

## RAGBRAI Geo-pedia

### Ceramics

Ceramics, principally the production of brick and clay drainage tile, has been a very important industry in Iowa's history (photo below). Pennsylvanian clays and shales were extensively mined for this industry in southeast Iowa, including the Ottumwa area. Among the finest ceramic clays to be found in Iowa are Pennsylvanian-age underclays, the ancient soils that nurtured vegetation that formed the great coal swamps 325 million years ago. These clays now underlie the coal beds in Iowa and are still mined and utilized by southeast Iowa potters.



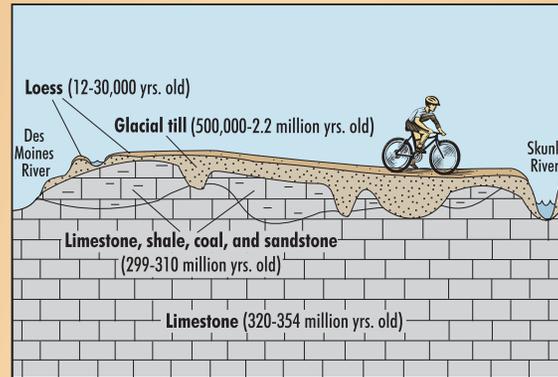
Calvin Collection, University of Iowa

Kilns, sheds, and neat stacks of finished clay products at the Iowa Pipe and Tile Company plant in Des Moines, about 1896.

COVER PHOTO: Lake Darling, named for the legendary Iowa conservationist Jay "Ding" Darling, is home to a watershed success story. Landowners and other stakeholders installed numerous conservation practices to reduce sediment, nutrients, and bacteria entering the lake.

Photo from Iowa DNR Fisheries Bureau.

### Day 6 Milestones



**Start:** Ottumwa

**Des Moines River:** Downtown Ottumwa

**Cedar Creek:** 10.2 miles after Ottumwa

**Skunk River:** 1.3 miles after Rome

**Big Creek:** 3.5 miles after Skunk Rver

**Finish:** Mt. Pleasant – 74 miles

#### For more information...

about the efforts being undertaken to improve the water quality at Lake Darling visit their website:

[www.iowadnr.gov/water/watershed/lakedarling/index.html](http://www.iowadnr.gov/water/watershed/lakedarling/index.html)

Water well information will be available within the upcoming months for Web accessible viewing at:

<http://ia.water.usgs.gov/>

Lake Darling has had many monitoring projects, including attempts to track bacteria sources like *E. coli*.

To view a short report of this project, visit: [www.igsb.uiowa.edu/gsbpubs/pdf/WFS-2005-04.pdf](http://www.igsb.uiowa.edu/gsbpubs/pdf/WFS-2005-04.pdf)

