06-096 DEPARTMENT OF ENVIRONMENTAL PROTECTION

Chapter 200: METALLIC MINERAL EXPLORATION, ADVANCED EXPLORATION AND MINING

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Subchapter 1: GENERAL PROVISIONS

1. Applicability.

A. To all metallic mineral exploration, advanced exploration and mining activities after the effective date of this Chapter.

NOTE: Persons seeking to conduct exploration activities in the unorganized or deorganized areas of the State should contact the Maine Land Use Planning Commission.

B. The following activities are prohibited, and no permit shall be issued under this Chapter to a mining operation that includes:

(1) Heap, percolation or in-situ leaching.

(2) Mining for thorium or uranium ore.

(3) Block caving.

(4) Open-pit mining.

(5) Wet mine waste units and tailings impoundments are prohibited, except that a mining operation may place into a mine shaft waste rock that is neutralized or otherwise treated to prevent contamination of groundwater or surface water.

2. Definitions. As used in this Chapter, unless the context otherwise indicates, the following terms have the following meanings:

A. **Acid Potential.** "Acid potential" or "acid generating potential" means the ability of a rock or geologic material to produce acid leachates.

B. **Acid Rock Drainage.** "Acid rock drainage" means the drainage that occurs as a result of oxidation of sulfide minerals contained in rock which is exposed to air and water.

C. **Act.** "Act" means the *Maine Metallic Mineral Mining Act* at 38 M.R.S. §490-LL *et seq.*

D. **Active Treatment System.** "Active treatment system" or "active treatment" means a system that treats water or wastewater with the active addition of chemical reagents or the application of external energy. Active treatment does not include periodic inspections and routine maintenance such as the mowing of vegetation.

E. **Administratively Complete.** "Administratively complete" means an application for a mining permit under this Chapter that is determined by the Department to contain all of the documents and information required to initiate processing under this Chapter.

F. **Advanced Exploration.** "Advanced exploration" or "advanced exploration activity" means any metallic mineral bulk sampling or exploratory activity that exceeds those activities that are exploration activities, but removes 10,000 tons or less of mine waste. Samples taken as part of "exploration" are not considered bulk sampling.

G. **Advanced Exploration Mining Permit.** "Advanced exploration mining permit" means a mining permit to conduct metallic mineral advanced exploration activities.

H. **Advanced Exploration Site.** "Advanced exploration site" means the area and facilities within which advanced exploration or activities incidental to it occur, or may reasonably be expected to occur.

I. **Adverse Impact or Adverse Effect.** "Adverse impact" or "adverse effect" means an unreasonable impact or effect on the associated attribute, as determined by the Department based on an evaluation of information that considers the value of the resource and the degree of impact or effect, on an associated existing attribute such as environment, scenic character, natural resource, or public health and safety.

J. **Affected Area.** "Affected area" means an area outside of a mining area where the land surface, surface water, groundwater, air resources, soils, or existing uses are potentially affected by mining operations as determined through an environmental impact assessment.

K. **Air Contaminants.** "Air contaminants" or "air contaminant" includes, but is not limited to dust, fumes, gas, mist, particulate matter, smoke, vapor, or any combination thereof.

L. **Applicant.** "Applicant" means any person who applies to the Department for a mining permit.

M**. Approved Suspension.** "Approved suspension" means a temporary suspension of mining issued pursuant to section 29 of this Chapter and approved in writing by the Department.

N. **Aquifer.** "Aquifer" means a geologic formation composed of rock or sand and gravel that stores and transmits significant quantities of recoverable water as identified by the Division of Geology, Natural Areas and Coastal Resources, Maine Geological Survey within the Department of Agriculture, Conservation and Forestry.

O. **Assurance Instrument.** "Assurance instrument" means a financial instrument executed in favor of the Department in a form approved by the Department and which is insured by an agency of the United States government or whose letter of credit operations are overseen or are regulated and examined by a federal or state agency.

P. **Baseline Conditions.** "Baseline conditions" or "baseline site conditions" means pre-mining conditions for a specific location and shall include, but not be limited to characterization of the following resources: wildlife; surface water and groundwater quality and quantity; vegetation, including the presence or absence or rare, threatened or endangered species; and air quality.

Q. **Beneficiation.** "Beneficiation" means the treatment of ore to liberate or concentrate its valuable constituents. "Beneficiation" includes, but is not limited to, crushing, grinding, washing, dissolution, crystallization, filtration, sorting, sizing, drying, sintering, pelletizing, briquetting, calcining, roasting in preparation for leaching to produce a final or intermediate product that does not undergo further beneficiation or processing, gravity concentration, magnetic separation,

electrostatic separation, flotation, ion exchange, solvent extraction, electrowinning, precipitation, amalgamation, and dump, vat, tank and in situ leaching.

R. **Blasting.** "Blasting" means the use of explosives to break up or otherwise aid in the extraction or removal of a rock or other consolidated natural formation.

S. **Block Caving.** "Block caving" is an underground hard rock mining method that involves undermining an ore body and allowing it to progressively collapse under its own weight. In block caving, a large section of rock is undercut, creating an artificial cavern that fills with its own rubble as it collapses. This broken ore falls into a pre-constructed series of funnels and access tunnels underneath the broken ore mass.

T. **Board.** "Board" means the Board of Environmental Protection.

U. **Buffer.** "Buffer" means actions or structures used to separate, shield, screen, or lessen the effect of the mine operation on the surrounding area by reducing noise or dust, improving aesthetics, controlling stormwater, and protecting the public health, safety, and welfare.

V. **Bulk Sampling.** "Bulk sampling" means the removal of samples for the purpose of testing to determine the feasibility, method, or manner of extraction and/or processing of metallic minerals. Such testing may include milling or grinding tests and/or pilot plant and processing tests. Methods of bulk sampling may include, but are not limited to, drilling and boring, digging of shafts and tunnels, or digging of pits and trenches. For purposes of this Chapter, bulk sampling of metallic mineral deposits is included in advanced exploration and is limited to the removal of no more than 10,000 tons of mine waste.

W. **Closure.** "Closure" means activities undertaken to manage a mining area and, if necessary, an affected area, pursuant to the mine plan approved by the Department. "Closure" includes, but is not limited to, actions taken to contain metallic mineral wastes on site and to ensure the integrity of waste management structures and the permanent securement of pits, shafts, and underground workings.

X. **Coastal Wetlands.** "Coastal wetlands" means all tidal and subtidal lands; all areas with vegetation present that is tolerant of salt water and occurs primarily in a salt water or estuarine habitat; and any swamp, marsh, bog, beach, flat, or other contiguous lowland that is subject to tidal action during the highest tide level for the year in which an activity is proposed, as identified in tide tables published by the National Ocean Service. Coastal wetlands may include portions of coastal sand dunes.

Y. **Commencement of construction.** "Commencement of construction" means that a Permittee or other person has physically altered a mining area or proposed mining area including, but not limited to, the clearing of trees and other vegetation, site preparation work, bulk sampling, and the construction of roads and other infrastructure upgrades.

Z. **Commissioner.** "Commissioner" means the Commissioner of the Maine Department of Environmental Protection.

AA. **Containment Structure.** "Containment structure" is an engineered structure or system designed to prevent the release of materials or substances from a designated area. Containment structures may be utilized to prevent releases from a variety of stored materials including, but not

limited to overburden, ore, tailings and hazardous substances. Hazardous substances must be stored in accordance with the federal *Resource Conservation Recovery Act* (RCRA) and state laws and regulations.

BB. **Contamination**

(1) As applied to groundwater, "contamination" means nonattainment of water quality standards, the cause of which is attributable to a mining operation, as:

(a) Specified in rules relating to primary drinking water standards adopted pursuant to 22 M.R.S. §2611; or

(b) Demonstrated by a statistically significant change in measured parameters that indicates deterioration of water quality determined through assessment monitoring.

(2) As applied to surface water, "contamination" means a condition created by any direct or indirect discharge that causes or contributes to nonattainment of applicable water quality or licensing standards under 38 M.R.S. §§ 414-A or 420. The nonattainment may be attributable to the mining operation either by itself or in combination with other discharges.

CC. **Contemporaneous Reclamation.** "Contemporaneous reclamation" means mining in a manner that creates areas that can be reclaimed continuously and as soon as practicable after the commencement of construction and throughout the life of the operation as described in the mine plan.

DD. **Contingency Plan.** "Contingency plan" means the contingency plan required by subsection 9(K) of this Chapter for all permit applications and mining operations.

EE. **Corrective Action.** "Corrective action" means action taken by the Permittee to correct a violation or to meet a performance requirement in a mining permit or advanced exploration mining permit, or other applicable rule or law.

FF. **Cumulative Impact.** "Cumulative impact" means the environmental impacts that result from the proposed mining activities when added to other past, present, and reasonably foreseeable future activities.

GG. **Department.** "Department" means the Maine Department of Environmental Protection.

HH**. Designated Chemical Materials.** "Designated chemical materials" means toxic or acidic chemicals used within the mining area in extractive metallurgical processing, the use of which, at certain concentrations, represents a potential threat to human health, property, or the environment.

II. **Drilling.** "Drilling" means the making of holes with a drill for exploration, development of a metallic mineral deposit, evaluating water quality, or collecting hydrogeological and geotechnical data.

JJ. **Drill Hole.** "Drill hole" means the cavity created by drilling.

KK. **Dry Stack Tailings Management.** "Dry stack tailings management" means the process of disposing of dewatered, compacted mine tailings into a freestanding, stable structure on an area with an impervious liner designed to shed water to a water collection and treatment system.

LL. Endangered or Threatened Species. "Endangered or threatened species" means any species of fish or wildlife designated as endangered or threatened under 12 M.R.S. §12803 or the federal *Endangered Species Act*.

MM. **Environmental Protection, Reclamation and Closure Plan.** "Environmental protection, reclamation and closure plan" means the portion of the mine plan that relates to the environmental protection, reclamation and closure activities required by subsection 9(I) of this Chapter for all permit applications and mining operations.

NN. **Event of Force Majeure. "**Event of Force Majeure**"** means an event beyond the control of the Department and the Permittee, including but not limited to:

(1) An act of God (such as, but not limited to, fires, explosions, earthquakes, drought, tidal waves and floods);

(2) War, hostilities (whether war be declared or not), invasion, act of foreign enemies, mobilization, requisition, or embargo;

(3) Rebellion, revolution, insurrection, or military or usurped power, or civil war;

(4) Riot, commotion, strikes, go slows, lock outs, or disorder; or

(5) Acts or threats of terrorism.

OO. **Exploration.** "Exploration" or "exploration activity" means activities conducted in accordance with this Chapter for the purpose of determining the location, extent, and composition of metallic mineral deposits, test boring, test drilling, hand sampling, the digging of test pits, trenching or outcrop stripping for the removal of overburden having a maximum surface opening of 300 square feet per test pit or trench, or other test sampling methods determined by the Department to cause minimal disturbance of soil and vegetative cover.

PP. **Exploration Site.** "Exploration site" means the area within which exploration or activities incidental thereto occur, or may reasonably be expected to occur.

QQ. **Financial Assurance.** "Financial assurance" means an assurance instrument or statement of financial responsibility provided by an Applicant or Permittee to ensure compliance with the Act, this Chapter, mining permit conditions, instructions, or orders of the Department.

RR. **Financial Interest.** "Financial interest" means:

(1) If the Applicant is a business entity:

(a) any officers, directors and partners;

(b) all other persons or business concerns having managerial or executive authority over the Applicant or Permittee and holding more than 5 percent of the equity in or debt of that business unless the debt is held by a chartered lending institution;

(c) all other persons or business concerns other than a chartered lending institution holding 25 percent or greater of the equity in or debt of that business unless the debt is held by a chartered lending institution; and

(d) the managerial person with operational responsibility for the facility; or

(2) If the Applicant is a public entity, all persons having managerial or executive authority over the mining operation.

SS. **Floodplain.** "Floodplain" or "floodplain wetland" means lands adjacent to a river, stream, or brook that are inundated with floodwater during a 100-year flood event and that under normal circumstances support a prevalence of wetland vegetation typically adapted for life in saturated soils.

TT. **Groundwater.** "Groundwater" means all the waters found beneath the surface of the earth which are contained within or under this State or any portion thereof, except such waters as are confined and retained completely upon the property of one person and do not drain into or connect with any other waters of the State.

UU**. Groundwater Basin.** "Groundwater basin" is the underground volume of an aquifer or aquifer system that is separated and defined by geologic or hydrologic boundaries.

VV**. Group A Waste.** "Group A waste" means a mine waste having an acid-generation potential or exhibiting a characteristic of hazardous waste as defined in 06-096 C.M.R. ch. 850.

WW**. Group B Waste.** "Group B waste" means a mine waste having no acid-generation potential that may release soluble pollutants at concentrations which exceed performance requirements for groundwater or surface water.

XX. **Group C Waste.** "Group C waste" means a mine waste that does not have the potential to violate water quality standards other than sedimentation or turbidity.

YY. **Heap or Percolation Leaching.** "Heap or percolation leaching" means a process used for the primary purpose of recovering metallic minerals in an outdoor environment from a stockpile of crushed or excavated ore by percolating water or a solution through the ore and collecting the leachate.

ZZ. **Historic Site.** "Historic site" means any site listed in the National Register of Historic Places or judged eligible for national register listing by the Maine Historic Preservation Commission.

AAA. **Intervenor.** "Intervenor" or "general intervenor" means a person who, in accordance with the *Maine Administrative Procedure Act*, 5 M.R.S. §§ 9054(1) and (2), and Department rules governing hearings, has been granted leave to participate as a party in a license application or appeal proceeding where a decision has been made to hold a hearing.

BBB. **Lean Ore.** "Lean ore" means rock containing metallic mineralization that is not profitable to process using technologies that exist at the mining operation.

CCC. **Life of Mine.** "Life of mine" means the period from issuance of a mining permit through post-closure of the mine.

DDD. **Metallic Mineral.** "Metallic mineral" means any ore or material to be excavated from the natural deposits on or in the earth for its metallic mineral content to be used for commercial or industrial purposes. "Metallic mineral" does not include ores of thorium or uranium.

EEE. **Metallic Mineral Operator.** "Metallic mineral operator" means a Permittee or other person who is engaged in, or who is preparing to engage in, mining operations for metallic minerals, whether individually or jointly or through agents, employees, or contractors.

FFF. **Metal Leaching.** "Metal leaching" means the dissolution and removal of metals and metalloids as a result of chemical processes commonly associated with minerals containing sulfides.

GGG. **Metallic Product.** "Metallic product" means a commercially salable mineral or metal produced primarily for its metallic mineral content in its final marketable form or state.

HHH. **Mine Plan.** "Mine plan" means all aspects of the plan to develop a mine including, but not limited to, siting, design, development, operation, reclamation, closure, post-closure, and corrective action activities throughout the life of a mine.

III. **Mine Shaft.** "Mine shaft" means a vertical, inclined or horizontal excavation, including all underground workings, with a surface opening not exceeding 1,000 square feet.

JJJ. **Mine Waste.** "Mine waste" means all material, including, but not limited to, overburden, rock, lean ore, leached ore, or tailings, that in the process of mining and beneficiation has been exposed or removed from the earth during advanced exploration and mining activities.

KKK. **Mine Waste Unit.** "Mine waste unit" means any land area, structure, location, equipment, or combination thereof on or in which mine wastes are managed. A structure or area of land does not become a mine waste unit solely because it is used to store nonreactive mine wastes generated on the site, such as soil or overburden, for 90 days or less.

LLL. **Mine Workings.** "Mine workings" means the system of pits, shafts and underground workings in a mine.

MMM. **Mining.** "Mining," "mining operation," or "mining activity" means activities, facilities or processes necessary for the extraction or removal of metallic minerals or overburden or for the preparation, washing, cleaning or other treatment of metallic minerals and includes the bulk sampling, advanced exploration, extraction or beneficiation of metallic minerals as well as waste storage and other stockpiles and reclamation activities, but does not include exploration.

NNN. **Mining Area.** "Mining area," or "metallic mineral mining area" means an area of land described in a permit application and approved by the Department, including, but not limited to, land from which earth material is removed in connection with mining, the lands on which material from that mining is stored or deposited, the lands on which beneficiating or treatment facilities, including groundwater and surface water management treatment systems, are located, or the lands on which water reservoirs used in a mining operation are located. Each mining activity or operation shall establish a separate mining area. The Applicant shall propose, and the Department shall approve the location and extent of each mining area.

OOO. **Mining Permit.** "Mining permit" means a permit issued pursuant to 38 M.R.S. §490-LL *et seq.* and this Chapter for conducting advanced exploration or mining operations.

PPP. **Monitoring.** "Monitoring" means activities including, but not limited to, observation, sampling, collection, analysis, recording, and reporting necessary for siting, development, operation, corrective action, suspension of operation, closure, or post-closure activities or to demonstrate compliance with a mining permit including any special permit conditions and approved plans. The Department shall approve the quality assurance plans for all monitoring activities.

QQQ. **Municipal or County Commissioner Intervenor.** "Municipal or County Commissioner Intervenor" means an intervenor status granted to the municipal officers, or their designees, from each municipality in which the mining area or affected area may be located, or in the unorganized territory, the county commissioners, or their designees, for each county in which the mining area or affected area may be located pursuant to 38 M.R.S. §490(OO)(6)(D).

RRR. **Open-Pit Mining.** "Open-pit mining" means, for any single mining operation permitted under 38 M.R.S. §490-LL *et seq.* and this Chapter, the process of mining a metallic mineral deposit by use of surface pits or excavations having greater than 3 acres of surface area in aggregate or by means of a surface pit excavated using one or more horizontal benches.

SSS. **Ore.** "Ore" means rock containing sufficient metallic mineralization to process using technologies that exist at the mining operation.

TTT. **Overburden.** "Overburden" means soil, rock or other materials which lie above or between the natural mineral deposits to be mined.

UUU. **Passive Treatment System**. "Passive treatment system" means the process of removing metals or acidity or both, through the use of chemical, biological, and physical removal processes that occur naturally in the environment such as topographical gradient, microbial metabolic energy, photosynthesis and chemical energy that do not require power or chemicals after construction and operates successfully over its design life with regular but infrequent maintenance.

VVV. **Performance-Based Standards. "**Performance-based standards" means a regulatory approach that establishes defined results and measurable outcomes without specific direction regarding how those results are to be obtained.

WWW. **Permittee.** "Permittee" means a person to whom a mining permit is issued.

XXX. **Perpetual Treatment.** "Perpetual treatment" means active treatment for more than 10 years post-closure.

YYY. **Person.** "Person" means an individual, firm, partnership, association, company, limited liability company, corporation, joint venture, municipality, state agency, federal agency, or other legal entity.

ZZZ. **Post-closure Maintenance.** "Post-closure maintenance" means an activity that may be required to sustain reclamation after cessation of a mining operation, as well as all activities undertaken at a closed mine waste unit, to maintain the integrity of containment features and to monitor compliance with applicable performance standards and permit conditions.

AAAA. **Post-closure Monitoring Period.** "Post-closure monitoring period" means a period following closure during which a Permittee is required to conduct monitoring of groundwater and surface water and other monitoring as specified in a mining permit.

BBBB. **Practicable.** "Practicable" means available and capable of being implemented after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

CCCC. **Probable Maximum Flood.** "Probable maximum flood" means the largest flood that may reasonably be expected to occur at a given point on a stream from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible on a particular watershed. This term identifies estimates of hypothetical flood characteristics (peak discharge, volume, and hydrograph shape) that are considered to be the most severe that are reasonably possible at a particular location, based on comprehensive hydrometeorological analyses of critical runoff-producing precipitation (and snowmelt, if pertinent) and hydrologic factors favorable for maximum flood runoff.

DDDD. **Protected Location.** The locations described in 06-096 C.M.R. ch. 375, §10(G)(16) constitute protected locations.

EEEE. **Qualified Professional.** "Qualified professional" or "qualified person" means a scientist, engineer, or professional in a technical discipline with sufficient training and experience to enable the individual to make sound professional judgments regarding conducting technical analyses or regarding the design, construction, and operation of regulated units and ancillary structures who, if accreditation is the norm in the profession, is accredited in the State of Maine, or subject to review and approval by the Department, is accredited in another jurisdiction.

FFFF. **Reactive Mine Waste. "**Reactive mine waste" means any natural geologic formation or mined material that, when exposed to air and water, may develop acid rock drainage, or any other natural geologic or mined material that is shown through characterization studies to release substances that may adversely impact natural resources and the environment.

GGGG. **Reclamation.** "Reclamation" or "reclamation operation" means the rehabilitation of a mining area, affected area, and any other area of land or water body affected by mining under a mine plan approved by the Department. "Reclamation" includes, but is not limited to, stabilization of slopes, creation of safety benches, planting of forests, seeding of grasses and legumes for grazing purposes, planting of crops for harvest, and enhancement of wildlife and aquatic resources.

HHHH. **Related Person.** "Related person" means any person with a financial interest in a proposed mining operation.

IIII. **Remediation.** "Remediation" means the cleanup, removal or containment of contaminants or contamination within a mining area or an affected area. Remediation may include, but is not limited to, removing contaminants or contamination, containing or treating waste on site, and identifying and removing sources of groundwater contamination and halting further migration of contaminants.

JJJJ. **Responsible Officer.** "Responsible officer" means:

(1) A person holding a principal executive position in a corporation as established by the charter or by-laws of the corporation;

(2) A general partner or the proprietor, as appropriate, of a partnership or sole proprietorship; or

(3) A principal executive officer or ranking elected official of a municipal, state, federal, or other public agency.

KKKK. **Storage Pile.** "Storage pile" means a manmade landform used for the temporary storage of material generated during mining, such as overburden, waste rock, lean ore, ore, or topsoil, provided that these materials have an identified final destination in the facility's mine plan or are part of the materials to be processed through beneficiation.

LLLL. **Statistically Significant Change.** "Statistically significant change" is a change that is likely the result of causes other than random variation as determined by statistical testing methodologies.

MMMM. **Surface Water Resources.** "Surface water resources" are coastal and freshwater wetlands, great ponds, rivers, streams, and brooks as defined in 38 M.R.S. §480-B.

NNNN. **Tailings.** "Tailings" means the product resulting from the milling and mineral concentration process remaining after extraction of minerals by physical or chemical means.

OOOO. **Tailings Impoundment.** "Tailings impoundment" means a surface area, contained by dike or dams, on which is deposited the slurry of material that is separated from a metallic product in the beneficiation or treatment of minerals, including any surrounding dikes constructed to contain such material. "Tailings impoundment" does not include a lined surface area on which dewatered tailings are stacked.

PPPP. **Topsoil.** "Topsoil" means the material at the earth's surface which has been so modified and acted upon by physical, chemical, and biological agents that it will support rooted plants.

QQQQ. **Underground Mine Openings.** "Underground mine openings" or "mine openings" means all openings and voids in the earth created in the process of mining, during development, or operation of the site.

RRRR. **Unusual Natural Area.** "Unusual natural area" means any land or water area, usually only a few acres in size, which is undeveloped and which contains natural features of unusual geological, botanical, zoological, ecological, hydrological, other scientific, educational, scenic, or recreational significance. By way of illustration, and not limitation, these may include: rare or exemplary plant communities; individual plant species of unusual interest because of size, species or other reasons; unusual or exemplary bogs; unusually important wildlife habitats, particularly those of rare or endangered species; unusual land forms; fossils and other deposits of importance to geologists; outstanding scenic areas; and others of similar character.

SSSS. **Upper and Lower Predictive Limits.** "Upper and lower predictive limits" are the statistically determined bounds of the prediction interval which is an estimate of an interval where future observations will fall.

TTTT. **Visual Resources.** "Visual resources" means the composite of basic terrain, geologic features, hydrologic features, vegetative patterns, and land use effects that make up the scenic character of the site and the area surrounding the site, especially as viewed from a protected natural resource.

UUUU. **Waste Rock.** "Waste rock" means rock material removed to access the ore body that may or may not contain metallic mineralization, but that is not processed to extract metallic minerals.

VVVV. **Watershed.** "Watershed" means the land that drains, via overland flow, drainageways, waterbodies, or wetlands to a given waterbody or wetland.

WWWW. **Waters of the State.** "Waters of the State" means any and all surface and subsurface waters that are contained within, flow through, or under, or border upon this State, or any portion of the State, including the marginal and high seas, except such waters as are confined and retained completely upon the property of one person and do not drain into or connect with any other waters of the State, but not excluding waters susceptible to use in interstate or foreign commerce, or whose use, degradation or destruction would affect interstate or foreign commerce.

XXXX. **Wellhead Protection Area.** "Wellhead protection area" means a specific geographic area which is approved by the Department, and if applicable, the Department of Health and Human Services, as the surface and subsurface area surrounding a water well or well field that supplies a public water system and through which contaminants are reasonably likely to move toward and reach the water well or well field.

YYYY. **Wet Mine Waste Unit.** "Wet mine waste unit" means a mine waste unit in which mine wastes are placed under water to minimize sulfide oxidation, acid formation or particulate pollution.

3. General Prohibitions. This section applies to all exploration, advanced exploration and mining activities.

A. It shall be unlawful for any person to engage in any exploration, advanced exploration or mining activity, or initiate the construction of such, except as authorized pursuant to this Chapter.

NOTE: Qualified exploration activities conducted pursuant to the standards established in section 7 of this Chapter do not require a mining permit.

B. The Department may not approve a mining permit in an unorganized or deorganized area of the State unless the Maine Land Use Planning Commission certifies to the Department that:

(1) The proposed mine is an allowed use within the subdistrict or subdistricts in which the project is located; and

(2) The proposed mine meets any land use standard established by the Maine Land Use Planning Commission applicable to the project that is not considered in the Department's review.

C. The Department may not authorize a discharge of pollutants as defined at 38 M.R.S. §361-A(4-A) to waters of the State under this Chapter.

NOTE: Discharges of pollutants to waters to the state require a waste discharge license pursuant to 38 M.R.S. §413, including permits for construction and industrial discharge issued by the Department pursuant to 40 CFR §122.26.

D. No chemical or oil, products or waste, shall be discharged, mixed, or released onto, into, or under the ground or waters of the State. This prohibition includes, but is not limited to, discharges into or from onsite wastewater treatment plants, mine pits or tunnels, or beneficiation units. All chemicals and oils shall be managed so as to prevent their release and mishandling, including compliance with all applicable management rules and laws including 06-096 C.M.R. ch. 800, 801, 850 through 858, and 860. Chemicals or oils utilized for their intended purpose as a part of the wastewater treatment process, beneficiation process, or other mining activities may be utilized only when identified in the mining permit application or exploration work plan, documented as chemicals or oils that are the least toxic materials available for their intended purpose, being used in appropriate quantities, used solely for their intended purpose and not as a means of disposal, and as approved by the Department. The use of underground injection for disposal is prohibited.

E. Waste rock shall not be used for roads or any other construction purpose, except for Group C waste.

4. Relation to Other Rules. This section applies to all exploration, advanced exploration and mining activities. Compliance with the provisions of this Chapter, the mining permit, and the Act does not:

A. Relieve a Permittee of the obligation to comply with all other applicable state, federal, or local statutes, regulations, or ordinances, including but not limited to the regulations for air emissions, water discharges, hazardous waste management for wastes not exempted from the federal hazardous waste management requirements under 40 CFR §261.4(b)(3) or (b)(7) (July 1, 2015), and underground storage tanks; permits required under 38 M.R.S. Chapter 3, Subchapter 1, Article 5-A (*Natural Resources Protection Act*), waste discharge licenses required under 38 M.R.S. §413 for discharges of pollutants to groundwater via an underground injection well or discharges of pollutants to surface waters of the State, including permits for construction and industrial discharge issued by the Department pursuant to 40 CFR §122.26; licenses required under 38 M.R.S. Chapter 4 (Protection and Improvement of Air); hazardous waste management licenses and other permits or licenses issued pursuant to any United States Environmental Protection Agency federally delegated or authorized program.

NOTE: Pursuant to 38 M.R.S. §490-NN(1)(A), the provisions of Chapter 3, Subchapter 1, Article 6 (Site Location of Development), Article 7 (Performance Standards for Excavations for Borrow, Clay, Topsoil or Silt), and Article 8-A (Performance Standards for Quarries); Chapter 13 (Waste Management); and 38 M.R.S. §420-D (Storm Water Management) do not apply to applications reviewed under the Act and this Chapter, except when permits or licenses are issued pursuant to any United States Environmental Protection Agency federally delegated or authorized program, as also set forth at 38 M.R.S. §490-NN(1)(A). In the case of waste management, the Department has interpreted the Act to exclude only those mine wastes that have been excluded by Subchapter 3 of the *Resource Conservation and Recovery Act*, 42 CFR §6901 *et seq.* and 40 CFR §261.4(b)(3) and (b)(7) (July 1, 2015).

B. Prevent a municipality from regulating or controlling mining or reclamation activities; and

C. Prevent a municipality from regulating the routes, hours, and weights of transportation of ore, rock, tailings, and other mining-related materials on public streets and roads in order to protect the public health, safety, and welfare.

Subchapter 2: ENVIRONMENTAL REQUIREMENTS FOR EXPLORATION AND ADVANCED EXPLORATION

5. Purpose of Exploration and Advanced Exploration Requirements. The purpose of this subchapter is to establish environmental procedures and standards for exploration and advanced exploration activities.

6. Applicability of Exploration and Advanced Exploration Requirements. This subchapter applies to any person proposing to conduct or engaging in exploration activities in the organized areas of the State and advanced exploration activities statewide.

7. Exploration Activities. A mining permit is not required for exploration under this Chapter, however, the submittal of an exploration work plan is required under section 7(C)(1) prior to initiating any activities at an exploration site within the organized areas of the State. The exploration work plan must contain the submission requirements listed in subsection 7(C) of this Chapter.

NOTE: Geophysical surveys are considered exploration for the purposes of this Chapter and the submissions and standards under section 7 of this Chapter if they involve some disturbance of soil or vegetation, such as cutting or clearing of vegetation along a survey grid. Non-intrusive methods, such as aeromagnetic surveys or other remote-sensing methods that do not involve any disturbance of soil or vegetation are not considered exploration for the purposes of this Chapter. The submission of an exploration work plan is not required for hand sampling activities (soil sampling with auger or shovel, stream sediment sampling, and rock chip sampling); however, these activities may require approval under other laws and regulations administered by the Department (e.g., the *Natural Resource Protection Act*, 38 M.R.S. §480-C).

NOTE: Persons seeking to conduct exploration activities in the unorganized or deorganized areas of the State should contact the Maine Land Use Planning Commission.

A. **Other Applicable Permit Requirements.** Depending upon the location, type and extent of activity, a permit may be required under other statutes or rules of the Department and the Maine Geological Survey. Persons seeking to conduct exploration activities should check with the appropriate agencies to determine applicable requirements. Requirements for exploration activities may include, but are not limited to, the following:

(1) Bureau of Resource Information and Land Use Planning. See Mining on State Lands, 12 M.R.S. §549, *et seq.*; and

(2) Natural Resources Protection Act Permit. See *Natural Resources Protection Act*, 38 M.R.S. §480-A, *et seq*.

B. **Standards.** The following minimum standards must be met for exploration activities in the organized areas of the State:

(1) Existing access ways shall be maintained to ensure that runoff is delivered immediately to stable ditches and vegetated buffer areas. Clearing of the vegetative cover shall be limited to the minimum necessary to allow for the movement of equipment.

(2) Access way approaches to stream channels shall be located and designed so as to divert water runoff from the way in order to prevent such runoff from directly entering the stream. With the exception of crossings, an undisturbed buffer strip of at least 75 feet must be maintained between access ways and streams.

(3) Erosion control measures must be implemented to prevent unreasonable erosion of soil or sediment beyond the exploration site or into a protected natural resource as defined in 38 M.R.S. §480-B; these measures must be in place before exploration activity, or related activities including, but not limited to, clearing and road construction, begins. Measures must remain in place and functional until the site is permanently stabilized. Adequate and timely temporary and permanent stabilization measures must be taken and the site must be maintained to prevent unreasonable erosion and sedimentation.

(4) For stream crossings and activities involving the disturbance of soil adjacent to a wetland or water body in organized areas, a permit under the *Natural Resources Protection Act* may be required. See 38 M.R.S. §480-C and the Department's *Permit by Rule Standards*, 06-096 C.M.R. ch. 305, §10.

(5) Topsoil which is stripped or removed must be stockpiled for use in reclaiming disturbed land areas. Soil stockpiles shall be seeded, mulched, and anchored or otherwise stabilized.

(6) The exploration site shall be restored to a physical state that is similar to, and compatible with, that which existed prior to any exploration. Within 30 working days following completion of exploration at an exploration site, any person conducting exploration activities shall accomplish the following:

(a) Disposal of all debris in accordance with applicable state laws and regulations;

(b) Grading of the surface of the site so that the final graded slope conforms with the original contour of the land; and

(c) Placement of topsoil and reseeding and stabilization of graded topsoil with vegetation native to the area.

(7) Within 30 working days after completion of exploration, all excavations including trenches, test pits, and mud pits shall be capped, refilled or secured. All settling ponds or sumps must be backfilled, covered with topsoil, and seeded.

(8) Drill pump stations must be located at least 25 feet from a river, stream, brook, great pond, or an area of open water of one-half acre or more within a freshwater wetland.

(9) All drill additives should be non-toxic as indicated by the manufacturer's product publications, such as Safety Data Sheets, and biodegradable to the extent reasonably possible. Drill fluids, additives and cuttings may not be released and must be confined to the drill site by the use of storage tanks or sumps unless an alternative disposal method is approved by the Department. All excavation sites and resulting waste must be managed to ensure no untreated water is released to the environment and released volumes will not adversely impact existing stream flows. The discharge of pollutants to surface and groundwater during exploratory mining is prohibited without prior approval pursuant to 38 M.R.S. §413.

(10) No bulk sampling may take place under an exploration work plan.

(11) Sealing of all drill holes, whether temporary or permanent, shall be completed within 30 days of cessation of drilling or testing activities such as "down-the-hole" geophysical surveys or other similar activities. All artesian wells shall be capped or sealed within 48 hours after cessation of drilling or the onset of artesian conditions. No drill hole may be temporarily sealed for more than 3 years unless the drill hole is being used during the time it is temporarily sealed for sampling or other studies related to a mineral deposit or general hydrological conditions of the area. A drill hole that has remained temporarily sealed for more than 3 years and is not being used for sampling or other studies shall be sealed permanently.

NOTE: For guidance on sealing drill holes, see "Guidance for Well and Boring Abandonment," produced by the Department's Bureau of Remediation and Waste Management, Division of Technical Services, dated January 7, 2009.

(a) Within 30 working days after permanent sealing of a drill hole, any person conducting exploration activities shall submit to the Department a report including, but not limited to, the following information for each drill hole:

(i) Location and identification of the drill hole;

(ii) Dimensions of the drill hole;

(iii) Identification of depth, static elevation, and estimated flow of any groundwater encountered, if known; and

(iv) Methods of sealing the drill hole, demonstrating compliance with subsection 7(B)(11).

(12) All facilities and equipment shall be promptly removed from the exploration site when they are no longer needed for exploration, except for those facilities and equipment which the Department has determined may remain on-site in order to:

(a) Provide additional environmental quality data;

(b) Detect, reduce or control the onsite or offsite effects of the exploration activities; or

(c) Facilitate future mining and restoration operations by the person conducting the exploration, under a work plan described in subsection 7(C) below.

(13) The Department may enter any exploration site, take samples, and conduct tests in order to determine compliance with any provision of this Chapter or other applicable requirements. The Department may require the submission of annual self-inspection reports, signed by a qualified professional, on exploration activities conducted by the Permittee.

(14) Any person conducting exploration activities shall notify the Department and/or the Land Use Planning Commission orally within 24 hours and in writing within 5 working days of any activity or occurrence during the course of exploration or reclamation which results in a discharge or has the potential to damage public health or the environment.

NOTE: Other reporting requirements may exist under federal laws and the laws administered by the Department of Environmental Protection and the Land Use Planning Commission. For oil spills, call 1-800-482-0777 which is available 24 hours a day. For spills of toxic or hazardous material, call 1-800-452-4664 which is available 24 hours a day. For more information, visit the Department's website at: http://www.maine.gov/dep/spills/emergspillresp/

(15) Beneficiation is prohibited under an exploration work plan.

C. **Submission Requirements.**

(1) At least 30 days prior to the commencement of any exploration activities, an exploration work plan shall be submitted to the Department on forms provided by the Department, prepared and signed by a qualified professional, which provides the following information, at a minimum:

(a) Documentation of the property boundaries, landowner information, and description of the area to be explored;

(b) Evidence of the applicant's title, right, or interest in the pertinent property for access to the area to be explored and to conduct exploration activities and restoration;

(c) A site plan showing the proposed access routes and exploration areas;

(d) Identification of any existing roads or clearings;

(e) A site plan with wetlands or other protected natural resources as defined under the *Natural Resources Protection Act* and other sensitive environmental features identified;

(f) A sediment and erosion control plan, including a stormwater management plan consistent with the Department's standards for stormwater management for access roads, excavation and stockpile areas, and other areas affected by the activity;

(g) A description of proposed drilling and excavation activities and methods, including petroleum products and chemical handling procedures and spill management, estimated quantities of material that must be removed to obtain samples, and best management practices to be employed in conducting the exploration activities;

(h) A plan for backfill and restoration of exploration sites which will address subsidence, drill holes, structural safety, water management, restoration of disturbed areas including access roads, and the abatement of any physical hazards; and

(i) A plan showing the exploration drilling area, maximum number of drill holes, and the maximum total linear drilling footage.

(2) Within 60 days of the completion of the exploration activities the Applicant shall submit a report, prepared and signed by a qualified professional documenting that all of the requirements of the restoration plan were completed.

D. If specified by the Department, additional measures to protect the environment shall be adopted by the person engaged in exploration activities.

8. Advanced Exploration. A person may not engage in advanced exploration without an advanced exploration permit issued by the Department. Advanced exploration activity permits are divided into two categories: Tier One and Tier Two. Under a Tier One approval, bulk sampling may not exceed two thousand tons of mine waste. Under a Tier Two approval, bulk sampling may not exceed ten thousand tons of mine waste. Under an advanced exploration permit, on-site processing of bulk samples is limited to mechanical size alteration and sorting. Any additional on-site testing and characterization must occur within enclosed, portable facilities. Any waste generated from this additional on-site testing and characterization must be transported off-site for disposal.

A. **General Standards and Requirements.** Applications for all advanced exploration activities must demonstrate compliance with the standards for exploration listed under subsection 7(B) of this Chapter. Tier One advanced exploration activities must also meet the requirements of subsection 8(C), and Tier Two advanced exploration activities must meet the criteria for approval of mining activities in section 11 of this Chapter together with any additional site-specific conditions required under the advanced exploration permit.

(1) The Department may enter any advanced exploration site, take samples, and conduct tests in order to determine compliance with any provision of this Chapter or other applicable requirements.

(2) The Department may require the submission of quarterly self-inspection reports, signed by a qualified professional, on the advanced exploration activities conducted by the Permittee.

B. **Submission Requirements.** Applications for advanced exploration activities must comply with all applicable requirements in section 9 of this Chapter. A pre-application meeting is required prior to submission to the Department of a new application for any advanced exploration activity pursuant to this Chapter. The Applicant must meet the requirements in section 10 of Rules Concerning the Processing of Applications, 06-096 C.M.R. ch. 2. A pre-submission meeting is required unless waived as provided in 06-096 C.M.R. ch. 2, §10(D).

C. **Tier One Advanced Exploration.** To qualify for Tier One advanced exploration, exploration activities may exceed those permitted under section 7, "Exploration," of this Chapter, but bulk sampling shall not remove in excess of 2,000 tons of mine waste from the exploration site for mineral testing or extraction. These activities may include: larger scale trenching or blasting than permitted under "Exploration" (i.e., greater than 300 sq. ft. for each test pit, trench or outcrop stripping site) but no more than one acre in total area in the area of exploration; road building/reconstruction; and temporary camp construction. Baseline monitoring or environmental assessment pursuant to section 9 of this Chapter is not required to obtain approval under Tier One for advanced exploration, but the Department may require water quality monitoring or other monitoring and sampling as described in paragraph (3) below. In addition, an adjudicatory hearing is not required for a Tier One Advanced Exploration.

(1) Application. Prior to commencement of any Tier One advanced exploration activities, an application shall be submitted for review and approval on forms provided by the Department. This application shall provide all information required by subsection 7(C) of this Chapter, evidence of the applicant's mining experience as it relates to advanced exploration activities, and evidence to demonstrate that the proposed activity meets the standards set forth in subsection 8(C)(2).

(2) Standards. The standards for Tier One advanced exploration activities include the minimum exploration standards listed under subsection 7(B), the blasting standards in subsection 20(K),

the performance standards in subsection 20, and the reclamation standards in subsections 23(I), 23(J), 23(M), and 23(N) of this Chapter. The Applicant must also demonstrate and maintain financial assurance in accordance with the requirements of section 17 of this Chapter.

(3) Submission Requirements. The Applicant shall submit with its application information to demonstrate that all applicable standards are met. The Applicant shall also submit with its application a reactive mine waste characterization work plan that includes the information required by subsection 20(E) of this Chapter. The plan must include, if determined to be necessary by the Department, measures to prevent or minimize adverse impacts on the environment, including, but not limited to control and monitoring of acid rock drainage, of metal leaching, and of areas impacted or potentially impacted by acid rock drainage.

D. **Tier Two Advanced Exploratio**n. To qualify for Tier Two advanced exploration, activities may exceed those permitted under Tier One advanced exploration activities and may include underground exploration tunnels, shaft sinking, and excavation work that disturbs more than one acre in area (which may involve multiple sites within the identified area of exploration) but not more than a total of three acres in area or a total of five percent of the advanced exploration site, whichever is less. Bulk sampling shall not remove in excess of 10,000 tons of mine waste from the advanced exploration site for mineral testing or extraction.

(1) Submission Requirements. Prior to commencement of any Tier Two advanced exploration activities, an application shall be submitted for review and approval on forms provided by the Department. This application shall provide the information required by subsection 9(B) through 9(L) of this Chapter, unless waived by the Department, to demonstrate that the mining operation meets the performance standards and approval criteria of this Chapter.

Subchapter 3: PERMITS

9. Application Requirements

A. **Pre-Application Meeting**

(1) Prior to preparing an application for a mining permit, the Applicant shall meet with the Department for a pre-application meeting and a site visit. The purpose of the pre-application meeting, as set forth in 06-096 C.M.R. ch. 2, is to help the Applicant understand the application process, to exchange information, to discuss the application fee, and to review the proposed metallic mineral mining and reclamation operation, and for the Department to provide direction on the process for preparing an application for a mining permit.

(a) The Applicant shall provide the Department the following information prior to the pre-application meeting:

(i) Identities and contact information of the persons associated with the proposed mine, including landowners, lessees, the Applicant, and other associated persons;

(ii) Location, including a description of town or township, range, section, and depiction of the metallic mineral mining areas and affected area on a diagram;

(iii) A general description of natural features including physical, geographic, hydrologic, biologic, and infrastructure description of the proposed mine and affected area

including administrative features such as land use, zoning, surface and mineral ownership, and areas of special environmental designation;

(iv) A description of geologic resources, including:

(A) Geologic map indicating known stratigraphy, structure, and fault systems with appropriate cross-sections;

(B) Narrative of geologic history;

(C) Discussion of the metallic mineral deposit including mineralogic and chemical nature of the ore and waste rock;

(D) Geologic stability of the affected area including regional seismicity, known landslides, and fault systems; and

(E) Unique geologic features;

(v) A description of the target mineral deposit, based on existing exploration data;

(vi) A conceptual advanced exploration plan, if necessary, and a conceptual metallic mineral mining, beneficiation, and reclamation plan;

(vii) A conceptual mine waste and designated chemical materials characterization work plan that meets the requirements of subsection 20(E) of this Chapter; and

(viii) A conceptual baseline characterization work plan that addresses, at a minimum, the requirements of subsection 9(C) of this Chapter.

(b) At the pre-application meeting the Department will provide an overview of:

(i) The Act, applicable rules, and the permit application process;

(ii) The fees for metallic mineral mining and the maximum fee for processing an application; and

(iii) The relationship of the Act and rules to other laws and regulations.

(2) Public Information Meeting. A public information meeting is also required pursuant to 06-096 C.M.R. ch. 2.

B. **Application Contents.** The Applicant shall provide all submissions that the Department determines are necessary to evaluate the application under the criteria for a permit under the applicable laws and rules. The Applicant shall prepare and submit to the Department an application for a mining permit, which shall at a minimum contain:

(1) Applicant Information. Information about the Applicant and the proposed activity must be provided including, but not limited to, the following:

(a) The name, mailing address, and phone number of the Applicant and principal representative of the applicant;

(b) The general organizational structure of the applicant, any parent companies, owners, principal stockholders, partners, and joint ventures;

(c) Evidence of title, right, or interest in all of the property that is proposed for development or use;

(d) All entities with a financial interest in the proposed activity;

(e) Any managing agents or subsidiaries which are or may be involved in the proposed activity;

(f) Organizational and legal relationships between or among joint applicants;

(g) The Applicant's registered agent for service of process in the State;

(h) Evidence of the Applicant's ability to undertake the proposed activity, including:

(i) A statement of the Applicant's prior experience and/or training as it relates to the proposed activity;

(ii) The names and qualifications of all key personnel who will be involved with site preparation, extraction, beneficiation, reclamation, closure, and post-closure maintenance;

(i) A summary of the Applicant's and its responsible officers' and related persons' record of compliance with environmental and land use laws and financial requirements of Maine and other jurisdictions, as follows:

(i) Criminal Convictions. A listing and explanation of any criminal convictions of the State, other states, the United States, or another country of the persons required to disclose under this section;

(ii) Civil Violations. A listing and explanation of any adjudicated civil violations of environmental laws or rules administered by the State, other states, the United States, or another country by any of the persons required to disclose under this section in the 10 years immediately preceding the filing of the application;

(iii) Consent Decrees and Administrative Orders or Agreements. A listing and explanation of administrative agreements or consent decrees entered into by, or administrative orders directed at, any of the persons required to disclose under this section for violations of environmental laws administered by the Department, the State, other states, the United States, or another country in the 10 years immediately preceding the filing of the application;

(iv) Other Proceedings. A listing and explanation of any ongoing court proceeding, administrative consent agreement negotiation, or similar ongoing administrative enforcement action not already provided in which the Applicant or any of the persons required to disclose under this section is a party and which concerns environmental laws administered by the Department or the State.

The Department may require the Applicant to update the list set forth in subsection 9(B)(i) subsequent to the filing of the application; and

(j) Documentation of sufficient financial assurance and insurance required under subchapter 4 of this Chapter and proof of a comprehensive general liability insurance policy in force for the mining to provide personal injury and property damage protection in an amount adequate to compensate persons who might be damaged as a result of the mining operation or any reclamation or restoration connected with the operation.

(2) Location. The location of the proposed activity must be provided including, but not limited to, the following:

(a) The location of the proposed site, including the municipality or township, and county;

(b) A legal description of the proposed site;

(c) Whether or not the proposed site is within the jurisdiction of the Land Use Planning Commission, and if so, the land use district(s) encompassing the site; and

(d) The names and addresses of abutting property owners.

(3) Evidence of Legal Authority. Evidence of the Applicant's legal authority to conduct business in the United States and the State of Maine must be provided in the form of the Information Summary sheet from the Bureau of Corporations, Elections and Commissions.

(4) Other Permits. A list must be provided of all other federal, state, and local permits, licenses, and approvals required for the proposed activity, including the status of such permits, licenses, and approvals or applications for such approvals that are pending.

(5) Mining Experience. A list must be provided of all mines controlled or operated, in whole or in part, by the applicant, parent companies, subsidiaries, predecessors, or related persons, in the United States and abroad. This list shall include mine site addresses, nature and duration of affiliation with the site, a brief description of each mine, and the compliance record with regard to applicable mining permits, authorizations, rules, and laws of the applicable jurisdiction.

(6) Reactive Mine Waste Report. The Applicant shall submit with its application a reactive mine waste report that includes the information required by subsection 20(E) of this Chapter consisting of all test data concerning waste analysis for each type of mine material, waste and designated chemical material, the testing program objective together with an interpretation of the results, and options for the control of acid generation and metal leaching.

C. **Baseline Site Characterization Report**. A baseline site characterization report shall be included as part of the application. This report must define existing conditions within the proposed mining areas and affected areas prior to commencement of the proposed activity. Baseline studies must provide sufficient data to allow qualitative and quantitative analysis of the study areas under a baseline work plan approved by the Department. All data collection and analyses must be performed by qualified professionals in the relevant disciplines. The use of already available (or pre-existing) data may be allowed subject to prior review and approval by the Department. All pre-existing data shall be clearly marked "pre-existing data" within the baseline plan. The Applicant shall discuss the manner and time in which the data were acquired, the analytical or

investigative methods used and any other factors relevant to the quality and applicability of the data. The Department shall accept or reject the use of pre-existing data prior to the acceptance of the baseline work plan. All pre-existing data must be supplemented with new data collected within the mining areas and affected areas. The proposed baseline site characterization report must include, if required by the Department, each of the following:

(1) Documentation of aquatic and terrestrial flora and fauna species presence, distribution and abundance including the existence of endangered or threatened species and significant wildlife habitats and may include analyses of fish tissue, fish population, invertebrate population and abundance, and any other measure of ecological health the Department deems necessary to gauge potential impacts.

(2) A water balance of the metallic mineral mining and affected area including, but not limited to, consideration of precipitation, evapotranspiration, infiltration, runoff, surface and groundwater flow, hydraulic gradients, velocity, flowpaths, elevations, and groundwater/surface water interactions;

(3) An ambient water quality monitoring plan and monitoring results that provide baseline water quality information for any surface or groundwater that potentially may be impacted as a result of the mining activity. Surface and groundwater baseline monitoring is required for (1) metallic elements for which maximum contaminant levels (MCLs) have been established by the United States Environmental Protection Agency (EPA) under the Safe Drinking Water Act, or for which applicable Effluent Guidelines and Standards for Ore Mining and Dressing Point Source Categories have been established pursuant to 40 CFR §440; and (2) for any toxics for which criteria have been developed by EPA under Section 304(a) of the *Clean Water Act* or by the Department under 38 M.R.S. §420, and other indicators that could adversely impact water quality. In addition, the Department may require testing which includes, but is not limited to, the following:

acidity
alkalinity
aluminum
ammonia
antimony
arsenic
barium
beryllium
biochemical oxygen demand
boron
bicarbonates
cadmium
calcium
carbonates
cation-anion balance
chemical oxygen demand
chloride
chromium
conductivity
copper
cyanide
dissolved oxygen
magnesium
manganese
mercury
molybdenum
nickel
nitrates-nitrite
pH
phenols
potassium
radium 226 and 228
selenium
silver
silica
sodium
sulfate
sulfide
temperature
thallium
total dissolved solids
total Kjeldahl nitrogen
total organic carbon
fluoride total phosphorus

hardness	total suspended solids
iron	vanadium
lead	volatile organic compounds
zinc	total petroleum hydrocarbons

Baseline water quality monitoring shall include at least 2 years' data collected over 24 or more consecutive months unless pre-existing data are approved for use by the Department, and shall generate the information necessary to:

(a) Determine upper and lower predictive limits, with 95% level of confidence, for baseline physical hydrologic conditions (water levels, stream stage, and discharge) at each monitoring location, for each parameter, and for each hydrologic season. Storm frequency, intensity and flow/volume analyses shall be conducted for 2, 10, 25, 100, and 500-year storms;

(b) Provide a basis to evaluate future operational, reclamation, corrective action, closure, and post-closure monitoring data for the presence of a statistically significant change from baseline conditions;

(c) Characterize baseline water quality and sediment in streams, ponds, and wetlands for parameters representative of mine materials, wastes, and designated chemical materials, and associated reaction and transformation products that present a potential risk of release during metallic mineral mining;

(d) Characterize baseline water quality and sediment in streams, ponds, and wetlands for parameters that likely serve as general indicators of baseline conditions; and

(e) Provide a groundwater flow numerical model for baseline, operational, and post closure conditions that will be used for determining potential hydrogeological impact;

(4) Documentation of baseline climatological and meteorological conditions including temperature, precipitation, precipitation forms, wind speed, wind direction, solar radiation, relative humidity, barometric pressure, atmospheric gas composition, and atmospheric dust;

(5) Documentation of all watersheds, groundwater basins and aquifers, and an inventory of wells, springs, and seeps within mining areas and affected areas;

(6) A study documenting soils and other surficial deposits present, including descriptions of type, extent, thickness, and physical and chemical properties; and

(7) Documentation of cultural, historic, and scenic resources.

D. **Mining Operation Plan.** A mining operation plan shall be included as part of the application. The mining operation plan shall provide a detailed metallic mineral mining feasibility study including, but not limited to, designs, plans and specifications, analyses, and schedules along with supporting data and information, as applicable, of the following:

(1) Type and method of metallic mineral mining proposed, and the expected operating life of the mine, including a mining and production schedule;

(2) Area, volume, type, and mineralogy of ore to be excavated, and schedule of metallic mineral mining and stockpiling of ore;

(3) Area, volume, and characteristics of topsoil, overburden, lean ore, ore, and waste rock to be excavated, including plans and schedules for excavating, segregating, processing, storing, and stabilizing these materials. All mine waste must be characterized according to their potential to generate acid rock drainage or otherwise discharge contaminants to the environment, and plans for excavation, segregation, processing, storage, and stabilization of each type of material must specifically address the nature of the material identified by this characterization;

(4) Locations, designs, schedules of development, proposed use, and dimensions of stockpiles;

(5) Location, extent, depth, dimensions, and elevation contours of excavations, underground mine openings and workings, shafts, portals, and other openings to the land surface, including a schedule of development;

(6) Locations, dimensions, and proposed use of buildings, facilities, and structures including those used for storage and transfer of chemicals, and location, dimensions, and proposed use of fuel and explosives storage, washdown, and maintenance areas;

(7) Transportation plan, including off-site ore concentrate or metallic product hauling;

(8) Plan for providing necessary general infrastructure requirements to the mining operation including electrical power requirements, water, wastewater, and general solid waste disposal, and access roads for transportation of equipment, materials, and labor required for the mining and restoration operation. This plan shall include details on the addition of the mining operation to existing civil infrastructures within the metallic mineral mining and affected areas;

(9) Beneficiation plan describing type, methods, extent and sequences, as well as associated materials, reagents, wastes, products, equipment, and processes;

(10) Tailings management plan, including a description of the quantity, method, location, sequence, and schedule;

(11) Water management plan for storm water, surface water, groundwater, potable water, and process water describing:

(a) Withdrawal sources, quantities, rates, and duration of use;

(b) Expected hydrologic impacts on water supply sources, groundwater, wetlands, and other surface water resources;

(c) Purpose, location, size, capacities, design, operating procedures of all ponds, impoundments, dewatering systems, diversions, and other water control structures and treatment facilities;

(d) Location and estimated volumes, rates, quality, and duration of discharges; and

(e) Anticipated wastewater treatment methodology, design, and procedures;

NOTE: For some activities in, on, over or adjacent to a wetland or waterbody, a permit under the *Natural Resources Protection Act* may be required. See 38 M.R.S. §480-B and the Department's *Wetlands and Waterbodies Protection* rule, 06-096 C.M.R. ch. 310. Any discharge to the Waters of the State requires a permit pursuant to 38 M.R.S. §413.

(12) Waste management plan including descriptions by waste stream type, source, anticipated volumes, characteristics, provisions for minimization, treatment, on-site storage, containment, management, transportation, and disposal endpoints. Waste management plans shall not include perpetual treatment methodologies; and

(13) Dust management plan for the control of dust and other fugitive emissions.

E. **Engineering Report.** An engineering report shall be included as part of the application. The engineering report for the mine facility must present the basis for the engineering design and the proposed construction procedures. The engineering report must discuss site-specific factors considered during design and address design selection for engineered structures. The report must also include a narrative evaluating the potential modes and significance of failures in engineered systems. All calculations and assumptions used in the evaluation and design of the proposed facility must be submitted. Engineering designs, reports, plans and other technical engineering documents must be signed by a qualified professional.

F. **Quality Assurance Plan (QAP).** A QAP must be established and included as part of the application to assure that design specifications and performance requirements for all mining operations are met during construction, operation, reclamation, and closure. The QAP must include, but is not limited to, the following:

(1) A description of the Construction Quality Assurance (CQA) measures to be implemented;

(2) A description of the relationship between the QAP, construction quality control, and the construction contract bid documents. The construction contract bid documents must also clearly define this relationship;

(3) A description of the extent and scope of the responsibility and authority of organizations and/or personnel involved in permitting, designing, constructing, and certifying construction, operation, reclamation and closure of the mining operation. This must also include a description of a construction problem resolution process that incorporates the roles and responsibilities of all parties, including the Applicant /Permittee, CQA personnel, contractors, and the Department;

(4) The required qualifications of the CQA personnel and testing laboratories. Personnel qualifications must include recognized industry certifications where available and applicable. Testing laboratories must be certified by the appropriate state and national accreditation programs for the tests to be performed;

(5) The inspections and tests to be performed to ensure that the mining operation conforms to the requirements of the mining permit, this Chapter and the Act;

(6) The sampling activities, sample size, methods for determining sample locations, frequency of sampling, acceptance and rejection criteria, and methods for ensuring that corrective measures are implemented;

(7) Record keeping and reporting requirements for CQA and inspection activities;

(8) A list and description of all items requiring CQA certifications, including identification of the engineer(s) responsible for these certifications; and

(9) A description of the process for evaluating CQA and inspector performance, and for terminating CQA personnel and inspectors, including notification to the Department.

G. **Environmental Impact Assessment.** An environmental impact assessment shall be included as part of the application. Preparation of an environmental impact assessment must include the public participation requirements described in section 10 of this Chapter. The environmental impact assessment report shall include:

(1) Project Description. The project description shall include:

(a) A map showing the metallic mineral mining areas and affected areas, including a rationale and basis supporting the proposed mining area boundaries and affected area boundaries and locations of protected natural resources as defined at 38 M.R.S. §480-B(8) within, adjacent to, or potentially impacted by the mining areas or affected area. Each mining activity must have a defined mining area;

(b) A statement of purpose and need for the proposed mine and mining activity components; and

(c) A summary of the mine plan.

(2) Resource and Setting. A description of and documentation of the metallic mineral mining areas, affected areas, natural and artificial features, and where applicable, anticipated seasonal and longer term variations of those features using data and information from the baseline characterization, the reactive mine waste and designated chemical materials characterization, as well as other site-specific information, credible regional studies, and studies of other sites having documented similar conditions. This assessment must include the quality, flora, fauna, hydrology, geology, geochemistry, and baseline conditions for these features, including, but not limited to:

(a) Topography and land use;

(b) Climate;

(c) Visual resources;

(d) Geology, including, but not limited to, the areal extent, thickness, lithology, permeability, and geochemistry of soils, overburden, and the bedrock and ore body;

(e) Water resources including, but not limited to, the hydrologic attributes of surface water and groundwater resources and the physical and spatial attributes of aquifers, groundwater basins, watersheds, and natural and artificial surface water resources;

(f) Locations of designated or recorded administrative features including:

(i) Hydrologic features such as wild, scenic or recreational rivers, wellhead protection areas, floodplains, and wetlands;

(ii) Towns, villages, counties, and other civic jurisdictions;

(iii) Recreational, historical, cultural, archeological, scientific, and natural areas or similar features such as parks, refuges, wilderness areas, and state and national monuments; and

(iv) Public rights of way, zoning, and associated land use plans for the metallic mineral mining areas;

(g) Biologic resources including, but not limited to, the presence of, or recorded locations of rare, endangered, and threatened species, the presence or absence of species of special concern, significant wildlife habitats, deer wintering areas, aquatic and terrestrial flora and fauna species and abundance, and ecological systems; and

(h) Manmade structures, including descriptions, locations, and uses of:

(i) Water supply sources for drinking, cooling, irrigation, geothermal, industrial, and other purposes;

(ii) Dwellings, places of business or worship, schools, hospitals, government buildings, and other buildings used for human occupancy;

(iii) Private, public, and institutional infrastructure such as utilities, transportation corridors, dams, bridges, and tunnels;

(iv) Past metallic mineral mining facilities including storage piles, tailings basins, pits, underground workings, and beneficiating plants; and

(v) Waste disposal facilities or sites of environmental contamination.

(3) Impact Analysis. The environmental impact assessment must identify potential impacts to the resources and setting identified in subsection 9(G)(2), above.

(4) Use of Federal Permit Submissions. An Environmental Impact Statement or equivalent document prepared as part of Federal permitting requirements for an application under this activity may be accepted in lieu of the State's required environmental impact assessment, at the discretion of the Department. The Department may require these documents to be supplemented to meet the requirements of the Chapter.

(5) Environmental impact assessment results, analyses, and findings and supporting information and data shall be submitted in a report to the Department as part of the application for a mining permit.

H. **Alternatives Analysis.** An alternatives analysis shall be included as part of the application and must include the following information and analysis. This analysis will be incorporated into the Department's determination of whether the proposed project would unreasonably adversely affect existing uses, scenic character, air quality, water quality, and other natural resources.

(1) The alternatives analysis must demonstrate the consideration of siting alternatives as well as alternative technologies, modified scale or magnitude, and alternatives incorporating practicable mitigation measures for portions of a metallic mineral mining operation ancillary to the removal of material in connection with the commercial production of metallic minerals, and for which there is some flexibility in site selection, such as storage piles, water reservoirs, beneficiation operation processing plants, chemical and fuel storage and handling areas, wastewater treatment plants and disposal alternatives, offices, roadways, and auxiliary facilities.

(2) The alternatives analysis for removal of material must demonstrate minimization including location, removal techniques, and reasonable mitigation measures.

(3) Alternatives that were considered but eliminated based on information developed through the environmental impact assessment must be discussed and the reason for their elimination must be stated.

(4) Data and analysis shall be commensurate with the importance of the impact and the relevance of the information to a reasoned choice among alternatives and to the consideration of the need for mitigation measures.

(5) Impact Analysis. There shall be an analysis of potentially significant adverse or beneficial environmental effects generated, directly, indirectly, or cumulatively for the proposed mine and each major alternative.

(6) Mitigation. Measures that could reasonably eliminate or minimize any adverse environmental effects, of the proposed project shall be identified, including, but not limited to:

(a) Minimizing an impact by not taking a certain action or parts of an action;

(b) Rectifying an impact by repairing, rehabilitating, or restoring the affected environment;

(c) Reducing or eliminating an impact over time through preservation and maintenance operations during the life of the project; and

(d) Compensating for an impact by replacing the affected significant wildlife habitat.

I. **Mine Plan.** A mine plan shall be included as part of the application. The mine plan shall describe the metallic mineral mining operation plan and include the siting, design, development, operation (including beneficiation operations), reclamation, closure, post-closure, and corrective action methods to be used during construction, operation, reclamation, remediation, closure and post-closure to avoid, minimize and mitigate actual and potential adverse impacts to natural resources, the environment, and public health and safety. The mine plan must include an environmental protection, reclamation, and closure plan. The mine plan must address the unique issues associated with mining and must include, at a minimum, the following:

(1) A description of each aspect of the mine siting, design, development, operation, reclamation, closure, post closure, and corrective actions, and the potential adverse impacts to natural resources, the environment, and public health and safety that are avoided, minimized, and/or mitigated;

(2) Detailed designs, plans, specifications, techniques, methods, materials, standard operating procedures, construction methods, and schedules for each aspect of the mine plan;

(3) The basis for the applicant's contention that the proposed plan for each of these aspects prevents adverse impacts to natural resources, the environment, and public health and safety;

(4) A description of the reclamation plan, including, at a minimum:

(a) A reclamation plan as required in section 23 of this Chapter;

(b) A plan for contemporaneous reclamation activities along with an explanation if contemporaneous reclamation will not be practicable in certain aspects of the project;

(c) Closure and post-closure maintenance, identifying reclamation activities that would be taken by the Applicant if operations cease or are suspended. The plan shall address all of the components stipulated in section 24 of this Chapter and be updated annually; and

(d) A schedule for expected reclamation activities;

(5) A detailed written cost estimate and cost rationale for each category of the mine plan, including, at a minimum:

(i) The cost of designing and constructing the mine and operational costs for the first 5 years of operation;

(ii) The cost to investigate all possible releases of contaminants at the site, monitor all aspects of the mining operation, close the mining operation in accordance with the closure plan, conduct treatment activities of all expected fluids and wastes generated by the mining operation for a minimum of 100 years, implement remedial activities for all possible releases and maintenance of structures and waste units as if these units have released contaminants to the groundwater and surface water, conduct corrective actions for potential environmental impacts to groundwater and surface water resources as identified in the environmental impact assessment and conduct all other necessary activities at the mine site in accordance with the environmental protection, reclamation and closure plan; and

(iii) The cost to respond to a worst-case catastrophic mining event or failure, including, but not limited to, the cost of restoring, repairing and remediating any damage to public facilities or services, to private property or to the environment resulting from the event or failure.

All cost estimates shall be in current dollars, shall include at least a 20% contingency, and shall assume the hiring by the Department of a third party to complete all tasks. Cost estimates shall include Department oversight costs equal to 30% of the cost of hiring a third party to complete all tasks. No salvage value of products, waste, mine structures, equipment, land, or other assets associated with the mining operations shall be included in the cost estimate.

J. **Monitoring Plan.** A monitoring plan must be included as part of the application. The contents of the monitoring plan must meet the requirements described in section 22 of this Chapter.

K. **Contingency Plan.** A contingency plan must be included as part of the application. The contingency plan shall include all of the following:

(1) An assessment of the risk to public health and safety associated with potential accidents or failures involving the following:

(a) Release or threat of release of reactive mine waste or toxic materials;

(b) Storage, transportation, and handling of explosives;

(c) Fuel storage and distribution;

(d) Fires;

(e) Wastewater collection and treatment system failure or upset;

(f) Settling pond, dry stack tailings management structure, or embankment failure;

(g) Air emissions;

(h) Spills of hazardous substances;

(i) Other specific natural risks defined by the environmental impact assessment;

(j) Power disruption;

(k) Unplanned subsidence; and

(l) Leaks from containment systems for stockpiles, storage, or disposal facilities.

(2) A description of the detection and warning systems to be used in alerting the Applicant or the Department of the accidents or failures above.

(3) A complete Spill Prevention, Control and Countermeasures Plan if required by 40 CFR Part 112 or other federal or state statutes and regulations.

(4) Response measures that will be followed for each potential accident or failure.

(5) The procedure for notifying the general public, public authorities, and safety agencies in the event of an emergency including:

(a) A list, by title, of employees of the Permittee to be contacted and their duties and responsibilities;

(b) The actions to be taken to restrict access of nonessential personnel to the area;

(c) If evacuation of the public is necessary, the procedure for conducting the evacuation;

(d) A list of emergency equipment and its location;

(e) A list of emergency telephone numbers for the following people or entities:

(i) Representatives of the Permittee;

(ii) The local municipality emergency management coordinator;

(iii) Local ambulance services;

(iv) Local hospitals;

(v) Local fire and police departments;

(vi) Department of Environmental Protection;

NOTE: Other reporting requirements may exist under federal laws and the laws administered by the Department of Environmental Protection and the Land Use Planning Commission. For oil spills, call 1-800-482-0777 which is available 24 hours a day. For spills of toxic or hazardous material, call 1-800-452-4664 which is available 24 hours a day. For more information, visit the Department's website at: http://www.maine.gov/dep/spills/emergspillresp/

(vii) Pollution emergency alerting system;

(viii) Federal regulatory agencies, as appropriate;

(ix) Department of Agriculture, Conservation and Forestry; and

(x) Local unit of government.

(6) A plan for testing the contingency plan to assure its effectiveness.

(7) The contingency plan, including contact information, shall be updated and re-submitted to the Department on an annual basis.

(8) The Applicant shall submit a copy of the contingency plan to each emergency management coordinator having jurisdiction over the metallic mineral mining affected area at the time the application is submitted to the Department.

L. **Financial Assurance.** A description of the type or types and amounts of financial assurance to be provided that will satisfy the requirements of subchapter 4 of this Chapter and 38 M.R.S. §490-RR must be included in the application. This submittal must be adequate to demonstrate the financial ability of the Applicant in accordance with subchapter 4 of this Chapter.

10. Public and Local Participation

A. **Notification and Participation Requirements**. These requirements apply to an application for an advanced exploration activity or mining permit. This section details the notification and participation requirements for the pre-application phase, which includes the baseline work plan and the scoping document for the environmental impact assessment. In addition, the application phase, which includes the advance notice requirements, notice of intent to file, adjudicatory hearing and intervenor grants must meet the requirements of Chapter 2 of the Department Rules and the *Maine Administrative Procedure Act*, 5 M.R.S. chapter 375.

B. **Pre-application Phase – Publication and Notice of Baseline Work Plan.** Prior to the collection of any baseline data, the Applicant shall submit a baseline work plan to the Department. The baseline work plan shall describe methods used for acquiring data, sampling locations, sampling frequency, analytical methods, a timetable for data collection, and a quality assurance (QA) project plan. Upon submittal of a baseline work plan, the Applicant shall provide public notice of the availability of the baseline work plan for public review and comment by publishing notice in at least one newspaper of general circulation in the area where the activity is proposed, and in one newspaper with a circulation area of the entire State of Maine. Following notice of publication of the baseline work plan, there shall be 30 days for public review and comment.

(1) Review and Acceptance of Baseline Work Plan. Within 30 days after the close of the public comment period, after review of the proposed baseline work plan and consideration of comments received, the Department shall either accept the baseline work plan or require revisions to the plan prior to acceptance.

(2) After the baseline work plan has been accepted by the Department, the Applicant shall submit to the Department a proposed amendment if:

(a) Changes in the siting of the proposed activity necessitate an expansion of the study area;

(b) Changes in the scope of the proposed activity necessitate additional studies; or

(c) Any other information is necessary for the Department to evaluate the proposed activity under all applicable permit review criteria.

C. Preparation of Environmental Impact Assessment Scoping Document.

(1) A scoping process shall be used before preparation of an environmental impact assessment (EIA) to identify environmental issues relevant to the proposed activity, determine the appropriate level of analysis and contents of the EIA, identify the factors to be assessed in the EIA, and set a timetable for preparation. At a minimum, the scope of an EIA shall encompass the environmental, human health and safety, physical, cultural, and land use impacts of a proposed activity; measures for mitigating significant impacts; the physical characteristics of the project site and design/operation alternatives.

(2) Prior to the preparation of the EIA, a draft scoping document must be submitted to the Department by the applicant. The draft scoping document must be submitted before the application is filed, and shall include, but is not limited to, the following:

(a) Identification of the Applicant and the location and description of the activity;

(b) Identification of other reviewing agencies;

(c) Identification of potential environmental impacts and issues that require investigation including interconnection of the proposed mining areas to adjacent groundwater and surface water resources;

(d) Detailed work plan for the analysis of each potential environmental impact and issue identified above including proposed evaluations;

(e) Copy of the baseline work plan, if previously accepted;

(f) Identification of the baseline data that will be incorporated into the EIA and how it will be incorporated; and

(g) Preliminary outline of the EIA.

(3) Public Notice and Availability of Draft Scoping Document

(a) Upon submittal of the draft scoping document, the Applicant shall provide public notice of the availability of the draft scoping document for public review and comment by publishing a notice in at least one newspaper of general circulation in the area where the activity is located.

(b) The Applicant shall also notify, by certified mail, abutting landowners, the municipal officers of the municipality in which the activity is proposed or, if within the unorganized and deorganized areas of the State, the county commissioners with jurisdiction where the activity is proposed.

(4) Public Comment Period. Following notice of publication of the draft scoping document, there shall be 45 days for public comment.

(5) Public Scoping Meeting. During the comment period, the Department may hold a public scoping meeting to gather further comments on the draft scoping document if the Department determines that such a meeting is necessary or useful to the review process.

D. **Application Phase – Advanced Notice of Intent to File**

(1) The Applicant shall notify, by certified mail, the municipal officers of each municipality in which the mining areas or affected areas may be located, or in unorganized and deorganized areas of the State, the county commissioners for each county in which the mining areas and affected areas may be located, of the Applicant's intent to file a mining permit application at least 60 days prior to submitting an application to the Department.

(a) The notice shall contain all of the following:

(i) A statement of intent to apply for a mining permit;

(ii) The name, address, and telephone number of the applicant;

(iii) The name of a designated contact person;

(iv) The type of mine proposed and a figure clearly showing the location of the mining areas and the affected areas;

(v) The anticipated date of submittal of the permit application; and

(vi) A description of the right of the municipal officers or county commissioners to apply for intervenor grants, their right to receive grants not exceeding $50,000 to support certain activities to intervene before the Department, and the requirement that they

must request intervenor status within 60 days of this notification or be deemed to have waived the right to receive intervenor grants.

(2) At the same time the Applicant shall provide a copy of this notice to the Department and the Director of the Bureau of Resource Information and Land Use Planning within the Department of Agriculture, Conservation and Forestry.

E. **Notice of Intent to File Applications.** Within 30 days prior to filing, an Applicant shall give public Notice of Intent to File an application for a new, transferred, or amended permit. An application that has been previously returned as incomplete pursuant to the Department's administrative rules must comply with these requirements if the application is not resubmitted within 30 days of the date it was returned to the applicant. The notice must be mailed by certified mail to abutters, as determined by local tax records or other reliable means, to the municipal office of the municipality(ies) where the project is located and, if the project is located in the unorganized or deorganized areas of the State, to the appropriate county commissioners. The notice must also be published once per week for four (4) successive weeks in a newspaper circulated in the area where the project is located. Copies of the published Notice of Intent to File and a list of abutters to whom notice was provided must be submitted with the application. The notice must include the following information:

(1) Name, address, and telephone number of the applicant;

(2) Citation of the statutes or rules under which the application is being processed;

(3) Location of the activity;

(4) Summary of the activity;

(5) Anticipated date for filing the application with the Department;

(6) A statement providing the local filing location where the application can be examined;

(7) A statement that public comments on the application may be provided to the Department, together with the name and email address of the Department contact person and the mailing address of the Department; and

(8) Any other information required by applicable rule or law.

F. **Application Phase – Adjudicatory Hearings.** The Department will hold an adjudicatory hearing within the municipality in which a Tier Two advanced exploration or mining operation may be located or, in the unorganized or deorganized areas of the State, in a location convenient to the vicinity of the proposed mining operation no later than 180 days after the application is accepted as complete for processing and at least 30 days prior to the issuance of a draft permit decision. This timeframe does not apply if the Board takes jurisdiction over the application. Public notice of such a hearing will be provided in accordance with the *Maine Administrative Procedure Ac*t, 5 M.R.S. §9051-A. The hearing will be conducted in conformance with the requirements of the *Maine Administrative Procedure Act*, 5 M.R.S. §§ 9051-9063, and the Department's *Rules Governing the Conduct of Licensing Hearings*, 06-096 C.M.R. ch. 3.

G. **Application Phase – Intervenor Status**

(1) Petitions for General Intervenor Status. A request for general intervenor status may be filed in any application proceeding for an advanced exploration mining permit or a mining permit under this Chapter. Petitions for intervenor status are governed by the Department's Rules Governing the Conduct of Licensing Hearings, 06-096 C.M.R. ch. 3, except as otherwise provided in subsection 10(G)(2) of this Chapter.

(2) Requests for Municipal and County Intervenor Status. As provided in 38 M.R.S §490-OO(6)(D), the municipal officers, or their designees, from each municipality in which the mining areas or affected areas may be located or, in the unorganized or deorganized areas of the State, the county commissioners or their designees, for each county in which the mining areas or affected areas may be located have intervenor status if they request it within 60 days after notification under subsection 10(D). Immediately upon the Commissioner's receipt of a request for intervenor status from such a municipality or county, the intervenors have all rights and responsibilities commensurate with this status.

H. **Assistance Grants for Municipal and County Intervenors.** The Commissioner shall reimburse or make assistance grants for the direct expenses of intervention by municipalities and county commissioners granted intervenor status.

(1) Grant Agreements. The Department shall draft a grant agreement as soon as possible after a qualified municipality or county commissioner has requested intervenor status. This agreement will formalize the type of services to be used; the frequency and conditions of billing, grant payment or reimbursement; the required documentation of costs and work output; and audit and grant repayment conditions.

(a) The Applicant shall pay the Department an amount sufficient for the Department to reimburse or make assistance grants for the direct expenses of intervention for any municipality or county commissioner granted intervenor status under this section.

(b) The amount of any such grant may not to exceed $50,000 per project per intervenor.

(c) The Department shall coordinate, evaluate, and approve or deny in writing all requests by intervenors for grants or project expense reimbursement.

(2) Grant Reimbursement**.** Allowable expenses include hydrologic studies, traffic analyses, the retention of expert witnesses and attorneys, and other related expenses. Expenses not incurred in support of direct, substantive participation in the proceedings before the Department, including attorneys' fees related to judicial appeals, are not eligible for grant funding or reimbursement under this provision. Reimbursement requests shall include the following:

(a) Not more often than monthly, a municipal or county intervenor seeking reimbursement for expenses shall submit detailed documentation of eligible expenses to the Department up to the maximum amount approved by the Department.

(b) Documentation shall include the following:

(i) A description of the expense incurred, the names of the person or entity performing the work or providing the testimony, and the dates on which that work was performed or the study or testimony provided; and

(ii) Hourly rates and the number of hours worked, if applicable, or the cost for each person providing services or testimony.

(3) Upon approval of a grant agreement, grant payments must be made upon the request of the municipal or county intervenor unless payment is denied for one of the following reasons:

(a) The work was undertaken before the municipality or county commissioners had intervenor status, after the intervenor had been notified by the Applicant that the application was withdrawn, or after withdrawal of the intervenor;

(b) False statements were made in the grant submission; or

(c) Expenses are ineligible for payment under section 10(H)(2).

(4) The municipal or county intervenor shall maintain all documentation of expenses pertaining to costs incurred under the grant agreement. These materials must be provided upon request by the Department.

(5) Any grant funds not spent by an intervenor for eligible costs must be returned to the Applicant within 60 days of the Department's final disbursement to the municipal or county intervenor, but in no case later than 120 days after approval or denial of the application.

I. **Access to the Site by Intervenors.** Both general intervenors and municipal officers and county commissioner intervenors shall have access to the proposed mining site at reasonable times for purposes of inspection and investigation, as follows:

(1) An intervenor must submit a request in writing for entry to the site to the Department explaining the dates and times of requested entry, names of persons to gain entry, specific location of proposed work, and a detailed description of work to be conducted.

(2) The intervenor shall provide a copy of the written request for access to all other intervenors and the applicant.

(3) If the Applicant and the requesting intervenor are unable to reach agreement within a reasonable time for the intervenor's access to the site, the Department will arrange for the site access for the intervenor.

(4) A designated representative of the mining permit Applicant shall accompany the intervenor on at least the first site visit and may approve non-accompanied future intervenor visits.

J. **Public Information Website.** The application, review comments, and supplemental application materials shall be made available on the Department's website. The Applicant shall reimburse the Metallic Mining Fund for all costs associated with development and maintenance of this website.

11. Criteria for Mining Permit Approval. A person may not engage in metallic mineral mining except as authorized in a mining permit issued by the Department.

A. **Permit Approval.** The Department shall issue a mining permit whenever it finds the following:

(1) The Applicant has the authority and technical ability to develop the proposed mine in a manner consistent with applicable state environmental standards and with the provisions of this Chapter and the Act.

(2) The Applicant has demonstrated that its proposed mining operation meets the requirements of all of the following:

(a) The Applicant has made adequate provisions for fitting the mining operation harmoniously into the existing natural environment, and the development will not unreasonably adversely affect existing uses, scenic character, air quality, water quality or other natural resources;

(b) The mining operation is located on soil and rock types and geological structures that are suitable to the nature of the mining operation;

(c) There is a reasonable assurance the mining operation will not violate applicable surface water quality standards. Notwithstanding 38 M.R.S. §§ 465-C and 470, contamination of groundwater from activities permitted under this Chapter may occur within a mining area, but such contamination must be limited and may not result in:

(i) Contamination of groundwater beyond the mining area;

(ii) Contamination of groundwater within the mining area that exceeds applicable water quality criteria for pollutants other than pH or metals;

(iii) Contamination of groundwater within the mining area due to pH or metals that exceeds limits set forth in the mining permit by the Department based on site-specific geologic and hydrologic characteristics;

(iv) Any violation of surface water quality standards under 38 M.R.S. §413 or Title 38 Chapter 3, Subchapter 1, Article 4-A (Water Classification Program) ; or

(v) If groundwater or surface water quality within the mining area prior to the commencement of any mining activity exceeds applicable water quality standards, further degradation of such groundwater or surface water quality.

In determining compliance with this standard, the Department shall require groundwater monitoring consistent with the standards established pursuant to 38 M.R.S. §490-OO(3) and section 22 of this Chapter.

Notwithstanding subsection 2(NNN) of this Chapter, for the purposes of this subsection "mining area" means an area of land, approved by the Department and set forth in the mining permit, not to exceed 100 feet in any direction from a mine shaft, surface pit or surface excavation, and does not include the following lands, regardless of the distance of such land from a mine shaft, surface pit or surface excavation: the land on which material from mining is stored or deposited; the land on which beneficiating or treatment facilities are located; the land on which groundwater and surface water management systems are located or the land on which water reservoirs used in a mining operation are located;

(d) The mining operation will not result in a direct or indirect discharge that, either by itself or in combination with other discharges, will cause or contribute to nonattainment of

applicable surface water quality standards under the Water Classification Program, 38 M.R.S. §§ 464-469;

(e) The mining operation will not result in a direct or indirect discharge that, either by itself or in combination with other discharges, will cause or contribute to nonattainment of groundwater standards outside the mining areas under the Water Classification Program, 38 M.R.S. §§ 464, 465-C and 470;

(f) Withdrawals of groundwater and surface water related to the mining operation will comply with the Water Withdrawal Reporting Program, 38 M.R.S. §470-A *et seq*. and 06-096 C.M.R. ch. 587;

(g) The Applicant has made adequate provisions for utilities, water supplies, wastewater treatment facilities and solid waste disposal required for the mining operation, and the mining operation will not have an unreasonable adverse effect on the existing or proposed utilities in a municipality or area served by those services;

(h) The mining operation will not unreasonably cause or increase flooding of the area that is altered by the mining operation or adjacent properties or create an unreasonable flood hazard to any structure. Mining operations involving the removal of metallic minerals, the storage of metallic minerals or mine waste, the processing of metallic minerals, or the treatment of mine waste may not be placed in or on floodplains or flood hazard areas;

(i) The Applicant has made adequate provision for protection of public health and safety;

(j) The mining operation will not use heap, percolation leaching, in-situ leaching, or block caving;

(k) The mining operation meets the performance standards of this Chapter;

(l) The Applicant has demonstrated a reasonable assurance of being able to meet all terms and conditions specified by the Department in a mining permit;

(m) The Applicant has demonstrated that there is reasonable assurance that public and private water supplies will not be affected by the mining operation.;

(n) No part of the mining operation will be located wholly or partially in, on or under any state land listed in 12 M.R.S. §549-B(7)(C-1);

(o) The mining operation will not remove metallic minerals in, on or from a river, stream or brook, as defined in 38 M.R.S. §480-B(9); a great pond, as defined in 38 M.R.S. §480-B(5); a freshwater wetland, as defined in 38 M.R.S. §480-B(4); or a coastal wetland, as defined in 38 M.R.S. §480-B(2) is prohibited;

(p) The mining operation will not involve placement of a mine shaft in, on or under a significant river segment, as identified in 38 M.R.S. §437; an outstanding river segment, as identified in 38 M.R.S. §480-P; an outstanding river, as identified in 12 M.R.S. §403; a high or moderate value waterfowl and wading bird habitat that is a significant wildlife habitat pursuant to 38 M.R.S. §480-B(10)(B)(2); a great pond, as defined in 38 M.R.S. §480-B(5); or a coastal wetland as defined in 38 M.R.S. §480-B(2);

(q) The mining operation will use dry stack tailings management and will not use wet mine waste units or tailings impoundments for the management of mine waste and tailings, except that the mining operation may involve the placement into a mine shaft of waste rock that is neutralized or otherwise treated to prevent contamination of groundwater or surface water;

(r) The mining operation will not use open-pit mining; and

(s) The financial assurance required pursuant to 38 M.R.S. §490-RR and section 17 of this Chapter has been posted and fully funded.

B. **Requirements.** The Department shall process each permit application required and submitted by the Applicant under 38 M.R.S. §490-NN(1), and identified by the Applicant in the permit application under the requirements of subsection 9(B)(4) of this Chapter in a coordinated fashion. The coordinated process shall include consolidation of public hearings and the issuance of a joint decision on all applications for permits required by the Department.

C. **Effect of Current Violation.** The Department may not issue a mining permit if the Applicant or any person in a position to control the operations of the Applicant is in violation of any state or federal law, rule, permit, or order that the Department determines in the permit decision is relevant to the issuance of a mining permit, unless the person has corrected the violation or the person has agreed in a judicially enforceable document to correct the violation.

D. **Effect of Compliance History.** The Department may not issue a mining permit if the Applicant or any person in a position to control the operations of the Applicant has documented violation(s) of state or federal land use or environmental laws, or documented violations of land use or environmental laws of a foreign country, demonstrating that the Applicant would not be capable of complying with the terms and conditions of a mining permit. An Applicant may present evidence of changed conditions or circumstances demonstrating the current ability to comply with all permit terms and conditions notwithstanding any prior violations. If that evidence is sufficient to warrant a finding by the Department that the Applicant is capable of compliance, the Department may issue a permit.

E. **Effect of Financial Assurance Defaults.** The Department may not issue a mining permit if the Applicant or any person in a position to control the operations of the Applicant has defaulted on or otherwise violated a financial assurance requirement including, but not limited to, a letter of credit, bond, trust fund, guarantee, or financial test.

12. Permit Conditions

A. **Standard Conditions.** The following standard conditions must be included in all mining permits.

(1) Relation of Permit to Application. The plans, specifications, descriptions, and other documentation submitted by the Permittee in support of the application, and approved by the Department in issuing the permit, constitute terms of the permit. Any variation or change in the plans, specifications, descriptions, or other documentation must be approved by the Department prior to implementation. Upon completion of any construction or alteration, the Permittee must submit to the Department a written certification by a qualified professional that the site has been constructed or altered in accordance with the terms of the permit.

(2) Duty to Comply. The Permittee must comply with all terms and conditions of the permit. Any noncompliance constitutes a violation of law and is grounds for enforcement action, permit suspension, or revocation.

(3) Duty to Halt or Reduce Activity. It is not a defense in an enforcement action that halting or reducing the permitted activity would have been necessary in order to maintain compliance with the conditions of the permit.

(4) Duty to Mitigate. The Permittee shall take all steps to minimize or correct any adverse impact on the environment resulting from noncompliance with the permit.

(5) Proper Operation and Maintenance. The Permittee shall at all times properly operate and maintain all facilities and systems which are installed or used by the Permittee to achieve compliance with the conditions of the permit.

(6) Permit Actions. The Department, after notice and an opportunity for a hearing as required under the *Maine Administrative Procedure Act*, 5 M.R.S. §§ 10003 & 10051 and 38 M.R.S. §342(11-B), may modify a permit or may act to suspend or revoke the permit. The Department may also modify a permit in response to an application for a modification filed by the Permittee. The filing of a request by the Permittee for a permit modification does not stay any permit condition. If the Department determines that a violation of the Mining Act, this Chapter, a Department Order or this permit is causing or resulting in imminent and substantial endangerment to the public health or safety, environment or natural resources, the Commissioner may issue an order requiring immediate suspension of mining activities, including the removal of metallic product from the site.

(7) Property Rights. The permit does not convey any sort of property right or exclusive privilege.

(8) Duty to Provide Information. The Permittee shall furnish any information which the Commissioner requests in order to determine whether cause exists for modifying, suspending, or revoking the permit or to determine compliance with the permit. The Permittee shall also, upon request, furnish to the Department copies of records required by law or by the permit to be kept by the Permittee, and not otherwise required to be filed with the Department. The information shall be submitted in accordance with the timeframe requested by the Commissioner.

(9) Monitoring Reports. All monitoring results shall be reported to the Department according to this Chapter, the mining permit, and the Act within 60 days of the sampling event unless an alternative time is requested or approved by the Department.

(10) Noncompliance and Occurrence Reporting. The Permittee shall report to the Department any noncompliance, any unpermitted or otherwise unlawful release or discharge of pollutants including accidents and failures specified in the approved Contingency Plan. Information shall be provided in accordance with the approved Contingency Plan or, if not addressed in the Contingency Plan, orally within 2 hours of the time the Permittee becomes aware of the circumstances, and in writing within 5 working days. If the noncompliance, release or discharge of pollutants, or cause of fire or explosion has not been corrected, the anticipated time it is expected to continue must be given, together with the steps taken or planned to reduce, eliminate and prevent recurrence. The written submission must include the following:

(a) Name, address, and telephone number of the owner or operator;

(b) Name, address, and telephone number of the facility, if applicable;

(c) Date, time, type, and description of incident;

(d) Name and quantity of any waste(s) involved;

(e) The extent of injuries, if any;

(f) An assessment of actual or potential hazards to the environment and human health inside and outside the site, when applicable; and

(g) Estimated quantity and disposition of any pollutants released or discharged.

(11) Other Information. When the Permittee becomes aware that it has failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department including any sampling data evaluating the site, the Permittee shall promptly submit such facts or information to the Department.

(12) Signatory Requirement. All applications, reports, or information submitted to the Department shall be signed by a responsible officer. Such responsible officer shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information."

(13) Construction/Operation within 4 Years. After public notice, the Department may terminate or request surrender of a mining permit if the Permittee has not commenced construction of mining facilities or conducted mining activities covered by the mining permit within 4 years after the effective date of the mining permit, unless the Permittee is issued an extension pursuant to section 14 of this Chapter. If the mining permit is terminated or surrendered, the Applicant may reapply to the Department for a permit. No construction or operation may be undertaken until a new permit is granted. A new application filed for a project previously approved must state the reasons why construction or operation was not begun within 4 years from the granting of the initial permit, and the reasons why construction or operation will be able to begin within 4 years from the granting of the new permit. The new application may incorporate, by reference, information submitted in the initial application, but must include all information required by law or rule at the time the new application is submitted.

(14) Commencement of Operations. Prior to the commencement of operations:

(a) The Permittee shall submit to the Department, by certified mail or hand delivery, a letter signed by the Permittee and a State of Maine Licensed Professional Engineer stating that the site has been constructed, altered, or modified in compliance with the permit; and

(b) The site must be inspected by the Department and found to be in compliance with the conditions of the permit.

(15) Other Permits and Licenses. The Applicant and Permittee shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, approvals, conditions, agreements, and orders prior to and during construction, alteration, modification, operation, reclamation, and closure as appropriate.

(16) Bid Specification. A copy of the Permit approval must be included in or attached to all contract bid specifications for the site.

(17) Contractor Copy. The Permittee may not direct or allow any work within the scope of the permit to be done by a contractor until the contractor(s) has been given a copy of the mining permit. The Permittee shall certify to the Department that the contractor(s) has received a copy of the permit.

(18) Annual Fee. The Applicant or Permittee shall pay an annual fee as required by 38 M.R.S. §352(4-A)(E). The permit is not effective until, and unless, the annual fee has been paid.

(19) Inspection and Entry. Employees and authorized representatives of the Department must be allowed access to the site and affected area during business hours, and at such other times as the Department deems necessary, for the purpose of performing tests, collecting samples, conducting inspections, examining records relating to the site, or developing or enforcing any rule, statute or order.

(20) As a condition of a mining permit, the Permittee shall retain the services of a qualified third-party independent inspector to monitor compliance with permit conditions during construction, operations and closure. More than one inspector may be needed to obtain the qualifications necessary to monitor different activities. An inspector retained under this section cannot also serve as a qualified professional under section 25 of this Chapter.

(a) Inspector selection. At least 30 days prior to starting any permitted activity on the site, the applicant must submit the names of at least two inspector candidates to the Department. Each candidate must meet the minimum qualifications listed below. The inspector may not be an employee, partner, or contracted consultant involved with the permitting of the project or otherwise employed by the same company or agency except that the Department may accept subcontractors who worked for the project's primary consultant on some aspect of the project such as, but not limited to, completing wetland delineations, identifying significant wildlife habitats, or conducting geotechnical investigations, but who were not directly employed by the applicant, as independent inspectors on a case by case basis. The Department will have 15 days from receiving the names to select one of the candidates as the inspector or to reject both candidates. If the Department rejects both candidates, then the Department shall state the particular reasons for the rejections. In this case, the applicant may either dispute the rejection to the Commissioner, or start the selection process over by nominating two new candidates.

(i) The Permittee may not terminate the services of a qualified third-party independent inspector without prior Department approval.

(ii) In the event the qualified third-party independent inspector is terminated or voluntarily resigns, the Permittee must select and retain the services of a replacement inspector within 30 days.

(b) Inspector Qualifications. A qualified third party independent inspector must be a qualified professional and must have the following minimum qualifications:

(i) A degree from an accredited program in environmental science, civil engineering, mining engineering, geology, or other demonstrated expertise;

(ii) A practical knowledge of mining principles, stormwater control, and waste management;

(iii) Experience in management or supervision on large construction projects;

(iv) The ability to understand and articulate permit conditions to contractors;

(v) The ability to clearly document activities being inspected;

(vi) Appropriate facilities and, if necessary, support staff to carry out the duties and responsibilities set forth in subsection (4), below, in a timely manner; and

(vii) No ownership or financial interest in the permitted activities other than that created by being retained as the third-party inspector.

(c) Inspector Duties and Responsibilities. The inspector's work shall include the following duties and responsibilities:

(i) Prior to construction, the inspector will become thoroughly familiar with the project plans and specifications, including those for containment structures and impoundments, mine operations buildings and structures associated with ore handling and processing, detention basins, those for installing the erosion control measures to be used on the site, and those for stabilizing disturbed soils.

(ii) During construction, the inspector will monitor activities required by the permit and contained in the approved construction documents.

(iii) The inspector will keep logs recording activities on the site, discussions with contractor(s) and/or mine operations personnel, and possible violations of the approved construction documents or the permit terms and conditions.

(iv) The inspector will inspect the site at least twice per week from the commencement of construction until closure. The site must be inspected at least monthly during the post-closure monitoring period.

v) The inspector will notify the designated person at the Department immediately of potential violations of the mining permit.

(d) Inspection Reports. The inspector will submit written reports, including photographic documentation, in a format approved by the Department to the designated person at the Department. Reports shall be submitted to the Department in accordance with a schedule determined by the Department.

(i) The report will state the start and end dates for the reporting period.

(ii) The report will state the date(s) and time(s) when the inspector was on the site making inspections.

(iii) The report will describe the Permittee's activities over the reporting period.

(iv) The report will summarize the inspection results, identify and describe any deficiencies noted, and provide recommendations for correcting deficiencies.

(21) Preconstruction. All preconstruction terms and conditions must be met before any construction begins.

(22) Advertising. Advertising relating to matters included in the permit application may refer to the Permit approval only if it notes that the approval has been granted with conditions, and indicates where copies of the permit may be obtained.

(23) Transfer of Ownership. Unless otherwise provided in the permit, the Permittee may not sell, lease, assign, or otherwise transfer the site or any portion thereof, or cause or allow any other action where the purpose or consequence is to transfer any of the obligations of the Permittee as incorporated in the permit, without prior written approval of the Department pursuant the 06-096 C.M.R. ch. 2(21).

(24) Deed Notation. Whenever any site, or portion thereof, previously used for mining or advanced exploration is transferred by deed, the following must be expressly stated in the deed:

(a) The type(s) of waste unit(s) located on the site, the dates of establishment and closure of each, and a description of the location, composition, extent, and depth of waste deposited in each; and

(b) The heading and date of issuance of the permit, the identification number of the permit, and the fact that it was issued by the Department of Environmental Protection.

(25) Event of Force Majeure. The Permittee's responsibility for meeting all requirements of the Act, this Chapter and the mining permit shall not be discharged due to an Event of Force Majeure.

B. **Special Conditions.** The Department may place special terms and conditions on a permit issued under this Chapter as necessary to ensure that the construction, operation, and reclamation of the proposed mining operation is implemented in compliance with the law and terms of the permit and to protect the environment and public health and safety. However, terms and conditions must specify particular means of satisfying minor or easily corrected problems, relating to compliance with this Chapter and with the applicable law, and may not substitute for or reduce the burden of proof on the Applicant to affirmatively demonstrate to the Department that each of the applicable standards has been met.

13. Duration of Permit

A. If construction and/or operation commences within 4 years after the effective date of a mining permit, a permit granted pursuant to this Chapter continues in effect as long as:

(1) The Commissioner or a court has not issued an order terminating or revoking the permit pursuant to section 32 of this Chapter, 38 M.R.S. §342(11-B), and the *Maine Administrative Procedure Act*, 5 M.R.S. §10051(1); or

(2) There is a Department approved suspension of mining operations as provided in section 29 of this Chapter.

B. All other permits associated with the mining activities and mine waste site expire in accordance with their terms and conditions.

C. The Department shall conduct annual reviews of the mining operations and assess compliance with the permit terms. If the Department determines at any time that the Permittee is in noncompliance with the Act, rules, permit, or order, and determines that the violation is causing an imminent and substantial endangerment, the Commissioner may issue an order requiring that the Permittee cease mining for metallic metals, and cease the removal of metallic metals from the site until the compliance issues are corrected to the Department's satisfaction. In addition to requiring the correction of the violations, the Department may pursue enforcement action including the termination or revocation of the permit.

14. Termination of Permit

A. **Requirements**

(1) After public notice the Department may terminate or request surrender of a mining permit if the Permittee has not conducted mining activities covered by the mining permit within 4 years after the effective date of the mining permit.

(2) The Permittee may file a written request with the Department for approval of an extension of time to conduct mining activities covered by the mining permit prior to Department ordered termination or surrender of a mining permit. The request must set forth:

(a) The reasons for the delay in the construction of mining facilities or commencement of mining activities;

(b) The date of anticipated construction of mining facilities or commencement of mining activities; and

(c) The factors that will influence the decision for construction of mining facilities or commencement of mining activities.

B. The Department may approve an extension of time to commence construction of mining facilities or conduct mining activities covered by the mining permit if the Permittee demonstrates that the mining operations are expected to commence within a reasonable period of time as determined by the Department.

C. The Department may terminate or request surrender of a mining permit if the following conditions have been achieved:

(1) The Permittee has requested termination of the mining permit and has demonstrated that:

(a) The requirements of the mine plans have been satisfied;

(b) Final reclamation of the mining areas and, as necessary, the affected areas have been completed, including post-closure monitoring; and

(c) The mine is in compliance with all requirements of the permit, this Chapter, and the Act; and

(2) The Department has:

(a) Determined that the documentation provided by the Permittee is complete and adequate to make a determination that the conditions required to terminate a mining permit have been achieved;

(b) Completed a field inspection of the mine and determined that:

(i) The Permittee has complied with all requirements of the permit, applicable rules, and the Act;

(ii) Air, water, or other natural resources are not contaminated or impaired from the mining operation;

(iii) The Permittee has fulfilled all conditions determined to be necessary by the Department to protect the public health, safety and welfare, and the environment; and

(iv) Requirements for the post-closure monitoring period have been satisfied; and

(c) Completed public notice requirements pursuant to 38 M.R.S. §490-PP(4).

15. Transfer of Permit. No permit issued pursuant to the Act and these rules may be transferred without prior written approval of the Department. Prior to the transfer of a mining permit to another person, the acquiring person, the Transferee, shall submit to the Department a request for the transfer of the mining permit.

A. A Transferee shall submit to the Department a request for the transfer of the mining permit on a form provided by the Department.

B. A Transferee shall provide the following to the Department as part of the request:

(1) Evidence of title, right, or interest in all of the property that is proposed for development or use;

(2) An update to the contingency plan;

(3) A demonstration of financial capacity and technical ability;

(4) A summary of the Transferee's and its responsible officers' and related corporations' record of compliance with environmental and land use laws and financial requirements of Maine and other jurisdictions, as follows:

(a) Criminal Convictions. A listing and explanation of any criminal convictions of the State, other states, the United States, or another country of the persons required to disclose under this section;

(b) Civil Violations. A listing and explanation of any adjudicated civil violations of environmental laws or rules administered by the State, other states, the United States, or another country by any of the persons required to disclose under this section in the 10 years immediately preceding the filing of the application;

(c) Consent Decrees and Administrative Orders or Agreements. A listing and explanation of administrative agreements or consent decrees entered into by, or administrative orders directed at, any of the persons required to disclose under this section for violations of environmental laws administered by the Department, the State, other states, the United States or another country in the 10 years immediately preceding the filing of the application; and

(d) Other Proceedings. A listing and explanation of any ongoing court proceeding, administrative consent agreement negotiation, or similar ongoing administrative enforcement action not already provided in which the Applicant or any of the persons required to disclose under this section is a party and which concerns environmental laws administered by the Department or the State.

The Department may require the Applicant to update the list set forth in this subsection subsequent to the filing of the request to transfer a mining permit;

(5) An update to the financial assurance plan;

(6) Documentation stipulating acceptance of all aspects of the mining permit and a commitment to adhere to the requirements of this Chapter and the Act;

(7) Any proposed changes to the mining operation plan or the mine plan ;

(8) Transfer fee; and

(9) The Transferee shall complete the public notice requirements specified in subsection 10(E) of this Chapter.

C. The Department shall hold a public meeting pursuant to 06-096 C.M.R. ch. 2 for all mining permit transfers.

D. The Department shall inspect the mining operation and determine whether the existing Permittee is in compliance with the mining permit, this Chapter, and the Act. If a Permittee is determined by the Department to be in violation of the mining permit, this Chapter, or the Act, the mining permit of the mine subject to the transfer may not be transferred until the Permittee has completed the necessary corrective actions or the person acquiring the mining permit has agreed in a legally enforceable document to correct the violation pursuant to a compliance schedule approved by the Department.

E. The Department may not transfer a mining permit if the Transferee or any person in a position to control the operations of the Tansferee has documented violation(s) of state or federal land use or environmental laws, or documented violations of land use or environmental laws of a foreign

country, demonstrating that the Transferee would not be capable of complying with the terms and conditions of a mining permit. A Transferee may present evidence of changed conditions or circumstances demonstrating the current ability to comply with all permit terms and conditions notwithstanding any prior violations. If that evidence is sufficient to warrant a finding by the Department that the Transferee is capable of compliance, the Department may transfer the permit.

F. A permit transfer is not effective until:

(1) The Department is satisfied that the Transferee has provided evidence of the financial assurance required by the mining permit, this Chapter, and the Act;

(2) All other applicable permits and authorizations have been transferred to the acquiring Permittee; and

(3) A Transferee has demonstrated to the Department's satisfaction the intent to:

(a) Comply with all terms and conditions of the mining permit, this Chapter, and the Act; and

(b) Satisfy all applicable statutory and regulatory criteria.

G. A Permittee may not convey authority to operate a mine to another person until a mining permit is granted to the Transferee by the Department.

16. Amendment of Permit. A mining permit may be amended in accordance with the requirements of this section to address changes in the mining operation, natural or human-made conditions, technology, deficiencies in the reasonable protection of the environment, natural resources or public health and safety, or to correct an oversight.

A. **Requirements**

(1) A Permittee may submit to the Department a request to amend a mining permit to address anticipated changes in the mining operation.

(2) The Department may require the Permittee to submit a request to amend a mining permit if the Department determines that the terms and conditions of the mining permit are not providing reasonable protection of the environment, natural resources or public health and safety.

(3) The Permittee shall provide revisions of any of the following that are, or reasonably could be, affected by the proposed amendment:

(a) Environmental impact assessment;

(b) Mine plan;

(c) Contingency plan;

(d) Mining operation plan;

(e) Financial assurance provisions;

(f) Other applicable federal, state, and local permits and licenses that are anticipated to be required; and

(g) Other terms and conditions of the mining permit.

(4) The Permittee shall pay all costs incurred by the Department in processing an application.

(5) The Permittee shall comply with the public notice requirement specified in 38 M.R.S. §490-OO(6)(B).

B. Within 15 working days after receiving a request to amend a mining permit, the Department shall determine whether the request constitutes a significant change from conditions of the approved mining permit, and whether the submitted documentation is administratively complete.

C. In the event that the Department determines that an amendment is a minor revision, the Department shall consider the request for amendment automatically approved within 60 working days of an administratively complete submittal, unless the Department requests additional information or the application is denied.

D. In the event that the Department determines that an amendment is not a minor revision, the Applicant shall submit an application for permit amendment, including any applicable fees. Applications for permit amendment will be processed in accordance with *Rules Concerning the Processing of Applications*, 06-096 C.M.R. ch. 2. In addition, the Department may require any additional application requirements specified section 9 of this Chapter. The Applicant will not be required to submit any information which duplicates applicable previous submittals. The Applicant shall clearly describe where the information not included in the amendment application, but necessary to render the amendment technically adequate, may be found in the original application and supporting documents.

Subchapter 4: FINANCIAL ASSURANCE AND INSURANCE

17. Financial Assurance and Insurance Requirements

A. **Requirements.** Financial assurance and insurance is required for all advanced exploration and mining activities and must be posted and fully funded prior to the issuance of a mining permit.

(1) The Permittee shall continuously maintain financial assurance, as a condition of the mining permit, until the Department determines that all reclamation, closure, post-closure maintenance and monitoring, and corrective actions have been completed.

(2) The Permittee shall be required to maintain financial assurance for as long as the Department determines that the mining operation and any associated waste material could create an unreasonable threat to public health and safety or the environment.

(3) Financial assurance must be available and made payable to the Department when requested by the Department.

(4) Financial assurance may not be canceled by the Permittee unless it is replaced by alternative mechanisms in the appropriate amount and with the express written consent of the Commissioner after 30 days public notice in a paper of statewide coverage.

(5) Financial assurance must be fully valid, binding, and enforceable under state and federal law.

(6) All financial assurances obtained under this Chapter must be in a form such that it would not be subject to discharge under any and all provisions of the *Bankruptcy Reform Act of 1978*, as amended by the *Bankruptcy Abuse Prevention and Consumer Protection Act of 2005*, Pub. L. No. 109-8, 119 Stat. 23, 11 U.S.C. §101 *et seq*. (as may be further amended from time to time) (the "United States Bankruptcy Code") and must be in a form such that it will not be considered property of the bankruptcy estate under any and all provisions of the United States Bankruptcy Code in the event that a bankruptcy petition is filed by or against the Permittee.

(7) All forms of financial assurance and terms and conditions of financial assurances must be approved by the Department and must be analyzed by individuals with documented experience in material handling and construction, mining costs, and financial analysis. If the Department does not have adequate in-house expertise, the Department shall hire third-parties with documented experience in material handling and construction, mining costs, risk analysis, and financial analysis to analyze and evaluate the proposed terms and conditions of financial assurance required for the Applicant or Permittee. The individuals and company hired to perform this function shall have no conflict of interest with the applicant, related persons, applicant's consultants, attorneys or any of their employees. All costs of the third-party evaluation must be paid by the Applicant pursuant to 38 M.R.S. §352(4-A).

(8) Failure of financial providers. The financial assurance shall provide a mechanism for a bank or guarantor to give prompt notice by certified mail to the Department and the Permittee of any administrative or judicial action filed or initiated alleging the insolvency or bankruptcy of the bank or the Permittee, or alleging any violations which could result in suspension or revocation of the bank charter or license to do business.

(9) Upon incapacity of a bank or guarantor by reason of bankruptcy, insolvency, suspension or revocation of charter or license for any other reason, the Permittee shall be deemed to be without financial assurance coverage and shall cease mining and immediately begin to conduct reclamation, closure, post-closure maintenance and monitoring, and corrective actions measures in accordance with the mine plan. The Department may, for good cause shown, grant up to two 30-day extensions prior to the initiation of reclamation and closeout measures. Mining operations shall not resume until the Department has determined that an acceptable replacement financial assurance has been provided.

(10) Advance notice

(a) The Permittee shall notify the Department within 30 days thereof if its and/or its parent company's credit rating falls below investment grade as determined by Moody's Investor Services, Standard & Poor, or other comparable ratings service.

(b) If the Permittee's and/or its parent company's credit rating falls below investment grade, within 30 days of such determination the Permittee shall secure an irrevocable standby letter of credit in an amount and form approved by the Commissioner.

(c) The Permittee shall notify the Department of the availability on line of quarterly financial statements (filed by it and/or its parent company) within 30 days of when such statements are filed with the United States Securities and Exchange Commission (SEC). If quarterly financial statements become unavailable on line, the Permittee shall submit these

statements in writing to the Department within 30 days of when such statements are filed with the SEC.

B. **Coverage of Financial Assurance**

(1) Financial assurance under this section applies to mining, including advanced exploration, and reclamation operations that are subject to a mining permit. The amount of financial assurance must be sufficient to cover the cost for the Department to administer, and hire a 3rd-party to implement all necessary investigation, monitoring, closure, post-closure, treatment, remediation, corrective action, reclamation, operation and maintenance activities under the environmental protection, reclamation and closure plan, including, but not limited to:

(a) The cost to investigate all possible releases of contaminants at the site, monitor all aspects of the mining operation, close the mining operation in accordance with the closure plan, conduct treatment activities of all expected fluids and wastes generated by the mining operation for a minimum of 100 years, implement remedial activities for all possible releases and maintenance of structures and waste units as if these units have released contaminants to the groundwater and surface water, conduct corrective actions for potential environmental impacts to groundwater and surface water resources as identified in the environmental impact assessment and conduct all other necessary activities at the mine site in accordance with the environmental protection, reclamation and closure plan; and

(b) The cost to respond to a worst-case catastrophic mining event or failure, including, but not limited to, the cost of restoring, repairing and remediating any damage to public facilities or services, to private property or to the environment resulting from the event or failure.

(2) An Applicant for a mining permit must include with its application a review of the proposed financial assurance amounts required under 38 M.R.S. §490-RR(2) and this Chapter as performed by a qualified, independent 3rd-party reviewer approved by the Department. The costs of the 3rd-party reviewer must be paid by the Applicant. Estimates of the costs of a worst-case catastrophic mining event or failure under subsection 17(B)(1)(b) provided by the applicant may not include costs to the applicant associated with the loss of use of any mining operation or facility or the costs of repairing any damaged mining operation or facility to restore operations or other functions.

(3) The Applicant or Permittee must provide detailed documentation of the estimated cost to implement the activities in the mine plan and the provisions of subsection 9(I)(5) of this Chapter with the application for permit, in the corrective action plan, and in other submittals as follows:

(a) Cost estimates must be in current United States dollar value;

(b) No salvage value attributed to the sale of products, wastes, facility structures, equipment, land or other assets may be used for estimating purposes; and

(c) Cost estimates must be re-evaluated and updated at any time that the Department requires a corrective action, a change to the mining permit or changes to the cost estimates, and the financial assurance amount must be adjusted accordingly within 30 days of the filing of a new or modified corrective action plan, mine plan or when the permit or cost estimates are changed.

(4) The Applicant or Permittee must provide financial assurance in the amount determined by the 3rd-party reviewer under subsection 17(B)(2) to be sufficient for the Department to conduct all activities listed under subsection 17(B)(1). Financial assurance estimates provided by the Applicant and reviewed by the 3rd-party reviewer under this section must use the highest cost option for all estimates, include a minimum 20% contingency to account for unexpected expenses, assume that all activities are to be completed concurrently, and base cost estimates on the maximum permitted quantities and volumes.

(5) The financial assurance must be updated annually and adjusted using the implicit price deflator for gross national product as published by the United States Department of Commerce, Survey of Current Business, and must be submitted to the Department on or before March 15 of each year. The financial assurance shall not be adjusted downward in the event of a negative implicit price deflator.

(6) The financial assurance must not include funds from the Maine Mining Oversight Fund as established at 36 M.R.S. §2866.

(7) Without limitation, changes in the financial assurance may be required due to modifications of the permit, changed financial or site conditions, technology changes, inflation, anticipated changes in mining activity and waste unit utilization, or changes in requirements for closure, post-closure maintenance, corrective action or reclamation. The Permittee shall annually report to the Department, subject to the Department's approval, an estimate of cost changes as provided in this Chapter on or before March 15. The permit remains in effect only if all required deposits or increases are made within 30 days of the due date provided in this rule. The obligation to make deposits or increases ceases only upon approval from the Department.

C. **Allowable Forms of Financial Assurance.** The financial assurance must consist of a trust fund that is secured with any of the following forms of negotiable property, or a combination thereof as approved by the Department:

(1) A cash account in one or more federally insured accounts;

(2) Negotiable bonds issued by the United States, a state or municipality having a Standard and Poor's credit rating of AAA or AA, or an equivalent rating from a national securities rating service; or

(3) Negotiable certificates of deposit in one or more federally insured depositories.

The financial assurance must be in a form that cannot be canceled, withdrawn, revoked, or otherwise reduced without the express written consent of the Department.

D. **General Terms and Conditions of Financial Assurance**

(1) Trust fund requirements. The Permittee must deposit the required financial assurance in a trust fund prior to the issuance of a mining permit. The trust fund must be fully funded with one or more of the instruments identified in subsection 17(C) above.

(a) The Department shall be a party to the trust agreement as beneficiary and shall have the right to withdraw and use part or all of the funds in the trust fund or to require the liquidation of the assets of the trust fund, at its sole discretion, to carry out the Act

requirements including all associated regulations, permit, and other requirements as the Department determines necessary. The trust agreement must provide that there shall be no withdrawals from the trust fund except as authorized in writing by the Department.

(b) The trust fund must not constitute an asset of the trustee or Permittee, and must be established in such a manner so as to ensure the funds in the account will be available to the Department and not any creditor, including in the event of bankruptcy or reorganization of the trustee or Permittee. The Permittee shall pay all costs of managing the fund and compensating the trustee.

(c) The trustee must not invest assets of the trust fund in any real estate or real estate investment trust, any contract for the future sale or delivery of commodities or foreign currency, any state, municipal or corporate bond, or any other equity instrument or security, except that assets of the trust fund may be invested in securities issued by the United States Treasury.

(d) The trustee shall notify the Department immediately in the event that any payment from the Permittee is not remitted by the due date.

(e) The trustee shall submit to the Department an annual statement of deposits, letters of credit, investments, and any income and principal in the trust fund, and changes in the same over the prior year.

(f) The financial institution serving as a trustee is subject to Department approval and is limited to the following:

(i) A bank or trust company chartered by the State of Maine;

(ii) A national bank chartered by the Office of the Comptroller of Currency; or

(iii) An operating subsidiary of a national bank chartered by the Office of the Comptroller of Currency.

E. **Financial Assurance Mechanisms.**

(1) Cash accounts and Certificates of Deposits. When the Department has authorized the Applicant or Permittee to meet its financial assurance obligations through the establishment of a trust fund secured with a cash account or certificate of deposit, the following requirements apply:

(a) Any interest paid on a cash account must be retained in the account and applied to the account; and

(b) The Department shall require that certificates of deposit be made payable to or assigned to the Department, both in writing and upon the records of the bank issuing the certificates. If assigned, the Department shall require the banks issuing these certificates to waive all rights of setoff or liens against the certificates prior to the Department's acceptance.

(2) Negotiable bonds. The Department may authorize the Applicant or Permittee to meet its financial assurance obligations through the establishment of a trust fund secured with negotiable bonds.

(a) Negotiable bonds shall have a fair market value at the time of permit approval in excess of the financial assurance amount by at least 10%. The amount of such excess shall reflect changes in value anticipated over a period of 5 years, including depreciation, appreciation, marketability, and market fluctuation. In any event, the Department shall require a margin for legal fees and costs of disposition of the bonds in the event of forfeiture.

(b) The financial assurance value of the negotiable bonds used to secure a trust fund may be evaluated at any time by the trustee or the Department. The Permittee shall increase the assets in the trust fund as necessary. In no case shall the value attributed to the negotiable bonds exceed market value.

F. **Release of Financial Assurance**

(1) When requesting release of financial assurance funds, the Permittee shall submit to the Department:

(a) An environmental evaluation of the mining operation, mining site, affected areas, waste units, reclamation, and any required corrective action to ensure that any remaining problems are identified and corrected before financial assurance funds are released;

(b) A detailed cost breakdown of the expended funds and the amount of money requested by the Permittee to be released from the trust fund; and

(c) A detailed cost breakdown of the funds needed to complete the actions contained in subsection 17(F)(1)(a) above.

(2) At the time the financial assurance release request is filed with the Department, the Permittee shall submit proof that notice of the request has been mailed by certified mail to abutters, as determined by local tax records or other reliable means, to the municipal office of the municipality(ies) where the project is located and, if the project is located in the unorganized or deorganized areas of the State, to the appropriate county commissioners. The notice must also be published once per week for 4 successive weeks in a newspaper with statewide circulation. Copies of the published notice must be submitted with the application. The notice must include the following information:

(a) The Permittee's name;

(b) Permit number and approval date;

(c) The precise location of the real property affected;

(d)The number of acres;

(e) The type and amount of financial assurance;

(f) The type and appropriate dates of reclamation, closure, post-closure maintenance, monitoring, and corrective actions;

(g) A description of compliance with the Permittee's approved permit and mine plan; and

(h) The name and address of the Department contact, to whom written comments, objections, or requests for public hearings on the financial assurance release request may be submitted.

(3) The Department shall provide notice of the receipt of the request for release of financial assurance to the Department of Inland Fisheries and Wildlife, Department of Agriculture, Conservation and Forestry, and other state and federal agencies deemed appropriate.

(4) The Department shall post the public notice on the Department webpage dedicated to this permit.

(5) Release inspection by the Department. Upon receipt of the complete request for release of financial assurance, the Department shall conduct a release inspection and evaluation of the reclamation, closure, post-closure maintenance and monitoring, and corrective actions completed at the mine site. The surface owner or lessor of the real property, other state and federal agencies as listed in this section, and any persons who have requested advance notice of the inspection shall be given notice of the release inspection and may be present at that inspection as may other members of the interested public to the extent reasonably practicable. The Department may arrange with the Permittee to allow access to the permit area, upon request, by any person with an interest in the financial assurance release, for the purpose of gathering information relevant to the proceeding. Nothing in this subsection prevents the Department from making additional inspections of the reclamation, closure, post-closure maintenance and monitoring, and corrective actions completed at the mine site

(6) Public Hearing

(a) The Department shall hold a public hearing on all requests for release of the financial assurance, and the Department shall inform all persons who have requested notice of hearings and persons who have filed written objections in regard to the request of the time and place of the hearing at least 30 days in advance of the public hearing. The hearing shall be held in the area of the permitted facility.

(b) The date, time, and location of the public hearing shall be advertised by the Department in a newspaper of statewide circulation once a week for two consecutive weeks. All persons who have submitted a written request in advance to the Department to receive notices of hearings shall be provided notice at least 30 days prior to the hearing. The hearing procedures of 06-096 C.M.R. ch. 3 will be followed.

(c) Within 90 days after a public hearing has been held pursuant to this section, the Department shall notify in writing the Permittee, trustee or other persons with an interest in collateral, and the persons who either filed objections in writing or participants in the hearing proceedings who supplied their contact information to the Department, if any, of the decision to release the financial assurance. The Department does not release the Permittee from any mining obligations, reclamation, closure, post-closure, or corrective action requirements or third party liability as a result of releasing any funds.

(d) If the Department denies the release application or portion thereof, the Department shall notify the Permittee and any person with an interest in collateral, in writing, stating the reason for denial.

G. **Forfeiture of Financial Assurance to the Department.** If a Permittee refuses or is unable to conduct or complete reclamation, closure, post-closure maintenance and monitoring, and corrective actions of the mining operation, if the terms and conditions of the permit are not met, or if the Permittee fails to comply with the conditions under which the financial assurance was accepted, the Department shall take the following action to require forfeiture of all or part of the financial assurance for the mine or an increment of the mine.

(1) Send written notification by certified mail, return receipt requested, to the Permittee and the Trustee informing them of the determination to forfeit all or part of the financial assurance, including the reasons for the forfeiture, and the amount to be forfeited. The amount shall be based on the estimated total costs of completing reclamation, closure, post-closure maintenance and monitoring, and corrective actions.

(2) Upon failure to comply with the conditions under which the financial assurance was accepted, the Department may cause the forfeiture of any and all financial assurances to complete reclamation, closure, post-closure maintenance and monitoring, and corrective actions for which the financial assurance was provided. Financial assurance liability shall extend to the entire mining site under conditions of forfeiture.

H. **Insurance Requirement.** The Applicant must include, as part of its application, and the Permittee must provide annually thereafter as part of the mining and reclamation report required under subsection 26(B) of this Chapter, proof of comprehensive general liability insurance for the site for sudden and accidental occurrences. Non-sudden occurrence insurance may be required by the Department on a case by case basis and, and shall be required whenever there are land disposal units, land storage units, or mine waste units. The insurance underwriter(s) must be approved by the Department. Requirements include, but are not limited to, the following:

(1) Liability insurance coverage must be provided during operation, reclamation, corrective actions, closure, and, where mine wastes will remain on the site after closure, during the post-closure maintenance period;

(2) The level of coverage for sudden and accidental insurance must be at least $10 million per occurrence and $20 million annual aggregate, unless because of a greater risk, a higher minimum is required by the Department for a particular site;

(3) The level of coverage for non-sudden insurance must be at least $6 million per occurrence and $12 million annual aggregate, unless because of a greater risk, a higher minimum is required by the Department for a particular site;

(4) All liability insurance coverage amounts must be exclusive of legal defense costs;

(5) An Applicant/Permittee may not self-insure. If liability insurance is unavailable, an irrevocable letter of credit drawn upon a reputable bank which meets the following criteria may be utilized in lieu of liability insurance for sudden and accidental and non-sudden occurrences:

(a) Letters of credit must meet the terms below, and be unconditional, irrevocable, issued for a period of at least 1 year, and otherwise be in a form satisfactory to the Department.

(i) Any irrevocable letter of credit must be issued by a separate financial institution from the trust fund financial institution.

(ii) A letter of credit must be issued by:

(A) A bank chartered by the State of Maine;

(B) A national bank chartered by the Office of the Comptroller of Currency; or

(C) An operating subsidiary of a national bank chartered by the Office of the Comptroller of Currency; and

(b) When a letter of credit is used as liability insurance, the issuing financial institutions must be acceptable to the Department and the institution must have sufficient resources and assets to demonstrate that there is certainty the money will be available should the Department need to draw the funds;

(c) The Permittee and the letter of credit institution must be independent of one another; and

(d) The letter of credit must be modeled after the respective instrument language in 40 CFR 264.151 as modified to cover mining activities and meet the needs of this Chapter.

(6) The liability insurance policy may not be written as a "claims made" policy unless approved by the Department.

18. Failure to Maintain Financial Assurance. A failure to provide financial assurance in accordance with this Chapter constitutes grounds for the Commissioner to order the immediate suspension of mining activities including, but not limited to, suspending the extraction of metallic product or removal of metallic product from the site.

Subchapter 5: STANDARDS FOR ADVANCED EXPLORATION AND MINING

19. General Provisions

A. **Compliance.** A Permittee or Applicant shall comply with all applicable standards and requirements under the Act, the provisions of the mining permit, and this Chapter.

B. **Performance-Based Standards.** To the extent feasible, standards contained in this Chapter are performance-based. To the extent that this Chapter includes standards that are not performance-based, a Permittee or Applicant may propose an alternative means of compliance that achieves equivalent performance. If the Applicant proposes a control device or measure, it must demonstrate that there is reasonable assurance that the device or measure will achieve the performance standard. The Department is not required to approve any alternative means of compliance. Control devices or measures may be reassessed at any time, and if the Department determines that the control device or measure no longer achieves the performance standard, the Department may require remedial actions, including but not limited to, the implementation of additional control devices or measures, a corrective action work plan, temporary suspension of mining activity, and the cessation of all mining activity.

C. **Burden.** The Permittee or Applicant shall affirmatively demonstrate that all proposed or undertaken actions, devices, or measures will meet the minimum requirements of this Chapter, the Act, and the mining permit.

D. **Disclosure.** The Permittee or Applicant must disclose fully all relevant facts applicable to the provisions of this Chapter, the Act, and the mining permit.

E. **Required Information.** The Permittee or Applicant must provide the information necessary to demonstrate that the methods, materials, and techniques proposed to be used are capable of accomplishing their stated objectives in protecting the environment and public health and safety. The information may consist of results of actual testing, modeling, documentation by credible independent testing and certified organizations, or documented applications in similar uses and settings.

F. **Certification.** All submitted information must be accurate, complete, and acknowledged as such by the signature of an authorized agent of the Permittee or Applicant. Documents, plans, and reports submitted in support of applications must be signed and stamped by qualified professionals as required.

G. **Qualified Professional.** All data collection, analyses, modeling, design, inspection, operation, monitoring, data synthesis, and documentation and reporting shall be conducted by qualified professionals.

H. **Independent Reviewer.** The Department may retain an independent reviewer to assist in the review of documents, plans, models, designs, studies, analysis, characterizations, applications, amendments, financial assurance mechanisms, field operations, and any other submission.

I. **Additional Information.** If required by the Department to establish that the Applicant has met the minimum requirements of the rule, Act and mining permit, the Applicant or Permittee shall provide any additional data, monitoring, testing, modeling, characterization, or additional synthesis and interpretation of submitted data, analysis, and information required by the Department.

J. **Public Health and Safety.** The Permittee and Applicant shall make adequate provisions for the protection of public health and safety.

20. Performance Standards

A. **General Requirements.** All mine operations and waste units shall be designed, constructed, operated and maintained during the development, operation, closure, and post-closure maintenance period in a manner that:

(1) Meets the performance requirements for groundwater, surface water, air, soils, or surficial materials established under this Chapter;

(2) Minimizes acid generation, metal leaching, and acid rock drainage within the mining areas;

(3) Provides structural stability;

(4) Protects public health and the environment including all applicable air and water quality standards and criteria;

(5) Otherwise complies with applicable federal, state, county and municipal laws, regulations and ordinances; and

(6) Eliminates the need for perpetual treatment following closure.

B. **Siting**

(1) Mining operations involving the removal of metallic minerals, the storage of metallic minerals or mine waste, the processing of metallic minerals, or the treatment of mine waste may not be placed in or on floodplains or flood hazard areas. The Applicant must demonstrate that all development not prohibited in these areas is secure from flooding and erosion under flood height and velocity conditions equal to or greater than the 500-year flood.

(2) Buffers. Mining operations shall be designed, constructed, and monitored so that the operation is compatible with surrounding non-mining uses.

(a) Existing terrain and vegetation or vegetated berms must be used to diminish impacts of mining activities.

(b) Buffers must be marked or otherwise established in any area of the site where their construction is determined by the Department to be necessary to mitigate sound or visual impact, provide water quality treatment or for any other purpose before beginning operations.

(c) Mine waste units and beneficiation facilities must be set back a minimum of 1,000 feet from a property boundary of lands not owned or controlled by the Permittee or a public or private drinking water supply. Mine waste units and beneficiation facilities may not be located in the wellhead protection areas or source water protection areas of public water supplies.

(d) The limit of excavation must be set back a minimum of 1,000 feet from a public water system and 300 feet from a private water system and a property boundary of lands not owned or controlled by the Permittee. Upon receipt of written permission from the abutting property owners and all owners of property whose wells are located within 300 feet of the limit of excavation, the 300-foot setback may be reduced to 100 feet.

(e) All activities, other than mine waste units and beneficiation facilities and the limit of excavation, must be set back a minimum of 300 feet from a property boundary of lands not owned or controlled by the Permittee, a public or private drinking water system, or a public road. Upon receipt of written permission from the abutting property owner, the 300-foot property boundary setback may be reduced to 100 feet.

(f) The minimum setback requirements described above apply to any mining project; however, the Department may require a greater setback if submission materials or other information demonstrate an increased setback or buffer is necessary to protect the environment and public health and safety.

(3) The removal of metallic minerals in, on or from a river, stream or brook, as defined in 38 M.R.S. §480-B(9); a great pond, as defined in 38 M.R.S. §480-B(5); a freshwater wetland, as defined in 38 M.R.S. §480-B(4); or a coastal wetland, as defined in 38 M.R.S. §480-B(2) is prohibited, except that gold panning and recreational motorized gold prospecting are permitted pursuant to 38 M.R.S. §§ 480-Q(5) and 480-Q(5-A) and are exempt from the requirements of this Chapter.

(4) Surface mining shall not be allowed within 1 mile, and underground mining within ¼ mile of the jurisdictional limits of the following unless the Applicant can demonstrate to the satisfaction of the Department that there are topographical features that provide sufficient protection of the resource, the environment and public health and safety. These setbacks shall apply unless and until another state or federal agency with management authority determines that mining is allowed in or on the following:

(a) National and state parks;

(b) National wilderness areas;

(c) National wildlife refuges;

(d) The Allagash Wilderness Waterway;

(e) State-owned wildlife management areas pursuant to 12 M.R.S. §10109(1);

(f) State or national historic sites;

(g) Any river designated pursuant to the federal *Endangered Species Act* as critical habitat for Atlantic salmon;

(h) One of the 66 great ponds located in the State's organized area identified as having outstanding or significant scenic quality in the "Maine's Finest Lakes" study published by the Executive Department, State Planning Office in October 1989; and

(i) One of the 280 great ponds in the State's unorganized or de-organized areas designated as outstanding or significant from a scenic perspective in the "Maine Wildlands Lakes Assessment" published by the Maine Land Use Regulation Commission in June 1987.

The Department may require a greater setback if submission materials or other information demonstrate an increased setback is necessary to protect the environment and public health and safety.

(5) No part of the mining operation may be located wholly or partially in, on or under any state land listed in 12 M.R.S. §549-B(7)(C-1).

(6) The mining operation may not involve placement of a mine shaft in, on or under a significant river segment, as identified in 38 M.R.S. §437; an outstanding river segment, as identified in 38 M.R.S. §480-P; an outstanding river, as identified in 12 M.R.S. §403; a high or moderate value waterfowl and wading bird habitat that is a significant wildlife habitat pursuant to 38 M.R.S. §480-B(10)(B)(2); a great pond, as defined in 38 M.R.S. §480-B(5); or a coastal wetland, as defined in 38 M.R.S. §480-B(2).

C. **Erosion, Stormwater, and Dust Management.** All affected areas and mining areas of the site must be designed, constructed, and operated so as to:

(1) Effectively control erosion. The mining activity shall not cause or contribute to unreasonable erosion of soil or sediment, nor unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment. The erosion and sedimentation control practices must:

NOTE: For guidance on erosion and sedimentation control practices, consult with the *Maine Erosion and Sediment Control Best Management Practices (BMPs).*

(a) Maintain the stability of the site including, but not limited to, preventing unacceptable settling, subsidence, voids, caving, or slope failures. All excavated and reclaimed areas must be designed, constructed and stabilized to:

(i) Withstand natural geologic processes and climatic conditions without failure that would be a threat to public safety and the environment;

(ii) Minimize post-reclamation visual contrasts between reclamation lands and adjacent lands appropriate for the final land use specified in the reclamation plan; and

(iii) Either exclude humans and wildlife, or provide safe ingress and egress at selected locations, from any temporary or permanent water bodies resulting from the mining activities.

(b) Place overburden and other materials approved by the Department in a manner that promotes vegetation establishment.

(c) Stockpile and stabilize all topsoil until it can be used for reclamation.

(2) Effectively manage stormwater. Stormwater management practices must meet the standards of 06-096 C.M.R. ch. 500.

(3) Effectively manage dust. Dust generated by mining operations, including dust associated with traffic to and from the mining areas and affected area, must be controlled by sweeping, paving, watering or other best management practices for control of fugitive emissions. Visible emissions from a fugitive emission source may not exceed an opacity of 20% for more than 5 minutes in any one-hour period.

D. **Underground Mine Openings.** The Applicant and Permittee shall design, construct, operate and maintain underground mine openings to prevent unauthorized entry and, to the extent feasible and practicable, to minimize the risk of unacceptable settling, subsidence, voids, or caving.

E. **Reactive Mine Waste Characterization.** All designated chemical materials potentially encountered, used or generated during metallic mineral mining or advanced exploration must be analyzed and characterized as follows:

(1) Testing. Mine waste and designated chemical materials characterization and analysis must identify the characteristics of the mine waste~~s~~. This analysis must evaluate the quantities, variability, physical and chemical properties of mine waste necessary for predicting the potential environmental impacts of mine waste handling, storage, treatment, and disposal, and

for determining specific treatment, disposal, and storage design. This evaluation must be conducted prior to the issuance of a permit and thereafter as determined by the Department and must include, but not be limited to, evaluation of the following:

(a) Changes in the character of the mine waste and designated chemical materials managed at the site; and

(b) Changes in the design, operation, or management at the site which may potentially alter the characterization or the stability or other characteristics of tailings and other mine waste.

(2) Mine Waste Evaluation. Testing must be performed on representative samples of individual mine waste from the extraction and beneficiation process and of composite mine waste or other materials where mixed storage or disposal of individual mining waste is proposed. The major components of mine waste characterization and analysis must include, but are not limited to, the following:

(a) Identification of all mine waste which will be disposed of, stored or handled at the site, or removed from the site including classification of waste types, estimation of the generation rates and volumes of each type, and an explanation of the ultimate disposition of each type;

(b) Chemical, petrological, and mineralogic analyses of the mine wastes;

(c) Description of expected particle size distributions of waste rock and analysis of particle size distribution of mill tailings;

(d) Determination of the potential for metal leaching and acid rock drainage for mine waste (waste rock, tailings, and mine walls). At a minimum, the characterization must consider the short- and long-term acid generating characteristics of the mine waste, considering the acid generating content of the materials, the particle size and particle form of the acid generating material, and the spatial distribution of its particles, the neutralizing effect of host materials and the effects of weathering, erosion, and sedimentation; and

(e) Determination of the leaching potential of the mine wastes and determination of the composition of the resulting leachate.

(3) Mine Waste Characterization. The Applicant shall describe in detail its proposed mine waste characterization work plan including, but not limited to, the methods of obtaining samples of mine waste, sample size, sample preparation, sample shipment, testing schedule, and frequency and chain-of-custody methods employed in evaluating the mine waste characteristics, and must provide justification for the use of such methods. The metal leaching and acid generating potential for mine waste must be determined by a static test method and confirmed by a kinetic test method. The Applicant shall submit its mine waste characterization work plan to the Department for review and approval.

F. **Mine Waste Classification.** Based on the mine waste characterization required above, the Applicant shall propose, subject to the approval of the Department, classification of each mine waste as a Group A, Group B, or Group C waste according to the following criteria:

(1) The mine waste has an acid-generating potential or exhibits a characteristic of hazardous waste as defined in 06-096 C.M.R. ch. 850. Such waste must be classified as Group A wastes.

NOTE: Group A wastes may include, but are not limited to, waste rock, tailings, and leachate derived from those wastes.

(2) The mine waste has no acid-generating potential and may release soluble pollutants at concentrations which exceed performance requirements for groundwater or surface water. Such waste must be classified as Group B waste.

(3) The mine waste does not have the potential to violate water quality standards other than sedimentation or turbidity. Such waste must be classified as Group C waste.

G. **Reactive Mine Waste and Designated Chemical Materials Management Systems**

(1) Reactive mine waste and designated chemical materials management systems must provide for containment, unless the material has been neutralized or stabilized and will not cause a direct or indirect discharge of pollutants that could reasonably result in a condition of nonattainment of water quality standards or noncompliance with the performance standards of this Chapter. Mining operations must use dry stack tailings management for the management of mine waste and tailings, except that the mining operation may involve the placement into a mine shaft of waste rock that is neutralized or otherwise treated to prevent contamination of groundwater or surface water. Reactive mine waste and designated chemical materials management systems must be designed and operated to prevent the contamination of groundwater and surface water or generate acid rock drainage above the primary drinking water standards adopted pursuant to 22 M.R.S. §2611, applicable water quality-based license conditions established pursuant to 38 M.R.S. §413 and §§ 464, 465-C, and 470 or groundwater quality baseline conditions.

(2) Reactive mine waste and designated chemical materials management systems must provide for the collection, treatment and disposal of any water containing mining activity contamination derived from reactive mine waste, designated chemical materials, or combinations of reactive mine waste and designated chemical materials with a reasonable potential of migrating beyond designated containment areas in compliance with the Act, this Chapter and the mining permit as well as other applicable state and federal standards. The collection, treatment and disposal methods must be designed to ensure that discharges to affected areas must meet water quality standards without requiring treatment as soon as practicable, but in no case greater than 10 years post-closure. The Permittee must design mine waste units capable of operating without such treatment after that time.

H. **Containment Structures**

(1) Containment structures include waste containments, dry stack tailings management structures, water impoundments, and other on-site constructed tanks and containments.

(2) Waste rock, dry stack tailings management structures, and waste containmentss must be designed based on the results of the waste classification determined through the Reactive Mine Waste requirements of this Chapter. Liner and leachate collection systems must meet the minimum design standards contained in section 21 of this Chapter.

(3) Containment structures must be designed, constructed, and maintained to prevent embankment overtopping, with adequate freeboard, during the Probable Maximum Flood (PMF) precipitation and snowmelt event considering maximum wind and fetch.

(4) Containment structures must be designed and constructed to be structurally stable. The stability assessment must include analysis of potential failure planes which pass through or along: the foundation soils, the waste mass, and/or liner system components for both static and seismic conditions. The stability assessment must be supported by corroborative field and laboratory data that defines the site geology and hydrogeology, the geotechnical characteristics, the waste mass characteristics, and the geosynthetic characteristics, as applicable. If approved by the Department, projected strength gain of the foundation soils may be incorporated into the analysis provided monitoring adequate to verify the projected strength gain is proposed. Stability assessments must meet the following requirements.

(a) Containment structures built with an earthen component must have minimum static factors of safety of 1.30 during construction and operations and 1.50 following closure. The Department may require higher factors of safety based on the risks and consequences of failure.

(b) Containment structures built with an earthen component must meet the following seismic stability requirements:

(i) The minimum factor of safety must be 1.10 when designed to withstand the peak ground acceleration having a 10% probability of exceedance in 50 years (a 475-year return period) during construction and operations. The Department may require higher factors of safety based on the risks and consequences of failure;

(ii) The minimum factor of safety must be 1.00 when designed to withstand the peak ground acceleration having a 2% probability of exceedance in 50 years (a 2475-year return period) following closure. The Department may require higher factors of safety based on the risks and consequences of failure;

(iii) The peak ground accelerations must be determined from the National Seismic Hazard Maps published by the United States Geological Survey or a site specific seismic shaking hazard assessment and must be amplified as appropriate considering the properties of the soils underlying the containment structure, the engineered systems, and/or the waste mass; and

(iv) Unless otherwise approved by the Department, the seismic stability assessment must include an evaluation of permanent deformation, an evaluation of waste and soil strength loss due to cyclic loading, an evaluation of post-cyclic stability, and an evaluation of liquefaction potential.

(6) Containment structures must contain adequate slope protection to prevent erosion.

(6) Containment structures must be operated to place a cover over reactive mine materials as soon as practicable to isolate the reactive mine materials from precipitation and air.

(7) Containment structures must be operated in a manner that provides for segregation of designated chemical and reactive mine materials, metallic mineral product, ore, tailings, lean

ore, waste rock, surface overburden, and topsoil, as applicable, unless these materials are placed together for a beneficial purpose as described in the mine plan.

(8) Containment structures must be designed, constructed, and maintained to promote contemporaneous reclamation.

I. **Storage Piles.** The Applicant and Permittee shall design, construct, operate, and maintain storage piles:

(1) Such that the function and stability of the piles are suitable to their purpose and they do not represent a substantial threat to the environment and public health and safety;

(2) In a manner that promotes contemporaneous reclamation;

(3) Such that runoff water is removed by drainage control structures and receives treatment appropriate to the nature and volume of the water and the nature of the material stockpiled; and

(4) Such that each storage pile is constructed, operated, and monitored according to standard operating procedures consistent with this Chapter and these practices are documented with detailed designs, schedules, and monitoring and operating procedures approved by the Department.

J. **Water Quality and Water Management Systems.** The Applicant and Permittee shall design, construct, operate, and maintain all mining operations and related activities:

(1) So as to minimize disturbances to the prevailing hydrologic balance of the affected areas to the extent practicable and feasible;

(2) In a manner that does not cause or increase the potential for injury to life or damage to property or natural resources due to hydrologic changes compared to baseline conditions;

(3) In a manner that mining activity withdrawals of groundwater or surface water will not adversely affect existing uses or natural resources and that comply with the *Natural Resources Protection Act*, 38 M.R.S. §480-A *et seq.* and the Water Classification Program, 38 M.R.S. §§ 464-470;

(4) Such that pollutants attributable to mining activities do not cause or contribute to non-attainment of applicable water quality criteria in surface water resources and comply with the terms and conditions of applicable waste discharge licenses issued pursuant to 38 M.R.S. §413;

(5) Such that pollutants attributable to the mining operation do not contaminate groundwater resources of the affected areas. Notwithstanding 38 M.R.S. §§ 465-C and 470, contamination of groundwater from activities permitted under this Chapter may occur within a mining area, but such contamination must be limited and may not result in:

(a) Contamination of groundwater beyond the mining area;

(b) Contamination of groundwater within the mining area that exceeds applicable water quality criteria for pollutants other than pH or metals;

(c) Contamination of groundwater within the mining are due to pH or metals that exceeds limits set forth in the mining permit by the Department based on site-specific geologic and hydrologic characteristics;

(d) Any violation of surface water quality standards under 38 M.R.S. §413 or Title 38 Chapter 3, Subchapter 1, Article 4-A (Water Classification Program); or

(e) If groundwater or surface water quality within the mining area prior to the commencement of any mining activity exceeds applicable water quality standards, further degradation of such groundwater or surface water quality.

In determining compliance with this standard, the Department shall require groundwater monitoring consistent with the standards established pursuant to 38 M.R.S. §490-OO(3) and section 22 of this Chapter.

Notwithstanding subsection 2(NNN) of this Chapter, for the purposes of this subsection "mining area" means an area of land, approved by the Department and set forth in the mining permit, not to exceed 100 feet in any direction from a mine shaft, surface pit or surface excavation, and does not include the following lands, regardless of the distance of such land from a mine shaft, surface pit or surface excavation: the land on which material from mining is stored or deposited; the land on which beneficiating or treatment facilities are located; the land on which groundwater and surface water management systems are located or the land on which water reservoirs used in a mining operation are located;

(6) Such that surface water and stormwater from the mining areas and affected areas are managed consistently with subsections 20(C), 20(G), and 20(H), above; and

(7) Such that run-on/runoff control systems include:

(a) A run-on control system to prevent or control surface water flow onto the mine waste unit during the peak discharge from at least a 24-hour, 500-year storm;

(b) A runoff control system to collect, control and treat surface water from the mine waste unit of at least the water volume resulting from a 24-hour, 500-year storm; and

(c) Surface impoundments associated with waste units, if any, that are designed, constructed, maintained, and operated to prevent overtopping as a result of a 24-hour, 500-year storm event. An emergency overflow spillway shall be provided for storm events equivalent to the 24-hour, 500-year storm.

