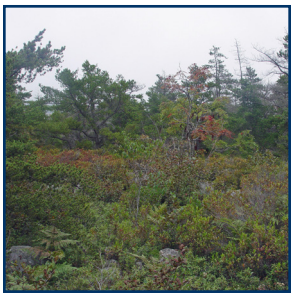
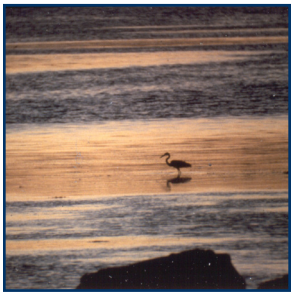
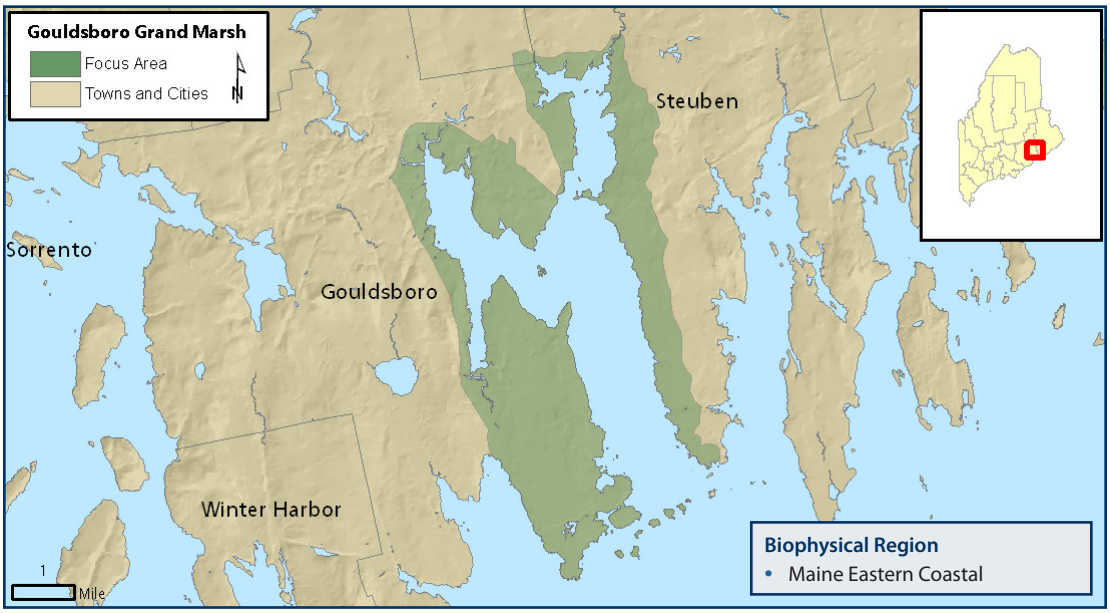
Beginning with HABITAT

Focus Areas of Statewide Ecological Significance

Gouldsboro Grand Marsh







WHY IS THIS AREA SIGNIFICANT?

The Gouldsboro Grand Marsh Focus Area encompasses the peninsula east of Prospect Harbor in the vicinity of the village of Corea. Portions of this focus area stand out as an excellent example of a Coastal Plateau Bog Ecosystem. The Gouldsboro Grand Marsh supports several species of rare plants, and serves as wintering grounds for the State Threatened harlequin duck.

OPPORTUNITIES FOR CONSERVATION

» Educate recreational users about the ecological and economic benefits provided by the Focus Area.
» Encourage best management practices for forestry, vegetation clearing, and soil disturbance activities near significant features to maintain ecological functions and values, habitat connectivity for wildlife, hydrologic processes, and watershed protection.
» Maintain intact forested buffers along water bodies and wetlands to protect water quality and provide valuable riparian habitat.
» Monitor and remove invasive plant populations.
» Work with willing landowners to permanently protect undeveloped areas and significant features.

For more conservation opportunities, visit the Beginning with Habitat Online Toolbox: www.beginningwithhabitat.org/toolbox/about_toolbox.html.