# RAGBRAI 2009

## Learn about the Land

Friday, July 24

# Day 6



### Iowa DNR – Geological and Water Survey

109 Trowbridge Hall  
Iowa City, IA 52242-1319  
(319)-335-1575  
[www.igsb.uiowa.edu](http://www.igsb.uiowa.edu)

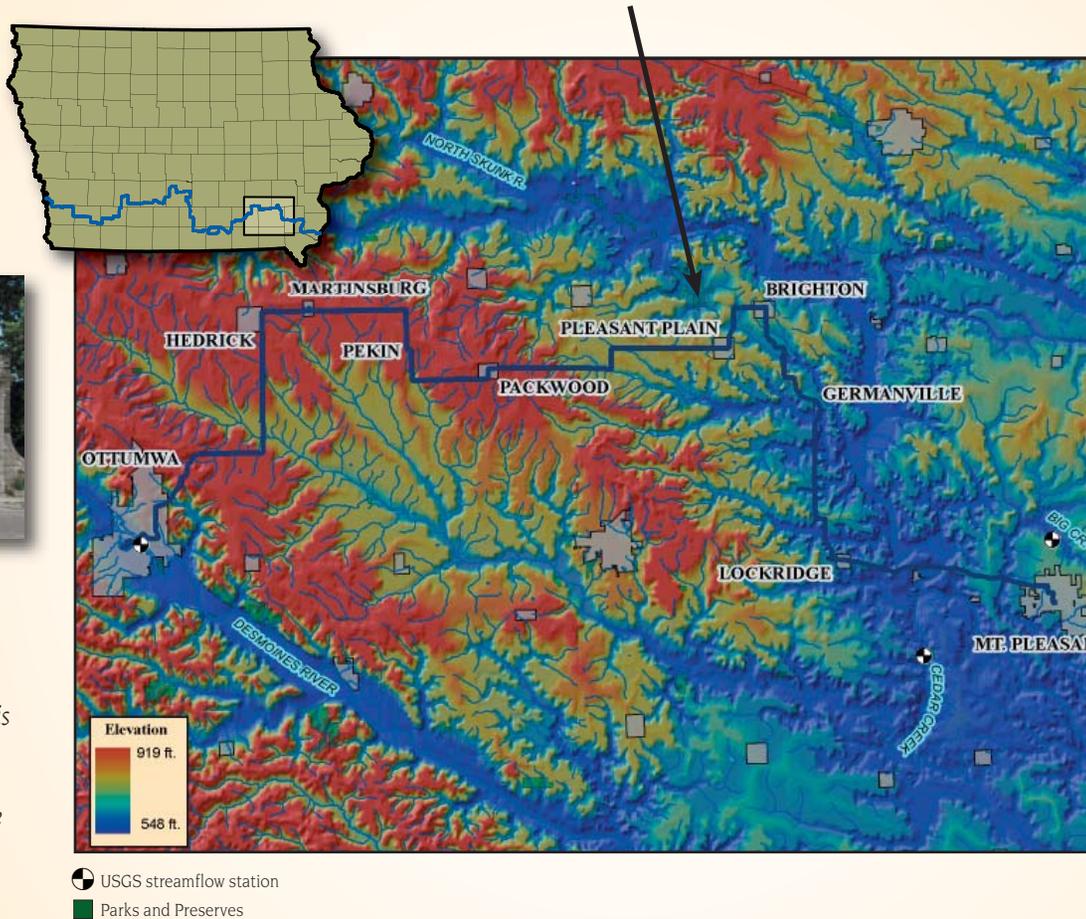
### US Geological Survey

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

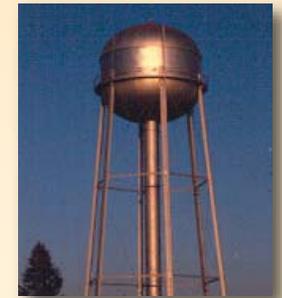
Today, just before entering the town of Pleasant Plain, you'll be entering the **watershed of Lake Darling**. The Lake Darling watershed consists of 19.8 square miles in Washington, Keokuk and Jefferson counties. Built in 1950, the once 305-acre lake had shrunk to 267 acres. Sediment washing in from the watershed has gradually filled in the lake and caused other problems. Excess nutrients, pesticides and bacteria washed into the lake with the sediment. Over time, the water became cloudy, fish habitat declined, and high bacteria levels led to swimming advisories at the beach. However, over the last five years, the lake has undergone drastic improvements in water quality, due largely to the involvement of a variety of stakeholders, from government groups to individual citizens interested in seeing water quality improvements. A number of cooperative efforts in the lake watershed have had demonstrable effects in the initial phases of the improvement process.



The rock used in the Edgarty Gateway (photo above), St. Mary's Church, and many other Ottumwa buildings is called Bedford Limestone, and is quarried between Bloomington and Bedford, Indiana. Many famous buildings, including the Pentagon, Empire State Building, and Yankee Stadium also use Bedford Limestone.



Biking through southern Iowa you may notice many water towers in the open country, away from towns and cities (photo above). These water towers are part of vast **Rural Water Systems** that cover most of the southern part of the state. In response to the scarcity of good clean water in the region, in the past 20 years rural water systems have spread to provide clean drinking water to rural residents in the countryside, as well as towns and subdivisions. These Rural Water Systems often span several counties and serve hundreds of thousands of people, in addition to ethanol plants and other businesses.



Riding through southeast Iowa, as in many parts of the state, you are guaranteed to see (and smell!) numerous **live-stock operations**. Within the first few miles after Ottumwa, there will be several animal confinement buildings that look

like large sheds (photo left). In case you were wondering, one standard confinement building can hold up to 1,200 hogs!



The U. S. Geological Survey Water Resources Program, in cooperation with Federal, State, and local agencies maintains a national network of **monitoring wells** to measure the effects of droughts and other climate variability on groundwater levels. In Iowa, the network consists of nine wells, one in each of the State's nine climatological districts including one near the towns of Chariton and Fairfield. These wells are equipped with telemetry that transmits by satellite a reading of water level to a data relay office. These measurements constitute real-time hydrologic data and are updated every four hours.