K. **Blasting.** The Applicant and Permittee must ensure that the blasting is conducted in accordance with applicable standards of the State Fire Marshal's Office.

(1) The Permittee shall use sufficient stemming, matting or natural protective cover to prevent flyrock from leaving property owned or under control of the Permittee or from entering protected natural resources or natural buffer strips. Crushed rock or other suitable material must be used for stemming when available. Native gravel, drill cuttings, or other material may be used for stemming only if no other suitable material is available.

(2) The maximum allowable airblast at any inhabited building not owned or controlled by the Permittee may not exceed 129 decibels peak when measured by an instrument having a flat response (+ or - 3 decibels) over the range of 5 to 200 hertz.

(3) Monitoring of airblast levels is required in all cases for which a preblast survey is required by paragraph 4. The Department may waive the monitoring requirement if the Permittee secures the permission of affected property owners to increase allowable airblast levels on their property and the Department determines that no protected natural resource will be adversely affected by the increased airblast levels.

(4) A preblast survey is required for all blasting and must extend a minimum radius of 1/2 mile from the blast site. The preblast survey must document any preexisting damage to structures and buildings and any other physical features within the survey radius that could reasonably be affected by blasting. Assessment of features such as pipes, cables, transmission lines and wells and other water supply systems must be limited to surface conditions and other readily available data, such as well yield and water quality. The preblast survey must be conducted prior to the initiation of blasting at the operation. The Permittee shall retain a copy of all preblast surveys for at least one year from the date of the last blast on each mining area, as applicable.

(5) Blasting may not occur in the period between sundown and sunrise the following day or in the period between 7:00 p.m. and 7:00 a.m., whichever is greater. Routine production blasting is not allowed in the daytime on Sunday. Detonation of misfires may occur outside of these times but must be reported to the Department within 5 business days of the misfire detonation. Blasting may not occur more frequently than 4 times per day. Underground production blasting may be exempted from these requirements provided that a waiver is granted by the Department.

(6) Sound from blasting may not exceed the following limits at any protected location:

Number of Blasts Per Day	Sound Level Limit
1	129 decibels
2	126 decibels
3	124 decibels
4	123 decibels

(7) The Permittee shall monitor blasting for peak particle velocity using a seismograph capable of measuring three mutually perpendicular peak particle velocities. Seismic measurements shall be conducted adjacent to structures located on lands not owned or controlled by the Permittee, or other locations as determined by the Department. The maximum peak particle velocity at inhabitable structures not owned or controlled by the Permittee may not exceed the levels published by the United States Department of the Interior in "Bureau of Mines Report of Investigations 8507," Appendix B, Figure B-1, dated 1980.

(a) The Department may grant a variance to allow ground vibration levels greater than 2 inches per second on undeveloped property not owned or controlled by the Applicant

if the Department determines that no protected natural resource, unusual natural area or historic site will be adversely affected by the increased ground vibration levels. If inhabitable structures are constructed on the property after approval of the development and prior to completion of blasting, the developer immediately must notify the Department and modify blasting procedures to remain in compliance with the standards of this subsection.

(b) The Permittee may apply for a variance of the ground vibration monitoring requirement prior to conducting blasting if the Permittee agrees to design all blasts so that the weight of explosives per 8 millisecond or greater delay does not exceed that determined by the equation $W=(D/Ds)^2$, where W is the maximum allowable weight of explosives per delay of 8 milliseconds or greater, D is the shortest distance between any area to be blasted and any inhabitable structure not owned or controlled by the developer and Ds equals 70 ft./lb.$^{1/2.}$ As a condition of the variance, the Department may require submission of records certified as accurate by the blaster and may require the Permittee to document compliance with the conditions of this paragraph.

(c) Based upon an approved engineering study, the Department may grant a variance to allow higher vibration levels for certain buildings and infrastructure. In reviewing a variance application, the Department shall take into account that the standards in this subsection are designed to protect conventional low-rise structures such as churches, homes, and schools. In cases of practical difficulty, the Department may grant a variance form the ground-vibration standard, with written approval of the property owner, if it can be demonstrated that no adverse impacts on existing infrastructure or protected natural resources, unusual natural areas or historic sites will result, and that no practical alternative to exceeding the ground-vibration standard exists.

(8) A record of each blast, including seismographic data, must be kept for at least one year from the date of the last blast, and must be available for inspection at the mining site or at the offices of the owner or operator if the mine has been closed, completed or abandoned before the one-year limit has passed. The record must contain at a minimum the following data:

(a) Name of blasting company or blasting contractor;

(b) Location, date, and time of blast;

(c) Type of material blasted;

(d) Number and spacing of holes and depth of burden or stemming;

(e) Diameter and depth of holes;

(f) Type of explosives used;

(g) Total amount of explosives used;

(h) Maximum amount of explosives used per delay period of 8 milliseconds or greater;

(i) Maximum number of holes per delay period of 8 milliseconds or greater;

(j) Method of firing and type of circuit;

(k) Direction and distance in feet to the nearest dwelling, public building, school, church, or commercial or institutional building neither owned nor controlled by the Permittee;

(l) Weather conditions, including factors such as wind direction and cloud cover;

(m) Height or length of stemming;

(n) Amount of mats or other protection used;

(o) Type of detonators used and delay periods used;

(p) The exact location of each seismograph and the distance of each seismograph from the blast;

(q) Seismographic readings;

(r) Name and signature of the person operating each seismograph; and

(s) Names of the person and the firm analyzing the seismographic data.

(9) All field seismographs must record the full analog wave form of each of the 3 mutually perpendicular components of motion in terms of particle velocity. All seismographs must be capable of sensor check and must be calibrated according to the manufacturer's recommendations.

(10) Prior to blasting, the Permittee shall develop and implement a plan that provides an opportunity for prior notification of a planned blast for all persons located within 1,000 feet of the blast site. Notification may be by telephone, in writing, by public notice in a newspaper of general circulation in the area affected or by other means identified in the plan. The plan must be in writing and available for inspection by the Department. This plan must include descriptions of audible warnings prior to blasting and other blast safety and notification measures as may be required by other authorities.

L. **Air Quality Standards**

(1) Ambient air quality standards. Mining operations shall not discharge air contaminants into the ambient air in such a manner as to violate the Maine ambient air quality standards or emission standards established pursuant to 38 M.R.S. §§ 585, 585-B or 585-K. Mining operations must be designed, constructed and operated in a manner that prevents adverse impacts on air quality, considering:

(a) The volume and physical and chemical characteristics of potential sources of air emissions at the site, including their potential for volatization and wind dispersal;

(b) The existing air quality, including other sources of air emissions and their cumulative impact on the air;

(c) The potential damage to the environment and public health and safety caused by air emissions from the site; and

(d) The persistence and permanence of the potential adverse effects to the environment and public health and safety.

(2) Fugitive emissions. Best management practices and control technology shall be required to control fugitive emissions and other contamination into or upon any land. Where fugitive emissions are anticipated, the Applicant must submit a best management practices plan for control of fugitive emissions indicating the methods the applicant intends to use to minimize fugitive emissions resulting from the mining operation such that emissions and air quality standards are not exceeded. If the Department determines that emissions released from, or as a result of, the mining operation create a risk to the environment or public health and safety, a numeric performance requirement may be established for those emissions. Such risk shall be determined based on impacts including, but not limited to, direct contact, bioaccumulation in plants and animals, and foodchain concentration that may occur on or off-site.

M. **Noise.** The Applicant and Permittee shall design, construct, operate and maintain the mining operation so as to prevent an unreasonable noise impact, and must meet the standards established by 06-096 C.M.R. ch. 375, §10.

N. **Preservation of Historic Sites.** The Department may not issue a mining permit for a proposed mining operation that will have an adverse impact on the preservation of historic sites.

(1) Scope of Review. In determining whether a proposed mining operation will have an adverse effect on the preservation of historic sites either on or near the mine site, the Department shall consider all relevant evidence to that effect.

(2) Terms and Conditions. The Department, may as a term or condition of approval, establish any reasonable requirement to ensure that a proposed mining operation will not adversely affect preservation of any historic site.

O. **Preservation of Unusual Natural Areas.** The Department may not issue a mining permit for a proposed mining operation that will have an adverse impact on the preservation of unusual natural areas.

(1) Scope of Review. In determining whether a mining operation will have an adverse effect on the preservation of unusual natural areas either on or near the development site, the Department shall consider all relevant evidence to that effect.

(2) Terms and Conditions. The Department may, as a term or condition of approval, establish any reasonable requirement to ensure that a proposed mining operation will not adversely affect the preservation of unusual natural areas.

P. **No Unreasonable Effect on Scenic Character.** The Department may not issue a mining permit for a proposed mining operation that will have an unreasonable effect on scenic character.

(1) Scope of Review. In determining whether the proposed mining operation will have an unreasonable adverse effect on the scenic character of the surrounding area, the Department shall consider all relevant evidence to that effect, such as evidence that:

(a) The design of the proposed mining operation takes into account the scenic character of the surrounding area.

(b) A mining operation which is not in keeping with the surrounding scenic character will be located, designed and landscaped to minimize its visual impact to the fullest extent possible.

(c) Structures will be designed and landscaped to minimize their visual impact on the surrounding area.

(d) The plans for the proposed mining operation provide for the preservation of existing elements of the mining site which contribute to the maintenance of scenic character.

(2) Submissions. Applications for approval of proposed developments must include evidence that affirmatively demonstrates that there will be no unreasonable adverse effect on the scenic character of the surrounding area, including information such as the following, when appropriate:

(a) Sketches of the proposed mining operation indicating how the mine fits into the scenic character of the area.

(b) Landscaping plans for minimizing the visual impact of the parking lots, mining operations and other types of developments.

(3) Terms and Conditions. The Department may, as a term or condition of approval, establish any reasonable requirement to ensure that the proposed mining operation will have no unreasonable adverse effect on scenic character, such as requiring that:

(1) Illumination of the mining operation be limited.

(2) Vegetative or architectural screens be established.

Q. **Protection of Wildlife and Fisheries.** The Department may not issue a mining permit for a proposed mining operation that has not made adequate provisions for the protection of wildlife and fisheries.

(1) Scope of Review. In determining whether the developer has made adequate provision for the protection of wildlife and fisheries, the Department shall consider all relevant evidence to that effect, such as evidence that:

(a) A buffer strip of sufficient area will be established to provide wildlife with travel lanes between areas of available habitat.

(b) Proposed alterations and activities will not adversely affect wildlife and fisheries lifecycles.

(c) There will be no unreasonable disturbance to:

(i) High and moderate value deer wintering areas:

(ii) Habitat of any species declared threatened or endangered by the Commissioner, Maine Department of Inland Fisheries and Wildlife or the Director of the United States Fish and Wildlife Service:

(iii) Seabird nesting islands;

(iv) Significant vernal pools;

(v) High and moderate value waterfowl and wading bird habitat; and

(vi) Shorebird nesting, feeding, and staging areas.

(2) Submissions. Applications for approval of a proposed mining operation shall include evidence that affirmatively demonstrates that the Applicant has made adequate provision for the protection of wildlife and fisheries, including information such as the following, when appropriate:

(a) The location of natural buffer strips and adequate provision for their maintenance; and

(b) Plans to mitigate adverse effects on wildlife and fisheries through means that at a minimum include, but are not limited to, design considerations, pollution-abatement practices, the timing of construction activities, and on-site or off-site habitat improvements or preservation.

(3) Terms and Conditions. The Department may, as a term or condition of approval, establish any reasonable requirement to ensure that an applicant has made adequate provision for the protection of wildlife and fisheries.

(4) Wildlife Exclusion

(a) Fencing. All open waters which contain any chemical(s) at levels harmful to wildlife shall be fenced to exclude terrestrial animals. The fence bottom shall be secured tight to the ground to prevent animals from gaining access under the fence. These fences shall be inspected and maintained to prevent wildlife access.

(b) Covering or Containment. All waters that contain any chemical(s) at levels harmful to wildlife must be covered or contained in a manner that shall prevent access by wildlife. All covers or containers shall be maintained in a manner that shall continue to prevent access by wildlife for as long as the pond or container could be harmful to wildlife.

(c) Chemical Neutralization or Isolation. Any chemical-laden fluids that are the result of any process and that are impounded in an area that is too large to cover or contain must be rendered non-harmful to wildlife prior to outside storage.

(6) Wildlife Reports. The Permittee shall maintain a record of any wildlife mortalities that occur in association with the permitted facility. Those reports shall be provided quarterly to the Department. In addition, the Permittee shall report all wildlife mortalities that are associated with chemical containing tanks or impoundments by the beginning of the next working day following the occurrence or observation of those mortalities.

21. **Mine Waste Unit Design Standards**

A. Requirements. Mine waste units shall be designed to prevent the direct or indirect discharge of pollutants that could reasonably result in a condition of nonattainment or noncompliance with the performance standards of this Chapter.

(1) The design of waste units for the management of Group A mine waste shall provide for a liner system which includes a composite liner. A leachate collection and removal system above the composite liner shall be incorporated into the design. A composite liner shall consist of the following:

(a) A clay or compacted till bottom liner having a permeability of less than or equal to 1 x 10^{-6} cm/sec with a minimum 2-foot thickness; and

(b) A High-Density Polyethylene (HDPE) liner having a minimum thickness of 60 mils.

(2) The design of waste units for the management of Group B mine waste must provide for a clay or till bottom liner having a permeability of less than or equal to 1 x 10^{-7} cm/sec with a minimum 3-foot thickness. A leachate collection and removal system above the liner must be incorporated into the design.

(3) Leachate ponds must be provided with the composite liner system described in subsection 21(A)(1) of this Chapter except that leachate collection and removal are not required. An emergency spillway must be included in the design. Leachate ponds must have a minimum 2 feet of freeboard measured to the lowest spillway elevation or an additional capacity volume equal to 25% of the total required capacity, whichever provides greater storage volume. Additional freeboard or other measures may be required to contain wave action as necessary. Leachate ponds must have a means installed to measure leachate depth within the ponds.

(4) If stabilization of Group A and Group B mine waste may be ineffective in preventing pollutant release, the design must include a system for detection of leaks and leak recovery, or other engineered system as required by the Department.

(5) If a mine waste unit will generate leachate, the Applicant shall provide a description of the leachate management methods for the unit, including a process flow diagram for water use and reuse at the site, and a water balance for each unit. In evaluating the water balance for each unit, the volume of leachate generated must be based on the most recent historical annual precipitation data, with a minimum of a 15-year database, and the leachate storage volume must include capacity for the precipitation from a 24-hour, 500-year storm falling on the mine waste unit and the leachate storage pond.

(6) Leachate collection and removal systems must be designed to maintain 12 inches or less of leachate head on the liner system.

(7) The Department reserves the right to require additional and/or alternative waste unit design elements if necessary to protect the environment and public health and safety.

B. **Alternative Design Process.** Alternatives to the minimum design standards and requirements may be proposed by the applicant. A variance request is not required for proposals which meet the requirements of this paragraph. The Applicant shall submit the following documentation to clearly and convincingly demonstrate technical equivalency of a proposed alternative:

(1) A discussion of the benefits of the proposed alternative technology;

(2) A discussion of the risks and drawbacks of the proposed alternative technology;

(3) An assessment of similar applications of the proposed alternative technology;

(4) A demonstration that the alternative technology will provide equal or superior performance to the component it is proposed to replace, or that its inclusion within a system will result in equal or superior performance of that system;

(5) An assessment of the feasibility of constructing the proposed alternative, including the ability to provide an adequate level of quality assurance and quality control. A demonstration of the feasibility of construction may be required; and

(6) An assessment of the likelihood that the proposed alternative will perform as designed through operations, closure, and post-closure periods.

C. **Tailings Management.** All tailings must be managed in dry stack tailings management units. Notwithstanding section 21(B), no alternative tailings management designs or technologies will be approved.

22. Monitoring and Reporting Requirements

A. The Permittee shall conduct monitoring in accordance with this Chapter, the mining permit, and the Act. The Applicant shall prepare an integrated environmental monitoring plan for the site.

(1) The plan detailing how the Applicant proposes to comply with this section must be submitted with the application and will be reviewed and approved by the Department as part of the application. All sample collection and analysis conducted under the monitoring program must specify sampling frequencies, procedures and techniques for sample collection, sample preservation and shipment, sample data sheets, analytical procedures and detection limits, chain-of-custody control, data validation and reporting methods, sampling and analytical quality assurance, quality control procedures, and include a description of sampling locations, a sampling location map, dates of sample collection, and other information determined to be necessary by the Department. The monitoring plan must be prepared by a qualified professional.

(2) Parameters analyzed from any samples at each monitoring point shall be based on the potential threat from the mine, mine waste or designated chemical materials used on the site, the transformation and degradation products of those materials as well as general indicator parameters of contamination associated with a release of those materials.

(3) Baseline conditions specific to each monitoring location and parameter identified in the monitoring plan must be established such that a statistically significant change from baseline conditions indicative of declining water quality, or other evidence of adverse environmental impact may be identified in the compliance monitoring dataset.

(4) All monitoring data shall be submitted to the Department in an electronic format prescribed by the Department.

B. The monitoring plan must include the following elements:

(1) Groundwater. The following groundwater monitoring criteria apply to all mining operations:

(a) The monitoring system must have a sufficient number of groundwater wells, at appropriate depths and locations, to detect contamination of groundwater. Downgradient monitoring wells must be placed as close to all mining operations as practicable, but in no case greater than 100 feet away, unless placing additional wells at a greater distance enhances the ability to detect a release from the site as determined by the Department. In such a case, the Department may require the placement of additional monitoring wells more than 100 feet from the mining operations.

(i) The points to be monitored for compliance with the groundwater standards for the purposes of determining contamination pursuant to 38 M.R.S. §490-MM(5) and subsection 2(BB) of this Chapter are the downgradient boundaries of all mining operations as they exist at the time any sample is collected. Areas of the site proposed and approved for future use or stripped of topsoil and vegetation and graded or otherwise prepared for future construction are not considered mining operations for the purposes of compliance with this standard. Establishment of additional monitoring locations and abandonment of wells and other monitoring locations, in accordance with procedures described in this Chapter, may be required, and applicants should design monitoring networks with this in mind. Any new monitoring location to be used as a compliance point must be established to allow collection of at least one year of data prior to its becoming a compliance point;

NOTE: The Department will consider the phasing of operations in determining the location of compliance monitoring wells.

(ii) The Department may require groundwater monitoring within any mining area as defined at 38 MR.S. §490-MM(12) if the Department determines such monitoring to be necessary to assess the performance of pollution control measures or the potential for contamination as defined at 38 M.R.S. 490-MM(5) and section 2(BB) of this Chapter outside any mining area;

(iii) The Department may require groundwater monitoring at any location to determine the potential for groundwater discharges to surface waters that would cause or contribute to nonattainment of applicable water quality criteria. Failure of groundwater to meet applicable water quality criteria at points of baseflow discharge constitutes contamination as defined at 38 M.R.S. §490-MM(5) and section 2(BB) of this Chapter; and

(iv) The Department may require groundwater monitoring within any mining area as defined at 38 M.R.S. §490-OO(4)(D) for the purpose of that subsection if the Department determines such monitoring to be necessary to assess compliance with the standards established in 38 M.R.S. §490-OO(4)(D) and this Chapter.

(b) Background groundwater quality monitoring well(s) must be established in an area or areas unaffected by mining operations and hydrologically upgradient of the mining areas to be monitored. Background groundwater quality may be measured at wells that are not upgradient of mining operations if those locations are determined to be representative by the Department;

(c) Wells must be cased to maintain the integrity of the bore hole. Casing must be screened or perforated and the annular space packed with gravel or sand, where necessary, to

enable collection of samples. Any annular space above the sampling depth must be sealed to prevent contamination of samples and groundwater;

(d) Design, location, installation, development, and decommissioning of any monitoring wells, piezometers, and other measurement, sampling, and analytical devices require review and approval by the Department prior to action by the Applicant and must be documented in the Mining and Reclamation Reports required pursuant to section 26(B) of this Chapter;

(e) Monitoring wells, piezometers, and other measurement sampling, and analytical devices must be operated and maintained so that they conform to design specifications throughout the life of the monitoring program;

(f) The number, spacing, location and depths of monitoring wells and other instruments must be proposed by the Applicant and must be approved by the Department prior to installation. The Department may require additional monitoring wells or other instruments it determines to be necessary. The Applicant shall consider the following in its monitoring system design:

(i) Characterization of saturated and unsaturated geologic units and fill materials overlying and underlying the uppermost aquifer including, but not limited to, thicknesses, stratigraphy, lithology, hydraulic conductivities, and porosities; and

(ii) Characterization of the uppermost aquifer including, but not limited to, the thickness, flow rate, and flow direction.

(g) Parameters for which the Applicant must monitor include, but are not limited to, those for which groundwater performance requirements are established. Changes in parameters to be monitored may be made as determined by the Department;

(h) Monitoring for all parameters except specific conductance and pH must take place at least quarterly during the life of the mine, including any post-closure maintenance period or more frequently if determined to be necessary by the Department. Less frequent monitoring may be performed as approved by the Department. The monitoring results must be submitted to the Department within 10 days of the end of each quarter in a format approved by the Department;

(i) The Department may require continuous monitoring of certain parameters including, but not limited to, specific conductance and pH, in groundwater seepage and other seepage to lagoon underdrains, drains of impoundment structures, or similar engineered facilities, in natural geologic features with high conductivity, or other locations as determined necessary by the Department. Continuous monitoring results exceeding any established parameter threshold must be submitted electronically to the Department within 24 hours in a format prescribed by the Department; and

(j) Any revisions to the plan are subject to review and approval by the Department.

(2) Surface Water and Sediments

(a) The Applicant shall establish a surface water monitoring system that is capable of detecting direct or indirect discharges to surface waters from mining operations,

including, but not limited to, discharges licensed under 38 M.R.S. §413, of any parameter for which a performance requirement has been established or indicator parameters as determined to be necessary by the Department. This system must be capable of detecting any exceedance of performance requirements and violations of water quality standards and criteria pursuant to 38 M.R.S. §§ 464-469.

(b) The Applicant shall establish a sediment monitoring system capable of detecting accumulations of pollutants in sediments within water bodies affected by mining operations.

(c) Surface water and sediment monitoring programs are subject to review and approval of the Department and must, at a minimum, meet the following criteria:

(i) Provision for surface water and sediment monitoring to determine background levels in the receiving water. Background samples must be collected as close in time as possible to the collection of samples at the monitoring points; and

(ii) For the surface water and sediment monitoring program, specification of the monitoring frequencies for each parameter and media. Monthly monitoring is required for all monitored parameters in surface water, except that continuous monitoring is required for certain parameters including, but not limited to, water depth, specific conductance, pH, temperature, and dissolved oxygen. Sediments must be monitored at least annually. The Department shall determine which additional parameters require continuous monitoring. Monthly monitoring results shall be submitted within 10 days of the end of each monitoring period. Continuous monitoring results exceeding any established parameter threshold shall be submitted electronically to the Department within 24 hours in a format prescribed by the Department.

(3) Hydrology. Hydrology of the mining areas and affected areas must be monitored where mining activities have reasonable potential for measurable impact on surface water and groundwater.

(4) Biological Resources. Biological resources of the background locations, all mining areas and affected areas shall be monitored where mining activities have a reasonable potential for measurable impact to these resources. This monitoring must include analyses of fish tissue, fish population, invertebrate population and abundance, and any other measure of ecological health determined to be necessary by the Department.

(5) Mining operations. The Department may require collection of samples for analysis and other monitoring procedures at certain structures on the site including, but not limited to, lagoon underdrains, leachate collection systems, and impoundment drains.

(6) Initiation of Monitoring. Monitoring, except baseline monitoring activities, must start at the time when extraction or removal of metallic minerals, overburden or mine waste is initiated pursuant to an advanced exploration or mining permit.

(7) Duration of monitoring. Unless the Department determines that a reduction or cessation is appropriate, monitoring must continue for at least 30 years after closure of the mine subject to the following conditions:

(a) If the mining-related activity or disturbance resulting in the reasonable potential for measurable impact has ceased and the results from post-closure monitoring confirm that there is no significant potential for future impact resulting from the mining operation, the monitoring period may be reduced or terminated.

(b) If the mining-related activity or disturbance has ceased and the resulting impacts have been reclaimed or mitigated in conformance with mining permit conditions and the results from post-closure monitoring confirm that there is no significant potential for future impact resulting from the mining operation and that the implemented reclamation or mitigation measures are self-sustaining, the monitoring period may be reduced or terminated.

(c) The Permittee may provide the Department a written request to terminate all or specific aspects of monitoring not less than 18 months before the proposed termination date and, if such a request is made, must provide supporting data and information demonstrating that the conditions required to terminate monitoring have been achieved. The Department may reduce the 18-month notification requirement on a case-by-case basis.

(d) The Department may reduce the default 30-year post-closure monitoring period at any time upon determining that there is a reasonable assurance of no significant potential for environmental, natural resource, public health and safety, and/or property damage impacts resulting from the mining operation and that implemented reclamation or mitigation measures are self-sustaining.

(e) The Department shall extend the post-closure monitoring period in increments of up to 20 years for all or specific aspects of monitoring unless the Department determines, approximately 1 year before the end of a post-closure monitoring period or post-closure incremental increase to the monitoring period, that there is a reasonable assurance of no significant potential for environmental, natural resource, public health and safety, and/or property damage impacts resulting from the mining operations and that implemented reclamation or mitigation measures are self-sustaining.

(8) Methods. Monitoring methods, parameters, frequencies and locations will be reviewed and are subject to approval by the Department and must be sufficient to verify that potential and actual mining-related impacts, including those identified in the environmental impact assessment, are avoided, or where unavoidable are adequately minimized, compensated for, or mitigated and that reclamation is effective and complete and self-sustaining as specified in the mining permit application documents, and required by the Act, this Chapter and the mining permit.

(9) Reference location. At least one reference monitoring location must be established outside of each mining area and the affected area with the purpose of providing data relevant to non-mine related influences on monitored parameters and conditions.

(10) Exceedances. The Applicant shall propose to the Department for approval, as part of the permit application, levels indicative of statistically significant change from baseline conditions for each parameter at each monitoring point, and where appropriate, for specific time periods such as hydrologic season. The Department may accept these for use or require different levels, limits, or other performance criteria, based on its review of the data and site conditions.

(11) Submission of data. Unless otherwise specified in this Chapter or otherwise required by the Department, the Permittee shall submit all monitoring data to the Department in a format specified by the Department. Monitoring data must be submitted to the Department within 10 days of its receipt by the Permittee.

(12) Notification of Exceedences and Deterioration of Site Conditions. The Permittee shall notify the Department at such time as monitoring indicates that one or more of the following compliance standards has been exceeded or a statistically significant change has been identified at any monitoring station.

(a) For surface water, the compliance standards are the ambient water quality criteria for toxic pollutants, or applicable water quality-based permit conditions established pursuant to 38 M.R.S. §§ 413 and 464-469.

(b) For ground water, the compliance standards are the primary drinking water standards adopted pursuant to 22 M.R.S. §2611, applicable water quality-based license conditions established pursuant to 38 M.R.S. §§ 413, 464, 465-C, and 470 or ground water quality baseline conditions.

(c) Within mining areas as defined in 38 M.R.S. 490-OO(4)(D) and section 11(A)(2)(c) of this Chapter, the compliance standards for pollutants other than pH or metals are the primary drinking water standards adopted pursuant to 22 M.R.S. §2611, applicable water quality-based license conditions established pursuant to 38 M.R.S. §§ 413, 464, 465-C and 470 or ground water quality baseline conditions. The compliance standards for pH and metals will be established in the mining permit by the Department based on site-specific geologic and hydrologic characteristics. In determining compliance with these standards, the Department will require groundwater monitoring consistent with the requirements established pursuant to 38 M.R.S. §490-QQ(3) and this section.

(c) For biological criteria, sediment, or other relevant environmental criteria, compliance standards are established pursuant to 38 M.R.S. §§ 413 and 464-469, baseline conditions, or as determined by the Department.

(13) Minimum elements of notification. The notification must consist of:

(a) A table and chart presenting all data for that monitoring location;

(b) Data from associated reference or upgradient monitoring locations;

(c) The associated standard or baseline;

(d) An analysis of that data relative to the presence or absence of a statistically significant decline in water quality or other evidence of adverse environmental impact; and

(e) An analysis of the probability that an observed statistically significant change indicative of declining water quality or other evidence of adverse environmental impact from baseline conditions is related to the mining operation.

(14) Corrective action required. Failure to meet a performance standard or evidence of a deterioration of site conditions requires the Permittee to undertake corrective action to identify whether the data are accurate, and to identify and eliminate or correct the problem.

The Department must be notified within 24 hours of the failure to meet a compliance standard at any monitoring location. The Department may require the Permittee to resample the location or locations to confirm the result; confirmation resamples, if required, must be taken within 7 days of the initial Department notification. As part of the corrective action plan, the Department may require such actions as the Department deems necessary, including the actions listed below:

(a) Increased monitoring;

(b) Source investigation;

(c) Corrective action;

(d) Modification of active or post-closure mining activity; or

(e) Other action as determined to be necessary by the Department.

(15) Duration of corrective action. The corrective action shall continue, and may be amended from time to time, until such time as the Department determines that corrective actions are complete, the site meets all performance standards including achievement of baseline conditions, the site is expected to continue to meet such standards and conditions without further corrective actions, and all discharges causing or contributing to failure to comply with water quality standards are eliminated or mitigated to correct all compliance issues.

(16) Other conditions requiring corrective actions. The Department may require any action listed in subsection 22(B)(14) if it identifies in the submitted data or from any other information, indications of discharges of contaminants, deterioration in site conditions, or observes conditions on the site indicative of discharges of contaminants or deterioration in site conditions.

(17) Air monitoring.

(a) Air emissions, including fugitive emissions, shall be monitored in accordance with a plan approved by the Department.

(b) If at any time during operation, closure or post-closure for the mining operation, the monitoring demonstrates that the performance standards are not being met, a corrective action plan must be implemented, the details of which must be specified or approved by the Department.

23. Reclamation. Reclamation shall be completed on all mining areas and, if necessary, any affected areas.

A. A Permittee shall commence and complete reclamation of each mining area and, if necessary, any affected areas, consistent with mining permit conditions and the Department-approved plan.

B. Upon written request of a Permittee, the Department may approve with conditions an extension of time to begin or complete final reclamation.

C. To the extent feasible and practicable and considering changes caused by non-mining activities or other natural events, the Permittee shall reclaim the mining areas and affected areas to the ecological conditions that approximate pre-mining conditions.

D. Contemporaneous reclamation of the mining areas must be conducted consistent with the performance standards of this Chapter.

E. Safe ingress and egress must be provided for people and wildlife to water bodies accessible after reclamation.

F. Structures and equipment not required in meeting the approved mine plan must be dismantled and removed from each mining area.

G. The prevailing hydrologic balance of the affected area must be restored to conditions that approximate baseline conditions.

H. To the extent practical and feasible, intermittent and perennial streams diverted during mining activity must be returned to original channels or, if the original channel has been disturbed or destroyed, to a reconstructed channel having grades, pools (substrate, floodplains), and meanders comparable to baseline conditions.

NOTE: Other or additional standards may apply under the *Natural Resources Protection Act* to a project located in or adjacent to a protected natural resource. For example, a person who conducts, or causes to be conducted, an activity that involves filling, displacing or exposing soil or other earthen materials may need to take measures to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected natural resource as defined in 38 M.R.S. §480-B.

I. Surface water and stormwater from each mining area and each affected area must be managed to ensure that:

(1) Erosion and sedimentation control practices are in accordance with the *Maine Erosion and Sediment Control BMPs*;

(2) Water impoundments are removed unless necessary for pollution control or to meet other conditions of the permit; and

(3) Peak stormwater discharge from the area does not exceed baseline conditions.

J. Vegetation appropriate to the approved final post-mining land use must be established.

(1) Introduced, naturalized or nonnative plant species may be used only if they are suitable to the post-mining land use and approved by the Department.

(2) Where establishment of vegetative cover is required by the reclamation plan, the land must be reclaimed with a diverse, self-regenerating, no- or low-maintenance cover of native vegetation that is appropriate to the safety, stability, environmental protection, and natural resource goals of the plan.

(3) Transitional vegetative cover may be used to provide the greatest probability of success in plant establishment considering site conditions as well as slope stability, erosion control,

and hydrologic and water quality goals associated with successful establishment of vegetative cover.

K. The Permittee shall create and attach enforceable covenants on each mining area in accordance with the *Uniform Environmental Covenant Act* at 38 M.R.S. §3001 *et seq*. as required by the Department. These covenants must limit future use of the mining area such that the goals of this Chapter, the Act, and the mining permit are maintained or enhanced until there is no unreasonable threat to public health and safety or the environment.

L. Following closure and reclamation, the landowner or lessee of a mining area in an unorganized territory may petition the Maine Land Use Planning Commission for rezoning to an appropriate subdistrict designation.

M. All pitwalls and mine openings shall be adequately marked or fenced, and all markers and fencing must be maintained by the Permittee to provide notice to the public of a dangerous condition. The Department may determine, following closure and reclamation of a mining area from which potential sources of contamination have been removed, that the area may no longer be designated as a mining area.

N. Highwalls, or quarry faces, must be treated in such a manner as to leave them in a condition that minimizes the possibility of rock falls, slope failures and collapse. A highwall that is loose must be controlled by the use of blasting or scaling, the use of safety benches, the use of flatter slopes or reduced face heights or the use of benching near the top of the face or rounding the edge of the face.

O. Drill and auger holes, adits, shafts, underground workings, and pits must be permanently secured.

P. All unused fuel, designated chemical materials, and explosives must be removed from the mine site in accordance with applicable rules.

24. Closure and Post-Closure Maintenance Standards

A. Closure Maintenance Criteria

(1) Performance Standards

(a) The Applicant shall design the closure of the mine to minimize the need for maintenance, and to control the release of mine waste and constituents into the air and the groundwater and surface water, and to ensure protection of public health and safety, and the environment. Closure activities must:

(i) Restore the mine site to approximate pre-mining baseline hydrologic and geologic conditions and ensure that mining wastes will not contaminate ground and surface water;

(ii) Meet performance requirements;

(iii) Comply with design, monitoring, and operating criteria approved in the closure plan for the mine, and each mine waste unit; and

(iv) Comply with the general technical requirements below.

(b) The Permittee shall undertake the following activities:

(i) Provide certification by a qualified professional(s) that each mine waste unit, given its location, composition, and construction, is designed to meet current standards of practice for geotechnical engineering;

(ii) Institute or maintain a run-on/runoff control system that meets the requirements of this Chapter; and

(iii) Implement and maintain monitoring systems as approved in the closure plan.

(c) For leachate management systems, ore leaching facilities including associated solution ponds, and collection systems including trenches, piping, leachate collection systems, and equipment, which contain leach solutions, the Permittee shall ensure the following:

(i) Water that is not to be recycled for processing shall be treated and disposed of in a manner that ensures compliance with the performance requirements and shall in any event comply with the terms and conditions of the permit; and

(ii) Leachate collection and management systems must continue until leachate no longer contains constituents in concentrations above those described in the performance requirements for the period of time specified in the permit or otherwise provided by the Department.

(2) Closure Plan

(a) A closure plan must be submitted at the time of application for a permit. At a minimum, the plan must include the following information for each mine waste unit:

(i) The methods, designs, procedures, and processes necessary to satisfy the closure performance standards for each mine waste unit;

(ii) An estimate of the maximum capacity and maximum volume of mine waste that can be managed in the unit at any time during the life of the mine waste unit;

(iii) A description of activities required to close leaching operations, including compliance with the standards at the time of closure;

(iv) A schedule of closure activities; and

(v) A detailed cost estimate of closure activities.

(b) Closure plans must be amended to reflect applicable changes in unit design, operations, or mine waste management technology, and applicable legal requirements, at intervals not to exceed 5 years.

(c) The closure plan for each mine waste unit must minimize the onsite and offsite use or contact with mine waste if such use or contact would pose a significant risk to the environment or public health and safety.

(d) A copy of the closure plan must be kept at the site or at an alternate location approved by the Department until the post-closure maintenance period has ended.

(3) Closure Design Requirements

(a) Closure design must be based on the following factors:

(i) The geology and geologic setting of the unit;

(ii) The character of the waste, including waste treatment;

(iii) The potential for and degree of contamination of the environment at or in the vicinity of the mining operation, if applicable;

(iv) Corrective action(s) in place or planned, if applicable;

(v) The operating practices at the waste unit;

(vi) The geographic location of the unit; and

(vii) Any other factors which are necessary for an informed determination of an appropriate design.

(b) The closure design must minimize maintenance and control the release of contaminants to ensure that performance requirements are met.

(c) Final closure requirements for mine waste units including, but not limited to, dry stack tailings management structures are as follows:

(i) Final cover for a mine waste unit must have a permeability less than or equal to the permeability of the primary liner system;

(ii) The cover must be designed and constructed to function with the minimum maintenance possible;

(iii) Closed mine waste units must be graded and maintained to prevent ponding and to divert surface drainage from covered wastes;

(iv) Areas with slopes greater than 10%, surface drainage courses, and areas subject to erosion by water and wind must be protected to prevent such erosion; and

(v) No discharge to surface or groundwater may be allowed except as licensed by the Department.

(d) A protected, permanent benchmark must be established on each closed mine waste unit. This benchmark shall be shown on all recorded drawings.

(4) Closure Trigger

(a) Closure must begin, if for the preceding 12 months, the mine waste unit has not received for disposal more than 10% of the average annual volume of waste received during the

mine life to date as measured from the arrival of a substantial quantity of waste at that mine unit and not including time elapsed during any suspension of mining, unless the Permittee has applied for the extension described in this section.

(b) The Department may grant an extension to the initiation of closure if the Permittee demonstrates that:

(i) The mine waste unit is planned to be used within the next 7 years;

(ii) The mine waste unit is in compliance with performance, design, and operating requirements; and

(iii) The mine waste unit will continue to comply with performance, design, and operating requirements during the extension.

(c) The Department may grant a 12-month extension, up to a maximum of 7 extensions.

(5) Certification of Closure

(a) Within the 90-day period following closure of the mine waste unit, the Permittee must submit certification to the Department verifying that closure has been completed in accordance with an approved closure plan.

(b) Certification shall be based on a review of the mine waste facility by a qualified professional approved by the Department, a responsible officer of the Permittee and an inspection of the facility by the Department.

B. Post-Closure Maintenance Criteria

(1) Applicability. Following certification of the closure, the Permittee shall commence post-closure maintenance for the closed mine waste unit.

(2) Performance Standards

(a) The Permittee shall conduct post-closure maintenance activities to ensure the continued protection of public health and safety, and the environment, and to ensure the performance requirements continue to be met.

(b) Site access during the post-closure maintenance period must be controlled as necessary to prevent the removal of mine waste and ensure continued effectiveness of closure and post-closure maintenance activities.

(c) Post-closure land uses shall not impair the integrity of containment structures.

(3) Requirements

(a) The Department may require the Permittee to conduct, at a minimum, any or all of the following activities during post-closure maintenance:

(i) Periodic sampling of the mine waste as necessary to characterize the mobilization or conversion of mine wastes or parameters;

(ii) Inspection and maintenance activities necessary to maintain the structural and chemical stability of the mine waste unit;

(iii) Continued operation and maintenance of run-on/run-off control systems and leachate management systems, if any;

(iv) Continued operation and maintenance of groundwater and surface water monitoring stations and other monitoring locations; and

(v) Any other measure necessary to prevent a violation of a performance standard or other legal requirement and otherwise to protect public health and the environment.

(b) All post-closure monitoring activities shall continue until such time as the Department provides written approval for their cessation. In addition, the Department may alter post-closure requirements in response to monitoring information or other assessments.

(c) Mine waste units that have been closed may be reactivated or re-utilized only under a new or amended permit. The Permittee shall ensure that:

(i) Operations conform to the performance requirements, design operating criteria, and monitoring requirements of this Chapter; and

(ii) If mining wastes remain in the mine waste unit following the removal of materials for additional beneficiation, or at the completion of additional storage or disposal activities, the mine waste unit is closed in compliance with the requirements of this section.

(d) If any performance requirement is not met, the Permittee shall develop and implement a corrective action plan pursuant to section 30(A) of this Chapter.

(4) Post-Closure Maintenance Plan

(a) The Applicant shall prepare and submit a detailed post-closure maintenance plan as part of the application. At a minimum, the plan must include the following information:

(i) A description of activities and frequency of activities necessary to satisfy the performance standards;

(ii) A detailed estimate of post-closure maintenance costs;

(iii) A description of the planned use of the property to satisfy the post-closure maintenance performance standards, including the following information:

(A) Prevention of exposure of mine waste or constituents to the environment, unless such exposure would pose no significant risk to health or environment and is within licensed limits; and

(B) Continued maintenance of the structural and operational components of closure and post-closure; and

(iv) The name, address, and telephone number of the Permittee's contact during the post-closure maintenance period.

(b) A copy of the post-closure maintenance plan shall be kept at the mine waste unit or alternate location as approved by the Department throughout the post-closure maintenance period.

(5) Length of the Post-Closure Care Period. The collection, treatment, and disposal methods must be designed to ensure that discharges to affected areas must meet water quality standards without requiring active treatment as soon as practicable, but in no case greater than 10 years post-closure. The post-closure care period for Group A and Group B wastes must end 30 years from the time of closure certification, provided the Department determines the mine waste unit has been closed in compliance with the performance requirements of this Chapter and the post-closure performance standards of this section, and that the site will continue to remain in compliance with such standards. The post-closure care period for Group C waste must be 5 years from the time of closure certification.

(6) Deed Notation

(a) During the first year following closure certification the Permittee shall record a notation on the deed to property, or other instrument normally examined during a title search, if any mine waste or constituent remain at the site.

(b) The deed notation must state that the land has been used for the management of mine waste, that mine waste or constituents remain at the mine waste unit and, if applicable, that land use is restricted.

(7) Post-Closure Certification

(a) After completion of post-closure maintenance for the mine waste unit, the Permittee shall submit certification to the Department verifying completion of post-closure maintenance. All inspection records and reports pertaining to certification shall be submitted to the Department.

(b) The certification must be based on a review of the mine waste unit by a qualified professional approved by the Department and executed by a responsible officer of the Permittee and an inspection of the facility by the Department.

(c) Approval of certification of the completion of postclosure maintenance of a waste unit by the Department does not release the Permittee from any subsequent corrective action requirements or other legal responsibility including the requirement for any monitoring determined to be necessary by the Department.

Subchapter 6: MINING INSPECTION, RECORDKEEPING AND REPORTING REQUIREMENTS

25. Inspection and Maintenance. The Permittee, using qualified professionals, shall inspect all phases of the mining operation to ensure compliance with the design and construction specifications, standard operating procedures, the mining permit, applicable rules, and the Act. Nothing in this section limits the ability of the Department to conduct inspections in any area of the property or to require corrective actions to address deficiencies identified in the monitoring data or as a result of

such inspections. A qualified professional under this section cannot also serve as a third-party independent inspector under section 12.

A. A Permittee shall allow all inspections and comply with maintenance and monitoring requirements contained in the permit.

B. Each phase of mine construction, operation, and closure must be inspected by qualified professionals in accordance with the Quality Assurance Plan (QAP) approved by the Department.

(1) For construction of containment structures and impoundments, Construction Quality Assurance (CQA) must include continuous site inspections by the CQA personnel. Inspection, testing, and certification must be done by CQA personnel separate from the Permitee. As determined by the Department, this requirement may also apply to storage piles depending on the nature and extent of the particular storage pile.

(a) For the purposes of this section, separate from the Permittee means CQA personnel are not in the direct employment of the Permittee. Direct employment of the owner/operator does not include CQA personnel employed by a company under a contractual relationship with the owner/operator, provided that the CQA personnel are employed by a company that:

(i) Offers and performs quality assurance services for other companies not affiliated with the owner/operator; and

(ii) Has a management structure that exists and operates separately from the owner/operator, such that CQA personnel are not directly compensated by, and are completely free of any direct reporting obligation to the owner/operator.

(2) All other phases of mine construction must be inspected by qualified professionals and the inspections must be conducted with the frequency and level of detail and documentation necessary to allow the qualified professional to certify that the structures were constructed consistent with the design.

(3) Mine operations must be inspected at least weekly by qualified professionals in order to verify that the mine is operated consistent with permit requirements and that structures and practices designed to protect natural resources, the environment and public health and safety are functioning as designed, intended and required by the mining permit, this Chapter and the Act, and not susceptible to failure due to significant weather, seismic or other events.

(4) Inspection and maintenance requirements and schedules for the operation, reclamation, closure, and post closure phases of the mining operation. These requirements must at a minimum apply to any feature or structure that represents a potential threat to natural resources, the environment and public health and safety, as well as to hydrologic and biologic features in the mining and affected area.

(a) During operation, reclamation and closure, the mining areas and affected areas must be inspected by qualified persons at least monthly.

(b) During the post-closure monitoring period, the mining areas, and affected areas must be inspected by qualified persons at least twice per year.

(c) Within 30 days of the inspections required under this section, the qualified person shall submit to the Permittee and the Department:

(i) A summary of activities that occurred at the mine site during the reporting period and results of analyses conducted to monitor compliance with permit conditions;

(ii) Certification that the mining areas and affected areas are in good condition and in compliance with the mining permit, this Chapter, and the Act; or

(iii) Identification of the corrective measures that must be undertaken by the Permittee to reach compliance. Within 10 days of receipt of the necessary corrective measures, the Permittee shall propose a plan and schedule to the Department for review and approval for implementing the corrective measures.

26. Reporting Requirements

A. **Requirements.** A Permittee shall file with the Department an updated mining and reclamation report:

(1) On or before March 15th of each year;

(2) During the period the mine is operating;

(3) During suspension of mining operations; and

(4) During the post-closure monitoring period.

B. **Mining and Reclamation Report**. The mining and reclamation report must contain a description of mining and reclamation activities conducted during the preceding year, including:

(1) A description of the status of mining and reclamation;

(a) The types and amounts (tons) of materials moved from the ore body and to storage piles, including a distinction among ore, lean ore, overburden or mine waste;

(b) The acreage disturbed;

(c) Changes to the beneficiation process and to tailings and waste disposal;

(d) The amount of metallic product (tons) produced at the facility;

(e) The amount of waste rock and tailings disposed of at the facility by disposal unit;

(f) The amount of leachate collected and treated from each disposal unit;

(g) An evaluation of the effectiveness of the leachate treatment and disposal system; and

(h) An update on mine waste characterization including a characterization of new mine waste encountered during mining that has not been previously characterized under section 20 of this Chapter.

(2) An update of the contingency plan:

(a) Documentation that the updated plan has been submitted to the municipality or county commissioners, as applicable; and

(b) A description of amendments to the contingency plan as a result of changes in mining and beneficiation.

(3) A description of reclamation conducted, including acreage and a discussion of the success of revegetation efforts;

(4) A report of monitoring results for the preceding calendar year;

(5) A list of the notifications required under section 27 of this Chapter, for the preceding calendar year;

(6) The estimated cost to implement the reclamation plan, closure and post-closure plan, and corrective action plan if the mining operations were to cease in the next year;

(7) A description of any proposed amendments to the amount and type of financial assurance;

(8) A description of proposed mining, beneficiation, tailings disposal, and reclamation activities; during the current year;

(9) A summary of inspection results; and

(10) An evaluation of the facility's operations to verify compliance with approved plans, licenses, and regulatory requirements. This evaluation must be performed either by qualified facility personnel or a qualified professional.

27. Notification Requirements. A Permittee shall promptly notify the Department and each municipality or county commissioners in the unorganized or deorganized areas of the State in which the mining areas and the affected areas are located of any incident, act of nature or violation of a permit standard or condition related to the mining operation that has created, or may create, a threat to the environment, natural resources, or public health and safety.

A. Notification to an authorized representative of the Department during normal business hours, or to the Department pollution emergency alerting system between 5 p.m. and 8 a.m. and on weekends and holidays shall be made by telephone or in person as soon as possible, and in any case within 2 hours following the incident, act of nature or exceedance.

B. The Permittee shall submit to the Department a detailed written incident report of the incident, act of nature or exceedance within 5 days of discovery, including:

(1) The name of the Permittee;

(2) The name of the person reporting the incident, act of nature, or exceedance;

(3) The date and time of the incident, act of nature, or exceedance;

(4) The nature of the incident, act of nature, or exceedance;

(5) The nature and degree of the threat to the environment, natural resources, or public health or safety; and

(6) Response actions taken or planned.

C. If the response to the incident, act of nature or exceedance is not concluded at the time the written incident report is required, then the Permittee shall submit to the Department a written final incident report within 30 days after the incident response is concluded. The final incident report must contain a summary of the initial incident report and an account of all response actions taken. If the final response to the incident, act of nature or exceedance is not concluded within 30 days, then the Department may require periodic progress reports.

D. Records upon which reports are based must be preserved by the Permittee in accordance with section 28 of this Chapter.

28. Recordkeeping Requirements. Records must be retained by the Permittee as follows:

A. All records required pursuant to the Act, Chapter 200 and the mining permit must be preserved by the Permittee for 6 years, or preserved for a longer period of required by the Department.

B. Any retained record must be available to the Department upon request.

C. Records upon which incident reports under section 27 of this Chapter are based must be preserved by the Permittee for 6 years, or until the end of the post-closure monitoring period, whichever is later.

Subchapter 7: SUSPENSION OF MINING

29. Suspension of Mining and Resumption of Mining after Suspension.

A. Requirements

(1) Any Permittee requesting a temporary suspension of mining must file a written request for approval of a temporary suspension of mining to the Department at least 30 days prior to suspending mining for a continuous period of 90 days or more. A temporary suspension of mining must be limited to 365 days. Activity that deviates substantially from the approved mine plan may not constitute part of a continuous period of mining for the purposes of this section. The request for a temporary suspension must set forth:

(a) The reasons for the temporary suspension of mining;

(b) The start date and expected duration of the temporary suspension of mining;

(c) The factors that will influence the decision for resumption of mining;

(d) Measures to maintain and monitor the mining areas;

(e) Security measures to be taken during the temporary suspension of mining;

(f) Interim sloping or stabilization of surfaces;

(g) An update to financial assurance;

(h) Interim measures that will be taken during the temporary suspension of mining to comply with its mine plan and mining permit;

(i) Interim measures that will be taken to protect the environment, natural resources, and public health and safety; and

(j) Verification that all required, routine operations will continue during the suspension, including but not limited to, treatment operations, inspections, monitoring, corrective actions (if any), and annual reporting.

(3) Prior to considering the request for approval or modification of a request for temporary suspension of mining operations, the Department shall verify Permittee compliance with the Act, applicable rules, and the mining permit.

(4) The Department may require more information from the applicant, a partial closure of mining operations, an adjustment to financial assurance, corrective actions or additional measures to protect the environment, natural resources, and public health and safety as a condition of approval.

(5) The Permittee shall file a revised request for temporary suspension of mining to the Department for approval if modifications to elements of the original request are required by the Permittee or the Department.

(6) The Permittee may request an increase in the duration of the period of suspension of mining, and as part of this request, the Permittee must:

(a) Provide an explanation as to why the Permittee has not recommenced operations; and

(b) Provide a demonstration of continued commitment to conduct mining within 365 days from the date of temporary suspension of mining.

(7) The Permittee is considered to have ceased mining and all requirements applicable to the closure take effect if mining operations are suspended for a continuous period exceeding 365 days, not counting any nominal activity, unless the Department agrees in writing to delay the implementation of the closure plan based on a written submission by the Permittee that demonstrates to the satisfaction of the Department that the mining operations are expected to recommence within 1 year or less. In any case, the Department may require partial closure of the mining operation during such suspension.

(8) For any suspension of mining operations greater than 60 days from the original date of request, prior to resuming operations, the Permittee shall inspect the facility and provide certification to the Department that all systems are functioning as designed and are capable of resuming operations.

B. **Exemption from licensing requirements.** A request to suspend mining activities pursuant to this section is exempt from licensing requirements under 06-096 C.M.R. ch. 2.

30. Permittee Required to Correct Violations and Deterioration in Site Conditions. The Commissioner may order a Permittee to correct a violation of the Act, this Chapter, an order of the Department, or a mining permit.

A. **Corrective Action Plan.** The Permittee shall develop and submit a corrective action plan on a schedule determined by the Department.

(1) This plan shall, at a minimum:

(a) Be protective of public health and environment;

(b) Propose a remedy to control the sources of releases and ensure compliance with the performance requirements throughout operation, reclamation, closure, and post-closure maintenance;

(c) Propose a schedule for implementing corrective action;

(d) Provide a detailed cost estimate for corrective action activities; and

(e) Provide financial assurance for corrective action costs pursuant to section 9(I) and 17 of this Chapter.

(2) In developing the corrective action plan, at a minimum, the following shall be considered:

(a) Extent, nature, and cause of contamination;

(b) Identification of remedies to achieve compliance with the performance requirements and to prevent future exceedances or deterioration of site conditions;

(c) Availability of alternative treatment or disposal measures during implementation of the corrective action;

(d) Evaluation of performance, reliability, timing and ease of implementation, and potential impacts (including safety and cross-media environmental impacts) of alternative corrective actions;

(e) Potential risk to public health and the environment prior to completion of corrective actions;

(f) Evaluation of requirements (e.g., federal, state and local permit requirements, environmental or public health requirements) that could substantially affect implementation of potential corrective actions; and

(g) Other relevant factors specified by the Department.

B. When the Permittee is aware of a violation of the Act, this Chapter, an order of the Department or a mining permit, the Permittee shall:

(1) Take immediate action to correct the violation; and

(2) Notify the Department of the violation and of the action being implemented to correct the violation.

D. The Permittee shall correct the violation as soon as practicable.

E. The Department may pursue enforcement action in accordance with 38 M.R.S. §§ 347-A, 348 and 349, or any other statutory authority and may require changes to the corrective action plan.

31. Imminent Endangerment. If the Commissioner determines that a violation is causing or resulting in an imminent and substantial endangerment to the public health and safety, the environment, or natural resources, the Department may take action necessary to abate or eliminate the endangerment, including one or more of the following:

A. Taking action to suspend or revoke the mining permit as authorized by the Act, 38 M.R.S. §342 (11-B) and the *Maine Administrative Procedure Act*;

B. Recommend to the Board pursuant to 38 M.R.S. §342(11-C) that the Board modify or take corrective action on the permit pursuant to 38 M.R.S. §341-D(3).

C. Issuing an order to the Permittee requiring immediate suspension of mining activities;

D. Issuing an order prohibiting the removal of metallic product from the site;

E. Ordering the Permittee to undertake such other response actions as may be necessary to abate or eliminate the endangerment;

F. Issuing an emergency order as authorized by 38 M.R.S. §347-A(3);

G. Notifying municipal officers and county commissioners or their designees, from each municipality and county in which the mining areas and affected areas may be located;

H. Notifying the public through publication of the action in a newspaper of general circulation in the area; and

I. Refer the violation to the Attorney General for civil or criminal prosecution pursuant to 38 M.R.S. §§347-A or 348.

32. Effect of Revocation of a Mining Permit or Suspension of Mining Activities.

A. The revocation of a mining permit by the Commissioner or a court, or the suspension of mining activities by the Department does not relieve the Permittee from its responsibilities to continue the following actions as directed by the Department or a court:

(1) Complete all reclamation, closure, post-closure maintenance and monitoring, and corrective actions;

(2) Maintain financial assurance under 38 M.R.S. §490-RR and this Chapter; and

(3) Undertake all appropriate measures to protect the environment, natural resources, and public health and safety.

33. Enforcement and Compliance Orders Issued Under this Chapter

A. Any enforcement or compliance order issued under this Chapter, except an emergency order as authorized by 38 M.R.S. §347-A(3) and for which the procedure is set forth in that section, shall be governed by this section.

NOTE: This section does not apply to license orders of the Commissioner, which may be appealed as set forth in 38 M.R.S. §§ 344(2-A) and 346 and 06-096 C.M.R. ch. 2, §24.

B. Any order issued under this Chapter must contain findings of fact. Service of a copy of the Commissioner's order must be made by the Sheriff or Deputy Sheriff or by hand delivery by an authorized representative of the Department in accordance with the Maine Rules of Civil Procedure. The person to whom the order is directed shall comply immediately.

C. A person to whom such an order is directed may apply to the Board for a hearing on the order if the application is made within 7 working days after receipt of the order by the person to whom the order was directed. Within 14 working days after receipt of the application, the Board shall hold a hearing, make findings of fact and vote on a decision that continues, revokes or modifies the order. That decision must be in writing and signed by the Board Chair using any means for signature authorized in the Department's rules and published within 2 working days after the hearing and vote. The nature of the hearing is an appeal. At the hearing, all witnesses must be sworn and the Commissioner shall first establish the basis for the order and for naming the person to whom the order was directed. The burden of going forward then shifts to the person appealing to demonstrate based upon a preponderance of the evidence, that the order should be modified or rescinded. The decision of the Board may be appealed to the Superior Court in accordance with 38 M.R.S. §346 and Title 5, chapter 375, subchapter 7.

NOTE: A person to whom an order is directed also may appeal directly to the Superior Court pursuant to 38 M.R.S. §346(1) and Title 5, chapter 375, subchapter 7.

STATUTORY AUTHORITY: 38 M.R.S. §349-A

EFFECTIVE DATE:
August 26, 1991

EFFECTIVE DATE (ELECTRONIC CONVERSION):
May 4, 1996

AMENDED:
April 21, 2013, filing 2013-100

REPEALED AND REPLACED:
December 28, 2017 – filing 2017-188 (Major substantive)

Comprehensive Land Use Plan

for Areas within the Jurisdiction of the

Maine Land Use Regulation Commission

Maine Land Use Regulation Commission
Department of Conservation

Maine has always been proud of its wildlands – the Big Woods, land of Indian and trapper, of white pine tall enough for masts on His Majesty's ships, of mountain lion, moose, and eagle. Much of the wildness was still there when Thoreau went in by birchbark canoe, a little over a century ago. And much of it remains. There is spruce and fir, moose and beaver, lake and mountain and whitewater enough to satisfy generations of Americans. More and more, as northeastern U.S. develops, the Maine woods are becoming an almost unparalleled resource, both for tree production and for recreational opportunity. But who is to come forward to say that this resource must not be squandered? Can we guarantee that the next generations will be able to set out in a canoe and know that adventure is just around the bend?

"Report on the Wildlands"
State of Maine
Legislative Research Committee
Publication 104-1A, 1969

COMPREHENSIVE
LAND USE PLAN

For Areas Within the Jurisdiction of the Maine Land Use Regulation Commission

Department of Conservation
Maine Land Use Regulation Commission

Originally adopted in 1976
Revised in 1983, 1990, 1997, and 2010

Moosehead Lake

STATE OF MAINE
OFFICE OF THE GOVERNOR
1 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0001

JOHN ELIAS BALDACCI
GOVERNOR

March 16, 2010

Land Use Regulation Commission Members
Department of Conservation
22 State House Station
Augusta, Maine 04333-0022

Dear Commission Members:

By this letter, I approve the Land Use Regulation Commission's revised Comprehensive Land Use Plan that you adopted unanimously on March 3, 2010. The revised Plan provides a balanced, fair and flexible approach for promoting orderly growth and development in the 10.4 million acres of the jurisdiction for the next decade. I recognize that it is the result of 5 years of extensive public and stakeholder involvement and that it reflects the input from landowners, residents, various recreation and conservation organizations and the general public.

In approving this Plan, I take special notice that one of the most important and overarching goals of the revised Plan is to update LURC's role regarding economic activity in the jurisdiction and to support economic development in appropriate locations. I also recognize your commitment to inclusive, collaborative stakeholder processes to find solutions that work for landowners and residents of the jurisdiction while protecting the public interests in this extraordinary area. It is important to continue to provide every opportunity for residents and landowners within the LURC jurisdiction to meaningfully shape new policies as they are developed and implemented.

In the revised Plan, you mention that considerable opportunities may exist for non-regulatory, voluntary approaches that provide landowners with flexibility and incentives to protect the principal values of the jurisdiction while achieving reasonable economic returns. You have assured me that you will actively explore collaborative processes as they may offer a path forward which not only maintains but improves landowners' value while enhancing the protection of public interests. These assurances are integral to my approval of this revised Plan.

LURC's important role in the planning and zoning of this unique and vital part of our state is critical to Maine's future. Working forests, healthy and vibrant communities, and abundant recreational and natural resources are part of our heritage and must be safeguarded and enhanced for our generation as well as our children and grandchildren. I urge you to continue your hard work on behalf of the great state of Maine.

Sincerely,

John E. Baldacci
Governor

STATE OF MAINE
DEPARTMENT OF CONSERVATION
22 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0022

JOHN ELIAS BALDACCI
GOVERNOR

ELIZA TOWNSEND
ACTING COMMISSIONER

March 11, 2010

Dear Governor Baldacci,

We want to thank you for meeting with us earlier this week and appreciated the opportunity to present the Comprehensive Land Use Plan (CLUP) to you in person and answer your questions.

As you know, the Plan is the Commission's policy document and the real work of finding solutions to the challenges and opportunities facing the jurisdiction will be undertaken in the years ahead through the implementation of the Plan. In this regard, you inquired about how we intend to move forward with implementation.

As we reflect on our process in developing the Plan and the issues that have been dealt with over the Commission's 40 year history and our tenure, we are encouraged by collaborative processes that have been used in other settings and that are characterized by:

- Respect for diverse points of view
- Creative search for solutions that work for all parties
- Open sharing of information

History shows that collaborative processes can achieve unprecedented levels of success both from the perspective of the regulated parties and public interests. They can result in creative, equitable and enduring solutions.

Mindful of this, as we undertake the important work of implementation, we are committed to collaborative stakeholder processes that allow us to find solutions that work for landowners and residents of the jurisdiction while protecting the public interests in this extraordinary area and its resources. The issues facing the jurisdiction are complex and we certainly do not have the answers or even the tools necessary to address them all. We believe that stakeholder involvement and collaborative processes will not just be important but may well be essential to the success in effectively and equitably addressing the most intractable and fundamentally important issues the Commission confronts.

We recognize that collaboration requires willing partners and that the Commission can not command collaboration. We can, however, offer and encourage this approach and are prepared to do so. We also understand that collaboration requires changing old mindsets, traditional behaviors and making a new start – this is very challenging but success in other arenas make clear it is possible and that the results can be impressive. We are prepared to model this patient, open and inclusive behavior and encourage others to do so as well. We would like to initiate a collaborative approach for implementing the Plan as soon as possible. This would allow us to take the important next steps in addressing issues while clearly demonstrating our commitment to involving landowners, residents and other interests in an open dialogue.

www.maine.gov/doc
PHONE: 207-287-4900
FAX: 207-287-2400
TTY: 888-577-6690

We can assure you that we will make every opportunity for residents and landowners within the LURC jurisdiction to meaningfully participate and shape these efforts as new policies are developed and implemented based on the CLUP.

This is not to say we are abandoning our statutory charge – you may also be assured that we will adhere to it while working to implement the Plan – rather, we are looking to achieve the objectives of the LURC Act through more creative and effective means. In these regards, we are encouraged by collaborative processes, as they may offer a path forward which not only maintains but enhances landowners' value while enhancing the protection of public interests.

We hope that this resolves any questions that you may have regarding our intentions as we go forward. We stand ready to answer any questions that you may have in this regard; and, again, truly appreciate the opportunity to serve the people of Maine as Commissioners of the Land Use Regulation Commission.

Sincerely,

Gwendolyn R. Hilton, Commission Chair

Steve Schaefer, Commission Vice-Chair

Acknowledgements

Principal Authors: Sarah Giffen, Diana McKenzie, Susan Burns, Samantha Horn-Olsen, Tim Beaucage and Agnieszka Pinette.

Former staff members who also contributed to the drafting of this revised Plan were: Fred Todd, Caroline Eliot and Jeremy Pare.

This revised Plan was written under the guidance of Catherine M. Carroll, Director of the Maine Land Use Regulation Commission. Members of the Maine Land Use Regulation Commission serving at the time of adoption of this revised Plan were:

Gwendolyn Hilton, Starks, Chair
Steve Schaefer, Grand Lake Stream Plt., Vice-Chair
E. Bart Harvey, Greenville
Rebecca Kurtz, Rangeley Plt.
Edward B. Laverty, Medford
James A. Nadeau, Winterville Plt.
Stephen W. Wight, Newry

Former members of the Maine Land Use Regulation Commission who also provided guidance in the drafting of this revised Plan were:

Steve Kahl, Old Town
Carol Murtaugh, Lubec

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The revision of this plan occurred over the course of five years, during which more than one thousand individuals, organizations, and governmental agencies participated and contributed information, comments, and testimony. We thank all of those interested citizens.

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Chapter 1
Vision, Goals and Policies

The Maine Land Use Regulation Commission (LURC or the Commission) is charged with extending the principles of planning and zoning across its jurisdiction, which spans more than 10 million acres of the State of Maine. Known historically as the Wildlands of Maine, this vast landscape is the least populous and least developed portion of Maine and encompasses the largest block of undeveloped forestland in the Northeastern United States. The lands of the jurisdiction are predominantly privately owned, though they also contain many public values and resources. The Commission faces complex and unique challenges in its planning and regulatory responsibilities due to this intermixing of private ownership and public values.

The Commission's responsibilities include planning for the future, not just reacting to present conditions. This Comprehensive Land Use Plan provides the Commission with an opportunity to not only look back at trends and evaluate their effects, but also to develop a future vision of the jurisdiction. The vision, below, describes how the jurisdiction ideally would look in the future if change is successfully accommodated. The goals, policies and implementation measures of this plan, which follow, are aimed at attaining this vision.

The vision is best viewed in the context of the purpose and scope of the Commission's enabling legislation:

> The legislature finds that it is desirable to extend principles of sound planning, zoning and subdivision control to the unorganized and deorganized townships of the State: To preserve public health, safety and general welfare; to prevent inappropriate residential, recreational, commercial and industrial uses detrimental to the proper use or value of these areas; to prevent the intermixing of incompatible industrial, commercial, residential and recreational activities; to provide for appropriate residential, recreational, commercial and industrial uses; to prevent the development in these areas of substandard structures or structures located unduly proximate to waters or roads; to prevent the despoliation, pollution and inappropriate use of the water in these areas; and to preserve ecological and natural values.
>
> The Legislature declares it to be in the public interest, for the public benefit, for the good order of the people of this State and for the benefit of property owners and residents of the unorganized and deorganized townships of the State, to encourage the well-planned and well-managed multiple use of land and resources. The Legislature acknowledges the importance of these areas in the continued vitality of the State and to local economies. Finally, the Legislature desires to encourage the appropriate use of these lands by the residents of Maine and visitors in pursuit of outdoor recreation activities, including, but not limited to, hunting, fishing, boating, hiking and camping.
>
> (12 M.R.S.A. § 681)

1.1 Vision for the Jurisdiction

The Commission's jurisdiction will retain its unique principal values and will exemplify a sustainable pattern of land uses.

"…retain its unique principal values"

The Commission has identified four principal values that, taken together, define the distinctive character of the jurisdiction:

- **The economic value of the jurisdiction derived from working forests and farmlands**, including fiber and food production, largely on private lands. This value is based primarily on maintenance of the forest resource and the economic health of the forest products industry. The maintenance of farmlands and the viability of the region's agricultural economy is also an important component of this value.

- **Diverse and abundant recreational opportunities**, including many types of motorized and non-motorized activities. Unique opportunities exist for recreational activities which require or are significantly enhanced by large stretches of undeveloped land, ranging from primitive recreation in certain locations to extensive motorized trail networks. Recreation is increasingly an economic driver in the jurisdiction and the State.

- **Diverse, abundant and unique high-value natural resources and features**, including lakes, rivers and other water resources, fish and wildlife resources, plants and natural communities, scenic and cultural resources, coastal islands, mountain areas and other geologic resources.

- **Natural character**, which includes the uniqueness of a vast forested area that is largely undeveloped and remote from population centers. Remoteness and the relative absence of development in large parts of the jurisdiction are perhaps the most distinctive of the jurisdiction's principal values, due mainly to their increasing rarity in the Northeastern United States. These values may be difficult to quantify but they are integral to the jurisdiction's identity and to its overall character.

The four principal values do not exist in isolation of one another. More often than not, they are interconnected and in many instances one value enhances another. The tradition of a working forest not only supports the forest products industry, but provides a landscape with an outstanding variety of outdoor recreational opportunities and an array of wildlife habitats, and also plays an important role in carbon sequestration. Natural character, particularly that of remoteness, and diverse natural resources support and add to the other values, most notably the working forest and recreational opportunities. Natural resources are generally enhanced when they are part of a large, relatively undeveloped area, especially one that encompasses entire watersheds or ecosystems.

Furthermore, while these values collectively define the jurisdiction, they are not represented equally across its towns, plantations and townships. Some areas have abundant high-value natural resources (e.g., numerous pristine ponds) or a unique physical feature (e.g., Gulf Hagas). Other areas lack distinctive natural resources, but serve as productive forestlands or contribute to the jurisdiction's natural and cultural character.

"…exemplify a sustainable pattern of land uses"

The Commission recognizes that, in addition to retaining the jurisdiction's unique principal values, a sustainable pattern of land uses is essential to achieving the Commission's vision for the future. Such a pattern of land use should meet present and future needs without compromising the principal values by:

- Retaining extensive forests, undeveloped shorelines, remote woodland character, and a unique collection of natural and cultural resources and values;
- Providing for a continuation of traditional ways of life, rural communities, sustainable economic opportunities and outdoor recreation for the people of Maine, its visitors, and property owners and residents of the jurisdiction;
- Supporting development in places where the principal values of the jurisdiction are least impacted and in areas identified by the Commission as most appropriate for development; and
- Encouraging long-term conservation in places where the principal values of the jurisdiction are most vulnerable to degradation and in areas identified by the Commission as least appropriate for development.

These defining characteristics of a sustainable pattern of land uses are fairly well represented by the jurisdiction's historical land use pattern — vast areas of relatively undeveloped land, with concentrations of development principally near organized areas and relatively few scattered seasonal residential dwellings elsewhere. This land use pattern is long established and is generally conducive to meeting present and future needs, while retaining the principal values of the jurisdiction.

While small ownerships can be well managed, forest management activities are most efficiently conducted on large blocks of undeveloped land without undue interference from other activities. The general lack of development in the interior of the jurisdiction is conducive to the protection of natural resources and associated values. The relative absence of development combined with pristine natural resources in the interior also provides unparalleled opportunities for various forms of primitive recreation, while recreation-related development on the fringes of the jurisdiction supports more intensive recreational activities. The remote undeveloped qualities of the jurisdiction are well served by this pattern of development. These qualities are particularly sensitive to change; the remote character of a lake or river in the interior of the jurisdiction may be eroded long before water quality is threatened. The stewardship of land for forest management purposes on large blocks of land has, in the past, supported the Commission's broad planning goals as enumerated in Section 1.2.

Meeting This Vision

Numerous complex and multi-faceted obstacles exist to meeting the Commission's vision for the jurisdiction. For example, although some of the land use trends evident in the period from 1971 to 2009 are consistent with the vision, the creation and development of scattered lots in the interior, or other areas deemed inappropriate for intensive development, are not. Many aspects of the Commission's policies and regulations are supportive of the vision for the jurisdiction, but limitations to the Commission's ability to guide development to appropriate locations will remain a major obstacle in attaining this vision and ensuring the long-term protection of the jurisdiction's principal values. So will the Commission's largely reactive approach to rezonings and the limitations of the adjacency criterion as it is now applied. These and other issues facing the jurisdiction are discussed in detail in Chapters 4 and 5.

The Commission recognizes, however, that the jurisdiction has room for a wide range of land uses. The challenge is to accommodate these multiple uses while retaining the values that make this area unique. By refining its approach, the Commission can more effectively guide growth and protect the jurisdiction's principal values while providing greater opportunities for reasonable economic development. The goals, policies and implementation strategies that follow are aimed at attaining the Commission's vision for the jurisdiction.

Camp on Umbagog Lake

1.2 Goals and Policies

Broad Goals of the Commission

The Commission's policies shall be directed toward the achievement of the vision for the jurisdiction and the following three broad goals:

1. Support and promote the management of all the resources, based on the principles of sound planning and multiple use, to enhance the living and working conditions of the people of Maine and property owners and residents of the unorganized and deorganized townships, to ensure the separation of incompatible uses, and to ensure the continued availability of outstanding quality water, air, forest, wildlife and other natural resource values of the jurisdiction.

2. Conserve, protect and enhance the natural resources of the jurisdiction primarily for fiber and food production, outdoor recreation and plant and animal habitat.

3. Maintain the natural character of certain areas within the jurisdiction having significant natural values and primitive recreational opportunities.

Specific Goals and Policies of the Commission

The Commission's actions shall be guided by the following goals and policies. The Commission recognizes that goals or policies may at times conflict with one another and will, in such cases, balance the various policies so as to best achieve its vision for the jurisdiction.

I. Development Goals and Policies

A. LOCATION OF DEVELOPMENT (See Chapter 4)

Goal: Guide the location of new development in order to protect and conserve forest, recreational, plant or animal habitat and other natural resources, to ensure the compatibility of land uses with one another and to allow for a reasonable range of development opportunities important to the people of Maine, including property owners and residents of the unorganized and deorganized townships.

Policies regarding the location of development on a jurisdiction-wide level:

1. Provide for a sustainable pattern of development, consistent with historical patterns, which directs development to suitable areas and retains the principal values of the jurisdiction, including a working forest, integrity of natural resources, and remoteness.

2. Guide development to areas near existing towns and communities and in other areas identified as appropriate development centers.

    a. Identify areas which are the most appropriate for growth when considering: (1) proximity and connectivity by public road to economic centers, organized towns and well established patterns of settlement; (2) compatibility of natural resources with development; (3) demonstrated demand for and public benefit from development; and (4) availability of public infrastructure, facilities and services.

    b. Outside of areas identified as the most appropriate for growth, identify other areas that are appropriate for some less intensive development or as smaller development centers and encourage compact patterns of development around these areas.

    c. Guide the location of different types of residential development according to potential impacts, infrastructure needs and the potential for conversion to a more intensive type of residential use.

3. Discourage growth which results in scattered and sprawling development patterns.

4. Guide proposals for new waste disposal and similar facilities to locations near organized communities that have good existing road access, low natural resource values, and are separate from incompatible uses.

Policies regarding the location of development on a community or regional level:

5. Undertake prospective zoning within certain areas of the jurisdiction where there is a need to achieve balance between expected development pressures and high resource values in order to provide greater regulatory predictability.

6. In communities or areas without prospective zoning, encourage orderly growth within and proximate to existing, compatibly developed areas — i.e. existing development of similar type, use, occupancy, scale and intensity to that being proposed, or a village center with a range of uses for which the proposed development will provide complementary services, goods, jobs and/or housing.

7. In areas that are not appropriate as new development centers, allow for (a) planned developments which depend on a particular natural feature, subject to site plan review, and (b) other development, subject to concept plan review.

8. Permit subdivision for the purpose of development only in areas zoned for development or in areas that meet the criteria for Level 2 subdivisions.

B. ECONOMIC DEVELOPMENT

(See Chapter 4)

Goal: Encourage economic development that is connected to local economies, utilizes services and infrastructure efficiently, is compatible with natural resources and surrounding uses, particularly natural resource-based uses, and does not diminish the jurisdiction's principal values.

Policies:

1. Encourage forest, recreation and other resource-based industries and enterprises which further the jurisdiction's tradition of multiple use without diminishing its principal values.

2. Encourage economic development in those areas identified as the most appropriate for future growth.

3. Provide for expansion needs of intensive developments where such expansion will not have an undue adverse impact on the resources of the area.

4. Allow new or emerging technologies, but limit the scale or application of these technologies where necessary to allow time for the Commission to evaluate the technology and its impacts.

5. Continuously review permitting procedures to identify means to expedite the permitting process while accomplishing the agency's purposes.

C. SITE REVIEW

(See Chapter 4)

Goal: Assure that development fits harmoniously into the existing communities, neighborhoods and the natural environment.

Policies:

1. Require that provision be made for fitting development harmoniously into the existing natural environment, including:

    a. Requiring the use of buffers, building setbacks, height restrictions, design and materials standards, lighting standards, and landscaping to minimize the impacts of land use activities upon one another and to maintain the scenic quality of shorelines, hillsides, ridgelines, and roadways;

    b. Requiring that developments provide for adequate parking and traffic circulation; and

    c. Limiting the number and size of signs in order to prevent undue visual impacts or hazardous conditions.

2. Prevent the degradation of natural and cultural values resulting from cumulative impacts of incremental development.

3. Encourage site designs which have a minimal impact on the principal values of the jurisdiction, including clustering or open space preservation, and discourage unnecessarily large lot sizes.

4. Provide an educational program to guide land development in a manner consistent with the goals and policies of this Plan and regulations promulgated pursuant to this Plan.

5. Provide incentives for lot owners to bring nonconforming uses and structures into compliance or closer to conformance with the Commission's regulations.

6. Limit expansions of nonconforming uses and structures.

D. INFRASTRUCTURE

(See Chapter 4)

Goal: Ensure that infrastructure improvements are well planned and do not have an adverse impact on the jurisdiction's principal values.

Policies:

1. Consider the capacity of existing infrastructure and services to accommodate proposed development, as well as the costs associated with the provision of these services to proposed development.

2. Discourage the construction or establishment of major new public roads that would degrade the natural character of remote areas.

3. Require that new utility lines, pipelines and associated facilities be (a) located or co-located within or adjacent to existing utility or public road rights of way to the extent practicable; (b) constructed and landscaped so that they do not degrade natural values; and (c) located so as not to inappropriately encroach upon or change the character of remote areas, or produce an intensity of use that is inappropriate for a particular area.

4. Monitor the installation of new road networks in order to anticipate and plan for future growth and public access and use in appropriate areas.

5. Require that highly visible facilities such as communication towers be dismantled and removed from the site when they are unused for an extended period of time.

6. Require that communication towers be made available for other users where feasible in order to limit the number of such towers.

E. DEVELOPMENT RATE, DENSITY AND TYPE (See Chapter 4)

Goal: Ensure that development is of a rate, density and type conducive to maintaining the jurisdiction's principal values.

Policies:

1. Monitor the rate and location of development throughout the jurisdiction to ensure it remains at a reasonable pace, particularly outside areas identified as the most appropriate for growth.

2. Establish appropriate guidelines for development (such as density or similar standards) in areas where necessary to prevent the adverse cumulative impacts of incremental development on the principal values of the jurisdiction.

3. Limit development to low-impact structures in areas where the principal values of the jurisdiction are threatened by more intensive development.

4. Limit conversion of low-intensity uses in remote areas to more intensive uses where such conversion would have an undue adverse impact on the principal values of the jurisdiction.

5. Encourage development that is energy efficient and that incorporates best practical technologies to conserve energy.

6. Limit development types and densities on the basis of soil suitability and other site limitations.

F. AFFORDABLE HOUSING (See Chapter 4)

Goal: Facilitate the provision of affordable housing in appropriate locations to households with a full range of incomes.

Policies:

1. Ensure that dimensional requirements and land use standards for residential structures and subdivisions do not contain unnecessary barriers to the creation of affordable residential lots and construction of affordable dwelling units.

2. Require that permitted affordable housing is overseen by experienced local or regional housing groups or agencies that can assure it is maintained as affordable housing over the long term.

3. Ensure that permitted housing affordable to households with varied incomes is interspersed within residential projects and development subdistricts, as appropriate.

4. Work with local and regional housing groups, plantation and town officials and regional planning agencies to identify the need and appropriate locations for affordable housing.

G. LAND CONSERVATION (See Chapter 4)

Goal: Encourage the long-term conservation of select areas of the jurisdiction that are particularly representative of its cultural and natural values, including working forests, high-value natural resources and recreational resources.

Policies:

1. Encourage conservation efforts that protect one or more of the following: working forest or farmland; landscape features of statewide, regional or local significance; public access to lakes, rivers or ocean waters; high-value recreational resources; high-value natural resources; and undeveloped, multiple use lands in high-growth areas.

    a. In areas distant from population centers and infrastructure, encourage conservation of large, landscape-level areas of the jurisdiction, particularly those that allow continued use of the forest for wood products and recreation. Work cooperatively with landowners and conservation organizations to encourage the designation of large tracts of land with these values for limited or no development.

    b. In areas proximate to population centers and infrastructure, encourage targeted conservation that protects high-value natural and recreational resources, open space and rural character.

II. Natural and Cultural Resources Goals and Policies

A. AGRICULTURAL RESOURCES

(See Section 5.1)

Goal: Conserve and protect working farms, encourage the development of new farming enterprises, and conserve agricultural soil resources.

Policies:

1. Encourage agriculture in appropriate areas.
2. Discourage land uses that can be destructive of prime, highly productive or other significant farmlands.
3. Encourage the use of Maine's best management practices for agriculture.
4. Regulate agricultural practices that can cause accelerated erosion, sedimentation or pollution in order to protect soil and water resources.
5. Encourage the economic viability of agriculture by allowing diversification of farming enterprises where the new uses do not detract from the principal values of the jurisdiction.
6. Discourage activities that are incompatible with existing agricultural enterprises.

B. AIR AND CLIMATE RESOURCES

(See Section 5.2)

Goal*:* Protect and enhance the quality of air and climate resources throughout the jurisdiction.

Policies:

1. Require compliance with all state and federal air quality standards. Require compliance with more stringent standards where necessary to preserve the air quality or unique values of identified sensitive areas, or to improve the air quality of identified nonattainment areas.
2. Encourage state, federal and international initiatives directed at reducing emissions of air pollutants.
3. Encourage and monitor research on the effects of air pollutants on forest health and productivity.
4. As part of a coordinated state effort, evaluate how the Commission's development policies and standards impact climate change and make appropriate revisions.
5. Maintain efforts to guide the location of development as one of the highest priorities.
6. Support and comply with Maine's initiatives on global climate change and emissions reductions.
7. Support programs and incentives that recognize the carbon sequestration value of working forestlands.
8. Encourage technologies or practices that support efforts related to Maine's global climate change action plan.

C. COASTAL RESOURCES (See Section 5.3)

Goal: Protect and conserve the special natural and cultural resources of coastal islands and mainland townships, and help sustain the traditional resource-based economies of these areas.

Policies:

1. Encourage and support marine-dependent activities that are compatible with traditional resource-based economies, island ecosystems and other island values.

2. Facilitate the provision of affordable housing opportunities for year-round coastal and island residents.

3. Encourage the maintenance of traditional public access points to the shore.

4. Discourage the construction of dwellings or improvements on undeveloped islands with high natural or scenic values.

5. Encourage buildings of a scale, design and location appropriate to protecting the natural and scenic values of islands and coastal landscapes.

6. Emphasize the concepts of environmental and community carrying capacity in island land use planning and review of proposed projects.

7. Except for commercial uses compatible with traditional resource-based economies, discourage the construction of permanent docks and piers, and promote the use of common temporary docking areas.

8. Ensure that LURC's rezoning and development review standards are appropriate to islands given their special characteristics and constraints.

9. Address the cumulative impacts of incremental island development using strategies such as Resource Plan zoning or encouraging development proposals that provide for permanent conservation of island lands.

10. Encourage the use of voluntary land conservation measures such as conservation easements and cooperative management agreements to protect the special resources of islands.

11. Monitor the impacts of global climate change on these uniquely sensitive coastal resources and respond appropriately.

D. CULTURAL, ARCHAEOLOGICAL AND HISTORICAL RESOURCES (See Section 5.4)

Goal: Protect and enhance archaeological and historical resources of cultural significance.

Policies:

1. Identify and protect unique, rare and representative cultural resources to preserve their educational, scientific and social values.

2. Collaborate with other agencies, groups and landowners in efforts aimed at the protection of cultural resources.

3. Consistently require the completion of archaeological surveys for large development proposals.

E. ENERGY RESOURCES (See Section 5.5)

Goal: Provide for the environmentally sound and socially beneficial utilization of indigenous energy resources where there are not overriding public values that require protection.

Policies:

1. Support indigenous, renewable energy resources as part of state and national efforts to promote energy independence, diversity and long-term sustainability.

2. Recognize the importance of providing energy to Maine citizens at the lowest possible cost.

3. Consider the long-term, societal and environmental impacts, both positive and negative, of various types of energy generation, including greenhouse gas emissions.

4. Minimize unnecessary adverse environmental and public health effects of energy production, distribution and use.

5. Recognize that new renewable energy projects displace electrical energy provided by fossil fuels and thus carry the following benefits: reduction of Maine's dependence on imported fuels; improvement of environmental quality; enhancement of state and regional security; and progress toward meeting Maine's renewable energy and greenhouse gas reduction objectives.

6. Accommodate energy generation installations that are consistent with state energy policies, are suitable in proposed location(s), and minimize intrusion on natural and cultural resources and values.

7. Prohibit energy developments and related land uses in areas identified as environmentally sensitive when there are overriding environmental and other public values requiring protection.

8. Allow emerging energy technologies when they will not have an undue adverse impact on existing uses and natural resources.

9. Limit the scale of proposals involving emerging technologies as appropriate, particularly if there is risk of significant adverse impacts to outstanding natural resources and values, to allow time for the Commission to evaluate the technology and impacts prior to its application on a large scale.

10. Require that a decommissioning plan accompany all wind energy development proposals.

11. Prohibit hydropower development on river stretches identified in Maine law as having unparalleled natural or recreational values.

12. Assure that energy generation facilities and associated utilities, including interconnection and transmission lines, are not used as the sole basis to justify other types of new development for which proposed locations are not otherwise appropriate.

F. FOREST RESOURCES

(See Section 5.6)

Goal: Conserve, protect and enhance the forest resource in a way that preserves its important values, including timber and fiber production, ecological diversity, recreational opportunities, as well as the relatively undeveloped remote landscape that it creates.

Policies:

1. Encourage active forest management.

2. Support uses that are compatible with continued timber and wood fiber production, as well as outdoor recreation, biodiversity and remoteness, and discourage development that will interfere unreasonably with these uses and values.

3. Protect areas identified as environmentally sensitive by regulating forestry activities, timber harvesting and construction of land management roads.

4. Review and make appropriate refinements, from time to time, in forest practice standards for protection districts in order to make such standards effective in minimizing environmental degradation. Standards shall be responsive to the needs of private land management and to the public need for adequate timber resources to support the economic base of the state.

5. Support efforts by landowners to manage vehicular access to private roads when necessary to reduce land use conflicts and protect high-value natural resources.

6. Allow harvesting of dead and dying trees resulting from insect or disease outbreaks or other causes, consistent with the Commission's responsibilities for protection of significant natural resource values and uses.

7. Encourage the protection of highly productive forestlands by allowing only those uses essential to forest management or timber production on these lands.

8. Encourage scientific research and management of forest resources in relation to other important resources.

9. Encourage the use of Maine's best management practices for forestry.

G. GEOLOGIC RESOURCES

(See Section 5.7)

Goal pertaining to geologic resources: Conserve soil and geological resources by controlling erosion and by protecting areas of significance.

Policies pertaining to geologic resources:

1. Regulate land uses to protect areas identified as important natural geological formations.

2. Regulate land uses in areas with identified topographical or geological hazards, including areas with fragile soils, steep slopes, high elevations or seismic faults.

3. Administer standards for structural development and other land uses based on soil suitability and site characteristics.

4. Administer performance standards for timber harvesting, road construction, gravel extraction, stream crossings, agricultural practices and other land use activities in order to control potential causes of accelerated soil erosion.

5. Regulate the disposal of sewage, solid waste, manure and septic sludge and prohibit their disposal in flood prone areas, on unsuitable soils or in other inappropriate areas.

Goal pertaining to mineral resources: Allow environmentally responsible exploration and mining of metallic and non-metallic mineral resources where there are not overriding, conflicting public values which require protection.

Policies pertaining to mineral resources:

6. Permit exploration for mineral resources provided no more than minimal disturbance is caused to natural and cultural resources.

7. Provide for small sand, gravel and shale extraction operations used primarily for the construction and maintenance of roads in most areas without rezoning, but subject to compliance with performance standards designed to avoid undue environmental harm.

8. Permit larger sand, gravel and shale extraction operations in areas zoned for industrial development where a benefit to the people of Maine has been demonstrated and the operations are sited and developed in a fashion which minimizes adverse effects on other land uses and natural resources.

9. Permit major metallic mining developments only in areas zoned for planned development, and provide a rezoning procedure for this purpose which broadly considers impacts and benefits, competing uses and public values.

10. Regulate mining operations to minimize water, air, land, noise and visual pollution, to ensure public safety and health, and to avoid undue adverse impacts on fisheries, wildlife, botanical, natural, historic, archaeological, recreational and socioeconomic values.

11. Require effective monitoring and reclamation of mining sites to protect public health and safety and to promote beneficial reuse where feasible.

12. Prohibit excavation of sand, gravel or shale resources below the water table except where it is demonstrated there will be no undue adverse impact to groundwater resources.

Goal pertaining to mountain resources: Conserve and protect the values of high-mountain areas from undue adverse impacts.

Policies pertaining to mountain resources:

13. Regulate high-mountain areas to preserve the natural equilibrium of vegetation, geology, slope, soil and climate, to reduce danger to public health and safety posed by unstable mountain areas, to protect water quality, and to preserve scenic values, vegetative communities, unique wildlife communities and low-impact recreational opportunities.

14. Protect high-mountain resources with particularly high natural resource values or sensitivity which are not appropriate for most development.

H. PLANT AND ANIMAL HABITAT RESOURCES (See Section 5.8)

Goal: Conserve and protect the aesthetic, ecological, recreational, scientific, cultural and economic values of wildlife, plant and fisheries resources.

Policies:

1. Coordinate with and support agencies in the identification and protection of a variety of high-value wildlife habitats, including but not limited to: habitat for rare, threatened or endangered species; rare or exemplary natural community and ecosystem types; native salmonid fish species; riparian areas; deer wintering areas; seabird nesting islands; waterfowl and wading bird habitats; shorebird nesting, feeding and staging areas; and significant vernal pools.

2. Regulate land use activities to protect sensitive habitats, including but not limited to habitats for fish spawning, nursery, feeding and other life requirements for fish species.

3. Retain connectivity of habitats and minimize road mortality of wildlife by promoting road building practices that facilitate wildlife movement and by directing development to appropriate areas.

4. Encourage retirement of land management roads in areas that provide valuable habitat restoration opportunities.

5. Protect wildlife habitat in a fashion that is balanced and reasonably considers the management needs and economic constraints of landowners.

6. Support landscape-scale planning and habitat management.

7. Consider mechanisms to encourage sustainable land use patterns that contribute to maintenance of large tracts of undeveloped land, particularly those areas having statewide ecological significance that are important to healthy plant and animal populations.

8. Encourage cooperative agreements between landowners and public agencies which enhance protection of high-value habitat and, when appropriate, modify the Commission's zoning to facilitate the execution or strengthen the goals of such agreements.

9. Regulate land use activities to protect habitats, including deer wintering areas and coastal bird nesting sites, ecosystems, food sources and other life requisites for wildlife species to maintain biodiversity in the jurisdiction.

I. RECREATIONAL RESOURCES

(See Section 5.9)

Goal: Conserve the natural resources that are fundamental to maintaining the recreational environment that enhances diverse, abundant recreational opportunities.

Policies:

1. Protect the values of the jurisdiction that provide residents and visitors with a unique array of recreational experiences, especially high-value natural resources and remoteness where they exist.

2. Encourage diverse, non-intensive and nonexclusive use of recreational resources and protect primitive recreational opportunities in certain locations.

3. Accommodate a range of recreational uses and facilities in appropriate locations, based on the level of use, size, scale and compatibility with existing recreational and non-recreational uses. Specifically:

    a. Direct intensive recreational uses and facilities to areas most appropriate for growth, and near existing services and infrastructure.

    b. Accommodate less intensive, nonexclusive recreational uses and facilities in other appropriate locations where such uses and facilities will not adversely affect existing uses and resources.

    c. In more remote locations, accommodate low-impact, small-scale facilities that are most compatible with primitive recreational uses.

4. Consider traditional sporting camps as recreational and cultural resources, worthy of protection from incompatible development and land uses, and give special consideration to sporting camps in the Commission's development standards and in its review of rezoning petitions and development proposals within the immediate vicinity of a sporting camp.

5. Discourage the conversion or expansion of sporting camps located in remote locations to facilities or uses that would unreasonably impact the jurisdiction's natural resources or remote values.

6. Support cooperative efforts that ensure continued public access across, and recreational use of, private lands.

7. Support efforts that ensure continued public access to public waters.

8. Promote respect for and responsible use of private lands.

J. SCENIC RESOURCES (See Section 5.10)

Goal: Protect the high-value scenic resources of the jurisdiction by fitting proposed land uses harmoniously into the natural environment.

Policies:

1. Encourage concentrated patterns of growth to minimize impacts on natural values and scenic character.

2. Regulate land uses generally in order to protect natural aesthetic values and prevent the incompatibility of land uses.

3. Continue to regulate timber harvesting activities in important recreational and scenic areas to protect aesthetic qualities.

4. Establish, and refine as needed, scenic evaluation methodologies to aid in reviewing development proposals.

5. Identify and protect areas that possess scenic features and values of state or national significance.

K. WATER RESOURCES (See Section 5.11)

Goal: Preserve, protect and enhance the quality and quantity of surface waters and groundwater.

Policies:

1. Regulate uses of land and water in order to prevent degradation of the jurisdiction's excellent water quality and undue harm to aquatic habitat.

2. Protect the recreational and aesthetic values associated with water resources.

3. In flood prone areas, allow new structures only as an exception when development standards for floodplain development are met in order to minimize the human, environmental and financial costs of floods.

4. Conserve and protect lakes, ponds, rivers, streams and their shorelands, which provide significant public recreational opportunities.

5. Permit a reasonable range of development and land uses on lakeshores in order to accommodate a range of recreational opportunities important to Maine people.

6. Require appropriate setbacks and other development standards to protect water quality, water quantity and the recreational and aesthetic values of lakes and rivers.

7. Encourage cooperative uses of public and private docks, water access points and boat launching sites.

8. Control land uses on identified aquifers and their recharge areas in order to prevent adverse effects on water quality or quantity.

9. Guide lake development based on identified land use characteristics and natural resource values, conserving important values and directing development toward those lakes or lake areas most capable of absorbing new development.

10. Protect ground water quality throughout the jurisdiction through proper controls on potentially polluting activities.

11. In areas with federally designated sole-source aquifers that are the only available potable water supplies, provide a high level of protection from potential groundwater threats.

12. Conserve the quality and quantity of public and certain private water supplies by managing land use in source protection areas.

13. Assess and regulate water withdrawals from groundwater and surface water sources by major users and by other users on a case-by-case basis in order to minimize adverse impacts on natural resources and existing uses and to assure adequate water resources are available.

14. Protect lake water quality from long-term and cumulative increases in phosphorus associated with development in lake watersheds.

15. Support efforts to limit the spread of invasive aquatic plants and animals and adopt prevention measures as appropriate.

L. WETLAND RESOURCES

(See Section 5.12)

Goal: Conserve and protect the ecological functions and social and economic values of wetland resources.

Policies:

1. Support the nationwide goal of no net loss of wetland functions and values through a program that promotes avoidance and minimization of impacts.

2. Require compensation to offset loss or degradation of wetland functions, while recognizing that such losses may not be avoided in every instance.

3. Ensure that development avoids alteration of wetland areas. If avoidance is not feasible, ensure that development minimizes alteration. If loss of wetland functions is unavoidable, require actions to restore, reduce or gradually eliminate lost or degraded wetland functions. If necessary, require compensation for lost or degraded wetland functions through protection of wetlands of equal or greater value.

4. Work cooperatively with state and federal agencies to provide a wetland protection program that is effective and consistent with other programs.

5. Provide periodic training to enable staff to effectively advise applicants and efficiently administer the wetland program.

III. Compliance Goals and Policies (See Chapter 6)

Goal: Administer an effective education and enforcement program in regard to the laws, regulations and standards of the Commission in order to ensure landowner and public awareness and compliance.

Policies:

1. Carry out a balanced but vigorous enforcement effort to identify, investigate and pursue significant violations of the laws and legal requirements administered by the Commission.

2. Train and utilize the field staff of other state agencies in order to disseminate information to the public and to report compliance problems to the Commission.

3. As a general principle, hold landowners and land managers primarily responsible for land use activities resulting in violations taking place on their land. This principle is subject to appropriate exceptions where the violation occurs entirely by reason of actions by a third party (as in the case of a trespass) or where the landowner has no involvement with the activities and receives no benefit from nor has any contractual or other relationship with the third party.

4. Conduct educational programs for citizens, landowners, land managers, contractors, woods workers, lawyers, realtors and others concerning environmentally sound land use practices and the laws and legal requirements administered by the Commission.

5. Improve adherence to the Commission's regulations through the use of expanded compliance monitoring tools such as Certificates of Compliance for all new dwellings and other appropriate activities.

IV. Cooperative Initiatives (See Chapter 6)

Goal: Encourage landowner initiatives and cooperative efforts which further the Commission's objectives of protecting natural resources and guiding growth through nonregulatory or voluntary actions.

Policies:

1. Recognize the value and contributions of cooperative approaches to the protection of important resources and values, and provide opportunities for and recognize the achievements of such approaches.

2. Provide creative alternatives to traditional regulatory approaches, such as resource and concept plans.

3. Promote cooperative efforts to substantially limit development on large tracts of land to ensure that these lands will remain available to sustain the state's rural, natural resource-based economies.

Chapter 2
The Commission

2.1 Introduction

The Maine Land Use Regulation Commission (LURC or the Commission) was created by the Maine Legislature in 1971 to serve as the planning and zoning authority for the state's plantations and unorganized areas[1]. The Commission was established primarily in response to a recreational building and land development boom in these areas during the late 1960s. As directed by statute, its purpose is to extend the principles of planning and zoning; preserve public health, safety, and welfare; encourage the well-planned, multiple use of natural resources; promote orderly development; and protect natural and ecological values. The Commission has regulatory jurisdiction over land uses in these areas because there is no form of local government to administer land use controls, or local governments exist but choose not to administer land use controls . The jurisdiction is a diverse area which includes numerous coastal islands and stretches from Downeast across to the Western Mountains and up to the Canadian border (see Map 1). This area encompasses more than 10.4 million acres, over one-half of the state and one-fourth of New England.

While the more undeveloped portion of the jurisdiction is often referred to as wilderness by recreationists and those promoting recreation in the jurisdiction, this area is not wilderness by strict definition. To visitors, much of this area may seem like wilderness compared to much of the Northeast. For those living or working in or near the mainland portion of the jurisdiction, however, logging roads and active timber harvesting clearly identify the region as a working landscape important to the state's forestry industry and recreation industry. Historically, much of the jurisdiction has been referred to as the "wildlands" or the "North Woods" of Maine.

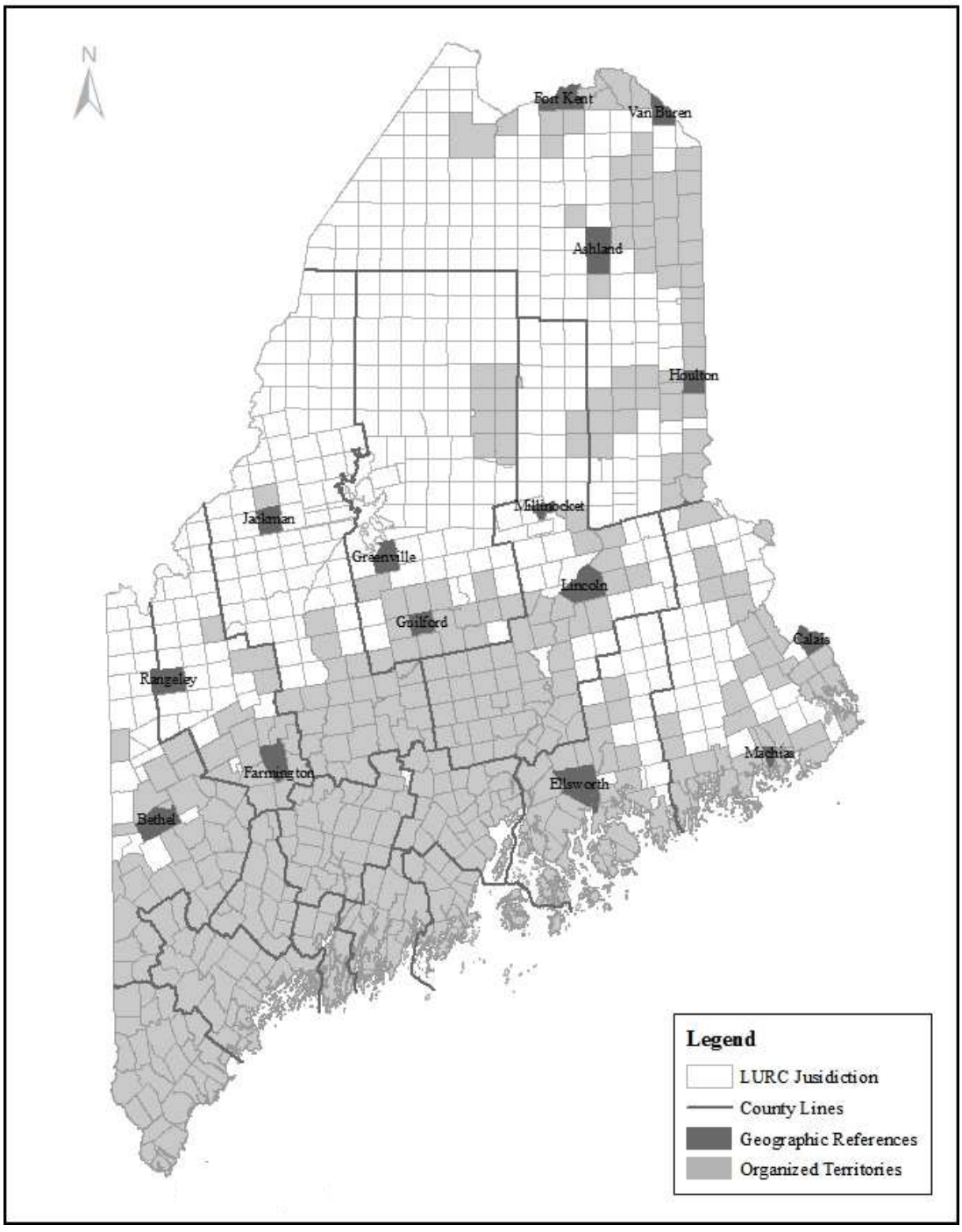
In 1971, and still today, the responsibility of guiding land use in the jurisdiction represents a unique challenge. The jurisdiction encompasses the largest, contiguous undeveloped area in the Northeast. The most striking features of the area are the forest — diverse in appearance because it is actively managed for timber — and the general absence of development. The natural world dominates the region, and the landscape is made intriguing by high mountains, pristine lakes and streams, wetlands and abundant wildlife. Settled areas and many of the conveniences of modern life are generally a long distance away. While the area has an extensive private land management road network, it has few public roads and is sparsely populated. Most development is concentrated along the edge of the jurisdiction, adjacent to more populous areas where services are more accessible.

[1] While the first LURC law was passed in 1969, that law was so significantly rewritten two years later, 1971 is now considered to be the effective date of the current statute. The Commission's jurisdiction also includes several towns which have organized and chosen not to assume local land use controls and, thus, remain within the Commission's jurisdiction.

The North Woods have always possessed a powerful mystique. Residents and visitors alike place a premium on the natural values they find there. Even those who never visit the area value its uniqueness and consider it an important part of the state's identity.

Map 1 – The Jurisdiction

REGULATORY JURISDICTION
OF THE MAINE LAND USE REGULATION COMMISSION



2.2 Structure and Function of the Commission

2.2.A THE COMMISSION AND STAFF

The Commission is a seven-member, independent board. Its members are appointed by the Governor and confirmed by the Legislature. While administratively LURC is a bureau within the Department of Conservation, under the law the Commission has independent policy and decision-making authority. The Commission has ultimate responsibility for rules, adjudications, policies and other agency decisions. These responsibilities include considering and adopting new rules and amendments to the Comprehensive Land Use Plan, acting on zoning petitions and important permit applications, acting as an appellate board to hear appeals of staff decisions on more routine permit applications, ratifying the administrative resolution of enforcement actions, and setting agency policy. The Commission generally meets monthly to consider pending business and holds public hearings as needed. Commission members hold staggered, four-year terms. Each of the members of the Commission must (1) reside in the Commission's jurisdiction, (2) be a former resident or be retired after working within the Commission's jurisdiction for a minimum of 5 years, or (3) have expertise in commerce and industry, fisheries and wildlife, forestry or conservation issues as they affect the Commission's jurisdiction. At least three Commission members must be residents of the jurisdiction.

Commission Meeting

A small staff carries out administrative, operational and other functions of the Commission. As the primary instrument of the Commission, the staff carries out its responsibilities guided by the Commission's policies. The staff operates under the supervision and oversight of a Director, who is appointed by the Commissioner of the Department of Conservation with the approval of the Commission members. The Director acts on routine permit applications delegated to staff by the Commission and is responsible for making staff recommendations to the Commission on matters that come before it. The Director reports and is responsible to the Commission in executing the Commission's policy decisions. The Director also reports and is responsible to the Commissioner of the Department of Conservation in connection with administrative matters affecting the agency. On matters where these responsibilities overlap, the Director provides a bridge of communication between the Commission and the Commissioner of the Department, and keeps the Commissioner informed of the Commission's work.

The staff of the agency is organized into three operational divisions: Administration, Planning, and Permitting and Compliance.

- **The Administration Division** provides primary administrative support to the Commission and the staff, including scheduling Commission meetings and hearings.

- **The Planning Division** is staffed by a Division Manager, several planners, and a GIS coordinator. This division coordinates the development of land use policy for the jurisdiction. Its responsibilities include advising the Commission on zoning approaches; tracking natural resource and other information; researching and analyzing land use and other issues; developing policies; revising and updating the Comprehensive Land Use Plan, zoning maps, land use standards and other rules; and assisting in the review of major projects. The division also directs LURC's educational efforts, including public outreach workshops and publications (in conjunction with the permitting and compliance division), updates operational procedures, coordinates legislative activities and frequently represents the Commission on interagency matters.

  Much of the planning staff's work involves identifying and researching emerging issues and developing appropriate responses. Examples of this work include the innovative lake management program adopted in 1990, deer yard study and associated program changes in 1991, the prospective zoning plan for the Rangeley area in 2001, and a guidance document clarifying the rezoning criterion of “demonstrated need” in 2004. The planners also oversee the preparation of resource plans which enable specialized management of unique features or resources and provide greater flexibility to landowners.

- **The Permitting and Compliance Division** is staffed by a Division Manager and regional representatives. The division’s primary function is the processing and review of applications for development and rezoning activities that require a permit in the jurisdiction. The staff also provides on-site assistance, conducts inspections and enforces LURC regulations through a program of compliance checks of approved projects and regular monitoring of activity for potential violations. The staff processes over 1,000 applications each year, including applications for building permits, building permit amendments, development permits (commercial and industrial development), subdivision permits, rezoning petitions, forestry

permits, variance requests and other specialized permits (e.g.. hydropower, utility line, and stream alteration permits). The staff is delegated the authority to approve or disapprove routine permit applications, but all rezoning changes and variance requests must be acted on by the Commission based on information provided by the staff. The Permitting and Compliance Division also carries out educational activities, including training contractors, loggers, realtors and others in appropriate land use practices.

The Commission has facilitated permitting and compliance activities and improved service to applicants by establishing a staff presence in regional offices. It now has a total of five regional offices located in Ashland, Greenville, Bangor, East Millinocket and Rangeley. Each office is staffed by one or more regional representatives, who carry out both permitting and compliance tasks for their respective regions.

2.2.B COMMISSION RESPONSIBILITIES AND REGULATORY FRAMEWORK

The Land Use Regulation Law, the Commission's enabling statute, directs the Commission to plan, zone, implement land use standards, review permits and carry out associated responsibilities to include implementing certain federal as well as other state environmental regulations. In practice, the Commission is similar to a local planning board except that the area of its responsibility is vast in comparison to municipalities. In essence, it plans regionally and implements locally.

Zones and land use standards are the primary mechanism for implementing the Commission's goals and policies. These goals and policies, and much of the information on which they are based, are contained in this Comprehensive Land Use Plan, the Commission's primary policy document.

Land Use Districts

In accordance with its enabling statute, the Commission has established zoning districts, many of which are resource-based, to protect important resources and prevent conflicts between incompatible uses. These districts identify what types of activities are appropriate and allowed in each zone. Interim zoning was first established for areas in the jurisdiction during the 1970s. Permanent zoning maps were finalized and adopted between the late 1970s and early 1980s. Today, the Commission administers a land use zoning program for 420 townships, 32 plantations, 8 organized towns and more than 700 coastal islands.

Districts are grouped into three general categories: management, protection and development. The Commission has sub-categorized these districts into ten development subdistricts, three management subdistricts, and 14 protection subdistricts (Table 1). Approximately 79% (8.2 million acres) of the jurisdiction lies in Management Subdistricts, 21% (2.17 million acres) in Protection Subdistricts, and less than 1% (41,000 acres) in Development Subdistricts.

Management subdistricts are applied to areas that are appropriate for commercial forest product or agricultural uses and for which future development is not anticipated. The General Management (M-GN) Subdistrict is the most significant subdistrict in terms of size. The purpose of the M-GN Subdistrict is to permit forestry and agricultural management activities to occur with minimal interference from unrelated development. The M-GN

Subdistrict generally excludes land uses involving large-scale processing of materials. However, it allows specific smaller-scale natural resource-based processing (e.g., maple syrup processing, small sawmills, and mineral exploration and extraction) and a number of other uses, such as low-impact recreational uses (e.g., sporting camps). The M-GN Subdistrict allows single- and two-family dwellings but generally prohibits subdivision except for level 2 subdivisions (small-scale subdivisions that meet certain criteria in the Commission's rules and are located in specified minor civil divisions ("MCDs")).

Protection subdistricts are applied to areas where land use activities may jeopardize identified significant natural, recreational or historical resources. The Commission allows low-density residential development in a number of protection subdistricts. All protection subdistricts, except the Mountain Area Protection (P-MA), Wetland Protection (P-WL), Soils and Geology Protection (P-SG) and Recreation Protection (P-RR) Subdistricts, generally allow single- and two-family dwellings by permit or as special exceptions. The Resource Plan Protection (P-RP) Subdistrict may allow residential subdivisions as part of a concept plan.

Development subdistricts are applied to areas that have patterns of concentrated residential, recreational, commercial or industrial use, including commercial removal of minerals or other natural resources, and areas identified as appropriate for designation as development subdistricts. There are currently five types of development subdistricts that are applied throughout the jurisdiction:

- Residential Development (D-RS) and General Development (D-GN), allow residential subdivisions and a range of residential uses, the most common form of development in the jurisdiction.

- The Commercial Industrial (D-CI) Subdistrict allows larger-scale commercial and industrial projects.

- The Maritime Development (D-MT) Subdistrict reserves working coastal waterfronts primarily for water-dependent uses.

- The Planned Development (D-PD) Subdistrict accommodates large-scale development that depends upon a particular natural feature or location and therefore may be some distance from existing, developed areas. The large-scale development proposed for D-PD zones sometimes includes a mix of uses, including residential subdivisions and a range of residential uses.

In 2000, the Commission created five new development subdistricts as part of its prospective zoning effort in the Rangeley region ("Rangeley PZP"). Generally, these new subdistricts are variations of existing zones, but incorporate more explicit requirements regarding where they can be applied and what uses are allowed. To date, the Commission has limited the application of these zones to areas undergoing prospective zoning efforts. Further discussion of these subdistricts and the Rangeley PZP is included in Appendix D.

Table 1 – Land Use Subdistricts

GENERAL DESCRIPTION OF THE COMMISSION'S PROTECTION, DEVELOPMENT AND MANAGEMENT SUBDISTRICTS[2]

Management Subdistricts		
M-GN	General Management Subdistrict	Covers areas of the jurisdiction not otherwise zoned, where forest and agricultural activities are allowed and encouraged without significant restriction.
M-HP	Highly Productive Management Subdistrict	Identifies highly productive agricultural or forest lands.
M-NC	Natural Character Management Subdistrict	Maintains large areas for forestry and primitive recreation with minimal development.
Protection Subdistricts		
P-AL	Accessible Lake Protection Subdistrict	Protects accessible, undeveloped, high value lakes.
P-AR	Aquifer Protection Subdistrict	Covers important groundwater resources.
P-FP	Flood Prone Protection Subdistrict	Covers areas within the 100 year frequency flood.
P-FW	Fish and Wildlife Protection Subdistrict	Covers important deer winter shelter areas, coastal seabird nesting sites and can be applied to other significant plant and animal habitat.
P-GP	Great Pond Protection Subdistrict	Applies to a 250 foot wide strip around most lakes and ponds greater than 10 acres in size.
P-GP2	Semi-Remote Lake Protection Subdistrict	Applies to select lakes valued for their semi-remote character and determined to be suitable for limited development.
P-MA	Mountain Area Protection Subdistrict	Covers mountainous areas above 2,700 feet elevation.
P-RP	Resource Plan Protection Subdistrict	Permits landowners to develop a resource management plan for an area and, if approved by the Commission, allows land use activities in accordance with such plan.
P-RR	Recreation Protection Subdistrict	Covers areas along existing hiking trails, significant canoeing rivers, around unspoiled, remote fishing ponds, and other areas of recreational significance.

[2] While the gray highlighted subdistricts have, to date, only been applied to areas that have undergone a prospective planning process, the Commission may consider applying these zones to other parts of the jurisdiction in the future.

Protection Subdistricts (continued)

P-RT	Special River Transition Protection Subdistrict	Applies to developed shorelines on outstanding river segments in areas of the jurisdiction adjacent to organized towns.
P-SG	Soils and Geology Protection Subdistrict	Covers areas of steep slopes and unstable soils.
P-SL	Shoreland Protection Subdistrict	Protects shorelands of rivers, streams, ocean, and small ponds.
P-UA	Unusual Area Protection Subdistrict	Applies to unusually significant scenic, historic, scientific, recreational and natural areas not adequately protected by other zoning.
P-WL	Wetland Protection Subdistrict	Encompasses all submerged lands and other areas meeting wetland criteria.

Development Subdistricts

D-CI	Commercial and Industrial Development Subdistrict	Applies to areas around existing patterns of major commercial or industrial development that are incompatible with residential uses.
D-ES	Extended Settlement Development Subdistrict	Applies to areas around a wide range of commercial, light manufacturing, and public uses that are incompatible with residential uses and community centers.
D-GN	General Development Subdistrict	Covers areas around existing patterns of mixed, residential and small scale, commercial development.
D-GN2	Community Center Development Subdistrict	Applies to areas characterized by a mix of compatible residential, commercial, and civic uses.
D-GN3	Rural Settlement Development Subdistrict	Applies to small isolated residential settlements.
D-MT	Maritime Development Subdistrict	Provides for working waterfronts in coastal communities.
D-PD	Planned Development Subdistrict	Provides for special planned developments.
D-RS	Residential Development Subdistrict	Covers areas around existing patterns of residential development.
D-RS2	Community Residential Development Subdistrict	Covers areas that integrate home-based occupations, residential dwellings, and public uses that occur in a rural residential area.
D-RS3	Residential Recreation Development Subdistrict	Covers areas dedicated principally to seasonal and year-round residences and applies a restricted range of uses.

Land Use Standards

In addition to zoning the jurisdiction, the Commission has established land use standards to ensure that land uses and development will not have an undue adverse effect on existing uses and resources. The land use standards, first adopted in 1977, establish dimensional and performance standards for development as well as other land use activities. They address considerations such as dimensional and setback requirements for structures, subdivision and development standards, timber harvesting practices near water bodies, and clearing of vegetation in the shoreland zone.

LURC's zoning requirements and land use standards are contained in Chapter 10 (Land Use Districts and Standards) of the Commission's regulations.

Administration

Zones and land use standards are administered principally through permit review and notification procedures. Permit review is the process of reviewing a proposed activity to ensure that it meets the Commission's zoning and land use standards. The LURC statute stipulates that all development activities require a permit unless expressly exempted by statute or LURC regulations. The Commission reviews over 1,200 permit applications every year, including permits to build individual camps, create subdivisions and construct large, commercial developments. Notification procedures apply to certain land management activities, such as timber harvesting. These activities may be conducted without a permit provided written notice is provided to the Commission and certain performance standards are followed. The Commission receives approximately 800 notifications each year.

Zoning, land use standards and the permit review process are the primary tools provided to the Commission by the Legislature for carrying out its statutory mandate. These tools are accepted as a reasonable and appropriate means of protecting the public interest and guiding growth and development. The Commission recognizes that these regulatory tools can affect land value, both positively and negatively. The Commission is committed to exercising its authority fairly, responsibly, and with consideration to the interests of landowners, within the framework provided by its legal mandate.

The Commission complements its regulatory program with efforts to educate the public about appropriate, well-planned uses of land. Toward this end, the Commission conducts outreach workshops and develops and distributes publications about its programs.

2.2.C LANDOWNER INITIATIVES AND COOPERATIVE EFFORTS

Of necessity, in its early years, the Commission focused on setting up appropriate regulatory programs in accordance with its statutory mandate. Nevertheless, it has always recognized the value of cooperative approaches to the protection of important resources and values and will continue to seek out opportunities for such cooperation.

Over the years, numerous landowners have utilized the Resource Plan Protection (P-RP) Subdistrict (a landowner-initiated zone) as a more flexible alternative to LURC's traditional zoning framework. During the 1980s, several major landowners cooperated with the Commission on a small streams mapping project to

improve the accuracy of LURC zoning maps. A number of landowners have developed or considered landowner-initiated concept plans that address the long-range development and conservation of large blocks of land in a manner that accomplishes both Commission and landowner objectives. Likewise, several resource plans have been developed by groups of landowners for the management of certain high-value rivers, including the St. John River and the Penobscot River.

St. John River Resource Plan Advisory Committee, Annual River Trip, 1997

The Commission recognizes that many actions taken by landowners advance its objectives. Examples include the following:

- The former Great Northern Paper, Inc. designated several "remote recreation areas" where recreational vehicular access is limited to maintain traditional uses and remote character. For example, a large area comprising about 50,000 acres and 30 lakes and ponds in the Debsconeag Lakes region is managed as a remote recreation area.

- Project SHARE, a voluntary association of landowners, businesses, government officials, educators, and conservation organizations, takes actions which conserve or enhance Atlantic Salmon habitat and populations in the Downeast region of Maine.

- Several major landowners have developed long-term management agreements with the Department of Inland Fisheries and Wildlife ("DIFW"), establishing protections for deer wintering areas that go well beyond areas protected by the Commission's zoning.

- Several landowners have developed resource protection plans in conjunction with Commission review and approval to provide for more efficient management of resources. Examples include the St. John River Plan, The Penobscot River East Branch Plan, and the Penobscot River Lower West Branch Plan.

- A large tract in the Rangeley area was protected from development but retained for timber production and other purposes by selling the development rights under the federal Forest Legacy Program.

- Approximately 1.4 million acres of land in the jurisdiction have been placed under conservation easement protections through the sale of development rights by several landowners in the jurisdiction. An additional 1.2 million acres has been purchased or donated for conservation ownership.

Many other examples of cooperative, nonregulatory initiatives exist. The Commission will continue to strongly encourage landowner initiatives and cooperative efforts that take advantage of the flexibility and creativity available through nonregulatory measures as well as optional regulatory tools which further the Commission's vision for the jurisdiction.

2.2.D THE COMMISSION'S CONSTITUENCY

The Commission differs from a local planning board in that its jurisdiction extends over multiple townships, plantations and towns. In organized communities, planning boards are ultimately responsible to the town's legislative body — usually town meeting or municipal councils. The Commission, on the other hand, is ultimately responsible to the people of Maine through legislators and the Governor.

The powers and functions given to the Commission under state statute are declared to be "in the public interest, for the public benefit, for the good order of the people of this state, and for the benefit of property owners and residents." The statute charges the Commission with "encourag[ing] the appropriate use of these lands by residents of Maine and visitors, in pursuit of outdoor recreation activities..."

In light of this statutory language, the Commission has historically viewed its constituency broadly. In making land use decisions affecting particular communities, the Commission strives to be sensitive to the concerns of local residents. But this is not its sole constituency. Many property owners within the Commission's jurisdiction do not reside there. Residents of organized areas may work in the jurisdiction or have other economic ties to the region and its resources. The recreating public also has a strong interest in the jurisdiction. In public forums concerning planning, zoning and permitting, the Commission strives to balance the concerns of these various constituencies.

2.2.E THE COMMISSION'S RELATIONSHIP TO OTHER GOVERNMENTAL ENTITIES

The Commission is the primary governmental agency responsible for land use planning and resource protection within its jurisdiction, but several other state and federal agencies administer statutes that deal, directly or indirectly, with land and resource use throughout Maine. A number of agencies have limited

jurisdiction over specific resources or types of land use in the jurisdiction. In most cases, their responsibilities are distinctly different from the Commission's responsibilities. These responsibilities are briefly explained, below.

Department of Environmental Protection

The Maine Department of Environmental Protection ("DEP") administers a broad range of environmental protection and pollution control regulations governing activities that affect natural resources. DEP's Bureau of Land and Water Quality administers the Site Location of Development Law ("Site Law"), the Natural Resources Protection Act ("NRPA"), and the Maine Waterway Development and Conservation Act ("MWDCA").

Although, under Site Law, DEP is responsible for reviewing specific large projects elsewhere in the state, DEP's authority within the jurisdiction is limited to metallic mineral mining for which DEP and LURC jointly administer specialized rules. Under legislation enacted in 2001, DEP may review projects in the Commission's jurisdiction under Title 38 of the Maine Statutes for permitted uses in affected zones that extend into organized towns (e.g., pipelines and transmission lines).

NRPA directs DEP to protect significant natural resources such as rivers, lakes, fragile mountain areas, wetlands, significant wildlife habitat and coastal sand dunes. This Act applies statewide, although the Commission has been given the authority to administer it within its jurisdiction. Under direction from the Legislature, the Commission must periodically review and revise its standards to make them consistent with NRPA so that activities in the Commission's jurisdiction will be regulated similarly to those outside the jurisdiction.

MWDCA authorizes a single permit for hydropower projects. LURC or DEP is the permitting agency for proposed hydropower projects and associated water quality certifications located wholly within the area of each agency's jurisdiction. DEP is the permitting agency where a proposed project overlaps both jurisdictions. DEP also issues water quality certifications for federal relicensing permits for existing dams in the state, including such permits within the Commission's jurisdiction, and is responsible for setting water levels on dam-controlled lakes and ponds within the jurisdiction, except those permitted under MWDCA.

Department of Health and Human Services

The Department of Health and Human Services ("DHHS") oversees the administration of a statewide plumbing code. LURC is not involved in the administration of the plumbing code, most of which is done by locally designated plumbing inspectors, but the LURC staff usually checks permit applications for consistency with plumbing code requirements. DHHS is also responsible for licensing all public water supply systems (i.e., any system serving 25 or more people) and issues bulk water transport licenses for certain major water users.

Maine Forest Service

The Maine Forest Service ("MFS") administers the state's forest practices laws, which regulate certain aspects of timber harvesting practices. Under this program, MFS monitors forest management activity through reporting requirements and administers standards for forest regeneration, clearcutting, and liquidation harvesting. MFS could also assume regulation of forest practices near water bodies within the jurisdiction if a

specified number of organized towns adopt statewide forestry standards approved by the Legislature in 2005. Further discussion of this legislation can be found in Section 5.6.

Department of Inland Fisheries and Wildlife

The Maine Department of Inland Fisheries and Wildlife ("DIFW") administers the Maine Endangered Species Act, which can affect land use activities in the jurisdiction. DIFW has mapped "essential habitat" — areas essential to the conservation of an endangered or threatened species. Any activity proposed in these areas that requires a permit or license from a state agency or municipality also requires a determination by DIFW that the activity will not significantly alter or unreasonably harm the essential habitat.

Except for activities affecting essential habitat, DIFW generally functions as an advisor to LURC, providing technical assistance to the Commission but having no permitting authority itself. DIFW supplies LURC with information about the location of important terrestrial and aquatic habitats (including deer wintering areas, coastal nesting sites and remote ponds) so that the Commission can consider them for protective zoning.

Other Agencies

A number of agencies serve as "review agencies" for certain permit applications that come before the Commission. These agencies review permit applications for impacts based on their area of expertise and submit comments and recommendations for the Commission's consideration.

For example, the Maine Historic Preservation Commission evaluates impacts on historical and archaeological sites, DEP assesses the impact of subdivisions on lake water quality, DIFW evaluates whether proposed activities would adversely affect fisheries or wildlife resources, the Maine Natural Areas Program evaluates impacts on rare botanical features, and the State Soil Scientist evaluates erosion control measures and soil suitability.

County and local governments also review permit applications for projects proposed within their jurisdictions. County Commissioners and town and plantation officials generally evaluate proposals for potential impacts on regional or local facilities and services.

Federal involvement in land use regulation within the jurisdiction is limited mainly to the U.S. Army Corps of Engineers' jurisdiction over wetlands. However, the U.S. Army Corps of Engineers as well as the U.S. Environmental Protection Agency and the U.S. Fish and Wildlife Service serve as review agencies for certain permit applications.

The comments and recommendations of these agencies are advisory. Ultimately, the Commission considers the information in the context of its statutory and other review criteria and makes a decision as to the significance of natural and cultural resources and the impact proposed activities will have on them.

2.3 The Commission – Past, Present and Future

Since its creation in 1971, the Commission has accomplished a great deal:

- Over 500 zoning maps, covering 10.4 million acres, have been created for the 459 townships, towns and plantations within the jurisdiction. New zoning maps have been developed from improved base maps. And, in 2005, the Commission completed a 15-year effort to make its zoning available in digital format and accessible to the public through an internet mapping site.
- The Comprehensive Land Use Plan, first adopted in the mid-1970s, establishes policies to guide the Commission's work. This document represents the fourth complete review and update of the plan and is designed to ensure that the Commission's policies are appropriate in the context of changing conditions and priorities.
- The Commission's Land Use Districts and Standards (Chapter 10), first adopted in 1977, contain the Commission's zoning and land use standards. This document has been revised periodically to improve the standards and to respond to the changing needs of the jurisdiction.
- In the late 1970s, the Commission prepared six Land Use Handbooks aimed at educating the Maine public about land use planning and design. These handbooks won the Meritorious Program Award from the American Planning Association.
- In the early 1980s, the Commission developed guidelines for erosion control on forestry operations. These guidelines subsequently became the model for the best management practices for forestry that were developed for the entire state in 1995.
- In 1987, the Commission and DEP adopted joint hydropower regulations to facilitate administration of the Maine Waterway Development and Conservation Act.
- In 1988, LURC established regional offices, adding three more in the mid-1990s. There are now offices in Ashland, Greenville, Bangor, East Millinocket and Rangeley. These offices dramatically improve the Commission's ability to provide on-site assistance, ensure compliance with its standards, and create new educational opportunities.
- A comprehensive lakes management program was developed following years of inventory and study of 1,500 lakes in the jurisdiction. In 1990, this program was implemented through adoption of a lake classification and management program designed to guide development to suitable lake locations and away from inappropriate locations. The Legislature subsequently used this classification system as a basis for identifying lakes on which personal watercraft ("jet skis") are banned.
- A comprehensive review of the deer wintering area program was undertaken, and changes to the program were adopted in 1991. The fundamental structure and function of the program was unaltered, but the program was improved by defining its scope and improving the basis for decision-making.

- In 1991, comprehensive metallic mineral mining rules were adopted jointly with DEP. They included technical rules pertaining to exploration and mining activities and revisions to the Land Use Districts and Standards which allow the rezoning of areas associated with mining activities.

- In 1992, *A Guide to Creative Site Planning in the Unorganized Areas of Maine* was prepared to provide pre-application guidance on site/development design to those who intend to subdivide and develop land in the Commission's jurisdiction.

- A number of resource protection plans have been developed jointly with landowners to both meet the resource protection objectives of the Commission and provide land management flexibility for landowners. These include resource plans for Dix Island (1977), Hewett Island (1978), Penobscot River (1981, renewed in part in 2002), St. John River (1982, renewed 1992 and 2002), White Mountain National Forest (1982, renewed 1992 and 2008) and Metinic Island (1992,1994).

- In 1993, the first concept plan was approved for a 17,000-acre area in Attean Township and Dennistown Plantation. This plan received the planning project of the year award from the Maine Association of Planners. Since then, concept plans have been approved for First Roach Pond, portions of Brassua Lake and Kingsbury Plantation, and all or portions of 26 minor civil divisions in Somerset and Piscataquis counties more or less surrounding Moosehead Lake. The concept plan is an innovation that fulfills the Commission's goals of encouraging landowner-initiated, long-range natural resource-based planning as an alternative to incremental, haphazard development.

- Planning assistance has been provided to 10 plantations or towns that were originally within the Commission's jurisdiction, but opted to prepare and administer their own plans and regulations. The Commission also worked with residents of Benedicta, Greenfield, Madrid and Centerville to prepare zoning maps for these townships when they deorganized and entered the Commission's jurisdiction. The maps serve as the basis for Commission decision-making in those MCDs.

- Planning assistance was provided to Monhegan Plantation in 1991 to prepare a land use and natural resource inventory and analysis. This report assists the Commission and Plantation officials in carrying out their respective responsibilities for the community. Commission staff also assisted Monhegan Plantation in applying for and receiving a grant to improve public facilities on the Island.

- In 1994, the Commission developed conservation easement holder guidelines and a model conservation easement to serve as the basis for easements that come before the Commission as part of regulatory actions. These guidelines and the attendant model conservation easement were updated in 2004.

- In 2000, the Commission adopted a prospective zoning plan for 10 MCDs surrounding the Town of Rangeley ("Rangeley PZP"), the Commission's first land use plan developed for a subregion of the jurisdiction. Together with rule changes and new zoning maps developed specifically for the subregion, the Rangeley PZP incorporates a long-term vision for the region and a 20-year strategy for guiding the desired types of future development to designated areas in the Rangeley area.

- In 2001, the Legislature effectively eliminated the 40-acre exemption to the Commission's subdivision definition at the request of the Commission. This exemption had been a major obstacle to the Commission's ability to direct development to appropriate areas through its subdivision review process.

- In 2004, the Commission approved several major changes to the way in which it regulates major developments. Specifically, the Commission adopted (1) a guidance document clarifying the "demonstrated need" criterion applied to rezoning petitions; (2) a two-tier level of subdivision review to simplify the review process for small-scale, appropriately located subdivision proposals; and (3) development standards for all aspects of major development, including rules governing the layout and design of subdivisions.

- Each year, the Commission has acted upon hundreds of applications for development and other land use activities, approving the vast majority (over 90%). These permits are often approved with special conditions to prevent environmental degradation.

As evidenced by its history of accomplishment, the Commission's focus has shifted over the years in response to changing needs and new challenges. In its first decade, the Commission developed a planning and zoning framework for the unorganized areas, implemented interim zoning over its jurisdiction and established its major natural resource and development policies. In its second decade, with its regulatory framework in place, the Commission turned to fine-tuning its standards and addressing emerging issues. The major issues of this period were the spruce budworm outbreak, debate over conservation versus use of rivers and, in the latter years, significant changes in the amount and nature of development activity occurring in the jurisdiction. The surge in development activity associated with the land and real estate boom of the late 1980s commanded the Commission's attention in the early 1990s.

Over the last decade, demand for residential development has continued at a steady rate, corporate priorities and forestry operations are changing and land ownership patterns are shifting. An unprecedented amount of forestland has changed hands in recent decades. These land transactions are especially of concern because they come at a time when forestland is being viewed as an increasingly valuable commodity for nonforestry uses. Even though much of the acreage remains in forestry use, the growing volume of land transactions and increased use of land for development rather than forestry purposes has shaken the traditional vision of the region as one of stable ownership and land use patterns.

The jurisdiction has experienced periods of active land trading and speculation in the past, but these transactions always involved large parcels of land, the future use of which was not limited or predisposed by size. Recent land transactions have included many smaller parcels, use of which is more limited, with significant implications for future land use patterns.

The last two decades indicate that there is a high level of interest in land and housing in remote regions of the state. Some of this development has taken the form of coordinated subdivision proposals, but the majority is occurring as individual dwellings. Concurrently, there has been a growing interest in the natural resource values of lands in the jurisdiction, as demonstrated by the acquisition of large-scale conservation easements on approximately 1.6 million acres of the jurisdiction.

Looking to the future, the Commission's focus will likely continue to be dominated by its review of development proposals and questions of appropriateness in terms of location, scale and relation to existing uses and resources.

Chapter 3
The Jurisdiction

The Commission's jurisdiction encompasses 10.4 million acres of Maine. The area extends across northern Maine to the New Hampshire border in the west, to the Canadian provinces in the north and south to the rocky shores of Downeast Maine. It also includes a collection of townships, towns and plantations in inland southern central Maine, as well as coastal island communities, and uninhabited islands. Known historically as Maine's wildlands, this vast landscape is the largest block of undeveloped forestland in the Northeast — larger than Massachusetts and Connecticut combined. While forestry and recreation remain the dominant uses, the jurisdiction is largely undeveloped and parts of it remain relatively inaccessible. It is largely free of the state routes and populous communities that intersperse the nearest comparable area, New York State's six million acre Adirondack Park.

The jurisdiction is a unique natural area with a distinct character. Links to the past remain strong, and the area's natural resources continue to shape its use and value in the future, with forestry and recreation remaining dominant uses. While much of the land is actively managed for timber, many areas are left undisturbed for 10 to 80 years at a time. Its clean air and water, diverse natural communities and abundant wildlife draw thousands of seasonal residents and outdoor enthusiasts each year.

West Forks Plantation

3.1 Physiography

The jurisdiction is a quietly spectacular land of high mountains, vast forests, swift streams and major rivers, expansive lakes and jewel-like ponds, and a host of unique natural areas. Despite the signs of human activity evident in settlements, logging roads, harvested areas and skid trails, the natural world remains the dominant presence here, and its features have long played an important role in the state's cultural and economic heritage.

The area spans several physiographic regions and encompasses lands of considerable physical diversity, including coastal lowlands and islands, river valleys, rolling hills, mountains and a broad plateau. The terrain ranges from relatively flat to mountainous with elevations generally above 600 feet. Mount Katahdin, a major landmark in central Maine, marks the northern extremity of the Appalachian Mountain chain which stretches northeast across the state from the New Hampshire border. These mountains occupy the western part of the jurisdiction and are flanked to the north by a region of rolling hills, which encompasses the watersheds of the St. John and Allagash rivers. An open, gently rolling landscape dominates northeast and central areas of the jurisdiction and includes some good farming soils. To the southeast, small mountains parallel the Downeast coast, presenting a marked contrast to coastal lowlands.

Water is abundant in the jurisdiction. Over 21,000 miles of rivers and streams flow through the area, including the headwaters of most of the state's large rivers. Some of the larger rivers — the Penobscot, Kennebec, Androscoggin, and St. John — have important historic and cultural values because of their roles in settlement and the economy. For centuries, these rivers served as the lifelines of interior settlements, provided transport for raw materials and supplied unlimited power to industry. Today, they continue to provide hydropower, as well as fisheries habitat and recreational opportunities. The extensive river systems in the jurisdiction are generally the most pristine in the state and provide some of the best remote canoeing experiences in the Northeast.

Past glacial activity has left the jurisdiction with a profusion of lakes. Over 2,600 lakes and ponds dot the landscape, providing a total of more than 622,000 acres of surface water. These water bodies range from ponds of less than an acre to Moosehead Lake, the state's largest lake spanning 75,470 acres. The vast majority of these lakes has excellent water quality and are a significant recreational resource. The jurisdiction contains a diverse array of lakes, but the most highly treasured are its remote ponds — inaccessible, undeveloped lakes that offer a remote recreational experience which is not easily found in the Northeast.

The forest, covering over 95% of the jurisdiction, is central to the region's history, economy and way of life and is its defining characteristic. The soils and climate are well suited to growing trees. Spruce-fir and northern hardwoods are the dominant forest types, both of which are valuable for the manufacture of paper, lumber and other wood products. The jurisdiction serves as the "wood basket" for the state's timber industry. The forest is also valued for many other reasons, including recreation, wildlife habitat, watershed protection and biodiversity.

3.2 Early Settlement

The region was first inhabited by Native Americans and many of its features bear the names given to them by these first residents — Passadumkeag, Nesowadnehunk, Caucomgomoc, Mooselookmeguntic, Chesuncook. European explorers came in the 17th century to cut the white pine of coastal areas. Since that time, natural resources have dominated the history of Maine's more remote regions. The first settlements were simply isolated outposts producing fish, fur and timber for distant markets. It was presumed that, once timber and other resources had been utilized, the northern reaches of the state would eventually be settled for agriculture, but agricultural settlement largely bypassed the jurisdiction for a variety of reasons. Northern Maine's harsh winters and short growing season discouraged many potential settlers, and the discovery of rich soils in the west lured many settlers from the east. Agricultural settlements advanced southward from the St. Lawrence River Valley but, with the exception of settlements in Aroostook County, were slowed by establishment of the U.S.-Canadian border in 1842 by the Webster-Ashburton Treaty.

While these factors discouraged agricultural settlement, the development of the paper-making process using wood cellulose in 1867 precipitated the rise of forest management, which, with the existing pattern of large land holdings, solidified the region's attractiveness for natural resource utilization. Since that time, forest management has remained the dominant use of land, as well as the backbone of the Maine economy.

Settlement patterns in the region are closely linked to resource utilization. The earliest settlements were located along rivers used to transport timber. Later, the paper-producing companies established themselves near the major rivers — convenient sources of power — on the edge of the vast wood supply. Development did not spread much beyond these one-factory towns. Since most land was held in large ownerships and the rivers provided a mode of transport for logs, there was little impetus for developing roads and other infrastructure that might have spurred settlement.

3.3 Development and Land Use Patterns

The jurisdiction today continues to be distinguished by a lack of public roads and infrastructure. A handful of state routes pass through sections of the jurisdiction, but none passes through the heart of it. Nevertheless, the region has become more accessible over the years. The first dramatic change came with the construction of logging roads in the 1960s and 1970s as use of the rivers for log transport was phased out. Thousands of miles of haul roads have been constructed since 1971, many of which are maintained on a permanent basis. These roads opened up areas that were previously accessible only by canoe or by foot.

The publication of maps showing the region's extensive logging road network has further increased accessibility and public use. Some roads are gated or blocked to prevent their use by recreationists, although a majority are open to the public. Thousands of people now use these roads to take advantage of the wide variety of recreational opportunities, including fishing, hunting, hiking, camping, whitewater canoeing and rafting, snowmobiling and skiing. Water-related recreation and associated shoreline development are increasing along with other forms of recreation, such as downhill skiing and motor home camping.

The most common form of development in the jurisdiction is residential development. Types of residential development include primitive hunting camps, seasonal cottages, second homes and year-round residences. The overall density of residential development in the jurisdiction is roughly one dwelling per square mile. Historically, year-round housing has been concentrated in plantations, towns and townships on the edge of the jurisdiction near job and population centers. Seasonal housing has been concentrated near lakes and other high-value recreational resources.

Few commercial or industrial facilities are located in the jurisdiction, as nearby towns generally provide services and employment. Much of the commercial development in the area is recreation-based: sporting camps, campgrounds, ski areas, rafting operations and other businesses supporting recreational activities. Some general services such as gas stations and general stores also exist. Most industrial development in the jurisdiction is related to wood production.

3.4 Civil Divisions

3.4.A MINOR CIVIL DIVISIONS

Three different types of minor civil divisions exist within the jurisdiction: townships, plantations and towns. The majority (420) are "unorganized" townships. Townships have no form of local government. Property taxation is administered by the state, and services normally provided by local government are funded by the state and contracted for by state and county government.

While towns and plantations have the right to administer land use controls, some have chosen to remain within the Commission's jurisdiction and authority. There are currently 32 plantations and eight organized towns in the jurisdiction (Table 2). Most are located near the edge of the jurisdiction. Plantations are similar to towns in terms of organization and procedures, but their responsibilities and authority are more limited in scope. The eight towns presently within the jurisdiction all organized in the years after LURC was established in 1971. Town government in these communities is no different from other Maine towns, except that jurisdiction over land use remains with the Commission until such time as these towns, individually, opt to assume local control.

Portions of twelve different counties are located in the jurisdiction. The bulk of the jurisdiction is within eight counties: Aroostook, Penobscot, Somerset, Piscataquis, Washington, Franklin, Oxford and Hancock Counties. Single plantations or townships are located in Lincoln, Knox, Sagadahoc and Kennebec Counties. In the unorganized townships, county governments provide or coordinate a number of basic services, including road maintenance and public safety.

The jurisdiction's boundaries are not static. Since its creation in 1971, more than two dozen townships, plantations, and towns have moved out of or into the Commission's jurisdiction through the processes of organization or deorganization. Since 1971, four minor civil divisions have been added to the jurisdiction through deorganization and ten minor civil divisions have gained local control. In addition, portions of several unorganized territories were annexed by adjacent towns (Table 3). This ebb and flow of the jurisdiction's boundaries is likely to continue in the future.

Table 2 – Towns and Plantations within the Commission's Jurisdiction

PLANTATIONS IN THE JURISDICTION

Aroostook County
- Cary Plt.
- Cyr Plt.
- Garfield Plt.
- Glenwood Plt.
- Macwahoc Plt.
- Moro Plt.
- Nashville Plt.
- Oxbow Plt.
- Reed Plt.
- Saint John Plt.
- Winterville Plt.

Franklin County
- Coplin Plt.
- Dallas Plt.
- Rangeley Plt.
- Sandy River Plt.

Knox County
- Matinicus Island Plt.

Lincoln County
- Monhegan Island Plt.

Oxford County
- Lincoln Plt.
- Magalloway Plt.

Penobscot County
- Carroll Plt.
- Drew Plt.
- Seboeis Plt.
- Webster Plt.

Piscataquis County
- Kingsbury Plt.
- Lake View Plt.

Somerset County
- Dennistown Plt.
- Highland Plt.
- Pleasant Ridge Plt.
- The Forks Plt.
- West Forks Plt.

Washington County
- Codyville Plt.
- Grand Lake Stream Plt.

