

Clearwater River Stream Bank Stabilization and Revitalization Project

In 2001 the RLWD continued work on the Clearwater River Stream Bank Stabilization and Revitalization Project. The work performed during 2001 was focused on bank stabilization, grade stabilization and floodplain improvements on the Clearwater River in Section 27, Greenwood Township, Clearwater County.

Construction for the project was completed in November. Elements of the project included:

- 1) Stabilization of stream bank erosion sites through bank reshaping, rock riprap and bioengineering techniques. The bioengineering techniques included the planting of willow stakes and bundles on the bank slope above the rock riprap and seeding of grass mixtures.
- 2) Cross-vein weirs (rock riffles) were established in order to stabilize the grade of the Clearwater River. Lowering of the riverbed has occurred due to past dredging of the Clearwater River. The cross-vein weirs prevent further erosion while allowing the passage of fish.
- 3) Re-establishment of the function of the floodplain in the area was accomplished by using clay fill and rock riprap. This material was placed in actively eroding channels forming in the floodplain. The material will slow the flow of water during higher flows to allow deposition of sediment.

The RLWD has also made an application to the Board of Water and Soil Resources for wetland banking acres due to restoration of the floodplain. The

RLWD owns approximately 25 acres in the project area, some of which may qualify for the wetland banking program.

Data collection and preliminary design work has been conducted on another site in Section 6, Gully Township, Polk County on the Lost River. This project is aimed at addressing erosion near a county bridge.

These projects have been made possible through a Section 319 grant from the Environmental Protection Agency, which is administered by the Minnesota Pollution Control Agency. Cooperating partners in the project have included Clearwater County and local landowners. Special cost share funds and in-kind work were provided through the Clearwater County SWCD. Local landowners provided some of the construction as well as right-of-way for construction.



Installation of willow stakes and bundles at the Greenwood 27 site.



Bank stabilization site after completion of construction.

Clearwater Lake Management Plan and Water Quality Modeling Projects

The Red Lake Watershed District received two Local Water Planning Challenge Grants, dealing with Clearwater Lake, through the Board of Water and Soil Resources in 2001.

The first project is titled the “Clearwater Lake Management Plan”. The Clearwater Lake Area Association applied for the challenge grant through the RLWD. The purpose of this project is to develop a lake management plan to improve lake water quality through active educational efforts with lakeshore owners and partnerships with local agencies. The management plan is being developed through the Sustainable Lake Planning Guide from the Minnesota Lake Association.

Elements of the management plan include:

- A property owners’ survey;
- Lake watershed mapping;
- Historical lake information;
- A parcel-based database;
- Water quality information;
- Development of a vision statement, goals and future action steps for lake management.

In May of 2001 the Clearwater Lake Area Association met to begin the planning process. Several teams were assembled to accomplish each of the elements listed above. In September, the lake association submitted a property owners’ survey, response to the survey was approximately 63%.

The second project is titled the “Clearwater Lake Water Quality Model”. The purpose of this project is to assess the feasibility of various

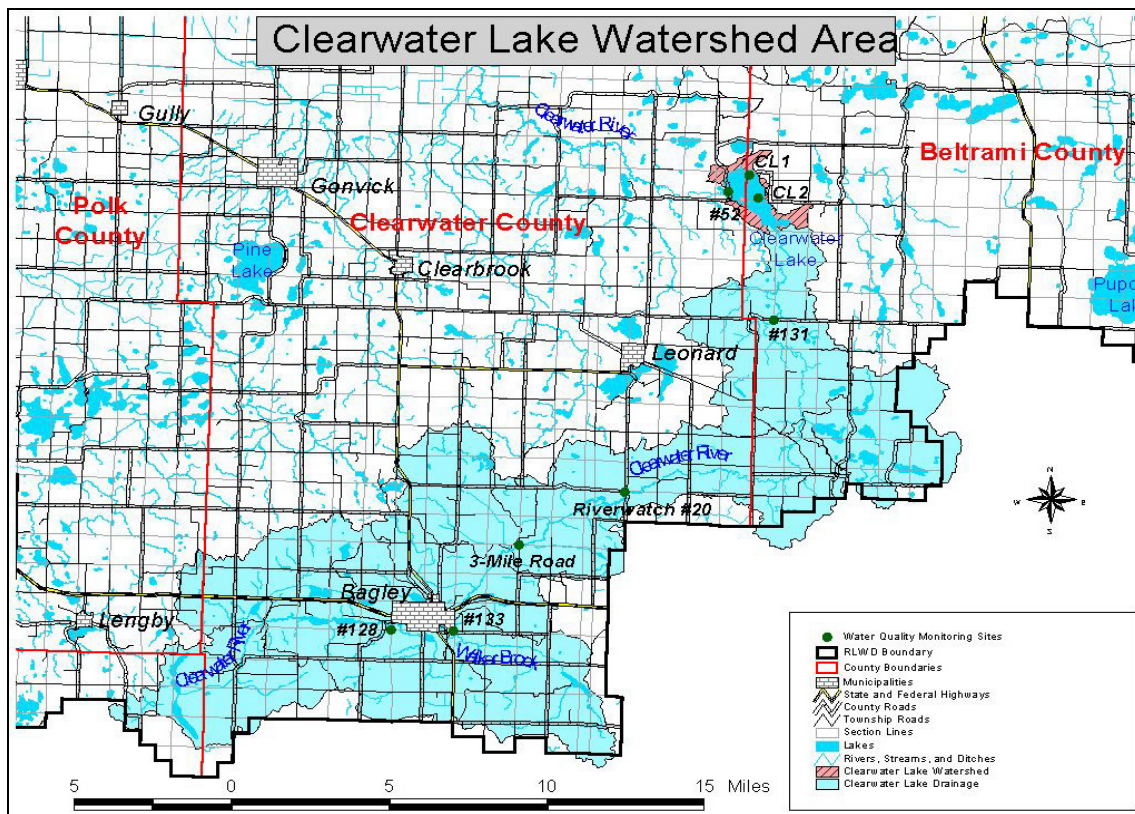
nutrient and sediment reductions and their effect on lake water quality. The project enhances the lake management plan project by providing recommended solutions to the perceived water quality problems on Clearwater Lake. These recommendations will be used within the lake management plan for future implementation projects. The project will provide recommendations by accomplishing the following tasks:

