

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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IKC QUARTERLY MEETING REMINDER
SATURDAY, MARCH 21st, 10:30 AM EDT
BLOOMINGTON, INDIANA
MONROE COUNTY PUBLIC LIBRARY, ROOM 2A

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: Recap of recent work projects and the promotion of upcoming projects at our various preserves; Financial reports; Lowry Karst Preserve stewardship and fund-raising update; Wayne Cave EQIP funding contract update; Cave/land acquisition activities; and more....

Directions to the meeting location: The Main Library is located in downtown Bloomington at 303 E Kirkwood Avenue between Lincoln and Grant Streets. The parking lots are accessible from 6th Street. If you are travelling northbound on Walnut street, turn right on either Kirkwood or Sixth Street and go east two blocks. If you are traveling southbound on College Avenue, turn left on either Sixth Street or Kirkwood Avenue and go east three blocks.

ACTIVITIES CALENDAR

March 21 – IKC Annual Business Meeting (see above)

March 21 – Wayne Cave & Preserve Clean-up (see page 6)

April 25 – IKC/ICS Cave Symposium (see page 17)

April 30 – Orangeville Rise Garlic Mustard Pull (see page 6)

May 2 – Orangeville Rise Garlic Mustard Pull (see page 6)

June ?? – IKC Quarterly E-Board meeting (date & location TBD)

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. Memberships and donations can also be made by credit card using our on-line services on our website (see the Join Us! tab in the menu).

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...

Here in the IKC, we're in the midst of preparing for our March Annual Business meeting, which is always the culmination of a great deal of activity over the previous twelve months. It occurred to me during some discussions in the process of drawing up the slate of candidates for this year's election, that the average IKC member probably has little idea of the inner workings of the IKC in general, and of the President's responsibilities in particular, so... let's talk about that a bit.

First, it's important to recognize that I'm not the IKC... I'm just the President, a person who frequently represents the organization. The proverbial buck sometime does stop here, and includes everything from being named on lawsuits, to answering phone calls from folks who found my name on the IKC website or with a google search and want to go "spelunking". Luckily, I receive a lot more inquiries about caves than legal issues. For lawsuits, that means meeting with an attorney and seeking counsel on how to proceed. If you've visited one of our caves in the past two years, you're probably aware that the IKC has ratcheted-up our policy of requiring liability waivers and making sure they are properly completed. Sorry about that, but it's in response to a lawsuit, and waivers are no longer an optional policy with any wiggle room.

In contrast to dealing with lawsuits, I'm better equipped to answer questions about caves since I've been in about 800 in Indiana. The inquiries usually range from scout groups or other semi-organized cavers, to completely disorganized, clueless people who I usually direct to one of Indiana's excellent commercial caves. For those folks who sound like they might be candidates for going on an actual "wild" cave trip, I usually direct them to Paul Uglum, our Cave Patron for Sullivan Cave.

Directing people to Paul is an example of another facet of the job. As President, I don't have to do everything, I just need to know someone who will do whatever is needed and delegate it to them. In many ways, being President is all about del-

egation. That means having a working knowledge of the skills and interests of our Executive Board members, Cave Patrons, Property Managers, and a variety of other people inside and outside of the organization. Being President is a job that frequently requires daily attention. Today, for example, I contacted the President of the NSS to inquire as to the status of a grant request for funding to be put toward paying for the IKC's acquisition of the Lowry Karst Preserve. As part of his role as Treasurer, Keith Dunlap had written the grant and submitted it for consideration in June, 2019, prior to the NSS Convention. We never heard back and Keith's nu-

merous inquiries had for the most part gone unanswered, so after discussion at the December Board meeting it was decided that it was time to "bump it upstairs", which in this case meant I'd inquire as President of the IKC. So I drafted an email and after bouncing it back and forth between Keith and myself, today it went to the NSS. Other IKC chores today included responding to inquiries from the Director of the IDNR Natural Heritage Program about how

to manage security for biological survey data from IKC caves, and writing to the Cleveland Grotto to thank them for their continued financial and moral support. That resulted in a string of emails culminating in a request to give a presentation in Cleveland. That seems to happen to me a lot.

And... knowledge of all of our properties and in the case of most of them, the underlying caves, is part of the job. Again, we have managers who take care of the day-to-day issues, but I need to have a comprehensive understanding of what's what on the properties. Of course, sometimes there are problems and then it's my turn to deal with it. For example, we had a caver who refused to return a key to Suicide Cave that he had borrowed. That subsequently required that the Cave Patron drive from Indianapolis to Salem to swap out a new lock. Kevin Smith dealt with replacing the lock, but the issue of what to do about the scofflaw ends up on my plate.



A big responsibility of the IKC is the financial side of the organization and for that I rely on the IKC Treasurer-for-life Keith Dunlap. Once I was asked to be the president of another national cave conservation organization, an honor which I declined immediately. The only thing that I might like less than being named in a lawsuit is sitting through an audit with the Internal Revenue Service, and that organization's financial management was sketchy at best. The way to avoid unpleasanties like an IRS audits is to operate the organization in a scrupulously honest, above-board way and that's got Keith written all over it. I haven't lost a moment's sleep in the years that I've been President worrying about our finances. Other things – like legal matters – yes, I've lost sleep over, but not the realm of the treasurer.

Sometimes I'm unclear on who I am (some of you who know me won't be the least bit surprised by that). I receive a lot of requests to give presentations and try to accommodate them all. Some are definitely for the IKC, while others, I'm not sure if I'm there on behalf of the IKC or as a cave biologist. When in doubt, I usually give the IKC credit for my appearance. These presentations actually suck up a lot of time because each audience gets a new slide show tailored to their interests. It takes hours to prepare a customized presentation so it's not a small thing. Sometimes the results are checkered. Last year I agreed to do a presentation for an organization (a non-cave related club) at McCormick's Creek State Park, which was a couple hours from my home. Normally I don't ask for any type of compensation, but if I have to stay overnight in a hotel, I might ask that whoever asked me to be there to cover the room charge. The club agreed... and then stiffed me. A month later, I received a thank you note with a Walmart gift card for \$25... but I was informed when I tried to redeem it that the value of the card had already been spent. Sigh. Things they didn't tell me when I agreed to be President...

One of the things I get to do as President is worry, and safety is a concern. For example, I sat outside the entrance to Binkley Cave a couple years ago, waiting to see if a group of my friends were going to be found and rescued....or found later and carried out in bags. As I watched the snow flurries drifting down that day in the pasture outside the entrance, I saw unfolding a growing "zoo" of cars, ambulances, an emergency response trailer, dozens of people whom I had no idea who they were, nor why they were there...

and imagined what if this was happening at Buddha, or Sullivan. I decided I couldn't do much about what was unfolding in Binkley, but I could definitely do something to prepare the IKC for this kind of eventuality. Thus was born our new round of safety protocols, and thanks to Danyele Green, the IKC now has a safety sheet posted at every cave entrance with a who's who of resources to call or notify in the event of an emergency.

Sometimes other issues come up and I feel they need to be discussed by the entire Executive Board. We try to deal with issues that require approval of a motion in our quarterly meetings, but sometimes an issue won't wait and I conduct what we call an E-mail motion. Returning to the subject that I started this ramble with – the slate of candidates – we just completed the annual E-mail motion in which we approve the slate of candidates. This process is set in place when our Election Committee (this year it was Danyele Green and Laura Demarest, thank you very much) returns a potential slate of candidates, which are sent to the Board for further discussion and eventually approval.

This year the way in which the Committee obtain our candidates for Directors and the three executive Officers evolved, which led to some further Board discussions. The way we used to do it was to simply put out a notice of the election and wait for someone to run. A couple years ago we delegated the process to a committee to put out the word that the IKC was looking for Board members. Then the committee would do some additional recruiting, notify the potential candidates of what the duties would entail if they were elected, and to do a certain amount of screening for suitability. And yes, since I've been President we've had a person elected to a Board position who then rarely came to a meeting and never obtained a proxy when absent. It was like electing an empty chair, and we just can't have that, thus more scrutiny.

