The Benefit of Riparian Buffers

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Carroll County, New Hampshire
August 2011: A July visit to an NRCS contract-holder's project site showed the successful establishment of a 15-acre riparian buffer planting in North Conway, New Hampshire. The entire planting area consists of a 1,400-foot long buffer with 450 feet of interior shrub zone and pollinator plantings.
Prior to the spring 2010 planting, the site was a 50-acre corn field, with corn being harvested right up to the Saco River. This resulted in soil erosion and bank sloughing, which meant that part of the field would be lost annually. Due to its proximity to the Saco River and the adjacent landscapes of fields and forest, the site is ecologically rich. Margaret Marshall, the owner of the 88-acre parcel, was concerned about the overall health and longevity of the field, so she applied for a contract under the Environmental Quality Incentives Program (EQIP). Nels Liljedahl (District Conservationist) and Debra Eddison (Soil Conservationist) developed a conservation plan for this land designed to match the landowner's goal of providing maximum wildlife habitat diversity, stabilizing the riverbank, and still allowing for some agricultural use. Technical assistance was provided by Joe Homer (Soil Scientist) in identifying the soil types, while Don Keirstead (Ecologist) developed a planting plan.

To address erosion of the streambank, Red Osier Dogwood, Shining Willow, and Alder were chosen for installation on the half acre closest to the river. For the 11 acres between the streambank plantings and the hay field, NRCS identified a number of tree and shrub species appropriate for three different zones - Bottom Land Hardwood, Dryland Forest, and Silver Maple – based on soil texture and flooding frequency. A 25-foot swath of wildlife shrubs (including Arrowood Viburnum, Gray and Redosier Dogwood, High Bush Blueberry, and Northern Wild Raisin) was planned around the field on three sides. Another 25-foot perimeter of pollinator plantings was placed between the shrub border and the field. The ecotones (the transitional zone between two ecological communities) that were created by the buffer planting include the hay field to pollinator plantings to shrubs to the treeline.

With the planting plan complete, the contractor chosen, and the plant source identified, installation of the buffer commenced at the end of May 2010. Fifteen Earth Team Volunteer high school students from Fryeburg Academy's Pequawket Valley Alternative School, along with the contractor's crew, engaged in a week-long mission to help plant the 6,000 trees and shrubs needed for this project.

Currently, the remaining 24 acres of field that was not planted into buffers is managed for hay. The existing grasslands serve to provide this space for grassland nesters including the Eastern Meadowlark, the Bobolink, and the Northern Harrier. To encourage and accommodate cavity nesters, the EQIP contract included the placement of 10 birdhouses at various locations around the field perimeter. During the 2011 field check, it was noted that all bird boxes were inhabited.

This photo to the left shows the twig-built nest of a House Wren.

The birdhouses were acquired through a partnership between the NRCS and the Carroll County Conservation District (CCCD). Since 2009, the two organizations have worked together on a bird nesting box program. The CCCD purchases a large amount of nesting boxes suitable for a number of smaller bird species including bluebirds, tree swallows, nuthatches, chickadees and house wrens from Nezinscot Guild, a Maine-based 501 (C)(3) non-profit.

To assess the success of the bird boxes, the CCCD sends out a brief questionnaire to its participants seeking information such as the species of birds using the boxes, fledgling survival, and the indirect effects that the boxes have on insects in the area.

Established in 1979, the Nezinscot Guild operates with the mission of "*Providing employment to people with developmental disabilities, autism, mental illness and traumatic brain injuries, in a successful small business*". The Guild operates two divisions – a Commercial Repackaging and Assembly Division and a Wood Products Division. To learn more about the Nezinscot Guild, visit: http://www.thenezinscotguild.com

In addition to providing ground nesting habitat for bird species – critical in the early spring - the established buffer protects the soil health and provides food for wildlife including nuts, berries, nectar, and pollen. Thanks to the landowner's generosity, existing walking trails that lead to the sandy beach are available to the public. The buffer project emphasizes partnerships. Throughout the project development, NRCS worked closely with the CCCD to identify and obtain the desired plantings. The finished planting plan was given to the CCCD who then ordered the plants and sold them directly to the landowner.

