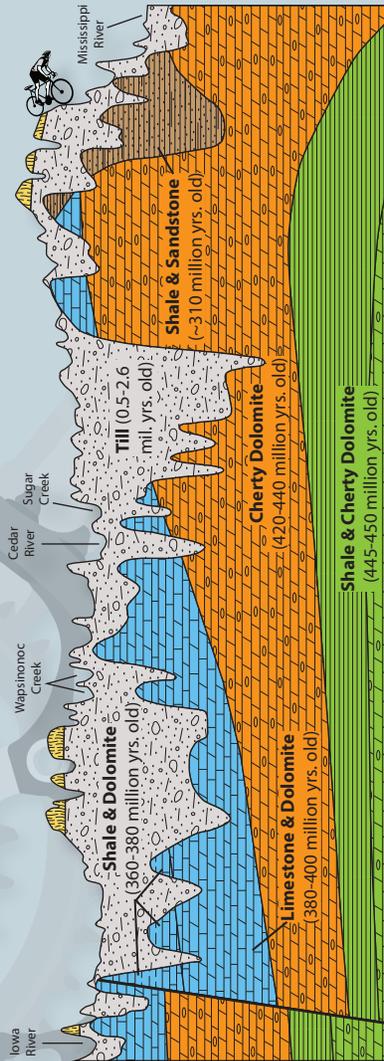


Cleona Channel

At some time in the Pre-Illinoian (between about 0.5 and 2.5 million years ago) a continental glacier first pushed into Illinois and diverted the Mississippi River to the west through Scott, Muscatine and Louisa counties. The channel was incised about 300 feet into the bedrock, as seen in the bedrock elevation map above, making it one of Iowa's most prominent bedrock channels. It was overridden by Pre-Illinoian glaciers, then reoccupied by the river on several occasions, most recently during the Illinoian about 100,000 years ago. RAGBRAI 2015 will ride above the Cleona Channel between Atalissa and Durant. Had you been there a few hundred thousand years ago you might be in the middle of a Mississippi River surging with glacial melt water.

Daily Geology:

Today's ride is loaded with intriguing geologic features. The Iowa City - Clinton Fault Zone (western end of cross-section) is a similar fault system as the PRFZ that you rode over yesterday. Near the confluence of the Iowa and Cedar rivers was a huge lake that formed during the last ice age, called Glacial Lake Calvin. Of course you can't miss the Cleona Channel, the deep bedrock valley near the eastern end of the ride. It's obvious that Iowa's glacial and bedrock geologic record are far from ordinary.



RAGBRAI

Day 7

2015

Saturday, July 25

Learn About the Land



Nahant: Almost an Island



Nahant Marsh, a 265-acre preserve nestled in southwest Davenport, is the largest urban wetland on the Upper Mississippi River. It is part of a 513-acre wetland complex that is bordered by the Mississippi River, Interstate 280, and Highway 22. Nahant is an Algonquin word that roughly translates to almost an island. Nahant is indeed a fitting name, considering that Nahant Marsh had been a former side channel of the Mississippi River and a portion of the land was at one time, an island in the river. Occasionally when the river floods, the area again becomes an island.