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Rare Animals
Bald Eagle
Harlequin Duck

Rare Plants
Pickering's Reed Bent-grass
Screwstem
Swarthy Sedge

Rare and Exemplary Natural Communities
Coastal Plateau Bog Ecosystem
Jack Pine Woodland
Salt-hay Saltmarsh

Significant Wildlife Habitats
Tidal Waterfowl and Wading Bird Habitat
Inland Waterfowl and Wading Bird Habitat
Shorebird Areas

Public Access Opportunities
» Petit Manan NWR, USFWS
» Dry Island, MeBPL

Wild orchids blooming in Corea Heath, Tom Sidar

FOCUS AREA OVERVIEW

The two most ecologically significant features in this focus area are Grand Marsh and Corea Heath. They are currently linked as one focus area because of the unfragmented habitat connecting them.

Grand Marsh

Grand Marsh is a 135-acre Salt Hay Saltmarsh bisected by a tidal creek that empties into the narrow Grand Bay. Tidal marsh vegetation occurs in north to south bands, with low marsh types dominated by salt marsh cordgrass (*Spartina alterniflora*) nearest the creek and high marsh types nearest the uplands. Black-grass (*Juncus gerardii*), seaside plantain (*Plantago maritima*), and saltmeadow cordgrass (*Spartina patens*) dominate here in broad areas of high marsh. Bands of vegetation are not continuous and are punctuated by open water pannes (small saltwater pools) and creek branches.

Although this tidal marsh is not as large as some others in the East Coastal region, it is in very good condition, with very little to no evidence of past ditching that characterizes many salt marshes in Maine. Moreover, the adjacent uplands are intact. The marsh is mapped as both Tidal Waterfowl and Wadingbird Habitat and Shorebird Feeding and Roosting Habitat.

Corea Heath

Corea Heath is an approximately 250-acre Coastal Plateau Bog that abuts Route 195 near the village of Corea. It stands out as an excellent example of a coastal plateau bog ecosystem because of its large size, circular shape, well-developed concentric patterning, and raised central treeless plateau with evident marginal slopes. Corea Heath supports several species of rare plants. Stunted jack pine trees also occur at Corea Heath. Though not rare, this species is very uncommon in a peatland setting in Maine.

A large portion of Corea Heath, especially in the southern half, is characterized by well-defined ridge and depression relief. The hollows, some of which retain surface water for long periods, contain dwarf shrubs, deer-hair sedge (*Trichophorum cespitosum*), lichen, and mud-bottom areas. The ridges support a similar variety of species including stunted black spruce (*Picea mariana*), black crowberry (*Empetrum nigrum*), and peat mosses.

A large antenna facility formerly owned and operated by the U.S. Navy sits on a concrete pad in the western portion

of Corea Heath. Only a small portion of the peatland was destroyed by the construction, and its subsequent impact on the surrounding peatland seems negligible. An abandoned access road that was built upon fill about ¼ of the way across the heath from the eastern side leads to a small abandoned building frame. Despite past disturbances to the peatland surface, the hydrological integrity of Corea Heath appears to be intact as evidenced by two prominent fen drainage ways to the north and to the southwest.

In addition to the ecological features described above there is a small jack pine woodland community at the southeastern tip of this peninsula near Sand Cove.

RARE AND EXEMPLARY NATURAL COMMUNITIES

Coastal Plateau Bog Ecosystem: Peatlands in east coastal Maine in which the surface is raised above the surrounding terrain, with the bog perimeter sloping sharply to mineral soil. The raised surface is flat or undulating, generally with few to no trees, and usually features extensive lawns of deer-hair sedge. Black crowberry and baked apple-berry are also characteristic. Some coastal plateau bogs support the rare crowberry blue butterfly.

