



Maryland's Lower Eastern Shore Watershed Restoration Project



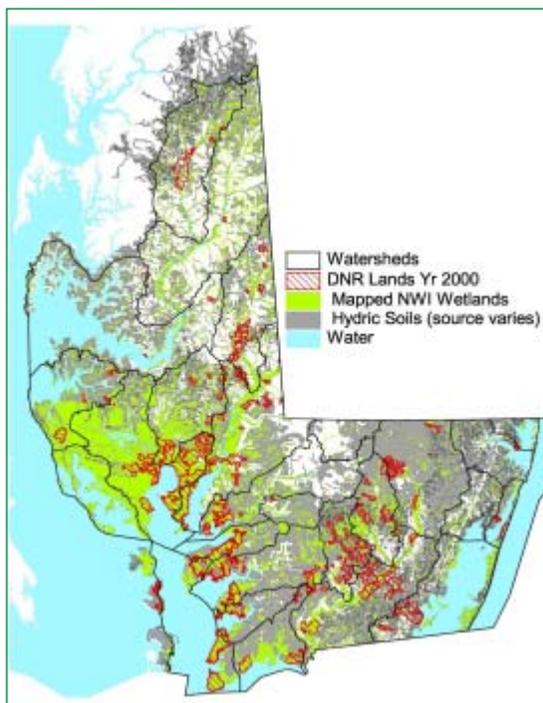
BACKGROUND

One might ask what can forestry do to enhance watershed protection? Forests play a significant role in the watersheds we all live in. Forests help protect the water quality, aquatic habitat, and other wildlife that live in and around the forest.

In the Lower Eastern Shore of Maryland, foresters plan to manage forests to enhance watershed protection, including protection of wetlands and restoration of forest riparian buffers.

With assistance from the USDA Forest Service and leadership by Dr. Anne Hairston-Strang of the Maryland Forest Service, the project will benefit public and private lands with the help of foresters, landowners, and various partners.

LOCATION



Maryland's Lower Eastern Shore

The project will be implemented on Maryland's Lower Eastern Shore in the Pocomoke,

Blackwater/Wicomico, and Nanticoke watersheds.

Restoration activities will occur on sites of willing landowners and partners. The Maryland Forest Service will also target the portion of the project on recently acquired State lands.

ISSUES TO BE ADDRESSED

The Lower Pocomoke shows degradation of sensitive resources such as water quality, wildlife, and aquatic life from nutrient pollution. This area became infamous during the 1997 *Pfisteria* fish kills.

Wetland Protection - The Nanticoke watershed has extensive wetlands and is located between Cambridge and Salisbury. Its natural resources need special protection because development is expanding. Developing this land will be a threat to water quality and natural resources.

Nutrient Loading or Excess Nutrients - Because hydric soils have been converted to agricultural land, high nutrient loading and wetland loss characterize many of the sub-watersheds. As a result, stream habitat is usually poor and will benefit from stream buffers and wetland forest restoration. This problem presents a prime opportunity for buffer restoration on farmlands to address nutrient issues.

GOALS

- Restore wetland forests
- Analyze alternative forest management techniques
- Create 200 acres of new riparian forest buffers
- Provide technical training and information exchange for wetland forest and buffer restoration

METHODOLOGY

Actions that will be taken in order to accurately assess the solution include field support, water quality testing, and analysis.

Restore Wetland Forests - One problem that has led the Maryland Forest Service to take action is ditching that has altered the hydrologic cycle. Ditching has been used to improve agricultural productivity and access. In order to plow more easily, ditches and other draining techniques (tiles) have benefited farmlands by draining off excess water. In ditched areas, water flows quicker to the rivers and the Chesapeake Bay, with few opportunities for reducing nutrients along the way. In strategically located areas, some ditches can be plugged or removed to allow the natural hydrology of swamps and wetlands to return.

Since 1999, the Northeastern Area and the Northeastern Area Association of State Foresters have sponsored a cooperative challenge grants program to promote watershed health and restoration through the conservation, restoration, and sound stewardship of trees and forests.

Trees that can tolerate wet conditions, such as Atlantic white cedar, bald cypress, and bottomland hardwoods, will be planted on 250 acres. This restoration will benefit both habitat and water quality.

Analyze Forest Management Techniques - Forest management that minimizes the effects on water quality and supports a healthy forest industry on the Eastern Shore will be promoted. The project will evaluate alternative pine management techniques to focus on water quality and habitat protection. Forests produce some of the best water quality and habitat of any land use. The Lower Eastern Shore is the heart of Maryland's loblolly pine lands, a key piece of the rural economy.

Create Riparian Forest Buffers - The project will create 200 acres (10 miles) of riparian forest buffers on unforested streambanks that are in targeted sub watersheds. Forest buffers are a cost-effective method for improving water quality and habitat and are also a very valuable tool on agricultural land. For example, buffers reduce runoff and erosion, provide wildlife habitat, enhance aquatic environments, and reduce flooding.

Provide Technical Training - Training programs will have three main goals:

- ◆ Increase the foresters' specific knowledge about restoration techniques.
- ◆ Increase the exchange of information across state and agency boundaries.
- ◆ Result in written summaries to educate others about successful techniques, as well as the progress of the project.

Training will help everyone involved restore forested wetlands. "This is something we haven't tried to do a lot of," said Dr. Anne Hairston-Strang, project lead. "We haven't supplied a lot of information on wetlands to landowners, state foresters, or private foresters."

The project will utilize tools to reach the stated goals and carry out the methodology:

BMPs - Landowners must meet standards that are set by Best Management Practices (BMPs) to help prevent pollution. BMPs are guidelines the state has put into effect in order to reduce erosion and sedimentation of water bodies.

CREP - The Conservation Reserve Enhancement Program (CREP) offers substantial financial incentives and reimbursement for installing buffers. CREP is a partnership between the state, the U.S. Department of Agriculture, Ducks Unlimited,

Chesapeake Bay Foundation, and local land trusts for voluntary environmental improvements on lands and along streams. A landowner enters into a contract through CREP and agrees to take streamside or highly erodible lands out of production for at least 10 years. Native grasses, trees, or other vegetation are planted to reduce erosion, improve water quality, and provide habitat for wildlife.

PROJECTED OUTCOMES

The Maryland Forest Service will demonstrate evidence of improved water quality, more natural hydrologic systems, and more diverse wetland and aquatic habitats in forests. Applying various pine management techniques will reduce erosion. Riparian forest buffers will increase denitrification and deposition of sediment. The improved capability of natural resource managers to conduct forest wetland and buffer restoration, through technical training and information exchange, will supply a lifetime of knowledge to be passed down by foresters and land managers.

PARTNERS

Partnerships have developed through collaborative groups such as the Forestry Work Group of the Chesapeake Bay Program. The Maryland Forest Service will partner with Cooperative Extension Service (CES) for training, field support, water quality testing, and analysis. Other landowners, including The Nature Conservancy, are being contacted for interest in forested wetland restoration. Partnerships with research and university groups are being initiated. A field review team will coordinate monitoring.

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Grant Amount: \$88,072