TOWNS IN THE JURISDICTION

Aroostook County
- Hamlin
- Hammond

Hancock County
- Osborn

Penobscot County
- Chester (2,800 ac. portion)
- Lakeville
- Mount Chase

Piscataquis County
- Beaver Cove

Washington County
- Baring

Table 3 – Summary of changes to the boundaries of the jurisdiction (due to organization, deorganization and annexation of minor civil divisions)

MINOR CIVIL DIVISIONS REMOVED FROM THE JURISDICTION (EFFECTIVE DATE OF LOCAL CONTROL OR ANNEXATION)

Aroostook County
- Town of Allagash (local control, 1983)
- Town of Caswell (local control, 1999)
- Town of New Canada (local control, 1980)
- Town of Wallagrass (local control, 1988)
- Town of Westmanland (local control, 1981)

Franklin County
- Sugarloaf Township (annexed by Town of Carrabasset Valley, 1977)

Hancock County
- Town of Frenchboro (local control, 1981)
- Town of Great Pond (local control, 1981)

Lincoln County
- Town of Somerville (local control, 1978)

Penobscot County
- Portions of TA R7 WELS and T1 R7 WELS (annexed by Town of Millinocket, 1995)

Piscataquis County
- Portion of Cove Point (annexed by Town of Greenville, 1994)

Somerset County
- Brighton Plantation (local control 1990-1992, 1995)
- Town of Caratunk (local control, 1980)

MINOR CIVIL DIVISIONS ADDED TO THE JURISDICTION (EFFECTIVE DATE OF DEORGANIZATION)

Aroostook County
- Benedicta Township (deorganized 1987)

Franklin County
- Madrid Township (deorganized 2000)

Penobscot County
- Greenfield Township (deorganized 1993)

Washington County
- Centerville Township (deorganized 2004)

3.5 Communities

3.5.A COMMUNITIES WITHIN THE JURISDICTION

Within the jurisdiction, there are a number of communities with significant year-round or seasonal populations and distinct characteristics. These communities exist mostly within the organized towns and plantations in the jurisdiction, but several are in unorganized townships. Most are located on the edge of the jurisdiction, close to population centers, and dependent on larger towns or the county to provide services such as waste removal, education and fire control. These communities are usually traditional rural communities or recreational communities closely associated with large bodies of water and other natural resources.

Most traditional rural communities, such as Oxbow, originate from settlers' lots. Although heavily dependent on services from nearby organized towns, these communities have a strong sense of community and pride.

The economies of these small towns are based on forest products, agriculture and related services, and do not generally involve large industries. There is a secondary reliance on provision of services to hunters, anglers, snowmobilers and other recreationists. Up to about 1950, men worked on logging crews during the winter, on the farm during the summer and trapped or guided in the fall. Since that time, farms have steadily disappeared, employment has shifted more toward the forest products industry and more residents are driving to nearby population centers for jobs.

Dallas Plantation Municipal Office

Most of the jurisdiction's recreational communities are located near lakes and other water bodies. Rockwood Strip Township and Lake View Plantation are two typical examples. Much of the housing in these communities is seasonal and the local economies are geared to providing goods and services to seasonal residents and visitors. Many of the jurisdiction's recreational communities are long-established summer enclaves, but there are variations. For example, the area in the vicinity of The Forks and West Forks Plantations has an established seasonal community but, since the 1980s, has become a focal point for the commercial whitewater rafting industry. A number of rafting-related businesses are now located on the main state route running through the area. Several communities located near downhill skiing areas have housing and businesses geared to winter visitors. And increased interest in other winter recreational activities, such as snowmobiling, ice fishing and ski touring, has resulted in extended seasons in many traditional summer communities.

3.5.B COMMUNITIES NEAR THE JURISDICTION

A number of communities adjacent to the jurisdiction exert a strong influence on surrounding towns, plantations and unorganized townships within the jurisdiction. These communities provide jobs, goods and services to outlying areas, and a number serve as important gateways to the North Woods. While each of these communities has its own unique characteristics, most fall into one of three broad categories: (1) regional population/employment center, (2) smaller population/employment center, or (3) regional recreational center.

Millinocket and Lincoln are typical regional population/employment centers. Both have populations over 5,000 people, and offer a full range of local and regional services. Paper mills have historically been the major employer and economic base in these communities, but the trend is toward more economic diversity, including tourism. Surrounding areas within the jurisdiction sometimes serve as bedroom communities to these centers and provide residents of these towns with recreational opportunities.

Ashland and Patten are examples of smaller population/employment centers adjacent to the jurisdiction. These towns have populations in the 1,000 to 2,000 range and economies based primarily on forest products. While not large enough to serve as significant regional job centers, these towns function as service hubs to more remote parts of the jurisdiction. These rural communities still retain much of the character of farming communities. Houses are spread out along the public roads, the communities generally have no "downtown," and few services are available beyond convenience store/gas stations, a post office, church and town hall. The populations of these communities have remained stable or declined in the last 50 years. There are fewer working farms and more hunting camps, but still relatively few "second homes" because of the absence of water-based recreation and distance from population centers.

Rangeley and Greenville are typical regional recreational centers. In these communities, recreation is a primary part of the economy. The communities provide lodging, flying services, guide services, supplies, equipment rentals, outfitting services and other amenities that promote and support recreation. Other industries, such as forest products, also support the economies of these communities. The year-round populations of these communities are in the range of 1,000 to 2,000 each, but their seasonal populations — and that of surrounding areas within the jurisdiction — can swell dramatically during the summer. While summer is clearly the busiest season, recreational opportunities are available through all four seasons to varying degrees.

THE JURISDICTION'S RESIDENTS: A PROFILE

Natural resources are the backbone of the economy in both rural and recreational communities in the jurisdiction. They are also responsible for the area's attractiveness and appeal and are frequently the reason many residents choose to live there. This strong desire to live in these often-isolated communities necessitates creativity with respect to the means of making a living. Both the landscape and the climate have shaped the character of those who live there. Generally speaking, residents have a strong physical, emotional and spiritual relationship with the outdoors, and the cool temperatures and long winters foster independence, self-reliance and endurance.

Population

The U.S. Census year-round population estimate for the jurisdiction in 2005 was 12,461. This represents a very low overall population density — less than one person per square mile — but the population is distributed unevenly. The majority of this population exists in plantations, towns and townships adjacent to organized towns. Many townships have no permanent residents.

Population growth for the jurisdiction overall has been slow but stable — about 5% per decade between 1970 and 2000. By region, this growth has varied widely. The jurisdiction's population in the Western Mountains and Moosehead areas grew by 14% between 1990 and 2000. The jurisdiction's population in the Downeast area grew by 7% while the jurisdiction's population in Aroostook County decreased by less than 1%. In general, the population in the jurisdiction is projected to continue growing.

Demographics

The demographic composition of the jurisdiction's year-round population is changing. In comparing statistics from 1990 to 2000, the following trends are evident:

- The population is growing older. The jurisdiction holds more middle aged to early-retiree aged individuals than the rest of the state. Approximately 37% of the jurisdiction's residents are under the age of 35, while 58% are between the ages of 35 and 64.

- Households are getting smaller. In 2000, the average household in the jurisdiction was comprised of 2.38 persons, a decrease from 2.89 persons in 1990. Decreases in average household size are projected to continue for the foreseeable future.

- The population is becoming better educated. In 2000, nearly 80% of the jurisdiction's population over age 25 had a high school diploma and 19% had a college degree. In 1990, only 66% had a high school diploma and 9% had a college degree. However, the percentage of the population with a post-secondary school education is generally lower than the state as a whole.

- Home ownership rates are very high. In 2000, 87% of the households in the jurisdiction owned their homes, compared to 72% in the state as a whole.

- Household income is generally less than that in the state as a whole. In 2000, nearly 60% of households earned less than $35,000, compared to 47% in the state as a whole. The majority (two-thirds) of household income in the jurisdiction came from wages and salaries. The next largest components of household income came from self-employment income (11%), social security income (9%), and retirement income (7%). Households in the jurisdiction rely more on self-employment, social security and retirement income than households in the state as a whole.

- A large number of households live below the poverty level. In 2000, approximately 15% of households in the jurisdiction had incomes below the poverty level, compared with 10% for the state as a whole.

- The jurisdiction's residents are most likely to work in the education, health and social services sector (22% of workers held a job in this sector in 2000), followed by manufacturing (15%); retail and wholesale (13%); construction (10%); natural resources (9%); and art, entertainment and recreation (8%). Compared to statewide figures, residents of the jurisdiction are more likely to work in the natural resources and construction industries.

3.6 Regional Data

For the purpose of providing more detailed information on the jurisdiction's physical and demographic characteristics, it is helpful to view the jurisdiction as being comprised of seven data regions: (1) Interior, (2) Aroostook, (3) Western Mountains, (4) Moosehead Lake, (5) Central, (6) Downeast Lakes, and (7) South and Islands.

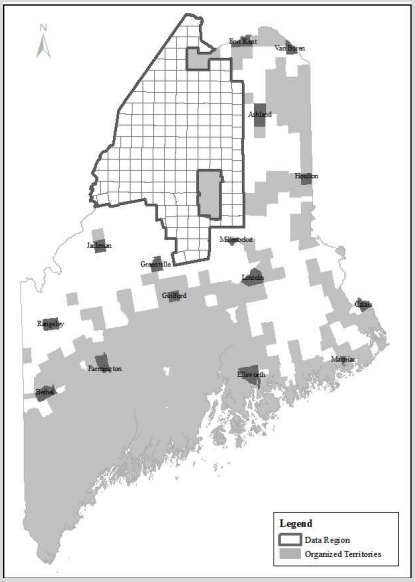
3.6.A THE INTERIOR DATA REGION

The Interior data region is the largest and generally most remote of the jurisdiction's areas. Encompassing approximately 40% of the jurisdiction, the Interior is comprised of northern parts of Somerset, Piscataquis and Penobscot Counties, as well as most of Aroostook County except for populated areas to the east and north. The area is characterized by a landscape of largely uninterrupted forest stretching from the boundaries of Baxter State Park to the Town of Allagash in the north and the Canadian border in the west. Few public roads traverse the area. Geographically, this area is an unbroken expanse that is viewed by many as the true "North Woods."

The character of the Interior is rooted in natural resources and remoteness from population centers. It is an area of millions of acres of largely undeveloped commercial forestland. Included within its boundaries are two of the most famous wild rivers of the Northeastern United States — the Allagash and the St. John. It surrounds Baxter State Park and includes many other areas valued for their backcountry recreational appeal.

The year-round population has decreased significantly in recent decades, while the number of housing units increased by 8%. More than 90% of housing units in this area are used seasonally. The area has also experienced dramatic changes in land ownership. The Great Northern holdings were sold to more than ten different land owners and conservation groups invested in fee ownership and conservation easements on large tracts of land in the area.

THE INTERIOR DATA REGION: A PROFILE



- 4,163,000 acres (40% of jurisdiction), including northern Somerset, Piscataquis and Penobscot Counties, as well as most of Aroostook County.

Population

- Population is scattered.
- 123 permanent residents (2005).
- 39% population decline from 1990 to 2005.
- Population is projected to decline at a moderate rate in the future.

Housing Units (1990 to 2000)

- 8% growth (1,309 to 1,411). In 2000, the housing stock accounted for approximately 7% of the jurisdiction's total housing stock.
- 90% of housing units are seasonal units (the highest of all areas in the jurisdiction and accounting for 9% of total seasonal units in the jurisdiction).
- Housing units tend to be older, and few have full kitchens or plumbing facilities.
- Number of year-round units grew faster than the number of seasonal units.
- Housing units are very small, averaging 3.2 rooms per unit (versus an average of 4.3 rooms per unit for the jurisdiction as a whole).

Demographic Characteristics (2000)

- Population tends to be comprised primarily of middle age and senior age groups, with few younger children.
- There is a lower poverty rate than in Maine as a whole.
- Residents are more likely to work in the manufacturing industry.

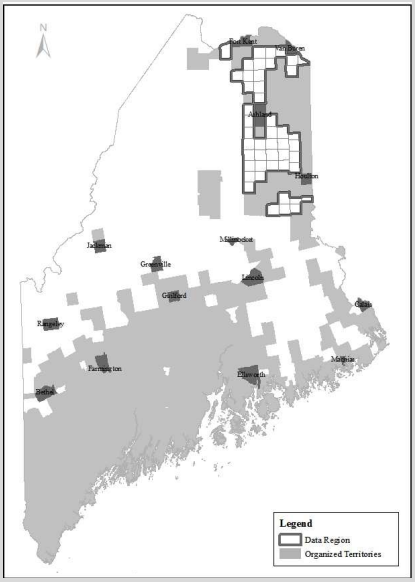
3.6.B THE AROOSTOOK DATA REGION

The Aroostook data region includes land in eastern Aroostook County surrounding the population centers of Fort Kent, Presque Isle, Caribou and Houlton. The area is accessed by Route 1 in the east, Route 11 in the west, and Interstate 95 in the south.

The landscape reflects the area's agrarian roots. Eastern portions of Aroostook County are dominated by wide open spaces of farmland that produce potatoes, broccoli and peas, among other crops. This area is home to people of diverse cultural backgrounds, including Micmacs and Maliseets, and French-Acadians who were among the first Europeans to settle in the area.

The Aroostook area has experienced modest population and housing stock change in recent decades. Most of this change occurred near service center communities or along road corridors. While the population decreased, the number of housing units increased by 11% between 1995 and 2005. The year-round population is projected to remain stable given current economic conditions.

THE AROOSTOOK DATA REGION: A PROFILE



- 1,145,000 acres (11% of jurisdiction), including land in eastern Aroostook County that surrounds the population centers of Fort Kent, Presque Isle/Caribou, and Houlton.

Population

- Population is concentrated between Van Buren and Caribou; south of Houlton; and around Long, Square, Eagle, and St. Froid Lakes in the north.
- 3,153 permanent residents in 2005.
- 1% population decline from 1990 to 2005.
- Stable population is projected in the future.

Housing Units (1990 to 2000)

- 11% growth (2,582 to 2,857). In 2000, the housing stock accounted for approximately 15% of the jurisdiction's total housing stock.
- 53% of housing units are seasonal units (the fewest of all areas in the jurisdiction).
- Seasonal units are clustered largely around Eagle, Square, and Long Lakes.
- Approximately 40% of new residential dwellings are near water bodies.

Demographic Characteristics (2000)

- 32% of population is older than 55.
- Low poverty rate.
- Residents are more likely to work in professional, educational, or retail industries.

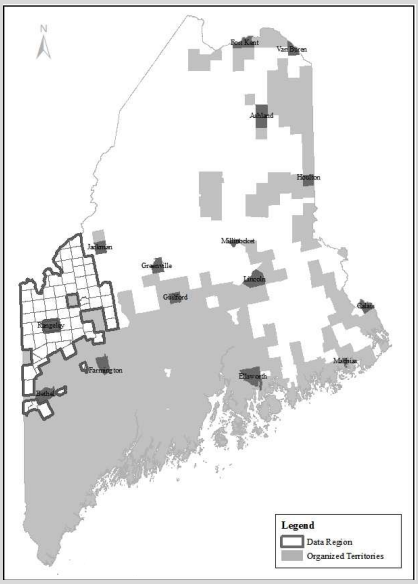
3.6.C THE WESTERN MOUNTAINS DATA REGION

The Western Mountains are located in the southwest portion of the jurisdiction, and include the Rangeley Lakes and Carrabassett Valley areas. The area is comprised of large portions of Oxford and Franklin Counties and shares its western border with New Hampshire and Canada. The area is accessible by several routes including Routes 4, 17 and 27.

The Western Mountains area is known for its outstanding natural resources, including a variety of exceptional lakes, rivers and mountains. The area has numerous large lakes, including Rangeley, Mooselookmeguntic, Richardson and Aziscohos. It also has most of Maine's highest mountains, including Bigelow, Saddleback, Sugarloaf, Kibby and Redington, many of which are traversed by the Appalachian Trail. This combination of outstanding natural resource values makes the Western Mountains area an historically popular recreation destination.

The multi-recreational nature of the area has made it particularly attractive for residential and recreational development. It is not surprising that the Western Mountains area is one of the fastest growing areas in the jurisdiction and holds the largest year-round population. Most of the growth has been along the edge of the jurisdiction and near the Town of Rangeley. The year-round population is projected to grow rapidly.

THE WESTERN MOUNTAINS DATA REGION: A PROFILE



- 1,470,355 acres (14% of jurisdiction), including lands from central Oxford County north through Franklin County. The southern boundary skirts Rumford, Farmington and Skowhegan.

Population

- Year-round population tends to be clustered around organized communities along the southern boundary of the area, including Rangeley, Kingfield and Carrabasset Valley/Eustis.
- 2,635 permanent residents in 2005.
- 21% population growth from 1990 to 2005.

Housing Units (1990 to 2000)

- 21% growth (3,278 to 3,973). In 2000, the housing stock accounted for approximately 21% of the jurisdiction's total housing stock.
- 70% of housing units are seasonal units.
- Number of year-round housing units grew at a faster rate than the number of seasonal housing units.
- Seasonal housing units are scattered throughout the area, but concentrated around Rangeley, Flagstaff, and Bethel.
- Housing units are large relative to the rest of the jurisdiction, averaging 4.9 rooms.

Demographic Characteristics (2000)

- The age profile of the area matches the jurisdiction as a whole.
- Home values are high (13% are worth more than $200,000).
- Residents are more likely to work in arts, entertainment, and recreation industries.

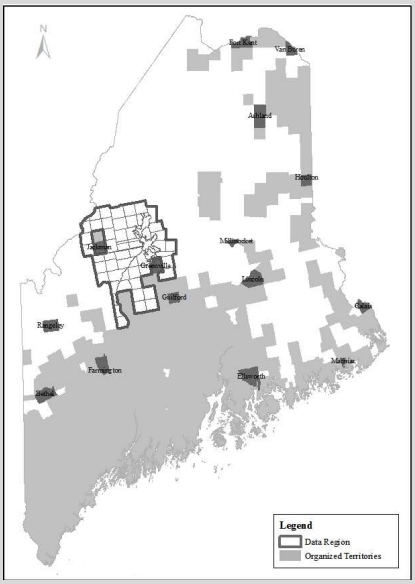
3.6.D THE MOOSEHEAD LAKE DATA REGION

The Moosehead Lake data region encompasses most of Somerset and Piscataquis Counties and surrounds the Towns of Jackman and Greenville. The area's focal point is Moosehead Lake, Maine's largest water body. The area is accessible by several state routes, including Routes 6/15 and 201.

Located at the doorstep of Maine's North Woods, the Moosehead Lake area is steeped in history. Henry David Thoreau explored the area in the mid-1800s. A century ago, visitors arrived by train and summered at the grand hotels on the shores of Moosehead Lake to escape the heat, noise and crowds of city life. The mid-1900s brought the flourishing logging industry, when steamships towed huge booms laden with logs down the length of Moosehead Lake. Today, the area continues to attract many recreationists, who are drawn to the area's outstanding natural and cultural resources, such as Mount Kineo, the headwaters of the Kennebec River and numerous other high-value lakes, rivers and mountains.

Like the Western Mountains area, the Moosehead Lake area is one of the fastest growing areas in the jurisdiction. Most new growth has occurred along the Route 201 corridor and on the shores of Moosehead Lake. The year-round population is projected to continue growing and seasonal housing development is projected to accelerate.

THE MOOSEHEAD LAKE DATA REGION: A PROFILE



- 1,220,995 acres (12% of jurisdiction), including most of Somerset and Piscataquis Counties. Surrounds the communities of Jackman and Greenville.

Population

- Year-round population tends to be close to roads along Routes 201 and 6/15, as well as along the shores of Moosehead Lake.
- 1,187 permanent residents in 2005.
- 14% population growth from 1990 to 2005.

Housing Units (1990 to 2000)

- 18% growth (3,082 to 3,629). In 2000, the housing stock accounted for approximately 19% of the jurisdiction's total housing stock.
- 81% of housing units are for seasonal use.
- Number of year-round housing units grew faster than the number of seasonal housing units.
- Seasonal units are scattered throughout the area, but concentrated around Rockwood Township, Greenville, along Route 201, and around the shores of Moosehead Lake.
- Housing units tend to be newer (23% were built in the 1990's).

Demographic Characteristics (2000)

- The age profile of the area is older than the jurisdiction as a whole (18% of residents are over 65 years).
- Household incomes are more likely to be from self-employment, property (interest, dividents, rent), social security, and retirement income.
- Home values are high (9% are worth more than $200,000).
- Relatively small household size (70% are 1-2 person households).

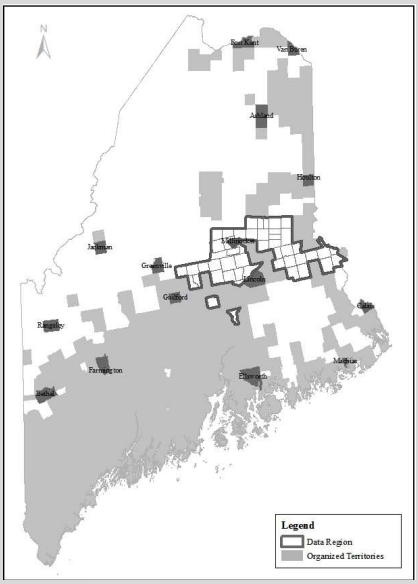
3.6.E THE CENTRAL DATA REGION

The Central data region includes land from Elliottsville Township near Dover-Foxcroft to the Towns of Millinocket and Lincoln, and the Canadian border, to the east. The area surrounds the population centers of Millinocket and Lincoln. Interstate 95 and Route 1 intersect the area.

The character of the Central area is closely tied to its remarkable landscape. The area's main attractions include the West Branch of the Penobscot River, numerous high-value lakes and its reputation as the "gateway" to Mount Katahdin and Baxter State Park. The area also has deep ties to the forest products industry. In fact, Millinocket — the Central area's major service center — was established around the Great Northern Paper mill in the early 1900s.

The Central area has experienced modest population and housing stock change in recent decades. The population grew by 5% and housing units grew by 12%. Much of the change occurred near Millinocket and in the exurbs of Lincoln. This area has a large number of high-speed, long-distance road corridors and has experienced a rapid increase in the number of residents that commute to jobs within 10 miles of the jurisdiction – a trend that could increase in the future. The year-round population is projected to grow modestly, largely due to a projected increase in the number of residents living in the jurisdiction and commuting to work outside of the jurisdiction. Seasonal housing unit development is projected to continue growing faster than year-round housing.

THE CENTRAL DATA REGION: A PROFILE



- 1,082,000 acres (11% of jurisdiction), including southern Piscataquis, Penobscot and Aroostook Counties, and northern Washington County. Reaches east from Dover-Foxcroft to the Canadian border near Vanceboro.

Population

- The population is concentrated in Argyle and Orneville Townships to the south, and is scattered along collector roads throughout the area near Springfield, Topsfield, Danforth, Sherman Mills, Mattawamkeag, and Millinocket.
- 3,068 permanent residents in 2005.
- 5% population growth from 1990 to 2005.

Housing Units (1990 to 2000)

- 3% growth (3,636 to 3,766). In 2000, the housing stock accounted for approximately 22% of the jurisdiction's total housing stock.
- 6% of housing units are for seasonal use.
- Number of seasonal housing units grew at a faster rate than the number of year-round housing units.
- Seasonal units are clustered around lakes near Brownville, Millinocket, and Mattawamkeag.
- Housing units tend to be older (most units were built before 1980).

Demographic Characteristics (2000)

- The age profile of the area is younger than the jurisdiction as a whole, with more younger families and fewer seniors.
- Very high owner-occupancy rate (92% of all households are owner-occupied).
- Relatively low house values (86% below $100,000).
- High poverty rate (16% of residents live below the poverty level).
- Residents are more likely to work in manufacturing, natural resource, and transportation industries.

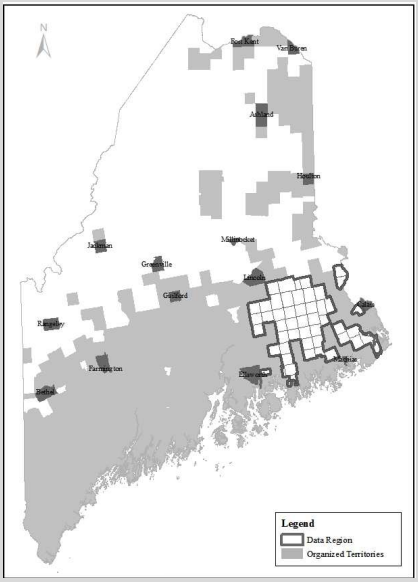
3.6.F THE DOWNEAST LAKES DATA REGION

The Downeast Lakes data region is a distinct area comprised of large portions of Washington County and portions of Hancock County. Only two minor civil divisions – Trescott and Edmunds Townships – have frontage on the coast within the Downeast area. The area is encompassed by Route 1 to the south and east, Route 6 to the north, and Interstate 95 to the west. Route 9 traverses the area.

A unique combination of geology, natural forces and climate have combined to produce a area of unparalleled natural resources and values. Lakes abound with names like Pocumcus, Wabassus and Sysladobsis, reminiscent of the area's Indian heritage. Stands of white birch, eastern hemlock and white pine attest to the economic importance of the natural resources that first drew settlers hundreds of years ago. Today, the forest and fisheries continue to sustain the unique community in and around Grand Lake Stream Plantation. This community has more Registered Maine Guides than any place in Maine. These professionals provide a vital link between visitors and the complex ecosystem of lakes, marshes, woodlands, bogs and their wildlife in an area scientists recognize as one of unmatched biodiversity.

The Downeast area has experienced modest population and housing stock change in recent decades. The number of residents has increased by 10% and the number of housing units increased by 37%. Much of the change occurred in Lakeville Plantation, around Beddington, and near Lubec. More than half of new homes were built near water bodies. The year-round population is expected to remain stable given current economic conditions and seasonal housing unit activity is projected to continue expanding at current rates.

THE DOWNEAST LAKES DATA REGION: A PROFILE



- 1,169,000 acres (11% of jurisdiction), including lands in Hancock and Washington counties.

Population

- The population is concentrated along the Route 1 corridor between Lubec and Dennysville, near Calais, along the Route 179 corridor, in Greenfield and in Grand Lake Stream Plantation.
- 2,146 permanent residents in 2005.
- 10% population growth from 1990 to 2005, second largest population growth in the jurisdiction.

Housing Units (1990 to 2000)

- 37% growth (2,191 to 3,009), the highest in the jurisdiction. In 2000, the housing stock accounted for approximately 14% of the jurisdiction's total housing stock.
- 67% of housing units are for seasonal use.
- Number of seasonal housing units grew at a faster rate than the number of year-round housing units.
- Seasonal housing units are scattered throughout the area, with clusters around Grand Lake Stream Plantation, Pleasant Lake, Nicatous Lake and Aurora.

Demographic Characteristics (2000)

- The area has more younger residents and fewer seniors than the jurisdiction as a whole.
- Household incomes are more likely to be from wages and salaries.
- Home values are relatively low (80% are worth less than $100,000).
- Approximately one-fifth of the population lives below the poverty level, the highest in the jurisdiction.
- The area has the largest average household size.
- Residents are more likely to work in construction and education/health/social services industries.

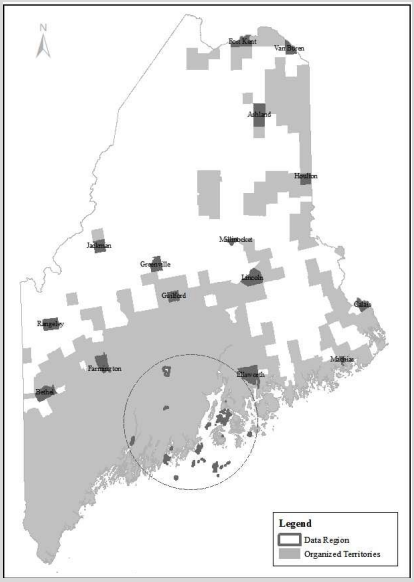
3.6.G THE SOUTH AND ISLANDS DATA REGION

The South and Islands area includes a diverse collection of offshore coastal islands, as well as townships that are surrounded by organized towns and thus isolated from the remainder of the jurisdiction. Collectively, this area makes up less than 1% of the jurisdiction. The interior lands are located in Kennebec, Sagadahoc, Lincoln, Knox and Hancock Counties. Examples include Unity Township in Kennebec County and Hibberts Gore in Lincoln County. The roughly 300 coastal islands included within this area are widely scattered: the southernmost islands are located west of Bristol, the northernmost in the Lubec area. Monhegan and Matinicus Plantations and Criehaven Island are the largest communities in this area and dominate the population and demographic statistics of the South and Interior area.

The nature of this area is quite different from the rest of the jurisdiction. The jurisdiction's coastal islands are characterized by an isolated landscape possessing an array of distinctive recreational, cultural and natural resource values. The self-contained communities of Matinicus, Monhegan and Criehaven, for instance, represent a unique coastal landscape with a strong fishing influence. The scattered inland townships are shaped in part by the various organized towns which surround them.

The South and Islands area has experienced a year-round population decline of 25% — mostly the result of declining island populations. Concurrently, the number of housing units in this area has increased by 19%. In the next decade, the year-round population of this area is projected to continue declining, while housing unit development is projected to increase modestly.

THE SOUTH AND ISLANDS DATA REGION: A PROFILE



- 16,000 acres (less than 1% of jurisdiction), including coastal islands and interior lands within Kennebec, Sagadahoc, Lincoln, Knox, and Hancock counties. None of the geographies within this area are adjacent to each other – they are either surrounded by communities outside of the jurisdiction or water.

Population

- 111 Permanent residents in 2005.
- 25% population decline from 1990 to 2005.
- Most of the year-round residents live on Matinicus and Monhegan islands.
- Population is projected to decline modestly in the future.

Housing Units (1990 to 2000)

- 19% growth (244 to 290). In 2000, the housing stock accounted for approximately 2% of the jurisdiction's total housing stock.
- 64% of housing units are seasonal units.
- Number of seasonal units grew faster than number of year-round units.
- Housing units tend to be older (nearly 70% were built before 1940).
- Housing units are larger than other areas (average housing unit size of 5.0 rooms).

Demographic Characteristics (2000)

- Population tends to be between ages 18 and 44, with few children.
- Average household size is very low (1.88 persons per household).
- Nearly one-half of household income is from self-employment.
- Residents are more likely to work in natural resource, construction, and art/entertainment industries.

Chapter 4
Development

4.1 Introduction

The Commission has a dual mandate with respect to conservation and development in the jurisdiction. It must reconcile the need to protect the natural environment and other important values from degradation with the need for traditional, resource-based uses and reasonable new economic growth and development.

Historically, development has stayed mainly on the edges of the jurisdiction, with the exception of scattered seasonal dwellings and traditional resource-based facilities such as sporting camps. This pattern of development is compatible with use of the region principally for non-intensive recreation and forestry. It also serves to protect the natural resources and distinctive character of the interior of the jurisdiction. Thus, since its inception in 1971, the Commission has sought to reinforce and promote this pattern of development. Now, with over 35 years of permitting data regarding the location and intensity of development, the Commission has an opportunity to evaluate the success of its efforts in guiding development and to determine whether a continuation of development patterns is consistent with its vision to protect the jurisdiction's principal values and exemplify a sustainable pattern of land uses.

Development in the jurisdiction has played a positive and important role in the culture and economy of the area. For example, businesses and homes, as well as recreational development — including a spectrum of facilities and uses ranging from primitive campsites to ski area expansions and commercial whitewater rafting bases — has enhanced and diversified recreational and economic opportunities for residents of and visitors to the jurisdiction. Likewise, the expansion of commercial uses in the jurisdiction beyond forestry to other resource extraction uses, such as wind power development and groundwater extraction, has brought money and jobs to the state and the jurisdiction. Small businesses, particularly those that manufacture value-added products, have also contributed to local economies. And new residential development has spurred construction-related jobs and resulted in affordable housing for some year-round residents, while the new residents attracted by these homes have invigorated year-round communities.

While development in the jurisdiction has many positive benefits, it can adversely affect important resources and values or fail to meet economic objectives if it is not appropriately located. The jurisdiction is the most rural portion of the second most rural state in the U.S. Consequently, many areas are poorly suited to accommodate intensive development. Most places are distant from population centers and services and have limited and sometimes inadequate infrastructure. Further, the jurisdiction is distinctive — both within Maine and in the Northeast — for the quality and quantity of its natural resources. These

resources are valued for their numerous and diverse economic, cultural, recreational, ecological and other purposes. The balance between protecting the natural environment and other important values and accommodating traditional resource-based uses and reasonable new economic growth is the Commission's central challenge in regulating land uses in the jurisdiction.

Below, the Commission provides an overview of its planning and zoning approach as it pertains to development; characterizes past, present and likely future development activities and trends; discusses the central development issues facing the jurisdiction; and presents recommendations for addressing these issues.

Post-LURC Development on Aziscohos Lake

4.2 Historical Development

Natural resources have dominated the history of the area that is now the Commission's jurisdiction. Early Native American tribes constructed a number of permanent villages along major rivers near resources and transportation routes. The first settlements by Europeans were isolated outposts producing fish, fur and timber for distant markets. Settlements were generally limited to the most accessible areas — islands, coastal mainland areas and lands near navigable rivers.

Much of the area never became heavily settled because, by the time it was opened up for settlement in the 1800s, pioneers were being lured west by the prospect of rich agricultural lands and mining claims. The region's harsh winters, rocky soils and short growing season also discouraged agricultural settlement.

Land ownership in Maine underwent a great transition in the first half of the 1800s. Before gaining statehood in 1820, only nine million acres of the 20 million acres of public domain had been sold or granted to private parties by the Commonwealth of Massachusetts. When Maine became a state, the remaining public lands were surveyed and divided equally between Maine and Massachusetts. Maine granted some land for roads, railroads, schools and colleges during the 1830s and 1840s, both in response to, and to encourage, a growing population and a demand for more and better transportation of forest products. During that same period, many individuals became aware of the importance of Maine's timberlands and a land boom began. By 1847, almost all the public lands in the state had been sold to private interests by Maine and Massachusetts, except for a 1,000 acre public lot reserved in each township. The region's pattern of large landholdings and the development of a papermaking process using wood cellulose were key factors in the emergence of the area in the late 1800s as the principal resource base for Maine's commercial forest industry. The Kennebec, Penobscot and other major rivers provided a means to transport timber and supply power to mills.

The opening of more remote areas to logging also opened them to recreation in the 19th century. People came from the rapidly growing cities of the East to vacation in resorts such as Kineo, Harford's Point and Seboomook to fish and hunt while lodged at sporting camps or to take part in camping trips into the heart of the Maine Woods.

One of the most significant changes in the history of the area was the end of log drives in the 1970s and the related construction of thousands of miles of roads needed to transport wood from the forest to mills and markets. These roads opened up areas previously accessible only by boat or foot. This improved access resulted in scattered, low-density development across the jurisdiction, principally seasonal camps near lakes and other recreational attractions. Improved access also significantly increased use of the area by hunters, anglers and other recreationists.

Relative geographic isolation, land ownership patterns characterized by large tracts of land held by industrial owners and managed almost exclusively for forest management purposes, and the dominance of a healthy forest products industry strongly influenced land use in this region of Maine. Population and housing growth was slow, characterized predominantly by low-density, low-impact seasonal development. Most year-round development was concentrated around the edges of the jurisdiction leaving large substantially undeveloped blocks of land in the interior. A number of very small communities were established over the years. Some were traditional rural communities with small, year-round populations

that worked in forestry, agriculture or recreational guiding. Others were summer enclaves near lakes and other water bodies. Most of these small communities, many of which still exist today, are located relatively close to public roads and population centers.

The land use pattern evident today bears the imprint of historical land use patterns, but it is changing in a number of noteworthy ways. As described in following sections, some of the factors that established the historical land use pattern — geographic isolation, large tracts of land held by industrial owners, and valuation of the land based primarily on its timber production capacity — have changed. Technological advances are encroaching on the region's geographic isolation, making it more attractive as a place to live and visit. Substantial changes in land ownership have created a less predictable environment regarding future land use. And a more competitive, global wood products industry and steady demand for seasonal residential development are driving closer scrutiny of land values for maximum return.

4.3 The Commission's Regulatory Approach

The Maine Legislature in 1971 charged the Commission with applying "principles of sound planning, zoning, and subdivision control" to the jurisdiction. The Commission's enabling statute is particularly attentive to the treatment of development in the jurisdiction, setting forth the following principles related to development:

- Prevent inappropriate uses detrimental to the proper use and value of areas within the jurisdiction;
- Prevent intermixing of incompatible activities;
- Provide for appropriate uses;
- Prevent substandard development; and
- Encourage well-planned and well-managed multiple use.

In carrying out its mandate, the Commission has always been guided by the premise that most new development should occur in or near areas where development already exists. This idea was first expressed in the Commission's initial Comprehensive Land Use Plan, adopted in 1976. The premise was based on generally accepted planning principles of concentrating development near services to reduce public costs and minimizing development near productive natural resource-based activities to reduce land use intrusions and conflicts.

The Commission began its regulatory efforts with a land use inventory during the 1970s. This inventory became the basis for zoning in the jurisdiction, utilizing development, management and protection districts. The Commission also established land use standards to minimize undue adverse impacts of development on resources and uses. These zones and land use standards constitute the regulatory foundation of the Commission's work.

Since then, the Commission has periodically reviewed and revised its Comprehensive Land Use Plan, zoning framework and land use standards, usually in response to emerging issues and statutory requirements. It has also developed new tools to improve its approach to guiding development, protecting resources and minimizing conflicts between uses. This section outlines the Commission's current approach to regulating development.

4.3.A LAND USE DISTRICTS AND STANDARDS

The Commission's zoning districts and land use standards are the primary mechanisms for implementing its goals and policies. This regulatory framework, described in detail in Section 2.2.B, has proven to be generally effective in protecting natural resources and separating incompatible uses from one another.

4.3.B POLICIES AND REGULATIONS FOR GUIDING DEVELOPMENT

Since its inception, the Commission has recognized the importance of guiding new development to appropriate locations as an effective means of protecting the jurisdiction's principal values and establishing sustainable development patterns. Past and current comprehensive land use plans have expressed two central principles regarding growth and development:

(1) Discourage growth which results in sprawling development patterns, and

(2) Encourage orderly growth within and proximate to existing, compatibly developed areas.

These principles are based on the Commission's longstanding belief that concentrating growth around existing development will help to protect the resources and values of the jurisdiction, ensure efficient and economical provision of public services, and promote the economic health of development centers. The Commission administers a variety of policies and regulatory tools designed to guide growth as described below. Some of these tools are applied in response to landowner-initiated actions (such as rezonings and concept plans) and others require implementation by the Commission (such as prospective zoning).

Rezoning Areas for Development

When it first established zoning in the 1970s, the Commission created development subdistricts primarily where development already existed or where landowners had imminent development plans. The Commission delineated 667 Residential Development (D-RS) Subdistricts in 135 minor civil divisions ("MCDs") prior to 1975. When the Commission established these development subdistricts, it usually drew the zoning boundaries tightly around developed areas. Development subdistricts generally did not encompass undeveloped land due to the difficulty of predicting future growth areas over such a vast jurisdiction. Consequently, lands almost always require rezoning to an appropriate development subdistrict prior to use for new intensive commercial, industrial and residential development.

Rezoning an area to a development subdistrict is usually initiated by the landowner and is reviewed by the Commission based on statutory criteria. The Commission's enabling statute sets forth the following criteria for adoption or amendment of land use district boundaries:

> A land use district boundary may not be adopted or amended unless there is substantial evidence that:
>
> A. The proposed land use district is consistent with the standards for district boundaries in effect at the time, the comprehensive land use plan and the purpose, intent and provisions of [Chapter 206-A (the Land Use Regulation Law)]; and
>
> B. The proposed land use district satisfies a demonstrated need in the community or area and has no undue adverse impact on existing uses or resources or a new district designation is more appropriate for the protection and management of existing uses and resources within the affected area."
>
> (12 M.R.S.A. § 685-A(8-A))

With regard to the criterion that zoning changes be consistent with the Comprehensive Land Use Plan, past plans have expressed the need to encourage orderly growth within and proximate to existing, compatibly developed areas particularly near organized towns and patterns of settlement. The Commission's application of this concept has evolved over its history in response to changing trends and growing appreciation for the often counterproductive fiscal and economic impacts of dispersed development. The requirement that new development should be located near existing development is referred to as the "adjacency" principle. The Commission has generally interpreted adjacency to mean that most rezoning for development should be no more than one mile by road from existing, compatible development[2] — i.e., existing development of similar type, use, occupancy, scale and intensity to that being proposed, or a village center with a range of uses for which the proposed development will provide complementary services, goods, jobs and/or housing.

The Commission recognizes that isolated patterns of development in remote locations, such as sporting camps, should not be used as the basis for establishing adjacency. The Commission has also consistently maintained that intensive uses, including recreation-based, commercial and industrial uses, are best located near compatible, developed areas. Areas near population and employment centers with available infrastructure and low resource values are generally the most suitable locations for these uses.

Several of the policies of this Plan provide more direction on how the adjacency principle is applied in different situations.

The Planned Development (D-PD) and Resource Plan Protection (P-RP) Subdistricts, available for certain types of large-scale mixed-use development, waive the adjacency principle under certain circumstances and so provide more flexibility regarding location. The adjacency principle is waived for the D-PD subdistrict in order to accommodate development that is dependent on a particular feature. The P-RP subdistrict allows a waiver of the adjacency principle under certain circumstances for development proposed as part of a concept plan.

Concept Plans

Concept planning is a relatively new planning tool that is implemented through a landowner-initiated rezoning action. In 1990, as part of its lake planning program, the Commission established concept plans as an alternative to traditional shoreland regulation — an alternative which was intended to fulfill both public and private objectives.

Concept plans provide a measure of flexibility to landowners regarding the siting of development because they allow the Commission to consider adjusting certain standards, such as the adjacency criterion, provided that any such adjustment is matched by comparable conservation measures. The main value to the Commission of concept plans as a planning tool is the opportunity they provide to secure permanent conservation in areas where substantial development is proposed. The main value to landowners is the ability to develop a predictable plan for the future use of their lands and to accomplish proactive zoning.

While concept plans were originally conceived as a planning tool for shoreland development, the Commission has since extended their use to backland areas as well. Concept plans are landowner-

[2] The Commission recognizes that there are certain instances in which a greater or lesser distance may be appropriate in measuring distances to existing developments.

initiated, long-range plans for the development and conservation of large blocks of shorelands and/or backlands. The plans clarify the long-term intent of landowners, indicating, in a general way (1) areas where development will be focused, (2) the relative density of proposed development, and (3) areas where significant natural and recreational resources will be protected, as well as the mechanism to protect them.

Concept plans should be prepared for an area large enough to allow for a balance of conservation and development. The area must be of sufficient size and resource value to offer a clear public benefit. Thus, concept plans are not appropriate for small land areas that offer limited opportunities for development and meaningful conservation.

Concept plans require rezoning land to the Resource Plan Protection (P-RP) Subdistrict. After approval of concept plan rezonings, the resource plans govern permitted activities for the life of the plans. Concept plans may have a minimum time frame of ten years, but the Commission discourages plans of less than twenty years duration if such plans propose significant deviations from existing standards.

The Commission will encourage the use of concept plans by working to simplify and add predictability to its process of reviewing concept plans. Additional information regarding concept plans is included in Appendix C.

Prospective Zoning

Prospective zoning is a relatively new tool employed by the Commission to proactively direct growth in certain areas of the jurisdiction. As noted above, most development zones in the jurisdiction contain little or no undeveloped land to accommodate future growth, so most new development requires rezoning land to a development zone. Under prospective zoning, the Commission uses information on existing development patterns, natural resource constraints and recent trends to identify and zone areas appropriate for future growth. This allows the Commission to direct development on a regional level to areas that are suitable based on proximity to development centers and infrastructure. This approach brings more predictability to the permitting process and promotes concentrated economic development in suitable areas. The prospective zoning process also creates an excellent opportunity for public participation by residents, landowners and other interested parties.

Prospective zoning, as applied by the Commission, should fulfill several objectives. It should be easily understood. It should be applied without significant expansion of staff resources. And it should utilize current, realistic and cooperative planning and regulatory concepts that have the greatest chance of achieving desired results.

Rangeley Prospective Zoning

The Commission undertook prospective zoning for a ten-MCD region in the Rangeley region in the late 1990s in accordance with its expressed intent to prospectively zone key high-growth areas in the jurisdiction. As the Commission's first land use plan for a specific sub-region of the jurisdiction, the Prospective Zoning Plan for the Rangeley Lakes Region ("Rangeley PZP") establishes a long-term vision for the ten-MCD region and implements strategies for guiding development to designated areas over a twenty-year period.

The Rangeley PZP calls for periodic consideration of whether changes or updates to the PZP are necessary. Examination of development patterns in the eight years following the plan's adoption suggests the PZP has been effective in achieving its vision. Year-round development in the region has been focused in the three plantations surrounding Rangeley — Dallas, Rangeley, and Sandy River. The Town of Rangeley continues to function as the economic center. And the new zoning framework appears to be maintaining the diversity of lake experiences in the region. Evaluation of development patterns a decade or more after adoption will better determine the PZP's long-term effectiveness. Further discussion of this prospective zoning plan is located in Appendix D.

Other Prospective Zoning Efforts

The Commission has also applied prospective zoning in Greenfield, Madrid and Centerville Townships. These townships deorganized in 1993, 2000 and 2004, respectively, thereby coming under the Commission's jurisdiction. After inventorying the communities' land uses and natural resources, the Commission, with input from the public, identified several areas determined to be most suitable for future residential and village growth. It developed and adopted zoning maps which included development zones that have sufficient undeveloped land to accommodate future growth.

4.3.C SITE REVIEW

Through its permitting process, the Commission requires formal approval of most proposed uses and the structures and facilities accommodating such uses in the jurisdiction. Most residential uses and structures require a Building Permit ("BP") and, with the exception of certain forestry and agricultural uses, most nonresidential uses require a Development Permit ("DP") or other permit. Through the issuance of BPs and DPs, the Commission conducts detailed site reviews considering such factors as: provisions for fitting the project harmoniously into the existing natural environment, vehicular circulation, access and parking, noise and lighting, soil suitability, waste disposal, water supply and quality, phosphorous control, erosion and sedimentation control, wetland alteration, and dimensional requirements.

This permitting process serves two primary purposes: (1) to ensure that development is designed and constructed in a way that avoids or minimizes adverse impacts on natural resources, existing uses, public facilities and services and natural character; and (2) to ensure that development meets all zoning and other provisions.

4.3.D SUBDIVISION STANDARDS

The Commission adopted subdivision design and layout standards in 2004. These standards were created based on the need identified in the 1997 Comprehensive Land Use Plan to provide staff and applicants with clear guidance on how development can best meet the Commission's standards. These standards clarify permitting requirements for certain types of development, facilitate residential development in certain areas deemed appropriate for it, and promote good subdivision design and layout. They seek to facilitate the process of designing subdivisions that embody sound planning principles. The subdivision design standards specify that new subdivisions must expand existing neighborhoods or create new community centers, and must avoid linear lot configurations along roads and shorelines.

The Commission also revised its regulations to allow residential subdivisions in the General Management (M-GN) Subdistrict in 42 MCDs, provided the subdivisions meet certain criteria regarding number of lots, total acreage, proximity to roads and compatible development, and natural resource limitations. These subdivisions — referred to in rule as level 2 subdivisions — and those allowed in the P-GP2 subdistrict, are the only subdivisions allowed outside of development subdistricts.

Level 2 subdivisions were created to simplify the permitting process for small-scale subdivisions while guiding new development to appropriate locations in the jurisdiction. The 42 MCDs generally border organized towns, but also share important characteristics that make them particularly suitable for future development, including their connection to an adjacent service center by a major state route or to areas recognized by the Commission as having special planning needs. Level 2 subdivisions are not allowed in areas prospectively zoned by the Commission because these areas are already governed by a plan to guide new development to appropriate locations.

Since level 2 subdivisions are a relatively new planning tool, the Commission expects to monitor their effectiveness and revise the rules as needed to address changing circumstances and trends.

4.3.E PUBLIC INFRASTRUCTURE AND FACILITIES

Public infrastructure and facilities such as fire stations, public works facilities, solid waste transfer and disposal facilities, schools and libraries are allowed in the General Development (D-GN) and Residential Development (D-RS) Subdistricts, as well as several development subdistricts applied in prospectively zoned areas.

Utility facilities, which include structures associated with electric, telephone, gas, water and sewer lines, are allowed by permit in all subdistricts except those which are particularly sensitive to adverse impacts. For example, the Mountain Area Protection (P-MA), Recreation Protection (P-RR), Special River Transition Protection (P-RT), and Wetland Protection (P-WL) Subdistricts allow utility facilities only by special exception.

The Commission's review of utility facilities focuses on appropriateness of location. Utility line extensions are carefully evaluated to assess immediate impacts on the site as well as the long-term impacts of bringing utility services into an area. This evaluation is necessary because utility extensions have the potential to magnify the environmental impacts of existing development on surrounding resources and can spur new development. Service drops, which include utility line extensions of less than 2,000 feet within a five-year period, are allowed without a permit provided land use standards are met. The only exception to this is the Semi-Remote Lake Protection (P-GP2) Subdistrict, which substantially limits service drops.

State statute and federal regulations limit the Commission's authority over some public utilities, principally telecommunications facilities and certain power lines. Telecommunication facilities, such as cell towers and transmitters, are afforded specific protections under the Federal Telecommunications Act of 1996. Generally, this act restricts state and local governments' ability to regulate telecommunications facilities, particularly if such regulation would have the effect of prohibiting the use. The Commission's authority over electric power lines is limited in three different ways. First, a provision in statute specifies that a permit is not required from the Commission if a utility line is reviewed by the Department of Environmental Protection

("DEP") and is located in a LURC subdistrict where the use is allowed.[3] Since most transmission lines cross into organized areas subject to DEP regulation and utilities are an allowed use in most subdistricts, the Commission generally does not have jurisdiction to review large transmission lines. Second, pursuant to state utility law, utility facilities located within a public right-of-way do not require a permit from the Commission.[4] Third, if sought and granted through a petition for exemption to the Maine Public Utilities Commission, transmission lines greater than 100 kV may be partially or wholly exempt from regulation to the extent that the Commission may not prohibit such use but may impose conditions on that use.[5]

In addition to reviewing the impacts of proposed public facilities, the Commission also considers the ability of public infrastructure and facilities to meet the needs of proposed residential and nonresidential development. It considers these issues as part of its statutory mandate to apply sound planning principles to the jurisdiction, preserve public health, safety and welfare, encourage well-planned use of land, and protect cultural and natural resources and values. Applicants generally must show that proposed uses will not burden local public facilities and services such as solid waste disposal, fire and ambulance services, police and schools.

4.3.F OTHER REGULATORY PROGRAMS

Development in the jurisdiction must comply with other state and federal requirements. The Commission works to avoid unnecessary duplication of effort with state and federal regulatory entities, but generally seeks to ensure that other requirements are met as part of its permitting process. For example, water supplies and wastewater disposal systems must comply with other state standards, such as the Maine Subsurface Waste Water Disposal Rules and the Maine Department of Health and Human Services Rules Relating to Drinking Water (10-144A C.M.R. 231). Additional regulatory programs that may apply to development are described briefly in various natural resource sections of this Plan, including the Water Resources, Wetland Resources, and Plant and Animal Habitat sections contained in Chapter 5.

[3] 38 M.R.S.A. § 488, sub-§ 9; 12 M.R.S.A. § 685-B, sub-§ 1-A,B.
[4] 35-A M.R.S.A. § 2503(20).
[5] 12 M.R.S.A. § 685-A(11).

4.4 Economic Trends

The economy of the jurisdiction remains natural resource-based, with a focus on forest products, agriculture and recreation. Many businesses located both within and outside of the jurisdiction depend on its natural resources either for raw materials or as a destination for recreational activities.

The forest products industry is the largest single contributor to Maine's economy and is the backbone of the economy in the jurisdiction. The area provides a continuous stream of raw materials for lumber and paper production. Chipping mills, sawmills and pulp and paper mills of various sizes and types are scattered across the jurisdiction or are located in adjacent towns where they provide employment. Small, specialty wood products manufacturing operations also have a presence within and nearby the jurisdiction.

Economic activity in the Rim Region[6] provides the closest approximation of current economic activity in the jurisdiction. The Rim Region is heavily dependent on lumber and paper manufacturing and accounts for nearly 60% of the state's earnings from these sectors. Total earnings from the forest products industry in the region was approximately $650 million in 2003, the largest single component of the region's total earnings of almost $4 billion.

The economic environment in which the forest industry operates has changed quite significantly in recent decades, bringing both new opportunities and new challenges. Globalization of wood products has opened new markets, but has also introduced competitors into markets that were previously dominated by Maine industry. Traditional wood products manufacturing facilities in the Northeast have increasingly been at a competitive disadvantage because of their size, age and relatively high operating costs. Many companies have been forced to choose between upgrading equipment or closing their facilities. In order to stay open, these facilities have had to increase productivity, which has at times involved implementing systems that employ fewer people. There have been other structural changes in the industry, including the divestiture of forest land.

Just as there have been challenges, there have been opportunities. New markets for wood pellets and biofuels have opened or are emerging. The forest products industry remains the foundation of Maine's rural economy, but it will continue to face challenges in the foreseeable future as a result of operating within a highly competitive global marketplace.

Tourism and recreation are the next most significant economic forces in the jurisdiction. Statewide, tourism has grown significantly since 1972. In the Rim Region, tourism dollars reached nearly $150 million in 2003. Between 1990 and 2003, earnings from tourism in the region grew by 25%. The area's natural resources attract a diverse clientele, which spends dollars directly on recreational activities and support services such as lodging, food and supplies. Visitors to the jurisdiction come as occasional tourists or seasonal residents to occupy second homes that are typically located close to a recreational attraction. Many visitors are attracted to specific destinations such as ski areas, rafting bases, sporting camps, trail facility hubs and campgrounds. Others come to engage in dispersed activities such as hiking, camping, hunting, fishing and trail riding on ATVs, bikes, horses and snowmobiles. Snowmobiling continues to be a significant job and

[6] The Rim Region includes Oxford, Franklin, Somerset, Piscataquis, Aroostook, and Washington Counties. It includes some areas that are not in the jurisdiction and excludes some that are (principally Penobscot County which includes the Bangor area). State Planning Office.

revenue producer during the winter months. Tourism benefits the rural economy of the jurisdiction in a number of ways, including supporting local commerce, maintaining the local property tax base and providing jobs.

Recent years have brought changes in the recreation economy, as described in more detail in the Recreational Resources section. While hunting and fishing continue to generate substantial economic benefit to local communities, usage of the Allagash Wilderness Waterway and Baxter State Park in Maine, as well as national parks across the nation, has declined. It is not yet clear if these trends will continue into the future. Conversely, nature-based tourism is growing. Nature-based tourism includes activities (organized or independent) focused on wildlife viewing, backcountry trekking and various other recreational experiences such as snowmobiling. As practiced today, nature-based tourism typically involves a higher level of amenities than historically associated with these activities. Nature-based tourism has been receiving new attention from public, private and non-profit sectors in programs such as the Maine Nature Tourism Initiative. A number of new cultural and heritage tourism initiatives have been started in or adjacent to the jurisdiction, such as the Maine Mountain Counties Heritage Network, the Downeast Heritage Museum and trail networks. It remains to be seen whether these and other efforts to expand the tourist economy in and around the jurisdiction can overcome the area's distance from population centers.

Energy production is emerging as another potentially significant economic force in the jurisdiction, with wind power, biomass, biofuels, tidal energy and other energy sources offering new opportunities to utilize indigenous natural resources. Energy production in the jurisdiction has the potential to support state and local needs but may also be viewed as an export industry serving the energy needs of the Northeast. No data are available on the economic contribution of energy production within the jurisdiction, but current trends suggest that energy production will increase.

The forest products, recreation, tourism and energy production industries bring diversity to the economy of the jurisdiction. The forest products industry remains the dominant economic sector, but recreational development, energy and tourism sectors are growing.

Like the rest of Maine, the economy of the jurisdiction faces new challenges. Some believe that future economic success requires innovation, particularly in areas such as biotechnology, information technology, forest bioproducts and precision manufacturing. Areas within and adjacent to the jurisdiction have had some success in diversifying the local economies. Business in northern Maine has had success expanding agriculture into new cold-weather crops such as broccoli, and has developed some niche finance and insurance enterprises such as Maine Mutual Group in Presque Isle. The region may be able to take advantage of opportunities in the growing forest bioproducts industry. Several entities in western Maine are exploring various aspects of biomass utilization. Many of these initiatives will be attracted to service centers outside the jurisdiction, but there may be demand for certain resource-based industries located close to the resources of the jurisdiction. Whatever change comes, natural resource-based uses such as forestry will likely continue to be the backbone of the jurisdiction's economy.

4.5 Land Ownership Data and Trends

Landowners' objectives and choices have historically played a very significant role in shaping land use patterns in the jurisdiction and are largely responsible for the maintenance of vast areas principally for forestry and associated uses. For much of the 20th century, industrial owners were the predominant landowner in the jurisdiction and land swaps or sales took place primarily to consolidate their land holdings. Beginning just over two decades ago, large tracts of the northern forest began to change hands on a scale that was unprecedented in recent history. Starting with the sale of Diamond Occidental lands to an overseas financier in 1986, transactions involving large tracts continued through the 1990s and into the 2000s, driven by several major corporate restructurings and other changes. By 2005, several new trends in land ownership were apparent, principally: (1) the divestiture of forestland by industrial landowners; (2) the purchase of forestland by new types of owners, particularly financial investors; and (3) the growing role of conservation owners and conservation easement holders in the northern forest.

The volume and pace of land sales during this period is noteworthy. Ninety-three transactions of 10,000 acres or more ("large-scale transactions") took place in Maine between 1990 and 2005, involving a total of 17.4 million acres.[7] Many lands were sold more than once, changing hands several times during this 15-year period. The rate of large-scale transactions increased steadily from 1990 through 2005 and has not abated. In fact, the number of transactions in the first half of the first decade of the 2000s exceeded the number of transactions for the entire decade of the 1990s. Land transactions involving parcels of 10,000 to 99,999 acres have increased significantly since 2002. This wholesale restructuring of land ownership has been driven by a variety of factors, including corporate lending practices, changing corporate and real estate tax laws and industry need for capital.

Areas within the jurisdiction have experienced speculative land buying and transfers from public to private ownership and private to corporate ownership in the past. However, the scale and rate of ownership changes in the past two decades is unprecedented. The ongoing sale and resale of timberland means that the predictability associated with the prior pattern of predominantly industrial ownership appears to be gone.

4.5.A CHANGING NUMBER AND TYPES OF LANDOWNERS

Timberlands

One result of the increase in large-scale land transactions has been a relatively swift transformation to a more diverse array of timberland owners. The number of timberland owners holding 5,000 acres or more in the state increased significantly between 1999 and 2006. This reflects an ongoing trend, which began in the 1980s and continued through the 1990s, of dividing very large holdings into smaller holdings. Concurrently, the average parcel size has decreased from 144,000 acres (in 1999) to 118,000 acres (in 2005). As of 2005, only two entities owned more than one million acres of forestland in Maine. This

[7] This figure includes lands sold more than once, as well as some transactions involving less than fee interests (e.g., conservation easements).

represents a significant change from the past, when a majority of lands within the jurisdiction were held by just a few landowners.

In addition to an increasing number of timberland owners, the types of owners are changing. While categorization of landowners is imprecise at best, researchers have nonetheless drawn some conclusions regarding the changed composition of timberland owners. In 1994, industrial owners held about 60% of parcels over 5,000 acres in Maine (about 4.6 million acres). By May of 2005, the industry owned only 15.5% (1.8 million acres), while ownership by financial investors grew from 3% to 32%. Other relatively new types of timberland owners include logging contractors and conservation buyers. Old-line families continue to play a role, owning about 20% of Maine's timberland in large tracts.

The change in type of timberland owner has brought some subtle, yet significant changes to landowner management objectives in some areas of the jurisdiction. Industrial landowners historically held timberland to maintain a steady flow of wood to their paper mills, which were their primary asset. New financial investors such as real estate investment trusts ("REITs") and timber investment management organizations ("TIMOs") generally view the timberland itself as the primary asset. Income can be produced through timber sales, sale or lease of recreational or conservation lands, natural resource extraction and other methods. Changes in land ownership, and consequent changes in management objectives, bring uncertainty to future land use patterns. It is not clear how great the implications of these changes will be. Changing patterns of ownership are discussed further in Section 5.6.

REITS AND TIMOS

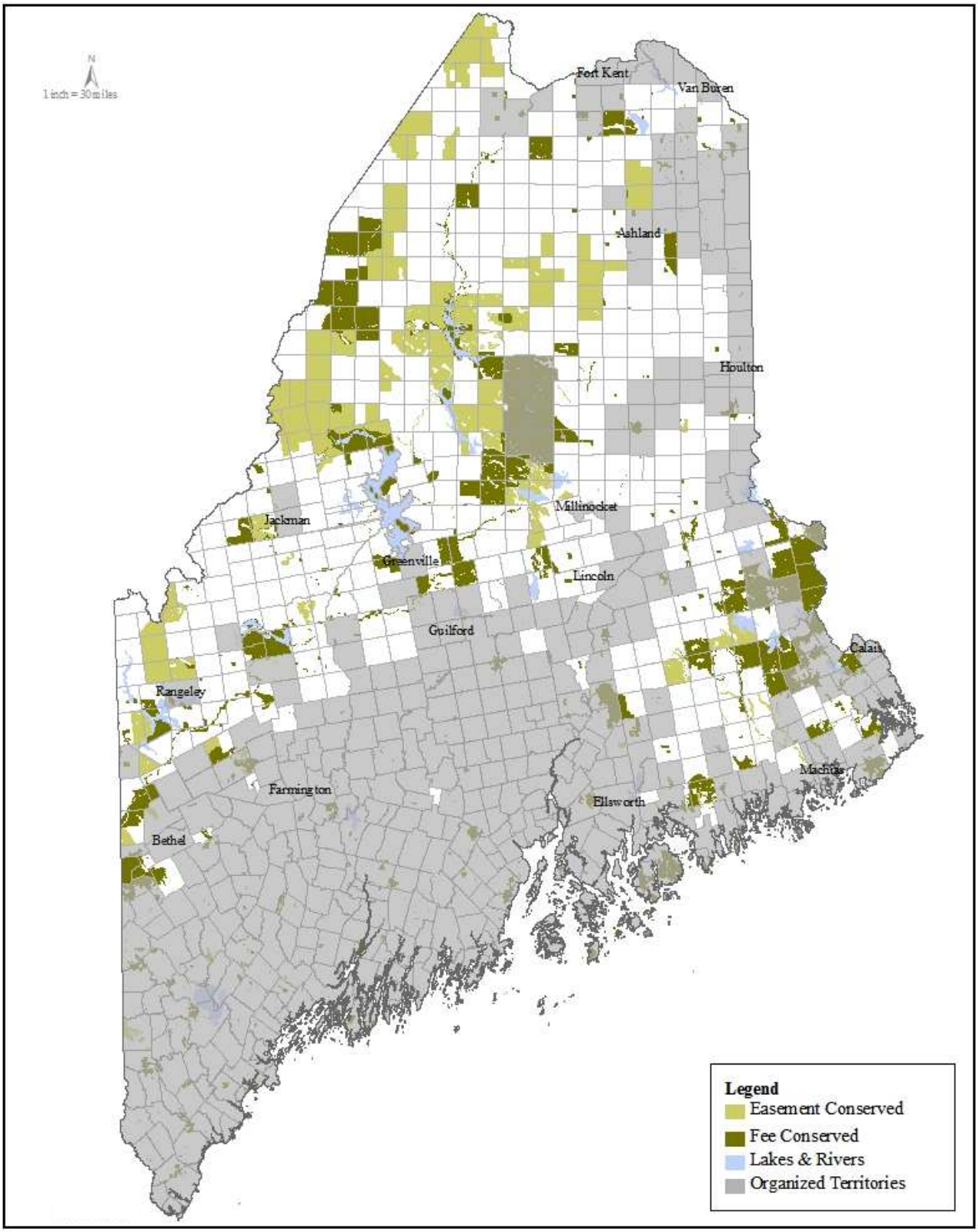
REITs and TIMOs now hold a considerable amount of timberland in Maine and the jurisdiction. REITs are companies that manage a portfolio of real estate to earn profits for shareholders. They use investors' capital to acquire or finance diverse forms of real estate, including timberland. The tax code allows these companies to pass earnings directly to shareholders in a way that reduces or eliminates corporate income taxes. TIMOs acquire and manage timberland investment properties. Their goal is to optimize financial returns for their clients, who are generally institutional investors (e.g., pension funds, insurance companies, and endowments) as well as individuals. It is generally expected that TIMOs will hold land for shorter periods of time than the timberland owners of the last century. An example of this can be found in Hancock Timber Resources Group's (HTRG) history of timberland acquisition and disposition in Maine. HTRG purchased 683,000 acres of timberland between 1993 and 1997. Hancock sold all of this land between 1995 and 2004.

Conservation Lands

While land conservation is not new to the Maine Woods, conservation buyers[8] are participating in land acquisition on an entirely new and unprecedented scale, driven in part by the active land market in recent decades (Map 2). In 2009, approximately 1.4 million acres of the jurisdiction were subject to conservation easements, and conservation buyers held approximately 1.2 million acres in fee. These lands held in fee ownership or subject to conservation easements total approximately 2.6 million acres — nearly one-quarter of the area of the jurisdiction.

[8] Conservation buyers are those entities listed in the public GIS database maintained by the State Planning Office and managed by the Conservation Lands GIS committee, which is comprised of various governmental agencies.

Map 2 – Conservation Lands



In most cases, one of the expressed intents of these conservation buyers is to maintain the land as working forest; however, this is not always the case. The objectives of some conservation buyers do not include active forest management at all. Some conservation buyers manage specifically for recreation, others manage for wildlife, and of course some manage for a variety of objectives.

The impact of increased ownership of conservation on land use patterns in the jurisdiction remains to be seen. In some instances, conservation efforts will help to support the forest products industry by ensuring the long term maintenance of working forest lands. In other instances, conservation lands will help to ensure the continued protection of important resources and values such as significant habitats and recreational experiences. While no two conservation easements are exactly alike, in most cases they extinguish some or all development rights. Conservation easements are discussed further in Section 5.9.

CONSERVATION BUYERS

The types and objectives of conservation buyers in the jurisdiction are quite varied. For example, in 1999, the New England Forestry Foundation purchased a conservation easement to the development rights on over 700,000 acres of timberland from the Pingree family. The easement sold the development rights to the land while preserving forestry uses. Other organizations, such as The Nature Conservancy, have purchased conservation easements (as well as land in fee) to protect specific resources and other values. And individuals have purchased land explicitly for natural resource preservation. The state has also increased purchases of land in the region in recent decades and typically manages those lands for forestry and recreational uses.

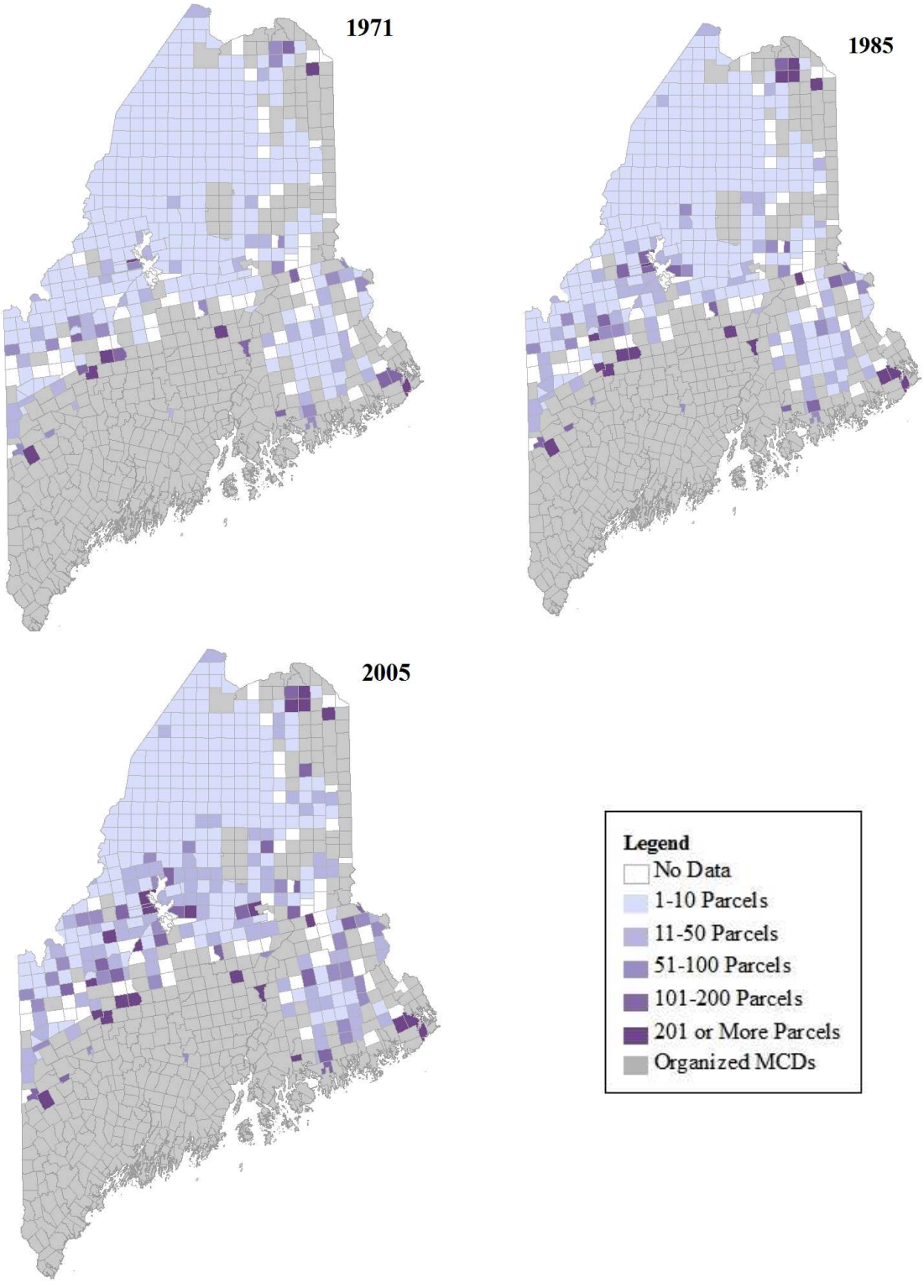
4.5.B GROWING NUMBERS OF PARCELS

In general, there appear to be significantly more parcels in the jurisdiction in 2005 than there were in 1971 (Map 3). Available information on the number of parcels in the jurisdiction is gathered for tax purposes, not for purposes of examining changes in the number of parcels over time. Consequently, the parcel information presented here has significant limitations for examining detailed trends. In particular, there have been changes in the way that the information is gathered over time and there is no information available for towns and plantations. Nonetheless, the information is adequate for examining general trends and when viewed this way, reveals valuable information. Between 1971 and 2005, the number of MCDs comprising fewer than ten parcels decreased significantly (approximately 25%). During the same time period, the number of MCDs with 100 or more parcels increased significantly (over 150%).

Map 3 shows the geographic change in number of parcels from 1971 to 1985, and from 1985 to 2005. Each MCD is categorized based on its total number of parcels in the given year. For example, the 1971 map shows a large number of MCDs that contained very few parcels, as identified by the light blue. The declining number of light blue MCDs on the 1985 and 2005 maps reflects the gradual, yet steady trend toward increased parcelization[9] in the southern third of the jurisdiction. Map 3 also shows that about half of the MCDs in the jurisdiction continue to have relatively few parcels, as indicated by the many areas in light blue on the 2005 map.

[9] As used here, "parcelization" refers to the practice of dividing one large parcel into numerous smaller parcels, usually for purposes of sale.

Map 3 – Number of parcels by MCD, 1971, 1985 and 2005[10]



[10] This information was gathered for tax purposes and, consequently, has limitations for examining detailed trends in parcel change over time (such as those caused by changes in Maine Revenue Service methodologies). However, the information is adequate for examining general trends.

This pattern is generally consistent with natural resource-based uses which dominate the area. However, Map 3 does not reveal the exact extent of parcelization in these MCDs, as some of these areas may have been configured as one parcel in 1971 and subsequently been divided into up to ten parcels without affecting the map.

The new parcels created since 1971 could have been created for any number of purposes. For example, they could reflect the division of forest lands, the sale of leased lots, the creation of subdivisions, or the creation of parcels held by conservation buyers. Whatever the reason, the growing number of parcels in the southern third of the jurisdiction is especially noteworthy. As a region noted for the economic contributions of the forest and recreation industries, this trend is a concern if it foreshadows further loss of forestry and associated uses. The Maine Forest Service ("MFS") reports that owners of small parcels of forest land (less than 49 acres) usually manage land for purposes other than timber production.

Parcelization is also a concern if it drives up prices for timberland to levels that cannot be supported by forestland revenues (larger properties typically sell at lower per acre prices than smaller properties). An MFS analysis of the relationship between the annual return from sustainable harvest and the appraised value of a northern Maine timberland parcel concluded that, even with favorable financing terms, the returns from sustainable harvests were not nearly sufficient to justify a loan for the appraised value of the land and could not support purchase of the land. Additionally, in a 2005 report on the state of the forest, MFS cited inadequate returns from long-term forest management as a key issue that could affect the future of Maine's forests. MFS noted that the financial returns on long=term forest management may not justify retaining forestland if other higher value uses, such as development, are an option.

Fragmentation of ownership is discussed further in Chapter 5.6.

4.5.C LEASED LAND

The traditional practice of leasing lots is less common than in years past. According to information obtained from Maine Revenue Service tax records, between 1985 and 2005, the total number of leases in unorganized townships decreased from 5,393 to 4,346, a decline of 1,047. This may reflect landowners' preference to get out of the business of managing leases, or could reflect a desire to capture the value of the underlying land. The only area that has shown an increase in leases is the Interior, which includes portions of Aroostook, Somerset, Piscataquis and Penobscot Counties. This increase in leases in the Interior may reflect landowners' desire to retain maximum control over recreational use in an area that is served almost exclusively by private roads and is dominated by forest management.

SOURCES OF DATA

Sections 4.5.B (Growing Numbers of Parcels) and 4.6.B (Residential Development Trends) rely predominantly on four sources of data: Maine Revenue Service tax records, U.S. Census data, LURC permitting data, and the report, "Patterns of Change" prepared for LURC by Planning Decisions.

Maine Revenue Service tax records provide information on the number of parcels and leases in the jurisdiction by minor civil division. This information is gathered for tax purposes, not for purposes of examining changes in the number of parcels over time, so there are limitations to its use for this purpose. For example, the Maine Revenue Service changed the way that it accounted for parcels associated with islands during the 1980s. Consequently, there may be a jump in the number of parcels in a township due to a change in accounting versus a change in the actual number of parcels. Despite these known limitations, the information is adequate for the examination of general trends.

U.S. Census data provide the number of existing residential dwellings in the jurisdiction, some characteristics of these dwellings and population trends. These data are viewed as some of the most reliable and are provided according to census blocks. In the organized areas of Maine, these blocks are typically based on minor civil division boundaries. Each town or plantation constitutes its own block or data set. In unorganized areas, these blocks range from a single town or plantation to dozens of townships. The data collected according to the census block format were adjusted by LURC to account for changes in the geographic area included in the jurisdiction over time.

LURC permitting data provide information on the number and location (by minor civil division) of new dwellings permitted by the Commission. This information represents permitting activity, which may not always reflect what is actually on the ground. For example, there may be discrepancies between permitted dwellings and actual dwellings if permitted dwellings were never built or if dwellings were built without permits. LURC permitting data also provide information on the number and location (by minor civil division) of permits for expansions or reconstructions of existing dwellings.

The Commission retained Planning Decisions, Inc. of South Portland, Maine, to examine land use trends in the jurisdiction. The attendant report, entitled "Patterns of Change," provides information on various trends in the jurisdiction drawing from U.S. Census data, Maine Revenue Service tax data, and LURC permitting data.

Each of these data sources is best used to demonstrate overall trends. Thus, the Commission evaluates each data source in the context of the others to confirm trends and identify areas for further inquiry.

4.6 Development Data and Trends, 1971-2005

The primary development activities in the jurisdiction are residential housing, recreation-related commercial development, energy generating and transmission facilities, other commercial and industrial activities, road and infrastructure improvements, and waste disposal facilities. This section presents data and trends for these and other types of development occurring in the jurisdiction, with particular focus on transportation improvements, residential development, nonresidential development (including natural resource-based, recreational, commercial and industrial facilities), and public facilities and services. This section also identifies and discusses several areas of the jurisdiction with special planning needs.

4.6.A TRANSPORTATION

Transportation improvements are both a form of development and a prime determinant of where future development will occur. The dominant transportation mode in the jurisdiction is road travel. Public roads in the jurisdiction are fairly limited, while private roads used predominantly for forest management activities are more widespread. While accurate numbers are difficult to obtain, approximately 1,500 miles of public roads and over 20,000 miles of private roads exist within the jurisdiction.

Public Roads

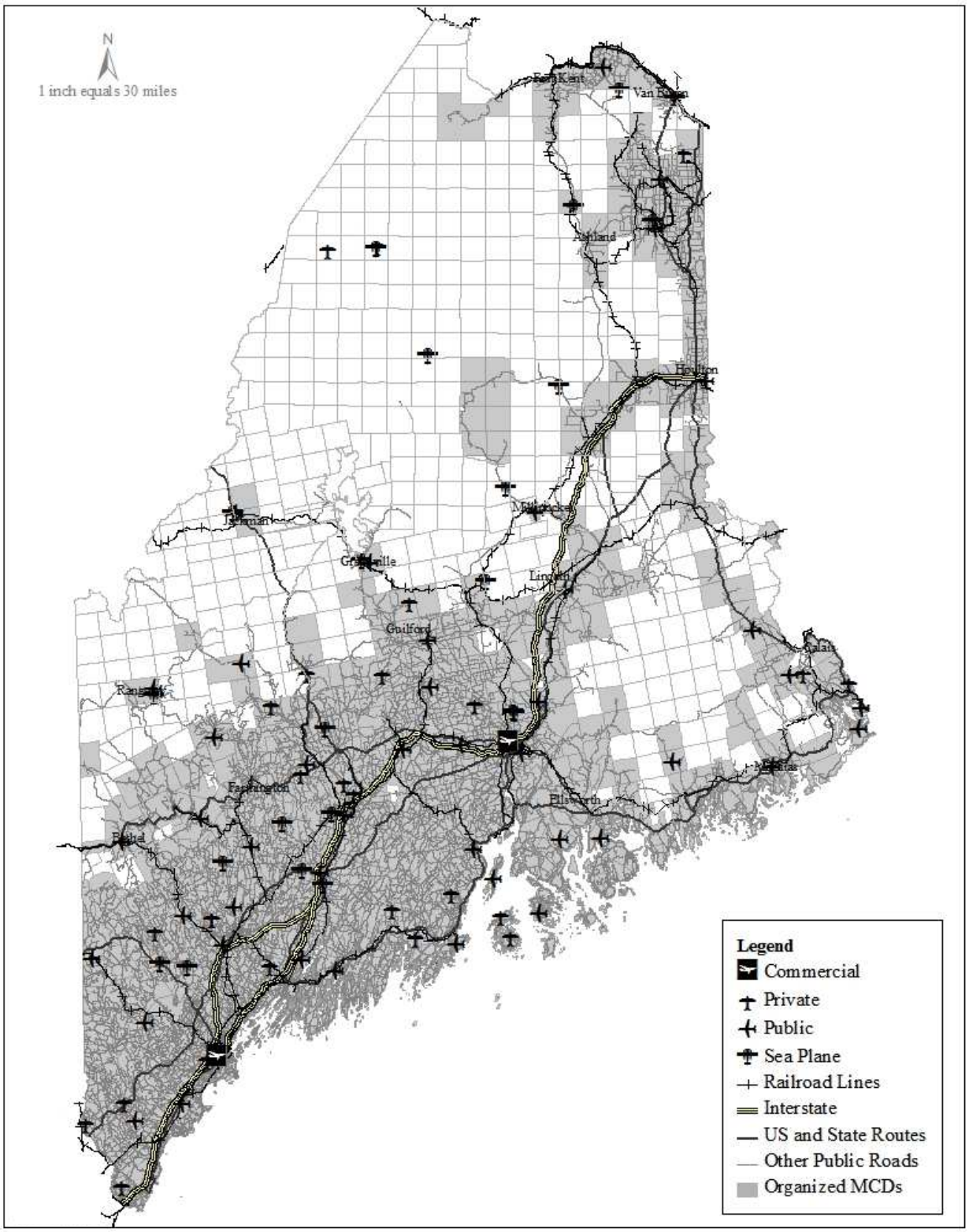
The jurisdiction's approximately 1,500 miles of public roads (Map 4) include arterial routes that allow relatively high-speed travel through the region, collector routes that provide important connections between arterials, and local roads that move traffic within communities and provide access to adjacent properties.

Interstate 95 is a limited access four-lane highway that serves as a primary route of travel to the region from points south. The interstate bisects several MCDs but generally stays to the east of the Central area of the jurisdiction and to the west of the Downeast area. Interchanges in Howland, T2 R8 NWP (near Lincoln), Medway, Sherman, Island Falls, Oakfield, Ludlow and Houlton serve as major gateways to the jurisdiction.

Arterial routes primarily serve the Western Mountains and Downeast areas or pass through MCDs on the jurisdiction's edge. Significantly, no arterial routes access the heart of the jurisdiction. Major arterial routes within the jurisdiction include State Routes 1, 9 and 201. Minor arterials include Routes 4, 16, and 27 in the Western Mountains area; Routes 2, 2A, and 6 in the Downeast area; and Routes 11 and 161 in the Northern area.

Other state routes serve portions of the jurisdiction, but most of these carry less traffic, functioning more as collector roads than arterials. The remaining public roads within the region are county and local roads, with paved or gravel travel surfaces. Some of these roads serve as important links between state routes; others are more lightly traveled.

Map 4 – Transportation Infrastructure



Repair, maintenance and snowplowing of public roads are carried out by the state, county, town or plantation government. Funds for major resurfacing and reconstruction projects are allocated by the Maine Department of Transportation.

At this time, there are no plans to construct any new state routes through the jurisdiction, although extending I-95 north from Houlton to Presque Isle and Caribou has been considered. Several years ago the state decided to make substantial improvements to existing east/west highways, resulting in ongoing reconstruction projects for major state routes, rather than constructing a new east/west arterial. The main changes to the public road system in the future will most likely occur as the result of improvements made to existing state and county roads. Other improvements may involve the public highways in the jurisdiction that have been designated as state or federal scenic byways (further discussed in Section 5.10).

Private Roads

Most of the roads within the jurisdiction are privately owned and maintained. Approximately 20,000 miles of these roads crisscross the area, providing the forest products industry with a vital link between its resource base and markets. Some private roads, such as the Golden Road near Millinocket, the Stud Mill Road in the Downeast area, and the Realty Road in Aroostook County are large, well-traveled thoroughfares that function much like unpaved arterials for logging trucks, recreationists and local traffic.

Logging Road East of Moosehead

Extensive private road construction began after the cessation of the log drives on Maine rivers. Spurred by the rush to harvest trees damaged by the spruce budworm, road construction during the 1980s peaked at an estimated 1,000 miles per year. While the pace of construction has slowed, new private roads continue to be constructed, providing improved access to backcountry areas. Much of this involves construction of spurs and winter roads off of the major access roads. Other road construction activities occasionally entail the reopening of older roads that have not been used since the time of a previous harvest.

Roads are essential to a managed forest. A good road network allows frequent targeted harvest entries, as well as access for frequent management such as pre-commercial thinning, planting, inventorying and fire control. It also allows flexibility in routine resources analysis and protection such as cruising timber, town line maintenance and monitoring forest health.

There have been many improvements in road construction techniques over the years, which have dramatically reduced the amount of exposed soil associated with road building, reduced the need for trucking in gravel from off-site pits, improved water management around the roads and reduced long-term road maintenance costs. However, extensive time and associated costs are involved in maintaining this road system, which are borne by private landowners. Road maintenance includes plowing, grading, replacing culverts, cleaning of ditches bridge repair and replacement.

Although some of the roads built for logging are gated and others are permanently closed after harvesting, many remain open and available for public use. There is a unique cultural history of public access over private roads in Maine and the jurisdiction, providing access to recreational opportunities, private property, public lands and other uses.

As this private road system developed, sportsmen began to use it to access hunting and fishing locations. In time, use evolved to include the wide spectrum of activities that occurs in the Maine Woods today. The private landowners have never promoted use but have accepted it and in some cases are managing it so that public use is compatible with the primarily private working forest. Some landowners have produced maps and brochures over the years to educate and inform the public about private forests, while others have preferred to maintain a low public profile.

Lack of understanding that the lands and roads are privately owned and that vehicular access is a privilege can sometimes lead to unfounded expectations and conflicts. Consequently, numerous cooperative efforts exist to foster communications and cooperation among landowners and land users. For example, the Landowner Relations program, jointly administered by the Department of Conservation and the Department of Inland Fisheries and Wildlife is a valuable educational, outreach and problem solving tool. Likewise, the Sportsman/Forest Landowner Alliance brings landowners and various users together to address areas of common concern.

Addressing road safety and conflicting road uses became a focus of the Northern Maine Landowners Industrial Road Safety Committee in 1997 when committee members began to receive complaints about dangerous or aggressive driving practices of truckers and recreational users alike. Frequent committee meetings over the last few years led to a number of accomplishments. Significant among the accomplishments is the consolidation of “Rules of the Road” supported by all members. The rules are published in English, French and Spanish and made available to all types of in-woods contractors, landowners and trucking companies as well as the recreational public courtesy of North Maine Woods, Inc. Additionally, the landowners who maintain these private road systems enhanced their road signage

systems. Mile markers have been placed along most major routes and are the basis for CB and other radio communication, allowing drivers to announce their location by mile markers and thus warning others of their presence.

The Commission recognizes that the location of roads shapes development patterns. While most land management roads are initially constructed for forest management activities, some later become access roads for development.

Other Transportation Modes

Rail service, once a major mover of passengers and freight in Northern Maine, now plays a relatively minor transportation role. The Montreal, Maine and Atlantic Railway line runs from Searsport northwest into Canada through Jackman, and from Searsport north to Van Buren. Smaller lines also exist in Eastern Maine and Washington and Penobscot Counties.

Air travel is limited to nonscheduled service to small airfields in gateway communities or on coastal islands and by float plane to lakes and ponds. There are several private airstrips within the jurisdiction (Map 4). Some of these private operations have become quite substantial in recent years.

Ferry service is available to Monhegan Island and Matinicus Isle Plantations, two coastal island communities in the Commission's jurisdiction.

4.6.B RESIDENTIAL DEVELOPMENT TRENDS

The main type of structural development in the jurisdiction today is housing. Residential development typically includes the construction of dwellings, garages, and driveways and/or roads; the clearing and grading of land; and the installation of water and septic systems and utilities. It can also include the construction of other accessory buildings, the installation of docks and communications equipment, and shoreline alteration.

Amount of Development

Housing growth since the inception of LURC in 1971 has been moderate. Between 1971 and 2005, the Commission permitted 8,136 new dwellings — an increase of 66% in the housing stock, using the 1970 Census count of 12,286 dwellings as a baseline. While the 2000 Census data indicate 7,031 new dwellings in the 1970-2000 period, the Commission permitted 6,758 new residential dwellings during this same time period. Given the limitations of precision in the data, the two numbers are consistent. While housing growth averaged over the period between 1971 and 2005 was moderate, housing growth in the jurisdiction has fluctuated over time with changes in the economy.

According to Census data, Maine is the second most rural state in the United States. Excluding areas of the jurisdiction, Maine has a housing density of 36 dwellings per square mile. The jurisdiction is the least populated part of this rural state. Until recently, the jurisdiction as a whole had less than one dwelling unit per square mile (0.7 dwellings per square mile in 1970). While the average density of housing units within the jurisdiction is still low (approximately 1.25 dwellings per square mile in 2005), there is great variability in

housing density from one area to another. Concentrations of residential development are typically found in LURC's towns and plantations and near organized towns.

Character of Development

The jurisdiction's year-round population is growing and in some cases it is growing faster than neighboring organized communities. Still, the jurisdiction is distinguished by the fact that 70% of its housing units are used seasonally or serve as second homes. This is in striking contrast to the fact that only 16% serve as second homes in Maine as a whole. The demand for seasonal homes in the jurisdiction comes primarily from within Maine. In fact, 70% of the seasonal homeowners in the jurisdiction are Maine residents. This is a slight decline from 1971 to 1991, when 78% of the new dwelling permits in the jurisdiction were issued to Maine residents. Generally, the demand for second homes in the jurisdiction has followed local and regional economic conditions.

The year-round homes in the jurisdiction tend to be located near organized areas and are not dissimilar from year-round residences in other areas of the state. Seasonal dwellings in the jurisdiction have traditionally been small, single-story camps built on posts and lacking insulation and utilities.

The last decade has brought noticeable changes in the character of seasonal camps. These changes are evident in the size of new construction, as well as improvements and expansions to existing dwellings. While the Commission does not track dwelling size in a way that is easy to retrieve and analyze, the Commission has noted that a considerable number of new dwellings are larger than was historically typical. There is also a trend towards renovating and enlarging existing camps by adding bathrooms, bedrooms, second floors, bunkhouses and garages. Many of these improvements and expansions are to dwellings located on the shores of lakes and ponds. Between 1971 and 2005, 7,937 or 45% of all building permits were for expansions to existing dwellings. Between 1971 and 2005, 46% of permits for residential uses were located on parcels within 500 feet of water bodies. In some cases, these expansions are occurring on substandard lots.

Another change in the character of residential development is that an increasing percentage of dwellings are being constructed or renovated for four-season use. Dwellings able to accommodate year-round use are typically constructed with full foundations, indoor plumbing and insulation. At present, 69% of the dwellings in the jurisdiction are constructed for four-season use, up from 52% in the 1990s, 49% in the 1980s, and 53% in the 1970s. A shift toward more frequent use and an increased potential for conversion to permanent residences has implications for the provision of public services, such as education and public safety, as well as for surrounding uses and natural resources.

THE JURISDICTION'S POPULATION IS GROWING, IN SOME CASES FASTER THAN NEIGHBORING TOWNS

The jurisdiction's population grew from 10,427 in 1970 to 12,120 in 2000, averaging about 5% growth per decade. Between 1990 and 2000, the population in most regions in the jurisdiction grew faster than neighboring organized communities (communities within 10 miles of the jurisdiction). 2005 U.S. Census estimates indicate continuation of this trend. The population of the Western Mountains area of the jurisdiction grew by 17% between 1990 and 2000, accounting for 63% of the jurisdiction's net growth. The Moosehead Lake area's population grew by 8%. By comparison, organized communities near these two data regions experienced a 2% decrease in population growth. The Downeast area of the jurisdiction grew by 7% while neighboring communities grew by only 2%. The population in the Central area of the jurisdiction grew by 3% while neighboring communities decreased by 6%, and the Aroostook area of the jurisdiction decreased by less than 1% while neighboring communities decreased by 16%.

Population trends after 2000 point to continued population growth in the jurisdiction. Since 2000, every region in Maine has experienced significant population growth. Even northern Maine (including Aroostook, Penobscot and Piscataquis Counties), which lost over 2,800 people between 1995 and 1999, gained 2,000 people between 1999 and 2004.

Location and Patterns of Residential Development at the Jurisdiction Level

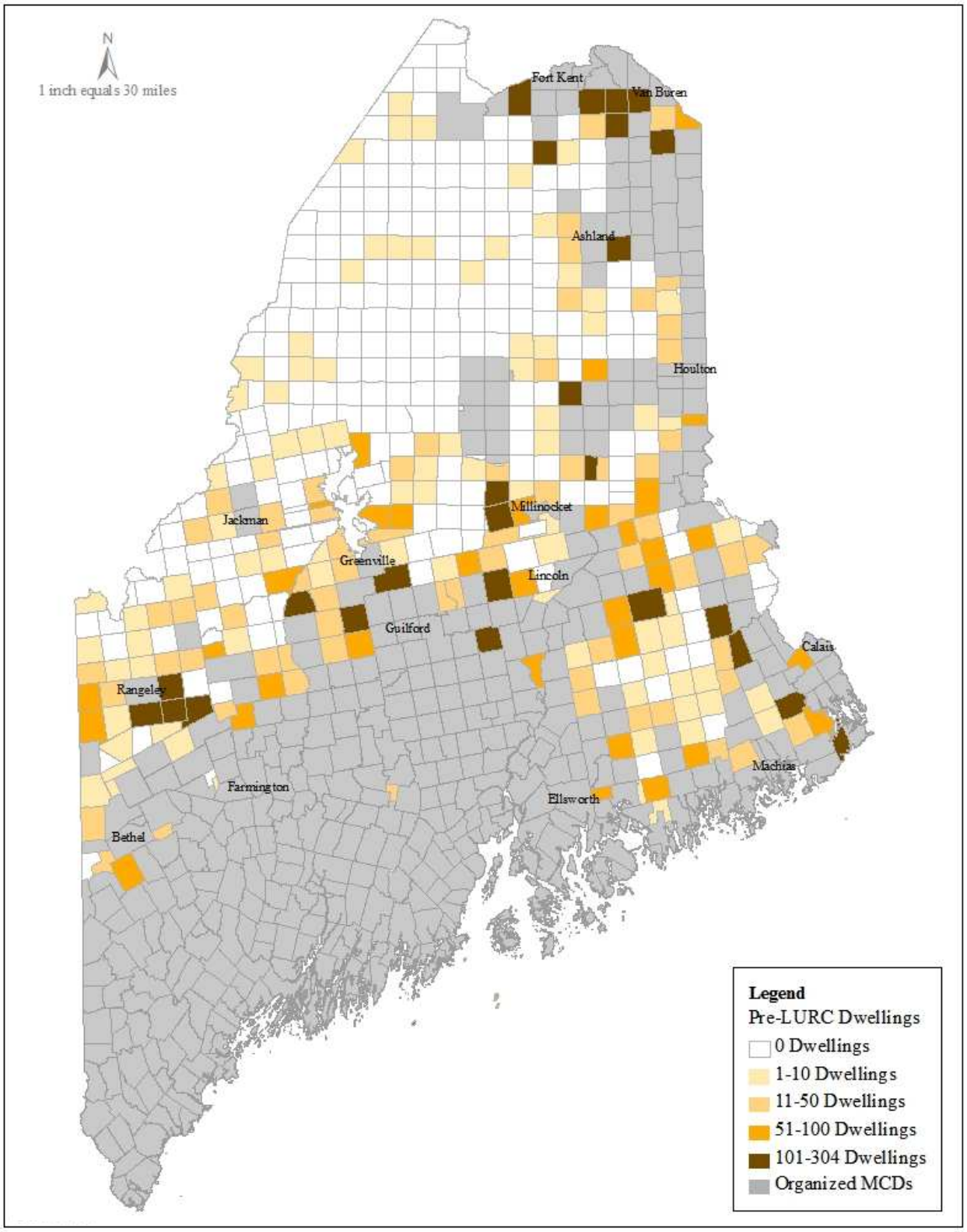
In 1970, prior to the creation of the Commission, there were approximately 12,286 housing units in the jurisdiction. By combining information from the 1970 Department of Transportation Maine Road Atlas and the 1970 U.S. Census, it is possible to illustrate the approximate locations (at the MCD level) of 76% of the dwelling units that existed in the jurisdiction at that time (Map 5). In 1970, areas of concentrated residential development were generally associated with public roads, high-value natural resources or job centers. There was limited residential development in the interior of the jurisdiction.

The overall pattern of residential development in 2005 (Map 6) bears some similarity to the pattern that existed in 1970. The most dense development is generally close to organized areas, public roads and high-value natural resources. Approximately 79% of the permitted new residential dwellings are located in MCDs that border organized areas, and 88% of the permitted new dwellings are in MCDs that are within one mile of a public road (Map 7).

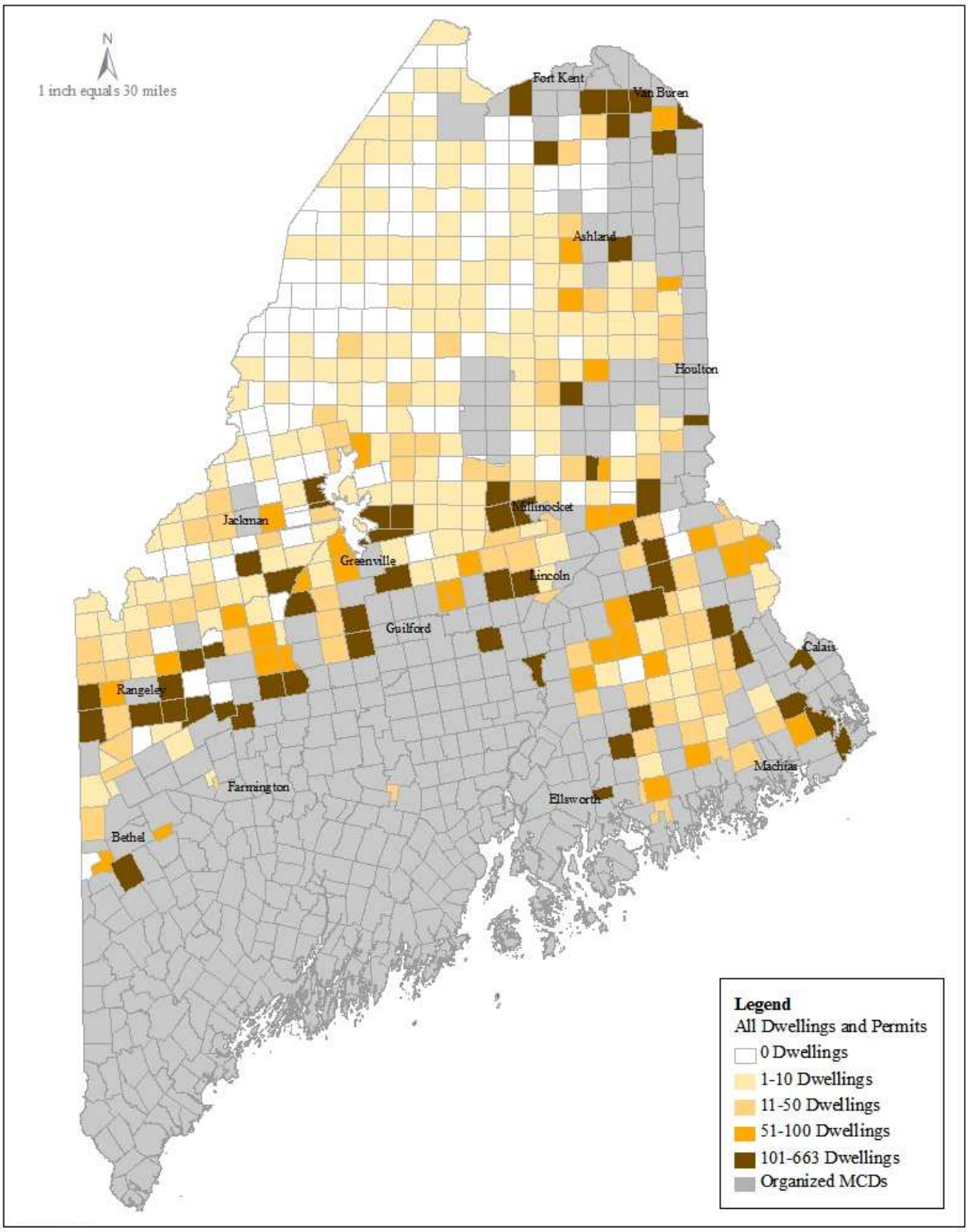
However, some aspects of the 2005 development pattern deviate from the pre-LURC pattern of development. Since 1971, a significant number of the permitted new dwellings have been dispersed across more isolated portions of the jurisdiction. For example, approximately 60% (4,841) of new dwellings permitted between 1971 and 2005 were located in 314 of the 459 MCDs in the jurisdiction. Over half of these 314 MCDs have no public roads and nearly two-thirds have fewer than ten new dwellings. New patterns of concentrated development have appeared in MCDs that had little or no prior development, such as Upper Enchanted, Elm Stream and Connor Townships. And only about 50% of the new dwellings permitted between 1971 and 2005 were located in MCDs near a service center (Map 7).[11]

[11] These are MCDs that are either located within 12 miles by public road from the municipal boundary of a service center, or where approximately 10% or more of the MCD is within one mile of such public roads.

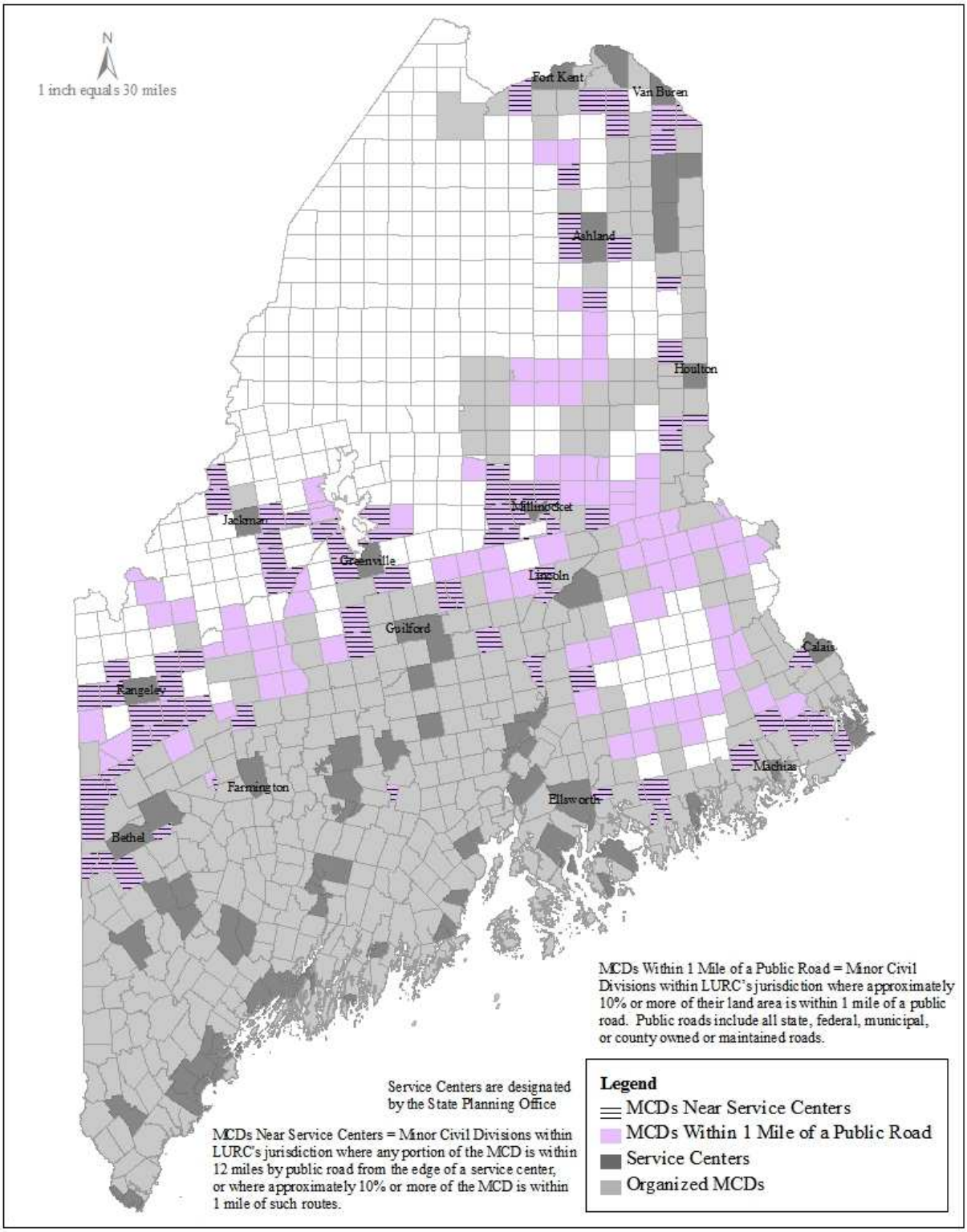
Map 5 – Location of Pre-LURC Dwellings



Map 6 – Location of Pre-LURC Dwellings and LURC-Permitted New Dwellings



Map 7 – MCDs Within One Mile of a Public Road or Within 12 Miles by Public Road from a Service Center



SERVICE CENTERS

The State Planning Office ("SPO") identified service centers as those cities and towns that provide a majority of the state's jobs, commercial activity and social resources such as higher education and health care (Map 5). The methodology for identifying these cities and towns is based on the level of retail sales, jobs-to-workers ratio, amount of federally assisted housing, and number of service sector jobs. There are 69 such service centers in Maine. Of these, 15 are contiguous to the jurisdiction:

Fort Kent	Madawaska	Van Buren	Caribou	Houlton
Ashland	Lincoln	Millinocket	E. Millinocket	Greenville
Jackman	Rangeley	Bethel	Calais	Lubec

Service centers are the economic engines of the state. They are generally the places people go to work and shop. Statewide, they provide 71% of all jobs, 74% of all service employment and 77% of all consumer retail sales.

Fastest Growing MCDs

Approximately 40% (3,295) of new dwellings permitted between 1971 and 2005 were located in the jurisdiction's 17 fastest growing MCDs (Map 9). The high rate of new residential development in these MCDs is likely due to their proximity to high-value natural resources. For example, eight of the 17 MCDs are in the Western Mountains, an area known for its high-value natural resources.

However, some of the 17 MCDs experienced high levels of permitting activity not necessarily as a result of the presence of high-value natural resource, but rather because of expansive use of land divisions that were exempt from subdivision review (see "Residential Development Occurring Within and Outside of the Commission's Subdivision Review," below). Four of the 17 fastest growing MCDs have a history of large lot divisions (40 or more acres) involving 100 or more lots each. These MCDs include Upper Enchanted (Map 10), Prentiss, and Tomhegan Townships and the Town of Lakeville. Even though the large lot exemption for development purposes was eliminated by the Legislature in 2001, the pattern created by large lot divisions continues to influence land use. These divisions have created concentrations of development in areas not necessarily suited for this type of use when considering the Commission's goals and policies.

Proximity to service centers has also played some role in the location of residential development in the jurisdiction. Just over half of the 17 fastest growing MCDs are near (within two MCDs and connected by a public road) service centers. However, eight of the MCDs that experienced a high rate of growth are not proximate to service centers.

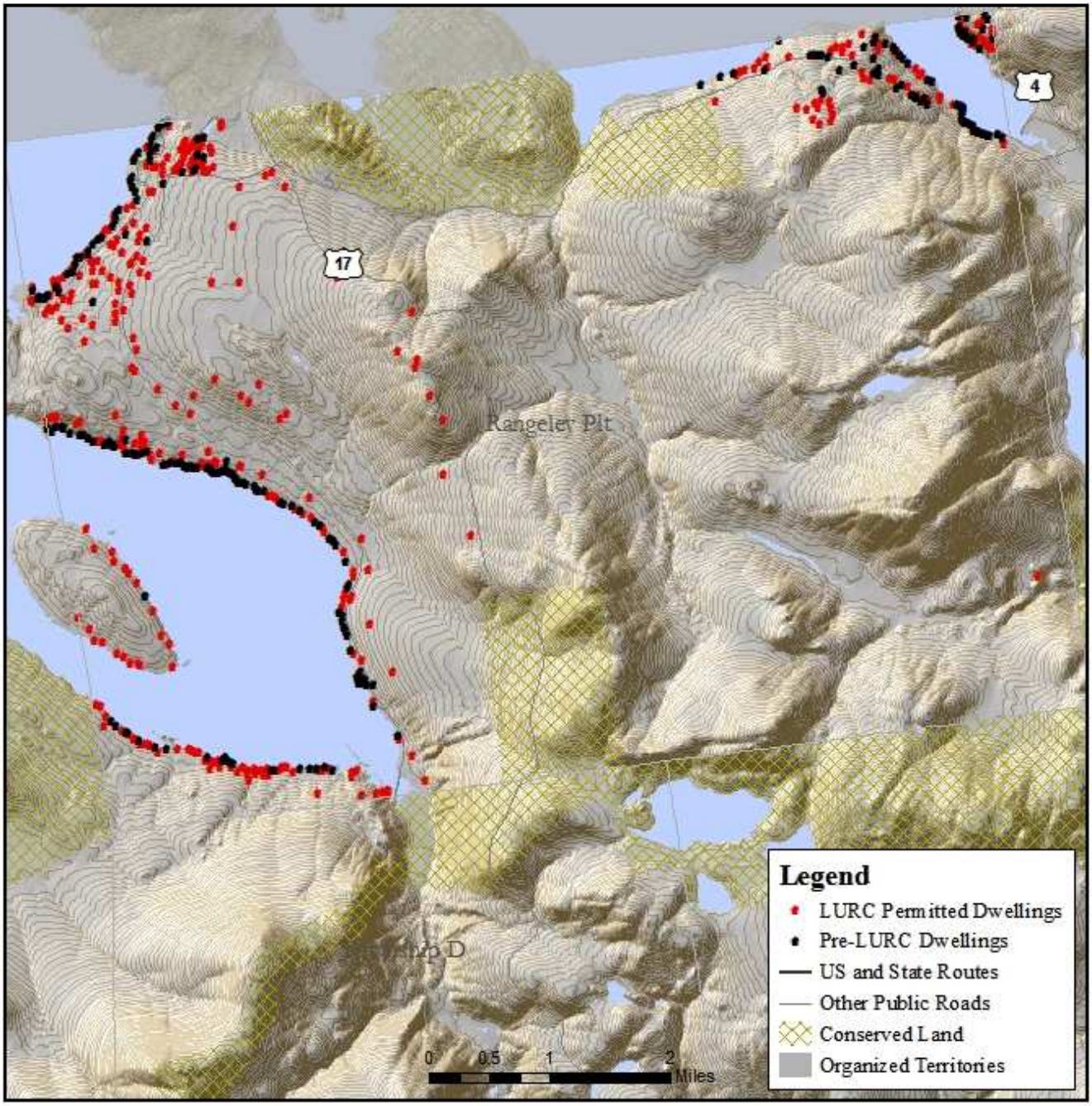
CONCENTRATIONS OF RESIDENTIAL DEVELOPMENT NEAR HIGH-VALUE NATURAL RESOURCES

Approximately 49% (4,032) of new dwellings permitted between 1971 and 2005 took place in the high-value natural resource areas of the Western Mountains and Moosehead Lake. These areas both have significant lake resources as well as hillsides offering attractive views of surrounding areas.

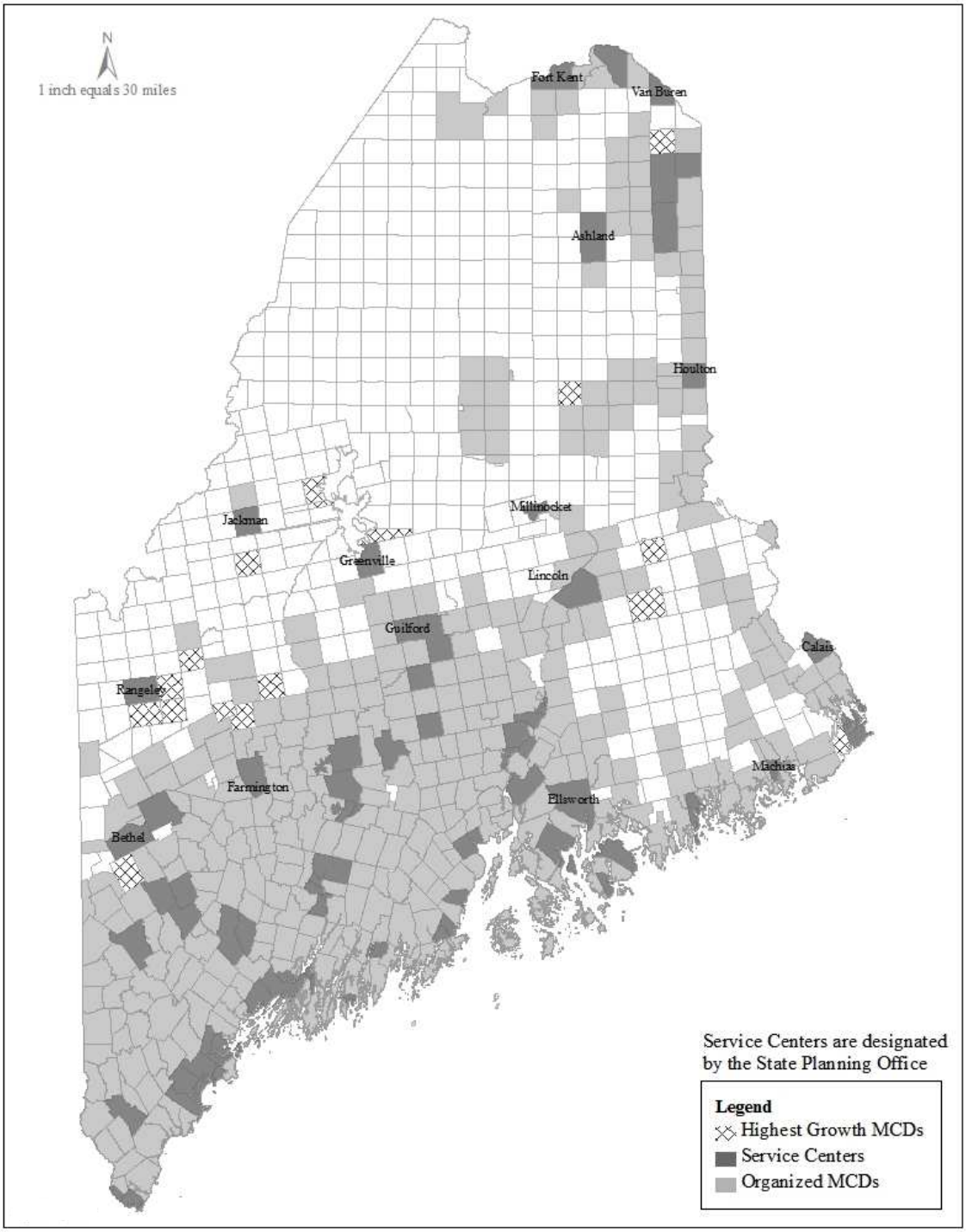
In the 1971-2005 period, the amount of shorefront development has been relatively steady across the jurisdiction as a whole. However, the trends vary by region. For example, permits for residential uses on lakes remained near 33% in the Western Mountains and decreased from 73% to 53% in the Moosehead Lake area.

More recently, as waterfront land becomes less available in some high-growth areas, development pressure is moving up the hillsides and ridges in order to take advantage of attractive views. This is particularly evident in the Rangeley Lakes area (Map 8). The pre-LURC development, represented by black dots, is located along the shoreline. Subsequent development permitted between 1971 and 2005, represented by red dots, includes additional shoreline development but also includes development located on the hillsides and ridgelines. This new pattern of development is occurring both within and outside of the jurisdiction.

Map 8 – Rangeley Area Pattern of Development

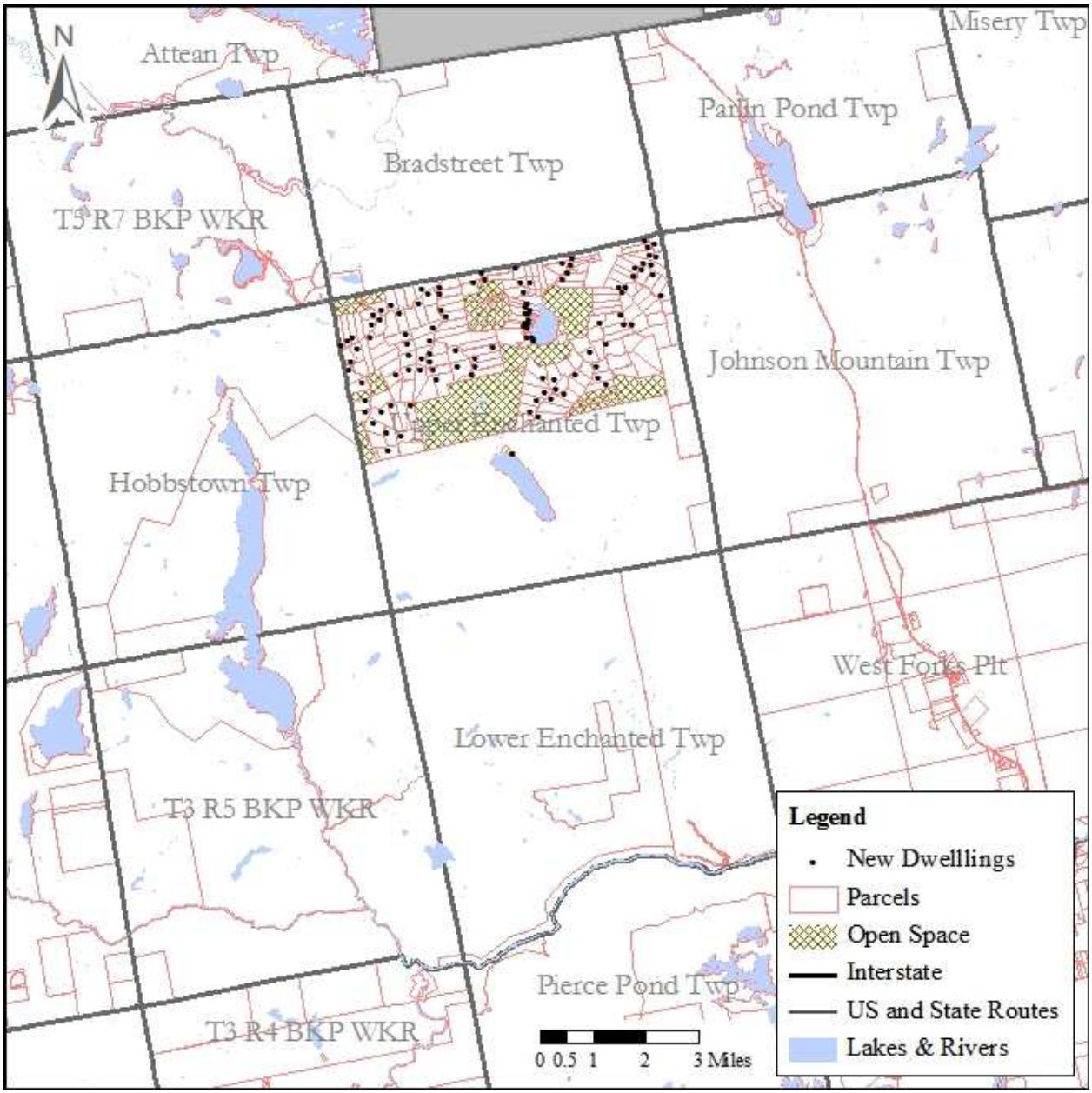


Map 9 – 17 Fastest Growing MCDs [12]



[12] The 17 fastest growing MCDs include: the townships of Albany, Connor, Freeman, Lexington, Prentiss, Rockwood Strip, Salem, Tomhegan, Trescott, and Upper Enchanted; the Towns of Beaver Cove, Lakeville and Mount Chase; and the plantations of Coplin, Dallas, Rangeley, and Sandy River.

Map 10 – Upper Enchanted Land Divisions

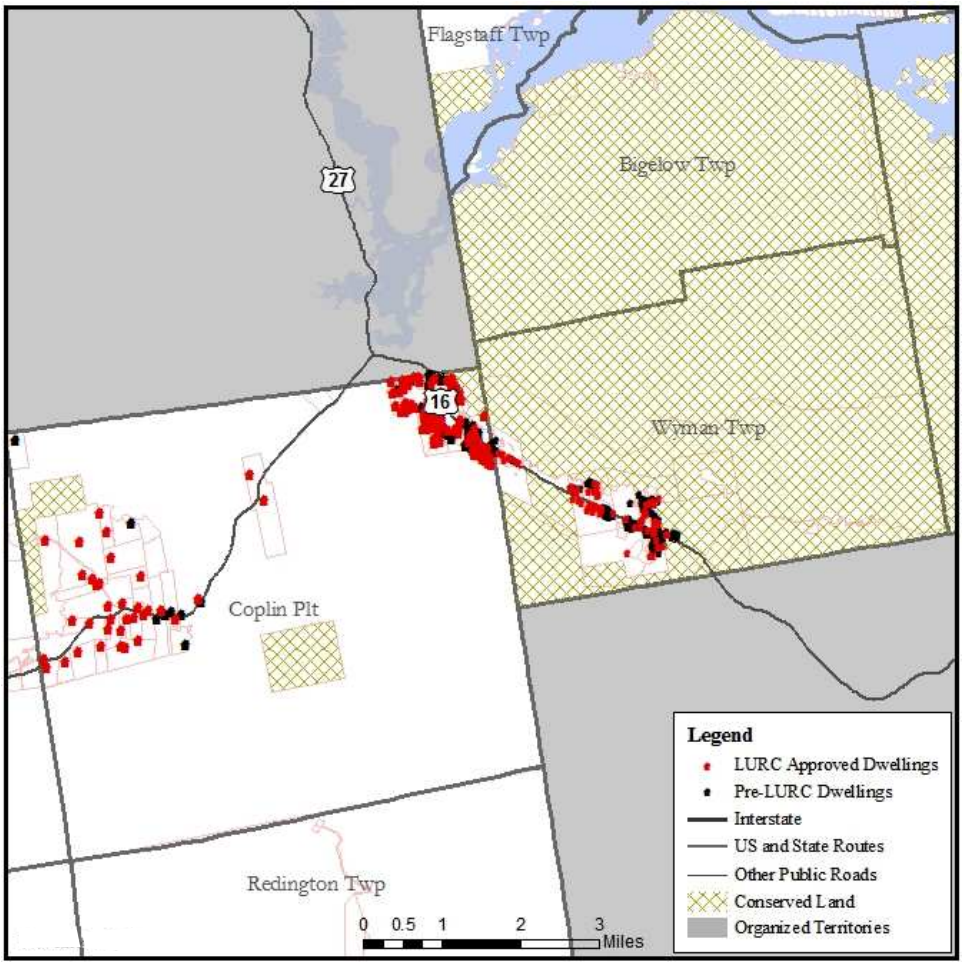


Location and Patterns of Residential Development at the MCD Level

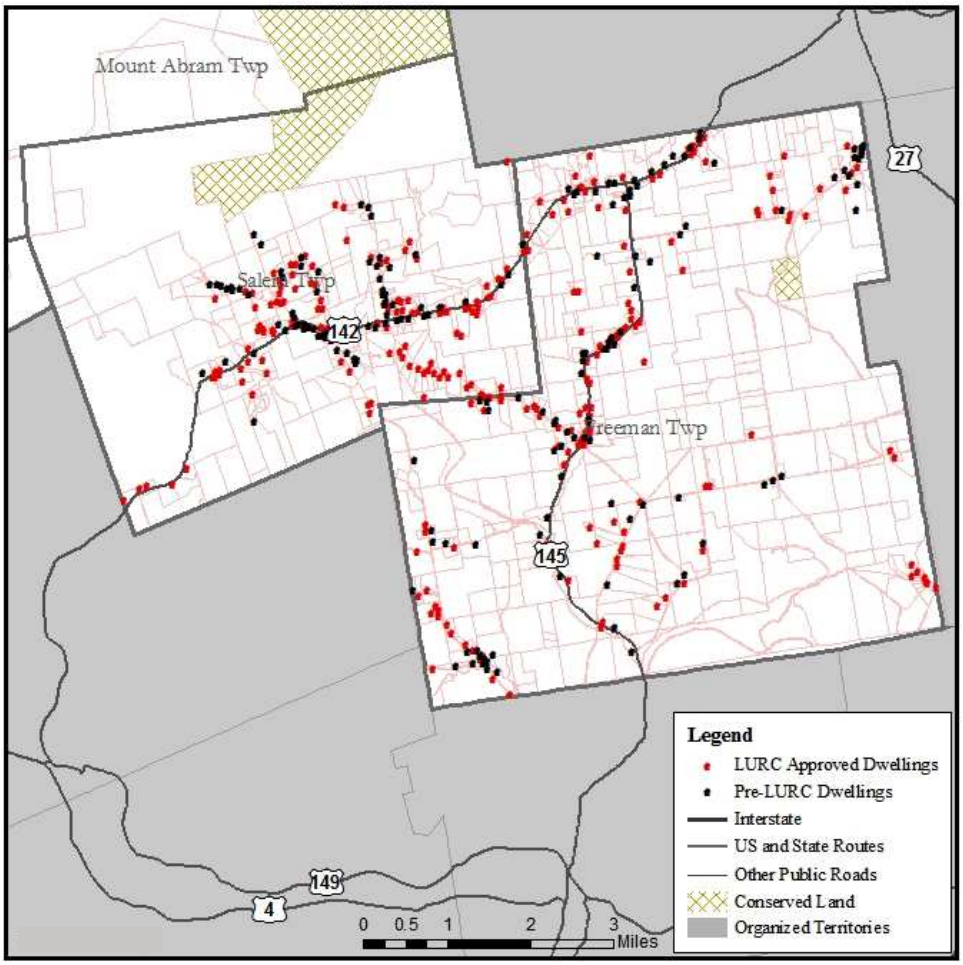
In addition to examining development patterns at the jurisdiction level, it is informative to consider development patterns within MCDs themselves. Doing so reveals that the development pattern within MCDs is quite variable. Some relatively high-growth MCDs may have a dispersed development pattern, while relatively low-growth MCDs may have a concentrated development pattern. The opposite may also be true. Just as at the jurisdiction level, a variety of factors influence the development patterns within MCDs, including landowner objectives and goals, road access and proximity to natural resources, conservation lands and service centers.

For example, the pattern of residential development in Coplin Plantation and Wyman Township — both relatively high- or moderate-growth areas — is fairly concentrated (Map 11). In Wyman Township, this pattern is clearly the result of the presence of conservation lands. Most of Wyman Township is owned by state and federal agencies, and so residential development is concentrated on available land along Route 27. In Coplin Plantation, the concentration of development appears more to be the result of landowner intent. Most of Coplin Plantation remains in single ownership and has not been divided over the last three decades. The owner's apparent decision not to create residential lots has directed most development to east and west portions of the Plantation where land has been available for development. Conversely, the pattern of residential development is more dispersed in the townships of Salem and Freeman (Map 12). Between 1971 and 2005, the Commission approved 44 subdivision lots in these two townships. Additionally, between 1985 and 2005, 169 lots were created through exemptions to subdivision law, and many of these lots are now developed with houses. In Salem and Freeman Townships, the development pattern and the amount of parcelization that has taken place appears to be the result of landowner intent.

Map 11 – Coplin Plantation and Wyman Township Development Pattern



Map 12 – Salem and Freeman Townships Development Pattern



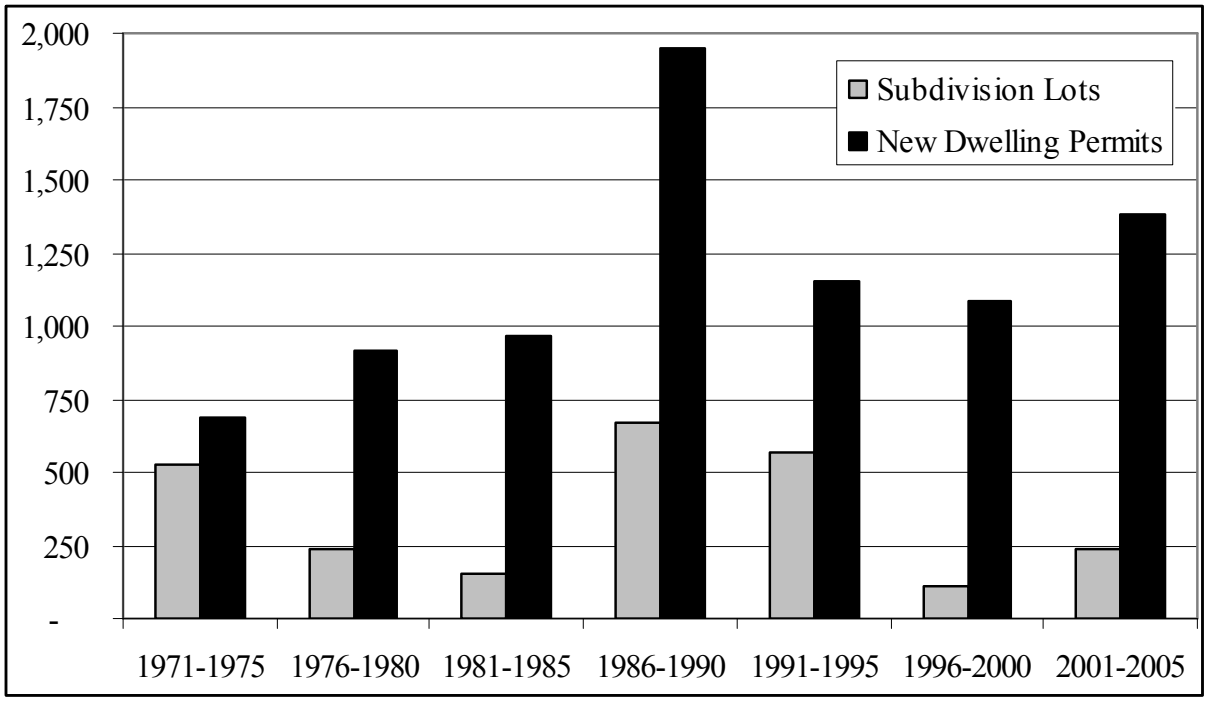
Residential Development Occurring Within and Outside of the Commission's Subdivision Review

As presented above, the Commission permitted 8,136 new residential dwellings in the jurisdiction between 1971 and 2005. The Commission approved 2,494 subdivision lots during this same time period (Figure 1). Assuming all of these approved subdivision lots were developed with a new residential dwelling, at most, only one-third of the new dwellings permitted by the Commission could possibly be located on Commission-reviewed subdivision lots – i.e., parcels that were subject to Commission review regarding the appropriateness of their location at the jurisdiction and regional level.

Conversely, at least two-thirds of the new dwellings permitted by the Commission are not located on subdivision lots. Thus, these dwellings are located on lots that either existed prior to the Commission's inception in 1971 ("pre-LURC lots") or were created via an exemption to subdivision law ("exempt lots")[13]. While the dwellings located on these lots must receive a building permit from the Commission, they do not receive the same type of review that those associated with subdivision receive in terms of the appropriateness of their location at the regional or jurisdiction level.

[13] Some exemptions to subdivision law are located in statute (statutory exemptions) and some are located in LURC rule.

Figure 1 – Number of New Subdivision Lots and New Dwelling Permits by Five Year Category, 1971-2005



While it is not possible to determine how many of these lots were permitted on pre-LURC lots versus exempt lots, Maine Revenue Service and LURC permitting information suggests that exempt lot creation has been substantial in some areas of the jurisdiction. Between 1985 and 2005, the most significant use of exemptions to subdivision law occurred near organized areas. Five percent of the jurisdiction's MCDs experienced the creation of between 40 and 140 new exempt lots between 1985 and 2005, or the equivalent of two to seven exempt lots per year. All of these MCDs are either adjacent to or completely surrounded by organized towns. Fewer exempt lots were created in the remainder of the jurisdiction between 1985 and 2005.[14]

SUBDIVISION DEFINITION AND EXEMPTIONS

Subdivision is defined in statute, 12 M.R.S.A. § 682(2), as the division of a single lot into three or more parcels within a five-year period. Consequently, the division of a parcel into two lots every five years does not, in most cases, constitute a subdivision and is referred to by the Commission as the "2-in-5" exemption. Additionally, pursuant to the Commission's rules and statute, the following divisions are exempt when counting lots for purposes of subdivision: (1) Transfer of Lots for Forest Management, Agricultural Management or Conservation of Natural Resources; (2) Retained Lots; (3) Transfers to an Abutter and Contiguous Lots; (4) Divisions by Inheritance, Court Order, or Gifts; (5) Conservation Lots; (6) Transfer to Government Entity; and (7) Large Lots Managed for Forest or Agricultural Management Activities or Conservation. These lot division exemptions are set forth in statute (12 M.R.S.A. § 682-B) and the Commission's Land Use Districts and Standards (Chapter 10).

[14] This information does not consider lots created using the 40-acre exemption or the sale of leased lots.

Location of Development Subdistricts that Allow Residential Development

Residential Development (D-RS) and General Development (D-GN) Subdistricts occur throughout the jurisdiction and allow single-family residential development as well as residential subdivisions. As discussed previously, the Commission created over 600 D-RS Subdistricts spread across 135 MCDs during its original zoning process in the mid-1970s (Map 13: Original Residential Subdistricts). These zones were placed around existing patterns of development (defined as four or more dwellings within a 500 foot radius).

Since its initial zoning efforts, the Commission has approved 72 landowner-petitioned D-RS Subdistricts located across 59 MCDs (Map 13: Petitioned Residential Subdistricts). The location of these development subdistricts was guided by the Commission's current policies for rezoning and not just by pre-existing development patterns.

There are some differences in the location of Commission-created and landowner-initiated zones. Of the 667 Commission-created development zones based on existing patterns of development, 43% are near (within two MCDs of and connected by a public road) a service center. Overall, these subdistricts are more dispersed across the jurisdiction, and a greater number of them occur in the interior of the jurisdiction. Conversely, of the 72 landowner-initiated zones, 60% are near a service center. A greater percentage of these subdistricts are near organized areas, and the majority is located along public roads or water bodies. Still, the locations of these landowner-initiated rezonings reflect not just Commission policies but also market forces and landowner intent.

While many of the exemptions to subdivision law were established to facilitate the transfer of lands for forest management or conservation purposes, historically, some of these exemptions — including the large lot exemption — have been used for development purposes. The Legislature found that the use of the large lot exemption for development was contrary to the purpose and intent of the exemption and created land use patterns that were out of keeping with sound planning practices and, consequently, modified the large lot exemption so that its use is now limited to agriculture, forestry or conservation.

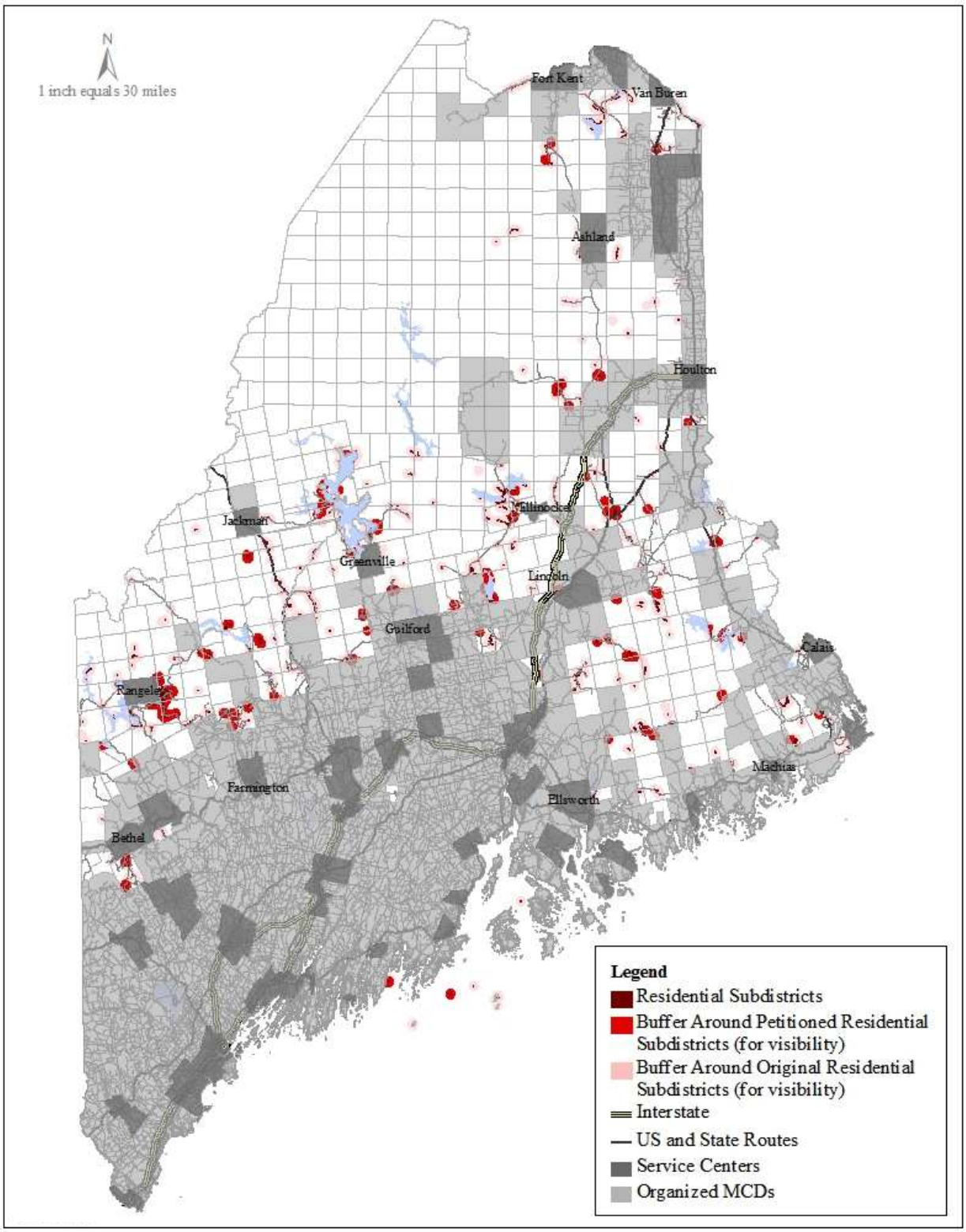
Affordable Housing

Affordable housing is housing that is priced at a level that is affordable to lower and moderate income groups. Housing in much of the jurisdiction has been and remains generally affordable compared to the rest of the state. Nevertheless, housing affordability has become an issue in some areas of the jurisdiction where strong demand or limited housing supply has driven up prices. Lack of affordable housing has both economic and social repercussions. High housing costs may become an impediment to economic growth if workers cannot afford to live in a community. Such costs may also exclude young families from some communities, making it more difficult for them to sustain their year-round population over time.

The high housing costs on Monhegan Island Plantation have prevented the in-migration of new year-round residents. Affordability concerns are most acute on the coastal islands, which do not have the option of drawing their workforce from adjacent towns. The ten coastal islands (three of which are within the jurisdiction) for which data are available have a low affordability rating of 0.5 (where 1.0 indicates a more affordable area).[15]

[15] The Affordability Index measures the ratio between how much of a mortgage loan the area's median income can afford divided by the area's median home price. Source: Maine State Housing Authority.

Map 13 – Residential Subdistricts



A few other areas of the jurisdiction have also experienced problems of affordability (Table 4). The situation appears to be fairly localized in a few seasonal communities possessing outstanding natural resource values and located adjacent to organized towns or service centers. For example, affordability ratings of 0.46 and 0.81 for Rangeley and Greenville, respectively, indicate a lack of affordability.[16] Because localized areas of the jurisdiction have experienced problems of affordability, the Commission adopted rule changes in 2007 to facilitate the provision of affordable housing.

High housing costs and property taxes in organized communities and employment centers can drive people to move farther out to rural areas. As communities with high-value recreational attractions (such as the Bethel, Rangeley and Greenville areas) experience sustained seasonal home demand, year-round residents and some second home buyers will seek affordable land and housing farther afield. This trend could have implications for more rural areas of the jurisdiction and could promote a pattern of dispersed development, resulting in longer commutes/driving time, increased fuel consumption, extension of service areas and infrastructure, and cumulative impacts of development on natural resources and values.

Table 4 – 2005 Homeownership Affordability for Buyers at Median Income

Community or Housing Market	Affordability Index[1]	Median Home Price	Median Income	Income Needed to Afford Median Home Price
Communities				
Greenville	***0.81***	$127,500	$35,948	$44,604
Rangeley	***0.46***	$251,250	$38,243	$83,826
Counties				
Aroostook County	1.41	$67,000	$32,809	$23,249
Hancock County	***0.66***	$196,000	$41,869	$63,206
Franklin County	***0.84***	$127,000	$35,930	$42,752
Knox County	***0.69***	$192,875	$44,005	$63,675
Lincoln County	***0.64***	$209,000	$43,559	$68,281
Oxford County	***0.88***	$129,900	$38,123	$43,510
Penobscot County	***0.88***	$132,500	$39,453	$44,988
Piscataquis County	1.02	$92,000	$31,652	$30,994
Somerset County	1.14	$91,500	$35,153	$30,898
Washington County	***0.89***	$95,000	$29,105	$32,723
Labor Market Areas[2]				
Dover-Foxcroft LMA	1.06	$86,750	$30,982	$29,291
Millinocket LMA	1.81	$53,950	$33,440	$18,488
Coastal Islands[3]	***0.50***	$272,500	$42,716	$85,035
LURC MCDs[4]	***0.68***	$165,000	$36,554	$53,498
Maine	***0.70***	**$184,000**	**$43,370**	**$61,648**

Notes: 1 Affordability Index – the ratio between how much of a mortgage loan the area's median income can afford divided by the area's median home price.
2 LMA – Labor Market Area.
3 Based on data for 10 coastal islands, including Criehaven, Matinicus and Monhegan.
4 MCD – Minor Civil Division, based on data for 58 towns, townships and plantations in LURC jurisdiction and 8 organized towns.

Source: Data compiled by Maine State Housing Authority, distributed at LURC meeting, August 2, 2006.

[16] Maine State Housing Authority. 2005 Housing Facts for LURC Regions, Maine Islands, Greenville, Millinocket, Rangeley. Compiled by MSHA for Land Use Regulation Commission Meeting Housing Panel. August, 2006.

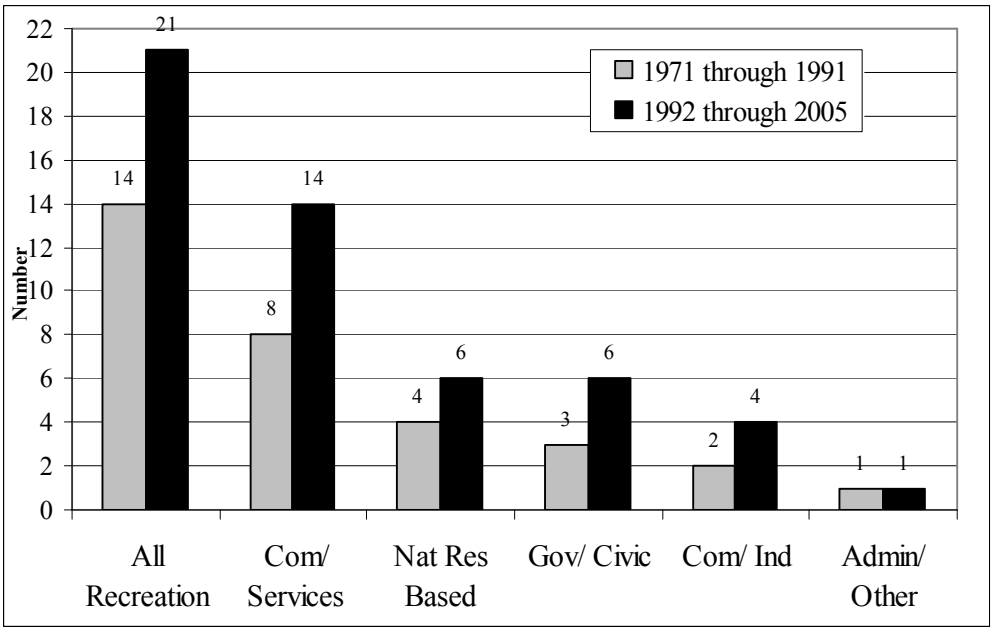
4.6.C NONRESIDENTIAL DEVELOPMENT

This section describes the nonresidential development activities or land uses that require a permit from the Commission. These activities are wide ranging and include recreational uses, commercial industrial activities, and government or civic facilities. Some of these activities are allowed in the General Management (M-GN) Subdistrict, while others are only allowed in development zones and thus require rezoning. While forestry and agricultural management are the dominant nonresidential land uses in the jurisdiction, many of the associated activities do not require a permit from the Commission and are therefore not included in the permitting data cited in this section.

