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# CAVE TALK NEWSLETTER

## April 2025

**Core Values:** Stewardship, Education, Entertain, Cooperation  
**Core Focus:** Our Niche – Help Show Caves to Learn and Grow  
**Our Purpose :** A Platform to Share, Support and Sustain

**National Caves Association**  
**P.O. Box 625**  
**Cobleskill, NY 12043**  
**518-231-5420 CAVERN.com**

**Robert A. Holt, Executive Director**  
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## Spring is in the air!

As we bid farewell to winter and welcome the warmth of spring, we also embrace the beauty of budding trees and blooming flowers. This month's edition is packed with exciting updates and events!

### 60th Anniversary Convention – Reserve Your Hotel Room Now!

We are thrilled to celebrate our 60th Anniversary Convention, and preparations are well underway! The room block is now open, and we encourage you to book your accommodations early. Our goal is to have 200 attendees join us for this milestone event – no, this is NOT an April Fool's joke! Some of our ISCA friends have already expressed interest in attending, so don't wait too long. Convention registration will open in May – stay tuned for more details! Read all about it on the next pages.

### Cave Talk Podcast – New Episode Coming Soon!

The next installment of the Cave Talk Podcast is on its way! Jack has been hard at work formatting an exciting interview with Alexander Chrapko and Vladimir Vashkevich from our Affiliate Member, Cave Lighting. Be sure to catch this insightful episode once it's released.

**Bob**





# Convention 2025

## Book Your Room Early for the 60<sup>th</sup> Anniversary Convention! Rooms will sell out fast!

**We have an excellent rate! – Don't miss out!**  
**[See the link within this article!](#)**

We are thrilled to welcome you to the beautiful **Hotel Madison** in Harrisonburg, Virginia, as you come together to celebrate the 60th Anniversary of the National Caves Association from **September 22-25, 2025**. This charming, upscale hotel is the perfect setting for this historic gathering, combining modern luxury with warm Southern hospitality.

### **Hotel Madison: A Beautiful Venue**

Nestled in the heart of Harrisonburg, Hotel Madison boasts an **elegant design** that harmonizes with the surrounding natural beauty of the Shenandoah Valley. With its **spacious rooms**, **stylish interiors**, and **stunning views** of the area, this hotel offers a refined yet comfortable atmosphere. Whether you're relaxing in your guest room or attending one of our exciting events, Hotel Madison ensures your experience will be unforgettable.



### **Guest Room Amenities**

Your stay at Hotel Madison will be nothing short of exceptional. Each guest room is equipped with modern amenities to provide the ultimate comfort. Enjoy **luxurious linens**, **complimentary Wi-Fi**, a **flat-screen TV**, and a **spacious work desk** for those who need to stay connected. **Refrigerators** and **coffee makers** are also included in every room, offering convenience and relaxation. Plus, for those looking to unwind, many rooms offer beautiful views of the surrounding mountains and downtown Harrisonburg.



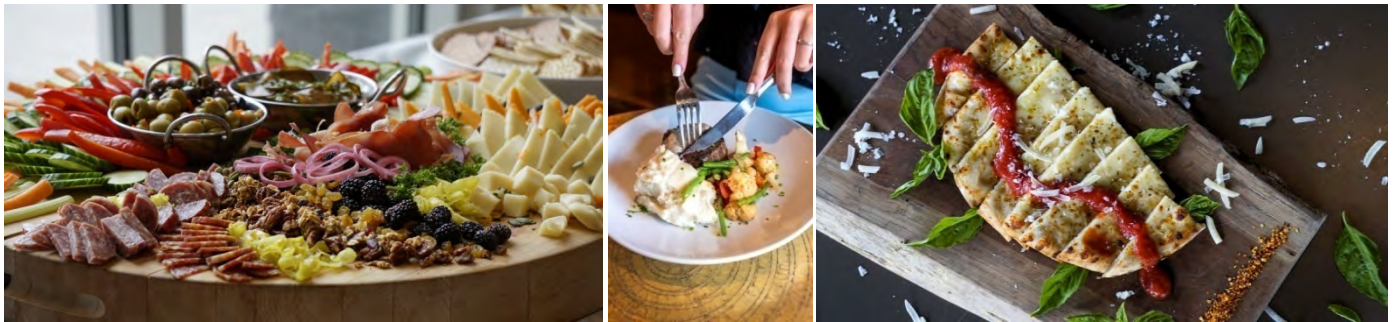
## Meeting Rooms & Convention Facilities

The Hotel Madison is perfectly suited for our convention needs, with a range of **state-of-the-art meeting rooms** and **ballrooms** to accommodate various group sizes. Whether you're attending educational sessions, networking events, or workshops, the meeting spaces are designed to provide a comfortable and engaging environment. With advanced **AV technology** and flexible room layouts, these facilities will help ensure our 60th Anniversary celebration is a success.



## Dining Options: Restaurant and Convention Catering

For dining, Hotel Madison offers a wonderful restaurant where you can enjoy delicious, locally-sourced dishes prepared by talented chefs. The restaurant features a range of options from hearty breakfasts to flavorful lunches and dinners, ensuring your culinary experience will be memorable.



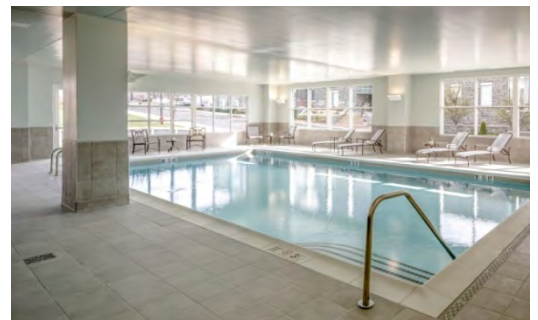
In addition to the restaurant, convention attendees will be treated to special catering services throughout the event. From **gourmet coffee breaks** to **buffet-style luncheons**, every meal is thoughtfully planned to fuel your day and keep you energized.

## Relaxation & Fitness

After a full day of events, take advantage of the hotel's **heated indoor pool** to unwind or enjoy a workout in the **fitness area**. The fitness center is equipped with modern machines, including treadmills, elliptical machines, and free weights, for those who want to stay active during their stay.



While the hotel provides excellent facilities for leisure and fitness, it does not feature a dedicated full-service spa offering traditional treatments such as massages and facials. For guests seeking spa experiences, the hotel's proximity to downtown Harrisonburg offers access to local salons and wellness centers that provide a variety of treatments.



## **Special Hotel Madison Rate – Book Early!**

Convention begins:

**Monday evening September 22 and check out is September 26**

**RESERVE**

We are pleased to offer a **special low rate for convention attendees**. These discounted rooms are available for a limited time, so we encourage you to **book early** as rooms are expected to fill quickly. Secure your spot and make your reservation today to ensure you don't miss out on this fantastic opportunity! Use this link to get started: <https://bookings.travelclick.com/110365?groupID=4487930#/guestsandrooms>

### **Connection to James Madison University**

Hotel Madison shares a unique connection with **James Madison University (JMU)**, one of the region's most renowned educational institutions. Located just a short distance from the hotel, JMU adds a vibrant college-town atmosphere to the area. For convention attendees, this proximity allows for easy access to the university's **research facilities, cultural events, and beautiful campus**.



### **Motorcoach Trips to Luray Caverns and Melrose Caverns**

No visit to the Shenandoah Valley would be complete without exploring some of its most breathtaking natural wonders. During the convention, we will offer exciting **motorcoach trips** to two of the area's most famous caves: **Luray Caverns** and **Melrose Caverns**. Tour other local caves pre and post convention.



**Luray Caverns** (left) is renowned for its stunning underground formations, including towering stalactites, stalagmites, and the breathtaking Great Stalacpipe Organ. You will see the newly build Welcome Center!

**Melrose Caverns** (right) offers an intimate experience with incredible crystal formations and a rich history of the Civil War where soldiers etched their names on the formations; which ties into the region's unique history.

These guided tours will be a memorable highlight of your time in Harrisonburg, offering you a chance to explore the beauty of the region's underground landscapes.



**Convention Registration will begin in May!**

**Cave Talk April 2025**



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## Discover Harrisonburg and the Local Area

Harrisonburg is a charming city with a rich cultural heritage, vibrant downtown, and a welcoming community. Known for its **historical sites**, **local wineries**, and **outdoor recreational activities**, Harrisonburg offers plenty of opportunities for exploration and relaxation.

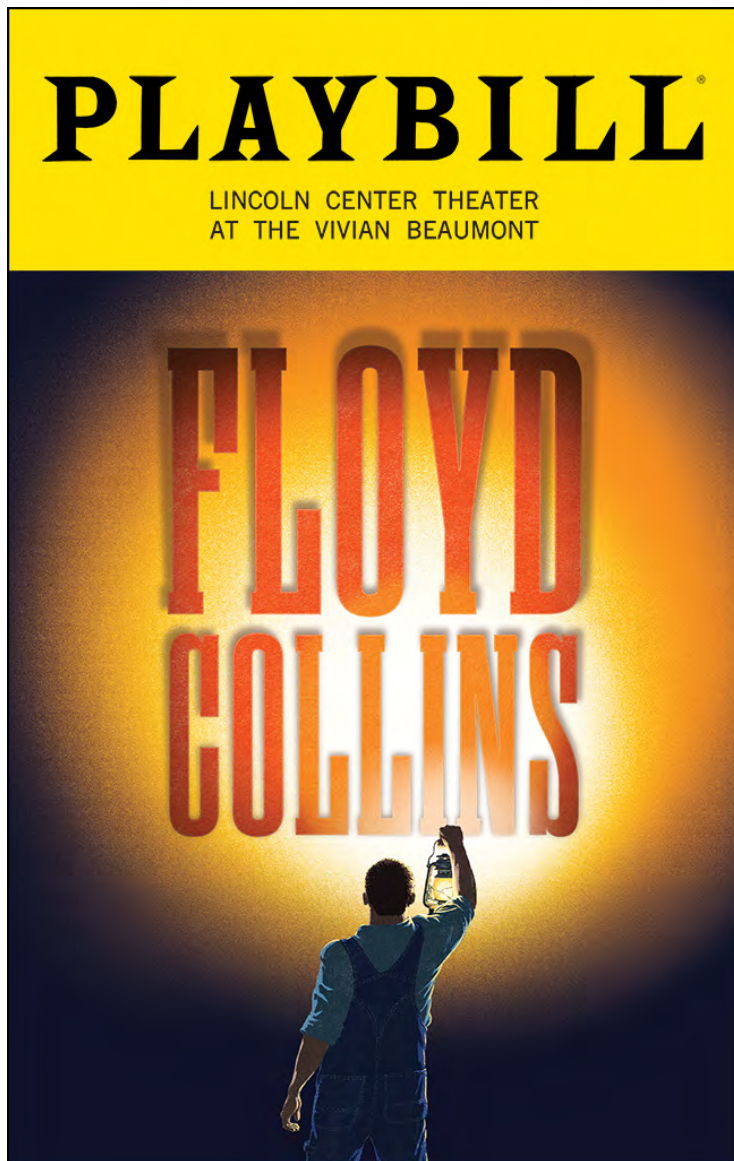
Stroll through the historic **Downtown Harrisonburg**, where you'll find **unique boutiques**, **art galleries**, and **locally-owned restaurants**. For outdoor enthusiasts, the Shenandoah National Park and **George Washington National Forest** are just a short drive away, offering hiking, biking, and breathtaking scenery. The surrounding countryside is also dotted with **vineyards** and **apple orchards**, providing perfect spots to relax and enjoy the natural beauty of the region.



## Conclusion

We can't wait to welcome you to **Hotel Madison in Harrisonburg, VA**, for the 60th Anniversary celebration of the National Caves Association. This event promises to be an exciting and unforgettable experience, with everything you need for a successful convention and an amazing visit. From luxurious accommodations to unforgettable tours and local attractions, you'll find plenty to enjoy during your stay.

So don't wait—**reserve your room today** and get ready for an incredible time in Harrisonburg, Virginia for the NCA's 60<sup>th</sup> Anniversary Bash in September!



# Floyd Collins

BROADWAY | MUSICAL | REVIVAL

[VIVIAN BEAUMONT THEATER](#)  
[150 W. 65TH ST., NEW YORK, NY](#)

*Floyd Collins* had its world premiere at the American Music Theater Festival in Philadelphia in 1994. It was followed by the off-Broadway debut at Playwrights Horizons in 1996 where it won the Lucille Lortel Award for Outstanding Musical. Due to its enduring cast recording, the musical has achieved a devoted following over the years. This Lincoln Center Theater production will mark the long-awaited Broadway debut of this modern-day classic.

**SYNOPSIS:** *Floyd Collins* is based on the true story of a cave explorer in Kentucky, 1925. While chasing a dream of fame and fortune by turning Sand Cave into a tourist attraction, Floyd Collins himself becomes the attraction when he gets trapped 200 feet underground. Alone but for sporadic contact with the outside world, including his brother Homer, Floyd fights for his sanity – and, ultimately, his life – as the rescue effort above explodes into the first genuine media circus. Reporters and gawkers from across the country descend on the property, fueling the hysteria

and manipulating the nation into holding its collective breath. *Floyd Collins*, featuring a haunting exploration of the American dream by Tina Landau and a glorious folk and bluegrass-inspired score by Adam Guettel, tells the transcendent tale of a true American dreamer.