In my view, as our election procedures currently stand, the IKC has three levels of members. The first is to become a general member, and anyone with \$15 and an interest in karst conservation is welcome. The next is to have one of the twelve Director seats on the board. For that, I think a person should be an IKC member for at least a year. The final level is the three executive Officers of the Board: the President, Secretary and the Treasurer. Again, in my view the candidates for these three positions should be chosen from the existing Board, or at the very least from someone who has proxied on the Board a few times to un-

derstand the mechanics of the organization. The Secretary, for example, gets to be me – the President – if I get hit by a meteorite, and thus needs to be both willing and able to assume the office in a worst case scenario. Hopefully our current Secretary, Marc Milne, doesn't read this and get scared away from running again.

As a side discussion during our candidate approval discussion, the point arose that the method used by the IKC to select its Board is not the way most land trusts do it. The IKC is administered as a democracy with its entire membership electing the leaders. Most land trust organizations choose board members for specific skill sets that are needed, and the selection is done by the existing board members, rather than elected by the general members. Another potential short-coming of our current system is that it's completely possible to have a person with valuable experience and skills

booted off the board if someone more popular comes along and runs. For example, I find the past presidents of the IKC board, like Dick Vernier and Bruce Bowman, to be valuable resources and from time to time I draw on their experience, knowledge, and historical perspectives. I'm glad that the circumstances have allowed all that wanted to remain active on our Board to do so. With that said, I think at the next meeting we will start discussing the possibility of changing our bylaws to allow for not only election, but in some cases targeted selections, of board members.

Finally, one last responsibility of being the President – having to come up with something to ramble about for the *IKC Update*. Hopefully this one has been informative, and allows some insights into the organization.

Jerry Lewis

WAYNE CAVE AND PROPERTY CLEANUP

Saturday, March 21 2:30 PM to 4:30 PM EDT (weather permitting)

After the IKC Annual Business meeting, with time for lunch, come out to the IKC's Wayne Cave Preserve for two conservation opportunities to do some much needed trash removal, above and underground. Danyele Green will lead the above-ground trash cleanup. Please bring thick gloves as there is a large amount of glass and sharp metal in the woods that we will focus on cleaning up. Andrew Coyle will lead the under-ground efforts of cleaning trash out of the entrance and crawlway areas. Be prepared with your normal caving gear. The IKC will provide trash bags, buckets, and waivers for both endeavors. If we encounter storms/lightning on this date, consider the workday cancelled and please check on the IKC and BIG Facebook pages for a new date option to be announced.

GARLIC MUSTARD PULL AT THE ORANGEVILLE RISE

Thursday, April 30 from 4 PM to 8 PM EDT and Saturday, May 2 from 9 AM to 1 PM

Join IKC Property Manager Carla Striegel-Winner for a great time of ridding our Rise property of invasive garlic mustard. Anyone can participate. Garlic mustard is not very hard to pull up by the roots, and this is best done before each plant creates thousands of seeds to spread around and send down-river in early summer. We will be pulling by hand and bagging the pesky plants. Volunteers should bring work gloves and wear long pants and sturdy shoes. The Thursday evening pull will serve as a rain date (if the forecast for Saturday looks bad) and an alternate for those unable to attend on Saturday. Please indicate your interest by e-mailing carlastriegel@gmail.com and you will receive email updates about the event. You may also call Carla at home at 812-367-1602.

NEWS BRIEFS...

- ❑ It is perhaps not widely known that the IKC annual dues revenue do not completely cover all of the IKC's baseline operating expenses and obligations (newsletter, liability/business insurance, property taxes, routine stewardship activities, miscellaneous business requirements). Thus, we are greatly appreciative of the additional donations many of our members make to supplement and support our basic

Continued on page 23...

LOWRY KARST PRESERVE UPDATE

by Keith Dunlap

Since the last report in the December *IKC Update*, several notable progressions have been made. At the preserve, two dump truck loads of crushed stone were delivered and spread on the un-maintained county road and the first part of the interior lane. Subsequently, Ray Sheldon (the Property Manager and Cave Patron) used his tractor and box-blade to grade out the stone (see below). While more stone will be needed within the coming year, this initial application should allow two-wheel drive vehicles to approach the property and park beyond the lane gate. This improvement has allowed Ray to start granting permission for smaller groups to visit the cave (one or two vehicles maximum parking). He has already arranged several trips in the past few months. Ray's contact information can be found on page 2 of this newsletter or on the Lowry Karst Preserve [webpage](#).



The other primary update since the last newsletter has to do with the fund-raising towards the acquisition of this preserve. I'm happy to announce that the Lowry Karst Preserve acquisition project is now fully funded. In the last newsletter, we were about \$6,000 short of our \$36,000 funding goal. Thanks to an anonymous donor who pledged a year-end matching challenge grant of \$3,000, others stepped up and our goal was met. Further, the NSS approved our previous \$2,000 grant request and several other donors have contributed in the past few months. To the right is the updated donor's list (also on the Lowry Karst Preserve [webpage](#)).

And while this acquisition project is fully-funded, for those still wanting to contribute and be listed as a Lowry donor on our website and eventually the on-property kiosk, donations specific to this preserve will still be accepted through at least the end of March. Any excess funds raised above the \$36,000 project budget, will be "rolled-over" into our restricted Acquisition Fund and be used towards our next acquisition project.

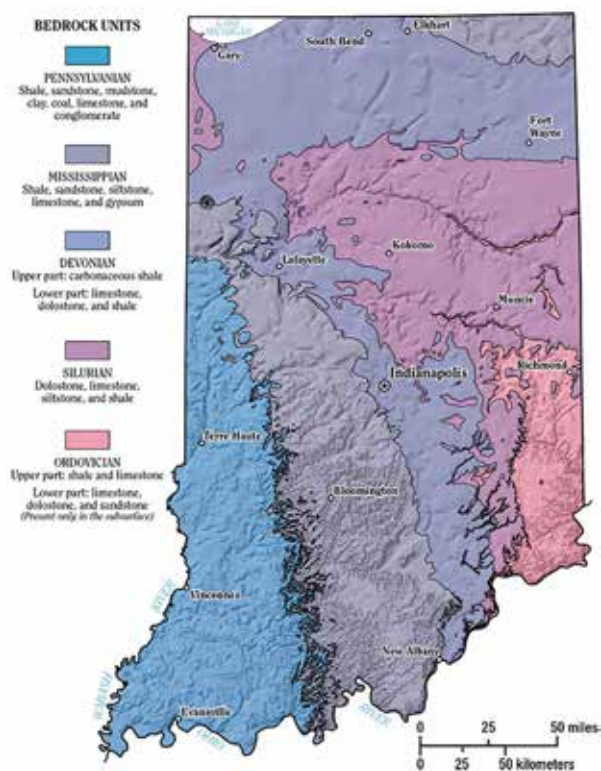
LOWRY KARST PRESERVE DONATION LIST	
\$5,000 or more	
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\$2,500 to \$4,999	
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\$1,000 to \$2,499	
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\$50 to \$99	
Pat Burns Dale Chase Patti Cummings Laura Demarest Allen Goodcase Timothy Heppner Kyle Hoyt Ralph Moshage Carroll Ritter Robert Sollman Dan Vettes Indiana Caverns	
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Project goal: \$36,000 Raised/Pledged* to date: \$46,301 Percent of goal: 128.6% February 29, 2020	

LOWRY CAVE – A HISTORICAL PERSPECTIVE

by Matt Selig

In 2019, the IKC acquired a tract of land in Jennings County which contains the entrance to Lowry Cave. An interesting detail of Lowry Cave is that it is not located in Indiana's "classical" karst region of Mississippian period rocks, which are roughly 323 million to 359 million years old. Rather, Lowry Cave is located in older Devonian period dated limestones, which are roughly 359 million to 419 million years old.

These two Hoosier karst regions are shown in the below graphic from the Indiana Geological and Water Survey. Indianapolis is located mostly in the Devonian band of rocks (covered by glacial till), while Bloomington is located in Mississippian period rocks.



As an interesting "first" Devonian period acquisition made by the IKC, I put some effort into learning more about Lowry Cave, and found an alternative spelling of "Lowery Cave" and an 1876 report from a geologist, William M. Borden, that begins, "Agreeable with your letter of instructions, of April 21, 1875, I have closely traced the geological formations of Jennings and Ripley counties, Indiana; observed the character and position of pre-historic mounds; inquired into the agricultural and manufacturing interests and herewith respectfully submit notes on the same."