Amount of Nonresidential Development

Between 1971 and 2005, the Commission issued 1,353 development permits ("DPs") for new uses or substantial amendments to existing uses (Figure 2). The rate of permitting for nonresidential development activities has more than doubled in recent years. From 1971 through 1991, the Commission issued 629 DPs, or approximately 21 permits per year; whereas from 1992 through 2005, the Commission issued 724 DPs, or approximately 56 permits per year.

Figure 2 – Average Annual Number of Development Permits



Permitted nonresidential development is broadly dispersed across the jurisdiction (Map 14). This development is located in 249 MCDs, or approximately 55% of the MCDs in the jurisdiction, and occur within development subdistricts as well as in other subdistricts, such as the M-GN Subdistrict and certain protection zones.

A wide range of land uses and activities is represented in the Commission's nonresidential permitting data. For general planning purposes, these uses can be divided into broad categories (Table 5). Recreational facilities and commercial service facilities accounted for the greatest number of DPs (62%) issued between 1971 and 2005. Government/civic and commercial industrial activities experienced the greatest percentage increase in permitting activity during this time period.

Map 14 – Development Permits by Category, 1971-2005

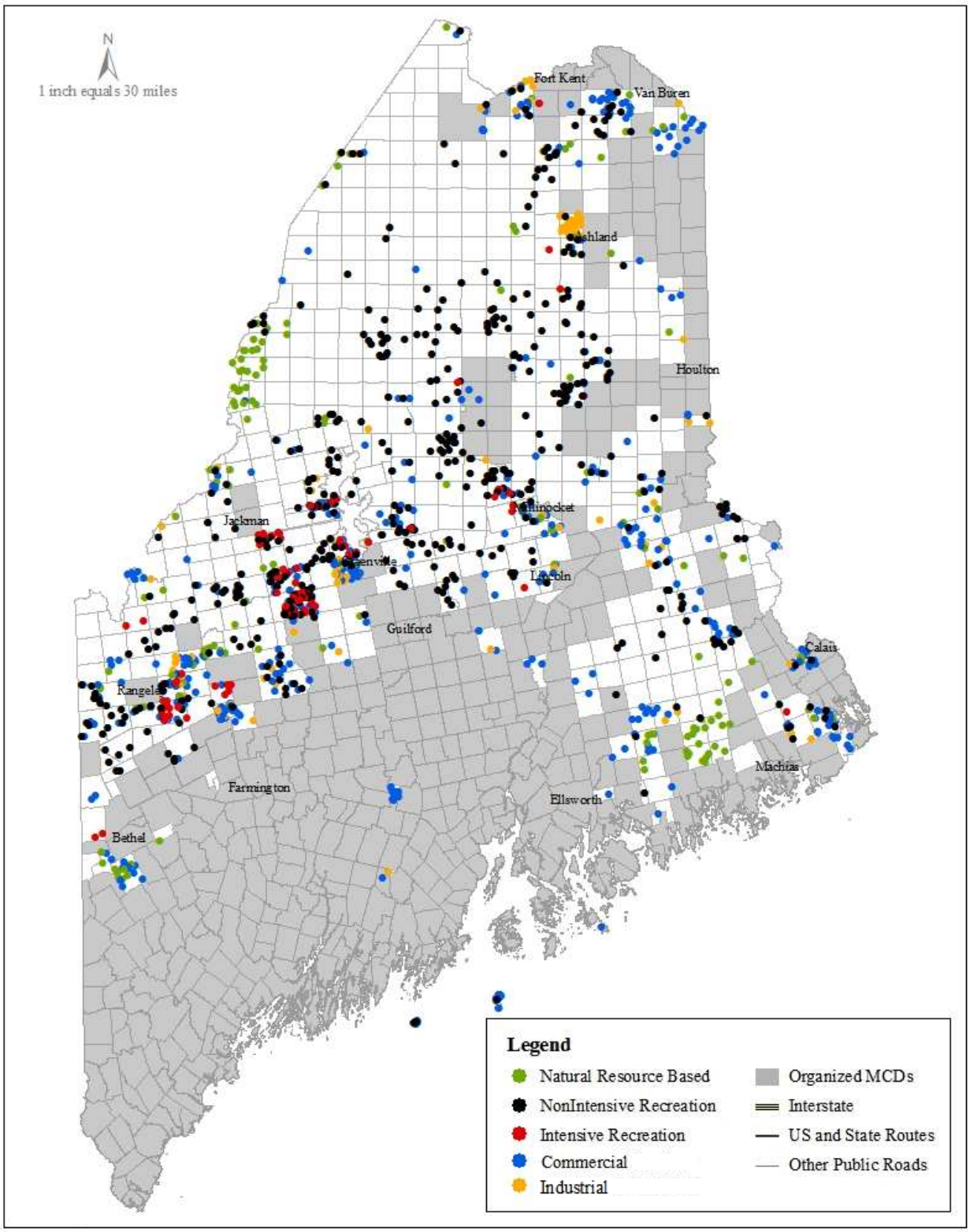


Table 5 – Development Permit Use Categories

Category	Description	Subcategory	Example of land uses	Zoning
Natural Resource-Based Development	Uses and structures which are resource dependent or linked to the harvest or management of natural resources (does not include any forest or agricultural management activities exempt from the permitting process)	*Agriculture/ Forestry*	Agricultural activities, dam/dikes, dri-ki collection, forestry activities	M-GN
		Extraction (water)	Non-consumptive water extraction	
		Sugaring	sugar camps and evaporators	
		Extraction (mineral)	Gravel pits, rock quarries, and clay extraction	Development Subdistrict
Recreational Development	Recreational uses which are less intensive in nature	*Low-Intensity Recreational Development*	Boat launches, campsites, campgrounds, gatehouses, recreational lodging facilities (cabins and sporting camps), and trails	M-GN
	Recreational uses which are more intensive in nature	*HighIntensity Recreational Development*	Golf courses, rafting bases, and ski resort facilities	Development Subdistrict
Commercial Development	Uses which offer either a service or retail opportunity	*Home Occupations*	Small engine repairs, craft shops, and saunas	M-GN
		Utility	Towers, utility facilities, and radio repeaters	

Commercial Development (continued)	Uses which offer either a service or retail opportunity	*Retail/Services*	Gas bottling, gift shops, antique shops, mobile home sales, salons, laundromats, welding shops, grocery and convenience stores	Development Subdistrict
		Lodging/ Restaurants	Hotels, motels, pizza and ice cream shops, and lounges	
		Office/Storage	Various office uses, storage facilities, and other commercial uses	
Industrial Development	Uses incompatible with residential uses	*Airstrip*	Airstrips and hangars	M-GN
		Landfill	Landfills and waste dumps	Development Subdistrict
		Forest Products Processing	Mills*, planer or chipper* buildings, and kilns *(*size thresholds apply)*	
		Mineral Processing	Rock crushing and paving plants	
Government and Civic	Development conducted by government agencies, civic groups, church groups, sewer/water districts	*Not Applicable*	Churches, fire stations, libraries, salt/sand storage, schools, town garages, and transfer stations	Development Subdistrict
Administrative	Changes which are not of a material or physical nature	*Not Applicable*	Changes in permit conditions or dimensions, time extensions, transfers of ownership, and appeals	All Subdistricts
Other	Permits and uses which do not fit into any of the categories above	*Not Applicable*	Residential uses *(these dwellings are included in Residential Trends)*	All Subdistricts

Natural Resource-Based Development

Although forest and agricultural management activities are the predominant land use in the jurisdiction, most of the structures and facilities associated with these land uses are not reflected in the following data because they are exempt from the Commission's permitting requirements. Many of the natural resource-based activities that do require a permit from the Commission are allowed in the M-GN Subdistrict; however, some of the larger scale or more intensive natural resource-based activities require rezoning to a development subdistrict.

Some natural resource-based activities in the jurisdiction occur in clusters, while others are more dispersed depending upon the location and distribution of the resource (Map 14: Natural Resource-Based). For example, a number of water extraction permits for blueberry crop irrigation purposes are concentrated in the Downeast area. Likewise, several maple sugaring operation permits are found in western areas along the Canadian border. Gravel extraction activities are scattered throughout the jurisdiction. Many gravel pits are small operations allowed in the M-GN Subdistrict and used for road construction and maintenance or for general construction in the region.

MAPLE SYRUP PROCESSING

The M-GN Subdistrict allows sugar camp operations. This activity includes the construction of sugaring camps and processing of the sap on-site. The Commission has determined that these camps are compatible with the purpose of the M-GN Subdistrict as long as they are used for the intended purpose. The Commission is particularly mindful of the future conversion potential of these facilities to uses that are not necessarily compatible with the purpose and intent of the M-GN Subdistrict in which they are located.

Larger extraction operations for gravel or other minerals require rezoning to a development subdistrict. Although interest in the state's metallic resources is increasing, commercial mineral extraction plays only a minor industrial role in the jurisdiction. Mineral exploration, however, occurs in a number of areas along with some small-scale gemstone mining, most notably in the Western Mountains area.

Natural resource-based activities in the jurisdiction also include energy generating facilities. The Commission allows these uses only in certain development subdistricts due to the large infrastructure generally associated with them. The jurisdiction contains a handful of commercial electric power generating facilities, such as hydropower dams and biomass plants. Interest in wind-generated energy has risen dramatically in recent decades. The technology has improved and costs of wind-generated energy have dropped significantly in the intervening years. Some areas of the jurisdiction have relatively high sustained wind velocities. Energy facilities are discussed in more detail in Section 5.5.

Recreational Development

Forty-two percent of development permits issued by the Commission between 1971 and 2005 were for recreation-related activities and facilities. These permitted activities take place across the jurisdiction, confirming that recreation is a widespread and important land use in the jurisdiction. (In fact, the data may actually under-represent recreational uses due to the fact that some recreational facilities predate LURC

and are not reflected in the permitting records. Also, some recreational uses in Resource Plan Protection (P-RP) or Recreation Protection (P-RR) Subdistricts do not require a development permit and therefore are not reflected on Map 14. Lastly, in some cases, a single permit is issued for multiple campsites or rental cabins in multiple MCDs. Such permits would appear as a single dot in one MCD on Map 14.)

Low-Intensity Recreational Development

Most recreational pursuits in the jurisdiction are low-intensity activities which require development of few, if any, facilities or support services. Common examples of low-intensity recreational facilities are public and private sites for picnicking, launching boats, and swimming; trails for snowmobiling, hiking, cross-country skiing, and snowshoeing; and lodging facilities such as remote rental cabins and sporting camps.

Low-intensity recreational facilities such as campsites, campgrounds, sporting camps, and boat launches are more dispersed compared to high-intensity recreational facilities (Map 14: Intensive Recreation). This is due in part to the fact that the low-intensity facilities are allowed in most management and protection subdistricts, as they are considered compatible with the primary purposes of those subdistricts. The number of traditional sporting camps has declined throughout this century, but there has been renewed interest in these facilities and improved coordination and promotion by camp owners. Many of these facilities are marginal, labor-intensive operations. Their future success may be tied to increasing their clientele while maintaining the remote character of the camps and their surroundings.

High-Intensity Recreational Development

High-intensity recreational facilities include golf courses, ski resorts and commercial rafting bases. These facilities tend to be located along highway corridors in areas with high natural resource values, and require rezoning to a development subdistrict. There are clusters of development permits issued for high-intensity recreational development around Rangeley, The Forks, south of Jackman, Moosehead Lake and just south of Baxter State Park.

The most intensive recreational development in the jurisdiction is associated with three alpine ski resorts: Saddleback Mountain Ski Area in Sandy River Plantation near Rangeley, Sugarloaf Mountain Ski Area in Carrabassett Valley, and Sunday River Skiway in Newry and Riley Township. Sugarloaf was once part of an unorganized township that was annexed by the Town of Carrabassett Valley in 1977. However, unorganized communities adjacent to Sugarloaf continue to provide needed support services. Squaw Mountain, a relatively small-scale alpine ski facility, is located within the jurisdiction near Greenville. Continued growth of Sunday River, Saddleback and Sugarloaf can be expected as they compete for larger shares of the regional ski market. Downhill ski areas are likely to continue trying to attract more year-round business with activities such as golf, foliage viewing and mountain biking. Furthermore, extensive residential development is increasingly associated with ski resort development activities.

The whitewater rafting industry is centered on two outstanding whitewater river segments: the West Branch of the Penobscot River and the Kennebec River Gorge. The industry includes more than ten rafting companies that provide their clientele with food, lodging, equipment, guide services and transportation to and from the river. A number of rafting bases have been constructed in the vicinity of these whitewater segments. For example, several are located along Route 201 in The Forks Plantation.

Nature-Based Tourism Development

Until recently, tourism in the jurisdiction has taken the traditional form of small-scale, scattered recreation by a relatively small number of people engaged in day trips or low-impact camping. In general, facilities serving these tourists in the jurisdiction have been small lodging and retail establishments. However, interest in nature-based tourism – including by state and private entities — may lead to new proposals, including large-scale destination resorts that offer a broad range of activities, and upgrades of existing uses to provide more amenities and recreational options. These proposals will likely benefit from being located in areas with high scenic or recreational values, where questions of appropriateness of location and impacts upon existing uses, resources and values are particularly important.

Diversification of Recreational Development

A likely future trend for campgrounds, sporting camps and whitewater rafting operations is diversification into secondary activities as a means of attracting more business. For example, some sporting camps now remain open year-round to cater to snowmobilers and other winter recreationists. Several rafting bases and sporting camps have added campground areas and have dining facilities open to the general public. A number of campground stores cater both to campers and to the public at large. As this trend continues, it may become increasingly difficult to clearly distinguish between different types of recreational facilities and to assess potential impacts.

Recreational activities and facilities are discussed in more detail in Section 5.9.

Commercial Services

Commercial services in the jurisdiction comprise a wide range of activities and facilities including home occupations, hotels and motels, restaurants, storage facilities, gas stations, gift shops, utilities and wharfs. Twenty-six percent of the DPs issued by the Commission from 1971 through 2005 were for these types of commercial services (Map 14: Commercial Services).

Restaurants and lodging facilities tend to be located along public roads in areas of high natural resource value. They are located predominantly in MCDs bordering organized areas, clustered near gateway communities such as Rockwood Township, The Forks Plantation and areas south of Baxter State Park. While commercial services tend to be near organized towns, they are not necessarily near service centers.

Retail facilities and stores, while also located predominantly near organized areas, tend to be more dispersed than restaurant and lodging facilities. These activities tend to be located in areas where other services are not available.

Commercial and Industrial Development

Commercial and industrial facilities include airports, landfills and processing facilities such as lumber mills and rock crushing plants. Although commercial and industrial facilities constitute a small percentage of nonresidential development permits issued between 1971 and 2005, they represent significant economic activity. Most industry in the jurisdiction is related to wood products or energy production. Chipping mills and saw mills of various sizes and types operate in a number of MCDs. The majority of these occur near service centers or major road corridors, such as those located outside of Ashland, Greenville and Fort Kent (Map 14: Commercial Industrial).

The Commission generally seeks to site these facilities close to service centers and similar development centers, in part to provide an employee base and access to services and infrastructure. However, these facilities must also be buffered from residential uses. Balancing these two objectives can be challenging. The Extended Settlement Development (D-ES) Subdistrict, established in the Rangeley PZP, was created in part to address this balancing act, although it is only appropriate for smaller scale industrial facilities.

Large gravel pits occur throughout the jurisdiction and are regulated in a unique manner. Due to the fact that they are sometimes located in more remote areas of the jurisdiction, the Commission permits large extraction operations through rezoning to Commercial and Industrial Development (D-CI) Subdistricts, conditioned with dates of expiration. Once the land use activity is complete, the D-CI zoning expires and the area reverts to its original zoning, which is M-GN in most cases. The Commission established temporary D-CI Subdistricts to allow activities that are appropriate on a short-term basis. The Subdistricts cannot then serve as the basis for a new pattern of development. A few of these D-CI zones where operations have ceased have not yet been changed back to their original zoning, and the Commission needs to complete this task.

Other

The Commission issues permits for various government and civic facilities and administrative matters such as changes in permit conditions and time extensions.

4.6.D PUBLIC FACILITIES AND SERVICES

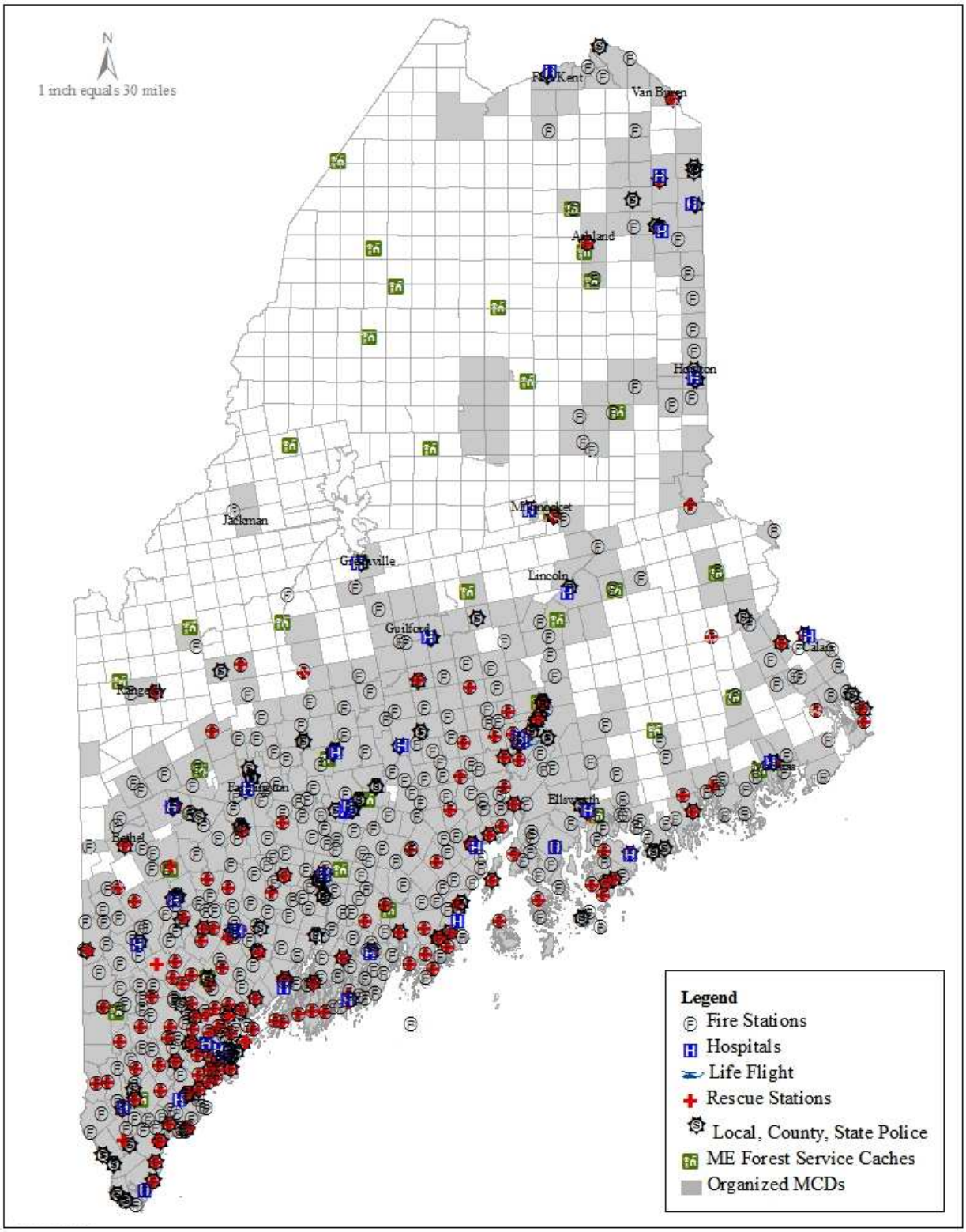
The jurisdiction is generally characterized by a lack of public services, particularly when compared to the rest of the state. This is due in large part to the jurisdiction's relatively small year-round population and remote location. Public facilities and services that do exist in the jurisdiction include fire and police protection, education, solid waste disposal and public utilities. These facilities and services are most available on the edge of the jurisdiction near organized communities, where the majority of the year-round population resides. In 2000, most of the jurisdiction's year-round residents (70%) lived within three miles of an organized town.

In the absence of the municipal form of government, state agencies, county governments and other entities provide services to the unorganized territory. Plantations and towns within the jurisdiction are responsible for either providing their own services or contracting with nearby towns. This section describes the type and degree of services that exist in the jurisdiction.

Public Safety

Although a few towns and plantations have their own fire and rescue units, fire protection and emergency services for most unorganized townships are provided through county government, which arranges contracts with neighboring organized towns. Services are typically provided to unorganized townships that are within a reasonable range of available services. A network of EMT stations, hospitals, medical centers, and LifeFlight of Maine provide emergency and medical services. Most emergency service facilities are located in or near organized areas (Map 15).

Map 15 – Emergency Services



Response time is a critical element of the effectiveness of emergency services and is affected by both travel distances and road conditions. In some instances a critical response time of as little as 15 minutes is important.

Forest fire protection is provided by MFS. While MFS tries to contain fire from spreading to nearby areas, its primary obligation is to protect the forest and not to rescue buildings or homes. MFS personnel are not allowed to enter buildings due to a lack of relevant training and equipment. County sheriff departments, the Maine State Police and plantation police are responsible for law enforcement.

Education

Public education for residents of the jurisdiction is available from state-operated schools or adjacent educational units. There were approximately 1,150 students in the unorganized territory in 2008. One hundred sixty-nine of these students attended five state-operated schools in Edmunds, Connor, Sinclair, Kingman and Rockwood. The remaining 980 students attended schools in organized towns, to which the state paid tuition. Due to low enrollment, the school in Rockwood closed at the end of the 2008-2009 school year. The small number of students and the vast geographic areas over which they are spread means that the cost per student in the unorganized territory usually exceeds statewide averages. Transportation expenses are double statewide averages for these students due to the long distances that must be traveled and the high vehicle maintenance and replacement costs associated with traveling over substandard roads.

Slow growth in the jurisdiction's year-round population makes an increase in demand for education facilities unlikely. Should it occur, however, the most noticeable education-related impact of such growth may affect the governments of adjacent, high-growth communities.

Solid Waste Disposal

The disposal of household and commercial wastes is handled in a variety of ways. Towns and plantations run their own solid waste facilities or pay to use facilities in neighboring towns. In the unorganized territory, county commissioners make arrangements for solid waste disposal. Communities on the periphery of the jurisdiction tend to use landfills in nearby organized towns.

The jurisdiction is sometimes considered as a potential site for regional and statewide solid waste facilities. This is due in part to the availability of relatively inexpensive land, low population densities and the closure of town dumps throughout the state. The Commission's policy is to site solid waste facilities close to organized areas rather than in more isolated areas of the jurisdiction. However, the Commission recognizes the need to locate these facilities in areas that have appropriate site conditions, but away from other land uses such as residential development.

There are currently four landfills (some of which are owned and operated by organized municipalities) and fifteen transfer stations (which serve as collection sites for solid waste) located within the jurisdiction. Some of these solid waste handling facilities are facing capacity constraints or other issues.

Water and Subsurface Waste Disposal

Only a small portion of the dwellings and facilities in the jurisdiction are served by public sewer or water. Most of these dwellings and facilities are adjacent to larger, organized communities with sewer or water districts. The vast majority of dwellings and facilities draw water from wells, springs or nearby surface water sources and dispose of septage by means of on-site subsurface waste disposal systems or privies.

According to the 1990 U.S. Census, 63% of the housing units in the jurisdiction have individual wells, 12% have public water, and 25% have some other form of water supply. The Census also reported that 73% of the units have septic systems, 7% had public sewer and 21% had another means of waste disposal (most likely pit privies). It is probable that some of the housing units serviced by "public" facilities rely on shared wells or clustered waste disposal systems.

As of 2003, approximately 140 of the water systems in the jurisdiction were considered "public water supplies" (defined by the number and frequency of water consumers) by the Maine Department of Health and Human Services. These systems serve various uses, such as schools, offices, campgrounds, golf courses and highway rest stops. The Maine Department of Health and Human Services administers the rules governing public water supplies.

Public Utilities

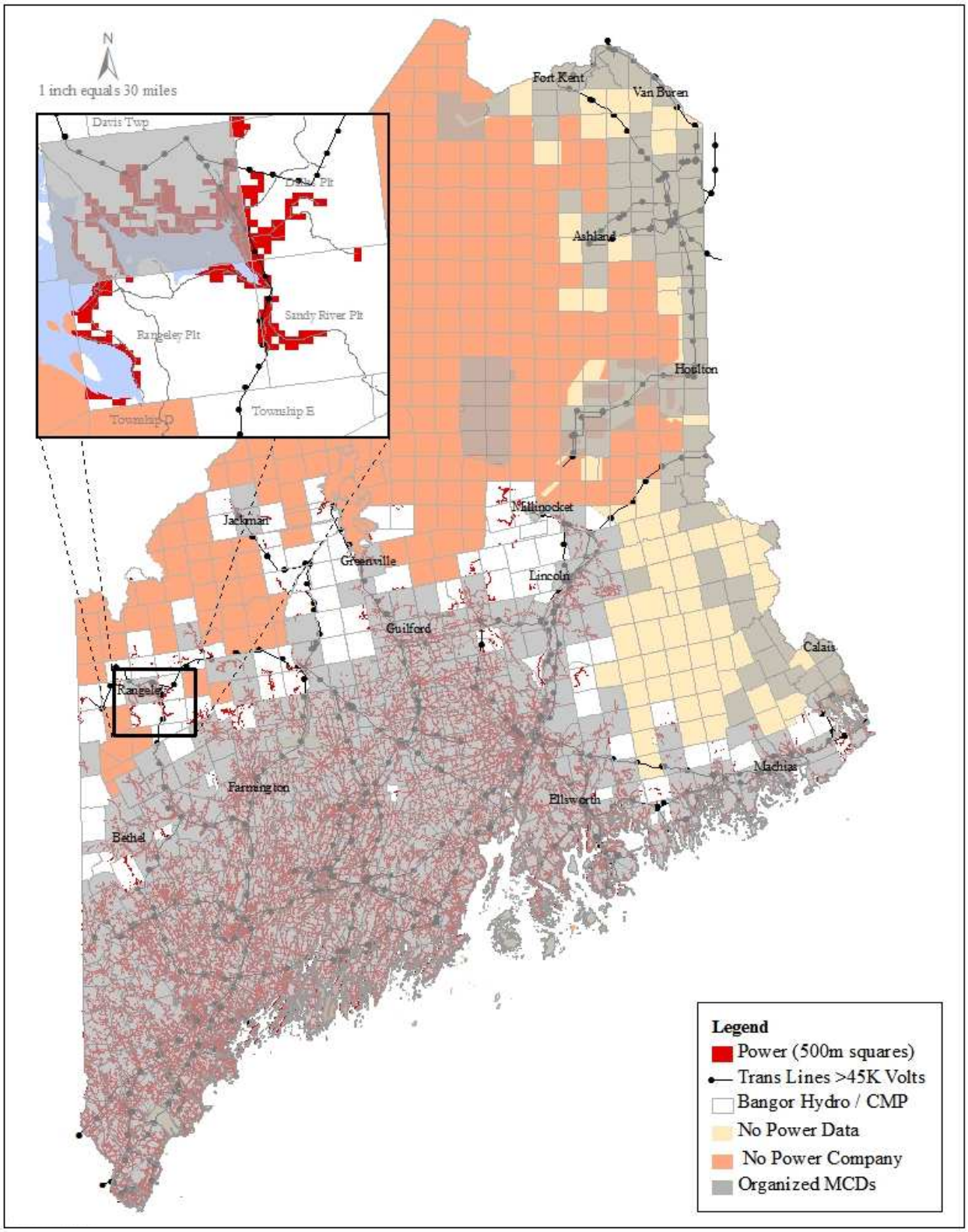
While most year-round homes have electricity and telephones, a substantial percentage of seasonal homes have neither. These homes are typically located in more isolated areas that are distant from utility distribution lines (Map 16).

The main distributors of electricity are Central Maine Power Company, Bangor Hydro-Electric Company, and Maine Public Service Company. Several smaller electric utilities provide power as well. The power distribution system is comprised of transmission lines, which transport high voltage electricity long distances, and distribution lines, which deliver power to homes and businesses.

There is limited information on the location of utility distribution lines in the jurisdiction. Many utility line extensions are exempt from Commission review, so the Commission has limited data on these lines, and some power providers do not have the capacity to share their data. The data that are available illustrate that public utilities are concentrated along the edge of the jurisdiction and are almost completely absent from the interior. Excepting Interior and Aroostook areas for which data are not available, electric service was provided to more than 8,000 homes and businesses in the jurisdiction in 2004.

The Commission has authority for permitting utility lines only when they are located outside of public rights-of-way. Most utility line extensions permitted by the Commission from 1971 through 2005 are located around the Rangeley, Jackman and Moosehead Lake areas, and the Downeast area around Vanceboro and Patten. Between 1971 and 1991, the Commission issued 525 permits for utility extensions. Many of these permits were for short connections to existing utility lines. A number were for longer extensions. Since 1992, the Commission has issued approximately 80 permits for utility extensions and an additional 281 service drops for phone service, electric service, or both. The distance qualifying as a service drop was increased from 1,000 to 2,000 feet between these two time periods, thereby explaining the decline in utility line permits.

Map 16 – Utility Lines and Service Points



As utilities seek new customers and camp owners request electric and phone service, applications for future extensions into more remote areas are likely. Extension of utilities into an undeveloped area generally makes it more attractive for year-round development. A more significant ongoing trend, however, is the extension of electric power to older seasonal developments that previously relied on hand-pumped water and privies.

Fairpoint is the main provider of local phone service, but several smaller independent phone companies provide service as well. While verbal communication remains the most common use of telephones, technological advances are revolutionizing the use of phone lines as a vital link to an expanding communication network. Phone lines, as well as cable and wireless capabilities, are increasingly used for voice, video and data transmission purposes where the infrastructure exists. Digital Subscriber Line (DSL) service, offering high-speed digital communications over typical phone lines, is available in parts of approximately 36 MCDs in the jurisdiction. There are approximately ten wireless communication towers, providing service for cellular phones located within the jurisdiction as well as at least 50 facilities located outside of the jurisdiction that provide some level of coverage within the jurisdiction. As people become accustomed to having cellular service, there will be increased pressure for the development of this infrastructure within the jurisdiction. Advancements in communication technologies provide new economic opportunities to previously isolated areas. These advancements increase employment opportunities for those who wish to live in relatively remote areas and work out of their homes.

Utility Service Line

Costs Associated with Public Facilities and Services

While Maine statute allows public agencies, including municipalities and counties, the discretion to provide services and facilities in a manner that best fits the geographic, economic, population and other characteristics of communities, county commissioners and local officials generally seek to provide reasonable services to the unorganized territory.

County governments prepare a budget to pay for municipal services provided to the unorganized territory. The Legislature authorizes county budgets as well as the costs of state-provided services, and the Maine Revenue Services collects the appropriated funds through unorganized territory property taxes. The unorganized territory has a much lower mill rate than many organized areas of the state. In some cases, this lower mill rate does not reflect the true cost of providing services in the jurisdiction. To some degree, large landowners subsidize costs for other residents of the unorganized territory, and organized areas subsidize part of state-provided services such as Maine Forest Service fire protection. In 2005, the Legislature established a committee to study the costs of providing services in the unorganized territory. The committee presented its findings and recommendations in a 2006 report ("State of Maine Report - The Commission to Study the Cost of Providing Certain Services in Unorganized Territories").

In general, communities in the jurisdiction will continue to rely on facilities and services provided by counties and organized towns. Consequently, population and housing growth in the jurisdiction will have impacts on neighboring organized communities. Expectations regarding service levels can magnify these impacts. A slowly increasing size and gradual aging of the jurisdiction's population may lead to increasing demands and expectations regarding public services.

The costs of providing services in rural areas remain modest when services such as police and fire are minimal, largely volunteer-based or are transferred to another level of government. However, as expectations increase, the costs of providing higher levels of services often rise. Some of these costs may be transferred back to unorganized territory taxpayers, remain with organized community taxpayers, or both.

The pattern of population and housing growth in the jurisdiction may influence the degree to which the costs of providing public facilities and services will increase. Studies point to the fact that more dispersed patterns of development can impose higher infrastructure and service costs on municipal governments and their taxpayers. There is often a connection between sprawl and the three primary cost drivers for services: (1) the construction of redundant infrastructure to support dispersing populations; (2) the similar expansion of service-provision areas and routes (lengthening of service routes for police, fire, emergency, road maintenance and plowing); and (3) the maintenance of old under-used service capacity.

Often, it costs more on a per-unit basis to serve families that are widely dispersed than it does to serve families that live in traditional neighborhoods. However, the costs of dispersing development go beyond fiscal considerations. There are also costs to air quality, lake water quality, and contiguous wildlife habitat and other natural resources. The Commission will continue to closely monitor patterns of development in light of the public costs of providing services to dispersed development.

POPULATION GROWTH AND SERVICE COSTS

When the population in the unorganized territory increases, it can create a burden on service providers in neighboring organized towns. For example, emergency responders from Bethel cover property owners in parts of Albany and Mason Townships. While Bethel taxpayers are currently paying property taxes of $17.86 per thousand dollars of assessed valuation, property owners in Albany are only paying $7.21. The nature of development in the unorganized territory is changing and some argue that the method of paying for essential services needs to change as well.

4.6.E AREAS WITH SPECIAL PLANNING NEEDS

The Commission has identified several areas of the jurisdiction that are especially well-positioned for more specialized, forward-looking planning and zoning approaches than the Commission's regulatory approach typically affords. These areas are generally referred to as "high-growth, high-value" areas and "low-growth, high-value" areas.

High-Growth, High-Value Areas

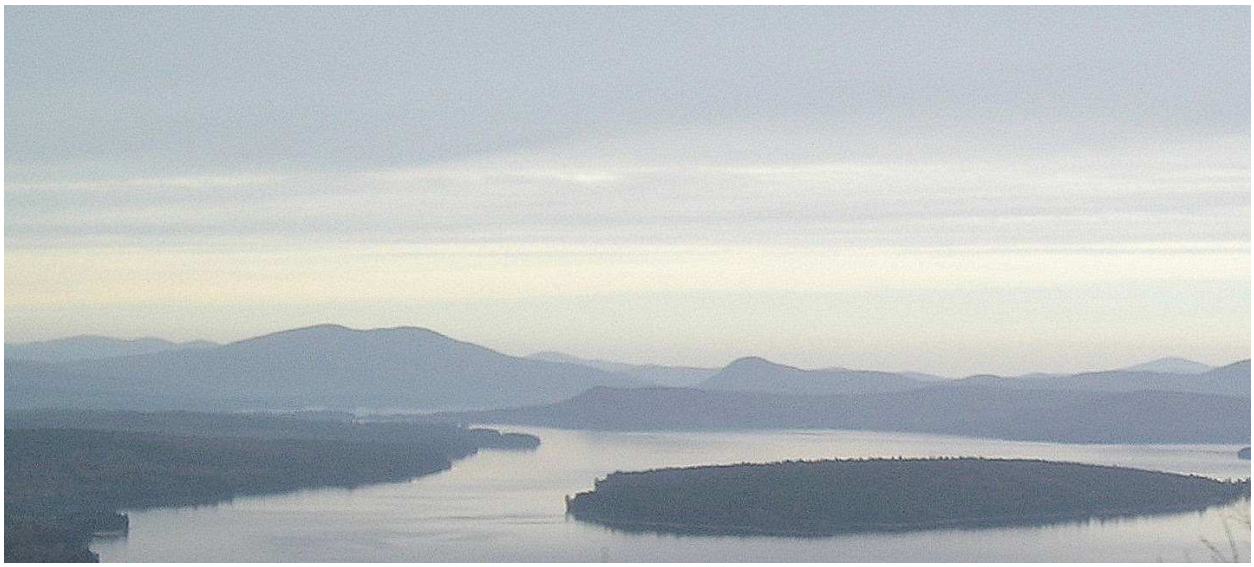
The first Comprehensive Land Use Plan, adopted in 1976, identified several areas of rapid growth including the Rangeley Lakes, Moosehead Lake, and Carrabassett Valley areas. Examination of growth trends indicates that many MCDs in these areas have continued to attract development. In fact, several of the 17 fastest growing MCDs discussed above are located in each of these areas. These MCDs also possess concentrations of high-value natural resources that are potentially threatened by continued high rates of growth.

In addition to these high-growth areas, several other areas or communities experienced moderate growth and possess characteristics that make significant future growth likely. Some of these areas have high concentrations of recreational and natural values that may attract development. Other communities owe their growth to their accessibility or location near a population or employment center. The Millinocket area is particularly noteworthy because of its abundance of high-value resources, its accessibility, role as a gateway to Baxter State Park and surrounding recreational amenities, and proximity to a major job center.

The Commission regards MCDs that (1) have an established pattern of settlement, (2) have experienced or are likely to experience rapid growth, (3) are relatively accessible, and (4) harbor high-value natural and cultural resources as "high-growth, high-value" MCDs. Development is likely to continue in most of these MCDs due to the attractiveness of their resources and their relative accessibility. Because of some of the weaknesses of the Commission's regulatory approach (discussed below), no assurance exists that such likely development will be orderly.

The challenge for the Commission is to accommodate growth in these areas without compromising the resources that make them so special. Degradation of their high-value resources can adversely affect not only the natural resources themselves but also their economic importance. Directing growth to appropriate locations and balancing development and conservation in these areas are therefore key to maintaining their high values. In its planning and zoning efforts, the Commission will strongly focus on these MCDs,

particularly high-value areas with the greatest growth potential, to ensure that development is accommodated without compromising their special qualities.



Mooselookmeguntic Lake

Low-Growth, High-Value Areas

Certain areas, though they may not be high- or moderate-growth areas, have unique characteristics that are particularly worthy of protection. For example, the Interior area supports traditional uses that are very important to the economy and culture of Maine in a setting that is quite unique in the Northeast. The principal values of these more remote areas of the jurisdiction are especially sensitive to development and special efforts must be made to make sure that these values are maintained. Even though the interior is not a high-growth area, it has experienced steady dispersed development over the past 35 years and is particularly vulnerable to the cumulative impact of incremental development. Consequently, the interior may warrant its own special regional planning effort.

Another area of relatively low growth combined with unique resources is the jurisdiction's coastal islands. These islands warrant special consideration due to the fragility and high value of their natural resources and their consequent attractiveness for future seasonal residential development. Even a relatively low rate of development can have significant impact on island landscapes and resources.

A more specialized and focused planning and zoning approach is appropriate for these low-growth, high-value areas to ensure that their unique characteristics are not degraded.

4.7 Evaluation of Development Trends and the Commission's Approach to Development

4.7.A EVALUATION OF DEVELOPMENT TRENDS AND IMPACTS

Amount of Development

During the 1971-2005 period, the Commission issued 8,136 permits for new dwellings. This amounts to about 232 permitted new residences per year for the jurisdiction. During that same time period, the Commission issued roughly 40 permits per year for nonresidential structures.

The Commission has concluded that this amount of development, by itself, is not a threat to the jurisdiction's values, and that a similar rate of growth can be accommodated over the next 10 years without compromising the jurisdiction's values — if they occur in appropriate locations and in a compact development pattern.

Location of Development

Most development has occurred in areas that abut organized communities and near public roads. Nearly 79% percent of the permits for new dwellings issued in the 1971-2005 period were located in communities that abut organized towns and 87% were in MCDs located within one mile of a public road. However, only about 50% of new dwelling permits were in MCDs located near service centers.

A considerable amount of new development has gravitated toward areas with high natural-resource values. The Rangeley and Moosehead Lake areas accounted for over 50% percent of the new dwelling permits issued during the 1971-2005 period.

While MCDs that do not abut organized communities have experienced considerably less growth than areas on the edge of the jurisdiction, the 21% of new building permits that occurred there over the last three decades is still significant. Some relatively remote MCDs, such as T41 MD, and Spring Lake Township, experienced considerable development. Some townships, such as Upper Enchanted Township, which previously had no pattern of development, experienced a significant amount of development as well.

Of particular note is the fact that at least two-thirds of the new dwellings permitted by the Commission in the 1971-2005 period did not occur on Commission approved subdivision lots but rather on pre-LURC lots and exempt lots.

4.7.B IMPACTS OF DEVELOPMENT

Evaluation of Benefits

Development between 1971 and 2005 has provided jobs, housing and improved services and facilities for residents of the jurisdiction. Some development has also supported or enhanced the jurisdiction's principal values. For example, new businesses and facilities related to wood products have reinforced and strengthened the jurisdiction's role as a diverse, working forest. The development and improvement of sporting camps, campgrounds, individual campsites and boat ramps during the 1971-2005 period have enhanced primitive recreational opportunities, as have the expansion of the private road network. Ski area expansion and the growth of the commercial whitewater rafting industry have supported more intensive recreational uses in particular areas. Tourism is a mainstay of Maine's economy, and recreational development in the jurisdiction has contributed to this sector.

New development has benefited local building contractors and suppliers. Some forms of development, particularly commercial and industrial uses, have generated substantial tax revenues while requiring a minimum of services and facilities.

Residential development has mixed benefits. The construction of year-round dwellings has provided often affordable housing to existing residents and newcomers. New year-round residents can serve to invigorate established communities, buttress the local labor force and provide clientele to local businesses. Seasonal development can also benefit local retail and service establishments and provide Mainers and visitors with opportunities to enjoy the jurisdiction's outstanding recreational resources.

New residential development is often viewed favorably from a fiscal standpoint because of increased tax revenues. However, in some instances the costs of added services and facilities associated with residential development may offset tax revenues. This may be particularly true with year-round housing requiring a full range of services, including education. Seasonal housing requiring few services is most likely to yield fiscal benefits. But the location of many seasonal homes away from existing services and facilities increases potential service costs. During the 1971-2005 period, seasonal housing has increasingly been constructed as permanent second homes geared to multi-season use and possible conversion. The fiscal benefits of seasonal housing can therefore be limited or fleeting, particularly second home development in more remote areas.

Remote camps are a form of seasonal development that may be appropriate in many locations where second homes may not. Under the Commission's rules, remote camps are defined as dwellings "consisting of not more than 750 feet of gross floor area that is not served by any public utilities, except radio communications." These structures may best approximate the primitive hunting and fishing cabins that have long been scattered throughout the jurisdiction. This type of seasonal development is characterized by low service cost and impacts. At low densities, it may be most conducive to maintaining the values of interior areas.

Evaluation of Adverse Impacts

Some adverse impacts are easy to identify and to avoid or mitigate; others are difficult to recognize or prevent. Full consideration of adverse impacts requires keeping abreast of scientific research and documentation, while recognizing that many impacts are subtle and incremental. Sometimes, by the time

degradation of a value is clearly detected, the value may be lost, or remedial action infeasible. The Commission, therefore, will approach the identification of potential adverse impacts with a balance of good science and reasonable foresight.

In evaluating the impacts of development, the Commission has focused on residential construction because it is by far the most common form of structural development in the jurisdiction. The most prevalent type of residential development – second homes – is most likely to be located in areas with high-value resources.

Recreational facilities and other commercial and industrial activities also have potential for significant adverse impacts on the jurisdiction's principal values. However, these types of development are likely to be project specific rather than cumulative. Further discussion of the potential impacts associated with these larger developments can be found in Sections 5.5, 5.7 and 5.9.

The Commission has determined that the development that occurred between 1971 and 2005 had minimal adverse impacts on a number of distinctive natural resources that are clearly tied to a physical feature or location. These resources include deer wintering areas, high mountain zones, a number of remote ponds, large non-forested wetlands, Class A rivers and certain recreational trails. The most effective method of minimizing adverse impacts on these types of resources is to guide development away from them, and over the past 35 years the Commission has effectively pursued this approach. Landowner stewardship and the lack of access to these resources have also contributed to the protection of some of these resources.

Not all of the jurisdiction's principal values, however, are linked to a distinct physical feature or location, or confined to a particular zoning district. In fact, as previously mentioned, many values are tied to the maintenance of large blocks of undeveloped forestlands. Values such as fish and wildlife habitat, ecological diversity, water quality and forest resources can be significantly affected by development activities that occur outside of specific protection zones or buffers. Values associated with recreation opportunities and remote, undeveloped character can be similarly affected.

The Commission has determined that the development pattern that has taken place since 1971 poses risks to these types of values. Twenty-one percent of the new residential development permitted by the Commission occurred in interior areas and approximately two-thirds of the new residential development permitted by the Commission occurred on lots that received no Commission review as to the appropriateness of their location for future residential growth. These trends are clearly less than optimum for preserving the special values of these areas.

The potential impacts on principal values from such patterns of development include:

- Loss of productive forest land and reduction in productivity of forestlands divided into smaller ownerships.

- Conflicts between residential uses and other uses of the forest. Development of remote areas typically results in increased nuisance complaints regarding forest practices, recreational use, and wildlife.

- Negative impacts on wildlife habitat and ecological values due to permanent clearing and conversion of land to development, intrusions into riparian zones and other habitat, and increased erosion and sedimentation.

- Degradation of water quality as a result of incremental development in sensitive watersheds or on lakes with high concentrations of existing development.
- Visual impacts on previously undeveloped roadsides, water bodies, and hillsides.
- Loss of primitive recreational opportunities and natural character values as more remote areas are developed and access is improved.
- Increased demand for community services for dispersed development in more isolated areas, which may result in negative fiscal impacts on communities and taxpayers.
- Rising carbon emissions due to increased vehicular travel between dispersed dwellings and service centers.

The location of most development in MCDs that abut organized towns is a favorable trend from the standpoint of protecting the values of interior areas. But much of this development occurred in areas with high natural resource values, and impacts on these values need to be considered as well. The Rangeley and Moosehead Lake areas received considerable development during the 1971 - 2005 period, and will likely continue to be the principal growth areas in the jurisdiction. While well-planned growth is appropriate in these areas, a haphazard growth pattern has the potential to degrade the attractiveness of these areas as recreational centers and ultimately their tourism-based economies.

Some of the growth in these areas has occurred in a compact manner near the regional centers of Rangeley and Greenville. Other development has extended into more remote MCDs, leapfrogged along shorelines, or appeared conspicuously on hillsides overlooking scenic lakes. The most likely impacts on the values of these regions are incremental effects on scenic values and water quality, and reductions in the overall quality of recreational opportunities, particularly on high-value lakes. Loss of some productive forest lands is to be expected in such high growth areas, but a more compact development pattern would have resulted in less impact on these resources.

The degree to which development occurring in the 1971-2005 period actually eroded the jurisdiction's values – either in the interior or in areas abutting organized towns – is open to debate. There will always be honest disagreement about the extent of the problem depending on one's perspective and the degree of conservatism used in evaluating impacts. Nonetheless, the Commission feels that a strong case can be made that elements of the jurisdiction's remote, undeveloped character have been eroded, and that development and division of land in the interior is likely having a negative impact on ecological values and forest resources and on primitive recreational opportunities. In selected high-growth MCDs that abut organized towns, the Commission believes that some development has had negative effects on the values of special lakes, wildlife and scenic resources. The most important finding, however, is not indisputable evidence of lost values, but identification of a development pattern that may not be conducive to the long-term protection of these values. And as the following evaluation of the Commission's approach to development indicates, this growth pattern is largely avoidable.

Pre-LURC Development when no setbacks or vegetative buffer were required

Post-LURC Development on Aziscohos Lake with setbacks and buffer

4.7.C EVALUATION OF THE COMMISSION'S APPROACH TO DEVELOPMENT

Many of the Commission's policies and regulations have been generally effective in protecting the values of the jurisdiction. Several deficiencies have been identified, however, that work against the Commission's efforts to encourage new growth within and proximate to compatible developed areas, particularly towns and communities, and to protect the jurisdiction's principal values.

Strengths of the Commission's Approach

One of the greatest strengths of the Commission's approach is its identification and protection of distinctive or fragile natural resources: deer wintering areas, high mountain zones, Class A rivers, selected high value lakes and most inaccessible ponds, large, nonforested wetlands, and significant recreational trails. Most of these areas are prospectively zoned and buffered from potential development. During the 1971-2005 period, the values of these resources have been substantially protected. While there may be other important natural resources or physical features that also warrant such high levels of protection, the Commission's general approach to protecting these resources is sound and adequate for their continued protection.

For example, the Commission's lakes program, adopted in 1990, has generally been successful in ensuring protection of certain pristine lakes and providing guidance on which lakes are most suitable for future development. In this instance, the Commission conducted a comprehensive evaluation of the lakes of the jurisdiction and developed management guidelines based on their values. This approach may provide a model for the protection of coastal islands and other high-value areas.

Another strength of the Commission's approach is its focus on the location of major new development. A weakness of many land use regulations in other parts of the country is the focus on impact mitigation rather than on location. Under this approach, development is allowed in most locations as long as it satisfactorily addresses site-specific concerns. The eventual result of this type of planning is a sprawling development pattern comprised of individual projects that may not cause site-specific problems, but that cumulatively consume open space, irrevocably alter community character and contribute to unforeseen off-site impacts.

Mitigation is an important tool, but it generally does not assure long-term protection of an area's essential character or of its natural resources. The most effective way to preserve the values of an area is to promote compact development patterns, and the Commission has been at least partially successful in this objective. While the Commission has struggled with the issue of appropriateness of location for some large-scale projects, particularly planned developments in more remote areas and other developments where the adjacency principle cannot be clearly applied, the overall focus on location is a strength which warrants further refinement. The Commission continually looks for ways to improve its regulatory approach.

Weaknesses of the Commission's Approach

The Commission has long recognized the importance of promoting compact development patterns and discouraging sprawl. Yet the application of this principle to all forms of development has been more difficult, and some of the principles and standards the Commission has used to guide growth lack refinement. Four major weaknesses are: (1) the exemption of certain lots from the Commission's subdivision review, (2) the Commission's reactive treatment of rezoning proposals, (3) lack of recognition of

local and regional differences within the jurisdiction, and (4) limited control over infrastructure improvements, particularly roads.

Exemptions to the LURC Law

Some statutory exemptions to the LURC law regarding land divisions interfere with the Commission's ability to effectively guide growth. The amount of exempt lot creation has been substantial since LURC was created in 1971, and in some cases represents a significant departure from the historical land ownership and development pattern of the jurisdiction. The Commission recognizes that many exemptions to subdivision are practical and beneficial to the management of forestlands and conservation efforts. However, exemptions such as the 2-in-5 exemption (the 2 lots that can be created every 5 years from a single parcel or ownership within each MCD), when used for development purposes, undermine the Commission's ability to guide growth. The Legislature came to this same conclusion regarding the so-called "40-acre exemption." The 40-acre exemption led to the creation of approximately 2,500 large lots totaling over 125,000 acres prior to 2001. Many of these lots, scattered across the jurisdiction, were subsequently developed and likely are no longer actively managed for timber. Over the last two decades, the Legislature recognized the counterproductive nature of the 40-acre exemption (which was originally created to enable easier exchange of timberland), and enacted changes that restricted creation of large lots for development purposes.

At least two-thirds of the dwellings permitted by the Commission since 1971 have occurred on lots that were not reviewed under the Commission's rezoning and subdivision review processes. Instead, they occurred on either pre-LURC lots or exempt lots. Whereas subdivisions and other development requiring rezoning receive Commission review regarding the appropriateness of their location, unregulated lot divisions receive no such review. When dwellings are proposed for exempt lots, the Commission generally limits its review to conformance with dimensional standards and subsurface waste disposal rules.

While the number of dwellings permitted on pre-LURC lots versus exempt lots is not known, data indicate that the number of exempt lots created since 1971 is substantial (exemptions are described in Table 4 in Section 4.5.B). More importantly, there is virtually no limit to the number of new lots that can be created via exemptions to subdivision law, such as the 2-in-5 exemption, over time. Lots created via the 2-in-5 exemption can almost always be developed with dwellings because most of the Commission's zones currently allow single- and two-family dwellings. There is significant potential for exempt lot creation to continue in light of continuing improvements in road access, changing landowner objectives, rising numbers of landowners, and increased demand for second homes. While the creation and development of exempt lots may be appropriate in some areas of the jurisdiction, it is not appropriate in all areas of the jurisdiction. These factors clearly have the potential to lead to increasing dispersion of development in the jurisdiction and the subsequent erosion of its principal values.

Exempt lots may also create new patterns of development which can become the basis for new development zoning. Under the Commission's existing approach, lands rezoned for development generally must demonstrate that they are near existing concentrations of similar development. In most cases, this requirement precludes new subdivisions in remote, undeveloped areas. But developed exempt lots in otherwise remote areas could be used to support such rezonings.

Reactive Approach to Rezoning and Limitations of the Adjacency Principle

Most proposals for intensive development require rezoning of land to a development subdistrict at the time a proposal for development is made. Since landowners must usually initiate such rezoning proposals, zoning decisions are driven more by landowner preference and constraints than by public policy regarding the most suitable locations for development.

In the past, four basic principles have broadly guided the Commission in evaluating most rezoning proposals: (1) Most future development should take place within or near compatible developed areas, particularly near towns and communities; (2) the rezoning should be consistent with other goals and policies of the Comprehensive Land Use Plan; (3) applicants for rezoning should demonstrate a need for their development in the community or area proposed; and (4) the rezoning must cause no undue adverse impact on existing resources and uses.

The criterion of demonstrating a need in the community or area is aimed at assuring that the rezoning is truly necessary and not overly speculative. For residential projects, the Commission has historically considered the apparent demand for new housing in a community or area; for nonresidential projects, the need for the services, goods or jobs that would result from the rezoning. The criterion that new development should be located near existing development is referred to as "the adjacency" principle. This principle is discussed in detail in Section 4.3.B (“Rezoning Areas for Development”). The Commission’s rezoning process, and particularly the application of the adjacency principle, has generally served the Commission well but it has several deficiencies that may become increasingly evident in the face of changing conditions and pressures in the jurisdiction.

The current application of adjacency does not necessarily focus development near the most appropriate areas, such as service centers. Rather, it focuses new development near compatible, existing patterns of development without necessarily considering the appropriateness of the area for future growth.

Many of the development subdistricts scattered throughout the jurisdiction can serve as the basis for meeting the adjacency principle. When zoning was first adopted for the jurisdiction, development zones were created around clusters of existing development with no consideration of the suitability of areas for future growth. As described above, the development of exempt lots has potential to produce other clusters of buildings in remote areas that could be used to support rezoning of adjacent lands. Consequently, new development can be located in areas that are not necessarily optimal locations for growth. For example, a rezoning proposal in an area inappropriate for growth might succeed if it is located near a cluster of existing camps. Conversely, a similar proposal in Argyle, a few miles from Interstate 95, may fail because there is no existing development in the vicinity.

Once an area is rezoned and developed, it can, in turn, serve as the basis for rezoning other areas within a mile. The adjacency principle, then, has the potential to sanction a “leapfrogging” effect in which each new development potentially becomes the existing, compatible developed area from which adjacency for the next development can be measured. Consequently, the adjacency principle does not prevent the leading edge of development from moving progressively deeper into undeveloped areas.

The adjacency principle also lacks guidance on what types or intensities of use constitute "compatibly developed areas" and on situations where it may have limited application. Does a cluster of five dwellings,

for instance, establish adjacency for a proposed 50-lot subdivision nearby? On smaller coastal islands, using a one mile adjacency threshold may justify rezoning anywhere on the island.

The rezoning criterion that requires demonstration of a need has also been problematic. The subjectivity and relativity of the term "need" makes it difficult to apply in a consistent manner. The criterion has been effective in discouraging wholesale rezoning for speculative purposes, but has been more difficult to apply to smaller projects.

The existing approach to rezoning, which responds to landowner initiatives and relies on the adjacency principle, is understandable in light of the size of the jurisdiction and staffing constraints. However, this case-by-case review of rezoning proposals is increasingly inadequate as the principal tool for guiding growth. The limitations of this approach have become more readily apparent under changing market conditions and landowner objectives and sustained development pressures.

Lack of Recognition of Local and Regional Differences

With a few exceptions, the Commission generally applies a "one size fits all" approach to different areas of the jurisdiction. For example, the coastal islands under the Commission's jurisdiction are significantly different than typical inland areas and the Aroostook area is markedly different from the Downeast area, but regulation of and permitting in these areas are essentially the same. The primary focus of all permit reviews is whether the proposal meets the Commission's dimensional requirements and subsurface waste disposal rules. While the Commission's approach is generally successful at considering specific resources and site level review, it is less successful at considering landscape level factors.

For larger scale projects, the Commission performs a more comprehensive review of project impacts, but the process is the same for all areas in the jurisdiction. As described earlier, as the adjacency principle is now applied, the focus is on whether there is existing development in the vicinity, not on the general appropriateness of the area for intensive development.

Use of this type of approach is understandable in light of the immense size of the jurisdiction and staffing constraints. But opportunities exist for refinements in which variations in values between different areas would be more strongly considered. As it now stands, the review process and standards that apply to some communities may, in fact, be overly conservative in light of relatively low resource values and location on the edges of the jurisdiction. In more remote MCDs, these same procedures and standards may provide insufficient consideration of the impact of the proposed project on principal values.

The Commission's regulatory approach must be revised to acknowledge the varying suitability for growth of different parts of the jurisdiction. Some differences in suitability are obvious, others are more subtle. Areas in the interior — distant from population, services, and infrastructure — are clearly not appropriate for intensive growth. However, determinations of suitability for growth are more complex in minor civil divisions near organized communities. For example, some MCDs near organized towns have few or no public roads. Some have public roads but are not directly connected to service centers by these roads. Others have a small number of public roads but have well-established patterns of higher density development and year-round population. Other factors are also relevant to determinations of suitability for growth. Some areas near organized towns offer high-value, remote recreational experiences. Some have high-value resources suitable for natural resource-based uses such as the economic value of timber that is close to

mills and markets. In sum, the current regulatory approach does not fully recognize these types of differences, which can be important factors in determining whether an area is suitable for growth.

Unplanned Infrastructure Improvements

Because land use is largely dependent on access, transportation improvements are a prime determinant of where future development will be located. While the original purpose of many roads in the jurisdiction is to access new areas for timber harvests or to improve hauling routes, these road improvements can also serve as a catalyst for future development, especially if they increase access to areas with high recreational or scenic values. A proposal for a subdivision on one of these roads has to meet the Commission's adjacency criterion, but permits for individual residences on lots exempt from subdivision review do not.

Under statute, the Commission has limited control over land management roads in management subdistricts. Land management roads must meet a number of guidelines aimed at minimizing environmental impacts, but except in select protection subdistricts, the Commission does not review the location of land management roads.

The extension of utilities also has an impact on the location of development and its level of intensity. Extending utility lines into more remote areas can spur new development because of improved marketability of homes with electricity and telephone service. The availability of electricity can substantially increase sewage generation because electric pumps facilitate water use. This is particularly true in old lakeshore developments where camps often have inadequate septic systems, located close to shore on poor soils. The Commission reviews proposals to extend utilities, but determining direct and indirect impacts on the jurisdiction's values has been difficult.

4.8 Central Issue: Location of Development

The Commission has concluded that the principal development issue is not the amount of development taking place in the jurisdiction, but rather where it is located. This conclusion is based on analysis of the pattern and impacts of development that has occurred within the jurisdiction since 1970 and evaluation of the effectiveness of the Commission's policies and regulations in protecting the principal values of the jurisdiction. The most important finding from evaluation of these development trends is not indisputable evidence of lost values, but identification of a development pattern that is not conducive to the long-term protection of these values. The Commission believes considerable opportunities exist for refinements to its approach that would promote a more sustainable growth pattern.

Thirty-five years of Commission permitting data illustrate a development pattern that is more dispersed today than it was in 1970. The impact of over 20,000 dwellings distributed across 10.4 million acres in the jurisdiction and the degree to which the location of this development has eroded the jurisdiction's values — in interior or other areas — is open to debate. There will always be honest disagreement about the extent of the problem. The most important finding from these 35 years of data is the identification of a development pattern that, if continued into the future, is not conducive to the long-term protection of the jurisdiction's values. Two things are clear:

(1) The Commission's existing rules are inadequate to effectively direct development to appropriate areas; and

(2) The factors driving development pressures will likely continue in coming years.

Consequently, changes to the Commission's regulatory framework as well as actions by other parties to better direct development will determine whether the jurisdiction's principal values will be retained.

The issue of dispersing development is not unique to the jurisdiction; it is a trend that is occurring throughout the state and many parts of the country. In many areas, sprawling development has adversely affected both communities and the surrounding countryside. As homes and businesses have moved out into rural areas, villages and downtowns have suffered, both economically and culturally, and distinctive rural areas have been transformed into land-consumptive suburbs.

While dispersing residential development is an issue of concern in many areas, it is of particular concern in the jurisdiction. This development pattern is especially harmful in an area characterized as the most rural part of the second-most rural state and containing some of the highest natural resource values in all of New England. Other high-value resources exist throughout the Northeast, but few occur in settings like the relatively undeveloped, remote and unfragmented landscape that is the jurisdiction. Additionally, the rural nature of the jurisdiction means that it is least equipped with the services and infrastructure typically needed to accommodate development. (Some parts of the jurisdiction are adjacent to communities that have services and infrastructure, and thus are better suited to accommodate development than most areas.)

The identification of dispersing residential development as the most important issue facing the jurisdiction comes not just from the examination of historical trends, but also from recognition that these trends are

likely to continue. Dispersing residential development is likely to become an issue of increasing magnitude in the years to come. The extent of parcelization in the lower third of the jurisdiction highlights the potential for continued conversion of forestlands to other uses (see Map 3 in Section 4.3). The trend towards smaller parcel sizes in this area of the jurisdiction increases the likelihood that parcels will be converted over time to other uses such as residential development. The full effect of parcelization of the jurisdiction is not yet apparent.

4.8.A CHANGING LANDOWNER OBJECTIVES

The pressure to maximize the asset value of timberland, which can lead to breaking forestland into smaller parcel sizes and/or converting it to other uses, is likely to continue. The economic and ownership conditions of the past that maintained large contiguous blocks of undeveloped forestland and limited the degree of residential dispersion are changing. The type of landowner in the jurisdiction is changing and with this generally comes changes in landowner objectives. Industrial owners, whose primary focus was on supplying timber to their mills, are no longer the dominant landowners in the jurisdiction. They have been replaced by financial investors, such as REITs and TIMOs, whose focus is on maximizing the asset value of timberlands. Given rising land values and steady demand for recreational property, financial investors are increasingly likely to seek revenue from non-timber sources if they will generate a higher return.

If left unchecked, these pressures may continue to drive a pattern of dispersing residential development. The result will be a loss of Maine's "quality of place," erosion of the unique economic and cultural role of the jurisdiction, and degradation of many high value natural resources.

4.8.B ADDRESSING WEAKNESSES OF THE COMMISSION'S APPROACH TO DEVELOPMENT

The Commission believes that the adverse effects of a dispersed development pattern are avoidable. Development, if appropriately located, can be accommodated without undermining the principal values, degrading important economic values or unduly burdening taxpayers. However, the Commission's current rules do not ensure this outcome. While the Commission's rules have protected certain discrete resources (such as deer wintering areas, high mountain areas, remote ponds, large nonforested wetlands, Class A rivers and other identified high value resources), they are not adequate to protect those resources and values that are not tied to a distinct physical feature, such as large blocks of undeveloped forestland.

Addressing weaknesses of the Commission's approach is important. However, this Plan does not identify one solution that will, by itself, rectify these weaknesses and prevent further dispersion of development. The Commission appreciates that addressing the problem of dispersed development in the jurisdiction will require resolve by the Commission, landowners and the public. It will require cooperation among various interest groups, identification of new strategies for directing development, and subsequently, bold actions to implement those deemed most effective. The Commission is committed to acquiring additional data and improving available data in a way that is informative and beneficial to this process. Specifically, land use inventory data and/or improved parcel data may be of great value. The recommended refinements, below, present approaches that could address the negative effects of a land use pattern of dispersed development. All of these approaches share the central goal of directing most development to areas near service centers and comparable areas while maintaining other areas of the jurisdiction for traditional uses, including forest management.

4.8.C RECOMMENDED REFINEMENTS

Address Effects of Exemptions to Commission's Process for Directing Development

Certain exemptions to subdivision law, coupled with the fact that individual dwellings are allowed in most of the Commission's subdistricts, have contributed to and will likely continue to contribute to a pattern of dispersing development. Most of the Commission's subdistricts allow for single- and, in some cases, two-family residential development. For example, the General Management (M-GN) Subdistrict and many protection subdistricts currently allow residential development. Combined, these subdistricts cover 84% of the jurisdiction. [17] If the Commission is going to effectively guide growth to appropriate areas, and if protection and management subdistricts are going to continue to fulfill their stated purposes, these areas cannot function as holding zones for incremental development. If areas zoned for management or protection of resources are developed over time, then the Commission's zoning designations become meaningless.

The Commission's overall goal is to direct most development to areas appropriate for growth and to maintain other areas for traditional uses, including forest management. Implementation of this goal and addressing the issue of dispersing residential development will take place through subsequent planning, rulemaking and other efforts, undoubtedly involving various parties. The issue of dispersing development is one which challenges many rural areas and will not be easily addressed through any identified single action. However, the Commission is committed to exploring a range of options. Options that potentially warrant consideration include:

- Evaluating the appropriateness of location in the permitting of dwellings that have historically not received such review. Considerations such as the nature of road access and proximity to other dwellings could be part of this process.

- Limiting dwellings in some high-value areas in the interior to low-impact seasonal camps.

- Creating incentives for development near service centers and comparable areas (such as an expedited rezoning and subdivision process).

- Prospectively zoning forestry and agricultural areas or other measures to proactively maintain these areas for natural resource-based uses. As part of this effort, the Commission could consider restrictions on the type, density or scale of development that can occur in certain locations.

Additional options that warrant exploration and may address the effects of the Commission's limitations to directing development are discussed below (see "Guide Development at the Jurisdiction Level").

Apply Prospective Zoning

Prospective planning and zoning addresses several of the limitations of the case-by-case approach to land use regulation, and the Commission will continue to apply regional prospective zoning efforts. Under prospective zoning, the Commission identifies areas within a community or region that are most appropriate

[17] This percentage does not exclude fee or easement conservation lands, which cover approximately 25% of the jurisdiction. Some of these conservation lands allow for limited development, others do not.

for additional growth based on existing development patterns, natural resource constraints and future planning considerations. These areas are then zoned as development subdistricts, and future growth is facilitated in these subdistricts. This approach makes the development review process more efficient and predictable, and promotes both economic development opportunities and the protection of principal values. The prospective zoning process also creates an excellent opportunity for public participation by residents, landowners and other interested parties.

As discussed earlier in Section 4.3.B, above, prospective zoning has been implemented in the Rangeley region. This effort has generally been effective at achieving the desired results. As part of the Rangeley prospective zoning process, the Commission established several new subdistricts, but limited their use to areas with prospective zoning. The Commission will consider extending the use of these subdistricts to other areas of the jurisdiction where appropriate.

The Commission will apply prospective zoning in high-growth, high-value areas (see Section 4.6.E). In these areas, prospective zoning will be used to balance growth and economic development needs with protection of special resource values. The Commission may also apply prospective zoning in low-growth, high-value areas where existing or future development could undermine the principal values of the jurisdiction. Such areas could include interior regions where the principal values are most sensitive to development. The Commission will consider making the prospective zoning of these areas a priority.

Prospective zoning efforts will not take the place of other efforts to guide development. The prospective zoning process is time consuming. While it establishes a system to effectively guide growth within a region, it does not address the issue of where development is appropriate or inappropriate in the jurisdiction as a whole.

Guide Development at the Jurisdiction Level

While applying prospective zoning at the local or regional level shows great promise, especially in balancing growth and conservation in high-growth, high-value areas, it has several limitations.

First, the process is time consuming and expensive, and, at 2009 staffing and resource levels, it may take several years to comprehensively inventory and zone a single region. By the time the Commission has applied this approach to a relatively small portion of the jurisdiction, a significant amount of additional growth may have occurred in other areas of the jurisdiction, some of it in inappropriate areas.

Second, the process focuses on individual communities or regions, and does not consider the larger issue of where development is most appropriate in the jurisdiction as a whole. The principal values of the jurisdiction differ significantly from MCD to MCD and from region to region, but no specific guidance exists on where development can occur with the least overall impact on these values. Beyond those areas identified as most appropriate for prospective zoning, there are other communities on the edge of the jurisdiction where development could be accommodated without significant impacts on the jurisdiction's principal values. Yet under the jurisdiction's one-size-fits-all approach, development in these areas is treated in a fashion similar to that in high-value interior areas.

In order for the Commission to effectively plan for future growth and ensure the long-term protection of the jurisdiction's principal values, it will consider improvements to its overall approach in guiding growth on a jurisdiction-wide basis over the next ten years. The Commission will evaluate the suitability of different

towns, plantations and townships for future growth based on their locations relative to population and job centers, the availability of roads and infrastructure, the demand for development, and the type and extent of principal values that they possess.

This broadening in focus will recognize that MCDs bordering organized areas are not all alike and are not equally suitable for growth. It will also recognize that areas within a single MCD may have varying suitability for development depending on conditions of access, natural resource sensitivity, economic value for other purposes, recreational values and other factors. Developing an approach that recognizes these differences is fundamental.

The Commission believes that the success of any effort to better guide development at the jurisdiction level will depend on support among diverse interests and strong participation by landowners. The vast areas of the jurisdiction remaining in unified ownerships offer considerable opportunities for promoting a growth pattern that preserves development opportunities and equity while assuring the long-term protection of principal values. Considerable opportunities may also exist for nonregulatory, voluntary approaches that provide landowners with flexibility and incentives to protect the principal values while achieving reasonable economic returns.

The Commission will consider incentives for promoting growth in the areas determined to be most suitable and disincentives for development in areas deemed least suitable. There are many potential strategies for accomplishing this. Some of the options are discussed below, although the list is by no means exhaustive. The Commission may consider the following:

- Undertaking a broader, jurisdiction-wide prospective zoning process for areas suitable and/or unsuitable for growth;
- Exploring tools such as transfer of development rights programs;
- Facilitating development in areas suitable for growth by exploring the expansion of tools such as level 2 subdivisions;
- Exploring ways to minimize new public infrastructure such as roads; and
- Reviewing the type of residential development allowed in different zones or areas of the jurisdiction. As the Commission moves toward a more refined approach to guiding growth, it must refine, modify and integrate the adjacency principle into its new approach.

As part of efforts to guide development to appropriate locations, the Commission will discourage development in areas that are not appropriate for growth. One of the Commission's goals is to maintain the forest resource, particularly those lands that are well-suited to natural resource-based uses, in a way that preserves its important values. These values include large-scale commercial forestry, ecological diversity and recreation in remote settings. The Commission will encourage the protection from intensive development those areas of the jurisdiction that are particularly representative of the jurisdiction's principal values, especially lands valued for their remote and relatively undeveloped condition.

The Commission also recognizes the unique ”quality of place” associated with certain areas that have particularly high natural resource values. Some of these areas are experiencing considerable growth pressure because of their attractiveness. The Commission will encourage conservation in some of these areas to protect their unique qualities. The purpose of conservation will be to protect the character and natural values of these areas in the face of increasing development pressure, without unduly limiting development opportunities where appropriate. The Commission will encourage private and public conservation, and will explore regulatory measures to promote protection of open space.

Improve the Rezoning Approach

While prospective zoning and other growth management strategies may lessen the need for landowner-initiated rezonings over time, there will always be a need to consider proposed rezonings in a timely and equitable manner. Despite the relatively high rate of Commission approvals of petitions for rezoning, developers face uncertainty when presenting a request for rezoning because the system requires many judgments from the Commission as it applies its rezoning criteria. The Commission has developed a rezoning guidance system to help in this regard, but will continue to seek ways to bring predictability to the rezoning process.

The adjacency principle has been a valuable tool in guiding development and will remain a central consideration in rezonings, but its application will be further refined to promote consistency and good planning. The Commission expects to substantially strengthen and more comprehensively define adjacency, and will likely integrate this criterion into its improved approach to guiding growth. The Commission anticipates that this redefinition of adjacency will consider current interpretations of geographic distance and type and scale of development and will incorporate other factors pertinent to identifying the appropriateness of areas for development. For example, the Commission may consider whether the rezoning proposal is proximate to existing service centers or other areas identified as appropriate for future growth. Until such efforts are completed, the Commission will continue to interpret adjacency to mean proximate to (within one mile of) existing compatible development, as described in Section 4.3.B (“Rezoning Areas for Development).

The Commission has determined that isolated patterns of development in remote locations, such as sporting camps, should not be used as the basis for rezoning adjacent lands for development as that practice can establish conflicting uses. Similarly, the Commission will not consider patterns of development such as those established by large lot exemptions in otherwise inappropriate locations as the basis for adjacency. This exemption was eliminated due to the counterproductive nature of the patterns that it established, and the Commission believes that these patterns should not serve as the basis for future growth in these areas.

The rezoning criterion requiring demonstration of need provides the Commission with a powerful tool in evaluating the viability and scope of proposed development. The Commission, however, will assess its use of this criterion with a goal of applying it as consistently as possible. Under the proposed rezoning guidance system, the need criterion is broken down into a number of factors intended to provide a more objective assessment of need. Factors include evaluation of availability of vacant building lots, the amount of land in the area already zoned for the proposed use, and anticipated benefits such as jobs and tax revenues. As the Commission and applicants become more comfortable with this system, it should provide more predictability in the assessment of need. Also, as the Commission gains more experience with the

guidance document, revisions may be needed to account for the unique circumstances presented by concept plans and other alternative tools for directing development.

In communities that are prospectively zoned, the areas most appropriate for future growth will be zoned as development districts, eliminating the need for most projects to go through the rezoning process. Requests for rezoning additional lands in these communities will be reviewed with particular care to avoid sprawling development patterns or a mixing of incompatible uses. While the adjacency principle would be applicable in allowing for needed expansions of existing development zones, broader application of the principle could lead to a proliferation of rezonings that may upset the balance between development and conservation that was a part of the original prospective zoning plan. In these situations, the most important consideration will be whether new areas proposed for rezoning are viable growth centers and consistent with the initial prospective zoning plan.

Address Infrastructure Improvements

The Commission will continue to monitor the location of new land management roads and the closure of existing ones. While the Commission believes that the siting of roads can have unforeseen impacts, this Plan does not make recommendations to regulate the location of land management roads to control the location of development. The Commission recognizes the importance of the haul road network to the forest products industry, and road siting issues, where identified, will be addressed in a cooperative manner. If the Commission is able to better guide the location of development, the issue of roads facilitating scattered development will be at least partially addressed. By conducting a more comprehensive inventory of the jurisdiction's road network, the Commission will be in a better position to track the relationship between road construction and development. The Commission recognizes that there is relatively broad agreement among various interest groups and landowners that additional public roads in the jurisdiction should be minimized to the greatest extent possible.

While the Commission has control over utility extensions, except in public rights of way, there are two major policy challenges that the Commission will address. First, state and federal laws, as well as the Commission's current rules, make it difficult to restrict the uses of a utility line. For example, the Commission is unable to restrict additional access to a utility line that was constructed for a specific use, even in cases where the secondary use is clearly not appropriate for the location. Second, the Commission's rules do not adequately address how to evaluate whether the extension of a utility line will facilitate inappropriate patterns of development. The Commission will consider utility line policy and rule changes and may include these concepts when it addresses issues of adjacency and identifies areas most and least appropriate for development, since these issues are closely related.

4.9 Other Major Issues

Three to four decades ago, the economy of the jurisdiction was overwhelmingly dominated by the forest products industry (i.e., activities associated with harvesting and processing of timber). Other economic activities were largely subordinate and peripheral to forestry and included seasonal camps, recreational facilities (principally low to medium intensity), and commercial uses oriented toward recreation or general services. The Commission was created against this backdrop in response to a building boom of seasonal camps in the 1960s. As a result, its regulatory framework was designed to address a landscape utilized primarily for timber harvesting (much of which was exempt from regulation) and seasonal residential development located along shorelines.

Since that time, the economy has diversified. Though still dominated by the forest products industry, the economy now includes a broader range of uses in the jurisdiction. Advances in technology have made grid-scale wind energy projects economically viable in areas of the jurisdiction. Shifts in the type of recreational experiences that people are seeking have resulted in proposals to expand ski areas, build new ecotourism resorts, and construct linked hut and trail networks. At the same time, a strong second home market, changes in land ownership patterns and other factors have contributed to steady residential development pressure, principally for second homes. Development pressure is no longer limited to shorelines, and now extends to hillsides and ridgelines. Many of these changes were not anticipated when the Commission was created. As a result, some land uses and development impacts in the jurisdiction today are not comprehensively addressed in the Commission's regulatory framework.

The Commission has had to respond to new uses as they emerge and to existing uses as they have evolved. It has revised its rules over the years to accommodate some of these changes, but revisions have typically been limited in scope to address fairly specific issues. Overall, its approach has been largely reactive. The Commission has not yet comprehensively assessed the adequacy of its regulatory framework to address the current economic and cultural environment. As a result, changing land uses continue to strain the capacity of the Commission's regulatory framework.

Examples of how the changing environment is straining the regulatory framework, some general and some quite specific, along with options for addressing these issues are described and discussed below. The Commission recognizes that even as it updates its framework to reflect today's conditions, tomorrow will bring new and unanticipated land uses and pressures. Consequently, the Commission will also consider developing a systematic approach to appropriately responding to changing land uses in this dynamic environment.

4.9.A ECONOMIC DEVELOPMENT

While the Commission is charged with protecting the values of the jurisdiction, it will ensure that reasonable economic development is accommodated, particularly facilities related to forestry, agriculture or recreation. Considerable opportunities exist for facilitating economic development in appropriate areas, and the Commission will reexamine its standards to assess their effect on economic growth. Specifically, the Commission will evaluate its permitting process, as well as its approach to regulating certain recreational uses, and other forms of commercial or industrial development.

The Commission's Permitting Process

The issue most commonly identified as a potential impediment to economic development is the permitting process. The Commission made a significant effort in 1988 to streamline its permitting process by broadening the definition of activities for which permitting would be expedited and has continued to do this periodically since that time. For example, in response to legislation, the Commission implemented an expedited wind power permitting process. The Commission will continue to seek out opportunities for further streamlining. Every effort will be made to make the permit turnaround time no longer than absolutely necessary to complete a thorough review in which the Commission's statutory responsibilities are carried out. Specifically, the Commission will continue to expedite the permitting process by: (1) simplifying application forms, (2) identifying minor activities and alterations for which no permit is required, (3) designating permits to be issued at the field office level as staffing becomes available to perform such functions, (4) delegating to staff the ability to act on small-scale rezoning proposals within designated growth areas which meet the Commission's rezoning guidelines, and (5) identifying types of uses that could receive accelerated review and approval.

Accommodating Certain Recreational Activities and Facilities

The Commission recognizes that a number of enterprises support or reinforce the principal values of the jurisdiction, and these types of activities will be promoted by the Commission's policies and regulations. Certain recreational facilities, for instance, can accommodate recreational uses with less impact than multiple individual second homes or camps (e.g., traditional nonintensive facilities such as sporting camps or primitive campsites in more remote areas), and the Commission's policies and regulations will promote these types of uses.

Traditional sporting camps represent both a recreation asset and a valuable part of the heritage of the North Woods. The Commission's approach to these facilities will recognize their need to adapt to changing economic conditions and their dependence on the remote character of their surroundings. Permitting of reasonable expansions and improvements will be facilitated, with assurances that camps will not evolve into more intensive uses that could have negative impacts on the area. Proposals for other development adjacent to sporting camps will be reviewed with particular care to ensure that values on which the camps depend for their survival are not eroded.

More intensive recreational facilities are most appropriate near developed recreational centers, or as part of well-planned developments in other areas. Both commercial whitewater rafting and downhill skiing provide increased recreational opportunities and considerable economic benefits, but have potential for negative impacts on other principal values. Growth of these industries is best accommodated as expansion of existing facilities or as compact development in identified areas.

Accommodating Other Commercial and Industrial Uses

The Commission already recognizes the need to provide flexibility in the siting of buildings used in forest management or agricultural activities. These uses are allowed without a permit in the General Management (M-GN) Subdistrict. There may be other buildings related to forestry or agriculture that will be treated in a similar manner.

Other types of businesses that may be inappropriate in interior areas may be suitable in communities that abut organized towns. In developing strategies for guiding growth, the Commission will identify areas where these economic activities can occur with the least impact on principal values. Areas near organized towns, population or employment centers with available infrastructure and low resource values are generally the most suitable locations. For such areas that have not yet been prospectively zoned, the Commission will facilitate development by making it easier for projects proposed for these areas to meet the Commission's rezoning criteria.

In the Commission's rules, there are four different types of development zones that can be created to accommodate new development: Residential Development (D-RS), General Development (D-GN), Commercial Industrial Development (D-CI) and Planned Development (D-PD) Subdistricts. While the D-GN Subdistrict allows small-scale commercial development, other more intensive development that may also be appropriate in a village setting is either not allowed or only permitted by special exception. Adoption of a new zoning classification, or application of zones created as part of the Rangeley prospective zoning effort that are more conducive to village-type uses, to accommodate more intensive development would provide additional flexibility to both the Commission and applicants.

Other forms of development may have needs or impacts that could be better addressed with special zoning designations. Solid waste facilities, for instance, are best sited in areas with existing infrastructure, but location within a village area is probably not appropriate. The Commission will continue to assess whether special zoning designations are warranted for both existing and emerging forms of economic development.

4.9.B NEW AND CHANGING USES

The Commission is increasingly challenged by changes in the type and scale of certain land uses. New uses, such as commercial water extraction and grid-scale wind power projects, are appearing in the jurisdiction (although these uses are not necessarily new to other parts of the state). And certain existing uses, such as campgrounds, are evolving – sometimes changing quite significantly from their traditional form. Some of these new and existing uses are larger in scale than historical uses of the jurisdiction.

The issues presented by new uses, existing uses that are evolving, and uses that are increasing in scale are very similar from a regulatory perspective. The most important issue associated with all uses is appropriateness of location – specifically, will the use be located where it will not adversely affect

surrounding uses, resources and values? Since the Commission's zoning framework is its primary tool for guiding the location of various uses, it is necessary to examine the effectiveness of the current framework under changing conditions.

As new uses emerge and existing uses evolve, questions arise regarding the type and scale of uses allowed in the M-GN Subdistrict since it applies to approximately 80% of the jurisdiction. Uses currently allowed in this subdistrict are generally considered low-impact uses compatible with forest management. However, recent history demonstrates that some uses allowed in this zone can evolve into forms that are no longer compatible with the purpose of the M-GN Subdistrict or lack standards that would ensure such compatibility. For example, some campgrounds and trails are becoming significantly more intensive in scope and scale than they have been historically. Many modern campgrounds involve substantial land alteration, numerous structures and generate substantial traffic. The impacts associated with these highly developed campgrounds are similar to those of uses allowed in development subdistricts, and are not necessarily consistent with the M-GN Subdistrict.

The application of the D-PD and P-RP Subdistricts for certain types of large-scale, mixed use development also presents questions regarding the type, scale and location of permitted uses. Both of these subdistricts can accommodate waivers of the adjacency principle under certain circumstances and so provide a significant amount of flexibility regarding the location of development. The adjacency principle is waived for the D-PD Subdistrict in order to accommodate development that is dependent on a particular feature. This waiver is granted in acknowledgement that feature-dependent development must be located where the feature is, and the feature may not be proximate to development patterns. It is a valuable tool that envisions mixed uses and is intended to encourage creative design. However, some uses allowed in D-PD Subdistricts are changing. For example, downhill ski areas are evolving to incorporate a broader mix of uses and include a substantial amount of residential development. Some of this secondary development is not necessarily feature-dependent, but may be linked to the economic viability of the proposed development. Similarly, the Commission may waive adjacency for development proposed as part of concept plans under certain circumstances. The use of the D-PD and P-RP zones for large-scale development encompassing a broad mix of uses raises questions regarding the potential impacts of such development to surrounding uses and resources. Is location of development being adequately considered? Do the waivers of adjacency remain appropriate in all circumstances? And are there ways to fine-tune these subdistricts in light of the changing nature of uses? As these subdistricts are used more extensively for a wider mix of land uses (particularly for new or evolving land uses), the Commission will continue to assess whether waivers of adjacency are appropriate in all cases.

The Commission also recognizes that deficiencies exist in the types and mix of uses allowed in its various development subdistricts. Most development subdistricts are designed for small-scale uses, while subdistricts that provide more flexibility (such as the D-GN2 and D-ES) are currently limited to areas subject to Commission-initiated prospective zoning. The establishment of development subdistricts that more explicitly accommodate large-scale development – such as some of the prospective zones or a non-feature-dependent planned development subdistrict – might better accommodate existing land use demands.

Moving forward, the Commission will most likely continue to be challenged by the need to accommodate new uses not currently addressed in any of its subdistricts. For example, while commercial water extraction is not an explicitly listed use in any of the Commission's subdistricts, it is consistent with the M-GN Subdistrict as a form of natural resource extraction. The Commission will need to respond to new uses as

they appear, determine where they are appropriate, and make necessary rules changes to accommodate them.

Recommended Refinement: Review the Adequacy of the Commission's Regulatory Framework to Address Changing Uses

The Commission's regulatory framework is due for a comprehensive review to evaluate its effectiveness at adapting to the changing nature and scale of land uses. This review should give special consideration to the adequacy of zoning tools, particularly in regard to guiding the location of new and evolving uses. The goal of this review will be to evaluate whether the Commission's current approach effectively protects existing resources and values, provides reasonable guidance to applicants, accommodates reasonable economic development, and promotes a workable and efficient review process.

The Commission will review its existing subdistricts to assess whether or not certain subdistricts are appropriate and which uses should be allowed in them. Review of uses allowed in the M-GN Subdistrict is particularly important, given its purpose and the vast area it covers. The M-GN Subdistrict must be reviewed in light of changing land uses to ensure that allowed uses, in their current form, remain consistent with the purpose of the subdistrict. The Commission will also review development subdistricts, including prospective zones, as well as the D-PD and P-RP Subdistricts applied to large-scale development proposals. It will update these subdistricts as needed with the goal of establishing a regulatory framework that can appropriately accommodate dynamic land uses.

Specifically, the Commission will review the D-PD Subdistrict in the context of policy and administrative issues that have arisen over the years, including: (1) How should protection of the jurisdiction's remote character be weighed against the subdistrict's provision that allows development where the resource is located by means of waivers of the adjacency criterion?; (2) How should mitigation of development impacts be evaluated, and is off-site mitigation appropriate?; and (3) How should the Commission handle mixed uses in a D-PD Subdistrict when only a subset of the permitted uses are strictly feature-dependent? Review of the D-PD Subdistrict will also consider whether this subdistrict should be made available to large-scale developments that are not feature-dependent, and will evaluate the merits of establishing different applications of the D-PD Subdistrict — one for feature-dependent uses and another for uses which are not feature-dependent. For any non-feature-dependent intensive development, waivers of the adjacency would not be appropriate. Location will be an important consideration as part of any proposed change to the D-PD Subdistrict.

The Commission will also review its rules and guidance regarding concept plans in the context of its experience with such plans. Review of the concept planning tool will consider some of the key policy and administrative issues that have emerged in concept plans over the last 15 years, including: (1) Are landowner-initiated concept plans taking the place of Commission-initiated comprehensive regional planning, and is this a problem from either a policy or administrative perspective?; (2) Should there be any upper or lower limit to the scale of concept plans (e.g., acres covered, development proposed, proximity/distance from service and organized areas, and related location and/or scale of development issues)?; (3) What are the essential requirements for conservation (i.e., scale, location and type) that is offered to offset and balance development proposed?; (4) Does the concept plan mechanism provide the appropriate balance between landowner predictability and Commission flexibility to address changing circumstances?; and (5) Is the P-RP Subdistrict the appropriate regulatory vehicle for concept plans? The Commission will update concept plan rules and guidance as needed to address these and other questions.

The Commission will consider allowing applicants to utilize zones established as part of the Rangeley prospective zoning, although it may limit where these zones can be applied. Some prospective zones are a better fit for large-scale development, as they allow larger footprints or explicitly contemplate a broader range of commercial and residential uses. Similarly, D-RS2 and D-RS3 Subdistricts provide more specialized residential zones that may be appropriate for resort-affiliated residential development.

The Commission must regularly update its rules to reflect the dynamic economic environment. The need to add commercial water extraction as a permitted use in the M-GN Subdistrict is a good example. The Commission will attempt to stay abreast of new technologies and be prepared for proposals for new uses, especially ones that are likely to occur in high-value areas. The Commission will try to be prepared to devote resources to assess the potential impacts of these new uses and to provide policy guidance on their appropriate development within the jurisdiction prior to acting on major development proposals.

In addition to these changes, the Commission will also consider whether it is possible to develop a systematic approach for handling new uses that are not explicitly anticipated or accommodated in its rules. The goal of such an approach would be to minimize permitting delays associated with these situations and to provide clearer guidance to the Commission regarding factors to consider when evaluating the appropriateness of a new use in a subdistrict. The intent would not be to bypass existing policies, rules and procedures but to facilitate a substantive evaluation of new uses and where they belong in the regulatory framework. A systematic approach to new uses could result in changes designed to add clarity and definition to existing rules, provide a process that incorporates the Commission's policies regarding the location of development, and protect the principal values of the jurisdiction. For example, the Commission could, in rule or guidance documents, identify more detailed factors or review criteria to consider when evaluating whether a new use is consistent with the purposes of particular subdistricts and other objectives.

All of the efforts described above will reflect the Commission's belief that most non-feature-dependent development, particularly large-scale, mixed use development, should be located close to economic centers where a work force, services, customers and infrastructure are available. It should be located near communities so it is connected to the local economy and can efficiently deliver and receive services. Given the nature of the jurisdiction — an area used predominantly for forestry, accessible principally by private roads dominated by logging trucks, and largely distant from population and services — large-scale, intensive development is generally not appropriate in remote locations.

Review and evaluation of the Commission's zoning framework requires ongoing effort. Periodic rule changes are necessary to respond to immediate needs, but more comprehensive evaluations are also needed to ensure that the regulatory framework remains effective and appropriate in the context of current conditions. The Commission is committed to taking on both of these efforts.

4.9.C HILLSIDE AND RIDGE DEVELOPMENT

The Commission's regulatory framework was developed during the late 1960s and early 1970s – a time when most residential development consisted of recreational camps located on the shores of lakes and ponds. Consequently, the Commission's rules with regard to residential development focus on limiting shoreline and water impacts through the application of prescriptive standards, such as vegetative buffers. While shoreland development has continued in recent decades, some residential development has

appeared on hillsides and ridgelines in response to the lack of available shorefront for development, rising waterfront prices and other factors. The Commission's regulatory framework, while relatively effective at minimizing the impacts of shoreland development, lacks the specificity and predictability necessary to ensure that the impacts of hillside and ridge development are avoided and minimized.

The amount of hillside and ridge development is growing and this trend is likely to continue. This development occurs most commonly in areas with high resource values, such as the Rangeley and Moosehead Lake areas where shoreland property is costly or unavailable, and near alpine ski mountains where people seek locations close to the ski slopes. Hillside and ridge development can have significant impacts on the natural resources, recreational resources and character of an area. Houses located on hillsides often have associated vegetation clearing that makes development highly visible from public roads and waters. Further, the construction of long roads, often traversing steep slopes, necessary to access this development can cause erosion, generate increased phosphorous, carve up wildlife habitats, and decrease the visual quality of the landscape visible from public resources. While the Commission currently has scenic impact standards that apply to hillside development, these standards are not prescriptive, and thus do not provide the Commission or applicants with much regulatory predictability.

Figure 3 – Hillside Development

Recommended Refinement: Develop Standards to Limit the Environmental and Visual Impacts of Hillside and Ridge Development

The Commission recognizes the environmental and aesthetic importance of naturally vegetated ridgelines and hillsides in the jurisdiction and believes they should be maintained where possible. The Commission will develop vegetation clearing standards and other non-vegetative scenic impact mitigation techniques for hillside and ridge development. It will approach this task with the following goals: Prevent the erosion and sedimentation often associated with development on slopes; maintain the appearance of the natural landscape as much as possible; prevent breaks in ridgeline vegetation; and limit the visibility of structures, particularly in high-profile locations (e.g., areas that are visible from public settings, including public roads and water bodies). The Commission will integrate this work with its efforts to develop a systematic approach to evaluation of scenic impacts, as described in the Section 5.10.

4.9.D IMPACTS OF EXISTING DEVELOPMENT

Much of the focus on the Commission's long-range planning efforts is on new development. Expansions and conversions of existing development, however, have the potential to degrade the jurisdiction's values, and the Commission's approach to these uses should be equally protective as its approach to new development.

Nonconforming Uses and Structures

Many existing structures, built prior to the enactment of the Land Use Regulation Law, are on inadequately sized lots, have soils unsuitable for waste disposal, or have inadequately designed or located waste disposal systems. When these structures require rebuilding or major renovation, the Commission applies reasonable requirements to upgrade the existing system so that future problems are minimized.

Some landowners have, on their own initiative, reconfigured nonconforming lots to bring them into compliance with current regulations. The Commission recognizes these efforts as being supportive of its own objectives and encourages other landowners to do likewise prior to development, sale or leasing of such lots.

Recommended Refinement: Establish Incentives for Bringing Nonconforming Lots and Structures Into Compliance

The Commission will seek to establish incentives for bringing nonconforming lots and structures into compliance or closer compliance with current regulations. In these efforts, the Commission is particularly interested in innovative voluntary approaches. The Commission is mindful of issues of fairness and consistent treatment of landowners with nonconforming lots or structures.

The Commission supports traditional uses of the jurisdiction including the traditional sporting camp. In light of the relatively small number of established sporting camps, the frequent nonconforming nature of structures associated with such facilities, and the importance of maintaining the integrity of the facility as a whole, the Commission recognizes the need to address nonconforming structures that are part of established sporting camps as special circumstances in considering the rebuilding or expansion of such structures.

Conversions of Existing Uses to More Intensive Uses, Particularly on Lakes

For a variety of reasons, many formerly low-impact seasonal structures are being converted to more intensive and/or year-round structures. These conversions have the potential to significantly increase impacts on traditional uses and natural resources, especially where they occur on the shores of lakes and ponds. This trend manifests itself in expansions of seasonal camps, conversion of seasonal camps to year-round homes, and expansions and changes in use of sporting camps. These changes have a disproportionate impact on lakes with pre-LURC development. Many seasonal camps, built prior to the enactment of the Land Use Regulation Law, are on small, substandard lots, have substandard septic systems, and are very close to the water. For a variety of reasons, including rising waterfront property values and improved road access, a growing number of these small seasonal camps are being expanded to larger, higher impact dwellings. An example of these types of expansions is shown in Figure 4 below.

The Commission revised its rules governing nonconforming uses, structures, and lots in 1999. Nevertheless, the current framework for addressing these expansions does not fully acknowledge the disproportionate impact of enlarged dwellings, usually on very small lots, on surrounding resources and values. These new or renovated structures typically generate more septic waste and surface runoff, and are often much more visible from water bodies. In addition, existing rules governing nonconformities are time-consuming to administer and have not created the more predictable regulatory environment that was intended.

Recommended Refinement: Refine Rules Governing Expansions of Nonconforming Shoreland Development

The Commission will refine its rules governing expansions of nonconforming shoreland development. Its goals will include respecting the limits inherent in substandard shoreland lots, minimizing adverse impacts on resources and values, and improving predictability. As part of this evaluation, the Commission will strive to be consistent with state guidance provided to municipalities pursuant to the Mandatory Shoreland Zoning Act. The Commission will continue to work to establish incentives for bringing lots and structures into compliance or closer compliance with current regulations. It will also emphasize the need for landowners and potential buyers to have realistic expectations when purchasing nonconforming lots and structures. In these efforts, the Commission will be mindful of issues of fairness and consistent treatment of landowners with nonconforming situations.

As part of this effort, the Commission will consider measures to limit the expansion of nonconforming structures and minimize environmental and scenic impacts of proposed expansions by, for example, establishing vegetative buffers and using natural colors and non-reflective materials for visible structures.

Figure 4 – Camp Conversion

4.9.E CHANGING CHARACTER OF DEVELOPMENT

The character of development is changing in unexpected ways, and the Commission finds itself needing to re-assess the adequacy of its rules to protect the distinctive values of the jurisdiction. Seasonal camps are getting larger and are being built for multi-season use. Nonconforming shorefront dwellings are being substantially improved. Both trends have the potential to adversely affect natural resources and values.

Section 4.6.B describes an ongoing shift in the type of dwellings constructed in the jurisdiction. Year-round dwellings in the jurisdiction, most of which are located very near organized communities, have always looked quite similar to year-round dwellings in organized areas. However, the "typical camp" in the jurisdiction has historically been a small, single-story seasonal camp built on posts within a fairly small clearing. On lakes and ponds, these camps have often been close to the water and sometimes quite visible. The limited footprint and minimal disturbance associated with these camps is one of the reasons the jurisdiction still possesses high-quality resources. These camps have also been a distinguishing feature of the region, one associated with a rustic lifestyle, self-sufficiency and appreciation for the outdoors.

The "typical camp" appears to be changing, as reflected in new construction and expansions and upgrades of existing camps. The trend is toward larger houses, most of which are built for four-season use. More of these new camps have full foundations, two stories and larger footprints (Figure 5). The changing nature of development could affect the jurisdiction's distinctive resources and features. The larger footprints associated with more recent development have proportionately greater impacts on natural resources. Larger structures with full foundations generate more runoff. They are often more visible, and can significantly alter the distinctive character of remote areas. Fire suppression efforts involving larger structures in remote areas are much more challenging. And increased investment in houses may signal growing interests or changing expectations regarding the provision of services and infrastructure that characterize more developed areas.

Figure 5 – Modern Dwelling

Parts of the jurisdiction look and function very much like adjacent, organized towns. These areas tend to have public roads, access to services and other features comparable to more populated areas. While these areas have their own unique character, this character is different from that of more remote areas of the jurisdiction. While both are an integral part of the distinctive Maine "brand" highlighted in the 2006 Brookings report entitled, "Charting Maine's Future," the character of remote areas is particularly unique in the Northeast and should be maintained.

Recommended Refinement: Maintain the Traditional Character of Dwellings, Particularly in Areas Distant from Population Centers

The Commission will consider measures to maintain the traditional character of dwellings in remote parts of the jurisdiction — areas distant from public roads, services, and population centers. Such measures could include more widespread application of the P-GP2 Subdistrict, more rigorous standards for larger houses that limit environmental and other impacts, additional vegetation clearing standards aimed at screening structures from view, stricter height limits, building footprint size limits, standards for exterior siding color and reflectivity, and limiting development in certain areas to traditional remote camps.

4.9.F USE OF PRIVATE ROADS TO ACCESS DEVELOPMENT

When the Commission was established, the extensive network of private land management roads that exists today was just beginning to be built. Most of the private land management roads in the jurisdiction were constructed explicitly for forest management activities, entitling the landowner to exemptions from certain regulation. Over time, these roads also came to be used to access recreational resources and scattered seasonal camps. The increased use of private land management roads to access development and, in some cases, the conversion of these roads from land management roads to subdivision roads raises a number of issues.

The increasing use of private land management roads for accessing intensive development, such as subdivisions, raises complex legal and regulatory issues. Where seasonal camp owners used to traverse the land of one or two landowners, today they may traverse the lands of ten or more landowners, and they may not always have deeded rights-of-way. In many cases it is unclear whether public services — including fire, police and ambulance services — can be provided effectively and without undue costs over these roads, which are under private ownership and not subject to any design or maintenance standards. Consumers may not be fully aware of the implications and risks associated with using privately owned and maintained land management roads as their only means of access to their property. And the interests of private road owners may not be fully protected, particularly if landowners are not aware that their roads are being used to provide access to a large development.

Additionally, land management roads are not subject to the same design and construction standards as roads specifically assigned to provide access to subdivisions and other development. Consequently, roads designed for land management purposes may not safely accommodate the increased volume of traffic associated with residential and other new uses. Furthermore, the maintenance costs for most private land management roads generally falls to the landowners, not those using the roads to access development. As use of these roads increases, maintenance costs will likely increase. This burden is often borne by landowners who may not have had any say in the use of their roads for this purpose. This situation can lead to increased pressure to convert private roads to public roads maintained by county governments.

In some cases, land management roads are converted to subdivision roads as part of a subdivision proposal. While land management roads are appropriately constructed and sited for forest management activities, they may not be appropriately sited and constructed for the purposes of accessing development. The location of pre-existing roads can constrain good subdivision design and the Commission is often faced with weighing the impacts of utilizing an improperly sited road versus relocating a road and disturbing previously undisturbed areas.

There are no ready solutions to the issues raised by the use of private land management roads for accessing development. Due to the policies of landowners, the Maine Woods have a valued decades-long tradition of using private roads to access recreational resources and private dwellings. Nevertheless, the issues raised should be considered to ensure that landowner, government, consumer and environmental interests are protected.

Recommended Refinement: Research Options Regarding Regulation of Road Access for Development

The Commission will research options for addressing issues associated with use of private roads to access development. Those options include: (1) developing notification procedures to ensure landowners are aware of proposals to use their roads to access development; (2) improving public education efforts regarding the status of roads and services in the jurisdiction; (3) requiring disclosure of access conditions to potential buyers as part of subdivision reviews; and (4) limiting the amount of development in areas accessed by private roads. Regarding the conversion of land management roads to serve development, the Commission will consider appropriate road design based on site conditions, rather than on existing land management road layout.

4.9.G SITING OF WASTE DISPOSAL, ENERGY AND UTILITY FACILITIES

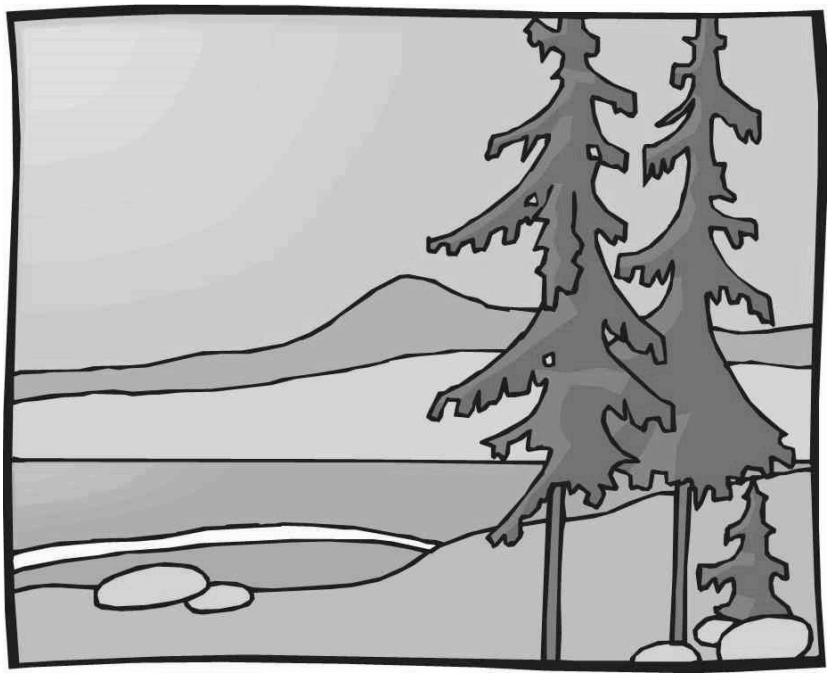
Proposals to site major new waste disposal, energy or utility-related facilities in more populated areas of the state have often generated controversy about the impact of such facilities on their communities. Because of its large area and low population density, the jurisdiction is likely to be increasingly viewed as a desirable location for some of these land uses.

A number of power transmission lines cross the jurisdiction. These facilities can significantly affect an area's scenic, remote and other natural values. Utility companies interested in siting new transmission or pipe lines may increasingly look to the jurisdiction for several reasons. First, there are advantages in dealing with one permitting agency rather than the planning boards of multiple organized towns. Second, state laws limiting utilities' eminent domain powers over unwilling sellers makes these companies more likely to choose rights-of-way where there are fewer landowners. Third, the jurisdiction lies between the source (the Canadian provinces) and the need areas.

While the Commission is concerned about the potential site-specific impacts of such facilities, it is also concerned that they be located in areas where they will have the least impact on the jurisdiction's principal values. Generally speaking, these facilities are best located in areas on the edge of the jurisdiction with good existing road access but low natural-resource values.

In the case of new transmission lines or pipelines, the Commission can minimize their impact by encouraging the siting of these facilities along existing rights-of-way (particularly roads) and discouraging new routes through more remote areas. In the case of radio communication towers, the Commission will ensure that such towers are dismantled and removed from the premises if unused for an extended period. To minimize the number of such towers, the Commission will also ensure that space on new towers is made available to other users where feasible.

Wind power siting has been addressed recently by the Commission. The Commission will need to refine the siting process for small-scale wind power projects. The siting of large-scale projects has largely been addressed by public law. Energy and utility facilities are discussed further in Chapter 5.5.

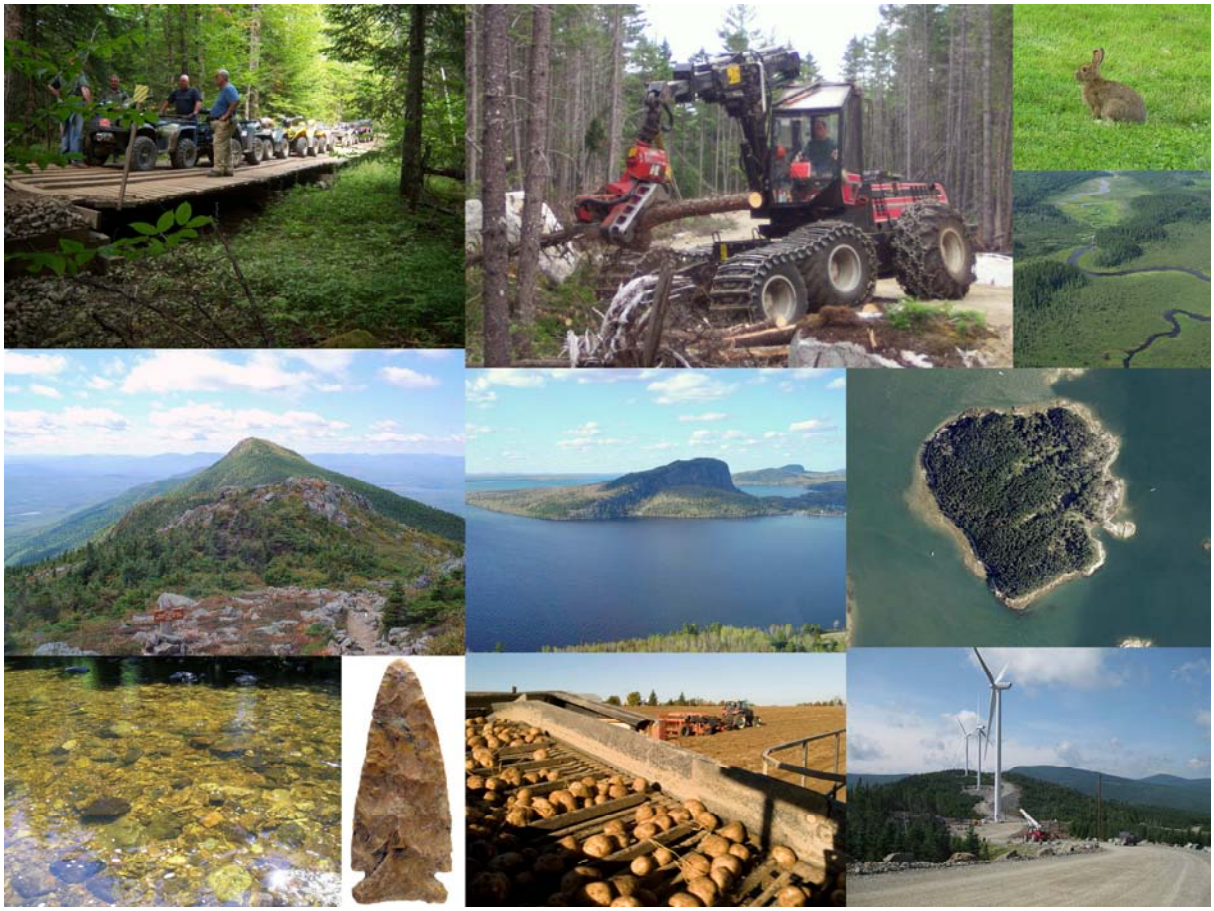


Chapter 5
Natural and Cultural Resources

Maine supports a wide variety of natural and cultural resources. There are vast forestlands, lakes, mountains, islands, tidal and inland wetlands, and special cultural resources.

Many of the most spectacular of these features are located in the Commission's jurisdiction. Some features date back to earlier geologic times, while others reflect human intervention. All are part of the ever-changing ecosystems which collectively comprise the state's resource base. Each natural resource has economic, recreational and ecological values and is, therefore, subject to conflicts over decisions about land use and resource allocation.

This chapter contains detailed descriptions of many of the jurisdiction's natural and cultural resources, and discussion of the issues pertaining to them.



5.1 Agricultural Resources

Despite its limited presence, agriculture is important to the jurisdiction. Agriculture makes a significant contribution to local and regional economies, and is an important part of the culture and heritage of many rural areas. Working farms keep significant lands in open space and help to maintain the tradition of the jurisdiction as a place where resource-based uses predominate.

A relatively small portion of the area within the jurisdiction is used for agricultural production. A number of factors contribute to agriculture's limited presence here: The availability of seasonal and trained year-round workers is limited; productivity is constrained by weather, soils which are poorly suited to agriculture, and the lack of large contiguous tracts of suitable land; and processing services and distribution centers are difficult to access without high-volume production.

While agriculture is not presently widespread in the jurisdiction, there remains potential for future expansion. The predominance of undeveloped land, general absence of incompatible uses and presence of pockets of good soil make some areas suitable for agriculture. To survive and expand, new types of agricultural enterprises may be needed. Farmers' efforts to diversify into new markets, such as agritourism, direct marketing and specialty products, has been dubbed the "Agricultural Creative Economy" and is a promising new trend in Maine, with approximately 15% of Maine's farmers participating and an estimated $75 million in sales.

5.1.A PREDOMINANT AGRICULTURAL CROPS

Potatoes and blueberries are the major cultivated crops in the jurisdiction. In 2008, Maine cultivated 57,100 acres of potatoes (this includes acreage in towns not within the jurisdiction). Maine potato acreage has remained stable in the past five years, with 68% of the acreage shifting to processing potatoes, 19% to seed stock and 13% to tablestock production. Innovation in production and marketing is occurring: Growers are using GPS technology for planting, advanced storage technology and digital imaging for potato grading. Markets are now global, due in large part to the internet and the availability of high-quality seed. Some of the acreage that had been taken out of potato production in the late 1990s and early 2000s continues to be used for other agricultural crops, such as Christmas trees.

Most blueberry production in the state takes place in Washington County, with a substantial amount occurring in the jurisdiction. Maine's dominance in blueberry production has been challenged in recent years by an increase in production in Canada. To remain competitive, Maine producers have improved large tracts of blueberry acreage — much within the jurisdiction — by using irrigation and other technologies to increase production. Maine blueberry production hit a landmark level of 110

million pounds in the year 2000, but has generally varied between 60 million and 80 million pounds per year, depending on weather-related factors. Market demand has skyrocketed in the last decade, as illustrated by blueberry prices: In 2000, the price per pound was $0.40, but had more than doubled to $0.94 by 2007. The acreage dedicated to blueberry production in Maine is expected to remain relatively stable and the market is expected to remain strong.

While cranberry production has increased in recent years, and the market is continuing to grow, it is not yet considered a significant agricultural sector in the state. Historically, cranberry plantations were created in wetlands, mostly along streambeds that could be dammed to provide flooding. More recent cranberry plantations were developed using the upland plantation development model, whereby upland sites are constructed with contained water sources such as ponds or bogs. These upland plantations have fewer environmental impacts and are generally easier to permit. When market factors make the expansion of cranberry production profitable, this upland model may make it easier for Maine growers to develop new production sites.

Smaller amounts of land in the jurisdiction are devoted to other forms of agricultural production, including poultry, apples, broccoli and other vegetables, and dairy and beef cattle. Canola production is also increasingly seen in the jurisdiction as a crop in rotation with potatoes. The production of maple syrup has expanded significantly in recent years. An approximately $2 million industry in the early 1990s, Maine's maple syrup production reached nearly $8.8 million in 2008. This increase in value is largely due to improved marketing methods: While Maine historically sold much of its maple syrup in 50 gallon drums, it now markets increasing amounts in small value-added containers. Other forest-based agricultural products in the jurisdiction include "tipping" of evergreen boughs for wreath production and harvesting of fiddleheads.

5.1.B LURC REGULATORY APPROACH

Most agricultural operations are located in the General Management (M-GN) Subdistrict. The M-GN Subdistrict is intended to enable forestry and agriculture to occur with minimal interference from unrelated development in areas where the resource protection afforded by protection districts is not necessary. Agricultural management activities are statutorily exempt from regulation by the Commission in management subdistricts.

The Highly Productive Management (M-HP) Subdistrict is designed to ensure the continued availability of products from high-yield or high-value forest and/or agricultural lands by reserving areas for these uses. To date, this subdistrict has not been applied due to the difficulty of defining qualifying lands. Until this issue is resolved, the Commission reaffirms its commitment to maintaining prime agricultural lands where they have been identified.

The Commission has a limited role in regulating agricultural practices, but does, in some cases, regulate nutrient management and water withdrawal. Many other practices, such as integrated pest management or the use of genetically modified organisms, are addressed by the Maine Department of Agriculture.

Potato Harvest

5.1.C AGRICULTURAL RESOURCE ISSUES

The major factors affecting the future of agricultural resources are economic. The removal of land from food production is an issue of global and national importance, yet is extremely difficult to address due to the dynamic and interconnected nature of the marketplace. Diversification and innovation may prove to be key to the future viability of agriculture within the jurisdiction. In light of prior acreage reductions in potato production, the stabilization of that industry is encouraging, as are the increases in blueberry prices and maple syrup production. The development of the agricultural creative economy is also very encouraging, and the Commission will align its policies with the needs of diversifying farms whenever possible.

The issue of greatest concern is development and fragmentation of the jurisdiction's remaining working farms and cleared farmlands, especially those that have prime agricultural soils and are close to markets and community services. Prime agricultural soils are a limited and irreplaceable resource. These soils are considered a valuable resource worthy of protection wherever they are found, particularly when they are located near areas that have the infrastructure to support farming. While the location of these soils are not presently known, extensive soils mapping is currently being conducted in the jurisdiction by the Natural Resource Conservation Service and information about the occurrence of prime agricultural soils is expected to be available in 2011. Working farms and cleared agricultural soils are especially important to maintain because, once a farm is forested, it can be difficult to find a farmer with sufficient capital to return it to production. When agricultural land is abandoned, the opportunity still remains to return it to agricultural use in the future in response to changing circumstances and markets, if sufficient capital is available. Once land is developed or topsoil removed and sold, however, the option of restoring the land to agricultural use is essentially eliminated. For these reasons, the Commission will discourage fragmentation of working farms and prime agricultural land, and will guide development away from these areas.

Existing methods for reducing the conversion of farmland include tax advantages such as the open space program or the sale of conservation easements through private and public programs such as Land for Maine's Future. However, the survival of farms may be partially tied to the ability of the farmer to capitalize on other values of the land, including areas of the farmer's holdings that are not prime agricultural soils. The Commission will consider the complex factors that influence the retention of farms and farmlands when it implements measures to guide development. Land conservation is discussed further in Chapter 4.

In order to remain competitive, most agricultural operations must use the land intensively and take measures to reduce crop and soil loss. The use of fertilizers and pesticides, and the withdrawal of water for irrigation, boosts productivity and improves crop quality and consistency. However, these activities need to be conducted with care to ensure that they do not create excessive impacts on natural resources and neighboring land uses. The listing of the Atlantic salmon as a federally endangered species has meant even closer scrutiny of the effects on stream flow of water withdrawal for irrigation. Water use is the focus of new regulation, including the 2007 adoption of statewide major water use laws and rules. LURC's permits must be in compliance with these standards, including withdrawals for agricultural use.

Soil erosion and sedimentation are also potential effects of agricultural operations. The state has regulatory programs for nutrient management and control of pesticides and also has developed best management practices and integrated pest management programs for agriculture and other significant land uses. Compliance with these programs can significantly minimize adverse impacts on surrounding resources. The Commission will continue to work actively with federal and state environmental and agriculture agencies and with industry to appropriately manage voluntary best management practices and, where necessary, permits for agricultural use of pesticides and surface and ground water.

In managing irrigation and pest issues, Maine farmers will also be facing changes in climate that will have significant impacts. According to "Maine's Climate Future," published in February 2009 by the University of Maine, Maine farmers are already seeing northward shifts in the plant hardiness zones. They are also likely to experience greater needs for irrigation and new challenges from a changing suite of crop pests and pathogens and increased pressure from invasive plants. The Commission will be sensitive to the changing needs of farmers over time and will adapt permit requirements and land use standards as appropriate. Climate change is discussed further in Section 5.2.

The trend toward larger maple syrup sugaring operations, many of which are in remote locations, has brought with it a need for more extensive accommodations to house workers and equipment. When issuing permits for these facilities, the Commission has generally stipulated that the facilities shall not be used for other purposes, unless it specifically approves the other uses.

Agriculture is not always compatible with residential or commercial uses because of nuisance conditions such as noise, dust and smells. As residential development encroaches on farmland, conflicts sometimes arise between established and emerging land uses. Maine's Right to Farm law is designed to allow farms to persist and thrive, even in areas with recent residential development. However, it may be preferable to avoid situations where such conflicts are likely. By separating incompatible land uses and encouraging residential development to locate away from working farms, the Commission will help to prevent these conflicts.

As the Commission considers how future regulatory actions may encourage the conservation of existing farms and the development of new farms, it will explore a range of options, including the use of better soils data and innovative conservation tools such as transfer of development rights, to identify and protect areas of prime agricultural land.

Aroostook County Farm Land

5.2 Air and Climate Resources

While areas within LURC jurisdiction are generally characterized by clean air and good visibility when compared to some parts of the U.S., there are still significant air quality issues that affect the jurisdiction as well as the surrounding New England and Atlantic Provinces region. Air issues are often quite complex and include not only ambient air quality issues, but also air pollutant deposition issues and climate change. Unlike some resources of the jurisdiction, air resources are particularly transient in nature and therefore influenced by factors well outside the boundaries of the jurisdiction.

Air quality has far reaching effects on the health of forests, water bodies and wildlife in the region. Additionally, clean air and smog-free skies are important to residents and recreational visitors in terms of the impacts on human health, as well as visibility and scenic resources. In the past, Maine has exceeded health-based standards for particulates, sulfur dioxide, carbon monoxide and ground-level ozone, but implementation of a wide variety of local and regional emission reduction strategies has been successful in helping Maine meet most of the National Ambient Air Quality Standards. However, the incidence of non-attainment is expected to increase when stricter standards are promulgated by the federal government in the coming years as ongoing research suggests that current standards may not be stringent enough to protect human health, vegetation and ecosystems and do not account for the effects of biomagnification and persistence of pollutants in the environment. As an example, Maine was in attainment of the previous ozone standard of 0.08 parts per million (ppm), but monitored concentrations along the coast from Kittery to Acadia National Park are violating the more current 0.075 ppm ozone standard.

5.2.A AIR QUALITY AND FORESTS

The forest plays an important role in maintaining good air quality, regionally and globally. It produces oxygen, necessary to human survival, and absorbs carbon dioxide, a greenhouse gas that plays an important role in regulating the earth's climate. The value of forests for their ability to absorb and store carbon (“carbon sequestration”) is of growing interest, given rising concern about greenhouse gas emissions.

While the forest removes some air pollutants from the atmosphere, it is also vulnerable to damage by other compounds. Forests at high elevations are especially vulnerable to damage by air pollutants. Subject to greater precipitation, cloud frequency and exposure, these forests receive much higher levels of certain pollutants than lowland areas. This pollution may have contributed to declines in high elevation spruce and fir forests in the Appalachian Mountains of the Eastern United States over the past two decades.

The impact of air pollutants on the forest is a topic of ongoing research. Trees weakened by exposure to pollutants may be more susceptible to damage by insects and disease. A decline in forest health and productivity could dramatically affect the region’s ecology and economy.

5.2.B AIR POLLUTANTS

Nonlocal sources of air pollution account for the greatest percentage of the pollutants influencing the air quality of the jurisdiction. These sources are principally population and industrial centers on the east coast, in the Midwest and in southern Canada. These areas generate primary emissions of suspended particulate matter, sulfur oxides, carbon monoxide, hydrocarbons, heavy metals and nitrogen oxides, all of which are

transported long distances in the atmosphere. Regional haze, particle pollution, ozone and other secondary pollutants are formed in the atmosphere along the route from those primary emissions.

Local sources of air pollution, which account for a very minor percentage of the pollutants influencing the jurisdiction, include sulfate-processing pulp mills adjacent to the jurisdiction, insecticide and herbicide spraying associated with timber management and agriculture, forest fires, woodburning stoves and furnaces, vehicle emissions, logging roads (dust) and biomass plants.

While the Commission has no direct authority to control sources of air pollution outside of its jurisdiction, Maine along with other states has legal standing to pursue air pollutant transport issues through regional bodies, such as the Ozone Transport Commission established by the Federal Clean Air Act. The Commission supports such efforts and has a vested interest in tracking air quality. Additionally, the Commission will continue to consider the effect of its zoning and permitting decisions on air quality in the region because of the potential of poor air quality to affect other natural resources.

Acidic Deposition

Acid rain occurs when air pollutants, particularly sulfur dioxide and nitrogen oxides, combine with water to form acids. Since the phenomenon of acid rain was first identified, there has been considerable concern about its potential impacts on lakes, streams and forests. Although sulfur emissions have decreased as a result of control programs, projected emissions of sulfur and nitrogen compounds are expected to have continuing negative impacts on forests, presenting some of the most serious long-term threats to forest health and productivity in northeastern North America.

Excess sulfur and nitrogen deposition may reduce the supply of nutrients available for plant growth. Nutrient depletion leads to increases in the susceptibility of forests to climate, pest and pathogen stress which result in reduced forest health, reduced timber yield, and eventual changes in forest species composition. Factors that increase forest sensitivity include: high levels of nitrogen and sulfur deposition, low mineral weathering rates, tree species with high nutrient demands, and biomass extraction rates. High elevation forests and areas closest to emission sources experience the highest levels of nitrogen and sulfur deposition. Low mineral weathering rates occur in association with particular geologic and climatic factors. Requirements for soil nutrients vary according to the species currently growing in a forest because tree species have different nutrient requirements for health and growth. Sugar maples, for example, have a high demand for calcium.

Critical load approaches offer air quality and natural resource managers a powerful tool with which to identify ecosystems at risk and to tailor monitoring and management strategies to address specific resource issues. As it applies to the atmospheric deposition of acid forming compounds, a critical load is that level of exposure to sulfur and nitrogen compounds below which no harmful effects are known to occur within a specified environment or ecosystem.

A critical load map for Maine was recently completed and critical loads have been calculated for Maine's forest ecosystem. Atmospheric deposition of sulfur and nitrogen from 1993 through 2003 exceeded the critical load in 36% of Maine's forested area. This occurred most in northern Maine where critical load values are among the lowest due to geologic conditions and high timber utilization.

Increased acidity of soil moisture also mobilizes some toxic metals normally occurring in most forest soils, including zinc, manganese and aluminum. Usually benign in trace amounts, research has shown that elevated concentrations of these metals in acidic soils damage root systems and slow growth in some tree species. This may reduce harvests under sustainable forestry practices.

Sulfur and nitrogen compounds also impact the chemistry of lakes. Acid deposition degrades water quality by lowering pH levels, decreasing acid-neutralizing capacity and increasing aluminum concentrations. About 100 lakes in Maine are considered acidic; half are naturally acidic while the other half have elevated levels of acidity due to human causes like acid rain. Acid rain research has revealed that 26.7% of surveyed lakes in Maine exceed critical load values for acidity, compared to 11.6% in the Northeast region. Despite decreased deposition of sulfur associated with the Clean Air Act Amendments, recovery of chemical water quality has been slow across the Northeast. This is due in part to complex changes in both soil and water chemistry.

Heavy Metals

Heavy metals such as lead, zinc, cadmium, copper, chromium, mercury and vanadium generally originate from fossil fuel combustion, refuse incineration and industrial processes, as well as from natural sources such as volcanic emissions. These heavy metals can travel long distances in the air to remote Maine forests. Once deposited in the forest, the metals remain in the ecosystem for a very long time.

The presence of mercury in the environment is a topic of growing concern and study. Research indicates that recent mercury deposition exceeds background levels by a factor of three or more. High levels of mercury have been found in some fish, including fish from “pristine” inland lakes. Air pollution, and sediments contaminated by industrial discharges are sources of mercury. Researchers suspect that lake conditions of low pH and low alkalinity make mercury available for uptake by organisms. Air pollution models have been used to explore patterns of mercury transport and deposition in the Northeast. Results suggest that measurable quantities of mercury are being deposited throughout the Northeast states, including in remote areas. For example, research has revealed high concentrations of mercury in Flagstaff and Aziscohos Lakes. Some common loons and river otters from the interior of Nova Scotia and several New England states have among the highest tissue mercury concentrations reported for these species. Mercury is a widespread problem, and research continues in this area. New England Governors and Eastern Canadian Premiers have been working together on ways to develop and implement national and continental responses aimed at the elimination of mercury discharges into the environment.

Ozone

Ozone is a key constituent of both the troposphere and stratosphere (the first two layers of Earth’s atmosphere). At abnormally high concentrations, tropospheric ozone is considered a pollutant. Tropospheric ozone is not emitted directly from a source, but is formed from hydrocarbons, nitrogen oxides and sunlight at the earth's surface. Hydrocarbons are emitted principally by automobiles and industrial uses utilizing petroleum-based products. Nitrogen oxides are emitted by combustion sources. It is estimated that most ozone in Maine is transported here from urban areas outside the state or generated in the atmosphere en route to Maine, although some is generated from local sources.

Widespread regions of the Eastern U.S. experience episodes of elevated ozone levels. Considered one of the most damaging air pollutants on a regional basis, elevated ozone levels are harmful to human health as well as tree growth. Eastern white pine is particularly sensitive to ozone. Ozone levels throughout Maine periodically exceed state and federal standards (14 days in 2007, four days in 2008 and two days in 2009), and researchers suspect that chronic and possibly acute ozone damage does exist in Maine’s forest. Achieving attainment of the eight-hour Ozone National Ambient Air Quality Standard of 0.075 ppm within all of Maine continues to be a state priority. However, ozone levels and resulting air quality will continue to be influenced by the amounts of ozone-forming pollutants being emitted.

5.2.C CLIMATE

Climate is defined as the 30-year average weather conditions of a given place and includes temperature, precipitation and wind, among other factors. The National Weather Service has identified three different climate divisions in Maine: Coastal, Southern Interior, and Northern. These climate divisions present a range of climates more geographically compressed than most similarly sized areas in the world. These climates vary in temperatures and amounts of annual precipitation (Table 6).

Table 6 – Maine Annual Average Temperature and Precipitation Over the Past 100 Years

Maine Climate Division	Annual Average Temperature	Annual Average Precipitation
Coastal	44.30 °F	46.49 in.
Southern Interior	43.15 °F	44.12 in.
Northern	39.31 °F	41.13 in.

(Source: Jacobson, G.L., I.J. Fernandez, P.A. Mayewski, and C.V. Schmitt)

Much of what Maine is today is the result of its climate. The climate currently supports numerous existing resources, such as the sub-boreal forests and the wildlife that depends upon them, extensive lobster fisheries, renowned snowmobiling and coldwater fisheries. Much of the economy of Maine depends upon the persistence of these existing resources, as discussed in other sections of Chapter 5.

Climate Change

Scientific data show that the earth has undergone warming and cooling cycles over hundreds of thousands of years. However, the global temperature has been rising an annual average of 0.08 °F per decade over the past 150 years, while the average for the past 50 years has been at the rate of 0.23 °F per decade. According to the Intergovernmental Panel on Climate Change, there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities, and climate scientists have arrived at a broad consensus about air pollution and climate change: Simply put, carbon dioxide and other global warming emissions are heating up our planet.

Carbon dioxide emitted into the atmosphere has the effect of trapping energy from the sun within the Earth's atmosphere. While initially this results in a warming trend, the secondary impacts are expected to present a range of variations, a distinction that has resulted in no longer referring to the issue as global warming, but rather as global climate change.

Since the pre-industrial era, atmospheric concentrations of carbon dioxide have increased nearly 30%, methane concentrations have more than doubled, and nitrous oxide concentrations have risen by about 14%. The present carbon dioxide concentration has not been exceeded during the past 420,000 years and likely not during the past 20 million years.

Increases in temperature and the consequent regional changes in climate have already affected both physical and biological systems in many parts of the world. Changes have been evident in Maine as well. Over the last century, the average temperature in Lewiston, for example, has increased 3.4 °F, and precipitation has decreased by up to 20% in many parts of the state. According to data collected in 2002, the ocean near Boothbay Harbor was 6.5 °F warmer than any August since 1905.

CLIMATE CHANGE AND LOBSTERS

"More than half of the annual U.S. lobster catch is landed in Maine, and landings here have increased steadily since the early 1970s. The remarkable increase in lobster landings over the past two decades could be the result of bottom water warming over that period, which would enhance conditions for settling juvenile lobsters. Growth rates of lobsters increase with warmer temperatures, as they reach reproductive maturity at a smaller size and at an earlier age.

Yet fish predation on lobsters is higher in southern New England than in Maine, likely owing to a more diverse assemblage of predators. As the Gulf warms, the southern fish community could expand northward, resulting in higher predation. And, finally, at very warm temperatures (above 77°F), lobsters become physiologically stressed.

Fishermen are already noticing significant changes in the lobster fishery, including altered growth and migration behavior. Changes in the lobster fishery have serious implications for Maine's coastal communities, where thousands of licensed lobstermen and women support numerous related industries such as boatbuilding, lobster trap production, bait distribution and transport, and marketing infrastructure. In the event of a collapse, the social landscape along the coast would shift away from commercial fishing with little chance for reversion back to a working waterfront should stocks recover in the future."

Jacobson, G.L., I.J. Fernandez, P.A. Mayewski, and C.V. Schmitt (editors). 2009 Maine's Climate Future: An Initial Assessment. Orono, ME: University of Maine.

Predicting specific outcomes of climate change is difficult given the complexities of environmental systems involved. Based on best available information, outcomes will likely include:

- Changes in average air temperatures;
- Changes in precipitation, either by amount, duration, or event frequency;
- Changes in ocean currents and/or the jet stream; and
- Extreme weather events, whether by amount, frequency, intensity or duration.

Individual and incremental changes, even if relatively small, could collectively produce dramatic outcomes. Increasing average air temperature is expected to shift forest composition toward hardwood forests, create a climate for new pests or diseases, reduce the duration of winter months or amounts of snow, and expand or shift some growing seasons. Shifting habitat conditions may impact wildlife persistence, particularly for those species already at the edge of their ranges. Changes in ocean currents or the jet stream could easily introduce new species of insects, plants or animals, or could cause additional changes in average air temperatures or precipitation. Climate change is poised to affect many aspects of the economies and ecosystems of the state and the jurisdiction.

Projections of Maine's future climate vary widely depending upon the assumptions used in the models. However, considered collectively, even widely varying projections can provide valuable insight into the likely range of results. According to projections made by the Intergovernmental Panel on Climate Change and results from the United Kingdom Hadley Centre Climate Model, temperatures in Maine could increase

by 4 °F by 2100. However, projections made by the University of Maine show temperatures increasing between 0.09 to 2.82 °F by 2100. Precipitation is projected to show little change in spring, increase by 10% in summer and fall, and increase by 30% in winter. The University of Maine projects an average change of -1.35 to 8.07 inches of precipitation over the same period for the state. Sea level is projected to continue rising. At Rockland, sea level has already risen by 3.9 inches in the past century, and it is likely to rise another 14 inches by 2100.

CLIMATE CHANGE IMPACTS

Although climate change impacts are difficult to predict due to the complexities of environmental systems, possible results for the New England area could include the following:

General Effects

- Temperatures in the Northeast are projected to rise another 2.5 to 4 °F in winter and 1.5 to 3.5 °F in summer in the next several decades.
- Climate change could worsen air pollution in the Northeast, creating more days when national air quality standards cannot be met.

Agriculture

- A longer growing season may allow farmers to experiment with new crops, but many traditional farm operations will become unsustainable without adaptation strategies that could be quite costly in some cases.
- Dairy milk production could experience up to a 20% decrease.
- An extended growing season will tend to benefit those farmers attempting to grow high-value crops that require long, warm summers, but as the region warms all crops will face increasing summer heat stress, drought and pressure from weeds and pests.
- Temperature changes could result in impacts to apple orchards containing varieties that require long winter-chill periods to produce fruit.

CLIMATE CHANGE IMPACTS (CONTINUED)

Forests

- The effects of a changing climate on forest resources could include changes in species composition, geographic range and health and productivity. While many tree species may be able to persist during this century even if their optimal climate zones shift northward, some may succumb to climate stress, increased competition and other pressures.
- Productivity of spruce-fir forests is expected to decline and suitable habitat for these species will all but disappear from the Northeast by the end of the century. This would greatly exacerbate stresses on the pulp and paper industry in the Northeast, particularly in Maine, where the forest-based manufacturing industry is key to the state's economic health.
- Winter warming will threaten hemlock stands, not only by reducing suitable habitat for this species, but also by allowing northward expansion of a fatal pest known as the Hemlock Woolly Adelgid.
- Warmer temperatures and reduced rainfall may increase the threats of forest fires.

Coasts and Shorelines

- Global sea level is projected to rise by 7 to 34 inches, by the end of this century. The erosive impacts of waves (especially storm waves) will contribute more to shoreline retreat and wetland loss than the loss of land caused by the rise in sea level itself.

Marine Impacts

- Warming of the region's colder northern waters (particularly the eastern Gulf of Maine) may actually boost lobster productivity. It may also make the environment more hospitable to "lobster shell disease".

Winter Recreation

- The length of the winter snow season could be cut in half across Maine, New Hampshire, northern New York and Vermont.
- Global warming is projected to profoundly affect winter recreation and tourism in the Northeast as winter temperatures continue to rise and snow cover declines. Snowmobiling is the most vulnerable of the region's economically important winter recreation activities because, unlike the ski industry, it cannot rely upon machine-made snow.

5.2.C LURC REGULATORY APPROACH

Most air pollutants are regulated by the Maine Department of Environmental Protection ("DEP"), which administers air quality standards. Nevertheless, the Commission does play a role in monitoring and protecting air quality, principally through the permitting process.

The Commission's authority in regulating air quality is broad, deriving from two statutory criteria: (1) that the Commission approve no application, unless "adequate technical and financial provision has been made for complying with the requirements of the state's air and water pollution control and other environmental laws...", and (2) that "adequate provision has been made... to assure there will be no undue adverse effect on..." natural resources. In reviewing individual projects within its jurisdiction, the Commission considers air quality issues, but relies heavily on DEP review under other air quality laws, especially on larger projects. However, the Commission has not reviewed its land use regulations in regard to their impacts on climate.

In 2001, Maine signed on to the Conference of New England Governors and Eastern Canadian Premiers 2001 Climate Change Action Plan. The plan identifies three major reduction targets for greenhouse gases in the region: A return to 1990 levels by 2010, a 10% reduction from 1990 levels by 2020, and recognition of the long term need to reduce our present day emissions by 75-85%. It calls upon each state and province to create its own Climate Change Action Plan. In 2003, the Maine Legislature enacted "An Act to Provide Leadership in Addressing the Threat of Climate Change" (LD 845), placing into law a policy of reduction in greenhouse gases. As a result, the DEP convened a group of over 30 stakeholders to develop a climate action plan for Maine aimed at responding to global climate change and achieving greenhouse gas emission reductions in Maine. During the 2009 legislative session, two bills (LD 460 and 891) were passed or carried over by the Legislature that focus on possible solutions and adaptations to climate change. While most of these actions do not directly affect the Commission or its charge, they do reflect a commitment by the Legislature, and the state as a whole, to address climate change. The Commission will continue to monitor these efforts and act in accordance with Legislative direction.

5.2.D AIR RESOURCE ISSUES

Air Pollutants

Maine forests bear the chemical signature of exposure to air pollutants, but the long-term effects on forest health and productivity are still unknown. Air pollution delivers elevated levels of nitrogen, sulfur, ozone, heavy metals, carbon dioxide and other compounds to forest ecosystems. These materials are changing the chemical and biological characteristics of forest soils. Accumulated trace metals are evident in forest soils, and although levels in Maine forests are lower than those in states to the south, they are still clearly above pre-industrial conditions.

Air pollutants also have the potential to adversely affect human health. Most health effects are respiratory in nature. High concentrations of particular pollutants can cause breathing problems for specific population groups, such as the elderly, children and people with respiratory conditions. Ground-level ozone periodically exceeds state and federal standards in some areas of the jurisdiction during the summer and affects many such groups. Long-term exposure to low levels of certain air pollutants is suspected as a possible cause of some diseases. Degradation of stratospheric ozone, which shields the earth from cancer-causing ultraviolet rays, is also of concern.

The Commission will consider both the beneficial and adverse impacts to air resources in its evaluation of residential and nonresidential development projects. Additionally, the Commission recognizes the importance of understanding and tracking the effects of air pollution on other valued resources, such as lakes and forests, and will participate in dialogue concerning these resources.

Climate Change

Global climate change will influence Maine and the jurisdiction in many ways. Some industries, activities and species will thrive in the new conditions, while others will be harmed or eliminated. The degree of potential disruption to Maine's natural and human systems is a cause for significant concern. Predicting specific outcomes is difficult given the complexities of environmental systems involved; however disregarding the issue and its likely effects is no longer an option.

Solutions pursued at the state or federal level to slow or mitigate climate change are likely to range from minor policy shifts to stringent emission or energy efficiency standards, though many of these solutions are beyond the purview or expertise of the Commission.

However, land use patterns do play a role in climate change. Development clustered near jobs and services can significantly reduce energy consumption for transportation. Clustered development and infrastructure can consume less forestland, leaving larger areas available for forest management activities. The Intergovernmental Panel on Climate Change asserts that (1) a climate-conscious development policy might discourage sprawling subdivisions, instead promoting high-density neighborhoods that would reduce travel distances, as well as smaller homes that would require less energy to heat and cool; (2) it is possible to capture greenhouse gases, most notably carbon dioxide, through increasing the size and nature of forested areas, encouraging natural carbon sinks; and (3) the sustainable use of forest products, including bioenergy to displace the use of fossil fuels and manufacturing of products to replace higher energy input versions, may make a significant contribution to mitigating climate change in the longer term, because it avoids the introduction of new carbon into the active carbon cycle. Effective action will require changes to all aspects of land use, including residential and commercial development, transportation, energy consumption and production, and the provision of services.

Although other governmental agencies regulate air and climate resources, the Commission is the only agency that reviews land uses with respect to geographic location or pattern of development for Maine's unorganized territory. While the Commission has worked to implement policies promoting sound planning principles and sustainable development, and will continue to do so based on its statutory charge, the critical issue of climate change provides particular affirmation and a certain level of urgency to those efforts.

Maine has within its borders, a large part of the largest contiguous block of undeveloped forestland east of the Mississippi River. Because this area is a working forest, it is sequestering carbon within the trees and ultimately in the products made from these resources, thus making this area a valuable carbon sink. Programs are being developed that compensate landowners for maintaining healthy forests specifically for this carbon sequestration value. These and other similar programs are likely to be an important part of Maine's contribution to mitigating the causes of global climate change.

Climate change will not be addressed solely by actions taken within the Commission's jurisdiction or even the state. However, the Commission takes seriously its responsibility to undertake reasonable efforts to contribute to the solution. Accordingly, the Commission is committed to working collaboratively to identify and implement appropriate measures to mitigate climate change.

5.3 Coastal Resources

A small portion of the Commission's jurisdiction borders the coast, comprising part of Maine's magnificent coastline. Two mainland townships, Trescott and Edmunds, have considerable ocean frontage between Machias and Eastport. The jurisdiction's most significant coastal resources, however, are 780 islands, located mostly in the mid-coastal part of the state. These resources include two island plantations, 280 named islands, and 498 unnamed islands and ledges, and represent about 5% of the total number of coastal islands in Maine.

Although the total land area of these islands is small in relation to the rest of the jurisdiction, they warrant extended discussion and special consideration for several reasons. First, taken together, the coastal islands are a defining feature of Maine's spectacular coast, and they exhibit many of the jurisdiction's principal values: they are numerous and diverse, with unique natural resources; a few of them support one of the original working landscapes — fishing settlements; their lands and surrounding marine environment offer many varied recreational opportunities; and, accessible only by air or water, many of them are relatively remote and possess outstanding scenic character. Second, their natural and human environments differ significantly from those of mainland areas and present a distinct set of planning and land use issues. Third, as coastal areas, many islands are attractive locations for development and have experienced increased development pressure and recreational use as well as conservation efforts during the past two decades — trends that are likely to continue.

5.3.A PHYSICAL AND NATURAL CHARACTERISTICS

Most of the islands in the jurisdiction can be cast into four geographic groups. The Muscongus Bay group is located at the mouth of the Medomak River near Bristol. The Muscle Ridge group is located east of St. George. The East Penobscot Bay group is situated west of Deer Isle. The outer island group is composed of islands more than five miles from the mainland. The remaining islands lie Downeast (Marshall and Ringtown Islands in Toothacher Bay near Swan's Island and numerous islands within the boundaries of Edmunds and Trescott Townships).

Many unique features of islands are a result of their isolation, small size and exposure to the marine environment. Surrounded by ocean, islands have evolved separately from mainland areas, resulting in an environment that is distinctive yet sensitive to natural disturbance. The small size of the islands — the largest within the jurisdiction is only 980 acres — and their exposure also make them vulnerable to the constant stresses of winds, waves, tides, salt, ice and animals, and to human activities. Generally, the larger the island, the more diverse its ecosystem, the more varied and numerous its plant and animal life, and the more tolerant it is of disturbance.

The ocean, which acts as a moderating agent, strongly influences island climate. Summers are generally cooler and wetter than on the mainland, with many more foggy days. This cooler climate allows for the growth of some boreal and sub-arctic plant species that are found further to the north on the mainland. Island winters, on the other hand, are warmer and rainier than on the mainland, allowing some plant species to extend their range northward.

Island soils are typically acidic, infertile and shallow, with a thin organic layer. Larger islands often contain marshes and bogs. Vegetative cover varies depending on local conditions, soil type and past vegetation clearing practices. Most larger islands are forested and mature softwood stands predominate on many islands. Maine's coastal islands, in fact, have abundant concentrations of mature spruce (100+ years) forests.

Groundwater is the main source of freshwater on islands, but supplies are generally limited and sensitive to contamination and depletion. Island groundwater is generated entirely by rain and snowfall on the island itself, which percolates into the soil and rock. On islands, recharge of groundwater supplies can be greatly reduced by impervious surfaces that cause stormwater to flow to the ocean rather than infiltrate into the ground.