**Information is subject to change prior to opening night.**

April 1–6: Tuesday @8pm, Wednesday @8pm, Thursday @8pm, Friday @8pm, Saturday @2pm and 8pm, Sunday @3pm

April 8–20: Tuesday @8pm, Wednesday @2pm and 8pm, Thursday @8pm, Friday @8pm, Saturday @2pm and 8pm, Sunday @3pm

April 21–26: Monday OPENING, Wednesday @2pm and 8pm, Thursday @7pm, Friday @8pm, Saturday @2pm and 8pm, Sunday @3pm

**RUNNING TIME:** 2 HOURS AND 45 MINUTES, INCLUDING ONE INTERMISSION.

**BOOK:** [TINA LANDAU](#)

**MUSIC:** [ADAM GUETTEL](#)

**LYRICS:** [ADAM GUETTEL](#)

**VIEW:** [FLOYD COLLINS - CURRENT CAST](#)

**MUSIC OVERVIEW & TICKETS:** [LCT.ORG/SHOWS/FLOYD-COLLINS/](https://lct.org/shows/floyd-collins/)

# Majestic Caverns spring update

**A New Addition to the Cave Family!** Exciting news from Majestic Caverns—Joy and Jared Sorensen have welcomed their fourth baby in five years and their first baby boy! Jack Allen Washington Sorensen was born on February 11, 2025, and his name carries deep significance. He is named after two legendary cave men—Jack Herschend and Allen Washington Mathis—both of whom have profoundly shaped the world of show caves and hospitality.

We pray that little Jack will grow up to reflect the values, faith, integrity, and influential spirit of the great men he is named after. While Joy has had some complications due to preeclampsia, we are so grateful that both she and baby Jack are doing well. We thank God for this precious new life and the blessing he is to the cave family!

**Gearing Up for Spring Breakers & Field Trip Season!** While winter brought deep cleaning, maintenance, and strategic planning, Majestic Caverns is now fully prepped for a bustling spring! With spring break visitors and school field trips filling our calendar, our team has been hard at work ensuring our park, attractions, and cave tours are in top shape for the season ahead. We look forward to welcoming families, students, and adventure-seekers as we dive into one of our most exciting seasons of the year!

**Majestic Caverns Team Explores Alabama's Caves** As part of our commitment to growth and collaboration, the Majestic Caverns team recently embarked on an incredible field trip to Rickwood Caverns and Cathedral Caverns! These visits provided valuable insights, strengthened our team, and allowed us to experience these breathtaking cave systems as guests.



We want to extend a huge thank you to:

- Emily, GM at Rickwood Caverns, and Tori, our fantastic tour guide, for their warm hospitality and unforgettable underground experience.
- Judy, GM at Cathedral Caverns, and Jason, our knowledgeable tour guide, for sharing their passion and expertise with us.

This trip was incredibly fruitful, offering fresh perspectives, new ideas, and deeper camaraderie among our team. We are so grateful for the warm welcome from our fellow cave professionals and look forward to continued collaboration within the cave community.

Warmly,  
***The Majestic Caverns Team***

# 2025 NPS visitation: Prepare for the Unexpected

In changes seen and unseen, we outline what you can expect when visiting a national park this year in light of recent changes in the federal government.



Interior view of fee collection booths at Castillo de San Marcos National Monument in Florida.

NPS

As a lifelong Utahn, former National Park Service ranger and current lead of NPCA's visitation program, I've thought a lot about parks over the years. And while my thoughts are as unique and varied as the 430+ places themselves, the common thread is people.

National parks set [a new record of 331.8 million visits](#) in 2024. People love America's national parks. Yet, recent actions by the Trump administration have reduced the National Park Service workforce severely and [wreaked havoc on the agency](#), which was already struggling with understaffing and underfunding.

For this year's visitors, impacts to parks will take shape in obvious ways as well as ways less visible but still tremendously important to the parks' stories and long-term health.

Here are some impacts, both seen and unseen, and how you can prepare for and respond to them.

## SEEN

**Visitor Use Assistants:** For parks with gates, the most visible presence is the person staffing the entrance booth who welcomes you, accepts your fee payment or park pass, hands you a map and waves you on your way. The loss of these positions has forced parks to close entrance stations, resulting in longer lines — and longer wait times for visitors.

**Visitor Centers:** The next place where people often interact with park staff is in a visitor center. This is where Junior Ranger ceremonies are performed, rangers help visitors determine whether to take that strenuous hike or perhaps an easier but more scenic one, and visitors can review their itineraries and register for backcountry permits.



A National Park Service employee gives a young junior ranger a badge for completing the junior ranger book and pledge at Fort Vancouver National Historic Site.  
NPS / Hannah Schwalbe

**Guided Tours:** At some national park sites such as caves or historic homes, a ranger-guided tour is the best, or only, way to experience the place. I personally led tours at John F. Kennedy National Historic Site and Timpanogos Cave National Monument during my years with the Park Service. Many parks have been forced to cancel guided tours, as well as limit self-guided opportunities.

**Recreational Facilities:** From bathrooms to campgrounds to boat ramps, closures and reservation cancellations will impact and change the way visitors experience parks this year. Glen Canyon and Lake Mead are among the popular national park sites to experience by boat, which also requires vessel inspection to prevent the spread of invasive species. Expect long lines for launching and taking out boats, as staffing is limited for facilitating boating operations.

## UNSEEN

At busy parks with larger staffs, including Rocky Mountain, Yosemite, Grand Canyon and Great Smoky Mountains, visitors may not notice some of the work that's going undone this year. Park managers will be forced to prioritize visitor-facing roles and services, pulling staff away from other duties to do so. In other cases, administrative actions have hamstrung park managers and taken important decisions out of their hands.

**Science:** Between the elimination of key science and research positions, severe travel restrictions and a \$1 spending limit imposed on park staff, critical work is being shelved in national parks as well as at other public land agencies, including the U.S. Fish and Wildlife Service, Forest Service, Geological Survey and Bureau of Land Management. Archaeological surveys of cultural resources, removal of invasive vegetation species, and the monitoring of threatened wildlife species are just a few of the hundreds of long-term projects impacted.

Visitor centers are also often interpretive centers, housing natural and cultural objects and educational exhibits. In the last month, we've seen a slew of parks announce changes to their operating hours. Some are closed altogether, open by appointment only, or open limited days each week. We've also seen calls for [cancellations of building leases](#) that house visitor centers, law enforcement offices and museum collections.



Due to lack of seasonal staffing, Arches National Park announced March 23, 2025, that it would cancel until further notice its tours through Fiery Furnace, the park's complex geological district.  
NPS



Isle Royale National Park's research on wolf and moose is the longest running predator-prey study in the world. Pictured, a Michigan Department of Natural Resources wildlife technician takes measurements of a captured gray wolf with National Park Service staff and other scientists.  
MI DNR / John Pepin



Two National Park Service rangers lead children in making "fossils" during an elementary school visit.  
NPS / Ally O'Rullivan



Sergey Tinyakov/Dreamstime photo

visitor center, tour or park area is closed or otherwise inaccessible.

- Check for park hours and alerts ahead of time, so you're not surprised by any immediate closures, safety hazards or other cautions.

**School and Community Outreach:** In my previous role at Timpanogos Cave, one of my duties included visiting local classrooms, where I brought curriculum-relevant lessons related to the park to students ranging from kindergarten through high school. Field trips and other Park Service-led community outreach programs have come to a halt. From rural to urban communities, this outreach is essential to enhance access to our national parks and has helped inspire new generations of park staff and advocates.

**Tribal Consultation and Historic Preservation Compliance:** Parks and public land agencies are required by law to engage Tribes on any project that affects traditional homelands of Indigenous peoples — it's also the right thing to do. The loss of positions such as regional Tribal liaisons has shifted this important work to even fewer, already under-supported staff who will struggle to meaningfully engage Tribes and other communities.

**TIPS ON HOW TO PLAN**  
With this picture in mind, here's how to prepare for your park visit this season:

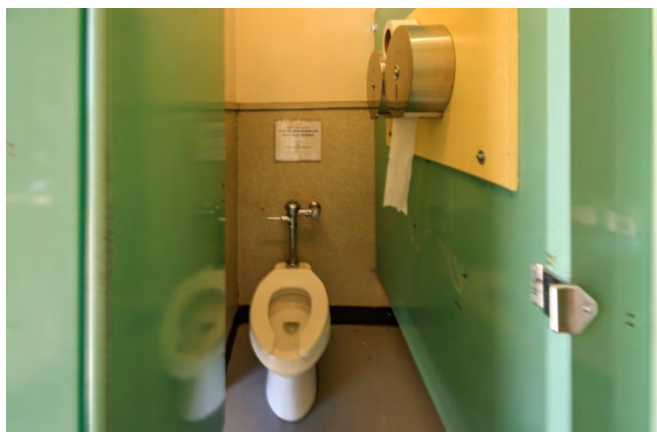
### 1. Pack Your Patience

Be kind to rangers and visitors. People who care for these treasured places are under extremely stressful and uncertain conditions. Fellow visitors may also be dealing with traffic jams or other experiences that don't match their expectations. A little kindness goes a long way.

### 2. Plan Ahead, and Include a Backup Plan

- With limited cell phone reception and visitor service closures in many parks, it's important to plan and include a backup plan, in case a

- Acadia, Arches, Glacier, Rocky Mountain, Shenandoah and Zion are among the parks that require reservations or permits for park or trail access. [NPCA's Know Before You Go webpage](#) offers up-to-date information on which parks require a reservation and why. Each park's website also contains important fee and pass information under the "Plan Your Visit" tab.



Restroom at Death Valley National Park's Grapevine Ranger Station.  
John D Hallett / NPS



A ranger speaks with a visitor at Old Faithful Visitor Education Center at Yellowstone National Park.  
NPS / Jacob W. Frank

### 3. Leave No Trace

- Bathroom facilities may be closed. Bring a personal hygiene kit and plan for you and your two- or four-legged friends.
  - Bring extra water and pack your reusable bottle.
  - Bring supplies to pack out your garbage (and even trash left behind by others!).
- Use reef/critter-safe sunscreen if visiting any of the 88 park sites along oceans and waterways.

### 4. Respect the Land and its History

All national parks exist on traditional Indigenous lands. In many cases, thousands of years' of Native American history has been documented at national park sites. It's important to visit cultural sites respectfully and with reverence for these living communities, as Tribal Nations continue to be in relationship with these spaces for their religious and cultural practice.



Casa Rinconada kiva at Chaco Culture National Historical Park.  
Photo © Glenn Nagel/Dreamstime.

**Tips to keep in mind:** Remember that ancestral landscapes are sacred; leave fossils, bones and cultural objects undisturbed; avoid touching rock imagery; keep children and pets out of sacred cultural sites; and stay clear of ancestral structures — do not climb or lean on them.

### 5. Stay Safe

- With limited search-and-rescue capacity, it's critical that visitors take care to prevent the kind of incidents that would require this level of staff response.

- Stay on trails and boardwalks.
- Wear hiking shoes or boots with sturdy rubber soles for stability and traction for the different terrains and walking surfaces you might encounter in a park.

- Obey all park rules and safety signs, barriers and railings.
- Give wildlife room to roam. Use a camera zoom lens and keep a minimum of two school bus lengths between you and wildlife — and eight bus lengths for large animals including bears and wolves.
- Bring GPS or other mapping equipment and extra layers and gear when exploring trails and remote park areas.



Technical search and rescue training at Zion National Park in Utah.

NPS / Daren Reehl

## 6. Speak Up!

The most essential way to support a good park experience — now and into the future — is to use your voice. We need our elected officials and decision makers to hear how important our national parks and the people who care for them are to our country. [Speak up and engage your community.](#) Let's be loud, clear and constant in our love for parks and rangers!



# World's deepest cave can fit 7 Eiffel Towers inside

With a depth of around 2,199 metres, a cave in Georgia is so deep that nearly 100 men to retrieve a body.

Krubera Cave has another name - Voronya - which translates as "Crows' Cave". This name was given because crows were observed nesting in the entrance pit of the cave. With its dramatic pits, chasms, tunnels, and even freezing underground waterfalls, Krubera Cave has been described as an [ideal supervillain lair](#). Also known as Voronya Cave, Krubera is the second-deepest known cave on Earth - it was previously believed to be the deepest cave in the world before this honour was switched to its neighbour Veryovkina. The two are within walking distance of each other, making the area a popular spot for intrepid explorers.

The exploration of these caves is not for the faint of heart. Despite its impressive depth, the cave's entrance is unremarkable - just six small openings rather than a dramatic hole in a cliff face. Some tunnels in Krubera can become completely flooded - requiring explorers to use scuba gear [to navigate](#) these underwater passages - known as sumps. Cave divers have reported spending up to two weeks inside Krubera before resurfacing into civilization.

In 2021, the body of Russian caver Sergei Kozev was discovered by Perovo-speleo team (PST), a speleological team from Moscow. Kozev had descended into Veryovkina in November 2020 where he got stuck and later died of hypothermia. His body was eventually recovered by a team of over 100 climbers in August 2021.

The cave is situated in Arabika Massif, part of the Gagra Range in the Western Caucasus area of Georgia - a country in Eastern Europe. Formed in Upper Jurassic and Lower Cretaceous limestone, the ancient natural wonder sits 2,256 meters above sea level. Its total length is 16,058 meters.

First explored in the 1960s, Krubera was named after the Soviet geographer and professor Alexander Alexandrovich Kruber.



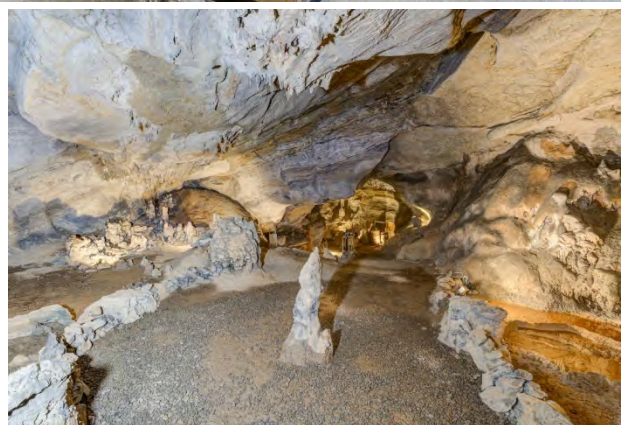
# Roger Hartley looking to sell Appalachian Caverns



Appalachian Caverns is seeking a new owner to nurture and grow this incredible property like the current owner, Roger Hartley has for over 20 years. The property sits on 9.36 acres. The caverns contain history of over 1300 years, and includes a 3 mile cave system with a 1/2 mile long walking path for walking tours. Walking paths, railing and bridges are made of stainless steel, and lighting was recently upgraded to LED (low voltage, with 3 way switch). The main building contains a gift shop, office and restrooms on the main floor, and two apartments (3BR, 2 Bath and 2BR,1 Bath) upstairs. 9.36 Acres in Blountville, TN - \$2,200,000 - Commercial Sale.