Salt-Hay Saltmarsh: These tidal marshes consist of expanses of saltmeadow cordgrass, smooth cordgrass, and/or black-grass. Shrubs are virtually absent, and the herbaceous cover is usually >85%. Much of the marsh is high marsh, where saltmeadow cordgrass forms meadows, and where black-grass may be dominant at slightly higher elevations. In the low marsh, along creeks or at elevations just below mean high water, smooth cordgrass is abundant. Salt pannes with abundant seashore saltgrass may dot the high marsh; goosetongue may also be locally common. Sea lavender and seaside goldenrod are often found at the upper tidal fringe. The dominant species typically form bands corresponding to tidal inundation zones. Saltmarshes are important nesting habitat for Nelson's sharp-tailed sparrow, seaside sparrow, and the rare saltmarsh sharp-tailed sparrow. These wetlands also provide foraging habitat for a large number of wadingbirds and shorebirds, including rare species such as the laughing gull, black-crowned night-heron, and least tern. The big bluet, a rare damselfly, inhabits saltmarsh ponds with emergent vegetation in southern Maine.

Jack Pine Woodland: These are open canopy woodlands (<60% closure) in which the dominant tree is always jack pine. Red spruce, black spruce, or white pine are common associates. The canopy trees are generally stunted and have poor growth form. Below the canopy, smaller jack pines are common, with scattered shrubs. The extensive herb layer is mostly heath shrubs that may form a thick tangle in canopy openings. At some maritime sites, black crowberry or mountain cranberry reflect the coastal influence. Herbs are very sparse. The bryoid layer varies from extensive to quite sparse, and is dominated by reindeer lichens. These are open canopy woodlands (<60% closure) in which the dominant tree is always jack pine. Red spruce, black spruce, or white pine are common associates. The canopy trees are generally stunted and have poor growth form. Below the canopy, smaller jack pines are common, with scattered shrubs. The extensive herb layer is mostly heath shrubs that may form a thick tangle in canopy openings. At some maritime sites, black crowberry or mountain cranberry reflect the coastal influence. Herbs are very sparse. The bryoid layer varies from extensive to quite sparse, and is dominated by reindeer lichens.

Ecological Services of the Focus Area

- Nursery for juvenile fish and shellfish.
- Provides wintering grounds for State Threatened harlequin duck
- Supports regional biodiversity by providing habitat for rare plants, animals, and natural communities.
- Supports eelgrass and associated eelgrass values

Economic Contributions of the Focus Area

- Contributes to recreational value of the area, including nearby coastal areas, by protecting water quality, fisheries, and wildlife habitat.
- Provides high value forest products that support the regional economy.
- Provides scenic vistas that raise property values.
- Supports local marine resource industries.

Jack Pine Woodland, Maine Natural Areas Program

CHARACTERISTIC SPECIES

Eelgrass beds are present in several areas throughout the focus area. The largest is in the cove at the north end of the peninsula, but beds extend in patchy distribution along Gouldsboro Bay. Eelgrass is ecologically important and serves

as nursery, habitat, and feeding areas for many fish, waterfowl, wading birds, invertebrates, and other wildlife, including commercially valuable fish and shellfish.

Grand Marsh Bay supports **marine worm habitat.** Marine worms in Maine include commercially harvestable bloodworms and sandworms. These worms live in muddy habitats along the coast that are also economically valuable for shellfish and ecologically critical as feeding grounds for migratory birds and other species.

Grand Marsh Bay also supports **horseshoe crab habitat**. Horseshoe crabs (*Limulus polyphemus*) occur in protected sandy beach areas, nearshore shallow waters, intertidal flats, and deep bay waters from the Gulf of Maine to the Gulf of Mexico. Horseshoe crabs feed primarily on clams and worms, and in turn are fed upon by shorebirds, crabs, gastropods, many fish species, and sea turtles. They are also an important resource for medical research, the pharmaceutical products industry, and as eel and conch bait. Because of their small populations here and life history characteristics, horseshoe crabs are very vulnerable to depletion from any harvesting activities.

Nearly the entire shoreline of the focus area has been mapped as high and moderate value **Tidal Wading Bird and Waterfowl Habitat**, providing important intertidal habitat for maintaining viable wading bird and waterfowl populations. Several areas have also been mapped as **Shorebird Areas**, including Joy Bay, West Bay, Dry Island and Dyer Point. Shorebird Areas are important feeding and resting sites for shorebirds making long migrations. Both Tidal Wading Bird and Waterfowl Habitat and Shorebird Areas are protected as Significant Wildlife Habitat under the Natural Resources Protection Act.

