

Mammoth Cave

Mammoth Cave National Park
Kentucky

National Park Service
U.S. Department of the Interior



Many cave creatures who live in darkness are eyeless and have no coloring pigments. While sightless, most have acute sensory systems that mentally picture their environments. Shown are the eyeless fish (above right) and the cave crayfish (right).

Photographs of the Rotunda and cave creatures by Chip Clark

Above and Below: One Ecosystem Linked by Water

Beneath the sandstone-capped ridges of Mammoth Cave National Park lies the most extensive cave system on Earth. After 4,000 years of intermittent exploration, the full extent of this water-formed labyrinth remains unknown. With more than 350 miles of surveyed passageways, Mammoth Cave is at least three times longer than any cave known. How long might it be? Geologists estimate that there could be as many as 600 miles of yet undiscovered passageways.

This vast cave system holds the world's most diverse cave ecosystem. Approximately 130 forms of life can be found in Mammoth Cave. Most are quite small. Some use the cave only as a haven, while others are such specialized cave dwellers that they can live nowhere else. All are dependent on energy from the surface. Life in the cave is not separate from the rest of the natural communities found in Mammoth Cave National Park. It is an extension of the larger biological whole, whose diversity and abundance are preserved in this place. To tour the cave and not explore the park's surface trails and waterways is to gain but half of the total picture.

The rugged, forested hill country of Mammoth Cave National Park is sanctuary to a vast array of wildlife. Deer and wild turkey frequently are seen feeding near roadsides, and the park's 60 miles of hiking trails provide access to the diversity of life in the eastern hardwood forest. The presence of the Green River further enhances the variety of scenery and habitat. Running 27 miles through the park, the Green River is one of North America's most biologically diverse rivers. This abundance has drawn humankind to this region for nearly 10,000 years.

At least 10 miles of Mammoth Cave were explored by prehistoric peoples 4,000 years ago. Archeological evidence indicates that these early cave dwellers collected crystals and other salts found in the cave. Exploration of the cave ceased some 2,000 years ago and did not begin again until the rediscovery of the cave in 1798.

Mammoth Cave played an important role at the very beginning of American tourism. As an attraction, the cave predates all national parks. Publicized during the War of 1812, the "mammoth" cave of

Kentucky had become an attraction by 1816. Along with the early scenic national parks, Mammoth Cave eventually helped define our national identity in the 19th century, when the nation sought status among world powers. Despite industrial and military might, we seemed to lack the ancient places and cultural antiquities of which Europe boasted. The wonders of nature became our treasures. Big was beautiful: Mammoth Cave, Grand Canyon, Giant Sequoia. These superlatives still live up to what Ralph Waldo Emerson once called "the brag" about them.

A World Heritage Site and Biosphere Reserve

Mammoth Cave was authorized as a national park in 1926 and was fully established in 1941. At that time just 40 miles of passageway had been mapped. As surveying techniques improved, great strides were made in describing and understanding the overwhelming extent of the cave system. Several caves in the park were shown to be connected, and today the cave system is known to extend well beyond the national park boundary. The park was named a World Heritage Site in 1981 and became the core area of an International Biosphere

Reserve in 1990. With its 53,000 surface acres and underlying cave ecosystem, Mammoth Cave National Park is recognized as an international treasure.

National park status and international recognition, however, are no guarantee for the continued protection and integrity of the natural systems of Mammoth Cave National Park. The park does not exist as a self-contained system. Research continues to demonstrate that the cave and resident ecosystems are components of regional groundwater basins within the much larger Green River basin. Groundwater inputs originate far beyond the park boundary, and under high-water conditions water quality is seriously degraded. Similarly, air quality studies have detected ozone at concentrations capable of damaging vegetation. If these world class cave, forest, and riverine ecosystems are to be preserved for future generations, we must work together to protect the region's air and watersheds.



