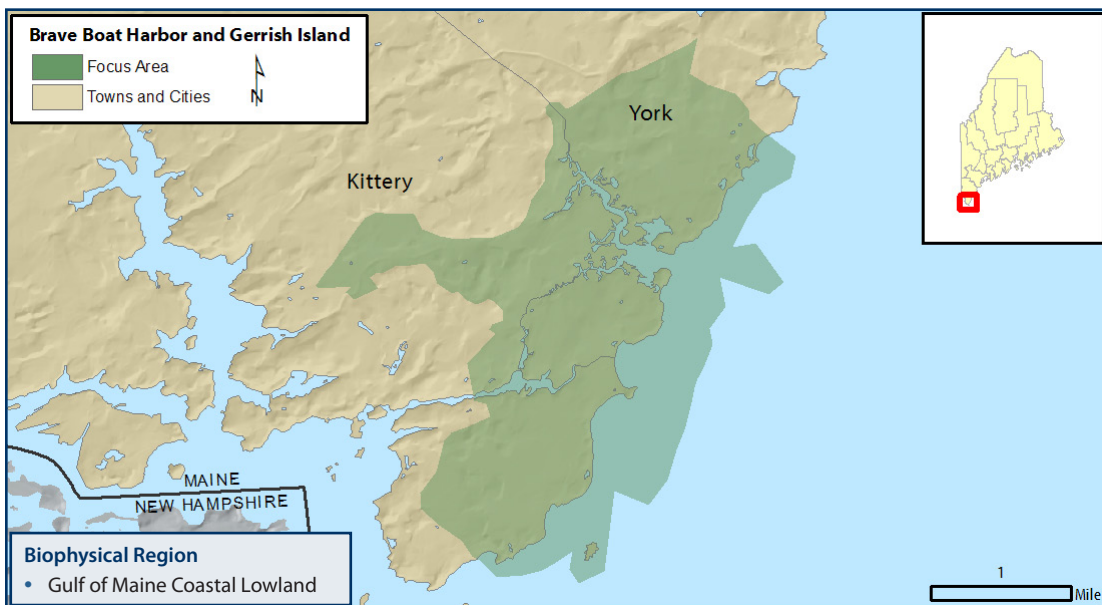
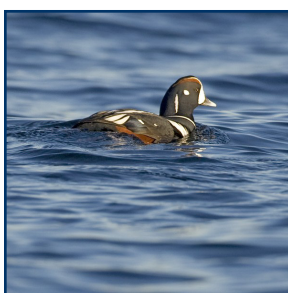


**Brave Boat Harbor - Gerrish Island**



**WHY IS THIS AREA SIGNIFICANT?**

The Brave Boat Harbor - Gerrish Island Focus Area includes a rich association of natural community types, including upland forests, dune grasslands, spartina saltmarshes, oak forests, freshwater swamps, pocket swamps, vernal pools, and coastal features that provide the habitat needed to support most of the native plants and animals we would expect to find along the south coast of Maine. This diverse system of large, undeveloped, high quality natural habitats is a high priority for additional conservation action because of the rapid pace of development in its immediate vicinity.

**OPPORTUNITIES FOR CONSERVATION**

- » Work with willing landowners to permanently protect remaining undeveloped areas.
- » Encourage town planners to improve approaches to development that may impact Focus Area functions.
- » Encourage landowners to maintain enhanced riparian buffers and buffers around rare and exemplary features.
- » Monitor and remove invasive plant populations.
- » Maintain natural hydrology and identify and restore tidal restrictions and undersized culverts.

For more conservation opportunities, visit the Beginning with Habitat Online Toolbox: [www.beginningwithhabitat.org/toolbox/about\\_toolbox.html](http://www.beginningwithhabitat.org/toolbox/about_toolbox.html).

