

IKC UPDATE

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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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Cover: A white-haired Indiana bat in a Monroe County cave. This same bat was observed in 2014 and 2016 in the same cave. Photo by Keith Dunlap, February 2018.



ANNUAL BUSINESS MEETING REMINDER
SATURDAY, MARCH 24th, 10:30 AM EDT
ELLETTSVILLE, INDIANA
MONROE COUNTY PUBLIC LIBRARY (ELLETTSVILLE BRANCH)

The Annual Business meeting is for the purpose of Executive Board elections. Annual reports from the IKC Cave Patrons and Property Managers are also presented. And as always, the meeting is for members and other interested persons to have an open forum for talking about caves, 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 meeting is informal, and everyone is encouraged to attend and participate. The IKC Board wants your input.

Preliminary Agenda: Elections; Cave Patrons/Property Managers annual reports; Upcoming projects at various other preserves; Indiana Cave Symposium; DNR and HNF cave access updates; Emergency Protocol update; Financial reports; Land acquisition activities; and more....

Meeting address: 600 W Temperance St, Ellettsville, IN 47429 (812) 876-1272.

Directions: The Ellettsville Branch is located at the intersection of Highway 46 (Temperance Street) and Sale Street. To reach it from Bloomington, travel west on Highway 46 until you reach the stoplight at Sale Street. Turn left. The library and parking will be 1 1/2 blocks on your right.

ACTIVITIES CALENDAR

Mar 24 – IKC Annual Business meeting (see above)

Apr 14 – Indiana Cave Symposium (see page 10)

Jun ?? – IKC Quarterly Board Meeting (date & location to be determined)

July 30-Aug 3 – NSS Convention (Helena, MT)

Aug 17-19 – Cave Capers, Camp Rivervale (Mitchell, IN)

For more information on the Indiana Karst Conservancy, visit our website at ikc.caves.org 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. Donations can also be made by credit card using the donation button located on our website's home page.

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.

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RAMBLINGS FROM THE PRESIDENT...

The big news here for the IKC is that we're closing in on another property acquisition, adding to our Wayne Cave Preserve in Monroe County, and we're pretty excited about it (also see page 7). To me, the new acquisition is a giant step toward a goal that I would like to see us take as an organization – putting together preserves that impact the landscape, rather than just entrances. In this case, the landscape is one of Indiana's best-known cave areas: the Garrison Chapel karst. This speaks to a fact that I have been trying to impress upon various agencies that conduct conservation land management: the cave entrance is not the cave. That is not to underestimate the importance of cave entrances, which have myriad roles as the egress for water, nutrients, and wildlife. Our evolutionary ancestors, not to mention lots of more recent folks, used cave entrances for shelter and I've heard that even now in the 21st century, people still go in caves from time to time. However, the idea I'm trying to get across is that caves are much more far-reaching than just the entrance and to protect them requires protecting the land above and around them. I'm a proponent of acquisitions that safeguard swaths of our karst landscapes.

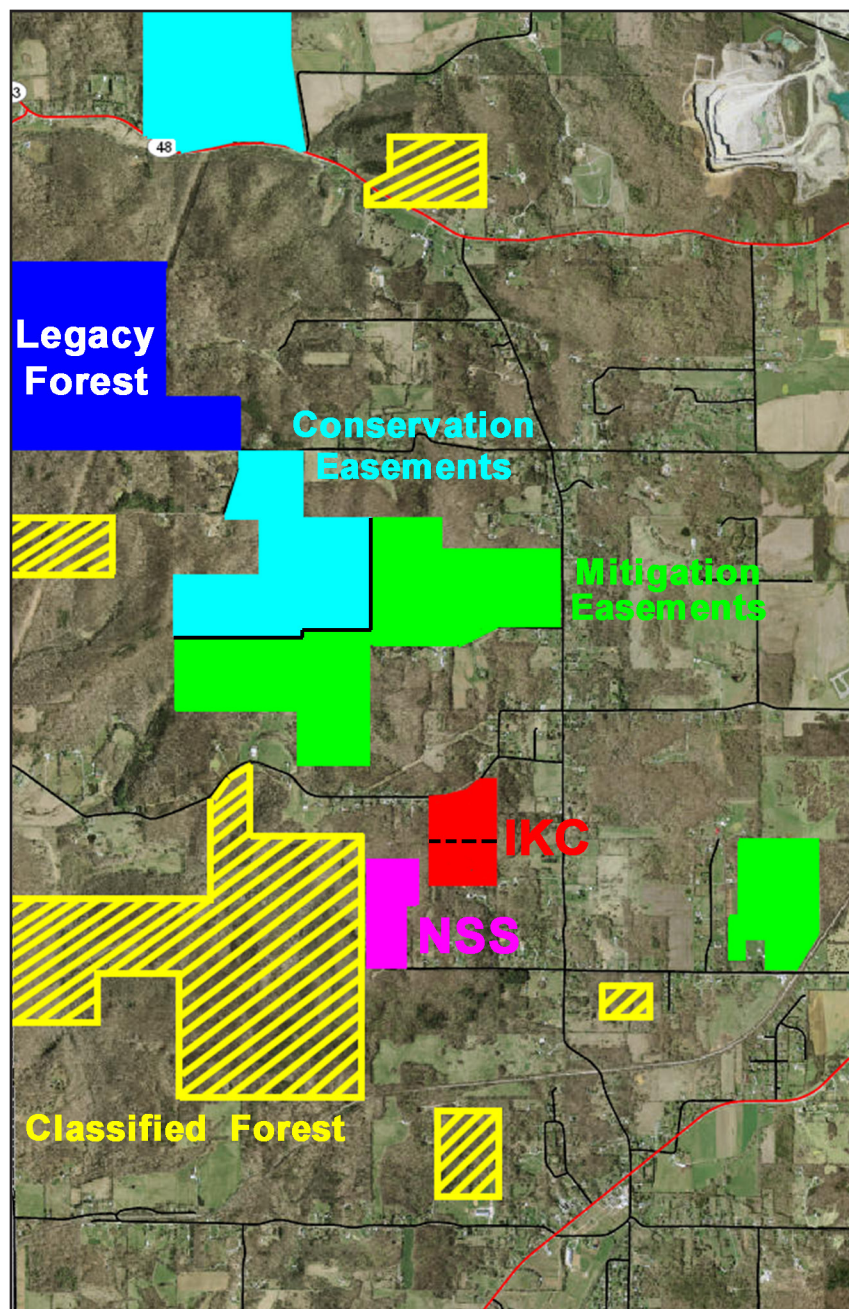
Let's look at some specifics. At the Wayne Cave Preserve, the IKC owns the only known entrance to Wayne Cave that is about 4.2 miles in length. If you look at the map of the area, you'll first see the 32-acre preserve as it stands at the moment (above the dashed line), the result of our initial 2003 acquisition of the cave entrance with 20 acres, and then another 12 acres in 2014. Next look at our preserve expansion, 25+ acres on the south side of the existing preserve. This in itself is a substantial preserve adding up to over 57 acres. What that translates to is 57 acres of no homes, no septic systems discharging sewage to the groundwater (i.e., cave streams), and no asphalt parking lots draining oily water into places where oily water was never meant to go.

But it gets better. With the new expansion, we're getting closer to connecting with the NSS's Richard Blenz Nature Preserve, where one finds the entrance to another one of the classic caves of the Garrison Chapel area: Buckner Cave. The entrance to this 3.5-mile cave is now the cornerstone of that preserve owned by the National Speleological Society, but besides the cave, it's another 43-acre karst tract on which suburbia will never sprawl. Why is the IKC president talking about a non-IKC preserve? Because it's a preserve, it's owned and man-

aged by our parent organization, and from where I'm sitting, it's protected and can be checked off the list of things to worry about being destroyed as Bloomington continues to expand. It's not realistic to think the IKC is going to protect the entire Indiana karst, but in league with other conservation groups we can make a difference.

The current expansion was not without extensive discussion by the IKC Board. The debate focused on the fact that the preserve expansion did not include the purchase of a significant cave. I think I've made my feelings on the matter clear, although I would probably be less enthusiastic about buying the property if it were not an expansion of one of our existing cave preserves. We had the options of making a small, medium, or medium-large acquisition, and the Board chose the middle ground. This was the prominent option for the IKC for several reasons. The neighbor who owns the property was comfortable with selling 25 acres in that this met his financial needs, and the Board felt that we could complete the acquisition without putting undue financial stress on the organization. In other words, if another great cave came up for sale tomorrow, we could still afford to buy it, if the price was right.

