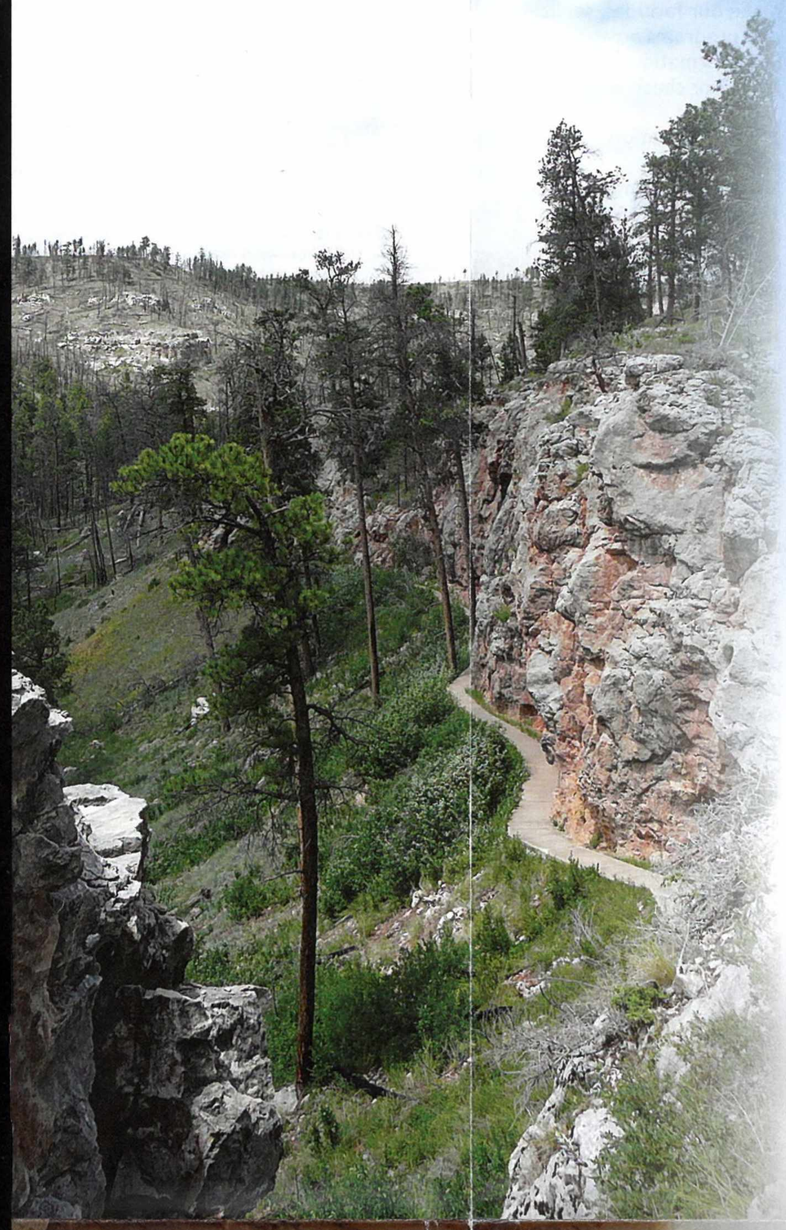
National Park Service
U.S. Department of the Interior

