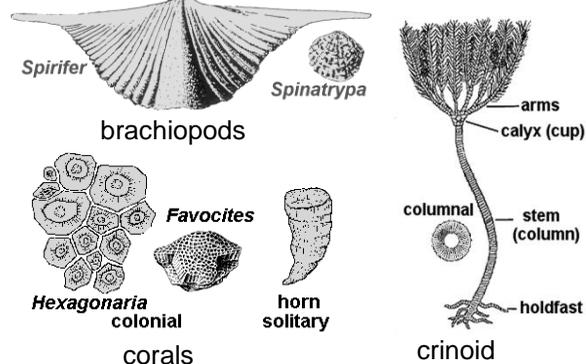


## SITE FACTS

**The Dam:** Completed in 1958 on the Iowa River upstream from Iowa City, this structure was built primarily for flood reduction. The outlet below the dam is designed for a maximum release of 20,000 cubic feet (150,000 gallons) of water per second.

**The Floods:** During the summers of 1993 and 2008 Coralville Lake exceeded its maximum capacity, and excess water flowed over the emergency spillway. The 1993 overflow continued for 28 days and reached 17,200 cubic feet per second, washing away a road, campground, and removing up to 17 feet of soil and rock exposing the Devonian bedrock that became the Devonian Fossil Gorge. In 2008 floodwaters again swept through the gorge, with flow reaching 19,500 cubic feet per second widening the gorge significantly.

### The Fossils:



### Did you Know?

- Iowa was once south of the equator and was covered by warm, shallow seas similar to the Caribbean Sea today.
- Devonian age fossils are almost 200 million years older than the dinosaurs.
- The limestone industry contributes over 400 million dollars annually to Iowa's economy.

## What is the Devonian Fossil Gorge?

- A unique opportunity to explore a 375 million-year-old seafloor and discover fossil remains of the sea life that once inhabited this tropical marine environment
- A place to “read” a past chapter of Iowa's diverse geological history and study the depths of geologic time.
- An opportunity to learn about the geologic origins of valuable limestone resources that improve the quality and safety of life in Iowa. Limestone is used in road and building construction, cement and asphalt, agriculture, landscaping, and erosion control.

### Want More Information?

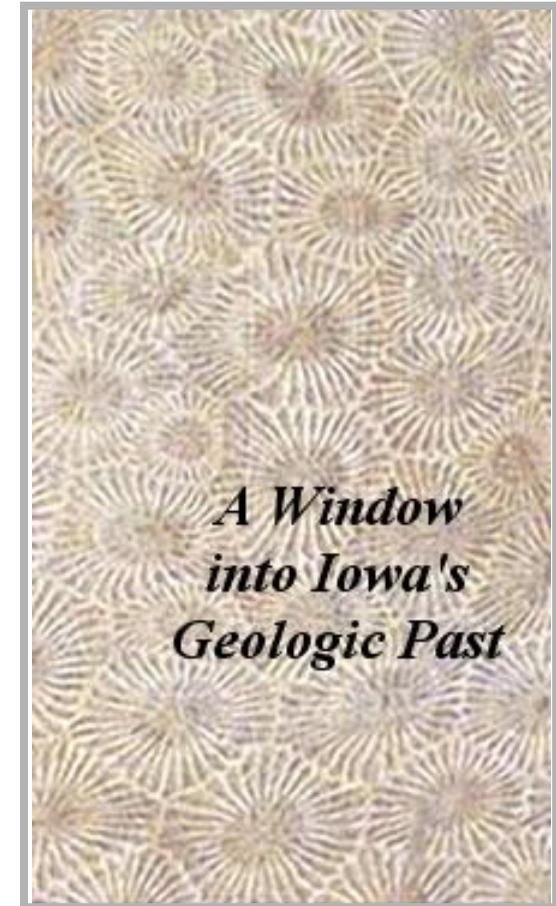
- To learn more about the geology of this site, stop in at the Corps of Engineers' Visitor Center at the east end of the Dam. Also, visit “Iowa Hall” at the University of Iowa Museum of Natural History, located in Macbride Hall on the Pentacrest in downtown Iowa City.
- If you have further questions about the site or would like to schedule a guided tour, please visit the Corps of Engineers' Visitor Center or call (319) 338-3543.
- Removal of, or damage to, any feature in the Gorge is strictly prohibited and subject to a \$500 fine.

