Riparian Improvement in East River South Dakota - Information and Education are Keys to Success

Water quality in the Big Sioux, James, and Vermillion rivers of South Dakota, which drain all or parts of 34 eastern counties, is impaired. Samples from these streams contain pollutants and physical impairments that limit their use for drinking water, fisheries, and water-related recreation. The persistence of poor water quality over many years relates to several land uses in the watersheds, namely, urban growth, and a variety of agricultural practices.

Sediments from sheet, rill, and ephemeral erosion on croplands and construction sites; stormwater runoff; streambank erosion; and loss of riparian vegetation, mainly from cattle grazing and cropland encroachments, are partial reasons for the water's poor quality. Excessive nutrients, especially phosphorus and nitrogen, and human and animal wastes in runoff and sediments are additional concerns.

Identifying the players

Although some remediation work is ongoing in these watersheds, South Dakota's Nonpoint Source Task Force saw the section 319 grant program as an opportunity to strengthen the effort. It organized the East River Riparian Committee to determine how local people can be encouraged to take active roles in riparian management and water quality improvement. The Nonpoint Source Task Force is an ad hoc group of South Dakotans interested in water quality; its members are representatives from agricultural groups, state and federal agencies, resource conservation and development districts, conservation districts, and water development districts.

The East River Riparian Committee is composed of competent resource managers and local area leaders who have developed a project to provide information and education on riparian area management for resource managers, land users, and the general public. The committee's goal is to provide incentives to land users who voluntarily implement a riparian management demonstration site. The sites can be in an area that needs treatment or in one that already displays the results of good riparian stewardship.

Reaping the benefits

The project helps resource managers develop their knowledge and improve their confidence in planning and implementing riparian area management projects. Land users interested in improving riparian areas can also obtain technical and financial assistance from the project. Landowners who already have good riparian areas receive recognition for their efforts and share their experience with those working in riparian areas for the first time.

INFORMATION AND EDUCATION

Everyone increases his or her awareness and understanding of the values and functions of healthy riparian areas in relation to water quality. Riparian areas influence the surface water quality by affecting the timing and amount of water, sediment, nutrients, and organic matter that enter an intermittent or perennial stream from the adjacent uplands. The riparian areas in the James River watershed (along the mainstem and tributaries) are pasture. In the Big Sioux and Vermillion River watersheds, both cropland and pastures are found in the riparian area. Overgrazing, cultivation, and trampling eventually eliminate riparian plants, which increases runoff and sediment delivery to the rivers, accelerates streambank erosion, and prevents the floodplain from functioning as it should to retard flooding.

Project overview and sponsors

All management practices demonstrated at the project sites were selected from the Natural Resources Conservation Service Field Office Technical Guide. Most practices were related to grazing management: for example, planned grazing systems, cross fencing, livestock crossings, livestock exclusions, range seeding, and water development (nose pumps, solar pumps, pipelines, dugouts, stockwater dams). Other practices include grass waterways, grass seeding, tree planting, grade stabilization structures, and streambank stabilization. Wet weather has hampered the implementation of these practices at several sites, but the landowners have remained enthusiastic.

In all cases, the land user was asked to allow media coverage and public tours to observe progress and riparian values of each site. Riparian information reaches the public through on-site tours, newspaper articles, slide talks, displays, and presentations. On-site tours are especially useful; they show that landowners accept riparian management practices and that improved riparian vegetation benefits both the landowner and surface water quality.

Benefits and results

The East River Riparian Area Demonstration Project has shown how conservation- oriented riparian management can succeed in South Dakota. A total of 18 project sites were selected in the riparian areas of the Big Sioux, James, and Vermillion river basins. The majority of the riparian areas in the project were classified as nonfunctioning or functioning minimally. Partnerships between the producers, the NRCS, the U.S. Fish & Wildlife Service, Ducks Unlimited, and other resource agencies have provided a vehicle for improving the condition of these riparian areas.

Producers and resource personnel are working together to manage agricultural systems in riparian areas in an economically and ecologically sound manner. Producers have implemented grazing plans that have increased the vegetative cover and the stability of the riparian areas, while still increasing net profit from their agricultural operations. The overall results from the project have been an increase in the number of functional streams in the river basins, improved water quality, larger profits from agricultural operations, and an increased awareness of the value of riparian management.