- Collecting water quality and water quantity data on an annual scale (in 2002);
- Development of water quality and hydrologic budgets on an annual scale;
- Development of a water quality model for Clearwater Lake.

The project also includes development of loads in the watershed above Clearwater Lake. This information will

be used to determine contributions of nutrients and sediment from upper watershed sources. This information will also be used to compare results to those found in the Clearwater Nonpoint Project, which occurred approximately ten years prior.

Local partners in this project, besides the Red Lake Watershed District, include: Beltrami County, Clearwater County, the Clearwater Lake Area Association, the Clearbrook-Gonvick River Watch Program, and partial funding provided through the Red River Watershed Management Board. State Agencies including the Minnesota Department of Natural Resources and the Minnesota Pollution Control Agency are also participating in this project.



Red River Watershed Assessment Protocol Project

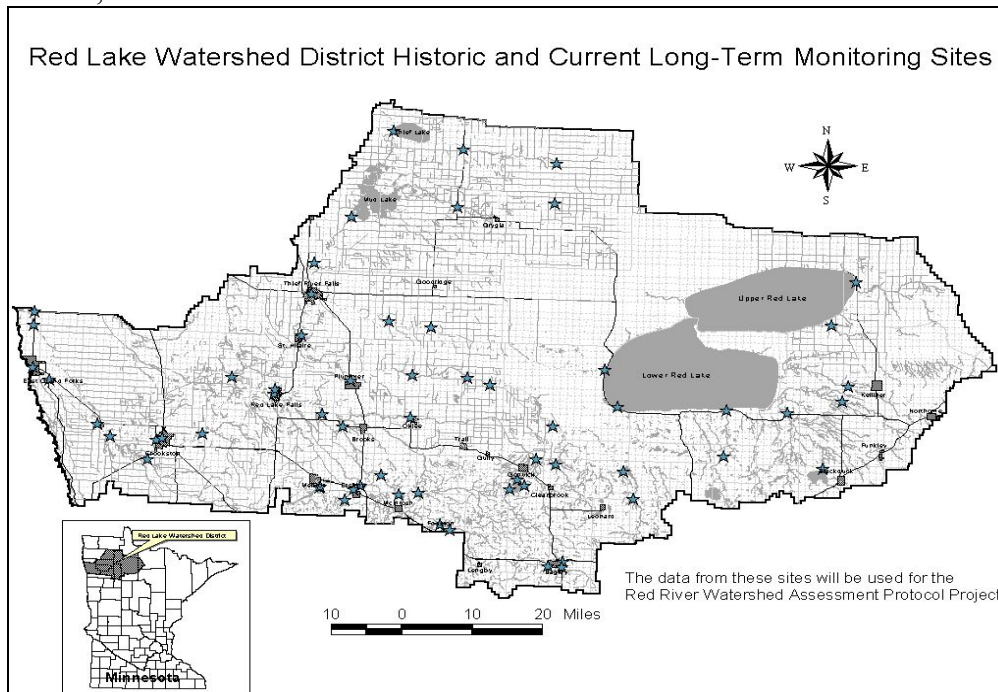
In 2001, the Red Lake Watershed District has undertaken the “Red River Watershed Assessment Protocol Project”. This is a multi-faceted project aimed at examining water quality data collected on a long-term basis at the RLWD and establishing protocols for the future long-term water quality program.

Outcomes for this project will be the following:

- Demonstrated statistical analysis techniques applied to RLWD and other organizations’ water quality data;
- A water quality report format for use in the RLWD;
- A database clearinghouse established at the RLWD and entered annually into the STORET database;

- Establishment of a RLWD website, which will allow entry of water quality data from remote locations, as well as display results from analysis of this data;
- A quality assurance guideline and standard procedures for field data collection.
- Providing coordination between local, tribal, state and federal organizations for future data collection.

