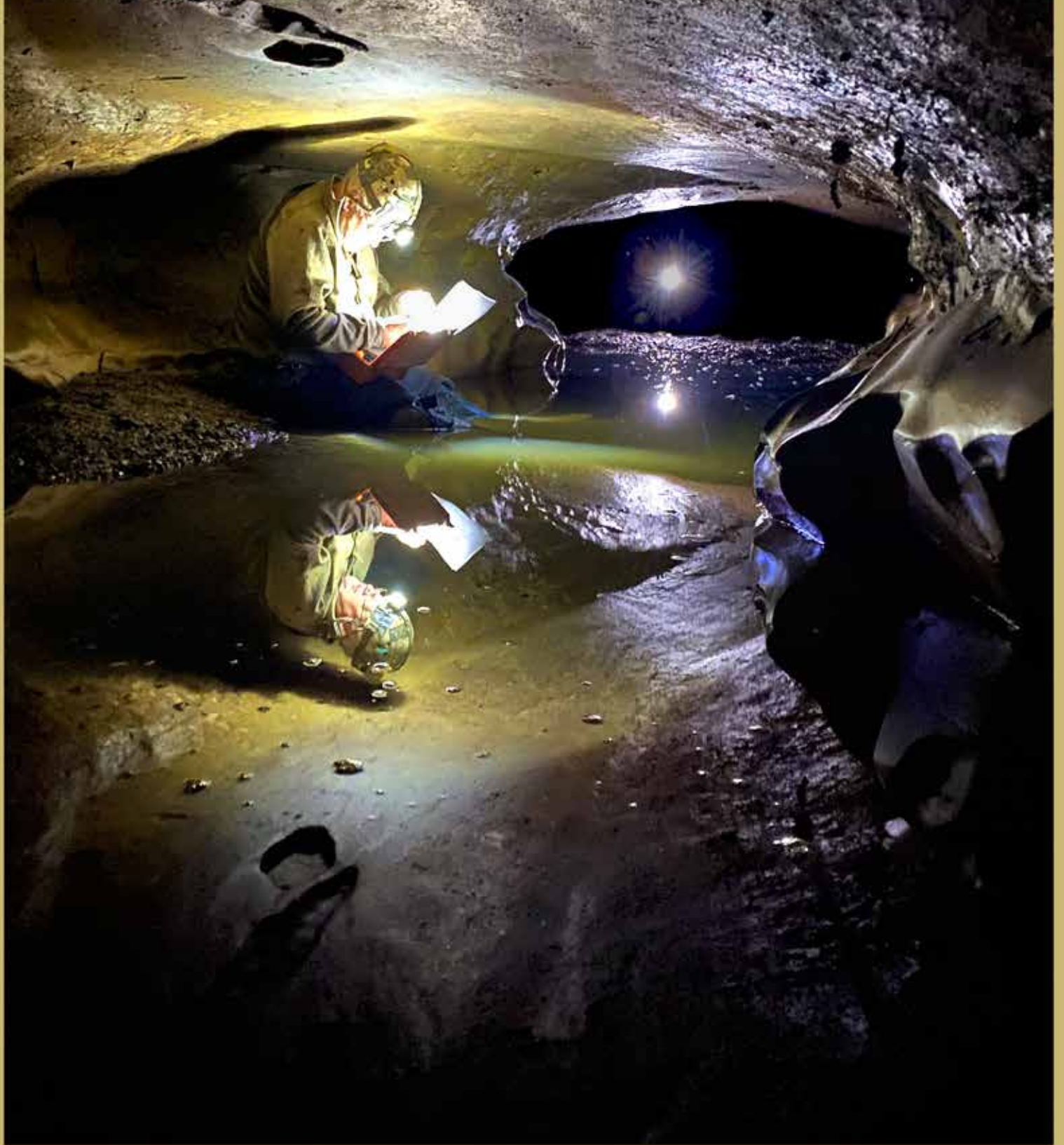


IKC UPDATE

A Quarterly Publication of The Indiana Karst Conservancy
December 2024
Number 155



INDIANA KARST CONSERVANCY, INC

PO Box 2401, Indianapolis, IN 46206-2401

ikc.caves.org

Affiliated with the National Speleological Society



The Indiana Karst Conservancy is a non-profit organization dedicated to the conservation and preservation of caves and karst features in Indiana and other areas of the world. The Conservancy encourages research and promotes education related to karst and its proper, environmentally compatible use.

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IKC QUARTERLY BOARD MEETING REMINDER

Sunday, December 15th, 12:15 PM Social, 1 PM Meeting (EST)

Monroe County Library - Ellettsville Branch (Room A)

600 W Temperance St, Ellettsville, IN

The quarterly meetings are for the Executive Board to conduct business, and for our members and other interested persons to have an open forum to talk about cave and karst conservation, and related topics. Past, present, and future IKC projects are discussed to solicit comments and input from our members and the caving community as a whole. The meetings are informal, and everyone is encouraged to attend and participate. The IKC Board wants your input.

Preliminary Agenda Items: Financial reports; Recap of recent preserve work projects; Promotion of upcoming preserve projects; Education/Outreach/Field Days updates; Indiana Cave Symposium; Electronic scheduling and waiver system; Cave/land acquisition activities; and more...

Meeting Details: The Ellettsville Branch is located at the intersection of Highway 46 (Temperance Street) and Sale Street. Free parking in front of the library. Enter the front doors and proceed straight thru the main library and past the service desk, continuing to Meeting Room A towards the back.

Pre-meeting Social: Come between 12:15 and 1 PM for refreshments and social time. Feel free to leave when the meeting starts, stay for a few minutes or join us for the whole meeting. See page 13 for more details.

ACTIVITIES CALENDAR

Dec 15 – IKC Pre-Meeting Social (see page 13)

Dec 15 – IKC Quarterly Board Meeting (see above)

March ?? – IKC Annual Business Meeting (date and location TBD)

April 26 – Pre-Symposium Tour, Orange County, Indiana

April 26 – Indiana Cave Symposium, Orange County Community Center

For more information on the Indiana Karst Conservancy, visit our website at ikc.caves.org, our Facebook page at www.facebook.com/IndianaKarstConservancy, or write to our PO box. Membership to the IKC is open to anyone or any organization interested in supporting cave and karst conservation. Annual dues are \$15. Please see inside the back cover for a membership application form or to make a much-appreciated donation. Memberships and donations may also be made electronically by credit card or PayPal using our on-line services on our website (see the Join Us! tab in the menu) or ikc.caves.org/join-the-ikc.

The *IKC Update*, distributed for free, is published quarterly for members and other interested parties. The purpose of this newsletter is to keep the membership and caving community informed of IKC activities and other news related to cave/karst conservation. Submission of original or reprinted articles for publication is encouraged. Back issues can be found at ikc.caves.org/ikc-updates.

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RAMBLINGS FROM THE PRESIDENT...

It pays dividends to slow down on a caving trip. How many times have I sped through a cave, in the dark, paying little attention to the finer details that lurk in the nooks and crannies above, below, and around me? When you slow down in a cave, you experience more.

As I've mentioned in past Ramblings, my understanding of Indiana's karst terrain has two distinct aspects. First, the canvas of physical and chemical processes such as the geology, hydrology, and chemistry that form limestone caves. The second is a tapestry, woven by life's interaction with caves, that encompasses biology, archeology, and history.

With an eye to exploring the canvas of Garrison Chapel Valley, it was my privilege recently to lead a karst geomorphology trip through Buckner Cave for the Bloomington Indiana Grotto.

Crawling through, around, over, and under this cave's intricate network of passages, I'm always fascinated by the story etched in the bedrock. It is wondrous to see the dynamic interplay between the cave's features and the surface world above.

Imagine carbonic acid as a sculptor, patiently dissolving intricate three-dimensional patterns into the limestone. This hidden artistry, concealed beneath a protective sandstone caprock, is a story that reveals an intimate connection between surface and subsurface. This is the "inside out" story of karst geomorphology.

I was thinking about this as we traversed the famous Buckner crawlway. We continued our discussion of these geomorphologic processes along with how the cave is situated between Garrison Chapel Valley upstream, and Blair Hollow downstream.

We paused to take a break in the T-Room and as we rested, with dramatic flair I announced we would take a detour from karst geomorphology and discuss cave biology. The entire group held its breath with anticipation, and I grandly announced: "One time here in the T-Room I saw a mouse." To guffaws and

laughter and an astonished sense of, "that's it?"

I am no expert on cave biology. I know the basics about how life uses the various zones of caves, of how some species live their entire lives in caves while mankind only makes brief visits, bringing a fleeting and dancing light into this permanent darkness.

But when I'm caving I enjoy a good laugh and an occasional gesture to the absurd. I love that sort of fellowship with other cavers on a rugged underground adventure.

We finished our break and continued counterclockwise around the "Loop," working to interpret the interplay of limestone, water and, carbonic acid. We sought clues to help us correlate what we could see in the cave with what's happening on the surface.

As we returned to the T-Room by way of the Big Room, one of the members of our group shined their light into a pile of breakdown and said, "Look, there's a mouse!" I was astonished as I realized we had come full circle, literally and figuratively. Sure enough, there was a mouse effortlessly navigating in the dark zone, with no obvious way to enter and exit the cave, and no high-tech caving gear needed.

Later, I asked former IKC President Dr. Jerry Lewis (a real expert on cave biology) how surface animals like mice navigate in total darkness. I found his answer thought-provoking: "Everything in caves (can) navigate in the dark... except people..."

That is something to ponder. We humans explore caves as temporary, somewhat awkward visitors. Our fancy gear allows us to only approximate what true troglobites do naturally, by instinct, and as second nature.

These cave dwelling creatures, however, are unable to communicate with those who don't venture into caves. They can't tell us how surface activity affects their lives and sometimes threatens their existence. They can't share an appreciation of the serene and tranquil beauty we find in caves.



Carla Striegel-Wymer



They can't relate how much there is yet to learn, how much is unknown, unseen, unexperienced. They are mute in our world in the same way we are ill-adapted visitors in theirs.

But we who call ourselves cavers can learn this "outside in" story of karst geomorphology, of how what is happening on the surface impacts and relates to what is going on underground, and how human activities in and around caves impact this mostly unseen world.

As a member of the small part of humanity that loves caves and caving, it is our responsibility to tell their story.

* * *

At the IKC we end another year filled with stewardship, conservation, preservation, advocacy, exploration, storytelling, data gathering, fellowship, and education. We were very busy in 2024.

We are grateful for those of you who joined the IKC in 2024, those who loyally renewed their membership, those who help us accomplish our work, those of you who follow our activities on our Facebook page and website, who read this newsletter, and those who tell others about the IKC's mission.

