

MINNETONKA CAVE

on the Montpelier Ranger District

BATS

Minnetonka Cave is an important hibernaculum to five bat species. The Townsend's big-eared bat (*Corynorhinus townsendii*) is of special concern to the management of the cave, and is a State of Idaho species of concern and a Forest Service Sensitive Species.

Townsend's big-eared bats prefer the first 300 feet inside the cave entrance for hibernation. In this area the air temperature is cooler than 40°F. To enhance bat habitat within the cave, a "bat door" was installed. This bat friendly door not only protects cave resources, but also enables all bat species to fly through the openings in the door. It also allows cold air to enter the cave to provide for the thermal requirements of the Townsend's big-eared bat.

Townsend's big-eared bat

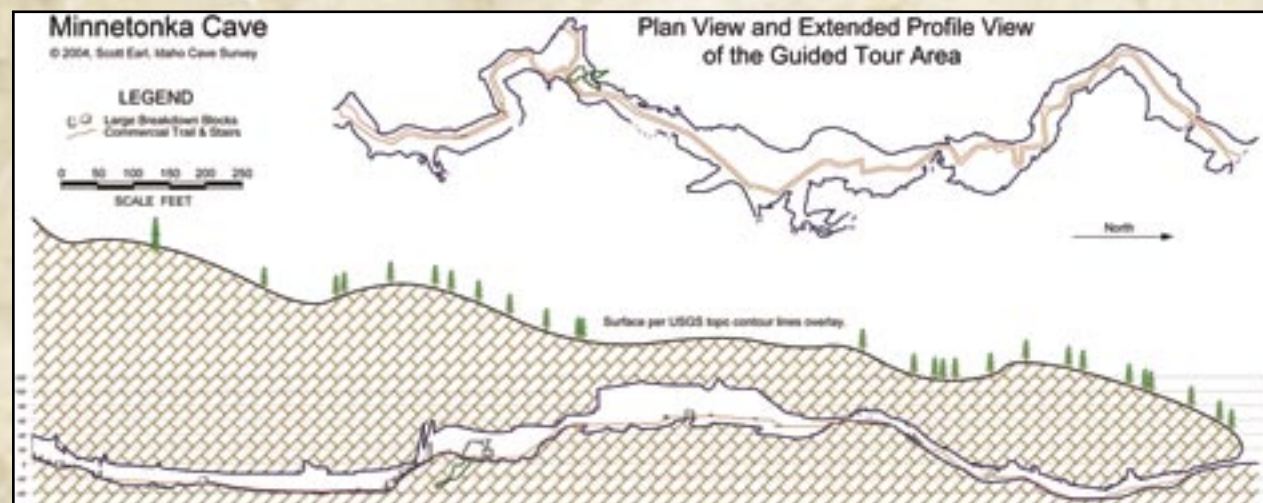


Bat friendly door entrance



GUIDED TOURS

Guided tours of the cave are conducted from the second week in June until Labor Day. During this operating season, the cave is open seven days a week, including holidays. Tours are conducted every half hour from 10:00 a.m. to 5:30 p.m., and last approximately 90 minutes. There is a fee charged for the tour. The hike in and out of the cave is best described as strenuous (896 stairs round trip). A jacket and gloves are recommended, as the temperature in the cave is a constant 40°F.



LOCATION

Minnetonka Cave is located in southeastern Idaho, near the Utah-Idaho border. It is about 12 miles west from scenic Bear Lake, near the head of St. Charles Canyon, and 10 miles west of St. Charles, Idaho. The cave is in the Bear River Range, which is part of the Wasatch system of Southeastern Idaho. Although located on the Cache National Forest, the Montpelier Ranger District, Caribou-Targhee National Forest, administers the cave.

For more information, contact

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<http://www.fs.fed.us/r4/caribou-targhee/>



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ORIGIN

The cave's story began some 330-350 million years ago, when small sea creatures lived and died in a shallow inland sea. Their remains formed calcite sediment layers that hardened into limestone. Then about 50-80 million years ago tremendous forces were at work fracturing and faulting the rock. The rock was uplifted with the mountain-building processes and became part of the Bear River Range.

Rain and snow water absorbed carbon dioxide from the atmosphere, the soil, and decaying plant material to form a weak carbonic acid solution that dissolves limestone rock. This solution followed the fractures until it reached a zone filled with water. The term water table refers to the upper surface of this saturated zone. Over time, the dissolving action of the weak carbonic acid solution along cracks and faults formed crevices, then tunnels, then passages, and then water-filled chambers and rooms. As the water table lowered and the valleys deepened, the underground chambers were drained. The clay and hard chert particles found in the cave are the residual parts of the limestone rock that did not dissolve.

