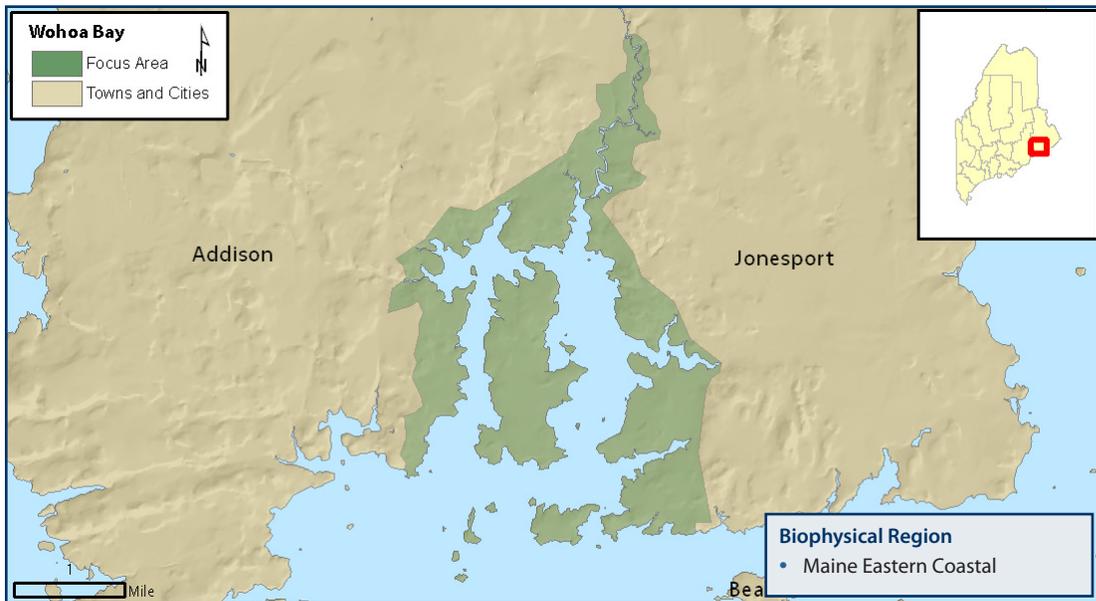
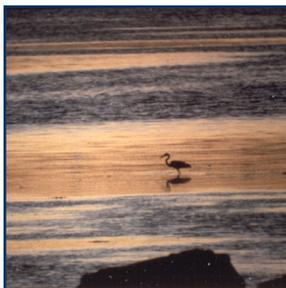


# Wohoa Bay



## WHY IS THIS AREA SIGNIFICANT?

The Wohoa Bay Focus Area includes expansive eelgrass beds and tidal mudflats that are highly productive for fish and shellfish and provide high quality habitat for wading birds and waterfowl as well as shorebirds. The focus area features a coastal plateau bog ecosystem, a peatland type that is found nowhere else in North America except for a narrow region along the eastern coast of Maine. Three rare animal species have been documented in the area, including the crowberry blue butterfly, which is restricted to coastal heathlands.

## OPPORTUNITIES FOR CONSERVATION

- » Encourage best management practices for forestry, vegetation clearing, and soil disturbance activities near significant features.
- » Identify and restore tidal restrictions and undersized culverts.
- » Limit use of pesticides, especially aerial spraying.
- » Maintain intact forested buffers along water bodies and wetlands.
- » Maintain natural hydrologic regime.
- » 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](http://www.beginningwithhabitat.org/toolbox/about_toolbox.html).

