

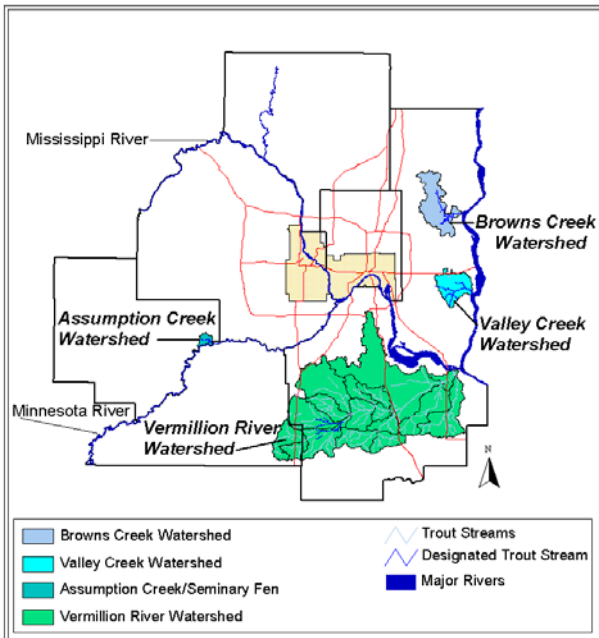
Improving Water Quality in Trout Stream Watersheds through Forest Stewardship

BACKGROUND

Parcelization of ownerships and fragmentation of agricultural and forested lands are rapidly increasing in the four watersheds of the Minneapolis-St. Paul Twin Cities Metropolitan Area. Each of these watersheds contains a designated trout stream, and three of the four streams contain naturally reproducing trout, which are highly sensitive to water quality degradation. These watersheds also contain other high quality natural resources, including forested areas. Over 95 percent of these watersheds are in private ownership. The project will increase forest stewardship in the four watersheds within the wildland-urban interface of the Minneapolis-St. Paul Metropolitan Area.

LOCATION

The project area contains 356 square miles and focuses on four designated trout stream watersheds within the Minneapolis-St. Paul Metropolitan Area. Streams include the Vermillion River (300 square miles in Dakota County), Brown's Creek (29 square miles in Washington County), Valley Creek (18 square miles in Washington County), and Assumption Creek (9 square miles in Carver County).



Trout Stream Forest Stewardship Project



Minnesota Department of Natural Resources -
Metro Region Watershed Initiative

Map Created June 17th, 2002

ISSUES BEING ADDRESSED

- Urbanization and loss of vegetative cover.
- Rapidly increasing parcelization of ownerships and fragmentation of agricultural and/or forested lands.
- Limited forest management.
- Sedimentation and stream bank erosion problems exacerbated by invasive plant species and lack of forest management.

GOALS

- Integrate forest stewardship into watershed and local open space plans with emphasis on improvement of water quality.
- Improve aquatic habitat by reducing sedimentation, stabilizing stream banks, and shading streams through forestry practices.
- Achieve quality forest management, including control of invasive, exotic species, and afforestation within the watersheds, particularly in riparian areas.
- Increase the implementation of forest stewardship-like plans.
- Promote forest management and tree planting with emphasis on achieving habitat connectivity.
- Reduce the impact of urbanization on high quality natural resources and streams.
- Achieve water quality improvements to support populations of trout and other wildlife.

METHODOLOGY

The Minnesota Department of Natural Resources (MNDNR) Metro Region interdisciplinary team will lead the project in collaboration with an active local committee in each watershed. The project will be undertaken in four primary phases/scales:

- (1) Watershed/Landscape Scale Assessment. For each watershed, a set of geographic information system (GIS) data layers will be developed and used to analyze the watershed and prioritize forest stewardship and other strategies to improve water quality. This includes completing detailed land cover mapping to document impervious surfaces, canopy cover percentages, urban (cultural) vegetation types, and native communities.
- (2) Management Planning and Guidelines for Landowners. This phase will have three primary products:
 - Stewardship plan writing will be accelerated for larger, rural landowners (those owning 20+ acres).
 - Management and project plans (similar to stewardship

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.

plans) will be developed for cooperative groups of adjoining landowners who typically own 5- to 10-acre lots. The project will also test stewardship plans on lots less than 20 acres in strategic locations.

- A publication titled “Vermillion River Watershed Handbook” will be completed, illustrated, printed, and widely distributed to local landowners.
- (3) Site-Specific Demonstration Projects. Stewardship-type plans, tree planting, invasive buckthorn removal, forest stand thinning and release, and demonstration projects of both reforestation targeted to improve stream bank stability and sediment reduction will be implemented on specific sites in the watersheds.
- (4) Stewardship Practices. Facilitate the integration of forest stewardship practices into local open space plans concurrently being developed by watershed communities.

OUTCOMES AND ACCOMPLISHMENTS

- (1) Watershed/Landscape Scale Assessment.
 - Detailed land cover mapping has been completed for all the watersheds. The GIS data layers document existing native communities, cultural vegetation types, impervious surfaces, and percent canopy cover. The land cover data is used to assess natural resources within the watersheds and as a model that identifies regionally significant natural areas for a new Metro Region natural resource guidance framework.
 - The partners published a Minnesota Land Cover Classification System-based natural resource inventory with stewardship strategies for the City of Afton for planning and land use decision making.
- (2) Management Planning and Guidelines for Landowners.
 - A total of 13 stewardship plans have been written for 294 acres of forestland.
 - Two buckthorn removal projects (on 3 and 5 acres) and native plant restoration projects were accomplished during two community workshops.
 - The 92-page, full-color “Vermillion River Watershed Handbook: A guide to help landowners make their property ‘Vermillion River Friendly’” was developed. Two thousand copies were printed and have been distributed to all riparian landowners. It will be used to help produce the Vermillion River Vision, which will secure agreements for a master plan incorporating a range of habitat and stewardship-based ideas.
 - The Valley Creek Watershed committee is pursuing forest stewardship recommendations in the development of their watershed plan.
- (3) Site-Specific Demonstration Projects.
 - Several youth groups and Trout Unlimited established a 10-acre riparian reforestation demonstration project on the banks of the Vermillion River.
 - Two woodland forb restoration projects were completed to test alternative methods of re-establishing an understory after removing invasive exotics.
 - Timber stand improvement, erosion control, removal and control of exotic species, agroforestry, oak

regeneration, and/or riparian reforestation demonstration projects are planned pending securing appropriate crews, contractor, planting stock, and final commitments.

PARTNERS

This is a cooperative project between the Minnesota Department of Natural Resources and numerous partners for each watershed.

- Trout Unlimited
- Local schools
- Carver, Dakota, and Washington Soil and Water Conservation Districts (SWCDs)
- Vermillion Watershed Management Organization
- Friends of the Mississippi River
- Dakota Habitat Alliance
- Vermillion River Watch Council
- Brown’s Creek, Lower Minnesota River, and Valley Branch Watershed Districts
- Valley Creek Sub-Watershed Advisory Committee
- Cities of Afton, Chaska, Chanhassen, and Woodbury
- St. Croix Watershed Research Station
- Friends of the Minnesota Valley
- Carver County Planning and Zoning

FUTURE PLANS

- Assessment and Planning. The watershed initiative and numerous partners are continuing to work in the four watersheds and will use the assessment information for land use and other planning projects.
- Demonstration Projects. Numerous forest stewardship and habitat improvement projects are in the planning stages. Several of these will be completed in 2002.

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