At the risk of playing the devil's advocate, there are some other caves in the Garrison Chapel karst area that are protected, sort of, by the mitigation conservation easements created during the construction of I-69 that are managed by the U.S. Fish and Wildlife Service. To many, these easements are draconian because some of the favorite caves in the area have been closed for entry. The protection afforded is "sort of" because although the USFWS oversees these easements, they don't own the land, and aren't readily present to efficiently enforce the covenants. So, for the most part, as is frequently the case for a "closed" cave, they aren't closed by anything more than words, which usually has little effect on folks with beer and spray paint. The more notable caves involved include Salamander, Shaft, Grotto, Coon, and Eller. On the surface this protects another several hundred acres from subdivisions and big box stores (Salamander: 17 acres; Eller: 88 acres; and Shaft-Grotto-Coon, 293 acres). The good news is that the USFWS seems willing to work with landowners in allowing limited access into some of these caves during the part of the year when bats aren't hibernating. The caves of Garrison Chapel are important winter hibernacula for



several species of bats, including the Indiana, Little Brown, and Tri-colored (pipistrelle) bats. I don't think any caver thinks it's a good idea to enter a bat hibernaculum when occupied, so perhaps we're moving in a direction that everyone can live with.

Southeast of the Garrison Chapel karst area is the city of Bloomington's 95-acre Leonard Springs Nature Park. Although the water quality of the springs in the park is questionable because of the land use in the upland above them, there are three small caves as well as the springs that are protected. And again, another 95 acres with no houses. Every bit counts.

Finally, there are other conservation groups (e.g., the Sycamore Land Trust) and other conservation

programs (e.g., Legacy Forest) in the area that permanently protect acres, as well as the Classified Forest and Wildland program that at least encourage conservation, even if the commitments are not perpetual.

Going back for a moment to the discussion within the IKC Board about whether or not to pursue this acquisition for the Wayne Cave preserve expansion, this was more about *you*. The concern was that the IKC usually pursues purchase of properties with caves on them, hence we own some pretty sweet properties like Sullivan, Wayne, and Buddha caves. That said, our last preserve expansions have been acreage without any significant caves on them, but in those instances at the Robinson Ladder Cave Preserve (in 2010) and the previous expansion of the Wayne Cave Preserve (2014), we were accepting donations of property in which we had to pay little, if anything. The current acquisition requires more fund-raising, but it was deemed affordable and the philosophical bottom line was that the IKC is a *karst* conservancy, not just a cave conservancy.

Other cave conservancies have different philosophies and pockets of varying depths with

which to pursue their missions. For example, the Karst Conservancy of Illinois owns a 3-acre parcel that was purchased to allow access to the 5-mile long Pautler Cave System, and the Karst Conservancy of Kentucky owns a similar 3-acre tract that contains the entrance to the approximately 14-mile long Big Bat Cave.

The cave conservancy that gets my attention is the Cave Conservancy of the Virginias (CCV) that owns three properties with at least five sizeable caves, including an entrance to the Omega Cave System on their Powell Mountain Karst Preserve. According to the list of long caves in the United States, the Omega System currently ranks as 19th in the country with 29 miles surveyed, and

growing. On top of its property acquisitions, the CCV collaborates on a long list of education and outreach programs, and funds tens-of-thousands of dollars of research grants. Their approach is to fund land acquisitions with external funds and the education and grant programs with internal funds. Their primary source of money is, believe it or not, reportedly the proceeds of gaming, namely: bingo. This path leads me toward the subject of a future rambling... a long-term strategic plan for the IKC... that's a subject for future thought.

To close, I would like to thank our biggest contributor to the Wayne Cave Preserve expan-

sion, the Indiana Chapter of The Nature Conservancy. TNC is contributing \$12,870 toward the purchase of the new property and on behalf of the organization, I want to extend a very big **thank you** for yet another large donation (TNC also contributed major funding and property donations at our Shawnee Karst, Robinson Ladder Cave, and Orangeville Rise preserves). The IKC has also received two \$10,000 challenge pledges from individual IKC members, and is currently accepting **your** donation toward this worthy cause!

Jerry Lewis

NEWS BRIEFS...

- ❑ Each year the IKC enters its past year's newsletter covers in the NSS Cover Art Salon. For the most part, we have been pretty successful, typically with at least one of our covers getting a ribbon. At the 2017 NSS Convention in Rio Rancho, NM, two of the *IKC Update* covers from 2016 received Honorable Mention (green) ribbons: cover #121 (photo by Elliot Stahl) and cover #123 (photo by Don Martin). To see all of the winners, go to the [NSS Salon page](#).
- ❑ Most of the IKC's basic operating expenses and obligations (newsletter, liability insurance, property taxes, routine stewardship activities) are covered by the IKC membership dues. However, we are greatly appreciative of additional donations to supplement and support the many other projects that the IKC initiate. During 2017, fifty-eight individuals and seven organizations made general donations beyond their dues totaling \$2,888.50. Donors include John Ahlberg, Miriam Ash, John Benton, Ted Bice, Don Bohling, Jeremy Brisch, Carl Brown, Thomas Campbell, George Cesnik, Jeff Cody, Barb Coons, Patty Cummings, Laura Demarest, Jeff Farr, Peri Frantz, David Frederick, Chris Gibson, Rick Gikas, Dan Gray, Barbara Hanka, Tim Heppner, Tem Hornaday, Glenn Kotnik, George Mattson, Bobbie Miller, Jon Miller, Mark Milne, Carl & Louie Nelson, Nate Pate, Ernie & Jacqueline Payne, Gene & Jennifer Pelter, Everett Pulliam, Russel Pusilo, Kevin Rasmus, Kelle Reynolds, Gary Roberson, Cindy Sandeno, Michael Sanders, Jay Savage, Ralph Sawyer, Bob & Phyllis Sergesketter, Susan Strickland, Wes Terrell, Bruce Trotter, Carl Tuttle, Aaron Valandra, Dick & Sue Vernier, Dan Veters, William Wayne, Mark Webb, Steve Weinzapfel, Gary Whittaker, Susan Wilkinson, Scott Worpell, Steve Wyatt, Bluespring Caverns, Hulman Memorial Way Foundation, The Cleveland Grotto, Greater Cincinnati Grotto, Near Normal Grotto, Northern Indiana Grotto, and St Joseph Valley Grotto.
- ❑ The IKC also maintains a Cave/Land Acquisition restricted fund which is used to accumulate resources for our next property acquisition. During 2017, forty-nine individuals and four organizations have contributed \$16,190 to the fund. Donors include James Adams, Joy Baiz, Bruce Bowman, Barb & Don Coons, Patty Cummings, Keith Dunlap, Dave Everton, Scott Fee, Peri Frantz, Allen Goodcase, Danyeale Green, Barb Hanka, Marlin Heinlein, Tim Heppner, Hank Huffman/Ellen Jaquart, Jerry & Salisa Lewis, Mark Matthews, George Mattson, Jon Miller, Marc Milne, Bill Morrow, Ken Nisly-Nagele, Ernie & Jacqueline Payne, Gene & Jennifer Pelter, Everett Pulliam, Kelle Reynolds, Wes Roeder, Nick Saulcy, Matt Selig, Bob & Phyllis Sergesketter, John & Brenda Shultheis, Tom Sollman, Ty Spatta, Susie Strickland, Bruce Trotter, Richard VanRheenen, Richard & Sue Vernier, Mark Webb, Rich Whisler, Jamie & Carla Winner, Central Indiana Grotto, Indiana Caverns, SerVaas Labs, and St Joseph Valley Grotto.
- ❑ The IKC has gained three new member in the last quarter. Welcome Dave Strickland, Goniela Iskali, and Stanley Nieder. The IKC membership currently stands at 196.