Front section of the roof was replaced in 2024. The campground includes 4 spots with electric/water hook ups, and a shower house. There is also a picnic shelter across the street from the main building available for use. With countless possibilities and opportunities awaiting, this is a rare chance to take the reins of a unique property like this. Some of the information in this listing may have been obtained from a 3rd party and/or tax records and must be verified before assuming accuracy. Buyer(s) must verify all information.



\$2,200,000    MLS# 9977946  
Listed by **Wendy Watkins Realtor** with  
**Greater Impact Realty**  
For more information contact (423) 791-2868  
Greater Impact Realty Lakeway, (423) 973-8634



# Tips on Preserving Cave-Books and Spelean Literature

(Reprinted from the 1992 NCA Files from Author Gary K. Soule)



Gary K. Soule, Spelean Archivist

As an archivist of old show cave materials, I was very honored when Cave of the Mounds asked me to set up part of my historical show cave materials at the Mt. Horeb NCA Convention. As an active member of the American Spelean History Association, it was a rewarding experience, and I want to thank the many show cave owners who have talked with me about it, and even shared some of their old materials with me for my files. **Thanks!**

Like I suggested, it is nice not to keep "all your eggs in one basket in case of an unexpected fire or other natural disaster." You should take two of every item you have that deals with the cave in terms of literature, and file them away in two different buildings, ideally some distance apart and above any projected flood plains. This collection should include your present, every day postcards, brochures, guide booklets, slides, etc. as today's common items are tomorrow's history!! It is never too late to start, and I am glad to hear that some of you are already doing this.

During our tour at "House on the Rock," Barbara Munson asked me if I could share some of my thoughts on historical preservation. I would be delighted to. Keep in mind that this is only a guide, and even myself am limited in how well I can preserve rare old materials based upon room limitations and financial constraints.

Most of us have a cave book, brochure, or some other fine assorted piece of spelean literature that we are most proud of. But valuable old books, like everything else, fall apart. They are constantly under attack by mold, insects, environmental conditions, and the wear and tear of everyday use. They are also slowly self-destructing from purely internal causes. By understanding their main adversaries and observing a few basic conservation rules, you can prolong the life of Spelean literature for many decades to come.

With over 800 hard and soft cover cave books, thousands of assorted cave brochures from 40 different countries, over 10,000 cave postcards, and well over a hundred different grottos with publications represented in my files, I find myself literally making a value judgment. Considerations would pretty much be the same for any cave literature collector or historian. What do you need to get at regularly for research purposes?

What is very old? What do you have only one copy of? In short, you need to make value judgments and plan accordingly. I never throw anything away, and that includes the printed envelopes, bumper stickers, and even cave ticket stubs. It all has historical value in regards to the history of show caves, and is worth saving. Some people laugh at saving adhesive cave bumper stickers, but they tell a story as well, and I have just about 1,000 of them on file! No, you will never see me put one on a car, as while it looks nice, it is here today, but will be destroyed forever in a few short months, depending on the weather and the condition of the paper it is made of. If you do, buy two. So, what do you do to protect what you have?

Old cave books face three different silent, but deadly, enemies: They are heat, humidity and light. Books are made mostly of paper, which is composed of long, thin fibers of cellulose. As the temperature of the air rises and falls, these fibers expand or contract. Many of them break under this stress, causing the pages to become brittle and the books to crumble. The single most useful thing you can do to preserve your old cave books and literature is to store them in a place where the temperature is constant. Luckily for us, 65 to 70 degrees Fahrenheit is the temperature they like best. But don't store them above heating vents, near drafty windows and fireplaces, or in

other spots where the temperature goes up and down.

Humidity attacks cave books and literature in several ways. When your books were originally manufactured, various chemicals were added to the paper to bleach it or to harden its surface. Ever since then, these chemicals have been combining with the moisture in the air to create harsh acids, which eat through the cellulose fibers. Pollutants in the air also combine with the moisture in the air to create new acids that further weaken the paper. Mold spores, which normally lie dormant in the atmosphere, spring to life under warm, humid conditions, and spot your pages with smelly brown and gray splotches. Extremes of humidity can even cause the covers of books to warp, and labels or endpapers to lift off.

You can avoid these effects of humidity by stabilizing the moisture level in the air at about 50%. The easiest way to do this is to maintain a constant temperature of 65 or 70 degrees, since the humidity level raises with the heat. A commercial window size air conditioner will help keep the temperature down in warm weather and will also filter out many of the acidic pollutants in the air. In the winter, putting pans of water on radiators or registers will help keep the air in your "speleo library" from drying out too much. A Taylor gauge to measure temperature and humidity costs only a few dollars and will help you to regulate the moisture level more precisely. Most hardware stores should have them.

Light is the third enemy of old cave books and literature. The worst offender is direct sunlight, which will cause the dyes in the binding and printing materials to fade and will raise the temperature of the air. Keep the shades drawn whenever possible. Mine are always kept closed. Even fluorescent and incandescent bulbs are harmful to paper. Like sunlight, they also contain ultraviolet rays that can speed up the action of the acids and make the paper brittle and brown. Keep the lights in your library turned off when they are not needed. You can also buy ultraviolet filters for windows and fluorescent lights in areas that cannot be kept shaded.

Perhaps in the ideal world of a cave literature collector, all the cave materials would be kept in a pitch dark room where the temperature would always be 68 degrees Fahrenheit, and the humidity kept at 50%. You would never handle anything so no hand oils or marks would be left on anything. But this is not possible if you make good use of your library. I might point out that all forms of tape, despite what the manufacturer says, should never be used on any type of literature. The same goes for rubber bands and paper clips, which can both leave marks on your valuable spelean literature in years to come. It is best to try and avoid any drinking and smoking around your cave literature as well, and the reason here is obvious.

In the case of my rarest cave brochures, I keep them filed tightly together in a dark drawer. This reduces both contact with the air and sunlight as much as possible. Postcards should never be put in an adhesive type photo album, but the pages with the plastic "pockets" are more ideal. They keep hands from touching them, yet even here I have to frequently let the postcards "breathe" for a few minutes so as to avoid any potential contact with the protective cover. This is done merely by letting the postcards be removed from the pockets for a brief period of time. A neutralized plastic is the answer here if you can afford it. The same goes with acid free folders and boxes, which I understand at least one major show cave operation here in the United States is already using.

I hope this article has been helpful and start saving, now!

**Gary K. Soule**

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Sturgeon Bay, Wisconsin 54235

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**Contact Gary if you have Archival Questions and more than likely he has your history!**

# Cave Lighting: a year under the French spotlight



## Cave Lighting : The number one in France

Part 1: French show caves. Michel Renda - Cave Lighting outpost in France

Part 2: Grottes de Blanot and Grottes de Azé

Part 3: Grottes de Thouzon

Part 4: Grottes de St. Christophe

Part 5: Special features of the projects

Part 6: Results

### Part 1: French show caves

#### Michel Renda - Expanding Cave Lighting in France

France is home to numerous show caves that are open to visitors and offer spectacular geological formations and prehistoric art. The country's show caves are very well-organized under La Fédération Française du Tourisme et Patrimoine Souterrain, <https://www.grottesdefrance.org/contact-federation-tourisme-patrimoine-souterrain/>. FFTS includes around 80 members, encompassing mostly some of the most well known show caves in France and beyond.

Notables show caves in France :

#### Caves with Prehistoric art:

1. **Grotte de Lascaux** (Dordogne) - World-famous for its cave paintings, accessible only through replicas (Lascaux II and Lascaux IV).
2. **Grotte Chauvet** (Ardèche) - One of the oldest decorated caves (36,000 years old). The replica "Caverne du Pont d'Arc" is open to visitors.
3. **Grotte de Niaux** (Ariège) - One of the few caves where original prehistoric artworks can still be seen.
4. **Grotte de Pech Merle** (Lot) - Features prehistoric paintings and well-preserved traces of humans and animal activity.
- 5.

Caves with spectacular speleothems:

6. **Gouffre de Padirac** (Lot) - A vast cave with an underground river navigable by boat.
7. **Aven Armand** (Lozère) - Famous for its "stone forest" of hundreds of stalagmites.
8. **Grotte de Clamouse** (Hérault) - Known for its intricate crystal formations.
9. **Grotte des Demoiselles** (Hérault) - A massive stalactite cave with stunning formations.
10. **Grotte de Trabuc** (Gard) - Notable for its rare "100,000 soldiers" rock formations.



### Cave Lighting's journey in France

Cave Lighting was first introduced to the French show caves in 2008, when Alexander and Luba Chrapko took part in the lighting tests in Grotte de la Verna.

The company's first major project in France came in 2010 with the lighting renovation of Grottes de Clamouse, where Cave Lighting handled the complete installation.

Following this successful project, there was a long hiatus until 2017, when Cave Lighting met Michel Renda during the Chameau Cave project in Morocco.

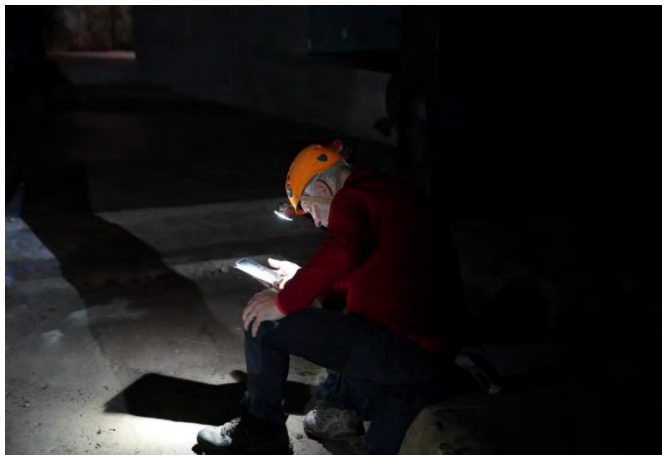
### Who is Michel anyway?

Michel Renda is a renowned French speleologist, explorer, topographer and photographer. A member of the Fédération Française de Spéléologie (FFS), Michel has discovered and explored numerous caves. His photography, capturing stunning cave formations and crystals from all around the world, has been showcased at international speleology conferences (E.G., Muotathal, Switzerland, 2012).

Michel Renda has also collaborated with other cave photographers to capture the beauty of underground worlds and founded an international team La Salle (<https://www.lasalle3d.com/>). He started his collaboration with Cave Lighting in 2018. Over the past eight years, his reputation has helped Cave Lighting gain multiple access to multiple projects in France. To date, Cave Lighting has been able to realize 13 different lighting projects in France, including 6 in 2024.

2024 - A remarkable French year for Cave Lighting

In 2024, Cave Lighting completed six lighting projects in France:



Grottes de Blanot  
Grottes d'Azé Rivière  
Grottes d'Azé Préhistorique  
Grottes de Thouzon  
Grottes de St. Christophe Supérieure  
Grottes de St. Christophe Inférieure



## Part 2: Grottes de Blanot and Grottes d'Azé

### Project Background

The projects at Grottes de Blanot and Grottes de Azé Rivière and Préhistorique, were commissioned by the Département de Saône et Loire in 2022 with planning overseen by Agence Rossignol. Initial discussions proved challenging, it took Cave Lighting some convincing to steer the realization of the project in the right direction.

The primary goal was to:

- Highlight the caves's natural beauty while implementing a sustainable and energy-efficient lighting concept.
- Equip this historically and archeologically significant caves with a lighting system suitable for both scientific tours and tourism.

### 2.1 General description

#### Grottes de Blanot

**Located in Burgundy**, (Saône-et-Loire) near the village of Blanot, 20 km southwest of Cluny, Grottes De Blanot is an impressive karst cave system with:

#### Characteristics of the caves

- Multi-level formations reaching over 80 meters deep.
- Diverse formations: stalactites, stalagmites and sinter pools.
- **Underground rivers** contributing to its development.
- **History & Archaeology**
  - The caves have been used since prehistoric times, as archaeological finds prove.
  - They were discovered and explored by various speleologists in the 19th and 20th centuries.
  - The caves are a protected natural monument and are used for guided tours.
- **Sightseeing & Tourism**
  - The guided tour covers 350 meters and requires a certain level of fitness from visitors.
  - Guided tours are available seasonally, usually from spring to fall.
  - A guided tour lasts approx. 45 to 60 minutes.
- The temperature inside is a constant **11 °C**, warm clothing is recommended.

