

## Land of Many Grasses

Scarborough Marsh is Maine's largest salt marsh, a 3,100-acre estuary lying where the Dunstan and Nonesuch rivers meet and mix with salt water from the ocean. The Native Americans could not have been more descriptive when they named this marsh Owascoag, Land of Many Grasses.

Aside from aesthetic and recreational value, this wetland is of great ecological importance. Microscopic bacteria break down organic matter into nutrients (detritus) that are washed out to sea for use by ocean-dwelling animals. Some detritus remains in the marsh where small animals feed on it. They, in turn, are preyed upon by birds and fish that support predators such as hawks, foxes, otters, and humans. In total, 70 percent of commercially valuable fish and shellfish depend upon salt marshes.

Marshes absorb excess water during storms and filter the water passing through them. They also provide nesting habitat and an essential stopover for migrating birds.

### Enjoy your walk through this natural treasure!

#### STATION 1

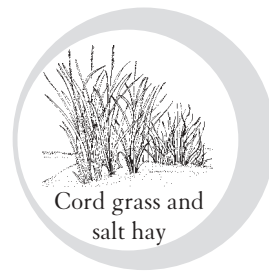
*(At the aerial map on the back deck)*

Scarborough Marsh began to form 10,000 years ago as the last continental glacier retreated northward. Quantities of clay and gravel washed seaward in the icy melt water. This area achieved its present geologic form about 3,000 years ago. A barrier beach formed across the mouth of the river, silt accumulated behind it, and in time it became shallow enough to support grasses. Migrating birds probably carried the grass seeds here.

#### STATION 2

*(By the fence to the right of the building)*

You are standing by the edge of the Dunstan River, one of several freshwater rivers that empty into Scarborough Marsh. The fresh waters flow in from your left, while the twice-daily tides flood the marsh from the ocean four miles away to your right.



Cord grass and salt hay

The river water is brackish, partly fresh and partly salty. While it may look dirty, it is not polluted. Its brown color comes from the nutrients and tiny microorganisms it contains.

As you can see, the dominant plant of the tide marsh is grass. The coarse, tall grass growing along the edge of the river is cord grass (*Spartina alterniflora*). Further back from the river and higher up in the marsh is a cousin, salt hay (*Spartina patens*). Both of these grasses have adapted to life in a saltwater environment that few other plants can tolerate.

#### STATION 3

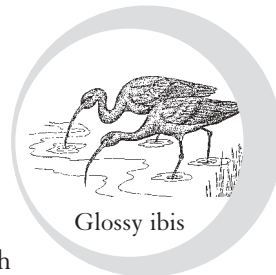
*(Turn to your right, facing a ring of wooden posts)*

The marsh was important to both the Native Americans and the colonists. Here they hunted, trapped, fished, clammed, and farmed. The Native Americans fished for herring and trapped the alewives for fertilizer and food. Colonists grazed cattle on the rich salt hay and thatched their roofs with cord grass. In the fall, farmers harvested the salt hay and swept it up onto wooden posts called staddles. These staddles, one of which you're seeing the remains of, held the hay until winter when the frozen ground could support teams of horses and their wagons.

#### STATION 4

*(Very carefully cross the road, walk up the rise, and turn to your right)*

At the top of the little hill you are able to look out over an arm of the marsh that was cut off from the main marsh when the new road was built in 1954–55. A shallow pond, or panne, is directly in front of you. A panne is not connected to a tidal stream. It relies on rain or extra-high tides for its water. The mud of the panne supports many small creatures of interest to sandpipers and glossy ibis, while minnows live in the water and are food for herons and snowy egrets. The surface is



Glossy ibis

covered by algae, a green plant that is a nursery for shrimp-like scud, baby snails, fish eggs, and insect larvae. Algae produces more oxygen than any other type of plant.

#### STATION 5

*(Along the path just beyond the first white pine tree)*

Walk out onto the marsh a little way. How does the ground feel under your feet? The salt hay you are standing on is this year's growth. Previous years' growth has been accumulating and decomposing. Since there is very little oxygen in salt marsh mud, decomposition is slow. The accumulation of decomposed grass and other materials forms a layer of peat up to 15 feet deep. If you jump gently on the marsh here, you can feel how it is like a huge sponge.

#### STATION 6

*(Further along the path at the end of a tidal stream)*

As you walked along the path you may have been scolded by a male red-winged blackbird guarding his nesting territory while his camouflaged mate tends her eggs. Unlike the panne, the small stream is tidal and at low tide is a favorite feeding area for sandpipers. Many shorebirds that nest in the Arctic tundra use the marsh as a resting and feeding stop on their annual migrations.

#### STATION 7

*(A cattail patch)*

Cattails are an indicator species, which tells us that the water in which they live is either fresh or only slightly salty. Few plants are as versatile as the cattail. Its long stems and leaves were used for thatching and weaving; its roots, new shoots, flowers, and even pollen are edible. Native Americans used the fluffy seedheads to line their boots, and birds use them to use them to line their nests. A cattail seedhead contains as many as two million seeds!



Male red-winged blackbird

#### STATION 8

*(At the edge of the panne)*

You are standing in front of the panne frequently occupied by ducks, shorebirds, and herons. Mallards and black ducks often feed on plants and may be accompanied by their ducklings. The short bluish grass is spike grass. On the upland side of the path is a display of typical meadow and roadside plants—goldenrod, clover, Queen Anne's lace, and asters as well as upland grasses. You are also seeing low shrubs of meadow sweet, wild rose, and sweet fern. Crushed leaves of sweet fern are very fragrant; its dried leaves were smoked by Native Americans and may be used for tea.

