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U.S. Fish & Wildlife Service

Blackwater

*National Wildlife
Refuge*

Marsh Edge Trail Guide



Great blue heron
USFWS

Welcome to Blackwater's Marsh Edge Trail

This 1/3 mile walking trail leads from a mature pine forest to a typical Eastern Shore bulrush marsh. Within this area is a transition zone where the forest and marsh overlap, called an “edge”. Edge habitat has a high diversity of plants, providing important food and cover for wildlife.

During your leisurely half-hour walk, take the time to observe the abundant plant and animal life of the marsh ecosystem, one of the most productive habitats on Earth. Consider the adaptations plants make to survive in their environment and think about the value of these plants to wildlife.

To make your walk more pleasant, please remember:



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From April to October, poison ivy is common along the trail. Although the young leaf buds and white berries are valuable food for birds, rabbits, and deer, the plant's oils can cause a red, itchy rash in humans. Remember the saying, “leaves of three, let it be.”

Biting insects are present from mid-April through late September. Protective clothing and insect repellent are recommended.

An informational kiosk, a pavilion with picnic tables, and a restroom are located near the trail entrance. Please practice “Leave No Trace” principles. Do not disturb or collect plants and animals.

Loblolly Pines

1

The loblolly pine is the predominant tree in refuge forests. The Eastern Shore is the northern limit of the loblolly pine's range. Loblollies can be identified by their long, twisted, yellowish-green needles growing in bundles of three.

Seeds of the loblolly are an important food source for the once-endangered Delmarva Peninsula fox squirrel. Blackwater National Wildlife Refuge (NWR) has the largest natural population of these large, light-gray squirrels.

Loblolly pines also serve as perches and nesting sites for the bald eagle.



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Shrubs For Wildlife

2

Many wildlife species depend upon shrubs that grow along the Marsh Edge Trail for food and protection. Because it can live in moist soils, the wax myrtle, also known as the southern bayberry, grows close to the marsh edge.

The shiny, yellow-green leaves of wax myrtles are retained throughout the winter, and have been used in cooking for bay-like seasonings. Birds feed on wax myrtle berries when other food supplies are depleted, and the scented wax from the berries can be used to make candles and soap.



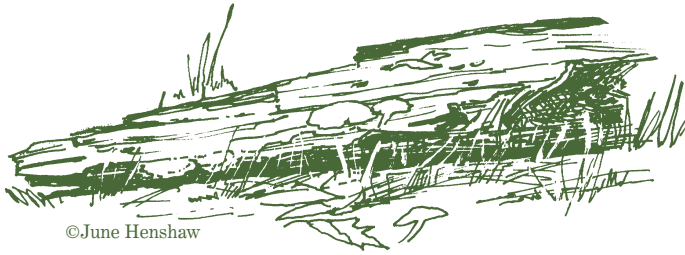
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Decaying Logs Mean New Life

3

Under the logs that line the trail you can see the important process of decay. As the wood breaks down, it forms a rich organic material which becomes part of the soil.

In the marsh, plants break down into tiny organic particles called detritus. This material is an important food source for shellfish, aquatic larvae, and other invertebrates.



©June Henshaw

The Changing Transition Zone

4

The marsh edge is a transition zone where forest and marsh meet. Here, the types of plants change from dry to wet ground, depending on how well they can tolerate water. Look for shrubs like the gray-green leaved groundsel-tree and wax myrtle in the higher elevations of the transition zone.



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The lower elevations of the transition zone are dominated by narrow-leaved cattail and Olney three-square, a bulrush with a three-sided stalk.

Habitats and vegetation in the transition zone are constantly changing. Dead trees along the marsh edges mark where rising water levels changed woods into marsh. Here you will see phragmites, a tall non-native reed that quickly invades disturbed areas and pushes out beneficial native plants. Controlling invasive species such as phragmites is one of the biggest challenges facing refuge biologists today.



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Osprey Nesting Platforms Help Reestablish Populations

5

In mid-March, ospreys return to the Chesapeake Bay area to nest. Nesting platforms in the Blackwater River, maintained by refuge volunteers and staff, allow visitors an up-close view of the nesting activities of this raptor, also known as the “fish hawk.” Young ospreys, which usually hatch in May and fledge in mid-July, will instinctively fly to South American wintering grounds in September.