- **Thank You for Your Visit** -

Devonian Fossil Gorge  
U.S. Army Corps of Engineers  
2850 Prairie Du Chien Road NE  
Iowa City, IA 52240

Welcome to

# Devonian Fossil Gorge



Directions: I-80 Exit #244, North 2.6 miles on Dubuque Street N.E., then East 1.3 miles on West Overlook Road to Coralville Lake and Dam.

Visitors are encouraged to explore, discover, and learn about the geologic features and fossils of the Devonian Fossil Gorge.

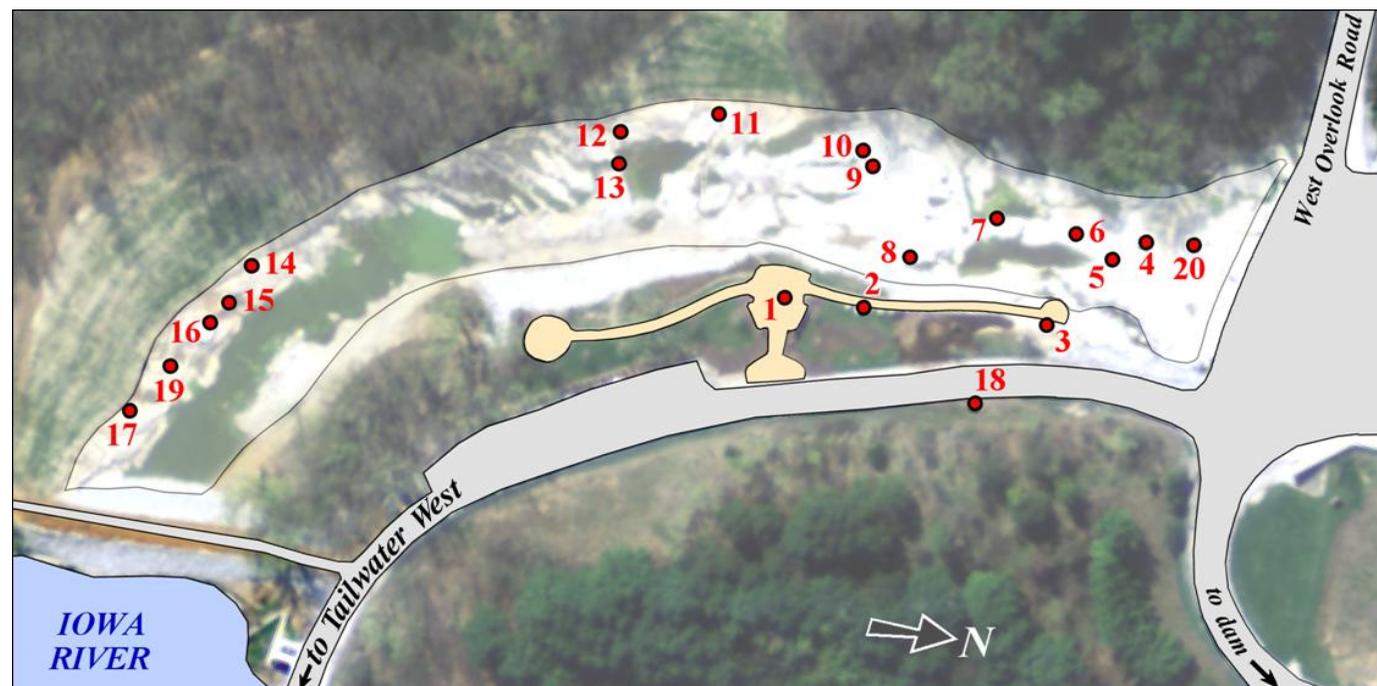
The location of each *Discovery Point* listed below is marked on the map and on the ground with a numbered hexagon.

The hexagonal (six sided) design of the locational plaques represent the cross section of an individual animal of the colonial coral *Hexagonaria*, one of the most distinctive fossils found in the Gorge.