The interface between groundwater and the salt water that lies around and often under the island is always moving, depending on rainfall, tides, the characteristics of the groundwater supply and, if the island is populated, water usage. In many cases, island groundwater actually floats on top of a more dense layer of saltwater. High groundwater demand or the siting of wells near this interface can cause intrusions of saltwater into the groundwater supply.

Although a number of ecosystems may comprise larger islands, each island can be viewed as a distinct ecological unit with limited outside interactions and a unique set of local conditions. This means the ecology of individual islands varies considerably from that of the mainland and of other islands. It also means that the level of biological diversity and equilibrium on islands is more often a result of relative isolation than of continuous interactions with diverse ecological and human forces, as is the case on the mainland. Under these conditions, the introduction of new forces or activities can have a particularly dramatic impact on island ecology.

Island wildlife resources are typically less diverse and more fragile than on mainland areas. Species generally are limited to those that can swim or fly, or those that have been introduced, intentionally or unintentionally. A number of species fill ecological niches usually occupied by other animals on the mainland, and lack of predators has resulted in large communities of certain species. Many islands have an abundance of whitetailed deer, as well as large populations of small rodents. As mentioned previously, larger islands tend to have more diverse and stable wildlife populations.

Coastal islands are especially valuable for the migratory and resident birds they harbor, some of which are endangered or threatened. Many islands within the jurisdiction provide essential nesting sites for a variety of significant seabirds including eider ducks, puffins, black guillemots, terns, leach's storm petrels, razorbill auks, cormorants and gulls. Shorebirds and tidal waterfowl and wading birds are abundant on islands, and a variety of terrestrial birds is also present. Two large raptor species, ospreys and bald eagles, often nest on islands, as do herons. A number of bald eagle nest sites have been identified on islands in the jurisdiction. The Maine Department of Inland Fisheries and Wildlife ("DIFW") recently completed an updated inventory, mapping and rating important seabird nesting islands, shorebird feeding and roosting sites, and tidal waterfowl and wading bird habitat for many islands. This recently available information will facilitate planning for their protection.

An initial impetus for use and settlement of islands was their proximity to fishery resources. A variety of fish species inhabit coastal island waters, with lobsters an especially important resource, particularly since other

fisheries have significantly declined in recent decades. Marine mammals also frequent nearby waters, and seal haulouts have been identified on a number of islands and ledges.

The global climate changes that have been documented over the past few decades have a number of implications for the entire jurisdiction, not just for coastal communities and natural resources, although that is the focus here. Sea level rise, one of the primary concerns related to global climate change, has direct implications for coastal human and natural communities. Potential impacts involve coastal flooding; loss of marine ecosystems, saltwater fisheries and coastal property; and accelerated erosion.

Additional impacts of global climate change on coastal natural resources and ecosystems are not certain. Climate change is affecting both the physical and chemical properties of waters in the Gulf of Maine. Changes in water temperatures affect the timing of life stages, ecological interaction, disease and invasive species. Changing water circulation alters the dispersal of young, migration, nutrients and temperatures, as well as species range limits. The oceans absorb more carbon dioxide as levels of atmospheric carbon dioxide increase, making ocean waters more acidic. While increased carbon dioxide may spur sea grass growth to some extent, it is also likely that warming waters will result in greater phytoplankton blooms and epiphytic algal growth that have the potential to shade and smother eel grass. Acidification could reduce growth and survival of carbonate shells and body parts of mussels, snails, sea urchins and coralline algae, as certain shelled animals are particularly sensitive to the acidity. Marine ecosystem-level effects could result in changes in biodiversity and leverage (linchpin roles) species. Current model projections are not able to predict exactly how the Gulf of Maine will change in the future.

The implications of such changes on Maine's island and coastal communities may be quite dramatic over the long term. A more extended discussion of global climate change appears in Section 5.2.

Matinicus Island

5.3.B LAND USE CHARACTERISTICS AND TRENDS

Up until the early 1900s, many Maine islands were intensively logged, farmed, grazed and quarried. Year-round island communities were common. In many cases, island settlement preceded that of mainland areas. Fishing was the economic mainstay of most island communities.

Depletion of island resources and declining markets in the late 19th and early 20th century led to abandonment of settlements on many islands. Today, the only islands within the jurisdiction with year-round populations are Monhegan Island and Matinicus Isle Plantations and Eagle Island. Most islands reverted to a relatively natural state after being abandoned. On many islands, there has been no significant timber harvesting or vegetation clearing since the early 1900s.

Sustained development pressures over the past 20 years, however, have the potential to alter significantly Maine's island landscape. Improvements in transportation and growing recreational boat ownership make islands more accessible now than ever. While year-round settlement has declined, second home development in the form of both new construction and conversions of year-round dwellings to seasonal use is a trend that accelerated in the 1990s and has continued into the 2000s.

Tourism and recreational use are also an established trend on Maine islands, especially on larger, populated ones. Monhegan has seen a sustained increase in "daytrippers" since the 1980s, and visits to other islands have grown as well. Boating, hiking, biking, painting, photography and nature study are the most popular island recreational activities.

On islands with mature stands of spruce and fir, timber harvesting is a likely future trend. According to the Maine Forest Service ("MFS"), the lack of forest management over the years on many islands has led to the development of unstable spruce stands, particularly with respect to disease and wind throw. Establishing ongoing forest management could help restore and maintain long-term stand vigor. These management operations can yield economic benefits, help control disease and remove the fire danger posed by dead and dying trees. Yet harvests on islands have potential to be highly visible — especially on islands with significant changes in topography — which can lead to controversy over harvesting activities.

Development Trends

Land use and development activities on particular islands vary tremendously, so for planning purposes it is helpful to make distinctions among islands within the jurisdiction. Generally, over the past ten years, permit applications and development activities on Monhegan and Matinicus, the two islands with significant year-round communities, have exceeded those occurring on the hundreds of islands with seasonal populations or no development.

Islands with Year-Round Populations

The two island plantations, Monhegan and Matinicus, stand apart due to their year-round communities, large seasonal populations, full-range of services and regular ferry service. The communities that have evolved on these islands are unique: the combination of social, cultural and economic factors, vernacular architecture and distinctive physical environments has created a special character that is an important resource in its own right.

Some of the land use and development characteristics of Monhegan and Matinicus parallel those of small mainland coastal towns. The constraints of size and isolation, however, have accentuated certain land use characteristics and resulted in some unique patterns and trends.

The harbor areas of both islands are the focus of most land use and development activities. Distinct villages have evolved on the slopes adjacent to the harbors. On Monhegan, almost all housing and businesses are located within or near the village area; on Matinicus, several additional concentrations of development are located along the island's interior road system. While development activities in the last few years have continued within or near the village on Monhegan, the pattern on Matinicus may be changing somewhat. New construction is taking place more often along the roads and near the north end of Matinicus, while more additions and expansions are occurring adjacent to the harbors.

Economic options on Matinicus and Monhegan are considerably more limited than those on the mainland; most working islanders are involved in fishing, tourism or both. Fishing has historically been the economic mainstay of both islands, and it remains so, with wintertime lobstering the most profitable pursuit. The large influx of seasonal residents has long provided a boost to the local economies of both islands. On Monhegan, increased numbers of "daytrippers" and short-term visitors in recent years have supported a somewhat more diversified service economy.

Development activity on both islands was generally light over the last three decades. While the 2000 Census showed a slight increase in year-round homes during the 1990s, that trend was accompanied by a more substantial increase in seasonal housing numbers. Many year-round dwellings were converted to seasonal use. Much development has been in the form of enlargement of existing buildings, conversions to commercial and lodging facilities, and occasional construction of new seasonal and year-round dwellings. The pace of new construction on Matinicus has increased somewhat in the first decade of the 2000s, as indicated by building permit applications. It isn't yet clear if that trend will continue.

Other Islands

The islands within the jurisdiction with smaller seasonal populations are generally less intensively developed and used than Monhegan and Matinicus. However, these islands may experience more development pressure during the 2000s, especially those located close to mainland population centers.

Approximately 15 islands in the jurisdiction have summer communities comprised of five or more residences. These are mostly larger islands (50 acres or more) and, with the exception of Metinic, Large Green and Criehaven Islands, are located relatively close to the mainland. Services on these islands are generally limited, with visitors dependent on their own transportation. Many of these islands once had thriving year-round communities and some retain the character of those earlier times. Criehaven Township (also known as Ragged Island) was the last to have a significant year-round community. An intact harbor village remains, and during the summer months a number of fishermen return to live and work there.

The construction of new seasonal homes and improvements to existing dwellings dominate development activities. Other development activities have involved the issuance of more permits for the construction or expansion of permanent wharves to seasonal residents on several of these islands. The trend has been toward docking facilities that can accommodate larger recreational boats and allow seasonal access at low tide.

A number of smaller islands in the jurisdiction (10 to 15) are developed with a few seasonal camps. Many of these islands are owned by a single owner or family. On some islands these seasonal dwellings get little use, leaving the island relatively undisturbed.

The vast majority of islands in the jurisdiction are undeveloped, and probably most will remain so in the near future due to environmental constraints, inaccessibility and ownership patterns and preferences. Some have remained undeveloped due to their small size. But modern engineering, construction and transportation technologies allow many long-standing constraints to be overcome. And land ownership patterns and preferences are subject to change. Many smaller islands remain in single ownership, are held in trust or are owned by older individuals who have preferred to keep them undeveloped. But as trusts are dissolved or land passed on to family members, island interests often are subdivided, making the potential for development much greater. Changes in ownership combined with increased tourism and recreational use of coastal islands might add to development pressure across Maine's island landscape in the future.

Island Carrying Capacity

The innate limits and sensitivity of the island environment become particularly important when considering islands with existing or proposed development. With a natural resource pool that is more circumscribed than mainland areas, the island environment is generally less forgiving of adverse impacts. Once an island resource such as groundwater or bird habitat has been degraded, options for mitigation are often limited and recovery, if possible, is slow.

The ability of land and water resources to support human activities and development is termed "carrying capacity." This concept is particularly relevant to island environments. The limited carrying capacity of most islands will be a major consideration in evaluating land use and development.

While several of the carrying capacity issues discussed below focus on Monhegan and Matinicus (the two islands with significant year-round populations), many other islands in the jurisdiction already experience some of the issues faced by the year-round island communities, and as seasonal use increases, more of these issues will arise. Groundwater use and overboard or subsurface waste disposal impacts are particularly important considerations, especially on smaller islands. And if summer communities become larger, issues such as solid waste disposal will grow in importance.

Development and Land Use

On Monhegan and Matinicus, the concept of carrying capacity is particularly useful for several reasons. First, existing year-round and seasonal development already "consumes" a significant portion of available carrying capacity, making wise use of remaining capacity essential. Second, carrying capacity evaluation can be broadened to include impacts on island infrastructure and services, and on the character of the community as a whole.

While development activity on Monhegan and Matinicus has been relatively light in recent years compared with other parts of the jurisdiction, the limited carrying capacity of these islands requires that any development be evaluated carefully. Even one poorly sited building or new use can have a marked impact on existing resources.

Increased tourism and recreational use can also deplete island carrying capacity. The rapid and sustained increase of daytrippers on Monhegan during the past three decades brought concerns that island trails, services and businesses would be unable to accommodate the influx. A 2005 study of tourism on Monhegan investigated the relationship between the numbers and type of visitors to the island and the attitudes of permanent and seasonal residents as well as visitors toward resulting impacts. The study found that most survey respondents perceived a balance between maintaining Monhegan's heritage and its economic well-being at the present time, but that visitation and the quality of life on the island is sensitive to perceptions of crowding and degradation of the island's unique village character and unspoiled natural setting.

The amount of tourism is largely dependent on the availability of ferry service, and thus is not an easy impact for island residents to control. The Monhegan study also looked at placing limits on the numbers of visitors, primarily through establishing visitor fees and using them to fund improvements and maintenance of island facilities and trails. Opinions on the concept of visitor fees were fairly evenly split among survey respondents.

Drinking Water

The quantity and quality of drinking water is a primary carrying capacity issue on both these islands. Monhegan is served by a public system and private wells, while Matinicus is served solely by private wells. Although the amount of groundwater varies considerably based on local rainfall, increased water use (especially during summer months) has the potential to create shortages. On Monhegan, water shortages due to overuse of the island's meadow aquifer were reported in 1985 but have since been attributed to limitations of the distribution system. Nonetheless, the island has instituted a number of water conservation measures, which indicates the importance of groundwater supplies to the community.

High water use can cause saltwater intrusion problems, with potential for long-term degradation of the water supply. This is especially true of drilled wells located near the ocean, a preferred location for new homes. Water quality problems can also be caused by the septic systems that accompany new development or by malfunctions of existing systems. Unsuitable soils limit the ability of islands to accommodate subsurface waste disposal. Not only is the shallowness of island soils a problem, but the areas most apt to meet plumbing code requirements are coarse, excessively drained soils that provide easy access to groundwater.

Waste Disposal

State policy prohibits new overboard wastewater discharges, allowing existing overboard discharges to continue only if wastewater flows to the ocean are not increased. Changes to state law in 2003 require current or new property owners with overboard discharges to submit designs for alternative subsurface wastewater disposal systems or upgrades to secondary treatment when renewing their licenses or transferring ownership. While this policy protects marine water quality, it requires discharging more treated wastewater into an island's groundwater.

The issue of solid waste disposal relates to both environmental and community capacity. On the one hand, siting an island landfill is generally not feasible due to space constraints, poor soils, possible adverse groundwater impacts and costs. On the other hand, transporting waste to the mainland is expensive and logistically difficult. The cost of transporting waste is the probable cause of unsightly accumulations of

unused items and abandoned vehicles on some islands. Recycling and composting have been embraced by Monhegan and Matinicus as a way of reducing solid waste generation.

Plant and Animal Habitat

Although the ability of an island to support particular animal or plant species is largely dependent on natural and ecological factors, human activities can have direct detrimental impacts on these resources or indirect impacts by altering island ecology. The small size and isolation of islands accentuate these impacts. On mainland areas, development and human activities often reduce plant or animal communities in a particular area. On islands, these impacts may lead to the elimination of an entire community.

New development often results in the loss of wildlife habitat and disturbance of wildlife by increased human traffic and the introduction of household pets. Impact on nesting birds is the most critical issue. Some species have an extremely low tolerance for disturbance.

A number of seasonally developed islands are sites of mapped essential habitat for bald eagles. Others are significant habitat for colonial nesting seabirds, shorebird feeding and roosting areas, and tidal waterfowl and wading bird habitat. The majority of mapped sites for colonial nesting seabirds and identified seal haulouts are on undeveloped islands. Human activities can easily disturb these areas.

According to DIFW, after human activities and development on coastal islands, oil spills in coastal waters probably pose the biggest threat to coastal wildlife resources. A number of state and federal agencies now coordinate efforts to plan for and respond to oil spills. The planning includes the identification of "places of refuge," which are locations where vessels needing assistance can be moved in order to take action to stabilize them and address various related hazards.

Plant communities are also sensitive to human activities and local management practices and decisions. Wildflowers abound, but their numbers and variety can be greatly reduced by hungry deer, picking by humans and foot traffic. A number of rare plant species listed on the state's Rare, Threatened and Endangered Plant Taxa occur on various coastal islands in the jurisdiction.

Monhegan and Matinicus as well as other islands have significant populations of older spruce trees. Cathedral Woods on Monhegan is a late successional red spruce stand with trees averaging more than 120 years in age. As trees on these islands continue to age, more aggressive forest management may be needed to reduce fire danger, prevent the spread of disease, reduce the risk of insect infestation and promote regeneration. A recent study of Monhegan's vegetation conducted by the University of Maine indicated that the island's red spruce forest is healthy and that white spruce forests, even though susceptible to mistletoe, will recover naturally. The study identified several invasive species that pose problems to Monhegan's ecosystems. People have introduced non-native species, which have all expanded their range on the island. Japanese barberry is regenerating on the entire island, spread in the past by browsing deer and currently by birds feeding on berries. The barberry's spread is so extensive that it may exclude the regeneration of other plant species and restrict forest access in future years. The extent of human introduction of non-native species on other islands in the jurisdiction is unknown.

Cultural and Scenic Resources

Aesthetic concerns are often heightened on islands due to their small scale, exposed rocky coastline and prevalence of ocean views. This is especially true on Monhegan and Matinicus with their sloping topography and distinctive, historic village areas. While coastal villages can be aesthetically pleasing, newer buildings or additions can easily block existing ocean views or be in conflict with the prevailing architectural character. Another concern is the visual impact of new structures on a previously undeveloped island landscape. A new house located on an exposed bluff can be a highly intrusive addition that is visible not only from the island but also from points far out at sea.

To island residents and visitors, the visual and scenic qualities of islands are an important component of what makes these areas special. Many other factors also contribute to island community character: close-knit social relationships, a slower pace of life, independence from the automobile, a seeming timelessness and lack of change, and a set of cultural traditions and rituals that have evolved over the years.

As islands are incrementally developed or more heavily visited by tourists, community character may be eroded long before environmental carrying capacity is surpassed. In some instances, these negative impacts can be minimized by proper management and by working to fit new developments into the community. Ultimately, however, a point is reached when even the most sensitively designed project begins to significantly erode community character.

As early centers of trade and settlement, islands are often rich in historical and archaeological resources. Abandoned quarries, cemeteries and foundations of early buildings are especially common. While many of these features may have only local historical importance, new development or neglect can result in the loss of significant sites that are an integral part of an island's heritage. A number of historical and prehistorical archaeological sites have been identified on islands within the jurisdiction, but survey work has generally been limited. New development has the potential to alter or obliterate unidentified sites. Archaeological sites on the coast are quite often located close to the water, which also makes them susceptible to the coastal flooding impacts of global climate change.

Hazard Mitigation and Public Safety

Carrying capacity extends to the ability of local facilities and infrastructure to handle hazards that may face a community. Fires on islands, whether occurring within a developed or forested setting, are a specific public safety and environmental concern. In village areas or small residential settlements where structures are on small lots with nonconforming setbacks, the potential threat from fire is particularly high. Once started, closely spaced structures facilitate its rapid spread. Diseased, overly mature or tightly spaced forest stands with dead or dying trees also offer potential fire hazards. The threat of forest fire may be mitigated by high relative humidity and usually adequate precipitation, but is accentuated by shorter and constant drying times afforded by offshore winds. The amount, configuration and location of the forest "fuel" figure significantly in the hazard equation. A lack of fire response resources, in terms of both people and equipment, is a common island issue. Mutual aid is for the most part nonexistent due to isolation, boats needed to transport equipment and time required to reach the various islands.

Island Conservation

Several agencies and organizations (including Maine Coast Heritage Trust, The Nature Conservancy, local land trusts, the DIFW, the Maine Department of Conservation, the National Park Service, and the U.S. Fisheries and Wildlife Service) have made concerted and coordinated efforts over the past few decades to protect selected islands because of their outstanding and unique natural resource values. Working together in many instances, these agencies and organizations have helped establish conservation easements or fee ownership protection on a number of islands in the jurisdiction by working closely with private landowners interested in island protection. These islands include Hungry Island, the southern tip of Louds, and Ross Island in Muscongus Bay; small islands south of the Muscle Ridge group; Pond and Western Islands in East Penobscot Bay; Marshall Island in Toothacher Bay; and Falls Island in Edmunds. The land trusts' conservation goals for islands include biological diversity, ecological and scenic protection and recreational and working waterfront access protection where appropriate, while state and federal island conservation efforts focus upon the protection of diverse coastal habitats (particularly coastal nesting islands) and outdoor recreation and working waterfront access. Land conservation is discussed further in Chapter 4.

Island and Municipal Interactions

The jurisdiction's islands are intermixed with adjacent municipalities, resulting in a certain amount of co-dependency. Seasonal development and tourism associated with the jurisdiction's islands also have an impact on the mainland communities that serve as points of departure and arrival. Accommodating the parking needs of island visitors and summer residents is usually the most pressing problem. But other issues such as adequate boat mooring space and use of mainland services and facilities may also arise. Some of these issues can be addressed by good communication and coordination between island communities and their mainland neighbors. Others may require some form of regional planning and management for island clusters in order to assure balanced long-term use of coastal island resources.

In 2004, the Legislature directed the Maine Department of Marine Resources and Maine State Planning Office ("SPO") to research innovative ways to manage Maine's embayments. The state's nearshore resources are comprised of both bays and open coastal areas and the water and land immediately adjacent to the coast. The study documented a complex mosaic of local, state and federal entities currently managing these resources, and resulted in a 2007 report to the Legislature that contained a number of issues and recommendations regarding the use and management of coastal waters. Recommendations to improve the state's framework for nearshore management and to move towards regional management of nearshore waters are most pertinent to the Commission's responsibilities. Implementation actions contained in the report include the establishment of an oversight committee and interagency coastal strategic planning.

5.3.C LURC REGULATORY APPROACH

The Commission generally applies the same land use regulations and standards to islands as to the mainland. Coastal mainland and island zoning consists of a similar mix of development, management and protection subdistricts with one notable exception: the Maritime Development (D-MT) Subdistrict is available to protect working waterfronts and water-dependent uses, such as fishing, from competing and

incompatible uses. Monhegan and Criehaven are the only islands that have D-MT Subdistricts on segments of their waterfronts, and none have been designated in the two coastal mainland townships.

While the zoning pattern for Monhegan and Matinicus is relatively complex, it is quite simple for most undeveloped islands, often consisting of a General Management (M-GN) Subdistrict surrounded by a Shoreland Protection (P-SL) Subdistrict, or for quite a few small islands, only a P-SL Subdistrict. Other subdistricts commonly found on islands include Residential Development (D-RS) Subdistricts, Fish and Wildlife (P-FW) Protection Subdistricts for protecting significant seabird nesting areas and Resource Plan (P-RP) Subdistricts for islands with special management needs. Due to the presence of diverse resources, a number of islands have overlapping zones to protect multiple resources.

Coastal Island

Green Island

5.3.D COASTAL RESOURCE ISSUES

Unique Planning Challenges

The coastal islands share an array of issues concerning both the human and natural environments that present unique planning challenges. The overarching issue related to coastal islands and resources involves the complexity of planning for and managing their very unique and vulnerable environments. This Plan identifies coastal islands as one of the jurisdiction's regions with special planning needs, even though compared with high-growth inland areas, coastal islands have experienced moderate rates of development. Nonetheless, they deserve special consideration due to the high value and fragility of their natural resources and the likelihood of continued development pressure. Thus, the Commission recognizes coastal islands' unique characteristics and has established policies and rules intended to reflect their special planning needs. It supports continued planning efforts, acknowledging the complexity of protecting these sensitive environments while preserving valuable cultural resources and human communities.

Some coastal land use issues are at least partially addressed through the Commission's policies and regulations; however, other issues go well beyond the scope of LURC's powers and duties. Local information-gathering, education and non-regulatory actions can help to document and address many concerns. The Commission will strive to respond flexibly to the needs of the year-round and seasonal residents and landowners of islands under its jurisdiction.

Affordable Housing

Changes in ownership and the conversion of houses from year-round to seasonal use have had major unintended consequences for the year-round community on Monhegan. Land and housing costs have increased dramatically in recent years as non-residents have competed with islanders for the few available houses coming on the market each year, pricing residents out of the market. Monhegan Associates, the local land trust, owns roughly two-thirds of the island, further limiting the land available for future housing development. The result is that the survival of the year-round community itself has come into question, spurring the creation of a local affordable housing initiative led by the Monhegan Island Sustainable Community Association.

The Commission recognizes the need to facilitate the provision of more affordable housing opportunities to the jurisdiction's year-round residents. Through a coordinated series of actions in 2006 and 2007, the Commission reviewed and revised its land use standards in collaboration with year-round coastal residents and agencies and organizations involved in addressing housing affordability issues. That effort resulted in a reduction in required dimensional standards for the purpose of providing affordable year-round housing. One aspect of the affordable housing issue for islands will involve balancing changes in the Commission's land use standards with the continued protection of island resources, particularly groundwater supplies. Affordable housing is discussed further in Chapter 4.

Adjacency

The Commission may need to reexamine how its adjacency criterion is applied to proposed rezonings on islands. One mile is a relatively short distance on mainland areas, but on islands this same distance may exceed the diameter of the island. To avoid sprawl outside of island village areas or other settlements, a very small adjacency threshold may be needed. Further discussion of adjacency can be found in Chapter 4.

Maritime Development Zoning

Island-based industries are often water dependent, and the Commission recognizes the need to accommodate such uses in its regulations. The Maritime Development (D-MT1 and D-MT2) Subdistricts, established initially on Monhegan and more recently on Criehaven, are examples of how the Commission can accommodate such uses. The original intent of establishing the D-MT1 and D-MT2 Subdistricts was to reserve a portion of the jurisdiction's coastal waterfront for water-dependent uses, conserve points of public access and give preference to commercial water-dependent uses in such areas. An evaluation of the effectiveness of the D-MT Subdistricts on Monhegan is in order now that they have been in place for over 15 years, with a focus on evaluating the mix of allowed uses and setback standards in these subdistricts in the context of the small village area, the limited availability of commercial sites and the limited number of economic opportunities on the island. Nevertheless, protection of commercial water-dependent uses and working waterfronts remains paramount, as loss of water access can often not be regained. Any changes to the D-MT Subdistricts must keep in mind the subdistricts' purpose, not just for Monhegan but on Criehaven and in other potential locations.

Dimensional Requirements

Many island dwellings were constructed prior to 1971 and do not conform to the Commission's standards for lot sizes and shoreline setbacks. The Commission allows for continuation and, in some instances, modest expansion of these structures, but it strives to ensure that these uses do not have adverse impacts on the island or ocean environment. When the Commission undertook a comprehensive review and revision of its rules on nonconforming uses and structures in 1999, it considered situations typical on islands and will continue to do so in the future.

The Commission also reexamined its property line and road setback requirements regarding islands and adopted amendments to those setbacks that accommodate island land use patterns. Some island villages and settlements are extremely densely developed with very small nonconforming lots. Many of the structures on these lots are nonconforming with respect to setbacks. Many island roads are no more than unimproved byways or footpaths, and even the more substantial roads see little motorized traffic. Requiring the usual road and property line setbacks in these instances may not be reasonable, and the Commission will continue to be receptive to considering the need for refinements to its standards to address these situations.

The goal of compact development itself may not be desirable on some islands, where a more dispersed settlement pattern is needed to avoid groundwater problems. Clustered development, often promoted by the Commission in mainland waterfront areas, may be appropriate in some island settings but not in others. The Commission will carefully consider site specific conditions on islands when reviewing applications that include clustered layouts of development.

Permanent Wharf Construction

The development trend toward the construction of more and bigger permanent wharves presents increased potential for adverse impacts to the island environment, and in some situations, navigation. Effects upon eel grass beds, initially from construction activities and subsequently from the structure's shade, are a particular concern. Another consideration in evaluating eel grass impacts is boat propeller wash from vessel traffic approaching and leaving piers. Wharf construction sometimes involves dredging, which can

cause additional environmental effects. More numerous and longer docking structures also have potentially greater impacts on scenic character. Amendments of the Commission's docking standards in 2005 limited the size of all such structures to that necessary for the intended use and contained additional restrictions on private, non-commercial permanent docking structures. The Commission will monitor the effectiveness of the revised standards as it reviews future applications for permanent wharf construction.

Forest Stand Management

The lack of management operations on island forest stands has led to many unstable spruce stands, which are susceptible to damage from wind throw or disease. Trees are large, overly mature, tightly spaced and located on generally poor sites that cannot support much additional growth. The trees have such high height to diameter ratios and are growing on such thin soil that silvicultural options are very limited. MFS states that regeneration, through the removal of overstory trees in groups, patches or clearcuts, and subsequent regeneration management, may be the most appropriate silvicultural treatment.

Forest management on islands is difficult because transporting equipment to, and removing harvested wood from, islands pose logistical challenges which result in higher operational costs than on the mainland. Since transportation costs are significantly higher, the volume of wood needed to turn a profit is also higher. More intensive cutting practices, whether for forest stand regeneration or for financial reasons, may result in even more visible harvest sites, at least in the short term.

The potential increase in timber harvesting on islands has a number of planning and zoning implications. Changes in island landscapes resulting from harvests often evoke public concern, and the Commission is likely to field complaints regarding future logging operations. Although harvesting is allowed without a permit in General Management (M-GN) Subdistricts, the Commission encourages those contemplating harvesting operations to work cooperatively with interested parties.

The Commission recognizes the challenges of harvesting timber on coastal islands in that, with the Shoreland Protection (P-SL) Subdistrict encompassing the island, there may be little management subdistrict left within which the landowner has maximum flexibility for managing timber stands. The Commission will attempt to balance the needs of landowners conducting harvests in the P-SL Subdistrict and other protection subdistricts with potential impacts upon various resources.

The Commission requires a permit to transport logs through island shoreland subdistricts. This requirement is appropriate in order to minimize adverse impacts on the island and ocean environment, but should not unnecessarily impede harvesting operations.

Habitat Protection

Currently, the Commission's Fish and Wildlife Protection (P-FW) Subdistrict applies to a number of identified seabird nesting islands. Updated information generated in recent years by DIFW pursuant to the Natural Resources Protection Act ("NRPA") refined definitions and identified new areas of significant bird habitat on some of the islands in the jurisdiction. That information provides the basis for considering revisions to the Commissions P-FW Subdistrict provisions in order to better protect seabird nesting islands and to expand protection to shorebird feeding and staging areas and tidal waterfowl and wading bird habitat in a manner consistent with DEP regulation of such resources under NRPA as well as municipal regulation under the Shoreland Zoning Act.

Public Access and Recreational Use

Public access to coastal waters on the mainland and on islands is crucial to many coastal economic and recreational activities. Two state agencies, the Maine Department of Conservation's Bureau of Parks and Lands ("BPL") and DIFW, have active recreational boating access programs for providing and protecting public coastal access points. In addition, the Maine Department of Transportation ("MaineDOT") has an active policy to add public access improvements at bridge and highway projects crossing public waters. BPL is currently leading an effort to update the state water access plan, working in close partnership with SPO, DIFW, MaineDOT and others.

While residents of and visitors to coastal islands enjoy many different kinds of recreational activities, boat cruising and kayaking have increased greatly in the last ten years. Ever-growing boat traffic, powered by motor, sail or paddle, to islands both close to the mainland and in more remote locations can stress the capacity of islands, large and small. Many of the undeveloped islands are popular picnic or fishing spots. Several are regularly used as stopovers by the Hurricane Island Outward Bound School and users of the Maine Island Trail. The impacts of such use range from competition for off-shore anchoring and mooring space to increased foot traffic on shorelines, trails and campsites. Some of the organizations that oversee the use of islands have intensified their management activities in the last ten years in order to lessen detrimental impacts and maintain landowner permission to use them. When the use or development of such areas involves the Commission's land use authority, the Commission will coordinate its regulatory activities with appropriate agencies and organizations.

Common Ownership

Common and undivided ownership is a form of property ownership that occurs on many islands in the jurisdiction. Owners sometimes inherit or purchase interests in island property that are held in common. Over time, as islands or portions of them change ownership (particularly through inheritance), the numbers of owners can multiply to such an extent that hundreds of interests may exist in a relatively small parcel of land. The situation poses a challenge to permitting actions by the Commission since title, right and interest must be established before applications can be processed. Determining who possesses the ability to construct a new residence or other structure can be extremely complex.

Monhegan & Manana Islands

5.4 Cultural, Archaeological and Historical Resources

A long history of human activity throughout the jurisdiction has left behind a variety of cultural resources. These resources possess educational, scientific and social values that help us understand our heritage and contribute to our sense of the Maine Woods as an exceptional place. Cultural resources include Indian canoe routes, prehistoric archaeological sites, historic archaeological sites and historical structures, districts, trails and landmarks.

Archaeological resources, both prehistoric and historic, provide us with evidence of human life and culture in past ages. Prehistoric archaeology attempts to reconstruct the lifestyle of the original human inhabitants of Maine from the end of the Ice Age to the arrival of the Europeans and written history. Historic archaeology analyzes the settlements and forts of the period from 1600 on, helping to expand the historical record. Historical resources in the form of structures, sites or landmarks are associated with past events or people of significance in the history of the state, represent an architectural style of a distinct period, or both. Criteria exist at both the federal and state level for evaluating the significance of such resources for placement on the National Register of Historic Places, Maine's Historic Places, Maine's Archaeological Survey and the Statewide Historic Archaeological Inventory.

5.4.A EARLY HISTORY AND ARCHAEOLOGICAL RESOURCES

The first people known to inhabit Maine, the Paleoindians, moved in from the south or west about 11,000 years ago as the land area of Maine was recovering from its last glaciation. They tended to camp on very well-drained soils away from river valleys and were probably the only prehistoric people to have lived in such areas in Maine. Trees spread across Maine toward the end of the Paleoindian period, forcing subsequent inhabitants to live and travel along lakes, waterways and coastal areas.

Travel on the ocean, main rivers and major lakes in dugout canoes characterized the Archaic period between 10,000 and 3,000 years ago. Native American settlements concentrated at the inlets and outlets of major and medium-sized lakes, along the main river valleys and in coastal sites. The development of the birchbark canoe sometime between 4,000 and 3,500 years ago opened up the Maine interior away from major lakes and rivers. Canoes enabled an increasingly dispersed settlement pattern around lakes and smaller streams during the late Archaic and Ceramic periods.

Native American Stone Arrow Head

Native Americans in Maine began to construct and use pottery about 3,000 years ago. During the Ceramic period, from around 1,000 B.C. to 1,500 A.D., Native Americans developed a generalized hunting, fishing and gathering economy based upon the mobility of birchbark canoes. They combined subsistence and settlement strategies to move people to seasonally available resources, or to move food and other resources to population concentrations. Life over most of Maine remained based almost entirely upon harvesting wild resources until well after contact with Europeans.

When the first European explorers arrived in the 1500s, the Early Contact period began, marking the end of the prehistoric archaeological period in Maine. Contact with the explorers initially added European materials to Native American material culture, followed later by other impacts upon Native American life, including intensified fur trapping and trade, changes in intertribal networks, intermittent warfare, widespread disease and. eventually, significant loss of lands.

For most of prehistory, Maine Native Americans were hunter-gatherers. They were generally mobile in lifestyle and lived in relatively small groups. The largest communities consisted of several hundred individuals in villages, which most of the population left at certain seasons.

Stone Axe

Five types of archaeological sites are known to exist in Maine: (1) habitation and workshop sites, (2) lithic quarries, (3) cemeteries, (4) rock art and (5) waterlogged sites preserving wood or other perishables. There are hundreds of known prehistoric archaeological sites in the jurisdiction, as well as hundreds more that are undiscovered. since archaeological surveys have been done on less than 10% of the land area. Habitation and workshop sites comprise the vast majority (over 95%) of the known archaeological locations in Maine. They exhibit evidence of a range of activities from food procurement and processing to tool manufacture and maintenance. More than 95% of these sites are located adjacent to canoe-navigable waters — whether coast, lake, river, stream or wetland — or former shorelines of the same. The majority of sites are shallowly buried on till, sand, gravel or silt soils within 1.5 feet of the surface. Some deeply buried sites (up to three meters in depth) occur in alluvial settings along rivers and streams.

The other types of known archaeological locations are far fewer in number than habitation sites. Lithic quarry sites are mines for rock used in making stone tools. They are highly localized sites, occurring at bedrock outcrops or along exposed, stony stream and river bottoms with extensive cobble materials. Cemetery sites always exist in locations with well-drained sandy or gravelly-sand soils near a large or small river or lake shore, or within 100 yards of a major habitation site. Rock art sites occur immediately adjacent to canoe-navigable water on particular kinds of bedrock outcrops. They include both petroglyphs and pictographs and probably date within the last 2,000 years. The Sebasticook fish weir is the best example of a waterlogged site, where wooden stakes from a fish trap structure, and some associated birchbark container fragments, have been preserved in anaerobic mud for between 2,000 and 6,000 years.

Examples of significant archaeological sites in the jurisdiction include both prehistoric and historic habitation and workshop sites and prehistoric quarry sites. The Chase Lake-Munsungun Lake Archaeological District incorporates at least 18 prehistoric habitation and quarry sites within 0.1 square kilometers centered on the Chase Lake-Munsungun Lake thoroughfare. The sites range in elevation from lake level to the summits of adjacent hills, and in age from 11,000 year old Paleoindian occupations to 500-year-old Late Ceramic period campsites. The sites away from the lake are associated either with glacial outwash landforms, or with quarry outcrops of a high-quality chert. This area was investigated in the late 1970s by the University of Maine and listed on the National Register of Historic Places in 1979.

Archaeological Dig

The Vail site in the Magalloway Valley near Lake Aziscohos in western Maine is an example of a large Paleoindian habitation site. It is surrounded by many smaller habitation sites, one with a stone meat cache, as well as two killing grounds. The sites occur on sandy soils and are associated with the valley, stream and a kettle hole. Following identification of Paleoindian tools in the collection of Francis Vail in the early 1980s, subsequent professional excavation of eight or nine locations recovered over 4,000 tools and a survey of most of the Magalloway Valley revealed at least eight more sites. Prior to the identification of the killing grounds and stone cache, neither had been recorded east of the Mississippi River. The Vail site and associated killing ground are listed on the National Register of Historic Places as an individual site.

5.4.B EUROPEAN SETTLEMENT

Shortly after European explorers came to Maine's coast in the 1500s, European settlers followed, stopping on coastal shores and islands for fishing and fur trading, and later turning to farming, shipbuilding, quarrying and timber harvesting. Settlement did not begin in the interior of the mainland until around 1800, spreading inland from both southern areas as well as from northern areas along the St. John Valley. The earliest settlements depended upon subsistence agriculture and small-scale timber harvesting.

Chesuncook Village on Chesuncook Lake

Timber harvesting operations advanced eastward and northward from river to river, from the Saco to the Presumpscot, and then on to the Kennebec as far north as Moosehead Lake. The peak of the lumbering activity occurred along the Penobscot River during the 19th century, following the river's East and West Branches deep into the Maine Woods. Throughout the 18th and 19th centuries, timber was transported by oxen, horses, and water. Elaborate systems of dams, lakes, canals, rivers and booms were devised to control and facilitate log movement. Lumber camps were built to house loggers. Farms were carved out of the wilderness to supply forage, bedding, produce, meat and shelter.

The opening of the Maine Woods to logging also opened the interior of Maine to other human activities during the 19th century. In addition to settlers, people came from the industrializing cities of the East Coast to vacation, exploring the forests, waterways, mountains and islands. Some stayed in resorts like Kineo, Harford's Point and Seboomook; others chose sporting camps which offered guide services to the choicest hunting and fishing spots; still others came with their own canoes, tents and guidebooks to explore on their own. In any case, areas of the jurisdiction were on the map as a vacation and recreation destination.

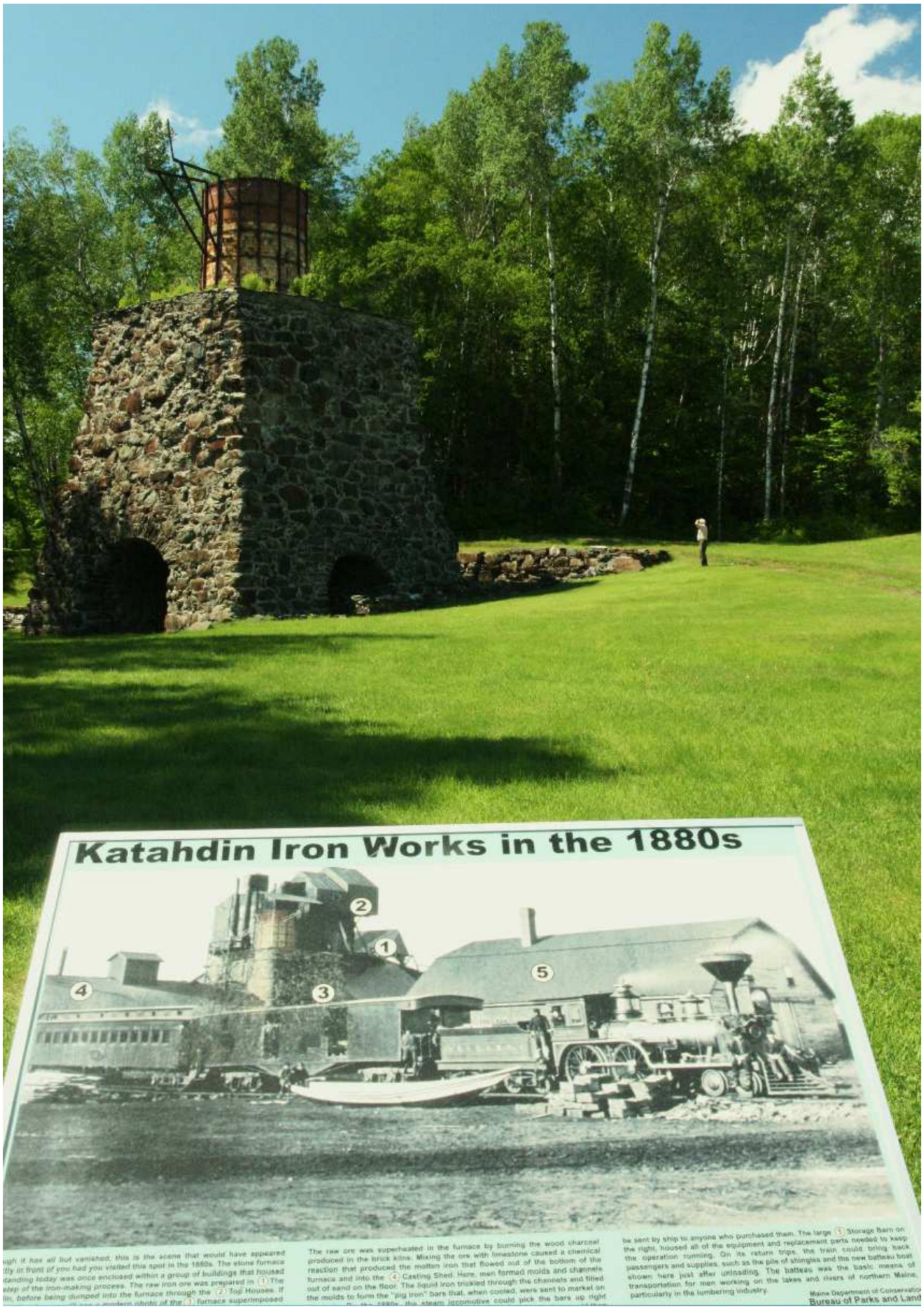
The jurisdiction never became heavily populated and, by 1890, the population of the area had already peaked. Although new communities were settled, particularly in the northern part of the jurisdiction, the area as a whole was depopulating by the turn of the century. That trend continued until 1970, when the population began to grow slowly.

The most well-known historical resources in the jurisdiction relate to the early days of the timber industry and consist of canals, dams, railways, sluiceways, logging settlements and farms. Other resources include architecturally significant structures and districts, historical commercial sites such as sporting camps, historical industrial sites and military fortifications and artifacts.

Some examples of historic archaeological period habitations and workshop sites are farm settlements established in northwestern Maine in the 1830s such as Seboomook Farm and Chesuncook. Sites such as these generally featured a large farm which produced quantities of hay and grain to support logging operations in the nearby areas. Sites would generally consist of dwellings and several barns and outbuildings and were located along a river or lake and functioned as a depot. These sites are important by virtue of their early dates for the region and their symbiotic relationship with the logging industry.

5.4.C CULTURAL RESOURCES

The jurisdiction possesses a variety of historical resources, all of which contribute to the cultural heritage of the state. Though many of these resources are embedded in the past, their legacy continues to influence and shape the jurisdiction's current sense of culture and heritage. Continued forest management activities, the maintenance of a working landscape, wilderness guiding and numerous craft and family traditions remain part of this culture and heritage. Regional populations with Franco American and other European heritages continue to contribute to the jurisdiction's distinct cultural mix. Similarly, Native American tribes — including the Aroostook band of Micmacs, Houlton band of Maliseets, Passamaquoddy Tribe of Indian Township, Passamaquoddy Tribe at Pleasant Point, and the Penobscot Nation — continue to contribute to the cultural resources of the jurisdiction and the state.



Katahdin Iron Works, Katahdin Iron Works Township

There are many state and regional ecotourism efforts to promote cultural resources. Efforts range from creating specific centers to creating narrative guides to important historical travel routes, and specifically include: The Natural Resources Education Center in Greenville, The Maine Indian Basketmakers Alliance, The Western Maine Cultural Alliance, The Abbe Museum, and the Thoreau-Wabanaki Trail initiative. While not all of these efforts are focused exclusively on the jurisdiction, they do identify sites, settlements and cultural activities within the jurisdiction.

5.4.D LURC REGULATORY APPROACH

The Commission employs the Unusual Area Protection (P-UA) Subdistrict to protect (among other resources) important historical, archaeological and cultural resources that have special land management requirements that cannot be sufficiently addressed by other zoning. The Commission also protects a number of historical sites and trails through P-UA Subdistrict designation. These include the Arnold Trail, Pittston Farm, Katahdin Iron Works, and the Monhegan Island Lighthouse area. Other protection subdistricts encompass additional historical, archaeological and cultural resources such as Telos Canal, which is zoned as a Recreation Protection (P-RR) Subdistrict.

Due to the vastness of the jurisdiction, not all of the important historical resources in the jurisdiction have been identified and protected through zoning or other measures. Consequently, the Commission and the Maine Historic Preservation Commission ("MHPC") have worked together to assess the cultural significance of lakes and ponds, and the Commission has incorporated the results into its lakes management program. (Further information regarding this program is found in Appendix C.) This assessment was based on an evaluation of features listed in the National Register of Historic Places, Maine's Archaeological Survey, Statewide Historic Archaeological Inventory and in the publication, "Above the Gravel Bar: Indian Canoe Routes in Maine." Additionally, MHPC houses data of known archaeological and culturally significant sites in the jurisdiction, as well as areas identified as archaeologically sensitive where significant sites may be found in the future. Access to these data provides the Commission with a valuable tool for assessing the potential archaeological and cultural impacts associated with development proposals.[18]

When the Commission reviews a permit application which the Commission's or MHPC's data indicate are near a potentially significant archaeological or historical area or feature, MHPC receives a copy of the permit application and site plan for review and comment. In some cases, MHPC recommends that an archaeological survey be conducted by the applicant. These surveys are typically required in cases of large development proposals, such as wind farms and significant subdivisions. The surveys are evaluations of the presence of historical or archaeological resources and consist of three separate phases of investigation: Phase 0 is a preliminary landscape-scale survey that serves as a background study to guide future field work; Phase 1 includes extensive field work to detect the presence or absence of archaeological sites in particular areas; and Phase 2 involves intense archaeological surveys that are focused on individual sites and generates information necessary to determine the site's significance (i.e., its eligibility for placement on the National Register of Historic Places).

[18] Pursuant to its authority under 27 M.R.S.A. § 371-387, much of the information housed by MHPC is confidential and exempt from public disclosure in order to protect sensitive archaeological and historical resources from vandalism, looting and other forms of damage.

These surveys are essential to protect the cultural, archaeological and historical values of the jurisdiction. Accordingly, the Commission is committed to consistently requiring archaeological surveys for large development proposals, including subdivisions.

5.4.E CULTURAL, ARCHAEOLOGICAL AND HISTORICAL RESOURCE ISSUES

Erosion, Development and Vandalism

Significant archaeological sites and historical resources are eligible for listing on the National Register of Historic Places. Significant archaeological sites are those worthy of protection or excavation with public funds. Criteria for eligibility consider content and condition of the site with specifics varying depending on the age of the site. The oldest sites (Paleoindian) are eligible even if they have been heavily disturbed. The youngest sites (Ceramic period age sites, historic sites) must be minimally disturbed and must yield archaeological data, such as fire hearths or separable layers of occupation in addition to stone tools and other objects.

Erosion, development and vandalism can all destroy the significance of archaeological sites. To be properly protected from threats or excavated by professionals, these sites must first be identified. At this time, erosion by water poses the greatest threat to archaeological sites. Artificially raised water levels on many interior lakes, as well as natural land subsidence along the coast, have resulted in water covering or eroding many sites from the Archaic period to the present. The greatest source of material that survives erosion fairly intact tends to be those sites sealed in the stratified sediments of floodplains along the rivers.

Development runs a close second to erosion as a threat to archaeological resources. Since most of the sites are shallowly buried and over 95% of the habitation and workshop sites occur along shorelines, any activity in shoreland areas that disturbs the top two feet of earth has the potential to severely damage a site. Problems involving known historical resources include inappropriate alterations that compromise architectural design and values, abandonment and deterioration of structures, and adjacent development which is incompatible with the historic context of a particular resource.

Finally, vandalism caused by nonsystematic digging for artifacts can destroy both the site and the artifacts themselves. Vandalism usually takes the form of unauthorized excavations by artifact collectors who loot sites once locations are publicized. This has resulted in the legal restriction of public access to information concerning the location of known or potential archaeological resources.

Information Needs

A complete inventory of archaeological and historical resources in the jurisdiction is not presently available. Limited state and federal funds hinder efforts to identify the resources. This lack of information — combined with the variety and low density of known sites, structures and trails scattered across the jurisdiction's millions of acres (often in remote locations) — makes it difficult to develop effective preservation strategies.

As discussed earlier, an assessment of the overall cultural significance of lakes and ponds is incorporated into the Commission’s lakes management program. These data are housed in a database maintained by the Commission. However, of over 1,500 lakes contained in the database, only 10 to 15% were surveyed to determine their archaeological potential. Consequently, the primary source of cultural resource information for the agency’s review of development proposals is not complete. Since the majority of

archeological sites are located within 300 to 400 yards of the shorelines of canoe-navigable water bodies, protection efforts may be enhanced by establishing criteria for determining when to request MHPC review of permit application on lakes that have not yet been assessed.

Given the lack of a complete inventory, both LURC and MHPC could strengthen their efforts to protect these cultural resources through further cooperation. The following needs warrant specific consideration: (1) a strengthened process for assuring that all applications with potential impacts on significant archaeological or historical resources are being adequately reviewed; (2) criteria for identifying potential archaeological sites not located near shorelines; (3) an estimate of the costs of professional reconnaissance and survey activities; (4) an approach to address architectural design issues for both clustered and isolated historical structures and sites within the jurisdiction; and (5) joint efforts to obtain funding to further investigate the extensive areas of the jurisdiction not yet surveyed.

Cemetery on Monhegan Island

5.5 Energy Resources

The jurisdiction has a diverse array of energy resources. Some of these resources, such as hydropower and biomass, have been valued for centuries as relatively inexpensive sources of indigenous power for Maine homes and industry. More recently, technological advances have produced new energy sources, such as wind, and opened the door to the future potential of others, such as biofuels, geothermal power and tidal power. These indigenous, renewable energy resources have considerable potential, particularly given growing concern about carbon emissions. Their present and future viability will continue to fluctuate based on many factors, including the pace of technological advance, changes in the larger energy markets and state and national energy policies.

While the future is difficult to predict, Maine's energy resources will likely remain attractive as indigenous power sources that can reduce the state's heavy reliance on natural gas and oil imports. In the coming decade, the Commission must be prepared for reviewing more energy projects. Its principal challenge will lie in crafting approaches that enable the state to take advantage of the economic and environmental benefits of renewable energy projects while maintaining the jurisdiction's principal values.

5.5.A THE ENERGY PICTURE IN MAINE

The energy picture in Maine has changed significantly over the past decade with the restructuring of the electric industry, dramatic changes in energy markets and growing concern over climate change. Little is certain regarding future energy markets, but demand for Maine's indigenous, renewable energy resources will likely continue to grow.

During the 1990s, Congress and the Federal Energy Regulatory Commission ("FERC") implemented changes to enable restructuring of the wholesale electric power industry. The federal government took these actions in response to the perception that competition was needed to lower prices and improve the function of the power industry. As a result, Maine utilities, which belong to the New England Power Pool ("NEPOOL"), became part of Independent System Operator of New England ("ISO-NE") – an independent nonprofit power operator created by FERC to oversee regional restructuring that ensures the reliability of the New England power grid, establishes competitive wholesale electric markets for the region and manages regional energy planning (primarily transmission) efforts.

The restructuring of Maine's electric energy industry in 2000 led to many changes. Maine utilities sold their energy generation resources. ISO-NE became the price-setting entity for the New England regional market, and became responsible for the assessment of the stability and reliability of the grid when a new generator is brought online. As a result, the state lost much of its control over the mix of generating resources used to supply electricity to Maine residents.

Other factors accentuated the changes brought by restructuring (i.e., "deregulation"). The closing of the Maine Yankee nuclear power plant in 1996 and subsequent expansion of natural gas in the state dramatically changed the energy mix. Nuclear power, which is no longer produced in Maine, still makes up 25% of Maine's energy mix. The installed capacity of hydropower and biomass declined by a total of 12% between 1991 and 2003, while natural gas increased from 0% to 45%. This overreliance on natural gas in

the state and region has resulted in large increases in electricity prices, substantial price volatility and a less reliable power system.

The rising price of and demand for electricity, as well as an increased demand for renewable energy sources, have spawned a growing number of energy-related proposals in the state over the past few decades, including hydropower dams, wind power facilities, natural gas transmission pipelines and liquefied natural gas plants. Since Maine has in recent years been a net exporter of energy, these energy project proposals have included extensive debates over the relative costs and benefits of energy projects to the state as a whole. The jurisdiction has been the site of numerous energy generation and transmission proposals in recent decades.

Maine's energy policy has long favored diverse generation resources as a means to minimize electricity and price volatility. Prior to the electrical industry restructuring, the state operated under legislation that promoted energy efficiency and fuel diversity, particularly the use of indigenous and renewable energy resources. Almost 50% of Maine's electricity was generated from renewable sources in the 1980s and 1990s. The state's Electrical Restructuring Act, which took effect in 2000, continued these policies as evidenced in the following:

> "In order to ensure an adequate and reliable supply of electricity for Maine residents and to encourage the use of renewable, efficient and indigenous resources, it is the policy of this State to encourage the generation of electricity from renewable and efficient sources and to diversify electricity production on which residents of this State rely in a manner consistent with this section." 35-A M.R.S.A. § 3210(1)

The Electrical Restructuring Act included a portfolio requirement mandating that at least 30% of electricity supplying retail customers in the state come from renewable or efficient resources. This requirement was strengthened by the Legislature in 2007 in its enactment of LD 1920, which requires that 10% of electricity supply come from newly created renewable resources by the end of 2017.

Growing concern over climate change has also influenced state policy. Maine is participating in a greenhouse gas emissions reduction effort as a member of the Conference of New England Governors and Eastern Canada Premiers ("NEG/ECP"). This group adopted a climate action plan in 2001 that included a goal of reducing total greenhouse gas emissions to 10% below 1990 levels by 2020. This goal was enacted into Maine law in 2004 (38 M.R.S.A. § 576). Maine is also participating in a Northeast regional effort to reduce emissions from the electricity sector. The Regional Greenhouse Gas Initiative ("RGGI") is a ten-state cap-and-trade program covering carbon dioxide emissions from power plants. Under this agreement, the region capped carbon dioxide emissions from power plants starting in 2009. The cap will remain in place until 2014, at which time it will decrease the cap by 10% by 2018. Climate change is discussed further in Section 5.2.

In sum, Maine state policy has continued to support renewable resources over the past decade. Recent support is grounded in growing concern over climate change and a desire for greater energy security, price stability and system reliability. These policies and other factors will likely stimulate continued exploration of renewable energy sources in the jurisdiction and state.

However, development of new generation sources requires sufficient transmission capacity. Most of Maine's transmission system was developed over four decades ago and has become a limiting factor to

additional energy generation in some parts of the state. Some increases in transmission capacity are possible through upgrade of existing lines, but the coming decade will almost certainly bring proposals for new transmission lines, either adjacent to existing lines or in new locations. In fact, Maine Public Service and Central Maine Power Company are considering a 345 kilovolt transmission line over approximately 200 miles from central Maine to northern Maine to connect northern Maine directly to the U.S. power grid. The northern Maine system is currently connected directly to the eastern Canadian power grid through New Brunswick.

Hydropower

Hydropower has long been a staple of Maine's energy mix. In 2003, hydropower accounted for approximately 17% of the state's utility, industrial and self-generated electricity. It has accounted for a larger percentage in the past, as high as 30%. The State Planning Office estimates that untapped hydropower sources statewide could provide up to 297 megawatts of additional installed hydropower capacity, including improvements and upgrades of existing facilities, and new projects at sites where hydro development is not prohibited under the Maine Rivers Act. Hydropower is reliable, renewable and generally nonpolluting, although it can have adverse environmental impacts on the aquatic environment, such as oxygen depletion, impaired fish migration and other impacts. These adverse impacts can be mitigated to varying degrees. Historically, Maine's hydropower facilities provided some of the least costly electricity for decades. During months of flowing water, these facilities provide power (at approximately 40% capacity) 24 hours a day.

Harris Dam

The Maine Waterway Development and Conservation Act, initially adopted in 1983, recognizes hydropower's unique value to the state as an indigenous, renewable energy resource. The Act establishes policy that the state "support and encourage the development of hydropower projects" through a streamlined permitting process.

A number of major new dam sites were considered by the Commission and the Maine Department of Environmental Protection ("DEP") during the 1980s. A proposal for a new dam at Big Ambejackmockamus Falls ("Big A") on the Penobscot River was approved by the Commission in 1985, but failed to receive water quality certification from DEP. The project was subsequently abandoned. A large dam was approved by DEP at Basin Mills in Orono in 1994 following a lengthy permitting process, but was subsequently denied by FERC and was never built. As of 2009, no new dams or hydro projects are being considered in the jurisdiction.

The focus in hydropower has shifted over the past decade from constructing new dams to relicensing existing dams. The FERC relicensing process is lengthy and sometimes results in costly improvements such as fishway accommodations. These improvements can drive up the cost of the power produced. Some dam owners have utilized FERC's alternative process for hydropower licensing, pursuing collaborative, negotiated settlement agreements with interested parties. Several negotiated agreements in Maine have successfully integrated economic and other interests, resulting in increased energy production or stable flows, recreational improvements, increased land protection and improved aquatic habitat. A number of dams in the jurisdiction are approaching or beginning the FERC relicensing process, which generally takes five to seven years. The Commission reviews hydropower facilities when expansion is proposed as part of the relicensing, and DEP reviews projects in the jurisdiction when no expansion is proposed. This division of responsibility was established as part of efforts to streamline state permitting. Where DEP is the permitting authority for hydropower projects, it is responsible for granting water quality certification, including projects in the jurisdiction being relicensed where no expansion is involved. LURC is responsible for granting water quality certification for projects in the jurisdiction where expansion is involved.

As with other indigenous energy resources, hydropower's viability will continue to rise and fall depending upon factors such as natural gas and oil prices, the percentage of wind power in the mix, energy markets and the ability of specific projects to meet federal and state regulatory requirements. The Maine Public Utilities Commission's 2003 report on renewable resources predicted that no new hydropower facilities were likely to be built in the near future, although additional capacity may be added to existing facilities.

Biomass and Biofuels

Prior to the 1980s, use of wood for energy in the jurisdiction was limited to a few co-generation facilities producing electricity and process steam principally for the generator's use. During the 1980s, federal policies created the opportunity for a small biomass power industry and resulted in 21 co-generation and free-standing plants capable of providing over 500 megawatts of generating capacity. Although these facilities were not located in the jurisdiction, many were adjacent to it and utilized wood from the region. Use of these biomass plants has fluctuated considerably over the years due to changes in the energy industry and markets, with many running well below capacity or not at all for periods of time. They were built at a time when utilities were paying a relatively high price for electricity. When those contracts expired, the generators were left with substantially lower prices for their electricity. These plants also had older, less efficient technology and, as a result, their economic viability fluctuated with energy prices. During the first

half of 2000, several plants were idled for periods of time as a result of unpredictable fuel supply and energy markets. When energy prices rose, most returned to operation. Some upgraded to more efficient technology so as to meet renewable portfolio standards and qualify for premium pricing.

This history highlights the challenges of doing business in the current rapidly changing energy landscape. Nevertheless, the significant natural gas and oil price increases of the 2000s, improved technology and government policies have the potential to stabilize the outlook for biomass. For example, adoption of renewable portfolio standards by some Northeastern states has strengthened the market for biomass energy. Also, new biofuels technologies have the potential to create new markets for Maine's extensive biomass resources. On the other hand, transportation of biomass to the plant is a significant cost and will continue to influence the feasibility of this energy resource. If biomass and biofuels develop as viable energy options, the Commission could see proposals for centrally located or decentralized power plants and bio-refineries, self-generation by local industry, and possibly pipelines and transmission lines carrying power and fuel to areas of demand.

Like other energy resources, biomass has positive and negative impacts. Combustion of biomass produces air pollutants, although emissions vary widely depending on the technology. However, biomass facilities that are operated in a sustainable manner (e.g., close to the wood source and using fuel from sustainably-managed forests) contribute to the reduction of greenhouse gases by using a carbon dioxide neutral fuel — that is, the amount of carbon dioxide released when biomass is burned can be the same as that consumed by the trees that replace the harvested stock. These plants also provide a valuable form of economic development to Maine's rural economy and play an important economic role in the forest products industry. Sawmills are particularly dependent on these plants for disposal of wood by-products. Utilization of sawmill wood waste for energy avoids disposal costs and provides mills with another revenue stream. In 2005, Maine had ten forest industry co-generation plants using biomass supplemented with coal, oil, and hydropower. In addition, Maine has ten standalone biomass plants. As of 2007, the combined capacity of the standalone and co-generation facilities was 612 megawatts.

Wind Power

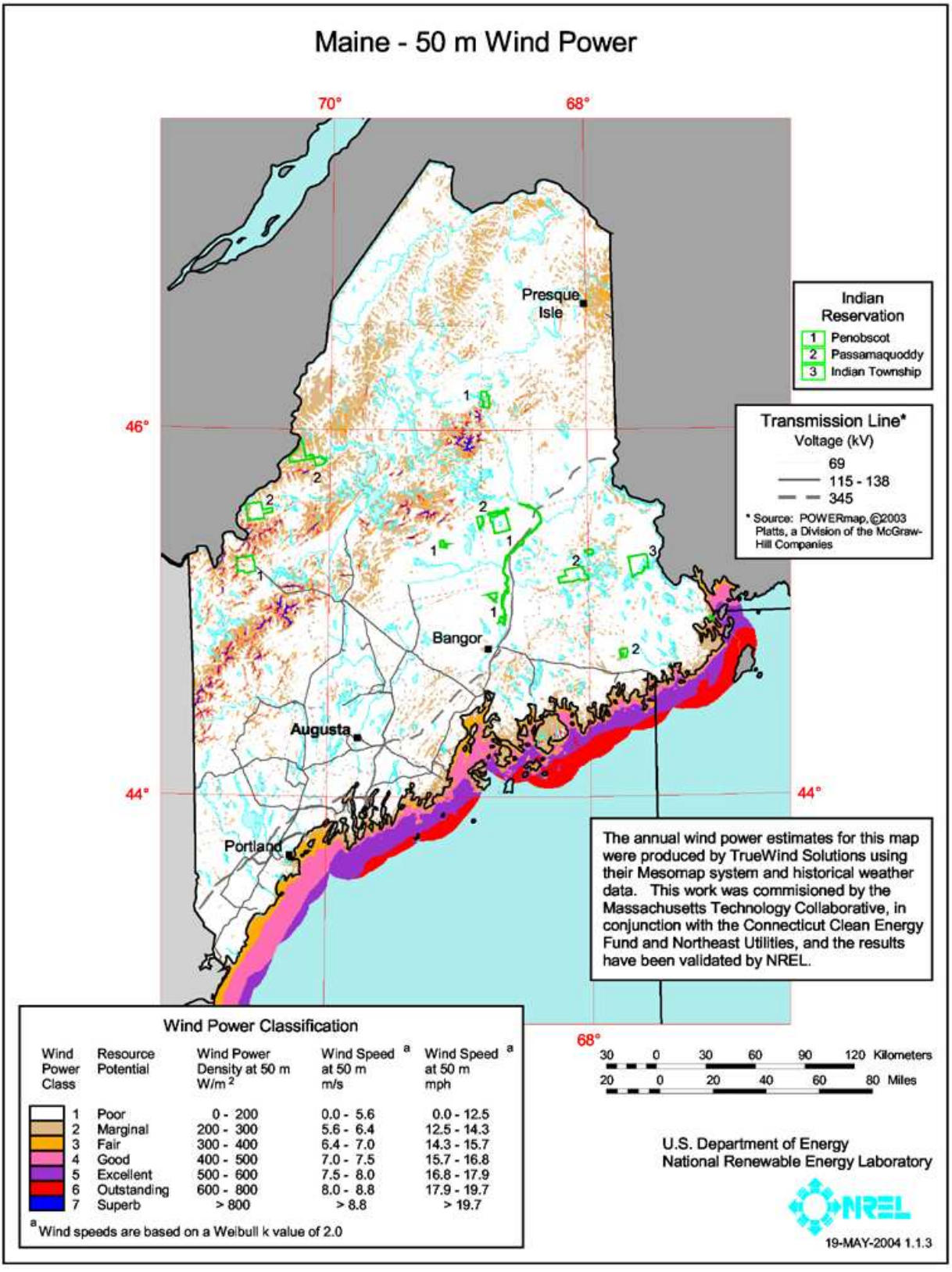
Wind power is increasingly recognized as the most significant renewable source of electricity that is economically viable at the utility scale. Maine has a significant wind resource - the largest of the New England states and 19th in the U.S. This wind resource is attractive for several reasons. It can reduce the region's dependence on imported fossil fuels, reduce greenhouse gas emissions, increase fuel diversity and price stability, and provide economic and employment benefits for Maine citizens. The best wind resources in Maine are located in high-mountain and off-shore coastal areas, but technological advances and a growing market for clean energy has increased the number of areas where utility-scale wind power is economically viable. Map 17 depicts annual wind resource estimates for Maine.

Maine has attracted considerable interest from wind power developers since the 1990s. Although not located in the jurisdiction, Maine's first utility-scale wind farm (42 megawatts) began generating power in Mars Hill in 2007. LURC first granted rezoning approval for the Kenetech wind power project in the Western Mountains in 1995, and granted permits for a 57-megawatt facility on Stetson Mountain in Washington County and a 132 megawatt facility on the Kibby Range in the western mountains in 2008. A wind power proposal on Black Nubble Mountain in the Western Mountains was denied in 2008. Exploration of numerous other areas in the jurisdiction continues, including low-elevation ridgelines, agricultural fields in the St. John Valley and blueberry barrens in Washington County.

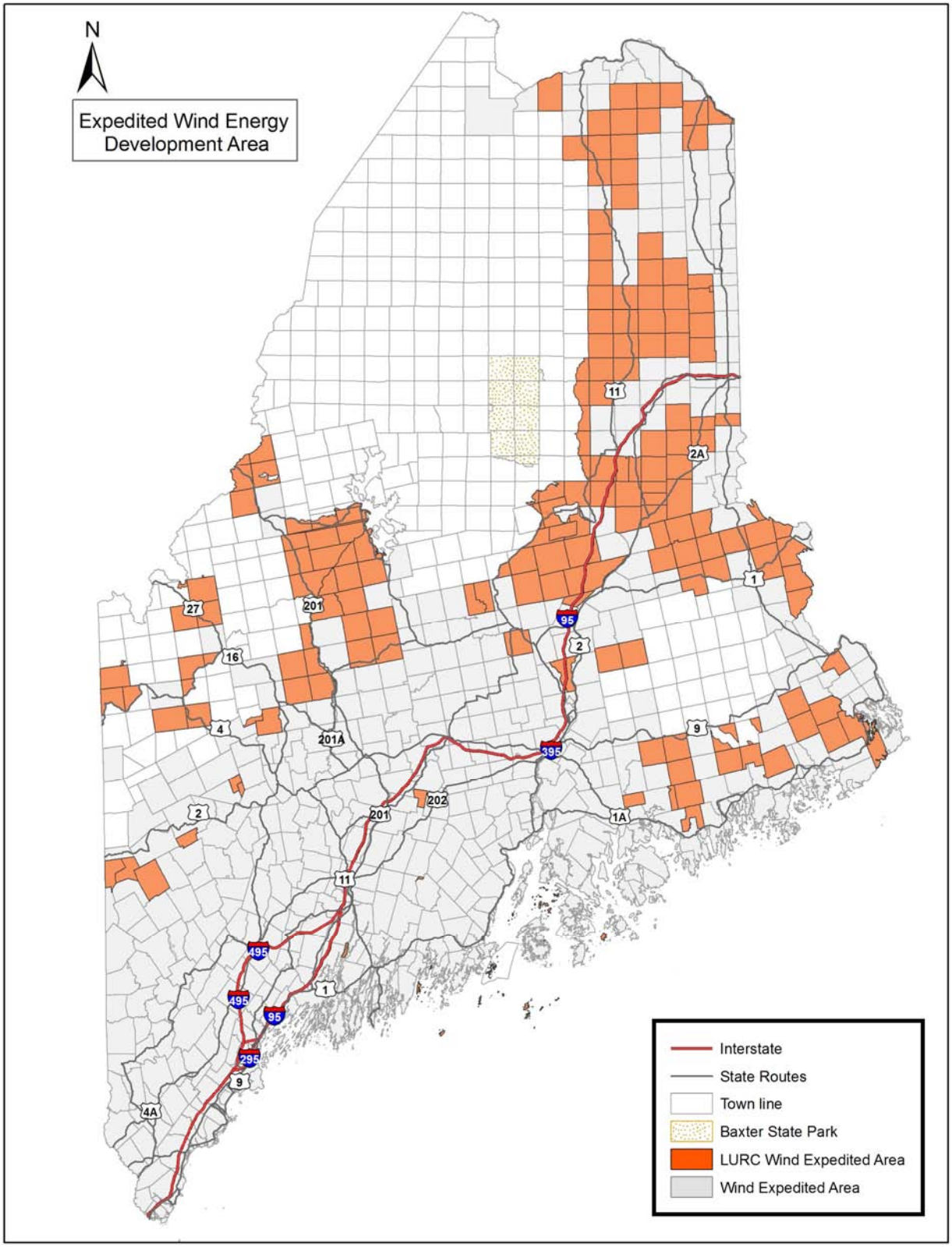
Proposed wind power developments in Maine and elsewhere have generated considerable public attention. There is support for wind power as a renewable resource, but also concern about noise, avian and bat mortality, visual impacts, effects of extensive road construction in high mountain areas, and other impacts. In 2007, the Governor created a Task Force on Wind Power Development to study wind power development and make recommendations designed to facilitate the siting of wind power while protecting the state's quality of place and natural resources and maximizing the benefits of wind power development to Maine people. In its final report, the task force concluded that Maine can become a leader in wind power development while protecting its quality of place and natural resources, and delivering meaningful economic and environmental benefits to Maine people. It recommended that Maine strive to host at least 2,000 megawatts of wind power capacity by 2015 and 3,000 megawatts by 2020.

Much of the task force's report focused on the need to streamline and improve the regulatory process for wind power projects. The task force identified a number of problems with the regulatory process. It attributed many of the problems to the fact that Maine's regulatory systems were created almost 40 years ago and were not designed to handle the unique circumstances of modern, grid-scale wind power development. The task force recommended creating a streamlined permitting process in the expedited permitting area, which include all organized towns and about one-third of the jurisdiction — in particular areas proximate to public highways or adjacent to organized towns (Map 18). It further recommended changes to update and clarify the regulatory criteria applied to wind power development in the expedited permitting area, including measures designed to optimize wind power benefits to the state.

Map 17 – Annual Wind Power Estimates for Maine



Map 18 –Expedited Wind Energy Development Area



Grid-Scale Wind Development

By identifying the area for expedited permit review and clarifying the regulatory criteria applied within them, the task force intended to send a clear signal to wind power developers about those areas within the state that appear to be most appropriate for wind power development. The task force's recommendations were implemented through statutory changes in 2008, with the Commission subsequently adopting rules consistent with the statutory changes.

The state's policy regarding wind energy is now set forth in the Maine Wind Energy Act:

> "The Legislature finds that it is in the public interest to explore opportunities for and encourage the development, where appropriate, of wind energy production in the State in a manner that is consistent with high environmental standards and that achieves reliable, cost-effective, sustainable energy production on those sites in the State that will attract investment and permit the development of viable wind energy projects." 35-A M.R.S.A. § 3402

Peat

The high oil prices of the 1970s and early 1980s and associated desire to decrease the state's dependence on oil led to consideration of peat as an energy resource. However, peat has not become a significant energy resource for a variety of reasons. In 1988, Maine became host to the only electrical co-generation facility designed to burn peat in the U.S. Peat generation at this facility has not proved to be generally economic. The facility has closed and restarted several times since opening and principally uses fuels other than peat.

The jurisdiction has considerable areas of peatland, although not all peatlands are appropriate for harvesting for fuel. Some support rare plant species and animal habitats or are otherwise ecologically or culturally valuable. Peatlands are further discussed in Section 5.12.

Tidal Power

Although research into the tidal resource and the best technology for harnessing it is still in the early stages, there is renewed interest in tidal power. Downeast areas of Maine, with their significant tidal range and numerous narrow channels, have considerable energy generating potential. Tidal power technically includes older technology (i.e., impoundments) as well as new technology (i.e., submerged turbines). However, only a few commercial-scale tidal generating facilities exist in the world, and all of these are impoundments. There are currently no utility-scale tidal facilities employing new technologies, although they are being actively explored. At best, commercial generation using tidal power in Maine is several years away. Like other renewable energy sources, many factors will influence the viability of tidal power in Maine, including environmental and other impacts, proximity to transmission lines and generation potential. If tidal energy projects come to fruition in the coming years, the facilities would be located principally on nearshore submerged lands. Land-based facilities would likely be limited to switching stations and transmission lines.

Solar Power

Grid-scale solar generation is not considered likely to be economically viable in Maine in the foreseeable future due to high capital costs and limited hours of sun. However, Maine has several hundred small, residential on-site solar generators. Some are off-grid, and some are used to defray electricity costs and/or sell power to a utility. The Legislature created a solar rebate program in 2005 as part of its effort to encourage renewable resources. To prevent these rebates from facilitating sprawl in remote areas, the Legislature limited their use to residences which are connected to the power grid.

5.5.B LURC REGULATORY APPROACH

The Commission's regulatory approach to utility-scale energy projects has generally involved rezoning and site review. The Commission considers the appropriateness of a proposed energy generation project's location and associated zoning. Most utility-scale energy projects require rezoning the subject area to an appropriate subdistrict to ensure that the proposed use is compatible with adjacent land uses. Proposed rezonings are reviewed under specific approval criteria, which include a requirement that certain types of development be proximate to existing, compatible development.

Large commercial or industrial facilities, such as biomass plants, are typically rezoned to a Commercial Industrial Development (D-CI) Subdistrict. Other development subdistricts may be appropriate depending on the nature and location of the project. Once an area has been rezoned to an appropriate development subdistrict, the Commission evaluates the proposal's site-specific impacts through a site review process.

There are some exceptions to this zoning approach to utility-scale energy projects, most notably the Commission's approach to wind power and hydropower project review. These unique regulatory approaches are described below.

Wind Power Regulation

Utility-scale wind power projects in approximately two-thirds of the jurisdiction require rezoning the affected area to a Planned Development (D-PD) Subdistrict. In 2002, the Commission amended the D-PD Subdistrict to specifically accommodate wind energy generation facilities by exempting such facilities from a minimum gross building floor area requirement that otherwise applies to commercial and industrial land uses that depend upon a particular natural feature or location. Petitions to rezone an area to a D-PD Subdistrict are not required to be proximate to existing development or meet the Commission's adjacency criterion, as are petitions to rezone to other types of development subdistricts.

Expedited Permitting Area

In 2008, statutory changes enacted to implement the recommendations of the Governor's Task Force on Wind Power Development altered the process and criteria for reviewing wind energy development in the expedited permitting area, which cover about one-third of the land in the jurisdiction, including the coastal islands, but do not extend below mean high water (Map 18). In the expedited permitting area, wind energy developments do not require a rezoning and are considered a permitted use in all subdistricts.

The new process is intended to reward well-sited projects with a predictable, expedited review. The Commission is responsible for reviewing projects within the expedited permitting area that fall entirely within its jurisdiction, while DEP may choose to assume full permitting responsibility for projects that include both organized and unorganized areas. LURC and DEP processes have been made consistent in the expedited permitting area. The two agencies apply similar submission requirements, approval criteria and guidelines on bird and bat impacts, noise, shadow flicker, public safety-related setbacks, and scenic impacts. Statutory deadlines have been established for review of projects in the expedited permitting area.

The implementing legislation also established a process whereby the Commission may add acreage to the expedited permitting area. Acreage can be added if the Commission determines that it: (a) involves a logical geographic extension of the existing expedited permitting area; (b) is important to meeting state goals for wind energy development; and (c) will not compromise the principal values and the goals identified in this Plan. This process gives the Commission the flexibility to explore, independently or in collaboration with interested parties, whether other areas in the jurisdiction merit inclusion in the expedited permitting area in the future.

Implementation of the task force's recommendations will hopefully limit future controversy over wind power projects by clarifying the state's policy toward wind power and improving regulatory processes. The task force recognized that confusion among the public and decision makers over the degree to which wind power displaces fossil fuels and associated greenhouse gas emissions had complicated the review process. To address this, implementation included the following statutory language:

> "Wind energy is an economically feasible, large-scale energy resource that does not rely on fossil fuel combustion or nuclear fission, thereby displacing electrical energy provided by these other sources and avoiding air pollution, waste disposal problems and hazards to human health from emissions, waste and by-products; consequently, wind energy development may address energy needs while making a significant contribution to achievement of the State's renewable energy and greenhouse gas reduction objectives… wind energy may be used to displace electrical power that is generated from fossil fuel

> combustion and thus reduce our citizens' dependence on imported oil and natural gas and improve environmental quality and state and regional energy security." 35-A M.R.S.A. § 3402

This statement resolves at a state policy level the debate over the nature and extent of off-site benefits associated with wind power facilities. A new energy policy based on the above language has been added to make this Plan consistent with the statute, to reflect the state's goals of supporting indigenous renewable resources, and to guide the Commission's future deliberations over wind power projects. This includes recognition that renewable energy displaces fossil fuels and thus carries benefits such as reducing the state's dependence on imported fuels, improving environmental quality, enhancing state and regional security, and making progress toward meeting the state's renewable energy and greenhouse gas reduction objectives. These policies should help to provide a more predictable framework for evaluating utility-scale renewable energy projects, both within and outside the expedited permitting area.

Delegation of Regulatory Authority

If wind energy facilities or their transmission lines extend into organized towns, DEP may choose to assume permitting responsibility for the entire project. When DEP assumes this responsibility, a permit from the Commission is not required. This division of responsibilities is articulated in statutory provisions in the Land Use Regulation Law, Site Location of Development Law, and Natural Resource Protection Act.

Utility transmission lines (which carry electricity to the grid) and utility distribution lines (which carry electricity to the users) are allowed in all subdistricts and so do not require rezoning, but they do require site review. As described above, the Commission is the permitting agency for utility transmission and distribution lines that fall completely within its jurisdiction, but DEP may assume permitting responsibility for projects that extend into organized towns. Utility distribution lines are further discussed in Section 4.6.D.

Hydropower Regulation

The Maine Waterway Development and Conservation Act requires a single application and permit for the construction of all new hydropower projects. The Commission and Board of Environmental Protection jointly adopted administrative regulations for hydropower projects in the late 1980s. These regulations, which provide for a single application and permit for hydropower, are administered by LURC for hydropower projects located completely within the jurisdiction. As of 2009, all tidal power projects, which are a type of hydropower generation facility, are reviewed by DEP regardless of location within the state.

5.5.C ENERGY RESOURCE ISSUES

Review of Utility-Scale Energy Projects, Including Wind Power

Over the past decade, steadily rising energy prices and concern over climate change have led to a growing emphasis on renewable energy. Most recently, wind power has been at the center of discussion as the most viable, utility-scale renewable resource. The Commission will likely entertain more proposals to develop the jurisdiction's indigenous energy resources, including wind power, in the coming decade. Some of these proposals may raise questions about the compatibility of utility-scale energy with existing uses of the jurisdiction, particularly in interior areas distinguished by their remoteness and lack of development.

While an updated and streamlined regulatory process now exists for wind projects in the expedited permitting area, LURC's process for handling wind power projects outside this area — which includes about two-thirds of the jurisdiction — has not been modified. In fact, the Governor's Task Force on Wind Power Development stated that it did not intend to change, expressly or by implication, the criteria for evaluating projects outside the expedited permitting area. Some of the task force's recommendations, however, could improve the process if applied to other renewable energy projects as well. Proposals for wind power and other forms of renewable energy elsewhere in the jurisdiction will likely continue to raise challenging questions in the coming decade. In part for this reason, the Governor has created the Ocean Energy Task Force, which is currently exploring issues surrounding off-shore wind power development.

Most utility-scale energy projects, given the nature of the use and the scale of the facilities, have the potential to negatively impact surrounding resources and uses and typically stimulate extensive debate about their appropriateness. Permitting challenges are seen by many as one of the largest hurdles to siting new, renewable energy projects. Nothing can eliminate these challenges entirely, but the Commission can work to improve the process in some ways. Accordingly, the Commission will incorporate updated administrative and technical requirements (such as technical guidelines on bird and bat impacts, noise, shadow flicker and setbacks) into its review of wind power projects outside of the expedited permitting area, as long as it can do so without compromising its ability to protect the qualities that distinguish these areas.

The Commission will monitor New England region efforts to meet carbon goals to ensure the jurisdiction does not bear a disproportionate share of regional carbon reduction efforts. Moving forward, the Commission will review projects to develop renewable energy resources using an approach that reflects both the jurisdiction's unique combination of resources and characteristics and the state's goals. It will continue to assess, on a case-by-case basis, whether adverse impacts are balanced by environmental, economic and other benefits. The Commission's decisions will be informed by state energy goals and guided by its statute and policies. When evaluating energy projects, the Commission will include in its consideration the following factors:

- Potential to generate significant energy in the proposed location;
- Consistency with state energy and environmental policies;
- Availability of infrastructure within the geographic vicinity to meet access, transmission, and maintenance requirements;
- Degree to which existing development within geographic proximity has already diminished natural, remote values;
- Consistency with existing land uses in geographic proximity;
- Extent to which site-specific construction measures are proposed to avoid and minimize adverse environmental impacts;
- Potential to adversely impact significant habitat, protected natural resources and other resources of statewide significance; and
- Scenic impacts, including adequacy of efforts to avoid and minimize these impacts.

The Commission will continue to work cooperatively with other entities, including DEP, to develop consistent regulatory processes, review criteria and performance standards that address site suitability as well as the specific impacts associated with utility-scale energy installations.

The Commission will continue to guide all energy generation installations in a manner that is protective of the jurisdiction's principal values, paying particular attention to those located in remote areas. It will carefully evaluate such projects, considering size and scale, compatibility with existing uses and natural resources, and whether the proposed location is the best reasonably available for the use, in addition to the factors listed above. The siting of wind energy facilities in high mountain areas is further discussed in Section 5.7.

New Transmission Lines

LURC rules allow utility facilities, including transmission lines, in all zones as a permitted use or by special exception. When transmission lines pass into organized towns, as is generally the case, DEP may choose to assume permitting responsibility for the entire project. This division of responsibility is established in statute. Within this framework, the Commission's oversight of transmission lines is very limited.

Allowing transmission lines in all subdistricts reflects the historical cultural recognition of the importance of utility infrastructure and the cost effectiveness of maintaining fairly direct paths to the users. While this remains true, it may be important to re-evaluate whether some parts of the jurisdiction are more appropriate for transmission lines than others. As demand for renewable energy rises, the possibility of multiple new transmission lines carrying energy from the jurisdiction and Canada to southern population centers is a very real prospect. Multiple transmission lines transecting the interior could significantly affect the principal values in some parts of the jurisdiction. The Commission believes it would be beneficial to encourage and participate in a state-wide conversation exploring co-location of transmission lines, where possible, or other minimization of impacts due to new transmission line corridors.

Utility Connections

The Commission will likely see more proposals for energy generation in the jurisdiction. Consequently, it must anticipate and prepare for the possible introduction of transmission lines into remote parts of the jurisdiction that have not been previously connected to the power grid. When the Commission approves an energy generation project and associated utilities, including interconnection and transmission lines, these facilities shall not be used subsequently to justify development that is otherwise demonstrate appropriateness in terms of location.

5.6 Forest Resources

Proportionately, Maine is the most heavily forested state in the nation, with approximately 90% of its land area (17.7 million acres) in forest. The state's forestland base has remained essentially stable for the last several decades and is close to the estimated acreage of forest land present at the time of European settlement. The Commission's jurisdiction is nearly 95% forested, making it even more extensively wooded than the state as a whole. The forests of the jurisdiction are part of the largest contiguous block of undeveloped forestland east of the Mississippi. This expansive forestland, with the economic value that it provides for fiber production as well as the relatively undeveloped and remote landscape that it creates, is in large part what defines the jurisdiction's distinctive character. The vastness of this forest resource contributes to the impression of the North Woods as a wild and remote place. The forests offer a variety of opportunities and values, including timber harvesting, recreation, energy production, wildlife habitat and watershed protection. The jurisdiction's forestland, along with the economic health of the forest products industry, provides a working landscape upon which many communities rely.

5.6.A FOREST CHARACTERISTICS

The composition of Maine's forests is heavily influenced by three factors: (1) extensive areas of thin, rocky, and poorly drained soils intermixed with scattered areas of deeper, better-drained soils; (2) a cool climate and abundant precipitation; and (3) recurrent insect outbreaks. Situated between the eastern boreal forest and the temperate deciduous forest, much of Maine lies in an ecological transitional zone referred to as the Acadian forest. A mixture of hardwoods and softwoods comprise the forest, changing in composition as one moves to higher elevations and north and east. The sub-boreal Acadian forest occurs more in northern and eastern portions of the state and tends to be dominated by spruce and fir.

Of Maine's approximately 17.7 million acres of forestland, 17.1 million acres are considered timberland and the other half million acres are in parks and wildlife preserves. The principal softwoods found in Maine are spruce, fir, white pine, cedar, tamarack and hemlock; the principal hardwoods are maple, birch, beech, oak, ash and aspen. LURC's jurisdiction encompasses over half of the forestland in Maine (9.5 million acres) and includes much of the state's spruce-fir forest.

Maine's forest stands are generally diverse and more closely resemble "natural" forests than more intensively managed forests in other parts of the world. The state's timberlands are roughly evenly distributed among sawtimber, poletimber and seedlings/sapling sized stands. Maine's forest inventory has stabilized over the last several years at 275 million cords — 87% more than in the 1950s. Harvesting has stabilized at just over 500,000 acres per year with a total harvest of just over six million cords per year. Most recent data show that growth exceeds harvest by approximately 15%.

The spruce budworm has had a major impact on the forest over the past century, recurring cyclically every 40 to 60 years, concurrent with the maturation of large volumes of balsam fir. The forest resource was affected by a major outbreak of spruce budworm which lasted from the early 1970s to the mid-1980s. This outbreak damaged or killed millions of trees, prompting harvest of many fir and spruce stands. The Maine Forest Service ("MFS") continues to monitor the development of young stands resulting from the combined impacts of the spruce budworm epidemic and extensive harvesting. Efforts to predict the timing and initial merchantability of these young stands is underway. Over the last five years of data collection under the

new annualized inventory design (1999-2003), annual estimates of in-growth (trees that have just reached merchantable size classes) have improved from 1.53 million cords in 1999 to 1.86 million cords in 2003. If current trends continue, growth is expected to increase to 2.2 to 2.3 million cords per year in 2010.

5.6.B FOREST USE AND VALUES

Maine's forest resources are vitally important — economically, culturally and biologically — to the state, New England and beyond. Economically, forest resources have supplied a continuous stream of raw materials for lumber, pulp and paper production which has provided an economic base throughout the state's history. Maine's forest products economy relies heavily on the wood supply from areas within the jurisdiction. Today, Maine's forest products industry remains an important component of the state's economy. The health of this industry, consequent maintenance of large tracts of undeveloped land, and the public access policies of many large landowners also provide an environment for nontimber forest-based activities, such as recreation. Culturally, the seemingly endless expanse of the forest is an integral part of Maine's heritage, a place where residents have earned their livelihoods, hunted and fished for both food and sport, and explored and recreated, alongside visitors "from away." Biologically, the forests provide genetic and ecosystem diversity, natural systems for counteracting air and water pollution, animal and plant habitats, and many other values.

The past three decades have seen increasing diversity in the use and value of Maine's forest resources, including construction of biomass plants, use of lands for purposes other than timber production (e.g., wind power, mining, and other forms of resource development, residential development, as well as new forms of recreation), and growing interest in its biodiversity and carbon sequestration potential. Appreciation of Maine's forest resources values independent of economic and other uses has also grown. Biological diversity, or biodiversity, is a value of increasingly recognized importance associated with forest resources. There is increasing interest in maintaining a wide range of species and ecosystems across the landscape to preserve genetic diversity and important functions played by natural systems.

Historical Photo of Horse-powered Twitching

Fish River Checkpoint, T13 R7 WELS

The Northern Forest's biodiversity is made up of many different types of ecosystems, ranging from forested wetlands to upland forests, and the many species of animals, plants and microorganisms that inhabit these ecosystems. There is growing concern that timber harvesting practiced on a large scale disrupts ecosystems and can reduce some aspects of biological diversity. Biodiversity impacts depend on the size of the disturbed area; the size, shape and distribution of undisturbed forest fragments and the extent to which they are interconnected; the presence of undisturbed habitat to serve as source pools for recolonization of disturbed areas; and the amount of time allowed for the disturbed areas to recover. Some aspects of biodiversity can be enhanced by certain timber harvesting practices. For example, many species of animals, ranging from deer to Canada lynx and neo-tropical warblers, need clear-cut areas or early successional forests to survive. Other species, such as pine martin, thrive in intact older forest stands. Thus, maintaining all aspects of biodiversity requires a representative array of ecosystems and well-distributed age classes across the landscape. (Section 5.8 includes additional discussion of biodiversity.)

In the foreseeable future, timber production will continue to be the most significant economic use of the forest resources in the jurisdiction, but other economic uses of the forestland base continue to be explored. A number of new land uses, such as wind power and mining, have surfaced in the past decade. The value of land for development has also increased, particularly near shorelines and scenic places, due to demand for recreational homes. And carbon sequestration and other ecosystem services are likely to become important economic uses in the future.

5.6.C FOREST PRODUCTS INDUSTRY

Maine's forest products manufacturing industry is crucial to Maine's economic and environmental health. Today, the forest provides raw material for pulp and paper, lumber and other forest products, and the forest products industry is the largest single manufacturing contributor to Maine's economy. The industry provides not only manufacturing jobs and beneficial economic impacts throughout the state, but is critical to the maintenance of undeveloped forestland which supports a traditional way of life in many Maine communities and serves as an anchor for the state's resource-based economy. Maintenance of a robust and diverse forest products industry has important environmental, social and economic benefits for Maine.

Historically, timber harvesting — first for lumber and later for pulp and paper production — has been the major use of Maine's forests. Today, the forest products industry continues as a key player in the state's economy. Its direct annual economic contributions to Maine gross domestic product have been reported to be $1.8 billion, with indirect contributions amounting to $4.3 billion. Forest products represent 36% of the state's total manufacturing output.

Maine is the second most productive paper producing state in the U.S. Maine's lumber production from over 200 sawmills has more than doubled since the mid-1970s. Since 1975, Maine softwood production (the bulk of the state's sawmill production) has increased by 250%. Hardwood production has increased by roughly 400%. Maine produces over half of the wood output of the four-state region that includes New Hampshire, Vermont and New York and accounts for 40% of the value of shipments in this same region.

Spruce and fir dominated the forest products industry for years, but their importance (as measured in terms of percentage of the harvest) has decreased. Starting in the 1980s, there has been a major shift away from use of spruce and fir and toward hardwood as a source of pulpwood. Today, more hardwood than softwood is harvested in Maine to make paper. The decline in use of spruce and fir pulpwood is attributed to budworm outbreaks, its rising cost and concerns over its long-term supply. Sawlog production of spruce and fir has expanded, but overall harvest levels have dropped concurrent with significant increases in the use of other species. Spruce and fir trees of sawlog size will become scarcer for the next 20 or so years. This shortage has been predicted for some time, although its specific length and severity remain uncertain. The declining use of softwood in pulp production and increased management of young spruce and fir stands to improve productivity may help to alleviate future shortfalls.

Partial harvest methods dominate forest management, accounting for just under 60% of the harvest acreage. What landowners report as shelterwood harvesting accounts for 36% of harvest acreage. Clearcutting now accounts for less than 5% of harvest acreage, a significant decline over the last 15 years.

Maine has the largest and most diverse forest products industry "cluster" in New England, consisting of paper companies, sawmills, secondary wood product manufacturers, forest landowners and managers, loggers, equipment manufacturers and distributors, biomass energy firms and power facilities, university programs, financial institutions, government agencies, trade associations, forest-based recreation businesses and transportation firms. Maine's forest products cluster provides markets for waste products from manufacturing facilities as well as high-grade material. Consequently, landowners have markets for everything they harvest, from the lowest grades of wood that go to biomass generation to dimension lumber and high-end furniture products.

In general, while levels of outputs are up significantly in some sectors of Maine's forest products industry over the last few decades, Maine forest product manufacturers are facing challenges in an increasingly competitive global marketplace. The rapid growth of a global marketplace has provided increased trade

opportunities for Maine forest products, while at the same time allowing new competitors into markets that Maine companies have long enjoyed. Maine's forest economy is in the midst of significant changes, and some of these changes are difficult for both the state and the industry.

Employment in the forest products industry has declined steadily (the industry currently provides approximately 24,000 jobs for Maine people) as mills and harvesting technology become more efficient. While employment is down, worker productivity, average wage and capital expenditures have increased. This is the natural evolution of a manufacturing industry going through transition and taking steps to remain competitive in the global market place. In order to remain competitive in the future, it is likely that existing manufacturers will need to increase productivity, which will likely lead to fewer, more highly skilled employees in the forest products industry. If Maine is to maintain the forest products industry as the strong and diverse cluster that exists today, the state needs to encourage innovation and new investments in the latest technologies.

Maine has a small number of engineered wood composites facilities. Engineered wood composites are products in which wood fiber is reconstituted with resins or other additives to produce a new product. These operations include some of the earliest oriented strand board ("OSB") facilities in the nation. In part because they are older, these Maine OSB facilities are now high-cost producers and will face significant pressure to curtail operations or close if, as predicted, capacity utilization industry-wide shrinks. For newer, emerging engineered products, the Advanced Engineered Wood Composites Center at the University of Maine is a world-class research institute that is developing new applications and uses for wood. Some of the advancements from this facility are quite promising.

Mill near Ashland

Harvesting Near Trout Pond

Maine has ten biomass facilities. In addition, a large number of forest products manufacturing firms burn wood to generate heat, steam and electricity for internal use or sale. These facilities are important to supporting the entire forest products cluster and allowing more opportunities for forest management as they provide a market for waste products from manufacturing as well as for trees of low economic value. New uses and markets for forest products may continue to evolve in the future.

5.6.D LURC REGULATORY APPROACH

The most common zoning designation of forestland is the General Management (M-GN) Subdistrict. The M-GN Subdistrict is intended to enable forestry and agriculture to occur with minimal interference from unrelated development in areas where the resource protection afforded by protection subdistricts is not necessary. The Commission has established two other management subdistricts which are appropriate for forestland: the Natural Character (M-NC) and Highly Productive (M-HP) Management Subdistricts. However, neither of these subdistricts has been applied yet.

The M-NC Subdistrict was designed to maintain the character of certain large undeveloped areas of the jurisdiction and to promote their use primarily for forest and agricultural management activities and primitive recreation. As in the M-GN Subdistrict, forest management, including land management roads, is exempt from regulation. But whereas the M-GN Subdistrict allows residential dwellings of any size, M-NC Subdistricts allow only remote camps, which have building size limitations and prohibitions on certain utilities. Campgrounds, mineral extraction, buildings relating to forestry and agricultural management are allowed in the M-NC Subdistrict, and public utilities are allowed by special exception.

The M-HP Subdistrict was designed to prevent highly productive agricultural and forestlands from being lost to other incompatible uses. This subdistrict has not been applied due to the difficulty of defining qualifying lands, but the Commission remains committed to maintaining prime and other important agricultural and forestlands.

MFS, as enabled by the state's forest practices laws, regulates forestry activity in the state. MFS administers rules and standards pertaining to clearcutting and regeneration and tracks forest utilization by requiring landowners to file notifications of intent to harvest commercial forest products for sale and report the volume of products harvested.

The Commission's regulation of timber harvesting and related uses is statutorily limited to areas zoned as protection and development subdistricts, although the statute requires land management roads in management subdistricts to be built and maintained according to road guidelines adopted by the Commission. In most protection subdistricts, the Commission prescribes specific performance standards for harvesting and road-building activities in order to preserve water quality, and recreational and aesthetic values. Where landowners have reason to exceed these standards, they may apply for a permit from the Commission to do so. A permit is required for all harvesting and related activities in development subdistricts.

POTENTIAL CHANGES TO THE COMMISSION'S REGULATORY APPROACH

In the future, the Commission's regulation of timber harvesting and related uses may be further limited to development subdistricts and a small portion of protection subdistricts. According to LD 188 ("An Act to Promote the Uniform Implementation of the Statewide Standards for Timber Harvesting and Related Activities in Shoreland Areas"), MFS may become responsible for administering and enforcing the regulation of timber harvesting in areas adjacent to rivers, streams, ponds, wetlands and tidal waters for the entire state. By law, these rules will become effective on the first day of January of the second year following the year in which 251 of 334 municipalities have either accepted the statewide standards or have adopted an ordinance identical to the statewide standards.

Reasonable regulation of forest practices in environmentally sensitive areas is a high priority of the Commission. The purpose of such regulation is to minimize adverse effects on water quality, fisheries, wildlife and aesthetic and recreational values, while allowing for economic utilization of the forest resource.

The Commission's approach to forestry regulation is perhaps unique in the U.S. Tailored to the circumstances of the jurisdiction, this framework provides protection in sensitive areas while allowing for a substantial degree of discretion and flexibility by landowners in managing the bulk of their land for timber production. The state's forest practices laws, administered by MFS, regulate certain aspects of timber harvesting in these areas (e.g., the size and separation of clearcuts).

The Commission finds that the overall approach to zoning of forestland is sound, but there continue to be issues which bear attention. As areas in the M-GN Subdistrict are rezoned to development, the M-GN Subdistrict has come to be viewed by some as a holding zone for land that is appropriate for conversion to other uses. The Commission is committed to limiting the conversion of working forestland. One approach to addressing this trend is to consider measures which will direct development away from these areas. *(*Further discussion of this issue is in Chapter 4).

5.6.E OTHER INITIATIVES

There are many nonregulatory initiatives and cooperative efforts taking place in the jurisdiction that further the maintenance of healthy working forests. These initiatives and landowner efforts include working forest conservation easements, wood supply agreements, certification programs, and tree growth tax program. As discussed in more detail in Chapter 4, an unprecedented acreage of land has become subject to conservation easement protections over the last decade. Many, though not all, of these easements are working forest easements aimed at retaining timber production on these lands. A number of landowners have signed long-term timber supply agreements with mills to ensure a steady stream of raw materials. While the details of these agreements are confidential, in general, they indicate a commitment to keeping lands in timber production.

Independent, third-party certification of forest management is a rapidly evolving market-driven tool that has the potential to change the face of Maine's forest products industry and forest landscape. Through certification programs, independent third-party auditors assess whether the management practices of a landowner are in accordance with standards of sustainable forestry. The amount of certified forestland in Maine has increased substantially since 1995 and there are currently about 7.5 million acres of land certified through one of the three major systems. This includes approximately 500,000 acres of public land, 6 million acres of large-parcel private lands, and 350,000 acres of small-parcel private lands.

The Tree Growth Tax Law provides for tax assessment based upon the ability of the land to grow timber, rather than valuation for other potential uses, such as commercial or residential development. Landowners enrolling in the program commit to manage enrolled land for long-term forestry-related uses, or suffer substantial withdrawal penalties. Over 11.2 million acres of land are currently enrolled in this program statewide, 7.6 million of which are located in the jurisdiction.

Certified Forest Products

5.6.F FOREST RESOURCES ISSUES

The extensive forest resources of the jurisdiction have many diverse values, ranging from timber production to recreation. Historically, these resources have been maintained as a result of landowner objectives, access and other factors, as well as Commission policies. Recent decades have brought changes, which may reduce this de facto protection of the forest and its myriad values.

As the Northern Forest Lands Council stated in its final report, "The conditions which up to now have conserved the Northern Forest can no longer ensure its perpetuation. The forces for change and current problems... may be stronger or weaker depending on economic cycles, but over the long run they will bring about change that, if left to proceed on its own, is likely to damage both the forest and the people who live there."

The challenge for the Commission is to determine how to maintain the many diverse values of the forest resources while recognizing that much of this land is privately owned.

Global Market Forces in the Forest Products Industry

By far, the most significant economic force affecting the Northern Forest has been the huge increase in the global supply of wood products over the past decade and its consequent downward pressure on prices. Global wood production in all major regions except Africa has increased dramatically. This increase has been the result of heavier harvesting on existing forestland, the opening up of new forestland to international trade, and the development of new forest plantations (primarily in South America and Asia). Most observers of world forestry trends expect this expansion of production to continue.

This increase in wood supply has created downward pressure on lumber and wood prices, particularly in the U.S. Producer price trends for paper and lumber products in the U.S. have fluctuated throughout the last decade, but have generally been declining. This has increased the pressure to get more product value per acre. In addition, by and large, the wood products manufacturing facilities in the northeastern U.S., compared to a worldwide average, are older and smaller, have higher labor costs, and have higher transportation costs because most new mills are located closer to their raw materials. Because of the high cost of supply, many Maine mills cannot compete with mills elsewhere in the U.S. and throughout the world. Several of these mills have shut down or endured major cutbacks in production in the past decade. However, production has been stable overall as other mills have modernized and increased their productivity.

In order to remain competitive, forest products businesses have had to invest in capital equipment in order to generate more and more product per worker. This trend will likely have to continue if the Maine forest products industry is to remain viable.

Changing Patterns of Ownership

In Maine, nearly 95% of the forestland is privately owned, one of the highest percentages in the country. Industrial owners have been the primary forestland owner in the state for most of the 20th century. Industrial owners are those that generally own forestland as well as wood processing facilities, usually pulp mills or sawmills. However, over the last two decades, the ownership of Maine's large private forests has changed rapidly. Industrial owners have largely eliminated their holdings (there are a few exceptions) while a new category of investor owners that includes timber investment management organizations, real estate investment trusts, and limited liability corporations have increased their holdings. Conservation buyers

have increased their land holdings as well. In Maine, the shift from industrial forest ownership to various new owner types has occurred with increasing rapidity. In 1994, the forest products industry owned about 60% (4.6 million acres) of the large tracts (greater than 5,000 acres) of timberland and financial investors owned about 3%. By May 2005, financial investors owned about one-third of the large forest tracts and industry owned only 15.5% (1.8 million acres). It should be noted that there are some large private ownerships, constituting several million acres, which have remained largely unchanged.

The historical industrial landowners had hundreds of millions of dollars invested in their wood products plants and had an interest in maintaining a predictable flow of wood fiber to feed their operations. However, in response to cost pressures, the forest products industry (both worldwide and in Maine) has gravitated towards more specialized niches of the market. Entities that owned large tracts of timberland in Maine have divested their timber holdings, as they could obtain long-term contracts to buy timber without the responsibility of owning and managing the timberlands, and could then use land sales proceeds to finance consumer products, niche acquisitions and other specialized strategic endeavors. As a result, land ownership has become increasingly separated from product manufacturing. Owning and managing timberlands has become its own niche market with specialized players, rather than a common requirement for all forest product companies. In Maine, this trend has been evident in the tremendous increase in sales of large tracts of land over the past decade.

Lots for Sale

New landowners generally have different objectives than the traditional Maine industrial owners. For example, financial investors tend to have a time horizon of 10 to 15 years. While many of these new landowners have signed long-term timber supply agreements, their responsibility is to maximize the asset value of the timberland rather than to meet the needs of a mill. So long as it remains profitable to grow and harvest trees, the vast majority of these lands will likely stay productive. If this is not the case, it becomes more likely that the land will be sold, developed or converted to other uses. Conservation buyers often have different objectives than the traditional Maine industrial owners as well. While in most cases, one of the expressed intents of these conservation purchases is to maintain the land as working forest, this is not always so. The objectives of some conservation buyers do not include active forest management at all. It is not yet clear how great the implication of land ownership changes will be on the forest resources and the forest products industry in Maine.

Fragmentation of Ownership[19]

Many of the jurisdiction's values are closely linked to forest resources, including large-scale commercial forestry, ecological diversity and recreation in a remote setting. Stability of ownership and dominance of large, landscape-scale parcels are most compatible with these values. Fragmentation of ownership and associated changes in use and management creates uncertainty and could undermine the integrity of the forest resource in a way that compromises these values.

For Maine forestland, there is a trend toward increased forestland owners and decreased parcel sizes. For example, the 2.3 million acre Great Northern Paper ownership of 1989 now resides among at least 15 different landowners. While the average ownership size in the jurisdiction is still fairly large (approximately 118,000 acres), there has been a decrease in mean land ownership size since 1999. There has also been an increase in the number of landowners owning smaller parcels. Between 1991 and 2007, the number of the jurisdiction's landowners owning parcels less than 500 acres in size increased from approximately 9,000 to approximately 13,000. Data from the Tree Growth Tax Law program point to some increasing parcelization of forestland as well: While the number of acres in parcels containing tree growth acreage remained relatively constant at approximately 8.25 million in the unorganized territory from 2000 to 2009, the number of parcels increased by 10.5% (from 4,300 parcels in 2000 to 4,750 parcels in 2009). While average parcel sizes have not crossed the threshold where active forest management becomes less likely, the trends illustrated by these figures are noteworthy. The increase in number of landowners and parcels, and consequent decrease in parcel size, has occurred to a greater extent on the edge of the jurisdiction than in the interior.

There is continuing debate regarding the extent of fragmentation in the jurisdiction that has taken place and the degree to which it poses a threat to the jurisdiction's values. However, the Commission believes that in selected areas, fragmentation of ownership has negatively affected forest productivity and resulted in some undesirable development. The Commission's primary concern is the longer-term uncertainty created by a continuation of these trends.

In light of other changes taking place in the jurisdiction, fragmentation of ownership can have important implications for the forest products industry. In general, as lot sizes decrease, the likelihood that owners will manage land for commercial forestry decreases. Some parcels become too small to operate commercially, and some small landowners are not interested in commercial timber harvesting. When small parcels are managed for timber, productivity typically declines between 33% and 66% due to the lack or discontinuity of sound forest management practices. A 1991 survey of small woodland owners in Maine confirms this notion, finding that respondents with more woodland acres were more likely to harvest timber for sale and to follow a plan or schedule for growing and harvesting timber. This leads to the complementary conclusion that smaller ownerships are less likely to be actively managed for timber. In short, as ownership becomes increasingly fragmented and parcel sizes decrease, some land is effectively removed from commercial timber production and productivity is reduced on others.

Of equal concern is that land divided into smaller lots becomes more ripe for development, whether that is the original intent of the division or not. There is an increasing level of interest in seasonal housing in remote regions of the state. Demographics, changes in recreational preferences and improvements in the economy will likely increase the demand for residential and recreational lots. This interest, and the

[19] Fragmentation of forest ownership is used here to describe land sales that incrementally result in forestlands comprised of smaller lots and more owners.

resulting disparity between the value of land for forestry and its value for development, could serve as a powerful economic incentive for converting high-value forestlands to development.

While isolated hunting camps have coexisted with forestry for many years, more broad-based residential development is not as compatible with industrial forestry activities, such as harvesting and heavy truck transport on logging roads. New residential areas within or near commercial forestlands increase the potential for conflicts between uses. The term, "shadow conversion," is used to describe the effect residential development tends to have on adjacent woodlands, often forcing commercial forest activities near developed areas to be curtailed or modified.

Timber Harvesting

In the past, landowner objectives and the market have limited land conversion in the heart of the jurisdiction as much or more than the Commission's policies. Many large landowners have chosen not to pursue development on their lands for a variety of reasons, including tax policies, potential for conflicts of uses and other disincentives. However, as landowners, their objectives, tax policies and other factors influencing land use patterns change, these factors alone cannot be relied on to protect the traditional form of the forest and associated values.

The Commission's goal is to maintain forest resources in a way that preserves their important values, including large-scale commercial forestry, ecological diversity and recreation in a remote setting. The Commission will pursue this goal on several fronts. As outlined in greater detail in Chapter 4, the Commission proposes development policies to guide future growth to appropriate areas, with specific implementation measures to be developed through a collaborative effort. The Commission will also seek to encourage conservation of select areas of the jurisdiction that are particularly representative of the jurisdiction's principal values and are especially valued for their remote and relatively undeveloped condition.

Conflicts Among Uses

As use and ownership of the forest diversifies, the potential for conflicts among uses increases. Each user group has different, sometimes conflicting, ideas of how forest resources should be used. Those pursuing recreational development may object to certain forest management practices; those pursuing low-impact recreation may object to the use of the forest for more intensive recreational development.

The M-GN Subdistrict, as presently structured, assumes that many activities can coexist without adversely affecting each other or the forest resources. The effectiveness of the management subdistrict will continue to be examined in light of the increasingly diverse and intensive uses of the forest. The Commission will continue to identify which uses are most compatible with the subdistrict's primary purpose — permitting forestry and agricultural management activities with minimal interference. Development which commits land irrevocably to other uses and detracts from the forest resource will be directed to locations where it will not significantly affect this valuable economic and recreational resource. Management for multiple use, which calls for the most judicious use of the resource for a variety of compatible purposes, will be encouraged whenever possible.

Insect and Disease Outbreaks

Maine's forests face increasing threats from the potential introduction and expansion of foreign invasive species. While Maine's forest resources have been affected by outbreaks of insects and diseases as long as they have existed, the ecosystem is to a degree adapted to the perturbation of native insects like the spruce budworm that periodically kill vast number of trees in Maine's forests. Foreign pests can result in far more devastating and permanent situations.

Non-native pests and diseases, such as beech bark disease, chestnut blight, Dutch elm disease and gypsy moth, have already diminished the character and diversity of Maine's forests. The most recent forest inventory shows that beech mortality associated with beech bark disease and drought exceeds growth. This has resulted in a 20% decline in beech volume since the 1995 inventory. Other foreign pests such as the browntail moth and balsam woolly adelgid are intensifying and expanding their range. From 1999 to 2004, the balsam woolly adelgid killed 9% of the balsam fir basal area in the 6.4 million acres of eastern and midcoast Maine. The expansion of these pests into the jurisdiction, as well as the introduction of other foreign pests into Maine (such as the hemlock woolly adelgid — the organism causing sudden oak death, asian longhorned beetles, and the emerald ash borer), could have major impacts on the forest. Climate change may well accelerate or exacerbate these threats.

MFS has engaged a broad range of cooperators to improve survey and detection of these pests. The Commission developed a number of specific responses to the spruce budworm outbreak of the 1970s and 1980s. The Commission may draw upon these responses in the future as needed to address future natural threats that cannot be predicted.

Climate Change

As discussed further in Section 5.2, long-term observations confirm that Maine's climate is changing. While exact implications for the forests of the jurisdiction are not known, global climate changes have the potential to radically change the composition and structure of Maine's forests. Climate change models suggest the following effects on forests:

- The character of the Northeast's forests may change dramatically over the next century as suitable habitat for the region's tree species shifts northward.
- Some of Maine's tree species with larger ranges, such as red maple, may be adapted to wider climate regimes and may increase in abundance, while other species with more limited resilience like red spruce may face local extirpation.
- Forest productivity may increase in the near term, particularly for hardwoods.
- Productivity of spruce fir forests is expected to decline.
- Winter warming will threaten hemlock stands, not only by reducing suitable habitat for these trees, but also by allowing northward expansion of a fatal pest known as the hemlock woolly adelgid.

Forests offer a major opportunity to mitigate atmospheric greenhouse gas levels by increasing sequestration in both forest stands and products, substituting wood for other materials that require more energy to produce. Large forest areas are also important to allow adaptation to a changing climate. In the future, forests and forest products may be more important than ever in terms of carbon sequestration, climate adaptation, energy supplies, and producing materials that substitute for others with higher emissions.

Log Yard

Forest Regeneration

5.7 Geologic Resources

Every Maine landscape, from the rocky coast to the heights of Mount Katahdin, is the product of a complex geologic history that spans hundreds of millions of years. Cycles of weathering, erosion and deposition concomitant with episodes of mountain building, volcanic activity and glacial sculpting have left behind an intriguing and distinctive landscape comprised of bedrock formations and surficial deposits that are an important part of the state's natural resource base.

Maine's landscape generally reflects the shape of the underlying bedrock. Bedrock usually lies within 20 feet of the land surface and provides the skeletal framework of hills and valleys, while the more recent glacial activity substantially modified this landscape. The nature of the underlying bedrock continues to exert the primary control on the morphology of the landscape, but the history of glaciation exerts an important secondary control on the landscape, most notably the formation of most of the lake basins in the state.

Most areas within the jurisdiction fall into one of four physiographic regions: Mountain Uplands, Downeast Mountains, Central Uplands and the Northern region. The Mountain Uplands region stretches from the state's western border to Mount Katahdin; the Downeast Mountain region lies just inland from the coast and is distinguished by prominent, rounded granite peaks; the Central Uplands region is bounded on the south by the Downeast Mountains and to the north by the Mountain Uplands region and is distinguished by rolling terrain with relatively little elevation change; the Northern region lies in the northwest corner of the state and is marked by hills and some low mountains. Elevations throughout the jurisdiction are generally greater than 500 feet except along the coast and in the major river valleys.

5.7.A CHARACTERISTICS

Bedrock Resources

Taken as a whole, Maine's bedrock is comprised of a vast array of rock types, some common and some rare, each with variations in mineral content, color, texture and structure. Geologists classify rocks and assign them names based on certain basic characteristics, but the degree of natural variation is almost limitless. All three major rock groups — sedimentary, igneous and metamorphic — are represented in Maine. Sedimentary rocks are those that formed from deposition of sedimentary material and are characterized by the nature of that material such as sand (sandstone) or silt (siltstone). Igneous rocks form through the cooling of molten magma. Metamorphic rocks form from one of the other two types when subjected to such intense heat and pressure that new minerals form through recrystallization. The intensity of metamorphism in Maine increases dramatically from north to south and from east to west. Most of the jurisdiction is underlain with weakly metamorphosed or low-grade metamorphic rocks (sandstone and shale). Western Maine is the exception where metamorphic grades are higher, producing gneisses and schists.

Bedrock in Maine has been through several periods of intense deformation and mountain building over several hundred million years. These events defined the general northeast-southwest “grain” of the rock units that is apparent on even very generalized geologic maps. The mountain-building events were

punctuated by igneous activity. Igneous rocks are located in two broad belts. One extends from the Sebago Lake region north to Rangeley, then northeast to Houlton. The other belt runs from an area southeast of Penobscot Bay to Eastport. Both metamorphic and igneous rocks are generally resistant to chemical weathering.

Major tectonic activity in Maine ceased more than 200 million years ago. The state is distant from sites of tectonic activity, which are distinguished by volcanoes, earthquakes, and other geologic events. Maine experiences a few small earthquakes every year, but most are too small to be felt or damage property. While there are many old faults in Maine, geologists have not found any correlation between the frequency of modern earthquakes and the locations of old faults. Similarly, Maine has many areas underlain with volcanic rocks formed eons ago, but none of these represent a threat of renewed volcanic activity. Several episodes of intense widespread deformation and erosion are partially responsible for the fractures and joints in bedrock which store groundwater, sometimes in significant quantities.

Bedrock sometimes provides a valuable record of the early development of life through fossils — the remains, trace or imprint of a plant or animal that has been preserved in the earth's crust. Most of Maine's fossil sites are in the northern part of the state and are associated with rocks that have not been greatly affected by metamorphism.

Unusual geological features were inventoried as part of the Commission's Wildland Lakes Assessment in 1987. The inventory contains information on physical features that are: (1) a type locality or rare occurrence; (2) critical to the interpretation and understanding of the geology of a region; or (3) an outstanding example of a particular feature. Bedrock features surveyed include significant outcrops, cliffs, caves and waterfalls. While this inventory is impressive, it is not comprehensive — it only identifies features located within 250 feet of a lake and features that dominate the view from a lake.

Surficial Resources

For nearly 400 million years, the dominant geological process on Maine's landscape has been erosion. Nature's most potent agent of erosion — glacial ice — exerted major influence on the shape of Maine's landscape through several episodes of advance and retreat over the last two million years. Between 25,000 and 10,000 years ago, the Laurentide ice sheet advanced into and retreated from the region. The topography of the jurisdiction today is a direct result of this glacial activity. The glaciers scraped the soil off of the landscape, scoured the underlying bedrock, transported rock debris for miles, and deposited quantities of sand, gravel and other unconsolidated sediments as they receded, creating new landforms and subtly altering the landscape.

Drumlins are elongated hills formed from glacial till. These hills parallel each other and are oriented in the direction of ice flow. Eskers are sand and gravel deposits that lay parallel to the line of movement of ice. They form narrow, winding ridges across the landscape. Some of Maine's esker systems are among the longest in the country — up to 100 miles long. Glaciation also created thousands of lakes and ponds as water collected in kettleholes left by blocks of ice and behind dams of glacial debris.

Flowing glacial meltwater deposited sorted sands and gravels in the form of eskers, other ice-contact deposits and glacial marine deltas, many of which form aquifers that store large quantities of groundwater. Elsewhere, the receding glacier deposited till, an unsorted mixture of sand, silt, clay and rocks. As the ice sheets melted, sea level rose, flooding major river valleys and lowlands as far inland as Bingham and

Millinocket. The sea subsequently receded to its present location, but its inundation of these areas resulted in widespread deposition of marine silt and clay. Where sediment-laden glacial meltwaters gave way into the elevated sea, large sand and gravel deltas formed that now sit well above sea level.

Unusual geological features inventoried as part of the Commission's Wildlands Lake Assessment included surficial geologic features such as sand beaches, reverse deltas, moraines, kettleholes, boulder trains and exceptional lake depth. Additionally, the Maine Geological Survey ("MGS") has mapped high-yield sand and gravel aquifers in portions of the jurisdiction. The only areas not yet mapped are north and west of Moosehead Lake, including northern portions of Piscataquis and Somerset Counties and northwest portions of Aroostook County. The MGS sand and gravel aquifer maps depict known deposits of coarse-grained material that, in all probability, can supply useful quantities of groundwater. The maps are best used to locate sites favorable for activities that require large volumes of groundwater, such as public water supplies or irrigation. The maps are also useful to identify areas poorly suited for activities that have the potential to degrade groundwater, including storage or disposal of hazardous and other waste. Additionally, the Sand and Gravel Aquifer maps can be used to update the Commission's Aquifer Protection (P-AR) Subdistrict.

Gravel Pit

Soil Resources

Soil is the product of thousands of years of physical and chemical weathering of bedrock and surficial deposits such as glacial till, outwash, and marine and lake sediments. Soil formation is influenced by climate, particularly temperature and precipitation, living organisms, type of parent material, topography and time.

Soils in Maine have developed primarily on glacial, marine and alluvial deposits overlying bedrock. Much of the parent material is till, an unsorted mixture of clay, sand and broken rock which is usually similar in composition to the underlying bedrock. Soils in Maine are predominantly shallow, stony, sandy to silty glacial tills which are acidic. Soil types in the jurisdiction vary widely, ranging from excessively drained gravels to very poorly drained swamps and bogs. The majority of soils are classified as spodosols or inceptisols, in which iron, aluminum and organic materials have been leached from the upper layers of soil. Many soil types found in the jurisdiction are inappropriate for most forms of development because of wetness, slope or shallowness to bedrock.

The Natural Resources Conservation Service ("NRCS") maps soils at two different intensity levels in areas within the jurisdiction. In forested areas, NRCS generally conducts order 3 (low intensity) soil surveys where the smallest delineations are approximately 20 acres in size and usually consist of two or three primary soil types grouped together on similar landforms. These soil groups, or soil map units, also include smaller areas of other soils. In more developed regions and open fields, order 2 (medium intensity) soil surveys are used. These surveys identify soils in map units as small as three to six acres in size, but these too contain areas of other soils. NRCS soil surveys are intended for broad planning and general informational uses only. They are not intended to take the place of on-site investigations.

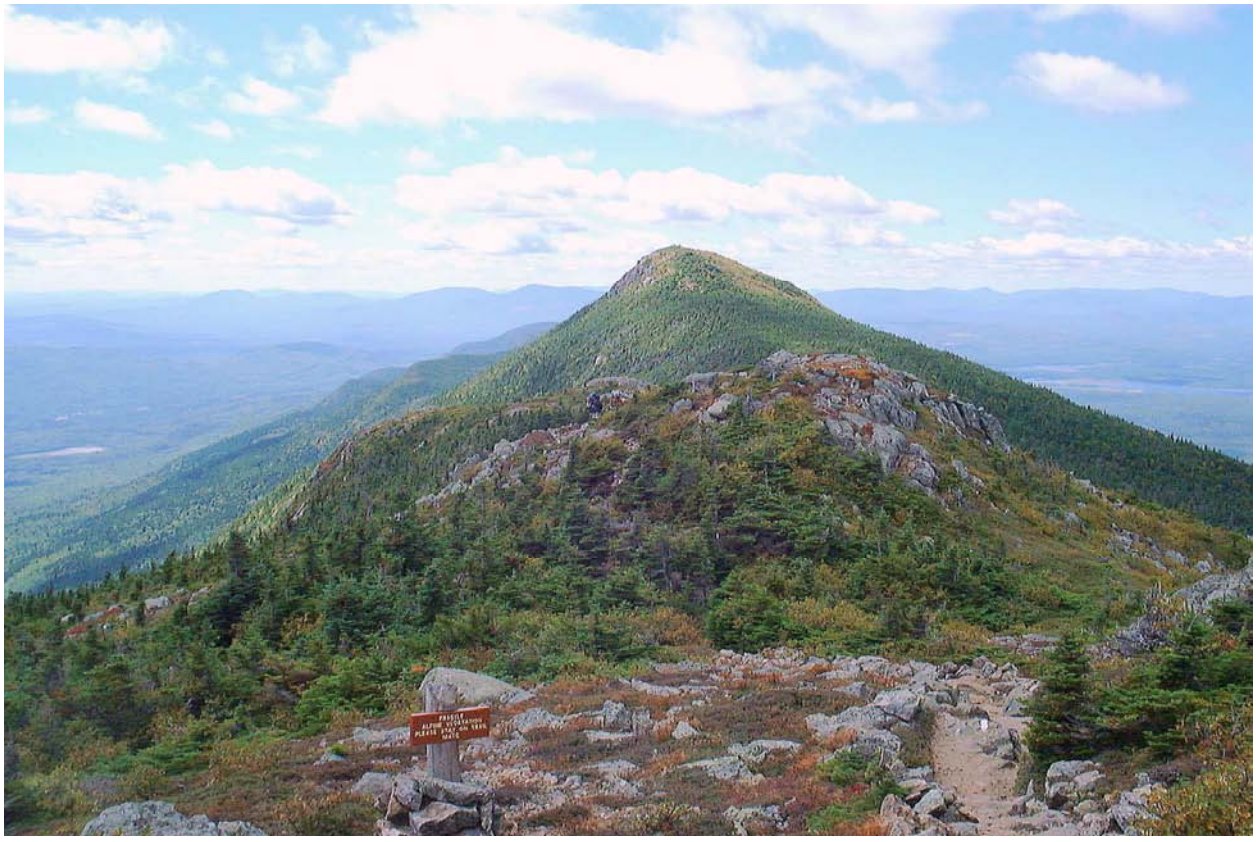
Over 80% of the state has been mapped by NRCS; however, most of the area that has not been mapped falls within the jurisdiction. Mapping has been completed in most of Somerset County, all of Franklin and Oxford Counties, northern Hancock County and western Washington County. The maps are digitized and are available on the web. Mapping in western Aroostook County and in northern Piscataquis and northern Somerset Counties will be completed by 2010.

Mountain Resources

The Appalachian Mountains, the spine of the eastern seaboard, extend from Alabama to Newfoundland. They stretch northeast across Maine and include the state's highest peak, Mount Katahdin (5,267 feet). Many of Maine's mountains are composed of granite, particularly those in the Downeast Mountain and Mountain Upland regions. Others are composed of volcanic rock, such as Mount Kineo, or metamorphic rock, such as Bigelow Mountain.

Mountaintops are fragile environments with harsh, subalpine climates characterized by lower temperatures, higher wind velocities, higher humidity and more precipitation than areas at lower elevations. The growing season is shorter, soils are often fragile, shallow, acidic and infertile, and slopes are steep, resulting in greater vulnerability to erosion. The diversity of vegetation decreases as elevation increases, a reflection of the harshness of the environment.

Mountain areas are important sources of high-quality surface water and groundwater. Mountains receive more precipitation than lower elevations. This water filters through soil and fractured rock and ultimately adds to stream flows, springs, and groundwater supplies at lower elevations within the watershed.



Bigelow Mountain view of Avery Peak

5.7.B USES OF GEOLOGIC RESOURCES

Bedrock and Mineral Resources

Some bedrock formations have specific economic values. Development and utilization of Maine's mineral resources have contributed to the state's economy for more than 150 years. Historically, the state is best known for its granite quarries, but limestone and metallic ores have also been mined, as have feldspar, mica, shale, mineral specimens and gemstones. The Katahdin Iron Works, located in the jurisdiction near Brownville, is the site of Maine's only 19th century iron works operation. Iron was extracted from iron sulphide ore at the Iron Works from 1844 until 1890. The deposit that hosts Katahdin Iron Works is one of the largest deposits of massive sulfide minerals in the world.

A past national effort to identify more of the country's mineral resources, with the goal of making the U.S. less dependent on foreign sources generated interest in the state's mineral resources. During that time, concentrated exploration sought a number of metals in the jurisdiction, including copper, lead, zinc, nickel, cobalt, tin, tungsten, silver, gold and bismuth. In 1978, a large deposit of copper, gold and zinc was discovered near Bald Mountain in Aroostook County. Perhaps half a dozen deposits and smaller prospects were identified in the jurisdiction through this explorative effort. Interest in mining Bald Mountain and other sites has fluctuated, reflecting the changing economics of mining as metal prices rise and fall. Several permits have been issued by the Commission for various levels of metallic mineral exploration. Most activity has focused on the Bald Mountain site in T12 R8 WELS in Aroostook County and the Alder Pond site in Lower Enchanted Township in Somerset County.

Economically valuable deposits of certain semi-precious stones are also present in the jurisdiction. Tourmaline and (less commonly) beryl and topaz are sometimes found in pegmatite, a coarse-grained cousin to granite that contains much larger minerals than typical granite. Most gemstone mining, generally on a small scale, occurs in the Western Mountains. In 1972, a series of tourmaline pockets were found at a mine in Newry, which abuts the jurisdiction in the Western Mountains. Interest in gemstone mining has been rejuvenated by recent activities and discoveries at Mount Mica and Newry.

Fractured bedrock is an important repository of potable water. Most of the jurisdiction is not serviced by public water supplies, so the availability of potable water on-site is an important land use consideration. Groundwater is discussed in greater detail in Section 5.11.

Soils and Surficial Resources

Soil, the primary medium supporting plant growth, is critical to biological life. Timber production continues to be the principal use of soil resources in the jurisdiction, with a small amount of land remaining in agricultural use. Another relatively minor use of the jurisdiction’s soil resources is as a base for building sites.

Soils and subsoils, along with the unconsolidated material they overlay, also play an important role in the disposal of wastes. They absorb and purify domestic wastes in septic systems and, on a larger scale, they dictate what areas are appropriate for disposal of municipal or special waste in landfills. Because of their distance from population centers, sites with suitable soils within the jurisdiction have been potential candidates for waste disposal facilities.

Surficial deposits are economically valuable for sand and gravel extraction. Recent studies suggest that the distance materials are being transported to job sites is increasing, but there are limits on how far aggregates can be transported economically. As existing supplies in production are exhausted, demand for materials in southern Maine and neighboring states may increase demand for material from more remote regions of Maine, including the jurisdiction.

Many surficial deposits have important natural values as well. For example, sand dunes and eskers are unusual landforms that are limited in number, and some areas support distinctive plant communities.

Mountain Resources

Timber production is the most common economic use of mountain areas. Between 1996 and 2008, the Commission issued 28 forestry operations permits ("FOPs") for harvesting in Mountain Area Protection (P-MA) Subdistricts, affecting thousands of acres of forestland. Intensive recreational development, ranging from ski areas and four-season resorts to vacation homes, is also located in some mountainous areas. Wind power development is the newest use of mountain resources. Some wind power projects have been permitted, with more proposals expected to arise, some of which may be located in high mountain areas. Metallic mineral mining is another possible use of mountain areas.

Primitive and some forms of motorized recreation are common activities in mountainous areas. Hiking, cross-country skiing, hunting, snowmobiling, snowshoeing and other forms of recreation in these areas are generally compatible with the natural and cultural values associated with mountains.

5.7.C LURC REGULATORY APPROACH

Bedrock and Mineral Resources

In 1991, the Commission and the Department of Environmental Protection ("DEP") jointly adopted comprehensive rules regulating metallic mineral mining activities in the state (Chapter 13 of the Commission's rules). These rules provide for a permitting process that consolidates a number of previously separate permits required by DEP and the Commission. Concurrently, the Commission adopted rule changes regarding zoning issues associated with mining. Consequently, mineral exploration is allowed in most subdistricts, but major exploration and mining are only allowed in Planned Development (D-PD) Subdistricts. The Commission's procedures establish a two-stage permitting process for metallic mineral mining operations. First, a developer must petition to rezone the area proposed for mining and related facilities to the D-PD Subdistrict. If the Commission deems the area appropriate for this type of use and rezones it, the site review process follows, focusing on design, engineering and environmental protection. Chapter 12 of the Commission's rules provides more specific guidance regarding how the Commission evaluates proposals to rezone areas to the D-PD Subdistrict for purposes of metallic mineral mining.

The Commission's approach to mining is aimed at providing an appropriate mix of flexibility and control, as reflected in Chapters 12 and 13 of the Commission's rules. In recognition of the site-specific nature of mining, large-scale mining facilities are allowed in Planned Development (D-PD) Subdistricts, which are not required to be adjacent to existing developed areas. The rezoning phase focuses on the socio-economic and environmental effects associated with metallic mining facilities. The site review process is designed to ensure a high-quality operation that is protective of existing uses and natural resources, and establishes specific data gathering requirements and standards regarding facility design, operation and closure.

Soils and Surficial Resources

The Commission has established a Soils and Geology Protection (P-SG) Subdistrict to protect areas that have precipitous slopes (slopes greater than 60%) or unstable characteristics from uses or development that could cause accelerated erosion, water sedimentation, mass movement or structural damage. The Commission has also adopted standards for timber harvesting in sensitive areas, roads and water crossings, residential driveways and filling and grading, to establish sound land use practices designed to minimize erosion and prevent sediment from entering surface waters.

Under the Commission's rules, small gravel operations (less than 5 acres in size) and pits used solely for road purposes can occur in General Management (M-GN) Subdistricts. Larger commercial operations generally must occur in areas zoned for commercial and industrial development. The Commission also has specific standards governing mineral exploration and extraction activities.

Mountain Resources

To protect the fragile environment associated with high mountain areas, the Commission has placed lands at elevations above 2,700 feet in the Mountain Area Protection (P-MA) Subdistrict. The P-MA Subdistrict includes provisions to include areas below 2,700 feet in this zone, where site conditions warrant, and to exclude areas above 2,700 feet where it is demonstrated that other designations will not jeopardize the resources of these areas.

The P-MA Subdistrict regulates certain land use activities in high mountain areas to preserve the natural equilibrium of vegetation, geology, slope, soil and climate. This protection subdistrict reduces the risks to public health and safety created by misuse of unstable mountain areas, protects water quality, and preserves mountain areas for their scenic qualities and remoteness, wildlife habitat, recreational opportunities and other uses. Approximately one hundred mountains in the jurisdiction meet the general criteria for P-MA zoning.

The D-PD Subdistrict can be proposed to replace the P-MA Subdistrict in cases where the proposed use depends on a particular natural feature or resource which is available at the site. The D-PD Subdistrict has been used to site ski areas and related development and utility-scale wind power development in high mountain areas.

Special Natural Areas

The Commission designates certain natural areas displaying natural, recreational, historic, scenic, scientific or aesthetic values as Unusual Area Protection (P-UA) Subdistricts. Some of the distinctive geologic and hydrologic features of the state are zoned P-UA, such as Mother Walk Falls, Screw Auger Falls and Table Rock in Grafton Notch State Park, and Gulf Hagas (a narrow, slate-walled canyon three miles long with numerous waterfalls).

Gulf Hagas

5.7.D GEOLOGIC RESOURCE ISSUES

Bedrock and Mineral Resources

Modern metallic mineral mining has not been practiced in Maine on a large scale, so it is difficult to predict the economic and environmental implications of this land use. A large mining facility can bring significant economic benefits to the state, expanding its economic base and creating employment opportunities. Such benefits are particularly valuable in rural areas which lack such a base. But this activity has the potential to cause serious environmental problems, and the Commission will evaluate proposals for metallic mining operations with particular care.

Contamination of surface water and groundwater is the greatest potential environmental risk associated with mining and encompasses several aspects of the mining process. First, water used in processing may become contaminated and must be properly treated before it is discharged to the receiving water body. Second, water and air interacting with the mine pit surface and waste material in some types of deposits can generate sulfuric acid, which leaches heavy metals from rocks and soil with which it comes into contact. Measures must be taken to prevent contamination of groundwater by tailings impoundments, and water must be prevented from coming into contact with exposed metal-bearing rock and waste material. These measures must be permanent to ensure long-term protection of water resources.

Surficial Resources

Gravel extraction operations, if performed improperly, have the potential to adversely affect their surroundings. Historically, most gravel pits in the jurisdiction have been at small scales and low densities. If demand for gravel increases, the Commission may see more proposals for large-scale extraction operations.

The Commission will continue to differentiate between small pits needed to accommodate localized demand and larger pits used to service a larger, more regional demand. Because of their proportionately greater impact, large extraction facilities will receive greater scrutiny on issues of location, need and impact on existing uses and resources.

The Commission will periodically review its standards for gravel pits to ensure that existing uses and resources are adequately protected. It will also seek to review its permitting process to promote consistency with rules administered by DEP and to ensure these facilities receive an appropriate level of review in a timely manner. The Commission will maintain a policy of prohibiting excavation below the water table in most cases and requiring reclamation of excavated areas.

As information about the location of sand and gravel aquifers improves and more Aquifer Protection (P-AR) Subdistricts are designated, the Commission must address the potentially competing demands for water supply and gravel extraction. Identification and protection of other values associated with surficial deposits will also continue.

Soil Resources

Soil mapping in the jurisdiction is incomplete, and the Commission is frequently without the benefit of readily available, detailed information on soils when it reviews applications. The Commission needs comprehensive soils information to ensure that development is not located on inappropriate soils and that proper stormwater and erosion control measures are implemented. Detailed soils information will not likely become available for the entire jurisdiction, however, and the information available is often appropriate only for very general use. Therefore, the Commission will continue to assess when it needs better soils information and will require applicants to provide site-specific soil surveys when necessary.

Topsoil removal, a land use activity that permanently reduces land's productive capacity, warrants careful evaluation when extraction operations require Commission review. In addition to permanently affecting the land, topsoil removal results in the exposure of mineral soils, which can result in erosion during or following operations if the site's soils are not promptly stabilized. As topsoil is lost, the land's productive capacity declines and it becomes less able to support vegetation. The land's ability to absorb and infiltrate water is also greatly reduced, resulting in decreased groundwater recharge and accelerated soil erosion by surface runoff.

One of the greatest threats to soil resources, however, is erosion. Erosion is the detachment of soil particles and loss of soil from an area by the action of water, ice, gravity or wind. Natural erosion is that which occurs under the natural environmental conditions of climate and vegetation, undisturbed by man. Natural erosion has been occurring at a slow rate since the earth was formed, accounting for the leveling of mountains over geologic time and the associated development of landscape features such as plains, valleys and deltas from transported sediment. It has been the dominant process of geological change on the Maine landscape for the past 400 million years. The normal process of erosion can be accelerated by disturbance of the natural environment through clearing, earthmoving, excavating and other land use activities that expose soil or alter normal drainage patterns. These activities can increase erosion to rates that significantly exceed natural rates and adversely affect natural resources.
Erosion is a major threat to the productivity of the jurisdiction's water resources and land base. Eroded sediment that enters water bodies adversely affects the aquatic environment by causing eutrophication, which decreases dissolved oxygen levels and disrupts organisms in those water bodies.

The greatest potential causes of erosion and associated sedimentation in the jurisdiction are poorly sited, constructed or maintained land management roads and development. The Commission's standards for roads and water crossings have helped to minimize erosion problems associated with land management roads. The Commission will continue to pursue ways of promoting effective erosion control measures for land development, including measures designed to minimize short-term erosion and sedimentation associated with the construction phase and permanent measures designed to prevent long-term increases in erosion. The Commission will continue to base its considerations and decision-making on the most current information available, and will always give preference to nonstructural measures to minimize erosion, such as limiting clearing, retaining vegetative buffer strips and careful siting.

Mountain Resources

Mountains and the scenic, natural, recreational, economic and other values they possess are a limited resource in Maine. Mountain areas are increasingly popular sites for recreational facilities, vacation homes and wind power generation. Mountain development carries a significant risk of erosion due to steep slopes

and the high erosion potential of many mountain soils. It also threatens to diminish the resources associated with mountain areas, including scenic qualities and vegetative communities. Consequently, proposed uses of mountain areas must be carefully evaluated to ensure that important resources associated with these areas will be protected. The Commission recognizes that there is disagreement about the significance of high mountain values. It will continue to consider all perspectives when evaluating specific proposals.

Ski areas, popular for recreation and as destination resorts, are frequently located at least in part in Mountain Area Protection (P-MA) Subdistricts. While the proposal of new ski areas is unlikely, the Commission will probably continue to receive proposals to expand existing areas. Such proposals must be evaluated carefully to ensure that high mountain resources are not degraded.

Some of the jurisdiction's mountain areas have excellent wind energy resources. However, wind turbines and associated infrastructure have the potential to compromise the resources the P-MA Subdistrict is designed to protect. A number of wind power developments have been proposed in mountainous areas in the jurisdiction, raising the question of whether all mountain areas should be available for this and comparable uses. Some wind power developments have been approved by the Commission and some have been denied following extensive debate over the impacts. In 2008, the Legislature created a new process for wind power development in expedited permitting areas, which include about one-third of the jurisdiction. The rezoning process in the remaining two-thirds of the jurisdiction has not changed. Given the finite number of high mountain areas and the value of their scenic, recreational and natural resources, it is unlikely that the Commission will consider all mountain areas in the jurisdiction suitable for wind power development or comparable uses. Further discussion of issues regarding wind energy resources can be found in Section 5.5.

The Horns

5.8 Plant and Animal Habitat Resources

The jurisdiction is a vast expanse of forestland surrounded by more settled agricultural, rural and, in some cases, urban lands. It is host to spruce-fir forests, alpine habitats, extensive bog systems and thousands of water bodies with excellent water quality. Ecologically, it is more similar to eastern Canada, the Adirondacks and northern Vermont and New Hampshire than it is to southern Maine. Its plant and animal diversity is somewhat lower than southern Maine where many species reach the northern limit of their range. Nevertheless, species diversity and abundance in the jurisdiction are a valuable regional resource. While Maine is best known for its deer, black bear, moose, bobcat and other mammals, many other animals and plants occupy the landscape and are important parts of the web of life.

"Habitat" includes all of the places where plants and animals live, and everything plants and animals need to survive and reproduce. Over the past few decades, many scientists have started to move away from the historical focus on specific rare or game species and move towards the idea of protecting biological diversity or "biodiversity." Biodiversity is defined as the variety of all forms of life at its various levels of organization — species and their constituent populations and genetic diversity; communities and ecosystems; and the processes by which all of these interact. Individual plant and animal species remain important, but a broad view is needed to effectively maintain the biological diversity that is so important to the health of all living things.

People use and enjoy lands in the jurisdiction, and this use can affect the integrity of natural communities and the associated habitat values. It is important to monitor the impact of land use on sensitive habitats to ensure these uses do not compromise the goal of maintaining existing plant and animal species and the habitats they occupy, and thus Maine's biodiversity. The body of knowledge about plant and animal habitat continues to grow and will be invaluable to future management of the biological landscape. So far, existing information does not indicate that Maine or the jurisdiction is in a crisis in terms of loss of species. Nevertheless, appropriate planning and management will help to avoid unnecessary degradation of habitat and other changes that have made extirpations[20] common in many other states. The Commission will continue to work to preserve the ecological and natural values reflected in the jurisdiction's habitat resources.

5.8.A COMMUNITIES AND HABITATS

The living things of the jurisdiction — plants (including mosses, fungi and lichens) and animals (vertebrates and invertebrates) — are an important component of the jurisdiction's character and value. The jurisdiction is distinguished by an assemblage of plant and animal communities and habitat, including:

- Some of the largest undeveloped habitat in the state and region. Many mammal and bird species are dependent on these large undeveloped blocks of interior forest for breeding habitat, such as deer wintering areas which are critical to the survival of white tailed deer. The jurisdiction is also a population source for many neo-tropical migrants and other northern forest breeding birds that winter in the southern U.S.
- Boreal spruce-fir forests that harbor species such as spruce grouse, black-backed woodpecker, and boreal chickadee, and draw birders from across the country.
- Numerous large peatland systems, including bog and fen complexes, which provide habitat for rare plants such as Lapland buttercup and rare invertebrates such as Clayton's copper butterfly.
- Significant alpine areas supporting rare or uncommon species such as Diapensia (a plant) that are specially adapted to survive in the ecological challenges of the alpine environment.
- Regional endemic[21] terrestrial and aquatic species found principally in the jurisdiction and nowhere else in the world, including Furbish's lousewort and the Tomah mayfly.
- The sand cherry – tufted hairgrass river beach natural community (associated with Furbish's lousewort), found exclusively in northwestern Maine and principally in the jurisdiction.
- The relative absence of invasive[22] plant species, common elsewhere in Maine, which often degrade habitat quality for native plants and animals.

[20] Complete extinction by destruction of a species' means of reproduction.
[21] Native species restricted to a particular locality or region.
[22] Invasive plants are non-native plants with very high reproductive potential and the ability to establish new populations across long distances. Invasive plants can compete with native plants in natural areas and disrupt natural communities.

