

Iowa Rocks!!!



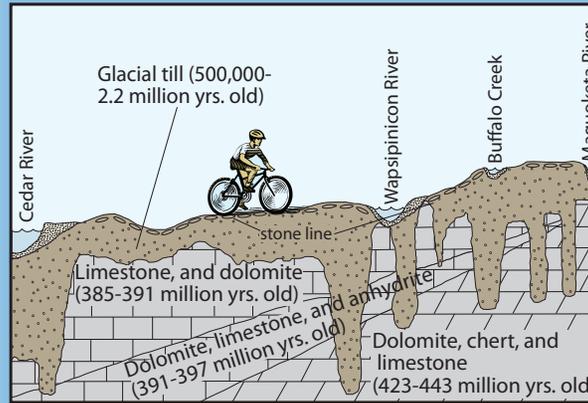
Imagine life in Iowa without structure – impassable roads and new homes without a foundation of concrete. These are only two of many countless uses of crushed limestone, perhaps Iowa’s most forgotten natural resource. Each year, Iowans use over 32 million tons of crushed limestone! It impacts the lives of every Iowan every single day. It is a key ingredient in the construction of our infrastructure, roads, commercial buildings, and bike paths. It even purifies our drinking water, increases crop production by neutralizing acid soil in our farm fields, and is the key ingredient in antacids.

Employing over 1,800 people, the limestone industry in Iowa is very conscious of its impact on the land and has a long history of working to protect the environment and ensure proper reclamation of mined lands.



COVER PHOTO: Iowan Surface in southeastern Black Hawk County, exhibiting glacial erratics.

Day 6 Milestones



**Start:** Waterloo

**Cedar Valley Nature Trail** mile 7

**Rowley Fen** : mile 34

**Wapsipiconic River:** mile 40

**Buffalo Creek Recreation Area:** mile 47

**Maquoketa River:** mile 61

**Finish:** Manchester: mile 62

**For More Information...**

on fens in Iowa, including how they form, notable differences between fens in different regions, the presence of peat, and many other geologic facts, go to:

[www.igsb.uiowa.edu/browse/peatfen/peatland.htm](http://www.igsb.uiowa.edu/browse/peatfen/peatland.htm)

A detailed factsheet on fens in Iowa can be found at:

[www.igsb.uiowa.edu/webapps/gsbpubs/pdf/WFS-2007-02.pdf](http://www.igsb.uiowa.edu/webapps/gsbpubs/pdf/WFS-2007-02.pdf)

The Devonian bedrock underlying most of today’s journey is also exposed spectacularly at the Devonian Fossil Gorge near the Coralville Dam Emergency Spillway. A free brochure describing the large assortment of fossils found in these rocks is available at:

[www.igsb.uiowa.edu/webapps/gsbpubs/pdf/em-42.pdf](http://www.igsb.uiowa.edu/webapps/gsbpubs/pdf/em-42.pdf)

The Cedar Rock State Park website:

[www.iowadnr.gov/parks/state\\_park\\_list/cedar\\_rock.html](http://www.iowadnr.gov/parks/state_park_list/cedar_rock.html)

# RAGBRAI 2010

## Learn about the Land

Friday, July 30

# Day 6



**Iowa DNR – Geological and Water Survey**

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

**US Geological Survey - IA Water Science Center**

400 S. Clinton St.  
Iowa City, IA 52240  
<http://ia.water.usgs.gov>

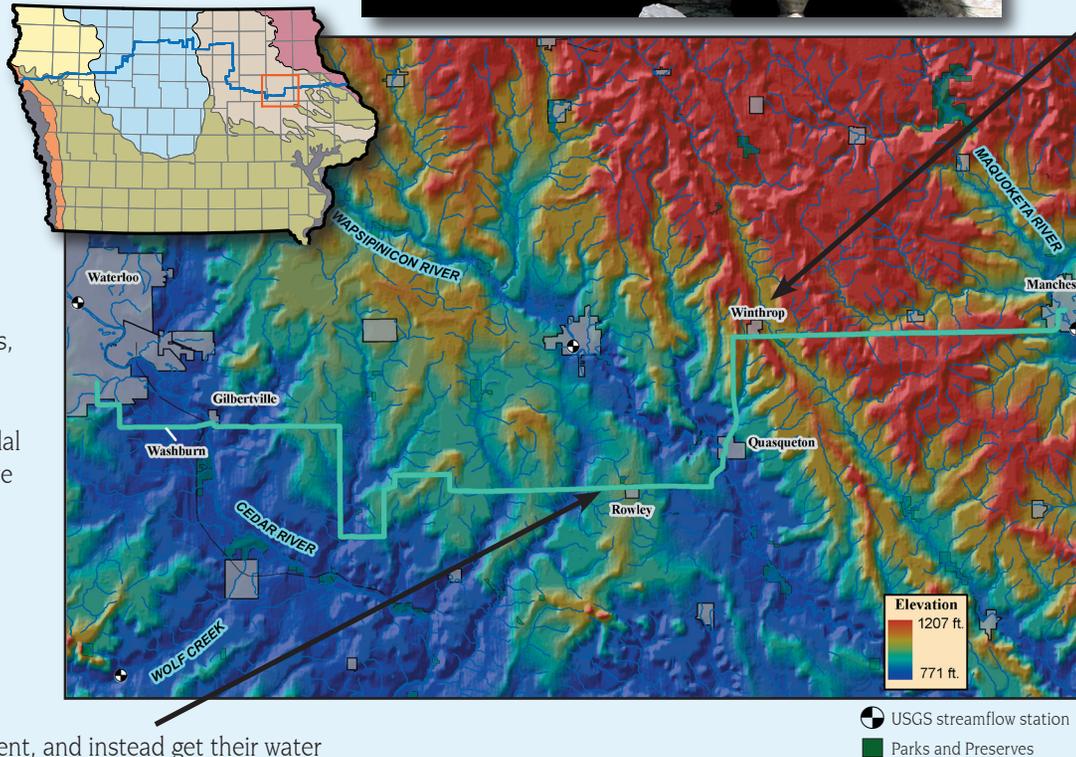
**Iowa Limestone Producers Association**

