



# Grade Stabilization above the Thief River



## Clean Water Funds: 2011

Clean Water Grant	\$187,974
Leveraged Funds*	\$47,075
Total Project Budget	\$235,049

\* Leveraged Funds include required 25% local match

**Targeted Water:**  
Thief River

**Project Sponsor:**  
Red Lake Watershed District

**Partners:**  
Red Lake Watershed District, Marshall County Highway Department, Marshall County Soil and Water Conservation District, Northwest Minnesota Joins Powers Board Engineer

**Grant Period:**  
January 2011 - December 2012

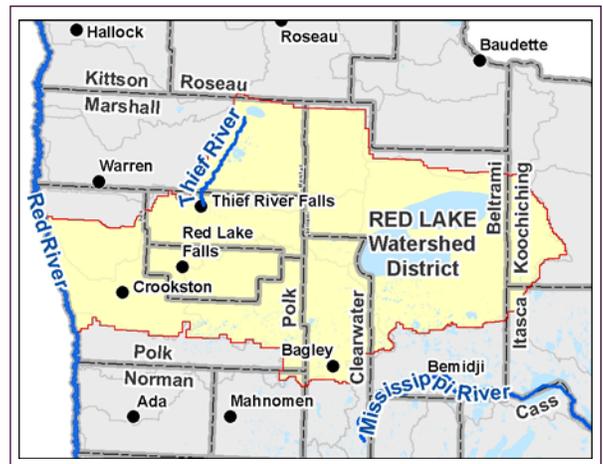
**Project Contact:**  
Myron Jesme  
(218) 681-5800  
jesme@wiktel.com  
www.redlakewatershed.org



## Project Narrative

The Thief River is the source of drinking water for the City of Thief River Falls. The river's other designated uses also include recreation and aquatic life. Water quality monitoring conducted by local agencies discovered that the Thief River is not meeting state water quality standards for both turbidity (muddiness) and dissolved oxygen. Each year, approximately 12,376 tons of sediment is deposited into the Thief River Falls reservoir by the Thief River. That is the equivalent of over 1,200 dump trucks full of dirt. This excessive amount of sediment increases the potential of harmful byproducts getting into the city's drinking water, increases water treatment cost, and degrades the fish habitat.

Marshall County Ditch 20 (CD20) is a drainage system that flows into the Thief River 7.5 miles northeast of Thief River Falls. The deepening of CD20 by erosion has been identified as a major contributor to the sedimentation problems in the Thief River and has exacerbated gully formation in fields along its course. Project partners will collaborate to implement grade stabilization and erosion control strategies along the lower 2.5 miles of CD20. Specifically, a series of rock riffle grade stabilization structures will be used to reduce the head cutting and sloughing along CD20 and side water inlets will be used to halt the gully erosion on adjacent field ditches. This project will help bring the Thief River closer to meeting the turbidity standard by reducing sediment on average by over 400 tons each year. Reducing sediment and nutrients will reduce the amount of water treatment that is need for the City of Thief River Falls and will also improve habitat for aquatic life within the river.



## Grade Stabilization above the Thief River



Gully in a field



Example grade stabilization structure installed by Marshall County Highway Department



Sediment bar formation at Thief River confluence