

RAGBRAI Geo-pedia

Iowa Stream banks / health of a stream

The shape and condition of stream banks can provide insight into the quality of the stream and the aquatic life it supports. Are the banks high crumbling walls or gently sloping banks with grass, shrubs, and trees growing on them? You can tell much about the stream's long-term stability by looking at the shape and condition of its banks.

A stable bank is a sign of a stable stream (photo right). All streams and rivers move within their floodplains, but a mature, stable stream will not move very rapidly.

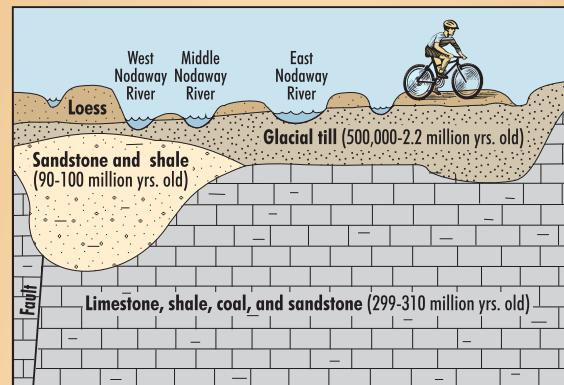


In Iowa, most streams naturally wind or "meander" back and forth across their floodplains. Bank sloughing, cut banks (shown below in photo of Nodaway River), and high-wall banks without trees or other plants are signs of bank instability. A sloping bank covered with vegetation is more stable and indicates a healthier watershed. Not only do gently sloping banks offer better habitats for wildlife near the water's edge, they help to slow and filter watershed runoff.



COVER PHOTO: The Swedish Heritage Cultural Center in Stanton, Iowa

Day 2 Milestones



Start: Red Oak

West Nodaway River: 8.2 miles after Stanton

Middle Nodaway River: 0.7 miles after Villisca

East Nodaway River: 3.6 miles after Villisca

Lake Binder: 1.5 miles after Corning

Nodaway Lake Park: 1.8 miles after Fontanelle

Greenfield Lake Park: 4 miles after Fontanelle

Finish: Greenfield – 70 miles

For more information...

about Viking Lake, Nodaway River, and other surface water bodies, along with how to improve watersheds or start an improvement project, visit: www.iowadnr.gov/water/watershed)

The Iowa DNR has many online interactive maps available for Iowa's natural and manmade resources. An index for these maps is at:

www.iowadnr.gov/mapping/index.html

Iowa's oil exploration information can be found at:

www.igsb.uiowa.edu/Browse/oilex/oilex.htm

2009 RAGBRAI

Learn about the Land

Monday, July 20 Day 2



Iowa DNR – Geological and Water Survey

109 Trowbridge Hall
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www.igsb.uiowa.edu

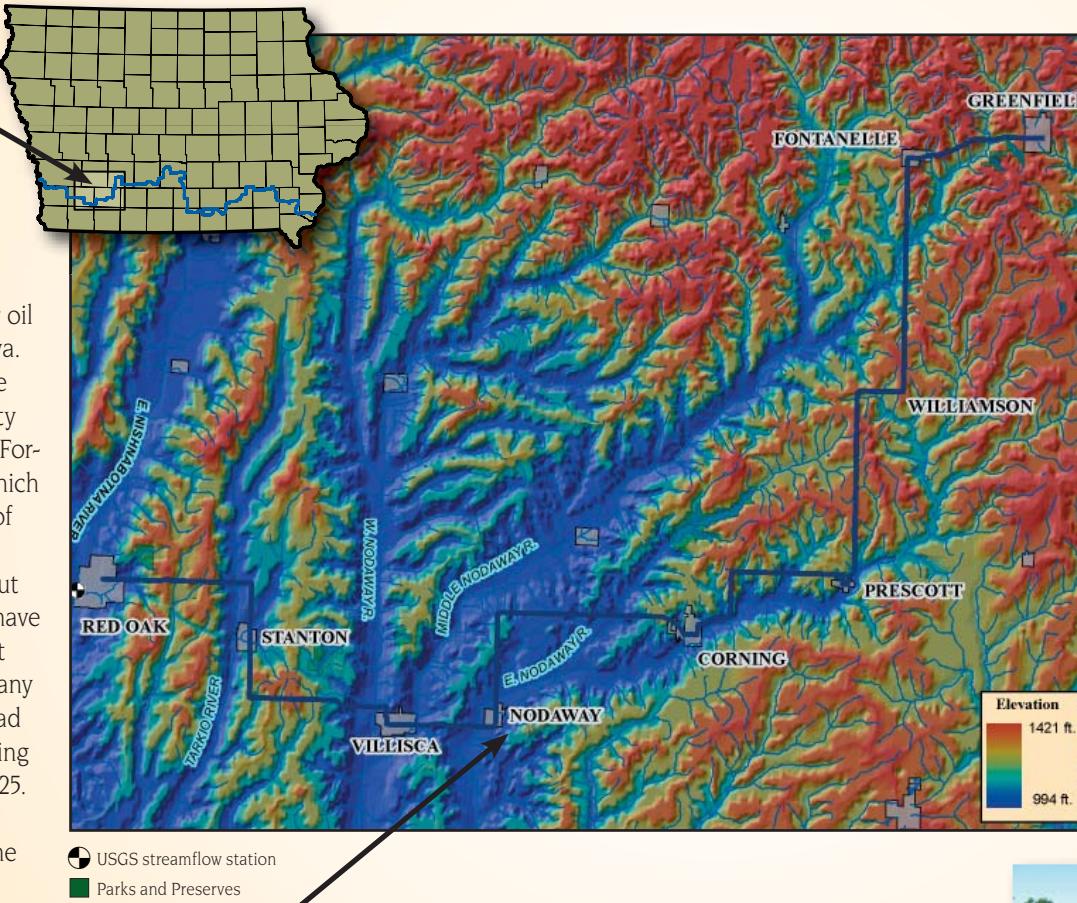
US Geological Survey

Iowa Water Science Center
400 S. Clinton St.
Iowa City, IA 52240
(319) 337-4191
<http://ia.water.usgs.gov>

Today, you will see the landscape change from dominantly corn and soybeans to more extensive **grasslands** (photo right). Roughly two-thirds of Iowa was covered by grasslands prior to European settlement – that's roughly 23 million acres! Much of it was tallgrass prairie, with short-grass prairie in some of the drier areas. Most of the grasslands you now see are farm fields enrolled in USDA's Conservation Reserve Program (CRP). Farmers can choose to enroll their land into 10–15 year CRP contracts, and receive payments throughout the life of their contract. These grasslands hold and store carbon, reduce erosion, and slow storm water run-off, while at the same time providing vital habitat for wildlife. Wildlife species that you may see on these grasslands include whitetail deer, pheasants, quail, turkeys, bobolinks, meadowlarks and more!



In all of Iowa's history only 133 oil exploration wells have been drilled in the state. Of these, only three have encountered oil. Many geologists believe the best potential for oil in Iowa lies in SW Iowa. This area includes the edge of the Forest City Basin (centered near Forest City, Missouri), which has yielded millions of barrels of oil for surrounding states. About 45 exploration wells have penetrated the Forest City Basin in Iowa. Many of these wells have had "shows" of oil, including Iowa's first show in 1925. The area of greatest speculation is near the town of Grant, where 8 oil exploration wells have been drilled. Most experts expect that a successful oil well will be drilled in this area of SW Iowa in the near future.



The **Nodaway River** (photo right) is a 120-mile long river in SW Iowa and NW Missouri. The river's name first appears as *Nodawa* in the journal of Lewis & Clark, who camped at the river's mouth on July 8, 1804. The Nodaway River basin area is 1,820 square miles and is prone to extensive flooding, contributing as much as 20% of the flood crest of the Missouri River near its mouth. In 2008 the USGS streamflow gage recorded a record peak-discharge, one of 47 new records set in Iowa during the '08 flooding.

As you bike across the streams and rivers, you will find that many are artificially straightened, or channelized. **Channelization**, or stream bank straightening, removes the natural meanders in the stream path so that the stream flows in a straight line. Streams are often channelized (photo below, right) to reduce flooding in low-lying areas. Channelization in streams quickly removes water from the area, so the streams often have extremely high flow at certain times during the year, producing cut banks and erosion. Many streams in southern Iowa have been channelized, including segments of the Missouri, Nishnabotna, and Nodaway rivers.

