



## **Shoreline Restoration Using Plants**

*February 2001*

### ***Soil Bioengineering***

Last year we worked with partners including the Leech Lake Reservation, Cass County Soil and Water Conservation District, the Minnesota Board of Soil and Water Resources, the Natural Resource Conservation Service and Wildlife Forever to try some new ways of restoring eroded shoreline that will reduce the amount of sediment that enters our lakes and provide habitat for plants and animals.

Erosion control just means saving the fragile layer of soil that plants thrive in. Restoration is bringing back the physical structure and the living things to a place where damage has occurred.

### ***High Water and Wind***

High water in 1999 on Cass Lake and Winnibigoshish took its toll on several miles of shoreline. Two areas on Cass Lake that were damaged were Cass Lake Campground and Wanaki Campground at the Norway Beach Recreation Area. On Winnibigoshish, several miles of shoreline had an accelerated amount of damage.



Our partnership effort utilized soil bio-engineering techniques at two areas. One area at Cass Lake Campground was used as a training site for contractors last May. The first two pictures in this newsletter show construction activities at that site and a view of the same site this fall. 150 feet of shoreline was restored and stabilized.



## ***Hard Rock and Soft Leaves***

The other area treated was the South Winnie Shoreline Restoration project, designed to test bio-engineering approaches in a large lake environment. This project utilized rock and logs as well as vegetation to stabilize the shoreline. This combination of “hard” and “soft” engineering approaches was needed for the harsh conditions on Lake Winnie.

Four vegetative methods and a log offshore breakwater were used along 2000 feet of Winnie shoreline. In addition, approximately 660 square feet of bulrushes were planted in the lake to improve aquatic habitat.

The project was completed in early August.



Treatments consisted of re-building severely eroded banks utilizing geotextile wrapped layers of soil and dormant woody vegetation, utilizing woody cuttings to re-vegetate moderately eroding or fairly stable

slopes and planting native grasses, shrubs and forbs on newly constructed slopes.

## ***Back to School***

Both of these projects have been learning experiences. The knowledge gained will be used to design better solutions to address shoreline erosion and to satisfy public demand for environmentally friendly methods for protecting water quality and restoring degraded habitats.

## ***Spring Project***

This spring we would like to use these methods and possibly some new methods to stabilize the remainder of the shore along Cass Lake Campground. This will include about 200 feet of the same treatment in the pictures above. In addition there is another 250 feet where willows and dogwood would be planted in a geotextile log. At Wanaki Campground we would be planting native shrubs and grasses on severely eroding banks. As a part of these projects we would also build stairs from campsites to the water to direct foot traffic at designated locations on the banks.

## ***Contacts***

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