

OKLAHOMA ROCKS! STATE PARKS

ROMAN NOSE

ALABASTER CAVERNS

Are there really caves in Oklahoma? We get a hint of the gypsum caves at Roman Nose. At Big Spring, rain water falling in the area above the spring seeps into the ground and dissolves some of the underlying gypsum to form caves. Some of these water-filled caves emerge on hillsides and form springs; at Big Spring, hundreds of gallons per minute of highly gypsiferous water flows to the surface 24-7.

The most spectacular example of a gypsum cave is at Alabaster Caverns State Park where visitors can tour the only developed gypsum cave in the world. At a cool 46 to 60°F, Alabaster Cavern is a welcome respite in the summer.

There are five species of bats that have made Alabaster Caverns their home. The Cave Myotis, Western Big-Eared Bat, Eastern Pipistrelle, Western Big Brown Bat and the Mexican Free-Tailed Bat all live in the caverns at some point throughout the year. They use the caverns as their daytime shelter and during the winter they hibernate in the caverns.

Bats navigate using reflected sound waves. This process, known as echolocation, allows these animals to “see” in the dark. To uncover objects, bats must first emit a series of sound pulses. These pulses travel outward and strike objects. The pulses are then reflected off the objects and return back to the bats. Detected by their large ears, the sounds are quickly analyzed by the brain’s echolocation center. This analysis is so precise that the bat can locate moving fish through a critical analysis of the ripples produced at the water’s surface.

>> ACTIVITY

1. Submarines also depend upon sound for accurate navigation and “observation” of unseen objects. Like the chirping bats, subs use active sonar. They also use something called passive sonar. Use library and online references to determine the similarities and differences in these techniques. Then, present a sound-full presentation to your classmates that distinguish the two types of sonar.

For more information about Oklahoma Geology, and links to past editions of Oklahoma Rocks! visit the Oklahoma Geological Survey website: <http://ogs.ou.edu/level2-earthscied.php>

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