In his report, Professor Borden notes that, "In this part of Montgomery township [in Jennings County], bordering on Graham Creek, the blue limestone is easy of access. A fine exposure is seen on the bluffs above Jesse Tate's cave, section 28, and at several other places on his land; also, on the land about Lowery Cave, section 21; also on the land of J.B. Johnson, west of Commiskey, section 20.... The various quarries of this stone throughout the county will be able to supply any demand that may be likely to occur."

He also describes in his report that in the Silurian (even older) aged rocks in western Jennings County, "Numerous small caverns occur in this strata, from which flow never-failing springs; also, sinks and large weathered vertical holes, some of which are very interesting on account of showing the weathering and decomposition of the rocks. Three of these vertical holes, four to five feet in diameter, which penetrate the limestone strata to the depth of 25 to 30 feet, exhibit the appearance of having been excavated with a large auger."

Caves in these southeast Indiana limestone regions are not unknown to cavers, but speaking from my own experience, I have always heard, "Oh you won't want to bother with those caves in Jennings County. They're just small, dark, and muddy."

But as a caver who has crawled through a lot of small, dark, and, muddy caves in Indiana's Mississippian period rocks, I wanted to take a moment to recall that it has always been worth my effort to look for caves in areas where the general consensus is, "...those caves aren't worth the trouble." I was pleasantly surprised to find Lowry Cave an impressive cave to visit, with features (such as fossils and rock strata) that I don't know much about and are an interesting learning opportunity.

I'm also glad the IKC has taken an interest in Indiana caves outside of Indiana's "classic" (Mississippian) karst belt. If you get an opportunity to visit Lowry Cave (after signing the appropriate waivers), I think you will agree it is a great cave to have on the list of IKC conserved properties, and it has certainly faced its own conservation challenges in recent decades.

And Professor Borden's report also reminds me of aspects of the science of speleology that are well worth thinking about with all of Indiana's caves: history and archeology. There is a story to tell of the people who owned and used these

caves, both in historical times, and in pre-historical times. In addition to the caves themselves, we should be always on the lookout to understand these aspects of the karst properties the IKC owns. It helps to link the wonder I've always found entering a cave to the wonder felt by a chain of people back through Indiana's historical times, into the pre-Columbian era, and all the way back to Paleolithic (Stone Age) peoples, who undoubtedly stood at the entrance to Lowry Cave with the same sense of adventure and wonder, who wanted to

find out, "...where does it go and what's in there?"

In addition to karst geological (rocks) and hydrological (water) resources, the human experience of caves is also part of what the IKC conserves. Lowry Cave delivers on this promise of adventure and opens the door to learning more about the less well-known caves in Indiana's Devonian and Silurian rocks. If you get a chance to visit Lowry Cave (after signing the appropriate waivers), I hope you can share in that sense of adventure, as well!

PROPOSED MID-STATE CORRIDOR HIGHWAY

by Keith Dunlap

While the costly and environmentally questionable I-69 highway construction through southwest Indiana is still years from being completed, that does not seem to stop others from pushing for new proposals that try to revive the routes that were slighted when I-69 by-passed them. The latest study to surface is the Mid-State Corridor that has been promoted for years, but was previously limited to studies of upgrading/paralleling US 231 from Rockport on the Ohio River, north to Jasper, then Loogootee, and finally intersecting I-69 at Crane. But of course when those partially privately-funded feasibility studies get rolling, other cities and towns lobby alternative routes to steer these new roads through them. Case in point, it seems the loudest squeaky wheel this time is French Lick trying to promote a new-terrain four-lane expressway from Jasper to French Lick to Mitchell that would plow across the northern part of Lost River drainage basin (see Route O on the adjacent map). Note that the current map shows the center line of the Route O corridor passing within a thousand or so feet of the IKC's Orangeville Rise Nature Preserve. Almost as bad as Route O would be the proposed Route M that is another new all-terrain corridor that would run from Loogootee to Bedford paralleling the north side of the White River via the karst-heavy Williams area.

Doing a preliminary query of the Indiana Cave Survey database, each of these two routes could potentially impact thirty-plus known caves/karst features/springs and likely many more unknown features in the karst terrain. And while the consulting company who is doing the Tier 1 planning for this project, the Lochmueller Group, will likely do its best to avoid or mitigate these impacts, once the preferred route is selected, the highway is pretty much committed to that particular corri-



dor regardless of what might be discovered in the more rigorous Tier 2 follow-on study.

At this stage of the Tier 1 study, community input is being solicited, so now is *the* time to potentially have the greatest input/influence. I encourage each of you to go to the Mid-State Corridor website (www.midstatescorridor.com) and study the maps and other documents (there are many) or at the minimum, complete their short on-line scoping questionnaire (www.midstates.questionpro.com). The questions are slanted towards the affirmative (what you'd like to see) rather than what you don't want, so you will need to rate the other Routes (B, C, and P) higher and Routes M and O the lowest. Also the Super-2 configuration/construction alternative would have a smaller foot-print compared to the freeway or expressway options.

A LOOK BACK AT INDIANA KARST

by John M Benton

Relax and enjoy a journey via buggy and steamboat to Wyandotte Cave in 1881 (some 30 years after it became a show cave).

On the morning of May 25th, the writer, in company with Mr Able Knight, left here on a short visit to Indiana's famous cavern. A pleasant ride through fields of growing corn, and through thrifty farms brought us about noon to Louisville, Ky. At that City we took passage on a steamboat for Leavenworth, the county seat of Crawford county, and the nearest town to the Cave. The ride down the Ohio was a delightful and enjoyable one. The river was smooth and fair, the boat heavily laden, and we glided along without a jar. The scenery was grand beyond description. A bold, high bluff skirts the Ohio on the Indiana side, for miles and miles. At times it is rocky and so precipitous as to be almost perpendicular, and the bare and naked rocks gleam in the sun like huge sentinels guarding the quiet waters of the river. Again the bluff becomes a series of long, low, round-topped knobs, covered with trees, and evergreens and flowers. Upon the side of one, is perched a quiet, cozy, little farm house; upon another is a vast orchard; and so the scene is ever changing. It is one grand panorama of artistic beauty – too grand to be described with puny words. It is a scene where grandeur and beauty must be beheld to be appreciated. Smoothly our boat glided on. The sun sank in the dim distance, the stars peeped out in the cloudless sky, a balmy breeze swept over the bosom of the peaceful river, and after supper a general rush was made for the upper deck. There we set for hours listening to the strains of sweet music poured forth by a splendid string band. After a time the crowd descended to the cabin, and dancing became the order of the evening. At eleven o'clock PM, we landed at the wharf in Leavenworth. We were loth to leave the boat, and the merry companions de voyage; and as I stepped the wharf-boat I made this mental memorandum: "That I never had had a more pleasant trip than my boat ride down Ohio." At seven in the morning we took the hack for the Cave, a ride of an hour through the Indiana hills brought us to the "Cave Hotel". The genial proprietor, Mr. H.W. Rothrock, received us with a cordiality that made us feel as though we were visiting some near relative rather than an entire stranger. A party of two ladies and two gentlemen were just

ready to enter the Cave. Permission was granted to us to join them, and we six, with Mr Rush Thornburg as our guide, at once started upon our first trip into the greatest cavern in Indiana, and almost the greatest in the world. Wyandotte Cave is the result of the freaks and fancies of an underground river aided by chemical changes which have been at work for thousands of years. It is one of the grandest of all of nature's grand works, and it seems to have been a mighty work wrought for the purpose of showing to man the insignificance of his labors and of himself. No written description can convey an adequate idea of the grandeur and beauty of the Cave: the visitor wanders on mile after mile, through superb palaces quarried out of solid rock by the mighty force of nature, into magnificent chambers, whose lofty ceilings are veiled in darkness; along rocky walls whose ragged faces are wrought by the subtle chemistry of nature into forms of the rarest beauty. There he stands gazing with awe down into the black throat of the yawning chasm; there he lifts his bewildered gaze up to the shadowy summit of a lofty cliff; and again bends in admiration over some unsightly stone which the quickening touch of the Creator, working surely in the silence and darkness, has made very beautiful. One knows not which to admire most – the delicate tracery of snowy gypsum upon the walls, or the mighty power that has cleft asunder great hills of solid rocks, and lightly tossed the huge fragments into fantastic heaps. Upon entering the Cave the first room is called Fanueil Hall, and right worthy is it of the name. It is 200 feet long, 50 wide, and 25 high. Leaving this place we pass through many beautiful rooms whose magnificence strikes the beholder with and unutterable sense of awe. I would like to speak of each apartment, but can not. Wandering along we suddenly came to "Pillared Palace". This room is grandly beautiful. It is from five to six feet high, fifty wide, and several hundred long. The ceiling is a perfect network of creamy stalactites, many of them so long that they reach the floor, thus forming pillars to support the roof. Grandeur pillars were never seen by the eyes of man and they would have made a Grecian architect in the palmiest days of that great nation mad with envy. Rapidly passing "The Palace of the Genii" (which for delicate formation excels the former), and ("Colliope's Bower") were we enter "Purgatory", a long room