5911 Meredith Dr.  
Des Moines, IA 50322  
[www.limestone.org](http://www.limestone.org)

Exposed on the land surface on RAGBRAI today are **Devonian-age rocks** (photo right) that make up the lower part of the Cedar Valley Group and Wapsipinicon Group. These rocks are limestones and dolomites from the Devonian Period and were laid down in a shallow, tropical sea that covered parts of Iowa around 380 million years ago. Furthermore, during this time, Iowa was actually south of the equator! Geologists can make this interpretation based upon fossil evidence. Corals, including colonial corals, are a common fossil found in Devonian rocks in Iowa. Since colonial corals are most abundant in shallow tropical seas today, geologists believe that corals of the past lived in similar environments. Other fossils found in the Devonian rocks of Iowa include brachiopods, bryozoans, crinoids, and trilobites. Similar rocks are exposed at the Devonian Fossil Gorge near Iowa City. As you pedal through Quasqueton, keep an eye out for rock exposures along the banks of the Wapsipinicon River.



After Quasqueton, you will ride within one half mile of the outcrop area of the **Winthrop Till**, named for the town of Winthrop in Buchanan County. The Winthrop till is the oldest of three Wolf Creek Formation members, one of two formations from the Pre-Illinoian Episode. Iowa was glaciated at least seven times during the Pre-Illinoian Episode (about 2.2 million to 500,000 years ago) and contains one of the best records of continental glacial deposits. Early researchers believed there were only two ice advances into Iowa during this time, and termed them the Kansan and Nebraskan. Later work revealed the presence of many more tills, and the old terms Kansan and Nebraskan were abandoned in favor of the term 'Pre-Illinoian' for these old tills. These tills are difficult to distinguish in the field, but may be differentiated in the lab through grain-size, clay mineralogy, pebble lithology, and carbonate content. The type area for the Winthrop Till is located approximately 1.25 miles west of Winthrop and 5.5 miles east of Independence at a railroad cut outcrop and drill core location.



To your north, right before you enter the town of Rowley is the **Rowley Fen** (photo right). Fens are a unique type of wetland with little to no open water present, and instead get their water beneath the surface through groundwater. Typically fens form on or along hillsides, and walking on one feels like walking on a waterbed. Fens often produce large mounds of peat because groundwater inhibits decomposition of plant material. This rich organic peat becomes saturated with water and creates a spongy condition. In especially moist fens a good jump will cause the ground to ripple outward for many feet. In Iowa, more than 225 species of vascular plants are associated with fens and have been identified during a statewide fen inventory, and a single fen can contain as many as 75 unique plant species. Fens are home to 24 species that are considered endangered, threatened, or of special concern, 12 of which are restricted to only fen habitats. Today, nearly 50% of all potential fen sites in Iowa have been destroyed by cultivation or drainage.



On Day 6, as you pass through Quasqueton, to your left is **Cedar Rock State Park**, home of Cedar Rock, one of nine residences in Iowa designed by famed architect Frank Lloyd Wright. Located on a limestone bluff overlooking the Wapsipinicon River, work on Cedar Rock began in 1948 and was completed in 1950. Wright played a major role in the design of this house, even to the point of selecting the carpets and drapes. Cedar Rock is an example of Wright's "Usonian" style of architecture and bears his coveted signature tile. Cedar Rock was originally owned by businessman Lowell Walter, and, when he died in August 1981, he and his wife, Agnes, donated Cedar Rock to the Conservation Commission and the people of Iowa.