It is the drip, drip, drip of water that decorates the cave. Air-filled chambers provide ideal conditions for the formation of many beautiful and varied cave mineral deposits. How the water moves (seeping, dripping, flowing), and how many crystals come out of the individual drops of water dictate the shape and size of the formations made of calcite. These formations, called speleothems, grow in an endless variety of shapes, from icicle-like stalactites, and pedestal-like stalagmites to columns, draperies, popcorn, and twisted helictites. Today the cave is still "alive" and formations continue to grow at varying rates as water seeps down from the overlying areas above the cave.

Running water played a minor role in the formation of the cave. Stratified sands, clays and rounded pebbles on the cave floor are evidence of stream action. This action occurred during dryer, more recent times after

the groundwater table dropped below the bottom of the cave. Clay, found throughout the cave, is from impurities in the limestone and remained after the lime dissolved. The sand and pebbles, water-washed chert nodules, are also impurities in limestone. Being composed of hard, insoluble materials, these were also deposited throughout the cave. Subsequent stream action wore off the edges and corners, rounding and polishing them.

In one of the chambers, excavation has revealed sand, clay, and pebbles arranged in delta-like deposits, which means the material was deposited in a cave lake or pool. At various times a number of lakes have probably occurred within the cave. These all disappeared as the groundwater table dropped.

CAVE FORMATIONS

Some of the more interesting features of the cave are the deposits of lime (calcite) as stalactites and stalagmites and drapery (pictured below). Most of these depositional features are very old, while others are still being formed.

STALACTITES are icicle-like formations, which hang from the ceiling of the cave at points where water drips from the ceiling. Little by little, lime is deposited and the formation



Bacon Strip Formation

begins. As this process is continued a tube is formed. Deposition takes place around the drop of water, which has descended the tube and hangs suspended

at its very end. In this manner the tube continues to elongate. A film of water flowing down the outside of the tube leaves thin layers of lime so the stalactite gains in diameter as layer is added to layer.

STALAGMITES are formed on the floor of the cave by dripping water from the stalactites above. This formation grows upward.

HELICTITES are formed in a similar manner as stalactites. For some reason, however, they do not follow the typical icicle pattern. They are observed in the cave in fishhook- and corkscrew-like formations.

FOSSILS

Numerous fossils of animals that lived in the tropical waters of the Mississippian Period are found in the ceiling and walls of the cave. These fossils include: horned coral, honeycombed coral, brachiopods, bryozoans, and crinoid stems. These skeletons were deposited in the warm tropical water along with the lime and mud in layers. Over time, the lime and mud layers hardened into rock by pressure and were later uplifted to form the Bear River Range.

DISCOVERY AND DEVELOPMENT

Edward Arnell of St. Charles, Idaho, accidentally found the cave in the early summer of 1906 or 1907. Mr. Arnell and others were in St. Charles Canyon constructing a sawmill. He went in search of meat for their evening meal and shot a grouse. The grouse fell at the cave entrance and, as Mr. Arnell went to retrieve it, he discovered the very small cave opening – only because of a cool breeze blowing from it.

The following day he and several others made what is thought to be the first exploration of the cave by white men. It is believed that the cave's first name "Porcupine Cave"



originated because a live porcupine and porcupine bones were discovered in the cave.

Local tradition honors Roy Welker, an educator and church leader of Bear Lake County, as the person to first apply the name "Minnetonka" to the cave. Minnetonka is an Indian word meaning "falling waters," as is suggested by the considerable dripping of water from the ceiling of the cave.

Very little public interest was shown toward the cave from its discovery until about 1938. During this time, however, extensive vandalism mutilated or destroyed many of the more striking and beautiful formations.

In the early days of the Works Progress Administration (1938), the Government undertook the first development of the cave, constructing a trail from the St. Charles Canyon Road to the cave entrance. Interior paths, steps, and railings were installed during that period. Gasoline lanterns were used for light during the guided tours through the cave.

Minnetonka Cave had been open for only a couple of years when World War II began. The cave was closed during the war years, and then reopened in 1947 under the direction of the Forest Service. In 1949, the Paris Lions Club was issued a special use permit to operate the cave. They maintained and administered the cave until 1963. From 1964 until 1994, the Forest Service managed the cave as part of its Visitor Information Service Program. Since 1995, concessionaires have managed cave operations and maintenance.