Ospreys were once threatened by the chemical DDT. This insecticide, which caused eggshells to be thin and easily broken, has been banned in the United States since 1972, and no longer threatens osprey populations. It remains an important reminder of how humans can impact wildlife and the environment.



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Little Blackwater River

Mixed Hardwood
Loblolly Pine
Forest

Legend

- P** Parking
- 10** Numbered Stop
- Restroom
- Informational Kiosk
- Boardwalk
- Bench
- Wooded Area
- Marsh

PAVILION



Greenbrier's Many Uses

6

A woody vine with thorns called common greenbrier serves many purposes for wildlife at Blackwater NWR. White-tailed deer feed on its leaves and songbirds enjoy the dark blue berries. Greenbrier vines often form dense thickets, which birds, rabbits, and other small rodents use for protective cover.



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Bald Eagles Like Isolation

7

Unlike ospreys, bald eagles typically shy away from human populations. Eagles prefer isolated marsh areas bordered by woods for resting and nesting.

As you look across the river, you will see isolated islands of loblolly pines. These provide secure nesting sites for bald eagles near the abundant food source of the marsh, where eagles can feed on fish, birds, and other wildlife.



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The lands in and around Blackwater NWR host one of the largest concentrations of nesting bald eagles along the Atlantic Coast. An average of 50-100 eagles use the refuge year-round. More than 200 eagles have been recorded on the refuge in January, when wintering eagles join the year-round residents.

The Chesapeake Bay

8

The Marsh Edge Trail boardwalk borders the Little Blackwater River, which flows into the Blackwater River near the refuge Observation Site. The water then flows into Fishing Bay, which is a part of the Chesapeake Bay.

From the boardwalk, try to envision the tides carrying rich nutrients and detritus from the marsh to the estuary, an area where fresh and salt water mix. This process helps to nourish extensive populations of microorganisms, fish, crabs, oysters, and clams.



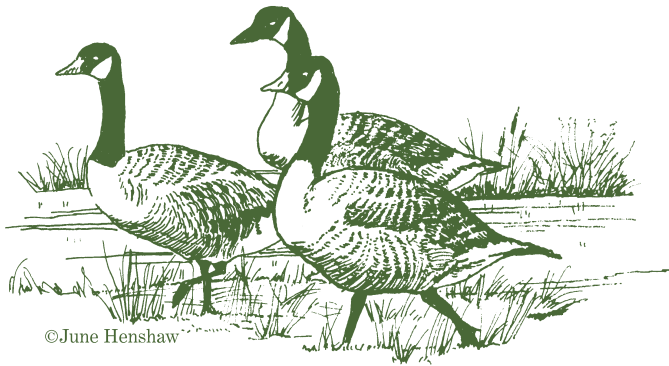
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Many types of fish and shellfish use the marsh as a nursery, because it offers protective vegetation and rich nutrients to feed their young. Wetlands like this one are vital to the health of the rivers and Bay; they serve as a filter for pollutants and sediments from groundwater and surface runoff from the land.

Olney Three-Square Makes a Good Meal

9

Olney three-square, a grass-like plant with a triangular stem, dominates the marsh at Blackwater NWR. Look for this plant along the marsh edge at the boardwalk and for its blooms from June into September. The tubers of three-square are an important food source for muskrats and waterfowl such as ducks and geese.



Three-square stalks are used by muskrats for building their lodges, and the densely growing stands serve as protective cover for nesting songbirds, ducks, and the secretive rails.

The Disappearing Marsh

10

Much of the open water area you see before you was once dense marsh. More than 5,000 acres of marsh vegetation have been lost since the refuge was established in 1933. Sea level rise, land subsidence (sinking), and the effects of nutria, a non-native aquatic mammal, all contributed to this loss.

Larger than the native muskrat, the nutria was brought into this area from South America in the 1930s for use in the fur industry. These ravenous mammals dine on marsh grasses, pulling them up by the root

and leaving behind bare soil that was susceptible to erosion. Tens of thousands once occupied the marshes in and around Blackwater NWR. An effort to remove nutria from the area was started in 2002, and today they are no longer seen on the refuge.

Some Closing Thoughts

On your walk today, you have experienced the mature loblolly pine and three-square marsh habitats of the Eastern Shore. The wildlife that so many people appreciate depends on these habitats for food, shelter, nesting, and a place to raise their young. These habitats all work together and are dependent on each other.

As you consider the future of any natural area and its wildlife, please remember how sensitive the natural world is to any changes in its fragile balance.