The project was funded through a Local Water Planning Challenge Grant through the Board of Water and Soil Resources in 2001. The Red River Basin Team is acting as the local advisory committee for the team.



The RLWD has recently established a website which contains map information ranging from soils and landuse to water quality collection sites. These sites can be found on the website at <http://www.redlakewatershed.org>.

River Watch Program Update

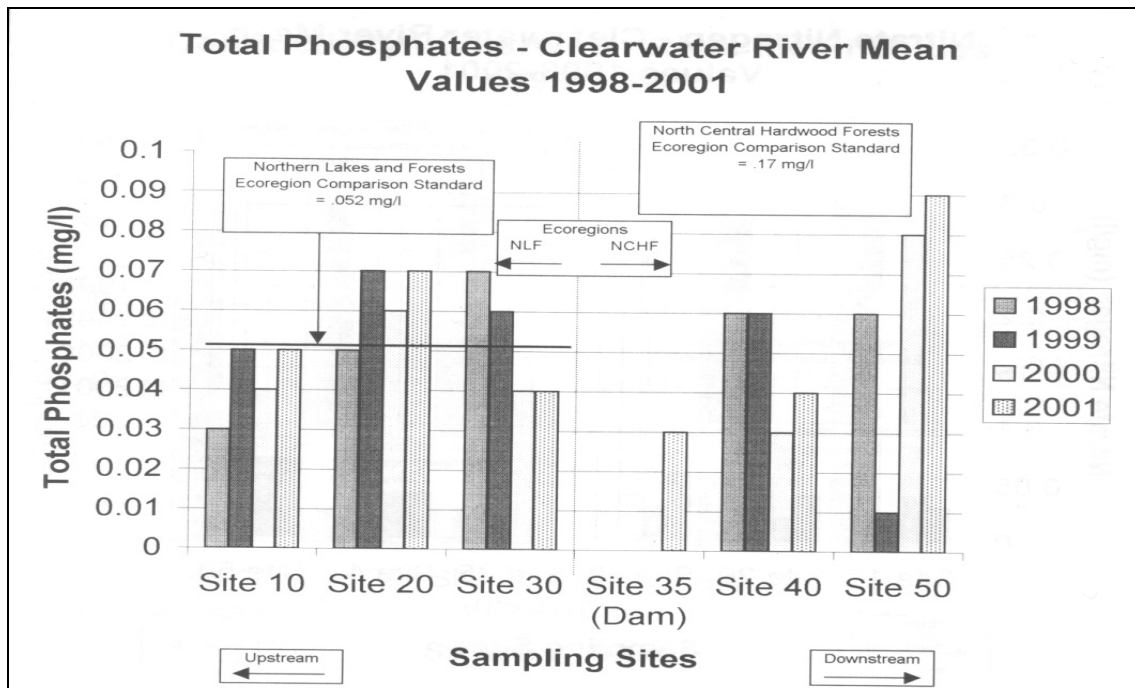
The River Watch Program has been continuing at several area schools in the RLWD. The goal of the River Watch Program is to educate students in natural resources fields while collecting meaningful water quality, quantity and other natural resource data. Students are provided “hands-on” experience in subjects ranging from chemistry and biology to hydrology and geology.

In 2001, the RLWD extended funding for the program in eight area schools for a period of ten years. This was accomplished through the signing of a mutual agreement between the schools and the RLWD. The RLWD is providing for reagents and supplies as well as substitute teacher and monitoring transportation costs. The schools involved in the program include Oklee, Plummer, Red Lake Falls, Clearbrook-Gonvick, Crookston, East

Grand Forks, East Grand Forks Sacred Heart, and Fisher.

The Red River Watershed Management Board has recently hired Wayne Goeken and Danni Halvorson. Part of their duties has included providing technical support to each River Watch Program in the Red River Basin as well as coordinating the program with watershed district and local SWCD personnel.

Future plans for the River Watch Program in the RLWD include maintaining annual River Watch data display forums and extending funding for the program to other schools including Grygla, Win-E-Mac, and Fosston. The data collected will be gathered on the RLWD database for use by resource managers.



Graph summarizing collected data from the 2001 Clearbrook-Gonvick River Watch Report.

Future Water Quality Program Information

In 2002, goals for the water quality program include:

- Continue progress on the Clearwater Lake Projects;
- Continue progress on the Red River Watershed Assessment Protocol Project;
- The RLWD in coordination with other organizations will conduct a habitat/bioassessment of the Clearwater River;
- Work on establishing buffer strips in the Silver Creek Subwatershed in Clearwater County;
- Finish construction on the bank stabilization efforts through the Clearwater River Stream Bank

Stabilization and Revitalization Project.

The RLWD recently hired Zeb Lamp as a natural resource technician. He has been assisting with water quality projects as well as working with GIS.

For more information or questions on water quality projects, water quality data, mapping or GIS data contact Ryan Odenbach at the Red Lake Watershed District Office or e-mail at ryano@wiktel.com.



Picture of the Crookston High School River Watch Team with teacher Greg Garmen (top, farthest right). Students have created their own website for River Watch, which can be found at http://crookston.k12.mn.us/student_page/RiverWatch.