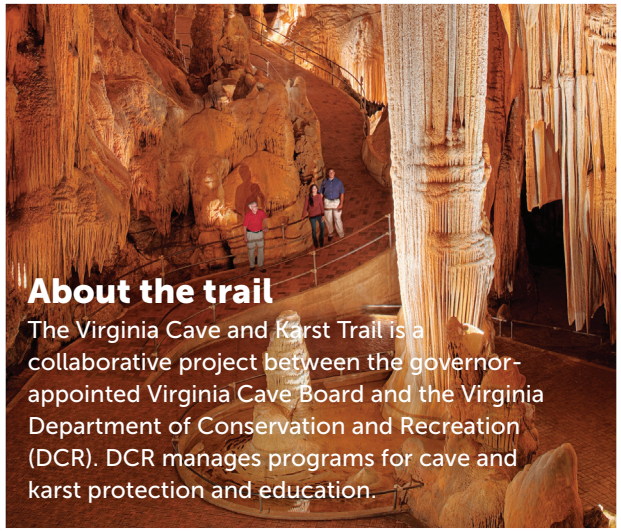
Caves, karst and critters

Eight species of bat rely to varying degrees on caves in Virginia for hibernation, to raise their young and as a refuge from predators. In Virginia, nearly 200 invertebrate species live only in caves. Eyeless and frequently white or translucent, these species are adapted for life in the dark. Many inhabit just one or two caves. Within the freshwater-filled caves of the Shenandoah Valley lives the Madison Cave Isopod, a crustacean that evolved from a marine-dwelling ancestor to become adapted to living in Virginia's karst aquifers more than 20 million years ago. Fossils of Ice Age animals, such as mastodons and short-faced bears, can be found in Virginia's caves. The Museum of the Middle Appalachians in Saltville tells the story of ice age animals trapped in ancient sinkholes, and displays life-size replicas of these animals as well as the actual bones and fossils of mastodons, woolly mammoths, musk oxen, black bear, horses, small mammals, birds, and fish. New fossils continue to be discovered at this working museum, where karst features provide a key window into the understanding of Virginia's Natural History. Karst is a dynamic landscape, full of unique and fascinating natural history. We hope you will enjoy exploring it.



About the trail

The Virginia Cave and Karst Trail is a collaborative project between the governor-appointed Virginia Cave Board and the Virginia Department of Conservation and Recreation (DCR). DCR manages programs for cave and karst protection and education.

The Virginia Cave Board

Established by the Virginia Cave Protection Act, the Virginia Cave Board advises individuals, organizations and public agencies on cave- and karst-related matters; provides cave management expertise; prepares and presents educational material; identifies significant caves; and recommends conservation and preservation measures for cave resources within Virginia. Board members include an array of educators, geologists, biologists, engineers, professors, conservationists, cave owners and cavers appointed by the governor. Visit **www.dcr.virginia.gov/natural-heritage/cavehome** for more details.

This brochure was made possible by a generous donation from the owners of Luray Caverns and the Virginia Cave Board, Virginia Department of Conservation and Recreation. ©2019

Photos: Karst window, Irv Wilson; Madison cave isopod, Susan Middleton and David Liittschwager, 1993; Big brown bat, Wil Orndorff; Luray Caverns

VIRGINIA Cave & Karst TRAIL

www.dcr.virginia.gov/natural-heritage/vacavetrail

A world beneath our feet

Caves figure prominently in Virginia's natural and geologic history. More than 4,400 have been documented here, and many harbor delicate natural communities with a diversity of species. Caves were mined for saltpeter during the Civil War, designated as bomb shelters during the Cold War, used as speakeasies during prohibition, developed as tourist attractions, and used to store food and supply water. Caves continue to be discovered, explored and studied by explorers. Scientists and conservationists in particular focus on caves and natural resources inside them.

Why is karst important?

Karst landscapes are characterized by sinkholes, sinking streams, springs and caves. Karst is found in areas where mildly acidic groundwater has dissolved soluble rock, such as limestone, dolostone, marble and gypsum. Virginia is rich in karst resources, and they play an important role in water quality and supply. Tens of thousands of Virginians depend on karst aquifers for clean drinking water but, because karst landscapes are porous, groundwater can easily be contaminated by surface runoff. Conservation of karst landscapes and education about their sensitivity to pollution are imperative.

Learn about geology

The geologic processes that produced Virginia's karst landscapes began more than 500 million years ago when a shallow tropical sea, abundant with life, covered much of the North American continent. Many organisms in the sea secreted hard shells and other protective body parts made of the calcium carbonate minerals calcite and aragonite. For much of the next 200 million years, their remains fell to the sea floor and mixed with other sediments to form layers, or strata, of the rocks limestone and dolomite more than 10,000 feet thick. Between 325 and 260 million years ago, the strata were uplifted and deformed by tectonic forces into the folded and faulted rock strata of the Appalachian Mountains. The Appalachians have been uplifted and eroded at least twice since then and continue to rise, producing the mountainous landscapes we see today.

The weathering processes that formed Virginia's present karst landscapes occurred over millions of years. Many karst features, such as sinkholes and caves, were destroyed by erosion as new ones formed, but occasionally evidence is found in the karstic "pockets" of the Earth of how long these landscape features have persisted.

The Virginia Cave and Karst Trail

The trail has more than 20 stops where visitors learn about and appreciate outstanding caves and karst features. The trail is meant to educate people about these sensitive environments and to promote their protection.

About a dozen caves in Virginia have been developed into show caves. These caves attract visitors from around the world, contribute to local economies and provide visitors amazing views of caves they wouldn't otherwise see. The Virginia Cave and Karst Trail features eight show caves.

Most stops are in Virginia's scenic Ridge and Valley province. Each offers visitors a unique experience such as an interpretive program, a scenic view or fee-based tour. A few stops have trails or self-guided tours.

With a bit of planning, several stops can be covered in a day. Be sure to contact commercial sites for information about admission fees and hours of operation.

How many Virginia Cave and Karst Trail sites can you visit?

- ☐ 1. Abrams Creek Wetland Preserve
- ☐ 2. Augusta Springs
- ☐ 3. Cowpasture River Trail
- ☐ 4. Dixie Caverns
- ☐ 5. Endless Caverns
- ☐ 6. Falling Spring Falls Overlook
- ☐ 7. Falls Ridge Preserve
- ☐ 8. Gap Cave
- ☐ 9. Grand Caverns
- ☐ 10. Hupp's Hill Civil War Park
- ☐ 11. Luray Caverns
- ☐ 12. Museum of the Middle Appalachians
- ☐ 13. Natural Bridge State Park
- ☐ 14. Natural Chimneys
- ☐ 15. Natural Tunnel State Park
- ☐ 16. New River Cave Nature Preserve
- ☐ 17. Pinnacle Natural Area Preserve
- ☐ 18. Rockland Park
- ☐ 19. Shawnee Springs Preserve
- ☐ 20. Shenandoah Caverns
- ☐ 21. Skyline Caverns
- ☐ 22. The Caverns at Natural Bridge
- ☐ 23. The Cedars Natural Area Preserve
- ☐ 24. Virginia Living Museum
- ☐ 25. Wildwood Park