## Grottes d'Azé



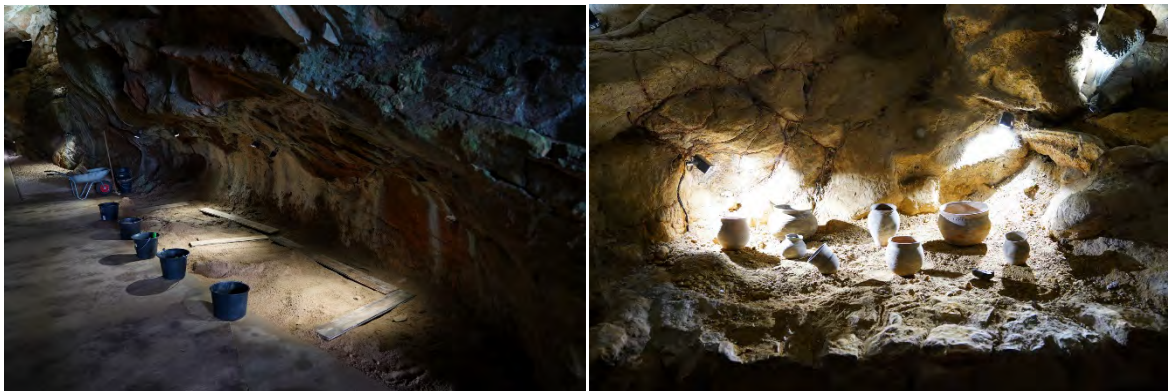
Also located in Burgundy, (**Saône-et-Loire, France**), **Grottes d'Azé** is one of the region's most important prehistoric and geological sites, featuring:

### Geology & Nature

- **Karst cave system** with multiple rooms and passages
- **Underground river** meandering through the cave
- **Stalagmites formations** (stalactites, stalagmites) in various colors
- **Multiple cave entrances**, including a large natural opening

### Archaeological and paleontological significance

- Evidence of prehistoric human settlement (tools, fireplaces)
- Fossils of extinct animals such as the cave bear
- Discoveries dating back to the **Paleolithic period**

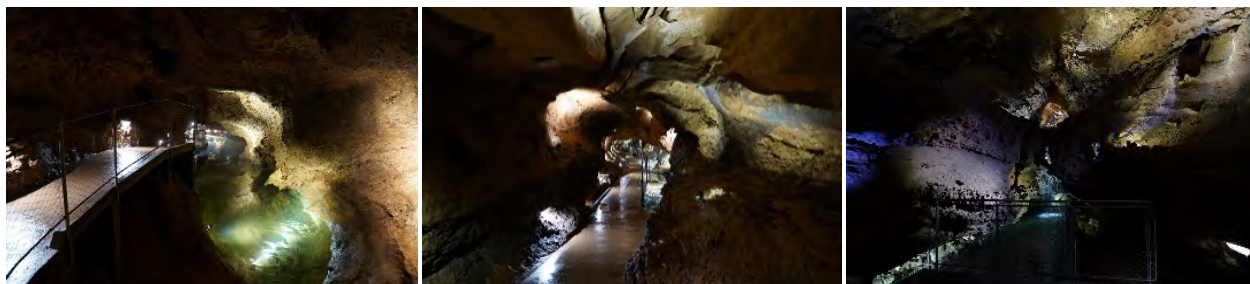


### Sightseeing & Tourism - Grottes de Azé Rivière

- The caves are open to visitors for **guided tours**
- The guide path is about 560 meters long, mostly horizontal with small ascents
- Duration of a guided tour: **approx. 1 hour**
- Temperature: **approx. 11 °C** - warm clothing is recommended
- **Educational exhibits** on geology, hydrogeology and geomorphology

### Sightseeing & tourism - Grottes de Azé Préhistorique

- The caves are open to visitors for **guided tours**
- The guide path is approximately 190 meters long, mostly horizontal with small ascents
- Duration of a guided tour: **approx. 40 minutes**
- Temperature: **around 11 °C** - warm clothing is recommended
- **Educational exhibits** on geology, archaeology and paleontology



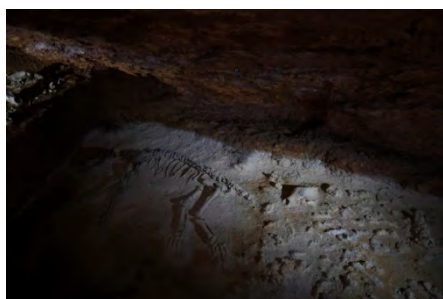
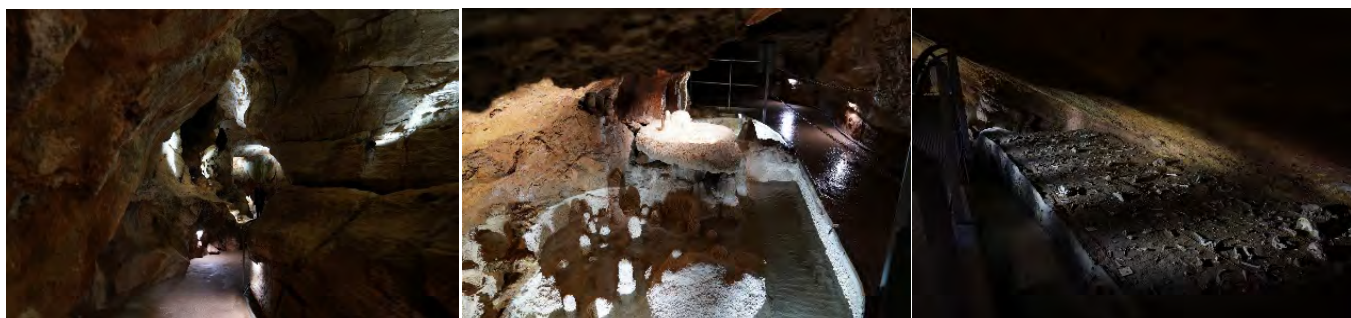
## 2.2 Lighting installation

After some productive discussions, the project management decided that no torch lights, pit lights or colored DMX lights would be installed in the caves. Thanks to Cave Lighting, the caves now have a natural look, and visitors are delighted with the subtle and authentic lighting as well as the smart switching system used in all three caves.

The installation in Grottes de Blanot began in autumn 2023, and was completed in April 2024. The work in Grottes d'Azé followed and was also completed in April 2024. Our tried-and-tested lighting solutions were used for the installation, including LSQ2, LQP2 and LMT luminaires as well as CN2, CD2, MMC2 and CP2 control units.

- Grottes de Blanot was equipped with an analog system
- Grottes d'Azé was fitted with a PLC-controlled system with a fiber optic network.

The installation was overseen by our project manager Adrian Titus Kondacs, who led a five-person Cave Lighting team.



## 2.3 Special features of the project

For the first time, Cave Lighting had to navigate a highly demanding public administration.

In January 2024 authorities discovered around 10 bats hibernating in Grottes d'AzéRivière. This happened during the installation, which was already underway. As a result, bat protection measures halted the

work in the Azé caves, causing further disruptions

After further discussions, additional guidelines were introduced to clarify where and how we were, permitted to work within the caves.

It required some effort and adjustments, but committed to wildlife protection, we did our best.

### Part 3: Grottes de Thouzon



#### 3.1 General description

**The Grottes de Thouzon** is an impressive stalactite cave near Le Thor in the Vaucluse department in the southern France. It was discovered by chance during quarry work in 1902 and has since become a popular tourist attraction.

#### **Features of the cave:**

- **Natural beauty:** The cave is remarkably well-preserved, featuring a vast array of stalactites and stalagmites that have formed over thousands of years.
- **"Golden Cave":** Due to the unique yellowish color of its stalactites, Grottes de Thouzon is often referred to as the "Golden Cave".
- **Underground river:** originally shaped by an underground river, traces of this water system are still visible today.
- **Temperature:** a constant 13°C throughout the year.



#### Visitor experience:

- The cave is open to visitors and can be explored on a **45-minute guided tour**.
- The guideway extends approximately 180 meters.
- Impressive light installations enhance the beauty of the rock formations during the tour
- Knowledgeable guides provide fascinating insights into the geology and history of the cave.

#### Location and accessibility:

- **Address:** Le Thor, Vaucluse, Provence-Alpes-Côte d'Azur, France.
- **Nearby towns:** Avignon (~20 km away), L'Isle-sur-la-Sorgue.
- **Ideal for a day trip**, especially for families and nature lovers.

**The Grottes de Thouzon** offers visitors a stunning underground experience, providing valuable insights into the geological history of the region.

### 3.2 Lighting installation

The installation took place between January and February 2024. The Cave Lighting team - Alejandro Hernaiz and Dan Ciulpan, supported by Vladimir Vashkevich - worked closely with cave manager Stephan Mathieu and his team to complete the project in 6 weeks.



Proven solutions from Cave Lighting were also used for the project including:

- LSQ2, LQP2 and LMT LED luminaires
- RGBW DMX-controlled EQP and ESQ LED luminaires.
- CN2 and CP2 control units, with radio-controlled operation via remote controls.

#### A unique light and music show

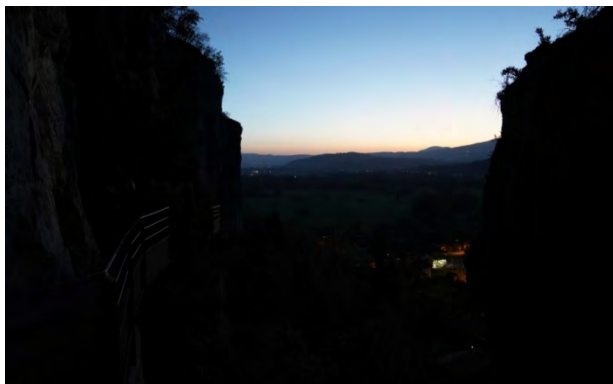
In addition to the standard lighting, a custom-designed light and music show was installed. Cave Lighting scenographer Jan Ptacin was entrusted with the realization of the task.

The production featured original music, custom scenography and specially developed projections designed exclusively for Grottes de Thouzon.

### **3.3 Special features of the project**

One of the most remarkable aspects of this project was the complete transformation of the caves's lighting system and control technology. Thanks to Cave Lighting's expertise, the cave was dramatically enhanced in a short period, offering visitors an immersive experience with 3D lighting effects, increased depth perception, and stunning accents since March 2024.

The light and music show became a highlight, exceeding expectations. Even the Cave Lighting team was surprised by the overwhelming enthusiasm from visitors.



## **Part 4: Grottes de St. Christophe**

### **4.1 General description**

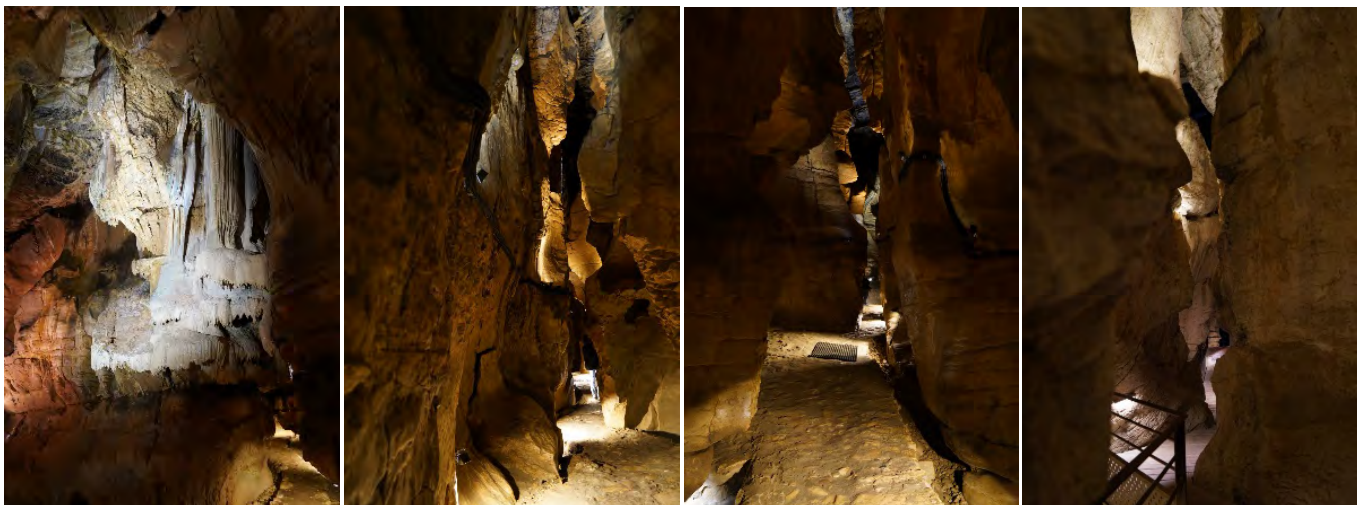
- **The Grottes de Saint-Christophe** (Caves of Saint-Christophe) is an impressive cave system in the Savoie region of France. Located in the Massif de la Chartreuse between Chambéry and Lyon, it is a site of significant geological and historical importance.

- **Key features**

- **Natural caves:** Carved into the limestone by the Guiers Vif river over thousands of years, these caves showcase spectacular rock formations.
- **Archaeological significance:** Evidence of prehistoric settlements and human use of the caves by various cultures.
- **Historical passage:** The caves are situated along an ancient trade and pilgrimage route that was used by the Romans.
- **Pont Romain** (Roman bridge): A historic stone bridge that was once served as an important link between Savoy and Dauphiné.



- **Visit and activities**
- **Guided tours:** The caves can be explored with a knowledgeable guide who provides insights into their geological, historical and archaeological significance.
- **Light and sound installations:** Some areas of the caves are spectacularly illuminated to highlight the special rock formations.
- **Hiking:** The surrounding area offers scenic hiking trails with magnificent views of the Chartreuse massif.
- **The Grottes de Saint-Christophe** is a fascinating excursion destination, ideal for nature lovers, history buffs and adventure seekers.



#### **4.2 Realization of the project in Grottes de Saint-Christophe**

This project marked the conclusion of Cave Lighting's French year.

The project ran from the end of August to the end of October and was managed by Adrian Titus Kondacs, who led a team of four.

The project was commissioned by the municipality with documentation prepared by the planning office, and was overseen by Guillaume Vieu.

The project involved two caves: Saint-Christophe Supérieure and Saint-Christophe Inférieure.

While these caves are not particularly complex, consisting primarily of meandering passages with a few stalactites, they posed a unique challenge:

- Both caves are designated residential habitats for small bat colonies and are subject to strict conservation regulations imposed by DREAL (the French bat conservation authority).

- Local planners and authorities faced significant pressure to comply with DREAL conditions, as failure to do so, could have resulted in the caves being closed.

