

Blackwater National Wildlife Refuge
2145 Key Wallace Dr.
Cambridge, MD 21613
410/228 2677
410/221 7738 Fax
Email: fw5rw_bwnwr@fws.gov
<http://www.fws.gov/blackwater>

U.S. Fish & Wildlife Service
<http://www.fws.gov>

For Refuge Information
1 800/344 WILD

Federal Relay Service
for the deaf and hard-of-hearing
1 800/877 8339 Voice and TTY

September 2008



U.S. Fish & Wildlife Service

Blackwater

*National Wildlife
Refuge*

Marsh Edge Trail Guide



Welcome to Blackwater's Marsh Edge Trail

This 1/3 mile walking trail leads from a mature pine forest to a typical Eastern Shore marsh of three-square bulrush. 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:



©Alex Briggs

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 head of this trail.

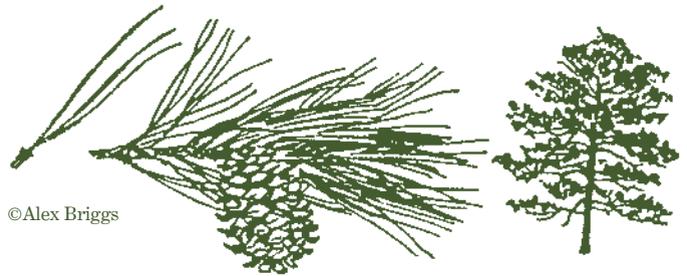
Loblolly Pines

1

Blackwater's forests are mostly loblolly pines mixed with small stands of oak. 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 refuge's endangered Delmarva fox squirrel. Blackwater Refuge has the largest natural population of these large, light-gray squirrels.

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



©Alex Briggs

Shrubs For Wildlife

2

Many wildlife species depend upon shrubs that grow along the Marsh Edge Trail for food and protection. Because it can tolerate semi-saturated soils, the wax myrtle, also known as the northern bayberry, grows close to the marsh edge.

The shiny, yellow-green leaves of wax myrtles are retained throughout the winter, and are 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.



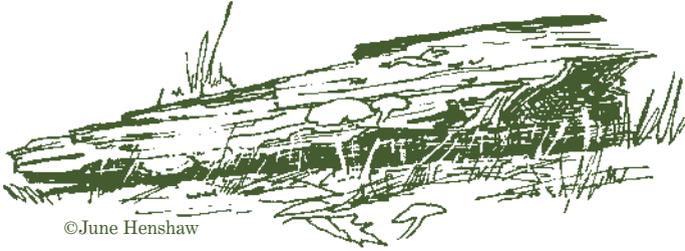
©Alex Briggs

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 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 upper edge of the transition zone.

In the lower edges, cattails and Olney three-square (bulrush) grows.

Habitats and vegetation in the transition zone are constantly changing. Dead trees along the marsh edges mark where rising water levels changed woods to marsh.



©June Henshaw



©Alex Briggs

Osprey Nesting Platforms Help Re-establish Populations

5

In mid-March, ospreys return to the Chesapeake Bay area to nest. To help this species, refuge managers have erected nesting platforms to increase reproduction. 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, however, a reminder of how humans can impact wildlife and the environment.



