

## **Scarborough Marsh Focus Area**

Scarborough and Old Orchard Beach, Maine

***Description:***

Scarborough Marsh is the largest contiguous tidal marsh system in the state of Maine. This 3000 plus acre system of tidally influenced marshes along with several other closely associated freshwater wetlands is located south of Portland, in the towns of Scarborough and Old Orchard Beach. The marsh is at the terminus of a small watershed of approximately 58 square miles and is divided into five principle lobes by the adjacent uplands and the associated drainage channels of several rivers and creeks (see color infrared aerial photo p. 2). Approximately 95% of the salt marsh (2965 acres) is currently owned by the Maine Department of Inland Fisheries and Wildlife (MDIFW).

Scarborough Marsh is designated as a Class A Marine Wildlife Habitat and as a Shorebird Feeding and Roosting Area by the MDIFW. The marsh along with adjacent upland is a mosaic of 16 habitat types. The marsh has also been documented as an exemplary salt hay salt marsh by the Maine Natural Areas Program (MNAP) and includes a small, exemplary pitch pine bog on the northwest side. The Scarborough Beach area is also included within the



Spartina saltmarsh (picture from MNAP files)

focus area and has two exemplary natural community types; dune grassland and pitch pine dune woodland. Descriptions of all these features are listed below.

**Spartina saltmarsh** or salt hay saltmarsh is abundant throughout Scarborough marsh. These large areas are dominated by expanses of saltmeadow cordgrass, smooth cordgrass, and black-grass. Shrubs are virtually absent. Saltmeadow cordgrass gives a meadow-like appearance over much of the marsh; at slightly higher elevations within the marsh, black-grass is dominant, and along creeks or at slightly lower elevations smooth cordgrass is dominant. Salt pannes are abundant and often support widgeon grass. Seaside goldenrod and sea-lavender are found at the upper tidal fringe. Populations of two rare plant species occur in the marsh, dwarf glasswort and seaside gerardia.



Color infrared aerial photo of Scarborough Marsh from August 8, 1991.

The **Pitch pine bog** is a sparsely forested peatland in which the dominant tree species are pitch pine and red maple. The shrub layer likewise indicates the more southerly affinities of the pitch pine bog community type, with maleberry, nannyberry, and highbush blueberry common. Cinnamon fern is the most abundant plant in the herb layer. Peat or sphagnum mosses cover the ground and form the substrate. The pitch pine bog at this site is located between the eastern and western tributaries of Mill Brook, and is west of Winnocks Neck and east of Willowdale golf course.

**Dune Grassland** is dominated almost exclusively by dune grass with very few other thinly scattered species. Dune grass is the anchor that helps keep the highly exposed sand dune formation in place. Dune grass needs actively accreting sand to survive and will die off if not stimulated to grow by shifting sand. Generally, the very front and back areas of the dunes are transition areas that support a small number of other characteristic plant species. Much of the original dune grassland occurring along this section of the coast is now heavily developed. Dunes and fore dune areas are essential habitat for the Federally Threatened piping plover and the State Endangered least tern. The dunes here also support a population of the rare plant sea-beach sedge. All the remaining viable areas of dune grassland should be preserved and managed as a sensitive natural area. All areas of sand dunes should be posted with signs indicating their fragile nature and regular crossing areas should be well defined and managed to prevent erosion of the dunes.

**Pitch pine dune woodlands** are generally located on the land-ward side of dune grasslands. The dry acidic sand soils typical of these sites are nutrient poor and make for difficult growing conditions. Dune woodlands are characterized by scattered stunted pitch pines, with occasional gray birch and red maple. The understory includes heath shrubs such as bayberry, sheep laurel, and lowbush blueberry. Herb species are scarce and the ground is often covered with carpets of sedges, grasses, and moss. More recently disturbed areas may have patches of lichens and beach heather beneath the spotty canopy. This community type is only found in the south coastal region of the state and like dune grasslands, has been severely impacted by development of shore front properties. It is currently only known from four isolated locations.

Data has not been collected for all the community types at Scarborough marsh, nor has this site been thoroughly surveyed for these features or for rare plant and animal species.