### **Cave Lighting's approach**

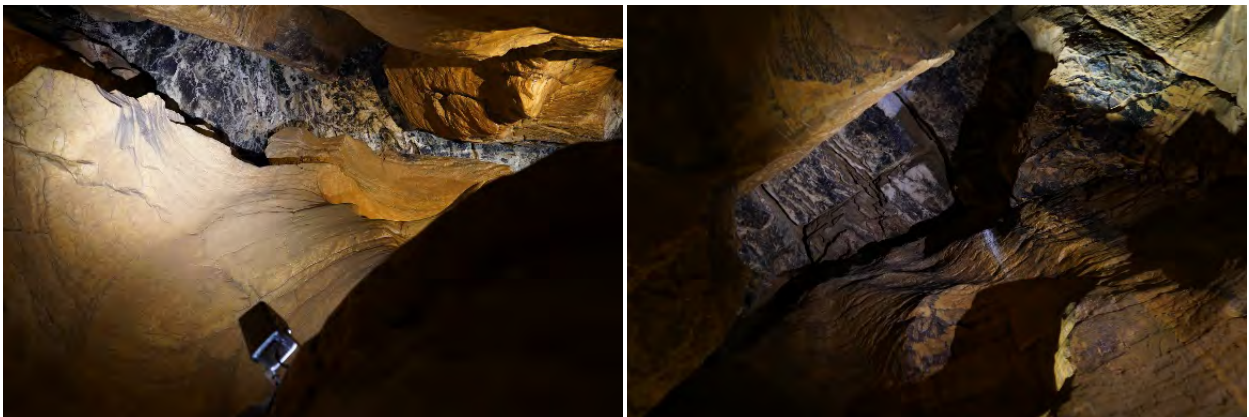
To navigate these restrictions, Cave Lighting implemented a strategic two-step approach:

- First we adhered to all initial conservation conditions.
- Then, we proposed alternative solutions, which were ultimately approved by bat conservation authorities.

By working collaboratively, we successfully achieved a win-win outcome, ensuring both the ecological protection of the caves and the successful implementation of the lighting system.

### **Implemented solutions:**

- Path lighting: installed using warm white LED lights
- Accent lighting: a combination of warm white and neutral white LED luminaires was used to provide optimal visibility while maintaining a natural cave ambiance.
- Bat friendly approach: the living areas of the bats were left completely unlit to minimize disruption
- Zone lighting control: the cave was divided into separate lighting zones, with each zone controlled independently for better adaptation to conservation requirements



The execution of the project was so seamless that the caves were opened before the bat protection season for Halloween, allowing visitors to enjoy a new and enhanced experience in 2024.

### **Technical overview:**

Two separate analog lighting systems with PWM control were installed. In the Supérieure cave, a DMX-controlled island solution was implemented in the large hall. The following solutions from Cave Lighting were used:

- LSQ2 LED lights
- LQP2 LED lights
- LMT LED lights
- EQP2 LED lights
- CN2 control units
- CP2 button controller
- MMC2 multimedia controller
- RR Radio radio receiver



## Part 5: Special features of the projects

### 5.1 Water



Caves, including show caves, maintain 100% humidity, which necessitates a completely waterproof installation. However, "installation" refers to everything from the control cabinet to the luminaire. To ensure durability, distribution cabinets and control units must have a protection rating of at least IP65 / IP67. Additionally, These components must be installed in a manner that prevents exposure to dripping water or condensation. The exceptions are always active river caves, which are at risk of flooding.

In France, three out of six show caves we worked on had high-humidity conditions, requiring customized waterproofing solutions.

Grottes d'Azé Rivière: this cave experiences flooding up to three times per year and, approximately once every ten years, a flood tide causes water levels to rise to the ceiling in certain areas.

To mitigate the impact of these conditions, the UV3 distribution cabinet was placed high under the ceiling, ensuring it remains protected. The control units were also installed at higher positions and specially sealed with silicone.

Grotte de Blanot: In the lower part of the cave there is a connection to an underground river, which occasionally floods the area.

To address this, the distribution cabinets were strategically positioned and dimensioned so that electrical supply to the lower sections of the cave originates from the dry areas. Appropriate cable cross-sections and variants were carefully planned and installed to accommodate these conditions.

Grottes de St. Christophe Supérieure: A meandering cave with an active river, making particularly prone to flooding. The river flows out of the cave at a rate of several hundred liters per minute. Due to these conditions, it was impossible to install a sub-distribution system in the cave.

Instead, it was installed outside, in front of the cave entrance, supplying 24 VDC power over a length of approximately 200 meters. All control devices were also installed outside with only the interface cable laid inside the cave. The cave's 6 lighting zones can be controlled wirelessly without any restrictions.

## **5.2 Bat protection**



Of the 6 show caves installed in France, 5 were under bat protection regulations. . Only Grottes de Thouzon was and is still not affected by this regulation. In the following section we will briefly outline the reasons and regulations behind bat protection, while highlighting key points of attention and differences observed throughout the projects.

## **5.3 Key issues**

At the start of the project in Grottes d'Azé, there were no bat protection regulations in place. The installation began in November 2023 but in January 2024, the authorities were informed about the presence of a few bats.

As a result, the authorities interrupted the project, causing it to come to standstill. Some rules were then negotiated leading to new restrictions:

- One zone in the middle of the cave had to be sealed off with polyurethane
- However, work at the far end of the cave was still permitted

### **Mistake or lack of knowledge?**

In our view, it would have been beneficial for project management to consider bat protection measures from the outset. Incorporating break periods for bat into the timeline and budgeting for associated costs could have helped ensure a smoother integration of environmental considerations.

## **Part 6: Results**

Installing six show caves in a single country within one year is no easy task. The execution of such projects requires effective project management, well-coordinated logistics, and a high level of



responsibility from all involved employees. And last but not least, the active participation of the customer plays a crucial role in the project success.



Sometimes, administrative processes can slightly complicate the smooth progression of projects. However, through discussions, we always manage to find compromises and successfully manage to meet our client's expectations.



Adapting to the challenges imposed by each project-depending on the location and the stakeholders involved- is also an integral part of Cave Lighting work.

Some of the most smoothly executed projects are found in privately managed show caves, such as Grottes de Thouzon. These projects often benefit from streamlined processes, allowing for greater efficiency and steady progress.

successfully completed and the caves have already welcomed their first visitors, who have been delighted by the new lighting installations.

Finally, Cave Lighting would like to thank all our customers for their trust. A Special thanks go to our internal and external employees, without whom, this success story would not be possible!

**Alexander Chrapko**  
Cave Lighting



# Fluorescent caves show how life could exist on one of Jupiter's moons



Student Jacqueline Heggen showing off glowing formations within Wind Cave. (Joshua Sebree via SWNS)

Fluorescent caves deep below America show how [alien life could exist](#) on one of Jupiter's moons, say scientists.

The chemistry in [Wind Cave, South Dakota](#), means that, under an ultraviolet (UV) light, chemicals fossilized within shine in brilliant hues of pink, blue and green.

Scientists are using the fluorescent features to understand how the caves formed and how life is supported in extreme environments.

They say their research, part-funded by [NASA](#), may reveal [how life could persist](#) in faraway places, such as on Jupiter's icy moon Europa.

The team explained that the chemistry in the American cave is likely similar to places such as Europa.

Astrobiologist Professor Joshua Sebree, of the [University of Northern Iowa](#), went hundreds of feet underground to investigate minerals and lifeforms in the cold, dark conditions.

He said: "The purpose of this project as a whole is to try to better understand the chemistry taking place underground that's telling us about [how life can be supported](#)."

As Sebree and his team began to venture into new areas of Wind Cave and other caves across the United States, they mapped the rock formations, passages, streams and organisms they found.



A section of South Dakota's Wind Cave seen under normal white light (left image) transforms into something otherworldly when placed under UV light (right image). (Joshua Sebree via SWNS)

As they explored, they used black UV lights to look at the minerals in the rocks.

Sebree says that, under the black light, certain areas of the caves seemed to transform into something otherworldly as portions of the surrounding rocks shone in different colors.

Thanks to impurities lodged within the Earth millions of years ago, the hues corresponded with different concentrations and types of organic or inorganic compounds.

Sebree says the shining stones often indicated where water once carried minerals down from the surface.

He said: "The walls just looked completely blank and devoid of anything interesting.

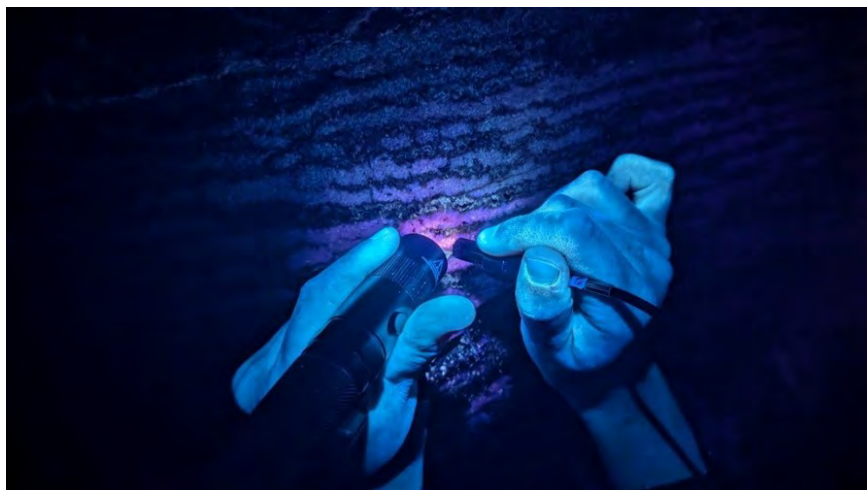
"But then, when we turned on the black lights, what used to be just a plain brown wall turned into a bright layer of fluorescent mineral that indicated where a pool of water used to be 10,000 or 20,000 years ago."

The team collected the fluorescence spectra - which they say is like a fingerprint of the chemical makeup - of different surfaces using a portable spectrometer. That meant they could take the information with them while leaving the cave intact.

One of the team, Anna Van Der Weide, is using data collected during the fieldwork to build a publicly accessible inventory of fluorescence fingerprints to help provide an additional layer of information to the traditional cave map and paint a more complete picture of its history and formation.

The team faced several challenges collecting data in caves. For example, in the chilly Mystery Cave, Minnesota, they had to bury the spectrometer's batteries in hand warmers to keep them from dying.

In other locations the team had to squeeze through spaces less than a foot (30 centimeters) wide for hundreds of feet, sometimes losing a shoe in the process.



Several fluorescence measurements of a zebra calcite in Wind Cave were taken using portable spectrometers. (Joshua Sebree via SWNS)

But their efforts have revealed a wealth of information.

In Wind Cave, the team found that manganese-rich waters had carved out the cave and produced the striped zebra calcites within, which glowed pink under black light.

The calcites grew underground, fed by the manganese-rich water.

Sebree believes that when the rocks shattered since calcite is weaker than the limestone also comprising the cave, the calcite worked to expand the cave too.

He said: "It's a very different cave-forming mechanism than has previously been looked at before."

Undergraduate Van Der Weide added: "It was really cool to see how you can apply science out in the field and to learn how you function in those environments."

Sebree now plans to investigate how similar, mineral-rich water may support life in the far reaches of the solar system.

The researchers presented their findings at the spring meeting of the [American Chemical Society](#) (ACS) in San Diego, California. But their efforts have revealed a wealth of information.

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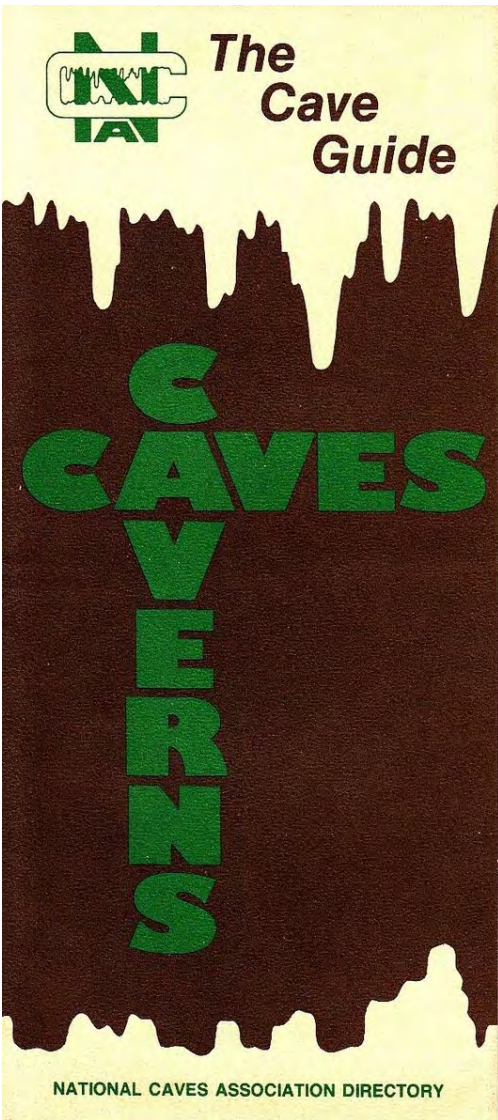
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Originally published on [talker.news](#), part of the [BLOX Digital Content Exchange](#).

That's the way it was...



The group above attended the 1981 Convention in Texas. Can anyone name them all? If so, please let Bob know!

The above four photos come to us from the archives of Cave of the Mounds 1960s era.

The NCA brochure to the right is from the 1980s.



Barbara Munson & Susan Berdeaux

Convention



# National Cave & Karst Management Symposium

Introducing C.J. McKinley – Public Relations Director, Western Cave Conservancy



I'm pleased to introduce a friend of mine, C.J. McKinley! Here at Lake Shasta Caverns, we partner with our local grotto, SAG (Shasta Area Grotto) in many activities that connect our passion for caves. One of my best caving friends and trip leaders from SAG, C.J., is also the newly minted Public Relations Director for the **Western Cave Conservancy**.

C.J. is passionate about conservation, education and access to caves. She assists not only SAG but other grottos that she is actively a member of - the Hawaii Grotto, Mother Lode Grotto, and Out of Bounds Grotto!

"I quickly learned that conservation and the dichotomy of caver access is my passion. It's such a complicated and important issue. You can't get people to care about the unique environments and ecosystems within caves without allowing people to see and experience them."

C.J. and I are excited about the 2025 NCKMS, National Cave & Karst Management Symposium, hosted by the Western Cave Conservancy.

