

# Salt Bay



## WHY IS THIS AREA SIGNIFICANT?

The Great Salt Bay stands out as an area of exceptional ecological value and productivity. The entire bay contains Tidal Wading Bird and Waterfowl Habitat, and it boasts an impressive variety of species that both migrate through and forage in the waters and shores of the bay. The flats between Glidden Point and Damariscotta Mills serve as an important Shorebird Area. Shellfish and marine worms also have important habitat here.



## 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 homeowners to maintain adequate vegetated buffers along the shoreline.
- » Monitor and remove invasive plants and animals.
- » Identify opportunities for removing dams, tidal restrictions, and undersized culverts.
- » Educate recreational users about the ecological and economic benefits provided by the focus area.

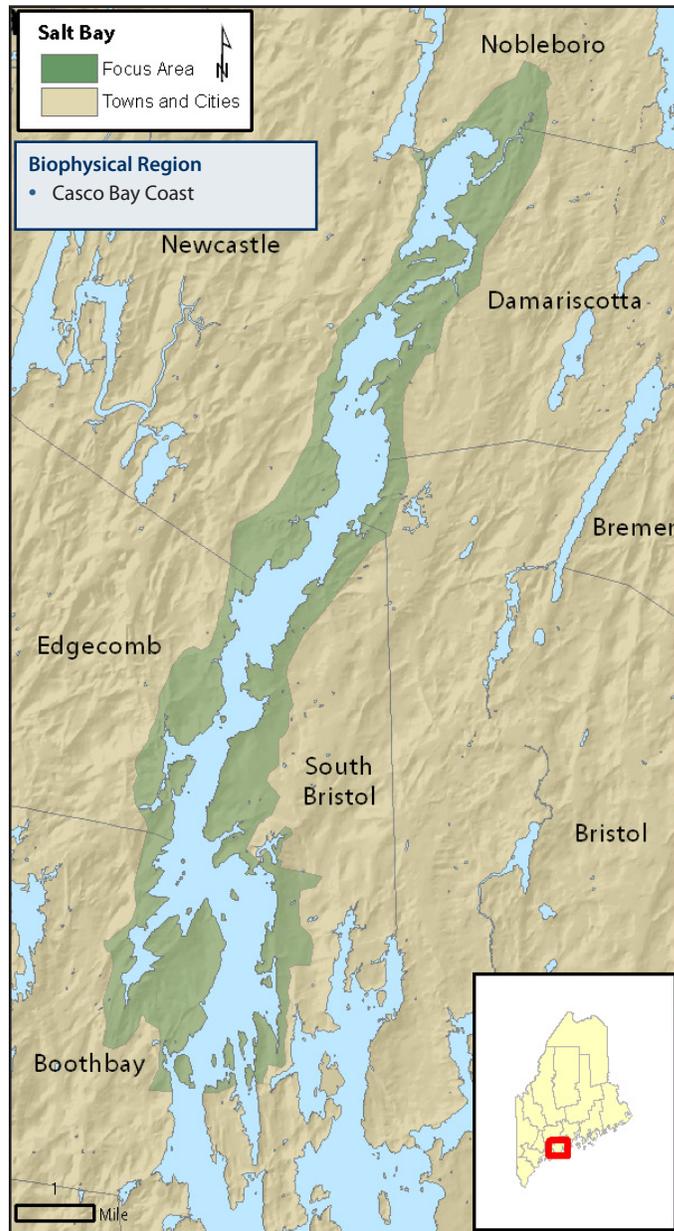


For more conservation opportunities, visit the Beginning with Habitat Online Toolbox: [www.beginningwithhabitat.org/toolbox/about\\_toolbox.html](http://www.beginningwithhabitat.org/toolbox/about_toolbox.html).



### Public Access Opportunities

- » Dodge Point, MBPL
- » Sherman Lake WMA, MDIFW



### Rare Animals

Bald eagle

### Significant Wildlife Habitats

- Inland Wading Bird and Waterfowl
- Tidal Wading Bird and Waterfowl
- Shorebird Areas
- Deer Wintering Areas

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Glidden Point, Jim Connolly

## FOCUS AREA OVERVIEW

The Salt Bay Focus Area encompasses the Damariscotta River Estuary from Fort Island upstream to a narrow constriction at the reversing falls of the twin villages of Damariscotta and Newcastle. It also includes the Great Salt Bay, which lies upstream of the reversing falls and extends up to Damariscotta Mills.

The Damariscotta River Estuary below the reversing falls is a drowned river valley that is generally lined by steeply wooded terrain with an increasing number of residential units along Route 129 to the east and River Road to the west.

## CHARACTERISTIC SPECIES

High concentrations of **marine worms** are located at Pleasant Cove and Salt Marsh Cove on the west and Huston Cove on the east. These worms live in muddy and sandy habitats along the coast that are also economically valuable for shellfish and ecologically critical as feeding grounds for migratory birds and other species. Marine worms in Maine include commercially harvestable bloodworms and sandworms. Although populations and landing numbers have fluctuated over the years, marine worm landings have declined overall since the 1950s.

The Damariscotta River once fostered prodigious numbers of naturally occurring oyster beds as evidenced by the massive shell middens left behind by native peoples. Natural changes in salinity associated with sea-level rise extirpated these populations, but today the Damariscotta River estuary supports an important **shellfish** aquaculture industry with oysters as the primary species under cultivation. Soft-shell clams are also harvested at several locations along the river.