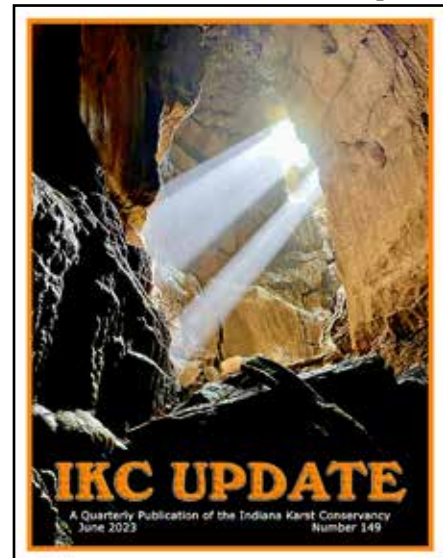
If you are not yet a member, we invite you to join us in 2025! We are making big plans, setting stretch goals, and have a lot of work on our plates. We want and need your support.

And as I like to do in my final Ramblings for the year, I wish you and your families happy holidays and a wonderful year in 2025. I hope in the coming year we'll have an opportunity to discuss caves, work together to care for them, go caving, hear each other's cave experiences, and even have a few good laughs. I look forward to it!

Matt Selig

NEWS BRIEFS...

- ❑ Save the Date: July 6-10, 2026 for the NSS Convention to be held in Corydon, Indiana! The national convention is a week of science/exploration sessions and daily activities, and will be held on the campus of South Harrison Jr/Sr High School with camping and evening activities just a mile away at the Harrison County Fairgrounds. Oh, and lots of caving in Indiana and Kentucky too. If you are interested in learning more or volunteering to help with the convention, please contact the co-chairs Laura Demarest (LDemarest@caves.org) or Dean Wiseman (WisemanD@uindy.edu).
- ❑ On September 8, prior to the IKC's quarterly Board meeting at the Sullivan Cave Preserve, a number of volunteers showed up early for several hours of stewardship on the property. Tasks undertaken included painting/sealing the roof on the woodshed (Jeff Cody), splitting firewood (Bill Baus), stacking firewood (several people), mowing/weed-eating the camping area (Joe Kinder), invasive control (Keith Dunlap, Danyelee Green, and Kevin Smith), installing a lane gate "stop" post (Cris Seuell and Keith Dunlap), and cleaning up an illegal dump on an adjacent property (Cris Seuell and Carla Striegel-Winner). Volunteers were then treated to campfire-grilled hot dogs and brats, salads, chips, and desserts.
- ❑ Each year the IKC enters its newsletter covers in the NSS Graphic Arts Salon with the covers displayed and judged at the national convention. Three of our four 2023 covers received ribbons.. *IKC Update* #148 (photo by Dave Black) and cover #151 (photo by Dick Vernier) each received Honorable Mention, while cover #149 (photo by Tim Flint) was awarded a Merit Award ribbon. You can see all of the winners here: www.caves.org/salon/2024-graphic-art-salon.
- ❑ The IKC did a mini fund-raiser last month. Cindy Rothrock, an IKC member (and sister to Keith Dunlap), once again offered to donate processed persimmon pulp for the IKC to re-sell. She also offered to wholesale honey from some of her hives for the IKC to retail. Because the items could not be easily shipped, the offers were sent out to a limited list



Continued on page 9...

REVISITING SEVERAL HISTORICAL CAVES OF THE FRENCH LICK AREA

by Carroll Ritter

The French Lick area has a rich history and fascinating geology. French traders established a post there near a salt spring in the early 1800s and the town itself was established in 1857. Today we recognize the extraordinary resorts of the French Lick Springs Hotel and the famed dome of the West Baden Springs Hotel. Many famous folks of the past have graced the area, including Franklin D. Roosevelt, Harry S. Truman, boxer Joe Louis, Al Capone, Bob Hope, Bing Crosby, and many more. Here is also the location of the famed Pluto Water of yesteryear. Even the caves of the area were notable attractions in olden days and were featured in local newspapers and on postcards.

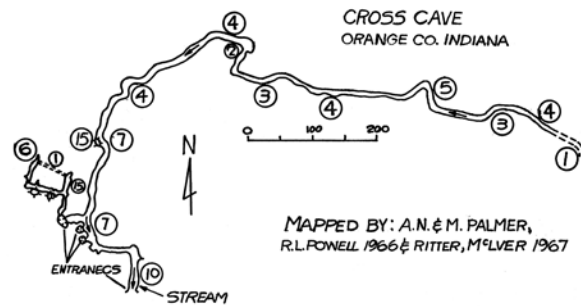
It had been 50 years since this author ventured to some of these caves and it was time to return. The mission was also to record accurate GPS locations and take entrance photos, as well as add any new findings to be submitted to the Indiana Cave Survey database. A fine team agreed to do this fun adventure with me. In several different visits, we had my wife Martha, Janet Eger, John Benton, and Carla Striegel-Winner out there in the area. Here is our story.

Cross Cave and Butler Spring Cave

It is the year 1896. The rattling sound of another buggy could be heard coming down the hollow. Guests at the table looked up as the visitors approached. The delicious smell of Mrs. Cross's fried chicken wafted toward the arriving patrons who had been guided here courtesy of Mr. Rhodes in French Lick. The destination was the property featuring Cross Cave as the main attraction, after lunch's final course of hot apple pie.

Ferdinand Cross and his brother Henry were

famous. Ferdinand, the sculptor, created masterpieces from area limestone. Pigs, a stone cow, a monkey, grapes, tree trunks, and ornate fountains like that which was on the grounds of the West Baden Springs Hotel many years ago. Some of these remain on the old, wooded site today in deteriorated condition; others have been carried away or lost in time.



Henry, the painter, was an extraordinary man, traveler, and superb artist. His biography is so loaded with adventure and persona met along his way, that it bears reading. What can you say except superlatives about a man who painted Geronimo, Sitting Bull, Presidents Lincoln and Grant, the King of England, Wild Bill Hickok, Brigham Young, Buffalo Bill, and Kit Carson?

Cross Cave was revisited most recently in the spring of this year. Two separate ventures were undertaken. Carla Striegel-Winner and John Benton visited in January and updated information and obtained better GPS locations for the cave's multiple entrances. In April, Carroll Ritter, Martha Ritter, and Janet Eger also fought through the storm blowdowns, unaware of the January visit! The intent was also to better GPS and photograph the entrances for the ICS database.

The scenic 12-foot high and 15-foot-wide main entrance leads inward to some 1300 feet of passage. A wooden boardwalk was originally placed there to assist the visitors in keeping their shoes and finery somewhat less muddy at least.

A total of five entrances have also been noted and recorded. They consist of (a) Main entrance, (b) Second entrance close to main, (c) Collapsed Boulder entrance, (d) Column entrance, and (e) Dome entrance. Some are solutional in the sandstone as groundwater worked downward to the limestone below. One section of the cave does contain some flowstone, not too common in Beech Creek caves.



John Benton at the entrance to Cross Cave

photo courtesy Carla Striegel-Winner





Janet Eger in the entrance to Butler Spring Cave

photo courtesy Carroll Ritter



Carroll Ritter in the lower entrance to North Gorge Cave

photo courtesy Martha Ritter

Nearby on the same property is Butler Spring Cave, an historic water source that still shows old piping and concrete blocks that held back the sparkling spring water. The cave's mapped length is 600 feet, with another estimate of 1000 feet. It is mostly a three to four feet high passage, with a place or two being six feet. The width is similar and water depth is usually very shallow. The old use is more interesting than the rather nondescript cave itself.

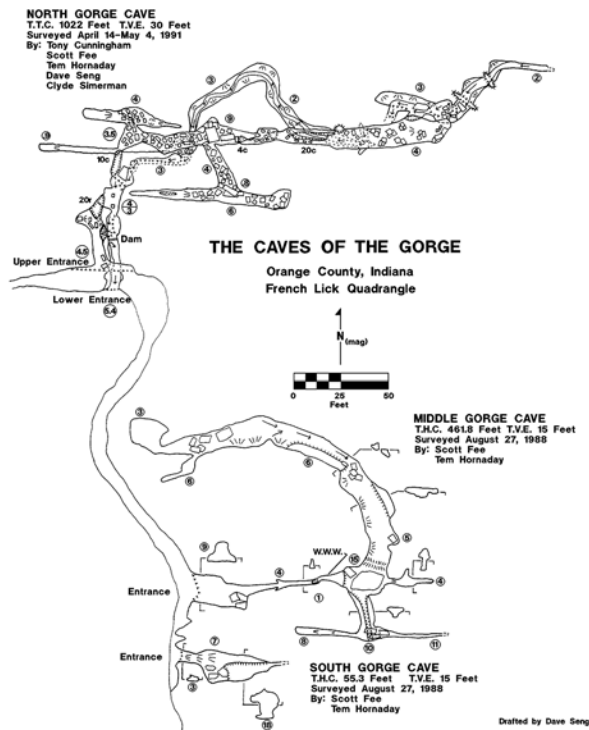
Gorge Caves

A few miles from here and closer to town, another famous site harbors a complex cave system.

The "Caves of the Gorge" not only are geologically intriguing, but tied to those historic days when water from the edifices were piped up to the inn, an elegant supper club for guests of all kinds. Al Capone, a visitor to the gambling opportunity there, most likely sipped on a glass of

cool water, perhaps a secondary drink to the other "beverages" available. The grounds were graceful with fountains, lakes, and walkways. In later years, after the inn closed, the ornate entry archways and road into the property allowed families to visit the building that had been converted to the Gorge Nursing Home. Doubtless, many stories about the place emanated from the elderly residents who had lived the history themselves. Now, when we visited the caves and met with the current owner's grandson, it was with some sadness, as the old inn and homesite had been destroyed by a tornado and was subsequently burned.

The caves themselves consist of four openings along the steep bluff, all in the Beech Creek limestone. Capped by permeable Big Clifty sandstone, the movement of descending water into the joint system below created a variation in the cave openings. All are enterable, but encounter crawlways and squeezes after the initial opening sections. The longest cave is Gorge Spring Cave, at 2,684 feet. Remnants of the old dam are still there. South Gorge Cave is directly above Gorge Spring Cave on the bluff, but only 55 feet long. North Gorge cave has an upper and lower entrance and was also used as a water source. The length is 1,022 feet. Middle Gorge cave has an impressive entrance, but



Carla Striegel-Winner in the entrance to Middle Gorge Cave

photo courtesy Carroll Ritter

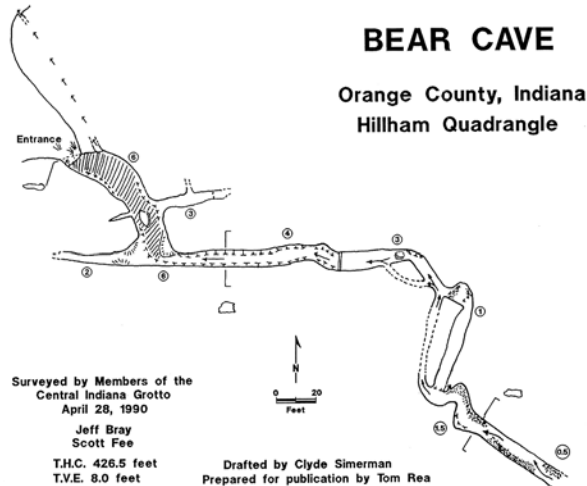


the passages run only 462 feet. The 1991 maps by Dave Seng illustrate the system very well.