### DISCOVERY POINTS

1. **Entry Plaza** - Displays basic information on the Dam, the floods, & fossils of the Gorge.
2. **Devonian Limestone Boulders** – The rock boulders along the walk down to the gorge are representative of progressively older Devonian limestone units, from the Conklin Quarry in Coralville, Iowa.
3. **Lower Rapid Biostrome** – The lower of two prominent ledges of densely packed fossil corals (including the colonial corals *Hexagonaria* and *Favosites*), sponges, brachiopods, and crinoids form a life layer known as a *biostrome*. Here the rock is composed almost entirely of fossils.
4. **Crinoid Fossils** – Often called sea lilies, crinoids are actually animals, related to star fish, that lived anchored to the sea floor by flexible, segmented stems. Just north of the marker a very well preserved crinoid displays a stem, calyx and arms.
5. **Long Crinoid Stem** – This long segment of crinoid stem indicates that the animal was buried very rapidly. Many more fragments of crinoids and other animals can be found in this area.

6. **Fossils** – Horn corals and many other fossils including brachiopods and abundant crinoid fragments can be seen.
7. **Calcite-Filled Fracture**- Several thin fractures in the limestone are filled with white to clear calcite crystals.
8. **Fossils – Trilobites** - Trilobites can be found associated with hundreds of other fossils including brachiopods, crinoids, and bryozoans.
9. **Cave Collapse** – Colonial corals from the overlying biostrome collapsed into a cave and were cemented to the cave floor. Erosion exhumed the cave and exposed the fossils and cave walls.
10. **Karstified Surface** – The irregular surface here was formed by ground water dissolving part of a limestone bed, a process called karstification. Note the cave-like opening in the vertical faces of the beds to the north and imagine the overlying rocks were removed.
11. **Brachiopods, Differential Weathering** Near this point many brachiopod fossils can be seen. The small caves at the base of each rock layer were formed by groundwater dissolving the softer, clay-rich basal rocks. These rocks erode more easily than the dense, overlying limestones, creating the step-like rock ledges that can be seen at the Gorge.
12. **Pothole & Coral** – A cylindrical karst-formed hole can be seen, and a large *Hexagonaria* colonial coral 6 feet north.
13. **Imbricated Slabs** – Looking to the east a large pile of rocks deposited by the flood shows imbricated slabs, flat rocks dipping upstream, indicating the direction of the flood waters. Also, see a large mat of concrete slabs held together by re-rods that was rafted down the gorge from the biostrome plaza by the flood water.



14. **Old River Sediments** - Immediately to the west is a mound of rust-stained sand and gravel originally deposited in an ancient river. It is similar to the materials that formed a prominent mound that survived in the center of the gorge after the 1993 flood.
15. **Brachiopods, Folds & Fractures** - Abundant brachiopods (mostly *Spinatrypa*) can be seen at this site. Looking to the west and north several fractures and large folds in the limestone demonstrate the stresses that affected these rocks in the geologic past.
16. **Fault** – This marks the northern edge of the largest fault zone in the Gorge. Near here blocks of upper Coralville Formation Iowa, City Member, have dropped down from up to 80 feet above. This sequence of down-dropped limestone blocks, faults, and folds continue south to *Discovery Point* 19. All faults in the Gorge have been inactive for millions of years.
17. **Abundant fossils** – A large variety of fossils including brachiopods, crinoids, bryozoans, horn corals, and other fossils are present around this location.

18. **Upper Rapid Biostrome** - A second prominent ledge, similar to that seen at *Discovery Point* 3, of densely packed fossil corals, brachiopods, and crinoids forms a life-layer known as a *biostrome*. These biostromes can be traced for over 150 miles from SE Iowa to southern Minnesota.
19. **Chert Nodules** – Near the southern end of a large fault zone, a block displays chert (microcrystalline quartz) that identifies it as upper Rapid Member limestone. A nearby block with abundant *Hexagonaria* corals is from the upper Coralville Formation. Both blocks should lay 10s of feet above but were moved downward by tectonic activity millions of years ago.
20. **Fault Slickensides** - The fine vertical grooves in the rock ledge a few feet upstream from this point are scratches created when one rock face moved against another, evidence of fault movement millions of years ago.

## Discovery Map

