

## **Identification of High Priority Areas in Redwood County**

This section is included in the Redwood County Comprehensive Local Water Plan to allow Redwood Soil and Water Conservation District to use the plan as its Comprehensive Plan.

### **HIGH PRIORITY EROSION PROBLEMS**

High Priority problems have been defined as:

“High priority erosion problems” means areas where erosion from wind or water is occurring equal to, or in excess of 2 x T tons per acre per year or is occurring on any area that exhibits active gully erosion or is identified as high priority.”

Unsheltered distances range from 5,000 to 11,000 acres across the county. This is due to lack of native trees and current farming practices.

There are 545,248 acres of farmland in the county and approximately 486,900 of these acres are tillable. About 75 percent of this land has a slope of less than two percent. The cropland is subject to intensive row crop farming, which at critical times leaves the soil unprotected.

#### **Wind Erosion:**

Effects of wind on unprotected soils include loss of topsoil, particularly on knolls, and deposition of soil in the county’s drainage ways and road ditches.

Agricultural practices have brought about development of extensive county ditches and tiling systems on most area farms. The poorly drained soils have been drained and are therefore more subject to wind erosion than is indicated by their soil classification. Wind erosion rates in the country range from 3 to 8 tons per acre, which is higher than what will sustain productivity levels.

Wind erosion is occurring on approximately 25 percent or 135,000 acres throughout the county at a rate that exceeds twice the soils tolerable limits. A soil’s tolerable limit is the amount of erosion it can endure and still maintain productivity through the soil’s natural regeneration.

#### **Water Erosion:**

Water erosion is a major concern on rolling uplands that have been exposed by intensive farming methods. Even with the implementation of RIM, CREP and CRP concern continues to exist along rivers and streams. It is estimated that approximately 12,500 acres of cropland in the county are subject to excessive water erosion. This is

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generally found in moderate to steeply sloping areas along the Cottonwood, Redwood and Minnesota rivers and their tributaries.

Sheet and rill erosion are found on moderate to steeply sloping land, affecting about 30 percent of the total cropland in the county. Erosion rates on these acres, depending on farming methods, can range from 5 to 15 tons per acre.

The priority areas in the county that are affected by rates that exceed 2T per acre per year are: Paxton, Sherman, Vesta, Underwood, Delhi, Charlestown and Springdale townships. **(Illustration 7)**

### **HIGH PRIORITY WATER QUALITY PROBLEMS**

High priority water quality leading to sedimentation problems have been defined as:

“High priority water quality problems” means an area where sediment, nutrients, chemicals or other pollutants discharge into Department of Natural Resources-designated protected waters, or to any high priority waters, as identified in any local plan, or discharge to sinkholes or groundwater. The pollutant delivery rate to the water source is in amounts that will impair the quality or usefulness of the water course.

Streambank erosion is found along all rivers in the county and their tributaries. This erosion is due in part to farming methods that have increased the rate of flow within individual watersheds and the removal of vegetation along stream banks. There are more than 100 miles of streams and tributaries in Redwood County and it is estimated that 40 percent of this length exhibits severe bank erosion. However, accurate systematic inventories of bank erosion have not been made.

Sedimentation in the county occurs primarily in the Minnesota, Redwood and Cottonwood rivers and their tributaries. There are specific townships in the Redwood and Cottonwood watersheds that have more impact: Underwood, Vesta, Gales, Springdale, Lamberton, Charlestown and Johnsonville. Along these drainage ways, there are approximately 12,000 acres of land that exceed 3 tons per acre per year. This sedimentation has been slowed due to the implementation of RIM, CREP and CCRP. Sedimentation also occurs as a result of erosion on long, steep irregular slopes along these same drainage ways. Sedimentation is more prevalent during intense rain or rapid snow melt allowing the water to carry with it heavy loads of soil, chemicals and animal waste. **(Illustration 8)**

In the Redwood River Watershed, Lake Redwood has been an issue regarding sedimentation. The Clean Water Partnership diagnostic study has shown that Lake Redwood in the City of Redwood Falls is the receiving body for most of the sediment in the Redwood River Watershed.