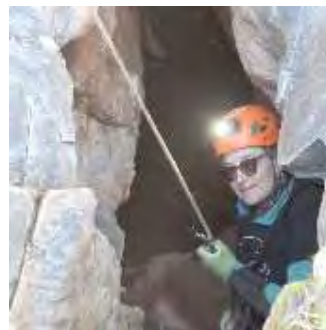
Held every 2 years, the National Cave & Karst Management Symposium is designed to provide an opportunity for cave and karst management professionals to discuss and explore solutions to help protect and conserve caves, karst, cave ecosystems and underground water resources across North America.

Led by a consortium of governmental agencies, each NCKMS conference encourages participation from professionals of diverse backgrounds, working in various fields and with interests spanning a broad range of cave and karst management issues.

Each symposium publishes the papers presented during the event as a formal proceeding. These have become important references for those involved in cave and karst management.

## Hidden Waters. Hidden Life.

Cave and karst resource management spans a wide array of scientific and recreational disciplines. In the arid west, management of these fragile ecosystems seems forever locked in the delicate interplay between surface geology and the precious but dwindling resource of groundwater.



Since 1975, the National Cave & Karst Management Symposium has been the preeminent forum for promoting, advancing and sharing concepts in effective management of cave and karst resources. Our conference is a gathering of inquisitive minds and passionate experts who share a common ethic for the responsible management of these rare environments.

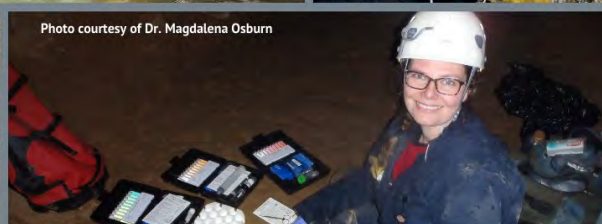
The Western Cave Conservancy invites you to join us at the **National Cave & Karst Management Symposium in Ely, Nevada from October 6-10, 2025!**

For more information or assistance, contact C.J. at: [cjmckinley@westerncaves.org](mailto:cjmckinley@westerncaves.org)

**Cave Dave Mundt**

## National Cave & Karst Research Institute

### Cave Science Grant



**NCKRI Seed Grant Deadline:  
April 24, 2025**



### NCKRI NATIONAL SEED GRANT PROGRAM FY 2026

[https://nckri.org/wp-content/uploads/2025/03/NCKRINatISeedGrantRFP\\_2025v2.pdf](https://nckri.org/wp-content/uploads/2025/03/NCKRINatISeedGrantRFP_2025v2.pdf)

**ANNUAL REPORT** for 2023-2024  
can be found here:

<https://nckri.org/wp-content/uploads/2025/03/NCKRI-2023-2024-v.2.pdf>

Each year NCKRI writes an annual report to share with its partners and stakeholders. We recognize that wants and needs change, so NCKRI is reaching out to see how to improve. Thank you for filling out this survey so that we can better support caves and karst!

### ANNUAL REPORT SURVEY

[https://docs.google.com/forms/d/e/1FAIpQLSf7mNMM1MEOWWxfm2PC6dzKI\\_rsM6yBw1JIFvTHB6J6NBjulg/viewform](https://docs.google.com/forms/d/e/1FAIpQLSf7mNMM1MEOWWxfm2PC6dzKI_rsM6yBw1JIFvTHB6J6NBjulg/viewform)



## Celebrating Bat Appreciation Day April 17<sup>th</sup>

### Conservationist Merlin Tuttle protects bat populations worldwide through education and photography.

Every now and then, you come across a real-life superhero. If there is one person more deserving of this title, it's the father of modern bat conservation, Merlin Tuttle.

His motto, "Win friends, not battles", is inspirational and carries significant weight in these trying times. Tuttle has spent his life tirelessly protecting bats by challenging age-old superstitions and fear through understanding and education.

Through decades of work, Tuttle has saved the lives of countless bats the world over, in the process founding the non-profit organization, [Merlin Tuttle's Bat Conservation](#). As a result of his work, he has received numerous prestigious accolades, one of which was having his bat photographs featured in a commemorative stamp series used by the U.S. Postal Service. His birthday, the 26<sup>th</sup> of August, has also been declared "Merlin Tuttle Day" in his hometown of Austin, Texas.



Merlin Tuttle

Image credit: Teresa Nichta

But resting on his laurels is not an option for Tuttle. At the age of 80, he continues to educate, giving lectures, seminars, participating in podcasts, TV shows, and publishing educational videos about these enigmatic animals.

Tuttle was kind enough to take time from his busy schedule to share his fascinating stories and motivating life lessons.

#### **When did you have your first encounter with a bat?**

I didn't really get into bats until I was in high school and my family had moved to Tennessee. We lived within a mile or two of a cave inhabited by several thousand grey bats, and after a friend told me about the cave, I convinced my father to take me there to explore the area. We were fascinated watching as thousands of bats would come out in the evening.

I found that they came only in the spring and fall, but all the books said that they lived year-round in a single cave and did not migrate, so I took detailed notes. I learned how to prepare scientific study specimens and I convinced my mother to drive me to the Smithsonian to meet with bat researchers there. I showed my specimens and field notes and said the books are all saying that these bats don't migrate but when I'm looking for them, they only appear in the spring and fall. I think mine must be migrating. They were very impressed with a teenage kid coming in with this kind of documentation and so they gave me several thousand bat bands and said I should band some and see where they go. So, I banded a couple hundred of them that fall when they came back again.



A little yellow-shouldered bat (*Sturnira lilium*) taking a solanum fruit in French Guiana. Such small fruit-eating bats are key dispersers of "pioneer plants" into clearings, establishing the foundation for reforestation.

In an incredible stroke of luck, my father happened to be doing something 100 miles [161 km] north of where we lived and offered to take me along so we would look for some bat caves after he finished with what he was doing. Some locals told us about a cave that had a lot of bats and we found a lot of my banded bats, which was totally unexpected because I had banded these bats in the fall and common sense says in the fall, these bats are going south for the winter, not north. In fact, I was convinced they couldn't be mine and that someone else must have banded [them], but I recorded the numbers, and when I got home I was flabbergasted to [find out] that they were my own.

and stay constantly at low temperatures year-round. If a bat happens to live north of such a cave, it migrates south for the winter but if they're east or west, they just migrate towards that cave. Their paths are like the spokes of a wheel, and in fact, I eventually found that these bats perform some of the longest migrations of any bats in America.

We later found these bats need very special hibernating caves that trap cold air

### **Was there a specific event that triggered your passion for bat conservation?**

As I was banding bats and trying to figure out where they were going, I quickly realized that people were killing them in huge numbers and that, in most of the cases where I went to look for them, they had already been killed. People were literally pouring kerosene in caves and lighting it on fire and killing thousands of bats, sometimes 10,000 in a single event.

I, of course, was shocked and appalled because, by that time, I knew these bats were incredibly gentle and they posed absolutely no threat whatsoever to people. The only way you would get bitten by one is if you found a sick bat that was grounded and picked it up and then it might bite in self-defense, but for anybody that just left it alone, the odds of being hurt are incredibly remote.



There's not a single instance known of a grey bat transmitting rabies or any other disease to humans, but the health department in Tennessee issued press releases warning that bats with rabies were recently found in the grey bats I was studying. Yes, you could find rabies in grey bats, but the truth is that they've never

transmitted rabies to a human and they're very unlikely to if we just leave them alone.

## Did you have any mentors who encouraged and supported you?

The first person I met in the world of bat research was Dr. Charles Handley who was head of the mammal division at the Smithsonian. I convinced my mother to drive me to Washington D.C. to talk to him. We didn't even have an appointment. We just went to the front desk and I announced I would like to speak to a mammalogist about my bat discoveries. So, he

Mexican long-nosed bats (*Leptonycteris nivalis*) pollinating an *Agave cerrudo*'s flowering panicles in Oaxaca, Mexico.

came down and, to my amazement, he spent most of his day showing me their collections and telling me about bats and helping me in many ways. He introduced me to several other people there who also were interested in bats and among the group of them, they became outstanding mentors to encourage my work.

Also, at about that time, Barber and Davis wrote a book on the bats of North America and they put me in touch with Dr. Wayne Davis, and I ended up going out in the field and helping him do his research. In fact, I almost flunked out college because I was skipping classes so often going out helping researchers.



An adult male Wahlberg's epauletted fruit bat (*Epomophorus wahlbergi*) with his cheek pouches full of figs in Kenya. These bats can carry tens of thousands of seeds to new locations in a single night. However, the primary purpose of pouches in males of this species appears to be more related to call enhancement during courtship.

This is a good example of how parents shouldn't panic just because their child is interested in something special that [they're] not doing in school. I actually was admitted to graduate school on probation, and it was lucky that I got in at all. Dr. Handley vouched for me, and I think he pulled some serious strings to get me accepted into the best graduate school in my field at that time. In fact, I have a letter still in my possession from Dr. Knox Jones, who accepted me as his student there.

The letter said they didn't consider me acceptable material for their Ph.D. program, but he would accept me on the understanding that I would come only for a Master's degree. The crazy thing was, once I was doing what really excited me, I ended up being one of the first people in the history of the biological sciences school to obtain a Ph.D. with honors.

I never once went to an expert in mammalogy or bat research who didn't enthusiastically help me. Often, now that I'm a well-known scientist, people are often hesitant and fearful to talk to me, as if I'm some bigger-than-life giant who isn't going to think they're intelligent if they ask the wrong question. I was lucky that my parents were very encouraging of me to not be afraid to talk to experts and those experts were so excited to talk to a little kid who was already so advanced in his knowledge about what they did.

I want to encourage other young people to understand that it's not inappropriate to contact experts and ask for help. They usually are delighted to help a young person get started.

## What advice would you give aspiring conservationists who want to become involved but have no idea how and where to start?

That's not an easy question. Of course, it helps to get an advanced degree, [but] right now, one of the very best bat conservationists is someone who never even studied biology in college. He is a business person who travels the world, but he's self-taught in his knowledge about bats. He is one of the best-rounded

experts in bats and their conservation of anybody I know anywhere. When I travel with him studying bats, I'm very hesitant to contradict him on any identification because he usually is right and knows as much as anybody else does about it. So, you don't necessarily have to get a degree to be very good at something if you're passionate about it and you study it on the side. Of course, it helps to get a degree if you want to be employed doing conservation.

One of the best ways to get started is exactly how I did it. I would go to experts and offer to help. If you make yourself indispensable as a volunteer, you'd be surprised how quickly you get around degrees and get hired. I just always made sure that anybody who accepted my help was very happy to have it and I tried to break all the records with everything I did. That resulted in me coming out of college without any advanced degree and with a relatively poor showing.

I was still hired by the Smithsonian to direct a project in Venezuela, and it was one of the best things I ever did in terms of getting a reputation established and learning about bats. I would have never had that opportunity had I not volunteered to help Dr. Handley at the Smithsonian. He was very interested in specimens from particular areas, and I would go and collect them and send him the information he needed. So again, it never hurts to be generous and volunteer a little bit of help if you want to get started.

Work hard, make yourself indispensable, be generous and you'd be surprised how far you can go.

### **Can you tell us three fun facts about bats that are generally not known?**

That's a tough one because there are probably [a thousand facts that are exciting](#), interesting, and not known.

First of all, bats are incredibly sophisticated and intelligent. I have throughout much of my career trained bats in the wild without ever even catching them. I've been continually amazed at how intelligent they are. They are now known to have social systems strikingly similar to those of higher primates and they form long-term friendships. They travel together, share information, help each other in need, and even adopt orphans.

Many people traditionally thought bats were ugly because, before I started taking pictures of bats as they naturally are, photographers would simply catch a bat, hold it up in front of the camera, and take a picture. The bat would think it was about to be eaten by a predator so it would have its mouth wide open and snarling, trying to scare you to leave it alone. You take that picture and the little bat's head is probably no



A mother minor epauletted fruit bat flying with her pup in Kenya.



A Mexican long-tongued bat pollinating agave flowers.

bigger than the end of your finger. You blow that up to page size and show it to the public and you're going to assume they are vicious and ugly.

One of the biggest impacts I've had is to make friends with bats and show them as they really are. They are intelligent, inquisitive, and gentle animals that are just incredible. People are amazed when they see me calling them to my hand. I not only do that, but sometimes when I want to get great action pictures of them, I train them to go to a particular place or do something on call. I've trained frog-eating bats to go catch a frog that I pointed to, but not to go until I took my hand back, so my hand isn't in the picture. Only when they heard the high-speed movie camera start would they come to catch the frog.

Amazingly, it took me most of my career to discover how intelligent even tiny bats could be. Little Hardwicke's woolly bats, for example, in Borneo, weigh about four grams. That's less than a U.S. nickel. Researchers had never tried to keep them in captivity because they felt they were too small and fragile and wouldn't survive, but I convinced them to let me bring one into my traveling studio. These bats live in pitcher plants, and that's a whole unique story in itself.

Pitcher plants are famous for eating whatever enters, including insects and even rats, and yet here's a pitcher plant in Borneo that has these woolly bats living in it and the plant actually has co-evolved with the bat. It provides a sleeping ledge inside, and an umbrella-like projection over the top so the rain doesn't come in. It even provides a reflector that reflects the bat's echolocation as it approaches to help guide it.

This is a very interesting story that I wanted to tell photographically. In fact, you can go to [my website and see my pictures](#) of these bats going into pitcher plants and roosting there. I brought this first bat into my studio and I hand-fed it mealworms that night and then released it into my studio. This bat had never seen a human before, had never probably caught a non-flying insect before, and had never eaten a meal worm before. However, the next morning when I came to work, this little bat remembered that I fed him the night before and actually flew up and started bumping me in the nose to get my attention to feed him.



Little red flying fox portrait was taken by Merlin in 1986



I guess anybody else would have thought they were being attacked, but I've had enough experience with bats to quickly realize what he was trying to do. I got a mealworm, held it up, and sure enough, the bat quit bumping me in the nose and got the mealworm out of my hand.