Constrained by underlying Elwren formation, the springs emerge on the hillsides. Water from those was piped up to the inn, and later nursing facility, quite a task and a quarter-mile distance.

Bear Cave

Whether or not this is the cave where pioneer Jim Wilson fought with a bear inside and both escaped alive, the old story adds a fine excitement to its history. Most likely in the early 1800s the



cave was in fact a great location for said ursine inhabitants — shelter, water, and abundant plants and wildlife nearby. On our visit in April 2024, the cordial owner, also a former caver, accompanied us to the entrance and went in as well. And we didn't get run out by a bear. He had been here many times and had even supervised boy scouts digging in a side passage. Water and mud are features of the initially six-foot high passage, while formations are absent. The cave's length is 427 feet. The actual spring exit is below the entrance and has been used as a water source.

Bear Cave is mentioned in the literature regarding the Beech Creek limestone and adjacent



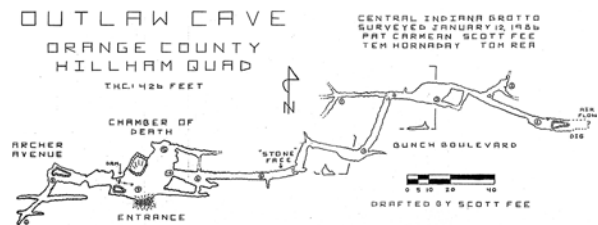
Carla Striegel-Winner in Bear Cave

photo courtesy Carroll Ritter

stratigraphic layers. (McGrain, Preston, and Orville L. Bandy. 1954. Origin and development of caverns in the Beech Creek limestone of Indiana).

Outlaw Cave (or Bunch Cave)

Not a bear this time, but rather outlaws were the history here. We approached the entrance with a keen eye out for any remaining ones holed up. There are several fascinating articles in the ICS database that one may read regarding the infamous Archer Gang. One variation of the story recalls a murder here back in 1886. Old Sam Bunch crossed the Archer Gang and was taken to a cave, then called Saltpeter Cave, which we now assume is the current Outlaw Cave. He was shot 17 times inside and the body left for several days. The gang later returned and took the decomposing corpse out, put it into a wooden box and burned it. A rather gruesome tale, which alone would deter the



faint of heart from visiting yet today. But here we were, ready to see what the cave harbored for us.

The actual hillside cave entrance is scenic and measures some 7 ½ feet wide and 6 ½ feet high. Reportedly it was not that large originally, and had a wooden gate. But after the notoriety of the murder, visitors had to come see the place. The entrance was enlarged to accommodate the curious from far and near. From the entrance is a slight decline into the main room with its relatively dry floor. This place was named the “chamber of death” as it was evidently where old Sam was tortured and shot.

From here passageways trend both northeast



Martha Ritter in the entrance to Outlaw Cave

photo courtesy John Benton

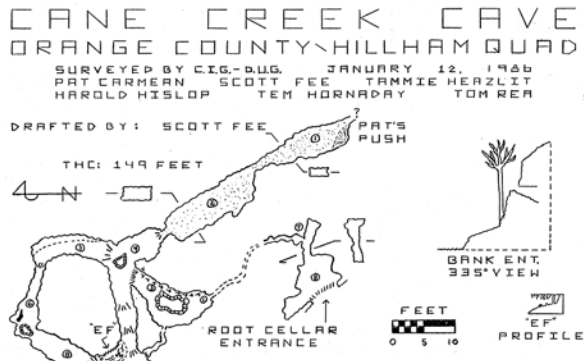


and northwest. Rock ledges and shelves showed solutional levels. The sculptured passage being taller than wide follows joint control patterns. While the development is of interest, there is a lack of speleothems. A tri-colored bat was seen and the typical spiders and crickets. The cave's length is 426 feet.

Following the cave visit, our indomitable crew drove to the Wolfington-Jackman Cemetery nearby where notorious members of the Archer Gang are buried.

Cane Creek Cave

Not much historical information seems to exist about this cave on the bank of Cane Creek west of French Lick. It would never be noticed by anyone, yet the description and map are intriguing. A nearby neighbor pointed us to where the cave



would be found on the brushy hillside. The main feature was the nice rectangular sandstone-walled entrance (four feet high and almost three feet wide) for an obvious storage cellar of olden days. The wooden gate of long ago no longer exists. Ironically the “root cellar” passage/room does not go far before its crevices are too small to proceed. With that said, the strata become very interesting with sandstone cap overlaying a thin shale layer, sandstone again, then limestone. Scott Fee’s 1986 map shows a second entrance along the hillside,



photo courtesy Carroll Ritter

Carla Striegel-Winner in the Root Cellar entrance to Cane Creek Cave

about 50 feet north from the first. That entrance has filled in over the years and is currently only 2 ½ feet wide and one foot high, and will require some digging out to crawl in safely. The entire cave is only about 149 feet in length.

Along the creek bank a little further north was another hole. It may be part of the same cave since air was blowing out. We named it Alumroot Crawl. At two feet wide and only eight inches high, it is not enterable. Carla was able to see in further, but the height of some five to six inches seems to preclude exploration.

Conclusion

French Lick is indeed an area of rich history and geology. The caves in this article are only a sampling of many others in the area, but did provide a fascinating re-visit from yesteryear.

Editor’s note: Visitation to any of these private caves must be with permission. This is vital to maintain cordial access. Also, the 2025 Pre-Symposium tour on April 26 will be in the French Lick area, featuring a couple of locations mentioned in this article, led by Carroll Ritter and John Benton. 🦋

...continued from page 5

of IKC members and supporters in the Indianapolis and Bloomington areas so the goods could be hand-delivered. In total the IKC netted \$303 for the effort.

- ❑ Several Cave Patrons have reported that they have experienced recent issues with cave trip leaders not getting liability waivers signed by trip participants and then submitted to the Cave Patron in a timely manner prior to their trip. While the Cave Patrons try to be as accommodating as possible, they have the obligation to protect the IKC in assuring waivers are read, signed, and submitted at least 24 hours prior to the trip (some Cave Patrons require waivers to be submitted several days before the trip). So if you are a trip leader organizing a trip to an IKC cave, please plan ahead and follow the requirements set by the Cave Patron for the cave you are visiting.

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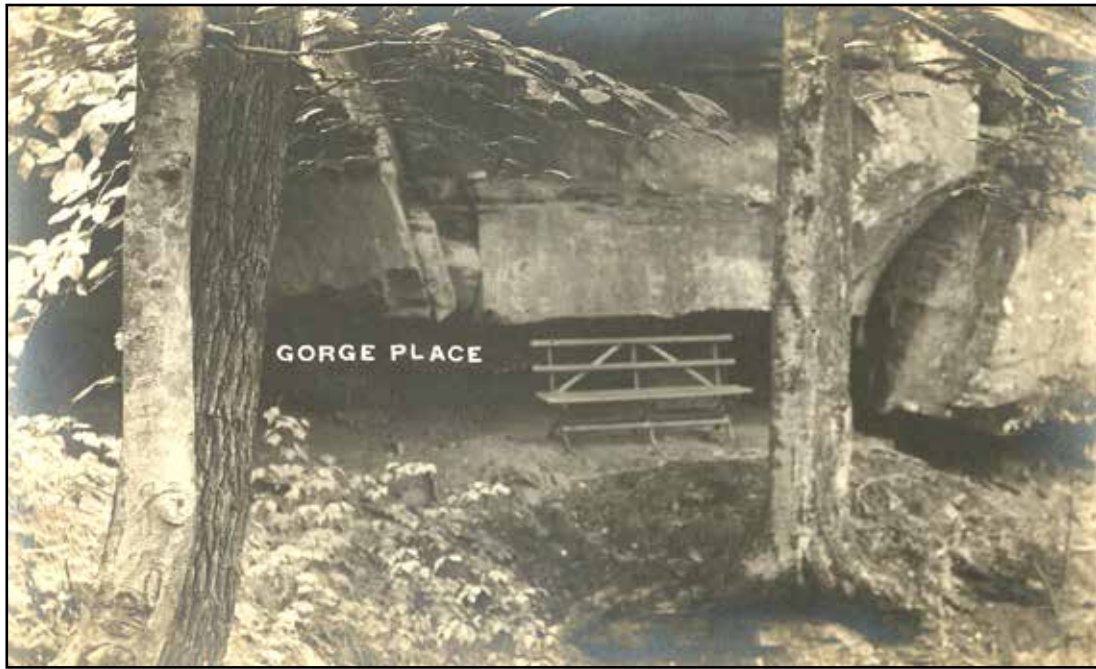
A LOOK BACK AT INDIANA KARST

by John M Benton

Editor's note: As a companion to Carroll Ritter's article on several historic Orange County caves (see pages 6-9), John decided to do his Look Back article on early 1900s postcards related to three of those caves. Special thanks to Natalie Silva, curator, at the National Cave Museum (Park City, KY) for providing the high resolution scans of the postcards from their collection.



Cross Cave – Brothers, Ferdinand (sculptor) and Henry Cross (painter) developed and ran Cross Cave, a few miles south of the popular tourist destination, French Lick Indiana. They featured fried chicken dinners, cave tours, and a relaxing visit to a park-like setting. Shown in the upper postcard is the entrance to Cross Cave circa 1910. The lower postcard shows the valley below the cave where the brothers spelled out religious messages as landscaping, such as “Where are you going to spend eternity” using white painted concrete spheres. Also included were life size sculptures of animals such as cows, calves, and pigs carved from native limestone. These carvings were featured as Jacob’s Well on the postcard. Remnants of some of these sculptures can still be seen on the hillside and valley floor today, but they are not obvious. The Cross brothers came to the Orange County area in the 1880s and the cave was used commercially until around 1912. ►►



The Gorge – Throughout the years, The Gorge had a large nearby building that was used as a hotel, speak-easy, gambling mecca, restaurant, and even a nursing home in later years before abandonment. A tornado ultimately destroyed the structure that was then removed by the owners. The caves in the gorge remain, and several entrances dot the scenic valley. The Gorge is located between French Lick and Cross Cave. It is on private property, like all of these sites. The Gorge Hotel started operating in the 1920s and was in use as the nursing home as late as the 1970s.



Outlaw (Bunch) Cave – This cave, in Orange County but near Lost River Township in Martin County, was used by the infamous Archer Gang as a hideout when they operated in the area. It was sometimes called Bunch Cave, after one of the family members who was related to the Archers. The Archers terrorized some citizens and businesses, but it is said they attended a local church every Sunday and were always generous with the collection! The gang robbed banks and stagecoaches in the Midwest and Kentucky. Many of the Archers are buried in the Wolfington-Jackman Cemetery, just at the edge of French Lick. Originally unmarked, their graves now have simple grave stones. It is thought the gang was most active in the 1860s and 1870s. This postcard, dated 1907, was published by the “Hotel Press” and shows a family posing in front of the then commercialized cave.