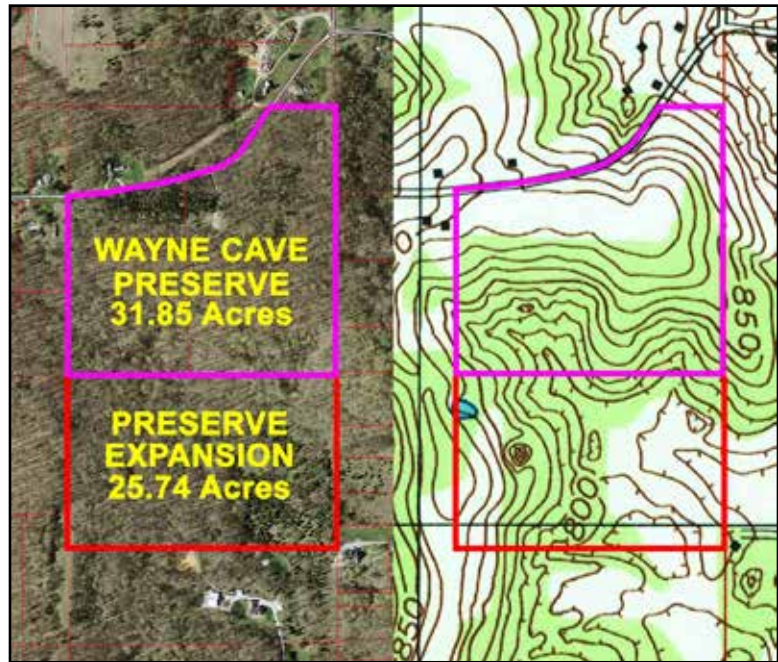
WAYNE CAVE PRESERVE EXPANSION

by Keith Dunlap

As announced to our membership on February 17th, the IKC has undertaken a new acquisition project: the expansion of the Wayne Cave Preserve. The IKC originally acquired the entrance to Wayne Cave and 20 acres above the cave in 2003. An additional 12 acres was added to the Preserve in 2014. The new expansion project is adding another 25+ acres to bring the total Preserve to 57.59 acres. This acquisition/transfer should be completed by July 2018.

The new expansion is mostly wooded and contains a multitude of interesting karst features. Deep sink-holes like the ones on the expansion are now known to provide habitat for a variety of tiny animals that prefer sinks over caves or the surface. Although not a major feature of the expansion, one of the sinks provides access to a 38-foot pit, and there is the potential for other caves to be discovered. Preventing this property from development will go a long way in protecting the groundwater that flows to the west through Queen Blair Cave and contribute to the purity of the water emerging from springs in Blair Hollow. This expansion is also key for our long-term goal of connecting the Wayne Cave Preserve to the nearby NSS's Richard Blenz Nature Preserve.

Stewardship activities planned over the next few years include constructing a loop trail that highlights the karst features found on the preserve, fence removal, invasive treatments (autumn olive and multiflora rose), boundary marking, wildlife pond improvements, and tree plant-



ing/reforestation of approximately four acres. To see more photos and other information on this project, go to ikc.caves.org/wayne-cave-preserve-expansion.

The IKC is excited to pursue this significant karst property and is grateful to everyone who has contributed to date. If you would like to support this acquisition, please send your donation to:

Indiana Karst Conservancy
PO Box 2401
Indianapolis IN 46206

Checks should be payable to the "Indiana Karst Conservancy." Credit card donations may also be made using our secure server on our website. The IKC appreciates your support!



HOOSIER NATIONAL FOREST CAVES REOPENING FOR SUMMER MONTHS

Bedford, IN - (January 25, 2017) - In 2009, the Hoosier National Forest (HNF) implemented a year-round cave closure order as part of an effort to combat the spread of White-nose Syndrome (WNS), a fungal disease first observed in 2006 that has killed millions of bats in the U.S. and Canada. While WNS is still a serious issue, especially in western states that still have potential for additional spread, The HNF biologists have determined that since the fungus has now spread throughout Indiana, our neighboring states, and beyond, a year-round closure of caves to the public is not an effective means of protecting bat populations on the HNF.

In order to protect hibernating bat populations, HNF caves will still be closed to all public entry annually between September 1st to April 30th. However, recreationists are now permitted to enter and explore caves from May 1st through August 31st each year. Anyone who violates the seasonal closure may be fined up to \$5,000 or face imprisonment of no more than six months.

All cave explorers are asked to remember proper cave etiquette and safety. Caves are inherently dangerous environments, with many hazards people may not be accustomed to dealing with. Remember: Never go caving alone; tell someone

where you are going and when you expect to return; dress in layers of clothing and sturdy shoes; carry appropriate equipment, including multiple light sources and a first aid kit; and don't forget food and water. For more caving safety information, please visit www.fs.fed.us/visit/know-before-you-go/cave-safety. Planning to visit caves outside the HNF? Learn more about how you can help prevent

the spread of WNS to caves not yet exposed to the fungus by visiting www.whitenosesyndrome.org/topics/decontamination.

This seasonal cave closure order is in addition to other provisions in the Federal Code of Regulations and other Forest Orders. To view all Forest Orders for the Hoosier National Forest, please visit www.fs.usda.gov/alerts/hoo-sier/alerts-notice.

The U.S. Forest Service is an agency of the U.S. Department of Agriculture, a mission of sustaining the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations. The Forest Service's Eastern Region includes twenty states in the Midwest and East, stretching from Maine, to Maryland, to Missouri, to Minnesota. There are 17 national forests and one national tallgrass prairie in the Eastern Region. For more information, visit www.fs.usda.gov/R9.



IDNR INTERIM CAVE ACCESS COORDINATOR REPORT #3

by Dave Everton

This is the third Cave Access Coordinator report, and covers the third and fourth years of an agreement between the Indiana Karst Conservancy (IKC) and the Indiana Department of Natural Resources (IDNR) pertaining to selected caves at Spring Mill State Park. The March 2016 *IKC Update* (#120) contained the previous report, which covered year two of the initial two-year agreement.

Background

In early 2014, an Interim Cave Access Program Letter of Agreement was finalized between the IKC and the IDNR. Bronson-Donaldson Cave

in Spring Mill State Park was reopened, along with the boat entrance to Upper Twin Cave during the winter time (November 1 to May 15, when boat tours are not in operation). Further, two caves (River and Endless) in Cave River Valley were opened during the summer (May 1 to August 31), but closed for the remainder of the year to protect hibernating (federally-endangered) Indiana bats. The IKC has administered the access program, which stresses adhering to proper clothing and gear decontamination protocols in an effort to prevent transmission of White Nose Syndrome, which has significantly impacted many bats in the US. I was appointed



by the IKC to be the Cave Access Coordinator, and have acted as the liaison between the public interested in cave access, and the Spring Mill State Park staff. In addition to reopening those caves, the IDNR also relaxed cave restrictions on the dry side of Donaldson Cave in SMSP, and Wolf Cave in McCormicks Creek State Park, allowing unscheduled visitation by anyone during park hours.

2016 Trip Summary

- Endless Cave: 16 trips (up from 15 in 2015)
- River Cave: 10 trips (up from 9 in 2015)
- Bronson-Donaldson: 13 trips (same as 2015)
- Upper Twin: 5 trips (up from 4 in 2015)

Grand total: 44 trips on 29 different dates (up from 41 trips on 20 different dates in 2015) with a total number of approved visitors: 213 (some made more than one trip). Three requested trips didn't take place: one was called off by the trip leader due to water levels and/or weather forecast, and the other two didn't have the minimum required number of cavers.

2017 Trip Summary

- Endless Cave: 16 trips (same as 2016)
- River Cave: 10 trips (same as 2016)
- Bronson-Donaldson: 10 trips (down 3 from 2016)
- Upper Twin: 5 trips (same as 2016)

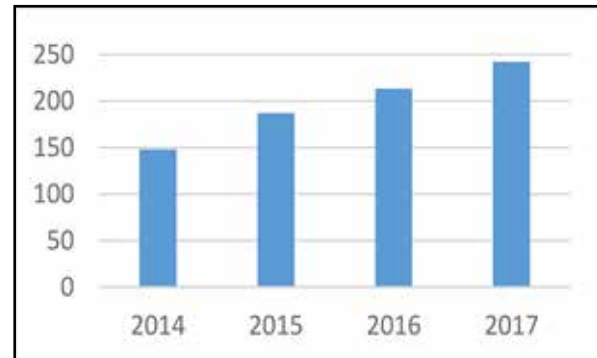
Grand total: 41 trips on 28 different dates (down from 44 trips on 29 different dates in 2016) with a total number of approved visitors: 242 (some made more than one trip). Only one scheduled trip didn't take place, but it was rescheduled for a different date.