A key partnership came from our neighboring state of Maine. Over the past seven years, dedicated teachers and students from the Pequawket Valley Alternative School (part of Fryeburg Academy) have contributed hundreds of community service hours to NRCS projects through the NRCS Earth Team Volunteer program. This benefits the students by providing hands-on experience on

conservation-related projects, and it benefits the NRCS by gaining volunteer help. The Marshall Project is just one of five recent riparian buffers these students have completed.

Chatham, NH: The Fecteau Project

In the Spring of 2010 the students and teachers from the Pequawket Valley Alternative School contributed time and energy to establish a one-acre riparian buffer along both sides of a stream running through the pastures of the Fecteau property in Chatham. The students and teachers showed their commitment and fortitude on this project. The night before the scheduled planting date, it snowed approximately 6 inches. This did not stop them, as they persevered, shoveling the snow away before digging the holes to plant the trees and shrubs. These shrubs are now thriving and the landowner has noticed a large increase in birdlife inhabiting the area. The installation of bird nesting boxes has also helped in this regard.

Tamworth, NH: The Remick Project

The Remick Farm Museum property, located in Tamworth, NH on the Bearcamp River is a Wildlife Habitat Incentives Program (WHIP) 2011 riparian buffer project that was also completed by the contractor, along with the students and teachers from the Pequacket Alternative school.

During the initial site visit, it was noted that the owners were haying right up to the stream's edge. The planting plan was designed for two distinct areas: a 1.2-acre silver maple floodplain and a delicate 3.7-acre shrubland. The plan included the careful establishment of a 50-foot buffer on both sides of the perennial stream, increasing habitat for birds and amphibians. Besides the stream, a large wetland in the field was planted and connected to the stream with vegetation. This is intended to provide better habitat for breeding amphibians.

Specific shrubs including Witch hazel, Dogwood species, and berry species were chosen to enhance the wildlife. The adaptable Silver Maple, White Ash, and Northern Red Oak were selected for the tree plantings within the floodplain section, bordering the Bearcamp River. Both the trees and shrubs are expected to help stabilize the shore over time and also continue to encourage nesting birds and other wildlife to the location.

Ossippe, NH: The Cumberland Project, Another Reason for Buffers

Another successful buffer that NRCS helped to establish through WHIP is located in Ossipee, NH. `Unlike many of the project sites that utilized buffers to thwart streambank erosion while enhancing wildlife habitat, the "Cumberland Project" was initiated by a tornado that swept through the area and destroyed 30 acres of

Riparian buffers provide a number of ecological benefits. These include:

- ✓ Providing a corridor for wildlife along a river
- ✓ Reducing sedimentation into a waterbody
- ✓ Providing shade, keeping the water cool
- ✓ Absorbing energy from flowing water, reducing further erosion on streambanks
- ✓ Providing valuable habitat for declining bird species, such as bank swallows and kingfishers
- ✓ They can also be an opportunity to restore endangered silver maple flood plain habitat

forested land on Lynette Cumberland's property. The 2009-2010 planting plan was established under the WHIP contract with a practice specific to storm damage. The plan included buffer plantings designed for 1.5 acres of Pine Barren and 2 acres for Flood Plain Forest.

How much is the volunteer time worth?

According to Independent Sector, a national advocacy organization in Washington, D.C., the 2010 estimate for the value of a volunteer hour reached $21.36, an increase from the 2009 estimate of $20.85 per hour. With 7 high school volunteers and two teachers donating their time to planting the Smith Flats buffer in Tamworth, the volunteer work hours add up. For this project, the total number of volunteers hours provided was 144. Applying $21.36 per hour figure, the value of the volunteers for that project was $3,075.84.

Volunteers can help expand efforts in soil and water conservation. Anyone 14 years or older and interested in saving our precious soil and water can join the Earth Team Volunteer Program. Volunteers may work part-time, full-time, outdoors, or in an NRCS office. The mission of the Earth Team is to provide an effective volunteer workforce within NRCS to help people conserve, improve and sustain our resources and environment.

Resources:

Link to Carroll County Conservation District: *http://www.nhacd.org/carroll.htm*

For more information on the New Hampshire Conservation District in your area, visit: *http://www.nhacd.org/*

For more information on the Earth Team Volunteer Program, visit: *http://www.nh.nrcs.usda.gov/about/volunteer.html*