with a ceiling full of deep grooves. It is "a place of merry difficulties". The easiest way to get through was to lie down and roll over like barrels going down a hill. Our party acted accordingly, and a merry time we had of it. We passed a dozen more grand rooms and finally reached "The Throne". It is a perfect throne formed by nature out of the solid rock, and any Queen might feel proud to be seated upon it. A canopy of delicate stalactites overhangs the seat making the semblance much more perfect. We wandered along through vast rooms seeing so much that is impossible to remember the thousands of grand sights. We reached

"The Hall of Representatives", a noble room, 200 feet in diameter, and 50 feet high. After admiring this place for a time, someone proposed a wedding. Mr Geo. K. Gwartney and Miss Kittie Wolfe, of Corydon, Ind, were the happy parties, and the wedding was a tremendous success. We left the Hall, and for a while rested at the "Card Table", a large, flat stone upon which we left thousands of photos, cards, and mementoes. Our Corydon friends desiring to leave for home in the afternoon, we returned our footsteps, and at twelve, noon, emerged from the cave having been in it for five hours. After dinner we took leave

of Mr Gwartney, who is: "Editor of the Corydon Democrat, and prosecuting attorney of Harrison Co", with many feelings of regret. Early in the morning of the next day we again entered the cave: we were prepared for an all-day's journey and carried luncheon with us. The first grand room we entered was "Rothrock's Cathedral". In it towers Monument Mountain, 175 feet high, and above it seventy feet more is "Wallace's Grand Dome", making the distance from floor to ceiling 245 feet. The following is a good description of this wonderful place. This Dome has hardly a superior in the world: standing at the summit of the Mountain, we look upwards, but the top is veiled in darkness. We cast one glance around us, and the same unilluminated night lay beyond the dim light of our candles. But when we had lighted our fireworks

we could see far above us the bending arch of this majestic temple, rising 245 feet from the base of the mountain, while around us in vast proportion a circular wall, 1,000 feet in circumference. We passed through dozens of grand rooms, and through the "Auger Hole" where one has to lie face down and descend feet first to he-knows-not-where. He lands about 15 feet below after a glorious slide over wet rocks; but it is funny in the extreme. "Milroy's Temple" was discovered a few years ago by a student of Wabash College. It is one of the finest rooms of the entire cave. Imagine great masses of white delicate coral, twisting, curl-

ing, and interlacing itself serpent-like into every conceivable fantastic shape, and you have only a faint idea of some of the scenery in Milroy's Temple. There are in this wonderful room galleries of creamy stalactites, vermicular tubes intertwined, frozen, cataracts, and vine-like pendant forms of stalactites in profusion almost incredible. One of the greatest curiosities of this room is a row of musical stalactites, all perfectly in harmony, and upon which my friend Thornburg, with skillful hand, played a sweet fantastic melody. There are hundreds of other rooms more beautiful than any of those described. To write a description of what



THRONE & CANOPY.

I'd seen would fill a volume, nor could words describe it. One thing more to give an idea of the age of the cave, and then I close. At the end of the old cave is an immense stalactite called "The Pillar of Constitution". It is 40 feet high and 75 feet in circumference. Our State Geologist, who is an excellent authority, says that this pillar grows one fiftieth of an inch in five years, or an inch in 250 years. Supposing the pillar to always have been growing at this rate, it is at least 36,000 years old: and in all probability the cave is three times as old as that. I stopped at Wyandotte a week and felt much more than paid for the time and trouble. A word as to rates. One can go from this place, and stay a week for \$25. The proprietor and his family are ever ready and willing to do all in their power for the comfort of guests. Mr Rush Thornbury,

Continued on page 17...

SHAWNEE KARST PRESERVE PRAIRIE RESTORATION

by Jerry Lewis

If you've followed the IKC over the long-term, you might recall our efforts to do a prairie restoration at our Robinson Ladder Cave (RLC) property in Crawford County. At the time of the initial acquisition of RLC, some flowering plants typical of prairies were noticed. This suggested that perhaps the area was a remnant of one of the many native grasslands that once occurred in southern Indiana. The IKC pursued restoration of the open fields on the RLC property with mowing and prescribed burns to keep out trees, but the areas just didn't respond well to the management. The goal at RLC – a prairie – is frequently mis-understood, with many who think that when a pasture, an old field, or maybe their backyard, is allowed to return to the wild that the tall grass and weeds constitute a "prairie". That's not the case. Prairie is a distinct biological community characterized by warm-season grasses like Big Bluestem or Indian Grass, and dozens of kinds of wildflowers, like Purple Coneflowers. Among the most familiar grazing animals evolving to live on prairies was the Bison, but a wide variety of other mammals ranging from pocket gophers, to shrews, to ground squirrels were common. Today very little true prairie remains in Indiana, and no animal has suffered more decline than birds native to these grasslands, like the Greater Prairie Chicken. Now extinct in Indiana, if you want to see a prairie chicken, you'll have to go somewhere else.

Prairies once occurred across much of the mid-western US, extending into Indiana. European colonists were intimidated by what seemed like vast seas of grass that grew so high that even riders on horseback were swallowed by it. Not until the invention of the steel plow in 1837 were settlers able to cut through the tenacious root systems of prairie plants and commence the transition of prairie to agriculture, leading to the demise of the American prairie.

Indiana lies on the eastern edge of the prairie region of North America. In the northern glaciated

plains, vast open prairie extended into the state. In southern Indiana, where deciduous forests were predominant, there were still significant areas of prairie. "Barrens" devoid of trees were widespread on the shallow karst soils of the sinkhole plain. Wildfires maintained prairies by eliminating woody plants like Eastern Red Cedar, which now encroach rapidly on grasslands where fire is suppressed.

Despite the lack of success at RLC, when the IKC acquired the Shawnee Karst Preserve (SKP) a new prospect for a prairie restoration was an area of Indian Grass on the north side of the property. Soon after purchase of the property, the IKC had a work day to start removing cedars and poplars that were sprouting in the grassland. Other periodic work days over the last eight years have been conducted to remove encroaching trees. During our most recent classified forest inspection with



District Forester Janet Eger in November, 2019, she noted the presence of Indian Grass and Elliott's Sedge, typical of prairies. She also posed the possibility in her report that the SKP grasslands are remnants of one of the barrens that were once characteristic of the region.

Janet recommended that we seek out Mark Bennett (IDNR) for input on how to conduct a prescribed burn of the grasslands on the Shawnee Karst Preserve. Keith Dunlap and I met with Mark last month at SKP and after seeing the stand of Indian Grass, he encouraged management as a barren. He subsequently provided the IKC with a "burn plan" for conducting a prescribed burn. The first stage of the burn plan was to mow fire-breaks around the grass to control the area that is flammable. That was accomplished on a recent workday, with Keith and Bambi Dunlap mowing the break, while Tom Sollman and I cut larger cedars and poplars with chain saws, and John Benton removed the resulting brush to areas that were out of the path of the fire. Now all that we need in the next month or so is a dry day, with low humidity and a mild breeze, to conduct our first prescribed burn at SKP.

POPULATION TRENDS OF INDIANA BATS IN INDIANA

by Keith Dunlap

This article covers the “larger” bat hibernacula census conducted in January/February of 2019. The formal report was released in December 2019.