I wouldn't tell that story except my wife grabbed the video camera and [shot a video of this happening](#), so I've got a record on my website of the bat bumping me in the nose.

**Your quote, "Win friends instead of battles" is very inspiring. Instead of fighting people that catch and kill bats, you try to convince them about the usefulness of bats. How do you find and approach these people and how do you convince them?**

I ask people to share their experiences. You don't challenge their integrity or their intelligence. You just ask them how they got to feel the way they did.

#### Big Bat Daddy Merlin Tuttle

There was a family who were interviewed multiple times by a local newspaper about how they were so horrified that they weren't able to poison the bats in their attic and that nobody was willing to protect them. The articles and the quotes in the newspaper were horrible.

I [visited the family and told them] that I was from the Milwaukee Public Museum and I was a professional bat researcher who had I heard about their problems and wondered if I could be of help. All of a sudden, they were ready to talk to me and so I asked them about their experience, how they came to fear the bats. They had read a horrible story in a magazine reminiscent of Alfred Hitchcock's "*The Birds*" movie, which claimed that a family had been trapped in their home for three nights and days while bats attacked the doors and windows and tried to get in to get them.

It was a terrible story, but I just told them that in my experience, studying bats for many years worldwide and going into caves with sometimes millions of them, I have never been attacked by a bat. In fact, I don't know anybody that ever has been attacked by them. They are incredibly gentle animals that leave people alone if we leave them alone. I pointed out they had a home on a lake and that's where the mosquitoes and other insects are often most abundant. I asked, "Did you know that just one of the bats living in your attic, probably little brown bats, can catch up to 1,000 mosquitoes in a single hour?"

Finally, they were convinced that bats were not dangerous and scary, but their children were having nightmares, they were so terrified. I said, "I've been holding a live bat of the kind that lives in your attic [while we've been talking]."

At about that time, the kids who were supposedly having nightmares showed up and wanted to see, and the little girl thought it was so cute and wanted to keep it as a pet. I told them bats don't make good pets and you shouldn't try to handle them, but they are really cute animals going out there eating mosquitoes. By the time I was finished, they wanted me to stay for their party and entertain their guests with the bat. They even offered to be interviewed again by the newspaper and tell what they had learned.



©MerlinTuttle.org  
The Congress Bridge Bats make their nightly departure 30-60 minutes before sunset

I've had those kinds of experiences so often, and all it takes is not going in and saying, "That's not possible, you weren't attacked". Just ask questions and have people feel that you care about how they think and you respect their opinions. By asking enough questions, it's amazing how many times we can

change attitudes 180 degrees. But if we start out by not talking to a person because this person doesn't agree with me or I think this person is a bad person because he voted for the wrong party, we're not going to get anywhere.

My view is that in every organization, every church, every kind of group you can name, there are going to be some people that you would like to distance yourself from and there are others who are really trying to do the best they can. In every group, there's somebody you could make friends with and help influence their attitude.

### **Are people always receptive to your approach? What about poachers who need to hunt to provide for their families?**

I haven't had many experiences with poachers, but I had [one very useful experience 40 years ago](#). I was in Thailand and monks who owned a bat cave and made a living selling bat guano fertilizer contacted me asking for advice. The guano production was precipitously falling and they wanted advice on why that was happening and what could be done.



Pallid Bat colony found in Canada

One early morning before the sun came up, I went out to see the bats coming back to roost and I ran into poachers who had a big net set over the entrance, and they were catching thousands of bats. They were preparing to sell them to restaurants.

Through a Thai interpreter, I greeted the poachers in a very friendly manner and [asked] if they would let me hire them to teach me what they had learned. We ended up becoming good friends. They showed me all their netting sites, how they did it, how many they caught, and how many poachers there were. I got all kinds of data that could not have been found if I just said these guys are bad and I'm going to report them.

I had to understand right off that these were perfectly honest men who did not know the damage they were doing. They were trying to feed and take care of their families. They weren't bad guys, although they were doing things that I certainly didn't like. I alerted the monks that they needed to hire a game warden to protect the cave entrance so the poachers couldn't just put a net over the entrance.

I also went to the local school and got the teachers interested in bats and helped them with photographs and information that they in turn [used to teach] the children. When I came back ten years later, the children would be



Spotted Bat - Merlin Tuttle photograph

wearing bat T-shirts in honor of the bats.

Recently, the principal explained that proceeds from the bat guano sales are used to fund students to go to college on scholarships. The guano producing bats were too small to be sold to restaurants, but were killed for easier removal from nets. The game warden that was hired didn't stop all bat hunting, but he did stop the needless killing of thousands of unwanted bats at the blocked cave entrance.

Now, the children complain whenever they find somebody killing or eating bats, and due to the change in perspective, the poachers' children went off into other professions and bat hunting in the area just gradually died out. Even when I returned ten years later, I was delighted to still find friends among the former poachers.

### **Your educational videos are so inspirational, are you planning to make more?**

We are working on new videos as fast as we can. We're limited mostly by funds. It's not cheap to go out and produce quality videos but we're working on one right now, documenting the value of the millions of wrinkle-lipped bats I got protected at Khao Chong Pran Cave in Thailand. They really need help at a time when they are now being speculated as possible sources of the next pandemic.



Commissaris's long-tongued bat (*Glossophaga commissarisi*) pollinating *Trichanthera gigantea* in Panama. This flower receives some pollination from hummingbirds as the flowers open at dusk, but is primarily pollinated at night by bats.

in Austin, where a million and a half bats live in crevices underneath. They were going to be eradicated before I came in and educated the city. Now, we have millions of people that come to Austin to enjoy the bats' spectacular emergence, but we're not yet educating them nearly as much as we should.

More than a decade ago, I retired from leadership of the organization I originally founded, [Bat Conservation International], but I'm still working full-time as an unpaid volunteer at my new organization, Merlin Tuttle's Bat Conservation — I celebrated my 80th birthday not long ago, and I'm hoping to still be working when I'm 90. I passionately believe in this and I love helping not just bats, but people.

When I first decided to devote my full time to conserving bats, everybody thought I was crazy. I had it made with a position at a major institution where I was drawing a good salary to study bats year-round and travel anywhere.

In those days, we weren't pestered with emails or cell phones, so nobody even knew where I was, and they just expected me back in a few months. I was able to study any aspect of bat biology I wanted, but as a full-time researcher, I started seeing, time and again, not only the incredible value of bats, but the horrible damage that could be done by human fear.

Our long-term goal is to establish an education center in association with the now famous Congress Avenue Bridge here

**Which bat species is the most endangered at the moment and why? What can be done to help?**

I can't tell you which one is the most endangered because bats are so little studied that we're still discovering new species we didn't even know existed. I would say we don't know enough about probably 90% of the world's bat species to have any really good idea of either their value or needs. Some bat species have already gone extinct without even having been recognized as endangered, which shows just how little we know.

Some foundations and other supporters of conservation say they help only bats that are officially listed as endangered species. But, for example, 10 to 20 million bats live in a single cave here in Texas. If that one cave was destroyed, the whole species could be at risk. Unfortunately, many things can kill bats, but as long as we protect that cave, where millions of bats rear their young every summer.

Because of their low reproductive rates, their high concentration in a single location, the ease with which you can kill large numbers, and the frequency of these killings happening because of fear, bats are at serious risk.

**You are an avid wildlife photographer. When did you start doing this and how do you prepare your shoots and “models”?**

I was always interested in photography, but I wasn't a very good photographer. Fairly early in my career, *National Geographic* asked me to write a book chapter for their book, *Wild Animals in North America*, where I explained that bats weren't scary, but are instead wonderfully safe and beneficial.

However, when I went to the *National Geographic* headquarters to see the chapter and the pictures, I was horrified because all the pictures were of bats snarling in self-defense. I pointed out to the editor that publishing pictures of any other group of animals on the planet with



Bat house from Merlin Tuttle Conservation Photo: Merlin Tuttle Bat Conservation



A photoshoot takes place in China with Merlin Tuttle giving instruction

all of them provoked into snarling would cause a public outcry. People would say that was very misrepresentative of those animals, but because people don't know any better about bats, they'll probably just think that's the way bats are: ugly and vicious.

He sympathized with what I was saying and so he assigned one of the *National Geographic* staff photographers, Bates Littlehales to go to the field with me for a month to take pictures. Well, bats are not easily photographed. In a whole month, he only got three pictures that were going to be useful for the book.

In that month, however, I was very interested in learning new things that

could help promote conservation, so he could hardly go to the restroom without me asking a photography question. When he left at the end of the month, he said I should see what I could do on my own. I ended up being the second most used photographer in the book.

That was the beginning of my collecting over 100,000 photographs of bats doing almost anything you can imagine, and that has become the foundation of [bat] conservation success.

I use many different techniques to get specific action shots. Sometimes it's just knowing that a bat catches fish or insects in a certain place or that it courts at in certain location, and then figuring out where to be ready when it happens. Whenever possible, I like to photograph bats in the wild without any other interference, but there are many things that bats do that cannot be photographed without bringing them into an indoor setting and training them to perform normal activities in a specific location.

[In one photoshoot], we wanted a shot of a bat coming in and catching big katydids. We went to a cave and, as they came out in the evening, we caught a dozen bats at the right time. Most of the bats didn't have quite the right personality [to be trained for the photoshoot], but we finally ended up having one that had exactly the apparent IQ and personality we wanted.

[Our trainer] had this bat trained so it enjoyed being taken out into the larger studio because it knew when we took it out there, it was going to have fun hunting.

My colleague, who was training the bats for me, had to perch the bat on her finger two feet [about 61 cm] [away from] where I was going to put the katydid. We would chill the katydid beforehand to make it less active and then place it in a location where I pre-focused the camera.

This kind of bat doesn't use echolocation to find its prey and so it wouldn't come until the katydid moved. I'd watch the bat and figure out when he was about to come and then there was only a split second to get her hand out of the background and for me to open the shutter on the camera. It was incredibly difficult to get all that timing down and the bat kept destroying my katydids without me getting a picture.

It took us about five nights with three or four of us working together as a team. Finally, on the last night, just an hour before I was going to have to pack up and go home, we got everything in sync, and I got some 20 nearly perfect pictures.

Seeing so many great shots, it's easy to think this must have been easy, but it was incredibly difficult. It costs a lot of money too, and that's why I'm so appreciative of people who join in supporting my efforts because, although I'm retired and don't take any salary, I couldn't do many of these things if I didn't have financial assistance to cover the extraordinary cost. Those costs are well invested because they're making a huge difference for bats and for the health of our environment.

### **When you are not involved in bat conservation, what are your hobbies?**

Do you know what my favorite hobby is? It's photographing bats. However, I have been known to get excited about fly fishing. We have property on the San Marcos River, and I know a lot of people who own property [there], and so I can float down the river and fly fish. I catch and release and use barbless hooks. I tell my wife [that] I'm making them too smart to get caught by people who would eat them.



I don't get to do a whole lot of it though, and if you give me a choice [between] fly fishing and photographing bats, I'd rather photograph bats.

**Nicole Kilian**  
Advanced Science News



## Listen to: [The Secret Lives of Bats](#)



Much like the bat colony at the Congress Avenue Bridge, I'm very happy to be back in Austin! It's been a busy few months. My interview at the Adventurer's Club of Los Angeles was presented to an enthusiastic audience. It was wonderful to speak with such passionate listeners, and I was pleased to get to meet and sign books for some of our MTBC members! If you weren't able to attend, you can review a recording of the "Adventures of a Real Batman" livestream [here](#).

I hadn't expected to leave Austin again so soon after our recent filming trip to Costa Rica ([covered here](#) by our Operations Manager, Duncan Hicks). It was a challenging trip, especially due to torrential rains. However, the opportunity to work with Emmy-award winning cinematographer [Skip Hobbie](#), and his crew, to film bats at up to 1,000-frames-a-second slow-motion was impossible to pass up.

In addition to my in-person events and travels, I and MTBC staff have been interviewed on several more radio shows, [appeared in](#) the Noble Research Institute's magazine, [Legacy](#), and hosted a virtual Q&A — answering member-submitted questions from the U.S. and Canada to South Africa. Members receive first notification of such opportunities, but you can always look to our [events](#) page for the latest. We'll be announcing another virtual Q&A soon.

I also recently appeared in the video "The Beauty of Bats with Merlin Tuttle," released by actor and environmentalist Adrien Grenier's documentary series, called [Earth Speed](#). This video has already reached thousands of Grenier's and MTBC's followers on social media and YouTube. You can watch the full-length conversation [here](#).

On our website, we shared a guest blog from our intern, [Alyson Yates](#), and research reports from [Heather Kaarakka](#) and [Cesária Huó](#). These reports included findings of significant bat recovery in Wisconsin and fascinating new research on the social calls and conversations of bats in Africa. Alyson's interview with Merlin covered his early research career, success, and advice for young scientists.

I've been very proud of our record of [defending bats](#), even in the face of exceptionally powerful opposition. For more than 10 years we've had to correct unprecedented amounts of misinformation claiming bats to be exceptionally dangerous spreaders of disease. Foremost in this campaign were Ecohealth Alliance and its former President, Dr. Peter Daszak. On May 21, 2024, [after an eight-month investigation, the U.S. Department of Health and Human Services \(HHS\) cut off all funding and formally debarred EcoHealth Alliance Inc. \(EcoHealth\) and Daszak for five years based on evidence uncovered by the Select Subcommittee on the Coronavirus Pandemic](#). EcoHealth was found to have withheld key information from federal regulators and scientists on the scope and risk level of their research. It is likely that Daszak's false claims were an important factor in diverting billions of dollars of wrongful public health expenditures, not to mention having misled virtually the entire world in believing bats to be exceptionally dangerous. Daszak was fired. However, the damage won't end for decades, possibly never.

MTBC will continue to speak up in favor of [credible science](#) and fact-based bat conservation. We'll keep protecting public health, economies and ecosystems worldwide by teaching people to overcome fear and live harmoniously with bats.