Additional Comments

I field a lot of requests that don't result in visitation. Many persons hear the caves are open and ask about them, but have no idea what they are getting into before communicating with me. The position of Access Coordinator therefore offers a great chance for me to discuss particulars in detail with requesters, and as a result, potentially prevents incidents or accidents which could result from cavers being ill-prepared and visiting on their own. Although it is impossible to prevent unauthorized cave entry to all except the gated cave, this is truly a win-win for all.

There is a mixture of requests from cavers not affiliated with organized groups, and cavers who are. Again, this provides the IKC an opportunity to try to ensure that unaffiliated cavers will follow basic safe and responsible caving practices, including taking steps to prevent the possible spread of White Nose Syndrome.

Since the program started, the number of visitors has increased each year; here are the stats:



Included in the totals are cavers who went more than once per year, including me. Each year, I have taken at least one trip to each of the caves.

Endless Cave Lock Issues

Unfortunately, there have been some stubborn combination locks. I have learned from many years of experience with locks that not everyone has the same touch, and I have been able to easily open the same lock others have either struggled with or not been able to open. However, at least one or more of the locks have proved to be stubborn and uncooperative, which can be very problematic for an approved group. Only one group that I am aware of has made the trip to the property, only to not be able to get in the cave due to uncooperative lock issues. The IKC continues to explore ways to prevent these issues.

Continued Access

The agreement was recently renewed/extended for two more years, to expire in March 2020. I am personally grateful to the IDNR for continuing this program, and many cavers have expressed to me their appreciation as well for access to the caves. I truly hope it will lead to an expanded number of caves on state lands reopened for visitation in the future, and more importantly, that it will continue to foster improved relations between Indiana cavers and state and federal agencies.

2018 INDIANA CAVE SYMPOSIUM PREVIEW

by Keith Dunlap

The 26th annual Indiana Cave Symposium, co-sponsored by the Indiana Karst Conservancy and Indiana Cave Survey, will be held on Saturday, **April 14**, at the Handy Meeting Barn (2827 E Moffett Lane) in Bloomington, Indiana. The customary free cookout (burgers, brats, and other assorted meats and non-meat offerings) and pitch-in side dishes (please bring a covered dish or dessert to share) will start at 5 PM EDT. Presentations will begin at 6:30. The *tentative* presentation titles and presenters (in no particular order) include:

- Rand Heazlitt/Marion Akers – Binkley Cave & Dewey Eckart Hole updates and highlights in the past year.
- Jerry Lewis – Small Town Boy Travels to Big City: The Molecular Phylogenetics of Cave Isopods of Indiana.
- Ty Spatta – The expansion and exploration of Studebaker Pit.
- Keith Dunlap – Recent Indiana bat counts and the impact of WNS.
- Lee Flora – State Geographical Surveys, Karst Science, and a Decade of Exploration in Southern Kentucky.
- Chris Bell – Cave photos.
- Rob Jarboe/Scott Davis – Texas Bear Cave.

For more information about the Symposium, contact Bruce Trotter or visit the Indiana Cave Survey (www.caves.org/survey/ics).



photo courtesy Dave Black (2017)

A LOOK BACK AT INDIANA KARST

by John M Benton

This month's article takes an excerpt from the *Memoirs of H.W. Rothrock*, one of the original heirs of Wyandotte Cave. The excerpt details the discovery of Milroy's Temple off of the Long Route in Wyandotte Cave and was dictated by H.W. Rothrock in 1915:

In April 1879, four military students from Crawfordsville University [present day Wabash College] tramped to Wyandotte Cave during the spring vacation of the University. They were Charles E. Milroy, A.J. Brown, ---Kuhn and ---Bailey. I was at that time both guide and proprietor of the Cave. After registering, their spokesman made their wishes known to me. They had three or four days to spend with me at the Cave, and wanted thoroughly to explore it and see if they could find any new route or passages.

We had several passages marked "unexplored" and as it was too early in the season to expect any visitors, I allowed them to monopolize my time for the three following days. We began by putting in the first day on the Short Route. We spent ten or twelve hours trying to find something new in the Short Route, but failed to find anything new to me. However, the young students were very enthusiastic and well pleased with their first cave experience.

We put in the whole second day on what is known as the Old Cave [to the Pillar of Constitution]. While this was where I expected them to find some extensions, this day was also a failure as far as finding any new routes was concerned. Since this route is one of the most wonderful parts of the cave, the boys were still pleased and still willing to try again. The third day they were ready to see



the Long Route, the most magnificent of all. We spent several hours in here, examining the beauties, and the boys lost all their desire for exploring it appeared. But in going through Rugged Pass, a very dangerous looking place, I showed them some holes in the side of the room where the air was passing through, and said, "Now boys, I know there is an opening through this, but there is danger of pulling the whole thing down on us, and I won't be responsible for your lives if you undertake this." Then I showed them how the suction of the draft would draw the flame of the candles. At this, Brown said, "What do you say boys? Shall we tackle this?" The four unanimously said "Yes." I said that it was too dangerous for me, and asked to be allowed to withdraw. I went over to a safe place and sat down to rest. The four young men went to work in as many different places. Soon the boys, except Milroy, gave it up. After probably an hour, Brown called to me and said, "Mr. Rothrock, please come here." I went to where he was, and he said, "Milroy is out of sight and hearing, what shall we do?" I said he had possibly found a new room, and advised waiting a time. Soon after we heard Milroy calling. Brown wormed his way through the broken

rock until he could communicate with Milroy. He reported that Milroy sent word to me that he had found a new room, a cascade, a lake – one of the finest things yet. I told Brown to go to him, and see just what he had found, then to come back and report. Brown being larger than Milroy, it took him quite a while to get through. I was still apprehensive of danger, but when, after something like an hours time they came back and reported beautiful and wonderful finds. I forgot my fears and we all went into the new room. I was well pleased with the find, as it is one of the most beautiful and magnificent places. We named the passage Worm Alley, the whole large room Milroy's Temple, and gave the other three boys the privilege of naming something

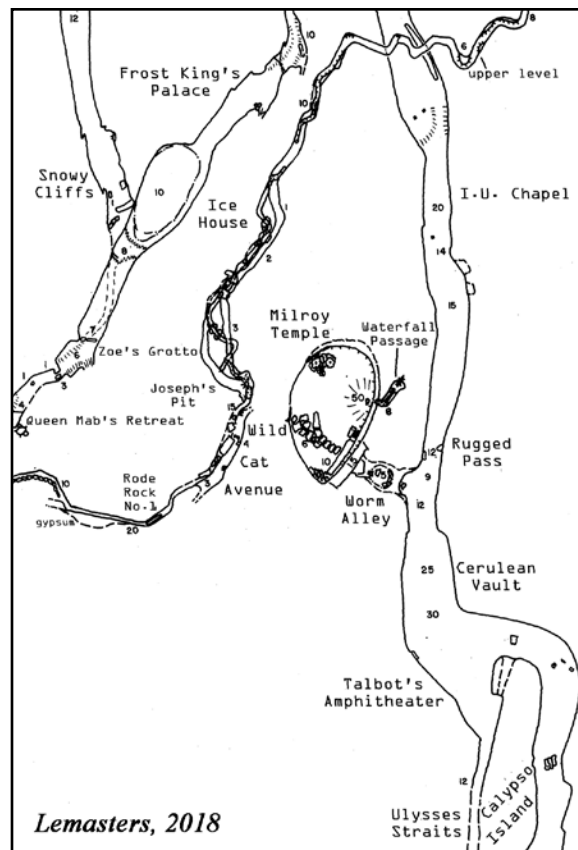
in the Temple. So we have Baileys Gallery, Browns Fescoing, and Kuhns Piano. This gave the boys quite a little notoriety. We finished the Long Route that evening, and on the fourth day, the quartet left for Crawfordsville.

In a month or so I received a group picture, with the picture of Bailey draped in mourning. He and a fellow student were stealing a ride to hear Joe Cooke lecture at Lafayette, and [Bailey] fell beneath the car and were mangled almost beyond recognition. I have that picture yet and revere it as a sacred memento. Brown came to see me once and when I last heard of him he was in Cincinnati, studying for the ministry. Kuhn wrote to me once, wanting to come be a guide at the Cave. Milroy studied law and lived, I believe at Milroy, Indiana.

