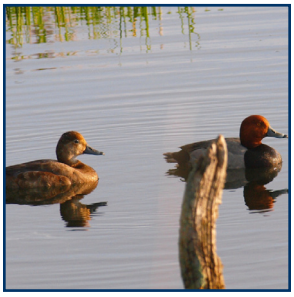
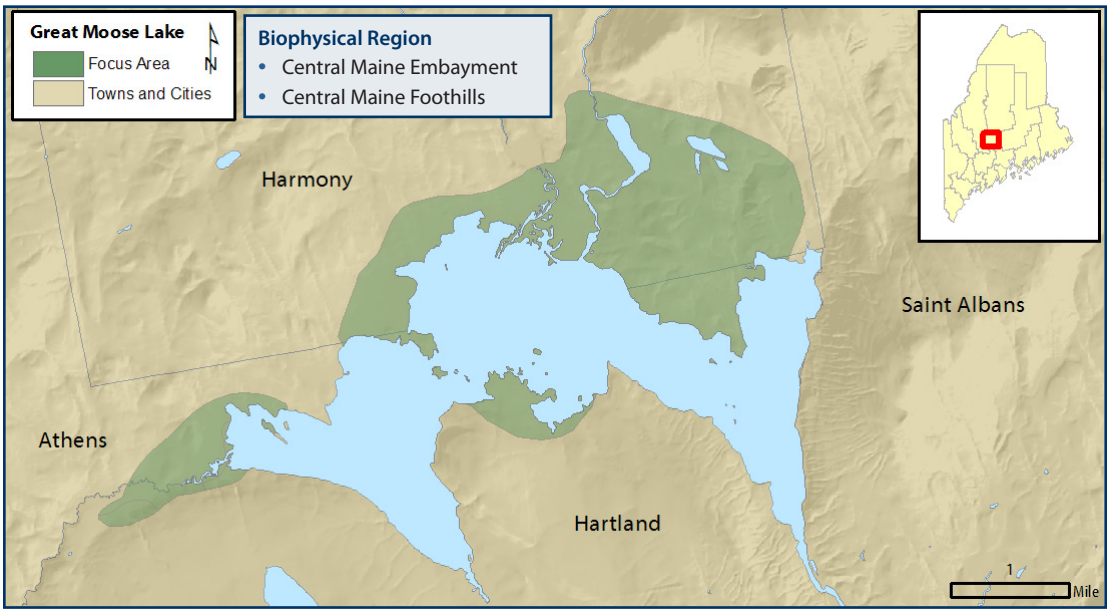
Beginning with HABITAT

Focus Areas of Statewide Ecological Significance

Great Moose Lake





WHY IS THIS AREA SIGNIFICANT?

Great Moose Lake Focus Area supports at least three different rare species, including some of the best habitat statewide for the black tern and regionally for the bald eagle. An uncommon floodplain forest community is present here as well as high quality habitat for waterfowl and wading birds and wintering deer. Great Moose Lake also provides a popular fishery.

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.
- » Maintain natural hydrology and water levels.
- » Encourage landowners to maintain enhanced riparian buffers.
- » Encourage town planners to improve approaches to development that may impact focus area functions.
- » Work with willing landowners to secure permanent conservation status for unprotected significant features in the focus area.

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
Black Tern
Tidewater Mucket

Rare Plants
None Documented

Rare and Exemplary Natural Communities
Silver Maple Floodplain Forest

Significant Wildlife Habitats
Deer Wintering Area
Inland Waterfowl and Wading Bird Habitat