*Photo credits, top to bottom: Maine Natural Areas Program, Bob Malbon, Maine Natural Areas Program, Maine Natural Areas Program, Maine Natural Areas Program, Maine Natural Areas Program*

**Rare Animals**

- Saltmarsh Sharp-tailed Sparrow
- Spotted Turtle
- Blanding's Turtle
- New England Cottontail

**Rare Plants**

- |                         |                       |
|-------------------------|-----------------------|
| Mountain-laurel         | Wild Garlic           |
| Spicebush               | Scarlet Oak           |
| Wild Coffee             | Pale Green Orchis     |
| Dwarf Glasswort         | Bottlebrush Grass     |
| American Sea-blite      | Spotted Wintergreen   |
| Saltmarsh False-foxtail | Northern Wild Comfrey |

**Rare and Exemplary Natural Communities**

- Coastal Dune-marsh Ecosystem
- Dune Grassland
- Salt-hay Saltmarsh
- White Oak - Red Oak Forest

**Significant Wildlife Habitats**

- Tidal Wading Bird and Waterfowl Habitat
- Inland Wading Bird and Waterfowl Habitat
- Shorebird Area
- Deer Wintering Area
- Significant Vernal Pools

**Public Access Opportunities**

- » Rachel Carson National Wildlife Refuge, USFWS



*Braveboat Harbor Marshes, York Land Trust*

## FOCUS AREA OVERVIEW

The Focus Area covers about 2,780 acres and includes a rich association of natural community types that provide the habitat needed to support most of the native plants and animals we would expect to find along the south coast of Maine. Natural communities found here include dune grasslands, spartina saltmarshes, oak forests, freshwater swamps, and vernal pools. The south end of the focus area on Gerrish Island is a complex mosaic of upland forests, pocket swamps, and vernal pools. This large undeveloped assemblage of habitats is potential habitat for a number of rare plants and animals. Further north, both Sea Point and Brave Boat Harbor have good quality spartina salt marshes, again areas that are important to both common and rare species. Numerous other intact forests, marshes, and coastal features are spread across the Focus Area. This diverse system of high quality natural habitats is a high priority for additional conservation action because of the rapid pace of development in its immediate vicinity.

## RARE AND EXEMPLARY NATURAL COMMUNITIES

The Brave Boat Harbor-Gerrish Island Focus Area has three documented rare natural community types, red oak - white oak forest, dune grassland, and spartina saltmarsh. The dune grassland and spartina saltmarsh, along with several other

plant associations, form a coastal dune - marsh ecosystem. Descriptions of the natural communities are listed below.

**Dune grassland** is dominated almost exclusively by dune grass with very few other thinly scattered species. Dune grass is the anchor that helps keep the highly exposed sand dune formations in place. Dune grass needs actively accreting sand to survive and will die off if not stimulated to grow by shifting sand. Generally, the very front and back areas of the dunes are transition areas that support a small number of other characteristic plant species. Much of the original dune grassland occurring along the southern Maine coast is now heavily developed. Dunes and fore dune areas are Essential Habitat for the Federally Threatened piping plover and the State Endangered least tern although neither of these species has been documented at this site. All the remaining viable areas of dune grassland should be preserved and managed as a sensitive natural area.

**Spartina saltmarsh** or salt hay saltmarsh is a community dominated by expanses of saltmeadow cordgrass, smooth cordgrass, and black-grass. Shrubs are virtually absent. Saltmeadow cordgrass gives a meadow-like appearance over much of the marsh. At slightly higher elevations within the

marsh black-grass is dominant, and along creeks or at slightly lower elevations smooth cordgrass is dominant. Salt pannes are abundant and often support widgeon grass. Seaside goldenrod and sea-lavender are found at the upper tidal fringe. The peat substrate of the marsh is likely several meters thick.

**Red oak - white oak forest** is a closed-canopy forest community dominated by red oak and with white oak as a common associate. White pine is occasionally present, and shagbark hickory may also occur in the southern most part of the state. Shrubs are distributed in well-spaced patches and include striped maple and maple-leaved viburnum. The forest floor is characterized by low heath shrubs; common herbs include woodland sedge and bracken fern. This rare forest type is usually found on gentle slopes with well drained acidic stony soils and is restricted to southern Maine.

### CHARACTERISTIC SPECIES

A high concentration of vernal pools and pocket swamps adds to the biological significance of the Braveboat Harbor - Gerrish Island Focus Area. Concentrations of vernal pools and pocket swamps on undeveloped landscapes are becoming increasingly rare in Maine and are vital for the conservation of certain amphibians, reptiles, and invertebrates.