A World Heritage Site



A Man and the Biosphere Reserve

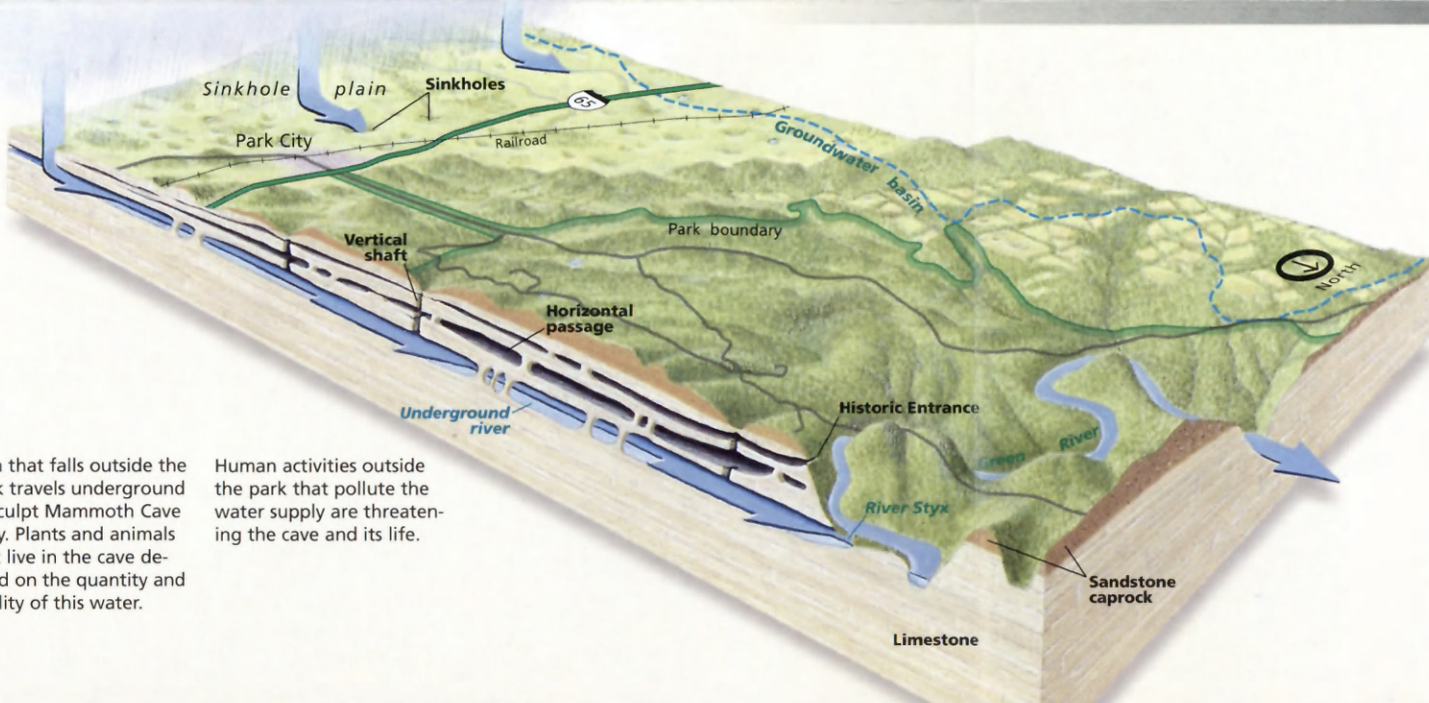
Clean Water Needed...

Limestone underlies the Mammoth Cave region. As rainwater falls and infiltrates the soil, it picks up small amounts of carbon dioxide gas. The carbon dioxide reacts with the water to form a weak solution of carbonic acid, making the groundwater itself a mildly acidic solution. Like most major caves, Mammoth Cave was formed by the slow dissolution of limestone by groundwater.

Eroded limestone landscapes are called karst topography and are typified by the Mammoth Cave area. The limestone was formed from sediments of a shallow sea that covered this region some 350 million years ago. These highly soluble layers of limestone were formed over a 70-million-year period.

Rain that falls outside the park travels underground to sculpt Mammoth Cave daily. Plants and animals that live in the cave depend on the quantity and quality of this water.

Human activities outside the park that pollute the water supply are threatening the cave and its life.



...Caves Still Forming

Over time, as groundwater dissolves the limestone, it forms underground streams. These streams converge, much like surface streams, and create the large underground rivers of Mammoth Cave. Throughout the geologic history of Mammoth Cave, the Green River, as the region's master stream, has carved deeply and entrenched itself in its valley. Cave streams responded by creating younger, lower routes and abandoning older and higher channels, thereby creating a network of cave passages. At depths of up to 450 feet below the surface, cave streams are still forming passages today.

As the cave formed, many aquatic species from surface waters slowly adapted to cave habitats. Several species evolved into the specialized animals found in the cave streams today. These cave biological communities, parts of a nutrient-poor ecosystem, depend on excellent water quality for survival.

The same geological characteristics that create Mammoth Cave also pose a threat to the cave's ecology today. Just as rainwater quickly becomes groundwater and flows through the cave's aquatic habitats, pollutants such as human waste, agricultural runoff, hazardous spills along roadways, and oil and gas drilling wastes are easily washed into the cave streams.