Public Access Opportunities

- » Boat launches located off Pickerel Cove Road and Great Moose Drive

Silver Maple Floodplain Forest, Maine Natural Areas Program

FOCUS AREA OVERVIEW

The shores and waters of Great Moose Lake provide habitat for at least three rare animals as well as an uncommon floodplain forest community. Black terns, known from only a dozen sites in Maine, have been documented as nesting here consistently since 1988. The Pickerel Cove population is one of the most viable nesting populations in the state, with 12-15 nesting pair common. One of the most optimal bald eagle habitats in the Sebasticook watershed is present in the Great Moose Lake Focus Area. Bald eagles have nested on Round Island and the shallow cove south of it every year since 1994 and eagles often perch and forage along the wooded point on the northwest side of The Narrows. A few individuals of the tidewater mucket, a rare mussel, have been found near the Narrows; it may occur elsewhere in the lake as well. The lake also provides excellent habitat for wading birds and waterfowl. Furthermore, a silver maple floodplain forest extends along Higgins and Fergusson Brooks to the north shore of the lake. Silver maple hardwood floodplain forests are rare in Maine, and are typically found on larger rivers.

RARE AND EXEMPLARY NATURAL COMMUNITIES

Silver Maple Floodplain Forests are dominated by silver maple (>60% cover). Associates include red maple and American elm (up to 30% cover) or, in a few locations, bur oak (up to 25% cover). Widely spaced trees, many with multiple trunks, give a park like feeling. The understory is open and shrubs are sparse. Musclewood may be present and is a good indicator. The lush carpet of herbs changes from spring ephemerals such as trout lilies and bloodroot to dense fern cover in summer. Bryoid cover is minor. Some forests have a berm adjacent to the river channel, and herbaceous species composition here is different from the lower elevation interior of the floodplain.

Silver Maple Floodplain Forests occur on the plains of low-gradient rivers where seasonal floods regularly deposit fine sand and silt. The resulting high nutrient levels often support a rich display of spring ephemerals, along with a dense herbaceous layer dominated by sensitive fern and, locally, ostrich fern. The isolated pools, oxbows, and river channels associated with floodplain forests provide excellent habitat for multiple wildlife species such as turtles, amphibians, and waterfowl.

Although a number of sites have been cleared or pastured in the past, current shoreland regulations provide increased protection to a number of these sites. Exotic plant species such

as Japanese knotweed, which may displace those native to our area, also represent a threat to the integrity of these forests and have degraded some Maine examples. Several of the known examples are formally protected from conversion.

Northern waterthrush, barred owl, belted kingfisher, bank swallow, and green heron are associates of this community type. In the southern part of the state, the Louisiana waterthrush and yellow-throated vireo are likely associates if the canopy is closed or nearly so. Rare turtles like wood, spotted, and Blanding's turtles may feed on amphibian egg masses present in isolated pools within such forests. Wood turtles overwinter in river channels and forage in floodplain forests. The silver-haired bat often roosts in riparian habitats in trees with loose bark.

CHARACTERISTIC SPECIES

The Great Moose Lake Focus Area contains one of the most viable nesting populations of black tern in the state. **Black terns** *(Chlidonias niger)* nest exclusively in large (over 40 acres) shallow freshwater emergent marshes associated with lakes, impoundments, or slow moving streams. They construct their nests on floating mats of dead vegetation or small mudflats and, therefore, fluctuating water levels and nest and chick predation are significant threats to the species. Maintaining stable water levels in impoundments, using floating nest platforms and employing measures to deter predators may help sustain black tern populations. Black terns are listed as Endangered in Maine.

Tidewater mucket *(Leptodea ochracea)* is a freshwater mussel listed as Threatened in Maine. The tidewater mucket is known from only a handful of river drainages in the state including the Merrymeeting Bay, St. George, lower Kennebec and the lower Androscoggin river drainages. Freshwater mussels like the tidewater mucket require clean water and certain flow and substrate conditions. They also have a unique life cycle that depends on specific fish species as larval hosts. Maine plays an important role in the conservation of freshwater mussels. With some of the most unspoiled aquatic ecosystems in eastern North America, Maine has some of the most significant remaining populations of several nationally rare freshwater mussel species. Maintaining water quality and undisturbed aquatic habitats is essential to maintaining these species.