A bit further on by the boardwalk you may notice an orange color on the ground. This is rust formed when iron in the mud is exposed to the air. If there is a shallow puddle near the path you may see bubbles on the bottom. This is methane, a gas formed underground by bacteria decomposing vegetable matter. You may also see an oil film on the surface of puddles. The oil is a natural substance released by the grasses as they are decomposed by bacteria.

#### STATION 9

*(The boardwalk turns sharply to your right)*

You are now taking a brief trip through a patch of upland woods and shrubs. Here you will see small white pine, pitch pine, and poplar trees. As you walk, look on the ground for tunnels pushing up through the soil. These are made by star-nosed moles.

#### STATION 10

*(At the end of the upland area along the abandoned road)*

Before you is a canal that was dug, during the American Revolution, from a shipyard at its western end to the Dunstan River. The location of the yard was chosen because it hid ship construction from surveillance from British warships at sea.



Glasswort

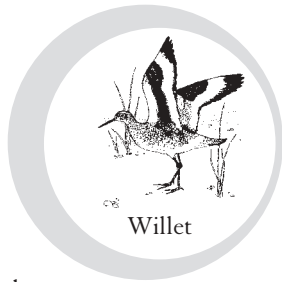
On the mud are periwinkles and green crabs. You may also see the pink remains of bacteria. Plants along this road include black grass, sea lavender, salt hay, and cord grass. Under the grass near the water you may find sea blite and glasswort.

Directly across the road from the canal is a patch of bayberry bushes. Crush a few of the dead leaves and smell them. Male and female flowers are on separate plants, and only the female produces the waxy berries from which candles were once made. Continue down the abandoned road.

### STATION 11

*(On the right hand side of the road at the edge of a panne)*

This is the last outbound stop. We are at the edge of a panne in which may be seen the intense activity of a salt marsh. Here willets, yellowlegs, glossy ibis, and sandpipers may be probing the mud for food. In the water are large schools of fish, including mummichogs and sticklebacks that feast on the quantities of mosquito larvae and other small creatures. Snowy egrets and great blue herons may be seen fishing for these minnows. Mallards and black ducks often feed on plants and may be accompanied by their ducklings.

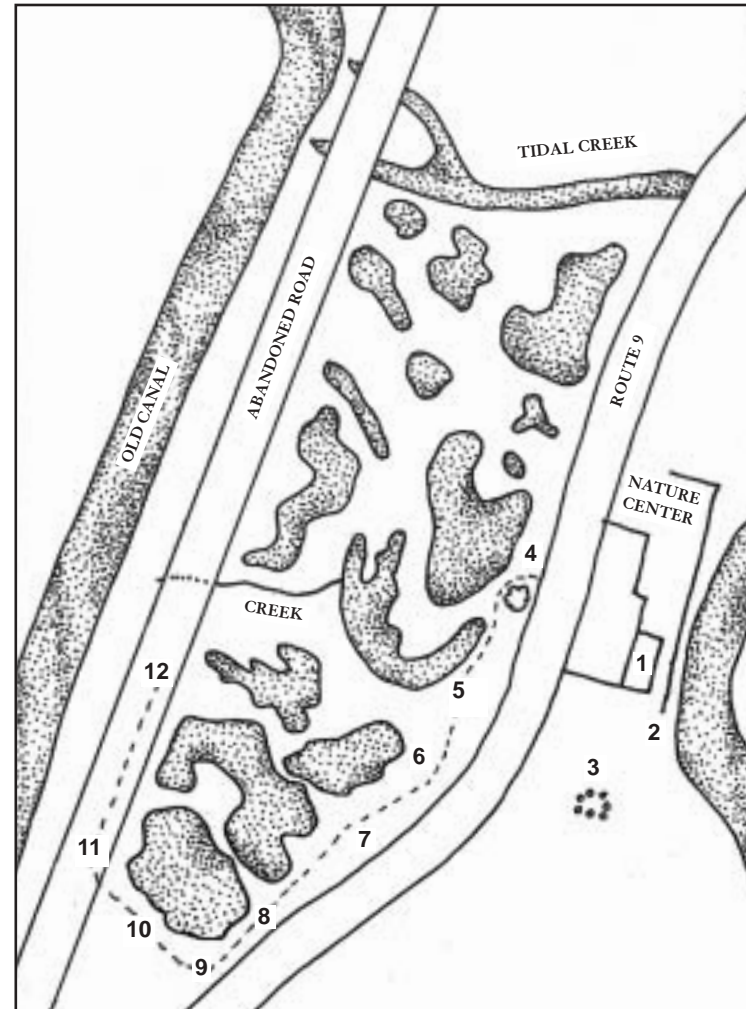


Willet

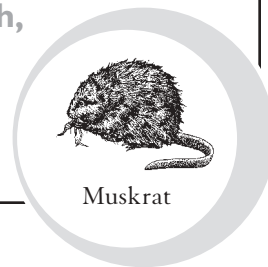


**Now, retrace your steps to the Audubon Center.**

## Scarborough Marsh Audubon Center



**Look, smell, listen, and touch, but please stay on the trail and do not disturb plants and wildlife. Thank you!**



Muskrat

**Maine Department of Inland Fisheries and Wildlife** manages Scarborough Marsh, which is owned by the state of Maine.

**Scarborough Marsh Audubon Center** provides a variety of guided and self-guided walks and canoe tours as well as exhibits, canoe rentals, and a Maine Audubon Nature Store.

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**For more information:**  
 (207) 883-5100 May–September  
 (207) 781-2330 October–April  
 smac@maineaudubon.org  
 www.maineaudubon.org

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20 Gilsland Farm Rd.  
 Falmouth, ME 04105

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## NATURE TRAIL GUIDE



## Scarborough Marsh Audubon Center

Route 9/Pine Point Road  
 Scarborough, Maine

**Nature programs for all ages  
 Memorial Day–September**

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