The State Threatened **harlequin duck** winters on islands off the southern tip of the peninsula. Harlequin ducks (*Histrionicus histrionicus*) are small diving sea ducks. They are found in the northern hemisphere and winter on both the Atlantic and Pacific Oceans. The Atlantic population has less than 15,000 harlequins and breeds in eastern Canada, Greenland, and Iceland. The birds that winter along the coast of eastern North America, including Maine, are primarily from a population of about 1,800 harlequins in southeastern Canada. About 1000 birds winter in Maine, mostly in small flocks on rough coastal waters and exposed rocky shores. They forage by diving into foaming surf to glean marine invertebrates.

Several **bald eagle** nests are located along the shore as well. Bald eagles were recently removed for from the state and federal endangered species list. They are a tremendous success story for endangered species recovery.

CONSERVATION CONSIDERATIONS

Harlequin Duck, Bob Malbon

» In general, threats to peatlands include peat mining, cranberry harvesting, invasive species, timber harvest around the forested perimeters, and development.

» The ecological integrity of peatlands, including all the processes and life forms they support, is dependent on the maintenance of the current hydrology and water quality of these systems. Intensive timber harvesting, vegetation clearing, soil disturbance, new roads, and development on buffering uplands can result in greater runoff, sedimentation, and other non-point sources of pollution.

» Peatland systems benefit from establishing and/or maintaining vegetative buffers around their perimeter wherever possible. A buffer of 250 feet or more will serve to limit impacts from adjacent development, help prevent erosion, limit colonization of invasive species, and prevent unnecessary impacts from off road vehicle use.

» Some of the rare plant populations at Grand Marsh are found within close proximity to Route 195. As a result, roadside spraying of herbicides and/or the use of road salt may have an adverse impact on these rare plant populations and therefore should be avoided.

» Increased shoreline development adjacent to Grand Marsh may result in habitat fragmentation, water quality degradation, and increased recreational use.

» Eelgrass is sensitive to losses due to disease, storms, pollution, nutrient enrichment, dredging, shellfishing, ice damage, propeller damage, sediments, runoff, jet skis, and inboard and outboard motors. 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.

» Although a few invasive species occur on the periphery of

the Grand Marsh, it is largely devoid of aggressive plants such as common reed (*Phragmites australis*) that have colonized other disturbed salt marshes in the northeast. Disturbances to soils and natural vegetation and introductions of non-native species to terrestrial and aquatic habitats can create opportunities for colonization of this and other invasive species. 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 for removal. For more information on invasive plants visit: http://www.maine.gov/doc/nrimc/mnap/features/invasives.htm.

» Harlequin ducks have extremely low reproductive potential compared to other waterfowl, and the North American population is especially susceptible to sources of adult mortality.

» 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.

» Marine worm landings have declined dramatically. In 1950, an average tide would yield 4,000 worms, but today that average is about 550 worms, often forcing diggers to take smaller worms that have not yet reproduced. Marine worms are sensitive to losses from pollution and dredging. Licensing is required for digging marine worms.

» 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.

» This area includes Significant Wildlife Habitat. Land managers should follow best management practices with respect to construction and forestry activities in and around wetlands, shoreland areas, and Significant Wildlife Habitat. Vegetation removal, soil disturbance and construction activities may require a permit under the Natural Resources Protection Act. Contact MDIFW for more information.

RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES OF THE FOCUS AREA

	Common Name	Scientific Name	State Status*	State Rarity Rank	Global Rarity Rank
Animals	Bald Eagle	*Haliaeetus leucocephalus*	SC	S4B,S4N	G5
	Harlequin Duck	*Histrionicus histrionicus*	T	S2S3N	G4
Plants	Pickering's Reed Bent-grass	*Calamagrostis pickeringii*	T	S1	G4
	Screwstem	*Bartonia paniculata*	T	S1	G5
	Swarthy Sedge	*Carex adusta*	E	S2	G5
Natural Communities	Coastal Plateau Bog Ecosystem	Coastal plateau bog ecosystem		S3	GNR
	Jack Pine Woodland	Jack pine woodland		S3	G3G5
	Salt-hay Saltmarsh	Spartina saltmarsh		S3	G5

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.