***Rare Species/Natural Community Table for Scarborough Marsh:***

Common Name	Latin Name	Status	S-Rank	G-Rank
<b>Exemplary Natural Communities</b>				
Dune grassland		n/a	S2	G4?
Pitch pine bog		n/a	S1S2	G3G5
Pitch pine dune woodland		n/a	S1	G2G3
Spartina Saltmarsh		n/a	S3	G5
<b>Rare Plants</b>				
Saltmarsh false-foxglove	<i>Agalinis maritima</i>	SC	S3	G5
Sea-beach sedge	<i>Carex silicea</i>	SC	S3	G5
Dwarf glasswort	<i>Salicornia bigelovii</i>	SC	S1	G5Q
<b>Rare Animals</b>				
Saltmarsh sharp tailed sparrow	<i>Ammodramus caudacutus</i>	SC	S3B	G4
Seaside sparrow	<i>Ammodramus maritimus</i>	No status	S1?B	G4
Piping plover	<i>Charadrius melodus</i>	E	S2B	G3
Common moorhen	<i>Gallinula chloropus</i>	SC	S2S3B	G5
Least bittern	<i>Ixobrychus exilis</i>	SC	S2B	G5
Least tern	<i>Sterna antillarum</i>	E	S1B	G4
Brown snake	<i>Storeria dekayi</i>	SC	S3	G5
New England cottontail	<i>Sylvilagus transitionalis</i>	SC	S2	G4

\*see last page for explanation of ranks

***Other Resources Mapped by MDIFW:***

Deer Wintering Area  
Piping Plover / Least Tern Essential Habitat  
Shorebird Roosting and Feeding Areas  
Tidal Wading Bird / Waterfowl Habitat  
Wading Bird Waterfowl Habitat

**Conservation Considerations:**

- Nearly all areas mapped as exemplary natural communities and all known populations of rare plants are contained within existing conservation lands.
- Natural Communities still occurring on the uplands adjacent to the marsh including upland forests, pine barrens, shrub swamps, forested swamps, and sand dunes should be conserved as part of the greater ecosystem of the marsh. Long term preservation of the biodiversity of a high value natural area such as Scarborough Marsh will be best affected by retaining as much of the surrounding natural landscape as possible.

- The marsh system will benefit from establishing and/or maintaining vegetative buffer around its perimeter where ever possible. The marsh and the life it supports are not independent of the landscape in which they occur. A buffer of 250 feet or more will serve to limit impacts from adjacent development, help prevent erosion, provide habitat needed by numerous species that depend on the marsh, limit opportunities for colonization of invasive species, and prevent reckless impacts from off road vehicle use.
- The integrity of the marsh and the processes and life forms it supports are dependent on the maintenance of the tidal hydrology in a natural condition. The hydrology of the marsh, and subsequently its sedimentation patterns, have been and are currently being impacted by the following; culverts which restrict tidal flow on several creeks, dredging of the channel for boat usage, and past ditching. 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. Channel dredging may cause erosion of adjacent marsh banks and disrupt natural sedimentation patterns in the lower marsh. Future management should prohibit additional impacts to the hydrology of the marsh.
- Scarborough Marsh has been disturbed by a rail line crossing, a pipeline crossing, and several road crossings. Disturbances to the hydrology, soils, and natural vegetation in or adjacent to the marsh can create opportunities for colonization by invasive plant species such as common reed (*Phragmites australis*). Common reed is already well established in several areas where tidal constrictions may be affecting the hydrology. Local groups with an interest in the marsh should be made aware of the potential threat of invasive plants and keep an eye out for them before they become well established.
- Care should be taken to insure that boating in the channels and mouth of the marsh doesn't cause erosion to the exposed soils along the marsh edge, and that excessive noise from boats and people do not disrupt normal patterns of wildlife behavior.
- No dredge spoils or other fill materials should be placed in the marsh.
- Scarborough and adjacent towns have experienced rapid growth in the last decade, and many upland areas adjacent to the marsh are under increasing threat. Unmanaged growth and sprawl can contribute to habitat fragmentation, expansion of invasive plant species, and water quality degradation through pollution from storm water runoff and private sewage systems.

***Protection Status:***

The Scarborough Marsh focus area includes substantial conservation ownership by MDIFW. However, most of the conservation ownership is of the salt marshes, the majority of the uplands buffering the marshes as well as the upland mosaics of forests and freshwater wetlands are in non-conservation private ownership.

### STATE RARITY RANKS

- S1** Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- 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.

**Note:** **State Ranks** are determined by the Maine Natural Areas Program.

### GLOBAL RARITY RANKS

- G1** Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- 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.

**Note:** **Global Ranks** are determined by The Nature Conservancy.

### STATE LEGAL STATUS FOR PLANTS

**Note:** State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's endangered and threatened plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

- 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 considered Threatened or Endangered.

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<http://www.state.me.us/doc/nrimc/mnap/factsheets/mnapfact.htm>