NAME THAT TREE! A FALL TREE IDENTIFICATION HIKE AT SHAWNEE KARST PRESERVE

by Richard Vernier

Saturday, November 9, a group of twenty people met on a warm late-fall morning at the Shawnee Karst Preserve to hike the trails with Indiana Department of Natural Resources District Forester Janet Eger and learn a little about tree identification beyond just examining the leaves.

We began at the preserve's garage, our *de facto* IKC visitor center, with introductions of attendees. And because our quarterly field tours attract a number of folks who are not cavers or IKC members, Board member and Outreach/Education Coordinator, Carla Striegel-Winner gave a brief introduction to the IKC, its mission, and our seven preserves.

IKC information and membership brochures were available, along with forestry information from IDNR. Carla also provided apples, trail snacks, and water for the participants.

The IKC was represented by Carla, as well as IKC Treasurer and Shawnee Karst Preserve Property Manager Keith Dunlap, Board member and Henderson Park Cave Access Coordinator Scott Frosch, Board member Goni Iskali, Board member Richard Vernier, and IKC members Brad Barcom, Robert Bloomer, Wes Roeder, Marty Ryan, and Sue Vernier.

After the preliminaries, Janet promptly sprang a pop quiz! Some questions were simple like what understory tree flowers in the spring and has twigs that curve upwards (flowering dogwood). Others were more difficult and included her pantomiming swinging an axe (hop-hornbeam or ironwood – used in tool handles). Another good question was, what does “MADBuck” mean in relation to trees? Sue knew that one: “maple, ash, dogwood, and buckeye” are all the trees found in Indiana with opposite branching. Last question was, what is the big tree next to the garage? The answer was a silver maple which led to Janet listing a variety of reasons why this was a bad choice for the location, not the least of which was the tendency for the tree's weak wood to split, and potentially damage any structures underneath it!

With the quiz over, we started off on the a trail

loop going counter-clockwise and quickly came to an obnoxious dump site. Carla pointed this out and told us that it would be the afternoon project for those who had volunteered to help with a stewardship activity (see pages 15-16) for more on that).

I quickly regretted forgetting my pocket notebook because Janet is a wealth of information and I didn't know at the time that I would be asked to write an article about the event!

Shortly past the dump we came to a tree defended by formidable thorns projecting from its trunk. Several of the hikers recognized this as the honey locust. Janet pointed out the dark gray

scaly bark and noted that it produced very long, flattened pods containing seeds. It's hard, strong, rot-resistant wood and is often used for fence posts.

A little further and we stopped at another tree. This one had us stumped, no pun intended, until Janet informed us that it was an oak, a shingle oak, the only oak native to Indiana with leaves having no lobed or toothed edges. As the

name suggests, pioneers once split the wood and used it for shingling their cabins.

More oaks led to discussions on the differences between red oaks, black oaks, and white oaks, and their nut production particularities.

A few invasives were spotted and identified, the autumn olive is a particular nuisance. Carla happened to be carrying pruners and a “bingo dauber” filled with herbicide and dispatched what she could with assistance from Goni.

Janet next pointed out a large persimmon and its distinctive bark with its rough, squarish, blocky surface. She noted that persimmons have separate male and female trees and both are required to produce the fruit. She asked how many like persimmon pudding and some of the younger attendees looked a little perplexed. She also explained that persimmon wood has been used for golf club heads due to its hardness and high density.

Next up was a young tree about six feet tall



District Forester Janet Eger telling how to identify a black walnut. Photo by Richard Vernier.

with very stiff branches and a large terminal bud. The IKC had planted lots of native trees over the years, but this one was a volunteer, a very healthy shagbark hickory.

A little further on we came to a large stand of evergreens with some tall eastern red cedars. Janet stopped and identified the Virginia pine. She pulled loose some needles and showed us that they come bundled in twos. The jack pine needles also come in twos, but she had a handy way to remember the difference, the Virginia pine needles were twisted so you just think “Ladies always cross their legs and Virginia is a lady!” This brought on a few laughs and snickers.

Nearby was a small tree with rough, red-brown bark from which Janet pulled a small twig for people to smell – a sassafras, famous for sassafras tea. Sassafras tea is made from the roots and has a pleasant root beer taste and is purported to have medicinal value, but one should proceed with caution because the sassafras bark contains safrole which is toxic to humans and may be present in the tea. Most medical professionals agree that there are no real medical benefits to drinking this natural tea. Still, it tastes good, but probably best not to make a habit of it.

We were running a little behind and started to hurry, but first we came to two huge tulip trees, or tulip poplars, or yellow poplars – though this tree is actually in the magnolia family and not a poplar at all. One was in bad shape with the top broken

off, but high up on the other, we could see the remains of the tulip-shaped flowers. The tulip tree is of course Indiana’s state tree.

A little further and the ground fell away to our left. A steep-sided channel led in and disappeared. Someone asked me if there was a cave down there and I replied that this was an infeeder to the cave system. I followed Scott over and realized that we were above the Upper Twin Cave entrance! I hung onto an ironwood and leaned over the edge. I could hear Janet talking about ironwood as I did so. I hadn’t been above the entrance since we cleaned up another adjacent dump site that was sliding into the cave. The improvements were most noticeable when we walked down to the entrance.

By now many of us were remembering that Carla had promised lunch for those of us who had volunteered for the stewardship activities and we hurried along back to the garage.

Janet had one last item to show us, some fruit-like galls on the red cedars along the driveway near the highway. These were the beginnings of Cedar Apple Rust, a fungal infection that typically is not harmful to the cedars, but can ruin the fruit of nearby apple trees.

With that final factoid, we adjourned for lunch. I’m sure I’ve missed a number of the trees we saw. Many thanks to Janet Eger for an excellent, informative, and well-presented talk! As a bonus we introduced some new people to the IKC and to the Shawnee Karst Preserve. 🐦



The group hiking along the native prairie at the Shawnee preserve. Photo by Richard Vernier.

JOIN US FOR AN IKC PRE-MEETING SOCIAL

SUNDAY, DECEMBER 15 – 12:15 to 1 PM EST

Monroe County Public Library (Ellettsville Branch, Room A)

600 W Temperance St, Ellettsville, IN 47429

Come for refreshments and give a pre-meeting hello to the IKC Board and fellow members and supporters. We will have IKC info available and if you need stocking stuffers, we will have IKC stickers and you can also buy a gift membership or donation if you like! Feel free to stay for the meeting – for a few minutes, or if you are brave and caffeinated, for the whole meeting!

Questions? Contact Carla Striegel-Winner (IndianaKarstConservancy.info@gmail.com).

DON'T GO CHASING WATERFALLS...

by Cris Seuell

As a nearly yearlong hydrology study of Garrison Chapel neared its end, many questions about Wayne Cave's complex water routes remained unanswered. I focused on the elusive third stream, speculating about its path from Old Wayne to the Camp I area. Standing in Old Wayne during heavy rain, you can observe water cascading from the ceiling, vanishing into small canyons carved deep into the floor. Most interesting is a hole beside the crawlway that channels water down into the unknown. Without another dye trace, it's just a theory, but this could be the water we see in the area around the Wells.

Exploring historical maps and trip reports, I found that leads in the Wells area had been thoroughly examined – many named with the word “folly”, hinting at their dead-end nature. One lead however stood out: a mysterious “18' pit w/ waterfall” marked on Terry Cox's 1970 Camp I Area map (published in the IUSC *SpeleoTymes* 2#2 newsletter, see below). After corresponding with Terry, I confirmed that this pit had not been entered due to its tightness and only had its depth measured from above during the resurvey.

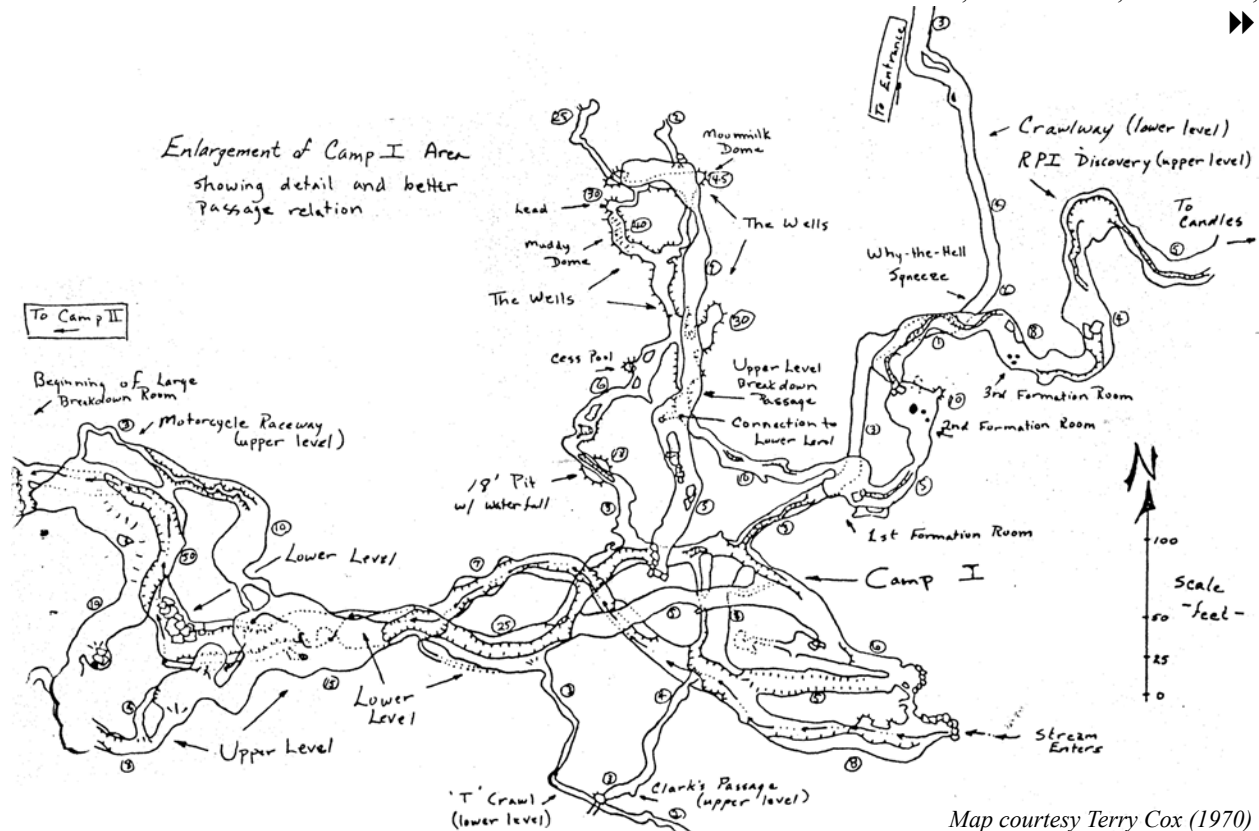
Equipped with vertical gear for the second time, our team was ready. Previously, we'd been unable to access the waterfall due to the narrow



photo courtesy Alex Taul

The bottom of the Waterfall Room in Wayne Cave.

opening. After securing a research permit from the Indiana Karst Conservancy, we were authorized to carefully widen the passage using hand tools. Owen Freese-Posthuma, Matt Lewis, Alex Taul,



Map courtesy Terry Cox (1970)

and I hauled our gear down the crawlway and descended the pit, a quick rigging thanks to natural anchors. Terry's depth measurement was accurate; the pit was 18 feet deep, leading into a mud-filled room approximately 8 feet wide and 12 feet long. The waterfall enters from a small opening high up on the north side of the room. This water is most likely coming from another waterfall to the north labeled "cess pool" on some maps. The other waterfall is visible on the left as you head towards the Wells, though the tube connecting these two waterfalls is too narrow to physically navigate.