The above was written several years ago. In July 1915, I was at the cave when my brother-in-law, Mr. Bennett, proprietor of the Cave, received a letter from Chicago, addressed to the proprietor of the Cave. It was from Charles E. Milroy saying that he and Mrs. Milroy would visit the cave during the summer, and incidentally remarked that if Mr. Rothrock were in the neighborhood, he should certainly hunt him up. I answered the letter, giving

him the hospitality of the place and telling him that nothing would give me more pleasure than to grasp his hand after thirty-seven years of absence. But alas, he failed to come, and I have not heard a word from him since. I was very much disappointed, for I anticipated a great deal of pleasure talking of the discovery.

Charles E. Milroy was a respected Chicago attorney originally from Delphi Indiana, tragically took his own life in 1927 at age 74 in Chicago. He had been despondent from his wife's recent passing along with a son who suffered lingering injuries from World War I. See Charles's obituary here: www.findagrave.com/memorial/107427359



POPULATION TRENDS OF INDIANA BATS IN INDIANA

by Keith Dunlap

This article covers the “larger” bat hibernacula census conducted in January/February of 2017. The formal report was released in December 2017.

As part of the USFWS Recovery Plan for the federally endangered Indiana bat (*Myotis sodalis*), biennial population counts are conducted to assess the status of the species. In this article, as I have done in the past, I will present the cumulative data systematically collected over the past nineteen primary censuses (1981-2017), along with some historic data dating as far back as 1950. The majority of the contemporary data has been collected for the Indiana Department of Natural Resources under contract and the direction of Dr Virgil Brack of Environmental Services Inc.

As was done in the prior three census, the 2017 census departed in scope and methods due to the presence of White-nose Syndrome, which increases the costs and complexity of performing the study. Rather than sample all of the known caves hosting Indiana bats, the focus of effort was directed towards the most populous “Tier 1” caves, that account for almost 99% of the Indiana population. The “Tier 2” caves are still visited in the “off years” to track the remaining 1% of the Indiana bats. This work is performed directly by DNR staff and other volunteers. In whole, since 1980, there have been 375 cave visits to 32 different caves documented to have had Indiana bats in recent years.

Similar to 2011, 2013, and 2015, the census methodology of conducting the in-cave work relied primarily on high resolution photography for collecting data (rather than measuring cluster sizes), which minimized disturbance times and improved accuracy. As before, extraordinary care was taken to assure all gear and clothing was properly decontaminated between each hibernaculum visit.

The Indiana bat was one of the first species to be protected under the Endangered Species Act (it was added to the list in 1967). The reason for the bat’s listing was the well-documented observations of population declines in the seven major hibernacula known at the time in Indiana, Kentucky, and Missouri. From 1965 to 2001, the population declined by nearly 44% (883,300 to 496,000, see figure 1) and appeared to be on its way to extinction despite modest and consistent positive gains in Indiana (dark bars) and a few other states. The

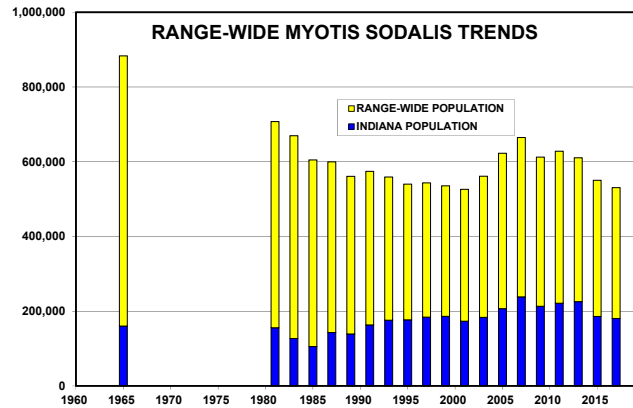


Figure 1

total population decline then appeared to reverse in the mid-2000s and was actually showing optimistic signs of recovery through 2007. Unfortunately, the past five censuses have once again shown range-wide decreases (down 20% compared to 2007), and the real impacts of WNS on the species has likely not yet to be fully realized.

Closer to home, the estimated 2017 population of Indiana bats *within Indiana* has decreased 24% compared to the 2007 numbers, but is still generally equal to or greater than the population counts prior to 2005.

Looking at population trends in individual Indiana caves is interesting in there is still significant volatility going on with only two caves showing increases, while the rest dropping.

Indiana bat populations in Twin Domes cave (figure 2) have fluctuated up and down through the early-nineties, but has shown a clearly decreasing trend since 1993. The 2017 population was no exception with a 70% drop compared to 2015 and over a 99% drop since 1993, to just 742 bats. However, it is likely some of the Twin Domes population loss has not completely perished, but

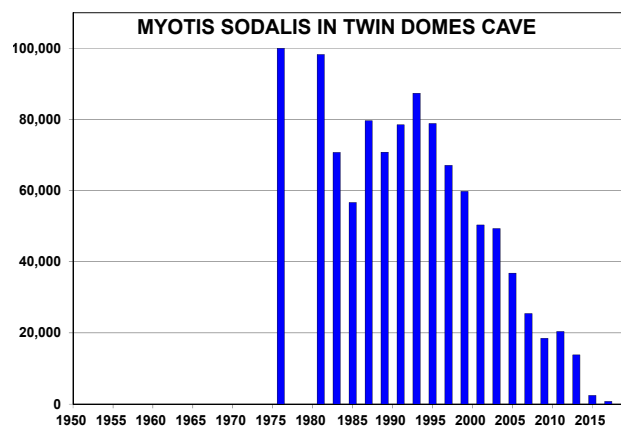


Figure 2



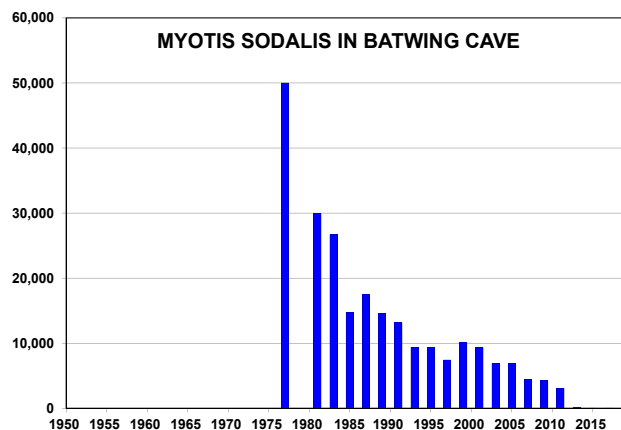


Figure 3

rather some of the bats have re-locating to other nearby caves such as Wyandotte and Jug Hole.

Likewise, Batwing Cave (figure 3), Indiana's other original Priority I hibernacula, has shown continuous population decreases since it was first documented in the mid-70s. The 2017 census was the most dramatic drop to date with only 6 Indiana bats found there, a 99.98% drop since 1981. Again, it is likely that some of these bats may have relocated themselves to more desirable nearby caves, but the abandonment is still astonishing. At this point, it may be time to get creative and try some new management strategies for Twin Domes and Batwing.

Wyandotte Cave has always been an interesting contradiction in resource management. While it serves as an ever increasingly significant hibernaculum, it was also a commercial tourist cave run by the Department of Natural Resources. Large populations of bats have been documented in this cave for over one hundred years (in fact, the *sodalis* was first classified as a separate *Myotis* species from this cave and thus the "Indiana" designation). Numerous gates have been placed on the cave with different degrees of airflow restrictions.