## Rare Animals

- Bald Eagle
- Crowberry Blue

## Rare and Exemplary Natural Communities

- Coastal Plateau Bog Ecosystem

## Significant Wildlife Habitats

- Inland Wading Bird and Waterfowl Habitat
- Tidal Wading Bird and Waterfowl Habitat
- Shorebird Areas

## Public Access Opportunities

- Crowley Island, Inner Goose Island, MDIFW
- Indian River Island, MBPL

*Photo credits, top to bottom: Maine Coast Heritage Trust, Rich Bard, Steve Walker, Paul Cyr, Maine Department of Inland Fisheries and Wildlife*



Wohoa Bay, Rich Bard

## FOCUS AREA OVERVIEW

Wohoa Bay is the dominant feature in this focus area, which encompasses Crowley Island and several miles of the Indian River. Extensive eelgrass beds and mudflats are found throughout the bay, in particular along the Indian River and around Crowley and Doyle Islands. Eelgrass beds form extensive underwater meadows in shallow bays and coves, and are among the most productive plant communities in the world. Mudflats are important for their production of marine worms, which provide critical feeding grounds for migratory birds and other species and include commercially harvestable bloodworms and sandworms.

In Wohoa Bay the eelgrass and mudflats serve as a nursery, habitat, and feeding area for many fish, waterfowl, wading birds, invertebrates, and other wildlife, including commercially valuable fish and shellfish. Most notably, nearly 1900 acres of **Tidal Wading Bird and Waterfowl Habitat** and over 1100 acres of **Shorebird Area** support huge numbers of waterfowl and shorebirds, including black duck, which feed and rest here during migration. Tidal mudflats and waterfowl and shorebird habitat are especially rich around Crowley Island, a 2-mile long island in the middle of Wohoa Bay.

Although Crowley Island is connected to the mainland by a bridge it is mostly undeveloped and hosts a large block of unfragmented coastal habitat. The uplands on Crowley Island provide breeding and nesting habitat for ruffed grouse, woodcock, and songbirds, as well as mammals such as moose, coyote, deer, and bear.

West Jonesport Heath, located along the eastern edge of the focus area, is a high quality example of a Coastal Plateau Bog Ecosystem.

## RARE AND EXEMPLARY NATURAL COMMUNITIES

**Coastal Plateau Bog Ecosystem:** This community type is restricted to the downeast coast of Maine and not found anywhere else in the United States. These unique peatlands have flat surfaces that are raised above the surrounding terrain, and are generally treeless or sparsely treed. Characteristic plants of coastal plateau bog ecosystems include deer-hair sedge (*Trichophorum cespitosum*), black crowberry (*Empetrum nigrum*), and baked-appleberry (*Rubus chamaemorus*). The latter two species reach the southern limits of their lowland habitats in the coastal plateau bogs, making this community more similar to plant communities found at higher latitudes of the

Northern Hemisphere. At the time the West Jonesport Heath was surveyed, it was determined to be the only coastal raised peatland in the U.S. with open peatland communities contiguous with a tidal marsh, and one of only three such communities in the U.S. that is subject to tidewater erosion.

### CHARACTERISTIC SPECIES

West Jonesport Heath supports a population of the rare **crowberry blue butterfly** (*Plebejus idas empetri*)—a species that uses black crowberry as its host plant and is only known from heathlands in eastern coastal Maine.

**Bald eagles** (*Haliaeetus leucocephalus*) nest on Inner Goose Island - one of the few locations within the focus area that is protected for conservation purposes. Bald eagles nest along sea coasts, inland lakes and major rivers. Breeding habitat includes large trees, primarily old white pines, in close proximity (less than one mile) to water where food is abundant and human disturbance is minimal. Bald eagles, once abundant in Maine, were nearly extirpated throughout their range because of widespread use of environmental contaminants.

The majority of the mudflats and intertidal areas in the focus area provide **Tidal Waterfowl and Wading Bird Habitat**. These areas provide undisturbed nesting habitat and undisturbed, uncontaminated feeding areas and are essential for maintaining viable waterfowl and wading bird populations. They also provide important **Shorebird Areas**. Shorebird Areas are important feeding and resting stop over sites for shorebirds on their long migrations.

High value **brook trout fisheries** are present in Gray's Brook, Lath Machine Brook, Lamsen Brook, Oxbow Brook, Joyville Brook, Long Creek, and Hicks Creek.

