

Cobscook Bay



WHY IS THIS AREA SIGNIFICANT?

Cobscook Bay has the highest density of nesting bald eagles in the northeastern United States. The bay's waters are exceptionally productive and host a high diversity of plant and animal species. In Cobscook Bay, the tide rises and falls an extraordinary 24 feet. Each tide brings a fresh supply of nutrients from the ocean. The nutrients support growth of seaweeds and algae, which are eaten by shellfish and other animals. During spring and fall migrations, thousands of shorebirds use Cobscook Bay as a stopover for resting and feeding.

OPPORTUNITIES FOR CONSERVATION

- » Work with willing landowners to permanently protect key areas of undeveloped shoreline.
- » 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.

Rare Plants

Gaspé Arrow-grass
Salt Marsh Sedge

Rare Animals

Bald Eagle
Harlequin Duck
Mystery Vertigo
Purple Sandpiper

Rare and Exemplary Natural Communities

Dune Grassland
Salt-hay Saltmarsh

Significant Wildlife Habitats

Tidal Wading Bird and Waterfowl Habitat
Inland Wading Bird and Waterfowl Habitat
Shorebird Area
Seabird Nesting Island

Photo credits, top to bottom: Bill Silliker, Ron Logan, Ron Logan, The Nature Conservancy, Ron Logan



The Cobscook Bay Focus Area is renowned for its biodiversity and highly productive waters. *The Nature Conservancy*

FOCUS AREA OVERVIEW

The Cobscook Bay Focus Area encompasses the tidal waters of Denny's Bay, Whiting Bay, Straight Bay, Pennamaquan River, and East Bay, and the adjacent shoreline. Cobscook Bay is a hydrologically and geologically complex estuary with high levels of biodiversity and productivity. Human impacts on the ecosystem are relatively low. Unlike most Maine estuaries, Cobscook Bay receives a relatively small amount of fresh water from land in comparison to the amount of salt water brought by the tides.

Cobscook Bay experiences unusually large tides, which bring nutrient-rich water from the Gulf of Maine. Higher concentrations of nutrients in the tidal water stimulate growth of seaweeds and phytoplankton in the Bay. In turn, blooms of phytoplankton provide food for bottom-dwelling shellfish, marine worms, and other important invertebrates. Cobscook Bay is also notable for its diversity of intertidal invertebrates, including multiple species normally found in subarctic waters.

Due in part to the abundance of fish and marine invertebrates, Cobscook Bay is an important habitat for birds. Each fall, thousands of shorebirds visit Cobscook Bay for several weeks during their southerly migration from northern breeding sites, attracted by excellent foraging and roosting habitat. During the winter, the bay's convoluted shoreline and strong tidal flow

keep it relatively free of ice, making it attractive to waterfowl such as black ducks and Canada geese. In certain winters, up to 25% of the black duck population in Maine may be found in Cobscook Bay.

Cobscook Bay has more nesting pairs of bald eagles per square mile than anywhere else in Maine. For this reason, Cobscook Bay has played a key role in restoring eagle populations in the northeast United States. Alewives are an important food source for eagles in Cobscook Bay. Once abundant, alewives are recognized increasingly as playing a key role in the bay's ecosystem. Efforts are underway to return alewives to their former spawning grounds in the Pennamaquan River, Little River, and Boyden Stream.

Public Access Opportunities

- » Cobscook Bay State Park
- » Shackford Head State Park
- » Cobscook Bay Wildlife Management Area
- » Tide Mill Farm
- » Moosehorn National Wildlife Refuge
- » Reversing Falls Town Park



Low tide in Cobscook Bay. *Ron Logan*



The same view at high tide. *Ron Logan*

CONSERVATION CONSIDERATIONS

- » Work with willing landowners to permanently protect key areas of undeveloped shoreline.
- » 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.
- » Rockweed harvesting should be managed in a way that provides sufficient protection for the many fish and invertebrate species that rely on rockweed beds for food and shelter.
- » Prevention and containment of oil spills should be a priority in order to protect the biodiversity of Cobscook Bay.
- » Whenever possible, dams and other structures hindering fish passage should be removed to provide passage of alewives and other anadromous fish and to help species such as the bald eagle that feed on anadromous fish. Installation and proper maintenance of manmade fishways can also help.
- » The green crab, which is an invasive species, has increased dramatically in abundance in Cobscook Bay. It threatens the viability of some shellfish such as clams, which are especially vulnerable as juveniles to being eaten by green crabs.
- » Agricultural runoff, shoreline development, and aquaculture should be managed to minimize addition of nutrients of cycling in the bay.



Cobscook Bay is an important stopover for migrating shorebirds. *Bill Silliker*

Ecological Services of the Focus Area

- High levels of biodiversity and productivity
- Migratory stopover for birds
- Habitat for fish and shellfish

Economic Contributions of the Focus Area

- Attracts tourism for wildlife observation, paddling, hunting, and angling
- Supports local marine resource industries
- Provides scenic vistas that raise property values
- Valuable open space for local residents

- » Activities that could harm water quality in first-order streams that drain to Cobscook Bay should be avoided to best protect the economic and ecological values of the bay.

RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES OF THE FOCUS AREA

	Common Name	Scientific Name	State Status*	State Rarity Rank	Global Rarity Rank
Animals	Harlequin Duck	<i>Histrionicus histrionicus</i>	T	S2S3N	G4
	Mystery Vertigo	<i>Vertigo paradoxa</i>	SC	SNR	G3G4Q
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	S4B,S4N	G5
Plants	Gaspé Arrow-grass	<i>Triglochin gaspensis</i>	SC	S2	G3G4
	Salt Marsh Sedge	<i>Carex vacillans</i>	E	S2	GNR
Natural Communities	Dune Grassland	<i>Dune grassland</i>		S2	G4?
	Salt-hay Saltmarsh	<i>Spartina saltmarsh</i>		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) or because some aspect of its biology makes it especially vulnerable to extirpation.
- 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.