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 twenty primary censuses (1981-2019), 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 four census, the 2019 census departed in scope and methods due to the presence of White-nose Syndrome, which increased the costs and complexity of performing the study. Rather than sample most of the known caves hosting Indiana bats as was done pre-WNS, the focus of the effort was directed towards the most populous “Tier 1” caves that account for almost 99% of the Indiana bat population. Many of the “Tier 2” caves are still visited in the “off years” to track the remaining 1% of the Indiana bats. The Tier 2 work is performed directly by DNR staff and other volunteers and reported separately. In whole, since 1980, there have been nearly 400 cave visits to 32 different caves documented to have, or have had, Indiana bats in recent years.

Similar to four prior censuses, the 2019 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

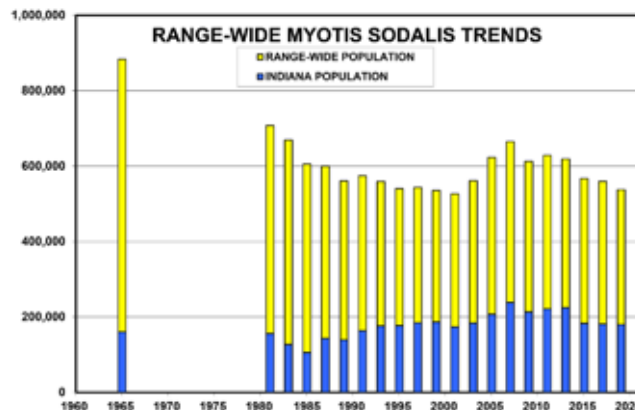


Figure 1

in Indiana (dark bars) and a few other states. The total population decline then appeared to reverse in the mid-2000s and was actually showing optimistic signs of recovery through 2007. Unfortunately, the past six censuses have once again shown range-wide decreases (down 19% 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 2019 population of Indiana bats *within Indiana* has decreased 25% compared to the 2007 numbers, but is still generally about equal to the previously low population count in 2003.

Looking at population trends in individual Indiana caves is interesting in there is still significant volatility going on within individual hibernaculum and geographical regions.

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 2019 population was no exception with a 90% drop compared to 2017 and over a 99.9% drop since 1993, to just 72 bats. However, it is likely some of the Twin Domes

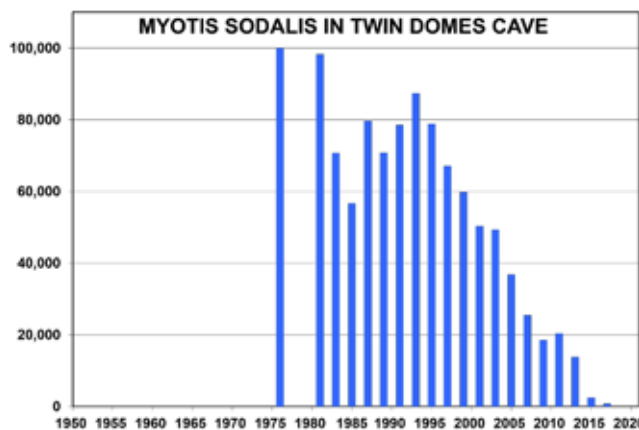


Figure 2

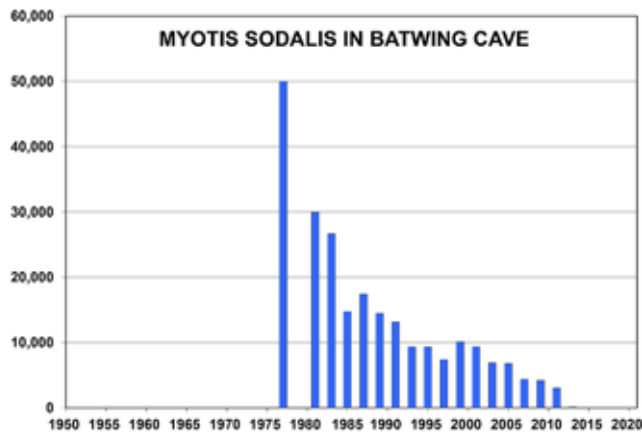


Figure 3

population loss has not completely perished, but 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 2019 census counted just 5 Indiana bats (compared to 6 in 2017). 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. A 1953 report by Mumford estimated the population at 10,000 bats (see figure 4). However, just

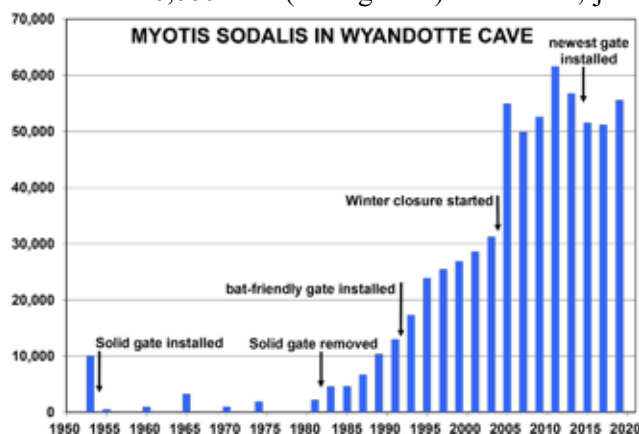


Figure 4

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. From 1981 until 2011 when White-nose Syndrome infected the cave, the population increased steadily with a significant jump precipitated by the winter closure initiated in 2003. The 2019 count estimated the cave contained 55,547 Indiana bats, up nearly 9% compared to 2017, but still down 10% from the 2011 peak. The 2019 population is slightly above the average of the last eight surveys (2005 to 2019).

Another interesting observation at Wyandotte Cave is the increasing number of Gray bats (*Myotis grisescens*) that have started to hibernate in the cave. First sighted in 2011 photos, the population has increased significantly with 1,380 Gray bats counted in 2019, and this may be an under-estimate since Gray bats and Indiana bats are sometimes difficult to distinguish in photos.

Most promising of all of the caves surveyed this time was Jug Hole. First censused in 1987 with 5,500 bats (see figure 5), the population has been on an impressive increase with 79,358 bats in 2019. This is the largest concentration of bats in any Indiana cave in the past 25 years. 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

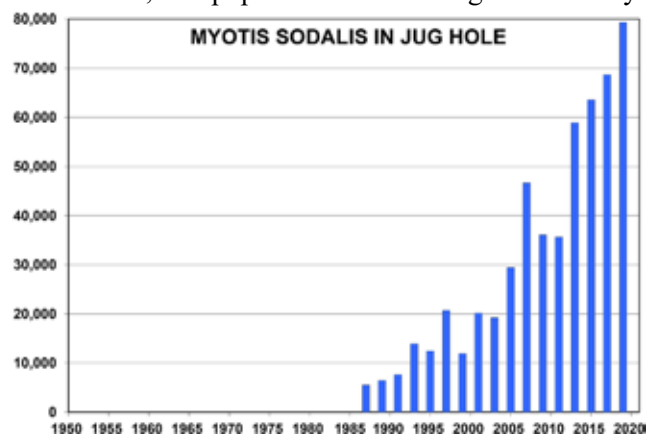


Figure 5

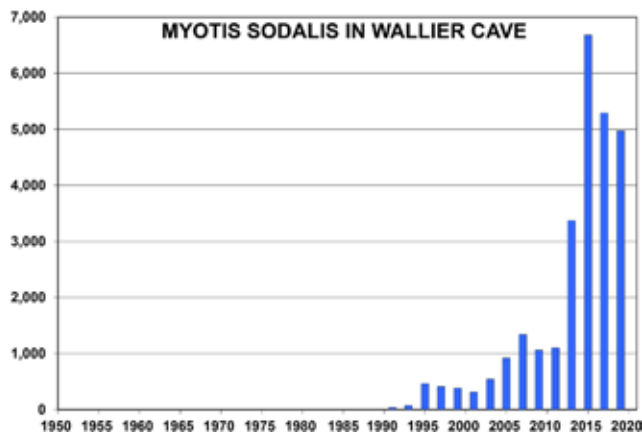


Figure 6

6,679 Indiana bats. In 2017 and again in 2019, the populations dropped (5,289 and 4,972, respectively), but this cave still appears to be a viable and important hibernaculum.