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. With bans on the use of these contaminants and habitat protection measures, bald eagles have made a tremendous recovery. In 2009 they were removed from the state Endangered Species list. They remain listed as Special Concern. Bald eagles and their nests are protected by the U.S. Fish and Wildlife Service under the Bald and Golden Eagle Protection Act.

Ecological Services of the Focus Area

- Provides nutrient export
- Contributes to regional biodiversity
- Provides high quality habitat for waterfowl, wading birds, moose, and other wildlife.

Economic Contributions of the Focus Area

- Serves as a scenic viewshed
- Recharges groundwater
- Provides high value forest products that support the regional economy
- Provides opportunities for recreational boating and fishing

Tidewater Mucket, Ethan Nedeau

The larger wetlands and open water areas in the focus area provide more than 1200 acres of important **Inland 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. Two **Deer Wintering Areas** have also been identified within the focus area. Deer congregate in wintering areas which provide reduced snow depths, ample food and protection from wind.

In addition, the 3,584 acre Great Moose Lake provides diverse **high quality fisheries** including stocked brook trout and

brown trout, cusk, landlocked salmon, largemouth bass, smallmouth bass, chain pickerel and white perch.

CONSERVATION CONSIDERATIONS

» Conservation easements and/or fee acquisition would be appropriate land protection vehicles here, for example on Round Island, where easement or fee acquisition could be important in maintaining its suitability for eagles in the long term. For most of the Great Moose Lake Focus Area, efforts to maintain or improve the water quality within the watershed are equally important.

» The integrity of wetlands and the processes and life forms they support including rare plants and animals are dependent on the maintenance of the current hydrology and water quality of the site. 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 activity should avoid additional impacts to the site's hydrology.

» Freshwater mussels are sensitive to contaminants and changes in water quality and benthic habitat. Maintenance and/or improvement of habitat integrity via protection of riparian buffers is important. Any activities that may potentially degrade water quality or negatively alter habitat type (including substrate, flow rate, water levels) should be avoided. A minimum of 250-foot contiguous, forested buffer is recommended on waterways that provide habitat for rare, threatened, and endangered mussel species. Likewise, because larval freshwater mussels require a specific fish host, activities that may result in changes to the fish community or prevent access by fish should be avoided. When designing projects near known rare mussel habitat consult with an MDIFW biologist to assist with planning, and refer to the Maine Forest Service's Forestry Best Management Practices handbook or the Maine Department of Environmental Protection's Maine Erosion and Sediment Control Recommendations.

» Timber harvest in the floodplain forest would degrade its qualities as an exemplary natural community. Where timber harvest or development continues, buffers should be maintained around all wetlands and ponds. While different species can have different buffering requirements, wider buffers provide better protection for riparian and wetland-dependent species. Better protection will be afforded to the wetlands and ponds if as little alteration as possible occurs within 250' of the wetland/upland border. Any timber harvesting within and adjacent to wetlands or adjacent to ponds should be implemented with strict adherence to Shoreland Zoning guidelines and Maine Forest Service Best Management Practices.

» 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 of appropriate techniques for removal. For more information on invasive plants visit: http://www.maine.gov/doc/nrimc/mnap/features/invasives.htm.

» Prior to land development or forest harvesting near black tern habitat, consult with a MDIFW biologist to assist with planning. Towns and landowners are encouraged to protect these areas with a 250 foot buffer that will preserve water quality, wetland functions and limit habitat disturbance.

» Monitoring recreational use will be an important component of conservation as well. Motorboat traffic should be discouraged near nesting sites for both bald eagles and black terns and no wake zones should be established around tern nesting areas.

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
	Black Tern	*Chlidonias niger*	E	S2B	G4
	Tidewater Mucket	*Leptodea ochracea*	T	S2	G3G4
Plants	None Documented				
Natural Communities	Silver Maple Floodplain Forest	SIlver Maple Floodplain Forest		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.