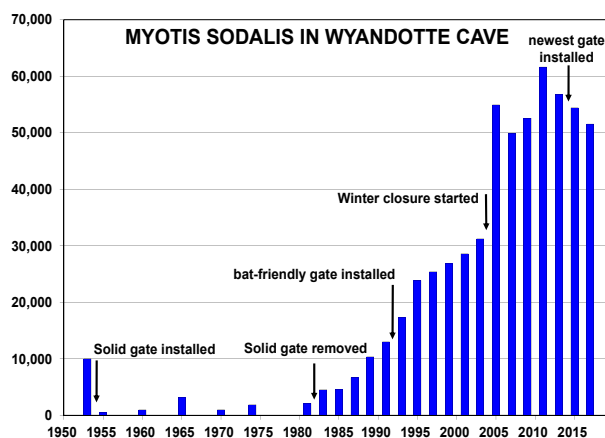


Figure 4

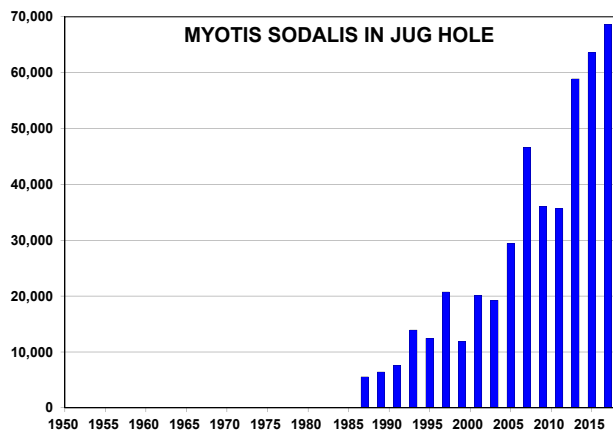


Figure 5

A 1953 report by Mumford estimated the population at 10,000 bats (see figure 4). However, just a few years later and after a solid-wall gate was installed, the population was only one-tenth that size. The population fluctuated around 2,000 bats until the late 1970s when the original gate was replaced with a more open grate-type. It is presumed that this partially restored the pre-gate airflow into the cave, providing a better winter habitat. Since 1981, the population has been steadily increasing, and the winter closure initiated in 2003 showed another significant step improvement. The 2017 count estimated the cave contained 51,534 Indiana bats, down 5% compared to 2015, and down 16% from the 2011 peak, but still considerably greater than the 2003 pre-closure populations.

On the positive side, Jug Hole continues to show promise. First censused in 1987 with 5,500 bats (see figure 5), the population has been on an impressive increase and in 2007 jumped to over 46,000 bats. In 2009 and 2011, the counts dropped to around 36,000, but in 2013 jumped back up, and continued the positive trend in 2015. In 2017, the population increased again to 68,681 and is the largest hibernacula in Indiana. Reducing the winter visitation at this cave by cooperative cavers has likely contributed to much of the increase over the years.

The final significant cave in the Harrison/Crawford area to discuss is Wallier Cave, southeast of Laconia. The 1991 and 1993 census included just 36 and 72 Indiana bats respectively (see figure 6). From 1995 to 2011, the population has shown an erratic, but upward trend. In 2013, the population there more than doubled to over 3,300 bats, and in 2015, the population doubled again to nearly 6,700 Indiana bats. In 2017, the population dropped to 5,289 Indiana bats, but still appears to be a viable and important hibernaculum.

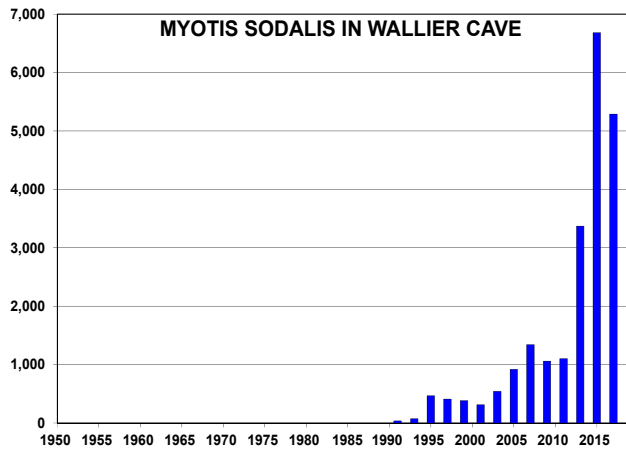


Figure 6

Previous research supported the observations that Indiana bats were habitual to using the same hibernacula year after year. But the individual population trends with some area cave dropping significantly while other caves increasing suggest bats may swap hibernacula more than expected. To better quantify this, figure 7 shows the combined numbers from Wyandotte, Jug Hole, Twin Domes, Batwing, and Wallier, along with Swinney, Wildcat, Robinson Ladder, Binkley, and Saltpeter caves (all in Harrison and Crawford counties) which accounts for approximately 70% of Indiana's population. It can be observed that the population appears to be much more stable and indicates that the total number of bats within the southern Indiana region hasn't really changed all that much over the past thirty years and the current population is still above the median for that period of time.

Moving north to Washington County is Endless Cave in Cave River Valley. Visits in 1982 and 1987 found only 2 and 1 Indiana bats, respectively (see figure 8). However, the last fourteen counts have shown an encouraging population increase of Indiana bats. In 2017, 2,613 *sodalis* were counted, the highest number to date. End-

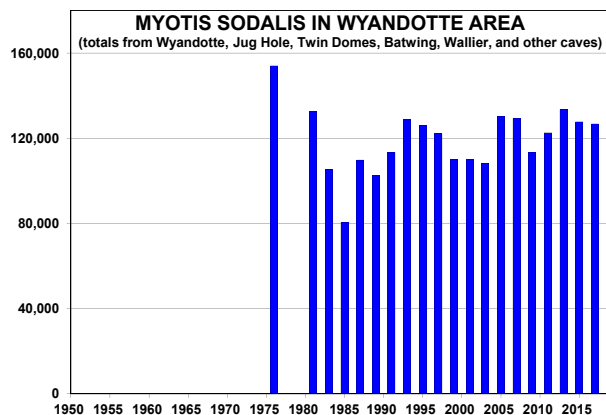


Figure 7

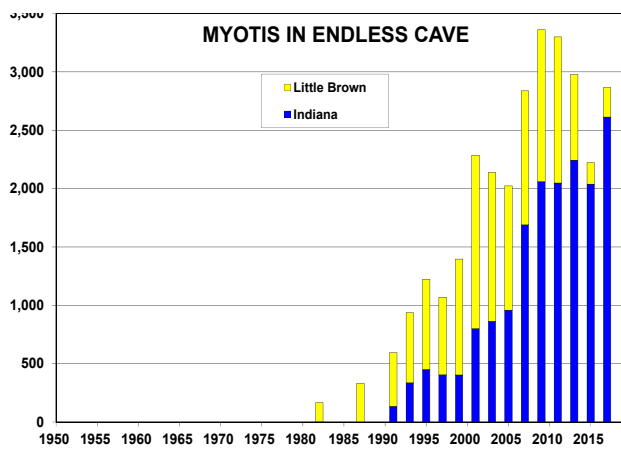


Figure 8

less also hosted a large number of Little Brown bats which were gradually increasing in numbers too, until 2011. In 2017, the number of little browns was only 20% of its 2009 high, but this was an increase from 2015, so perhaps the species is starting to rebound for the toll of WNS.

Jim Ray's Cave in Greene County has had remarkable population growth over the past 30 years until recently (see figure 9). Historic records by Mumford and others showed the cave's population never exceeded 3,200 bats in nine visits between 1952 and 1975. Brack's visits in the early 1980s showed the population had already jumped to approximately 12,000 Indiana bats with several thousand Little Brown bats. In subsequent years, the population grew at double-digit increases between biennial counts, peaking with 77,687 in 2007. Since then, the numbers have dropped and the 2017 population was 31,503 Indiana bats. This was slightly higher than in 2015, but still only 40% of the maximum observed ten years ago. The dramatic increase from 1975 to 2007 has had no clear explanation, but two contributing factors may have played important roles. First it is known that a medi-

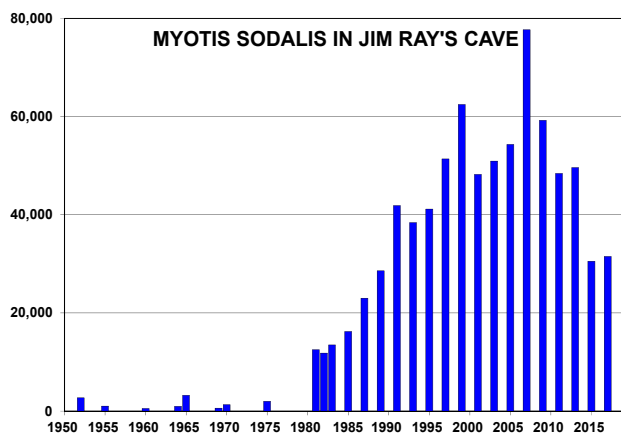


Figure 9

cal researcher from IU was illegally collecting perhaps thousands of bats each winter during the 1970s. This may have kept the population below some critical level to grow. Second, the “rear” entrance to the cave may have naturally enlarged itself, allowing more airflow to cool the cave, and thus making it a better hibernaculum. The DNR and IKC have been continually monitoring temperatures in this cave since 1993 to see if there is anything to make this a preferable cave for Indiana bats. Surprisingly, the temperatures are relatively unstable and occasionally dip below freezing which is thought to be undesirable. Likewise, there is no clear explanation of the recent decreases observed at Ray’s Cave, other than the obvious one: WNS.