Previous research supported the hypothesis that Indiana bats were habitual to using the same hibernacula year after year. However, long-term population trends within some the Harrison-Crawford area caves have dropped significantly, while other nearby caves have increased significantly suggest bats may swap hibernacula more than expected. To better quantify this observation, figure 7 shows the combined numbers of Indiana bats from Wyandotte, Jug Hole, Twin Domes, Batwing, and Wallier, along with Swinney, Wildcat, Robinson Ladder, Binkley, and Saltpeter caves (which now accounts for approximately 78% of Indiana's population). It can be seen that the aggregate populations appear to be much more stable and has actually increased slightly over the past thirty years.

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 fifteen counts have shown an encouraging population increase of Indiana bats. In 2019, 2,925 *sodalis* were counted,

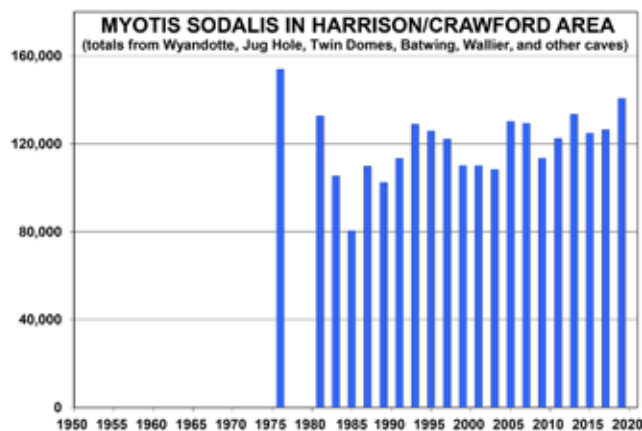


Figure 7

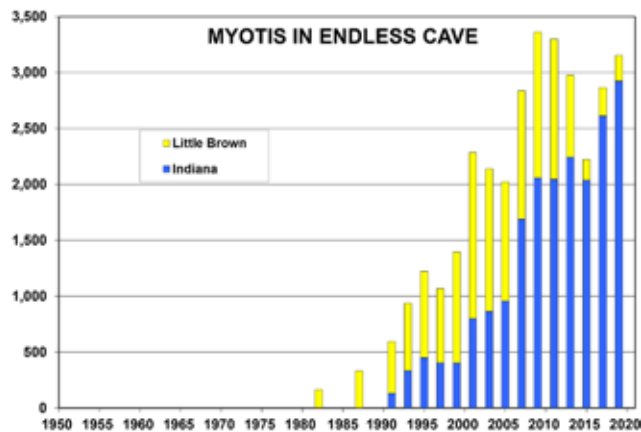


Figure 8

the highest number to date. Endless also hosted a large number of Little Brown bats which were gradually increasing in numbers too, until 2011. In 2019, the number of little browns was only 229 bats, 18% of its 2009 high, but this was a slight increase from the low in 2015, so perhaps the species is starting to rebound for the toll of WNS.

The number of Indiana bats in nearby River Cave and Panther-Neyman Cave are also showing increases, so this is a positive sign.

Jim Ray's Cave in Greene County has had remarkable population growth from 1980 until 2007 (see figure 9), but has since seen a dramatic decline. 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 2019 population was "only" 25,693 Indiana bats. This was one-third of the maximum observed just twelve years ago. There is no clear explanation for the

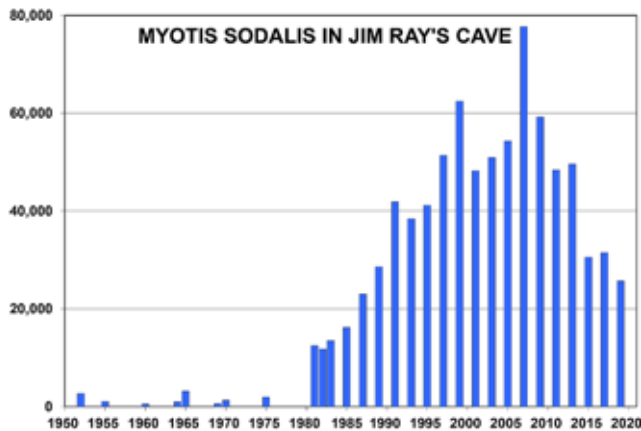


Figure 9

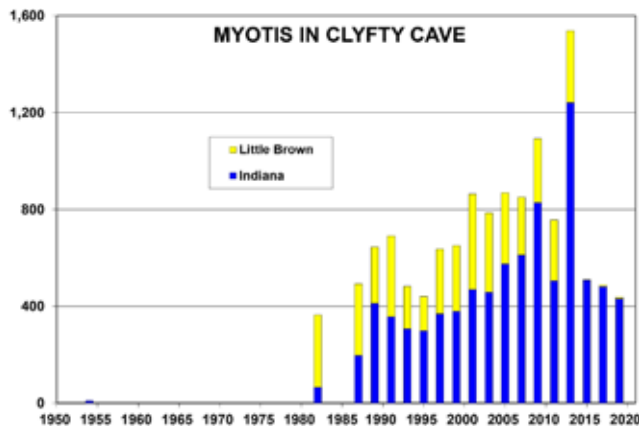


Figure 10

dramatic increase from 1975 to 2007, nor the significant drop since 2007, although WNS may have played a role in the later trend.

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 and again in 2019. 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 since 2015, only six or fewer *luci* have been counted.

Moving about nine miles east to adjacent Monroe County, Coon Cave's population trend mirrors Ray's Cave. It too had historic records in the 1950s through 1970s of only a few hundred bats (see figure 11). 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 30,595 Indiana bats. In 2015, the population dropped to 24,139, and in 2017, the population continued to drop to 19,026.

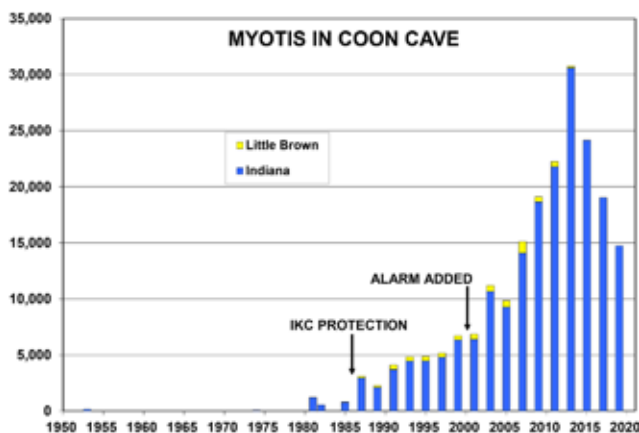


Figure 11

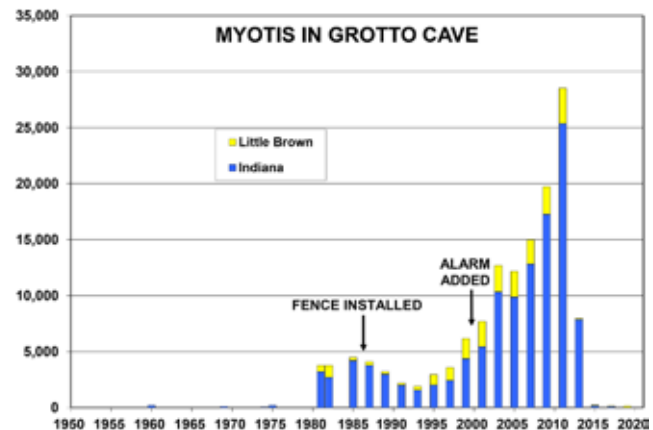


Figure 12

In 2019, the population was down to 14,728.