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High Priority feedlots are defined as:

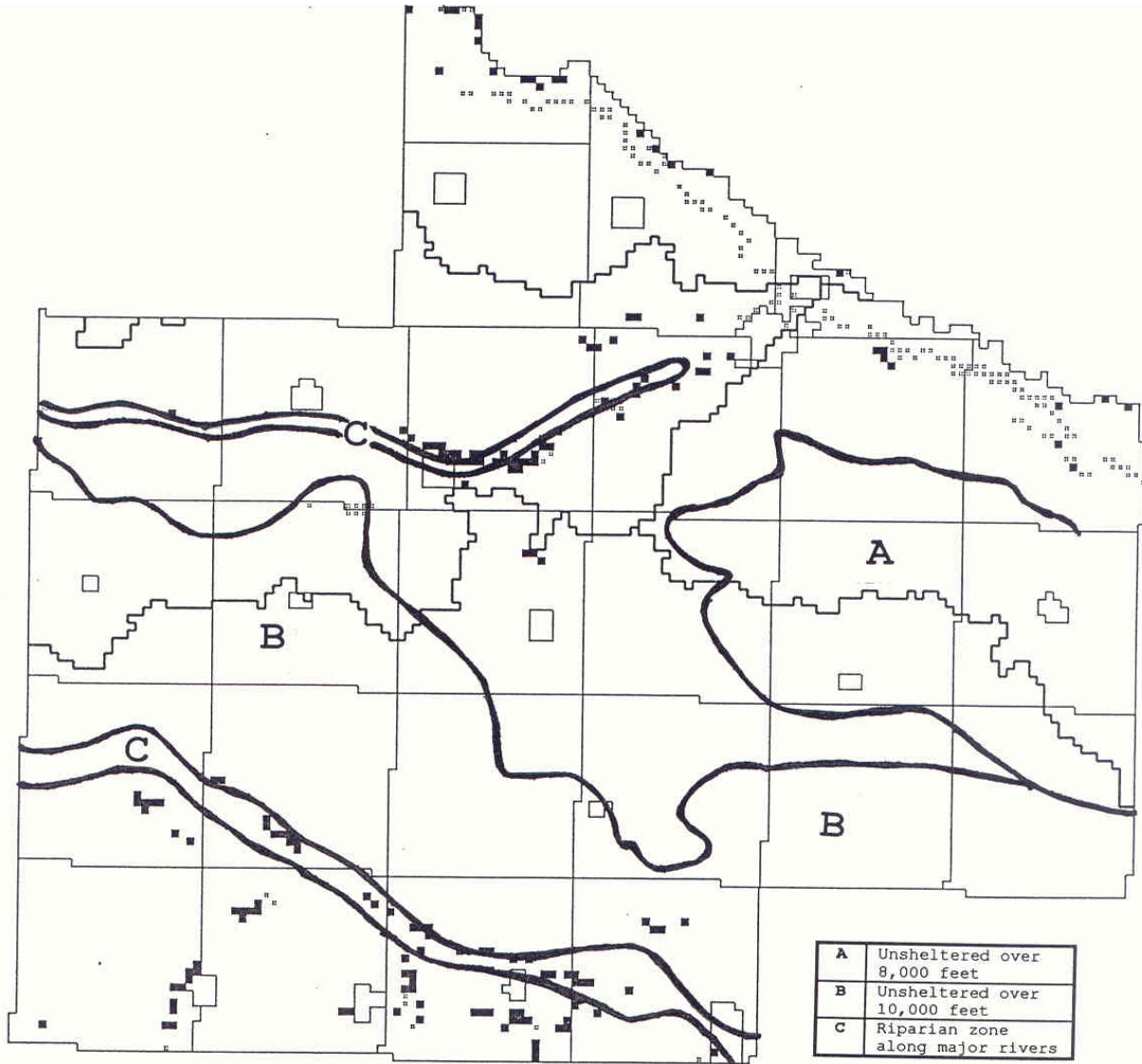
“Those feedlots where the pollution potential FLEval rating is greater than or equal to one, and is discharging pollutants to DNR-designated protected waters or wetlands, to a sinkhole, to shallow soils overlying fractured or cavernous bedrock, or within 150 feet of a water well.”

Nutrient loading of phosphorus, nitrogen and pathogens have been identified as a high priority in the Cottonwood and Redwood River Watersheds. The Hawk Creek/Yellow Medicine and Middle Minnesota watersheds have not had diagnostic studies completed to determine whether or not they are high priority. With the implementation of MPCA’s registration and nutrient management plan requirement, it is our expectation that these pollutants will be greatly reduced.

