RAGBRAI Geo-pedia

All Natural Products

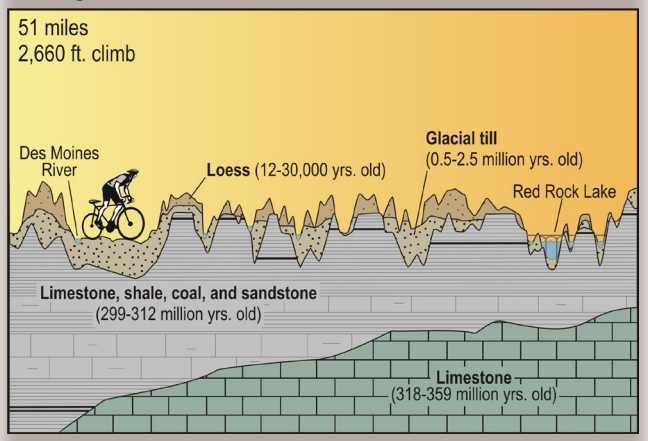
Imagine life in Iowa without structure – impassable roads and new homes without a foundation of concrete. These are only two of many countless uses of crushed limestone, perhaps Iowa's most forgotten natural resource. Each year, Iowans use over 32 million tons of crushed limestone! It impacts the lives 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 acidic 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.

"Everything we have and everything we use comes from our Natural Resources."

COVER PHOTO: Exposure of Pennsylvanian shales and sandstones near the White Breast Recreation Area at Red Rock Reservoir.

Day 4 Milestones



Start: Des Moines

Yellow Banks State Park: 13 miles

Mile-long bridge: 40 miles

Finish: Knoxville – 51 miles

For More Information...

Science in Your Watershed - USGS
http://water.usgs.gov/wsc/

IDNR - Recreational Canoeing & Kayaking
www.iowadnr.gov/Recreation/CanoeingKayaking/WaterTrails.aspx

Iowa Parks
www.iowadnr.gov/Destinations/StateParksRecAreas.aspx

Abandoned underground coal mines of Des Moines, Iowa and vicinity
ftp://ftp.igsb.uiowa.edu/igspubs/pdf/TP-08.pdf

Pennsylvanian Esposures in the White Breast Recreation Area, Marion County, Iowa
ftp://ftp.igsb.uiowa.edu/igspubs/pdf/GSI-091.pdf

RAGBRAI

Day 4

Wednesday, July 24 2013

Learn about the Land

Iowa DNR - Geological and Water Survey
109 Trowbridge Hall
Iowa City, IA 52242
www.igsb.uiowa.edu

US Geological Survey - IA Water Science Center
400 S. Clinton St.
Iowa City, IA 52240
http://ia.water.usgs.gov

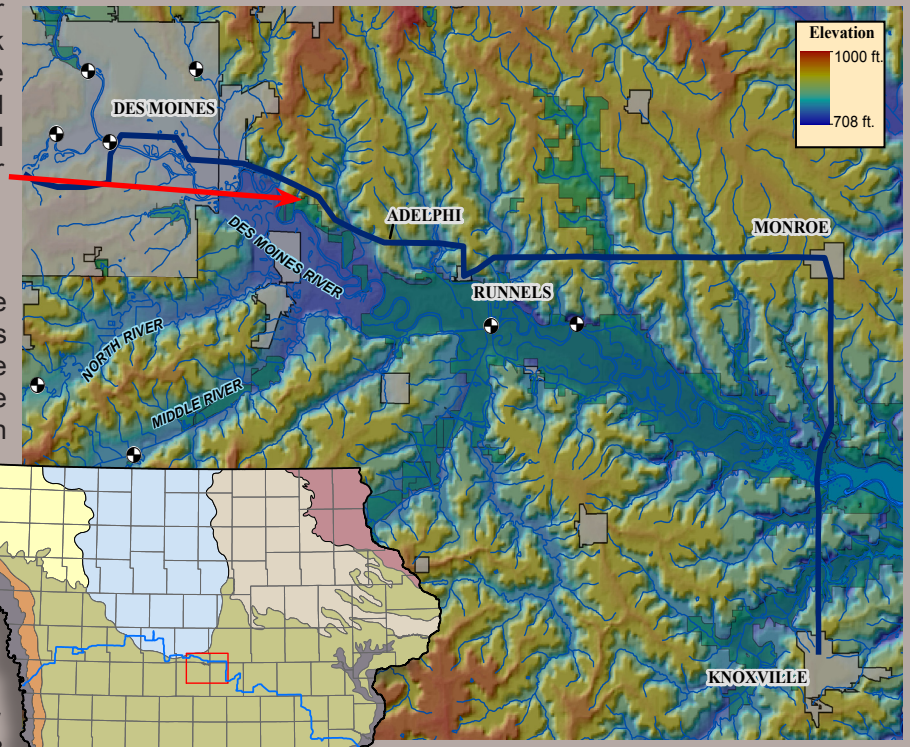
Iowa Limestone Producers Association
5907 Meredith Dr., Suite A
Des Moines, IA 50322
www.limestone.org