Water exits the 18-foot waterfall room through a narrow crack in the south wall that appears to widen at its base. I was hoping to figure out how this water connects to the main borehole. One theory is that this passage once extended under the main passage and has since become silted in. Sand fills much of this area, with the notable exception of the "T" crawl, which still drains a substantial amount of water.

As we prepared to leave, I took one last look at the bottom half of an old carbide lamp lying in the mud (see above right). The walls around the lamp were blackened – possibly from manganese deposits – left by the constant flow of water over count-



photo courtesy Alex Taul

less years. The lamp had clearly been bathed in this mineral-rich runoff for a long time. I couldn't help but wonder; did someone drop it down the crack we had descended? Or had it been lost in Old Wayne, eventually washed down to this hidden spot?

Looking back over the maps, I noted one more unchecked lead, high up in the Wells area. Accessing any passage here may require finding a high lead, as the "cess pool" water also seems to originate somewhere far above, seeping down through a narrow crack. I'll keep searching for an alternative route around the entrance crawlway – although the way forward may involve another crawlway just as challenging... if not worse than the original. 🦋

BOWLING FOR TROPHIES AT SHAWNEE KARST PRESERVE

by Richard Vernier

When we signed up for the Winter Tree ID hike at the Shawnee Karst Preserve (see pages 12-13) for Saturday, November 9, we were promised an opportunity to take part in a stewardship activity post-hike, and we were not disappointed.

Fourteen out of the twenty participants on the tree hike agreed to stay and help out, and in exchange the volunteers were treated to a hearty lunch put together by Carla Striegel-Winner (Outreach Committee Chair) and Keith Dunlap (Shawnee Preserve Property Manager). After the lunch, some of us might have preferred a short nap, but we had already had a preview of the task ahead on the hike, and knowing that we didn't want to drive home in the dark, it seemed best to get on with it.

The primary "opportunity" presented was to



photo courtesy Carla Striegel-Winner

Christopher Winningham won the trophy for finding the prettiest bowling ball.



clean up a large trash pile at the edge of the woods just a short distance from the IKC garage/visitor center. The trash, of course, pre-dated the IKC's 2020 acquisition of the property. Keith's pickup was already positioned next to the work site with the tailgate down ready to accept the spoils of our effort. My thought was, eyeing the waiting pile, "We're gonna need a bigger truck!"

It turned out that Keith had anticipated his pickup not being big enough to take the whole mess so separate piles were designated for recyclable metal and large objects for later disposal. Someone had already found a fairly modern toilet base and a concrete lawn-ornament deer and dragged them over to the "large" pile.

I was a couple of minutes behind everyone else, not intentionally of course – I'd never do that – and the work was already underway. My first target was a colorfully blue and yellow obnoxious child's swing set. It was entangled in a roll of fence wire so both had to be dealt with. Keith wanted the plastic parts removed from the steel swing components and produced a DeWalt battery-powered Sawz-all. It took both of us to deal with cutting away the plastic. The plastics industry has made amazing advancements in materials over the years and those bright yellow seats were tough and seem destined to be in great shape a thousand years from now, long out lasting the steel they were attached to.

Somewhere under the all the trash was a partly composted homemade utility trailer. Possibly someone had once had good intentions of using it to haul away the mess when the trailer

got full. Now it was all just part of the mess. Keith set about cutting the trailer into pieces with the Sawz-all while everyone else was busy filling large 3-mil-thick 55-gallon trash bags with a wide assortment of household refuse.

I don't really understand tossing trash out on your property. I can sort of see someone disposing of rotten lumber and metal roofing in a gully as part of controlling erosion, but bowling balls? And bowling trophies? And not in a gully, just "out back" of the house? Human behavior remains shrouded in mystery for me.

Window glass, plexiglass, the usual cans and bottles, all went into bags or were stacked for later removal. The bags went into Keith's overloaded pickup and Carla did her best to arrange them to all fit. Likely next year when the leaves are gone there will be more to be seen scattered about, but the improvement was already dramatic.

While most worked on the "trailer" pile, several of the volunteers were dispatched into the woods to pick up scattered trash in a ravine. They used a battery-powered leaf-blower to uncover the trash to then bag up. All total, that team filled five large bags that Scott Frosch volunteered to haul home.

With so many volunteers, we only needed to work about an hour to complete the tasks at hand. Helping with the cleanup were: Robert Bloomer, Nathan Buehrer, Keith Dunlap, Scott Frosch, Wenxia Jiang, Dwayne Keagy, Kevin Rivera-Monseratte, Wes Roeder, Marty Ryan, Carla Striegel-Winner, Richard Vernier, Sue Vernier, Christopher Winningham, and Houmin Zhong. 🦋



The "before" photo (left) of the trash pile with the buried trailer underneath. And the "after" photo (right) of the volunteers proudly posing with the to-be recycled pile foreground and the pickup full of trash bags behind.

photos courtesy Keith Dunlap

BIG DAY HIKE IS FOR THE BIRDS!

by *Carla Striegel-Winner*

We had a lovely autumn day for our third annual Big Day bird hike, held at the IKC’s Robinson Ladder Cave Preserve in Crawford County October 12th, from 9 to 11 AM. This event is in partnership with Indiana Audubon, who provides an expert bird guide, and Indiana Land Protection Alliance (ILPA) who helps coordinate the events with participating land trusts throughout the state, and provides each host group with funding for a snack as well. Our expert birder was Jeff Sells of nearby Washington County, and IKC Property Manager John Benton helped lead the hike and gave participants great info and tidbits about our property and the cave.

It was a bit nippy that morning, but with the sun out, the birds warmed up in the sunlight. Not being a birder myself, I have learned a few morsels of information each year, and I know that fall birding is “hit or miss” and that the birds often travel in groups, they are not as “chatty” since it is not mating season, and they can be difficult to see as well! Therefore, a serious birder might get a little disappointed, but it makes for a perfect nature hike as folks are always wanting to chat and also discover the other nature surrounding them. Our group of 9 included a couple of serious birders (including Spike Selig), a couple of folks who described themselves as “intermediate”, and then folks like my mom and me.... interested enough to be out on a pretty October day learning new things!

John had never been on a birding outing, and enjoyed it, saying he can see how it could be a very interesting hobby, although he added that he already has “plenty” of those and won’t be taking up birding any time soon! He was quite enthralled with this mysterious “Merlin” who everyone was talking about... He finally realized it was this excellent app by Cornell Lab of Ornithology that birder types (and wannabes like me) have on their phones. You can listen for bird

sounds and it gives suggestions for what bird it could be. The app is great for backyard birders as well as hikers and explorers. It can be downloaded here: merlin.allaboutbirds.org.

The other cool bird tech of the day is another part of Cornell Lab... eBird. This is really where the citizen science part of these outings comes in. eBird is a database where individuals and groups can create bird checklists and freely share them. So on our 17 statewide ILPA Big Day hikes the expert guides uploaded how many species each hike saw, and our totals. Statewide, the groups



photo courtesy *Carla Striegel-Winner*

saw 87 species that morning. For our own hike in Crawford County, we saw 27 species and 105 total birds, and were the only group to have an eastern meadowlark, and one of only two groups to have a swainson’s thrush. All of this info and more can be found on the eBird database. Recording these lists annually adds to the knowledge of what diversity the IKC has on our properties and can potentially help with our management in the future.

Below is the list of bird species we saw at Robinson Ladder, and go to ebird.org/tripreport/274287 to see all of birds spotted on the seventeen statewide 2024 IAS/ILPA Big Day hikes.

I’m already looking forward to my annual birding hike next October! 🐦

Eastern Bluebird	American Goldfinch	White-breasted Nuthatch	Turkey Vulture
Northern Cardinal	Common Grackle	American Robin	Cedar Waxwing
Carolina Chickadee	Red-shouldered Hawk	Song Sparrow	Downy Woodpecker
Brown-headed Cowbird	Red-tailed Hawk	White-crowned Sparrow	Pileated Woodpecker
American Crow	Blue Jay	Swainson’s Thrush	Red-bellied Woodpecker
Bald Eagle	Eastern Meadowlark	Tufted Titmouse	Carolina Wren
Northern Flicker	Northern Mockingbird	Eastern Towhee	

List of bird species observed at the Robinson Ladder Cave Preserve on October 12, 2024

SUMMER BAT CENSUS AT IKC PRESERVES

by Goni Iskali

The IKC continues to be interested in learning how bats use the aboveground areas at our karst preserves during the summer. All but one species of bats that occur in Indiana live outside of caves for the majority of the year. Most of these species mainly inhabit forested areas in the summer and create maternity roosts primarily in trees. This is because bats, and especially the young and hairless pups, require higher temperatures when not hibernating. Males are more solitary and less choosy about their summer roosts and may occasionally use caves or cave entrances in addition to trees and other structures. During the winter, some bat species migrate further south to avoid freezing temperatures, while other species (both male and female) hibernate in caves where the lower and stable temperatures can support their hibernating needs.

Last year we collected data at six of our largest preserves (Buddha, Lowry, Robinson Ladder, Shawnee, Sullivan, and Wayne) to establish baseline information on aboveground bat use. This year we re-surveyed three of these preserves (Buddha, Shawnee, and Sullivan) with the intent that the remaining three preserves will be sampled in 2025. Our goal is to continue to alternate surveys at the six preserves on a biennial basis to collect long-term datasets. The Shawnee and Buddha preserves were surveyed on June 22 and July 14, respectively, using passive acoustic transects with the Echo Meter Touch 2 that the IKC owns. The surveys were completed by walking the trails starting roughly 15 minutes before sunset and sampling at least 30 minutes after sunset. This year no bats were detected at either Buddha (similar results to last year) or Shawnee (bats were detected last year). However, the passive acoustic transect surveys represent a small snapshot in time and this does not mean that bats are not using these two preserves in the summer.

