



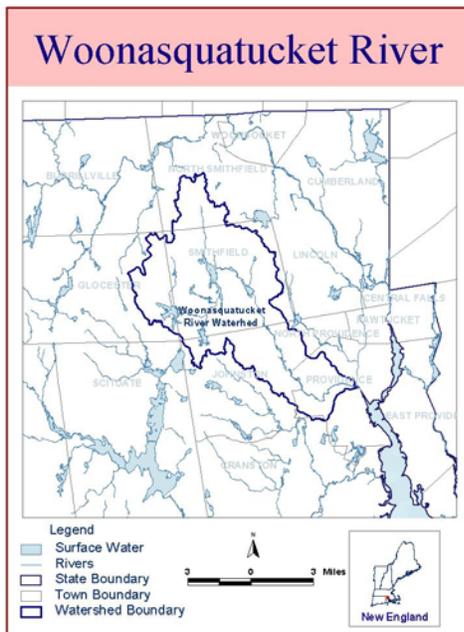
Woonasquatucket Watershed Riparian Buffer Restoration Project

BACKGROUND

Under the state of Rhode Island's Unified Watershed Assessment, the Woonasquatucket Watershed did not meet clean water goals and was added to the restoration list. Nonpoint source pollution was determined to be the greatest cause of water quality problems along with excess metals and pathogens. Protecting and establishing riparian forest buffers was determined to be the means of preventing pollutants from entering streams and rivers throughout the watershed. However, the condition of existing riparian buffers and the areas where they were needed was not known.

LOCATION

The Woonasquatucket River is one of 14 designated American Heritage Rivers. Its watershed is a diverse geographic area in north-central Rhode Island. The headwaters are located in the rural communities of Glocester, Smithfield, and North Smithfield. From its source at Primrose Pond, the river flows 18 miles through increasingly urbanized areas into Providence, eventually entering Narragansett Bay. Included in the watershed are portions of the towns of Glocester, Smithfield, North Smithfield, Johnston, North Providence, and the City of Providence. The entire watershed was the subject of the Riparian Restoration Project.



Woonasquatucket River Watershed.

ISSUES BEING ADDRESSED

Much of the natural riparian forestland along the Woonasquatucket River has been significantly altered by human activity. There has been considerable removal of buffers and forest vegetation for development and agriculture. Currently, 19 percent of the river corridor exhibits an existing riparian forest buffer. Most of the existing buffer is located in the upper portions of the watershed with only small fragments of forested riparian areas found in the middle and lower portions. Issues addressed in the project include:

- Removal of forest vegetation and ongoing mowing.
- Impervious surfaces being constructed directly adjacent to the river, including roads, roofs, and parking lots.
- Invasive exotic species.
- Channelization and floodwalls that hydrologically segregate the river from historic riparian buffers and floodplains.
- Storm drains that bypass vegetated buffer areas.