If you'd like to help us do so, a generous anonymous donor has pledged to triple your impact with a two-to-one matching gift. All funds raised using this [link](#) through March 31st will be matched — up to \$30,000. If you can't donate now, please consider sharing the link with your family and friends — there's never been a better time to help us inspire bat conservation worldwide.

Many thanks for your support,

**Merlin Tuttle**

[Show Your Support Here](#)

## WNS Report

A very short report this month!

An Arizona cave myotis tested 'high level positive' for the Pd fungus at Fort Huachuca (southeastern part of the state). Positive infections were first noted in 2017, with low level spread in 2021 and 2023.

So far, WNS has not been found in British Columbia, although the fungus has been found in the Boundary Region (Washington state).

Don't forget... [April 17 is International Bat Appreciation Day!!](#)

**Patty Perlaky**

WNS Chair





NSS unveils preliminary convention schedule

NSS 2025 PRELIMINARY CONVENTION SCHEDULE															
	MONDAY			TUESDAY			WEDNESDAY			THURSDAY			FRIDAY		
	Event	Time	Where	Event	Time	Where	Event	Time	Where	Event	Time	Where	Event	Time	
Morning	Opening Ceremony	8:30-9:00		US Exploration	9:00-Noon	Auditorium	International Exploration	8:30-Noon	Auditorium	Geology and Geography	9:00-Noon	Auditorium	BOG Meeting	9:00-Noon	
	BOG Open Meeting	9:00-Noon		Cave Conservation & Management	9:00-Noon	125 people	Biospeleology Session	9:00-Noon	100 people	NSS Awards Committee	9:00-10:00 open 10:00-11:30 closed	classroom	Video Salon Viewing	9:00 - Noon	classroom
	Speleology for Cavers	9:00-Noon	Classroom	Vertical Climbing Contests	9:00-Noon	gym	NSF (closed)	9:00-Noon	classroom	Spelean History	9:00-Noon	Classroom	Fine Art Salon Critique	9:00-10:00	classroom
	Vertical Climbing Contests	11:00am start	gym	Speleophore Repair Workshop	9:00-Noon	classroom	Speleophore Repair Workshop Part II	9:00-Noon	classroom	Vertical Section Session- Presentations	9:00-Noon	classroom	Cartographic Salon Critique	10:00-Noon	classroom near maps
	NCRC Annual Meeting	9:00-Noon	Classroom				Cave Digging Section	9:00-Noon	classroom	Archaeology & Paleontology	9:00-Noon	classroom	Photo salon critique	10:00-Noon	with FAG
	Sketching short course -paper	9:00-Noon	classroom										Print Salon Critique	10:00-Noon	
	Sketching short course - digital	9:00-Noon	Classroom										Cave Ballad Salon Critique	10:00-Noon	
													Cave Writers Workshop	9:00-Noon	
Lunch															
	BOG Lunch (Closed)	Noon-2:00		Luminary Speaker	12:30-1:30	auditorium	Luminary Speaker	12:30-1:30	Auditorium	Luminary Speaker	12:30-1:30	Auditorium	Survey & Cartography session - Lunch	Noon-1:00	
	Speleology Class Lunch	Noon-1:00	classroom	Cave Conservation & Management Lunch	Noon-1:00	125 people	Biospeleology Lunch	1:00-2:00	75 people	Geology and Geography Lunch	Noon-1:00		Arts and Letters Lunch	Noon-1:00	
	Vertical Climbing Contests	Noon-1:00	gym	Vertical Climbing Contests	Noon-1:00	gym	Speleophore Section Meeting	1:00-2:00	classroom	Vertical Section Lunch/Business Meeting	Noon-1:00	classroom			
	Communications & Electronics Lunch	12:30-2:00	classroom							NCRC's Steering Committee	Noon-1:00	classroom			
	Fine Arts Salon Opening	12:00-2:00								Cave Photography session	2:00-5:00	classroom			
	Cave Conservancy Roundtable	12:00-1:00													
Afternoon															
	BOG Meeting (Closed)	2:00 - 5:00		Vertical Climbing Contests	1:00-4:00	gym	International Exploration	2:00-5:00	Auditorium	Geology and Geography	2:00-5:00		State Cave Survey Roundtable	1:30-4:30	classroom
	Vertical Climbing Contests	1:00-4:00	gym	US Exploration	1:30-5:00	Auditorium	NSF (Open)	2:00-5:00	classroom	Cave Diving Session	1:30-5:00	50 people	Survey & Cartography Session	1:00-5:00	classroom
	Cave Conservancy Roundtable	1:00-3:00	classroom				Cultures of Caving	1:00-5:00	75 people	Vertical Section Session- Presentations	1:00-5:00		Cave Writers Workshop	1:00-4:00	classroom
	Speleology for Cavers	1:00-5:00	classroom	Cave Conservation & Management	1:00-5:00	classroom	Congress of Grottos	2:00-5:00	50 people	NSF Trustees Open	2:00-5:00	Classroom			
	Vertical Training Commission (VTC)	1:00-4:00	classroom	Convention planning	2:00-5:00	classroom	Biospeleology Session	2:00-5:00		Convention debrief	2:00-5:00	Classroom			
	Communications & Electronic Session	2:00-5:00	classroom							NSS Preserves & Acquisition	2:00-5:01	Classroom			
	In-Cave sketching -paper & Digital 1 to 5pm														
Evening															
	Howdy Party Dinner	6:30 - Midnight		Fellows- New Members Reception	7:00-9:00		NSS Auction	7:00 start		Photo Salon Short Show/Salon Awards	5:30-7:00		NSS Awards Banquet	7:00 - 9:30	
				Open Mic	8:00 start		Campground party	9:00 start		Full Photo Salon/Salon Awards	7:30-10:00		Campground Party	9:30-Midnight	
										Story Telling	10:00- Midnight	campground			
Stop the Bleed workshop - 14 people - 2 hour session - they want to do several sessions															
Week long: JSS, Fine Arts Salon, Cartographic Salon, Vendors, Consignment Sales, NSS Bookstore, Sketching Contest															

We now have a preliminary schedule for the convention. Please have a look. If something is missing we need to hear from you! Thanks. PS: Early reg discount ends after 4/9, and deadlines for ordering shirts and guidebooks and other convention swag will be coming soon as well!



You will be sipping the adult (or not) beverage of choice in style at the howdy party from these fabulous stainless steel, carabiner handled, logo mugs. A shout out to our generous VIP rock star sponsor The Northeastern Cave Conservancy. And here's the proof. Register today and score your mug. Our order is for 1,000 so we (probably) won't run out....

<https://caves.org/convention/2025-nss-convention/>



We were at the fairgrounds in Cobleskill prepping for the 2025 National Speleological Society Convention in June. Our caterer for the event concluding awards banquet checks all the boxes, planning on site cooking by bringing a full kitchen to the site. There will be 8 service lines and plenty of delicious fresh hot food for all. Nicole's Restaurant in Albany and has a reputation as a premier 5 star caterer. Their representatives



were tremendous to work with during our on site meeting. Banquet lead **Veronica Sassu Laviero**, co-chair Mike Warner and facilities chair **Bob Hyden** were all on hand, working towards the opening of registration at SUNY Cobleskill on June 21. Early registration discount ends 4/10. Register now!

# The Safety Net: Security/Surveillance Camera Systems – Benefits & Best Practices

Surveillance camera systems have become an essential component of modern security strategies for businesses, public spaces, and residential areas. This guide discusses the importance of surveillance cameras in enhancing security, defending against general liability claims, investigating injuries and accidents, and outlines best practices for camera selection and placement.



## Importance of Surveillance Camera Systems

### 1. Security Enhancement

Surveillance cameras serve as a deterrent to criminal activity. The presence of cameras can discourage theft, vandalism, and other illicit behaviors. When potential offenders see a camera, they are less likely to engage in criminal acts due to the increased risk of being caught. Additionally, surveillance systems provide real-time monitoring, allowing security personnel to respond quickly to incidents as they occur.

### 2. General Liability Claim Defense

In the event of a liability claim, surveillance footage can be invaluable. It provides objective evidence that can clarify the circumstances surrounding an incident. For example, if a customer claims they slipped and fell due to negligence, video footage can confirm or refute the claim, protecting the business from fraudulent or exaggerated claims. This can save organizations significant amounts in legal fees and settlements.

### 3. Injury/Accident Investigation

Surveillance cameras play a crucial role in investigating workplace injuries and accidents. They can provide insights into how an incident occurred, helping to identify contributing factors and prevent future occurrences. By reviewing footage, organizations can analyze employee behavior, equipment usage, and environmental conditions at the time of the incident, leading to improved safety protocols and training.

## Best Practices for Camera Selection and Placement

### 1. Camera Selection

Today, there are many options for camera systems. From DIY installation/monitoring systems that are similar to home security systems, to full professional security integration and professional monitoring. When selecting surveillance cameras, consider the following factors:

- **Resolution:** Higher resolution cameras provide clearer images, which are essential for identifying individuals and details. Aim for at least 1080p resolution for most applications.
- **Field of View:** Choose cameras with an appropriate field of view for the area you want to monitor. Wide-angle lenses can cover larger areas but may sacrifice detail.

- **Low Light Performance:** If monitoring areas with low light conditions, opt for cameras with infrared capabilities or low-light performance features.
- **Durability:** For outdoor installations, select weatherproof cameras that can withstand environmental conditions. Look for cameras with an IP rating suitable for your location.
- **Smart Features:** Consider cameras with advanced features such as motion detection, facial recognition, and remote access capabilities for enhanced functionality.

## 2. Camera Placement

Effective camera placement is crucial for maximizing coverage and effectiveness. Follow these best practices:

- **Identify Key Areas:** Focus on high-risk areas such as entrances, exits, parking lots, and areas with valuable assets. Ensure that all entry points are monitored.
- **Height and Angle:** Install cameras at a height that prevents tampering while providing a clear view of the area. Angling cameras to capture faces and identifying features is essential for identification purposes. Be sure to install cameras in such a way that they cannot be prone to tampering without capturing the perpetrator on video.
- **Avoid Obstructions:** Ensure that cameras are not obstructed by trees, signs, or other structures. Regularly check for changes in the environment that may block the camera's view.
- **Overlap Coverage:** Position cameras to overlap their fields of view slightly. This ensures that if one camera fails or is obstructed, another can still capture the necessary footage.
- **Regular Maintenance:** Schedule regular maintenance checks to ensure cameras are functioning correctly, lenses are clean, and software is updated.

## Footage Retention

Incidents are sometimes not reported for weeks or months after the fact so the longer the video footage is retained, the better. Typically it is recommended to retain footage for at least 30 days, but 90 days is more of a best practice. Cloud systems can extend the length of time video can be stored, so that is a good additional consideration.

General Retention Guidelines:

- **30 Days:** A common standard for many businesses is to retain footage for at least 30 days. This duration allows for the review of incidents that may arise shortly after they occur, such as theft or accidents.
- **60 to 90 Days:** For organizations with higher security needs, such as retail stores or facilities with valuable assets, retaining footage for 60 to 90 days can provide additional coverage for investigations and claims.
- **1 Year or More:** Certain industries, such as healthcare, finance, and transportation, may require longer retention periods (up to one year or more) due to regulatory compliance, legal obligations, or the nature of their operations.

**Ryan Quinn**

Safety Consultant, MMA



**Western  
Kentucky  
University**



## **KARST FIELD STUDIES SUMMER COURSES 2025**

- **KARST HYDROGEOLOGY, JUNE 1-6**
- **CAVE SURVEY AND CARTOGRAPHY,  
JUNE 8-13**
- **KARST GEOLOGY OF MAMMOTH CAVE  
AND SURROUNDING AREA, JULY 13-18**

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# Marvel Cave Silver Dollar City

Sometimes us cave guides  
have to go through Marvel Cave in reverse.  
It's like a completely  
different cave when we do this.  
We see things we've never noticed before.

***Cave Guide Corey***

## Calendar of Events

- **International Bat Appreciation Day**, April 17, 2025
- **National Travel and Tourism Week**, May 4 -10, 2025
- **National Caves and Karst Day & Cave Week**, June 6, 2025
- **NSS Convention 2025**, Cobleskill, NY, June 23 – 27, 2025
- **19<sup>th</sup> International Congress of Speleology**, Brazil, July 20 – 27, 2025
- **NCA Convention 2025**, Luray Caverns, Harrisonburg, Virginia, September 22 – 25, 2025
- **National Cave & Karst Management Symposium**, Ely, Nevada, October 6-10, 2025
- **Bat Appreciation Week**, October 24 – 31, 2025
- **IGES 2025**, Sevierville, TN • Nov 4-6, 2025. Pigeon Forge, TN • Nov 5-8, 2025
- **IAAPA 2025**, Orlando, Florida, November 18 – 21, 2025
- **Cumberland Caverns Cavers Christmas Party**, McMinnville, TN, (Dates TBD),
- **NCA Mid-Winter Board of Directors Meeting**, Houston, TX, February 24 – 25, 2026
- **International Bat Appreciation Day**, April 17, 2026
- **National Travel and Tourism Week**, May 3 - 9, 2026
- **National Caves and Karst Day & Cave Week**, June 6, 2026
- **NSS Convention 2026**, (Dates TBD)
- **NCA Convention 2026**, Diamond Caverns, Park City, Kentucky (Dates TBD)
- **Bat Appreciation Week**, October 24 – 31, 2026
- **ISCA 10<sup>th</sup> Congress 2026**, (Dates TBD), France
- **IGES 2026**, Sevierville, TN • Nov 3-5, 2026. Pigeon Forge, TN • Nov 4-7, 2026
- **IAAPA 2026**, Orlando, Florida, November 17 – 20, 2026
- **NCA Convention 2027**, Rushmore Cave and Adventure Park, Rapid City, South Dakota (Dates TBD)
- **NCA Convention 2028**, Cave of the Mounds, Blue Mounds, Wisconsin (Dates TBD)

**Items for the May 2025 edition of Cave Talk are due to Bob by April 15.**