Jewel Cave National Monument
South Dakota

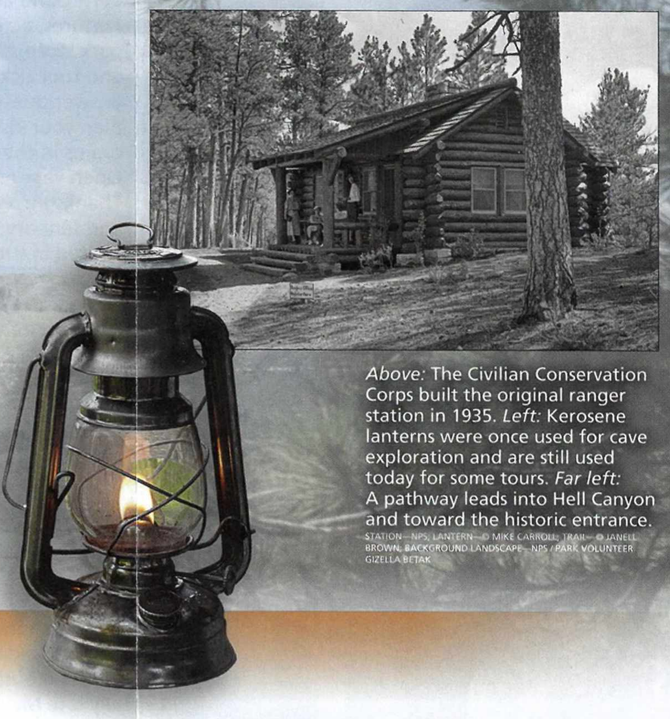
Jewel Cave



Worlds of Discovery Above and Below

From the time it first came to the attention of the outside world, Jewel Cave has lured adventurers, scientists, and curious travelers passing through the Black Hills. Its name alone makes you want to know more about these "jewels"—calcite crystals that take surprising forms and sparkle like gems when illuminated.

When Jewel Cave National Monument was established in 1908, less than a mile of it was documented. We now know that it's over 180 miles long—the third longest cave system in the world. Exploration continues to push the frontier, revealing rare formations and more contributions to science. Because the cave is a scientific gem, much of it has been set aside for research and is not open to the public. There is still much for you to discover, both above and below ground. Choose your nature trail or cave tour, tune your senses, and prepare to be dazzled.



Above: The Civilian Conservation Corps built the original ranger station in 1935. *Left:* Kerosene lanterns were once used for cave exploration and are still used today for some tours. *Far left:* A pathway leads into Hell Canyon and toward the historic entrance.

STATION—NPS; LANTERN—© MIKE CARROLL; TRAIL—© JANELL BROWN; BACKGROUND LANDSCAPE—NPS / PARK VOLUNTEER GIZELLA BETAK

The Lure of the Unknown

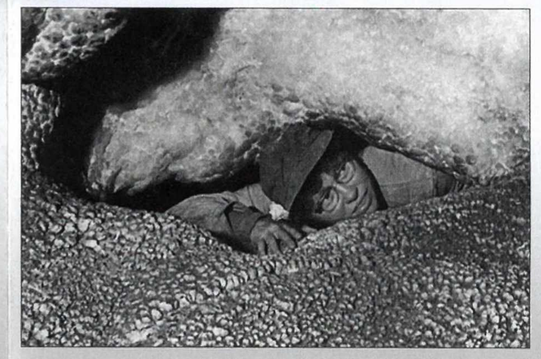
Early in 1900, South Dakota prospectors Frank and Albert Michaud heard wind rushing through a hole in rocks in Hell Canyon. Enlarging the hole, they entered an underground world of sparkling crystals. The brothers and their friend Charles Bush tried to turn a profit, first by filing a mining claim on the "Jewel Tunnel Lode," then by attracting tourists. Although their businesses never thrived, they brought national attention to these subterranean treasures and the need to protect them. In 1908 Jewel Cave became a national monument.

Nearly 60 years later, rock climbers Herb and Jan Conn joined an expedition into the cave. Captivated, they devoted much of the next 21 years to leading caving trips—708 in all. A typical Conn expedition spent about 12 to 14 hours underground. With hard hats, carbide lamps, gloves, loose fatigues, elbow and knee pads, and boots, they squeezed, crawled, and climbed through Jewel Cave's complex maze.

They found the highly decorated Formation Room (featured in today's Scenic Tour), rooms as big as 150 by 200 feet, passageways 3,200 feet long, and a small crawl way where cave wind blows up to 35 miles per hour. Having charted over 65 miles of cave, the Conns retired in 1981, and a new generation took up the challenge.

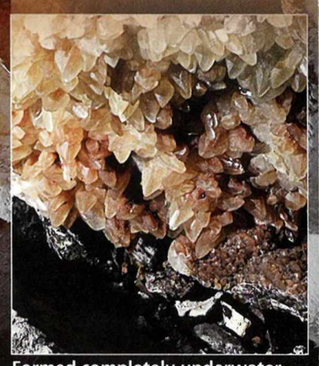
Today's cave explorers are mostly volunteers. Exploration trips are typically 16 to 18 hours underground. On multi-day trips, groups make a seven-hour trek to an underground base camp, then depart from there to various research sites.

To discover more cave, explorers follow the breeze. Natural airflow often occurs within Jewel Cave and usually indicates the existence of new cave passages. Strong airflow tends to indicate larger rooms or more passageways. Once new areas are found, they are surveyed and mapped. In all aspects of their work, cave explorers take precautions to keep this fragile underground environment pristine.