The "sister" cave to Coon is Grotto Cave located less than one-half mile away on the same property. Historic records showed very small populations in the 1960s and 1970s (see figure 12). 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 (perhaps a reaction to the 8-foot chain link fence erected to reduce human disturbance). Then in 1995 and 1997, the population rebounded slightly, and in 1999 and 2001, the numbers jump 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* and in 2019, the number was only 29 (down 99.9% in just eight 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

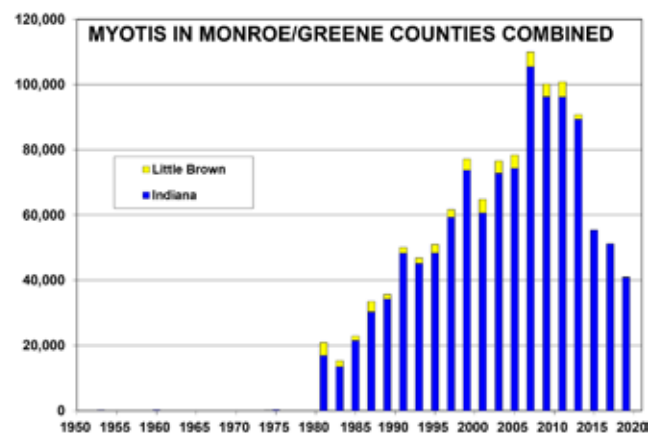


Figure 13

Indiana) to just 56 Little Browns in 2015 (a 98% decrease). The numbers of *luci* in 2017 and 2019 were slightly higher (63 and 98, respectively), so perhaps this is an indication of a rebound.

Looking at the Monroe/Greene counties meta-population (figure 13), the 2019 Indiana bat numbers are down 61% from its peak in 2007 and likely will continue to drop if the trend continues. It is completely unclear why the Harrison/Crawford and Washington County aggregate populations are stable or increasing, while the Greene/Monroe counties combined populations are drastically decreasing.

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 (at least at the northern end of range), but it is still too soon to know how the Indiana bat will fair in the long-term. 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. Hopefully the Little Browns have hit rock bottom and will start their gradual recovery.

2020 INDIANA CAVE SYMPOSIUM PREVIEW

by Keith Dunlap

The 28th annual Indiana Cave Symposium, co-sponsored by the Indiana Karst Conservancy and Indiana Cave Survey, will be held on Saturday, **April 25**, at the Handy Meeting Barn, 2827 E Moffett Lane, 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:

- Preliminary results of bio-inventory of the caves of McCormick's Creek State Park – Wyatt Williams
- Molecular genetics of Indiana's stygian cave isopod – Jerry Lewis
- Interstate 67 Corridor and Karst Resources – Kevin Strunk
- The Lucas and Dible Connection – Marion Smith
- The Cave Rover™ Project Update – Chris Dick
- Binkley Update – Rand Heazlitt
- Lowry Karst Preserve – Ray Sheldon
- Recent Indiana Bat Population Trends – Keith Dunlap
- Title TBD – Anmar Mirza
- Title TBD – Jess Deli



photo courtesy Jerry Lewis (2019)

For more information about the Symposium, visit its webpage (www.caves.org/survey/ics/symposium).

...Continued from page 11

the kind and obliging guide, mingles with his skill, sound and sensible conversation, and takes pleasure in explaining all mysteries. This mighty cave has been explored for 23 miles, and undoubtedly extends for hundreds of miles further. I have scarcely begun to tell the story of Wyandotte. Let me say in conclusion: "Whosoever visits Wyandotte Cave, let him go reverently: for the Master's hand has been at work there: we beseech him to pack carefully away his little stock and store of

adjectives, and not follow the Almighty to pelt his wonders with puny words. The senses may feel to the full glory and grandeur: but there is no language to interpret the feeling."

The article was written by W.P. Knode and originally printed in the Hagerstown [Indiana] Exponent, June 22, 1881. Note the author refers to the guide's name as Thornburg, and later Thornbury. It is probably the latter.

INDIANA KARST CONSERVANCY TREASURY REPORT

Income/Expense Statement From October 1, 2019 to December 31, 2019

INCOME:

Dues Apportionment and Residuals	826.25	
Donations - General	86.50	
Donations - Land Acquisition Fund	17,066.00	
SpeLoggers	4,372.55	
NRCS EQIP grant	6,493.65	
Investment Earnings	<u>1,016.96</u>	
		\$29,861.91

EXPENSES:

IKC Update (printing, production, mailing)	336.39	
Education / Outreach	290.00	
Stewardship/Conservation	1,683.03	
Business (PayPal/NFG fees, PO box rental)	180.15	
Insurance premium	1,256.00	
Transfers to/from restricted funds/other adjustments	<u>21,109.27</u>	
		(\$24,854.84)

NET OPERATING EXCESS (DEFICIT) THIS PERIOD: \$5,007.07

Balance Sheet December 31, 2019

ASSETS:

Cash in Checking / Saving / CDs / Brokerage acc'ts	226,380.22	
Robinson Ladder Cave Preserve (73.48 acres)	162,000.00	
Wayne Cave Preserve (57.59 acres)	188,000.00	
Shawnee Karst Preserve (50.31 acres)	105,000.00	
Buddha Karst Nature Preserve (36.84 acres)	29,000.00	
Sullivan Cave Preserve (28.00 acres)	72,000.00	
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)	<u>13.16</u>	
		<u><u>\$822,393.38</u></u>

FUNDS & OPERATING EXCESS:

Land Acquisition Restricted Fund	87,930.42	
Deferred Dues Restricted Fund (222 members)	3,622.50	
Stewardship Endowment Restricted Fund ¹	73,495.61	
Previous General Fund (total)	56,337.78	
Net Excess (Deficit) This Period	<u>5,007.07</u>	
Current General Fund (unrestricted)	61,344.85	
Current General Fund (committed)	1,550.00	
Real estate liquidity (basis value excluding CE)	<u>596,000.00</u>	
Total Liabilities & Operating Excess		<u><u>\$822,393.38</u></u>

NOTES:

1) A \$3,200 contribution/transfer was made to the Stewardship Fund from the General Fund.

IKC EXECUTIVE BOARD MEETING MINUTES

December 7, 2019 10:30 AM EST, Ellettsville Branch, Monroe County Public Library

Board Members Present:

Jerry Lewis, President
 Marc Milne, Secretary
 Keith Dunlap, Treasurer
 Bruce Bowman
 Jeff Cody
 Laura Demarest
 Danyeale Green (proxied by Salisa Lewis)
 Dave Haun
 Goni Iskali
 Matt Selig
 Bob Sergesketter
 Tom Sollman
 Carla Striegel-Winner
 Richard Vernier
 Sue Vernier

Board Members Absent:

None

Call to Order

The meeting was called to order by President Jerry Lewis at 10:30 AM at the Ellettsville Branch of the Monroe County Public Library. Jerry asked everyone to introduce themselves.

Acceptance of Proxies

Salisa Lewis for Danyeale Green.

Lowry Stewardship Funding E-mail Motion

A motion was put forward by Keith Dunlap on October 19th, 2019, seconded by Bruce Bowman, to fund up to \$1200 for road improvements (gravel) to harden the dirt lane at Lowry Karst Preserve. Vote: Unanimous approval (15-0).

Approval of Previous Minutes

The minutes from the September Board meeting were approved as published in the December 2019 *IKC Update*.

Treasurer's Report

Current finances: Keith outlined the financial status of the organization: Cash assets totaling \$213,466.72 and land assets totaling \$596,000.00, for total assets: \$809,466.72. Funds include Stewardship Endowment: \$69,944.14; Land Acquisition: \$76,699.42; Deferred Dues: \$4,192.50; and General Operating Fund (unrestricted): \$62,630.66.

Membership: Currently stands at 217 members. The last quarter we received six new members from the website. This is the highest membership the IKC has ever had. Jeff Cody asked how many are out of state.

Keith answered that some were, but most were either in-state or from surrounding states.

Insurance update: The IKC renewed its insurance with our new underwriter, Chubb, through the Land Trust Alliance Conserve-A-Nation program. The policy renewed November 1st. The policy covers General Liability, Directors and Officers, and Volunteer Accident. Carla asked about a previous conversation the Board had about insurance and that we said we would bring it up again after one year. Keith replied that in 2018 we decided not to go with the additional \$1 million umbrella coverage. Need to discuss at the June 2020 meeting.

Shawnee Karst Preserve

Classified Forest/Grassland burn discussion: The DNR District Forester, Janet Eger, said that we have too many beeches on the property and some culling is justified. She also noted various invasives needing to be addressed. She also encouraged us to burn the grassland on the property to open it up more to increase diversity. Jerry will be meeting with Mark Bennett (DNR District Biologist and openings specialist) to get advice on this process.