Eelgrass beds are abundant and widespread in Great Salt Bay. **Eelgrass** (*Zostera marina*) forms extensive underwater meadows in shallow bays and coves, tidal creeks, and estuaries. It is a flowering plant that reproduces by seed and by vegetative growth. Eelgrass beds are among the most productive plant communities in the world, and they are ecologically important because they serve as a nursery, habitat, and feeding area for many fish, waterfowl, wading birds, invertebrates, and other wildlife, including commercially valuable fish and shellfish. Eelgrass reduces water pollution by absorbing nutrients, and it dampens wave energy and slows currents, which helps stabilize sediments and buffer shorelines. Because of its important ecological functions, loss of eelgrass beds can result in reduced fish and wildlife populations, degraded water quality,



Salt Bay, Jim Connolly

and increased shoreline erosion.

Great Salt Bay is used by a variety of **diadromous fish**. Diadromous fish are species that use both marine and freshwater habitats during their life cycle. Great Salt Bay is recognized for the large population of alewives that pass through on their way to Damariscotta Lake. The lake lies approximately 50 feet above the bay at Damariscotta Mills, and a fish ladder constructed in the 1800's allows the alewives passage into the lake to spawn. Historically, the Damariscotta River alewife fishery was the largest in the state and recent improvements to the fish ladder by local conservation groups has enhanced the upstream migration of this species. Not surprisingly, the spring alewife run attracts a variety of bird species that prey on fish including osprey and bald eagles.

**Bald eagle** nest sites are scattered throughout the focus area, and one area with a particularly high concentration is Damariscotta Mills. Bald eagles (*Haliaeetus leucocephalus*) 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. Due to a wide variety of efforts, bald eagles have now made a dramatic recovery. In 2009 bald eagles were removed from the Threatened and Endangered species list. They are now listed as Special Concern. Management will continue to ensure that declines of the past are not repeated, and that habitat and a clean environment persist to promote population growth and expansion. Bald eagles and their nest sites continue to receive protections from the USFWS under the Bald and Golden Eagle

#### Ecological Services of the Focus Area

- Provides high levels of biodiversity and productivity.
- Serves as migratory stopover for birds.
- Provides habitat for fish and shellfish.
- Supports eelgrass and associated eelgrass values.

#### Economic Contributions of the Focus Area

- Attracts tourism for wildlife observation, paddling, hunting, and angling.
- Supports local marine resource industries
- Contributes to recreational value of the area, including nearby coastal areas, by protecting water quality, fisheries, and wildlife habitat.
- Provides scenic vistas that raise property values.
- Provides valuable open space for local residents.

Protection Act.

The Great Salt Bay also hosts one of the best breeding locations for horseshoe crabs in the state. **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. Spawning occurs in late spring on protected sandy beaches at high tides of the new and full moon. Males arrive first and await the females who will lay up to 80,000 eggs in a spawning season, less than 10 of which will reach adulthood. Horseshoe crabs feed primarily on clams and worms, and in turn are fed upon by shorebirds, crabs, gastropods, many fish species, and sea turtles. Shoreline development and subsequent habitat degradation is a potential threat to Maine populations. Maine's small populations have generally been overlooked for commercial and pharmaceutical uses. If they were harvested for commercial purposes these small populations would likely be depleted. In 2003, taking and possession of horseshoe crabs became prohibited in Maine.

Many of the coves, mudflats and intertidal areas provide valuable **Tidal Wading Bird and Waterfowl Habitat** and serve as important undisturbed foraging areas for numerous bird species. Salt Bay also serves as a **Shorebird Area**, an essential stopover site for migrating shorebirds.

#### CONSERVATION CONSIDERATIONS

- » The bay will benefit from establishing and/or maintaining vegetative buffers around its perimeter wherever possible. A buffer of 250 feet or more will limit impacts from adjacent development, help prevent erosion, provide habitat for

- numerous species that depend on the bay, limit opportunities for colonization of invasive species, and prevent reckless impacts from off-road vehicle use.
- » 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 for removal.
  - » Agricultural runoff, shoreline development, and aquaculture should be managed to minimize disruption of nutrient cycling in the bay.
  - » 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. Eelgrass is a key indicator for assessing nitrogen loading as it will rapidly decline due to shading by algae overgrowth.
  - » 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.
  - » Improperly sized culverts and other stream crossing structures can impede movement of fish and aquatic invertebrates effectively fragmenting local aquatic ecosystems and ultimately leading to local extirpation of some species. Barriers to diadromous fish passage threaten productive fisheries and in turn may have impacts on other species like bald eagles that feed on them. Dam removal or the installation of man-made fishways can help to alleviate this threat. Future management should maintain or restore the sites natural hydrology.
  - » Shoreline development and subsequent habitat degradation are potential threats to Maine small populations of horse-
- shoe crab. Though generally been overlooked as a resource, horseshoe crabs in Maine are vulnerable to depletion from any harvesting activities. In 2003, taking and possession of horseshoe crabs became prohibited in Maine.
- » Water quality changes such as changes in salinity, temperature, turbidity, or physical properties of the water can negatively affect habitat for species.
  - » Point and non-point sources of pollution can change faunal communities in tidal communities. Oil spills can destroy or significantly disrupt functioning systems.
  - » Direct alteration of habitat through filling, dredging, dragging, or other major human disturbances can alter floral and faunal communities and disrupt complex food webs.
  - » 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. Contact MDIFW for more information and to assist with designing projects in or adjacent to these areas.
  - » 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.



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**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

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.