SITE FACTS

- Coralville Dam was 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.

- 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.

- 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.

- If you have further questions about the site or would like to schedule a guided tour, please visit the Corps of Engineers' Visitor Center (east end of the Dam) or call (319) 338-3543.

- Removal of, or damage to, any feature in the Gorge is strictly prohibited and subject to a $500 fine.

WHAT TO LOOK FOR

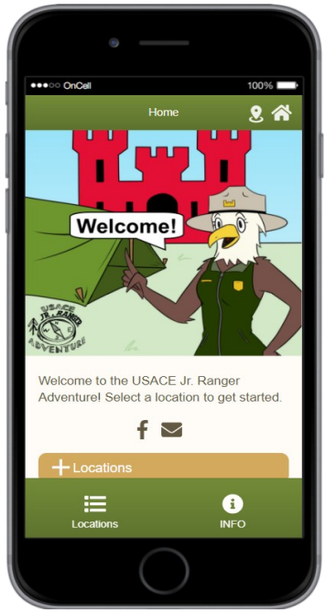
HEXAGONARIA CORAL

HORN CORAL

CRINOID

BRACHIOPODS

RATHER GO MOBILE?



Look for our ***USACE Jr. Ranger Adventure*** app or visit online!

Simply open the app/website, select ***Coralville Lake***, then the ***Devonian Fossil Gorge Tour***.

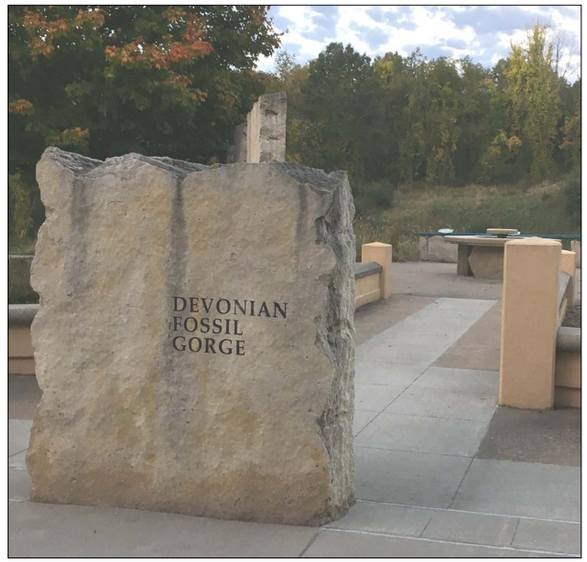
Feel free to end the program after the tour or work your way through the rest of the activities to earn your very own Jr. Ranger Badge! (Suitable for all ages)

GET IT ON Google Play

or visit

http://usacejrrangeradventure.oncell.com

DEVONIAN FOSSIL GORGE



CORALVILLE LAKE

2850 Prairie Du Chien Rd. NE
Iowa City, IA 52240

US Army Corps of Engineers®
Rock Island District

TOUR STOPS

1 Welcome to the Devonian fossil gorge. You are standing in the entry plaza at hexagon one. The monoliths around you are made of a sedimentary rock called limestone. This plaza was constructed in 2001 thanks to a partnership between the U.S. Army Corps of Engineers and the generous contributions of various donors. The Devonian layer of life can be traced east 60 miles to the Mississippi and north 150 miles to southern Minnesota. Back 375 million years ago, this entire region was a shallow tropical sea, with a meadow of sponges, corals, and bryozoans set low to the sea floor, sifting food from the current. The largest predator of that time was the dunkleosteous, an armor plated fish 33 feet long and weighing four tons who roamed the Devonian sea with a bite that exerted 11,000 pounds of force, rivaling the T-rex (who didn't live until 200 million years later). A fossilized portion of this fish can be seen at the Coralville Lake Visitor Center.

2 Along the sidewalk you will find 5 boulders ordered according to the "Law of Superposition." This law states that the youngest formations are on top (the first boulder) and the oldest are on the bottom (the last boulder). Notice the first boulder has scratches, called glacial striations, from the most recent glacial episode which occurred approximately 1 million years ago. Observe how the boulders change in color and notice how the fossils increase with depth.

3 Continuing on the sidewalk, you will notice a slippery elm tree on top of rock ledges. The lower ledge is composed almost entirely of densely packed colonial coral called Hexagonaria (named for its six-sided shape) and the honeycomb-like Favosites. Like modern coral, these colonies are all benthic, or bottom dwelling. These colonial corals created reef-like structures similar to what we find in tropical seas today and provided great habitat for many of the other Devonian creatures. The ancient reef formed a "layer of life" called a biostrome. Here you will also find sponges, Brachiopods, and crinoids. This "layer of life", resembling a skeleton of corals found in today's oceans, stretches east to the Mississippi river and north into Minnesota.

4 You're in crinoid country now! These marine creatures, also called "sea lilies" due to their flower-like resemblance, are related to modern day anemones and starfish. The crinoid lived anchored to the sea floor by flexible, segmented stems, and used their tentacle-like arms to capture and filter food from the ocean current. Crinoids were subject to fragmentation by scavengers and bottom currents before fossilization. Look for the stem plates that dot the rock beds here, they look like spilled cheerios!

5 The solitary horn corals here resemble bugle chips. Horn corals can range in size from less than an inch to many inches in length. Much like the crinoids, these organisms had small tentacles to help them catch microorganisms to eat. Solitary corals live alone and unattached unlike colonial corals. Also, notice the rust color in the limestone. This is due to a chemical reaction called iron oxidation. This reaction is the same that causes rust on your car or old nails.

6 Look for thin cracks in the limestone around you. Some cracks are filled with a whitish or clear mineral called calcite. It is a common component in limestone. Many sea organisms make their shells out of calcite by pulling carbon dioxide from the sea water. As these organisms die, their shells, coral or other debris accumulate on the sea floor, forming limestone. An interesting chemical property of calcite is its ability to effervesce, or fizz, with hydrochloric acid.

7 You are now standing on the roof of a collapsed cave, formed by groundwater eroding the limestone over a long period of time. The overlying biostrome collapsed into the cave and became cemented to the cave floor. Over time, erosion exposed the colonial coral fossils you see here today.

STOP LOCATIONS

8 Looking north toward the overflow spillway, you will see examples of karstification. Groundwater dissolved parts of the bedrock and is responsible for the irregularly shaped limestone you see before you.

9 At this point, you will notice slabs of limestone that dip down toward the direction of floodwater flow. The 2008 flood waters broke apart the concrete deck in front of the biostrome and carried the broken slabs downstream and deposited them in the gorge. The flood scoured out the loose debris and eroded and widened the southern end of the gorge exposing many more fossils.

10 This mysterious mound was deposited by an ancient river. It contains poorly sorted sand and gravel including small igneous pebbles, which is a clue that it was brought down by the glaciers from the north during Iowa's glacial and interglacial periods.

11 This is the largest fault zone of the gorge. A fault is a break in the earth's crust along which movement occurs. If you look directly west, you will see the top block and a lower block that has dropped down. The pattern of down-drop limestone blocks is caused by faults and folds, will follow you as you go through the gorge. All faults in the gorge have been inactive for millions of years.

12 The asphalt trail you are currently standing on is the entrance to the River Walk Trail. This marks the end of the fossil gorge area. During the high-water events of 1993 and 2008 water would have been rushing over this spot and back into the downstream flow, meaning this strip of land was destroyed and rebuilt each time. We hope you enjoyed Iowa's window into the past and learned something new!