

Watershed Restoration for Reservoirs in the Gunpowder-Patapsco Basin

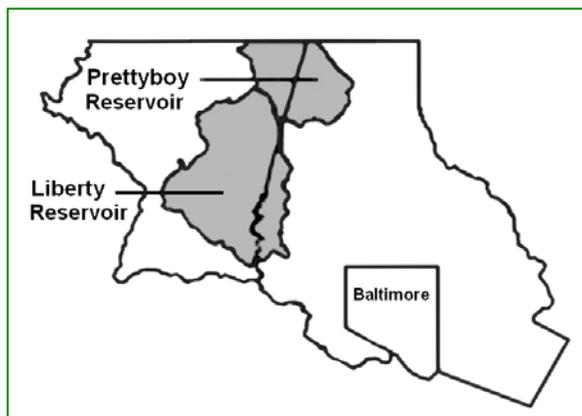


BACKGROUND

The City of Baltimore owns and operates the Prettyboy and Liberty Reservoirs located north and northwest of the City in the northern Piedmont region of Maryland. These reservoirs supply 1.8 million people with drinking water. They are surrounded by over 17,000 acres of city-owned forestland that was acquired between 1880 and 1955 to control land use around the reservoirs. City-owned land makes up about 7 percent of the total area of the watersheds draining into each reservoir. Mosaics of farm and forest, these source water drainages are part of the expanding, urbanizing Baltimore-Washington region, which is the 4th largest metro area in the United States. The Prettyboy and Liberty basins, however, are still rural, with agriculture as the predominant land use. Preserving the quality of the water that flows into the reservoirs requires careful land management and control of sediment and point and non-point source pollution. "Protecting streams and wetlands would significantly reduce these pollutants from entering the watershed," said Rob Northrop, Regional Watershed Forester with the Maryland Forest Service.

LOCATION

The project is located in the Carroll County portion of the Liberty and Prettyboy Reservoir watersheds. Both of the reservoirs lie within the Gunpowder/Patapsco River Basin.



Liberty and Prettyboy Reservoir watersheds.

ISSUES BEING ADDRESSED

- Protection of the municipal water supply
- Control of nitrogen, phosphorus, and several other pollutants from agricultural runoff
- Elevated water temperatures
- Eroding streambanks
- Wildlife habitat loss

These problems can be addressed by following sound land management plans for the watersheds and with actions such as the creation of forest riparian buffers. The Maryland Forest Service is developing a comprehensive Forest Conservation Plan for the watersheds, identifying sites for enhanced protection, and replanting forest buffers. These actions will have a positive impact on the area because forests act as filters when the roots take up extra nutrients and other pollutants from runoff and groundwater. Buffers also help prevent erosion by protecting streambanks, trapping sediment, and providing shade to help lower water temperatures. Enhancement of forests in the watershed is the focus of the project.

GOALS

- Develop a comprehensive Forest Conservation Plan for the watersheds.
- Identify priority areas for afforestation and forest buffer establishment using a combination of GIS and field data collection.
- Work with landowners and local communities on priority restoration sites.
- Create demonstration areas for afforestation and forest riparian buffer establishment.

We want to get the biggest bang for the buck," Northrop said enthusiastically about the project that is well under way.

METHODOLOGY

The Maryland Forest Service is conducting a detailed inventory of forests, streams, wildlife habitat, water quality, and recreational use. Collected data is evaluated and mapped in GIS to determine specific management recommendations, such as areas that would benefit from forest riparian buffers, and be priorities for future protection or afforestation, or those that provide unique habitats. Maps will be shared with the public and the City of Baltimore.

Forest riparian buffers will be installed on two dairy farms in Carroll County. The farms will be used as demonstration areas to

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.

illustrate the use of forests for protecting drinking water sources in agricultural settings.

Tours will be conducted at each demonstration area to acquaint landowners and community members with riparian forest buffers. The restoration will help protect municipal water supplies by reducing nutrients, while enhancing wildlife and aquatic habitats by providing cover, shade, and woody debris.

The data collected from this project will be used in ongoing programs throughout the reservoir watersheds.

ACCOMPLISHMENTS TO DATE



The Friends of Carroll County Streams, a local conservation organization, plants trees on former agricultural land.

Work is underway to create information resources for residents in and around the watersheds to use while planning forest restoration. "We are creating information and giving it to the communities that can directly affect the change," said Rob Northrop.

Workshops - Two workshops were conducted for farmers on the values and mechanisms for implementing forest restoration. Through the Farmer-to-Farmer Program, foresters have informed farmer contacts of watershed problems. Maps and landowner lists are then used to contact farmers who own priority, forest restoration sites.

Brochures - Two brochures were developed that highlight the connection between conservation of forest resources, stream water quality, fisheries habitat, and drinking water quality in the reservoirs.

One brochure is targeted for agriculture and the other for suburban landowners.

Demonstration Projects - The Maryland Forest Service has identified one of the demonstration areas for afforestation and forest buffer establishment. A plan has been written to illustrate the use of forests for protecting drinking water sources in agricultural settings. Implementation is scheduled for the spring of 2002.

Mapping - Maps of the entire stream and forest system for both watersheds have been digitized. The Maryland Forest Service has gained access to digital zoning maps through GIS and created digital soil maps.

PARTNERS

Outreach will be coordinated with local watershed organizations and Maryland's Tributary Teams. The Gunpowder Valley Conservancy will be an active participant. The Upper Western Shore Tributary Team, the Patapsco/Back Tributary Team, and the Friends of Carroll County Streams are all participating and supporting the project at a local level. All these groups will build and strengthen partnerships among agencies, organizations, and communities and help communicate the need for source water protection.

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