Minnesota Pollution Control Agency

LeSueur River Watershed

Partners working to restore southern Minnesota river

wq-iw7-29n • June 2011

Located in south central Minnesota, the LeSueur River flows 111 miles through a gently rolling landscape, most of it farmland, until it cuts down through high bluffs to the Blue Earth River.

A total of 711,838 acres drain to the Le Sueur, and an extensive ditch and tile system facilitates movement of water throughout the watershed. Several streams – a total of 1,201 miles – flow to the LeSueur, with its major tributaries being the Cobb and Maple rivers.

Many of the lakes are shallow and provide wildlife habitat while others are deeper and popular for recreation.

Changes in landscape

Once covered with hardwood forests and prairies, the vast majority of the watershed is now planted to crops such as corn and soybeans or used for livestock production.

Lakes and wetlands currently comprise 3 percent of the watershed. About 89 percent of the wetlands have been drained since European settlement. Landowners have also straightened many of the meandering streams to facilitate drainage.

Water quality issues

The Minnesota Pollution Control Agency (MPCA) and several partners have studied the LeSueur River watershed for many years because several sections of the river and its contributing streams fail to meet state water quality standards for supporting aquatic life such as fish.

Problems include:

- Turbidity, meaning the water is too cloudy with sediment and other materials;
- Low levels of dissolved oxygen; and
- Excess levels of nutrients such as phosphorus.

Water monitoring shows some modest improvements in water quality in the LeSueur River over the past 10 years, though many problems persist.

Sources of sediment

One persistent problem in the watershed is the amount of sediment – soil and other particles – in the streams and rivers. This sediment harms aquatic life by affecting gill function, covering spawning areas and creating other problems.

In addition, the sediment flows downstream where it's filling in rivers and lakes.

State and federal research shows that conservation practices in farm fields are succeeding at keeping more soil on land and out of surface waters. However, field erosion is still a major source of sediment in drainage ditches, streams and rivers.

Ravines, streambanks and stream bluffs are the other major sources of sediment at the mouth of the LeSueur.

Hydrology plays a leading role. As more water flows through a river system, there's more potential for erosion and movement of sediment downstream.

Fish survey

The MPCA sampled the fish population in 82 sites in the LeSueur River watershed in 2008. Researchers found that species tolerant of high turbidity, such as fathead minnow and common carp, dominated the fish population, though game fish were present in 41 percent of the sites. With a reduction in sediment and other pollutants, the rivers and streams in the watershed could support more species that are sensitive to turbidity, such as smallmouth bass and darter species.

Highfin carpsucker

Walleye

Minnesota Pollution Control Agency • 520 Lafayette Rd. N., St. Paul, MN 55155-4194 • www.pca.state.mn.us
651-296-6300 • 800-657-3864 • TTY 651-282-5332 or 800-657-3864 • Available in alternative formats

To better understand the sources of sediment, and to target funding and efforts on reducing those sources, the MPCA is helping with two efforts in the LeSueur watershed.

The first is a study by the National Center for Earth-surface Dynamics (NCED), a group of top scientists affiliated with the University of Minnesota and other institutions. This study is called a sediment budget and entails determining the amount of sediment entering and exiting the river.

The second is a study of the adoption of Best Management Practices. The NCED and University of Colorado are surveying farmers in the watershed to determine which practices they are likely to adopt.

Holistic approach

In addition to the sediment research, the MPCA is taking a holistic approach to water quality in the watershed.

Using this approach, the MPCA is doing the following:

- Working with the Minnesota Dept. of Agriculture to examine the levels of acetochlor, a chemical herbicide used to control weeds in corn, in rivers and streams. This herbicide has the potential to affect the development of fish. This examination will determine if the state needs to further study the herbicide levels and the impact to aquatic life. The ag department will also develop an Acetochlor Response Plan.
- Working with Minnesota State University-Mankato, Rural Advantage and Clean Up the River Environment to interview people in the watershed to determine how to best engage citizens in efforts to restore and protect waters.
- Working with counties and Soil and Water Conservation Districts to identify the highest priority areas for water quality. Local partners will visit about nine farms in each of the LeSueur's 34 sub-watersheds to share concerns and invite input on priority areas.
- Monitoring lakes and streams in the watershed for biological health as well as the traditional water monitoring of sediment, nutrient and bacteria levels. The biological monitoring examines the fish populations and macroinvertebrates such as mayflies and dragonflies. This monitoring provides a more complete assessment of the watershed's water quality.

For more information

Contact MPCA projects managers:

- Paul Davis at 507-344-5246 or paul.a.davis@state.mn.us
- Larry Gunderson at 651-757-2400 or larry.gunderson@state.mn.us

The LeSueur, named for a French explorer, starts in Freeborn County, flowing north and west through parts of Waseca and Blue Earth counties. Tributaries from Steele and Faribault counties also flow into the LeSueur.