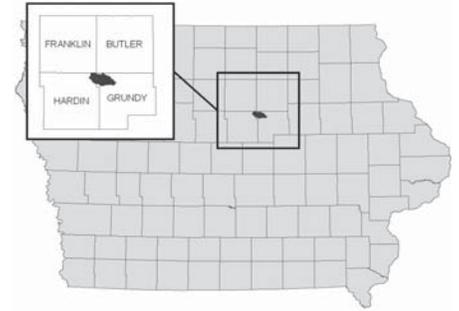


Clean Water  
starts with you

# Middle Fork South Beaver Creek



**Pollutant:** *Sediment and nutrients*

**Pollution Sources:** *Point and nonpoint*

The DNR tests waters throughout Iowa to make sure they are meeting state water quality standards. Those standards are in place to protect drinking water, aquatic life and recreational uses, like swimming. When a stream or lake doesn't meet those standards, the stream or lake is placed on the state's impaired waters list. The DNR then creates a plan which outlines ways Iowans can help improve the water quality in their community's lakes and streams.

## DNR needs your input

Every Iowan needs the help of their fellow citizens and watershed groups to improve water quality in their community. If you or your group would like to meet with a DNR staff member to discuss water quality, please contact Chris Van Gorp at (515) 281-4791 or [Chris.VanGorp@dnr.state.ia.us](mailto:Chris.VanGorp@dnr.state.ia.us)



For more information on water quality improvement plans, please visit [www.iowadnr.gov/water/watershed/](http://www.iowadnr.gov/water/watershed/)

The Middle Fork of South Beaver Creek needs your help. As you'll read below, the DNR has developed a plan which outlines the stream's problems and possible solutions.

But it's up to you to make sure those solutions are put into effect. A healthier creek depends on you.

## What's wrong with the stream?

Middle Fork South Beaver Creek is not supporting the amount and diversity of aquatic life that it should.

Over the years, too much sediment has reached the stream, causing a loss in habitat for invertebrates that live on the stream bottom. Also, high nutrient concentrations in the water have led to excessive plant growth and respiration, causing extreme dissolved oxygen swings and nighttime lows. Low dissolved oxygen levels can be toxic to fish and other aquatic life.

Middle Fork South Beaver Creek is a tributary to the Cedar River, sending nutrients to the river. The Cedar River is also on the state's impaired waters list because of nitrate levels.

Improving smaller sub-watersheds like the Middle Fork South Beaver Creek watershed can have a large impact on other streams and rivers downstream, such as the Cedar River.

## What is causing the problem?

Sediment comes from the watershed, or area of land that drains into the creek. Large areas of bare soil that have little or no vegetative cover during the rainy season are susceptible to the processes of sheet and rill erosion. During heavy rains and snowmelt events, bare areas that are close to the stream, or which develop concentrated



**Right: Middle Fork South Beaver Creek, a tributary to the Cedar River. Improving the watershed will help water quality in both streams.**

surface runoff, can deliver large sediment loads to the stream.

The high nutrient concentrations stem from a number of sources. Phosphorus, both dissolved and attached to sediment, carried to the stream by surface runoff and tile flow, is estimated to make up 77 percent of the annual loading. Point source pollution is estimated to contribute 16 percent of the annual phosphorus reaching the stream. Failing septic tanks, cattle in the stream, and natural loading by atmospheric deposition make up a minor portion of the total annual load (7 percent).

### How do we improve the Middle Fork?

The Iowa DNR has developed a water quality improvement plan (also known as a TMDL, or Total Maximum Daily Load) that outlines a plan for Middle Fork South Beaver Creek.

The plan defines the maximum amount of pollutants that the stream can tolerate and still support its designated uses. It also provides suggestions for future monitoring in the stream and activities that can help the situation.

To improve the health of this stream and of downstream rivers, sediment and phosphorus delivery from nonpoint sources need to be reduced significantly. This can be done by focusing on areas in the watershed that aren't currently using any soil conservation and/or nutrient management practices. Stream buffers, comprehensive nutrient management plans, cover crops, and controlled drainage are all potential measures for reducing sediment and phosphorus loading in the stream. There are many financial and technical assistance grants available to assist landowners who are interested in these practices.

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**Upper right:** The Middle Fork South Beaver Creek watershed. A watershed is an area of land that drains into a body of water. In this case, all land shaded in gray drains into Middle Fork South Beaver Creek.

**Lower right:** Land use in the Middle Fork South Beaver Creek watershed. Different land uses in a watershed can lead to different contributions of stormwater runoff and pollution.

Water quality monitoring is also a critical component in any watershed project. Monitoring helps identify dominant sources, characterize long term trends, and evaluate the impacts of watershed improvements. Currently, there is no monitoring being done in the stream; therefore, an active and devoted network of volunteer monitoring is strongly recommended.

### Who is responsible for a clean creek?

Everyone who lives and works in the watershed has a role in improving and maintaining Middle Fork South Beaver Creek. With all or nearly all of the 27,000 acres in the watershed in private ownership, government agencies can provide financial and technical assistance to landowners who are willing to voluntarily adopt land use changes.

Individual citizens can contact their local soil and water conservation district or the Iowa DNR Watershed Improvement Section for information on how they can make a difference.