- Many game species, including populations of bear, moose, ruffed grouse, and white-tailed deer, particularly large, trophy-class bucks that are highly valued by hunters. Deer hunting is particularly important, culturally and economically, to northern parts of the state.
- A majority of the pine marten range in Maine, and robust populations of other furbearers including beaver, otter, coyote, bobcat and fisher.
- The only extensive, intact populations of wild, self-reproducing brook trout in lakes and ponds in the 17-state Appalachian region. Of Maine's 305 heritage ponds (ponds supporting wild, self-sustaining populations of native brook trout), 256 are located in the jurisdiction.
- Over twice as many intact subwatersheds of documented brook trout populations as all other states in the Appalachian region combined (with many streams still unsurveyed but presumed to have healthy populations).
- Populations of federally endangered wild Atlantic salmon in 11 Maine rivers.
- Populations of native Arctic char, a fish found within the U.S. only in a small number of ponds in Maine and Alaska.
- Populations of native lake trout and lake whitefish, important fish resources found primarily in the jurisdiction.
- A small number of naturally "fishless" ponds, which are distinctive ecosystems that support unusual macro-invertebrate and non-fish vertebrate populations. Located primarily in western and Downeast regions, these ponds are fishless for reasons including topography (through waterfalls or high gradient stream sections), highly acidic water and/or extensive anaerobic conditions.
- High species richness in damselflies, dragonflies, mayflies, stoneflies, caddisflies and freshwater mussels (one of the most threatened animal groups worldwide), all of which require high-quality aquatic habitat.
- The only breeding Canada lynx population, listed as a federally threatened species, in the Northeast.
- Two hundred eighty-one bald eagle nest sites, of 521 identified statewide.
- Nesting habitat for roseate terns, listed as a state endangered species, on several coastal islands.
- Approximately 600,000 acres of wetland and adjacent riparian and upland areas identified by the Maine Department of Inland Fisheries and Wildlife ("DIFW") as high-quality habitat for inland waterfowl and wading birds.

Importance of Habitat

Maintaining a variety of plants and animals protects biodiversity and has particular relevance to the Commission's statutory obligation to preserve ecological and natural values. The value of biodiversity lies in variety — the basic property of nature that sustains healthy ecosystems upon which humans depend for survival. Protection of this variety ultimately preserves genetic diversity and adaptability. Because Maine

lies in the transition zone between temperate and boreal environments, it has many peripheral species.[23] These species can be important reservoirs of genetic diversity.

Keeping healthy natural systems functioning reduces the need for costly and challenging efforts to save individual species or re-create lost natural communities and habitat. Protection of plant and animal habitat also has many specific economic benefits ranging from avoided costs (e.g., costs of flood damage or water filtration) to the dollar value of nature- and wildlife-based recreation in Maine to carbon sequestration. A 2006 study found that hunting, inland fishing, and wildlife-associated recreation generate more than $1.5 billion annually in direct and indirect economic activity statewide. This economic impact reaches deep into the state, particularly in rural Maine. The economic value of nature-based recreation is further discussed in Section 5.9. Secondary benefits of habitat conservation, such as the potential for carbon sequestration, are just beginning to be analyzed.

High-Value Plant and Animal Habitats

High-value plant and animal habitats include rare plant locations, rare or exemplary natural communities, essential habitat, significant wildlife habitat, and rare animal locations. Mapping and research of these plants and animals provides information that is important to maintaining viable populations. Plants and animals are identified and mapped by the Maine Natural Areas Program ("MNAP") and DIFW, respectively.

Rare plants and animals have long been studied and protected, both to preserve them for their ecological value and to learn how to avoid further loss of species. Maine has lost a number of native species (at least 14), most of which were habitat specialists, due to overexploitation and/or changes to their habitats caused by humans.

High-Value Plant Habitat

MNAP maintains a list of several hundred plants that are considered rare, threatened or endangered in Maine. Degrees of rarity are categorized as shown in Table 7. Thirty percent of rare plant species in Maine occupy forests, with the remainder occupying specialized, non-forested habitats that are uncommon, such as certain rare, non-forested wetlands, rivershore environments and alpine areas. Fifteen percent of rare plant species in Maine are found only in northern Maine.

Cypripedium Reginae or Showy Lady's Slipper,
a rare plant in Maine

[23] Peripheral species are species at the edge of their geographic range.

Table 7 – Rare and Threatened Species Rankings

Rare Plant Ranking	Explanation
S1	Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
S2	Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
S3	Rare in Maine (on the order of 20-100 occurrences).
S4	Apparently secure in Maine.
S5	Demonstrably secure in Maine.

FURBISH'S LOUSEWORT

Furbish's lousewort is a perennial wildflower endemic to the St. John River. A 140-mile stretch of riverbank hosts the only recorded locations of Furbish's lousewort in the world. Ninety-five percent of the plants occur upriver of Fort Kent, principally in the jurisdiction. The plants are vulnerable to permanent alteration of riverbank habitat, particularly by clearing trees on the top and slope of the riverbank. Logging and farming are generally acceptable provided enough tall trees are left to shade and stabilize the river bank. Most lousewort locations are protected voluntarily by landowners through initiatives such as the St. John River Resource Protection Plan, which was proposed by landowners and approved by the Commission. The resource plan, designed to safeguard the natural values and traditional uses of the St. John River, prohibits commercial and residential development, subdivisions, dams and utility projects. It allows management for non-intensive recreational use and timber harvesting in accordance with prescribed standards that include protection of this rare plant resource.

High-Value Animal Habitat

The jurisdiction is home to a number of wildlife species of conservation concern.[24] Loss of habitat is not the major factor limiting recovery of some of these species, but it is important to monitor and manage these populations appropriately. Of the 48 animal species listed as endangered or threatened by the state, over 20 occur in or are identified as having a portion of their range in the jurisdiction. Most are coastal, aquatic or wetland species, but include several forest and alpine species as well. Several additional species in the jurisdiction are listed as endangered or threatened by the federal government, including Atlantic salmon and Canada lynx.

[24] While Maine and the jurisdiction are home to a number of rare species, Maine is distinguished by the relative health of its wildlife. For example, over half of the owl, salamander, frog and toad species that breed in Maine are identified as threatened, endangered or species of special concern in other northeastern states. This fact speaks volumes about the quality of Maine's habitat resource relative to other parts of the Northeast.

In 2005, DIFW comprehensively examined the abundance and distribution of Maine's fauna, including birds, herpetofauna (reptiles and amphibians), invertebrates, inland fish, mammals (non-marine) and marine wildlife. It identified species that have moderate to high potential for state extirpation without management intervention and/or protection. These are known as Species of Greatest Conservation Need ("SGCN"). Of 213 SGCN in the state, 157 (74%) occur in the jurisdiction. SGCN are distributed by taxon (Table 8). Statewide, freshwater habitats accounted for 39% of the primary habitats identified for SGCN species and upland habitats for 37%.

Table 8 – Species of Greatest Conservation Need Occurring in LURC Jurisdiction

Wildlife Taxon	**Priority 1** High potential for state extirpation without management intervention and/or protection	**Priority 2** Moderate to high potential for state extirpation without management intervention and/or protection	**Threatened or Endangered** State or Federal
Birds	7	77	18
Non-Marine Mammals	1	4	6
Reptiles	3	2	1
Amphibians	0	1	0
Fish	7	7	1
Invertebrates (Non-Arthropods)	3	8	3
Invertebrates (Arthropods)	4	34	6

DIFW and MNAP have been working cooperatively to develop information about areas that have the highest concentrations of rare flora and fauna and high-quality habitats. This information is intended to guide future collaborative efforts by local, state and federal governments, tribes, conservation partners, landowners and other entities in their planning, management and conservation efforts. DIFW and MNAP are in the process of developing this information for northern areas of the state.

Natural Communities

A natural community is a group of interacting plants and animals and their common environment, recurring across the landscape, in which the effects of human intervention are minimal. Maine is home to 104 different natural community types and 24 ecosystem types, which are broader aggregations of natural communities. Approximately three-fourths of these natural communities occur in northern and eastern Maine and include habitat ranging from alpine summits to coastal bogs, and upland forests to floodplain forests.

MNAP assigns rankings to natural communities based on their relative rarity, geographic distribution and threats from competing uses. Rarity ranks range from S1 (the rarest) to S5 (the most common). MNAP recognizes two classes of natural communities as important for conservation: "Rare" community types (ranked S1, S2 or S3) and "exemplary" communities (i.e., an outstanding example of a more common type; ranked S4 or S5). Examples of rare natural communities in northern Maine include circumneutral riverside

seeps and jack pine forests. Examples of more common natural community types that might be termed "exemplary" include beech-birch-maple forests and sheep laurel dwarf shrub bogs. Because most upland common natural communities have been influenced by land use practices, it is unusual to find large exemplary areas that are relatively undisturbed by humans.

Prior to 1995, there were no systematic inventories of rare plants and natural communities in Maine. Over the past 14 years, MNAP has undertaken eco-regional surveys for threatened and endangered species, plants and natural communities to assess their status and condition. Many northern Maine landowners have coordinated with MNAP to conduct surveys on their lands. These surveys have produced an abundance of new information. One result of these surveys is that some species and communities are not as rare as believed. Since 1995, 30 plants have been downlisted (i.e., removed from the state's threatened and endangered list) as a result of the inventories.

Currently there are 122 records of the rarest botanical features (those ranked S1) in the jurisdiction, representing 49 different plant species and two different natural communities (Table 9).

Table 9 – MNAP Natural Community Rankings

State Rank	Number of Records within the Jurisdiction	Number of Plant Species	Number of Natural Communities/Ecosystems
S1	122	49	2
S2	376	53	13
S3	449	26	24
S4	357	NA	34
S5	18	NA	5

Moose

Many landowners have taken voluntary steps to protect rare plants and natural communities. Such efforts have been encouraged by forest certification and large-scale conservation easements. The two dominant forest certification systems, Sustainable Forestry Initiative (SFI) and Forest Stewardship Council (FSC), require consideration of biodiversity in forest management and planning. Conservation is discussed further in Chapter 4.

Maine has an Ecological Reserve System under which some state-owned lands are set aside to protect and monitor the state's natural ecosystems. The statutory purposes of these reserves are to:

- Maintain natural communities in a natural condition to conserve biodiversity;
- Provide benchmarks for long-range monitoring and research; and
- Protect habitat for species whose habitat needs might not otherwise be met.

About 84,000 acres in 19 public land units are part of this ecological reserve system, and all but two are located in the jurisdiction. Most of the reserves are oriented around lakes, wetlands or mountain areas. By protecting these reserves, Maine is protecting reservoirs of biological diversity at multiple scales. Additional forest areas have been reserved through private conservation and landowner initiatives. Nevertheless, as noted in the 1996 publication, Biological Diversity in Maine, natural forest diversity is not adequately represented in lands currently in public and private conservation ownership.

Riparian Areas and Aquatic Habitat

Riparian areas — the transitional area between aquatic and upland areas — include the banks and shores of streams, rivers, ponds, lakes and wetlands, and adjacent uplands. They provide important habitat as evidenced by the diversity and number of animals known to use these areas in their daily and seasonal movements. Riparian areas and associated wetland systems are utilized by over 90% of the northeastern region's vertebrate species and provide preferred habitat for over 40% of these species. Riparian areas benefit the full suite of species ranging from aquatic species to riparian specialists to upland forest species.

Riparian areas form valuable linkages between other habitat types and are a critical habitat component for certain species. For example, large areas of dense conifers adjacent to rivers and streams are used by white-tailed deer for shelter in winter. Without the protection afforded by these areas during harsh northern winters, deer populations decline. In areas where intensive forest management is practiced, forested riparian areas often serve as refuges for late successional species that prefer the structural complexity of mature forests.

In addition to providing important plant and animal habitat, well-managed, ecologically functioning riparian areas help to maintain high-quality aquatic habitat through streambank stabilization, sediment reduction, chemical and nutrient removal, in-stream complexity and shade production with its associated thermal moderation.

The quality of aquatic habitat in the lakes and rivers of the jurisdiction is generally quite high, especially as compared to other parts of the Northeast. The health of Maine's brook trout population attests to the relative health of aquatic habitat in the jurisdiction. While brook trout have been eliminated from approximately 90% of their historic habitat in the Eastern U.S., waters in Maine, and particularly in the jurisdiction, remain their last stronghold. However, even in the jurisdiction trout are being threatened in waterways such as the main stem of the St. John River and the Upper Moose River drainage by invasive

fish species (e.g., smallmouth bass and muskellunge). Southern Maine has experienced greater reductions in brook trout populations due to urbanization and associated increases in water temperature and sedimentation, the spread of invasive fish species, and fish passage issues caused by poorly installed culverts and road crossing structures. A 2006 report by the Eastern Brook Trout Joint Venture cited excellent water quality, the high percentage of forest cover, and the lack of dams and development on streams as factors contributing to the present distribution and abundance of Maine's brook trout populations in lakes and streams. Most of these brook trout populations are located in the jurisdiction. Water quality in the jurisdiction is discussed further in Section 5.11.

The jurisdiction's waters also include warm-water ponds, vernal pools, peatlands and other wetlands, which provide habitat for a wide range of fish, waterfowl, wading birds, amphibians, aquatic invertebrates and other species. Vernal pools provide particularly valuable habitat for amphibian and invertebrate breeding and reptile and mammal foraging. Significant vernal pools have not yet been comprehensively mapped in the jurisdiction or in the state. DIFW has mapped inland waterfowl and wading bird habitat throughout the jurisdiction that highlight marshes and swamps particularly valuable for many species of ducks and declining species such as bitterns, rails and rusty blackbirds. Approximately 600,000 acres of inland waterfowl and wading bird habitat, comprised principally of wetland and adjacent riparian and upland areas, have been identified in the jurisdiction.

Large Forest Blocks

Scientists are increasingly aware of the value of managing forests in large blocks as part of habitat conservation efforts. Large forest blocks provide habitat for interior species and large-home-range vertebrates. They also provide an umbrella of protection for commonly occurring species for which specific protection plans might not otherwise be a priority. Protection of large forest blocks also ensures preservation of the full complement of species from invertebrates and fungi to birds, herbivores and wide-ranging predators. Large forest blocks are important to area-sensitive species, such as certain forest birds, large mammals and some turtles, and include a wider diversity of species than smaller blocks. However, even large habitat blocks have less value if they lack connections or corridors linking them to other habitat patches that allow genetic flow from one patch to another.

Some scientists have developed landscape-level habitat management strategies using the American pine marten as an indicator species. Martens are considered the most area-sensitive, forest-specialized mammals inhabiting northern Maine because they require large blocks dominated by relatively mature forest. Research indicates that planning for marten habitat would benefit more than 75% of forest-dependent generalist and specialist vertebrates in northern Maine. Maintenance of large forest blocks of habitat for marten can be a useful tool in achieving broad scale biodiversity objectives in northern forests.

Early and Late Successional Habitat

Early successional habitats are those stages of vegetation that naturally follow a forest stand destroyed or removed by timber harvesting, fire, insects or wind. These habitats provide a range of foods and cover that are valuable to numerous species, such as American woodcock, snowshoe hare, and Canada lynx. Until passage of the Forest Practices Act in 1989, clearcutting produced most of the early successional habitat in Maine. Now that partial cutting (i.e., selection and shelterwood harvesting) is more prevalent, there is concern that species associated with early successional habitat may be negatively affected, though arguably their populations are returning to levels more similar to those of Maine's pre-settlement forests.

Late successional forests are those nearing a later stage of forest development following a relatively long period without a major stand-replacing disturbance (by humans or natural causes). For the jurisdiction, any mature forest stand with canopy trees over 120 years old may be acquiring late-successional characteristics. Many of these older forests are rapidly disappearing. While it is unknown whether any species are dependent on late-successional or old growth forests, many species are likely to be at risk if late successional forests vanish, particularly some of the less conspicuous components comprising the state's biodiversity such as some mosses, lichens, fungi and insects. The 5,000-acre old-growth forest at Big Reed Pond is a good example of a late successional forest. While it supports no rare natural community types, it is considered exemplary because of its size, condition, variety of communities and lack of past human disturbance. The Big Reed Pond area, which is in conservation ownership, is thus valuable as a living laboratory for research and as a reservoir for certain elements of biological diversity. More generally, high-quality natural examples of common forest types — particularly late successional types — are notably uncommon in northern Maine and are worthy of conservation. The creation of ecological reserves on public and private lands is one example of efforts to retain or encourage development of late successional habitats in and near the jurisdiction.

5.8.B LURC REGULATORY APPROACH

As described above, the landscape of the jurisdiction supports a wide array of plant and animal habitat. Some habitat has been deemed under sufficient threat to warrant protection through zoning, while other habitat is protected through other tools, such as land use standards.

For many areas, there is no specific protection beyond that afforded by the management subdistrict. This approach reflects the belief that certain types of habitat are generally compatible with and reasonably protected from the impacts of land use activities allowed in the management subdistrict, including forest management.

Information about the nature, quality, quantity and appropriate management of habitat in the jurisdiction continues to improve and will require ongoing evaluation and response as appropriate. Some types of valuable habitat have simply not yet been mapped.

Protection Zoning

The Commission employs numerous protection subdistricts as part of its effort to provide protection for certain types of habitat. In some cases, a subdistrict's primary purpose is to protect sensitive habitats. In others, habitat protection is one of several objectives.

The Fish and Wildlife Protection (P-FW) Subdistrict provides direct protection for habitat. It is currently used to protect deer wintering areas and seabird nesting islands from uses that could adversely affect those habitats. As of 2006, approximately 175,000 acres of deer wintering areas and the critical seabird nesting portions of 26 coastal islands were zoned P-FW. The P-FW Subdistrict can also be applied to significant fish spawning, nursery and feeding areas, critical habitat of endangered and threatened fish and wildlife species, and habitat of other fish and wildlife species needing special protection.

Several subdistricts provide some habitat protection, although that is not necessarily the primarily purpose of the subdistrict. For example, the Mountain Area Protection (P-MA) Subdistrict protects areas above 2,700 feet in elevation. Some of these areas contain rare or distinctive alpine habitat. A number of subdistricts, such as the Unusual Area Protection (P-UA) Subdistrict and the Resource Plan Protection (P-

RP) Subdistrict, have been applied to areas that provide valuable habitat. For example, The Hermitage (an exemplary old-growth white pine stand) is zoned P-UA and areas of St. John River shoreland (where the rare Furbish's lousewort grows) are zoned P-RP.

Many other subdistricts provide direct or indirect protection to habitat. All shoreland zones provide some protection for riparian and aquatic habitat. The shoreland zones include the Accessible Lake Protection (P-AL), Flood Prone Area Protection (P-FP), Great Pond Protection (P-GP), Recreation Protection (P-RR), Special River Transition Protection (P-RT), and Shoreland Protection (P-SL) Subdistricts. The Wetland Protection (P-WL) Subdistrict, which applies to wetlands, the upland edges of certain wetlands and all areas below the normal high water mark, provides protection to areas that serve as important habitat for terrestrial and aquatic species.

Land Use Standards

Many of the Commission's land use standards contribute to the protection of both terrestrial and aquatic habitat. These standards are designed to minimize the potential adverse impacts of development and other land uses while allowing a reasonable amount of use. Standards for vegetation clearing and timber harvesting apply to shoreland areas, generally within 250 feet of lakes, rivers and wetlands and within 75 feet of ponds, streams and smaller wetlands. These provisions, in combination with setbacks, help to limit disturbance of riparian habitat. Cluster and open space provisions help to concentrate development in smaller areas, promoting or requiring permanent protection for adjacent areas.

The Commission works closely with other agencies, particularly DIFW and MNAP, to ensure appropriate protection for plant and animal habitat. The Commission relies on these agencies for surveying and mapping important resources, providing information and reviewing development proposals for potential harm to important habitat. DIFW and MNAP review all subdivisions and large development projects. They also participate in pre-application conferences for unusually large or significant proposals to ensure that habitat needs are factored into the early planning and design of these projects.

5.8.C OTHER STATE AGENCY AND FEDERAL REGULATORY APPROACHES

Certain species and/or their habitat receive protection through other laws and agencies. Rare plants do not receive specific statutory protection, but the official list of endangered and threatened plants, maintained by MNAP, is used in scientific research, environmental assessment, permit review by other agencies — mainly the Maine Department of Environmental Protection ("DEP") and LURC —, land management and education. MNAP works cooperatively with many landowners to ensure protection of these species.

Maine's Endangered Species Act ("MESA") identifies endangered wildlife species (those in immediate danger of extermination within the state), threatened species (those that will become endangered if populations experience further decline), and species of special concern (those potentially requiring special attention to prevent them from becoming endangered or threatened). Under MESA, DIFW has the authority to identify areas of essential habitat, which provide physical or biological features essential to the conservation of endangered or threatened wildlife. Designation as essential habitat occurs only when habitat loss has been identified as a major factor limiting species recovery. Essential habitat has been mapped for only four species to date: bald eagle, roseate tern, least tern and piping plover. The mapped habitat includes numerous bald eagle nesting sites and several roseate tern nesting areas in the jurisdiction. Nursery areas for Atlantic salmon have been identified as important, but have not yet been

mapped statewide. Regardless of whether essential habitat is mapped, all of Maine's state-listed species are protected from hunting, trapping, possession, take (killing) and harassment.

DIFW administers rules which require approval of certain projects located partly or wholly within areas designated as essential habitat. DIFW approval must be obtained prior to issuance of a permit by any state or local government entity, including LURC. The rules exempt projects that address protection of essential habitat and the affected species through a Resource Protection Plan (P-RP) to which DIFW is a party. Any development activities planned within an area of mapped habitat for a state endangered or threatened species should be informed by consultations with DIFW biologists to avoid potential violations of the take or harassment provisions of MESA.

MAINE'S BALD EAGLES

The comeback of Maine's bald eagle population has been remarkable. The state's population, believed to be approximately 1,000 pairs historically, sank to less than 50 pairs in 1962. Since then, over 500 bald eagle nest sites have been identified by DIFW as essential habitat. Stewardship of this habitat by private landowners has been key to the eagles' recovery. Many activities are allowed near nesting sites, but appropriate timing of activities is critically important.

The eagle population reached over 370 pairs in 2005 and continues to grow by about 8% annually. Because of this success, bald eagles were downlisted from endangered to threatened and will likely be completely downlisted in the coming years when the goals of DIFW's species management plan are met. Maintenance of suitable habitat remains the greatest challenge to their continued success.

The federal Endangered Species Act protects identified species from "take" — loss or capture as a result of an intentional or inadvertent action.[25] A number of species in the jurisdiction have been placed on the federal list of endangered or threatened species, including the Atlantic salmon and Canada lynx. Habitat for federally listed species is called critical habitat. A recovery plan for Atlantic salmon has been developed by the U.S. Fish and Wildlife Service and is in place. A recovery plan, which includes habitat management guidelines, is being developed for Canada lynx.

In 1988, Maine's Legislature passed the Natural Resources Protection Act ("NRPA"), which included provisions for the protection of significant wildlife habitat, including identified high and moderate value deer wintering areas and travel corridors, seabird nesting islands, critical spawning and nursery areas for Atlantic salmon, significant vernal pools, high and moderate value waterfowl and wading bird habitat, and shorebird nesting, feeding and staging areas. LURC has statutory authority to issue permits under NRPA in its jurisdiction while DEP administers NRPA in organized municipalities. In the jurisdiction, deer wintering areas and seabird nesting islands were mapped by DIFW prior to passage of NRPA. DIFW completed mapping waterfowl and wading bird habitat in the jurisdiction in 2006.

DEP also administers the rules that help prevent the spread of invasive aquatic plants in the state. MNAP and the University of Maine Cooperative Extension conduct education and outreach efforts on invasive species. More discussion on invasive species can be found in Sections 5.6 and 5.11.

[25] The law also provides for some incidental take.

5.8.D COLLABORATIVE EFFORTS AND LANDOWNER INITIATIVES

In addition to the governmental regulatory efforts aimed at protecting plant and animal habitat resources described above, habitat management and protection is practiced by many private landowners and nonprofit organizations. Voluntary efforts by landowners and organizations are important in protecting the jurisdiction's plant and animal habitat resources. The fee purchase of lands containing high-value habitat resources and the execution of conservation easements containing enhanced resource protections by private and public entities, are examples of these efforts. The participation and support of landowners in programs such as the Forest Stewardship Council, Sustainable Forestry Initiative, Maine Forest Biodiversity Project and Cooperative Forestry Research Unit are also an important component in the continuing efforts to protect the jurisdiction's important habitat areas. Other efforts such as land managers' voluntary use of water quality best management practices ("BMPs"), deer wintering area management guidelines, and forest habitat management guidelines for vernal pool wildlife aid in the protection of these valuable resources. Continuing these partnerships and supporting future incentives for more landowners to participate in these efforts should be a priority for all participants. To that end, the Commission will continue to be involved in and support these initiatives as appropriate.

5.8.E PLANT AND ANIMAL HABITAT ISSUES

Landscape-Level Habitat Protection

The knowledge base for understanding Maine's plants and animals and their life requirements is expanding rapidly thanks to ongoing surveys of natural communities, habitat and individual species. While much remains to be learned, it is evident that Maine and the jurisdiction have a diversity and abundance of plant and animal communities that are locally and regionally significant.

Since all land and water provide habitat, it has always been necessary to identify habitat that is particularly sensitive or at risk. LURC utilizes the expertise of DIFW and MNAP in identifying areas of critical importance that need protection through zoning or other regulatory or non-regulatory measures. The Commission's existing program to protect habitat reflects the historic focus on individual species. Since its inception, the Commission has protected certain types of species-specific high-value habitat, principally deer wintering habitat and coastal nesting islands, through zoning.

In recent decades, attention has been focused on areas that contain concentrations of at-risk species. However, it is no longer clear whether focusing on at-risk species will effectively maintain biodiversity and the health of more common species. In response, DIFW and MNAP have been working collaboratively to develop landscape-level approaches to plant and animal conservation that benefit many species and preserve multiple types of habitats. This developing body of knowledge may be used by public and private entities in the future to optimize habitat management and protection efforts.

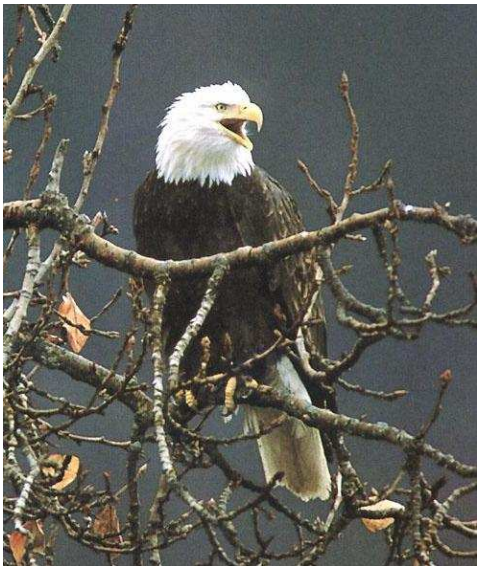
As of 2009, approximately 1.2 million acres of conservation land (both publicly and privately owned) exist in the jurisdiction. Many conservation owners manage their lands for biodiversity and plant and animal habitat protection. An additional 1.4 million acres in the jurisdiction are now under various types of conservation easements, some of which may contain general or specific biodiversity and habitat protections. Additionally, forest certification efforts have encouraged voluntary actions to protect and/or manage certain plant and animal populations. Collectively, these efforts are a valuable complement to the Commission's regulatory program. However, more information and landscape-level planning is needed to focus future conservation and habitat protection efforts.

DIFW, in collaboration with MNAP, is working to develop appropriate landscape-level planning recommendations for northern and eastern areas of the state, modeled on the "Beginning with Habitat program. DIFW's recommendations will provide an important planning tool to inform public and private efforts to protect areas of important habitat. The Commission will continue to encourage proactive, collaborative efforts to maintain plant and animal resources in the jurisdiction. As noted in DIFW's Comprehensive Wildlife Conservation Strategy, Maine has a long history of successful collaboration among federal, state and local agencies, as well as many tribes and non-governmental organizations, to manage and conserve the state's wildlife resources and habitat. This is also true for plant communities. Maintaining adequate habitat to support the full array of plants and wildlife in the state will require continued cooperation and collaboration. LURC's habitat protection programs will remain an important part of these efforts. The Commission will continue to evaluate the proper role of regulation, considering the effectiveness and longevity of other habitat protection efforts, including voluntary public and private habitat management, land conservation and other efforts.

BEGINNING WITH HABITAT

The adequacy of habitat protection has been widely discussed in southern Maine over the past decade. Triggered by concern over habitat loss and the cumulative impacts of development, MNAP and DIFW spearheaded development of a process for identifying landscape-scale areas meriting special attention and providing complete resource data to municipalities for planning purposes. Utilizing digital information, the Beginning with Habitat program has developed a process for overlaying the locations of rare plants, animals and natural communities, high-quality common communities, and significant wildlife habitat to determine where these resources intersect with riparian areas and large blocks of undeveloped habitat. Areas that have a diverse convergence of high-value plant and animal resources are highlighted, reviewed by ecologists and termed "Focus Areas of Statewide Ecological Significance."

In southern Maine, municipalities are encouraged to use a variety of tools, including resource protection zoning, land use standards and land acquisition, to protect identified areas. They are also encouraged to maintain large blocks of undeveloped forest and grassland habitat by concentrating development and protecting rural areas from suburbanization.



Bald Eagle

Land Use and Habitat

Forest Management

All uses of land alter habitat. Forest management, the dominant use of the jurisdiction, is generally compatible with maintaining habitat for many species when conducted according to best management practices. While timber harvesting has the potential to dramatically alter habitat, sometimes with long-term effects, forest management in the jurisdiction has historically been more compatible with plant and animal conservation than most other intensive land uses. Forest management and timber harvesting add to the mosaic of habitat types represented in the jurisdiction. For example, the early successional forest that follows a clearcut supports a different species mix than that found in a mature forest. The clearcuts of the 1970s and 1980s created habitat favorable for snowshoe hare and Canada lynx — a species that is rare elsewhere in the northeast region. At the same time, timber harvesting can adversely affect late successional forest habitat, which is rapidly disappearing. The challenge of habitat protection lies in finding creative ways to ensure that a continuum of habitat types exist across the managed forest, sufficient to sustain the diverse array of species currently inhabiting Maine.

Timber harvesting can be detrimental to some specialized habitat. For example, rare or declining species of plants or animals with very specific habitat requirements can be negatively impacted by certain timber harvesting practices. Timber harvesting can also degrade riparian and aquatic habitat if not conducted in accordance with best management practices. Soil disturbance resulting in erosion to water bodies can alter the basic physical, chemical or biological characteristics of aquatic habitat. Significant canopy removal in these areas can alter water temperatures and increase light penetration. These changes are particularly harmful to the less adaptable species, such as coldwater fish. The Maine Forest Service, DIFW and Maine Department of Marine Resources are in the process of producing a manual entitled, "Protecting and Enhancing Cold Water Fisheries," for foresters and loggers, which may help encourage good management practices for this habitat.

While the effects of large-scale landscape alterations are readily identified, the cumulative effects of small-scale alterations are often less evident, but equally important. For example, a 2006 report by the Eastern Brook Trout Joint Venture cites sedimentation and stream channel fragmentation associated with culvert installation on land management roads north and east of Bangor as problematic for brook trout populations. While the report notes that these problems are less severe than in southern Maine and elsewhere in the Eastern U.S., given the regional rarity of Maine's brook trout resource, it underscores the importance of aggressive education and enforcement of road construction standards.

Landowners have generally been good stewards of rare plant and animal habitat. For example, many landowners have assisted in voluntary surveys for rare plants and natural communities on their land and taken steps to protect important plant communities. However, valued habitat that is more broadly distributed across the landscape has been more challenging to protect in a way that meets both ecological and human needs. The Commission will continue to monitor research that explores the relationship between forest management and habitat. It will maintain and adjust, as necessary, riparian and other standards that are protective of the jurisdiction's high-quality aquatic and terrestrial habitats.

Development

Residential development generally has more lasting consequences on habitat. Construction of new dwellings and other development is less widespread than forest management in the jurisdiction, but it tends to result in permanent rather than short-term changes to habitat. Habitat in the developed area is

significantly altered, and adjacent habitat is often affected by changes in moisture, light, noise, introduced species and amount of human activity. Roads leading to development fragment the habitat they pass through, with effects that vary depending on the width and traffic volume of the roads. (Fragmentation of habitat associated with roads is discussed in greater detail, below.)

The jurisdiction can accommodate a reasonable amount of development. Nevertheless, the Commission will strengthen existing policies designed to direct development to appropriate areas and away from sensitive resources such as important habitat. While low-impact, low density development may be compatible with some habitats, the continuation of unplanned dispersed development threatens to undermine many of the jurisdiction's principal values over time, including the ecological and natural values associated with maintaining the existing diversity of plant and animal species. The Commission will monitor development densities throughout the jurisdiction, along with research on the relationship between development density and habitat impacts. It will continue to pursue protection of plant and animal habitat by promoting a working forest landscape, directing most development to appropriate areas, and encouraging public and private measures designed to achieve an interconnected network of habitat types and conditions.

Sometimes, the Commission must deal with conflicts between land use and habitat on a small scale. For example, development is sometimes proposed in habitat that is zoned for protection, such as a coastal island. In a few cases, large portions of coastal islands are zoned as seabird nesting habitat. A relatively small development on an island can significantly disrupt an entire nesting colony of seabirds. In evaluating these situations, the Commission will continue to give careful consideration to the value of the resource, including rarity and sensitivity to disturbance, and the options available to landowners. The Commission will also strongly encourage cooperative agreements that are acceptable to the landowner and the pertinent resource agency.

Updating LURC's Habitat Protection

In accordance with NRPA, the Commission must review and update its habitat protection provisions in conjunction with DEP. For example, DIFW has now mapped more significant wildlife habitat in the jurisdiction — specifically, tidal and inland waterfowl and wading bird habitat totaling approximately 600,000 acres. This habitat tends to overlay wetlands that are presently included in the Commission's Wetland Protection (P-WL) Subdistricts. The Commission must determine whether the P-WL Subdistrict alone provides sufficient protection for this newly mapped habitat or whether additional protections are merited. The Commission must also develop a program for regulating development activities affecting significant vernal pools, which provide valuable habitat and are protected under NRPA. It will strive to develop a program that is comparable to DEP's program, while addressing any unique circumstances presented in the jurisdiction. Vernal pools are further discussed in Section 5.12.

Global climate change will have an effect on habitat and wildlife composition in the jurisdiction. While it is unknown how and to what degree, the ranges of certain species may change in response to temperature and precipitation changes, possibly causing an influx of new species and possibly eliminating others that currently inhabit the jurisdiction. Given the complexities of the issue and the interconnectedness of environmental systems, the effects are impossible to predict. However, the Commission and other state agencies must be proactive in mitigating contributions to climate change and prepared to react and adjust as necessary to any impacts that may arise due to climate change. While there is some uncertainty on the part of biologists as to specific approaches for mitigating potential negative effects of climate change, there is general agreement that one of the most promising strategies involves efforts to maintain large blocks of relatively intact natural habitat through which species can disperse and shift their ranges in response to

new climate constraints. Further discussion on climate change and possible related effects can be found in Section 5.2.

Fragmentation of Habitat

Scientists have identified fragmentation[26] of habitat as a serious concern. Roads, utility corridors, certain types of recreation trails, structures and clearings create breaks in the landscape. These breaks can act as barriers to animals and isolate populations of both plants and animals. Most research to date has been conducted on the impacts of roads on fragmentation. Roads and their associated vehicular traffic have the following general effects: mortality from road construction; mortality from collisions with vehicles; modification of animal behavior; alteration of the physical and chemical environment; spread of exotic species; and secondary impacts from increased human use. Some of these effects extend well beyond the actual footprint of the roadbed. It is also true that some road effects do not result in immediate changes to wildlife populations, but rather occur over several wildlife generations.

In general, roads fragment habitat blocks and create more "edge" habitat, thereby favoring edge-dwelling species. Humans have created ample habitat for edge species, while habitat for interior-dwelling species is generally less commonly available. Road mortality of common large mammals such as deer and moose is not a major ecological concern on lower speed forest management roads, but it is a concern for small, slow-moving migratory animals, such as amphibians and turtles. Also, some sensitive species may avoid roads, which can lead to population isolation and reductions in habitat size.

Fragmentation of habitat in the jurisdiction is not yet as significant an issue as it is in southern Maine. Nevertheless, the jurisdiction does have over 25,000 miles of land management roads, several major transmission lines, and development (structures and clearings) in riparian areas. Roads in the jurisdiction range from wide, permanent high-traffic state routes to narrow, grassy woods trails. The Commission is limited in its authority to regulate the location of land management roads, and it recognizes the importance of roads to forest management. However, the Commission also recognizes the importance of habitat that is relatively unfragmented by permanent human features.

As part of its interest in minimizing fragmentation, the Commission will look carefully at the conversion of land management roads from forestry to development purposes and will discourage such conversions when they are likely to adversely affect areas of high-value habitat. It will also monitor research on the relationship between roads and fragmentation of plant and animal populations. It will promote road-building practices that facilitate wildlife movement and minimize fragmentation. The Commission will continue to encourage the retirement of land management roads in certain areas when such retirement provides valuable habitat restoration opportunities.

Fragmentation of stream habitat results from poorly designed and installed road crossings, with impacts on passage of fish and other organisms. Fragmentation of fringing aquatic beds on lakeshores can result from private dock construction and "cleaning" of shorelines in front of residences. Scientists are just beginning to understand the implications of the associated loss of woody shoreline debris and emergent aquatic plant stands on aquatic invertebrate populations. The Commission will monitor research in these areas and utilize new information in its regulatory framework as appropriate. In 2008, the Maine Department of Transportation produced a manual entitled, "Waterway and Wildlife Crossing Policy and Design Guide for Aquatic Organism, Wildlife Habitat, and Hydrologic Connectivity" which contains guidelines designed to

[26] The term "fragmentation" as used here refers to the division of a forest or other habitat into isolated patches, accompanied by the loss of a certain portion of the original habitat to the cause of the fragmentation (such as roads, clearings, etc).

minimize the adverse effects of waterway crossings on wildlife and other organisms. The Commission will consider how best to utilize this information to improve stream habitat quality in the jurisdiction.

Deer Wintering Areas

The Commission protects deer wintering areas through P-FW zoning when DIFW demonstrates that the area meets specific criteria regarding vegetative conditions and use by deer for shelter. Timber harvesting within the P-FW subdistrict is regulated, usually according to a plan worked out in the field by DIFW regional biologists and the landowner. The goal is to maintain an appropriate level of winter shelter for deer while allowing for periodic timber harvesting on a sustained yield basis over the long term.

The Commission has comprehensively reviewed and discussed its deer wintering area program twice in response to specific concerns and changes affecting the program. No other aspect of the Commission's programs has elicited such singular attention over the years — a measure of the value of the resource to all parties. After both reviews, the Commission concluded that the fundamental structure and function of the program were appropriate, but took measures to improve it following both reviews. The Commission expressed its thinking about the deer wintering area program in a policy document originally published in its 1997 Comprehensive Land Use Plan. This document is reproduced as Appendix E of this Plan, and remains an active expression of the Commission's thinking about its deer wintering area program. It provides guidance and perspective on the following issues: the scope of the program; whether the program is a burden for landowners; problems created by the budworm outbreak; administrative burdens associated with managing deer wintering areas; deer wintering area zoning criteria and the rezoning process; deer wintering area cutting prescription criteria; future study needs; and the permanence of P-FW Subdistricts.

Despite the Commission's efforts, the deer wintering area program continues to challenge landowners and DIFW. As part of the last program review, DIFW and a number of landowners worked cooperatively to develop innovative long-range management plans for deer wintering areas. DIFW and landowners invested considerable resources in developing and implementing these plans as cooperative agreements outside of the regulatory framework. Since then, many timberlands have changed hands and DIFW is working with many new landowners to renegotiate these agreements.

Most recently, DIFW has expressed two related concerns: (1) deer management goals and objectives are not being met in northern and Downeast regions, and (2) there is little formal protection for significant deer wintering areas in some of these areas. DIFW has had difficulty meeting the documentation requirements of the P-FW Subdistrict due to limited resources, landowner notification issues and other factors, and so has been unable to increase the amount of zoned deer wintering area. In 2007, the Legislature created a Northern and Eastern Deer Task Force to develop recommendations in response to these and other issues. Among other things, the task force concluded that cooperative efforts between DIFW and landowners are the preferred option for addressing deer management concerns in northern and eastern Maine. It created a working group to develop deer wintering area management guidelines. These guidelines will be provided to all forest landowners along with information about current and historical deer use. Implementation will be voluntary, but landowners will be strongly encouraged to manage active deer wintering areas. The task force must report annually to the Legislature on its progress toward meeting deer management goals in northern and eastern regions and on the success of the approach described above. LURC zoning will remain the baseline tool for conserving deer wintering areas on ownerships that do not participate in cooperative initiatives. The Commission understands the cultural and economic importance of the deer population to the state and will closely monitor the progress of this new initiative.

The task force also made some other noteworthy recommendations, including that DIFW work to integrate the separate population and habitat management goals for deer, moose, bear, marten and Canada lynx into a unified set of habitat goals for northern and eastern Maine. This work will facilitate future habitat planning and management for public and private entities. The Commission welcomes this integrated management approach and will carefully monitor its effectiveness at protecting deer and a broad array of other species.

Big Sag Brook, Stetsontown Township

5.9 Recreational Resources

One of the defining values of the jurisdiction is its diverse and abundant recreational opportunities.[27] The jurisdiction presents an unusual collection of opportunities for diverse recreational activities ranging from multi-day boating trips to extensive snowmobiling and all-terrain vehicle ("ATV") trails to hunting, fishing and hiking. The jurisdiction's exceptional recreational resources are unparalleled in the Eastern United States and provide the setting for many outstanding recreational experiences which are fundamentally shaped by the area's natural resources, relative absence of development, distance from population centers and working forest landscape with its history of public access.

As exceptional as the jurisdiction's natural resources are, it is the jurisdiction's distance from population centers, sense of remoteness and relative lack of development that sets it apart. There is something special about hunting, snowmobiling, fishing, hiking or camping surrounded by over 10 million acres of largely undeveloped forestland. For many users, these remote, undeveloped qualities not only enhance, but essentially define, their recreational experience, distinguishing it from excursions in more populous areas. As recreational lands elsewhere are increasingly developed, opportunities for backcountry experiences will become scarcer, and the remote values of the jurisdiction will become even more highly prized.

Recreation in the jurisdiction is important to the economic well-being of the communities within and near the jurisdiction as well as to the state as a whole. Recreation plays an important role in the economy for a number of towns which have traditionally served as gateways to the jurisdiction (Rangeley, Greenville, Millinocket, Jackman, Ashland and Allagash). These communities rely on the recreational opportunities afforded by the jurisdiction's distinctive qualities.

5.9.A THE RECREATION LANDSCAPE

The Natural Landscape

Most recreational pursuits in the jurisdiction rely heavily on the area's exceptional natural resource values. These values serve both as the basis for recreational activities and as the setting which enhances the quality of the recreational experiences. Depending on the activity, recreationists enjoy the jurisdiction's lakes, ponds, rivers, streams and other water resources; fish and wildlife resources; botanical resources; ecological values; scenic and cultural resources; coastal islands; and mountain areas. Some of the distinctive recreational resources in the jurisdiction include:

- More than 2,600 lakes and ponds, ranging from tiny kettle holes to Moosehead Lake, totaling over 622,000 acres of surface area.
- Roughly 100 mountain peaks over 3,000 feet high, including the Bigelow Range and Saddleback Mountain.

[27] This plan generally uses the term "recreation" rather than "tourism" to categorize uses and facilities related to the many outdoor pursuits enjoyed by residents of and visitors to the jurisdiction. Recreation is the term used in the Commission's statute, in previous comprehensive plans and in the Commission's rules. Many outdoor sports enthusiasts do not consider themselves tourists, and the term tourism encompasses many activities and facilities that do not occur within the jurisdiction.

- Over 21,000 miles of rivers and streams, from mountain rivulets to the St. John River. The jurisdiction possesses the highest concentration of undeveloped rivers in the East, and includes the Allagash, the nation's first state-administered wild and scenic river. Renowned canoe routes follow this and other rivers.

- Abundant and diverse wildlife and fishery resources that include moose, deer and bear, wild landlocked salmon and trout, and populations of rare species such as the Canada lynx and golden eagles.

- Five significant whitewater river segments with dependable summer flows. These include several heavily used whitewater rafting areas.

- Over 300 miles of coastline, including 780 coastal islands.

- 268 miles of the Appalachian Trail, a nationally known and utilized hiking trail system.

Family Paddle on Flagstaff Lake

The Human Landscape

The recreational experience in the jurisdiction is heavily influenced by the preferences of recreationists and a changing land ownership pattern of publicly and privately owned lands, including a substantial amount of land subject to conservation easements. Currently, the dominant setting for recreation in the jurisdiction is within the working forest. However, there is a spectrum of settings with a wide range of levels of human presence. This dynamic human landscape shapes recreational opportunities in the jurisdiction, as lands become either accessible or closed to recreationists.

Privately Owned Lands

Traditionally, the public has enjoyed recreational use of millions of acres of relatively undeveloped private land for free or at minimal cost. Private forestlands continue to dominate most of the jurisdiction's landscape and, in spite of changing ownership patterns, most of these lands remain open for many recreational activities. Private roads, some with checkpoints, others ungated, provide access to most of these areas.

Recreation is of secondary use for most landowners, however most landowners recognize the long tradition of respectful public use of private lands and support this use by maintaining roads or campsites or allowing snowmobile trail routes on their lands. Recreational uses that have historically occurred in the Maine Woods are generally those that are compatible with the working forest. Hunting, trapping, fishing, canoeing, gathering (berries, fiddleheads) and snowmobiling are among the recreational pursuits long associated with the Maine Woods and compatible with forest management. Horse-packing, mountain biking and ATV riding are newer uses that may be compatible when road safety issues can be addressed satisfactorily. Hut-to-hut trail systems are among the emerging uses on privately owned land that also have the potential to grow and be compatible with a working forest.

Recreational use of most private lands is managed by individual owners, and landowner policies on public access vary to some degree. North Maine Woods, Inc. ("NMW"), a non-profit organization representing a consortium of diverse landowners, oversees recreation on 3.5 million acres in the northwest portion of Maine and 175,000 acres in the KI Jo-Mary Multiple Use Forest west of Millinocket. The organization also collects information on public use trends that can be used for recreational planning. NMW works cooperatively with a number of state agencies and is under contract to collect fees and maintain campsites on some state-owned lands. The existence of this unique organization helps in maintaining valuable recreational opportunities within a vast portion of the jurisdiction.

Increasingly, privately owned lands held by non-profit conservation organizations play a part in the recreation landscape of the jurisdiction. Recreational activities like hunting, fishing, boating, camping and hiking are allowed to continue on much of this land, although restrictions occur from place to place, particularly for motor vehicle and off-road vehicle access. Within the jurisdiction, non-profit conservation organizations increased their fee holdings from approximately 57,000 acres in 1985 (largely held by the Coburn Land Trust) to approximately 307,000 acres in 2009 (largely held by The Nature Conservancy).

Many of the recreational opportunities in the jurisdiction are dependent upon a private land base and landowner permission. Without the traditional open use policy of landowners, the recreation landscape would be strikingly different.

Publicly Owned Lands

Over 672,000 acres of conservation and recreation land in Maine are owned by state or federal agencies. Approximately 592,000 acres of land in the jurisdiction are owned by state agencies, with approximately 267,000 additional acres of land in the jurisdiction being managed under conservation easements by state agencies. In the last 20 years, the state has increased its ownership in the jurisdiction by more than 50,000 acres. The Department of Conservation's Bureau of Parks and Lands owns and manages most of the state-held conservation and recreation lands in the jurisdiction. These lands are administered as public reserved lands and non-reserved public lands; state parks, historic sites and other park lands; the Allagash Wilderness Waterway and Penobscot River Corridor; and public boating facilities. The Department of Inland Fisheries and Wildlife also administers wildlife management areas, fish hatcheries and boat access

facilities throughout the state. The Baxter Park Authority manages Baxter State Park, Maine's largest park encompassing over 210,000 acres in Piscataquis County.[28]

Not included in the numbers on state ownership are the Great Ponds (all bodies of standing water ten or more acres in size), which are owned by the state with Common Law rights of public access across unimproved lands, and allow pedestrian access and use by the public. There are 1,345 such lakes in the Commission's jurisdiction, totaling roughly 617,000 acres in surface area.

Most federal recreation lands in Maine are administered by the National Park Service, U.S. Fish and Wildlife Service and National Forest Service. The federal government administers approximately 79,827 acres within the jurisdiction, including a portion of the White Mountain National Forest in Oxford County, the Umbagog National Wildlife Refuge in Oxford County, and portions of the Moosehorn National Wildlife Refuge in Washington County. In the last 20 years, the federal government has increased its ownership in the jurisdiction by approximately 28,400 acres. While these lands are managed for a variety of public purposes, forestry, recreation and wildlife habitat preservation are the most significant. The White Mountain National Forest is managed pursuant to a detailed management plan, which has been approved by the Commission and is implemented through a Resource Plan Protection (P-RP) Subdistrict. Maine's portion of the Appalachian National Scenic Trail stretches from Mount Success on the New Hampshire border to Mount Katahdin in Baxter State Park. Of the 281 miles of the Appalachian Trail in Maine, almost all are located in the jurisdiction. The National Park Service now owns 34,592 acres, which protect 180 miles of the trail. Approximately 95 miles pass through state-owned lands.

Nordic Skier

[28] By opinion of the Attorney General, the original trust lands of Baxter State Park are not subject to the Commission's regulatory authority.

About North Maine Woods, Inc.

North Maine Woods, Inc. ("NMW"), is a nonprofit organization representing a diverse group of land owners — big and small, corporations, individuals, families and Maine's natural resource agencies — who have joined to create uniform recreation and visitor use policies for the northwestern corner of Maine encompassing over 3.5 million acres and 155 townships. The area's diversified ownership pattern is the primary reason for the NMW organization. Recreational users of the area are guided by one set of uniform regulations and fees. As a result, users do not have to obtain several permits or pay different user fees to many separate land owners.

The NMW concept evolved from a landowner committee organized in the mid-1960s to resolve differences over road use and maintenance between logging contractors. Log drives were ending and the major access road systems were expanding. As a result of the improved access, there was a significant increase in recreational traffic as more people took to the woods to hunt, fish and camp. Individual landowners began to establish their own control gates to manage these new pressures. During the 1970s, travel within the interior of the area was restricted by as many as 26 unmanned locked gates.

Over the past 30 years, land owners have become comfortable with having recreationists in the managed area and most interior gates were removed. Today, travel is possible throughout the entire area with only a few restrictions. This was accomplished through agreements made between adjacent landowners and between landowners and government agencies. In the early 1970s, NMW began as an association and assumed the operation of several checkpoints on the perimeter of the area. In 1975, the association changed to a partnership. NMW became a non-profit corporation under Maine law in 1981.

The North Maine Woods area has experienced several expansions. In 1985, the size of the managed area increased by 300,000 acres along the southwest border with the addition of lands surrounding Baker Lake and Wadleigh Pond. In 1999, approximately 700,000 acres of the Ragmuff-Seboomook forest were added to the southern boundary to include property from Chesuncook Lake west to the Quebec border. These expansions have resulted in many gates being eliminated to allow recreationists the ability to travel from Greenville, Rockwood or Millinocket all the way to Fort Kent or Ashland.

Another important change occurred in 1986 when NMW was contracted by several landowners to manage the approximately 175,000-acre KI Jo-Mary Multiple Use Forest to address rapidly increasing public demand for recreational opportunities in the Forest. The Forest, located between Millinocket, Greenville and Brownville, includes within its boundaries over 30 miles of the Appalachian Trail, the Gulf Hagas Reserve, the Hermitage, the East and West Branches of the Pleasant River, White Brook, more than 50 lakes and ponds and over 100 miles of brooks, streams and rivers.

The organization's main goal remains management of public use in concert with timber production. The day-to-day functions of the organization include maintenance of 13 checkpoints that welcome and register over 110,000 visitors annually, maintenance of over 450 campsites, emergency assistance, information and education and logging road safety.

Conservation Easements

Conservation easements have become an increasingly important feature in the recreation landscape of the jurisdiction by creating extensive areas where development rights are eliminated or limited. Conservation easements are voluntary legal agreements which transfer certain property rights, such as development rights or road closure rights, from a landowner to a qualified entity, such as a land trust, government agency or non-profit conservation organization. The landowner retains ownership and may convey it like any other property, subject to the easement's restrictions, which are permanent and apply to all future landowners. Today, more than 1.4 million acres in the jurisdiction are under some form of conservation easement protection held largely by non-profit conservation organizations and land trusts.

There are several notable landscape-scale conservation easements that provide for public recreational use of land — the Pingree Forest Partnership, the West Branch Project and the Downeast Lakes Project. In 2001 the Pingree Forest Partnership with the New England Forestry Foundation removed development rights and guaranteed public pedestrian access on 762,000 acres in northern and western Maine. In 2003, roughly 282,000 acres in the upper reaches of the West Branch of the Penobscot River and the headwaters of the St. John River were placed under a conservation easement. The easement provides permanent public access for recreational uses such as fishing, hunting, hiking, nature observation, cross-country skiing, canoeing and kayaking. In 2005, over 342,000 acres of woodlands and waterways in Washington County were conserved through a combination of fee purchases of land and conservation easement protections. Permanent public access within the protected area provides the opportunity to recreate on a wide array of lakes, ponds, rivers and streams, travel on an existing snowmobile trail system, and traverse the area on foot.

Although each conservation easement sets its own terms for public access and use of lands, easements can serve to provide the public with permanent rights of access to diverse recreational opportunities. Conservation easements are discussed further in Chapter 4.

5.9.B RECREATIONAL ACTIVITIES AND FACILITIES

Recreational Activities

Motorized recreation within the jurisdiction includes snowmobiling, motor boating and use of backcountry vehicles such as ATVs, dirt bikes, and four-wheel-drive trucks. While most users of motorized vehicles are attracted by the jurisdiction's remote qualities, they are generally tolerant of the presence of other recreational users and some forms of development.

Snowmobiling

ATV Riding

Snowmobiling is a popular wintertime activity within the jurisdiction that depends on snowy winters and the maintenance of trail systems. Extensive networks of trails, typically maintained by snowmobile clubs, pass over privately and publicly owned land. There are currently over 9,400 miles of snowmobile trails in the Maine's northern counties, and over 14,100 miles statewide.

Backcountry vehicles are used extensively within the jurisdiction, both as a means of accessing remote areas to engage in other recreational pursuits and as a form of recreation themselves. Use of ATVs is probably the most common activity in this group, although a number of private landowners restrict ATV use on private roads and trails. There are currently approximately 3,800 miles of ATV trails in Maine's northern counties, and over 5,400 miles statewide.
Sightseeing and nature viewing depend on the maintenance of scenic resources and wildlife habitat. Sightseeing and foliage viewing are most common in the more accessible parts of the jurisdiction.

Hiking, mountain climbing, mountain biking, backpacking, primitive camping, ski touring, snowshoeing, canoeing and kayaking generally depend on the availability of trails or accessibility to backcountry areas or water resources. A major aim of most of these activities is to "get away from it all" and to recreate in a remote setting. These activities are therefore very sensitive to intrusions by development and more intensive land uses. There are approximately 2,400 miles of hiking trails throughout Maine, with 34% on state-owned lands, 31% on private lands and 23% on federally-owned lands.

Hunting, fishing and trapping are recreation pursuits that have a rich tradition in the Maine Woods. These activities depend on the maintenance of high-value wildlife resources and the habitats that support them.

The abundance and diversity of wildlife in the jurisdiction makes for exceptional hunting and fishing, but users are also attracted by the opportunity to engage in these activities amidst a remote setting.

Whitewater rafting is an organized, high-volume activity that utilizes outstanding stretches of rapids, primarily on the West Branch of the Penobscot and Kennebec Rivers.

Recreational Facilities

Recreational facilities within the jurisdiction provide either direct recreational opportunities or support services such as lodging and equipment outfitting that cater to recreationists. While some facilities are located in state parks and other public lands, most are located on private lands.

The jurisdiction's recreational facilities include boat launches, campsites, campgrounds, trail systems, sporting camps, whitewater rafting bases, as well as nordic and alpine ski resorts. Most of the jurisdiction's recreational facilities are nonexclusive in that they offer opportunities to enjoy the area at a reasonable cost. Although second home or seasonal residential housing is often classified as recreational, it is exclusive compared with most other types of recreational facilities. Cumulatively, residential development may have significant impact on recreational resources within the jurisdiction. The characteristics and impacts of residential development are covered in more detail in Chapter 4.

5.9.C HISTORIC TRENDS AND FUTURE DEMAND

Recreational use patterns are complex and subject to change. Trends often vary from one geographic area to another and participation can change rapidly depending on a variety of factors such as social and economic conditions, technology changes and even changes in weather. The lack of data specific to the Commission's jurisdiction further complicates efforts to identify trends and understand future demand. There is, however, one main source for reliable information on certain types of recreational use in the jurisdiction: the visitor statistics compiled by NMW for the summer months (May through November). The NMW area does not allow ATVs, horses or bikes, so jurisdiction-specific data on these activities are unavailable. Data from the Statewide Comprehensive Outdoor Recreation Plan, which is updated every five years by the Department of Conservation's Bureau of Parks and Lands, is a reliable source for statewide recreational data.

Camping along the Penobscot River

DATA SOURCES: ADVANTAGES, AND LIMITATIONS

North Maine Woods, Inc (NMW)

Data from NMW compares the types of recreation being undertaken by visitors in certain areas of the jurisdiction during summer months (May through November). This information is collected within the jurisdiction on a yearly basis. However, it does not reflect wintertime activities such as snowmobiling and only represents approximately one-third of the jurisdiction's total area. This information is included to indicate types of summer activities within one section of the jurisdiction.

Maine Department of Economic and Community Development (DECD)

DECD surveys travelers throughout Maine in terms of number of trips and length of stays. The data are collected on a yearly basis and give an indication of the amount and duration of typical recreation trips in Maine. However, the data are for the entire state, and so do not strictly apply to the jurisdiction and do not indicate specific recreational activities performed. This information is included to indicate the general volume of recreation trips taken to and within the state in a single year.

Statewide Comprehensive Outdoor Recreation Plan (SCORP)

The Maine Department of Conservation's Bureau of Parks and Lands compiles data from several reliable sources, including from the Department of Inland Fisheries and Wildlife, state and national parks, and other clubs and non-profit organizations. The broad range of information provided (number of licenses and registrations issued per year, number of visitors per year, etc.) represents several years of data, which allows for analysis of trends. However, this information applies to the state as a whole and may not accurately reflect activities within the jurisdiction. This information can be relied on to make general statements on a statewide basis for trends in recreational activities over longer time periods.

2006 National Survey of Fishing, Hunting and Wildlife-Associated Recreation – Maine

The U.S. Fish and Wildlife Service, in conjunction with other federal agencies, compiles data on rates of fishing, hunting and wildlife watching on a state-by-state basis. This information, collected over time, records activities in Maine by both residents and non-residents of Maine and tracks economic expenditures for each activity. However, this information applies to the state as a whole and may not accurately reflect activities within the jurisdiction. This information is included to make general statements for recreational rates in Maine and for the economic benefits to Maine of those activities.

"Outdoor Recreation for the 21st Century America" report published by Venture Publishing, Inc., 2004

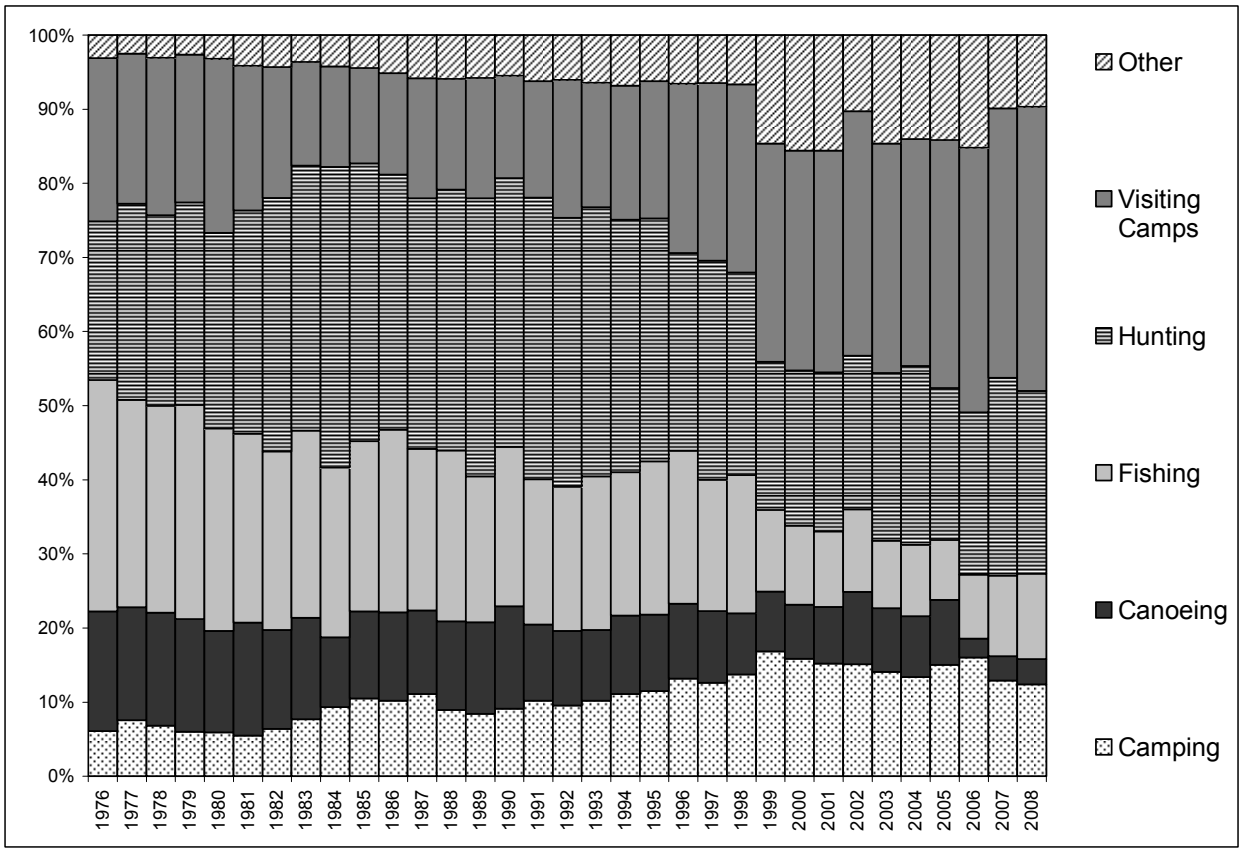
This book is a compilation of participation ranks and trends for recreation activities divided by state and region over the past 45 years. The Nationwide Survey on Recreation and the Environment ("NSRE") encompasses many years of surveys and it includes both summer and winter activities. However, the NSRE applIES to the state as a whole and may not accurately reflect activities within the jurisdiction. This information can be relied on to make general statements on a statewide basis for rates of recreational activities.

Recreational Use Levels

Northern Maine

During the past decade, data from NMW show significant numbers of summer recreationists visit the North Maine Woods region to hunt and fish; however, the most frequently cited purpose for travel has been to visit private camps located within the area (Figure 6). (It should be noted that in 1999, the NMW region increased by 700,000 acres (Ragmuff-Seboomook forest), making comparisons of recreational use data to years before 1999 impractical.)

Figure 6 – Percentage of summer visitor days by purpose in the North Maine Woods region, 1976-2008.



The most popular outdoor land or water-based recreation activities among Maine residents include walking, scenery and wildlife viewing, swimming, car touring, picnicking, sightseeing, attending sporting events, bicycling, boating, fishing, swimming and visiting cultural or historic sites. The most popular snow- and ice-based recreation activities for Maine residents are sledding, snowmobiling, snowshoeing, cross country skiing, ice fishing and outdoor ice skating.

Among visitors to Maine, sightseeing is a top activity, with Maine's villages and natural environment being the points of interest. Data on marketable pleasure trips[29] for the entire state indicate that, of the 23.2 million such trips to Maine in 2006, 79% (18.3 million) were day trips and the remaining 21% (4.9 million)

[29] A marketable pleasure trip is a day or overnight journey outside one's community and not part of normal routine. It does not include trips taken to visit friends or relatives, or for business. The term marketable trips is used because choice of destination on these trips is discretionary and therefore open to marketing influence.

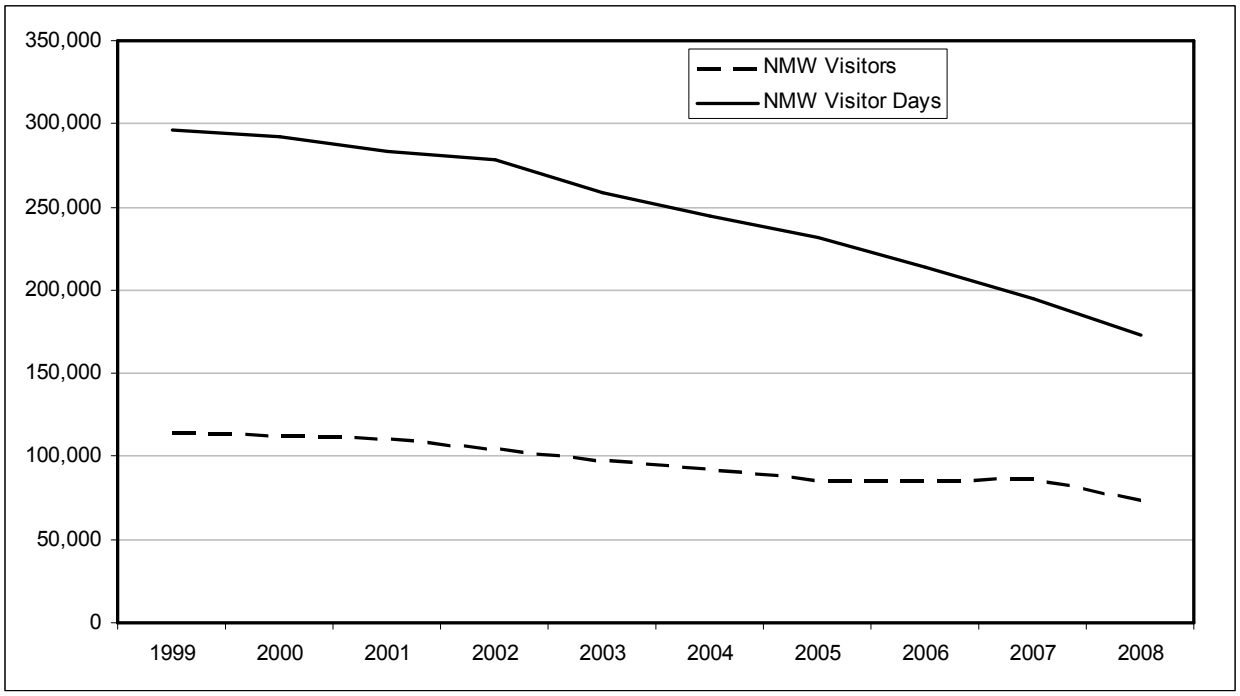
were overnight trips. Thus, many people are recreating in Maine, but are staying for relatively short periods of time. Of the 2006 marketable pleasure trips to Maine, the most important reasons for visiting Maine included touring the state (32%) and enjoying the outdoors (21%).

Trends in Recreational Uses

Northern Maine

Over the past decade, the level of recreational use in the jurisdiction appears to have changed. Within the North Maine Woods region, summer recreational use has experienced a slowly declining trend in both number of visitors and in length of stays (Figure 7). A similar trend of declining public use has also been evident in other remote recreation areas of the state, including Baxter State Park where total visitor days declined by approximately 23% between 1999 and 2008, and the Allagash Wilderness Waterway where total visitor days declined by approximately 46% from 1999 to 2008.

Figure 7 – Use trends for the North Maine Woods region, 1999-2008.



Statewide

Analyzing recreational activities across the state reveals a number of trends:

- Fishing and hunting participation is in flux. Between 1999 and 2008, the number of hunting and fishing licenses issued to Maine residents increased by approximately 4% and 10%, respectively. The number of nonresident hunting and fishing licenses issued during the same timeframe declined by approximately 18% and 7% respectively. The associated economic expenditure (food, lodging, transportation, equipment, etc.) in Maine by all people who hunted and fished was approximately $634 million for 2006.

Bird Hunting

- Motorized recreation is increasingly popular in Maine. Snowmobile registrations grew by approximately 16% between 1999 and 2008, with approximately 102,000 snowmobiles registered in 2008. ATV registrations grew by approximately 40% during that time, with more than 67,000 ATVs registered in 2008. Motorboat registrations remained at a relatively consistent level of approximately 128,000 registrations per year from 1999 to 2007, with a slight decline to approximately 124,000 registrations for 2008. For the 2003/2004 season, total expenditure in Maine for ATV use was approximately $156 million. The most recent data for the economic expenditure for snowmobiling in Maine are from the 1997/1998 season and show expenditures to be approximately $176 million. The annual economic expenditures for both snowmobiling and ATV riding have likely increased since these studies were conducted.

- Whitewater rafting is on the decline. Maine has three rivers that carry the majority of commercial whitewater rafting visitors — the Kennebec, Penobscot and Dead Rivers. Whitewater rafting use increased during the 1980s and 1990s; however, since 1999 the number of whitewater rafting passengers has seen a slow and relatively consistent decrease of approximately 4% on average per year up through 2008.

- Wildlife watching characteristics are changing. The number of people participating in wildlife watching (this includes observing, photographing and feeding wildlife) in Maine has decreased by 14% from 1996 to 2006 for those traveling away from home to participate, but has increased by 33% from 1996 to 2006 for those participating near home. In 2006, total expenditures in Maine for wildlife watching activities were approximately $866 million.

- Public use of state facilities appears steady. Declining public use has been evident in some of the more remote recreation areas of the state such as Baxter State Park and the Allagash Wilderness Waterway. However, the total public use of Maine's state parks has remained consistent at approximately 2 million visitor days per year from 1999 through 2008. The associated economic expenditure by visitors to state parks was approximately $60 million in 2005.

- There is increasing interest in nature-based tourism. In recent years, a variety of tourism market studies have documented the traveling public's increasing desire for experiences that allow them to learn first-hand the lifestyle, culture and history of rural areas. According to the Travel Industry Association of America ("TIA"), 48% of U.S. travelers are interested in visiting a place that is "remote and untouched." TIA research also shows that cultural and historical tourists, as well as tourists whose main purpose is to learn about new places, constitute a significant portion of the American travel market and that enrichment, health/revitalization/enhancement, and "soft adventure" type eco-tourism are among the tourism areas most likely to grow in the U.S. market. A more detailed discussion of nature-based tourism continues below in Section 5.9.E.

Recreationist Attributes

Maine has, and will continue to have, increasing numbers of older recreationists. As baby boomers move into middle and senior age, recreation activity participation will likely shift to those activities that reflect the age, ability, income, leisure time and interests of an older population. The aging of the population may also result in an increased need for certain recreational facilities. For instance, older recreationists may demand lodging and support facilities that offer more services and amenities. As the more affluent of this group move toward retirement age, there may be an increased interest in destination resorts and new and upgraded dwellings for primary or vacation residences. Given the growing older population and the fact that in 2000 nearly one-fifth of Maine's population was disabled in some way, recreation facilities will need to be accessible to a growing number of people with disabilities.

The majority of Northern Maine's recreationists has been, and continues to be, Maine residents. The remaining percentage comes largely from other northeastern states and Canada. Over the past decade, there has been a decline in the number of visitors to the North Maine Woods region from all regions. However, the ratio of residents to nonresidents visiting the region remains consistently near 75%. Although the majority of recreationists are Maine residents, nonresident visitors make a significant contribution to the state's tourism economy.

Fly Fishing

Future Demand

In evaluating available recreational use data, it appears that there are two main categories of recreational use — recreational experiences tied to a strong demand for amenities (including both motorized recreation and nature-based experiences) and backcountry non-motorized primitive recreational experiences associated with minimal accommodations.

The changing character of recreational use and the increased demand for some types of recreational opportunities in the jurisdiction is likely to continue in the future. Whether recreational use in the coming decade increases rapidly or slowly and whether the nature of recreating continues to fluctuate will depend on many factors, including the rate of loss of recreational opportunities in more developed parts of the Northeast and Maine, the level of focus on tourism marketing by state agencies and the private sector, as well as the economic health of Maine and the Northeast.

5.9.D LURC REGULATORY APPROACH

The Commission recognizes the value — both in terms of quality of life benefits and economic benefits — of diverse recreational opportunities, including nonintensive, intensive, motorized and nonmotorized activities. Accordingly, the Commission promotes diversified, nonintensive, nonexclusive use of recreational resources. It does so while recognizing that significant recreational opportunities exist in the jurisdiction due to the voluntary public access provided by permission of landowners.

The Commission also recognizes that, in many locations, multiple uses can coexist. However, due to the sensitivity of some types of primitive recreation to use conflicts, the Commission has long-standing policies of protecting primitive recreational activities in certain locations.

The term "recreation" encompasses a wide range of recreational activities and facilities that differ markedly in regard to the types of recreationists they attract, types of facilities and equipment they require, costs to participate, intensity of use, compatibility with other recreational and non-recreational uses, dependence on particular natural resources and features, and distance from population centers and public services infrastructure. The Commission has long recognized such differences in its policies of promoting diversified, nonintensive, nonexclusive use of recreational resources, including primitive recreational activities in certain locations. Evaluating activities and facilities according to these characteristics provides guidance to the Commission on which uses are most compatible with the jurisdiction's values and which have potential to cause adverse impacts.

The most obvious kinds of impacts are those that cause harm to surroundings and natural resources: trail and campsite damage, slope and shoreline erosion, water pollution and harm to fish and wildlife. But there are also a number of impacts that, while not causing serious environmental damage, may affect the recreational experience for other users. These include noise, traffic, smells and emissions, trash, lighting and other visual effects.

The potential impact that a particular recreational use has on the jurisdiction's natural character and remoteness values is closely tied to its location. In general, intensive recreational uses and large-scale recreational facilities are more appropriate in places where infrastructure is easily accessed and roadways directly connect such facilities to those places identified by the Commission as the most appropriate for growth. Low-impact recreational activities that do not require facilities or need only small-scale primitive facilities, on the other hand, can usually be accommodated in the interior of the jurisdiction.

PRIMITIVE AND NONINTENSIVE, WHAT DO THEY REALLY MEAN?

Recreation planning is an important part of the Comprehensive Land Use Plan, and the words that are used to describe the Commission's recreation policies should be understandable for the reader. Many of the key terms are defined in Appendix A of this Plan, and a few are repeated here. Encouraging the availability of nonexclusive recreational uses flows directly from the Commission's statutory charge, and is for the benefit of the residents of the jurisdiction, all the people of Maine and the state's many visitors.

- **Primitive Recreation:** Those types of recreational activities associated with non-motorized travel, including fishing, hiking, hunting, wildlife study and photography, wild crop harvesting, trapping, horseback riding, tent and shelter camping, canoe portaging, cross country skiing, and snowshoeing. (Section 10.02 of the Commission's Land Use Districts and Standards)
- **Intensive Recreation:** A recreational land use which involves relatively high levels of use and requires structural development or more than minimal land alteration. These uses are characterized by potentially substantial impacts on traffic, the natural environment, and the surrounding area and include such activities as whitewater rafting and downhill skiing.
- **Nonintensive Recreation:** A recreational land use which usually involves relatively low levels of use and requires minimal structural development or land alteration. These uses are characterized by minimal impacts on traffic, the natural environment, and surrounding areas and include such activities as hiking, hunting, and fishing.
- **Nonexclusive Recreation:** Those recreational uses in which a wide range of people can participate, generally at reasonable cost.

For recreational uses in most of the jurisdiction, there is no specific protection beyond that afforded by the General Management (M-GN) Subdistrict or that is applied normally to shoreland areas. The rationale behind this approach is that many nonintensive outdoor recreational activities in the jurisdiction can coexist with other land use activities such as forest management.

However, impacts on recreational resources and uses, including on primitive recreational uses, are major review considerations in the Commission's evaluation of any development proposal. In accordance with its statutory mandate, the Commission is responsible for ensuring that any impacts potentially caused by development to these resources and uses are avoided, minimized and mitigated.

Recreational facilities are generally regulated like other types of development. Low-impact facilities such as campsites are allowed in management subdistricts without a permit and in most protection subdistricts with a permit. Facilities with more substantial improvements such as sporting camps and campgrounds are permitted less universally, but are still allowed in M-GN Subdistricts and as a special exception in Great Pond Protection (P-GP) Subdistricts. Large-scale or high-impact recreational facilities have the potential to dramatically affect recreational resources and uses, and the Commission's policies and regulations direct these to be located near compatible patterns of development. Areas near population and employment centers with available infrastructure and low resource values are generally the most suitable locations for these facilities.

While primitive recreational activities are allowed in all subdistricts without a permit, the Commission has applied special protection zoning to especially significant primitive recreational resources. The Recreation Protection (P-RR) Subdistrict has been applied to areas that support or have opportunities for unusually significant primitive recreational activities in order to protect them from incompatible development and other intensive land uses. The Commission's rules recognize that the natural environment is essential to those primitive recreational activities protected by P-RR Subdistricts. To date, the Commission has placed P-RR Subdistricts on approximately 300 miles of hiking trails, including nearly the entire Appalachian Trail within Maine; major portions of the Lower Dead, the Moose, the Penobscot and Allagash Rivers, and a number of other rivers and streams because of their significance as canoe trails or for other forms of recreational boating; and 177 remote, undeveloped ponds having a cold water game fishery. The Commission protects some of the jurisdiction's other significant recreational resources through several other protection subdistricts. The Special River Transition Protection (P-RT) Subdistrict serves to protect the special resource values of Maine's outstanding river segments through certain communities. The Resource Plan Protection (P-RP) Subdistrict provides for more efficient and effective management of single or multiple protection subdistricts, and has been applied through landowner petition to major portions of the St. John and Penobscot Rivers. And the Unusual Area (P-UA) Subdistrict covers areas with a variety of significant values that may also possess important recreational resources.

There are many factors that influence the mix of recreational opportunities in the jurisdiction. For example, landowners have discretion regarding the public's use of their property for outdoor recreation by accommodating and/or prohibiting certain public use of their property. Within this dynamic environment, the Commission's responsibility is to ensure that recreational resources and uses in the jurisdiction are not degraded through its planning and zoning tools (e.g., development review and protective zoning of sensitive recreational resources). While the Commission does not actively manage lands for public recreation, it recognizes that active recreation management by landowners (e.g., by building and maintaining motorized and non-motorized trails, campsites and other recreational infrastructure) can significantly enhance public recreational opportunities and thus encourages local, state, federal and regional recreation groups and government agencies to provide support, coordination and funding for such efforts.

While the Commission's approach to protecting recreational uses and resources through zoning, land use standards and development review is generally sound, there are a number of existing and emerging issues that warrant consideration as discussed in Section 5.9.E, below. Some of these issues suggest possible changes to the Commission's zoning framework, but most can be addressed by fine-tuning of policies and standards, by education and outreach, and by working with landowners and groups representing recreation users and suppliers.

5.9.E RECREATIONAL RESOURCE ISSUES

The most obvious kinds of impacts from recreational uses and facilities are those that cause harm to surroundings and natural resources (for instance, trail and campsite damage, shoreline erosion, water pollution, and harm to fish and wildlife) and those that, while not causing serious environmental damage, may affect the recreational experiences for other users (including noise, smells and emissions, trash, lighting, and other visual effects). But there are also impacts that result in the incremental loss of natural character values and a sense of remoteness which, once lost, are difficult if not impossible to restore. These types of impacts are difficult to quantify and tend to occur slowly and cumulatively, making them a challenge to detect.

Public Use of Private Land

The overwhelming majority of land used by recreationists in the jurisdiction is in private ownership. Such recreational use of private land has historically occurred because of long-established open lands policies of many large landowners. Land ownership changes and associated changes to public use policies, therefore, have potential to impact recreation in areas of the jurisdiction. Changing land ownership patterns are discussed in greater detail in Section 5.6 and Chapter 4.

Land ownership in some areas of the jurisdiction is becoming more fragmented — there are more landowners and these owners own smaller pieces of land. At the same time, ownerships are becoming more complex and more diverse. Today, land holdings are more likely to be owned by an array of individuals, subsidiaries, corporate cousins, timber investment management organizations, real estate investment trusts, utilities, and nonprofit organizations, each with different land ownership interests and management objectives. Combined with rising land values and global changes in the forest products market, today's large landowners face increased pressure to derive profits beyond what traditional forest products can offer. Thus, current or future landowners may be looking to recreational access as a means to derive income. Although private lands have generally remained open to many recreationists at no or modest cost, there is increasing uncertainty about whether this time-honored practice of allowing the public free or low-cost access over and use of much of these lands for recreational pursuits can continue forever. The concern over public access is particularly heightened since many publicly owned recreation lands in the jurisdiction, including the Allagash Wilderness Waterway and many of Maine's public reserve lots, can only be reached by crossing private lands.

As access to and recreational use of private lands has increased, so too have landowner concerns over the real and potential costs and impacts of such use. Even responsible use of private lands entails wear and tear on roads, trails and campsites. Furthermore, abuses such as trespassing, littering, vandalism, illegal dumping and site alterations can impose substantial costs on land owners. Just the presence of recreationists creates liability worries and the possibility that an errant camp fire could spark a devastating forest fire. Such concerns have caused some landowners and their management companies to reconsider

their stance regarding public access. Some have responded by gating land while others have taken a more active role in managing recreational use. Posting of land is increasing among smaller landowners. Changes to the liability laws on public use of private land have been enacted by the Legislature, addressing some liability concerns, but others remain.

The concern over actual and potential changes to traditional public access and use policies has been an important impetus in the purchase or protection via conservation easement of high-value recreation lands in the jurisdiction. Increasingly, conservation easements provide guaranteed public access and often include terms that either tolerate or prohibit certain recreational activities and facilities on the conserved lands. The permanency of conservation easements, however, may have unintended consequences — for better or worse, such easements could permanently preclude new or emerging recreational uses or facilities on large tracts within the jurisdiction.

Private lands play an important role in meeting public recreational demand and their continued availability to the public is critical. While many of the decisions regarding public access are in the hands of landowners, state agencies, recreational organizations and other interested parties can work together cooperatively to address problems. The North Maine Woods organization is a model of such a cooperative arrangement. Hence, the Commission supports efforts that ensure continued public access across and recreational use of private lands in the jurisdiction.

Impacts of Development

While the impacts of growth and development are discussed in greater detail in Chapter 4, the encroachment of development on recreational resources is an issue that deserves highlighting here. Potential impacts of development include adverse effects on natural resources and diminishment of remote and natural character values, which enhance — and are often essential for — the recreational experience. Incremental lot-by-lot residential development can result in a gradual erosion of recreational and natural resources that goes unnoticed or is accepted as inevitable. Over a period of time, this type of development can transform the character of an area as the number of cleared areas, roads, buildings, utility lines, docks and boats increase. Development and posting of land can also cut off or reduce public access to areas traditionally used by recreationists or destroy the connectivity of existing recreational trails, both motorized and non-motorized.

Compared with most recreational facilities, second home or seasonal residential development is of particular concern because it gives relatively few people the opportunity to experience the jurisdiction's recreational resources. Owning a piece of remote Maine is a widely shared dream, but it presumes an unending supply of water frontage or scenic lands whose qualities are unaffected by others pursuing the same dream. Although residential development is appropriate in some areas of the jurisdiction, it can conflict with the Commission's goals of protecting primitive recreational opportunities in certain locations and promoting diversified, nonintensive and nonexclusive use of recreational resources.

The construction of new roads and utility lines associated with development and other land uses can also greatly impact recreational resources, especially where such construction creates new access to areas with significant resource values. New or improved travel routes can lead to unexpectedly high levels of use, or ultimately to increased pressure for residential development.

While the Commission has enacted a number of measures to protect some of the jurisdiction's highest value recreational resources (e.g., P-RR zoning), it will work to ensure that development and associated road or utility infrastructure does not erode the values of other recreational resources. In the review of

proposed developments, the Commission will consider impacts of development on existing access routes and recreational trails, and whether the development will create significant changes in the recreational setting. The Commission will work with landowners and other state agencies to ensure that plans to extend or improve land management and other roads include consideration of the potential impacts of increased use and increased development pressure. The Commission will also be supportive of efforts by landowners to close land management roads when they are no longer used for hauling timber, are not deemed essential for fire protection, and when doing so would help preserve the recreational and natural character values of an area. Most significantly, the Commission will continue to guide growth in a manner that protects the jurisdiction's principal values, including directing well-planned development to places where the jurisdiction's recreational resources are not harmed.

Recreational Use Conflicts

As a place characterized by diverse and abundant recreational opportunities, the jurisdiction is at times subject to conflicts among different recreational user groups. Recreational use conflicts arise when groups perceive that the quality of their recreational experience is threatened by another use. Various recreational activities and facilities create very different impacts, and some groups of users are more sensitive to these effects than others. For instance, many people who participate in non-motorized recreation can have their experience negatively impacted by the sounds and smells created by motorized recreation, which can travel considerable distances. As more types of recreationists use a particular area, the likelihood of conflict is heightened.

Tensions between human-powered boaters (canoes, kayaks) and motorized watercraft users resulted in the designation of more than 250 lakes and one river in the jurisdiction on which the use of personal watercraft (jet skis) was prohibited. Concern over lake-related use conflicts also led the Commission to embrace a lakefront development density guideline of allowing a maximum of one dwelling unit per 10 acres of lake surface area.

Conflicts arising from multiple use of trails are not uncommon either. Multiple use trails are an important component of the supply of land trails in Maine. How well motorized and non-motorized uses blend on these trails remains to be seen.

To date, the Commission's approach to trail regulation has been largely unobtrusive. Trails are defined broadly in the Commission's rules and may be constructed in most subdistricts without a permit, provided they do not cause sedimentation into water bodies. Some trails, however, are designed and constructed to accommodate intensive year-round recreational uses. Such potentially high-impact uses were not envisioned in the creation of the Commission's current regulatory approach. Thus, any serious effort to address recreational use conflicts will need to include an examination of the Commission's trail definition as well as consideration of the appropriate location and design of various types of trails. The issue of recreational trail impacts should be evaluated in terms of anticipated effects not only on natural resources, but also on the jurisdiction's remote values. The Commission will work with state agencies, landowners, recreation groups and other interested parties in addressing this issue.

The Commission will also work closely with state agencies and affected groups concerning the siting of new or improved boat ramps on waters in the jurisdiction. These facilities have the potential to significantly change the level and type of use on lakes and rivers. While increased motorized boat access may be appropriate on many waters in the jurisdiction, it may have negative impacts on others. The Commission will therefore work to ensure that the type of boat access (hand-carry launch, trailered launch, etc.), and the associated recreational uses that such a site might bring, does not adversely affect the natural and

recreational values of the water resource. And, consistent with its lakes program, the Commission will review proposals for boat ramps allowing motorized access with particular care and focus on recreational use conflict issues.

The Commission recognizes that the various needs of many diverse recreational uses must be balanced, with some uses needing isolation and others able to successfully function as part of a multi-use arrangement. The Commission also appreciates that portions of the jurisdiction provide a unique and increasingly rare opportunity for non-motorized backcountry recreation experiences, which are extremely sensitive to intrusions from other recreational and other land uses. Therefore, the Commission will continually strive to protect certain remote areas for their natural character values, which enhance primitive recreational activities. The Commission will also strive to ensure that motorized and high-impact recreational uses have a place in the jurisdiction that reflects the increasing popularity of those uses.

Nature-Based Tourism

Tourism is an industry comprised of a diffuse group of thousands of businesses that derive some or all of their profits from leisure travelers. They range from commercial sporting camps to gas stations and convenience stores. Tourism is important to the economy of every Maine region, although the industry is primarily focused on southern and coastal areas. Leisure travel directly generates nearly 7% (approximately $2.5 billion) of Maine's gross state product, and tourism's employment (87,000 direct jobs) is greater than the combined contributions of agriculture, commercial marine fisheries and forest products.

Maine's tradition as a major Northeast outdoor recreation destination extends back over a century to an era when nearly all visitors arrived by rail or steamer. Today, the vast majority (92%) of Maine's 26 million visitors from away come by personal vehicle. Four of five overnight visitors come from the New England and Mid-Atlantic states, a figure that has changed very little in 30 years.

All Maine tourism is dependent on the state's outstanding natural attractions or its natural and cultural heritage. Fishing villages, open farm landscapes and vast forests are all tourism resources. The jurisdiction has tremendous tourism growth potential due to a variety of factors, including its multiple outstanding natural resource values; its tradition of recreational access to private land; its 25,000 miles of logging roads that opened up much of the region to vehicle access in the 1970s and 1980s; and its marketing advantage as a unique place that appears wild and at the same time is accessible from major population centers. Maine Woods Discovery is an example of a current collaborative effort to attract more recreationists to Western and Northern Maine.

However, tourism in its current form — small-scale scattered recreation by relatively small numbers of people visiting for short-term day trips — does not fully take advantage of this sector's growth potential. Some economists believe that the tourism potential lies in drawing a certain demographic of visitors to a limited number of high-quality nature-based destination resorts for multi-night stays. Several state and regional initiatives in recent years have explored the possibility of such a tourism model. In 2004, for instance, the Department of Economic and Community Development retained FERMATA, an experiential tourism development consulting firm, to assess Maine's opportunities in nature-based tourism. The firm worked in three rural pilot project areas — the Western Mountains, the Highlands, and Downeast — to demonstrate how nature-based tourism development can be planned and implemented across Maine. In their report published in 2005, the firm found, among other things, that lodging opportunities were in ample supply within the pilot project areas, but not all lodging would meet the quality expectations of many nature-based tourists.

As a complement to the increased interest in nature-based tourism, Maine significantly expanded its commitment to tourism in the 1990s. Maine's tourism marketing budget has grown to more than $4.6 million annually. The efforts of Maine's Office of Tourism are now directed by strategic marketing plans that guide both state and industry efforts.

If the increasing interest in nature-based tourism and the state-wide focus on marketing the Maine Woods as a tourist destination is an indicator of continued tourism growth, then such growth is likely to present a number of new challenges to the jurisdiction and the Commission. One major challenge may be an increased demand for nature-based tourism development in the jurisdiction, including the development of new destination resorts or the upgrading of existing small-scale recreational facilities to accommodate the quality and service expectations of nature-based tourists. Such facilities would likely be proposed in or near areas with high scenic and recreational values, such as on a lake or pond or on a hillside with exceptional views. Like many recreation-based businesses (for instance, sporting camps, remote campgrounds, guide services, nature tours and outdoor leadership schools), large-scale recreational facilities benefit from the remote and undeveloped character of areas of the jurisdiction. However, they also have the potential to jeopardize these characteristics if they lead to encroachment of development into, or excessive recreational use of, remote areas. As formerly remote areas become developed, nature-based businesses may lose clientele or be forced to move their operations elsewhere.

The Commission's current zoning framework generally encourages intensive recreational development in the General Development (D-GN) Subdistrict. Where facilities exceed a gross floor area of 2,500 square feet, the development may be allowed as a special exception, subject to additional review criteria. Although the current zoning and permitting approach gives the Commission considerable control over protecting recreational resources, the Commission will evaluate the merits of prospectively identifying sites for large-scale nature-based facilities either through its current zoning framework or by means of a modified zoning approach. In the interim, the Commission will rely on its sound policies of guiding growth to appropriate locations when evaluating nature-based tourism facilities, and will generally promote intensive recreational uses and large-scale resort facilities where infrastructure is easily accessed and roadways directly connect such facilities to those places identified as the most appropriate for growth.

Existing and Emerging Recreational Uses and Facilities

All-Terrain Vehicles

ATVs and other motorized backcountry vehicles such as dirt bikes and four-wheel-drive trucks are used extensively within the jurisdiction both as a form of recreation and as a means of accessing remote areas to

engage in other recreational pursuits. In 1999, approximately 40,000 ATVs were registered in Maine. Today, more than 67,000 ATVs are registered. This recreational use is the fastest growing motorized outdoor sport in Maine and may exceed the popularity of snowmobiles due to the vehicles' capacity for nearly year-round operation.

The primary physical impacts of motorized backcountry vehicles are trail wear and accelerated soil erosion, especially when conducted in areas without adequate base. The noise levels generated by these vehicles can be high and have potential to disrupt other recreational users. There is concern regarding ATV usage and the law enforcement issues that such use has created, especially since much of this type of recreation occurs on private land. As a result, a number of private land owners have restricted ATV use on their roads and trails, and some conservation easements include terms that prohibit ATVs on conserved lands.

At the same time, many landowners and state agencies recognize that there is a need to find ways to accommodate this increasingly popular recreational pursuit. In 2006, the Maine Department of Inland Fisheries and Wildlife ("DIFW") adopted a policy to address ATV use on the roughly 120,000 acres of the department's state-owned lands. The department identified areas within its ownership that should be protected and areas that can reasonably accommodate ATV usage, and is directing ATV use toward appropriate areas. DIFW emulated much of what snowmobile clubs have done to create its ATV policy.

The Department of Conservation's Bureau of Parks and Lands ("BPL") also has a policy on ATV use on public lands. BPL identified areas within its ownership where ATVs are allowed, allowed under certain conditions, or prohibited. BPL also has adopted a multiple use policy whereby roads and trails on public lands are posted with "shared use" signs that indicate ATVs, passenger vehicles, horses and bicycles are allowed. Where only a single specific use is allowed, appropriate signs are posted at trailheads or intersections. ATV use on roads and trails within state parks is prohibited unless they are a part of a trail system designated for such use by BPL.

As ATV use increases, it is likely that there will be continued pressure to accommodate ATV use on both public and private lands. The Commission will support state and landowner efforts to direct ATV use to appropriate places within the jurisdiction, consistent with its recreation goals and policies, via efforts such as trail siting or recreation management plans. Any such efforts should provide enough flexibility to encourage responsible use of ATVs while discouraging use in sensitive areas, particularly in places where opportunity exists for non-motorized backcountry recreation and where conflicts between motorized and non-motorized recreational uses are likely.

Sporting Camps

Sporting camps are a traditional feature of the jurisdiction, which function primarily as destinations for primitive recreation and some motorized activities such as boating and snowmobiling. By the Commission's definition, sporting camps are distinguished from other recreational facilities in that they are destinations, rather than transient lodging facilities or bases of operations for activities in another location. Sporting camps must also have a resident on-site attendant available full time to meet the needs of guests and must not exceed 10,000 square feet of total floor area for all principal buildings associated with the facility.

There are serious challenges facing the sporting camp industry today. In some areas the quality of hunting and fishing has declined in part due to increased road access to more remote areas. Also, sporting camps are seeing a drop in hunting and fishing guests in recent years, potentially as a result of the declining interest in hunting and fishing among nonresident hunters and anglers. Increasing land values in many

parts of the jurisdiction make financing sporting camp operations very difficult. To address some of these challenges, sporting camps are now trying to focus more on other nature-based activities, such as canoeing, hiking and bird-watching, as well as promoting family-oriented vacations to fill off-season times and to offset the decline in hunting and fishing guests. Sporting camp owners are finding that amenities sought by guests who participate in nature-based activities are different than those of the past, and are trying to adapt to new expectations.

Sporting camp owners benefit significantly from the natural resource and remoteness values in their immediate vicinity. Maintenance of relatively pristine surroundings and the feeling of remoteness is essential to most of the camps in attracting and maintaining clientele. Thus, one of the challenges facing sporting camps is the instability brought on by land ownership changes. Such changes raise questions as to whether the features important to the marketability of sporting camps — a remote landscape, high-value natural resources, and the tradition of open access to private lands — will continue.

As a result of these and other factors, the number of operating sporting camps within the jurisdiction has dwindled over the past 50 years to the point where today fewer than 40 traditional camps operate. Considering their cultural value and compatibility with remote recreational settings, a basic question is whether the Commission's policies and regulations are adequately supportive and protective of these facilities.

The Commission has at its disposal a number of mechanisms that can help protect sporting camps. Recognizing a sporting camp's dependence on its remote setting and the sensitivity of many sporting camps to intrusions from other intensive uses, the Commission maintains that isolated patterns of development in remote locations, such as sporting camps, should not be used as the basis for rezoning adjacent lands for development. Likewise, the Commission will evaluate not just rezoning petitions but any development proposals within the immediate vicinity of any existing sporting camps with particular care in order to ensure that the recreational and cultural values that sporting camps offer are protected from incompatible land uses.

Moose Point Camps on Fish River Lake

Given the small number of sporting camps and large number of people for whom they provide recreation, the Commission also gives special consideration to sporting camps in its development standards. Such consideration includes allowing in-place reconstruction of nonconforming sporting camps and permitting guest cottages associated with new sporting camps to meet the dimensional requirements of private residences rather than commercial structures. In addition to the considerations currently in place for sporting camps, the Commission will consider other ways to be supportive of the continued viability of sporting camps, such as considering an increase in the total allowed floor area of such facilities.

Although the Commission's approach to sporting camps is generally sound, one significant issue remains. While the Commission does not consider existing sporting camps as "nodes" to justify rezonings for new development, sporting camps in existence prior to 1971 have been zoned General Development (D-GN). As the challenges facing sporting camp operations increase, so does the potential for conversion or expansion of sporting camps to facilities or uses that are more intensive or less compatible with remote values (such as condominiums, family compounds or large-scale resorts). Although new sporting camps are today allowed in most development and management subdistricts, as well as by special exception in many protection subdistricts, the appropriateness of the present General Development (D-GN) Subdistrict of sporting camp facilities, particularly those in more remote settings, must be reexamined.

Commercial Whitewater Rafting

The rapid growth of commercial whitewater rafting during the 1980s raised a number of concerns regarding its potential impacts on, and compatibility with, the jurisdiction's principal values. While there is now considerably less concern that commercial whitewater rafting will dramatically change the character of the jurisdiction, a number of considerations remain.

On the rivers where it occurs, commercial whitewater rafting is an intensive use that periodically crowds stretches of whitewater with boats and exuberant rafters. Others using the river, particularly anglers, may see rafting as an intrusion on their enjoyment of the resource. The levels of use evident in the early 1990s, however, seemed to strike an appropriate balance in controlling river congestion and recognizing other values and uses along these rivers. In recent years, use has declined from a peak in the 1990s, and so river congestion does not appear to be a significant issue at this time. The appropriateness of these use levels needs to be periodically evaluated and any proposals to increase use levels beyond historical peaks should be reviewed with extreme care.

The high-volume, high-turnover nature of most rafting bases distinguishes them from sporting camps and most campgrounds where users engage primarily in primitive recreational pursuits or dispersed motorized uses, and where use levels are relatively low. While some rafting operations have diversified to provide other recreational opportunities the Commission views businesses with a rafting component as fundamentally different from traditional sporting camps and primitive camping facilities. From the Commission's perspective, businesses with rafting operations are intensive recreational facilities, which are best sited in appropriately located development subdistricts, away from potential conflicts with existing uses, significant natural resources and other values of the jurisdiction. Larger rafting operations are most appropriately viewed as outdoor adventure resorts that are ideally located near existing services and infrastructure.

In reviewing new businesses with rafting bases and expansions of existing ones, careful consideration will be given to on- and off-site impacts due to the high-volume use of these facilities. Traffic, parking, septic and solid waste considerations are especially important, as are screening and careful management of activity areas for existing bases near shoreland, residential or sensitive areas.

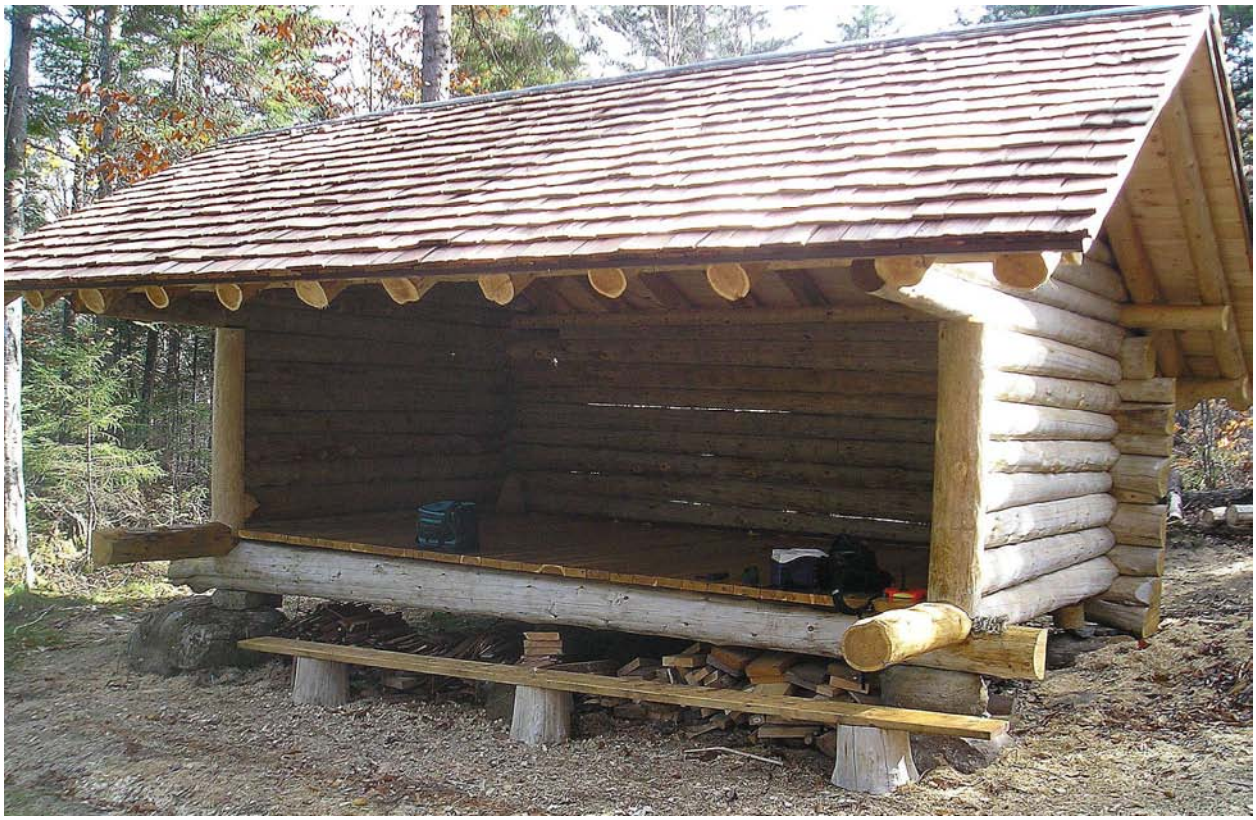
Whitewater rafting

Campsites and Campgrounds

Camping is an activity that occurs at many different types of facilities, ranging from primitive sites consisting only of small cleared areas and fire rings to sites in a full-service campground with sewer, water and electrical hookups. Most of the issues involving campsites and campgrounds relate to the development, management and regulation of these facilities in all their different forms.

The Commission's approach to camping facilities is to classify them into three subcategories — remote campsites, campsites and campgrounds — and to regulate them according to their expected level of improvements, accessibility and impacts. The Commission will review these subcategories to determine whether they can be refined to deal with issues regarding which category particular facilities belong in and the appropriateness of standards or requirements for facilities once they are so classified.

For instance, the term "campground" encompasses a broad range of facilities, from relatively primitive and low-impact clusters of sites that can accommodate a relatively small number of people, to fully improved facilities with utility service that more closely resemble seasonal trailer parks. Like sporting camps, many campgrounds within the jurisdiction benefit from their location in a remote setting, as well as their low use levels and privacy to attract and maintain clientele. In this regard, they are quite different from larger campgrounds elsewhere in the state, which become full-blown communities during summer months, with all the services and impacts of relatively high-density housing development. In general, low-impact campground facilities are more compatible with the Commission's vision for the jurisdiction.



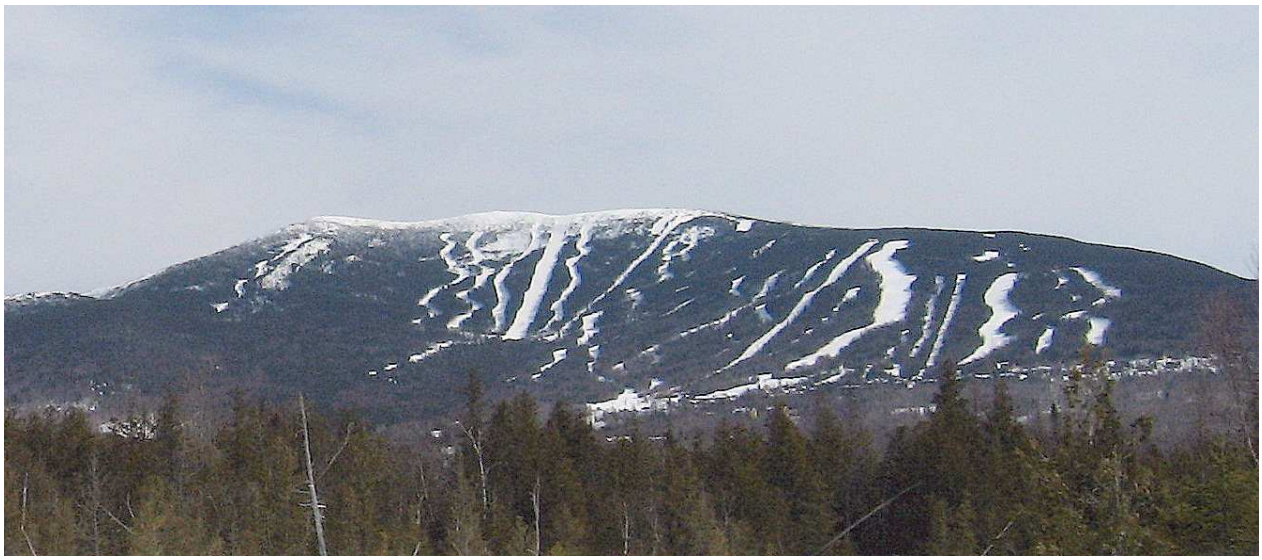
Lean-to

Both within campgrounds and elsewhere, issues have arisen regarding the length of residency of "camping" trailers, and at what point they should be treated as single-family homes. Although the Commission has a statutory definition of “transient occupancy” (occupancy that does not exceed 120 consecutive days), without consistent enforcement, there is greater likelihood that permanent siting of trailers will be used to circumvent the Commission's requirements and may lead to high-impact, high-density development in remote locations.

These and other issues will be addressed by refining the standards and definitions governing camping facilities. In any revisions, the Commission will continue to adhere to the principles that camping facilities should be treated according to the intensity of use and the potential impacts and characteristics of the resources on which they are sited. In remote locations, preference will be given to facilities most supportive of primitive recreational uses.

Alpine Ski Areas

Alpine ski areas are some of the jurisdiction's most intensive recreational facilities, and most of the issues relating to them involve their potential impacts on natural resources and adjacent land uses and activities. The most likely future trend is continued expansion of Sugarloaf, Saddleback and Sunday River ski areas, with a considerable amount of "spill-over" development — seasonal homes, lodging accommodations, restaurants and sports outfitters — in adjacent areas. These areas are all located on the edge or just outside the jurisdiction and are near major highway corridors. From an overall planning perspective, expansion of existing areas is preferable to the development of a new ski mountain, especially one located in a remote area. However, expansion of existing areas must be accomplished with extreme care to address the environmental constraints of mountainside development and to preserve the natural and recreational values of these areas.



Saddleback Mountain and Saddleback Ski Area,

For any future ski area expansion or related support service development within the jurisdiction, the Commission will pay particular attention to the effect of wastewater disposal on surface and groundwater water resources, impacts of snowmaking facilities on the quantity and quality of surface and groundwater resources, visual impact of ski area and related development on scenic values in the vicinity (especially from the Appalachian Trail and other significant trails and view points), and the secondary impacts of ski area development on roadside sprawl.

Climate Change

Tourism and recreation in Maine are closely tied to its natural resources and seasonal climate variations that supply cold snowy winters and warm clear summers. A changing climate may lengthen some seasons and shorten others, which would in turn impact associated recreational activities in either positive or negative ways. While the effects of climate change on recreation and tourism are likely to differ across the state, warmer temperatures in Northern Maine could negatively impact winter activities such as snowmobiling, skiing, ice fishing and dog mushing. It is unclear what the types of changes or the extent of those changes will be for the jurisdiction; it is clear, however, that in the event of significant climate change, there will be need for adaptation. Further discussion on climate change and possible related effects can be found in Section 5.2.

Emerging Recreational Uses/Facilities

Recreational uses and facilities exist today that were probably not contemplated in the early 1970s. Likewise, in the future there are likely to be new recreational uses not considered by this Plan. A likely future trend for campgrounds, sporting camps and whitewater rafting operations is diversification into secondary activities as a means of attracting more business. For example, some sporting camps now remain open year-round to cater to snowmobilers and other winter recreationists. Several rafting bases and sporting camps have added campground areas and have dining facilities open to the general public. A number of campground stores cater to both campers and to the public at large. As this trend continues, it may become increasingly difficult to clearly distinguish between different types of recreational facilities and to assess potential impacts.

The Commission recognizes that it must be flexible in its approach to this evolving field, and adapt its policies, zones and standards to address new uses. On the other hand, the Commission will carefully consider the potential impacts of any new uses on the principal values of the jurisdiction. While the Commission encourages recreational diversity, it will ensure that new uses and facilities do not diminish the experience for existing recreational users.

People visit the jurisdiction to participate in a multitude of different recreational activities. The unifying principle that attracts this diverse array of recreationists is the setting within which they participate in their activities. Whether it is a hike or a snowmobile ride, recreating in a place that offers such a vast area for uninterrupted exploration in a natural setting provides an experience that is unmatched in much of the country. Approaching recreation from a standpoint that considers the experience of the individual and the opportunities available for a range of experiences is a well-established methodology in recreational planning that has been applied in national parks, and is an emerging approach in the Commission's assessment of development impacts on recreational resources and uses. The Commission will further develop appropriate and consistent policies with which to continue to utilize this approach to recreation in the jurisdiction.

5.10 Scenic Resources

Scenic resources are those landscape patterns and features which are visually or aesthetically pleasing and which positively contribute to the definition of a distinct community or region. Resources such as lakes, rivers and streams, mountains, coastal islands and forestlands, including working forests, are some of the most notable attributes of the jurisdiction and make it a place of outstanding scenic value. Scenic qualities are in part what make the jurisdiction attractive to recreationists and tourists as well as year-round residents. These attributes drive the tourism industry, contribute to the economic health of the area and are integral to defining its character and shaping the way of life of its residents and visitors.

The scenic resources of the jurisdiction are intricately tied to its other resources and principal values. Open spaces might be working agricultural landscapes or actively managed timberlands; harbors and marinas, part of a working maritime waterfront; wetlands and woodlands, important habitats. As with many of the jurisdiction's other resources, its scenic resources are fundamentally shaped by the area's natural resource values, relative absence of development, remoteness from population centers and tradition of a working landscape. The scenic resources of the jurisdiction are many and varied. There are millions of acres of actively managed forestlands which help give the jurisdiction its characteristic landscape. There are also thousands of miles of scenic rivers as well as thousands of lakes and ponds scattered across the jurisdiction — one of the primary reasons that the area is perceived to be exceptionally attractive to outdoor enthusiasts of all kinds. This perception is intimately linked to the visual experience that lakes and rivers provide. Research shows that there is no greater positive influence on people's perceptions of the quality of the landscape than the presence of water. The scenic beauty of Maine lakes and rivers is invaluable to the quality of life and economy of this state. There are also dozens of scenic waterfalls in the jurisdiction, most notably Little Wilson Falls Gorge, Screw Auger Falls, and Gulf Hagas, which is so striking that it is often referred to as the Grand Canyon of Maine.

Aziscohos Lake

Approximately 100 mountain peaks over 3,000 feet high exist within the jurisdiction, including the mountains of the Bigelow Range and Saddleback Mountain. There are smaller peaks that have distinctive properties that make them of particular scenic value as well. For example, Kineo is a flint outcropping that rises dramatically up 800 feet from Moosehead Lake and is a well known scenic feature in the area. The Height of Land in Township D is a popular spot for tourists seeking an expansive vista, especially during fall foliage season. The jurisdiction includes much of the Maine section of the Appalachian Trail — a resource of national as well as world-wide significance, valued for the scenic qualities that surround it.

Many areas of cultural significance are also valued for their scenic qualities. Chesuncook Village is a surviving example of a picturesque 19th century logging village. The village on the coastal island of Monhegan with its working waterfront draws tourists from all over the world to experience its scenic beauty. Preserving the scenic quality of these cultural resources enables inhabitants and visitors to the jurisdiction to maintain a link to past traditions while bringing economic benefits through tourism.

Several routes within the jurisdiction have been designated as National Scenic Byways, recognized by the U.S. Secretary of Transportation as roads with certain intrinsic qualities — archeological, cultural, historic, natural, recreational and scenic. To be designated as a National Scenic Byway, a road must possess characteristics of regional significance within at least one of these intrinsic qualities. National Scenic Byways within the jurisdiction include the Old Canada Roads Scenic Byway, which winds its way alongside the Kennebec River, Wyman Lake, the Dead River and through large tracts of forest, and the Rangeley Lakes Scenic Byway, which runs through the mountains and valleys of Western Maine and passes through Rangeley.

5.10.A SCENIC RESOURCE EVALUATION TECHNIQUES

The evaluation of scenic resources is not an entirely subjective exercise. There are established, relatively objective ways to determine the scenic quality of a landscape. While various techniques exist, seven key factors are often instrumental in evaluating scenic quality: landform, vegetation, water, color, adjacent scenery, scarcity and cultural modifications. Each of these factors can be ranked on a comparative basis with similar features within the area. Some techniques use the cumulative ranking of these seven key features to assess the overall ranking of an area in terms of scenic quality. In general, areas with the most variety and most harmonious composition have the greatest scenic value.

5.10.B SCENIC IMPACT EVALUATION TECHNIQUES

Landscapes vary widely in their ability to accept changes, particularly new development, without negative impact on existing scenic character. Landforms that are the most tolerant of change are complex rolling hills, while the least tolerant are very flat or very steep slopes. Landscapes composed of complex vegetation — i.e., mixed forests composed of vegetation of varied species, age and type — are more tolerant of change than open landscapes composed of a single species, age and type. More complex and dense cultural landscapes, such as densely settled towns, are more tolerant of new development than large expanses of forest or agricultural land with no or few existing structures or other cultural elements.

In general, the greater the contrast is between structural development and the landscape, the greater will be the visual impact of that development, especially if the development is located on a hillside, which increases its visibility across the landscape. There are various ways to assess the degree of contrast created by a project. One method relies on an evaluation of the elements of color, breaks in forested

ridgelines, area of visible structure(s), amount of cleared area, presence of reflective surfaces, visible perimeter of structures, number and density of structures, and degree of night lighting. Night lighting is a particularly important element since lights visible at night indicate the extensiveness of development and can undermine enjoyment of the rural night sky. Evaluation of all of the criteria may determine that the project creates a low contrast with the surrounding landscape and is not visible or perceived, creates moderate contrast with the landscape and begins to attract attention, or creates strong contrast and demands attention, and thus will not be overlooked and is dominant in the landscape.

Contrast ratings are generally done from areas with public values, or public vantage points, usually along public roads, great ponds, rivers, and/or other high-value scenic resources such as those of state or national significance. Factors that are often cited when considering observation points include the angle of observation, number of viewers, sensitivity of viewers, length of time the project is in view, season of use, and light conditions. Selecting a time frame for evaluating contrast is also important. Changes to the landscape may be rated on either a short-term (five years) or long-term (life of the project) basis. These different time frames may have different contrast ratings.

Visual simulations, when used appropriately, can be an effective tool in evaluating the impacts of a proposed change in the scenic landscape. Simulations help to portray the relative scale and extent of a proposal. Different alternatives can be simulated in order to compare their relative contrast ratings.

5.10.C LURC REGULATORY APPROACH

Careful management and protection of significant scenic resources is important since, once degraded or destroyed, those resources are difficult or impossible to restore. The Commission is charged, under its enabling statute, with protecting the significant scenic features of the jurisdiction. The Commission addresses the protection of scenic resources through zoning, land use standards and its development review process.

Zoning

The Commission seeks to conserve particularly significant scenic resources of the jurisdiction in part through zoning. One of the purposes of the Mountain Area Protection (P-MA) Subdistrict is to preserve mountain areas for their scenic values. Approximately 100 mountains in the jurisdiction meet the general elevation criteria for P-MA zoning. The P-MA Subdistrict regulates certain land use activities, such as timber harvesting, and excludes activities, such as development, in part to preserve mountain areas for their scenic value as well as to protect water quality and recreational opportunities. Similarly, both the Great Pond Protection (P-GP) and the Shoreland Protection (P-SL) Subdistricts regulate development in part to protect and enhance scenic character (as well as water quality, fishery and wildlife habitat and recreational opportunities along water bodies). The Unusual Area Protection (P-UA) Subdistrict includes areas identified by the Commission as important in preserving significant historic, scenic, scientific, recreational, aesthetic or natural resources of the region or state. The major purpose of development subdistricts, such as the Extended Settlement Development (D-ES), General Development (D-GN) and Community Center Development (D-GN2) Subdistricts, is to concentrate development in order to avoid the impacts of sprawl, including its visual impacts.

The prospective zoning process, such as that completed in the Rangeley area, affords the Commission the opportunity to conduct a more comprehensive assessment of scenic and other resources of a discrete area and plan for the future in such a way as to help protect those resources. In this way, it enables the

Commission to apply new or additional standards in order to address region-specific concerns regarding the scenic resources of an area. In the Rangeley prospective zoning plan, new standards were developed in order to ensure that parking areas are located and designed to minimize their visibility, exterior lighting sources are shielded and the scale, mass and rooflines of new commercial and institutional development complement existing historical architectural styles. A number of these Rangeley-specific standards have now been applied to the entirety of the jurisdiction.

Land Use Standards

In addition to the zoning framework, the Commission's land use standards are also aimed in part at protecting the scenic resources of the jurisdiction. These standards include vegetation clearing standards near water bodies, lighting standards, layout and design standards for all subdivisions and, more specifically, scenic impact standards. The shoreland vegetation clearing standards help to maintain the natural character of shorelines along water bodies and wetlands in part to preserve the view from water bodies and roadways. The lighting standards also help to reduce the impact of development on the visual character of an area especially at night by reducing light pollution. Many of the subdivision design standards are aimed at reducing the visual impact of development on the landscape. For example, the Commission encourages structures and lots in subdivisions to be clustered or oriented so as to preserve open space and provide visual harmony. Visual compatibility — the degree of congruity or fit between the visual elements of a project and the setting in which it is located — is also considered. The Commission encourages, and in some cases requires, the conservation of open space, natural areas and cultural resources as another way of protecting scenic resources.

Kineo Mountain, Kineo Township

The scenic impact standards specify that the design of proposed development should take into account the scenic character of the surrounding area. Specifically, development should be located and designed to minimize its visual impact on the surrounding area, particularly when viewed from existing roadways or shorelines. The Commission also has standards aimed at retaining the natural character of ridgelines.

Development Review

In addition to its zoning and land use standards, the Commission considers the scenic qualities of an area and evaluates scenic impacts during its review of specific development proposals. The Commission requires that adequate provisions be made to fit the proposal harmoniously into the existing natural environment in order to ensure there will be no undue adverse effect on scenic character.

Integrated into all of these tools are the results of the scenic lakes character evaluation conducted as part of the Commission's Wildlands Lake Assessment. In 1986 and 1987, using methods based on similar concepts to those described above, the Commission conducted a comprehensive evaluation of all of the great ponds within the jurisdiction for their scenic quality. Relief, physical features, shoreline configuration, vegetation diversity, special features and inharmonious development were included as the key components of evaluating the scenic values of each lake. Of the 1,509 lakes evaluated, 118 (8%) were identified as having outstanding scenic values, and 162 (11%) were identified as having significant scenic values. As expected, lakes with outstanding scenic values were located around mountainous regions. In conjunction with information about other natural resource values, the Commission uses the lakes evaluation to identify and manage lakes requiring especially sensitive land use controls and to guide growth towards those with greater capacity for development.

5.10.D COLLABORATIVE INITIATIVES

The establishment of conservation easements by landowners and the purchasing of areas containing significant scenic features by public entities are examples of important steps in what needs to be an ongoing collaborative effort between all parties holding an interest in the future of the jurisdiction. The Commission will continue to encourage and be involved in these collaborative efforts as appropriate.

5.10.E SCENIC RESOURCE ISSUES

Inventory Needs

One of the biggest challenges to protecting the scenic resources of the jurisdiction may be the fact that the jurisdiction covers such a large and diverse geographic area. A comprehensive inventory of significant scenic resources is the most effective way to plan for the protection of resources from visual impacts of development. A scenic resources inventory would identify those resources needing special protection or consideration in the Commission's review of development proposals, and might include resources such as those identified in the Maine Wind Energy Act as "scenic resources of state or national significance" (35-A M.R.S.A. § 3451(9)). These are areas or places owned by the public or to which the public has a legal right of access. Examples of such places are federally designated wilderness areas, national natural landmarks,

national or state parks and the great ponds in the jurisdiction designated as having outstanding scenic quality.

This detailed information can be used in the analysis of future zoning and planning efforts. Inventorying scenic resources involves a considerable investment of resources. While there are well-defined methods for conducting such inventories, they are most often applied to a much smaller geographic area than that of the jurisdiction or to a specific type of feature, such as that done for lakes in the jurisdiction. The Commission may undertake studies to inventory additional scenic resources in the future, but the extent of these efforts will depend on available resources.

Evaluation Guidelines

Protection of scenic resources has been an emerging issue in the jurisdiction due to recent proposals for large-scale development projects. It is likely that additional large-scale development projects, as well as increasing numbers of medium- and small-scale development projects, will continue to be proposed in the jurisdiction, making it necessary to identify, evaluate and protect significant scenic resources. Establishing techniques for evaluating structural development that can be used to minimize the visual impacts of those developments is one of the steps necessary to address this issue.

One-third of the jurisdiction has been identified as areas for expedited permit review. In this expedited permitting area (illustrated on Map 18 in Section 5.5), scenic evaluations for wind power proposals have an abbreviated process that utilizes specific evaluation criteria, such as the project's impact on a scenic resource of state or national significance, in lieu of the Commission's general requirement to fit harmoniously into the existing natural environment.

Regardless of the extent or type of scenic resource inventories that the Commission undertakes and any policies or rules that result, there will undoubtedly always be some need to evaluate scenic resource impacts during the review of specific development projects, generally for those projects that are large-scale or located in particularly sensitive areas. There are two potential issues that can arise from this case-by-case evaluation of development proposals. First, due to the fact that scenic resources can be hard to quantify, the focus during project review can shift towards more tangible resource protection issues (such as preservation of water quality and wildlife habitat), leaving scenic resources more vulnerable. Second, a case-by-case approach, without underlying guidelines, can lead to inconsistencies in Commission decisions. Consequently, the Commission will explore possibilities for establishing more definitive guidelines for evaluating scenic impacts to use in the review of development proposals when appropriate.

Impact of Development on Scenic Character

While large-scale development — whether industrial, commercial or residential — is the most likely type of development to affect the aesthetic characteristics of an area, even a single structure or road, if poorly located, can impact the scenic quality of that area. This is an emerging issue due to the fact that the character and location of residential development in the jurisdiction has been changing over time. As residences get larger, are more dispersed across the landscape and include more window area, they may have a greater visual impact on the surrounding area both during the day and at night. In addition, indirect impacts may result from infrastructure and other activities that accompany development, such as utility lines and transportation networks. All of these may lead to reductions in scenic quality.

While the Commission has taken steps to conserve and protect the scenic resources of shoreline areas from the impacts of development through shoreland vegetation clearing standards, the Commission has

only begun to address the conservation of the scenic resources associated with hillside and ridgeline development. There is increasing pressure to locate development in areas that have views of the surrounding landscape. Often the vegetation clearing associated with this type of development and the types of structures built makes the development visible from public vantage points. In particular, structures with large windows that are intensively lit can be seen at night across long distances. This pattern impacts qualities such as remoteness that draw people to various areas of the jurisdiction in the first place. Issues associated with hillside development are further discussed in Section 4.9.C.

Ridgeline zoning has been employed in numerous areas of the country in response to the increasing pressure for development on ridgelines. Ridgeline regulations are often based on a combination of objectives, both aesthetic and non-aesthetic. Their primary intent is to maintain the unbroken natural appearance of ridgelines from major public viewing points. Such regulations often specify that structures are prohibited from breaking the skyline (the line between the vegetation on top of a relevant landform and the sky) when viewed from any public viewing point. Other regulations more generally state that structures shall not be sited on top of or within a certain distance of high points, outcroppings or prominent knolls.

The Commission will explore various methods for avoiding and minimizing the visual impacts of non-forestry activities such as hillside and ridgeline development, utilizing impact evaluation criteria as discussed above. Specific goals for this task are set forth in Section 4.9.C.

Canada Falls Lake, Pittston Academy Grant

5.11 Water Resources

Water is abundant in the jurisdiction with 2,635 lakes larger than one acre, over 21,000 river and stream miles, and billions of gallons of groundwater. But purity, rather than abundance, sets these waters apart from other regions of the United States. Most of these waters provide stable, high-quality aquatic habitat for many species that require such conditions, such as freshwater mussels, damselflies and brook trout.

These outstanding water resources are integral to the principal values of the jurisdiction. Taken as a whole, they represent an unusually high-quality natural resource with significant ecological value. They support a healthy forest and continued fiber and food production, and are a focal point for recreation. Consequently, the Commission recognizes a special responsibility to ensure that use of land and water does not compromise the quality of this valuable resource which is so essential to the jurisdiction's character.

The dwindling supply of high-quality water resources elsewhere makes the jurisdiction's resource increasingly rare and valuable. People are attracted to these waters and relatively remote settings, manifested by steady demand for water-related recreation and shoreland development. In the face of this demand, the Commission must take special care to maintain the conditions that foster such outstanding water quality. Most of Maine's rivers originate in the region. Therefore, the Commission is responsible for preserving good water quality not only in the jurisdiction, but also in much of the state.

5.11.A DESCRIPTION

Lakes and Ponds — Characteristics and Uses

The jurisdiction is host to a wealth of lakes and ponds unparalleled in most regions of the nation. Largely the gift of receding glaciers, these lakes display such variety that it is impossible to characterize a typical Maine lake. Some are shallow; others are deep and cold. Some are regular in shape and ringed with dense forest; others have irregular shorelines, islands, rock outcroppings and beaches.

These waters range in size from unnamed ponds of less than one acre in size to Moosehead Lake, the state's largest lake with 75,470 acres, and include some of the largest and least developed water bodies in the northeastern U.S. Fourteen of Maine's 15 largest lakes are wholly or partially within the jurisdiction. In addition to more than 2,600 lakes and ponds of one or more acres in size, the jurisdiction is home to another 7,000 ponds smaller than one acre that, despite their small size, play an important role in the ecology and hydrology of the region. Taken together, these lakes and ponds span over 622,000 acres — approximately two-thirds of the state's total lake area — and approximately 7,000 miles of shoreline.

The Maine wildland lakes assessment ("WLA") was initiated in 1986 to establish a systematic base of natural resource and land use information on lakes of 10 acres or more in the jurisdiction. Known as great ponds, approximately 1,500 lakes(representing over 98% of the jurisdiction's lake surface area) meet this 10-acre size requirement. A number of smaller lakes were added to the study because they were found to possess especially noteworthy natural resource values.

Information on fisheries, scenic quality, botanic features, physical characteristics, wildlife, shoreline character and cultural resources was collected and evaluated to determine the resource significance of these features on each lake. Lakes possessing "significant" or "outstanding" resource values in any of these areas were identified and each lake was placed into one of four resource classifications based on its cumulative resource significance.

The study also collected information on land and water use characteristics, including access, zoning, water level fluctuation, proximity to services, shoreline development, ownership and public water supply. This information is recorded in an extensive lakes database that is maintained by the Commission. Further discussion of the program is provided in Section 5.11.B, and individual lake characteristics and classifications are listed in Appendix C.

Since the WLA was undertaken, the quality and quantity of data on lakes and their features has continued to improve. For example, a 2006 study of Eastern brook trout highlighted the unique high quality of water in many lakes in the jurisdiction. Brook trout are a key indicator of water quality as they survive only in the coldest and cleanest water.

In recent decades, greater understanding of biological diversity and associated ecological importance has led to new emphasis on the biological values of lakes and ponds. Unusual forms of aquatic habitat, such as fishless ponds, are being studied, and there is new appreciation for the values associated with non-game species such as native minnow populations. Many lakes and ponds in the jurisdiction are valued for this type of research because of their relatively undisturbed condition. The value of aquatic habitat and the importance of water resources to plant and animal species are further discussed in Sections 5.8, and 5.12.

Deboullie Lake and Pushineer Pond

Lakes also have important cultural values. They have significantly influenced transportation and settlement patterns throughout Maine's history, and have contributed much to the state's social, economic and environmental well-being. Lakes provided convenient transportation routes for Native Americans, early settlers and Maine's timber industry. They also served as sites for early hunting camps and resorts, establishing Maine as the nation's premier sporting camp state. Today, lakes continue to be a magnet for outdoor enthusiasts, offering experiences ranging from remote, backcountry fishing and canoeing to vacationing at nature-based recreational facilities. Recreational use of lakes is further discussed in Section 5.9.

The value of economic activity associated with Maine lakes has been studied in recent decades and is significant. Maine lakes contribute over $1.8 billion into the economy annually, 60% of which is associated with recreational use. Much of this money goes into local economies where it has a multiplier effect. It has also been found that lakes with compromised water quality have lower net economic values, lower use rates and decreased direct and indirect sales. While no information has been gathered regarding economic activity associated with lakes in the jurisdiction specifically, the economic contribution is likely significant and its value will increase if lake water quality in more developed areas declines.

Water resources continue to attract a considerable amount of recreation-based development and seasonal homes. As discussed in more detail in Section 5.9, there is growing demand for nature-based recreation facilities, particularly in scenic settings. Also, since the Commission established the opportunity to undertake concept plans as part of its lakes action program in 1990, five concept plans have been reviewed, all of which proposed shorefront development. The four plans approved by the Commission as of 2008 have resulted in zoning approvals contemplating approximately 250 lots on nine lakes and ponds, including two Management Class 3 lakes.

Water bodies attract more residential development than any other geographic feature in the jurisdiction. Since the Commission was established, approximately 46% of building permits have been issued to parcels within 500 feet of a water body (lakes, rivers, ponds and streams). Another 8% have been issued between 500 and 1,500 feet of a water body.

Jurisdiction-wide, six of every 10 subdivisions have been located within 500 feet of a water body, with variation from region to region. In the interior, all approved subdivisions were proximate to water, reflecting the dominance of water bodies as a development-attracting feature in that region. Three-fourths of subdivisions in the Moosehead Lake and Downeast regions were close to water. Fewer than 50% of subdivisions in the Western Mountains and Central regions were water-related, reflecting a number of factors, including growing year-round populations, the influence of four-season development, nearly complete build-out along some shorefronts, and the increased cost of waterfront land.

Other forms of development also occupy shoreland, including sporting camps, recreational development and some commercial uses. Between 1971 and 1991, 42% of new commercial development was associated with a water body. This pattern of development has remained relatively constant, with 39% of new commercial activity locating within 500 feet of a water body between 1992 and 2005. Seventy-one percent (71%) of all camps and lodges and 50% of commercial recreation were located proximate to a water body.

River and Stream Resources — Characteristics and Uses

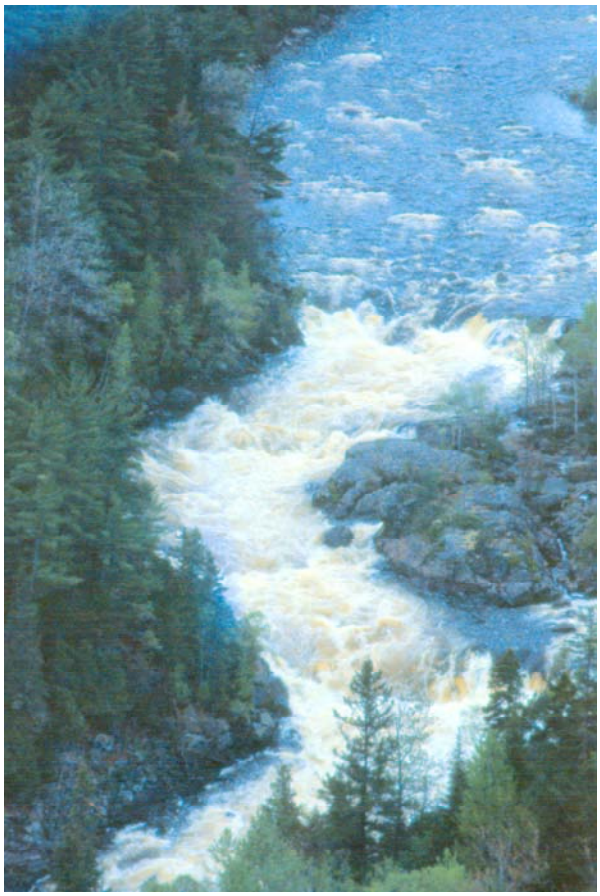
Maine is unique in the Northeast in the number and diversity of significant natural and recreational river resources that it possesses, including:

- River gorges, waterfalls and white water rapids identified as being outstanding geological or hydrological features;
- More miles of undeveloped free-flowing rivers than any other state in the Northeast, including particularly significant undeveloped stretches along the Allagash, Aroostook, East Machias, Machias, Penobscot, Pleasant, St. Croix and St. John River systems;
- River corridor segments which provide habitat for diverse populations of rare and endangered plant species;
- The highest quality aquatic habitat for brook trout in the eastern U.S.;
- Over 2,000 miles of rivers with Maine's highest water quality classifications — class AA or class A;
- Protected Atlantic salmon and renowned landlocked salmon, trout and other game fisheries; and
- Significant whitewater, backcountry and other canoeing and rafting experiences.

Six major drainage basins span the jurisdiction: the St. John/Aroostook River Basin, Penobscot River Basin, Kennebec River Basin, Eastern and Central Coastal Basins, Androscoggin River Basin and Western Coastal Basins. Large portions of four of these basins are located in New Hampshire, Quebec or New Brunswick. Over 21,000 miles of rivers and streams flow through these watersheds, including the headwaters of most of the state's large rivers.

Of the major rivers in the state, many of those with the most outstanding water quality, class AA, lie within the jurisdiction. They include the Allagash, Dead, East Branch of the Penobscot and Fish Rivers. Other rivers in the jurisdiction that possess excellent water quality in their upper watersheds, with AA and A classifications, include the Androscoggin, Aroostook, Kennebec, Penobscot, Presumpscot, St. Croix and St. John Rivers.

The Maine Rivers Study, carried out in the early 1980s, comprehensively inventoried and assessed 32,000 miles of the state's streams and rivers. Over 1,000 miles of these rivers were identified as "A" rivers of highest significance because they possess a variety of unique and/or outstanding recreational or natural values of greater than state significance. Nearly 760 miles of the "A" rivers lie in the jurisdiction. In addition, the study identified several hundred miles of rivers and tributaries as "B," having natural and recreational values with outstanding statewide significance.



Long Falls, Dead River

As noted earlier, the 2006 brook trout study documented the significance and uniqueness of Maine's brook trout resource, an indicator of excellent water quality and high-quality habitat. The strongest populations are located in the jurisdiction's rivers and streams. This study and a growing body of research on other biological values associated with rivers and streams in the jurisdiction emphasize the diverse values of these resources.

Maine's rivers have always been an important part of the state's culture and economy. They were used for travel by Native Americans, European settlers and 19th-century tourists. Millions of logs were floated down the Penobscot, the Kennebec and the Androscoggin Rivers during annual spring log drives until the 1970s. Today, recreation is the most common use of rivers and streams. Several rivers in the jurisdiction provide spawning grounds for trout, salmon and other important game fish and attract people from all over the Northeast to fish. Other recreational opportunities include boating, particularly whitewater canoeing, kayaking and rafting. Recreational use of rivers is further discussed in Section 5.9.

Development on rivers and streams, while less common than along lakeshores, is nonetheless a common land use. Some of this development is vulnerable to flooding, especially in late winter and early spring. Spring rains, coupled with snowmelt, sometimes produce severe flooding. Ice buildup complicates the situation as ice jams often obstruct water flows. The volumes of water released when these jams break can threaten human life, devastate buildings and damage infrastructure. Poorly conceived uses of flood prone areas contribute to damage caused by floods and can result in severe economic losses and environmental degradation for individual landowners and the public in general. Collectively, even small structures in flood prone areas reduce flood storage capacity. Bridges, structures and other artificial obstructions in flood prone areas can impede water and ice flow, causing adjacent and upstream flooding to increase. Demolished structures can become hazardous debris, as well as create pollution downstream. Submerged waste disposal systems pollute surrounding and downstream waters. Preserving flood prone areas in their natural condition maintains the carrying capacities of river channels and provides temporary storage areas for flood waters.

Rivers and streams are also used as sources of water. In past decades, the volume of surface water utilized in the jurisdiction increased, although more recently the volume has declined. Surface water use, principally for agriculture, generated concern based on growing awareness of potentially adverse impacts of water withdrawal on river ecology and aquatic habitat. Over the last decade, Maine experienced a number of direct conflicts between surface water use and ecological needs. These cases highlighted the reality that surface water supplies can be a limiting factor in a particular geographic area, during certain seasons or during periods of drought. Major water withdrawals for agricultural purposes from rivers and streams within the jurisdiction have now largely been replaced with groundwater wells.

Another significant use on certain river and stream segments is hydropower. Since hydropower development can conflict with a river's other resource values such as recreation, scenic preservation and fisheries, in the 1980s the state moved to establish a balance among these values. The 1981 State Energy Policy recommended developing hydropower on all sites where the advantages of a facility outweigh the adverse impacts. Recognizing that hydropower development permanently alters the resource, the State Energy Policy directed the Department of Conservation to work with environmental, economic, energy and other appropriate interests to identify river stretches in the state that provide unique recreational opportunities or natural values and to develop a strategy for the protection of these areas. This led to the Maine Rivers Study and subsequent enactment of the Maine Rivers Policy in 1983. Hydropower is also discussed in Section 5.5.

Groundwater — Characteristics and Uses

Groundwater supplies 60% of human demand and 75% of livestock demand for water in Maine. While the state's groundwater is generally of high quality, it is particularly vulnerable to contamination from landfills, septic systems, leaking storage facilities, agriculture and hazardous materials sites. Because these threats have a relatively low presence in the jurisdiction, groundwater is generally of very high quality in the region.

The jurisdiction has vast groundwater supplies in surficial deposits of sand and gravel and fractured bedrock, both of which provide pathways and storage for percolating ground water. Water in these underground aquifers is replenished primarily by precipitation. Groundwater plays an important role in maintaining healthy aquatic habitat by supplying many streams and brooks with clean, cold water.

The Maine Geological Survey ("MGS") has completed mapping significant sand and gravel aquifers for most of the state of Maine. The areas that have not been mapped within the jurisdiction include the northern portions of Piscataquis and Somerset Counties and the northwestern portion of Aroostook County. The mapping effort included upgrading all of the 1:50,000-scale maps to a scale of 1:24,000. The maps are designed for use in locating sites favorable for activities that require large volumes of groundwater, such as public water supplies or irrigation, or for identifying areas unsuitable for activities with the potential to degrade groundwater, such as the storage or disposal of hazardous or other waste. No maps of bedrock aquifers are available for the jurisdiction, but some information regarding this resource is available from MGS.

Until recently, the most common use of groundwater in the jurisdiction was for on-site drinking water supplies, principally for individual dwellings and camps, and also for commercial uses such as lodging establishments, restaurants and recreational facilities. A few public water suppliers serving adjacent towns have wellheads in the jurisdiction. Interest in the jurisdiction's groundwater supplies has risen significantly during the past decade. Some conflicts between surface water extraction and ecological needs have arisen and have precipitated a shift toward groundwater as a water source. Agricultural users are turning increasingly to groundwater wells, and industrial uses may follow. At the same time, growing demand for commercial bottled water has resulted in several groundwater extraction facilities in the jurisdiction and more may follow.

5.11.B STATE REGULATORY FRAMEWORK

State Water Quality Policy

State water policy is established in 38 M.R.S.A. § 464-470, in which the Legislature declares that it is the state's objective to restore and maintain the chemical, physical and biological integrity of surface waters and to preserve certain pristine waters. The Maine Department of Environmental Protection ("DEP") is given responsibility for implementing this goal through establishment of a water quality classification system which allows greater control over activities on waters within a particular classification, such as types of discharges to water bodies.

DEP's classifications reflect the state's goals for the water body and do not necessarily represent current water quality conditions. DEP periodically assesses all waters to determine whether they are attaining designated uses and water quality standards or are "impaired." An impaired listing can set in motion certain specific management activities designed to bring the water body back into full compliance. Statewide, about 10% of lakes and about 2% of rivers and streams are impaired. Only a very small number

of these are located in the jurisdiction, again reflecting the high quality of the region's water resources. The Commission's land use standards specifically reference state water quality classifications to ensure that development will not adversely affect water quality goals. An "impaired" listing can also influence the Commission's work, such as the withholding of Square Lake from Management Class 3 designation under the Commission's lake management program until water quality concerns have been addressed.

Table 10 – State Water Quality Classifications

	RIVERS AND STREAMS
Class AA waters	➢ Applied to waters which are outstanding natural resources and which should be preserved because of their ecological, social, scenic or recreational importance. ➢ Class AA waters must be of such quality that they are suitable for the designated uses of drinking water after disinfection, fishing, agriculture, recreation in and on the water, navigation and as habitat for fish and other aquatic life. ➢ The habitat must be characterized as free-flowing and natural.
Class A waters	➢ Class A waters must be of such quality that they are suitable for the designated uses of drinking water after disinfection, fishing, agriculture, recreation in and on the water, industrial process and cooling water supply, hydroelectric power generation (except as prohibited under 12 M.R.S.A. § 403), navigation and as habitat for fish and other aquatic life. ➢ The habitat must be characterized as natural.
Class B waters	➢ Class B waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment, fishing, agriculture, recreation in and on the water, industrial process and cooling water supply, hydroelectric power generation (except as prohibited under 12M.R.S.A. § 403), navigation and as habitat for fish and other aquatic life. ➢ The habitat must be characterized as unimpaired.
Class C waters	➢ Class C waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment, fishing, agriculture, recreation in and on the water, industrial process and cooling water supply, hydroelectric power generation (except as prohibited under 12 M.R.S.A. § 403), navigation and as a habitat for fish and other aquatic life.
	LAKES
GPA	➢ GPA waters must be of such quality that they are suitable for the designated uses of drinking water after disinfection, recreation in and on the water, fishing, agriculture, industrial process and cooling water supply, hydroelectric power generation, navigation and as habitat for fish and other aquatic life. The habitat must be characterized as natural.
	GROUNDWATER
GW-A	➢ GW-A waters must be suitable for drinking water purposes (potable).
GW-B	➢ GW-B waters are not suitable for drinking water purposes (unpotable).