Vernal pools are ephemeral wetlands that typically fill with water from snow melt and spring run-off and often dry out over the course of the summer. They offer critical breeding habitat for some species of amphibians and invertebrates such as wood frogs, spotted and blue salamanders, and fairy shrimp. The seasonal nature of the temporary pools maintains a fishless environment conducive to the successful breeding of these animals. Vernal pools are also used as feeding and breeding habitat by many other animals such as spring peepers, grey tree frogs, and other common amphibians, as well as by several rare species. The amphibians and aquatic invertebrates that are dependent on these ponds for survival are an important food resource for other forest dwellers such as turtles, snakes, birds, and small mammals.

The wetlands and uplands in this Focus Area support the state Threatened **spotted turtle** (*Clemmys guttata*) and Endangered **Blanding's turtle** (*Emys blandingii*). Both turtle species are generally found only in the southern most part of the state where increasing development contributes to loss of habitat, habitat fragmentation, and road kill. These turtles are most frequently associated with complexes of small, acidic wetlands and vernal pools in large, intact forested landscapes. They also use small streams, shrub swamps, and wet meadows. Although these turtles spend most of their time in the water, they readily travel overland between wetlands during the spring and summer months. Upland habitats are critical for basking, aestivating (a period of late summer inactivity), nesting, and as travel corridors between wetlands.

Turtles have evolved relatively long adult life spans to offset

#### Ecological Services of the Focus Area

- Nutrient export for marine food webs
- Cleans water run off prior to discharge into ocean
- Nursery for juvenile fish and shellfish
- Habitat for diverse variety species
- Contributes to regional biodiversity

#### Economic Contributions of the Focus Area

- Valuable open space for local residents
- Attracts tourism for wildlife observation, paddling, hunting, and angling
- Supports local marine resource industries
- Acts as a protective buffer for storm surge

the long time it takes to reach reproductive maturity (15 years or more) and to offset high levels of nest mortality. Because of this unusual life history, turtle populations are at low densities, and thus populations are extremely vulnerable to any human sources of adult mortality. Road mortality and collecting for pets, for example, can be deleterious as the attrition of just a few individuals every year can lead to the long-term decline and extinction of a local population. Secondary effects of human development – increased predator populations (e.g., dogs, cats, raccoons, skunks), water, light and noise pollution, filling of small wetlands, and blocking upland travel corridors (roads, rail beds, yards) – also impact populations. Take (collecting, killing or possession) of turtles is strictly regulated by the Maine Endangered Species Act.

Also contributing to the biological significance of the Focus Area are the several high value **Tidal Wadingbird and Waterfowl Habitats**. Most of these are associated with the large salt marsh communities such as those located behind Seapoint Beach and within Brave Boat Harbor itself. **Inland Wadingbird and Waterfowl Habitats** have been designated and include the headwater marshes associated with Crockett's Brook. A single high value **Shorebird Area** has been mapped to include the beach front and intertidal mudflats associated with Seapoint Beach as well. The salt marsh communities in the Focus Area also support **saltmarsh sharp-tailed sparrow** (*Ammodramus caudacutus*), a special concern bird species.

Small areas of **eelgrass beds** are present in subtidal portions of this Focus Area. These ecologically important features serve as nursery habitat, and feeding areas for many fish, waterfowl, wading birds, invertebrates, and other wildlife, including commercially valuable fish and shellfish. **Horseshoe crab habitat** is present at Seapoint Beach, Crescent Beach, Swards Cove, Chauncey Creek and in Brave Boat Harbor and its estuary. A

**harlequin duck wintering area** has been mapped off of Seapoint as well.

Twelve rare plant species have been documented in the Focus Area. Species occurring in the salt marsh communities include **sea side gerardia**, **dwarf glasswort**, and **American sea-blite**. Other rare plants occur in the forested uplands and wetlands include **spicebush**, **scarlet oak**, **sassafras**, **wild coffee** and others. These rare plants tend to occur in small numbers where they are found and are vulnerable to loss of habitat due to development. Large portions of this Focus Area have not been surveyed and it is likely that there are populations of other rare plants and animals here.