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Illustration 7

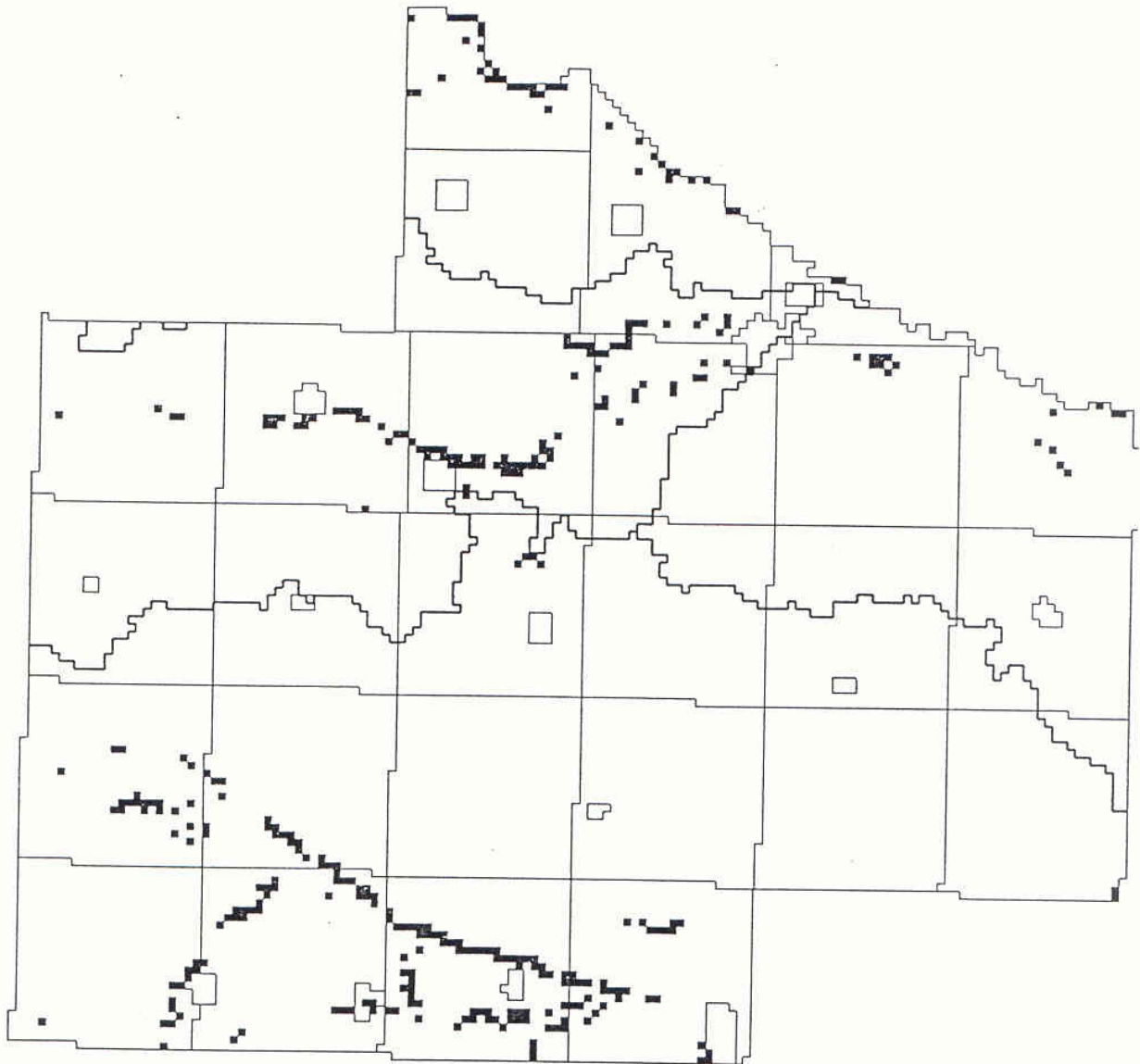
## Wind/Water Erosion in Redwood County



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**Illustration 8**

**Sedimentation Areas in Redwood County**



This map displays critical sedimentation areas in the county. The solid areas represent priority sedimentation areas, in particular shoreland with estimated soil loss greater than or equally to 3 T/Acre/Year.

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