Recognizing that the majority of the cave's groundwater originates beyond the park, the Biosphere Reserve boundary encompasses Mammoth Cave's watershed. Today, the park and its neighbors work together through the Biosphere Reserve Program to help better protect the cave while promoting environmentally sustainable agricultural, industrial, and business practices outside the park.

Human Use of the Cave and Its Resources



Self-educated slave Stephen Bishop became legendary as a cave guide and explorer. He began guiding visitors at age 17 in 1838. He was first to explore many miles of the vast cave.



Amateur caver Floyd Collins captured national attention in 1925 while pinned for several days by a boulder in Sand Cave. Collins died before rescuers could free him. The publicity led to Mammoth Cave's becoming a national park in 1926.

More than 10,000 years ago prehistoric Paleo-Indians hunted for game in the Green River valley in the vicinity of Mammoth Cave. From 4,000 to 2,000 years ago, Late Archaic and Early Woodland Indians explored and mined minerals from Mammoth and other area caves. Artifacts left by these earliest explorers, including cane reed torches used to light their way into distant portions of the cave, are found well-preserved in the drier passageways.

European-American settlers arrived in the Green River valley in the late 1790s. As the native people had before them, these newcomers discovered uses for Mammoth Cave. One of the cave's earliest uses was as a mine for saltpeter, one of the key ingredients in the manufacture of gunpowder. With the onset of the War of 1812 and a jump in saltpeter prices, African

slaves were brought in to mine large quantities of this mineral.

By war's end, the notoriety of Mammoth Cave had increased, and around 1816 people began visiting the cave. Stephen Bishop and Mat and Nick Bransford, slaves of the cave's owner, became legendary as guides.

Bishop discovered more miles of cave than anyone else during his time or later. He was the first to cross the previously impassable Bottomless Pit and the first person to see the natural inhabitants of the cave streams commonly known as eyeless fish. The Bransfords and their descendants continued as guides at Mammoth Cave for more than 100 years.

Touring the Cave

Plan Ahead Cave tours are given every day except December 25, but tour schedules vary from season to season. Fees are charged. Certain cave tours may require special clothing or equipment. Visitor center hours also vary through the year. We encourage you to contact the park for cave tour descriptions, schedules, and information on surface activities and special events. Mammoth Cave National Park, Mammoth Cave, KY 42259-0007, 270-758-2328, www.nps.gov/macac

Getting to the Park If you travel south from Louisville, Tenn., the most direct route is I-65 south to exit 53 at Cave City. Another 15 minutes of driving will bring you to the park visitor center.

If you travel north from Nashville, Tenn., the most direct route is I-65 north to exit 48 at Park City, Ky. Another 10 minutes of driving will bring you to the park visitor center.

Time Zones Mammoth Cave National Park and Nashville, Tenn., are located in the Central Time Zone, one hour behind Louisville (Eastern Time Zone).



Flowstone

Reserve a Tour Before Your Visit Cave tours can and do sell out. Summer days, holidays, and all weekends are busy. Make advance reservations so you can plan ahead to enjoy the tour of your choice.

For information on how to make advance reservations, call 270-758-2328 or visit www.nps.gov/macac. You can also make reservations in person at the park visitor center, but by the time you get there your preferred tour for that day may be full. It is better to make reservations ahead of time.

Children 12 years old and younger are eligible for discounted tickets but must be accompanied by an adult unless

otherwise noted. Children younger than six years old are admitted free but must have a ticket.

Pets The Mammoth Cave Hotel next to the visitor center offers a pet kennel with fees by the hour or day. Only guide dogs are permitted in the cave. Pets left in parked vehicles may be removed by park personnel because vehicle temperatures may threaten pets' lives.

Traveling With Children If your children are very young, consider taking a shorter orientation tour. All children under 16 must be accompanied by an adult. Strollers are not allowed in the cave. Backpacks for infants are allowed, but restrictions apply from tour to tour. Some cave passages are too narrow or low for backpack carriers, and small heads can be injured! Some tours have restroom facilities; others do not.

What Can I Take Into the Cave? Photography is permitted, but tripods are not. Video cameras are permitted but don't use them when walking or using stairs in the cave. Flashlights are welcome on tours but may not be used during tour stops. Respect other visitors. Do not shine the light in their eyes in the dimly lit cave.

Clothing and Footgear Wear sturdy shoes or hiking boots with good soles.



