

Enhancing Forest Stewardship in the Upper Iowa River Watershed



BACKGROUND

The Upper Iowa River Watershed encompasses 1,005 square miles of steep and rugged terrain that is dominated by rural agriculture and forests. The Upper Iowa is known for its fine fisheries, which contain some of the highest quality cold-water trout streams in the Upper Midwest. Visitors are drawn each year to the watershed to participate in fishing, hunting, canoeing, camping, and fall foliage viewing, which all bring needed income to the communities in this rural area.

Currently, land use is changing from a forest/prairie cover to row crop agriculture and residential development. These changes have caused flooding and degraded water quality, resulting in lower trout populations. In 1999, the Upper Iowa River Watershed Alliance was formed to address the problems in the entire watershed and improve its health in a unified manner.

LOCATION

The Upper Iowa River flows from southeastern Minnesota through northeastern Iowa to the Mississippi River.



ISSUES BEING ADDRESSED

Over 90 percent of the Upper Iowa River Watershed is in private ownership. Land use change has converted native oak-hickory and maple-elm-cottonwood forest types to row crop agriculture, livestock grazing, or residential development. Flood frequency and damage have increased. Nutrient and sediment loading is the primary reason that natural trout populations are significantly decreasing.

GOALS

- Increase private landowner awareness of and involvement in water quality enhancement and protection through the Upper Iowa River Watershed Alliance.
- Use a Geographic Information System (GIS) to display land use information and analyze the impact of land use change on hydrology and water quality.
- Accelerate forestry technical assistance to private landowners.

METHODOLOGY

The project directly improved long-term water quality within the Upper Iowa River Watershed through:

- Partnership Building and Education. The Upper Iowa River Watershed Alliance expanded recruitment and involvement of private landowners through direct mailings, brochures, and news releases. Forestry Best Management Practices (BMPs) were also publicized and distributed to area loggers and landowners.
- Promotion and GIS Analysis. The Alliance hired a full-time GIS land use specialist to gather and create GIS maps and analyze map information to visually show enhancement opportunities to private landowners. The GIS specialist conducted a specific land use analysis for each of the 30 sub-watersheds to enable the Alliance to prioritize areas of greatest need.
- Technical Assistance and Implementation. Private landowners received specific one-on-one forest management assistance and forest stewardship plan development. Landowners received detailed information on conservation practices that maintain and improve water quality. Tree planting, prairie reconstruction, timber stand improvement, livestock exclusion, and riparian buffer strip installation and maintenance were cost shared through the Environmental Quality Incentives Program (EQIP), Forestry Incentives Program (FIP), Conservation Reserve Program (CRP), Resource Enhancement and Protection (REAP), and the Minnesota Forestry Association (MFA) Program.

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.

OUTCOMES AND ACCOMPLISHMENTS

Although water quality improvements have not been documented, this project set the stage for restoration on a larger scale. The Trout Run Restoration Project and targeting of highly erosive areas have the potential to decrease soil erosion by hundreds of thousands of tons per year.

Through public and private partnership efforts in Iowa and Minnesota, private landowners received expanded water quality education and technical assistance. Private landowners are better informed of the resource concerns within the Upper Iowa River Watershed. Specific accomplishments include:

- Partnership-building activities increased membership and support within the Upper Iowa River Watershed Alliance. These activities included 3 newsletters, 2 water quality brochures on individual sewage treatment systems and the Continuous Conservation Reserve Program, 49 press releases, forestry BMP booklet distribution, 170 presentations of all types, targeted mailings to different landowner groups, a survey of 1,000 residents, and Technical Alliance Committee Meetings.
- A GIS watershed analysis prioritized opportunities for increased tree planting, prairie reconstruction, livestock exclusion, timber stand improvement, and riparian buffer strip installation and maintenance needs. Fifteen GIS maps were produced and analyzed to determine relationships between water quality and forest and prairie loss within sub-watersheds, the location of high erosion sites, and the highest sediment producing sub-watersheds.
- A model was developed to predict the effects of reforestation on erosion and identify erosion “hotspots” that were impacting sediment load. It is currently being used to notify landowners whose lands are eroding at rates between 76 and 160 tons per acre per year. It is also being used in the Trout Run sub-watershed for a reforestation project that targets highly erosive acreages for intensive technical and monetary assistance.
- Accelerated forestry technical assistance produced 96 forest stewardship plans on 3,016 acres, 8 EQIP forestry plans on 326 acres, 2 CRP tree plantings on 6 acres, 28 Continuous CRP tree plantings on 281 acres, timber stand improvement on 750 acres, and 1,100 acres of wildlife habitat improvement.
- Efforts by the Upper Iowa Alliance helped gain EQIP funds to accomplish TSI on the Iowa side of the project.

PARTNERS

- Iowa Department of Natural Resources (DNR) – Division of Forests and Prairies, Fish and Wildlife Division, and the Energy and Geological Services
- Minnesota DNR – Division of Forestry

- Soil and Water Conservation Districts of Howard, Winneshiek, and Allamakee counties in Iowa, and Houston, Fillmore, and Mower counties in Minnesota
- Upper Iowa River Alliance, RC&D for NE Iowa
 - Iowa Natural Heritage Foundation
 - NE Iowa Forest Advisory Committee
 - USDA Natural Resources Conservation Service
 - U.S. Fish and Wildlife Service
 - Iowa State University
 - Luther College
 - City of Decorah, Iowa
 - Local Pheasants Forever Chapters
 - Local Ducks Unlimited Chapters
 - Hawkeye Fly Fishing Association

FUTURE PLANS

The project was completed. The Alliance used the GIS analysis to select the Trout Run sub-watershed for their next project and have raised funds to start implementation. The project will reforest cropland sites that are on 14 percent slopes and are losing soil at rates between 76 and 160 tons per acre each year.

Project Contacts

John Walkowiak, Chief of Forestry Services
IA Department of Natural Resources
Wallace State Office Building
Des Moines, IA 50319
Phone: 515-242-5966
Email: John.Walkowiak@dnr.state.ia.us

Larry Himanga, Forestry Incentives Specialist
MN Department of Natural Resources
1801 S. Oak Street
Lake City, MN 55041
Phone: 651-345-4924
Email: larry.himanga@dnr.state.mn.us

Federal Contact

Rich Wiest, Forester
USDA Forest Service
1992 Folwell Ave.
St. Paul, MN 55108-1099
Phone: 651-649-5237
Email: rwiest@fs.fed.us

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