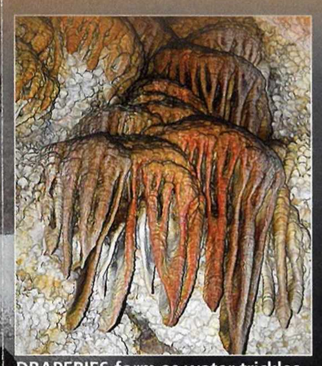


From 1959 to 1981, the Conns explored the cave. Jan Conn *(above)* said, "The thrill of discovery made everything else worthwhile."

Remarkable and Rare



Formed completely underwater, DOGTOOTH SPAR has six-sided calcite crystals with a sharp point like a dog's tooth.



DRAPERIES form as water trickles down an overhanging surface, depositing tiny calcite crystals in a fabric-like shape.



When water containing calcium carbonate evaporates, the process may form FROSTWORK, very fragile aragonite crystals.



GYPSUM FLOWERS contain long, parallel gypsum crystals. They form as water containing calcium sulfate evaporates.

While the cave was still forming, it was completely submerged in groundwater. The water was rich in dissolved calcium carbonate. A change in conditions caused the calcium carbonate to "precipitate," forming a thick layer of calcite crystals. These crystals formed on many of the exposed cave surfaces. Known as calcite spar, this layer can be several inches thick. Some individual crystals are as large as goose eggs.

Pure calcite crystals are colorless or translucent, but can be colored white, red, or yellow by various impurities. Where water filled the chambers and has since receded, silt covers the walls. Large sections of the cave's crystal lining thus appear gray and do not sparkle. Seeping water cleanses some crystals of their gray coating.

As water drained from the cave it left air-filled passages. When groundwater seeps into these passages, it often carries dissolved calcium carbonate and may deposit tiny calcite crystals that form a wide variety of larger shapes like stalactites, flowstone, and draperies.

Jewel Cave's collection of speleothems—underground formations—includes rare and unusual ones. The cave is well-known for dogtooth and nailhead spar. Helictites are only inches long and twist and turn in all directions as if to defy gravity. Like most cave formations, helictites are made up of calcite, as are small knobby clusters called popcorn.

Delicate, needlelike frostwork can be composed of calcite or a similar mineral, aragonite. Crisscrossing calcite veins called boxwork, abundant in nearby Wind Cave, also make an appearance in Jewel Cave. Another mineral, gypsum, is the basis for fanciful shapes of flowers, needles, spiders, and cottony beards.

FORMATIONS—NPS; CAVE INTERIORS—NPS / DAN AUSTIN



Until 1972, the historic entrance located in Hell Canyon was the only access to Jewel Cave.



The combination of pine forests and open meadows creates habitat for numerous bird species, including this black-backed woodpecker.

WOODPECKER—USFWS; OTHER PHOTOS THIS SIDE NPS



The Scenic Tour (1 hour and 20 minutes) allows you to view an array of colorful cave formations.



The Historic Lantern Tour (1 hour and 45 minutes) invites you to step back in time and explore the cave by hand-held lantern. Costumed park rangers share cave stories from the 1940s.



The Wild Caving Tour (3 to 4 hours) exposes you to a strenuous off-trail caving experience. The tight passages are challenging, but reward you with close-up views of rare underground wonders.

Exploring Jewel Cave National Monument

Visitor Center Here you will find exhibits on the park's underground and above-ground features, activity schedules, park store, cave information, and tour tickets. Park rangers answer questions, help you plan your visit, and offer programs in the summer months. Open year-round except Thanksgiving, December 25, and January 1. Tour times are limited in the off-season.

Historic Area and Cabin The Historic Area, open mid-June through late August, is a mile west of the visitor center. The park's first ranger station—a cabin built by the Civilian Conservation Corps in 1935—has been restored. Rangers in 1940s National Park Service uniforms answer questions, give information, and present informal talks. A short, steep trail to the cave's historic entrance begins at the cabin.

Hiking The park has two hiking trails: the 0.25-mile Roof Trail and the 3.5-mile Canyons Trail. Look for elk, bighorn sheep, white-tailed deer, mule deer, porcupines, red squirrels, chipmunks, and several bird species. While this is a predominately ponderosa pine forest, both prairie and forest plants grow here. Spring and summer wildflowers color the landscape.

Picnic Areas Shaded picnic areas, near the visitor center and Jewel Cave's historic entrance, have picnic tables and are near drinking water and restrooms. No campfires are allowed.