Cavers

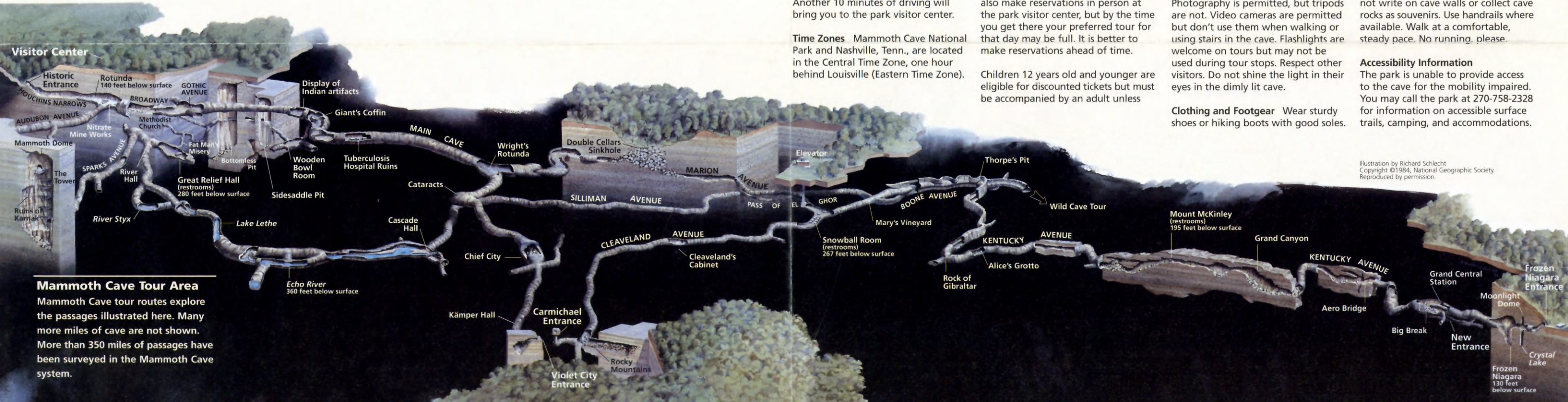
Chip Clark

No sandals or bare feet, please. A light jacket is recommended; cave temperatures range from freezing to around 60°F. In winter, dress warmly.

Cave Tour Safety Most cave tours are strenuous and require stooping and walking over uneven trails. All tours require walking up and down steps. Visitors must stay with their tour and on cave trails. Smoking is prohibited in the cave. Children must remain with parents in the cave, and everyone must stay on defined tour trails. Do not write on cave walls or collect cave rocks as souvenirs. Use handrails where available. Walk at a comfortable, steady pace. No running, please.

Accessibility Information The park is unable to provide access to the cave for the mobility impaired. You may call the park at 270-758-2328 for information on accessible surface trails, camping, and accommodations.

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Exploring Mammoth Cave



Sinkhole plain outside park



Turkey



Birdwalk



Mammoth Cave Baptist Church



Green River

Erosional forces that formed the cave system have also shaped the landscape of this entire region. Rivers, bluffs, sinkholes, cave entrances, and ridge tops all provide a variety of habitats in which are found a number of distinct plant and animal communities. Relatively small but specialized habitats, such as wetlands and old-growth forest, contribute disproportionately to both the park's and Kentucky's biological diversity. Predominantly wooded, the park features mostly second-growth forests. Small areas of relatively undisturbed old-growth forest, rare in Kentucky, can also be found. Beech trees dominate the ravine flats, joined by yellow poplar and sugar maple on lower and middle slopes. White and black oaks, along with three species of hickory, define upper slope forests.

Forests of Mammoth Cave National Park are home to a variety of wildlife. Eastern white-tailed deer are frequently seen browsing along roadsides, and flocks of wild turkey are not an uncommon sight in the park. Walking the trails in the park may be rewarded with the sights and sounds common to the eastern hardwood forests. Squirrels, chipmunks, and raccoons are the most commonly seen mammals.

As the base level stream of the region, the Green River is central to the formation and health of the Mammoth Cave system. Known as one of the most biologically diverse rivers in North America, the Green contains 82 fish species. Gravel bars of the upper Green River are critical habitat for freshwater mussels, one of the most

endangered groups of animals in the nation. More than 50 species are found within the park, seven of which are listed as endangered. Another four are being considered for listing. The banks of the Green River and its largest tributary in the park, the Nolin River, abound in wildlife. Deer, wood ducks, turtles, kingfishers, and great blue herons are frequently seen.

Mammoth Cave National Park contains a number of smaller, more specialized habitats that provide the conditions required for various plant and animal communities. Small ponds and stream banks provide wetland refuges for at least one rare sedge, several rushes, bladderwort, arrowroot, and the lance-leaved violet. Sinkholes and cave entrances provide moist microclimates for plant species dif-

ferent than those found in drier uplands. Native grassland species, once characteristic of much of western and central Kentucky, can be found in isolated patches and along park roadsides. Sandstone gorges containing hemlock, yellow birch, umbrella magnolia, and holly are found in the northern part of the park.