### CONSERVATION CONSIDERATIONS

- » Nearly all areas mapped as exemplary natural communities and all known populations of rare plants are contained within existing conservation lands, but the site also includes large areas which have yet to be surveyed for these features.
- » Natural communities still occurring on the uplands adjacent to the marsh including upland forests, shrub swamps, forested swamps, and sand dunes should be conserved as part of the greater ecosystem of the marsh. Long-term preservation of the biodiversity of this high value natural area will be best achieved by retaining as much of the surrounding natural landscape as possible.
- » Whenever possible a vegetative buffer should be established and protected around the perimeter of all salt marsh community types. The health of marshes within this focus area are inextricably linked to the quality of the surrounding upland landscape. A buffer of 250 feet or more will serve to limit impacts from adjacent development, help prevent erosion, provide habitat needed by numerous species that depend on the marsh, limit opportunities for colonization of invasive species, prevent reckless impacts from off road vehicle use, and allow for marsh migration in the face of sea level rise.
- » The integrity of the marsh and the processes and life forms it supports are dependent on the maintenance of the tidal hydrology in a natural condition. Marsh hydrology, and subsequently its sedimentation patterns, can be affected by dredging of channels, marsh ditching, and culverts that restrict tidal flow. Channel dredging may cause erosion of adjacent marsh banks and disrupt natural sedimentation patterns in the lower marsh. Partial tidal restriction from culverts causes increased fresh water influence (reduced salinity) in the upper marsh and a subsequent increase of oxygen. Increased oxygen leads to deterioration of the upper marsh through decreases in peat elevation and shifts in plant species. Water crossing structure repair, maintenance and installation projects should follow guidelines for aquatic species passage in order to avoid further fragmentation of



*Saltmarsh false-foxglove, Maine Natural Areas Program*

- aquatic and riparian habitats and unintended tidal restriction.
- » Past disturbances to the marsh include a rail line crossing, a pipeline crossing, and several road crossings. Disturbances to soils and natural vegetation in or adjacent to the marsh can create opportunities for colonization by invasive plant species. Local groups with an interest in the marsh should be made aware of the potential threat of invasive plants and keep an eye out for them before they become well established.
- » Care should be taken to insure that boating in the channels and mouth of the marsh doesn't cause erosion to the exposed soils along the marsh edge, and that excessive noise from boats and people do not disrupt normal patterns of wildlife behavior.
- » No dredge spoils or other fill materials should be placed in the marsh.
- » Coastal towns in southern Maine have experienced rapid growth in the last decade, and many upland areas near the coast are under increasing threat. Unmanaged growth and sprawl can contribute to habitat fragmentation, introduction and expansion of invasive plant species populations, and water quality degradation through pollution from storm water runoff and private sewage systems.
- » Invasive plants and aquatic organisms have become an increasing problem in Maine and a threat to the state's natural communities. Disturbances to soils and natural vegetation and introductions of non-native species to terrestrial and aquatic habitats can create opportunities for colonization. Landowners and local conservation groups should be made aware of the potential threat of invasive species, of methods to limit establishment, and/or of appropriate techniques

Focus Areas of Statewide Ecological Significance: **Brave Boat Harbor - Gerrish Island**

for removal. For more information on invasive plants visit: <http://www.maine.gov/doc/nrimc/mnap/features/invasives.htm>.

- » If there is heavy use of the area by Off Road Vehicles (ORV's) care needs to be taken that ORV's stay on existing trails and remain out of all wetlands. Existing roads and trails should be reviewed with specific recreation and access needs in mind, and trails closed if they run counter to protection needs. Fragmenting features should be minimized where possible.
- » Avoid road improvement projects (e.g. paving, widening) that may lead to increased traffic volume and speed within ¼ mile of known turtle wetlands.
- » No activities should be permitted that could lead to the loss or degradation of wetlands, regardless of size, including filling, dredging, sedimentation, changing hydrology unless the activity is reviewed by MDIFW.
- » A minimum 250 foot forested buffer zone should be maintained around target wetlands with known rare animal locations.
- » Impervious surfaces, yards, buildings and roads should comprise no more than 20% of the landscape within ¼ mile of rare animal wetlands. Natural forests should dominate the landscape around these wetlands. Intensive developments, including subdivisions and service centers, that concentrate human populations within ¼ mile of turtle wetlands should be avoided.
- » Towns should strive to maintain important habitat areas identified by MDIFW in low density, rural settings by identifying these areas in comprehensive plans and zoning accordingly.
- » For areas with known rare turtle populations low-intensity cutting (single tree or small group selection, firewood harvest) is likely compatible as long as operators avoid wetlands. Winter harvests are recommended to minimize impacts to turtles, amphibian prey, and wetland condition. Close adherence to Best Management Practices for forestry activities near vernal pools (available from Maine Audubon Society at 207-781-6180 ext. 222 or [bwilson@maineaudubon.org](mailto:bwilson@maineaudubon.org)) will generally ensure the protection of wetland habitats and the amphibian food source.
- » Eelgrass is sensitive to losses due to disease, storms, pollution, nutrient enrichment, dredging, shellfishing, ice dam-

age, propeller damage, sediments, and runoff. Because of its important ecological functions, loss of eelgrass beds can result in reduced fish and wildlife populations, degraded water quality, and increased shoreline erosion.