Regulations and Safety Federal law protects all natural and cultural features in the park; do not damage, destroy or remove. • Do not disturb or feed wildlife. • Fires are not permitted. • Pets must be on a leash and are allowed only in parking lots. • For a full list of regulations, including firearms information, ask a park ranger or check the park website.

Accessibility We strive to make our facilities, services, and programs accessible to all. For information, ask a park ranger or check our website.

More Information
Jewel Cave
National Monument
11149 US Hwy 16, Bldg. B12
Custer, SD 57730
605-673-8300
www.nps.gov/jeca

Jewel Cave National Monument is one of over 400 parks in the National Park System. Please visit www.nps.gov.

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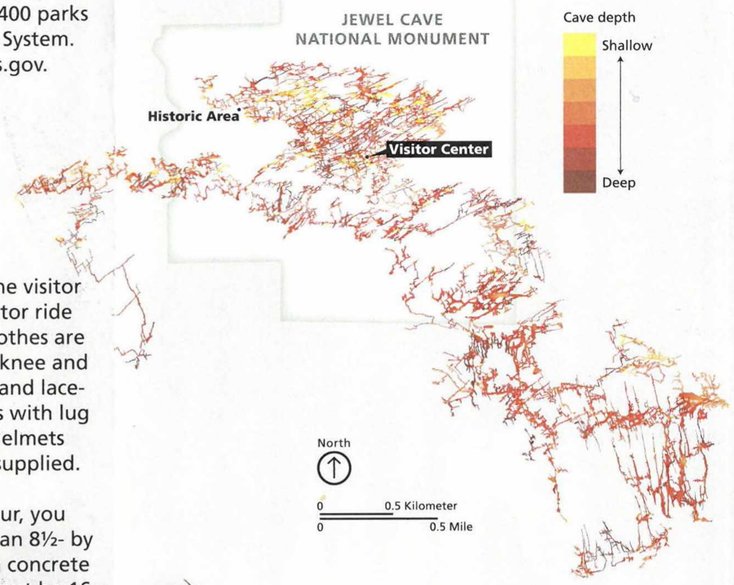
Jewel Cave Stats

• Jewel Cave is the third longest known cave in the world. Over 180 miles of underground passages have been mapped so far, but no one knows its full extent. Airflow studies indicate much more cave yet to be discovered.

• The elevation of the known cave ranges from 4,740 feet to 5,408 feet above sea level—668 feet from its lowest to highest point.

• The cave's depth below the surface varies greatly, due to the thickness of overlying rock layers and differences in surface topography. The deepest point in the cave is 749 feet below ground.

• Jewel Cave extends beneath about four square miles of surface area. The only known natural entrance is in Hell Canyon.





Jewel Cave has one of the world's largest colonies of hibernating Townsend's big-eared bats.

Choosing Your Cave Tour

Explore Jewel Cave by ranger-guided tour. Group sizes are limited, and tours often sell out. The busiest times are usually late May through early September.

You may buy tickets for the Discovery Talk, and Scenic and Historic Lantern tours at the visitor center. Reservations are required for the Wild Caving Tour and can be made up to 28 days in advance by contacting the visitor center. For advance ticket sales, call 605-673-8300.

Discovery Talk This 20-minute, wheelchair-accessible introduction to the cave's cultural and natural history takes place in one large cave room. It begins at the visitor center with an elevator ride into the cave. Offered year-round. Limit 20 persons.

Scenic Tour This moderately strenuous ½-mile, loop tour (1 hour and 20 minutes) begins at the visitor center with an elevator ride into the cave. Follow a paved, lighted path and walk up and down over 700 stairs. Offered year-round. Limit 30 persons.

Historic Lantern Tour This strenuous ½-mile tour (1 hour and 45 minutes) follows early cave explorers' paths as you make your way by hand-held lantern. The tour starts at the Historic Ranger Cabin above the historic entrance in Hell Canyon. You must be able to climb steep stairs and walk while bending and stooping. Offered early June through late August. Children must be six or older. Limit 20 persons.

Wild Caving Tour Explore a wild, undeveloped part of the cave on this strenuous ½-mile, 3- to 4-hour tour. The round-trip tour begins at the visitor center with an elevator ride into the cave. Old clothes are recommended. Soft knee and elbow pads, gloves, and lace-up, ankle-high boots with lug soles are required. Helmets and headlamps are supplied.

To qualify for this tour, you must crawl through an 8½- by 24-inch opening in a concrete block. Participants must be 16 or older; those 16 and 17 years old must have written permission of a parent or guardian. Offered mid-June through mid-August. Five-person limit.