### CONSERVATION CONSIDERATIONS

- » Bald eagles are extremely sensitive to disturbance during their nesting season. Any activities near their nests or within their nesting territory during this period may cause nest failure or may even cause adults to abandon the nest. In general it is recommended that a 330-foot radius be left undisturbed around an eagle nest during any kind of land-clearing or timber harvest activity. Habitat protection within ¼ mile radius of a nesting site is another significant measure that can help support nesting eagles. Consult with a MDIFW biologist prior to planning any activity that may disturb the forest around an eagle nest.
- » Eelgrass is sensitive to losses due to disease, storms, sediments, ice damage, dredging, shellfishing, propeller damage, pollution, nutrient enrichment, runoff, jet skis, and inboard and outboard motors. In 1931-1932, a wasting disease decimated 90% of the eelgrass in the North Atlantic. Mussel dragging can pose severe and long lasting threats to eelgrass beds; it takes an average of 11 years for eelgrass in dragged areas to grow to 95% cover in undisturbed beds.

### Ecological Services of the Focus Area

- Cleans water running off land prior to discharge into ocean.
- High quality habitat for waterfowl, wading birds, moose, and other wildlife.
- Major migratory stopover, feeding, breeding and roosting area for myriad bird species.
- Nursery for juvenile fish and shellfish.
- Nutrient export to marine food webs.

### Economic Contributions of the Focus Area

- Acts as protective buffer for storm surge.
- Attracts tourism for wildlife observation, boating, hunting, and fishing.
- Contributes to recreational value of the area by protecting water quality, fisheries, and wildlife habitat.

Eelgrass is a key indicator for assessing nitrogen loading as it will rapidly decline due to shading by algae overgrowth.

- » Excessive and poorly planned shoreline development can have adverse impacts on estuarine habitat through increased nutrient loads, siltation, and loss of a habitat buffer.
- » Seawalls and other shoreline stabilization techniques (e.g. riprap) can disrupt sediment inputs from natural erosion processes resulting in alterations to the sediment structure. This can adversely affect species composition and the productivity of mudflats.
- » This area includes Significant Wildlife Habitat for waterfowl and wading birds and for shorebirds. Both land managers and private landowners should follow best management practices with respect to forestry activities in and around wetlands, shoreland areas, and Significant Wildlife Habitat. Maintaining wide forested buffers along all lakes, rivers, streams, and wetlands will provide valuable riparian habitat for many wildlife species.
- » The integrity of the marsh community is dependent on the maintenance of the tidal hydrology in a natural condition. 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.

- » The integrity of wetlands and aquatic systems including all the processes and life forms they support are 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. Improperly sized crossing structures such as culverts can impede movement of fish and aquatic invertebrates effectively fragmenting local aquatic ecosystems and ultimately leading to local extirpation of some species. Future management activities should avoid additional impacts to the site's hydrology.
- » Marine worm landings have declined overall since the 1950s. 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. Smaller worms should be left to mature and reproduce in order to rebuild or sustain the population. In addition, many of these

smaller worms perish before they can be used for bait, and are unattractive to dealers. Marine worms are sensitive to losses from pollution and dredging, and diggers believe that intertidal mussel dragging is ruining worm habitat. A license is required to dig more than 125 per day.

- » 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.
- » 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.



Wohoa Bay, Rich Bard

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For more information about Focus Areas of Statewide Ecological Significance, including a list of Focus Areas and an explanation of selection criteria, visit [www.beginningwithhabitat.org](http://www.beginningwithhabitat.org)

**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	<i>Haliaeetus leucocephalus</i>	SC	S4B,S4N	G5
	Crowberry Blue	<i>Plebejus idas empetri</i>	SC		
Natural Communities	Coastal Plateau Bog Ecosystem	<i>Coastal plateau bog ecosystem</i>		S3	GNR

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.