GOALS

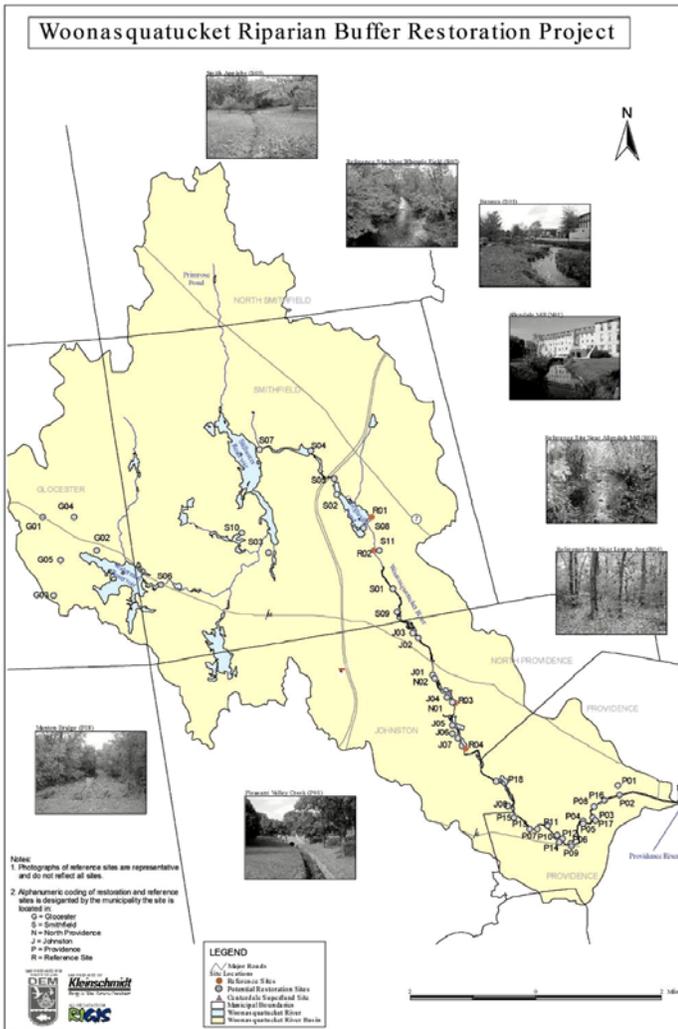
The purpose of this project is to protect water quality within the Woonasquatucket Watershed by encouraging the establishment of unfragmented and forested greenbelts along rivers and streams within the watershed.

METHODOLOGY

A comprehensive inventory of potential riparian buffer restoration sites was conducted along the Woonasquatucket River to examine opportunities for improving water quality and enhancing other important ecological and social values within the watershed. Potential restoration sites were identified through a site nomination process and field reconnaissance. A total of 36 candidate riparian buffer restoration sites were evaluated. Other sites were identified, but several of these were determined not to offer promising opportunities and therefore were not evaluated in detail. Data were collected on the potential restorability of each site by evaluating ecological, social, and other factors relating to ownership, potential use, and partnership opportunities.

Specific restoration options were evaluated for each site and preliminary costs associated with each option were developed. Based on field data and the issues being addressed, candidate sites were prioritized and evaluated relative to various benefits and costs. Using this information, five potential demonstration sites were identified and discussed with the Woonasquatucket River Watershed Council. The Riverside Mills site in

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.



Riparian restoration opportunities in the watershed.

Providence was ultimately identified as the preferred site for a demonstration project. Practical considerations, including leveraging and partnering potential private and public ownership, weighed heavily in this decision because of the desire to implement the project right away.

Inventory data, including site photographs, have been compiled into a database that can be examined in the future to identify suitable restoration sites depending on selection criteria and funding. Detailed site descriptions developed for each of the identified restoration opportunities provide a quick reference for future planning and implementation efforts.

OUTCOMES AND ACCOMPLISHMENTS

The final Riparian Restoration Project Report includes ArcView and Access database files for all site information. Restoration options and estimated costs were determined for each of the 36 sites. Local officials have been given copies of the report and database to help prioritize restoration opportunities within their

respective communities. Smithfield and Providence used the report to identify two projects, which are in the planning stages.

The database will also be included in a statewide restoration database website.

PARTNERS

- Woonasquatucket River Watershed Council
- RI Department of Environmental Management
- City of Providence
- The Towns of Johnston, North Providence, North Smithfield, Smithfield, and Glocester
- US Environmental Protection Agency
- The University of Rhode Island
- Rural Lands Coalition
- Rhode Island Forest Conservators Organization
- Southern New England Forest Consortium
- Audubon Society of Rhode Island
- RI Greenways Council
- Northern RI Conservation District

FUTURE PLANS

The Riverside Mills demonstration site will be completed in the late fall of 2003. One other location will be restored during this same time frame. In the current watershed action plan, the Woonasquatucket River Watershed Council has set a goal of one to three restorations per year for the next 3 years.

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