Stormwater Programs

Regulation of stormwater runoff reflects growing understanding of the impact of land use, including development, on water quality. While initial concerns focused on controlling the quantity of stormwater, the focus has now broadened to address its quality. The Legislature passed the Stormwater Management Law (38 M.R.S.A. § 420) in 1996. DEP initially adopted stormwater rules in 1997 and made substantive revisions in 2005 to improve the effectiveness of the program. DEP's rules now require a stormwater permit prior to construction for any project that disturbs one or more acres of land. By statute, these rules apply only to organized areas.

DEP administers the National Pollution Discharge Elimination System ("NPDES"), including the federal stormwater program, in Maine. It also administers Phase 2 of the U.S. Environmental Protection Agency ("EPA") stormwater program, which addresses stormwater runoff from smaller generators, including construction sites disturbing between one and five acres. This program, administered under the authority of Maine's Waste Discharge Law, applies statewide.

Consumptive Water Use

Consumptive water use is the large-scale withdrawal of water from surface waters or groundwater for purposes that do not result in the direct return of the water to its source. Up until the late 1990s, Maine's regulatory efforts focused on water quality with little attention to issues of quantity. However, the combination of growing water withdrawals from surface waters and drought conditions in the late 1990s triggered a new look at issues of water quantity.

In 2001, the legislature charged DEP with developing statewide standards for surface water quantity, and established an interim reporting process and thresholds defining major use. Following extensive collaboration with stakeholders, DEP developed new statewide standards which took effect in 2007. These standards establish stream flow and lake water level standards that are protective of all uses, particularly aquatic life, and reflect the importance of natural variation of flow and water level. The rules recognize the special needs of public water districts and give agricultural users extra time to comply with requirements. The standards will be applied independently by DEP and the Commission in their respective jurisdictions, but the two agencies cooperate in implementing water flow and water level standards as outlined in a memorandum of agreement between DEP and LURC.

In 2005, legislative attention turned to consumptive use of groundwater when the Legislature passed a law designed to clarify and enhance the state's role with regard to large-scale groundwater withdrawal. Pursuant to this directive, a policy group coordinated by MGS reviewed the state's regulations governing groundwater withdrawal. In 2007, this group issued its report, which included a recommendation that LURC review its rules governing water withdrawal for clarity and consistency with other agencies. The Legislature subsequently revised LURC's statutory criteria for the approval of applications to specifically incorporate Commission consideration of the effects of proposals for groundwater withdrawals. Water use is discussed further in Section 5.7.

Personal Watercraft

In 1998, the Legislature enacted a law prohibiting the operation of personal watercraft on certain high-value lakes and ponds in the jurisdiction. This prohibition applies to Management Class 1, 2, and 6 lakes as well as certain Resource Class 1A lakes located substantially in the jurisdiction with significant public and private conservation ownership. The Maine Department of Inland Fisheries and Wildlife enforces these restrictions.

5.11.C LURC REGULATORY APPROACH

Shoreland Regulation

The Commission has always made a special effort to provide for shoreland development while maintaining protection of significant natural values. It administers a variety of protection subdistricts for shoreland areas around lakes, ponds and wetlands and along rivers and streams. The type of subdistrict varies depending on the type and size of the water body. The Great Pond Protection (P-GP) Subdistrict encompasses the shorelands of lakes and ponds 10 acres and larger, "to regulate residential and recreational development on Great Ponds to protect water quality, recreation potential, fishery habitat, and scenic character." The Shoreland Protection (P-SL) Subdistrict applies to shorelands surrounding small ponds and all wetlands and along rivers and streams, "to regulate certain land use activities in certain shoreland areas in order to maintain water quality, plant, fish and wildlife habitat and in order to protect and enhance scenic and recreational opportunities." Other protection subdistricts that apply to certain lake management classes and river segments are described later in this section. Shoreland areas can be considered for rezoning to a development subdistrict if applicable criteria are met.

The Commission has established a variety of land use standards designed to prevent environmental harm and protect ecological and natural values while providing reasonable development opportunities in shoreland areas. Minimum shoreline frontage and setback requirements apply to shoreland development in areas where development is allowed. Standards governing vegetation clearing associated with development and timber harvesting adjacent to water bodies protect water quality, in addition to maintaining riparian habitat and preserving scenic character. Significant development, including subdivisions and nonresidential projects, within the watershed of a lake or pond must meet performance standards and design requirements. These address phosphorus control, scenic character, natural and historic features, noise and lighting, and other concerns. Subdivisions must also adhere to standards governing layout and design, cluster development and provision of open space.

Lake Management Program

While the amount of lakeshore development fluctuates from year to year, overall demand for recreational development in recent decades has grown steadily in the Northeast as reflected in the steadily rising prices of waterfront land and homes. Faced with growing demand for waterfront property and associated challenges, the Commission undertook a comprehensive lake planning effort beginning in 1986, acknowledging that existing standards were not sufficient to protect the unique character of lakes in its jurisdiction in the face of sustained incremental development. The Commission identified a number of needs, including the following: additional protection for lakes with exceptional values; a mechanism for guiding lakeshore development toward lakes best suited to accommodate growth; and a clearly stated lakes policy. The effort began with development of the WLA to establish a systematic base of natural resource and land use information for lakes.

The Commission established a committee comprised of public and private entities which worked collaboratively to develop recommendations. The product, "An Action Program for Management of Lakes in Maine's Unorganized Areas," sought a balanced approach to lake conservation and development and recommended a variety of innovative regulatory and non-regulatory lake management techniques. The proposal was discussed extensively at public meetings, accepted by the Commission in 1989, and implemented in 1990 through rulemaking changes and adoption of an amendment to the 1983 Comprehensive Land Use Plan. This entire 1990 amendment is included as Appendix C.

The main purposes of the Commission's lake management program are to: (1) maintain a comprehensive database on the values and characteristics of lakes in the jurisdiction, and (2) administer policy and rules that provide more comprehensive protection for lakes. It is the Commission's intention that its lake management program be updated periodically to ensure that it responds to changing needs in a comprehensive manner. Ideally, to maintain consistency of policy, this review and update should occur concurrent with the periodic revision of the Comprehensive Land Use Plan and as needed to address changing circumstances and new trends.

Lake Management Classes

Under the Commission's lake management program, lakes in the jurisdiction are grouped into seven management classes based on natural resource values and land use characteristics identified in the WLA. Each management class has specific planning and management objectives designed to protect and enhance its values which are implemented through lake protection subdistricts and land use standards (Table 11).

A number of important elements from the lake management program have been incorporated into the Commission's rules. Two lake management classes, MC 1(high-value, least accessible lakes) and MC 6 (remote ponds), have been placed in the Recreation Protection (P-RR) Subdistrict in which motorized access for non-forestry purposes and development is prohibited. Lakes in another management class, MC 2 (high-value, accessible lakes), have been placed in the Accessible Lake Protection (P-AL) Subdistrict, which limits development densities to one development unit per mile of shore frontage.

Third and Fourth Roach Ponds

Policy Guidance

One of the lake management program's major planning policies is to "guide lake development based on identified land use characteristics and natural resource values, conserving important values and directing development toward those lakes or lake areas most capable of absorbing new development." The program also establishes a general planning guideline that development on lakes will remain below an average of one dwelling unit per 400 feet of shore frontage, and one dwelling unit per 10 acres of lake surface area. The purpose of this guideline is to preserve the natural character of lakes and maintain the traditional pattern of lake development, which includes considerable undeveloped shoreline, and to prevent conflicts between incompatible uses and minimize surface use conflicts by limiting density.

Review Criteria for Lakes

One of the statutory review criteria for all applications is environmental fit. The Commission adopted seven additional review criteria to guide its determination of whether adequate provision has been made for fitting subdivisions and other development on lakes harmoniously into the existing natural environment. The same review is also applied to rezoning petitions that precede such proposals on lakes. The review criteria, which were developed as part of the lake management program, appear in Appendix C. The criteria address natural and cultural resource values, water quality, traditional uses, regional diversity, natural character, lake management goals and landowner equity, and have been incorporated into the Commission's rules in an abbreviated form.

Table 11 – Lake Management Classes

Management Class and Description	Management Objective
1 High-value, least accessible, undeveloped lakes	Preserve the best examples of these pristine lakes in their natural state by prohibiting development within 1/4 mile of their shores and restricting permanent vehicular access to these lakes. The Recreation Protection (P-RR) Subdistrict has been applied to these lakes. Existing timber harvesting standards are currently considered sufficient to protect the values associated with these lakes from forest management activities. (A number of lakes that met the criteria for Management Class 1 were not designated as such because they were already protected by P-RR zoning.)
2 High-value, accessible, undeveloped lakes	Conserve the special values of these lakes by significantly restricting the density and intensity of development to one development unit per mile of shoreline. These restrictions are applied to the area within 500 feet of the lakeshore to enable the Commission to regulate back lot development which could affect the lake's special values and is consistent with the management intent of the lake. The Accessible Lake Protection (P-AL) Subdistrict has been applied to Management Class 2 lakes. Variation of density requirements may only be sought as part of a concept plan which is demonstrated by clear and convincing evidence to be fully protective of the special values associated with the lake.
3 Lakes potentially suitable for development	Consider these lakes potentially suitable for development based on available information on water quality, access, conflicting uses, shoreland availability, water level fluctuation, location, regional considerations, and special planning needs. Soils were not considered in the designation of these lakes due to lack of information and may affect the appropriateness of this designation for some lakes. The Commission supports responsible development around these lakes, yet will take care to ensure that their significant natural resource values are conserved. The Commission will waive the adjacency criterion for development proposals on these lakes provided it can be demonstrated to its satisfaction by clear and convincing evidence that the lake has no existing or potential water quality problems and that soils are suitable for development. This waiver is strictly limited to shoreland, and proximate areas may not subsequently use shoreland development on Management Class 3 lakes to meet the adjacency criterion.
4 High-value, developed lakes	Allow a reasonable level of residential and recreational development while conserving natural resource values and maintaining undeveloped shoreland areas. The Commission takes special care in evaluating and regulating new

		subdivisions proposed on these lakes and requires cluster development to protect natural values except where clearly inappropriate due to site characteristics.
5	Heavily developed lakes	Maintain natural qualities associated with these lakes, enhance scenic values, and retain some undeveloped shoreline by requiring cluster development on these lakes except where clearly inappropriate due to site characteristics. The Commission has identified lakes approaching heavily developed status and will pursue similar goals on these lakes.
6	Remote ponds – inaccessible, undeveloped lakes with coldwater game fisheries	Prohibit development within 1/2 mile of these ponds to protect the primitive recreational experience and coldwater lake fisheries in remote settings. The Recreation Protection (P-RR) Subdistrict has been applied to Management Class 6 lakes.
7	Lakes not otherwise classified	Manage these lakes for multiple use, including resource conservation, recreation, and timber production, giving specific consideration to identified resource values when evaluating the merits of lake-related rezoning and permit applications. This category includes many lakes which have multiple outstanding or significant resource values. It is the Commission's intention that the majority of these lakes remains in Management Class 7 and be managed under applicable requirements.

Concept Plans

The Commission developed concept plans as part of the lake management program to provide an alternative to traditional shoreland regulation — an alternative designed to achieve a balanced approach to shoreland development and conservation, to recognize both public and private objectives, and to support the integrity of large forest holdings. Concept plans are landowner-initiated, long-range plans for the development and conservation of a large block of land on a lake, group of lakes or backlands. The plan is a clarification of long-term landowner intent that indicates: (1) all areas where development will be focused and the relative density of proposed development, (2) resource values or shoreland areas that will be protected, (3) mechanisms that will be used to conserve or protect important resources or areas and (4) the life span of the plan.

While concept plans were originally conceived as a planning tool that would be used exclusively for lake shorelands, the Commission expanded their applicability to backlands in 2000. Although they are initiated by landowners, concept plans must be approved by the Commission and are implemented through rezoning to the Resource Plan Protection (P-RP) Subdistrict. Concept plans differ from traditional resource plans in that resource protection is included within their purpose but is not their primary purpose. Concept plans are further discussed in Sections 4.3.B and 4.9.B, and in Appendix C.

River Management

Following publication of the Maine Rivers Study in 1982, an executive order established the protection of certain rivers (substantially the "A" rivers) and urged independent regulatory agencies such as LURC to take action consistent with that policy. The Commission responded in 1983 by amending its rules to place river and stream segments identified in the Governor's executive order as meriting special protection in Recreation Protection (P-RR) Subdistrict zoning. Water impoundments and commercial and residential

development are prohibited in the P-RR Subdistrict. The rule change adopted by the Commission and approved by the Legislature was based upon the Commission's enabling statute, its stated goal of protecting significant natural and recreational river resources, the Maine Rivers Study, and the Executive Order on Maine Rivers Policy. It provided a solid foundation for application of protection zones to river resources of documented importance.

The Commission has employed a variety of measures to protect important recreational river stretches from incompatible development. Approximately 690 miles of rivers are protected by Recreation Protection (P-RR) and Resource Plan (P-RP) Subdistricts. Most high-value rivers have been placed in P-RR Subdistricts. Significant stretches of the St. John and Penobscot Rivers have been placed in P-RP Subdistricts, whereby a special management plan provides for the protection and management of the river resource. Resource plans provide for the more efficient and effective management of areas within protection (and sometimes adjacent management) subdistricts, and their primary purpose is resource protection.

Sections of the Aroostook and Big Machias Rivers have been placed in the Special River Transition Protection (P-RT) Subdistrict. This subdistrict is designed specifically for stretches of river that have significant recreational resource values, lie in "transitional" areas between "big woods" and downstream organized areas, and have a significant community present. The subdistrict is similar to the P-RR Subdistrict but allows for limited residential development utilizing an increased shoreline setback standard. A list of specific river segments with special protection zoning is provided in Appendix B.

Under Maine law, hydropower development is regulated by the Maine Rivers Policy and the Maine Waterway Development and Conservation Act. The Maine Rivers Policy protects outstanding segments of rivers and streams in the state from the construction of new dams, and provides for more stringent review of the additional development of dams existing on these segments. Hydropower regulation is discussed in Section 5.5.

Groundwater Protection

The Commission has an Aquifer Protection (P-AR) Subdistrict designed to limit potentially polluting activities on aquifers which are used or anticipated to be used for public, industrial or agricultural purposes. This subdistrict reflects the risk that certain types or densities of development can adversely affect the quality and quantity of groundwater in an aquifer. Such impacts can cause long-term damage that is extremely expensive or impossible to remedy. The P-AR Subdistrict has been applied in only a few areas, principally due to limited information on aquifer location and limited use of groundwater supplies. It has been applied to a federally-designated sole-source aquifer (which supplies 50% or more of local drinking water and has no reasonably available alternative source), aquifers in areas recently added to the Commission's jurisdiction, and recharge areas of public water wells.

Information on the location and quantity of groundwater resources is improving, as demand for groundwater is increasing. The Commission will continue to collaborate with MGS and Maine's Drinking Water Program for technical assistance regarding identification of areas appropriate for the P-AR Subdistrict.

Wetland Protection

Wetlands have been placed in the Wetland Protection (P-WL) Subdistrict and are fully discussed in Section 5.12.

Flood Prone Area Regulation

The Commission administers a Flood Prone Area Protection (P-FP) Subdistrict using soil survey information on floodplain soils as well as designated "areas of special flood hazard", more commonly known as the 100-year flood plain, for purposes of delineating flood prone areas and establishing appropriate land protection strategies. "Areas of special flood hazard" are those areas which have a 1% chance of being flooded in any given year. The Federal Emergency Management Agency ("FEMA") delineates these areas on flood insurance rate maps, which the P-FP Subdistrict incorporates by reference. The P-FP Subdistrict greatly restricts most forms of building and strictly regulates existing development. New construction is allowed only by special exception and subject to development standards established in 2005. This approach reflects the fact that preventive controls are far more effective and less expensive than after-the-fact protection such as flood walls and dams. The restrictions in this subdistrict comply with an agreement between the Commission and FEMA requiring that building development be regulated so that flood insurance can be made available to owners of property within the jurisdiction.

Limited mapping of flood prone areas has been completed for the jurisdiction. FEMA, which administers the national flood insurance program, has mapped flood prone areas in 35 minor civil divisions ("MCDs") in the jurisdiction. However, detailed studies with specific flood elevation levels have been completed for only five communities in the jurisdiction and several adjacent organized municipalities. In the absence of FEMA information for many MCDs, the Commission has identified flood prone areas in some MCDs based on soils information. This has not provided complete coverage, as soils information is lacking for some parts of the jurisdiction.

Periodically, the Commission reviews applications for structures or other regulated activities in or adjacent to flood prone areas, and the lack of detailed flood elevations continues to be a problem. In addition, in a few situations where knowledge of local flooding exists but federal flood maps or floodplain soils information do not, the Commission's staff must try to determine flood prone areas based upon available local information. More data on flood levels on lakes and rivers as well as the coast are needed to enable the Commission to make better decisions about where development can safely be allowed. When the Commission receives notification from FEMA of new or revised flood maps, it can then respond by adopting those maps by reference.

Consumptive Water Use

The Commission has stepped up its oversight of surface water and groundwater use over the past decade in response to concern over the potential impacts of large-scale water withdrawals on aquatic habitat and growing demand for high-volume water sources. Since the late 1990s, the Commission has worked collaboratively with numerous state and federal agencies to enhance its review and permitting of large-scale surface water and groundwater withdrawals in the jurisdiction.

Surface water and groundwater extraction is treated as an allowed use in many subdistricts, including the General Management (M-GN) Subdistrict, because it is a relatively low-impact form of natural resource activity at the extraction site in terms of structural development. However, water extraction requires a permit and usually involves extensive monitoring, reporting and other requirements to assess effects upon the water and other natural resources.

5.11.D WATER RESOURCE ISSUES

Lake Management Program

More than 20 years have passed since the WLA was initiated, and 20 years since the lake management program was adopted. When the Commission adopted the lake management program, it explicitly contemplated periodic review and update of the program. In the intervening years, considerable new information about natural resources and land use in the jurisdiction has become available and should be considered as part of a review and update of the WLA. For example, fisheries surveys are now available for some ponds which had not been surveyed at the time of the WLA. Likewise, eco-regional surveys have greatly added to information on the location and extent of botanic resources. The Commission will consider updating the resource assessments of all lakes to reflect this information.

At the same time, it is important to acknowledge that a factual update of the WLA will raise some potentially complicated policy questions. For example, fishless ponds have been identified in recent years as a relatively rare and somewhat unique resource. Should the fisheries resource assessment be revised to reflect the value of this recently identified resource? Or, if ponds designated as Management Class 6 have been surveyed and no longer support a coldwater fishery, should they be removed from this designation?

The lake management program was developed largely to address concerns that development was incrementally eroding the values of lakes in the jurisdiction. Since then, appreciation for the uniqueness of many high-value lakes has only increased. In addition to updating the inventory that was used as the basis for the lake management classes, the Commission will assess the effectiveness of the management classes at addressing these concerns.

For example, the program has been demonstrably successful in protecting certain classes of ponds, particularly those designated as Management Classes 1, 2 and 6. (The Commission will, however, consider whether existing access and motor restrictions on remote ponds are being adequately enforced when it reviews the lake classes.) It is less clear whether the values of lakes in other management classes have been effectively protected, especially Resource Class 1A lakes which have multiple outstanding values. It is also unclear whether the Management Class 3 designation has effectively guided growth to these lakes while still protecting their special values. Development on Management Class 3 lakes has been a feature of several concept plans. The adjacency waiver associated with these lakes has resulted in some fairly intensive development on lakes with remote characteristics. The adjacency waiver creates a presumption of appropriateness of development that may not always be justified for all parts of these lakes, particularly the larger lakes. As part of its review, the Commission will consider whether a more refined application of the adjacency waiver on Management Class 3 lakes is warranted. In summary, closer study and assessment will clarify whether the management classes have effectively accomplished the program's objectives.

Since the introduction of concept plans as a new planning tool, the Commission has learned from its experience reviewing a number of these plans which range in size and complexity. The Commission wishes to evaluate the concept plan process based on its experience and in the context of its current

regulatory framework, weighing issues of flexibility versus predictability, landowner-initiated concept plans versus LURC-initiated prospective planning, and implementation issues. Concept plans are further discussed in Chapter 4.

Chase Stream Pond, Misery Township, Management Class 6

First Roach Pond, Management Class 3

The Commission is committed to periodically evaluating and updating, as appropriate, its lake management program to ensure that the special values of lake resources in the jurisdiction will be protected while recognizing the need to consider landowner equity.

Consumptive Water Use

Use of groundwater and surface water for drinking water, agriculture, industry and other purposes has been a common practice in Maine for many years. However, as the scale of this use has changed in recent decades, with unprecedented volumes of water being removed for agriculture, snowmaking and drinking water, some concerns have developed. There is a new awareness of the potential for water withdrawal to adversely affect other resources.

Maintaining both the volume and the quality of groundwater and surface water is critical to the protection of healthy aquatic habitat in Maine's lakes, ponds, rivers and streams. In 1995, excessive surface water withdrawal for crop irrigation in northern Maine caused fish kills and damage to lake beds. Similar concerns of reduced lake levels and stream flows in the Downeast region arose in 1997, raising questions of whether surface water withdrawal for agricultural irrigation was adversely affecting endangered Atlantic salmon habitat.

There is growing appreciation for the ecological and economic value of the jurisdiction's high-quality water resources at a time when demand for their use is on the rise. The jurisdiction has abundant water supplies, more than enough to meet current and expected future demand. Nevertheless, the above examples made it clear that there are limits to how much surface water can be removed without adverse effects on the ecology of lakes and flowing waters, depending on factors such as site characteristics, time of year and the presence or absence of drought conditions.

As reliance on surface water has proved to be problematic under certain circumstances, water users have increasingly turned to groundwater. Similar questions have been raised regarding the potential impacts of high-volume groundwater withdrawal, particularly when proximate to streams. Accurate predictions on the complex interaction between groundwater and surface water are still a long way off, making protection of adjacent aquatic habitat in these situations an evolving science.

Another issue regarding consumptive use is competition for the resource. There are a limited number of resources that can support sustainable, high-volume withdrawals and are conveniently located. This has led to cases of multiple users competing for a particular water source — both in the jurisdiction and in organized areas — resulting in complex negotiations regarding allocation of the resource among the involved parties.

The rise in consumptive water use has been rapid, but the Commission and other agencies have worked diligently to address associated issues of adverse impact in an informed and appropriate manner. DEP adopted rules governing surface water withdrawal in 2007. The Commission has incorporated these rules into its existing permitting process and will continue to collaborate with other agencies to refine its approach. Regulation of stream flow and water level continues to evolve and monitoring and assessment of use and impacts will remain important to regulatory efforts to minimize environmental harm while accommodating use.

Groundwater extraction has also been studied in recent years. In response to growing demands on groundwater, the Legislature established a policy group to review Maine's regulations governing groundwater withdrawal. The group recommended a watershed-based approach to groundwater issues, which focuses on watersheds at risk, and outlined a process for implementing this recommendation. Its recommendations included that the Commission review its standards governing water withdrawal as needed to (1) clarify the existing regulations, (2) assure consistency with DEP and the Division of Health and Human Services, and (3) assure that the Commission's statutory authority over groundwater

withdrawal is clear. The group also recommended that the Commission explore the development of a guidance document to ensure its review is consistent and coordinated with other agencies. Since groundwater extraction on a large scale is relatively new to the jurisdiction, the Commission's policies and procedures will continue to evolve, reflecting developing knowledge about and experience with the use and its impacts.

While the state is moving to address issues associated with the environmental impacts of consumptive water use, a number of land use issues have also been raised by these facilities. One involves whether water extraction activities should require rezoning to a development subdistrict. Surface water and groundwater extraction has been allowed by the Commission in the General Management (M-GN) Subdistrict as a location-dependent natural resource extraction land use, similar to timber harvesting, mineral extraction (gravel pits), peat extraction and maple sugar processing. Most of these uses involve forestry or agriculture, or are resource extractive, require modest facilities and involve minimal processing. By contrast, mineral extraction exceeding certain size thresholds and involving the use of mineral processing equipment and associated structural development requires rezoning to the Commercial Industrial Development (D-CI) Subdistrict, and metallic mineral mining requires rezoning to a Planned Development (D-PD) Subdistrict. These rezoning requirements are based on both the scale and intensity of these uses.

Facilities associated with surface water and groundwater extraction have the potential to conflict with other uses based on transportation or other impacts. The Commission's permitting requirements and statutory review criteria provide sufficient opportunity to address these impacts. However, given the increased interest in groundwater extraction, it is appropriate to specifically identify water extraction as a permitted use in the appropriate subdistricts in order to clarify permitting procedures.

The "Meadow" on Monhegan is an aquifer, the island's primary water source

Water Quality

Evidence of the high quality of waters in Maine, the most outstanding of which are concentrated in the jurisdiction, continues to grow. With 814 miles of rivers classified as class AA for water quality purposes, 1,317 miles classified as class A, and thousands of clear lakes, water quality is undeniably one of the region's greatest assets. Maintenance of excellent water quality is critical to protection of the jurisdiction's principal values. The value of the jurisdiction's natural resources includes not only the quantity of water resources but also the outstanding quality of that water.

There is a growing body of evidence documenting the critical relationship between riparian habitat and water quality. Strong standards for riparian areas also serve a dual purpose of maintaining very valuable habitat for plants and animals. The Commission has revised its vegetation clearing and timber harvesting standards a number of times over the years, most often to ensure consistency with statewide standards. However, the quality of water in the jurisdiction's lakes and streams, overall, is markedly better than other parts of the state. Very few water bodies in the jurisdiction are on the state's list of impaired waters, even though they represent half of the state's water resources. Consequently, it is worth evaluating existing riparian and other standards to determine whether they are adequate to maintain the very high quality of water in the jurisdiction in the face of continued development.

Since its inception, the Commission has made a special effort to protect lake water quality. Many years ago, the Commission identified "water quality limiting lakes" — lakes on which a density of one dwelling unit per 150 feet of shoreline would increase the phosphorus concentration of the lake water by 5 parts per billion (ppb) or more. Since this assessment was made, significant advances in scientific knowledge have led to more accurate ways to evaluate the impact of watershed development on lake water quality. The Commission now requires intensive development such as subdivision) in lake watersheds to submit phosphorus control studies and utilizes DEP's expertise in reviewing them. It recognizes a 1 ppb change in a lake's phosphorus concentration as an indicator of unacceptable water quality degradation, consistent with DEP's policy statewide.

Since the Commission has adopted a more effective approach to protecting lake water quality, it is appropriate to remove the water quality limiting lake designation from LURC regulations and zoning. However, a significant amount of small-scale development (such as dwellings on individual lots) is not reviewed using DEP's phosphorus control methodology. Accordingly the Commission will consider measures to limit the phosphorus export of such development. Driveway length and design are key factors, and the Commission will consider including performance standards for driveways that are greater than 100 feet in length, as well as standards to minimize interruption of natural drainage ways. The Commission will continue to adapt its approach to protection of lake water quality as needed to reflect the most current information and will aggressively pursue its goal of maintaining the excellent water quality that distinguishes most lakes in the jurisdiction.

As more information becomes available regarding groundwater resources, the Commission will also assess the adequacy of the Commission's protection of these resources.

Stormwater Regulation

While the jurisdiction generally lacks the extensive development and impervious areas (more common to southern Maine) that require substantive stormwater regulation such as that implemented by DEP in 1997 for organized areas, the quality of the jurisdiction's water resources is very high. Consequently, consideration of additional standards to minimize the impact of land development and use on the jurisdiction's high-quality water resources is appropriate. The Commission will work collaboratively with

DEP to develop appropriate stormwater standards that will protect the generally excellent water quality that is found throughout the jurisdiction.

DEP presently administers phase 2 of EPA's stormwater program. This program, which applies statewide, addresses stormwater runoff from smaller generators, including construction sites disturbing between one and five acres. Consequently, some developers in the jurisdiction must obtain permits from both DEP and the Commission prior to beginning work. The Commission will work with DEP to consider the transfer of this authority to LURC to streamline the state's permitting efforts.

Invasive Aquatic Species

Invasive aquatic species have become a significant issue in many states because of the threats these non-native species pose to lake ecology and other values. Invasive aquatics are the primary cause of freshwater species extinctions. In 2006, Maine had 26 identified infestations of lakes by invasive aquatic plants, none of which were in the jurisdiction. Nevertheless, infested lakes in central and southwestern Maine are nearby, and containing further spread of invasive plants remains a significant challenge. Unfortunately, the situation regarding invasive animals is different. Invasive fish species, such as black crappies, smallmouth bass, northern pike and muskellunge, have been illegally introduced into a number of the jurisdiction's waters and pose serious threats to the native species in those watersheds.

DEP administers statewide rules which help prevent the spread of invasive aquatic plants. These rules prohibit the transportation, cultivation or distribution of invasive plant species on state roads or into state water bodies. The Maine Natural Areas Program conducts outreach and education on invasive plants in Maine and also produced the Invasive Plant Atlas of Maine in 2002, which shows the distribution of many invasive plant species. In addition, the University of Maine Cooperative Extension develops and distributes information bulletins on how to identify and avoid introducing invasive plant species. Many of the major forest landowners in the jurisdiction are certified by either the Sustainable Forestry Initiative or the Forest Stewardship Council, which have requirements for addressing exotic and invasive species.

The spread of invasive aquatic plants to the jurisdiction, and further incursion of invasive fish species in the jurisdiction would clearly undermine natural resources and values in the region. Support for preventive measures is essential. New infestations require management, and tend to divert financial and other resources from other water quality needs. As the state gains experience with this issue, the Commission will remain open to innovative ideas designed to reduce the risk of spread, including recommendations regarding boat launch siting and design, as well as float plane use.

5.12 Wetland Resources

Wetlands occupy an estimated 17% to 19% of Maine's land area, more than the combined wetland area of the other five New England states. In recent decades, public awareness and appreciation of the ecological, social and economic values of wetlands has grown, along with recognition of the need for better information about them. New tools for gathering and managing wetland information continue to be developed and are vital for the protection of critical wetland functions.

5.12.A CHARACTERISTICS

Generally, wetlands are areas where the water table is at, near or above the land surface for extended periods of time. Wetlands are regulated as "waters of the state" under Maine law (38 M.R.S.A., § 361-A(7)), and waters of the United States under the federal Clean Water Act. In accordance with the 1987 U.S. Army Corps of Engineers ("ACE") Wetland Delineation Manual, wetlands are identified by the presence of wetland hydrology, soils that result from periodic saturation or inundation, and vegetation tolerant of these conditions. Although many wetlands in Maine are hydrologically and physically connected to lakes, ponds, rivers, streams and brooks, some wetlands are geographically isolated and their saturated condition is sustained by groundwater seepage, precipitation, temperature or soil conditions.

Wetland

Maine has an estimated 3.3 to 3.7 million acres of wetlands, including forested and scrub shrub swamps, bogs, fens, freshwater meadows, marshes, intertidal areas and deep water habitats (excluding marine deepwater). The U.S. Fish and Wildlife Service has classified and mapped wetlands and deep water habitats across the country as part of the National Wetlands Inventory ("NWI"). The classification system follows Cowardin, et al., 1979. The NWI maps for Maine show approximate wetland boundaries and classifications at a scale of 1:24,000. Most maps are based on aerial photography taken in the 1980s, although efforts are underway to update and enhance maps for Maine's coastal and southern areas. The NWI maps depict the wide variety of wetland conditions in the state, which range from intertidal wetlands to inland forested wetlands and also include deep water habitats (although the latter, while regulated, do not meet the ACE strict definition of a wetland). Many mapped wetland areas include more than one wetland type.

The most abundant wetland types throughout the jurisdiction are forested or scrub shrub. Other somewhat less abundant but equally important wetland types in the jurisdiction are emergent and scrub shrub marshes along lake and river shorelines, which provide a variety of ecological functions. Documentation of wetland communities and conditions in the jurisdiction continues to improve.

In addition to the NWI, the Maine Natural Areas Program ("MNAP") has developed a classification system for all ecosystems and natural communities throughout the state, including both wetlands and uplands. This classification system describes the natural communities of Maine and outlines how different communities occur together as larger-scale ecosystems over the landscape. Additionally, MNAP identified a number of exemplary or rare wetland community types that occur in the Commission's jurisdiction.

Wetlands that have organic soils are collectively referred to as peatlands. Some peatlands, commonly known as bogs or fens, contain substantial peat deposits. Peatlands are particularly abundant in eastern and northern Maine and are a relatively common feature of the jurisdiction.

While the jurisdiction has many coastal islands, it has relatively few large coastal wetlands. However, intertidal areas, which often contain small tidal marshlands and adjoin freshwater wetlands, are important habitat for migrating or breeding birds along Maine's coast. Certain areas of coastal wetland associated with Cobscook Bay, some of which occur in the jurisdiction, have been identified as providing high-value habitat.

Wetlands change from one subclass or water regime to another as a result of natural succession, human-induced changes and sometimes even animal activities (primarily beaver in Maine). They are dynamic systems, underscoring the need to periodically update mapped wetland information to maintain an accurate information base.

Since European settlement, by the mid-1980s Maine had lost an estimated 20% of its wetlands. The rate of wetland loss, nationally and in Maine, has declined in recent decades as a result of efforts to protect wetlands and their functions. In the organized areas of Maine, approximately 750 acres of wetland were filled or altered as part of permitted activities between 2000 and 2007. During the same time period, approximately 1,750 acres of wetland were created, restored, enhanced or protected as mitigation for those wetland losses. Historically, hydropower impoundments were probably responsible for the greatest amount of wetland losses in the jurisdiction. However, in addition to wetland losses due to development, over time some natural and man-made activities, such as beaver dams and hydropower, may also result in the creation of wetlands. Currently wetland acreage losses associated with permitted activities are low in the

jurisdiction when compared to the organized areas of the state, largely because of the slower pace of development and other land uses. Loss of wetland functions and values due to the loss of wetland acreage are discussed in more detail below.

5.12.B WETLAND VALUES

Wetlands are appreciated today for their multiple ecological functions, as well as their social and economic values. The centuries-old perception of a wetland as useless land that could be redeemed only by filling or draining is gone. It has been replaced by recognition of the vital role wetlands play in sustaining important natural processes and communities.

Wetlands provide critically important ecological functions, many of which have associated social and economic value. First, wetlands attenuate flood flow by retaining water that enters the system as precipitation and surface runoff, and slowly releasing it to streams and lakes. As a result, wetlands reduce flood damage during times of peak water levels and maintain stream flow during periods of low water. Second, wetlands protect water quality by acting as settling basins, filtering out suspended sediments and absorbing and transforming nutrients and pollutants. Third, by absorbing wave action and storm energy, wetlands stabilize shorelines and reduce erosion. Fourth, wetlands function as an important part of the hydrologic pathway for recharge and discharge of groundwater. Finally, wetlands provide vital habitat for plants and animals. Even though wetlands occupy only 5% of our nation's land area, they contain 30% of its vascular flora. The mix of water and rich plant resources make wetlands valuable breeding, feeding, nesting, resting and wintering areas for a wide variety of birds, fish, insects, reptiles, amphibians and mammals. According to the U.S. Environmental Protection Agency ("EPA"), more than one-third of the federally threatened and endangered animal species live only in wetlands and nearly half use wetlands. One-third of Maine's rare and endangered animal species are found in wetlands during part of their life cycles.

Over the past decade, awareness of the extent and significance of vernal pools in Maine has grown. Vernal pools are small, temporary pools in shallow depressions in uplands, wetlands and floodplains that fill with water in spring and dry up in summer. Vernal pools are fishless, making them critically important to the successful breeding of amphibians such as salamanders and frogs. They also support many water-dependent species and are important stepping stones for wetland-dependent wildlife traveling across the landscape. The characteristics of vernal pools vary considerably based on factors such as landscape setting, surficial geology, soil type and surrounding vegetation. While the knowledge base about the function, value and location of vernal pools on the northern landscape continues to develop, many agree that vernal pools are among the most unique and productive wetlands in New England and vitally important to the food chain of forests. In recent years, the Maine Department of Environmental Protection developed a definition of and rules protecting significant vernal pools occurring in the organized areas of the state. Likewise, ACE now protects vernal pools at the federal level.

Because wetlands are host to a wide range of flora and fauna, they offer rich opportunities for use and enjoyment by people. Wetlands are valued for many traditional uses such as hunting, fishing and trapping, as well as photography, nature appreciation and environmental education. Both consumptive and non-consumptive uses of wetlands have indirect economic values, as well as important social values.

Wetlands also have a number of direct economic uses, including production of food and fiber. Historically, considerable wetland acreage in southern Maine was drained for agricultural use, but relatively few such areas have occurred in the jurisdiction, mostly in the St. John River valley. By contrast, timber harvesting in forested wetlands has been common in the jurisdiction for many years. Red maple, black spruce, larch and, to a lesser extent, ash and northern white cedar in forested wetlands provide wood for the state's forest products industry. Due to soil properties and seasonal wetness, forested wetlands generally produce timber at a slower rate than upland areas. Most harvesting activities take place during the winter months when the ground is frozen to reduce environmental damage.

Some peatlands contain substantial peat deposits that have economic value: at least 35,000 acres of commercially valuable peat exists in the jurisdiction. Some peatlands in the jurisdiction have been mined for peat, principally in Washington County. In North America, peat is mined principally for use as a horticultural or agricultural product. While Maine has several active peat mining operations and some old, abandoned ones, new operations in the jurisdiction have not recently been pursued. Maine's largest active operation is at Denbo Heath in T16 MD and Deblois where, in 1988, North America's first electrical co-generation facility designed to burn peat was built. However, the use of peat for energy generation has not proven particularly successful at this site, but it is actively mined for peat as a horticultural product. Because peat takes hundreds to thousands of years to form, it is not viewed as a renewable resource. Peat's value as an energy resource is discussed in Section 5.5.

It has been difficult to track the long-term loss of wetlands in the jurisdiction. Before 1998, only non-forested wetlands larger than 10 acres were shown on LURC's zoning maps as Wetland Protection (P-WL) Subdistricts, and as such impacts to smaller wetlands were not regulated by LURC. The most common activity in wetlands — timber harvesting — is generally allowed without a permit if conducted according to standards and regardless of the size of the wetland. Most landowners have avoided development activities in large wetlands because of the challenges and costs associated with working in wet environments. Several other common activities that can cause wetland alterations (such as stream crossings) are allowed without a permit, though subject to standards, in many subdistricts. In recent years, the Commission has developed a mechanism for tracking wetland losses resulting from permitted activities in the jurisdiction. Because the cumulative effect of frequent minor alterations and occasional major alterations of wetlands may present a threat to the environment and economy of the state and its quality of life, the Commission will continue to track wetland losses in the jurisdiction.

Despite the Commission's adoption of an expanded wetland regulatory program in 1998 resulting in significantly more mapped wetlands, permitting trends have not changed significantly. Landowners continue to avoid wetlands as much as possible. The Commission's wetland impacts tracking system, in place since 2002, reveals that the most frequent type of impact has involved very small areas (less than 500 square feet) and is associated with dock reconstruction, shoreline stabilization and similar activities. Larger disturbances of wetland acreage are associated with activities such as construction and repair of public and private roads. Overall, the total wetland acreage affected by permitted activities is small, generally less than 10 acres annually. This level of disturbance remains well below the rest of the state, which averages about 100 acres per year.

5.12.C REGULATORY APPROACH

Federal Regulatory Approach

Historically, the authority to regulate wetlands in the jurisdiction has been shared among several government agencies. ACE regulates wetland alterations of any size under Section 404 of the Clean Water Act. Section 404 regulates discharge of dredged or fill material into waters of the U.S., including wetlands. Section 401 of the Clean Water Act, administered by the EPA, requires those applying for federal licenses or permits for discharges to U.S. waters, including wetlands, to either obtain water quality certification or a waiver from the appropriate state certifying agency. The Commission and Department of Environmental Protection ("DEP") have been designated as the state agencies responsible for water quality certification in Maine. In 2005, ACE re-issued a programmatic general permit ("PGP") that expedites its review of low-impact work in wetlands and other areas in Maine. PGPs are intended to reduce duplicative review between ACE and state regulatory agencies. While the ACE permit process remains independent from state processes, ACE is able to "piggy back" on much of the state review and uses the state applications for its processes. In a select number of cases, projects that are regulated by the state and have very minor impact to aquatic resources may not have to be reviewed by ACE.

Over the years, there has been an effort to reduce duplicative review between state and federal agencies. Steps were taken, both legislatively and administratively, to make DEP's and ACE's wetland programs comparable and to consolidate their permitting processes. The Commission has participated in these efforts as much as possible, although it is sometimes constrained by the fact that its regulatory mandate is different. It carries out planning functions in addition to natural resource protection. As part of this effort,

LURC and DEP agreed to waive water quality certification for activities covered under the 2005 PGP to facilitate the ACE's permitting process. The Commission also has a practice of forwarding all applications involving wetlands to ACE, and ACE determines whether a federal permit is required.

State Regulatory Approach

The Commission and DEP administered independent wetland programs for many years. The statutory authority for DEP's program came from the Natural Resources Protection Act ("NRPA"), while LURC's program originated from the mandate to protect resources which is embedded in its enabling statute. During the 1990s, in response to interest in streamlining permitting processes, Maine passed several pieces of legislation designed to improve wetland protection, reduce duplicative review and create a consistent approach statewide. These legislative initiatives were implemented through the cooperative efforts of the Commission and DEP, resulting in separate but equivalent wetland programs. DEP administers NRPA in organized areas, while LURC administers NRPA in its jurisdiction through a program which reflects its unique planning and permitting function. Since 1999, the Commission has held sole authority to regulate wetlands in its jurisdiction and administers wetland rules designed to be consistent with NRPA and DEP rules while also reflecting LURC's broader role.

LURC Regulatory Approach

The Commission regulates land use activities in coastal and freshwater wetlands designated as Wetland Protection (P-WL) Subdistricts, as well as wetlands delineated during the permitting process. Although some activities are allowed in these subdistricts, the purpose of the P-WL Subdistrict is to conserve wetlands in essentially their natural state because of their indispensable biologic, hydrologic and environmental functions.

The Commission's regulatory program establishes three types of wetland subdistricts, P-WL1, P-WL2 and P-WL3, which reflect the different functions and values of wetlands. This three-tiered approach was designed to be similar to DEP's wetland regulatory program to provide statewide consistency. The wetland subdistricts cover approximately 909,000 acres of land, not including submerged lands such as lakes and ponds, which are also included in the P-WL1 Subdistrict. Wetlands of special significance are zoned P-WL1, spanning over 218,000 acres. These P-WL1 wetlands include areas below the normal high water mark, coastal wetlands and freshwater wetlands that are considered significant based on criteria outlined in the Commission's standards. As defined in the standards, certain scrub shrub and non-forested wetlands and small constructed ponds are zoned P-WL2, and most forested wetlands are zoned P-WL3.

A limited number of uses and activities, most of which are low-impact, are allowed in wetland subdistricts without a permit. Forest management activities (excluding timber harvesting) and land management roads, which have some potential to impact wetlands, in P-WL3 Subdistricts are the principal uses allowed without a permit. Additionally, a number of uses are allowed without a permit provided the activities are conducted in accordance with standards. Examples include certain activities affecting less than 4,300 square feet of P-WL2 or P-WL3 wetlands, limited extent land management roads and timber harvesting. Permits are required for more intensive uses and activities affecting larger areas.

Permitting requirements vary depending on the size of the proposed alteration and the type of subdistrict affected. Activities in high-value wetlands (such as P-WL1 wetlands) and larger alterations receive a higher level of scrutiny. The Commission's standards promote avoidance and minimization of wetland alteration

and include provisions for compensation, with a goal of no net loss of wetland functions and values. These permitting standards were specifically designed to provide a level of protection consistent with the goals of NRPA and DEP regulations.

As noted earlier, wetland subdistricts were identified based on NWI maps. While the NWI maps are an excellent tool for identifying approximate wetland boundaries across very large areas, the Commission recognizes the accuracy issues associated with using them as the basis for delineating wetland subdistricts. Identification of wetlands from aerial photographs invariably results in some omission of wetlands, misclassification of wetlands and incorrect wetland/upland boundaries. Also, some wetlands are too small to be identified on zoning maps. In response to these limitations, the Commission requires on-site wetland delineation using the 1987 ACE Wetland Delineation Manual for most intensive uses requiring a permit. If an unmapped wetland is identified pursuant to a wetland delineation, the Commission considers all relevant information to determine whether the area should be rezoned to a P-WL1, P-WL2, or P-WL3 Subdistrict.

The Commission will undertake expansion of its wetland program to include significant vernal pools to reflect their identification in NRPA as significant wildlife habitat.

5.12.D WETLAND RESOURCE ISSUES

Consistency of Wetland Regulation

Wetlands in Maine are regulated under several state statutes, including the Land Use Regulation Law, the NRPA, and the Mandatory Shoreland Zoning Act. There are some differences in how wetlands are handled in different jurisdictions. Even though the Shoreland Zoning Act applies only to municipalities, most parties agree upon the value of maintaining similar standards statewide. However, perfect consistency is not always possible.

For example, there are differences in the Commission's approach to wetland regulation and the approach outlined in DEP's shoreland zoning guidelines. Many of these differences are related to LURC's map-based regulatory framework, the size and nature of its jurisdiction, and its broader planning function. A wetland is zoned somewhat differently under LURC's framework than under the Shoreland Zoning Act, although the overall outcome is similar.

As noted earlier, the Commission administers NRPA within its jurisdiction while DEP administers NRPA in organized areas. Each agency carries out its mandate under this law through different, yet equivalent programs. Maintaining regulatory consistency within these separate programs can be challenging. Vernal pools provide a good example of this challenge. Because of their small size and ephemeral nature, vernal pools are not easily identified year-round. Consequently, the identification and protection of vernal pools pose some unique challenges. However, as a part of maintaining consistency with NRPA, updates to LURC's rules, which will include provisions for protection of vernal pools, will be made.

In 2006, pursuant to NRPA revisions extending protection to vernal pools, DEP adopted rule changes regulating significant vernal pools, including mandatory on-site delineation of vernal pools for most state-regulated development. Forestry activities in significant vernal pools are exempted by statute from regulation. The Commission will pursue rule changes to provide comparable protection to vernal pools in

its jurisdiction, but its approach may not exactly mirror DEP's program. A number of factors will influence the type of program the Commission develops, including ease of identification, location of vernal pools on the northern landscape, relative threats to the resource and staff resources.

In 2008, DEP in cooperation with a federal program administered by the ACE, initiated a program referred to as "in lieu fee" ("ILF"), which allows compensation for wetland impacts by way of money paid into a mitigation fund to be used for conservation of selected high value wetlands. DEP's ILF compensation program was established to provide applicants with a flexible compensation option over and above the traditional options. LURC's wetlands compensation guidelines allow for mitigation banking as a type of compensation. The guidelines will be updated to better coordinate with the ILF programs now being administered by DEP and ACE.

In addressing these and other wetland issues, the Commission will continue to strive for consistency with other wetland programs. It will not always achieve perfect consistency because of its unique role and mandate, but differences will likely not be substantive. The Commission will initiate rule changes to its wetland program as needed, considering factors such as the importance of the change to protection of the resource, the impact on regulatory predictability, and availability of staff resources.

Pursuant to NRPA, the Commission is directed, in consultation with DEP, to review its land use standards annually to ensure that they afford a level of protection consistent with NRPA goals, the goals of the Land Use Regulation Law, and this Plan. The Commission will conduct these annual reviews and will amend its wetland program as needed in accordance with this directive. It will continue to work with its federal and state regulatory partners to provide a wetland program that fulfills its statutory obligation to plan and to protect resources, and is consistent with and not duplicative with other regulatory entities.

Wetland Mapping

The Commission used NWI maps, as the basis for its wetland subdistricts. These maps are the best readily available source of information on wetland type and location for purposes of mapping wetlands in LURC's vast jurisdiction. The P-WL Subdistricts derived from the NWI maps provide valuable guidance to landowners as they plan land use activities.

There are accuracy issues associated with using NWI maps as a basis for zoning. The Commission's standards partly address these issues by incorporating provisions requiring on-site wetland delineation to address inaccuracies. Nevertheless, the Commission may need to revisit its wetland protection program as new, more accurate information becomes available. While there are no plans to redo the NWI maps in the near future, maps for southern and coastal regions are being updated with available information so as to facilitate assessment of wetland functions.

The availability of NWI maps made it possible to establish wetland districts in the jurisdiction, but the Commission has no comparable source of mapped vernal pools. The DEP, in cooperation with the Maine Department of Inland Fisheries and Wildlife, is now developing a database of and mapping vernal pools identified statewide during the project review process or other efforts, although most are not in the jurisdiction. The deficiency of such information on vernal pools in the jurisdiction will add to the challenge of protecting these resources because the Commission has traditionally preferred the predictability provided by map-based zones. However, the Commission will seek an approach that protects the resource, provides as much predictability as possible, and may be efficiently administered.

While the existing information base is not perfect, the amount and quality of natural resource information will continue to improve, coupled with technological advances in the ability to evaluate this information. These advances will continue to guide the Commission's wetland protection efforts in the years to come.

Climate Change

In addition to wetland losses due to individual development, the growing awareness of the adverse effects of climate change on wetlands has additionally underscored the need to limit wetland losses. Adverse effects on wetlands due to climate change may include, but are not limited to, surface drying during the growing season leading to habitat changes such as loss of drier-end wetlands or habitat important for wetland-dependent species; or increased or decreased precipitation resulting in hydrologic changes to wetland systems. The Commission understands the role of wetlands in maintaining Maine's environmental and economic health, and the importance of implementing its regulatory program for protection of wetlands within the jurisdiction. Climate change is further discussed in Section 5.2.

Program Administration

The 1999 rule changes and associated expansion of the P-WL Subdistrict increased both the scope and complexity of the Commission's wetland protection program. The number of wetland alteration permits has increased somewhat since these changes, reflecting the expansion of zoned wetland acreage on the ground. Permitting staff field more questions from applicants regarding the wetland program, and many of these questions require expertise in wetland delineation and technical regulations. Since 1999, LURC staff has received training to improve field skills in recognizing wetland boundaries and to assure consistency in the application of the wetland alteration standards. Nevertheless, staff turnover and the level of expertise required to effectively administer this program continue to challenge the agency. The acreage of wetlands proposed for alteration annually remains relatively small, so the Commission has time to evaluate program administration and consider changes to address the issues identified above. Staff training will continue to be critically important to the success of this program.

Cattails

Chapter 6

Compliance

The Commission's compliance program consists of four equally important components: education, public assistance, monitoring and enforcement. Since adherence to environmental regulations and zoning provisions is critical if they are to be meaningful, the Commission will administer a balanced program combining concerted education and assistance with vigorous monitoring and enforcement in order to achieve a reasonable degree of adherence to the law.

The task of conducting a compliance program for a geographic area consisting of approximately half of the State of Maine, including many areas that are difficult to access, is complex and difficult, especially given the limited resources available for the program. The Commission will continue its efforts to educate, assist, monitor and enforce, as well as search for additional ways to improve adherence to LURC's regulations considering the limitations of available resources.

6.1 Education

An important component of achieving adherence to LURC's regulations and preventing violations and environmental degradation is education. The Commission is committed to helping landowners, real estate agents, foresters, contractors and the general public understand and be aware of LURC's rules so that they can adhere to them. The Commission has developed informational brochures regarding LURC requirements such as the brochure on its vegetation clearing standards. Such brochures are distributed with property tax bills, made available at regional offices or mailed with application or permit materials. LURC staff also offers training sessions on specific technical components of LURC's regulations, such as timber harvesting and road construction, and attends gatherings of associations such as camp–owners' associations to address and answer questions on LURC's zoning and regulations.

The Commission will continue to inform landowners, land managers, contractors, citizens, real estate agents, lawyers, bankers and others concerning the laws and regulations the Commission administers. The Commission will also continue to train field personnel of other agencies in order to supplement the work of its small inspection and enforcement staff. In addition, the Commission is currently exploring the possibility of greater utilization of the internet to provide informational brochures, answers to frequently asked questions, application materials and instructional videos. These actions along with continuing to hold and expand its public outreach sessions will further help to inform the public.

6.2 Community Assistance and Public Participation

It is the Commission's policy to maximize assistance to and involvement of the communities, individuals and groups which it serves. The Commission has assisted a number of communities in preparing land use plans and zoning ordinances toward the goal of assuming local control of land use regulation. The Commission encourages local land use control for organized communities having the interest and willingness to undertake this work.

Public participation is encouraged in all of the Commission's work through public hearings, Commission meetings, permit application review and other public forums. Public access to all information pertaining to the Commission's actions will be maintained and facilitated.

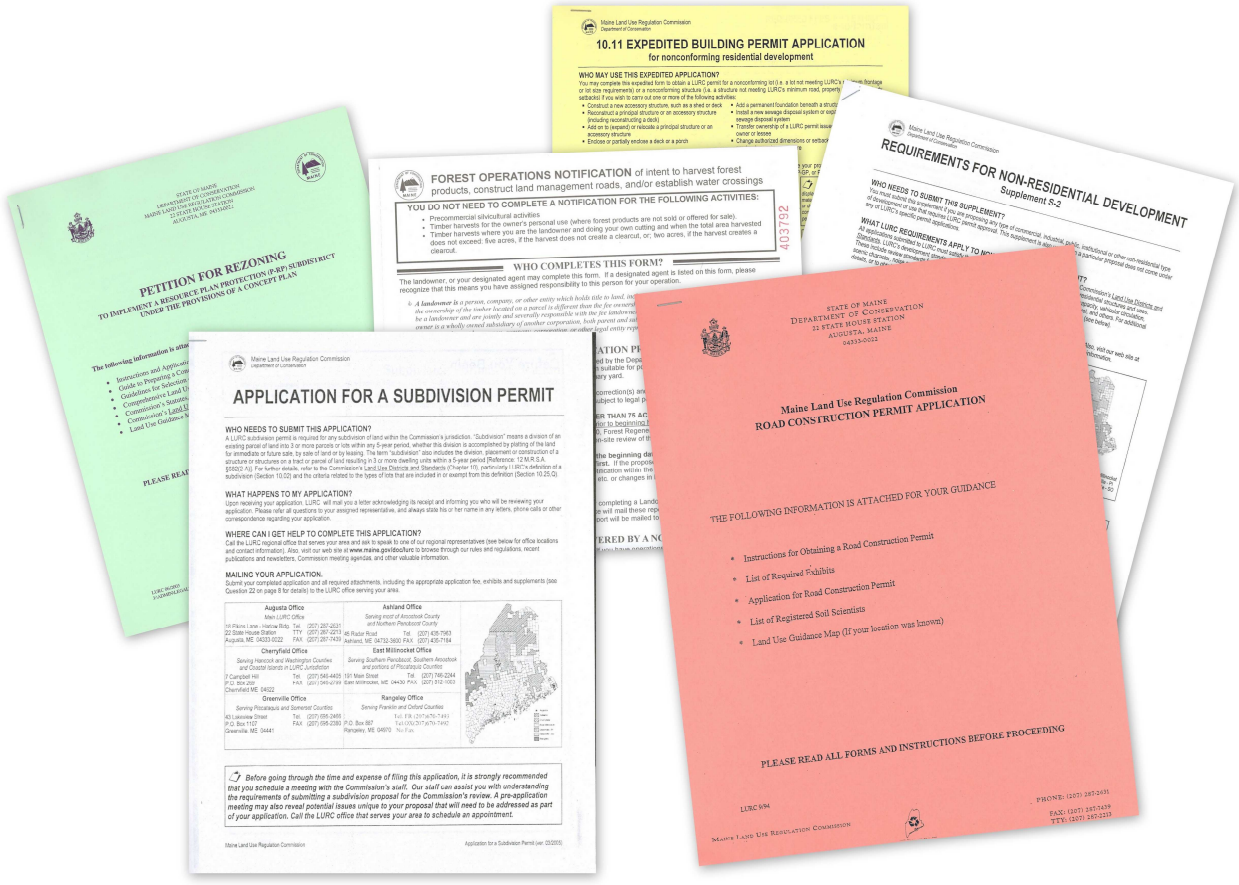
In the past, the Commission or landowners have occasionally initiated joint field trips or meetings to discuss matters of mutual concern. The Commission will make efforts to ensure there continue to be opportunities for a dialogue with landowners and other interests.

6.3 Applicant Assistance

The Commission will work toward assisting applicants in understanding and complying with its processes and requirements. To this end, the Commission will seek to simplify and clarify application procedures wherever possible, while assuring that it addresses the environmental issues of public concern. There are currently two types of expedited permit applications that streamline the application and review process. The Commission is also in the process of initiating online applications to further simplify the process.

The Commission has established five regional offices, enhancing access for assistance to residents of the jurisdiction. From these locations, staff can assist residents with permitting requirements such as the notification and general application processes. Staff can also conduct site visits to assist landowners in assessing property conditions, identifying critical permitting features and exploring options to develop property in a manner consistent with the regulations. The Commission will continue this effort as necessary and as resources (especially staff resources at the regional office level) become available.

To help ensure adherence to the Commission's regulations and its Plan, applicants for subdivision or major development proposals are strongly encouraged by the Commission to meet with the permitting and planning staff prior to fully formulating their proposals. Such pre-application conferences have been extremely helpful in avoiding unnecessary time and expense formulating major development proposals, which may not initially fully comply with the Commission's goals, policies and regulations.



6.4 Monitoring

On-site monitoring of development in the jurisdiction is critical to ensuring that education and assistance achieve the goal of adherence to LURC's regulations. Monitoring is also an important tool for heightening and maintaining landowners' awareness and expectation that adherence to LURC's rules is important.

Monitoring efforts are labor intensive and costly, and the Commission has sought to maximize the efficiency of monitoring efforts through the use of self-certification forms. These forms require the permittee to evaluate and certify the adherence of their completed project with the relevant regulations. In some cases, the self-certification process is supplemented with on-site inspections by staff. Due to the volume of permits issued each year and limited staffing and resources, it has been the Commission's practice to require formal certificates of compliance only for approved subdivisions and selected major development projects. In recent years, real estate agents, mortgage lenders and others associated with the conveyance of land have begun to request on-site inspections and certificates of compliance by LURC staff prior to the sale or financing of property. Given the increased interest and significance of on-site inspections and certificates of compliance, the Commission will explore and assess the feasibility and mechanisms to extend the requirement for on-site inspections and certificates of compliance to a broader range of development.

6.5 Enforcement

Education, assistance and monitoring all help landowners and others to adhere to the Commission's regulations. However, when adherence does not occur, consistent enforcement is a necessary component in any regulatory program. Each year numerous violations of the Commission's rules and regulations are reported, many of these under the Joint Enforcement Agreement between LURC and the Departments of Environmental Protection, Inland Fisheries and Wildlife, and Conservation. All such violations are reported in turn to the Commission, and significant violations are brought to the Commission for discussion and action.

In 1992, the Commission adopted a compliance and enforcement response policy that has guided staff and the Commission in investigating and responding to alleged violations of LURC regulations. The policy document authorizes staff to resolve minor violations and to negotiate formal administrative settlement agreements to resolve significant violations with the final terms of the settlement subject to approval by the Commission and the Office of the Attorney General ("AG"). This process is designed to be fair while resulting in expeditious and efficient disposition of enforcement matters. In instances where a staff settlement agreement cannot be readily reached, and in cases involving severe violations and/or environmental damage, the Commission refers the violation to the AG for appropriate legal action. The current policy document has served the Commission well, but is in need of updating in order to continue to conduct a meaningful enforcement program.

While the compliance program has increased awareness of the law among the affected public, and numerous violations have been resolved, efforts must continue to improve adherence to LURC's regulations. It should be recognized, however, that staffing and budgetary constraints hinder the agency's ability to effectively investigate and respond to violations. In addition, agency staff has limited resources or authority to address uncooperative violators without seeking assistance from the AG.

New opportunities have been developed to more efficiently address readily resolvable violations, such as the triple application fee for after-the-fact permit applications. Strategies such as this can aid in increasing adherence to regulations and limit the need for further enforcement. However, the Commission will continue to work on addressing violations in a fair and consistent manner. Toward this end, the Commission will pursue the following actions:

- The Commission will continue to hold landowners/managers primarily responsible for assuring that the work of contractors and other operators on their lands is in compliance with the law. Because the independent contractor status of such contractors may impair direct landowner involvement in contractor operations, landowners/managers are strongly encouraged to carefully inform and contractually require adherence of operators in accordance with LURC standards. In addition, landowners/managers may wish to bring contractors involved in violations into discussions with the Commission's staff leading up to a settlement as well as seeking contractor payment of monetary penalties where fair.

- The Commission will make appropriate exceptions to holding landowners/managers primarily responsible for violations on their lands. Such exceptions will be made when the violation occurs entirely by reason of actions of a third party (as in the case of a trespass),

where the landowner/manager has no involvement with the activities and receives no benefit from nor has any contractual or other relationship with the third party.

- In the course of resolving violation matters with landowners through settlement agreements, factors as described in the Commission's compliance and enforcement response policy will be considered in arriving at a just settlement of a violation, including the establishment of a monetary penalty in appropriate cases.

- Although no two violations are identical, an effort will be made to deal similarly with violations involving similar circumstances.

St. John River

Tumbledown Mountain

Chapter 7
Implementation

Implementing the Plan – the work of taking it from policy statement to reality – is a critical component of the Commission's responsibility. This chapter serves as a framework for future action on major policy topics, both as a guide for the Commission and its staff, and for the public. Only the highest priority implementation measures discussed in the Plan are included here. A more complete discussion of these measures (as well as measures that are of a lower priority or are part of the Commission's day-to-day work) is found in earlier chapters, as indicated by references set forth below.

Some of the issues raised in the text of the Plan are included for context and are not within the Commission's scope of responsibility. There are no specific implementation items associated with those issues. For those issues that are within the Commission's scope, action on specific measures will depend on resource and staffing availability. The Commission's limited resources will be directed toward implementing the highest priority measures, as identified here.

Every day, the Commission carries out policy through routine permitting and enforcement activities and through participation in policy dialogue with other governmental agencies and groups. When a change is needed, the Commission has a number of tools at its disposal to identify a new policy direction and then create the structure necessary to apply it consistently. This Plan is the Commission's primary statement of policy, and periodic revisions of the Plan allow for adjustments to policy over time. The Commission's primary tools for implementing policy are:

- **Clarifying policy through guidance documents.** In making decisions about permit applications or rezoning petitions, the Commission sometimes finds it helpful to staff and to the public to clarify in written form the Commission's thinking about particular issues. Guidance documents are not rules or new requirements. Rather, they are an explanation of the Commission's thinking about a particular issue as an effort to promote consistency in interpreting and applying the Commission's regulations.

- **Rezoning.** All areas in the Commission's jurisdiction are zoned. Through a public process that is outlined in the Commission's rules and in the Land Use Law, the Commission may change the zoning of a particular area from one subdistrict to another. This may change the type of activities that are allowed in a particular area.

- **Adopting routine technical rules.** Through the normal public rulemaking process, the Commission may make changes to rules, such as its land use standards. These changes go into effect upon approval by the Commission; however, the Legislature has the authority to reject or modify them in the next session.

- **Adopting major substantive rules.** Through the normal public rulemaking process, the Commission may make changes to certain rules, such as application fee schedules, which require direct approval of the Legislature. These rules do not go into effect until the Legislature approves them in the next session.

- **Proposing new laws.** The Commission may, at times, propose to the Legislature that certain land use laws be revised to better fit changing circumstances. New laws are exclusively acted upon by the Legislature, and the Commission is responsible for following the laws that the Legislature enacts.

Which process the Commission employs to implement its policies depends on whether the legal authority for the action already exists and which process best achieves the goals outlined in the Plan. For example, some new resource protections may best be achieved by rezoning sensitive areas, while others may require a change to the Commission's land use standards (Chapter 10). If the Commission does not have the required legal authority to implement a particular policy, the issue will need to be presented to the Legislature.

It is the Commission's intent that for certain of the most complicated implementation measures, particularly those regarding innovative tools for guiding the location of development, the Commission will engage in extensive stakeholder consultations. Because many of the options discussed in the Plan require the Commission and staff to learn about techniques and tools that the Commission has not previously employed, the process will benefit greatly from a robust discussion among many interests about the most effective and efficient ways to accomplish the goals and policies of the Plan. The Commission also recognizes the significant time commitment that stakeholder processes demand from all participants, and will carefully select the implementation issues and measures that would be most suited to this approach, while also pursuing other measures through established mechanisms.

Many implementation measures included in this section, although discussed in the context of a single resource or issue, have implications for other resources as well. The issues confronting the jurisdiction are inextricably linked. For example, the location of residential development has impacts on the forest resource and likewise, the health of the forest products industry has ramifications regarding development pressures. Due to the interconnectedness of resources and land uses in the jurisdiction, the implementation measures discussed here often address multiple challenges facing the jurisdiction. Development measures will often affect resource-related measures, but to avoid duplication, the development measures are collected in Sections 7.1.A and 7.2.A, and measures that are not directly related to development are in Sections 7.2.C through 7.2.E. All of the implementation measures outlined here relate directly to the Commission's vision, goals and policies for the jurisdiction and should be considered within that context.

7.1 The Commission's Highest Priority Issue

7.1.A GUIDING THE LOCATION OF DEVELOPMENT (See Chapter 4)

The Commission has concluded that the principal development issue is not the amount of development taking place in the jurisdiction, but rather where it is located. The strengths and weaknesses of the Commission's approach to guiding development within its jurisdiction are discussed in Chapter 4. To date, the Commission has used a largely reactive approach to identifying areas suitable for development within its jurisdiction. To provide greater predictability to landowners and the general public as to the most suitable locations for development, to concentrate development in suitable areas and to address the legislative charge given the Commission to plan for development, the Commission proposes the following actions.

Areas Most Appropriate for Development

The Commission will identify areas within its jurisdiction which are the most appropriate for development, taking into consideration: (1) proximity and connectivity by public road to economic centers, organized towns and well-established patterns of settlement; (2) compatibility of natural resources with development; (3) demonstrated demand for and public benefit from development; and (4) availability of public infrastructure, facilities and services.

Outside of areas identified as the most appropriate for development, the Commission will identify smaller development centers throughout the jurisdiction which are appropriate for development on a limited scale. Small development centers could include areas such as the Caucomgomoc gate area, Northeast Carry, Musquacook lakes, Clayton Lake and other.

The Commission may consider new development centers on some landowners' properties to provide balance and equity. Specifically, the Commission will allow well-planned development in areas appropriate as new development centers where: (a) there is a demonstrated public demand for and benefit from the proposed development in that area; (b) there is a demonstrated need for locating the development not proximate to established developed areas; (c) the productivity of existing forest and agricultural resources in the jurisdiction is not unduly harmed; (d) recreational resources and uses are not unduly harmed; (e) remote, natural and plant or animal habitat values are not unreasonably degraded; and (f) needed services are available or can be provided without unreasonable financial, social or environmental costs to the public.

Areas Least Appropriate for Development

In implementing the policy of encouraging conservation of select large tracts of land for limited or no development, the Commission will work cooperatively with landowners. The Commission will promote and support landowner-initiated efforts to provide increased protection of lands through measures that include non-regulatory mechanisms, such as conservation easements and management agreements.

To further promote this policy, the Commission will identify areas in the jurisdiction that are least appropriate for development. It will establish guidelines to clarify its policy language that these tracts of

land be particularly representative of the jurisdiction's principal values and especially valued for their remote and relatively undeveloped condition.

Strategies for Guiding Development to Areas Most Appropriate for Development

The Commission will explore tools to guide development to areas identified as most appropriate for development. The Commission will look for ways to work cooperatively with interested parties, including landowners, to identify, explore and implement new strategies for directing development.

In particular the Commission will:

- Explore ways to guide the location of various types and intensities of development that have historically not received Commission review for appropriateness of location;
- Identify strategies to minimize impacts from development that does not undergo a review for appropriateness of location;
- Apply prospective zoning both in high-growth, high-value areas and in areas that are currently under less development pressure than high-growth areas, but where existing or future development could undermine the principal values of the jurisdiction; and
- Explore strategies and develop tools to guide development at the jurisdiction level, such as transfer of development rights programs and expansion of the level 2 subdivision tool.

Responding to Major Development Proposals

While various strategies for directing development may lessen the use of landowner-initiated petitions for rezoning over time, there will always be a need to consider rezoning petitions in a timely and predictable manner. In this regard the Commission will:

- Continually look for ways to improve the rezoning approach, including by refining the adjacency principle.
- Encourage planned developments (through application of the D-PD Subdistrict) in areas where development is dependent on a particular natural feature. Such development must be reasonably self-contained and self-sufficient and, to the extent practicable, provide for its own water and sewage services, road maintenance, fire protection, solid waste disposal and police security.
- Encourage the use of concept plans as a voluntary means of achieving a publicly beneficial balance between development and protection of resources.

7.2 Other High Priority Issues

7.2.A ADDRESSING OTHER DEVELOPMENT ISSUES (See Chapter 4)

In some instances, the Commission's regulatory framework has not kept pace with changes in land use. Specific examples of how the changing environment is straining the regulatory framework, along with options for addressing these issues, are described in more detail in Chapter 4. The Commission will explore various options in an effort to ensure that its regulatory framework is adequate to handle existing circumstances and trends. These options may include:

- Evaluating where certain subdistricts are appropriate and which uses should be allowed in them. Review of uses in the General Management (M-GN) Subdistrict will be particularly important given its purpose and amount of area that it covers. The Commission will also consider applying jurisdiction-wide some of the subdistricts that are currently only applied in prospectively zoned areas or concept plan areas.
- Developing a systematic approach for handling new uses that are not explicitly allowed in current rules.
- Developing and implementing standards to limit the environmental and visual impacts of hillside and ridge development.
- Establishing incentives for bringing nonconforming lots and structures into compliance or closer compliance with current regulations.
- Considering measures to maintain the traditional character of dwellings in remote parts of the jurisdiction.
- Considering refinements to rules governing expansions of nonconforming shoreland development.
- Researching options for addressing issues associated with use of private roads to access development.

7.2.B ADDRESSING RESOURCE-RELATED ISSUES (See Chapter 5)

Selected, high-priority resource-related implementation measures are presented here; however, there are many more resource-related issues identified in the Plan than are listed below. Measures that are part of the Commission's day-to-day activity or are lower priority were not repeated here in order to highlight the most significant items. Details about the many implementation measures associated with each resource section can be found in the text of the Plan.

Agricultural Resources (See Section 5.1)

- Design and implement incentive-based and/or regulatory programs to protect working farms and prime agricultural soils from incompatible land uses where appropriate. Innovative conservation tools, accommodation of the changing uses of farms and farmland as part of the agricultural creative economy, and the availability of better soils data will be key elements of this effort.

Air and Climate Resources (See Section 5.2)

- Review the Commission's regulations with regard to climate change issues and work collaboratively with appropriate state agencies to identify and implement measures to reduce the causes, and mitigate the effects of, climate change.

Coastal Resources (See Section 5.3)

- Develop a regional plan for the coastal islands to address their distinctive set of planning and land use issues.

- Re-examine the application of adjacency and make any needed adjustments for islands, within the context of either refining the use of the adjacency principle for the entire jurisdiction or developing a regional plan for coastal islands.

Energy Resources (See Section 5.5)

- Work cooperatively with other entities, including the Maine Department of Environmental Protection ("DEP"), to develop a consistent regulatory process, review criteria and performance standards that address site suitability and specific impacts associated with grid-scale energy installations.

- Encourage a process of identifying areas that are unsuitable for wind power and comparable uses. Any such effort is best conducted as a coordinated, statewide effort which would include the State Planning Office, DEP and other interested parties.

Forest Resources (See Section 5.6)

- Re-evaluate and modify, as necessary, the permitted uses of the General Management (M-GN) Subdistrict to ensure these uses are compatible with forestry and agricultural uses, as envisioned by the Commission's statute.

Plant and Animal Habitat Resources (See Section 5.8)

- Update significant wildlife habitat protection efforts to achieve consistency with the Natural Resources Protection Act. This update should include incorporating recently available waterfowl and wading bird habitat information into the Commission's regulatory framework and preparing rule changes consistent with recently enacted amendments regarding vernal pools regulations. Also update the Fish and Wildlife Protection (P-FW) Subdistrict rules for existing seabird nesting islands and other identified significant bird habitat.

- Examine the Commission's regulations and guidance documents and revise as necessary to support the efforts of the Maine Natural Areas Program and Maine Department of Inland Fisheries and Wildlife in promoting landscape-scale habitat management.

Recreational Resources (See Section 5.9)

- Re-evaluate the Commission's regulations on recreational trail construction and campgrounds, involving other state agencies, landowners, recreation groups and interested parties in these efforts.

- Evaluate the merits of prospectively identifying sites for large-scale nature-based resort facilities either through the current zoning framework or by means of a modified zoning approach.

- Re-examine the appropriateness of the current zoning of sporting camp facilities as General Development (D-GN), particularly those in remote settings.

- Continue to apply, and refine as needed, experiential- and opportunity-based approaches to evaluating impacts on recreation resources.

Scenic Resources (See Section 5.10)

- Establish guidelines for evaluating scenic impacts when reviewing development proposals.

Water Resources (See Section 5.11)

- Evaluate and update as necessary the wildlands lake assessment, including assessment of the effectiveness of current lake management classes.

- Review the Commission's rules governing water withdrawal, and revise as necessary.

- Review the Commission's rules governing water quality protection, including the adequacy of riparian standards and phosphorus controls (including small-scale development that may occur on individual lots), and revise as necessary.

- Take appropriate actions to help minimize the spread of aquatic invasive species.

7.2.C COMPLIANCE (See Chapter 6)

The compliance program, which includes education, assistance, monitoring and enforcement efforts, is central to all of the Commission's objectives and programs. The Commission will therefore continue to pursue, as a top priority, a vigorous compliance program. Among other efforts, the Commission will inform landowners, land managers, contractors, citizens, real estate agents, lawyers, bankers and others concerning the laws and regulations that the Commission administers.

7.2.D INVENTORY NEEDS

Collecting better land use data, perhaps in the form of a land use inventory, is a top priority for the Commission. Such information would facilitate the planning, permitting and enforcement process and help monitor the significance of land use changes occurring in the jurisdiction for future revisions to this Plan. The Commission will attempt to utilize the field staff of other agencies to assist in such efforts.

If the Commission determines that a land use inventory is practicable and the best means of improving available data, it will endeavor to integrate its inventory of land uses with Maine Revenue Service records to facilitate the tracking of land use changes over time, including the creation of lots through the 2-in-5 exemption. To facilitate the maintenance of such an inventory, the Commission will utilize Geographic Information System (GIS) technology to the extent possible given available resources. The success of this effort will be contingent on pooling resources with many other agencies and organizations to accomplish the goal of a rigorous and reliable data set.

7.2.E OTHER ACTIONS

The Commission will undertake other actions from time to time to more fully implement the goals and policies of this Plan.

Sailing near Marshall Island

Attean Township

Appendices

Appendix A

Definitions

The definitions, below, apply to the following terms as they appear in this Plan. Refer to 12 M.R.S.A., § 682 and the Commission's Land Use Districts and Standards (Chapter 10) for complete list of terms defined by law and rule.

Access:

The ability to travel to a specific area on foot or by vehicle. "Public access" is the ability for the public to reach areas within the Commission's jurisdiction on foot or by vehicle. By Maine law, anyone on foot has a right of access over unimproved land to great ponds.

Biodiversity:

The variety of all forms of life at its various levels of organization — species and their constituent populations and genetic diversity, communities and ecosystems, and the processes by which all of these interact.

Commercial Sporting Camp:

"A building or group of buildings devoted primarily to the offering of lodging facilities for a fee to persons primarily in pursuit of primitive recreation or snowmobiling". 12 M.R.S.A., § 682(14)

In addition, for the purposes of the application of the Commission's rules, the term "commercial sporting camp" shall be construed according to the following: A facility which functions primarily as a destination for the above activities rather than a transient lodging facility or a base of operations for activities in another location, such as whitewater rafting. A sporting camp is usually located in a remote location and may typically consist of, but not necessarily include, all of the following: a number of cabins for the housing of guests including housekeeping cabins; a main lodge for serving of meals and socializing for the guests; outbuildings for housing of the owners, guides, and other workers; workshop, woodsheds, laundry, equipment storage, and other utility buildings as needed. Outpost cabins are considered a part of the commercial sporting camp. A resident, on-site attendant must be available on a full-time basis to meet the needs of guests. Such a facility shall have a total floor area no greater than 10,000 square feet for all principal buildings associated with the facility. Section 10.02 of the Commission's Land Use Districts and Standards.

Fringe:

Those towns, plantations, or townships within the Commission's jurisdiction which are contiguous with Maine towns which have local land use control.

Intensive Recreation:

A recreational land use which involves relatively high levels of use and requires structural development or more than minimal land alteration. These uses are characterized by potentially substantial impacts on traffic, the natural environment and the surrounding area and include such activities as whitewater rafting and downhill skiing.

Jurisdiction:

All unorganized and deorganized townships, and plantations and organized towns that do not implement their own land use controls, except Indian reservations.

Multiple Use:

The judicious management of all the various resources for timber production, outdoor recreation, watershed protection, fish and wildlife protection, mineral extraction and other private and public purposes.

Multiple use may involve: (1) different uses of adjacent subareas, (2) alternation through time of different uses on the same area, or (3) more than one use of an area at one time. In the first two methods, direct competition between uses is avoided by alternating them in space and time. Where uses occur in the same space at the same time, conflicts between resource uses may occur. In this case, multiple use is more correctly interpreted as a dominant use with secondary uses integrated insofar as they are compatible.

Non-intensive Recreation:

A recreational land use which usually involves relatively low levels of use and requires minimal structural development or land alteration. These uses are characterized by minimal impacts on traffic, the natural environment and surrounding areas and include such activities as hiking, hunting and fishing.

Organized Areas:

Organized municipalities outside of the Commission's jurisdiction that have established local governments and administer their own local land use controls. This term does not include organized towns within the jurisdiction that have elected not to administer land use controls locally.

Primitive Recreation:

"Those types of recreational activities associated with non-motorized travel, including fishing, hiking, hunting, wildlife study and photography, wild crop harvesting, trapping, horseback riding, tent and shelter camping, canoe portaging, cross country skiing, and snowshoeing". Section 10.02 of the Commission's Land Use Districts and Standards.

Remote:

Distant from permanently settled areas within Maine.

Remote Camp:

"A dwelling unit consisting of not more than 750 square feet of gross floor area, that is not served by any public utilities, except radio communications." Section 10.02 of the Commission's Land Use Districts and Standards.

Remote Campsites:

"Campsites which are not part of commercial campgrounds and which are characterized by their remoteness, limited scale, dispersed nature, and limited usage. More specifically, remote campsites include sites which:

a. are designed to be accessible and generally are only accessible by water or on foot;
b. are comprised of not more than four individual camping areas designed for separate camping parties, and are designed for a total of not more than 12 overnight campers;
c. have permanent structures limited to privies, fireplaces or fire rings, picnic tables, and picnic table shelters consisting of a roof without walls; and
d. require no other construction or grading and only minimal clearing of trees."

Section 10.02 of the Commission's Land Use Districts and Standards.

Rim Region:

Oxford, Franklin, Somerset, Piscataquis, Aroostook and Washington Counties. It includes some areas that are not in the jurisdiction and excludes some that are (principally in Penobscot County).

Rural Community:

A sparsely developed community where the land is primarily used for forest, agricultural and/or recreational purposes.

Service Centers:

Organized municipalities that provide a majority of the state's jobs, commercial activity, and social resources, such as higher education and health care. The Maine State Planning Office identifies service centers based on a methodology that evaluates level of retail sales, jobs-to-workers ratio, amount of federally assisted housing, and number of service sector jobs.

Traditional:

Conforming to customs which have passed from generation to generation.

Wilderness:

As defined by the National Wilderness Act of 1964, "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." Little of the Commission's jurisdiction falls within this definition.

Wildlands:

A term which has commonly been used to describe the Commission's jurisdiction. A term which is not synonymous with wilderness nor is it intended to imply that the area is not under active forest management.

Appendix B

Rivers with Special Protection Zoning

Recreation Protection (P-RR) Subdistrict

(Usually, a 250-foot wide zone along each shore)

Allagash River: Twin Brooks to Churchill Dam
- Musquacook Stream: Allagash River to Third Musquacook Lake
- Chemquasabamticook Stream: Long Lake to Ross Lake
- Allagash Stream: Chamberlain Lake to South Branch

Aroostook River: East boundary of T09 R07 WELS to Millinocket Stream
- Big Machias River: East boundary of T11 R07 WELS to Millinocket Stream
- Millinocket Stream: Aroostook River to Millinocket Lake
- Munsungan Stream: Aroostook River to Little Munsungan Lake
- St. Croix Stream: Masardis town line to Hall Brook

Dead River: Kennebec River to upstream end of Big Eddy

Dennys River: Edmunds Village to Township 14/Cooper boundary (south and west shore only)

East Machias River: Sections in T18 ED, T19 ED and Township 14, including Maine River

Kennebec River, Upper: 0.5 mile above Dead River to Harris Dam

Machias River: Northfield town line to Fifth Machias Lake, including Fourth and Fifth Lake Streams
- Old Stream: Sections in T25 MD, T31 MD, and T37 MD to First Lake
- Mopang Stream: Machias River to Mopang Lake
- West Branch: Machias River to Lower Sabao Lake

Moose River: Attean Pond to Number One Brook
- Holeb Stream: Moose River to Holeb Pond

Narraguagus River: Beddington town line to Eagle Lake

Penobscot River, East Branch: East Millinocket town line to Mattagamon Road, excluding sections zoned P-RP and east shore below Grindstone Falls

- Sebeois River: Penobscot River to Snowshoe Lake
- Wassataquoik Stream: Penobscot River to Baxter State Park
- Webster Brook: Baxter State Park to below Telos Dam
- Sawtelle Brook: Seboeis River to Sawtelle Deadwater

Penobscot River, West Branch: Chesuncook Lake to Seboomook Lake

Pleasant River: Columbia town line to Beddington town line

St. John River:

- Big Black River: St. John River to Canadian border
- Northwest Branch: St. John River to Canadian border
- Southwest Branch: St. John River to five miles downstream of Canadian border

West Branch Pleasant River: Brownville town line to second West Branch Pond, excluding developed areas at Katahdin Iron Works and Little Lyford Pond Camps

Special River Transition Protection (P-RT) Subdistrict

(250 feet wide along each shore)

Aroostook River: Section in Oxbow Plantation, T10 R06 WELS and T09 R05 WELS

Big Machias River: Section in Garfield Plantation

Appendix C

The Commission's Lake Management Program

In June of 1990, the Land Use Regulation Commission amended its 1983 *Comprehensive Land Use Plan* by adopting a document entitled, *Amendment of the Comprehensive Land Use Plan Regarding the Development and Conservation of Lakes in Maine's Unorganized Areas*. Concurrently, it adopted changes to its Land Use Districts and Standards which implemented several components of the comprehensive lake management program presented in the Plan Amendment.

Major features of the Commission's 1990 lake management program are reflected in the Water Resources section of this Plan, but some of the background information and other important details were too lengthy to include in the body of this plan. Because of the importance of this planning effort, the entire text of the original Amendment is reproduced here with appropriate changes to update the text. The Commission reaffirms its commitment to its lake management program as summarized in the Water Resources section and detailed below, and it will continue to follow the guidance provided below in managing the lake resources in its jurisdiction. At the same time, the Commission recognizes that periodic reviews were anticipated when the program was first adopted, and that having been in place for nearly 20 years, an evaluation of the program is warranted to ensure that it continues to respond to changing needs in a comprehensive manner.

A. PURPOSE OF AMENDMENT

This amendment to the Comprehensive Land Use Plan incorporated two major planning initiatives undertaken by the Commission — the *Wildlands Lake Assessment* and Lakes Action Program — as well as more current information regarding the relationship between land use and water quality.

B. LAKE ISSUES

The unorganized territories are host to a wealth of lake resources unparalleled in most regions of the nation. These lakes have long been a magnet for sportsmen and outdoor enthusiasts. In recent years, demand for recreational property has grown substantially throughout the northeastern United States. Land costs along Maine's coast have increased dramatically and lake-front properties in areas near population centers have in many cases become saturated with recreational camp development. Seeking both affordable property and a less crowded atmosphere, many people desiring to purchase waterfront property have turned their attention to the recreational opportunities offered by lakes in Maine's unorganized territories.

The demand for development on lake shorelands within Maine's unorganized areas in the 1980s was unprecedented. At virtually every Commission meeting, the Commission considered one or more issues relating to lakes and lake shorelands. Typical development proposals included those for new residences or additions to existing structures, docks and related recreational facilities, subdivisions, and roads. All told, between 1986 and 1988, approximately one-third of all building and development permit applications within the jurisdiction involved lakes. Subdivision applications appeared to be even more heavily weighted toward lakes; upwards of fifty percent of all subdivision applications over those three years involved areas adjacent to lakes. With its expansion both in volume and distribution, lakeshore development had significant potential to affect important natural values, timber harvesting, and traditional uses associated with lakes, such as sporting camps, in the unorganized territories.

While there seemed to be interest in shoreland development on lakes throughout the jurisdiction, there was a trend toward development on medium- to large-sized lakes located near organized townships. In the early 1980s, development attention focused on three main areas: the Rangeley Lakes, the Moosehead Lake region, and the Pemadumcook/Twin Lakes region. In northern Maine, interest in camp development was also evident in the Square, Cross, and Long Lakes region.

While some of the development proposals brought before the Commission were straightforward and non-controversial, an increasing number involved issues that were not easily resolved. Difficult issues that continually confronted the Commission included:

- Camp development on undeveloped lakes;
- Increased vehicle access to undeveloped, backcountry lakes;
- Subdivision development on larger lakes with significant natural, scenic, and recreational values;
- Protection of significant natural resource features outside of designated protection zones;
- Continued development on heavily developed lakes or on lakes with potential water quality problems; and
- Development of private recreational facilities such as docks and access roads where these already exist at other locations on the lake.

The Commission had at its disposal a variety of tools that could be used to regulate use of lake shorelands. These included protective zoning for sensitive areas and code requirements governing setbacks, road construction, timber harvesting, and subdivision of land. While these tools had proved sufficient to manage individual developments, they did not provide the means to effectively plan for the future of these lakes.

Due in part to their numbers, and in part to their remote locations, little information had been available for most lakes in the unorganized territories. This lack of information, and the inadequacy of the existing regulatory framework to deal wisely and comprehensively with lakeshore development, was noted in the 1983 Comprehensive Plan. In fact, the plan highlighted lake protection issues as needing further consideration.

The Commission has always made a special effort to provide for shoreland development while maintaining protection of significant natural values. Nonetheless, in the mid-1980s, faced with the increasing demand for lakefront property, the Commission acknowledged the danger that, even with minimum standards, lakes in its jurisdiction might, by attrition, lose the very character that makes them so unique. In evaluating its lake management goals, the Commission identified five basic needs: 1) the need for additional protection for lakes with exceptional values; 2) the need for a mechanism to guide lakeshore development toward lakes best suited to accommodate it; 3) the need for consistent, reliable, and readily accessible natural resource and land use information; 4) the need for a clearly stated lakes policy; and, 5) the need for a coordinated program to implement this policy.

The *Maine Wildlands Lake Assessment* and Lakes Action Program were initiated to meet these needs. In undertaking these initiatives, the Commission acknowledged that it had not yet "fulfilled all of its responsibilities to assure that the public interest in these unusual resources is protected" (*Maine Wildlands Lake Assessment Work Plan*, 1986).

C. SUMMARY OF LAKE PLANNING EFFORTS

Wildlands Lake Assessment

The *Maine Wildlands Lake Assessment* was initiated in 1986 to establish a systematic base of natural resource and land use information on all lakes within the Commission's jurisdiction. The study considered all lakes with a surface area of ten acres or more. Approximately 1,500 lakes met this size requirement. Smaller lakes were added when these were found to possess especially noteworthy natural resource values.

Based on methods presented in the *Maine Wildlands Lake Assessment Work Plan*, information was collected on the following natural resources:

- Fisheries
- Scenic quality
- Botanic features
- Physical resource
- Wildlife
- Shoreline character
- Cultural resources

Lakes that possessed "significant" or "outstanding" resource values in any of these areas were identified, and each lake was placed into one of the following four resource classifications based on its cumulative resource significance:

- Lakes of statewide significance with multiple outstanding natural values, categorized as Resource Class 1A (114 lakes);
- Lakes of statewide significance with a single outstanding natural value, categorized as Resource Class 1B (211 lakes);
- Lakes of regional significance (one or more significant ratings), categorized as Resource Class 2 (577 lakes);
- Lakes of local or unknown significance, categorized as Resource Class 3 (627 lakes).

The study also collected information pertaining to land and water uses, including:

- Access
- Zoning
- Water level fluctuation
- Proximity to services
- Shoreline development
- Ownership
- Public water supply

The completion of the Assessment in June of 1987, served only to highlight the need for further action — to develop measures to protect exceptional resource values associated with lakes and to guide development to the most appropriate areas.

Lakes Action Program

Following completion of the Wildlands Lake Assessment, the Commission appointed a Lakes Policy Committee. The committee, which included representatives from major landowners, statewide environmental and sportsmen's organizations, the University of Maine, and the Commission, was charged to:

(1) Develop a proposal for a policy that might guide future Commission lake management decisions, and
(2) Identify specific actions that should be taken to implement this proposed policy.

The actions identified by the committee were ultimately consolidated into a proposed lake action program. Public meetings were held in the fall of 1988 to discuss the proposal. *An Action Program for Management of Lakes in Maine's Unorganized Areas* was accepted by the Land Use Regulation Commission in January of 1989.

The Lakes Policy Committee sought a balanced approach to lake conservation and development, and recommended to the Commission a variety of innovative regulatory and non-regulatory lake management techniques, including policy guidance, special review criteria for lake development, lake concept plans, lake management classifications, and other public and private efforts.

Other Initiatives

The Commission also recognized the need to update its approach to review of impacts on water quality. To meet this need, Commission staff worked with DEP to develop a systematic approach that more accurately reflects the current level of knowledge about the relationship between land use and lake water quality. Additional rule-making changes was necessary to implement this approach when it was finalized.

Understanding of the impacts of clearing and development activities on water quality and riparian habitat has increased dramatically in recent years. In keeping with this improved understanding, IF&W and the Lakes Division of DEP recommended stronger standards to minimize the impacts of these activities on water quality and riparian habitat. In response to these recommendations, the Board of Environmental Protection adopted new standards governing minimum shore frontage, building setback, and clearing for development which have been applied to shoreland in organized towns. To maintain consistent environmental policies throughout the state, the Commission enacted comparable standards in its jurisdiction.

D. POLICY AND IMPLEMENTATION MEASURES

The Land Use Regulation Commission seeks a balanced and environmentally sound approach to lake conservation and development that:

(1) Conserves important lake-related natural resource values;
(2) Protects water quality;
(3) Accommodates reasonable shoreland development and harvest of timber;
(4) Provides a diversity of public recreation opportunities; and
(5) Encourages continued use of the unorganized territories for the principal purposes of fiber and food production, non-intensive outdoor recreation, and fisheries and wildlife habitat.

To meet these goals, the Commission has undertaken the lake management program outlined below as part of its overall commitment to guide development and resource conservation on the shorelines of the more than 3,000 lakes and ponds in Maine's unorganized areas.

Policy Guidance

The Commission will seek a balanced approach to shoreland development and conservation, one which recognizes public and private needs, supports the integrity of large forest holdings, and provides opportunities for creative, non-traditional shoreland development and conservation. The Commission proposes to regulate development based on lake-related natural features and values identified in the *Wildlands Lake Assessment*, guiding development toward those lakes or lake areas best suited to absorb new development, while restricting use of certain high value lakes. As a general planning guideline, the Commission will seek to ensure that development on lakes will remain below an average of one dwelling unit per 400 feet of shore frontage, and one dwelling unit per ten acres of lake surface area. These guidelines are designed to preserve the natural character of lakes in Maine's unorganized territories and to prevent conflicts between incompatible uses.

Review Criteria for Shoreland Permits

The Commission reviews all applications to determine whether they meet statutory criteria regarding technical and financial capability, traffic and circulation, soils, and environmental fit. Of these four decision criteria, "environmental fit" is often the most difficult to assess. In order to increase predictability regarding the assessment of environmental fit, the Commission has identified the following seven areas which it will review as a guide for determining whether adequate provision has been made for fitting subdivisions and commercial, industrial, and other non-residential structures on lakes harmoniously into the existing natural environment. The same review will be applied to rezonings that precede such proposals on lakes.

- **Natural and Cultural Resource Values**: The Commission will utilize the findings of the *Wildlands Lake Assessment* and other information sources in evaluating the merits of lake-related development. The Commission will, at a minimum, specifically consider all natural resource values that received a rating of either "significant" or "outstanding" in the Assessment, and will look for a demonstration that these values will be maintained.

- **Water Quality**: The Commission will give specific consideration to the effect that a proposed development will have on lake water quality. For proposed development on lakes, the Commission will require a finding regarding the probable effect of the proposed action on lake water quality. In those instances where it is determined that an unacceptable increase in phosphorus concentration may occur, the applicant will be required to take additional measures to protect lake water quality. If unacceptable water quality degradation will result regardless of additional measures, the Commission will deny the application.

  Independent of its review of specific proposals, the Commission will initiate actions aimed at refining its approach to evaluating lake water quality. This will include updating its approach to identification of water quality limiting lakes and switching to a one part per billion change in phosphorus concentration as an indicator of unacceptable water quality degradation, consistent with DEP's policy for the rest of the state.

- **Traditional Uses**: The Commission will consider the effect of lake-related development proposals on traditional uses, including non-intensive public recreation, sporting camp operations, timber harvesting, and agriculture, and will seek to ensure that such proposals do not have an undue adverse effect on these uses.

- **Regional Diversity**: The Commission will consider lake-related development proposals in a regional context. The objective will be to determine the effect of substantial land use changes on the diversity of lake-related uses afforded in any region of the jurisdiction. The Commission will make this determination based on a summary of existing lake shoreland uses in the region of the State where the proposed development will be located. The region is considered to be either the township in which the development will be located and the eight townships which abut that township, or, all townships abutting the lake in question, whichever is larger.

- **Natural Character**: The Commission will seek to maintain the natural character of lakes by encouraging: visual screening of larger developments and non-conforming structures; consolidated use of recreation facilities such as boat docks and access ramps; and provisions

for long-term protection of undeveloped shoreland as part of subdivisions and commercial, industrial, and other non-residential proposals.

Independent of its review of specific proposals, the Commission will adopt stronger shore frontage, setback, and clearing standards in order to maintain the natural character of lake shorelines in the jurisdiction.

- **Lake Management Goals**: In reviewing development proposals on or near lakes which fall into one of the Commission's seven lake management classifications, the Commission will seek to ensure that the proposed activity is consistent with the stated management intent for that class of lake.

- **Landowner Equity**: In certain instances, the amount of future development along a given lake's shoreline may need to be restricted due to water quality or other limitations. This can potentially cause an equity problem in that a landowner not wishing to develop his or her land in the short term could be precluded from developing at a later date due to heavy development on other parcels.

  A landowner should not be penalized for voluntarily foregoing early development on lakes where development is otherwise allowed. In cases where future development may be restricted, each landowner should be allotted a percentage of allowable future development proportionate to the extent of his or her ownership. Where a landowner proposes to exceed this proportion, development rights should be acquired from other landowners.

Concept Plans

The Commission established the "lake concept plan" as a flexible alternative to traditional shoreland regulation, designed to accomplish both public and private objectives. Since originally establishing lake concept plans in 1990, the Commission amended its rules for the Resource Plan Protection (P-RP) Subdistrict in 2000, thereby allowing the development of concept plans for other land areas and resources in addition to lakes.

Concept plans are landowner-created, long-range plans for the development and conservation of a large block of land on a lake or group of lakes or other specified resources. The plan is a clarification of long-term landowner intent that indicates, in a general way, the areas where development is to be focused, the relative density of proposed development, and the means by which significant natural and recreational resources are to be protected. A concept plan does not require the detailed technical information associated with a site-specific development plan and does not take the place of such plans.

A concept plan can be prepared for a lake, a portion of a lake, a group of lakes, or other lands and resources. The plan is initiated by the landowner or landowners and must be approved by the Commission.

The goal of concept planning is to encourage long-range planning based on resource characteristics and suitability as an alternative to haphazard, incremental development. The planning process necessary to prepare a plan encourages landowners to chart the future of their lake shorelands and other lands and resources in a manner that is thoughtful and forward-looking. The landowner gains from the insight obtained in preparing the plan, from expanded flexibility in making land management decisions, and from increased predictability regarding Commission actions. The public gains from the improved planning that results from

comprehensive evaluation of recreational and natural resources, from provisions for the long-term protection of resources, from greater knowledge of future development patterns, and from the increased predictability of the development review process.

While concept plans are voluntary, initiated and prepared by the landowner, once approved by the Commission, they are binding. The Commission encourages the use of concept plans by its commitment to expedite the permitting process for approved plans and to consider adjusting certain standards, such as the adjacency criterion, provided any such relaxation is matched by comparable conservation measures. Concept plans may not be used to relax requirements associated with Management Class 1 or Class 6 lakes. A concept plan may be used to seek a variation of the density standard for Class 2 lakes. Such variation will be granted only where it can be demonstrated by clear and convincing evidence that the plan is fully protective of the lake's special values and is consistent with the Commission's management intent for the lake.

Basic Requirements

A concept plan must be responsive to the Commission's policy guidelines for management of lakes and various resources in Maine's unorganized areas. With regard to lakes, a concept plan must give consideration to natural and cultural values identified in the *Wildlands Lake Assessment*, and be responsive to the Commission's intent to protect those lakes identified in the Maine Wildlands Lake Assessment as warranting special management consideration.

In general, a plan should identify: (1) all areas where new, lake- and other resource-related development is to be located; (2) resource values or shoreland areas that are to be protected; (3) mechanisms that will be used to conserve important resources or areas; and (4) the life span of the plan.

The emphasis and level of detail of a plan may vary depending on whether the plan is proposed for a single lake, a cluster of lakes, or an entire large ownership. At the option of the plan preparer, a detailed description of one or more development proposals may be submitted as a component of the plan.

Public Input

Plan preparers are encouraged to provide avenues for interested parties to offer input during the development of the plan. The Commission will provide opportunity for public review of proposed plans. Notice that the Commission has received a proposal for a concept plan will be given to interested parties including affected landowners and a public review and comment period will be established. Upon request by five or more people, or when desired by the Commission, a public hearing will be held.

Plan Approval

Concept plans are implemented through the Resource Plan Protection (P-RP) Subdistrict. In order to approve a concept plan, the Commission must find that the proposed plan conforms with the Commission's lake policies and lake program guidelines or other applicable resource policies, is feasible, and is compatible with other public and private interests. It must also find that the plan strikes a reasonable and publicly beneficial balance between development and conservation of lake and other resources, and that, taken as a whole, the plan is at

least as protective of the natural environment as the development, management, and protection subdistricts which it affects.

When a plan has been approved, the concept plan will be incorporated into the Commission's regulatory framework through appropriate changes to existing zoning. To accomplish the comprehensive planning objective of concept plans, the width of zones should generally be designed to encompass all lake- and other resource-related development planned for the area over the life of the concept plan, or 500 feet, whichever is more.

Plan Amendment and Termination

A time span for each plan will be established. Ten years will be the minimum period, but concept plans of less than twenty years duration will be discouraged if such plans propose significant deviations from existing standards. A plan may be extended beyond the designated time period upon mutual agreement of the landowner(s) and the Commission.

To adapt to changing circumstances, plans can be amended or terminated at any time subject to mutual agreement between the landowner(s) and the Commission and following public notice of the proposed Amendment. While proposals for amendment or termination may be initiated by either party, the Commission will be conservative in exercising this option. To ensure good planning, proposals for lake- or resource-related development proximate to a lake or other resource covered by a concept plan should be pursued through an Amendment to the concept plan. Amendments must be consistent with the intent of the original plan.

To maximize predictability, the plan shall stipulate all conditions associated with termination of the plan, such as the status of any development that was approved as part of the plan but was not initiated during the life of the plan. Upon the plan's termination, the Commission will, in conformity with its comprehensive plan, statutes, and standards, designate appropriate zoning which is consistent with zoning of equivalent areas. Any development or relaxation of regulations which took place as part of a concept plan cannot be used to justify subsequent rezonings, meet adjacency requirements, or otherwise alter zoning at any time in the future.

In the event that a plan is terminated, all transactions initiated as a component of the plan, such as the granting of conservation easements or creation of restrictive covenants on subdivided lands, will continue to apply to the extent that they are covered by legal contract or deeded covenants.

Lake Management Classes

The Commission recognizes six specific lake classifications for special planning and management purposes. Lakes are classified based on natural and other resource values and land use characteristics identified in the *Wildlands Lake Assessment*. Specific descriptions of the criteria for each classification, as well as lists of the lakes in Management Classes 1 through 6, can be found below. Those lakes which are not included in one of these six classes are considered to be Management Class 7.

- **Management Class 1** lakes are high value, least accessible, undeveloped lakes. It is the Commission's goal to preserve the best examples of these pristine lakes in their natural state by prohibiting development within 1/4 mile of their shores and restricting permanent vehicular

access to these lakes. Existing timber harvesting standards are currently considered sufficient to protect the values associated with these lakes from forest management activities. A number of lakes that meet the criteria for Management Class 1 are not designated as such because they are already protected through remote pond zoning. These lakes are identified below.

- **Management Class 2** lakes are high value, accessible, undeveloped lakes. The Commission intends to conserve the special values of these lakes by significantly restricting the density and intensity of development to one development unit per mile of shoreline. These restrictions will be applied to the area within 500 feet of the lakeshore to enable the Commission to regulate back lot development which could affect the lake's special values and is consistent with the management intent of the lake. Variation of density requirements may only be sought as part of a concept plan which is demonstrated by clear and convincing evidence to be fully protective of the special values associated with the lake.

- **Management Class 3** lakes are those lakes identified in the Appendix considered by the Commission to be potentially suitable for development based on available information on water quality, access, conflicting uses, shoreland availability, water level fluctuation, location, regional considerations, and special planning needs. Soils were not considered in the designation of these lakes due to lack of information, and may affect the appropriateness of this designation for some lakes. The Commission supports additional responsible development around Class 3 lakes, yet will take care to ensure that their significant natural resource values are conserved. The Commission will waive the adjacency criterion for development proposals on these lakes provided it can be demonstrated to its satisfaction by clear and convincing evidence that the lake has no existing or potential water quality problems and that soils are suitable for development. This waiver is strictly limited to shoreland, and proximate areas may not subsequently use shoreland development on Class 3 lakes to meet the adjacency criterion.

- **Management Class 4** lakes are high value, developed lakes. The Commission's goal for these lakes is to allow a reasonable level of residential and recreational development while conserving natural resource values and maintaining undeveloped shoreland areas. The Commission will take special care in evaluating and regulating new subdivisions proposed on these lakes and will require cluster development to protect natural values except where clearly inappropriate due to site characteristics.

- **Management Class 5** consists of heavily developed lakes. The Commission seeks to maintain natural qualities associated with these lakes, enhance scenic values, and retain some undeveloped shoreline by requiring cluster development on these lakes except where clearly inappropriate due to site characteristics. The Commission has identified lakes approaching heavily developed status and will pursue similar goals on the lakes.

- **Management Class 6** lakes are remote ponds – inaccessible, undeveloped lakes with coldwater game fisheries. The Commission intends to continue to prohibit development within 1/2 mile of these ponds to protect the primitive recreational experience and coldwater lake fisheries in remote settings.

- **Management Class 7** consists of all lakes not otherwise classified, including many lakes which have multiple outstanding or significant resource values identified in the *Wildlands Lake Assessment*. The Commission will manage these lakes for multiple use, including resource

> conservation, recreation, and timber production, giving specific consideration to identified resource values when evaluating the merits of lake-related rezoning and permit applications. It is the Commission's intention that the majority of these lakes remain in Management Class 7 and be managed under applicable requirements.

The Commission will consider reclassification of lakes within certain prescribed limitations. In cases where clear evidence of factual error indicates that a lake was misclassified, it will be reclassified to the appropriate class. Notwithstanding the above, changes in land use characteristics that occur after November 17, 1988, including without limitation, vehicle access and residential development will not be considered in future reclassifications. It is the Commission's intent to hold public hearings on all rule-making proposals involving proposed reclassifications.

The Commission has found that, in a few special cases, Management Class 3 criteria are not sufficiently refined for properly managing large lakes that are appropriate for a mix of conservation and development and which are or are likely to be under intensive development pressure. Moosehead Lake and the Rangeley Lakes, specifically Aziscohos, Mooselookmeguntic, and Upper and Lower Richardson, are considered to be such special cases. These lakes will be placed in Management Class 7 until comprehensive plans are developed to more specifically guide future growth in these areas. The Commission envisions that such plans will be substantially complete within 5 years.

Some lakes classified in Management Classes 1 through 6 abut other jurisdictions – either organized towns or Canada. The Commission should work cooperatively with other jurisdictions fronting on these lakes and encourage them to develop programs that are compatible with and comparable to LURC's lake management program. If comparable regulations are not implemented by abutting jurisdictions within a reasonable period of time, the Commission may choose to reconsider affected lakes' classification.

Other Public and Private Initiatives

The Commission encourages state agencies, landowners, and others to undertake actions that are consistent with and supportive of the Commission's lake management goals. Toward this end, the Commission: encourages interagency cooperation and coordination that furthers its lake management program; encourages non-regulatory measures that promote long-term conservation of important lake areas; supports measures to provide incentives for landowner conservation of important natural resources such as lake shorelands; and, encourages responsible shoreland use through camp owner education programs.

E. PERIODIC UPDATE OF LAKE MANAGEMENT PROGRAM

It is the Commission's intention that its lake management program be periodically evaluated to ensure that it responds to changing needs in a comprehensive manner. As part of its periodic evaluation, the Commission will consider whether a program update is necessary and, if so, whether such an update warrants a comprehensive program update or whether a more circumscribed effort focused on specific elements of the program is sufficient to ensure that the program continues to respond to changing needs. To maintain consistency of policy, this review and update should occur concurrent with the periodic revision of the Comprehensive Plan and as needed to address changing circumstances and new trends.

Songo Pond (Management Class 5), Albany Township

Chapter 10, Land Use Districts and Standards, Appendix C currently contains the official list of lake management classes. The original list of lake management classes in the Lake Management Program as adopted by the Commission provided the basis for rulemaking in Chapter 10. Although the list has been updated here to reflect changes over the years, the management class lists remain subject to change and reference to Chapter 10 should be made to determine official lake management classes.

MANAGEMENT CLASS 1

High value, least accessible, undeveloped lakes[1]

LAKE NAME	LAKE#	PRINCIPAL TOWN NAME[2]	SIZE(AC)	RESOURCE RATINGS[3] F	W	SC	SH	B	C	P
BAY P (WEST)	4396	T07 SD	249	-	O	-	-	-	-	-
BOGUS MEADOW P	4380	T07 SD	26	S	O	S	-	-	-	-
CARIBOU P (BIG)	4142	T07 R10 WELS	64	S	-	S	S	O	-	-
DEBOULLIE L	1512	T15 R09 WELS	262	O	O	O	S	-	-	-
DEBSCONEAG L (1ST)	2060	T02 R10 WELS	320	O	-	O	S	O	-	S
DEBSCONEAG L (3RD)	0584	T01 R10 WELS	1,011	O	-	O	S	-	S	S
ENCHANTED P	0150	UPPER ENCHANTED TWP	330	O	O	O	O	-	-	S
GREAT WORKS P	1386	EDMUNDS TWP	50	S	O	-	-	-	-	-
HOBART BOG	7451	EDMUNDS TWP	30	S	O	-	-	-	-	-
HUDSON P (UPPER)	1928	T11 R10 WELS	32	O	-	O	-	-	-	-
JERRY P	2190	T05 R07 WELS	272	S	-	O	S	-	-	-
JO-MARY L (LOWER)	0984	T01 R10 WELS	1,910	S	-	O	-	-	S	S
JONES P	0172	WYMAN TWP	36	-	O	-	-	-	-	-
KATAHDIN L	2016	T03 R08 WELS	717	S	-	O	O	-	S	S
LOGAN P # 2	2082	T02 R09 WELS	20	-	-	O	S	-	-	-
MARBLE P	2186	T05 R08 WELS	75	S	-	S	S	O	-	O
MATHEWS P	2836	T08 R10 WELS	19	O	-	-	-	-	-	-
MILLIMAGASSETT L	3004	T07 R08 WELS	1,410	S	O	-	-	-	-	-
MOCCASIN P	1590	T14 R08 WELS	32	O	-	-	-	-	-	-
NORTH P	9781	T14 R09 WELS	15	O	-	-	-	-	S	-
PASSAMAGAMET L	0970	T01 R09 WELS	461	-	-	S	S	O	-	-
POLAND P (UPPER)	PPUP	T07 R14 WELS	245	S	O	O	S	-	-	O
RAINBOW L	0614	RAINBOW TWP	1,664	O	-	O	O	-	-	S
REED P (BIG)	2842	T08 R10 WELS	90	O	-	-	-	O	-	-
ROUND P (LITTLE)	2874	EAGLE LAKE TWP	58	O	S	-	-	-	-	O
SAWTELLE P	3008	T07 R08 WELS	174	-	O	-	-	-	-	-
SAWTELLE P (LITTLE)	5778	T07 R08 WELS	10	-	O	-	-	-	-	-
THE HORNS POND	8601	WYMAN TWP	10	S	-	O	O	-	-	-

[1]CRITERIA: Not accessible within 1/4 mile by 2wd; less than 1 development unit per mile; at least one outstanding resource value.
[2]Some lakes span two or more townships.
[3]Ratings: O = outstanding; S = significant; P = present; m = missing info.

STATISTICS:		% OF TOTAL
NUMBER:	28 lakes	1.8%
ACRES:	9,592 ac total (avg 343)	1.2%
SHOREFRONT:	660,241 ft total (avg 23,580)	2.0%

Lakes Meeting Criteria of Management Class 1 But Adequately Protected by Remote Pond Zoning (Mgt. Class 6)

LAKE NAME	LAKE#	PRINCIPAL TOWN NAME[2]	SIZE(AC)	RESOURCE RATINGS[3] F	W	SC	SH	B	C	P
BLACK L	1506	T15 R09 WELS	147	O	-	S	-	-	-	-
BRANCH P (MIDDLE)	0912	T05 R09 NWP	34	O	-	-	-	-	-	-
CEDAR P	0474	TB R10 WELS	65	O	-	-	-	-	-	S
CHAIRBACK P (WEST)	0796	T07 R09 NWP	47	O	-	-	-	-	-	S
CLEARWATER P	2692	ATTEAN TWP	34	-	-	-	-	-	O	-
CURRIER P (FIRST)	2768	T09 R11 WELS	20	O	-	S	-	-	-	-
CURRIER P (SECOND)	2774	T09 R11 WELS	28	O	-	-	-	-	-	-
DIXON P	9911	PIERCE POND TWP	17	O	-	-	-	-	-	-
ENCHANTED P (LITTLE)	0148	UPPER ENCHANTED TWP	35	O	-	-	-	-	-	-
FOWLER P	0686	T03 R11 WELS	19	S	-	O	S	-	-	-
GARDNER L	1528	T15 R09 WELS	288	O	O	O	-	-	-	-
GAUNTLET P	0472	TB R10 WELS	11	S	-	O	-	-	-	-
GREEN MTN P	3666	T06 R06 WELS	10	O	-	-	-	-	-	-
HARRINGTON P	0702	T03 R11 WELS	40	m	-	O	-	-	-	-
HELEN P	0094	PIERCE POND TWP	15	O	-	-	-	-	-	-
HIGH P	0092	PIERCE POND TWP	7	O	-	-	-	-	-	-
HORSERACE PONDS	0626	RAINBOW TWP	50	O	-	O	S	-	-	O
HURD P (LITTLE)	0596	T02 R10 WELS	60	S	-	O	S	-	-	S
IRELAND P	4168	T07 R08 WELS	30	O	-	-	-	-	-	-
LANE P	2490	COMSTOCK TWP	24	S	-	-	-	-	-	O
LANG P	2542	PARLIN POND TWP	30	O	-	-	-	-	-	-
LANG P (LITTLE)	2543	PARLIN POND TWP	13	O	-	-	-	-	-	-
LONG P (LITTLE)	4424	T10 SD	55	S	-	O	S	-	-	-
LOON P	2688	ATTEAN TWP	37	O	-	-	-	-	-	-
MARY PETUCHE P	2474	PRENTISS TWP	10	S	-	-	-	-	-	O
MCKENNA P	0688	T03 R11 WELS	53	m	-	O	S	-	-	-
MINISTER P (BIG)	0590	T02 R10 WELS	15	O	-	-	-	-	-	-
RAINBOW DEADWATERS	9698	RAINBOW TWP	58	O	-	-	-	-	-	-
ROACH P (FOURTH)	0446	SHAWTOWN TWP	266	S	-	O	S	-	-	-
SLAUGHTER P	0690	T03 R11 WELS	66	O	-	O	S	-	S	-
SPRUCE MOUNTAIN P	0466	TB R11 WELS	20	S	-	O	-	-	-	S
MOOSE P (BIG)	0334	MOOSEHEAD JUNCTION TWP	91	O	-	-	-	-	-	S
MOOSE P (LITTLE)	0336	MOOSEHEAD JUNCTION TWP	25	O	-	-	-	-	-	S
SWIFT RIVER P (LIT)	3572	TOWNSHIP E	15	O	-	-	-	-	-	-
TOBEY P #1	2674	T05 R07 BKP WKR	35	m	-	O	S	-	-	-
TROUT P	3260	MASON TWP	17	m	-	S	-	O	-	-
TURTLE P	0952	LAKE VIEW PLT	81	O	-	-	-	-	-	-
TWIN (TROUT) PONDS	2102	T02 R09 WELS	60	O	-	O	S	-	-	-
WADLEIGH P (LITTLE)	2974	T08 R15 WELS	15	m	-	-	-	-	-	O

[2] Some lakes span two or more townships.

[3] Ratings: O = outstanding; S = significant; P = present; m = missing info.

MANAGEMENT CLASS 2

Especially high value, accessible, undeveloped lakes[1]

LAKE NAME	LAKE#	PRINCIPAL TOWN NAME[2]	SIZE(AC)	RESOURCE RATINGS[3] F	W	SC	SH	B	C	P
ALLAGASH L	9787	T08 R14 WELS	4,260	O	O	O	O	-	S	O
ALLIGATOR L	4498	T34 MD	1,159	O	-	O	S	-	-	-
ATTEAN P	2682	ATTEAN TWP	2,745	O	-	O	O	O	-	O
BALD MOUNTAIN P	0314	BALD MTN TWP T2R3	1,152	O	O	O	O	-	-	-
BEAVER P	3310	MAGALLOWAY PLT	179	O	O	-	-	-	-	-
BENSON P (BIG)	0864	T07 R09 NWP	320	O	-	O	-	-	S	-
CAUCOMGOMOC L	4012	T06 R14 WELS	5,081	O	O	S	S	-	S	O
CHAIN OF PONDS	5064	CHAIN OF PONDS TWP	700	O	O	O	S	-	S	O
CHESUNCOOK L4	CHCH	T03 R12 WELS	18,470	O	O	-	-	O	O	O
CHURCHILL L	2856	T09 R12 WELS	2,923	O	O	-	-	-	S	S
CLEAR L	1938	T10 R11 WELS	614	O	-	O	S	-	-	-
CLIFF L	2780	T09 T12 WELS	563	O	-	O	S	-	-	-
CLIFFORD L	1304	GREENLAW CHOPPING TWP	954	O	O	-	-	-	-	-
CROSBY P	3330	COBURN GORE	150	O	S	O	-	-	-	-
DEBSCONEAG DEADWATER	2076	T02 R10 WELS	500	O	O	-	-	-	-	S
EAGLE L (BIG)	2858	EAGLE LAKE TWP	8,288	O	O	-	-	O	O	P
FLAGSTAFF L	0038	DEAD RIVER TWP	20,300	O	O	S	S	-	-	-
IRONBOUND P	2510	ALDER BROOK TWP	40	O	-	O	O	-	-	O
JACKSON P # 2	0704	T03 R11 WELS	12	S	-	O	O	-	-	-
JIM P	5054	JIM POND TWP	320	O	O	O	S	-	-	-
JO-MARY L (UPPER)	0243	TA R10 WELS	1,873	O	-	O	S	-	-	S
LOBSTER L	2948	LOBSTER TWP	3,475	O	O	O	O	O	S	O
LONG L	1892	T12 R13 WELS	1,203	O	O	-	-	-	S	S
MACHIAS L (THIRD)	1124	T42 MD BPP	2,778	O	O	-	-	-	S	-
MOOSELEUK L	1990	T10 R09 WELS	422	S	O	O	-	-	O	-
MUNSUNGAN L	4180	T08 R10 WELS	1,415	O	-	O	S	-	O	-
MUSQUASH L (WEST)	1096	T06 R01 NBPP	1,613	O	-	O	S	-	S	-
NAHMAKANTA L	0698	T01 R11 WELS	1,024	O	-	O	O	O	S	-
PENOBSCOT L	0339	DOLE BROOK TWP	1,019	O	-	O	S	-	S	O
PIERCE P	0086	PIERCE POND TWP	1,650	O	S	O	S	-	-	-
PLEASANT L	1100	T06 R01 NBPP	1,574	O	-	O	S	O	-	-
ROUND P	1470	T13 R12 WELS	697	O	O	-	-	-	S	-
SCRAGGLY L	4264	T07 R08 WELS	842	O	-	O	O	O	S	O
SPENCER L	5104	HOBBSTOWN TWP	1,819	O	-	O	O	O	O	-
SPENCER P	0404	E MIDDLESEX CANAL GR	980	S	O	O	S	-	-	-
TELOS L & ROUND P	2710	T06 R11 WELS	2,276	O	S	O	S	-	S	-
TIM P	2362	TIM POND TWP	320	O	-	O	-	-	-	-
UMSASKIS L	1896	T11 R13 WELS	1,222	O	O	-	-	-	S	S

[1]CRITERIA: Accessible to within 1/4 mile by 2wd; less than 1 development unit per mile; two or more outstanding resource values in fisheries, wildlife, scenic or shore character – outstanding wildlife value must be due to especially concentrated and/or diverse wildlife values.

[2]Some lakes span two or more townships.

[3]Ratings: O = outstanding; S = significant; P = present; m = missing info.

[4]Includes Ripogenus Lake, but not Caribou Lake.

STATISTICS:		% OF TOTAL
NUMBER:	38 lakes	2.5%
ACRES:	94,932 ac total (avg 2,498)	11.7%
SHOREFRONT:	3,591,904 ft total (avg 94,524)	10.7%

(revised 3/21/1991 – added Big Benson Pond and Third Machias Lake per ZP 479;
revised 9/21/2000 – changed Clifford Lake from MC 4 to MC 2 due to lack of development per miscellaneous rule revisions;
revised 9/10/2008 – changed Debsconeag Deadwater from MC 1 to MC 2 due to correction of access information per ZP 720)

MANAGEMENT CLASS 3

Potentially suitable for development[1]

LAKE NAME	LAKE#	PRINCIPAL TOWN NAME[2]	SIZE(AC)	RESOURCE RATINGS[3] F	W	SC	SH	B	C	P
AZISCOHOS L (SOUTH)	3290 – AZ01	LINCOLN PLT	2,000	O	O	S	S	-	O	S
BEAU L	9785	T19 R11 WELS	2,003	S	-	-	-	S	S	S
BIG L	1288	BIG LAKE TWP	10,305	O	O	-	-	O	O	-
BOWLIN P	2188	T05 R08 WELS	115	S	-	S	-	-	-	-
BRANDY P	9651	T39 MD	723	S	O	-	-	-	-	S
BRASSUA L	4120	ROCKWOOD STRIP-East	8,979	S	-	-	-	-	O	-
CARIBOU L	CHCA	T02 R12 WELS	4,600	O	O	-	-	O	O	O
CHENEY P	2494	HAMMOND TWP	99	S	-	-	-	-	-	S
CLAYTON L	1958	T12 R08 WELS	264	S	-	-	-	-	-	-
EBEEMEE L (UPPER)	0966	T04 R09 NWP	196	-	-	-	-	-	-	S
ENDLESS L	0942	T03 R09 NWP	1,499	S	-	-	-	-	S	S
FALLS P	1490	T18 R10 WELS	256	S	S	-	-	-	-	-
FISH RIVER L	0009	T13 R08 WELS	2,642	S	S	O	S	-	S	-
GLAZIER L	9789	T18 R10 WELS	1,120	S	-	-	-	S	-	-
GRAHAM L	4350	FLETCHERS LANDING	7,865	S	O	-	-	-	O	-
GRAND L (WEST)	1150	T06 ND BPP	14,340	O	O	O	O	-	O	-
HORSESHOE P	3336	COBURN GORE	37	-	S	-	-	-	-	-
INDIAN P	4090	SAPLING TWP	3,746	S	O	-	-	-	S	-
JO-MARY L (MIDDLE)	0986	T4, INDIAN PURCHASE	1,152	S	-	O	S	-	S	S
LONG P	2536	LONG POND TWP	3,053	S	S	O	S	-	S	-
LONG P	3356	SEVEN PONDS TWP	35	S	-	-	-	-	-	-
MACHIAS L (BIG)	1960	T12 R08 WELS	692	S	S	-	-	-	S	-
MACHIAS L (LITTLE)	1578	NASHVILLE PLT	275	S	S	-	-	-	-	-
MATTAMISCONTIS L (LT)	2138	T03 R09 NWP	275	S	-	-	-	-	-	-
MATTASEUNK L	3040	MOLUNKUS TWP	576	S	-	-	-	-	-	-
MUD P	0023	JIM POND TWP	14	S	-	-	-	-	-	-
ONAWA L	0894	ELLIOTTSVILLE TWP	1,344	O	O	O	S	-	S	-
PEMADUMCOOK CHAIN L	0982	T01 R10 WELS	18,300	S	-	O	S	-	O	S
POCUMCUS L	1110	T05 ND BPP	2,201	O	O	-	-	-	S	-
RICHARDSON L (LOWER)	3308–RHLW	TOWNSHIP C	2,900	O	S	S	O	-	S	S
ROACH P (FIRST)	0436	FRENCHTOWN TWP	3,270	S	-	S	S	S	S	-
ROCKABEMA L	3636	MORO PLT	339	S	-	S	S	-	-	-
ROCKY P	4476	T22 MD	666	m	-	-	-	-	-	-
ROUND P	1594	T14 R08 WELS	90	S	S	-	-	-	-	-
SAPONAC P	4722	GRAND FALLS TWP	922	S	-	S	S	-	S	P
SCHOODIC L[4]	0956	LAKE VIEW PLT	7,168	S	-	S	-	-	S	S
SILVER L	0922	KATAHDIN IRN WKS PLT	305	S	-	S	S	-	-	S
SPECTACLE (SPEC) P	4450	OSBORN PLT	1,754	O	-	-	-	-	-	-

[1]CRITERIA: See page C-14.

[2]Some lakes span two or more townships.

[3]Ratings: O = outstanding; S = significant; P = present; m = missing info.

[4]Also on Management Class 5 list.

STATISTICS:

		% OF TOTAL
NUMBER:	38 lakes	2.5%
ACRES:	106,120 ac total (avg 2,793)	13.0%
SHOREFRONT:	3,924,753 ft total (avg 103,283)	11.7%

(revised 1/1/2001 – added Aziscohos Lake (South) and Lower Richardson Lake per Prospective Zoning Plan for the Rangeley Lakes Region and miscellaneous rule revisions)

POTENTIAL MANAGEMENT CLASS 3 LAKES

LAKE NAME	LAKE#	PRINCIPAL TOWN NAME[2]	SIZE(AC)	RESOURCE RATINGS[3] F	W	SC	SH	B	C	P
MOOSEHEAD L	0390	MOOSEHEAD JUNCTION TWP	74,890	O	O	O	O	O	O	O
Official classification of this lake will await completion of study.										
SQUARE L	1672	T16 R05	8,150	O	-	-	-	-	S	S
Square Lake may be placed on this list when and if the Maine Department of Environmental Protection is able to show that increased shoreland development around Square Lake would not significantly contribute to the stresses already being placed on it from lakes upstream.										
AZISCOHOS L (NORTH)	3290 – AZ02	PARKERTOWN TWP	4,700	O	O	S	S	-	O	S
MOOSELOOKMEGUNTIC L	MLML	RICHARDSONTOWN TWP	14,101	O	O	S	O	-	O	-
RICHARDSON L (UPPER)	3308 – RHUP	RICHARDSONTOWN TWP	4,200	O	O	O	O	-	O	-

These lakes were removed from Management Class 3 based on a recognition that the Rangeley Lakes have special planning needs that are not addressed by this classification. The Rangeley Lakes, comprised of a string of large, high value lakes subject to intensive development pressure, represent a unique resource to the state. Management Class 3 is not considered a sufficiently refined designation to adequately manage and protect these lakes, which like Moosehead, are suited to a mix of development and conservation. Aziscohos Lake (South) and Lower Richardson Lake have been placed in Management Class 3 as part of the *Prospective Zoning Plan for the Rangeley Lakes Region.* These lakes will remain in Management Class 7.

[1]Some lakes span two or more townships.
[2]Some lakes span two or more townships.
[3]Ratings: O = outstanding; S = significant; P = present; m = missing info.

Criteria for Management Class 3 Lakes

The lakes listed in Management Class 3, also referred to as Potentially Suitable for Development, meet the following criteria:

a. Water quality
   - Development of the remaining undeveloped shoreline at the rate of one dwelling unit per 150 feet of frontage will not result in a change in phosphorus concentration of 1 part per billion or more.
   - Not having additional lake specific water quality problems that would be exacerbated by additional shoreline development.

b. Location
   - Located within two townships of the organized portion of the State or existing settlements with public services.

c. Access
   - Accessible by 2-wheel drive motor vehicle during summer months to within 1/4 mile of the normal high water mark of the lake.

d. Conflicting use
   - Not totally zoned as P-FW (Fish and Wildlife Protection Subdistrict), P-WL (Wetland Protection Subdistrict), or P-RR (Recreation Protection Subdistrict).
   - Not a municipal water supply.
   - No major or unavoidable conflict with critical species or habitats.
   - No major or unavoidable conflict with recreational activities requiring an undeveloped setting.

e. Available shoreline
   - Greater than 10 acres of surface area per existing dwelling unit.
   - Undeveloped shore area adequate for 10 or more dwelling units.

f. Water level fluctuation
   - No extreme water level fluctuation (i.e. dam regulated draw down) which makes shoreline unsuitable for development.

g. Regional consideration
   - No region of the state is to have all or the great majority of the large water bodies in the area identified as suitable for development; in such cases, certain lakes otherwise eligible will be omitted from the list; preference will be given to retaining lakes which:
     (1) are the least sensitive to water quality degradation;
     (2) are closest to paved, all-season roads;
     (3) are closest to existing development centers;
     (4) have the least conflict between development and their resource significance.

h. Special planning needs
   - Is not a large lake determined by the Commission as having special planning needs, as evidenced by a combination of: suitability for development, high resource value or significance, and intensive development pressure.

MANAGEMENT CLASS 4

High value, developed lakes[1]

LAKE NAME	LAKE#	PRINCIPAL TOWN NAME[2]	SIZE(AC)	RESOURCE RATINGS[3] F	W	SC	SH	B	C	P
ARNOLD P	3332	COBURN GORE	148	S	-	O	-	-	O	-
CARRY P (WEST)	0048	CARRYING PLC TWN TWP	675	O	-	-	-	-	O	-
CATHANCE L	9661	NO 14 TWP	2,905	O	O	-	-	-	S	O
CHAIN L (FIRST)	1236	T26 ED BPP	336	O	-	-	-	-	S	O
CHAIN L (SECOND)	1234	T26 ED BPP	589	O	-	-	-	-	S	O
CUPSUPTIC L	MLCU	ADAMSTOWN TWP	2,199	O	O	O	S	-	S	-
DONNELL P	4412	T09 SD	112	O	-	O	O	-	S	-
GRAND FALLS FLOWAGE	7437	FOWLER TWP	6,691	O	O	-	-	-	-	-
GREENWOOD P (BIG)	0884	ELLIOTTSVILLE TWP	211	O	-	O	-	-	-	-
HOLEB P	2652	HOLEB TWP	1,055	S	-	O	O	O	-	-
KENNEBAGO L (BIG)	2374	DAVIS TWP	1,700	O	O	O	O	-	S	O
LYFORD P (BIG)	0438	SHAWTOWN TWP	152	O	-	-	-	-	O	-
NICATOUS L	4766	T40 MD	5,165	S	O	O	O	-	S	-
POND IN THE RIVER	3328	TOWNSHIP C	512	O	S	S	-	O	-	-
RAGGED L	2936	T02 R13 WELS	2,712	O	-	O	S	-	S	-
RANGELEY L	3300	RANGELEY PLT	6,000	O	S	O	S	S	O	O
SPRING RIVER L	4432	T10 SD	704	S	-	O	O	-	-	-
SYSLADOBSIS L (LO)	4730	T05 ND BPP	5,376	S	-	S	S	O	S	-
TOGUE P (LOWER)	2084	T02 R09 WELS	384	S	-	O	S	-	-	O
TOGUE P (UPPER)	2104	T02 R09 WELS	294	S	-	O	S	-	-	O
TUNK L	4434	T10 SD	2,010	O	O	O	O	-	S	S
WILSON P (UPPER)	0410	BOWDOIN COL GR WEST	940	S	S	O	S	-	-	S

[1]CRITERIA: Two or more outstanding resource values; accessible to within 1/4 mile by 2wd; more than one development unit per mile; not included in management class 3 (potentially suitable for development).
[2]Some lakes span two or more townships.
[3]Ratings: O = outstanding; S = significant; P = present; m = missing info.

STATISTICS:

		% OF TOTAL
NUMBER:	22 lakes	1.4%
ACRES:	41,878 ac total (avg 1,904)	5.1%
SHOREFRONT:	1,975,017 ft total (avg 89,774)	5.9%

(revised 3/21/1991 – added Grand Falls Flowage per ZP 479)

MANAGEMENT CLASS 5

Heavily developed lakes[1]

LAKE NAME	LAKE#	PRINCIPAL TOWN NAME[2]	SIZE(AC)	EXISTING DENSITY ACRES PER D.U.	EXISTING DENSITY FEET PER D.U.
AMBAJEJUS L[3]	PAMB	T01 R09 WELS	3,289	10.	229.5
BAKER STREAM P	7104	BALD MTN TWP T2R3	12	3.0	1,827
BEAVER MOUNTAIN L	3562	SANDY RIVER PLT	543	4.7	253.6
BEAVER P	3354	SEVEN PONDS TWP	20	3.3	819.8
BOTTLE L	4702	LAKEVILLE PLT	281	3.8	338.0
BOYD L	2158	ORNEVILLE TWP	1,005	6.4	358.3
CAMPBELL P	2574	BLAKE GORE	15	5.0	828.3
CEDAR L	2004	T03 R09 NWP	685	7.3	305.9
CROSS L	1674	CROSS LAKE TWP	2,515	8.8	309.2
DAVIS (WAPITI) P	2196	T05 R07 WELS	69	8.6	1,186
DEAD STREAM P	4066	WEST FORKS PLT	67	9.6	1,669
DEER L	4512	T34 MD	38	5.4	861.9
EBEEMEE L	0914	EBEEMEE TWP	940	5.8	391.7
FISH P	4054	MOXIE GORE	15	7.5	1,973
HILLS P	3686	PERKINS TWP	22	4.4	973.4
HUTCHINSON P	3494	ALBANY TWP	96	5.6	581.8
KINGSBURY P	0262	MAYFIELD TWP	390	4.3	277.3
KNEELAND P	3266	ALBANY TWP	16	4.0	1,086
LONG (MARTIN) P	4108	THE FORKS PLT	26	3.2	814.7
LONG P	1200	T18 MD BPP	15	7.5	1,892
LOON L	2384	DALLAS	168	2.9	248.0
MADAWASKA L	1802	MADAWASKA LAKE TWP	1,526	4.8	167.4
NUMBER NINE L	1756	T09 R03 WELS	120	5.2	389.4
OTTER P	7142	MAYFIELD TWP	25	2.8	409.4
PAPOOSE P (LITTLE)	3268	ALBANY TWP	19	9.5	2,499
PEEP L	9821	T30 MD BPP	32	8.0	1,430
PENMAN P	0113	T26 ED BPP	29	3.6	543.4
PLEASANT PD	0224	THE FORKS PLT	1,120	5.8	180.3
PRESQUE ISLE L	1758	T09 R03 WELS	38	5.4	927.7
PROCTOR P	3210	ALBANY TWP	45	4.1	463.4
ROUND P	3584	TOWNSHIP E	42	7.0	959.2
SANDY RIVER P (MID)	3566	SANDY RIVER PLT	70	8.8	1,307
SANDY RIVER P (LOWER)	3564	SANDY RIVER PLT	17	5.7	1,450
SANDY RIVER P (UPPER)	3568	SANDY RIVER PLT	28	7.0	1,289
SCHOODIC L[3]	0956	LAKE VIEW PLT	7,168	18.	386.2
SHIN P (LOWER)	2198	T05 R07 WELS	638	4.8	278.4
SMITH P	2012	T3, INDIAN PURCHASE	208	2.2	177.6
SOLDIER P	9783	WALLAGRASS PLT	96	6.9	1213
SONGO P	3262	ALBANY TWP	224	2.5	201.0
TWIN L (SOUTH)[3]	PSTW	T04 INDIAN PURCHASE	3,406	14.	388.0
UNNAMED P	7062	THE FORKS PLT	10	3.3	573.7
UNNAMED P	8735	SALEM TWP	40	2.2	481.1
WHETSTONE P	0296	KINGSBURY PLT	256	4.2	263.5

[1]CRITERIA: Lakes with less than 10 acres or 400 feet of frontage per dwelling unit taken as an average around entire lake.
[2]Some lakes span two or more townships.
[3]Also on Management Class 3 list.

STATISTICS:			% OF TOTAL
	NUMBER:	43 lakes	2.8%
	ACRES:	25,384 ac total (avg 590)	3.1%
	SHOREFRONT:	999,060 ft total (avg 22,234)	2.9%

(revised 2/3/1995 – dropped Redington Pond and Unnamed Pond (7818) due to lack of development per new zoning maps)

LAKES APPROACHING HEAVILY DEVELOPED STATUS[1]

LAKE NAME	LAKE#	PRINCIPAL TOWN NAME[2]	SIZE(AC)	EXISTING DENSITY ACRES PER D.U.	EXISTING DENSITY FEET PER D.U.
BEAVER P	3588	TOWNSHIP D	20	20	5,577
BRANCH P (1ST WEST)	0440	SHAWTOWN TWP	119	15	2,021
CARRY P (MIDDLE)	0046	CARRYING PLC TWN TWP	126	16	2,381
CARRY P (WEST)	0048	CARRYING PLC TWN TWP	675	16	678.5
CENTER P	4040	SOLDIERTOWN TWP	51	17	2,646
CHAIN L (FIRST)	1236	T26 ED BPP	336	15	1,133
CHALK P	3270	ALBANY TWP	25	13	2,329
CHASE STREAM P	4080	CHASE STREAM TWP	75	19	4,386
CUT P	1706	DUDLEY TWP	26	13	3,390
DUCK L	4698	LAKEVILLE PLT	256	13	892
ELLIS P	4086	CHASE STREAM TWP	85	17	2,161
ENCHANTED P (LOWER)	0142	LOWER ENCHANTED TWP	20	10	6,764
ENOCH L	1328	FOWLER TWP	18	18	3,291
FISH P	3324	LINCOLN PLT	20	20	6,458
GULL P	3532	DALLAS	281	13	704
HATHORN P	4242	T04 R08 WELS	15	15	3,264
HUSSEY P	0292	BLANCHARD PLT	15	15	3,729
KENNEBAGO L (LITTLE)	3958	STETSONTOWN TWP	190	14	837.4
LONG L	1682	T17 R03 WELS	6,000	20	600.4
LONG P	3582	TOWNSHIP E	254	17	1,071
LONG P	4118	TAUNTON & RAYNHAM	173	14	1,190
LYFORD P (BIG)	0438	SHAWTOWN TWP	152	17	1,623
MATTASEUNK L	3040	MOLUNKUS TWP	576	16	1,191
MAYFIELD P	0260	MAYFIELD TWP	140	14	1,122
MOOSEHEAD L #6	MH06	TOMHEGAN TWP	9,925	31	670.8
MOXIE P	4050	EAST MOXIE TWP	2,370	14	800.2
MYRICK P	4416	T10 SD	45	15	3,007
NORTHWEST P	3342	MASSACHUSETTS GORE	45	15	1,986
PARLIN P	2544	PARLIN POND TWP	543	15	929.3
PEPPERPOT P	3298	ADAMSTOWN TWP	50	10	1,058
POSSUM P	1310	T26 ED BPP	30	15	2,532
PUDDING P	0932	BARNARD TWP	12	12	2,657
SABBATH DAY P	3578	TOWNSHIP E	57	11	1,547
SAINT CROIX L	1774	ST CROIX TWP	416	18	1,402
SAINT FROID L	1610	WINTERVILLE PLT	2,400	11	415.3
SECOND L	1134	T37 MD BPP	102	11	1,726
SHAW P	5152	T03 R04 BKP WKR	45	15	2,814
SILVER L	0922	KATAHDIN IRN WKS TWP	305	17	1,581
SPENCER P	3586	TOWNSHIP D	15	15	3,538
SPRING RIVER L	4432	T10 SD	704	19	1,395
THANKSGIVING P	0288	BLANCHARD PLT	17	17	3,873
TROUT P	0322	MOOSEHEAD JUNCTION TWP	33	17	2,628
UNNAMED P	9740	DENNISTOWN PLT	20	20	2,615
UNNAMED P	9668	T05 R07 BKP WKR	12	12	8,802
UNNAMED P	7314	HIGHLAND PLT	12	12	4,074
WALLAGRASS L (THIRD)	1552	ST JOHN PLT	45	11	1,509
WEST L	0503	T03 ND	1,344	19	794.8
YOKE PONDS	0504	TA R11 WELS	134	11	1,808

[1]Lakes with less than 20 acres or 1,000 feet of frontage per dwelling unit taken as an average around entire lake.
[2]Some lakes span two or more townships.