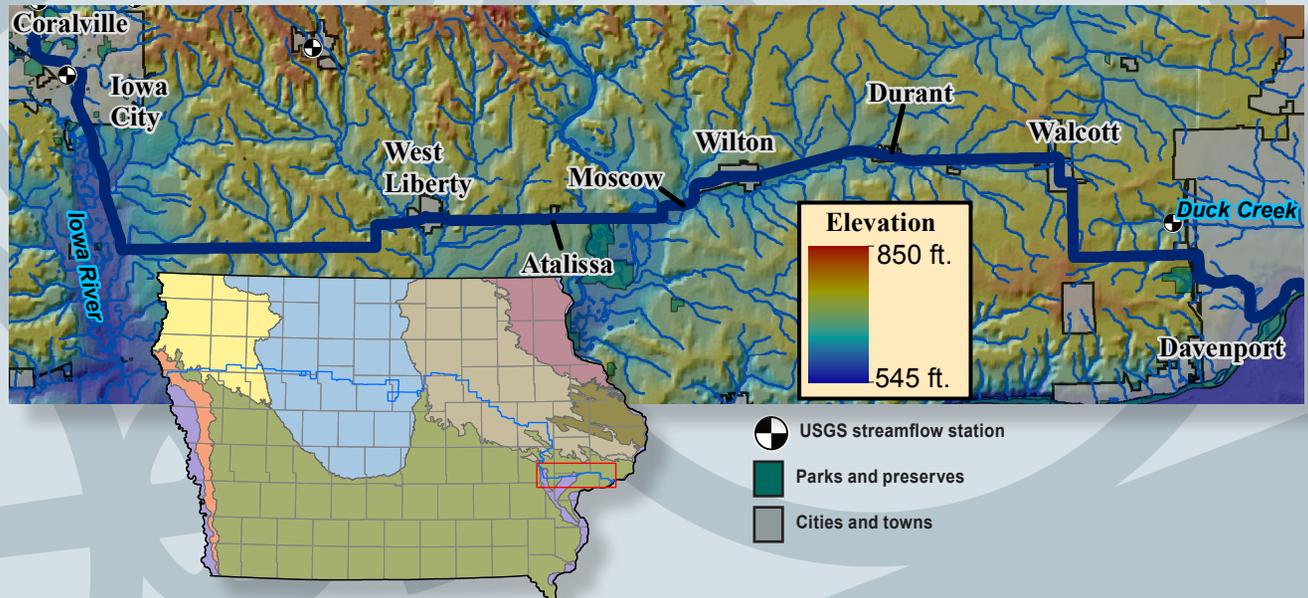
Much later, a portion of the area became a gun club and then an EPA Superfund site. Following the clean-up of lead shot in 1999, the Nahant Marsh Education Center was formed to educate the public about the preserve and to protect the ecosystems that comprise the preserve.

Today, thousands of people from all walks of life enjoy educational experiences at the marsh. Just as important, Nahant Marsh is home to over 150 species of birds, 400 species of plants, and a wide variety of mammals, fish, reptiles, amphibians and insects, including several rare and endangered species. Hiking trails, boardwalks, a dock, and bird blind at Nahant Marsh allow visitors to experience different habitats, including prairies, sedge meadows, bottomland forests, and the marsh.

* Cover photo: Limestone quarry near Moscow, right on the western edge of the Cleona Channel.

Old Cappy

The Old Capitol building in the heart of Iowa City began construction in 1840. The lower 2/3 of the structure was built using limestone blocks quarried from along the banks of the Iowa River in several places within about half a mile of the construction site. The Devonian age (~385 million years old) Coralville Formation is a very fossiliferous limestone unit with a highly variable composition. Luckily another rock formation, the State Quarry Member (also Devonian), was discovered about 13 miles upriver. It is a coarse-grained skeletal calcarenite consisting entirely of broken pieces of fossil shells in a calcite cement matrix. The uniformity of the State Quarry Member was ideal for construction, and thus the top 1/3 of the Old Capital was finished with this rock. State Quarry Member limestone was also used in the foundation of the current state capitol building in Des Moines, built in the 1870's.



Davenport Limestone Mines

Just southwest of Davenport, on Iowa Highway 20 along the Mississippi River, two large limestone quarries produce high calcium limestone (>96%) from Middle Devonian (~385 million years old) shallow marine rocks. Lafarge Corporation's Davenport Cement Plant operates the larger of the two quarries to produce stone for one of Iowa's two cement plants. The limestone is mixed with clay, iron, and other materials then fired to 2,700°F in a huge rotary kiln to form 'clinker'. The cooled clinker is ground to fine powder producing Portland Cement. The smaller quarry is associated with an underground mine, where Linwood Mining and Materials produces high calcium limestone and aggregates. The high calcium limestone is produced for the manufacturing of glass, calcium supplements in animal feed, calcium oxide for steel production and water pH control, and a variety of other uses. Both companies have access to Mississippi River barges to transport their finished products.