Approximately five miles to the northeast of Jim Ray’s Cave is Clyfty Cave. Figure 10 shows an Indiana bat population that appeared to be gradually increasing from 1995 to 2009, but dropped noticeable in 2011. However, the number of Indiana bats inexplicably doubled in 2013, but then fell back to the 2011 level in 2015, and dropped slightly more in 2017. For the most part, the number of little brown bats in Clyfty Cave has remained relatively constant over the years (15 counts averaging 272 bats), but in 2015 and 2017, only 2 and 5 *luci*, respectively were observed.

Moving to Monroe County, Grotto Cave has been another interesting hibernaculum. Historic records showed very small populations in the 1960s and 1970s (see figure 11). However, in the early 1980s, Brack reported significant numbers of Indiana and little brown bats. The cave peaked in 1985 with 4,200 Indiana bats and then decreased the next four census to a low of less than 1,600. Then in 1995 and 1997, the population rebounded slightly, and in 1999 and 2001, the numbers jump

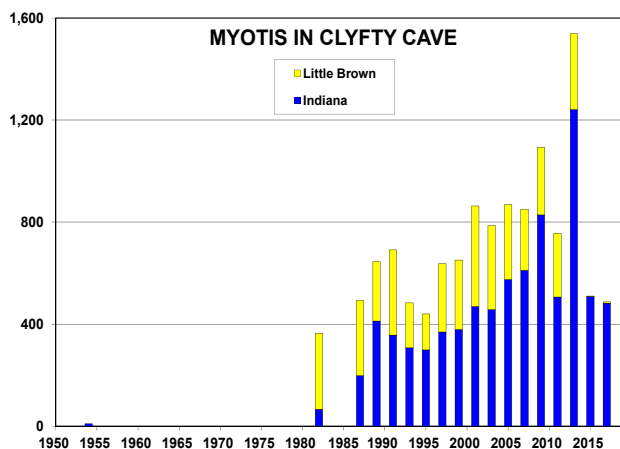


Figure 10

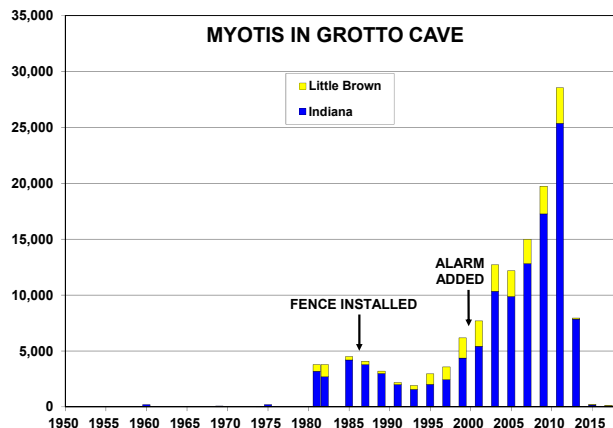


Figure 11

substantially. In 2003, the population nearly doubled compared to 2001. The 2005 count was down slightly, but it again took a sizable jump in 2007 to 12,807 *sodalis*, followed by a jump to 17,256 in 2009 and in 2011 an astonishing jump to 25,356 Indiana bats. In 2013, the population of Indiana plummeted to 7,849 and in 2015, crashed to only 169 Indiana bats. In 2017, the numbers dropped again to only 80 *sodalis* (down 99.7% in just six years from the peak). Just as disheartening, the population of little brown bats dropped from 3,175 in 2011 (what was the largest known *luci* population in Indiana) to just 63 little browns in 2017 (a 98% decrease).

The “sister” cave to Grotto is Coon Cave located less than one-half mile away on the same property. It too had historic records in the 1950s through 1970s of only a few hundred bats (see figure 12). Brack’s observations in the early 1980s were around 1,000 bats. Since 1985 when only 777 bats were found, with just two exceptions, the population had increased each count, peaking in 2013 with 30,496 Indiana bats. In 2015, the popu-

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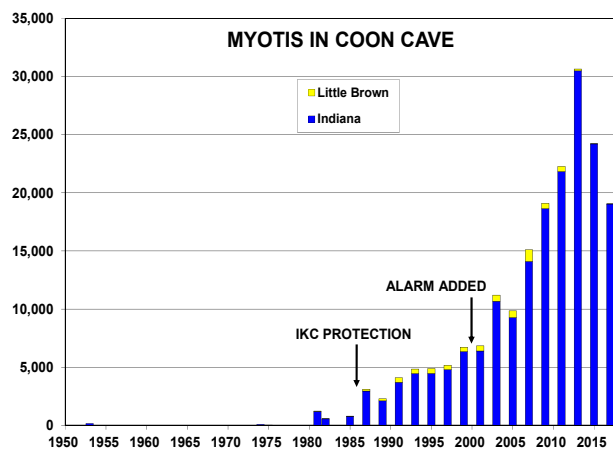


Figure 12

INDIANA KARST CONSERVANCY TREASURY REPORT

Income/Expense Statement From October 1, 2017 to December 31, 2017

INCOME:

Dues Apportionment and Residuals	739.50	
Donations - General	151.66	
Donations - Land Acquisition Fund	43,217.00	
Interest	<u>299.02</u>	
		\$44,407.18

EXPENSES:

IKC Update (printing, production, mailing)	256.12	
Education / Outreach	0.00	
Stewardship/Conservation	150.10	
Business (PO box rental, donation fees, etc)	98.91	
Insurance	821.00	
Transfers to/from restricted funds/other adjustments	<u>43,430.72</u>	
		(\$44,756.85)

NET OPERATING EXCESS (DEFICIT) THIS PERIOD: (\$349.67)

Balance Sheet December 31, 2017

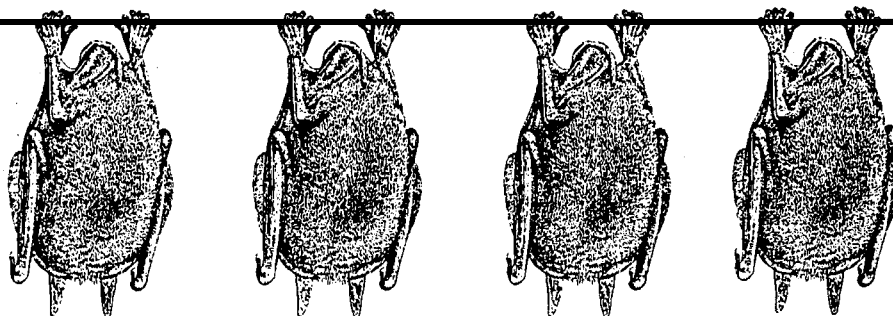
ASSETS:

Cash in Checking / Saving Accounts / CDs	209,212.90	
Robinson Ladder Cave Preserve (73.48 acres)	162,000.00	
Shawnee Karst Preserve (50.31 acres)	105,000.00	
Wayne Cave Preserve (31.85 acres)	85,000.00	
Sullivan Cave Preserve (28.00 acres)	72,000.00	
Buddha Karst Nature Preserve (36.84 acres)	29,000.00	
Orangeville Rise Nature Preserve (3.01 acres)	7,000.00	
Indian Creek Conservation Easement (valued at \$1/acre)	<u>13.16</u>	
		<u><u>\$669,226.06</u></u>

FUNDS & OPERATING EXCESS:

Land Acquisition Restricted Fund	84,854.95	
Deferred Dues Restricted Fund (194 members)	3,573.75	
Stewardship Endowment Restricted Fund	57,588.74	
Previous General Fund (total)	63,558.29	
Net Excess (Deficit) This Period	<u>-349.67</u>	
Current General Fund (unrestricted)		63,208.62
Current General Fund (committed)	3,100.00	
Real estate liquidity (basis value)	<u>460,000.00</u>	

Total Liabilities & Operating Excess \$669,226.06



IKC QUARTERLY EXECUTIVE BOARD MEETING MINUTES

Saturday, December 9, 2017, 1:00 PM EST – Bloomington, Indiana

Board Members Present:

Jerry Lewis, President
Sue Vernier, Secretary
Keith Dunlap, Treasurer
Bruce Bowman
Danyele Green
Dave Haun
Everett Pulliam
Matt Selig
Bob Sergesketter
Kevin Smith (proxied by Salisa Lewis)
Tom Sollman
Carla Striegel-Winner
Richard Vernier
Jamie Winner

Board Members Absent:

none

The meeting was called to order by President Jerry Lewis at 1 PM EST at the Monroe County Public Library, Bloomington, IN.

