Geology of the Pigeon Roost Trail

Trail Description

This trail illustrates karst which is characteristic of so many of the trails in the park. The trail begins on top of a ridge in the Boone Formation, so mostly chert fragments are seen until the trail turns into a small drainage leading to Beaver Lake.

Stop 1: If you are hiking the trail during the rainy season you may see several small wet weather springs that appear, disappear, and reappear in the drainage starting here and continuing down to where the trail meets the lake. Notice the cherty limestone in the creek typical of the Boone Formation.

Stop 2: Once you get to the lake you will see rock surrounding the shoreline. This is the fairly chert-free St. Joe Limestone Member of the Boone Formation. The limestone contains many enlarged fractures or joints. These allow water to travel through the rock and create the karst landscape in this region. Water also rounds out the sharp edges of the rock creating rock sculptures.

Continue along the trail taking the right fork along the lake instead of looping back to the trail head. The trail is back in the Boone Formation so you will see abundant chert fragments along most of it.

Stop 3: There are several sinkholes around the trail at this location. These sinkholes are commonly seen in the cherty portion of the Boone where the limestone is dissolved and a depression forms. The chert fragments are moving downslope along the sides of the sinkhole or being moved underground if there is a drain in the bottom of the sinkhole.

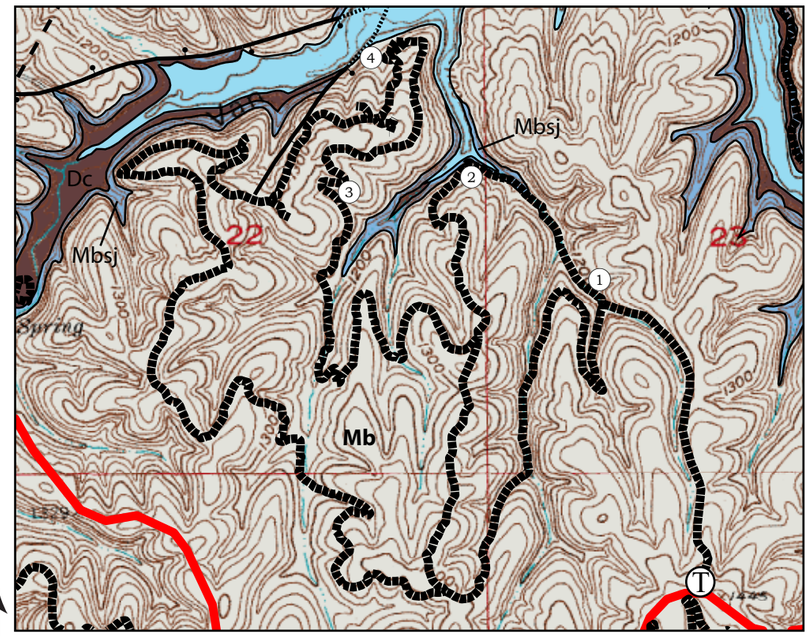
Stop 2-3. Chert fragments from the Boone Formation along the trail.

Stop 2. St. Joe Limestone surrounding the lake.

Stop 2. Sculpted limestone along the lake.

Stop 3. Sinkhole in the Boone Formation.

Stop 4. Cherty Boone near fault.



Mb Boone Formation

Mbsj St. Joe Limestone

Dc Chattanooga Shale and Clifty Formation

Ⓣ ① Trailhead and Trail stop

Pigeon Roost Trail

N

Scale 1 mile

Contour interval = 20 feet

Normal fault - ball and bar on downthrown side. Dotted where concealed.

Stop 4: At this location there is evidence of a fault along the shoreline of Beaver Lake. Typically at this elevation along the lake we would expect to see the St. Joe Limestone. However, there is cherty Boone exposed on the east side of the fault trace indicating the Boone has dropped down in elevation. There is a highly weathered zone containing red clay which is most likely the fault trace. The St. Joe Limestone is exposed on the western edge of the fault trace. Look around in the Boone Formation and you will see brachiopods, ancient marine animals, preserved in the rock. Look closely and you can also see feathery patterns which are a trace fossil called *Zoohpycus*.

Stop 4. Brachiopods in the Boone Formation.

Stop 4. *Zoophycus* in the Boone Formation.

SPS-04
Hobbs State Park - Conservation Area
Arkansas Geological Survey
2019