At the Sullivan Preserve, we completed stationary acoustic surveys from August 16 to 23, 2024 using more advanced detectors (the Wildlife Acoustic Song Meter SM4 Acoustic Recorder – wildlifeacoustics.com/products/song-meter-sm4). These surveys were made possible once again with the assistance of bat biologist Aaron McAlexander from Western Ecosystems Technology, Inc. (WEST), who loaned us the detectors and set them up. We placed one at the dry stream bed near the cave entrance, and the second detector in the open field/camping area north of the entrance. The detectors



photo courtesy Goni Iskali

Aaron McAlexander setting up the acoustic mic and data recorder at the Sullivan Cave Preserve.

were programed to record 30 minutes before sunset to 30 minutes after sunrise for 7 nights. The reason why we chose to sample the Sullivan Preserve more intensively is because the US Fish and Wildlife Service (USFWS) was collecting environmental DNA samples inside the cave at the same time to see if they can detect bats flying by/using the cave for species identification (see page 23). We communicated with USFWS and they agreed that the data that we collected right outside of the cave entrance would provide a great comparison on the potential efficacy of their filters. The observations collected were provided to USFWS.

Ashley Reed, another bat biologist and acoustic calls specialist, also volunteered for the second year to identify and confirm the acoustic data. She processed the call data by first running it through an automated identification program (Kaleidoscope) and then qualitatively identifying every bat call that was labeled by Kaleidoscope as a potentially sensitive species (either a myotis species or tricolored bat). Myotis species such as Indiana, northern long-eared, and little brown bats, and tricolored bats continue to be heavily impacted by White Nose Syndrome (WNS) and are either listed,



proposed to be listed, or being considered for listing as federally protected by USFWS. The Gray bat is also a myotis species that is federally endangered, but they do not appear to be significantly impacted by WNS and are also not likely to occur this far north in Indiana, yet. Their range has been creeping northerly as the population expands and they can now be documented in large numbers as far north as the Cave River Valley area in Indiana.

The results of the acoustic surveys at Sullivan are reported in Table 1, with the parentheses representing the number of calls that were confirmed by Ashley as belonging to a sensitive species. Indiana, northern long-eared, little brown bat, and tricolored bat were all confirmed at the station near the cave entrance, and all of these except for northern long-eared bat were also confirmed at the field station location. The data was collected close enough to the maternity season, which is thought to be from May 15 to August 15, that it's likely that these bat species have maternity roosts at or near the Sullivan preserve. Five other species of bats (big brown, eastern red, hoary, evening, and silver-haired) were also detected, but their calls were not manually

vetted. The data collected at Sullivan shows that the continued management of this preserve under a classified forest regime and minimal disturbance is providing an opportunity for most bat species in Indiana to call this preserve home, including some rare and sensitive species. Some bat-friendly Best Management Practices to continue to observe on our IKC preserves, at our members own properties, and during cave adventures are:

- Harvest/cut trees during the winter (~Nov 1 to March 31) when bats are not inhabiting them.
- Leave dead trees/snags in place as these are preferred roosts for bats (although some species can inhabit smaller trees, hide in leaf clusters, etc.).
- Clear brushy understories (especially if understory is full of invasives) to allow for clearer flight paths for feeding and navigation.
- Do not disturb hibernating bats in caves by taking photos with flash, getting too close, or making loud noises. If you see a bat in the cave, look down and pass by quietly by giving the bat(s) as much room as possible. 🦇

Table 1. Summary of Data Collected on the Indiana Karst Conservancy Sullivan Cave Preserve, Lawrence County, Indiana between August 16 – 23, 2024. Kaleidoscope Pro 5.4.0 was used to classify bat echolocation calls. Manual review was completed for little brown bat, northern long-eared bat, Indiana bat, gray bat, and tricolored bat echolocation calls. The number of manually review confirmed bat echolocation calls is given in parentheses. Manual review was not completed for the other bat species.

Site	Date	Species ¹									
		EPTFUS	LASBOR	LASCIN	LASNOC	NYCHUM	MYOSEP	MYOSOD	MYOLUC	PERSUB	MYOGRI
Sullivan Cave Entrance	8/16/2024	6	10	2	0	13	1 (0)	20 (0)	14 (4)	9 (3)	14 (0)
	8/17/2024	48	2	1	0	5	9 (0)	26 (0)	13 (0)	22 (17)	13 (0)
	8/18/2024	25	2	0	0	3	12 (1)	41 (3)	17 (2)	7 (3)	2 (0)
	8/19/2024	3	4	0	1	1	22 (1)	69 (7)	26 (3)	6 (4)	3 (0)
	8/20/2024	0	1	2	0	2	1 (0)	4 (0)	3 (0)	6 (3)	1 (0)
	8/21/2024	0	1	4	0	1	1 (0)	2 (0)	2 (2)	9 (8)	0
	8/22/2024	3	15	3	0	2	6 (1)	5 (0)	11 (1)	18 (5)	4 (0)
	Total	85	35	12	1	27	52 (3)	167 (10)	86 (12)	77 (42)	37 (0)
Sullivan Open Field	8/16/2024	25	19	4	6	41	0	2 (0)	8 (3)	2 (0)	1 (0)
	8/17/2024	37	8	7	11	13	0	2 (0)	11 (5)	5 (0)	3 (0)
	8/18/2024	22	4	15	12	2	0	11 (0)	33 (7)	8 (2)	1 (0)
	8/19/2024	7	5	12	5	2	4 (0)	21 (4)	68 (18)	3 (2)	1 (0)
	8/20/2024	0	1	7	0	2	1 (0)	3 (0)	1 (1)	16 (15)	0
	8/21/2024	5	7	3	1	7	1 (0)	1 (0)	4 (0)	1 (0)	0
	8/22/2024	5	28	2	3	17	0	5 (0)	15 (0)	8 (6)	0
	Total	101	72	50	38	84	6 (0)	45 (4)	140 (19)	52 (36)	6 (0)
Total	186	107	62	39	111	58 (3)	212 (14)	226 (31)	129 (78)	43 (0)	

¹ EPTFUS = big brown bat, LASBOR = eastern red bat, LASCIN = hoary bat, LASNOC = silver haired bat, NYCHUM = evening bat, MYOSEP = northern long-eared bat, MYOSOD = Indiana bat, MYOLUC = little brown bat, PERSUB = tricolored bat, MYOGRI=gray bat.

WAYNE CAVE PRESERVE MOTH SURVEY

by Steve Morris

Over the past couple of years I have come to know a lot about the Indiana Karst Conservancy through Matt Selig. The geology and biology of caves has always fascinated me. I have spent some time underground in the past, including work to protect and map caves with the Office of Kentucky Nature Preserves. However, after much investigation into the natural world, I seem to have found my niche with Entomology, and more specifically with moths. When Matt described the impressive land conservation efforts of the Indiana Karst Conservancy, I decided to become a member and thought it would be interesting to see what types of moths might be found on these properties.

Matt told me that a rare type of sedge (*Carex decomposita*) had been found in a sinkhole pond at the Wayne Cave Preserve. This really piqued my interest because having rare plants could mean there might be rare moths whose larvae feed on those plants. With that in mind, I applied for and received an IKC research permit and recruited some friends to join me for a moth survey at Wayne Cave on Labor Day, September 2nd. Our moth collecting event fell on a night with unseasonably cool weather predicted. Unseasonably cool weather can result in many species of moths not taking flight. With this in mind, I almost expected a suggestion from someone that we cancel the outing. Thankfully that did not happen, and in spite of the chilly weather, we were still able to find **over 210 species** of moths that evening.

It was actually a pleasant sunny afternoon for set up. The crew, made up of Jeanette Jaskula (Boone County), Jim Vargo (St. Joseph County), and myself, used a variety of methods to attract moths that evening. Jeanette used white bed sheets hung behind a mercury vapor light and ultraviolet (UV) lights. I used UV lights placed inside a screen tent. Jim and Jeanette also employed UV light traps that were placed along the trail, including by the sinkhole pond. In addition, we used a sugar bait that was spread on trees along the trail and around the parking area. Some moth species come more readily to sugar bait than to lights, including those in the *Catocala* (Underwing) genus. We were very fortunate to have Jim Vargo along on this trip as he is a nationally renowned lepidopterist and maintains a comprehensive list of moths that have been found here in Indiana.

We were excited to find six species of moths



photo courtesy Steve Morris

Jim Vargo and Jeanette Jaskula next to the moth collecting lights at the Wayne Cave Preserve.

that were new to us here in Indiana, including *Herpetogramma sphingealis*, a species whose larvae is known to feed on *Polystichum acrostichoides* (Christmas Fern). It should be noted that Christmas Fern was listed on the recent plant survey done at the Wayne Cave Preserve. Another new moth to Indiana was *Phyllonorycter aeriferella*, a very small species that is actually difficult to even see with the naked eye. In comparison, some of the *Catocala* species that were attracted to the sugar bait that night can be the size of the palm of your hand. Another moth we found that was not new to Jim for Indiana, but new to me, was *Papaipema rutila*. The larvae of *P. rutila* are known to feed on *Podophyllum peltatum*



photo courtesy Jim Vargo

Phyllonorycter aeriferella, an Indiana first, found at the Wayne Cave Preserve.



(Mayapple), another plant listed on the recent plant survey for the preserve. Many of the moths we found, while not necessarily new to Indiana, were new to Indiana on the website BugGuide. In order to really appreciate the diversity of moths we found, I suggest going to BugGuide.net and typing in “Wayne Cave” in the search box at the top right. There you will see many of the less common moths found on this property that have been posted so far.

One of the difficulties of Entomology is identifying species of moths that can be hard, or even impossible, to differentiate based upon photos alone. One way of positively identifying moth species is through dissection and examination of genitalia. Thankfully, Jim Vargo had the dissection skills and knowledge expertise needed to positively identify several of the moth species we found.

Although we found quite a few species of moths at the Wayne Cave Preserve that night, a more comprehensive list would require visits to the preserve spaced out at intervals throughout the span of a year. Some species of moths can be found almost any month of the year, but others may have only a short flight period of a few weeks at a certain times of the year. We plan to return to the property several more times to build upon this list of moths.

While we were focused on moths for this trip, we always keep our eyes open for whatever the natural world is willing to reveal. Toward dusk I noticed something buzzing along on top of the gravel in the parking area. I chased after it and was able to catch it and put it in a cooler to slow it down for a photo. It turned out to be a beetle known as *Bolbocerosoma farctum*. This is a beetle that was new to me and new to Indiana on BugGuide.

There was also a plant just off the parking area with yellow flowers that caught my eye. So I snapped a couple of photos of it and looked it up in my *Peter-son Field Guide to Wildflowers: Northeastern and North-central North America*. This plant ended up being *Cassia nictitans* (aka Wild Sensitive Plant or Sensitive Pea). This was a new plant for me. According to the field guide, it prefers sandy soil.

Moth Lacinipolia implicata (left) and beetle *Bolbocerosoma farctum* (right) collected under permit issued by the IKC at the Wayne Cave Preserve.

