Protecting the Knife River - Improved Land Management Around Goodman

The Goodman Creek Watershed Project is a subwatershed of the Knife River watershed located in west-central Mercer County, North Dakota. The project area encompasses approximately 59,000 acres, of which 52 percent is cropland and 45 percent is either rangeland or pasture. Low residue farming practices (plowing) and overgrazing have resulted in increased wind and water erosion on much of this land. Agricultural pollutants attached to the wind and waterborne sediments are deposited in Goodman Creek at an accelerated rate.

Taking action

The goals and objectives of the Goodman Creek project are twofold. First and foremost, it will improve the water quality of Goodman Creek by promoting improved land management practices and installing various best management practices that are known to reduce erosion effectively on agricultural lands within the watershed.

A second objective is to document and disseminate information on the positive effects that the application of various best management practices (BMPs) has on water quality especially in small watersheds.

Water quality and land treatment data compiled during this project are being used to determine the correlation between land treatment and water quality improvements. This data will help the state and individual farmers to evaluate the overall effects of the project activities on the watershed.

Monitoring results

The following structural practices were installed during this project:

- feedlot windbreaks,
- fencing,
- grassed waterways,
- pasture/highland planting,
- pipelines,
- ponds,
- spring developments,
- tanks, and
- wells.

Four monitoring sites have been established at which both water samples and macroinvertebrate inventories will be collected to help measure the project's effectiveness. Approximately 248 water quality samples have been collected since the project began in 1993.

Trends from these samples indicate an improvement of several variables, that is, declining concentrations of fecal coliform, total phosphorus, and total suspended solids. Figures 1 through 3 document the results to date, but as this project is relatively new, these numbers (and the trends they establish) can be expected to change by the project's end.