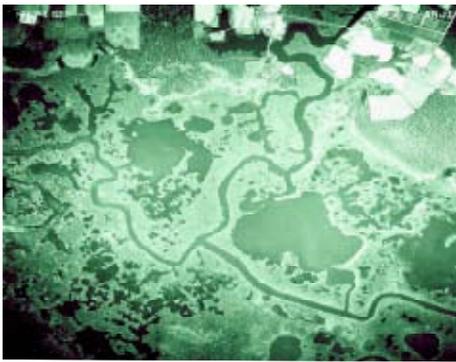


Blackwater National Wildlife Refuge

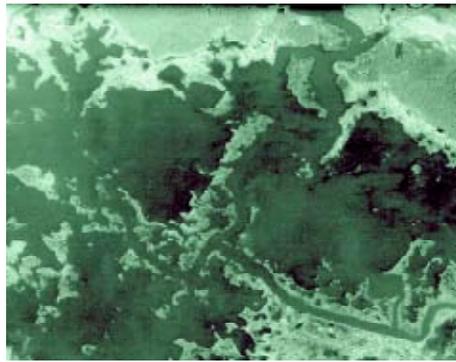
Marsh loss and restoration

The Blackwater River watershed and, within it, the Blackwater National Wildlife Refuge have undergone profound and ecologically degrading changes over the last 60 to 70 years. The intrusion of saltwater has eliminated migratory fish spawning habitat and has turned hundreds of acres of vegetated marsh into saline open-water mud flats. Thousands of additional acres of native plants, such as the three-square bulrush, have been lost to voracious plant-eating species, including nutria and resident Canada geese. The nutria is an exotic rodent species, introduced to the U.S. from South America. Marsh loss has been further exacerbated by sea level rise and land subsidence. Overall, more than 5,000 acres of natural wetlands have been lost within the boundary of the Blackwater National Wildlife Refuge since the 1930s.

Disappearing Marshes



Refuge marshes in 1938...



...in 1974...



...and in 1989.

The Problem

More than 300 acres of marsh are lost in the Blackwater River watershed each year. This degradation of wetlands severely affects the U. S. Fish and Wildlife Service's (Service) ability to manage Blackwater National Wildlife Refuge for the purpose for which it was established - to provide resting, feeding and wintering resources for migratory waterfowl. Marsh loss has decreased roosting and nesting areas for bald eagles, and the changing wetland environment is beginning to threaten habitat for the federally endangered Delmarva fox squirrel.

Beyond national wildlife refuge boundaries, the ecological health and economic viability of the Chesapeake Bay and Delmarva coastal region are tied to the health of these wetlands. The region's marshes support significant wildlife populations as well as provide habitat for important commercial shellfish and fish species.

The marshes also provide a buffer to local communities from significant storm events and provide important eco-tourism opportunities.

Taking Action

The Service and its conservation partners are working to meet the formidable challenge of reversing marsh loss in the region. As sea level rises, it is imperative for the agency to migrate wetlands inland to provide essential habitat for the migratory bird species in its trust.

We have taken action to:

- eradicate nutria and resident Canada geese,
- reduce saltwater intrusion, and
- restore lost wetland habitat.

Nutria were first introduced to the Eastern Shore of Maryland in 1943. Since that time, this exotic invasive species has destroyed thousands of acres of wetlands in the Chesapeake



USFWS

Nutria

Bay region. Nutria help cause and accelerate the rate of wetland degradation by consuming whole plants and creating deep swimming channels that erode soils. The U.S. Department of Agriculture's Maryland Nutria Project has extirpated nutria from about 150,000 acres of private, state and federal lands on the Delmarva Peninsula. The project has successfully eliminated nutria from the Blackwater National Wildlife Refuge.

continued

Feeding resident Canada geese also destroy native marsh vegetation. Service biologists have implemented management actions to significantly reduce the resident Canada goose population on the refuge.

To address the problem of saltwater intrusion, a weir was installed in Stewarts Canal. The weir was designed to help reduce the flow of saltwater into the freshwater river ecosystem.

In addition to managing marsh loss, we've restored two small marshes at the refuge using on-site dredged material as fill. These projects, completed in the 1980s and in 2003, were done in partnership with the U.S. Army Corps of Engineers, National Oceanic and Atmospheric Association, Maryland Department of Natural Resources, National Fish and Wildlife Foundation, National Aquarium in Baltimore, Friends of Blackwater and Ducks Unlimited.

Future Steps

We have taken significant steps to recover wetlands at Blackwater National Wildlife Refuge, but this is just a beginning. It will be necessary to eliminate nutria throughout the Delmarva Peninsula or populations will return and create more damage. We must continue to manage saltwater intrusion and actively pursue marsh restoration projects with our partners.

Refuge staff and a host of partners from the public and private sector have embarked on an ambitious program to use clean dredge materials to restore wetlands at Blackwater. It will be necessary, however, to obtain sufficient clean fill to complete these projects.

One possible source of fill may result from the future implementation of the U.S. Army Corps of Engineers' (Corps) Baltimore Harbor and Channels Dredged Material Management Plan and Tiered Environmental Impact Statement published in 2005. In it, the agency recommends several alternatives to maintain navigation channels for the Port of Baltimore and to place dredged material in an environmentally sound manner. The plan further recommends using dredged material for marsh restoration at Blackwater National Wildlife Refuge.

The Corps has completed a draft project management plan and will



Photo courtesy of the Baltimore Aquarium

Planting grasses to restore wetlands on Barren Island.

eventually complete a comprehensive study of the feasibility of implementing the project throughout Dorchester County. At this time, the project remains in the planning stage as other projects are currently meeting the objectives of the Dredged Material Management Plan.

Although this initiative looks promising, before dredge materials can be used to restore marshlands on the refuge, a demonstration project must be completed. There is evidence from our past restoration projects that clean dredge material can be used to restore wetlands, however it is still unknown if fill from the much saltier channel can achieve results in the fresh to brackish water environments on the refuge. The Maryland Port Authority has funded the design of a demonstration project, but funding for its completion remains uncertain.

If the demonstration project is a success and we move forward with the project, there would be a long wait before the Corps and the port authority would be ready to place the material at the refuge. Current plans estimate that this project would not begin until 2038.

It is imperative that we continue to accomplish restoration projects using on-site material to stabilize existing marshes on the refuge. We must also maintain our efforts to reduce the threats of saltwater intrusion and

environmental degradation by nutria and resident Canada geese.

We lose 300 acres of vital wetlands at Blackwater National Wildlife Refuge each year. It is essential that we continue to work with our conservation partners to stem this loss and protect the natural marshes in the Chesapeake Bay region.

For Further Information

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