That seemed sort of strange to me until I thought about the sandstone soil type mentioned in the plant survey for this property. According to the website Wildflower Search, *C. nictitans* is not a rare plant across its range in North America, but is only found in scattered sites in southern Indiana and again in northwest Indiana. This plant needs to be added to the Wayne Cave preserve plant listing.

Jeanette and Jim headed home on Tuesday, but I decided to go over to the Sullivan Cave Preserve for another night of moth searching. It was a bit warmer than the night before and I was able to record approximately 50 species of moths, including about a dozen species that we had not recorded from the Wayne Cave Preserve. I also found some other interesting insects at Sullivan Cave, including my first ever Mantidfly (*Dicromantispa sayi*). The Mantidflies are actually part of a group of insects known as Lacewings. Mantidflies have front legs that resemble those of the praying mantis. Another interesting find was *Tipula abdominalis* (Giant Crane Fly). I have only seen this species one other time in Indiana. Crane flies are often mistaken as giant mosquitos, but they do not bite and are harmless to humans. Images of these two insects and some of the less common moths that I found are posted at BugGuide and can be accessed by typing “Sullivan Cave” into the search box.

I have reviewed the master plans for many of the IKCs preserves and am impressed with the history of preservation of these special places and ambitious plans for the future. The work being done here fills an important niche and compliments well with other Indiana land conservation efforts. My thanks go out to all who have been involved, past and present, and I look forward to meeting other members of the conservancy in the near future. 🦋



photos courtesy Jeanette Jaskula and Steve Morris

CREATURE FEATURE: CAVE CRICKETS

by Carla Striegel-Winner

A few weeks ago, if a friend had asked me, “Are cave crickets native?” I would have answered with a resounding, “Yes! Of course!” As cavers, we see these fauna gathered in groups mainly in the entrance and twilight zones. We know they are an important part of the web of life in cave ecology, being opportunist eaters and then leaving behind their excrement, shed exoskeletons, eggs, and their own dead bodies for other organisms to live off of. The NSS even named them “Cave Animal of the Year” for 2023. So when I heard someone recently referring to cave crickets as “invasive”, alarm bells went off and I knew I needed to confirm that cave crickets are indeed native and not exotic pests. Googling the subject proved to be overwhelming, as there are dozens of species. I wanted to be sure, so it was time to find an expert to assist. After consulting with renowned cave biologist Dr. Julian J. “Jerry” Lewis, I felt better knowing that yes, of course the cave crickets that I know and love are indeed the naturally occurring fauna I thought they were. But. There is a species that *is* non-native to the United States that has been a pest in commercial greenhouses and tends to be synanthropic, meaning an organism that lives in close association with people. This explains why it also might be common in our homes or underneath Jerry’s porch when he lived in town. It can, however, be in entrances of caves that have been heavily disturbed by humans. Jerry has sampled multiple dozens of caves and has only found the non-native *Tachycines aynamorus* in one cave in Indiana, Big Mouth Cave in Harrison County. He has also identified it in Cave-In-Rock in neighboring Illinois. This cricket, commonly called the greenhouse camel cricket, is a different genus than our beloved native cave crickets, and one can assume that those found in our Hoosier caves are native.

Our abundant and lovely native cave crickets

are the *Ceuthophilus* genus, and if you read about the NSS Cave Animal of the Year for 2023, you will see that the cave animal featured for last year is not just generic “cave crickets” but is “*Ceuthophilus* cave crickets”. There are several species native to Indiana, and not all of them even prefer caves! According to Dr. Lewis, native *Ceuthophilus stygius* is one that occurs in hundreds of Indiana caves (and in adjacent states). Another species, *Ceuthophilus meridionalis*, can be seen in caves as well, and has a yellow midline stripe on its back (both occur in the



Native *Ceuthophilus* cave cricket in Siberts Cave (Little Wyandotte) in Crawford County. Identified by Dr. Lewis as likely *C. stygius*. Photo by Richard Vernier

IKC’s Sullivan Cave). Anyone thinking about a career in biology or entomology, please consider studying these critters, as Jerry states there is currently no one in the US working on crickets. Well, in typical Jerry fashion he actually said, “You might consider going somewhere and working on a MS or PhD in entomology and specializing in

gryllacridids...” Regardless, we will soon have an excellent written resource, as Jerry continues to work on his book manuscript *Subterranean Fauna of Indiana* which has hundreds of collection records from Indiana caves. It is sponsored by the Sam Shine Foundation, to be published by the Indiana Academy of Science. Work will be completed in 2026, with publication to follow soon after.

References:

- Lewis, Dr. Julian J. Personal email correspondence. July, August 2024.
- *Tachycines Asynamorus*. Wikipedia, Wikimedia Foundation, 1 March 2024, en.wikipedia.org/wiki/Tachycines_aynamorus (accessed 21 August 2024).
- Meet the 2023 USA Cave Animal of the Year: *Ceuthophilus* Cave Crickets! caves.org/uncategorized/meet-the-2023-usa-cave-animal-of-the-year-ceuthophilus-cave-crickets (accessed 21 August 2024). 🐛

EXPERIMENTING WITH PASSIVE BAT DETECTION IN CAVES

by Jamin Wieringa

In August the IKC and the US Fish and Wildlife Service's Indiana Field Office partnered up to test a new bat sampling approach in several Indiana caves. The goal for this project was to determine if this methodology could be used to passively identify increasingly rare species of bats in caves.

We tested for the presence of bats using environmental DNA. This is DNA that is shed into the environment every second of every day by every living creature. It can be shed into the environment by breathing and many other means. This approach has traditionally been accomplished in water as it is a confined environment where the species you target can't move to another area. This is very similar to caves for cave roosting bats. There is an enclosed space and during the winter the bats don't move large distances.

To capture the potential DNA, we used air samplers (see above right). This is an approach that has been used by others in the past. It was first validated at zoos where the species presence was well known and has been used in some bat roosts previously. But, to the best of our knowledge, this approach has not been widely used in caves. We further targeted August for sampling as it would be before bats returned to the caves for hibernation, but a few may still linger in the area. This would allow us to test two things: 1) can we detect these rare individuals present in a cave, and 2) for caves in which we don't see any bats, does the DNA linger for long durations as we want to know what is there right now, not what was there two years ago.

Thanks to IKC volunteers (Cris Seuell, Owen Freese-Posthuma, Scott Frosch, and Goni Iskali) we were able to sample four different caves (Coon, Grotto, Salamander, and Sullivan). For Sullivan Cave, the IKC approved a research permit for our



photo courtesy Jamin Wieringa

activities. While installing the equipment, some bats were seen in a few of those caves giving us hope that we may be able to detect them. After we set up the battery-powered samplers, we left them to run for approximately 24 hours. The filter elements were then carefully collected and placed in vials that were then frozen until we could ship them off to a lab for analysis.

We received the analysis results back recently and sadly we did not detect any bat DNA in our samples. This is both a good and bad thing. First is the good: the results show us that the DNA does not linger in the caves for a long duration. If we were to sample again and find bat DNA, we can be confident that the species detected is present at the site. And for the bad, the results tell us that we likely need more bats present to detect them using this approach.

We are hoping that we can get out again soon to sample when we expect bats to be using the caves at a higher density. We really appreciate the help that the IKC provided us, and we hope that we can continue to build a great relationship with the organization. We see a lot of areas where we could use your assistance and look forward to those opportunities. We could not have done this project without the IKC and its volunteers. 🦇

WHAT WILL BE YOUR LEGACY?

An easy way to make the IKC a part of your legacy is to include us as one of your beneficiaries on your insurance policy, 401k/IRA retirement plan, or investment brokerage account. Typically all you need is our address and TIN 31-1185033 and can usually be done on-line or with a simple designation form. You don't even need to inform the IKC of your decision unless you wish to provide specific instructions on how you'd like your gift to be used.

Please contact President Matt Selig (MSelig31@gmail.com or 317-258-9983) to discuss any aspect of legacy giving.

INDIANA KARST CONSERVANCY TREASURY REPORT

**Income/Expense Statement
From July 1, 2024 to September 30, 2024**

INCOME:		
Dues Apportionment and Residuals	1,149.45	
Donations - General	501.07	
Donations - Land Acquisition Fund	110.00	
General Investment Earnings	2,133.33	
		\$3,893.85
EXPENSES:		
IKC Update (printing, production, mailing)	562.57	
Education / Outreach	292.00	
Stewardship / Conservation	735.97	
Business (PayPal fees, postage etc)	20.88	
Transfers to/from restricted funds/other adjustments	110.00	
		(\$1,721.42)
NET OPERATING EXCESS (DEFICIT) THIS PERIOD:		<u><u>\$2,172.43</u></u>

**Balance Sheet
September 30, 2024**

ASSETS:		
Cash in Checking/CD/Brokerage accounts	797,089.13	
Wayne Cave Preserve (77.46 acres)	393,000.00	
Robinson Ladder Cave Preserve (73.48 acres)	162,000.00	
Shawnee Karst Preserve (67.78 acres)	175,000.00	
Buddha Karst Nature Preserve (36.84 acres)	29,000.00	
Sullivan Cave Preserve (30.00 acres)	88,000.00	
Lowry Karst Preserve (6.66 acres)	33,000.00	
Orangeville Rise Nature Preserve (3.01 acres)	7,000.00	
Indian Creek Conservation Easement (valued at \$1/acre)	13.16	
		<u><u>\$1,684,102.29</u></u>
FUNDS & OPERATING EXCESS:		
Land Acquisition Restricted Fund	82,067.38	
Deferred Dues Restricted Fund (299 members)	7,822.50	
Stewardship Endowment Fund (+5.74% for Q3)	140,847.20	
Gale & Ray Beach Endowment Fund (+4.06% for Q3)	475,395.00	
Previous General Fund (total)	88,797.78	
Net Excess (Deficit) This Period	<u>2,172.43</u>	
Current General Fund (unrestricted)	90,970.21	
Current General Fund (committed)	3,890.92	
Real Estate Basis (excluding value of CE)	<u>887,000.00</u>	
Total Liabilities & Operating Excess		<u><u>\$1,684,102.29</u></u>

...continued from page 9

- ☐ The IKC has gained nine new members in the last quarter. Welcome Jeff Dugan, Andrew Hahn, Vincent McKinney, Brandon Roell, Lonnie Sears, Andrew Seeber, Sarah Smith, Kent Waltz, and Rachel Wurfel. The IKC membership currently stands at 308. 🐦

IKC EXECUTIVE BOARD MEETING MINUTES

Sunday, September 8th, 2024 – 1:00 PM EDT

Sullivan Cave Preserve – 2088 SR 54 W, Springville, IN 47462

Board Members Present:

- Matt Selig, President
- Laura Demarest, Secretary
- Keith Dunlap, Treasurer
- Bill Baus
- Bruce Bowman*
- Brandon Chasteen
- Jeff Cody
- Scott Frosch*
- Danyelee Green
- Goniela Iskali
- Joe Kinder
- Cris Seuell
- Tom Sollman
- Carla Striegel-Winner
- Richard Vernier

* represented by proxy (see below)

Board Members Absent:

None

Others Present: Bambi Dunlap, Kevin Smith, Sue Vernier.

