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## WATER QUALITY



Iowa's streams and rivers are complex systems, but getting a grasp on their health doesn't need to be.

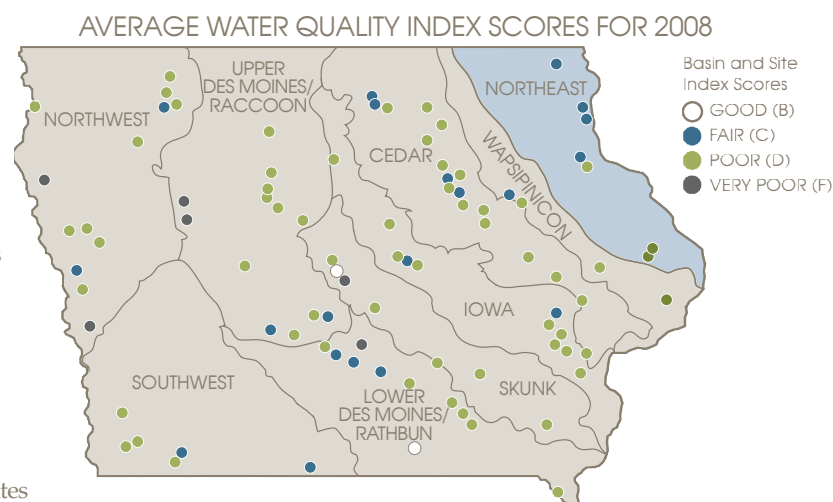
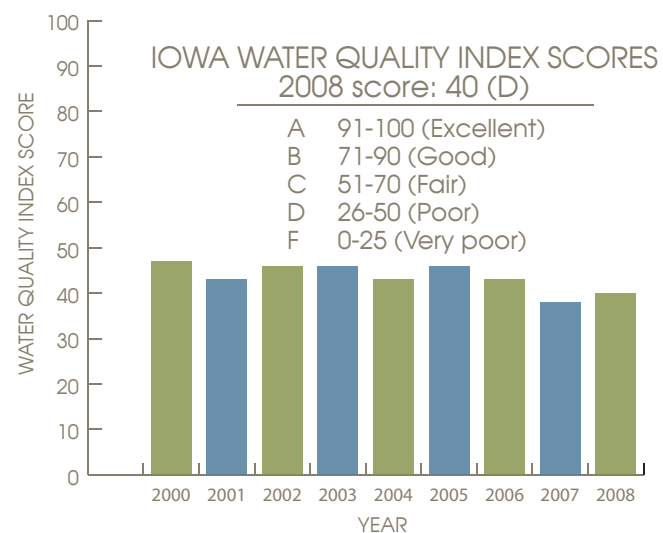
One measure of the state's overall water quality is the water quality index. The index works by measuring different factors (see below) that affect fish and aquatic life, drinking water, recreation and aesthetics. Monitors collect data monthly from 72 sites on major Iowa rivers. The index places these varied data into an equation that gives an overall reading of the health of Iowa's streams and rivers.

In 2008, Iowa streams scored a 40, landing in the "poor" category. Since 2000, the water quality index has dipped as low as 38 and reached as high as 47. Scores tend to be lower in the spring and summer when high stream flows wash in more pollutants from the landscape. In the fall and winter, scores rise as flows dip.

Results from each of the monitoring stations can help us better target water quality efforts and help us look at a watershed's impact on water quality. By identifying the largest influences on a watershed's health, the DNR and local groups can target problems to improve water quality locally and across the state.

In addition to current water quality improvement efforts, the DNR is developing a basin approach that will target resources in areas that need them the most. Basin coordinators will work in the field with local watershed coordinators and groups to make changes on the land, improving water quality.

For more information on how the DNR calculates Water Quality Index scores, view a fact sheet on the DNR website at <http://www.igsb.uiowa.edu/gsbpubs/pdf/WFS-2006-08.pdf>



### A CASE STUDY: CLEANER TROUT STREAMS

In 1980, only six Iowa streams sustained a trout population naturally, with the rest depending on stocking. Erosion from hilly northeast Iowa sent hundreds of tons of soil into trout streams, along with excess sediment, nutrients and bacteria from intensive farming. Grazing cattle trampled and eroded streambanks.

"We were losing a lot of soil into the streams. Too much mud makes spawning impossible," said Bill Kalishek, a DNR fisheries biologist at the Decorah hatchery.

Trout need clean water and a clean rock streambed to eat, spawn and thrive. Water quality depends on how people manage land in the watershed, which is the area that drains into a stream. Landowners working with DNR-funded watershed projects, as well as in-stream habitat improvements by the DNR, keep streams cleaner, making it easier for trout to reproduce on their own.

"There was a layer of silt on the stream bottoms that kept the water muddy for a long time after a rain," said



"The Water Quality Index and scoring mechanism will be a valuable tool as we all continue to address Iowa's poor water quality. However, we are not going to achieve significant improvements in water quality until we have better management of nitrogen and phosphorus applied to agricultural fields in fertilizers and manure—the largest source of water pollution in our state."

**Marian Riggs Gelb,**  
Executive Director of the Iowa Environmental Council



John Beard, a Decorah trout angler. "Now in a lot of these watersheds we can get a big rain event and not see any discoloration."

Today, 33 trout streams boast naturally reproducing populations. That includes Spring Falls in Delaware County, which had no naturally sustained brown trout in 1991. Now there is a naturally reproducing population ranging from 500 to 1,000 trout per mile of stream.

"We're changing the way water comes into the stream, and the trout are benefiting," Kalishek said.

Northeast Iowans also reap rewards with improved fishing, and in turn, increased tourism.

According to a 2006 DNR survey, licensed anglers made an estimated 535,064 trips to Iowa trout fisheries. At about \$27 per trip – that includes food, lodging, transportation and equipment – anglers spend more than \$14.4 million annually on trout in Iowa. The 2006 survey also shows that anglers took 161,000 more trips to Iowa trout streams than in 2001, including residents of 45 other states and Canada, Australia and England.

Trout anglers come to Iowa streams for a two-day trip, if not a week, and bring family and friends, according to local business owners. They spend time and money in sports stores, hotels, gas stations, restaurants and shops. For many small northeast Iowa businesses, most – if not all – of their business depends on trout anglers.

"We would not be here if it weren't for them," said Bev Stortz, who owns Highland General Store and Campground with her husband Gary. "It amazes me, the influx of people. I never imagined when we bought the store that so many people would come to this remote area."