# Little Bear River Project:
## Voluntary Approaches Yield Success

The Little Bear River watershed in Cache County, Utah, is listed as a high-priority watershed that is being adversely affected by nonpoint source pollution. The watershed covers 196,432 acres. Land use is approximately 70 percent range/forest, 19 percent irrigated cropland, 7 percent dry cropland, and 4 percent other. Land ownership is 85 percent private, 11 percent national forests, and 4 percent state lands.

In 1990 the U.S. Department of Agriculture (USDA) provided funding through the Hydrologic Unit Area Water Quality Program, giving birth to the Little Bear River Project. The Little Bear River Steering Committee was formed to provide local leadership and oversight of the watershed planning project. A technical advisory committee consisting of local, state, and federal resource agencies and representatives from Utah State University was formed to assist the Little Bear River Steering Committee with the watershed assessment. The technical advisory committee completed a watershed assessment in 1992.

The watershed assessment identified high sediment loads from eroded stream banks, as well as high nutrient and coliform loads from numerous animal feeding operations. Cropland and pastures were also found to be significant sources of nutrients in the Little Bear River watershed. Having identified the major causes of nonpoint source pollution in the watershed, the local steering and technical advisory committees developed the following project objectives:

Having identified the major causes of nonpoint source pollution in the watershed, the local steering and technical advisory committees developed the following project objectives:

- Reduce erosion from streambanks and rangeland in critical areas.
- Reduce nutrient and sediment loading from cropland, pasture, animal feeding operations, and rangeland.
- Inform and educate landowners within the project boundary and the public of the need to improve and maintain water quality in the Little Bear River watershed.
- Monitor the effectiveness of best management practices (BMPs) and evaluate the benefits of water quality improvements.

**Promoting voluntary approaches in the watershed**

The overall project goal was to encourage landowners to implement conservation practices and BMPs voluntarily to improve the quality of water in the Little Bear River watershed. To make the voluntary approach successful, a diverse group of partners were invited to provide guidance and input into project priorities and activities. To date, more than 100 landowners have participated in the project. An important component of the project is the citizen volunteers. Local community groups have donated more than 3,000 hours to various projects.

# LITTLE BEAR RIVER PROJECT

In the early stages, watershed restoration focused on stream channel and bank restoration and on grazing land improvements. In 1994 more emphasis was placed on improving animal waste management systems. By 1998, 36 animal waste management systems had been designed, and they are currently in various stages of completion and implementation. From 1991 to 1996, $1,507,000 in section 319 funding was allocated to the watershed effort.

**Measurable improvements in water quality**

Currently, 6 years after the initial watershed restoration efforts, measurable improvements in water quality are being documented. There is a downward trend in total phosphorus concentrations in the watershed. As more animal waste management systems and BMPs are implemented, the downward trend is expected to continue. A Total Maximum Daily Load (TMDL) plan has been developed, and further reductions in nutrient loadings will continue once the plan is implemented. The TMDL will target and reduce point source loads of phosphorus. By measuring the reduction of total phosphorus from point sources, the reduction of nonpoint source pollution can be determined to assess the success of the 319-funded projects.

Implementing BMPs throughout the watershed is also benefiting the aquatic community. In some reaches of the watershed, meanders have been restored in the stream channel. This work, and other structural work to control bank erosion, has improved habitat for fish and other aquatic organisms. Angler use has increased in the watershed, and this success has piqued the interest of other landowners in participating in the program.

**Primary Sources of Pollution:**
- agriculture (croplands, pasture, animal feeding operations)

**Primary NPS Pollutants:**
- sediment
- nutrients

**Project Activities:**
- stream channel and bank restoration
- grazing land improvements
- animal waste management systems

**Results:**
- reduced concentrations of total phosphorus
- improved habitat for fish and other aquatic organisms

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