Riding through the Woodland Hills area you will see a sign to **Yellow Banks County Park**. Ideal for paddling enthusiasts, this park is adjacent to the Des Moines River and is part of a state designated water trail system. The park features a watercraft campsite only accessible by boat as well as a water access point. Glacial outwash from the last Des Moines Lobe glacial advance likely provided a localized source of thick loess (~50 feet thick) along the Des Moines River at this location. A thick section of loess, some older buried soils, and the underlying glacial till is exposed in a bank near the Des Moines River.

Iowa Water Trails

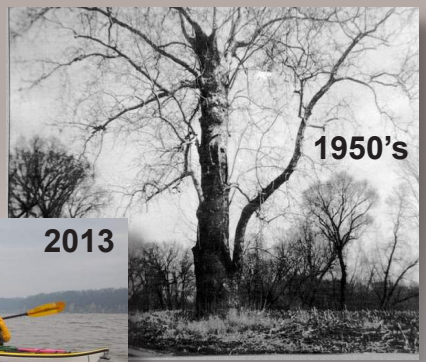
The Des Moines metro area is dissected by the Des Moines River which owes its existence to the last advance of the Des Moines Lobe glacier approximately 12,500 years ago. In the immediate metro area, the course of the river generally marks the boundary between the Des Moines Lobe (DML) and the Southern Iowa Drift Plain (SIDP) landform regions. In fact the Capitol Complex area is situated atop the **Bemis Moraine**, pile of glacial material deposited at the furthest advance of the DML ice sheet. This was likely one of the major factors in determining where the capitol building itself would be erected. The highest point at the intersection of two rivers and near the center of the state...perfect!

USGS streamflow station
Parks and Preserves



Although hardly noticeable these days, the ride from Des Moines to Knoxville crosses the heart of central Iowa coal country. Most of the mines in this region were active prior to World War 2 when Iowa was a significant coal producing state. However, due to the elevated sulfur content of Iowa coal and current regulations prohibiting the use of high sulfur coal, Iowa no longer has any active coal mines. The coal was mined from layers that rarely exceeded 6 feet; many of the mines had either horizontal or sloped entries or vertical shafts. The coal, occurs in rocks of the **Pennsylvanian System** and belong to a 310 million year old time period called the Desmoinesian, after the city of Des Moines where extensive abandoned underground workings still exist. At the time of coal deposition, Iowa straddled the equator and had a tropical climate similar to Indonesia today. Ancient rivers draining the rising Appalachian Mountains transported sediment to lush coastal delta forests which formed along the margin of the "midcontinent seaway". Waterlogged forests preserved the organic material as thick peat layers that, with burial and time, were transformed into coal.

Around the year 1500 a sycamore tree sprouted near the banks of the Des Moines River. As sycamores tend to do, this tree grew fast and became a beacon to Native Americans and early Euro-American settlers. Many historical accounts report that this tree served as a major landmark in the region, hosting meetings between Sauk (Sac) and Mesquakie (Fox) tribes and white settlers, serving as a trading post, and essentially standing as a land-based lighthouse guiding explorers and pioneers through the prairie landscape of pre-colonial Iowa. The **Peace Tree** is now a diminutive stump, peaking only about 3 feet above the murky waters of Red Rock Reservoir just west of the mile-long bridge. The name comes from the proximity of the tree to the north-south line drawn in 1892 marking the boundary of Native American occupation to the west and Euro-American settlements to the east. The "Red Rock Line" most likely went through the junction of White Breast Creek and the Des Moines River, about 4 miles east of the tree. In the 1950's the tree was reported to be at least 80 feet tall and 24 feet around at the base. In 1992 the Office of the State Archaeologist took a core sample of the tree and estimated its age between 454 - 539 years old! Unfortunately the tree is not expected to be visible above the normal pool level after next winter.



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