September Meeting Minutes

The minutes from the September Quarterly Board meeting were approved as published in the December, 2017 *IKC Update*.

Treasurer's Report

Treasurer Keith Dunlap reported cash assets totaling \$195,906.28 and land assets totaling \$460,000.00 for total assets of \$655,906.28. Funds include Stewardship: \$57,375.02; Land Acquisition: \$71,887.95; Deferred Dues: \$3,952.50; and General Fund (unrestricted): \$62,690.81. Of note, the Land Acquisition Fund has increased by over \$30,000 in donations in the last quarter in anticipation of the Wayne Cave Preserve expansion. The IKC membership currently stands at 193 paid members with renewals due in March.

Keith proposed renewing the \$40 annual membership dues to the American Chestnut Foundation. Supporting this organization would be advantageous in planting more of their blight-resistant American chestnut trees on another IKC property if we desire to. No objections were received from the Board.

Shawnee Karst Preserve

Jamie Winner used his tractor to clean out the ditches and dig out turnouts to divert water from the access road. Road grading will take place in the spring when more crush stone is delivered. Keith advised that Tom Sollman and Jerry Lewis have cut brush back from the road and on the trails. Tom continues to go into Upper Twin every two weeks to conduct

the stream census of cave fish and crayfish. He has applied for a permit extension since he wants to conduct the census for a full year but no response as yet from the state. Jerry and the Beckham Bird Club (Louisville) plan to conduct a winter bird count at the property, as well as at Buddha Preserve.

Sullivan Cave Preserve

Keith announced that the port-a-john has been serviced! Now that he has a reliable source, he plans to have it pumped twice a year. Keith needs someone to mulch mow the camping area. Tom Sollman said he would do it if no one else volunteered; Danyele Green has someone in mind. Whoever does the mowing should be made aware of the stiltgrass and clean their mower afterward.

Wayne Cave Preserve

Jerry said the details have been worked out on the proposed acquisition of approximately 24 acres adjacent to Wayne Cave Preserve. He needs approval from the Board to sign the purchase agreement. Keith discussed the finances in detail. At \$4,000/acre, the initial cost is \$96,000 with an estimated final total of \$100,000 when the shared costs of survey, permits, and closing fees are included. The Nature Conservancy is providing \$500/acre or \$12,000. About \$59,000 can be used from the IKC Land Acquisition Fund (donations not designated specifically for the purchase of a cave). Contributors of the \$12,000+ specifically donated to buy a cave will receive a letter from Keith advising the intent to purchase the expansion and giving them the opportunity to opt out. Along with the membership renewal notices in February, a flyer will go out soliciting funds to cover the shortfall. If necessary, the IKC will be able to finance internally – borrow from ourselves – to complete the purchase. Dave Haun made the motion that we purchase the 24 acres. Everett Pulliam seconded. Motion passed unanimously. Jerry will sign the purchase agreement and send it to seller. The closing is anticipated to happen in June, 2018.

Tom Sollman gave an update on the kiosk. Robert Sollman has found a company that prints on core plastic; two 4 x 8 sheets can be had at a reasonable cost of \$600. The cave map and history will be on one sheet, and the map of the property, rules, donor's list, etc., on the other. Tom needs approval to purchase the core plastic sheets, screws, etc. Bruce Bowman made the motion to approve expenditures up to \$1,000. Bob Sergesketter seconded and motion passed unanimously.

Buddha Karst Nature Preserve

Keith mowed all of the trails this fall.

Robinson Ladder Cave Preserve

Jamie has mowed the property outside of the fenced area. Keith mowed inside the tree fenced area in November.

Land Acquisition Activities

There were no new potential property acquisitions to discuss, beyond the Wayne Cave Preserve expansion.

IKC Preserves Emergency Protocols Update

Danyeale Green said the emergency data (cave contact, nearest hospital, street address, etc.) have been printed on heavy laminated plastic and are in process of being posted at all IKC properties. She is still working on Suicide and Shiloh since the IKC is not the actual owner. Still to be worked out is establishing the 911 address for Suicide and how to approach the owners of Shiloh. Tom Sollman said he could talk with the Shiloh owners and tell them the IKC is placing safety protocols at all of their preserves and would the owner like one for Shiloh? Tom could show him a sample of the sign.

NCRC Introduction to Cave Rescue Program

Jerry said the NCRC offers an "Introduction to Cave Rescue" program and would like the IKC to sponsor one. The cost is \$40/\$50 per person. The IKC could set a date and advertise it, but a minimum of 15 attendees is required. Perhaps the IKC could provide a partial sponsorship to IKC members. The Board expressed interest so Jerry will pursue with the NCRC.

Initiative with IDNR/Div of Forestry Access Update

Keith said the CIG was the partnership party on the proposed agreement to allow recreational cave exploration at selected caves in the State Forests, but the DNR would prefer to deal with the IKC rather than a grotto. No further action at the moment.

Education & Outreach Report

Salisa Lewis has received the IKC trunk of educational material. She will recycle the very outdated Project Underground manuals. There are two ground water models and Salisa proposes that the IKC keep one (which will be available to loan out) and offer the other one to an organization or individual who would put it to good use. Laura Demarest, Greene County Soil and Water Conservation District Watershed Coordinator, expressed interest as it could be used at county fairs, science fairs, and during Earth Week. Dave Haun said that he preferred that Laura take it; otherwise, the NSS would accept it.

Sauerkraut Cave Gate Project Update

Jerry wrote to the USFWS asking for an update and he has not yet received a response. Apparently, the State of Kentucky is still deciding whether a competitive bid is needed.

Items from the Floor

Jerry asked if the February meeting to approve the nomination committee's slate of candidates could be done by email or would we want to try WebEx? Salisa said that as long as we don't need to see each other it is easy to set up. The host sets the date and time and provides the telephone number (800) and conference code. It can be conducted on a regular land line or cell phone. If we do want to see each other, interact and share presentations, then a video system is required. Jerry thought we could use the February approval of candidates as a beta test. Keith said what ultimately needs to be answered is whether we want to allow the entire Board to meet remotely or just allow one or two people to operate remotely. Jerry said he will think about it and coordinate with Salisa.

Laura Demarest thanked the IKC for their letter of support for a water quality grant, which she did receive. The grant was used to sponsor an "Under the Watershed Field Day" workshop at the Richard Blenz Nature Preserve.

March Election Nomination Committee

Jerry asked for a nomination committee, which needs to be made up of IKC members not running in 2018. All of the Officers agreed to serve again (one very reluctantly). Directors Tom Sollman, Kevin Smith, Dave Haun and Joy Baiz are up for re-election. Tom and Dave are willing to serve again but Joy has declined due to the difficulty in attending meetings (Kevin's position is unknown). Salisa suggested Laura Demarest as a potential candidate; Laura said she is willing to consider it. Jerry appointed Danyeale Green and Matt Selig who agreed to serve on the nomination committee; Jerry will serve as an ex-officio member. The nomination committee needs to present the list of candidates to the Board for approval 45 days prior to the March meeting, since the ballots must be mailed 30 days prior. It was suggested that the nominees provide a short bio.

March Business Meeting Scheduling

The annual meeting will be March 24, 2018, at the Ellettsville Library. Time to be determined after Danyeale Green confirms what is available.

Adjourn

The meeting was adjourned at 2:55 PM EST.

Respectfully submitted, Sue Vernier, IKC Secretary



...Continued from page 15

lation dropped to 24,212, and in 2017, the population continued to drop to 19,044.

Looking at the Monroe/Greene counties meta-populations, the 2017 Indiana bat numbers are down 48% from its peak in 2007, while the Little Brown population is down over 98%.

All of the caves serving as hibernacula for Indiana bats are now fully infected with the fungus that causes WNS. The Little Browns

are showing a clear and devastating reaction to the disease, and it appears the Indiana bats are being somewhat impacted, but it is still too soon to know how the Indiana bat will fair in the long run. Behaviorally, both species are showing classic symptoms (easy arousal, roosting in colder locations, etc), but for whatever reason, the Indiana bat seems to be coping better (for now).



Large/deep sinkhole at the Wayne Cave Preserve expansion. Photo by Keith Dunlap.

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.

