Riparian Forest Buffers for Trout Habitat Improvement

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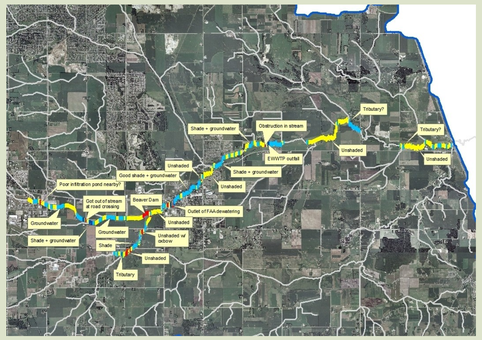
Issue

Minnesota is home to over 450 miles of state designated trout streams. Some of these streams are experiencing warmer temperatures affecting trout habitat and populations. Trees in a riparian buffer can improve trout habitat by moderating stream temperatures, providing woody debris, improving water quality and stabilizing stream banks.



Temperature variation in Vermillion River, Dakota County, as measured by Bill Olsen, Dakota County Water Resources Department, 2007 (blue=cold, yellow=warm, red=hot). Comments and map prepared by Brian Nerbonne, Minnesota Department of Natural Resources.

Methodology

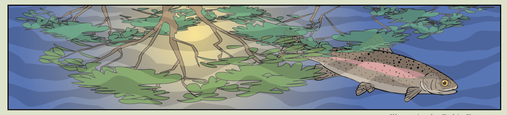


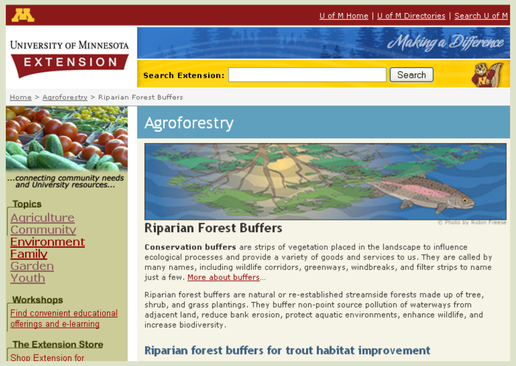
Illustration by Robin Freese

A collaborative educational program was developed to promote riparian forest buffers. It included:

- Developing a set of fact sheets based on a literature review
- Creating an Extension web site to offer access to resources
- Offering educational outreach meetings/tours
- Establishing a permanent riparian forest buffer demonstration planting on the Vermillion River, a DNR-designated trout stream in Dakota County.

Web Site

www.extension.umn.edu/buffers

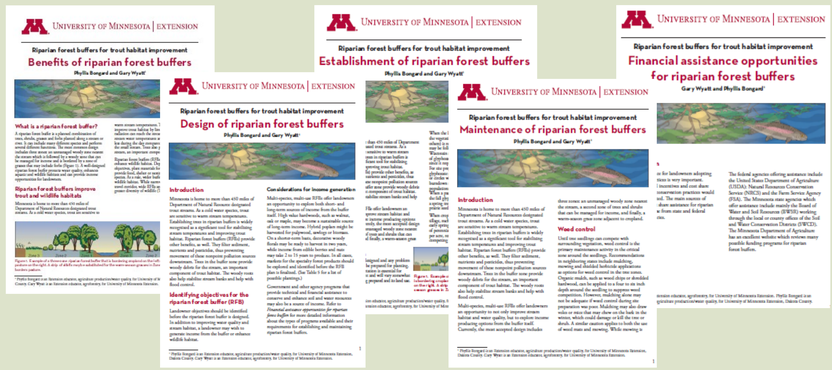


Field Demonstration Site

A permanent demonstration site on Minnesota Department of Natural Resources (DNR) land was established along the Vermillion River, a DNR-designated trout stream in Dakota County. With assistance from volunteers and support from the Vermillion River Watershed Joint Powers Organization (VRWJPO), over 450 trees and shrubs of several different species were planted in a random design to mimic a natural forest and improve trout habitat in this area of the river.

Publications

Since there was little existing material that addressed Riparian Forest Buffers to improve trout habitat in Minnesota, a set of peer reviewed fact sheets were created.



Meetings/Tours

A watershed meeting was held in March 2010 to review the project and to educate the public about Riparian Forest Buffers. A fall field tour in September visited the Buffer site plus five other conservation projects and funded landowner practices that protect environmental resources.

Impacts and Outcomes

This project has been established for long term research, demonstration and educational functions.

- Area residents attended meetings (35) and the fall field tour (15) in 2010.
- The VRWJPO has installed temperature loggers in the river to monitor the effect of shading on the Vermillion as trees mature.
- Corresponding trout population changes will be measured at the demonstration site over time by the Minnesota Department of Natural Resources.
- An educational billboard explaining the riparian forest buffer demonstration site is at the public access parking area.
- Educational field days and programs will be held at the site in future years to educate landowners about Riparian Forest Buffers.

Minnesota DEPARTMENT OF NATURAL RESOURCES

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Vermillion River watershed reflecting life

Dakota County Soil and Water Conservation District