It is easy to think of Mammoth Cave National Park in two parts, the below-ground world of the cave system, and the above-ground realm of forests and light. However, these two parts are simply different pieces of a greater whole, unified by the forces of nature that continue to form the cave, shape the landscape, and nurture their biological communities.

General Information

Mammoth Cave is approximately 85 miles from both Louisville, Ky., and Nashville, Tenn. From I-65, take exit 48 at Park City or exit 53 at Cave City. The park is in the Central Time Zone; if you're traveling from the north, you gain an hour. Airports and car rentals are in Nashville, Louisville, and Bowling Green.



Cave salamander

No park entrance fee is charged, but tour fees are charged for all persons six years and older. Fees are charged for camping.

Consult the free park newspaper *Mammoth Cave Guide* for a schedule of current ranger-led programs, visitor center hours, evening programs, a map of the park's hiking and walking trails, and information about facilities and activities accessible to persons with disabilities.

Camping
Three park campgrounds are available with a 14-day camping limit. All campgrounds have toilets, grills, tables, and water, but no hook ups. Houchins Ferry Campground is available on a first-come, first-served basis. Reservations are recommended for Mammoth Cave Campground. Reservations are required for Maple Springs Group Campground, which accommodates large, organized groups and campers with horses.

Scenic Drives
Flint Ridge, Green River Ferry, Houchins Ferry, and Ugly Creek roads enable you to tour part of the park by private motor vehicle. The latter two roads are not passable by trailers or motor homes. Ask for more information at the visitor center.

Ranger-led Programs
Rangers give brief orientation talks in the visitor center. Longer above-ground activities, offered in season, start from specified locations. At Mammoth Cave Campground rangers give seasonal evening programs at the amphitheater. Parking nearby can accommodate non-campers.

Junior Ranger Program
Children between ages six and 13 can become Junior Rangers by completing projects and taking part in ranger-led programs. Junior Ranger booklets are sold at the visitor center. School groups may qualify for the park's environmental education program. Call the program coordinator at 270-758-2354.

Scenic Boat Rides
One-hour boat cruises aboard the *Miss Green River II* operate from April through October, river conditions permitting. Buy tickets in advance at the visitor center. Call 270-758-2243 for more information.

Trails
The wheelchair-accessible Heritage Trail begins across from the visitor center and loops by one of the park's historic cemeteries. North of the Green River lie 60 miles of hiking trails. There are 10 miles of trails south of the river.

Bicycling
A one-mile gravel bicycle trail connects Headquarters Campground with a controlled-access road.

Boating and Canoeing
Nearly 30 miles of the Green and Nolin rivers in the park offer canoeing and boating past dramatic bluffs. Canoes may be rented from commercial outfitters outside the park.

Fishing
Muskie, bass, white perch, and catfish await anglers in the Green and Nolin rivers. No license is required within the park. However, all other Kentucky fishing regulations apply. Ask for a list of regulations at the visitor center.

Horse Use
Trails north of the Green River, except the Wet Prong of Buffalo Loop, are open for horseback riding. Horses may be rented from a concessioner outside the park. For horse-use information, call 270-758-2328.

For a Safe Visit
Check the park newspaper for park regulations, restrictions, and cave safety precautions. • Pets are restricted; a kennel is available through Mammoth Cave Hotel. • Be alert for ticks and chiggers and avoid the park's two poisonous snakes, the timber rattlesnake and northern copperhead. • All animals in the park are protected by law. Do not disturb or kill them. Do not feed any wildlife. If you have questions about any activity, check at the visitor center or ask a ranger.

Lodgings and Services
Mammoth Cave Hotel offers hotel rooms, a restaurant, and gas station open all year. Rustic cottages, a camp store, hot showers, and a coin laundry are available from spring to fall. For reservations or more information,

write or call Forever/NPC Resorts, LLC, Mammoth Cave, KY 42259-0007; 270-758-2225.

Public restrooms, showers, and a coin laundry are located near the gas station, store, and post office. See Service Center on the map at right.

For information on privately owned caves, accommodations, and other services outside the park, call the Cave City Convention Center, 1-800-346-8908.

More Information
Mammoth Cave National Park is one of more than 380 parks in the National Park System. The National Park Service cares for these special places saved by the American people so that all may experience our heritage. Visit www.nps.gov to learn more about parks and National Park Service programs in America's communities.

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