MANAGEMENT CLASS 6

Remote ponds[1]

LAKE NAME	LAKE#	PRINCIPAL TOWN NAME[2]	SIZE(AC)	RESOURCE RATINGS[3] F	W	SC	SH	B	C	P
ALLIGATOR P	0502	TA R11 WELS	47	S	--	--	--	--	--	--
AZISCOHOS P	3106	MAGALLOWAY PL	12	S	--	--	--	--	--	--
BAKER P	0422	BOWDOIN COL GR WEST	10	m	--	--	--	--	--	--
BEAN P	0656	T02 R12 WELS	16	m	--	--	--	--	--	--
BEAN P (LOWER)	0646	RAINBOW TWP	37	S	S	--	--	--	--	--
BEAN P (MIDDLE)	0648	RAINBOW TWP	10	--	S	--	--	--	--	--
BEAN P (UPPER)	0650	RAINBOW TWP	25	S	S	--	--	--	--	S
BEAR P*	4018	T06 R15 WELS	138	--	S	O	--	--	--	--
BEAR P	0636	RAINBOW TWP	30	S	--	--	--	--	--	S
BEATTIE P	5066	BEATTIE TWP	27	S	--	--	--	--	--	--
BEAVER P	0670	T03 R11 WELS	15	m	--	S	S	--	--	--
BEAVER P	0484	SHAWTOWN TWP	27	S	--	--	--	--	--	--
BEAVER P (BIG)	0610	RAINBOW TWP	45	S	--	--	--	--	--	--
BEAVER P (LITTLE)	9700	RAINBOW TWP	8	--	--	--	--	--	--	--
BEAVER P (LITTLE)	0612	T03 R11 WELS	10	m	--	--	--	--	--	--
BENJAMIN P	2684	ATTEAN TWP	121	m	--	S	S	--	--	--
BIRCH RIDGE P # 1	0514	TA R11 WELS	11	S	--	--	--	--	--	--
BLACK L	1506	T15 R09 WELS	147	O	-	S	-	-	-	-
BLACK P (LITTLE NO)	1508	T15 R09 WELS	6	S	--	S	--	--	--	--
BLACK P (LITTLE SO)	1510	T15 R09 WELS	7	S	--	S	--	--	--	--
BLUFF P	0434	FRENCHTOWN TWP	10	S	--	--	--	--	--	S
BLUFFER P (UPPER)	2798	T08 R11 WELS	15	S	--	--	--	--	--	--
BOARDWAY P (BIG)	0494	TA R11 WELS	15	S	--	--	--	--	--	S
BOULDER P	2672	T05 R07 BKP WKR	30	m	--	--	--	--	--	--
BOWLIN P (LITTLE)	2194	T05 R07 WELS	34	S	--	--	--	--	--	--
BRACKETT P	0290	BLANCHARD PLT	10	m	--	--	--	--	--	--
BRANCH P (MIDDLE)	0912	EBEEMEE TWP	34	O	-	-	-	-	-	-
BRAYLEY P	2706	T07 R10 WELS	6	--	--	--	--	--	--	--
BUCK P	0644	RAINBOW TWP	6	--	--	--	--	--	--	--
CAPE HORN P	2568	PRENTISS TWP	22	--	--	--	--	--	--	--
CEDAR P	0474	TB R10 WELS	65	O	-	-	-	-	-	S
CEDAR P	2654	HOLEB TWP	5	--	--	--	--	--	--	--
CHAIRBACK P (EAST)	0802	T07 R09 NWP	46	S	--	--	--	--	--	S
CHAIRBACK P (WEST)	0796	T07 R09 NWP	47	O	-	-	-	-	-	S
CHASE STREAM P	4093	MISERY TWP	31	S	--	--	--	--	--	--
CHESUNCOOK P*	0672	T03 R11 WELS	272	S	--	O	O	--	--	O
CLAYTON P	2406	T06 R17 WELS	75	m	--	--	--	--	--	--
CLEAR P	5074	LOWELLTOWN TWP	21	m	--	--	--	--	--	--
CLEARWATER P	2692	ATTEAN TWP	34	-	-	-	-	-	O	-
CLEARWATER P*	2476	PRENTISS TWP	11	--	--	--	--	--	--	P
CLIFFORD P	0624	RAINBOW TWP	17	S	--	--	--	--	--	--
CLISH P	5158	T05 R20 WELS	21	S	--	--	--	--	--	--
CRANBERRY P (L, NOTCH)	0784	BOWDOIN COL GR WEST	7	--	--	--	--	--	--	--
CURRIER P (FIRST)	2768	T09 R11 WELS	20	O	-	S	-	-	-	-
CURRIER P (SECOND)	2774	T09 R11 WELS	28	O	-	-	-	-	-	-
DAISEY P	0594	T02 R10 WELS	11	S	--	--	--	--	--	--
DEBSCONEAG P (6TH)	0580	T01 R11 WELS	31	S	--	--	--	--	S	S
DINGLEY P (LITTLE)	2462	T04 R05 NBKP	17	S	--	--	--	--	--	--
DINGLEY P (UPPER)	2464	T04 R05 NBKP	20	S	--	--	--	--	--	--

MANAGEMENT CLASS 6 (cont)

Remote ponds[1]

LAKE NAME	LAKE#	PRINCIPAL TOWN NAME[2]	SIZE(AC)	RESOURCE RATINGS[3] F	W	SC	SH	B	C	P
DIPPER P*	4042	PITTSTON ACAD GRANT	13	--	--	--	--	--	O	S
DIXON P	9911	PIERCE POND TWP	17	O	-	-	-	-	-	-
DOUGHNUT P	0616	RAINBOW TWP	12	S	--	--	--	--	--	--
DUBOIS P	2478	PRENTISS TWP	18	m	--	--	--	--	--	P
EDDY P	3546	SANDY RIVER PLT	9	--	--	--	--	--	--	--
ENCHANTED P (LITTLE)	0148	UPPER ENCHANTED TWP	35	O	-	-	-	-	-	-
FOGG P	0426	BOWDOIN COL GR WEST	23	S	--	--	--	--	--	--
FOLEY P (LITTLE)	2492	COMSTOCK TWP	35	m	--	--	--	--	--	--
FOWLER P	0686	T03 R11 WELS	19	S	-	O	S	-	-	-
FROST P (LITTLE)	0668	T03 R12 WELS	35	S	S	--	--	--	--	--
GARDNER L	1528	T15 R09 WELS	288	O	O	O	-	-	-	-
GAUNTLET P	0472	TB R10 WELS	11	S	-	O	-	-	-	-
GORDON P	0146	UPPER ENCHANTED TWP	28	S	--	--	--	--	--	--
GOULD P	0620	RAINBOW TWP	12	m	--	--	--	--	--	--
GREEN MTN P	3666	T06 R06 WELS	10	O	-	-	-	-	-	-
HAFEY P	1498	T18 R11 WELS	23	S	--	--	--	--	--	--
HALE P	2508	ALDER BROOK TWP	40	m	--	--	--	--	--	--
HALL P	2566	PRENTISS TWP	19	S	--	--	--	--	--	--
HALL P	5092	T05 R07 BKP WKR	42	m	--	--	--	--	--	--
HARRINGTON P	0702	T03 R11 WELS	40	m	-	O	-	-	-	-
HATHORN P	4242	T04 R08 WELS	15	S	--	--	--	--	--	--
HATHORN P (LITTLE)	2298	T04 R08 WELS	8	-	--	--	--	--	--	--
HEDGEHOG P	0556	T01 R11 WELS	5	--	--	--	--	--	--	--
HELEN P	0094	PIERCE POND TWP	15	O	-	-	-	-	-	-
HIGH P	0092	PIERCE POND TWP	7	O	-	-	-	-	-	-
HOLBROOK P*	0632	RAINBOW TWP	224	S	--	S	O	--	--	--
HORSERACE PONDS	0626	RAINBOW TWP	50	O	-	O	S	-	-	O
HORSESHOE P	9277	T16 R09 WELS	15	S	--	--	--	--	--	--
HORSESHOE P	2686	ATTEAN TWP	50	m	--	--	--	--	--	--
HOUSTON P (LITTLE)*	0920	KATAHDIN IRN WKS TWP	27	O	--	--	--	--	--	S
HURD P (LITTLE)	0596	T02 R10 WELS	60	S	-	O	S	-	-	S
IRELAND P	4168	T07 R08 WELS	30	O	-	-	-	-	-	-
JACKSON P #1	0684	T03 R11 WELS	23	--	--	--	--	--	--	--
JUNIPER KNEE P	0878	ELLIOTTSVILLE TWP	32	S	--	--	--	--	--	--
KELLY P	0654	T02 R12 WELS	60	S	--	--	--	--	--	--
LANE P	2490	COMSTOCK TWP	24	S	-	-	-	-	-	O
LANE BROOK P	3664	T06 R06 WELS	33	--	--	--	--	--	--	--
LANG P	2542	PARLIN POND TWP	30	O	-	-	-	-	-	-
LANG P (LITTLE)	2543	PARLIN POND TWP	13	O	-	-	-	-	-	-
LEDGE P	3554	SANDY RIVER PLT	6	--	--	--	--	--	--	--
LINE P	5162	T05 R20 WELS	7	--	--	--	--	--	--	--
LONG BOG	2668	HOLEB TWP	19	m	--	--	--	--	--	--
LONG P	2690	ATTEAN TWP	37	m	--	--	--	--	--	--
LONG P (LITTLE)	4424	T10 SD	55	S	-	O	S	-	-	-
LOON P	2688	ATTEAN TWP	37	m	-	-	-	-	-	-
LOON P	0554	T01 R11 WELS	5	--	--	--	--	--	--	--
LOST P	2694	ATTEAN TWP	5	--	--	--	--	--	--	--
MARY PETUCHE P	2474	PRENTISS TWP	10	S	-	-	-	-	-	O
MCKENNA P	0688	T03 R11 WELS	53	m	-	O	S	-	-	-
MCKENNEY P	0154	UPPER ENCHANTED TWP	9	--	--	--	--	--	--	--

MANAGEMENT CLASS 6 (cont)

Remote ponds[1]

LAKE NAME	LAKE#	PRINCIPAL TOWN NAME[2]	SIZE(AC)	RESOURCE RATINGS[3] F	W	SC	SH	B	C	P
MESSER P	4244	T05 R08 WELS	27	S	--	--	--	--	--	--
MIDWAY P	3544	SANDY RIVER PLT	7	--	--	--	--	--	--	--
MINISTER P (BIG)	0590	T02 R10 WELS	15	O	-	-	-	-	-	-
MINISTER L (LITTLE)	0592	T02 R10 WELS	4	--	--	--	--	--	--	--
MOOSE P (BIG)	0334	MOOSEHEAD JUNCTION TWP	91	O	-	-	-	-	-	S
MOOSE P (LITTLE)	0336	MOOSEHEAD JUNCTION TWP	25	O	-	-	-	-	-	S
MOUNTAIN CATCHER P	4258	T06 R08 WELS	84	S	--	--	--	--	--	--
MOUNTAIN P	0432	BEAVER COVE	56	S	--	--	--	--	--	S
MOUNTAIN VIEW P	0488	TA R11 WELS	13	S	--	--	--	--	--	--
MOXIE P	3585	TOWNSHIP D	6	--	--	--	--	--	--	--
MUD P	2340	TOWNSHIP 6 N OF WELD	6	-	-	--	--	--	--	--
MURPHY P	0486	TA R11 WELS	12	--	--	--	--	--	--	--
MURPHY P (BIG)	0638	RAINBOW TWP	15	S	--	--	--	--	--	--
MUSCALSEA P (BIG)	4036	RUSSELL POND TWP	14	m	--	S	--	--	--	--
MUSCALSEA P (LITTLE)	4034	RUSSELL POND TWP	11	m	--	--	--	--	--	--
NOTCH P	0786	BOWDOIN COL GR WEST	10	S	--	--	--	--	--	--
NOTCH P (BIG)	0328	MOOSEHEAD JUNCTION TWP	12	S	--	--	--	--	--	--
NOTCH P (LITTLE)	0326	MOOSEHEAD JUNCTION TWP	10	S	--	--	--	--	--	--
PAPOOSE P	0338	MOOSEHEAD JUNCTION TWP	3	--	--	--	--	--	--	--
PITMAN P	0598	T02 R10 WELS	20	--	--	--	--	--	--	--
POLLY P	0692	T03 R11 WELS	15	m	--	--	--	--	--	--
PORTER P*	4760	T03 ND	58	S	--	--	--	--	--	--
RABBIT P	0552	T01 R11 WELS	10	m	--	--	--	--	--	--
RABBIT P	0366	ELLIOTTSVILLE TWP	10	--	--	--	--	--	--	--
RAINBOW P	4436	T10 SD	17	--	--	--	--	--	--	--
RAINBOW DEADWATERS	9698	RAINBOW TWP	58	O	-	-	-	-	-	-
REED P (LITTLE)	2838	T08 R10 WELS	25	m	--	--	--	--	--	--
RIPOGENUS P	2910	T04 R12 WELS	76	m	S	--	--	--	S	--
ROACH P (FOURTH)	0446	SHAWTOWN TWP	266	S	-	O	S	-	-	-
ROACH P (SEVENTH)	0500	TA R11 WELS	33	S	--	--	--	--	--	--
ROACH P (SIXTH)	0480	SHAWTOWN TWP	48	S	--	--	--	--	--	--
ROBAR P (BIG)	2296	T04 R08 WELS	7	--	--	--	--	--	--	--
ROBERTS P	5164	T05 R20 WELS	19	m	--	--	--	--	--	--
ROCKY P (LITTLE)	0524	TA R11 WELS	12	S	--	--	--	--	--	--
ROUND P	2670	APPLETON TWP	5	--	--	--	--	--	--	--
SADDLEBACK P	3550	SANDY RIVER PLT	13	S	--	--	--	--	--	--
SECRET P	0907	ELLIOTTSVILLE TWP	12	S	--	--	--	--	--	--
SLAUGHTER P	0690	T03 R11 WELS	66	O	-	O	S	-	S	-
SNAKE P	2548	JOHNSON MOUNTAIN TWP	8	--	--	--	--	--	--	--
SOCATEAN P #1	4044	PLYMOUTH TWP	42	m	--	--	--	--	--	--
SOCATEAN P #2	4046	PLYMOUTH TWP	14	m	--	--	--	--	--	--
SPECK P	3288	GRAFTON TWP	9	--	--	--	--	--	--	--
SPRING P	2832	T07 R10 WELS	15	O	--	--	--	--	--	--
SPRUCE MOUNTAIN P	0466	TB R11 WELS	20	S	-	O	-	-	-	S
ST JOHN P (SECOND)	2432	T04 R17 WELS	105	--	--	--	--	--	--	--
ST JOHN P (THIRD)	2438	T04 R17 WELS	190	S	--	--	--	--	--	--
ST JOHN P (LOWER 1ST)	2428	T04 R17 WELS	29	--	--	--	--	--	--	--
ST JOHN P (UPPER 1ST)	2440	T04 R17 WELS	30	--	--	--	--	--	--	--
STRATTON P	0618	RAINBOW TWP	15	S	--	--	--	--	--	--
SUNDAY P	3316	MAGALLOWAY PLT	30	S	S	--	--	--	--	--
SWIFT RIVER P (LIT)	3572	TOWNSHIP E	15	O	-	-	-	-	-	-
TILDEN P	4418	T10 SD	36	S	--	--	--	--	--	--

MANAGEMENT CLASS 6 (cont)

Remote ponds[1]

LAKE NAME	LAKE#	PRINCIPAL TOWN NAME[2]	SIZE(AC)	RESOURCE RATINGS[3] F	W	SC	SH	B	C	P
TOBEY P #1	2674	T05 R07 BKP WKR	35	m	-	O	S	-	-	-
TOBEY P #2	2676	T05 R07 BKP WKR	32	m	--	S	--	--	--	--
TOBEY P #3	2678	T05 R07 BKP WKR	14	m	--	S	S	--	--	--
TROUT L	1098	KOSSUTH TWP	5	--	--	--	--	--	--	--
TROUT P	5082	LOWELLTOWN TWP	55	m	--	--	--	--	--	--
TROUT P	3260	MASON TWP	17	m	-	S	-	O	-	-
TROUT P	0792	BOWDOIN COL GR WEST	20	S	--	--	--	--	--	--
TUMBLEDOWN DICK P	0548	T01 R11 WELS	24	m	--	--	--	--	--	--
TUMBLEDOWN P	3512	TOWNSHIP 6 N OF WELD	9	--	--	--	--	--	--	--
TURTLE P	0952	LAKE VIEW PLT	81	O	-	-	-	-	-	-
TWIN (TROUT) PONDS	2102	T02 R09 WELS	60	O	-	O	S	-	-	-
TWO MILE P	9765	T16 R13 WELS	12	m	--	--	--	--	--	--
UNNAMED P	7115	COMSTOCK TWP	15	m	--	--	--	--	--	--
UNNAMED P	9746	ATTEAN TWP	12	m	--	--	--	--	--	--
UNNAMED P	8934	ATTEAN TWP	5	--	--	--	--	--	--	--
UNNAMED P	8416	COMSTOCK TWP	20	m	--	--	--	--	--	--
UNNAMED P	8980	T05 R07 BKP WKR	10	m	--	--	--	--	--	--
UNNAMED P	8942	HOLEB TWP	2	--	--	--	--	--	--	--
UNNAMED P	8868	PARLIN POND TWP	7	--	--	--	--	--	--	--
UNNAMED P	7073	T06 R15 WELS	8	--	--	--	--	--	--	--
WADLEIGH P (LITTLE)	2974	T08 R15 WELS	15	m	-	-	-	-	-	O
WELMAN P (UPPER)	2482	PRENTISS TWP	45	S	--	--	--	--	--	--
WING P	2319	SKINNER TWP	10	--	--	--	--	--	--	--
WOODMAN P	0622	RAINBOW TWP	6	--	--	--	--	--	--	--
WOUNDED DEER P*	2484	PRENTISS TWP	12	--	--	--	--	--	--	--

[1]CRITERIA: Not accessible within 1/2 mile by 2wd; no more than 1 non-commercial remote camp; cold water game fishery.
[2]Some lakes span two or more townships.
[3]Ratings: O = outstanding; S = significant; P = present; m = missing information.

*Identified and zoned as a remote pond in 1990.

STATISTICS:		% OF TOTAL
NUMBER:	176 lakes	11.4%
ACRES:	5,674 ac total (avg 32)	0.7%
SHOREFRONT:	935,343 ft total (avg 5,314)	2.8%

(revised 10/17/2000 – dropped Bear Brook Bog per miscellaneous rule revisions)

MANAGEMENT CLASS 7

Management Class 7 includes all lakes not otherwise designated herein.

Appendix D

Prospective Zoning Plan for the Rangeley Lakes Region

Prospective Zoning Plan for the Rangeley Lakes Region

An Amendment to the
Maine Land Use Regulation Commission's
Comprehensive Land Use Plan

Prepared by the
Maine Land Use Regulation Commission

In consultation with
Local Citizens, Officials, and Landowners

Adopted: November 1, 2000
Effective Date: January 1, 2001

ACKNOWLEDGEMENTS

Principal Authors: Holly Dominie and Andrew Fisk with assistance from Fred Todd, Susan Burns, Michael Demarest, and Cindy Bertocci

Geographic Information Mapping: Ellen Jackson

Field Inventory and Mapping: Consultants Jamie Greager and Martie Crone of Palermo and Susan Tolman of Readfield

This prospective plan was written under the guidance of John S. Williams, Director of the Maine Land Use Regulation Commission. Members of the Land Use Regulation Commission serving at the time of adoption are:

Stephen W. Wight, Newry, Chairman
Malachi F. Anderson, Woodland
Mary Beth Dolan, Monhegan Plantation
Theresa S. Hoffman, Waterville
Steven O. Mason, Greenville
Jeffrey W. Perry, Rangeley Plantation
Jacquelyn L. Webber, T17R5WELS (Cross Lake)

Marilyn K. Tourtelotte, a former member of the Commission, also provided guidance in the drafting of this plan.

A Commission workshop, over 30 public meetings, and a public hearing were held in the Rangeley area during 1999 and 2000 during the development of this prospective plan. Several hundred individuals participated and provided valuable oral and/or written comments. We thank all of those interested citizens, organizations, agencies, and corporate landowners who gave their time, information, and ideas.

Photo Credits: Holly Dominie, Michael Demarest, Rangeley Lakes Heritage Trust

View from the Bemis Road in Rangeley Plantation

STATE OF MAINE
OFFICE OF THE GOVERNOR
1 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0001

ANGUS S. KING, JR.
GOVERNOR

December 20, 2000

Chairman Stephen Wight and Members
Maine Land Use Regulation Commission
22 State House Station
Augusta, Maine 04333-0022

Dear Commission Members:

I am pleased to approve the Land Use Regulation Commission's Prospective Zoning Plan for the Rangeley Lakes Region. Congratulations on adopting Maine's first-ever land use plan and zoning regulations for a subregion of the state.

I am particularly delighted that you have incorporated the precepts of Smart Growth into your work. The fact that the new zones will avoid development sprawl in this magnificent area is truly a major contribution to the resource-based Rangeley economy and to future generations. Your effort to listen and respond to local opinions is a great credit to the Commission, as is your determination to provide more flexibility in the establishment of home occupations, small businesses and other mixed uses in designated development areas.

I thank you for your continuing dedication to the values of the jurisdiction and service to the State of Maine.

Sincerely,

Angus S. King, Jr.
Governor

PRINTED ON RECYCLED PAPER

PHONE: (207) 287-3531 (Voice) (207) 287-6548 (TTY) FAX: (207) 287-1034
www.state.me.us/governor

CONTENTS

EXECUTIVE SUMMARY

Introduction

This Prospective Zoning Plan is the Land Use Regulation Commission's first land use plan developed for a subregion of the jurisdiction. Together with rule changes and new zoning maps developed specifically for the Rangeley Region, it incorporates a:

- Long-term vision of what people want the region to be like generations from now; and
- Strategy for guiding the desired types of future development to designated areas in the subregion over the next twenty years in a manner that reinforces the vision.

The planning area encompasses five plantations including Dallas, Sandy River, Rangeley, Lincoln, and Magalloway; and five outlying townships including Adamstown, Richardsontown, C, D, and E. The Commission prospectively zoned this region first in the jurisdiction because of the high development rate and extraordinary natural features found there.

The Commission held an unprecedented 30+ meetings with communities, landowners, and organizations in the region. Agreement was generally strong about the location and kind of development that should occur over the next twenty years, with the exception of the appropriate development intensity for Lower Richardson and Aziscohos Lakes, an issue that the Commission agreed to monitor.

The Commission believes that this Plan will go a long way toward reinforcing the region's traditional settlement pattern and protecting its special character -- even as the development permitting process becomes more predictable, easier, and accommodating for those who live and make a living there.

The Region

The rate and kind of development activity, rather than excessive population growth, is the reason for this Plan. Year-round population in the ten townships -- as well as the Town of Rangeley – actually declined slightly between 1990 and 1997. This decline was not evenly distributed, however, because Dallas and Rangeley Plantations, along with the Town of Rangeley, gained a quarter more residents over the period. Even so, for each year-round resident that was added the last decade in Rangeley, Dallas, and Sandy River Plantations, 23 new homes or camps were permitted. Three quarters of the permits were for new homes or camps of a construction type that will accommodate year-round use.

This amount and type of development – particularly the trend away from rustic camps -- departs from historical trends and is likely to change the face of the region. It is very likely to increase demand for public services, too.

Most of the land is still owned in large tracts managed for commercial timber and accommodating public use for outdoor recreation. And a sizeable amount, compared with the state average, has been conserved through easements or public or non-profit ownership. But unplanned growth has the potential of changing the region's unique character forever.

The Vision

Local people agree that the region's outdoor heritage and character are too important to squander through sprawl and inappropriate development. Generations from now, they still want the region to:

- ✓ Be a four-season recreational gateway to the working woods for recreation and forestry;
- ✓ Rely upon the Town of Rangeley as the economic center;
- ✓ Focus most year-round development primarily in three adjacent plantations including Dallas, Rangeley, and Sandy River;
- ✓ Retain the working woods in all but discrete locations in outlying townships; and
- ✓ Maintain a diversity of lake experiential qualities in the region from remote to rural and developed settings.

New Zones and Maps

The Commission has adopted six new zoning subdistricts to shape future development patterns consistent with this vision. All are variations of existing zones, but provide greater specificity about the kind of development that can be accommodated. These new zones are being applied only in the Rangeley Region at this time. They include:

For Adjacent Plantations	For Outlying Areas
Community Center Development	Rural Settlement Development
Extended Settlement Development	Semi-Remote Lake Protection
Community Residential Development	
Recreational Residential Development	

Four of the zones allow more latitude for people to make a living in settlement areas. Two, Residential Recreation and Semi-Remote Lake ensure that new development fits with outstanding resource values on lakes and other places. Applying the zones, the Commission adopted new zoning maps for each of the ten plantations and townships. The size of new development areas was determined through discussion with local people and landowners, but generally provides about as much room for development as has occurred over the past twenty years. The maps are available from the Commission upon request.

New Standards

Repeatedly, people told the Commission that they are willing to accept more mixed-use development in the region providing that it is concentrated in discrete areas and respectful of neighboring properties and the region's special character, such as its dark night sky. Local people requested, and the Commission developed, standards for new development that relate to:

- ✓ Building height, setbacks, and road frontage,
- ✓ Outdoor lighting,
- ✓ Buffering,
- ✓ Building layout,
- ✓ Parking and circulation, and
- ✓ Home occupations.

New Zoning Criteria

Planning can be a waste of time and resources unless it translates into decisions on the ground. For this reason, the Commission has adopted three criteria, in addition to two jurisdiction-wide criteria, to use in determining whether to approve rezoning requests, including:

JURISDICTION-WIDE

- ✓ Consistency with the Comprehensive Land Use Plan
- ✓ Community Need and No Adverse Impact

ADDITIONAL CRITERIA FOR PROSPECTIVELY ZONED AREAS

- ✓ Unforeseen Circumstances
- ✓ Contiguous Development Districts
- ✓ More Effective Approach

Plan Implementation

The Commission will monitor how well the Plan works so that it may make refinements as necessary and consider whether to apply the new approach and zones elsewhere in the jurisdiction. Staff will track development trends and issues, report to the Commission annually on progress, and propose a plan update, if needed, at five-year intervals. In response to public comments, the Commission will also pay particular attention to (1) permits for home occupations in the General Management Subdistrict and (2) new development on Lower Richardson Lake.

The Commission has identified some priority areas for conservation attention based upon public comments. The Commission will work with landowners, Rangeley Lakes Heritage Trust, and Land For Maine's Future Board, and others to determine whether opportunities exist for private or public conservation on Lower Richardson Lake, Aziscohos Lake, and the remaining undeveloped shore of Beaver Mountain Lake. Finally, the Commission will consider three more regulatory changes to implement the plan in response to public comments. These include:

- ✓ Elimination of the 40-acre subdivision exemption,
- ✓ Refinements to the Planned Development districting process, and
- ✓ Addition of a provision enabling "mother in law" apartments in the Residential Recreation subdistrict.

INTRODUCTION

Rangeley Region First

The Maine Land Use Regulation Commission's *Comprehensive Land Use Plan (1997 Revision)* calls for establishing zoning districts that prospectively guide development in regions where heavy development pressure may compromise high resource values. The plan recognizes that *formulating a coherent future vision for these areas is best done as part of a regional planning process that identifies areas most appropriate for development and conservation.*[1] The Rangeley area is the number one priority established for attention in the plan, followed by the Moosehead Lake, Carrabasset Valley, and Millinocket areas.

Prospective Zones Are Different

Prospective Zoning is different from the Commission's usual approach. It establishes districts large enough to accommodate all anticipated growth in a region within a certain time period rather than designating districts on a case-by-case basis to make room for particular development projects.

With some exceptions[2], the current process works like this -- when a landowner wants a permit for anything more intensive than a single-family home or home occupation within a Management or Protection Subdistrict, he or she must first file a petition to rezone the property to a Development Subdistrict. Under this project-by-project approach, development zones are dispersed somewhat randomly. While new zones must be located within a mile of a similar zone, what the Commission calls "adjacency," development can leapfrog and spread ever outward. In contrast, prospective zoning provides explicit and reasonable boundaries to meet the development needs of a region within the next 20 years.

[1] Page 134.
[2] Exceptions include Lake Concept Plans, Resource Plans, and zoning for Greenfield and Madrid.

ANOTHER BIG DIFFERENCE:

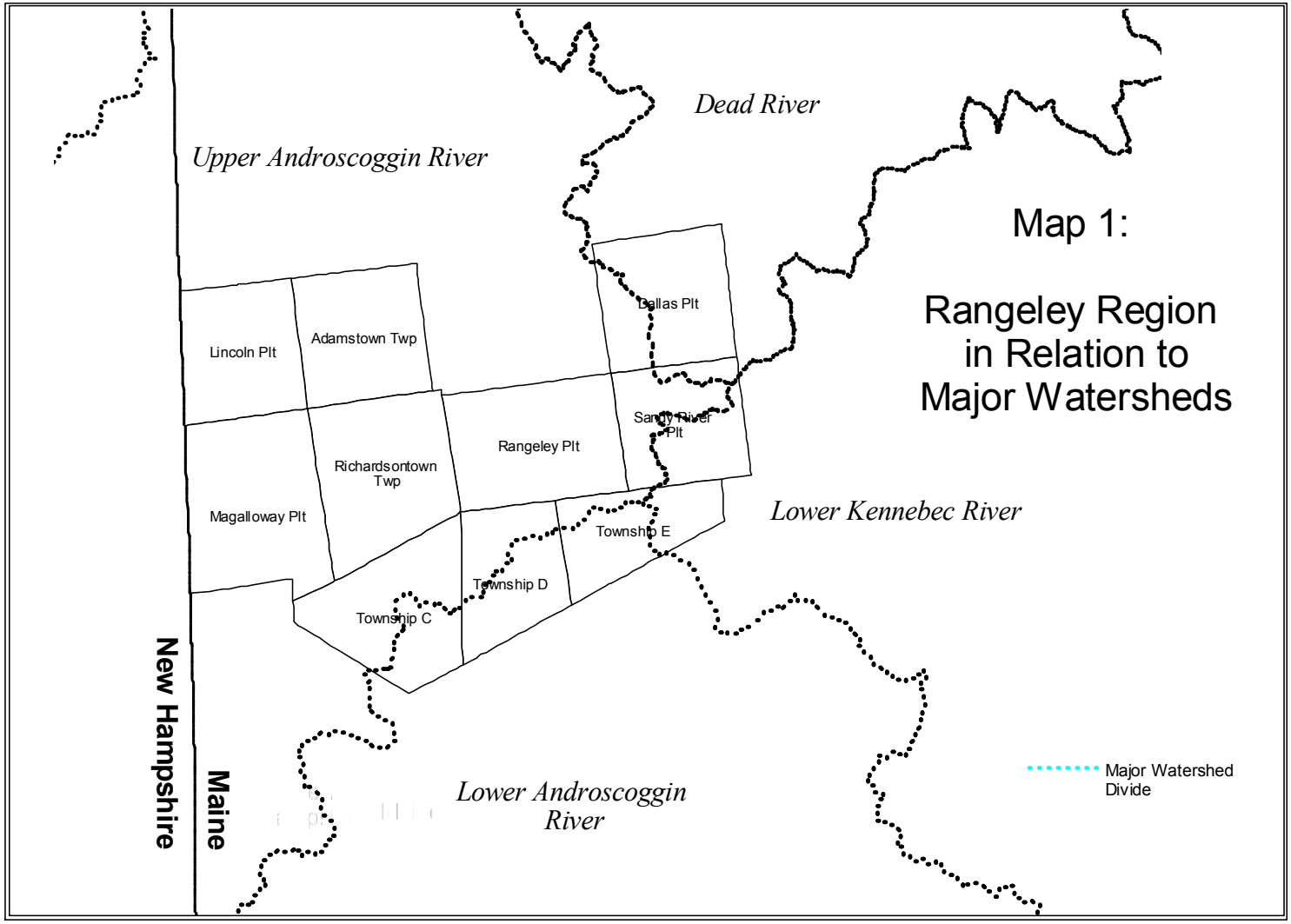
Prospective zoning enables local and seasonal residents, landowners, and citizens of Maine, in general, to have a say in establishing development patterns based upon:

- a long term **VISION** for the kind of place they want the region to be generations from now;
- a **REGIONAL PLAN** that conceptually guides development within the framework of that vision, including the desired rate, kind, and location of development; and
- **ZONING DISTRICTS** that provide enough room for reasonable development within the next twenty years; and **PERFORMANCE STANDARDS** that reinforce the desired character of the region and its special values.

Benefits

Prospective planning and zoning has sound benefits; it:

- **INVOLVES PEOPLE** - landowners, local officials, the public, and organizations - in shaping a region's future;
- **GUIDES DEVELOPMENT** to the most appropriate and publicly supported locations, thus:
  - reinforcing a widely-held regional vision;
  - preventing resource degradation,
  - facilitating economic development and
  - limiting sprawl and public service costs; and


Map 1:
Rangeley Region in Relation to Major Watersheds
Upper Androscoggin River
Dead River
Lower Kennebec River
Lower Androscoggin River
Lincoln Plt
Adamstown Twp
Dallas Plt
Rangeley Plt
Sandy River Plt
Richardsontown Twp
Magalloway Plt
Township E
Township D
Township C
New Hampshire
Maine
Major Watershed Divide

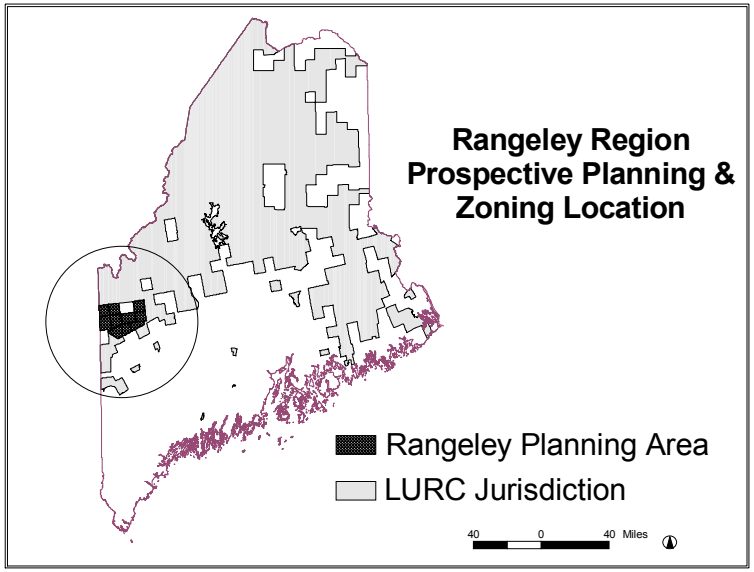
- **MAKES PERMITTING EASIER AND MORE PREDICTABLE** for landowners whose projects are consistent with the Regional Plan. They don't have to file a time-consuming and possibly costly rezoning petition.

Rangeley Region Study Area

The study area includes ten townships under the greatest development pressure in LURC jurisdiction. There are many more townships in the Rangeley area but the number was limited to keep this first prospective planning project manageable. The study area surrounds the Town of Rangeley to the east, west, and south as shown on Map 1. Five townships, including Dallas, Sandy River, Rangeley, Lincoln, and Magalloway, are plantations with elected assessors. The remaining townships rely upon state and county governments for property taxation and other public services. The townships north of Rangeley are less accessible and developed than those in the study area. Since the region is on the "fringe" of the Commission's jurisdiction, all but a few townships to the south are organized.

Public Involvement

Commission staff has held over 30 meetings with landowners, assessors, organizations, and others in the study area since the project began. Several hundred people have participated, especially at meetings in each of the plantations conducted in 1999 (see Appendix A). The staff has consulted closely with major landowners about their future development plans; met with local, regional and, statewide organizations; and mailed a project update to interested parties. Staff has also taken into account existing opinion surveys (see Appendix B).



Public Opinion Surveys Consulted

1986	Town of Rangeley Comp. Plan Survey	taxpayers	33% response
1990-91	Rangeley Lakes Chamber of Commerce	visitors	1,034
1998	Union Water Power Co. FERC Relicensing	visitors/ camp owners	471
1998	ME Audubon *Conservation Works Proj.*	year-round residents	242
		seasonal residents	64
		tourists	318

THE RANGELEY REGION

Regional Setting

The ecological context of the Rangeley Region is much larger than the ten-township study area. The study area encompasses only the lower portion of the Upper Androscoggin River Watershed, a subregion of the Western Mountains physiographic region (see Map 1). Primarily in timberland, this area functions generally as an outdoor recreation destination, with the Town of Rangeley as the economic center for "local" goods and services. Residents generally go to communities beyond the region, i.e. Farmington, Rumford, or Errol, N.H., for their groceries and major shopping and service needs.

High Value Resources

The region's extraordinary natural resources have dictated its historical development. This beautiful and bountiful complex of forests, lakes, and mountains first attracted loggers, then it drew turn-of-the-19th-century sports. Today, a core of year-round residents live on the edge of the working forest that attracts outdoor recreationists and second homeowners throughout the seasons. Map 2 depicts a few of these significant resource values. While there are many outstanding regions of the state and New England, none has quite the same character as Rangeley.

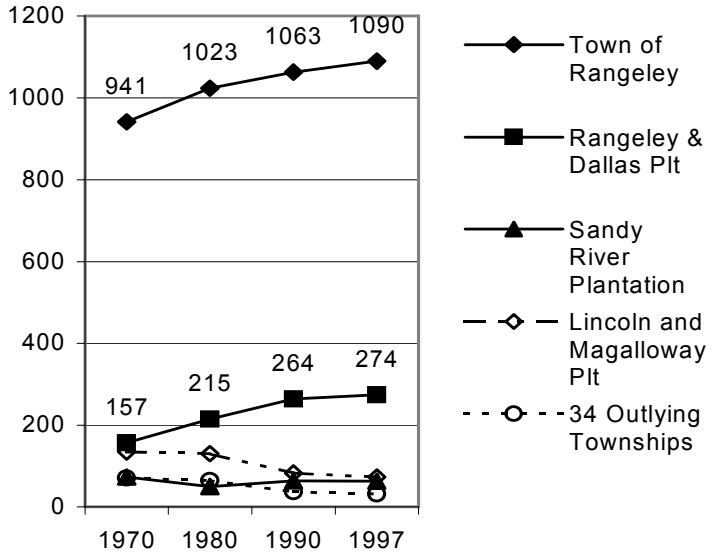
The area's unique quality is threatened by increasing development pressures. Shorefront property is becoming scarcer, thus putting pressure on marginal lands, places away from the water with a view, and backlands. The Commission's *Comprehensive Land Use Plan* contains a detailed description of these and other threats.

Year-round Population

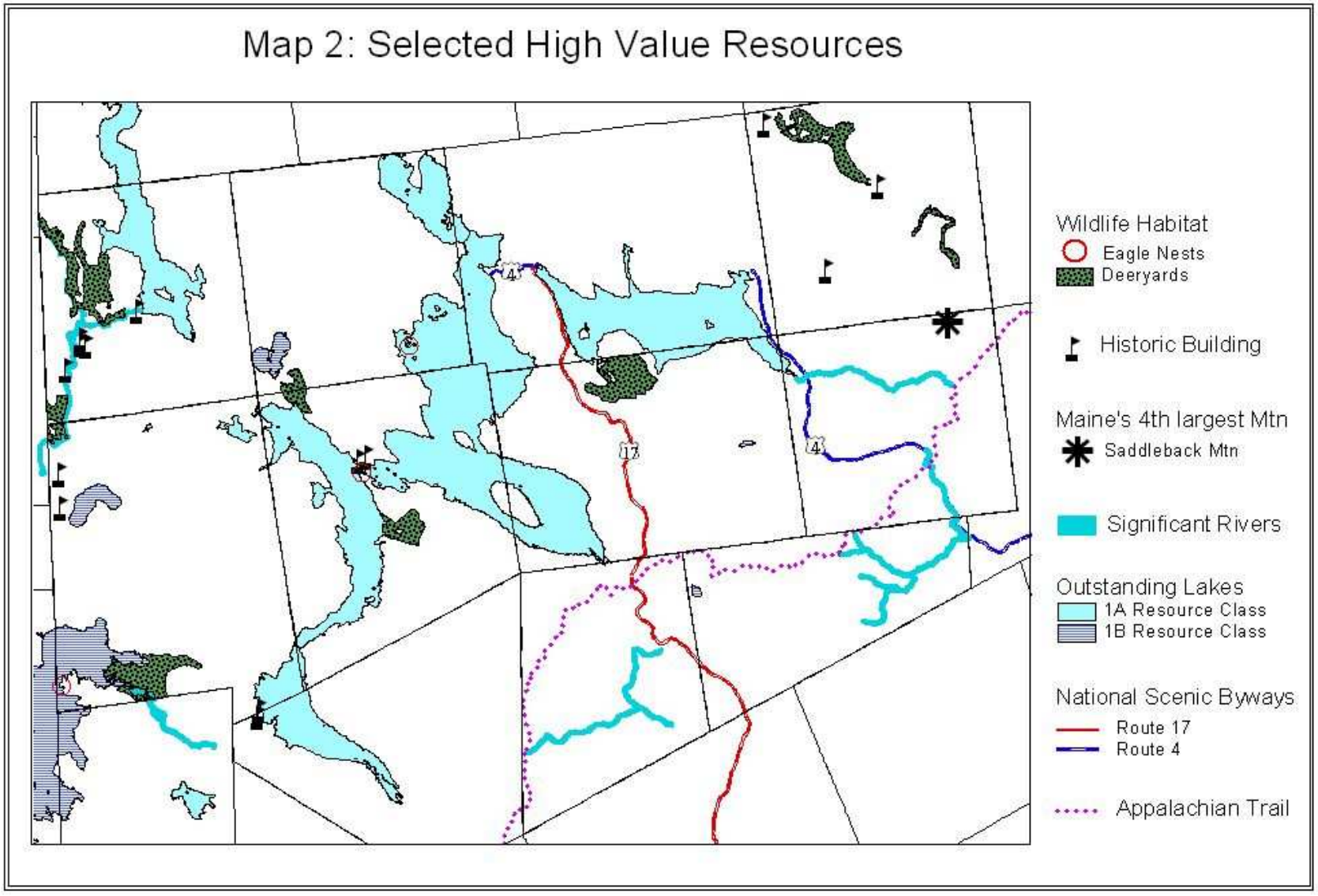
Year-round residency in the Town of Rangeley and Plantations of Rangeley and Dallas rose about 24% between 1970 and 1997, on par with the State and Franklin County averages of 25% and 29% respectively. Sandy River Plantation had a relatively stable population over this time period. The population of Lincoln, Magalloway, and other outlying townships is in decline, however, creating a net loss in the study area.

Between 1990 and 1997, total year-round population in the study area and the Town of Rangeley declined from about 1548 to 1532.

Figure 1: Year-round Population



Source: US Census Bureau and Maine Dept. Human Services estimates


Map 2: Selected High Value Resources
Wildlife Habitat
Eagle Nests
Deeryards
Historic Building
Maine's 4th largest Mtn
Saddleback Mtn
Significant Rivers
Outstanding Lakes
1A Resource Class
1B Resource Class
National Scenic Byways
Route 17
Route 4
Appalachian Trail
4
17
4

The Census Bureau aggregates data for sparsely populated outlying townships. The population data for the 34 outlying townships grouped in Figure 1 are in the Northern Oxford County, West Central Franklin, and North Franklin County Census tracts.[3] Consequently, no data is available individually for Adamstown, Richardsontown, and Townships C, D, and E.

Seasonal Population

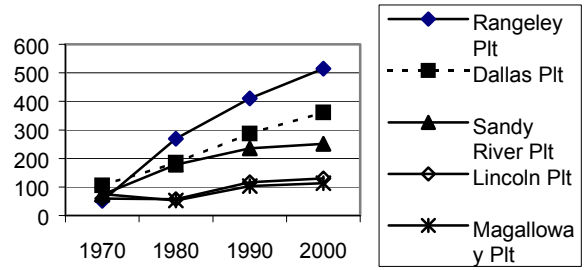
Keeping with tradition, more people have homes and camps in the study area than year-round population data reflect. Again, Rangeley, Dallas, and Sandy River have seen the greatest increases in dwellings since 1970 when all five plantations had roughly the same number (see Figure 2). The pace slackened somewhat in the 1990s, according to building permit data.

Still, during the 1990s, the ten-township study area averaged 28 building permits a year for new camps, mobile homes, or year-round homes or camps. Together, Rangeley (10/year), Dallas (8/year), and Sandy River (4.6/year) Plantations had the lion's share with 23/year. In comparison, the Town of Rangeley averaged 10 per year and the most populated township in the Commission's jurisdiction, Albany, averaged 8. Lincoln and Magalloway together averaged 3 per year and the other five study townships averaged 2.

For every year-round resident gained over the last decade in Rangeley, Dallas, and Sandy River Plantations, 23 new homes or camps have been permitted.

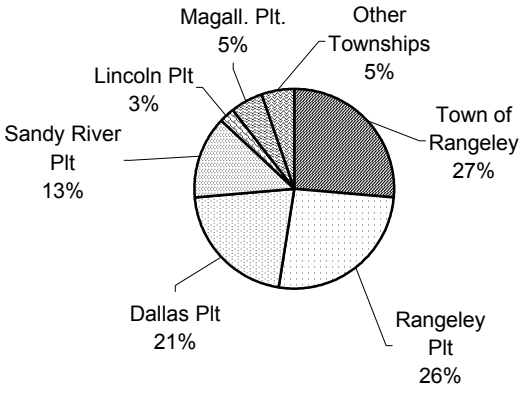
[3] The West Central Franklin County Census Tract includes: Townships D, E, and T6 North of Weld. North Franklin includes: Gorham Gore, Lowelltown, Skinner, Kibby, Jim Pond , Redington, Beattie, Chain of Ponds, Alder Stream, Tim Pond, Lang, Coburn Gore, Massachusetts Gore, Seven Ponds, Stetsontown, and Davis Townships. North Oxford includes: Bowmantown, Parmachenee, Oxbow, Lynchtown, Upper Cupsuptic, Parkertown, Adamstown, Richardsontown, C, C Surplus, Andover North Surplus, Andover West Surplus, Grafton, and Riley Townships.

Figure 2: Total Dwelling Units (estimated YR 2000)



Source: US Census Bureau and Land Use Regulation Commission

Figure 3: Building Permits in 1990s



Trend Toward Permanent Construction

Dallas and Rangeley Plantations have the bulk of dwellings constructed for year-round use, if not actually occupied on a year-round basis (Figure 4). While Dallas had slightly more dwellings in 1970, extensive subdivision east of Mooselookmeguntic Lake in Rangeley Plantation has moved that community to the front in the number of dwellings (Figure 2). Sandy River follows Dallas in third place.

According to US Census data between 1970 and 1980, the proportion of seasonal dwellings stayed constant in the study area, about 82% of the total. But Figure 5 shows that the recent trend is toward more permanent construction with foundations as more people build or convert camps to seasonal homes in the area. Presumably this trend will continue as the bulging baby-boomer generation enters its pre-retirement and retirement years.

Over three-quarters of building permits issued for new homes or camps in the past decade have been constructed in a manner that can accommodate year-round use.

Figure 4: Residential Structures (1995 LURC Inventory)

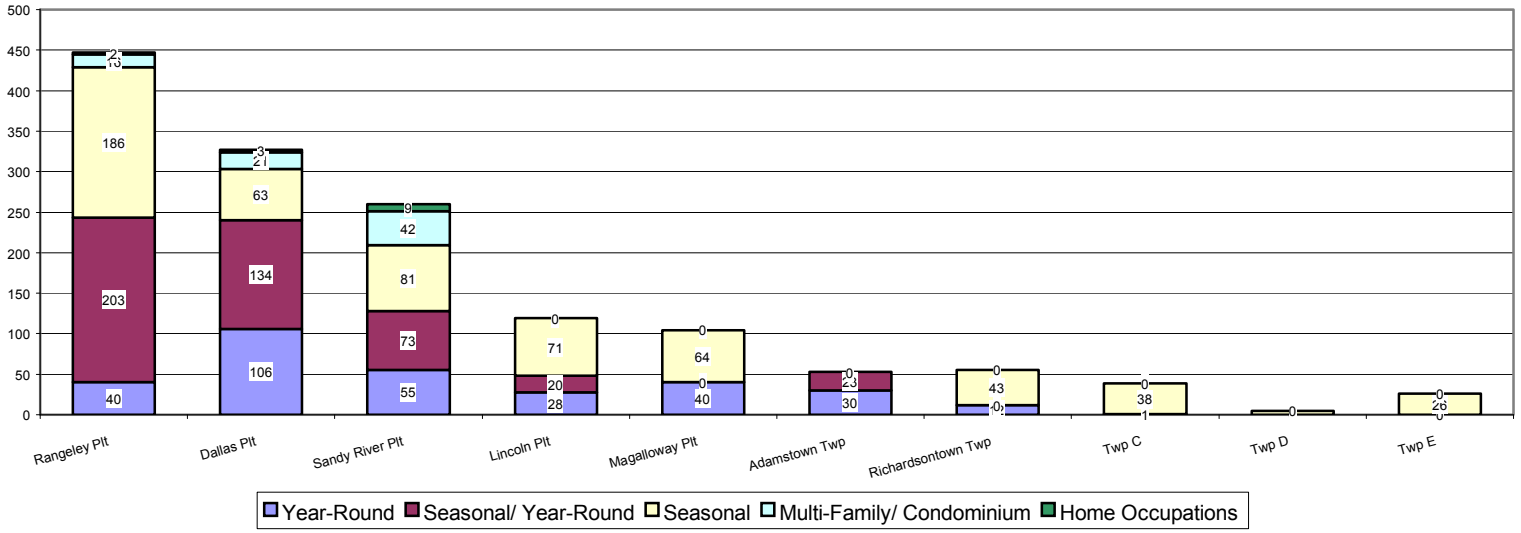
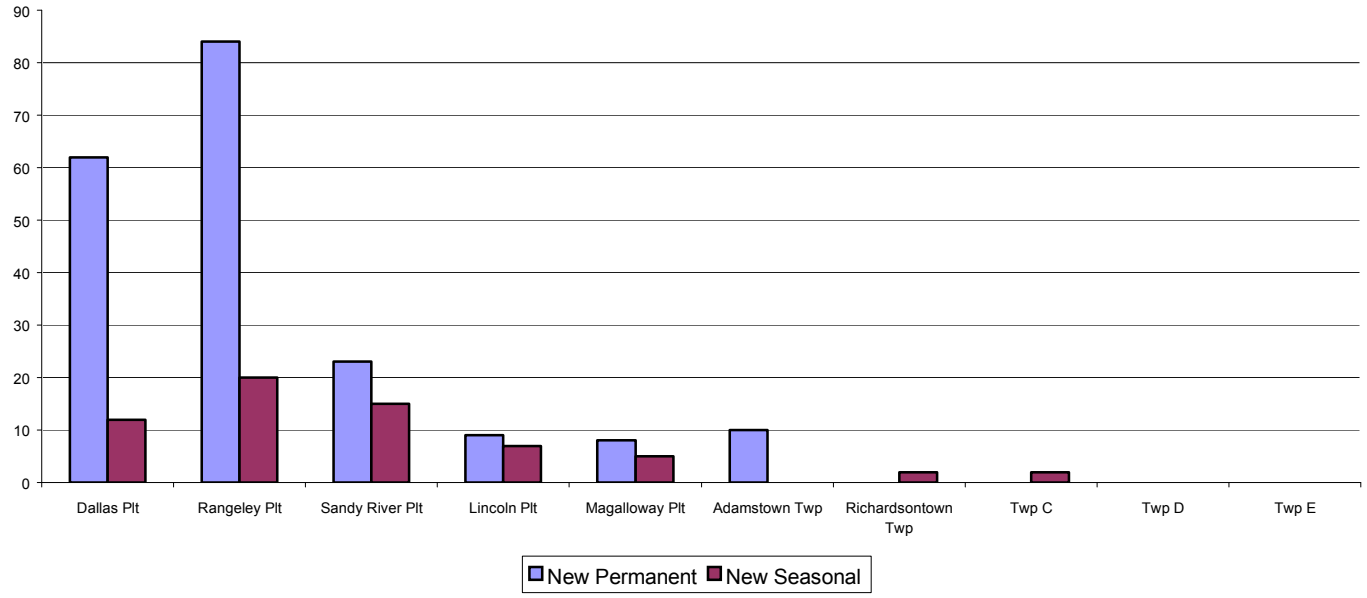


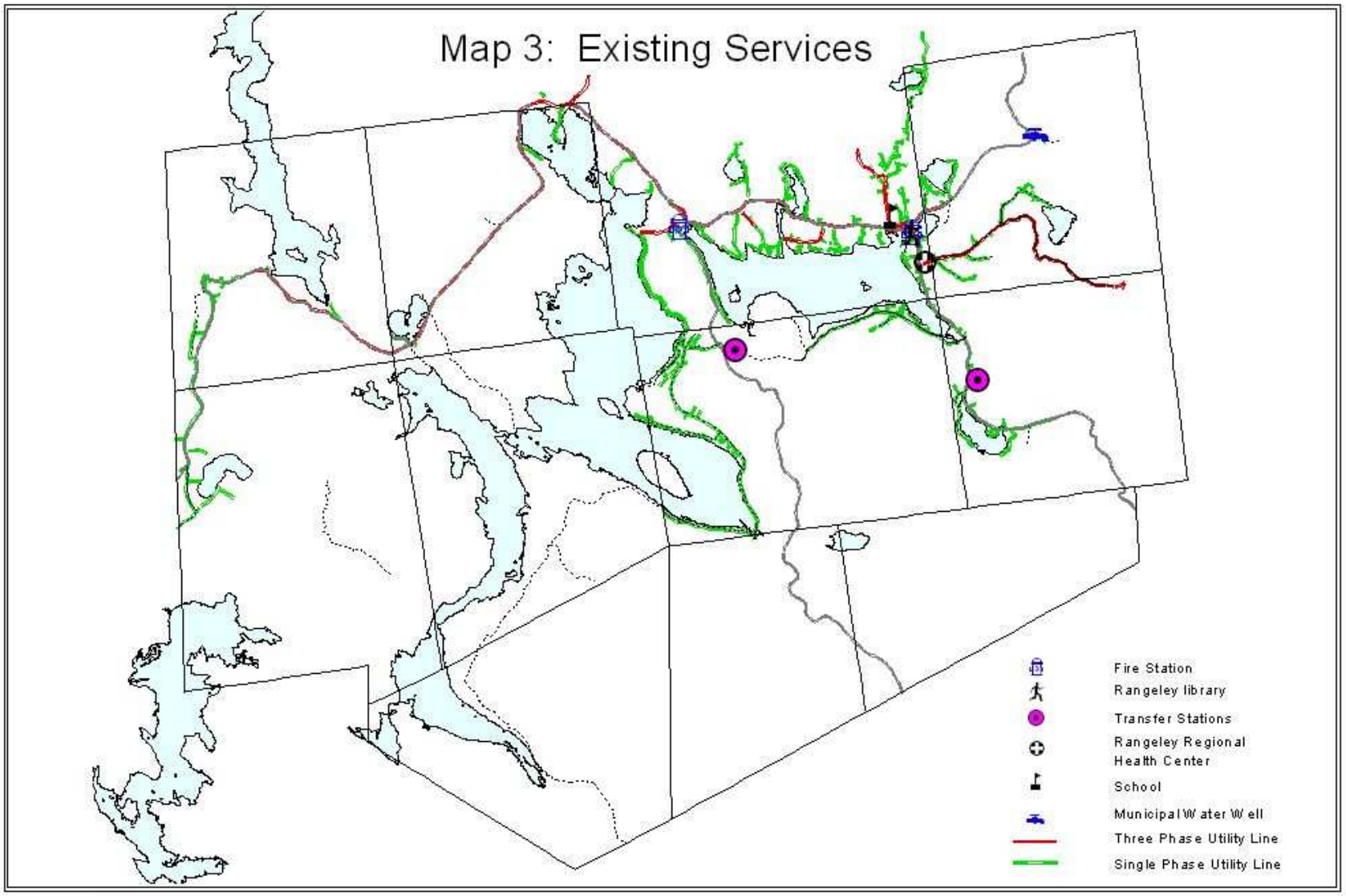
**Figure 5: Building Permits For New Dwellings (LURC data)
(1/1990 to 8/1999)**



Development Patterns

Map 3 shows development patterns generalized by property parcels in the ten townships, along with public utilities and services. Most development is concentrated near the Town of Rangeley and state highways, or along lakeshores. Public services are minimal, primarily road maintenance, snowplowing, and transportation to the Rangeley Region School. The townships contract with the Town of Rangeley for fire protection. Rangeley and Sandy River Plantations have their own transfer stations. Some households in Dallas are connected to the Rangeley Water District system. The Rangeley Sanitary District serves only the Town of Rangeley.

Commercial enterprises are not extensive, even in the plantations closest to the Town of Rangeley. The following are some examples. Sandy River Plantation has Saddleback Ski Area, as well as most of the home occupations that were inventoried in 1995. Dallas has a restaurant and a golf course, the latter constructed without a permit (an After The Fact Permit application is under consideration). A sporting camp exists on Lower Richardson Lake (Lakewood, on the National Register of Historic Places) and another is being developed on Rangeley Lake. Three other sporting camp/housekeeping cabin facilities in Rangeley and Dallas Plantations were sold as individual camps.


Map 3: Existing Services
Fire Station
Rangeley library
Transfer Stations
Rangeley Regional Health Center
School
Municipal Water Well
Three Phase Utility Line
Single Phase Utility Line

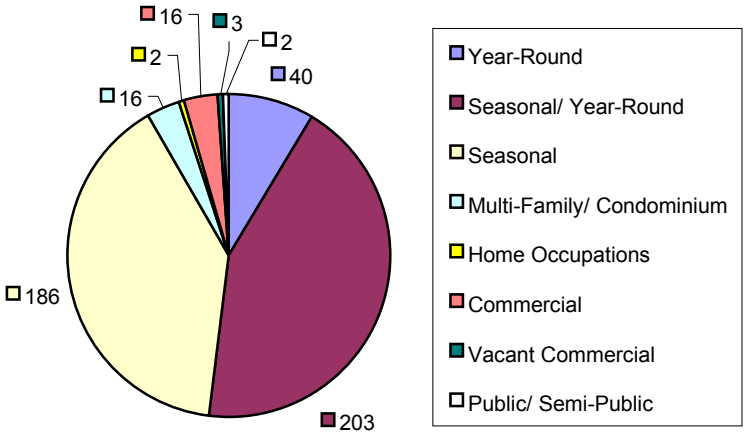
Land Consumption

Change used to be relatively slow in the Rangeley Region, but the building boom of the last 20 years has sped up the cycle. The Commission until recently did not record complete data on parcel size for building permits so one can only estimate the rate of land consumption.

For the data that is available, the size of developed parcels varies. For example, according to 32 permits out of 37 issued in Dallas between 1995 and 1999, three-quarters were 5-acre or smaller lots, and about half of these were 2-acre or smaller lots.

Assuming one acre for every primary structure – of which there were 2963 in the ten-township area in 1995, roughly 3000 acres are now developed. This is about 1.4% of the land area in the ten-township region.

Figure 6: Type of Structures (1995 LURC Inventory)



Land Ownership

Large timber management and power generation companies have traditionally held most of the land in the region in large blocks. This holds true today with the Pingree Family, Mead Corporation, International Paper Company, Dallas Company, Franklin Timber Company, and others still managing large tracts for timber and accommodating public use for outdoor recreation (see Map 4). No parcel maps are available for Lincoln and Magalloway Plantations, but only the settlement areas are in small parcels.

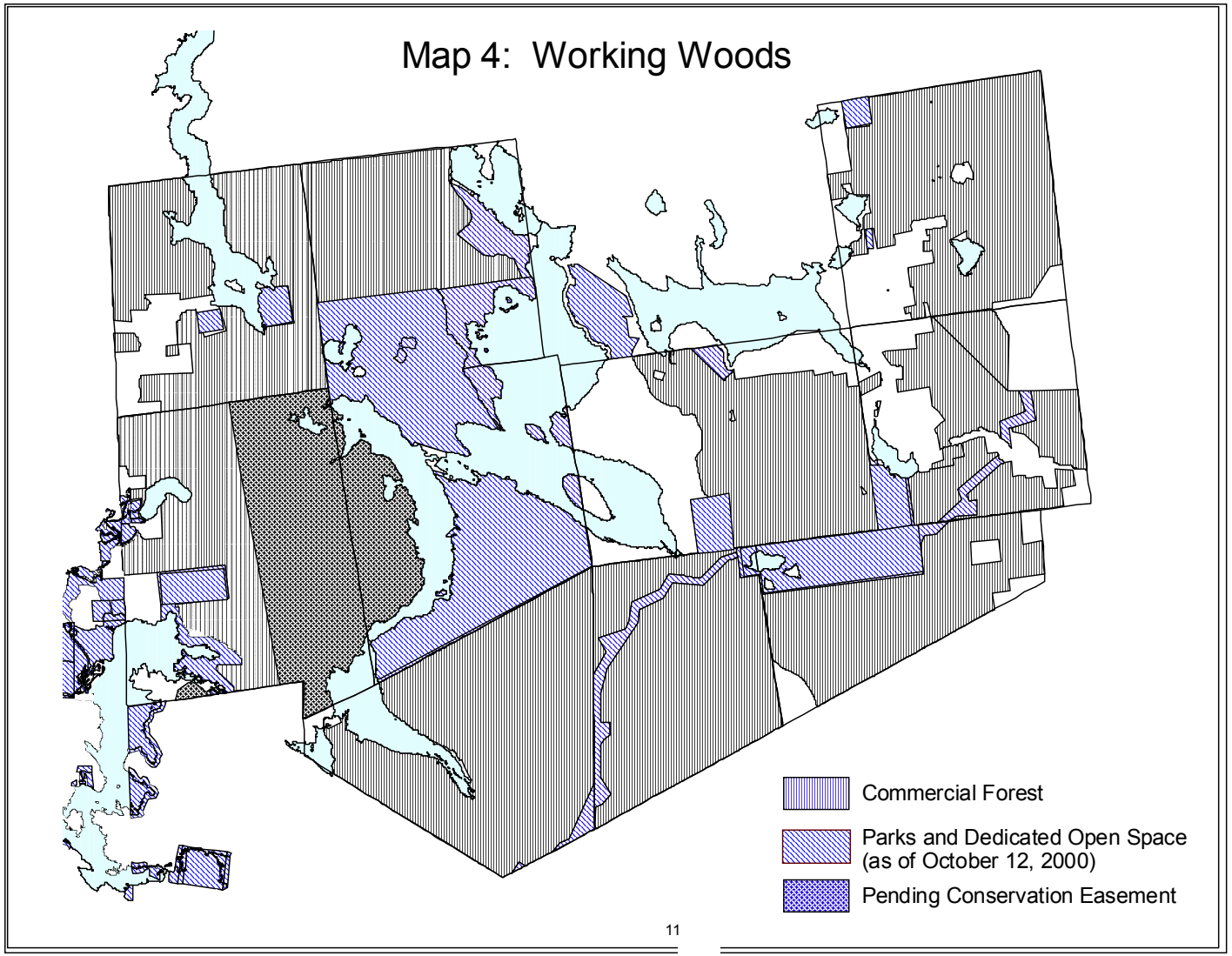
Most small parcels have been created in townships closest to the Town of Rangeley. Lease lots, of which there are many, are not reflected in this data.

Figure 7: Property Parcel Count By Parcel Size

	0 to 2 Acres	2.1 to 5 Acres	5.1 to 100 Acres	100.1 to 1000	>1000 Acres	Total Acres
Rangeley Plt	645	193	206	13	2	27,715
Dallas Plt	430	108	115	7	2	25,602
Sandy River Plt	343	68	116	12	6	20,897
Adamstown Twp	43	11	14	2	6	44,092
Richardsontown	0	1	2	1	1	5,875
Twp C	8	1	5	4	2	54,107
Twp D	5	0	0	1	3	22,763
Twp E	26	0	2	4	2	19,039
Total Count	1500	382	460	44	24	220,091

Land Conservation

The extraordinary landscape of the Rangeley Lakes area and a strong sense of stewardship have motivated several individuals, landowners, Rangeley Lakes Heritage Trust, and state and federal governments to conserve large important tracts of land (see Map 4).


Map 4: Working Woods
Commercial Forest
Parks and Dedicated Open Space
(as of October 12, 2000)
Pending Conservation Easement
11

The Rangeley Lakes Heritage Trust and the state own about half the shorelands of Mooselookmeguntic Lake and Upper Richardson Lake, along with an extensive land area in between. Union Water Power Company worked to conserve shorelands of the Rapid River and Pond in the River before selling their remaining property to Florida Power and Light Company. The New England Forestry Foundation is currently raising funds to sell development rights for conservation for 100,000 acres owned by the Pingree Heirs within the Rangeley area. Jean Noyes swapped land with state agencies on Rangeley Lake to expand the Rangeley Lakes State Park. Many landowners worked with the National Parks Service to conserve the Appalachian Trail Corridor. And the US Fish and Wildlife Service is also working to conserve land around Umbabog Lake and the Magalloway River.

Other Initiatives

Town of Rangeley Comprehensive Plan & Land Use Regulations

The Town of Rangeley recently revised its comprehensive plan following the State's Growth Management Program. The State Planning Office is currently working with the community to bring the draft plan into consistency with the state program.

The future vision for the town described in the plan is largely consistent with this prospective plan. It focuses on the region's four-season recreational character and seeks to concentrate and strengthen the two economic centers (Rangeley and Oquossoc Villages). It seeks to retain the high quality of traditional, outdoor recreational opportunities and the natural resource setting, to be implemented by a range of lot sizes.

The Rangeley town plan is different from this plan in two ways. It explicitly favors clean, low-impact, non-location sensitive businesses over manufacturing/light industrial uses. It calls for a range of densities for the community's various zoning districts.

In regard to key policies, the plan appears to be consistent with this prospective plan, but lacks specificity for determining how effective these will be in practice. Two primary goals very closely parallel the intent of this Land Use Regulation Commission plan. These include:

- Concentrating growth in designated areas located close to the economic centers of the town; and
- Expanding the range of low-impact businesses allowed as home occupations as long as there are safeguards to protect neighboring properties.

A major difference between the two plans in policy direction is that Rangeley explicitly seeks to maintain rural areas primarily for natural resource and traditional rural uses while allowing some other compatible uses. The Land Use Regulation Commission prospective plan is silent on this issue, focusing only on locations where development is appropriate and providing incentives for locating there, e.g. it allows a greater amount of floor area and some retail traffic for major home occupations located in most development zones. It does not prescribe any additional disincentives for development in the management or protection zones.

The Rangeley town plan does not yet provide specific strategies for realizing its policy for limiting development in the woodland zone. This is one of the State Planning Office's major findings for which it is seeking change before determining the plan to be consistent. The next step for Rangeley will be to revise its zoning regulations to be in conformance with its new plan.

National Scenic Byway

The Maine Department of Transportation established Route 4 and Route 17 as state scenic highways in 1982. Recently, these routes achieved federal designation as the *Rangeley Lakes National Scenic Byway*. The scenic highway will be managed according to a corridor management plan that was developed by a committee of local citizens and representatives.

The corridor management plan contains general language about the management of future development, stating that *the villages within the*

Byway will be the location for the majority of any future development that may occur. This policy is consistent with the Rangeley Lakes Prospective Zoning Plan that concentrates development in limited and discrete areas.

MDOT Access Management

The location of driveways and other entrances along state highways in the Rangeley region is an important issue. The spreading out of new development has slowed regional traffic in recent years, especially trucks hauling timber from the woods. For land managers this presents an efficiency issue, causing longer travel times to the mills. For all drivers, it makes the roads less safe. This is particularly a problem on stretches of Routes 17 and 4 where terrain and sight distances are dangerous to begin with.

Access standards were to be part of this plan, but they have been omitted because of recent legislation authorizing the Department of Transportation to strengthen its permitting process. The Department now requires landowners to obtain a driveway permit that only considers safe sight distances and drainage requirements.

After developing new regulations, Maine Department of Transportation will establish criteria and standards that also will ensure long-term maintenance of existing posted speeds along state or state-aid highways. This will primarily be accomplished by limiting the number of driveways that can be established in areas outside of village and urban areas. It will affect Routes 4, 17, and 16 in the Rangeley Lakes area.

View from the *Height of Land* on the Rangeley Lakes National Scenic Byway, Route 17

THE PLAN

Prospective Planning Principles

This prospective plan is guided by the following principles:

1. **CONSISTENCY WITH CLUP.** Be consistent with the vision, goals, and policies of the Commission's Comprehensive Land Use Plan;

2. **PLACE-SPECIFIC.** Create zones that respond to the particular character of the Rangeley Lakes Region. Differentiate between plantations appropriate for growth - primarily plantations adjacent to service centers and organized communities - and those plantations and townships that are remote;

3. **LONG TERM VISION.** Promote land uses that reinforce the special character of the region over the long term and discourage or prohibit those that do not. Do not fuel speculative development, drain the economies of existing economic centers, fragment the working forest and ecosystems, or reduce resource protection;

4. **ROOM FOR REASONABLE EXPANSION.** Plan enough room for development in the next 20 years based upon the historical growth rate;

5. **FOCUS ON LOCATIONS FOR DEVELOPMENT AND MAKE PERMITTING EASIER AND EQUITABLE THERE.** Make it easier to develop in designated areas. Provide incentives and remove obstacles so that people do "the right thing." Do not force landowners to designate their land for development. Above all, assure equitable results for all landowners, large and small; and

6. **STICK TO THE PLAN.** Make it more difficult to rezone areas outside of designated development zones unless extenuating circumstances, such as unforeseen public needs, emerge. Otherwise, this plan, and the effort that went into it will not be an effective investment.

Jurisdiction-wide Vision

The Commission's *Comprehensive Land Use Plan* provides direct and unambiguous guidance on vision:

The historical development pattern in which most new development occurs where principle values are least impacted should be reinforced.

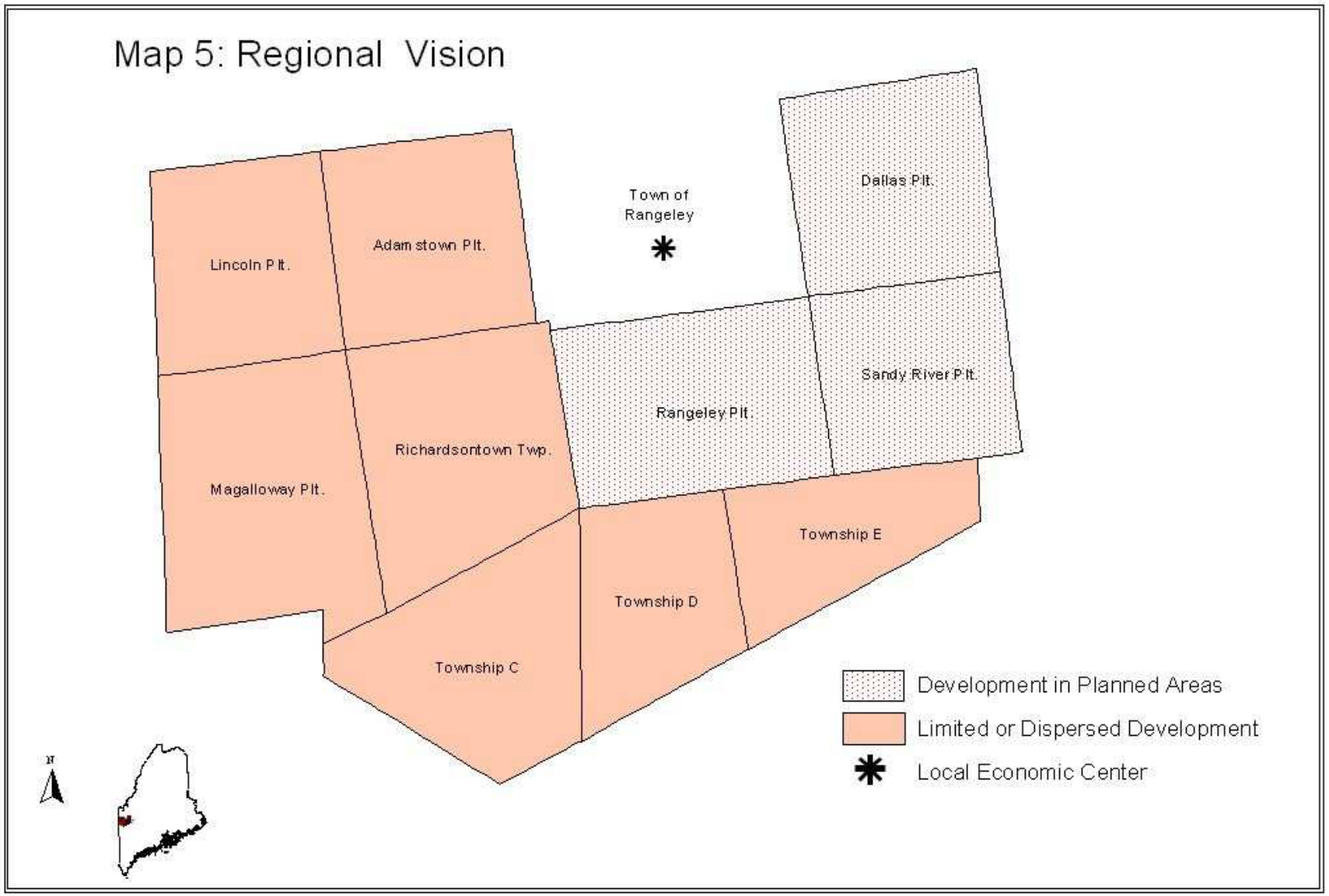
The historical development pattern of the Commission's jurisdiction is comprised of *vast areas of relatively undeveloped land, with concentrations of development principally near organized areas and relatively few scattered dwellings elsewhere.*[4]

Regional Vision

Four-Season Gateway to Lakes & Woods

Generations from now, residents, corporate landowners, and visitors desire the primary identity of the Rangeley Lakes Region to still be a friendly, four-season community that derives its distinct character and heritage from abundant, undeveloped land managed for multiple, natural resource-based uses.

[4] Pages 133-134.


Map 5: Regional Vision
Lincoln Plt.
Adamstown Plt.
Town of Rangeley
Dallas Plt.
Sandy River Plt.
Rangeley Plt.
Richardsontown Twp.
Magalloway Plt.
Township E
Township D
Township C
Development in Planned Areas
Limited or Dispersed Development
Local Economic Center

Town of Rangeley: local economic center

The villages of Rangeley and Oquossoc will continue to be the primary service centers of the area. They offer a full range of affordable "local" goods such as groceries and hardware for residents and visitors alike, though staples such as bread, milk, and gas may be available within neighboring settlement areas. People will still travel to Farmington, Rumford, and Errol, NH, for more intensive shopping and services.

Adjacent plantations: focus of development

Most year-round, second home, and intensive recreational development will be located in settlement areas in the Plantations of Rangeley, Dallas, and Sandy River (and Town of Rangeley).[5] Development will be at a pace consistent with historical development and resource values and located so as not to compromise special resource values or create sprawl and strip development. Residents will have flexibility in making a living through a variety of home occupations and businesses that do not compromise this outstanding natural setting.[6] Land uses will be less intensive in character and scale than in the towns of Rangeley or Farmington.

Outlying townships: working woods

The remainder of the region -- distant from public services and sparsely developed -- will still be characterized by:

- large working forests and landholdings,
- dispersed uses with light footprints offering a diversity of settings for outdoor recreation[7] that have a minimal impact on resource values and land fragmentation and conversion,[8] and
- small historical settlements with vitality but distinctly remote character and services.

The rate and intensity of development in these outlying areas will be consistent with natural and cultural resource values. Utilities, new public roads, and other accommodations facilitating year-round residency will intrude upon and change the character of remote and semi-remote areas outside of settlements.[9]

High Quality Lakes

Generations from now, the Rangeley Lakes Region will still have high quality lakes offering an array of experiential settings. See Map 5 and Figure 8.

[5] CLUP policy guides year-round residential, second home, and intensive recreational development to locations near organized towns or existing development centers in the Jurisdiction, particularly those that can be efficiently served by existing services, facilities, and utilities. It further encourages concentrated patterns of growth to minimize impacts on natural values and scenic character. Pages 138-140

[6] CLUP policy encourages economic development in the towns, plantations, and townships identified as most appropriate for future growth. Use buffers, building setbacks, and landscaping, as well as adequate parking and traffic circulation, to minimize the impact of land use activities on one another and scenic quality. Page 141

[7] CLUP policy promotes a range of recreational opportunities, including less-intensive, non-exclusive facilities in areas outside of designated development centers and opportunities for primitive recreation without intrusion from more intensive forms of recreation. Consider traditional sporting camps as recreational and cultural resources, worthy of protection from incompatible development. Page 138

[8] CLUP policy limits development to low-impact structures in areas where the principal values of the jurisdiction are threatened; encourages site designs that have a minimal impact on principal values of the jurisdiction, including clustering and open space preservation; and discourages unnecessarily large lot sizes. Page 141-142

[9] CLUP policy calls for locating infrastructure so as not to inappropriately encroach upon or change the character of remote areas or produce an intensity that is inappropriate for a particular area. Page 142

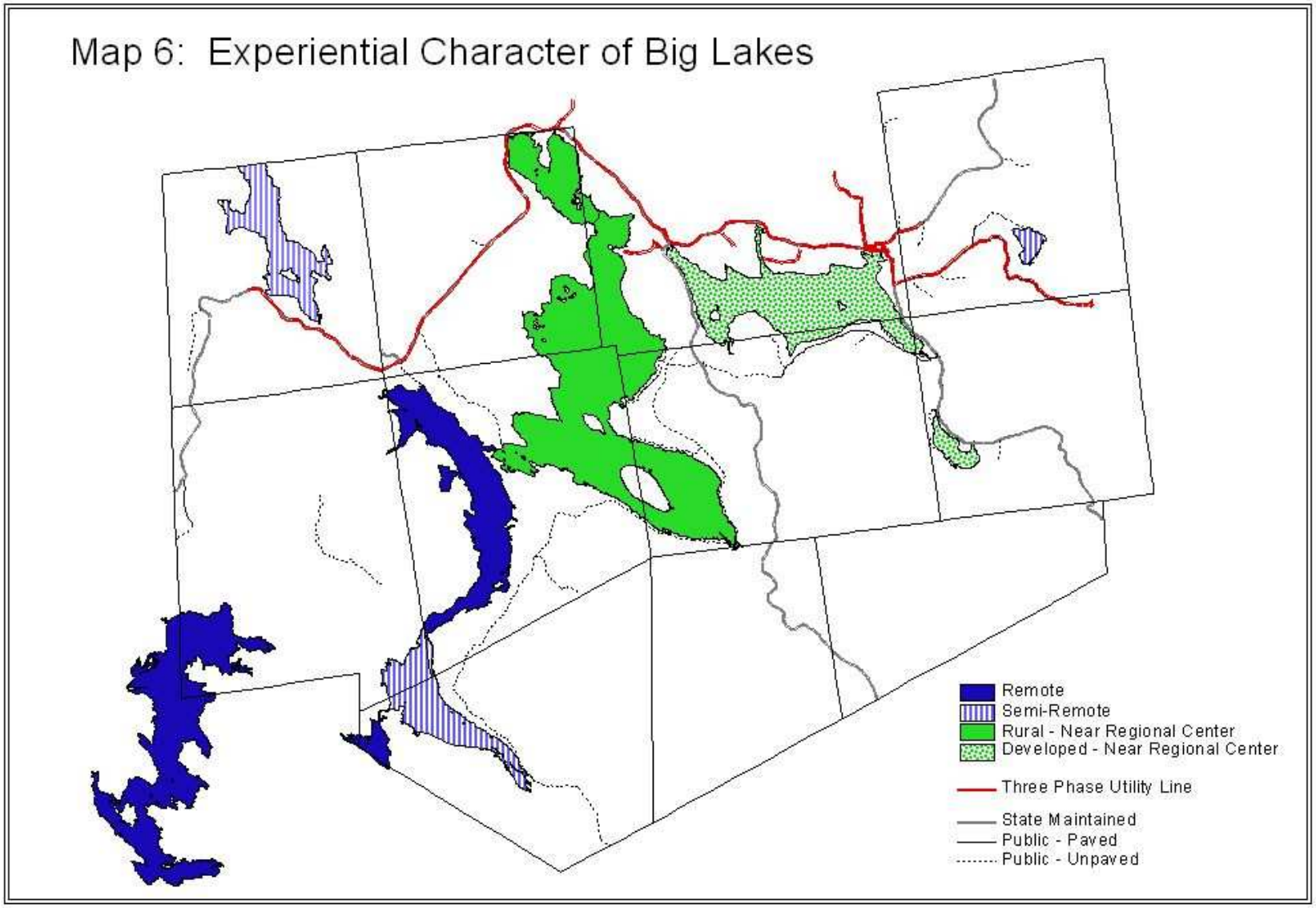

Map 6: Experiential Character of Big Lakes
Remote
Semi-Remote
Rural - Near Regional Center
Developed - Near Regional Center
Three Phase Utility Line
State Maintained
Public - Paved
Public - Unpaved

Figure 8: Future Experiential Character of Rangeley Lakes				
	Upper Richardson Lake, Umbagog Lake, Pond in the River	Lower Richardson Lake, Aziscohos L. (Lincoln Plt. only), Saddleback Lake	Mooselookmeguntic Lake Cupsuptic Lake	Rangeley Lake Beaver Mtn Lake
Proposed Management Character	**Remote Experience**	**Semi-Remote***	**Rural – Near Regional Center**	**Developed – Near Regional Center**
	Lake setting is characterized by essentially undeveloped shoreland used for low impact recreation. Few to no signs of seasonal development exist and backland is managed for forestry or other natural values. Access is primarily by boat.	Lake setting is characterized by no more than half the shoreland modified by dispersed pockets of low impact recreation uses and/or seasonal development. Evidences of the sights and sounds of shoreland development are moderate. Backland is a working forest. Road network is minimal or designed to limit sprawl.	Lake setting characterized by no more than half the shoreland substantially modified by a combination of seasonal and year-round development. Evidences of the sights and sounds of shoreland development are moderate. Backland development has substantial shoreland access.	Heavily developed lake setting with a combination of seasonal and year-round development in shoreland and some backland. Evidences of the sights and sounds of shoreland development are high. Backland development has substantial shoreland access.
Maximum development density/lake mile (based upon entire ownership & as site conditions allow)	1 camp per mile (for these lakes conservation is under negotiation or already secured)	13 camps/mile	13 camps/mile	13 camps/mile
Shore amount to remain undeveloped/conserved	Ideally: 95%	At least 50% in large blocks & retaining sensitive resources	50% (Substantial shorefront of these lakes is already conserved)	Less than 50% already
Subdivision and adjacency requirements	Not applicable because of conservation initiatives	Subdivision allowed w/out rezoning but for seasonal, low impact uses; adjacency not required	Rezoning required outside of prospective development zones	Rezoning required outside of prospective development zones. Cluster development required.
Rate of growth	Not applicable	One group of 20 units in 10 years	Controlled by size of zones designated for growth & exempt lot creation.	Controlled by size of zones designated for growth & exempt lot creation.
Required buffers between sporting camps, campgrounds, groups of rental cabins or camps	Not applicable	0.25 mile circular radius	Not applicable	Not applicable

*Additional provisions applicable to Semi-Remote Lake Zone (GP-2):

1. One unit per lot of record allowed as of August 1, 2000, same as existing P-AL district; new lots created under conditions stipulated herein.
2. New zone has 500 feet of depth from shore to foster creative development layouts.
3. Private boat launches for subdivisions only allowed when planned for common use and consistent with other LURC requirements

New Development Zones

After consulting with the public, local officials, and landowners about problems with existing zoning -- and in keeping with the regional vision, six new zones will be applied specifically in the Rangeley area. All are variations of existing zones, but the zoning descriptions are more explicit about where the zones can be applied, the kinds of land uses allowed, and performance standards required to make adjacent uses good neighbors.

These zones are designed as a whole system to reinforce development patterns in a manner consistent with the Regional Vision. It is important to note, however, that they are only one side of the equation because no changes are proposed for the Management Zone, with the exception of changes to the home occupation definition and standards. Consequently, development can conceivably, albeit slowly, spread into the Management Zone, to the extent those landowners sell off the working forest and shorelands of some of the smaller ponds. At this time, all of the industrial landowners plan to continue managing forestlands for timber over the long term.

The new zones include the following:

Five Development Subdistricts

- D-GN2 Community Center
- D-GN3 Rural Settlement
- D-ES Extended Settlement
- D-RS2 Community Residential
- D-RS3 Recreational Residential

One Protection Subdistrict

- P-GP2 Semi-Remote Lake

Other Potential Development Areas

This Plan and proposed zoning maps are the result of talking at length with all of the owners of large tracts of land and at public meetings with owners of smaller parcels. One of these owners, Union Water Power Company, plans to submit a rezoning petition request for projects at Middle and Upper Dams on the Richardson Lakes before this prospective plan takes effect. The company's general plan and maximum densities for both areas were negotiated with multiple parties during the relicensing process for these dams under the Federal Energy Regulatory Commission. Because this occurred before the development of the new Semi-Remote Lake Protection subdistrict, which stipulates lighter densities, the landowner wishes to be considered under the old Commission rules.

Development of three additional areas - two in Dallas Plantation and one in Rangeley Plantation - was discussed but zoning designations were not applied at this time, pending further information by the landowners (see Map 6). This plan recognizes that these landowners may file requests for rezoning permits for selected locations within these areas during the twenty-year time frame. The Commission will approve such development proposals providing that they are consistent with the pattern of growth, kinds of uses, and amount of overall development specified in this plan and meet all zoning and regulatory requirements and statutory approval criteria.

All three areas are in the watersheds of ponds and lakes that are sensitive to eutrophication. For this reason, special attention must be paid to limiting phosphorus runoff by controlling development densities and minimizing the amount and location of impervious surfaces.

DALLAS PLANTATION

<u>Dallas Company: Route 16</u>
This area is adjacent to an Extended Settlement Zone on Route 16. The community has talked with the Dallas Company about zoning this area for light industrial use. This is one of the future uses that the company will

consider, along with low/moderate-priced housing. In either case, the company plans to site such development so that it minimizes the number of access points onto Route 16 and is set back far enough from the roadway to be screened from view by wooded vegetation. The company is also open to accommodating a connector road from Route 16 to Dallas Hill Road, to the extent that its development proposals facilitate such a connection and are economically feasible. Such a route existed in former times and made local circulation much easier without having to go through Rangeley Village in traveling from one part of Dallas to the other.

Franklin Timber Company: Dallas Hill Road

The Franklin Timber Company owns the planned development zone associated with Saddleback Ski Area and largely located in Sandy River Plantation. The company also has extensive, contiguous holdings in Dallas Plantation along the upper Dallas Hill Road and Saddleback Lake. The company may scale back its currently permitted, but unbuilt development at the mountain and locate it instead in the Dallas Road/Saddleback Lake area. Uses might include housing or commercial lodging establishments. A primary part of the company's vision is to locate such development in pockets near the road or back from the lake. The intention is to conserve the shoreland of the lake for common use and traditional public access.

RANGELEY PLANTATION

S.C. Noyes and Company: southeast corner of plantation on Cross Town Rd

The landowner and local assessors hope to use this property for gravel extraction and asphalt production to meet local needs. Rezoning from a General Management to Commercial-Industrial subdistrict will not be necessary unless permanent mineral processing equipment is planned. The General Management Subdistrict now allows gravel extraction meeting standards under five acres without a permit; and larger acreage with a permit, including portable equipment such as for asphalt batching.

An evaluation of potential project impacts and future reuse will be necessary before an assessment of the appropriateness of this location for Commercial-Industrial zoning can be made.

Amount of Development Planned for 20 years

The challenge of planning is to shape the course of development toward a desired outcome rather than merely to respond to demand and development pressures. This plan seeks to identify appropriate areas to concentrate development in a pattern that will conserve the highly prized natural features and traditional character of the Rangeley Lakes Region. See Map 7 on page 22.

The size of these areas was determined through discussions with local people and in keeping with a general *rule of thumb*. This rule of thumb is to provide enough room for the next twenty years to accommodate about as much development as occurred in the past two decades. This rule of thumb is consistent with State Planning Office policy for communities that are developing growth management plans.

In the last two decades, an estimated 650 residential dwellings or camps were constructed in the ten-township area. Assuming 2 acres per dwelling/camp, the planning area will need about 1300 acres of land zoned for residential and mixed uses.

No attempt has been made to apportion this potential development acreage among the townships. Rather, the strategy is to meet the desires of each community, keeping the overall acreage within the target goal and limiting intensive year-round development to Dallas, Rangeley, and Sandy River Plantations. Most of the land placed in development zones will accommodate residential development as well as home occupations (see descriptions of proposed development zones). Only a small acreage is proposed for mixed use in community centers or intensive commercial-industrial use.

Existing year-round development in D-RS zones in outlying plantations and townships have been replaced by either a D-GN3 zone – in rural settlement areas where limited growth is allowed – or D-RS3 zone on lakes and ponds where adjacent growth is not encouraged.

Plan Implementation

Monitoring Land Use Change

The Land Use Regulation Commission will monitor development trends, including the location, type, and volume of permits and rezoning petitions, on a regular basis to ensure that future development is consistent with the intent and substance of this plan. Interested parties will be kept informed of application activity through the Commission's "Notice of Applications Received and Accepted For Processing," generated on a weekly basis. The list of interested parties will include those who have asked to be on the list through this prospective planning process, including the Maine Department of Inland Fisheries and Wildlife, Maine Historic Preservation Commission, and Mooselookmeguntic Improvement Association.

The Commission will monitor two additional issues in response to public comments made during its deliberation on the adoption of this plan. The first involves the issuance of permits for home occupations in the General Management Subdistrict, particularly for special exceptions in Rangeley, Dallas, and Sandy River Plantations. This issue centers on whether home occupations in the M-GN will be complementary or detrimental to the long-term function of the management zone for forestry and agricultural uses and the avoidance of development sprawl.

The second issue relates to monitoring any new development on Lower Richardson Lake to determine its impact on the character of Upper Richardson Lake. This latter issue addresses the question of whether there is a need to treat both lakes as one "remote" lake because they are physically connected and both have outstanding resource values. Boating traffic generated by development on the lower lake will effect the upper portion in equal measure.

Plan Update

Staff will also identify changing circumstances that could not be foreseen in the development of this plan and report annually to the Commission on development trends and how well the plan is working. The Commission will consider every five years whether an update is needed, but otherwise will make necessary changes during periodic updates of its jurisdiction-wide Comprehensive Land Use Plan.

While the plan provides a general guide for the next twenty years, it is not cast in stone. Zoning changes beyond those described above under "Future Development Areas" will be considered if the proposed developments meet general and prospective zoning review criteria.

Acquisition Priorities

In developing the plan, the Commission has identified some areas where priority attention should be directed for acquisition of development rights, conservation easements, or public ownership. Three of these were mentioned in the Basis Statement and Summary of Comments from the July 17, 2000 Public Hearing. These include Lower Richardson Lake, Aziscohos Lake, and the remaining undeveloped shore of Beaver Mountain Lake.

Following through on its Lake Classification initiative of 10 years ago, the Commission has created the P-GP2 zone to allow limited development on Lower Richardson and Aziscohos Lakes. These two lakes were considered as having potential for development during the lakes study. Through the comment process on this plan, several individuals and groups have indicated an interest in seeking conservation status for them. In addition, meeting participants in Sandy River expressed similar interest in the remaining developed land on Beaver Mountain Lake. Accordingly, the Commission will work with landowners, the Rangeley Lakes Heritage Trust, Land For Maine's Future Board, and others to determine whether opportunities exist for public or private conservation of these areas.

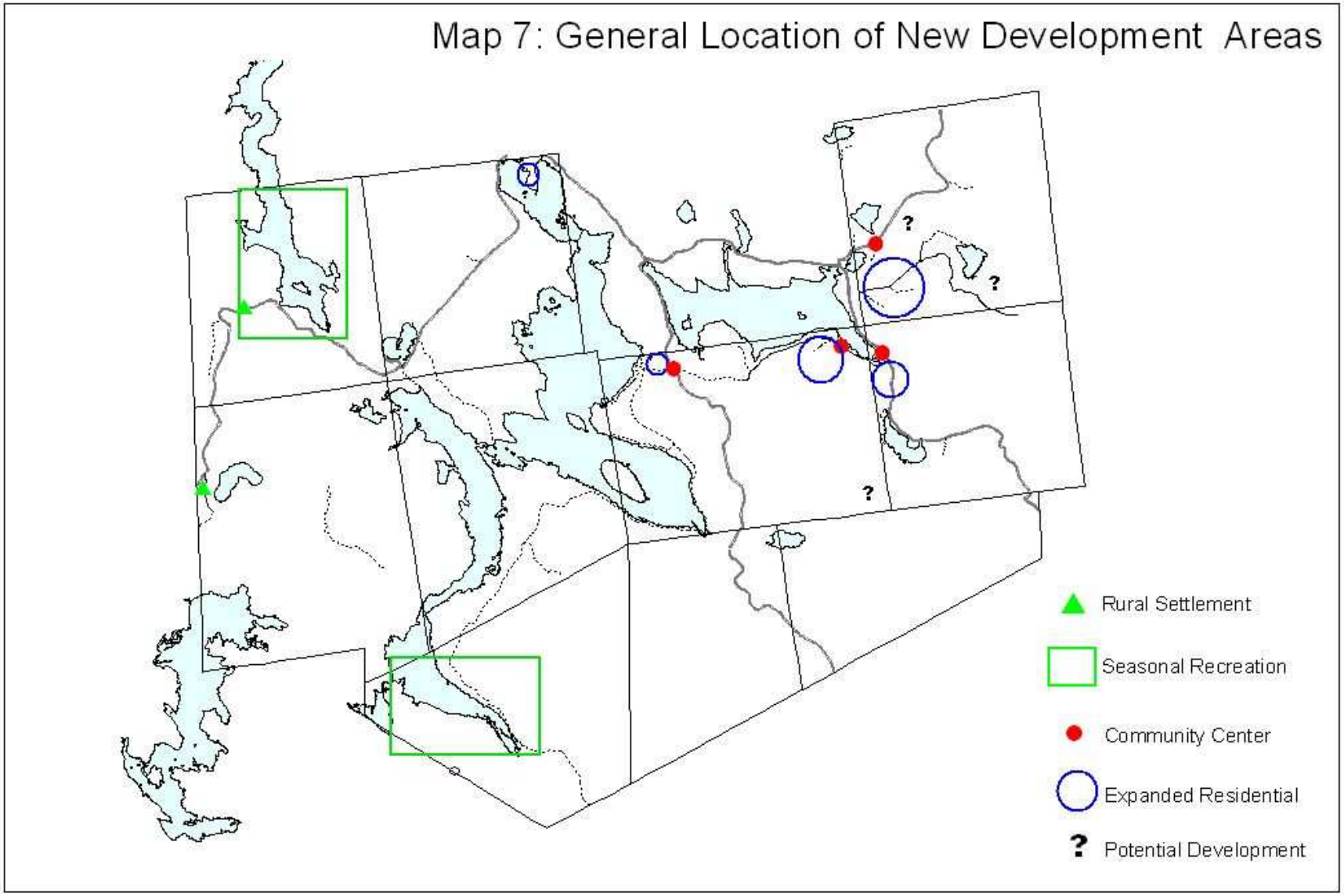
Additional Regulatory Changes

During implementation of the plan, the Commission will explore three other regulatory changes that emerged through the public hearing process. The first involves the elimination of subdivision law exemptions. Land divisions under these exemptions are responsible for incremental

development and unplanned sprawl into outlying townships and backcountry areas. Because this issue would require a statutory change, the Commission may seek legislation in 2001 as part of the Administration's *Smart Growth* initiative.

Two other changes to the Commission's Rules will be pursued through working with interested parties to improve the Planned Development Subdistrict Rezoning process and enabling the development of "mother-in-law apartments" in the Residential Recreation Subdistrict (D-RS3).

The region's heritage is tied to its lakes and woods.


Map 7: General Location of New Development Areas
?
?
?
Rural Settlement
Seasonal Recreation
Community Center
Expanded Residential
Potential Development

CONCEPTUAL DESCRIPTION OF ZONES

Community Center (D-GN2)

What is the essential character of this zone?

Livable community centers
These areas currently serve, or are planned to serve, as focal points for community life. They are characterized by a mix of compatible residential, commercial, and civic uses that foster social interaction, provide access to local goods and services, and are of a scale and type that reinforce the jurisdiction's rural character. This zone is not for isolated uses along highways or other locations outside of traditional or planned community centers or nodes of activity such as crossroads.

Why do we need this new zone?

The existing General Development Zone (D-GN) is too restrictive and the Commercial-Industrial Zone (D-CI) is too permissive.
The new zone allows slightly larger-sized commercial uses than is currently the case in the General Development Zone (D-GN). But it does not open the door to unlimited square footage and a broader range of uses than are compatible with residential uses, as does the existing Commercial-Industrial Zone.

How is the D-GN2 different from the existing D-GN?

It sets a firm limit on the size of commercial structures and specifies the types of uses permitted in community centers.

- Expands gross floor area of commercial uses from 2500 ft^2 to 4000 ft^2 for permitted uses and caps at 8000 ft^2, accompanied by specific conditions for special exceptions
- Specifies uses that are compatible with community centers and foot traffic, i.e. retails shops, restaurants, bed and breakfasts, professional and financial services, trades such as cabinetry or shoe repair, artisan shops and galleries
- Allows retail sale of gas (up to 2 pumps) as permitted use vs. special exception
- For use only in places appropriate for mixed community development

Where will this zone be applied?

D-GN2 is envisioned for plantations where growth is deemed most appropriate according to the regional vision developed for the Rangeley prospective planning area. These include Dallas, Sandy River, and Rangeley Plantations.

Rural Settlement (D-GN3)

What is the essential character of this zone?

Small isolated settlements that work.
These areas are focal points for community life in isolated areas. They are generally small historical settlements with homes, home businesses, and a few civic buildings and commercial businesses. They may serve as gateways to the working forest and backcountry recreation areas.

Why do we need this new zone?

Residents in established settlements zoned M-GN want more ways to make a living without stimulating development.
Settlement areas in Lincoln and Magalloway Plantations are primarily zoned General Management (M-GN). This is because the structures were not close enough together to meet the criteria for the General Development (D-GN) or Residential (D-RS). Residents like being in the M-GN because the zone limits the threat of subdivisions and other development that, individually or collectively, could rapidly change the size, remote character, and public service needs of the community. They want, however, more flexibility for making a living in the settlement area than the M-GN allows.

How is it different from the existing General Development Zone (D-GN)?

It is smaller in scale than a community center and doesn't allow subdivision.
- Allows exempt divisions of property but not subdivisions
- Limits gross floor area of general commercial uses to 2500 ft^2 for permitted uses and caps at 4000 ft^2, accompanied by specific conditions for special exceptions
- Allows commercial recreation up to 8,000 ft^2 and sporting camps up to 15,000 ft^2 by special exception.
- Includes permitted uses such as home businesses, general stores, post office, elementary school, and small lodging facilities or restaurants.

How is the D-GN3 similar to the existing Management Zone (M-GN)?

It promotes natural resource-based uses.
- Allows exempt divisions of property but not subdivisions
- Allows forestry without a LURC permit

How is the D-GN3 different from the existing Management Zone (M-GN)?

It allows more options for making a living.
- In addition to commercial farming and forestry uses permitted in the management zone, the D-GN3 allows commercial recreation and general commercial uses that meet specified size limitations
- The D-GN3 also allows more space to be used for home occupations (50% rather than 25% of a dwelling)
- The D-GN3 provides standards for vegetation buffers, lighting, parking, and building layout and flexible building setbacks and lot frontage to ensure good neighbors

Where will this zone be applied?

D-GN3 is envisioned for plantations or townships that are some distance from regional centers and organized communities, where undeveloped character is valued and public services are minimal. These include Lincoln and Magalloway Plantations.

Extended Settlement (D-ES)

What is the essential character of this zone?

Concentrations of high impact uses.
This zone is designed for uses that are generally incompatible with areas where people live or congregate for social interaction, shopping, and other services. Uses that generate heavy traffic, have an unsightly appearance, or other adverse impacts will be concentrated in locations near settlement areas but close to transportation links; and will be appropriately designed so they are screened from public places and neighboring uses.

Why do we need this zone?

It will rationally locate high impact uses.
The new zone will provide specific guidance on appropriate locations for concentrating high impact uses characterized by heavy traffic, hours of operation, and unsightly appearance. It will separate such uses from residential uses but limit their dispersal and sprawl.

How is the D-ES different from the existing D-CI?

It provides specific locations and standards for uses that are necessary for a community but may conflict with residential uses.

- The D-ES includes uses not in the current D-CI, such as auto body repair and large scale retail gas sales, in addition to some uses that are in D-CI, such as light manufacturing and transfer stations
- The new zone specifies performance standards, such as screening, lighting, and highway access appropriate for such uses
- Specifies appropriate locations adjacent to or near existing settlement areas and transportation links, but not in a manner that will create strip development or sprawl.

Where will this zone be applied?

This zone will be used in plantations where growth is deemed most appropriate according to the regional vision developed for the Rangeley prospective planning area. These include Dallas, Sandy River, and Rangeley Plantations.

Community Residential (D-RS2)

What is the essential character of the zone?

Limited mixed use
This zone is designed to better integrate a mix of home-based occupations, residential dwelling types, and public uses that occur in a residential zone.

Why do we need this zone?

People in rural areas live where they work and work where they live.
There is a need for a primarily residential zone where an appropriate range of residential and other uses are allowed. Residential zones in rural areas are not simply bedroom communities of single-family homes. People work from their home and create businesses, such as bed and breakfasts, professional offices, firewood businesses, or golf courses that can fit in well with residential development.

How is the D-RS2 different from the existing D-RS?

- The D-RS2 specifies a range of appropriate home occupations that are compatible with residential areas rather than relying entirely upon the amount of interior space to define what is acceptable
- The zone allows certain commercial uses such as bed and breakfasts and golf courses in keeping with residential character; rather than placing such uses on a more intensive zone where less benign uses could be proposed later
- D-RS2 allows multi-family dwellings and community living facilities without having to rezone to D-GN2
- The zone includes standards for lighting and screening

Where will this zone be applied?

This zone is for use in plantations where growth is deemed most appropriate according to the regional vision developed for the Rangeley prospective planning area. These include Dallas, Sandy River, and Rangeley Plantations.

Residential Recreation (D-RS3)

What is the essential character of the zone?

Residential
The purpose of the Residential Recreation subdistrict is to allow seasonal and year-round recreational development in high value resource areas without compromising scenic and other aesthetic values. This district has a more restricted range of allowed uses than other districts in order to limit impacts such as noise and visual impacts.

Why do we need this zone?

It conserves the tranquility of high value resource areas.
Residents of residential areas located along shorelines and their backlands are interested in creating a zone that will be dedicated principally to seasonal and year-round, single-family detached homes. These property owners maintain that the restricted range of uses in this subdistrict promotes the character and values they came to the jurisdiction to experience. This zone would be similar to the Limited Residential Zone in the organized part of state.

How is the D-RS3 different from the existing D-RS?

- It does not allow public & institutional uses aside from local parks or carry-in boat access facilities; and limits private launches to one common facility per subdivision
- The D-RS3 zone limits home occupations to those with negligible impacts and provides explicit standards for them
- The zone includes standards for lighting and screening

Where will this zone be applied?

Plantations where growth is deemed most appropriate according to the regional vision developed for the Rangeley prospective planning area. These include Dallas, Sandy River, and Rangeley Plantations.

Semi-Remote Lakes (P-GP2)

What is essential character of the zone?

Semi-remote, low impact recreation

Development along Management Class 3 lakes in the Rangeley area will be for seasonal and recreational uses and constructed to be in harmony with the undeveloped shoreline of these lakes and with other values such as fisheries and solitude. Development shall be designed and sited to conserve large expanses of undeveloped shoreline and protect traditional uses and values such as sporting camps and beaches.

Why do we need this zone?

To determine what we mean by "potentially suitable for development"

Four lakes in the Rangeley Region were classified Management Class 7 pending completion of this regional plan. Two of these – Aziscohos and Lower Richardson Lakes – will now be reclassified as Management Class 3 because they are high value, accessible, and potentially suitable for development. This zone will specify the kind, amount, and rate of development that will be allowed in keeping with their semi-remote character. The other two -- Upper Richardson and Mooselookmeguntic Lakes – will remain as Class 7.

How is the zone different from the existing P-GP?

It limits development to seasonal recreational uses and allows subdivision.

- Permits subdivision as a permitted use without need to rezone
- Limits subdivision rate to no more than 20 units in 10 years
- Specifies development density at a permitted maximum of 13 units per mile of developable shoreline
- Permanently conserves at least 50% of shoreline in large contiguous blocks that protect sensitive resources, semi-remote character, and traditional uses
- Increases depth of zone to 500 ft to allow for creative development design
- Allows sporting camps and campgrounds as a permitted use rather than special exception
- Requires a ¼-mile radius buffer around commercial sporting camps, campgrounds, and groups of cabins
- Does not permit retail stores and restaurants
- Discourages year-round residency through prohibition of public utilities and permanent foundations.

Where will this zone be applied?

Aziscohos Lake within Lincoln Plantation and Lower Richardson Lake in Township C.

DEVELOPMENT STANDARDS

Why do we need these standards?

To limit impacts that jeopardize jurisdiction values

Currently, LURC has few standards to guide the design of development. This can lead to inconsistency in processing similar applications. In addition, certain qualities that people value highly, such as dark night skies, are not safeguarded. At many Rangeley meetings, people consistently told staff that they don't want to see or hear development. Further, if an acceptable way to accomplish this objective can be developed, many would like the visual appearance of new development to fit the traditional character of the Rangeley area, much as we now do with sign regulations.

What will the standards accomplish?

Screening – revised standards to provide a more effective vegetative buffer width for development in rural areas

Non-residential parking – new standards to ensure that parking areas are located and designed to minimize their visibility and environmental impacts and function safely

Lighting – new standards to ensure that exterior lighting sources are shielded

Height/dimensional standards – revised standards to reinforce local settlement patterns and make height appropriate for fire fighting equipment

Generalized design review – new standards to ensure that the scale, mass, and rooflines of new commercial and institutional development complement existing historical architectural styles

CRITERIA FOR REZONING

Why do we need these criteria?

So we can "stick to the Plan."

This Plan and proposed regulations are a departure from how the Commission has done its business the last twenty-five years. When the jurisdiction was zoned in the 1970s, subdistricts were established to include only existing development. Then when change was proposed, the Commission would react to individual proposals for rezoning and development. That was the best way to work at the time.

Now that we have closely looked at a whole region and determined where the growth should occur for the next twenty years, the Commission needs to operate differently. In short, there's plenty of room in which to work, so let's be careful about changing the layout.

What will the criteria accomplish?

No person, plan, or organization can exactly foresee the future so there are criteria that guide proposals for change. This plan isn't perfect, times change, and new ideas emerge. Two general criteria and three specific to prospectively planned areas will guide the Commission in determining the acceptability of rezoning changes under the plan. These criteria are as follows:

JURISDICTION-WIDE
Consistency with the Plan – A proposed change must be consistent with the general provisions of the Plan, statutes, and rules.

Community Need and No Adverse Impact – The applicant must demonstrate a need for the change in the community and that it will have no adverse impact on existing resources or uses.

ADDITIONAL CRITERIA FOR PROSPECTIVELY ZONED AREAS
Unforeseen Circumstances – The Commission will rezone areas if a landowner can demonstrate that the Commission did not foresee the amount, type, or character of development needed in the area.

Contiguous Development Districts – If new development areas are needed, they should be adjacent to existing development. A haphazard growth pattern can increase costs over the long term and contribute to sprawl.

More Effective Approach – A zoning change may provide a better approach to achieving the goals of this plan and the Commission's Comprehensive Land Use Plan.

Appendix A: Summary of Meetings

Rangeley Region
Prospective Planning and Zoning Project
HIGHLIGHTS OF RANGELEY MEETINGS

Lincoln and Magalloway Plantations

June 9, 1999 (21 year round residents)

1. Growth. Growth isn't appropriate in this part of the region where remote character is a primary value. Local residents and others especially value the remote character of Aziscohos Lake and Magalloway River. Change the title on the maps from *Future Growth Plan* to *Future Land Use Plan*. Don't fuel speculative development. Want to make sure that local people still can use sites on lakes that are traditionally frequented, if more campsites/development must occur.

2. Subdivisions. LURC shouldn't allow subdivisions in Lincoln and Magalloway. Residents were angry that they had to fight LURC a couple of years ago when an applicant proposed rezoning for a subdivision that would have doubled the population. Development should be much more gradual and fit remote character and limited services.

3. Public Services. Services are limited in remote areas. Visitors in the backcountry expect plantation EMT's to arrive quickly in emergencies – but it takes at least an hour to get in there, even if the unit is readily available. Impacts from remote campsites/development also include noise and other nuisances. Landowners should oversee public use sites full time not just weekdays.

4. Zones. Residents are happy living in the Management Zone because it doesn't encourage growth, but wish they had more flexibility in the kinds of uses permitted. Want home businesses and small businesses that allow local people to make a living and that fit local character.

5. Permitting. Some expressed frustration with LURC permitting. Cited inconsistency in how LURC approves building lots. A local family owned a lot for some time and was told that the lot was too small and unbuildable. Someone else bought it and got LURC approval. Local people believe that the answer should be the same no matter who applies.

June 23, 1999 (14 residents)

1. Preferred Uses. The group discussed the kind of businesses that fit local character and needs. The following uses were preferred:
   - gift and bait shops
   - small restaurants, but no drive throughs
   - convenience stores w/ gas
   - commercial housekeeping cabins
   - small motels (not more than 10 to 20 units like the one in Errol)
   - bed and breakfasts
   - fly casting schools but not children's camps unless they have their own medical services
   - home occupations

   One person stated that the plantations need to move toward a recreation-based economy, citing Bethel as a community to watch. Attendees generally agreed that they don't want this area to become like "The Forks" with a proliferation of commercial outfitters. They don't want to lose the area's unspoiled character. Already they have people in their backyards on the Magalloway River. Would rather encourage light, informal uses, truly dispersed, slow-paced, non-commercialized, such as forestry, touring cabins, seasonal camps. Sarah Medina from Seven Islands attended and explained the Pingree Heir's interest in development options, noting that the company may not do anything, at least in the near future. People expressed general support for low impact use.

2. Standards. Make sure that remote and local character is conserved through standards. The group favored limiting noise and night lighting, and ensuring that architecture, materials, and setbacks fit in. Keep businesses relatively small.

3. Services. Attendees liked the "code of the woods" idea, commented that self reliance is an important part of being in remote areas.

4. Land Stewardship. Litter and refuse are a problem with campers in remote campsites. Don't permit them unless landowners/managers accept responsibility for oversight. Want land managers to retain public shore access in remote areas, especially places traditionally used by local people.

5. Minimum Lot Size. Want a minimum lot size that fits local character. Many people favored 5 acres per unit but some felt this would make lots too expensive for local young people to afford. Three acres seemed more reasonable to most, though one person thought it should be one.

6. Zones. Like "rural settlement' and "remote recreation" districts, but don't see the need for a "rural highway" district locally because of the extensive shoreland zone along Rte 16 between Wilson's Mills and Magalloway.

Sandy River Plantation

August 23 1999 (27, mostly year round residents)

1. Process. Inform all landowners of next meeting. Hold public hearing at a time when seasonal residents can attend -- if not summer, then on a weekend.

2. Zones. Need an alternative to existing "general development" zone that allows slightly larger structures than currently is the case. Don't need convenience stores in "community settlement" district (current residential zone) if are allowed in two other zones, i.e. "community center" (current general development) and "rural settlement" (new zone). Gas stations belong in either "rural settlement" or "rural highway" (new zones). Residential zone on shore of Long Pond should be stricter, limited to primarily single family homes and camps.

3. Locations. Consensus was reached on limiting commercial development to a particular part of the plantation. General support expressed for such a zone at the intersection of Route 4 and South Shore Road, though some attendees had reservations about wetlands and the lake. One person suggested putting the land at the transfer station in an industrial zone.

4. Standards. Strong support for standards limiting noise, night lighting, traffic impacts, air and water quality impacts, environmental harm in general, and making sure new development fits with the appearance of traditional development in the area.

5. Other Issues. Make sure zoning changes do not cause property taxes to bear the impact of speculative land values. Assessors now assess based on current use. Make sure that prospective zones will be flexible enough to respond to new ideas or needs, though attendees generally agreed that zoning petitions should not be easily approved after prospective zoning occurs. One attendee asked for information on the number of zoning permits over the last several years.

September 13, 1999 (21 year round and seasonal residents)

1. Regional Issues. Don't permit development that will sap the vitality of existing development, i.e. Rangeley Downtown and Oquossic.

2. Shoreland Residential Zone. When asked whether the group had a collective opinion about whether a new residential shoreland zone should be created, one person said she worried about making the zone too restrictive. Her children may want to create a bed and breakfast at some time, for instance. Another asked if LURC makes a distinction between camp rentals and bed and breakfasts, and was told that LURC does not get involved in whether people rent their camps to the public, but regulates B & Bs currently as a home occupation, and is considering changes. The group decided it wanted more time to think about whether another residential zone should be created.

3. Favored Uses. The group reviewed the responses of the first 14 people from Sandy River Plt who had completed the checklist concerning preferred uses for the zone changes. It was noted that people seem to be filling the checklist out based upon what they want locally not what the jurisdiction should allow in general in each zone. One person noted the apparent lack of interest in a "rural highway" zone based upon the kinds of uses that people had checked. One person asked if produce stands

mean only site-grown produce; and noted one could probably not make a go of such an operation without bringing in produce.

4. Small Group Discussions. People attending the meeting broke into 4 groups to review a draft zoning map that Leslie Ferguson, the assessors' representative on this issue, had put together after talking with landowners about their ideas. The group reports follow:

   Group I.

   Instead of "community center" (current general development), make the stretch along Route 4 from Greenvale Cove to Socher Drive residential because of its environmental sensitivity. Why not put the two potential campground areas in a "remote recreation" district (new zone). Make sure that all commercial uses are well buffered. Consider not including the Beauregard property (So Shore and Route 4) in a community center zone because of its sensitivity. LURC staff noted that the zoning change to D-GN has already occurred, but only for a portion of the land.

   Group II.

   Members of this group think that there should be no change in character for Beaver Mountain Lake zoning. It should stay residential.

   Group III.

   This group generally agreed with Leslie's map. But they would allow more types of business to occur in residential areas along Route 4 from the Ellis to Webber properties, provided that on-site parking and time of operation limitations apply. Businesses such as art galleries should be allowed. Prefer larger lot sizes for remaining developable land on Long Pond (Beaver Mountain Lake) so that undeveloped character is conserved.

   Group IV.

   This group also generally agreed with Leslie's map, but are concerned that homes in commercial areas would be taxed at the commercial value. LURC staff noted that this is one reason for calling the development zones "settlement" and "community center"rather than "commercial" because the jurisdiction is primarily residential settlement areas with compatible businesses. One person in this group mentioned to staff also the idea of indexing lot sizes to the size and impact of businesses, rather than having an arbitrary minimum.

Rangeley Plantation

August 16, 1999 (39, mostly year round residents)

1. General discussion. Several attendees voiced their displeasure with government in general, LURC, and the Town of Rangeley. Many stated that they feel that only year-round residents should have a say about zoning districts. Some were displeased that LURC had not sent notices to residents about the meeting. This meeting was the first time many had heard that LURC was considering changes of a larger scale than former LURC staff member Will Johnston had mentioned. The group requested that meeting notices be sent ahead of the next meeting to all landowners. In response to the staff's request for ideas about the kinds of uses and zones that Rangeley Plt people desire, the group agreed that LURC should put descriptions of the proposed new zones in writing.

2. Regional Vision. One person spoke against the draft regional vision that proposes that commercial business serving regional needs are best concentrated in the Town of Rangeley downtown and Oquossic. He believes that the Town of R. has run out of room for such business. Competition is good. Wants a grocery store in Rangeley Plt. The speaker's ideas were not generally supported. One person spoke of the conflict between development and his desire that the plantation's "wilderness" character endure. Others are more concerned about making sure the place is a "living, breathing community."

3. Issues. People generally agreed that regulations and enforcement should be fairly applied; and that new uses should not drive up property taxes (examples cited include: cemeteries, private schools demanding special education assistance).

4. Zones. People generally agreed that commercial development should be concentrated in the vicinity of Route 17 and Herbie Welch Road, though not strung along Route 17 because of its status as a scenic highway.

August 30, 1999 (56+, about half and half year round and seasonal residents, 1-2 from other communities)

1. Enforcement. While many supported the general direction that LURC is headed with zoning changes, they do not feel LURC should move ahead unless changes are accompanied by stronger enforcement. What good is planning without enforcement? They cited loopholes in subdivision law that a landowner on Cupsuptic Lake has used to create a subdivision that LURC had turned down.

2. Process. One speaker believes that the 20-year planning timeframe is too short; and that more townships belong in the study area. Urged staff to be as precise and specific as possible without being inflexible in detailing allowed uses. The context for planning should be the region not just a single plantation.

3. Zoning changes. Perhaps as many as half of those who attended agreed that the system should stay the same -- existing standards offer enough protection, such as prohibiting gravel extraction in residential districts and requiring shoreland buffers. Suggested that noise should be handled through nuisance laws. Asked whether the plantation has the option to keep system as is. Staff replied that revisions to development district regulations will probably change because people at other meetings generally agree that some changes are essential. Zone locations don't necessarily need to change in R. Plt. but people need to understand that criteria for approving rezoning petitions will be more difficult to meet in future if this planning effort is to be worthwhile.

   About half (or so) agreed that residential zone should be more restrictive in shoreland areas to maintain the non-commercial, 'get away from it all' character of these areas. Many favored allowing only single family homes/camps in such areas, excluding home occupations and other businesses. Supporters of changes in the regulations cited performance standards that would be helpful, including: noise, odor, water quality, and traffic.

   One person spoke in favor of allowing child and elderly day care in residential areas, (making no distinction between shore and upland residential areas). Beauty parlors and home offices were cited as acceptable home occupations by some.

4. Local input. People appreciated the opportunity to share their opinions with LURC, the community having asked for some time to do so.

Townships: C, D, E, Adamstown, and Richardsontown

August 24, 1999 (11 landowners, including 1 year round and 8 seasonal residents)

1. Utilities. One person questioned whether restrictions on utilities should be mandatory, but could see appropriateness of limiting them at South Arm Campground.

2. Locations for development. The group generally agreed that they want the lakes to stay the same. Some questioned why Lower Richardson has to accept more development when Upper Richardson will get little more. Why shouldn't development, if any has to occur, be distributed between both, still conserving their remote character?

   If development has to occur on Lower Richardson Lake, the group preferred remote campsites to additional camp lease sites, but want campsites restricted to places without archeological or historical values (e.g. avoid Whitney Point, Richardson Farm). If camps are developed, existing camp owners would prefer them to be located in pockets, but not so close together that they detract from remote experience. Would like to see a schematic drawing of how camps can be sited; Seven Islands subdivision on Aziscohos Lake was cited as a model. Prefer camps to sporting camp development and housekeeping cabins. A certain type of housekeeping cabin operation may be appealing, e.g. rental camps like Macannamak camps on Haymock Lake.

3. Management. If remote areas are developed, LURC needs to ensure strong landowner oversight of users to avoid behaviors that are out of keeping with the remote experience.

4. Densities. The group questioned the wisdom of having smaller minimum lot sizes in the proposed "remote recreation" district than in the "rural settlement" district.

5. Performance standards. Don't want to hear or see development!! Believe that relaxed clearing standards for sporting camps or rental camps would be unfair.

6. Enforcement. Want effective enforcement citing Cupsuptic Lake development as an example. Want adherence to standards, too, by state agencies. One attendee gave the example of MDOT road improvements where a stream has gradually been obliterated on Route 16.

7. Union Water Power Co. Zoning revisions may penalize UWP because company has already given up easements and agreed to development densities through FERC relicensing process. To avoid problems, UWP may proceed with development applications under existing rules before any zoning changes are made.

Dallas Plantation

August 31, 1999 (8 residents, 2 corporate landowners, 2 Madrid residents)

1. Problems with existing system. Rezoning takes a long time to go through. The uncertainty/lack of specificity about what is allowed is difficult.

2. Capital improvement planning. One assessor asked who would pay for capital improvement planning. Cited the Saddleback Road as a problem for the plantation because Sandy River gets the tax revenues while Dallas has to maintain the road.

3. Process. One person asked how much local opinion would count in the Commission's deliberations. Staff replied that the Commission takes a particular interest in local opinions and wants to hear them first, but welcomes and must take into account all opinions.

4. Zoning Locations. Assessors had talked to Dallas Company about putting some of the company's land into commercial use on Route 16. A company representative reported that the company is now thinking about housing that is affordably priced in that location. One person suggested that any new development should locate as close to the Town of Rangeley as possible. Another advised against permitting backland development around lake shores, i.e. Loon Lake.

5. Issues. Don't make changes that will increase property values and make things less affordable. Consider centralizing septic systems and green space in developments. Make lots large enough to anticipate septic system failures. Don't impact how people make a living in their homes.

August 31, 1999 (special committee meeting: 4 residents, 1 corporate landowner)

1. Zoning locations. The committee came up with options for the application of new zones throughout the community. LURC staff will put the zones on a map for the committee to review at its next meeting.

October 6, 1999 (special committee meeting: residents, 1 corporate landowner)

1. Planned development zone. Existing zone is too cumbersome. Requires too much up front investment before rezoning determination. Why can't a landowner prepare a conceptual master plan with phases, and do more detailed studies as development permits are sought for each phase? Apply the General Development zone instead, but with the master plan caveat. Saddleback is permitted for about 540 homes now. Allow some flexibility in siting some of these in Dallas Plantation instead of in the existing Planned Development area.

2. Connector road. In the long term, the community wants a connector road between Saddleback Road/Dallas Hill Road and Route 16. Plan

future growth areas so that landowners are encouraged to work toward this goal as development occurs.

3. Growth area priorities. Priority areas for growth include: the area south of Dallas Hill Rd. adjacent to the Town of Rangeley and Sandy River Plt.; the area between Saddleback Lake and Route 16 (where connector road would be located); and the area closest to Saddleback Ski Area. The committee proposed other areas as well.

4. Public facilities. Plan ahead for a post office, in the vicinity of the Town Office, in case the community grows substantially as well as for more public works.

5. Golf courses. Should be allowed in residential zones.

DISCUSSIONS WITH INDIVIDUAL LARGE LANDOWNERS/MANAGERS IN RANGELEY AREA

(Seven Islands, IP, Mead, Dallas Co., Franklin Timber Co., S.C. Noyes and Co., Cuisineau)

The representatives of one or more companies brought up the following points:

1. Flexibility. Provide incentives/options so landowners can hang on to their lands without subdividing. Allow more flexibility for uses in the existing management zone that are compatible with forestry management, i.e. enough dispersed, low impact recreation density to be more attractive than creating 2 in 5 year subdivisions. Cite having to subdivide if want to establish and lease a system of remote rental yurts or cabins for touring cross-country skiers or snowmobilers. Give landowners the option of defining density in exchange for enhancement of public values. Consider allowing large landowners the ability to sell or trade development rights for application in places where growth is deemed appropriate. Consider allowing more intensive development (such as condos) than currently is allowed in appropriate areas in exchange for money for public purchase of an area with higher resource value.

2. Backcountry/shoreland recreation. Define the limits of backcountry capacity based upon available research. Keep development well back from water and ensure common land on the shore, i.e. don't load up backland density with only a small amount of common land. Cluster to increase density. Allow landowners who own land on more than one body to trade off densities among the properties to concentrate on those where development is most appropriate and allowed.

3. High Mountain Areas. Consider an approach like NH's which allows companies to put low impact rental cabins/yurts for hikers above 2700' following state guidelines and through a review process rather than having an outright prohibition.

4. To sell or lease. Landowners face the dilemma of what to do with high value lands. If they lease, they get requests to allow electrification. If they try to sell large tracts, they have difficulty finding a buyer because of the uncertainty of LURC permitting. If they sell off lots or lease lots to camp owners, they come under pressure to make the road public and sell off more land. They must also respond to requests from communities to set aside land for public facilities and community expansion.

5. Traffic/Highway Access. Landowners are encountering more problems for trucks from highway development in difficult places such as Route 4 in Sandy River. Increased conflicts also arise from sharing highway with more motorists, e.g. need a truck route around Height of Land but can't afford to build one – irony: paper company built the original route.

6. Other problems. Favor going to an organized community when locating a major forest-processing facility because they don't have to contend with public outcry against the project and they frequently garner local support. Find permitting process to be faster in New Hampshire than in Maine communities or LURC.

7. Public Use Accommodation Zone. Create a zone where landowners can accommodate dispersed recreational development such as lease camps, sporting camps, remote rental camps, and campgrounds/campsites.

Because landowners cannot determine which specific parts of their lands along a lake, for instance, are the right places for such a zone, consider zoning the whole shore or assigning density allocations to each lake management class.

8. Resource Processing Zone. Create a zone where primary and secondary resource processing enterprises, along with support housing and services, can be developed by a company. Current planned development district has too many problems for such use, but it, or another zone, could be revised for this purpose.

9. Incentives rather than penalties. Landowners who have kept their lands in forestry use have been penalized as restrictions have tightened over the years. Those who have already developed have benefited while those who have thus far conserved their lands are penalized. Densities should be prorated among landowners to offset unfairness. Protect against the shadow effect of conserved or public lands, i.e. the argument that a place should be protected since it is next to lands that have been conserved.

10. Subdivision. Avoid fragmentation by putting an upper limit on the size of lots subdivided for development use, rather than establishing only minimum lot sizes.

11. Permit by rule. The Commission directed the staff to pursue more opportunities for permit by rule. Staff has not done so. Want permit by rule for projects that do not have permanent footprints and for small accessory structures such as woodsheds.

12. Development locations. The locations under discussion for prospective zoning changes include:

    - Dallas Plt: east side of Rte 16 in Dallas Plantation – Dallas Co.; Saddleback access road vicinity – Franklin Timber Co. (Saddleback)
    - Sandy River Plt.: south east shore of Long Pond – Cuisineau
    - Lincoln Plt: shore of Aziscohos Lake – Pingree Family/Seven Islands
    - Richardson Twp: Upper Dam – Union Water Power Company
    - Twp C: Middle Dam – Union Water Power Company; shore of Lower Richardson – Pingree Family/Seven Islands

Appendix B: Survey Highlights

Summary of Selected Questions From Public Opinion Surveys

Compiled by H. Dominie, Maine Land Use Regulation Commission

12/18/00

	Residents	Seasonal Residents	Visitors
Most valued attributes (in order of importance and with response rates)	Maine Audubon* (that make Rangeley attractive place to live) 1. Lifestyle/quiet living (92%) 2. Natural beauty (83%) 3. Remoteness (22%) 4. Community (20%) 5. Outdoor activities (12%) Town of Rangeley (attractive features that are important) 1. Lakes and ponds (100%) 2. Mountains (98%) 3. Wildlife (87%) 4. Forests (86%) 5. Rural scenes (76%)	Maine Audubon* (that make Rangeley attractive place to live) 1. Peace & quiet (51%) 2. Outdoor recreation (48%) 3. Natural beauty (44%) 4. Winter activities (30%) 5. Lakes (15%) Town of Rangeley (attractive features that are important) 1. Lakes and ponds (98%) 2. Mountains (94%) 3. Forests (89%) 4. Wildlife (82%) 5. Rural scenes (74%) Union Water Power Co. (reasons for campowner purchase of property) 1. Clean water lakes/river (87%) 2. Attractive scenery (77%) 3. Little to no development (69%)	Maine Audubon* (that make Rangeley attractive for tourism) 1. Town character & location 2. Natural beauty of area 3. Lakes (summer); Outdoor recreation (fall) 4. Wildlife Rangeley Chamber (single most outstanding impression) 1. Scenery (55%) 2. Wildlife (13%) 3. Peace & quiet (12%) 4. Lakes (9%) 5. Friendliness (8%) Union Water Power Company (factors important to decision to visit) 1. Clean water (88%) 2. Light to no development (72%) 3. Attractive scenery (66%) 4. Enjoying company of group (53%) 5. Good wildlife viewing & fishing (52%)

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List of Surveys

1. Rangeley Lakes Region Chamber of Commerce, 1990-91, Number of summer responses: about 734; number of winter responses: about 300
2. Union Water Power Co., Upper and Middle Dams Storage Project, 1998, Number of returned mail surveys: 471
3. Maine Audubon Society, Conservation Works Survey, 1998, Return rates: residents 22% (out of 1,100 mailed), seasonal residents 32% (out of 200 mailed), tourists: 318 sampled
4. Town of Rangeley, Comprehensive Plan Survey, 1986, Return rates: residents 33%, seasonal residents 25%

IN MOST CASES, ONLY THE TOP FIVE RESPONSES ARE INCLUDED. Open-ended questions, where respondents filled in their own responses, are signified with an asterisk. Responses are noted where they differed by season during which group was polled.

Summary of Selected Questions From Public Opinion Surveys

Compiled by H. Dominie, Maine Land Use Regulation Commission

12/18/00

	Residents	Seasonal Residents	Visitors
Attributes that are undesirable	Maine Audubon* (for lifestyle) 1. Access to facilities (51%) 2. Local economy/low wages (50%) 3. Weather (18%) 4. High cost of living (17%) 5. Taxes (13%)	Maine Audubon* (for lifestyle) 1. Weather (47%) 2. High Cost of Living (36%) 3. Crowds (27%) 4. Traffic/Noise (16%) Needs Amenities/Services (16%) Union Water Power Co.* Campowners who felt recreation activities of others detract from their experience (62% of total): 1. Vehicular traffic, i.e. dust (44%) 2. Jet skis (22%) 3. Motor boat noise (5%) Seaplanes practicing (5%) 4. Other	Maine Audubon* (for tourism) 1. None (summer); Long trip, too remote (fall) 1. Motor noise on lakes (summer); Poor roads, traffic, no major access (fall) 2. Need more rainy day activities (summer); None (fall) 3. No variety in restaurants (summer); Too crowded (fall) 4. Long trip, too remote (summer); Need more rainy day activities (fall) 5. Decline in environment (summer/fall)
Changes needed for Rangeley area to be more desirable:	Maine Audubon* (place to live) 1. Better paying jobs (25%) 2. Improve roads (9%) 3. Nothing (6%) Improve services (6%) Lower taxes (6%)	Maine Audubon* (place to live) 1. Do not overdevelop (17%) 2. Nothing (14%) 3. More in-town amenities (10%) 4. Lower taxes (7%) 5. Improve Saddleback (5%)	Maine Audubon* (recreation destination) 1. Do not change anything 2. More rainy day, indoor activities (summer); Control growth & commercialism (fall) 3. Improve dining options (summer); Advertise more (fall) 4. Do not allow motorized vehicles on lakes (summer); Outdoor recreation (fall) 5. Create & maintain trails (summer); Improve dining options (fall)

List of Surveys

1. Rangeley Lakes Region Chamber of Commerce, 1990-91, Number of summer responses: about 734; number of winter responses: about 300
2. Union Water Power Co., Upper and Middle Dams Storage Project, 1998, Number of returned mail surveys: 471
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Summary of Selected Questions From Public Opinion Surveys

Compiled by H. Dominie, Maine Land Use Regulation Commission
12/18/00

	Residents	Seasonal Residents	Visitors
Recreational qualities needed to maintain area as desirable place:	Maine Audubon* 1. Natural beauty (30%) 2. Trails (27%) 3. Water quality (26%) 4. Snow sports (22%) 5. Environmental quality (15%); Keep development out (15%)	Maine Audubon* 1. Environmental quality (42%) 2. Access to land & lakes (35%) 3. Snowmobile trails (23%) Hiking trails (23%) 4. Stop shore development (13%)	
Recreational activities to develop:	Maine Audubon* 1. Indoor activities for adults & children (60%) 2. More trails (33%) 3. Improve Saddleback Mt. (25%) 4. Nothing (13%) 5. Improve tourist accommodations (5%); More restaurants (5%)	Maine Audubon* 1. Indoor activities for adults & children (24%) 2. Organized games (16%) Nothing (16%) 3. Improve Saddleback (12%) Create bicycle lanes (12%)	Maine Audubon* 1. Do not change anything 2. More guided tours 3. Create & maintain trails 4. More flat hiking (summer) Local environmental guides (fall) 5. Shuttle to AT (summer); More equipment rental (fall) Union Water Power* (changes in kind of recreation facilities) Winter: No change (82%) 1. Trail-related (43%) 2. Keep area same as it is (13%) Summer: 1. Keep area pristine/no new business (5%) 2. Everything is OK, no changes (4%)

List of Surveys

1. Rangeley Lakes Region Chamber of Commerce, 1990-91, Number of summer responses: about 734; number of winter responses: about 300
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Summary of Selected Questions From Public Opinion Surveys

Compiled by H. Dominie, Maine Land Use Regulation Commission

12/18/00

	Residents	Seasonal Residents	Visitors
Does Rangeley need additional economic development?	Town of Rangeley Yes 71%	Town of Rangeley Yes 48%	
Type of Economic Development to Encourage:	1. Recreation & tourism (54%) 2. Industrial (49) 3. Commercial/retail (41%) 4. Forest products industry (27%) 5. Other (9%)	1. Recreation & tourism (62%) 2. Forest products industry (36%) 3. Commercial/retail (31%) 4. Industrial (28%) 5. Other (14%)	
Location of commercial development	1. Appropriate in some areas (64%) 2. Not appropriate in Rangeley (20%) 3. Appropriate for Rangeley (16%)	1. Appropriate in some areas (63%) 2. Not appropriate in Rangeley (20%) 3. Appropriate for Rangeley (17%)	
Has Rangeley changed in character during last ten years?	Town of Rangeley Yes 90% for better 52% for worse 96%	Town of Rangeley Yes 67% for better 31% for worse 25%	
Does Rangeley need stronger land use regulations to guide development?	Town of Rangeley 82% yes	Town of Rangeley 77% yes	
Would it be reasonable to adopt development guidelines to maintain town character?	89% yes	91% yes	
Do you favor restricting certain activities in areas important to wildlife?	Town of Rangeley 84% yes	Town of Rangeley 85% yes	

List of Surveys

1. Rangeley Lakes Region Chamber of Commerce, 1990-91, Number of summer responses: about 734; number of winter responses: about 300
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IN MOST CASES, ONLY THE TOP FIVE RESPONSES ARE INCLUDED. Open-ended questions, where respondents filled in their own responses, are signified with an asterisk. Responses are noted where they differed by season during which group was polled.

	Residents	Seasonal Residents	Visitors
Are multi-family units or condominiums appropriate for Rangeley?	Town of Rangeley 1. No (46%) 2. In some areas (46%) 3. Yes (8%)	Town of Rangeley 1. No (54%) 2. In some areas (37%) 3. Yes (9%)	
Attributes that make Rangeley (visually) unattractive	Town of Rangeley 1. Junk (74%) 2. Run down buildings (70%) 3. Lakeshore development (64%) 4. Clear-cuts (53%) 5. Signs (25%)	Town of Rangeley 1. Lakeshore development (64%) 2. Junk (58%) 3. Clear-cuts (57%) 4. Run-down buildings (52%)	
Should building appearance, in regard to economic development, be regulated?	Town of Rangeley 77% yes. If so, where? 1. Townwide (67%) 2. Village areas (48%) 3. Lakeshore (25%) 4. Other (8%)	Town of Rangeley 78% yes. If so, where? 1. Townwide (59%) 2. Village areas (52%) 3. Lakeshore (28%) 4. Other (7%)	

List of Surveys

1. Rangeley Lakes Region Chamber of Commerce, 1990-91, Number of summer responses: about 734; number of winter responses: about 300
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Appendix E

The Commission's Policies Concerning Deeryards

Twice, the Commission has comprehensively reviewed and discussed its deer wintering area program in response to specific concerns and changes affecting the program. No other aspect of the Commission's programs has elicited such singular attention over the years, a measure of the value of the affected resources to all parties.

The first review, undertaken in 1981, resulted in a document which set forth the Commission's policies regarding a number of issues associated with the deeryard zoning program. The second review was initiated in 1988. It resulted in a policy document addressing a number of issues and several rule changes.

The findings of these two reviews have been integrated and updated and are presented below.

A. THE TAKINGS ISSUE

In 1980, the Commission's deer wintering area zoning program was constitutionally challenged in court. After examining all of the constitutional issues involved, the Maine Supreme Judicial Court upheld the concept of using zoning to protect wildlife populations and the Commission's deer wintering area zoning in particular.

B. BURDEN ON LANDOWNERS

The Commission's review of the deeryard program included extensive consideration of whether restrictions on the level of activity permitted in P-FW zones create an undue burden for landowners. The Commission recognizes that the harvesting of trees within P-FW Subdistricts carries higher administrative and operating costs than comparable operations in M-GN zones, and that removal restrictions limit the short-term return from these areas. Nevertheless, it finds that deer and timber management are not mutually exclusive and that these costs are neither excessive nor unjustified. The Commission acknowledges that many deeryards do not represent ideal situations with respect to management — many are even-aged, overmature, or both. But productive timber management in deeryards is possible with proper planning. Unfortunately, many landowners have not availed themselves of the various options provided by the deeryard program, such as harvesting by plan agreement, harvesting by LURC permit, or harvesting under a long-range management plan.

Not finding existing management options inflexible or overly limiting, the Commission does not consider zoning additional acreage unduly burdensome. Nonetheless, it recognizes that there are bound to be cases in which harvesting in excess of I&FW guidelines is justified based on special site conditions or other factors. It encourages landowners to utilize the permitting process to seek approval for harvesting in these cases.

The Commission recognizes the special economic hardships which, under particular circumstances, may be caused by rigid adherence to deer yard zoning criteria and cutting prescriptions, particularly for the small landowner. Accordingly, the Commission accepts that it has an important role to play in striking a reasonable balance between the needs of deer and the needs of landowners. In seeking to strike that balance in a fair way, the Commission will exercise care to prevent any landowner from being unduly burdened for the protection of the deer resource.

The Commission will be responsive to concerns expressed about undue economic hardship and will determine, on a case-by-case basis, whether a particular deer yard zone is necessary and reasonable in terms of its benefits to the public as against its economic or other burdens on the landowner. Thus, in cases where an unfair or unreasonable burden on a landowner is shown, the Commission will reconsider and, where appropriate, remove all or part of the deer yard zoning.

Having considered a variety of other approaches to responding to potential economic hardship issues caused by deer yard zoning, the Commission believes this case-by-case weighing process is the only one which allows for reasonable flexibility and responsiveness where needed without creating arbitrary and rigid rules for responding to economic hardship problems. In sum, the Commission believes that making the process more flexible and less rigid, rather than the opposite, is the proper response to this concern. This response, coupled with the other policies articulated below, should provide a fair deer yard program without imposing unreasonable economic hardships on landowners.

C. THE BUDWORM PROBLEM

The budworm outbreak of the 1970s and early 1980s created a conflict between the public's desire to protect important resources such as deer yards and the landowner's legitimate interest in salvaging budworm infested timber. This conflict was particularly acute because areas which comprise the best deer shelter tend to be composed of dense, even-aged over-mature spruce and fir, the very forest components which are most susceptible to budworm. The Commission decided that it will not require the protection of deer cover which is composed of stands of dead or dying trees, even though these may be of some continuing benefit in protecting deer. In most such instances, the Commission will allow cutting of deer shelter areas. However, in cases where dead and dying trees are a relatively small component of a stand which otherwise is reasonably healthy, the Commission may decide to restrict harvesting so as to avoid destruction of the value of the residual stand as deer shelter.

D. ADMINISTRATIVE BURDENS IN MANAGING DEER YARDS

There have been isolated instances where landowners have complained of significant costs and delays in awaiting approvals for cutting in deer yards. In response, the Commission streamlined its administrative

processes and relies upon the wildlife biologists of the Department of Inland Fisheries and Wildlife to work out an acceptable cutting agreement in the field with the landowner in a timely manner. If landowners experience administrative problems or delays with this system, the Commission or its staff should be so informed immediately so that efforts may be made promptly to expedite the process.

E. DEER YARD ZONING CRITERIA

The criteria used by LURC to identify deer yards have been the subject of much discussion but little criticism. The only significant criticism has been that, in focusing on protection of currently used deer yards, the Commission has not provided for the identification and protection of deer yard needs 10 to 20 years into the future. However, extending the program to cover "prospective" deer yards would be speculative and impractical. Moreover, experts indicate that deer tend to yard up in the same areas year after year. Accordingly, the Commission's program will remain focused on currently used and needed deer yards, while recognizing that, if circumstances change and deer alter their yarding habits over time, the Commission should remain flexible in altering deer yard zones accordingly.

In 1990, the Commission added a number of informational requirements to the criteria for applying protective zoning to proposed deeryards. The additional information is used to provide a broader context in which to consider individual rezoning proposals — to enable a determination that the new zone is necessary and thus more appropriate than the current zone.

The Commission also considered whether other issues should be addressed in the rezoning criteria. Landowners feel that the economic and management impacts of deeryard rezoning proposals should be reflected directly in the rezoning criteria. The Commission recognizes the costs associated with its regulation of deeryard zones. It also recognizes the costs associated with unregulated use of resources. In the case of deeryards, these would include the decline in deer population caused by the unrestricted harvesting of deeryards and economic losses associated with the decline in passive and active recreation revolving around deer. Rather than evaluate costs to the landowner against costs to society on a case-by-case basis as part of each rezoning application, the Commission has factored these considerations into the standards governing activities in deeryards which allow continuing timber management of deeryards.

The Commission believes this is the appropriate approach to economic considerations, excepting perhaps cases involving protection zoning which encompasses most of a small ownership, for two reasons. First, the determination of what constitutes an unacceptable economic burden is a very complex, and somewhat subjective, calculation. Second, the Commission had difficulty envisioning a case in which unrestricted timber management could justifiably override deer management, thus it anticipated denying a rezoning proposal on that basis only as a rare exception to the rule.

The Commission also contemplated whether to incorporate consideration of the impact of deeryard rezonings on the wood supply in the rezoning criteria. It resolved that establishment of a limit on the amount of land that can be included within the P-FW Subdistrict in LURC jurisdiction was the most appropriate means of addressing this issue. This limit and the details of its application are described later in this document.

F. DEER YARD CUTTING PRESCRIPTION CRITERIA

The cutting prescriptions for deer yards, as provided under the guidelines of the Department of Inland Fisheries and Wildlife (DIFW), generally appear to allow for a reasonable degree of cutting on a sustained yield basis balanced with a reasonable degree of long term deer yard protection. In the past, however, there has been some confusion regarding how the cutting prescriptions are arrived at. In response to the Commission's request, DIFW has developed and made available written guidelines regarding management of deer wintering areas which are the basis for developing cutting prescriptions.

G. FUTURE STUDY NEEDS

The Commission wishes to encourage studies by DIFW and others on the effects on the deer herd of various deer yard management techniques, including alternative cutting prescriptions. The Commission recognizes that such studies will necessarily take a number of years and require a long term commitment. As such studies get underway and yield results, the Commission wishes to be informed of their progress.

The Commission also encourages additional studies by DIFW to identify other wildlife values of deer yards as well as other significant wildlife and fishery habitats appropriate for P-FW zoning protection.

H. DEERYARD REZONING PROCESS

In 1990, the Commission made some changes to the deeryard rezoning process. These changes were designed to promote cooperation and coordination between DIFW and the landowner, while providing equal opportunities for evaluation of the suitability of an area for deeryard zoning. Landowners are either given the opportunity to attend DIFW's ground survey of an area under consideration as a deeryard, or they are granted the right to petition the Commission for reconsideration of a deeryard rezoning if they have information suggesting that zone criteria were not met. This approach is designed to give landowners equal opportunity to evaluate the scientific basis for the proposed zone, and minimize factual disputes by promoting exploration of an area by both parties at the same time.

I. SCOPE OF THE DEERYARD REZONING PROGRAM

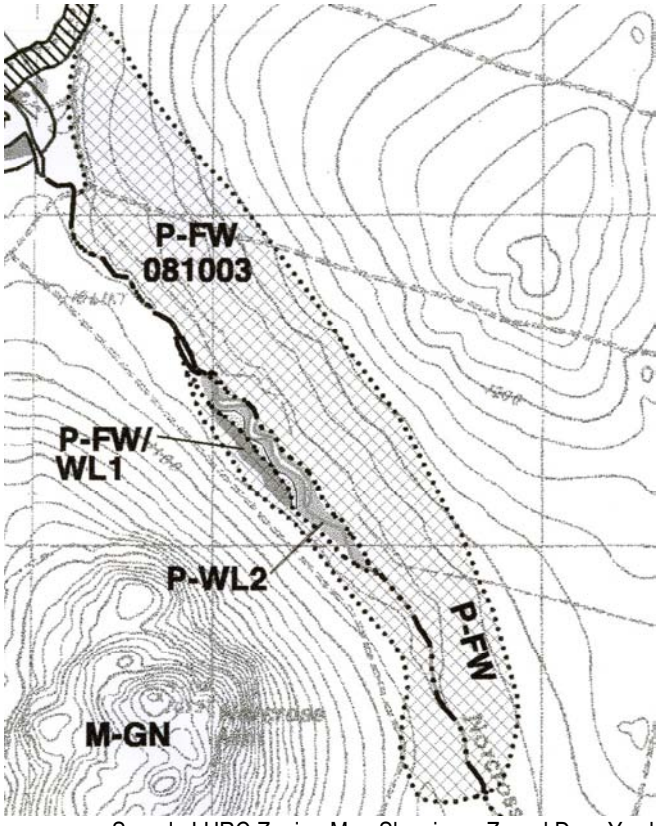
Landowner concerns with the deeryard program have focused on the rezoning of land from Management Districts to Protection Subdistricts. These concerns were precipitated in large part by the addition of considerable new acreage to the deeryard program in the latter part of the 1980s. DIFW believes that additional deeryards are needed to support the deer population in LURC jurisdiction. The discovery and documentation of new deeryards by DIFW support this contention. The Commission believes that an increase in the acreage of zoned deeryards is justified. Deer are valued highly by people in this state and their wintering habitat should be provided a reasonable level of protection. At the same time, given the uncertainties associated with a species living at the northern edge of its range and the need to reasonably consider other needs, such as the wood supply provided by these areas, the Commission is persuaded to define the scope of

the deeryard protection program by establishing that zoned deeryard acreage shall not exceed 3.5% of each Deer Management District. A 3.5% cap allows for considerable, but not unlimited, expansion of the program.

The Commission recognizes that the 3.5% cap does not reflect DIFW's estimate that 5% of the landbase will be used for winter shelter by the target deer population. Nevertheless, the Commission's mandate is different from DIFW's, and directs it to provide for the multiple use of resources in its jurisdiction. The cap reflects the Commission's feeling that protection of deeryard acreage to a level of 3.5% most appropriately balances competing uses of a highly valued land resource. If the limit is reached in a particular Deer Management District, the rezoning process will focus on replacing lower priority deeryards with higher priority deeryards.

J. PERMANENCE OF P-FW ZONES

In 1990, the Commission established a clearer process for reviewing the status of deeryards that are believed to be no longer used by deer. It felt the standard for removal should be strict because the deeryard program is designed to be a long-term habitat protection program, but recognized that removal of land from the P-FW designation is appropriate in some cases. Therefore, the removal criteria specify that a deeryard must not have been used by deer for ten years to qualify for removal. If this criteria is met, DIFW and the landowner will be given the opportunity to present cases to the Commission regarding the appropriateness of retaining P-FW zoning, and the Commission will make the final decision. Alternatively, a deeryard zone may be removed without extensive documentation of no use if both DIFW and the landowner agree that removal of land from the P-FW designation is appropriate.



Sample LURC Zoning Map Showing a Zoned Deer Yard

Appendix F

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