©June Henshaw

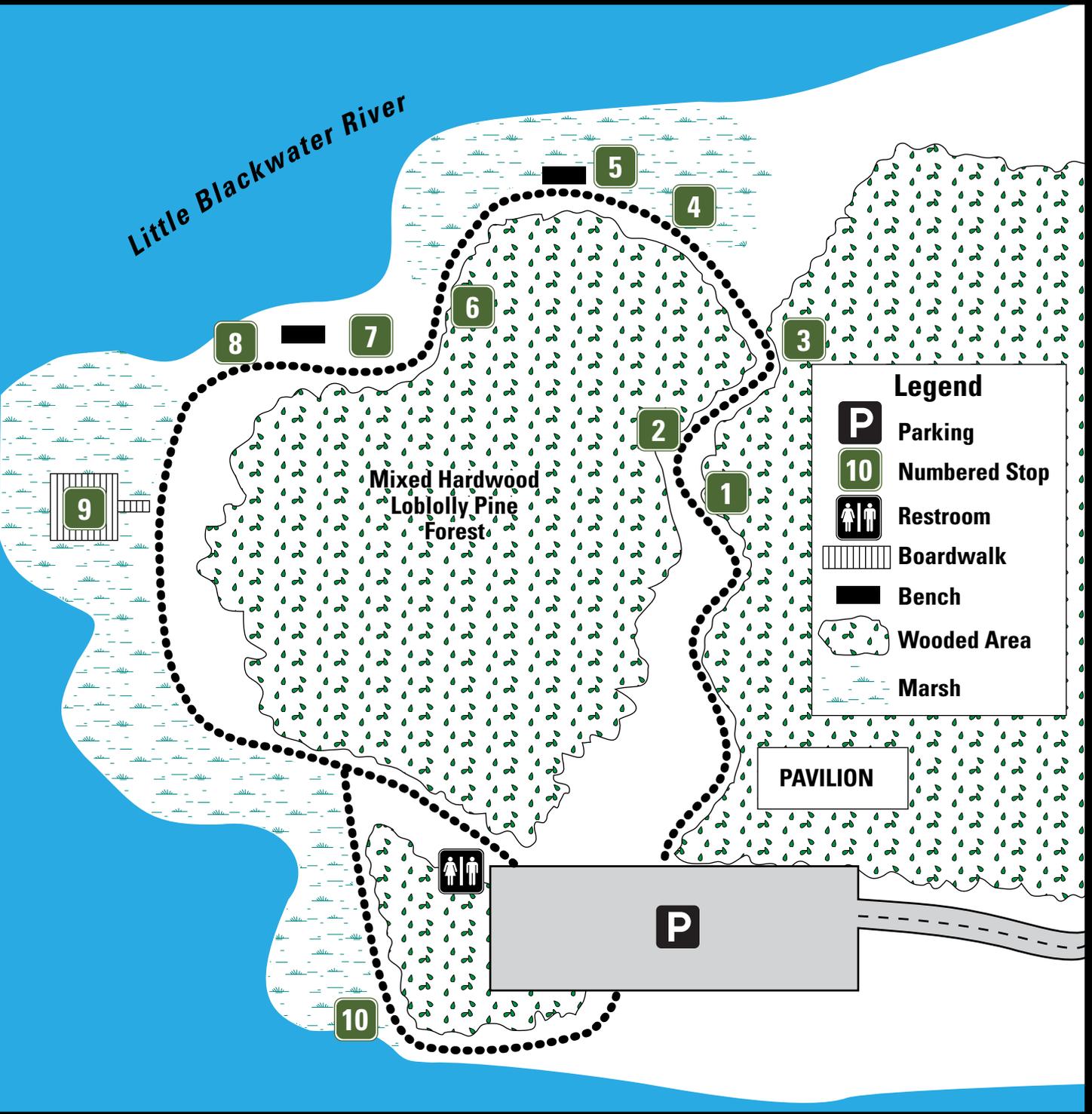
Little Blackwater River

Mixed Hardwood
Loblolly Pine
Forest

PAVILION

Legend

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



Greenbriar's Many Uses

6

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

There are many species of the greenbriar genus, with leaves that vary from broad and heart-shaped to thin and lance-shaped. As you walk the trail, see how many different greenbriar species you can spot.

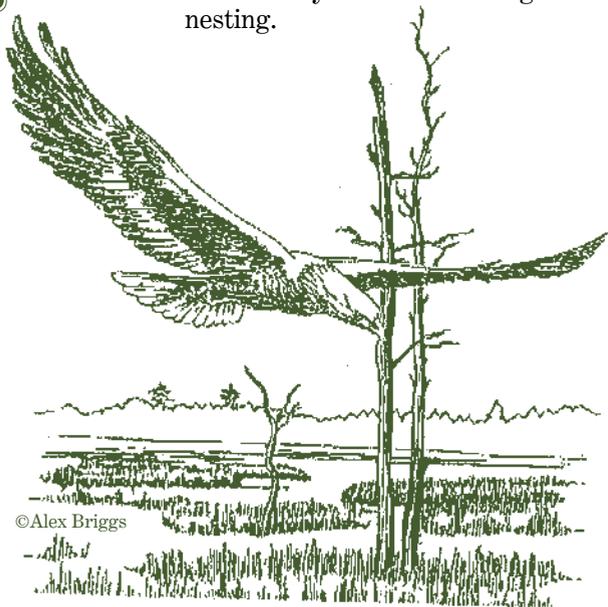


©Alex Briggs

Bald Eagles Like Isolation

7

Unlike ospreys, bald eagles cannot tolerate the presence of people. Eagles prefer isolated marsh areas bordered by woods for resting and nesting.



©Alex Briggs

If you look across the marsh, you can see Barbados Island, where a pair of eagles have been nesting since 1975.

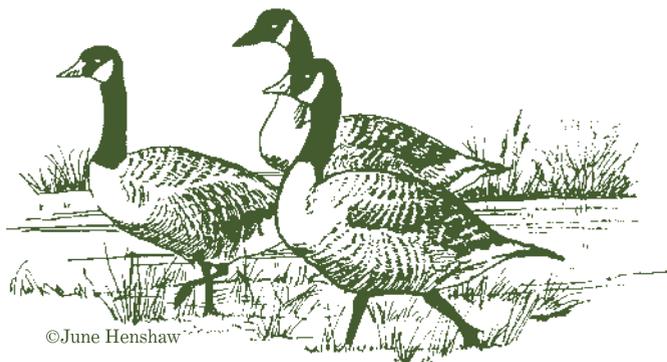
Isolated islands of loblolly pines like these provide secure nesting sites near the abundant food source of the marsh, where eagles can feed on fish, birds, and other wildlife.

The lands surrounding Blackwater 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. Peak populations of 200 have been recorded in January, when wintering eagles join the year-round residents.

Olney Three-square Makes a Good Meal

8

Olney three-square dominates the marsh at Blackwater, blooming from June into September. Look for this three-sided grasslike plant along the marsh edge towards the boardwalk. The tubers of three-square are an important food source for ducks, geese, and muskrat.



©June Henshaw

Waterfowl also feed on the seeds. Three-square leaves are used by the muskrats for building their lodges, and the densely growing stands serve as protective cover for nesting songbirds, ducks, and the secretive rails.

The Chesapeake Bay

9

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, an arm 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.



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.

The Disappearing Marsh

10

Much of the open water area you see before you was once dense marsh. More than 7,000 acres of marsh vegetation have been lost since the refuge was established in 1933. Some reasons for this loss include: natural forces such as the rising sea level, land subsidence (sinking), wind and wave erosion, high water salinity during droughts, and changes in the flow of the Blackwater and Little Blackwater Rivers.

A great deal of the marsh has been lost to the destructive appetite of the large, rodent-like nutria. 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 it up by the root and leaving behind bare soil that is susceptible to erosion. Tens of thousands once occupied the marshes in and around Blackwater. An effort to remove nutria from the area was started in 2002, and today they are rarely seen on the refuge.

Outside of the refuge, dredging and filling associated with development destroys thousands of acres of marsh each year. Saving existing wetlands is the key to restoring the Chesapeake Bay. You can help by encouraging alternatives to development around the Bay, and by reporting illegal dredging and filling activities in wetland areas.

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.