Call to Order – IKC Exempt Purpose & Introductions

Meeting was called to order by Matt Selig at 1:08 PM EDT (to allow people to finish up lunch).

Acceptance of Proxies

Sue Vernier for Scott Frosch, Kevin Smith for Bruce Bowman.

Approval of Previous Minutes

Danyelee Green made a motion to approve the minutes from the June meeting as published in the September 2024 IKC Update. Joe Kinder seconded. Unanimously approved.

E-mail Motions Since Last Meeting

- *Funding (up to \$500) for storm damage/tree clearing at the Wayne Cave Preserve – Yes-15, No-0, Abstain - none.*
- *Wayne Cave Research Permit for collection of moths (above-ground) – Yes-14, No-0, Abstain-1.*

Treasurer Report

Dunlap outlined the current financial status of the organization:

Assets:

Cash assets totaling	\$764,833.45
Land assets totaling	\$887,000.00
Total Assets	\$1,651,833.45

Dedicated Funds:

Land Acquisition Fund	\$82,057.38
Stewardship Endowment	\$133,623.03
Gale & Ray Beach Endowment	\$451,311.97
Deferred Dues	\$8,355.00
General (unrestricted) Fund	\$89,486.07
Total Dedicated Funds	\$764,833.45

Additional information on the Stewardship Fund and Beach Endowment investments was provided. Membership currently stands at 299 paid members, excluding those who have not renewed. At this time, 48 have been dropped for non-payment despite multiple follow-up reminders. Several long-time non-renewing members have been moved to ‘complimentary’ status.

Stewardship Endowment Fund has grown by 29% and the Gale and Ray Beach Endowment Fund has shown favorable progress with a 13% increase since invested in mutual funds.

2025 Indiana Cave Symposium

Carla shared that April 26th, 2025 will be the date of next year’s IKC/ICS Symposium at the Orange County Community Center. This time, the entire facility has been reserved for this event.

Education/Outreach Committee

Carla supplied some updates about outreach events this summer. The Wyandotte tour went well, despite being a bit longer than anticipated (almost four hours compared to the typical two hour commercial tour), though great feedback was received from attendees. IKC had an info display at Indiana Cave Capers with stickers for sale. A total of \$141 was received from the sticker sales cash basket ‘honor system’ and those IKC Directors who helped monitor the booth over the weekend were thanked. New promotional stickers were distributed to board members. Matt spoke with the Indy Star about karst in Indiana (article reprinted in the September 2024 IKC Update). Matt also responded to a request from a cave researcher at Purdue who was interested in creating a virtual caving experience. He offered consultation and put him in touch with Ginger Davis at the Indiana Geological and Water Survey.

Upcoming field days include an October 12th “Big Day” hike at the Robinson Ladder Preserve to document bird species. On November 9th there will be a winter tree identification hike at the Shawnee Karst Preserve with DNR District Forester, Janet Eger, as well as a service/clean-up opportunity.

Carla is also offering consultation on a cave-themed youth education event with over 400 attendees at



the Noblesville Crossing Elementary on Wednesday, February 5th, 2025. IKC was invited to host a booth though the weekday event makes it difficult to secure volunteers. The inflatable cave was discussed, and Scott Frosch offered to coordinate a caving event in late February for their group and/or the general public if there is interest.

Recently Carla reached out to Charlie Vettors with Organic Robot Designs to inquire about reordering embroidered IKC baseball caps and winter beanies. Still waiting for a price quote.

CILTI (Central Indiana Land Trust) is going to be doing a promotional article on IKC in their upcoming September newsletter.

Danyeale mentioned that the Land Trust Alliance is holding a series of classes focused on climate topics that affect conservation and land management. These classes will be \$45/person for three 90-minute sessions. Classes will be Oct 23rd, 30th, and November 13th.

ILPA Update

Carla provided information about an upcoming free chainsaw training where applicants were selected for the 12 spots available. Joe Kinder and Brandon Chasteen were chosen for this three-day chainsaw safety class on behalf of the IKC. The class will be held at Morgan-Monroe State Forest November 18-20.

ILPA and the Indiana Academy of Science has grant funding available to pay professional taxonomists to conduct an inventory of various species on a preserve, if there is any interest.

Danyeale will be attending an online membership vs donorship seminar hosted by ILPA on Tuesday, September 24th.

There will also be a single day Outreach and Advancement Peer Group in-person Gathering at the TNC office on November 12th.

ILPA Winter gathering will be held February 4, 2025 free of charge at the Indiana History Center with a reception to follow. This event was attended by several IKC Directors last year and is a great networking opportunity.

IKC was selected to participate in a photography program funded by ILPA that will help collect promotional media for conservancy groups to use as needed. The photographer is expected to take photos in the fall of various IKC property features.

Other Updates

Summer Bat Surveys – Goni reported that they did bat surveys at the Buddha, Shawnee, and Sullivan properties. Walking transects were done at Buddha and Shawnee and higher precision detectors were on loan from Western EcoSystems Tech (West) to monitor the

Sullivan property. They chose Sullivan for the more advanced equipment to be in conjunction with USFWS studies monitoring bat DNA in the air at the cave entrance. Data is still being compiled from Sullivan. No bats were identified at Buddha and Shawnee. Next summer she plans to monitor the Lowry, Wayne, and Robinson Ladder preserves. Keith commented about the USFWS filter sampling and mentioned that Cris and Scott assisted their staff with installing monitors at Coon, Grotto, and Salamander caves as well.

US Fish & Wildlife Opportunities – Goni discussed an opportunity with Partners for USFWS to implement a pollinator program on private land. Partners for USFWS can offer funding and technical assistance for habitat establishment and continued consultation on management for ten year contracts. Locally, Camille Verendia is the main point of contact for this program. Keith, Danyeale, Laura, and Goni will schedule a Zoom meeting to get more information.

Research Permit at Wayne Preserve to Study Moths

Matt provided more information about a recent moth study that was conducted above-ground on the Wayne Cave Preserve and disclosed that seven species new to Indiana had been found. The findings of the study will be shared in the next IKC Update. The Sullivan Cave Preserve was also surveyed for rare moths, but none were found.

Land Acquisition Activities

The Board discussed the possibility of acquiring a property in Lawrence County after some recent contact with a landowner who expressed a desire to work with the IKC to keep access available to cavers indefinitely. Additional possibilities were also discussed.

Wayne Exploration Update

Cris followed up on a recent research permit and disclosed that a large room was found, but no other leads were discovered. The passage was surveyed, and more information will be shared in the upcoming IKC Update.

SCCi Online Waiver Update

The Board will need to follow-up with Paul Uglum to pick up where this project left-off so progress can continue. Matt volunteered to check-in with Paul and enlist the help of others if necessary.

Review IKC Membership Dues for 2025

Danyeale is still gathering information and will follow-up at the next meeting.

Recap of Preserves Work Projects and Upcoming Preserves Projects

Lowry Karst Preserve – Jasper Beavers provided no updates.

Wayne Cave Preserve – Danyeale shared that they are



in the final stretch of the current EQIP grant for invasive species removal and will be finishing up this fall. She also announced that she would like to step down as manager for this property. Cris Seuell is willing to take over in the future. *Keith Dunlap moved to appoint Cris Seuell as the next Wayne Cave Property Manager effective January 1st, 2025. Scott Frosch seconded the motion. Yes-14, No-0, Abstain-1. Motion passed.*

Orangeville Rise Nature Preserve – Carla had no recent activities to report.

Robinson Ladder Cave Preserve – John was not in attendance, but Keith reported that most of the TACF hybrid chestnut trees have contracted blight despite treatment, though some trees are now producing nuts. The Big Day birding event will be coming up this October.

Shawnee Karst Preserve – Keith recently mowed trails and treated various invasive species, including stiltgrass. Some Cave Capers visitors visited the property to hike and gave positive feedback. Mark Young from Spring Mill State Park reached out to Matt to coordinate a cave trip into Upper Twin with a student who is working to designate the Hoosier cavefish as Indiana’s state fish.

Buddha Karst Nature Preserve – Keith spent several days treating invasives on the property – mostly stiltgrass. Trails have been mowed and Bambi Dunlap sanded down and painted the gate. Cave Capers guests also commented positively on the state of the property. Jeff Cody touched up the kiosk recently as well.

Sullivan Cave Preserve – Joe Kinder has been working hard to maintain the IKC’s most-visited property. He mowed a couple of times, greased the cave gate, treated invasives in August, serviced the porta-potty, and coordinated with folks on research permit tasks. For the workday preceding today’s meeting, Jeff Cody painted/sealed the shed roof, several worked on chop-

ping and stacking wood, the drainage ditch along driveway was dug out, more invasives were removed, and a new “parking” post was installed for the entry gate. Some plans are being made to start constructing an educational kiosk for the property in the future.

Indian Creek Conservation Easement – Bambi Dunlap visited a couple of weeks ago with Keith to tour the property, identify property line markers, and conduct a thorough annual inspection. Letters have been mailed out to property owners and all tasks are complete.

Items from the Floor

- Scott Frosch would like to give special thanks to Mike Everett of the TNC for posting an IKC sign at the main gate of the Henderson Park property, though their website still needs to be updated accordingly with the new information.
- Danyele asked if any property managers need items replenished in their first aid medical kits.
- Some parking issues with Suicide Cave were discussed. Kevin recently received a phone call from the local sheriff about parking alongside the road in response to complaints about too many cars parked on the north side of the road during the Cave Capers weekend. Would it be possible to clear some vegetation along the south side of the road to better accommodate parking?

Next Meeting Date and Place Selection

The next IKC Quarterly meeting is scheduled for Sunday, December 15th at 1:00 EDT at the Ellettsville Public Library. A pre-meeting social will start at 12:15 PM.

Adjourn

The meeting was adjourned at 3:48 PM EDT.

Respectfully compiled and submitted by Laura Demarest, IKC Secretary

INDIANA KARST CONSERVANCY, PO BOX 2401, INDIANAPOLIS, IN 46206-2401

I would like to help the IKC protect Indiana’s unique caves and other karst features. Enclosed is:

\$ _____ for IKC membership dues at \$15 per year (dues expire March 31st of each year, please pro-rate @ \$1.25/month).

\$ _____ donation to the general IKC fund.

\$ _____ donation restricted to a specific IKC project. Please specify: _____

_____ I know of an area worthy of protection. Please contact me.

_____ I would like to volunteer to help. Please contact me.

NAME _____

ADDRESS _____

CITY/STATE/ZIP _____

PHONE # _____

Make checks payable to the Indiana Karst Conservancy, Inc. and mail to the IKC Treasurer, c/o Indiana Karst Conservancy, PO Box 2401, Indianapolis, IN 46206-2401. The IKC is an IRS recognized 501(c)(3) non-profit organization with membership dues and donations fully tax deductible.