- » Widespread loss, degradation, and fragmentation of coastal saltmarshes along the eastern seaboard are the biggest threats to the saltmarsh sharp-tailed sparrow. Habitat preservation and restoration are the most important factors for conserving this species.
- » Shoreline development and subsequent habitat degradation are potential threats to Maine small populations of horseshoe crab. Though generally been overlooked as a resource, horseshoe crabs in Maine are very vulnerable to depletion from any harvesting activities. In 2003, taking and possession of horseshoe crabs became prohibited in Maine.
- » All areas of sand dunes should be posted with signs indicating their fragile nature and regular crossing areas should be well defined and managed to prevent erosion of the dunes.
- » Current projections suggest sea level will rise at least 2 feet in the next century due to changing climate and warming temperatures. As sea levels rise, coastal habitats will begin to migrate inland. In areas where this inland migration is blocked by development these habitats will be lost. Conservation of low-lying, undeveloped uplands where coastal marshes, beaches, and other intertidal natural communities can migrate inland with sea level rise should be promoted.



*Spartina salt marsh, Braveboat Harbor,  
Maine Natural Areas Program*

RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES OF THE FOCUS AREA

	Common Name	Scientific Name	State Status*	State Rarity Rank	Global Rarity Rank	
Animals	Saltmarsh Sharp-tailed Sparrow	<i>Ammodramus caudacutus</i>	SC	S3	G4	
	Spotted Turtle	<i>Clemmys guttata</i>	T	S3	G5	
	Blanding's Turtle	<i>Emys blandingii</i>	E	S2	G4	
	New England Cottontail	<i>Sylvilagus transitionalis</i>	E	S2	G3	
	Saltmarsh False-foxglove	<i>Agalinis maritima</i>	SC	S3	G5	
	Wild Garlic	<i>Allium canadense</i>	SC	S2	G5	
	Spotted Wintergreen	<i>Chimaphila maculata</i>	E	S2	G5	
Plants	Northern Wild Comfrey	<i>Cynoglossum virginianum var. boreale</i>	E	S1	G5T4T5	
	Bottlebrush Grass	<i>Elymus hystrix</i>	SC	S3	G5	
	Mountain-laurel	<i>Kalmia latifolia</i>	SC	S2	G5	
	Spicebush	<i>Lindera benzoin</i>	SC	S3	G5	
	Pale Green Orchis	<i>Platanthera flava var. herbiola</i>	SC	S2	G4T4Q	
	Scarlet Oak	<i>Quercus coccinea</i>	E	S1	G5	
	Dwarf Glasswort	<i>Salicornia bigelovii</i>	SC	S1	G5	
	American Sea-blite	<i>Suaeda calceoliformis</i>	T	S2	G5	
	Wild Coffee	<i>Triosteum aurantiacum</i>	E	S1	G5	
	Natural Communities	Coastal Dune-marsh Ecosystem	Coastal dune-marsh ecosystem		S3	n/a
		Dune Grassland	Dune grassland		S2	G4
		Salt-hay Saltmarsh	<i>Spartina</i> saltmarsh		S3	G5
		White Oak - Red Oak Forest	White oak - red oak forest		S3	n/a

State Status\*

- E** Endangered: Rare and in danger of being lost from the state in the foreseeable future, or federally listed as Endangered.
- T** Threatened: Rare and, with further decline, could become endangered; or federally listed as Threatened.
- SC** Special Concern: Rare in Maine, based on available information, but not sufficiently rare to be Threatened or Endangered.

*\*State status rankings are not assigned to natural communities.*

State Rarity Rank

- S1** Critically imperiled in Maine because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres).
- 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.

Global Rarity Rank

- G1** Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation.
- G2** Globally imperiled because of rarity (6–20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- G3** Globally rare (on the order of 20–100 occurrences).
- G4** Apparently secure globally.
- G5** Demonstrably secure globally.