Upper Twin Cave entrance update: The entrance is larger than Jerry has seen it in a while. However, there is a 5-6 foot dirt cliff that is above the entrance, and he suggested that it be dug out to prevent collapse into the entrance.

Kiosk construction update: Construction on the kiosk began recently, and the site has been cleared and the holes for the footers excavated. In the process Jaime Winner's backhoe broke a pin trying to remove a large stump. Keith stated that the design of the kiosk is completed and we're just waiting for a warm day to pour the concrete footers, then we will proceed with erecting the kiosk.

Sullivan Cave

Stewardship activities: Jaime Winner used his backhoe to clear out the drainage ditch that runs along the access lane that had filled up with mud. This ditch was last cleared in 1998. Also, the upstream portion of the plugged culvert near the parking area was reopened by Jaime.

Three truckloads of crushed stone were brought in and spread to build the access lane back up. This activity cost \$800 of the \$1500 that was allotted a year ago for this project. In addition, overhead branches on the lane were cut to allow for the truck to spread the stone. Bambi Dunlap and Keith mulched all the leaves on the campground area.

Laura stated that she observed what she thinks is new

vandalism in the cave in the form of hot pink spray-painted graffiti. Laura agreed to work to scrape it off. Keith stated that generally there should be some oversight of cleaning efforts to be sure that historic graffiti is not removed. Sue stated that because the ones who are cleaning are Directors, they should know the difference between historic graffiti and newer graffiti. Carla asked if there was something else IKC should do to try and figure out who did the vandalism. The consensus of the Board was that it would be difficult to tell who committed the vandalism, assuming it was new.

Goni stated that she saw six tri-colored bats the last time she was in the cave. Keith responded that the DNR will be doing an off-year bat count early next year and Sullivan is on the list for counting.

Wayne Cave Preserve

NRCS invasive control update: Danyeale (Salisa): On September 22nd, Keith and Danyeale submitted an application for invasive control on the property for the southern 20 acres. Cara (NRCS staff) wanted to walk the property to see if the percentages were still correct from the original review, but that visit hasn't happened yet. Trail maintenance and invasive treatments for property are anticipated.

Buddha Karst Preserve

Stewardship activities: Keith stated that this fall he mowed the trails, did some invasive treatments around the property (there were a good number of smaller Bush honeysuckle and Autumn olive cut and treated, and some larger ones flagged for later treatment), and did the Classified Forest re-inspection where Janet Eger, District Forester, who was impressed with the progress and changes to the property. He hopes to do more grapevine treatment this winter. Janet said that the oak-culling last year looked good, but more cuts will be needed in the thicker areas in 5-10 years. Janet encouraged Jerry to continue the bird counts on the property to see how numbers change as transition from open pasture to woodland occurs.

Robinson Ladder Cave Preserve

Stewardship activities: Carla stated that Jaime feels that mowing the field on this property is getting too rough for his equipment. She stated that Jaime did not mow it recently. Carla said that Jaime suggests that Keith rent equipment to mow the field. Keith stated that inside the deer perimeter fence of the Chestnut planting did not get mowed this fall, but will occur next spring along with weed treatment. He said that some Chestnuts and Walnuts are 15-feet high and some are tiny.

Lowry Karst Preserve

Stewardship activities: Ray Sheldon said that the stone contractor has delivered two loads of stone for the road. There was one particular tight spot near a

Cottonwood tree that squeezes the lane. It was previously shored up with railroad ties and Keith and Ray had to cut the exposed rebar off. The contractor backed in with the truck and the truck almost slid off the lane with the stone load at that squeeze spot. The contractor had to drop the stone early because of the squeeze spot. Ray stated that he will work on the gate by installing new posts, will work on controlling invasives in the spring, and will work on cleaning up the trash in the sinkholes on the property. He said that he will recycle the metal found. Ray talked to the neighbors of the property and they said that, historically, the property has been a dumping hole.

Matt stated that he went in the cave on October 19th and said it's a beautiful cave. Laura said that she wants to start leading grotto trips into the cave. Ray said that the cave is open for business, though the lane could be a bit tough until it is graded. Matt said that there were long sections of water pipe and pieces of broken cinderblock in the stream in the cave and that other trash exists in the cave, but it's still beautiful. He said that the cave is very wet and that there were fossils present in the entrance room. Keith stated that getting the two loads of rock down to the road will make a big difference on making the road passable.

Acquisition funding status: Goal: \$36,000 to pay for property and Stewardship Endowment Fund contribution. Of that, the IKC is currently at \$33,500. The TNC has pledged \$5,000 towards the project (included in the \$33,500). We have received grants from the CIG (\$1,000) and the National Speleological Foundation (\$2,000). We also applied for a \$2000 grant from the NSS back in June, but there appears to be some reluctance to make a decision. Laura stated that visitors to Wayne Cave were impressed and moved by the list of donors on the kiosk display and that this visual at each cave may increase donations. She suggested that it would be a good idea to use and update the Facebook donation. Jeff said that the IKC may want to state that donor names will be added to the kiosk display in order to increase motivation for donating. Keith said that the names of donors are also promoted in the *IKC Update*.

Keith stated that we normally make a 10% contribution to the Stewardship Endowment Fund with each property we acquire. However, we have not yet done that for the Lowry Karst Preserve. Keith made a motion to transfer \$3,200 from the General Fund to the Stewardship Endowment Fund for the future upkeep and stewardship of Lowry Karst Preserve. Seconded by Bruce Bowman. Unanimous approval (15-0).

Jerry requested permission to conduct a bioinventory of Lowry Cave as per what he has done at other IKC caves. Sue Vernier made a motion to allow Jerry to conduct a general cave bio-inventory of in Lowry Cave. Bruce seconded. Unanimous approval (15-0).

Land Acquisition Activities

Potential Shawnee Karst Preserve expansion: Keith stated that there is a possibility of a future expansion of Shawnee by 17.5 acres. Keith has purchased this property with his own money and has demolished two houses and numerous other out-buildings, enrolled the property in Classified Forest (to reduce property taxes), and has removed the fencing around two previously fenced areas that were approximately one acre each. However, he suggested that the Lowry expansion should be completed before the IKC moves ahead with this new opportunity. There is a small cave on the property that is located very near known passage to Upper Twin Cave. Jerry reported that he and Tom visited the cave and while it is hydrologically connected to Upper Twin Cave, it is not an entrance at the moment. Keith said that there are opportunities for tree planting on the property. Jerry stated that native grasses on the property and that he had been in contact with Mark Bennett at DNR to set up a visit for evaluation for a prescribed burn. Keith suggested that perhaps he could host the June IKC Board meeting at the property so the Board members could better evaluate the property before proceeding with the decision to acquire. Goni asked what the price of the property would be. Keith stated that the property was appraised at \$4,000/acre, but suggests that the actual price is probably lower due to the removal of the structures on the property and the way the appraiser looked at sub-division potential. Keith suggests the price is probably \$3,000 - \$4,000/acre times the 17.5 acres. Keith invited/encouraged Board members to stop by and walk the property when they are in the area.

NCRC Orientation to Cave Rescue Outcome

Jerry stated that the IKC sponsored this training event and that it was the first one that he had attended. The IKC was plugged a good bit. Jerry was very impressed with the efficiency and usefulness of the event. He recommended that the IKC sponsor more of them. Laura agreed. She stated that the management aspects of cave rescue were fascinating and useful. Keith said that there were 22 participants; ten took advantage of our \$25 discount and one was a first responder (full fee covered by the IKC). IKC paid a total of \$290 in discounts. One of the two original donors who put up the sponsorship fees asked that their remaining funds be rolled into the Land Acquisition Fund. The other donor indicated their remaining fund be reserved for the next OCR training. Laura stated that many cavers from out-of-state attended. Keith said that several people joined the IKC just to get the discount to the event (this was expected and encouraged). Laura said that we should request to participate for next year's event, if the IKC is interested. Jerry said that yes, the IKC is interested in participating next year.

No-entry List Discussion Update

Jerry said that he and Keith requested a legal opinion on the No-entry List that was discussed at the last meeting. Keith said that the legal advice was to not create a No-entry List because in order to do that, the IKC would have to notify the individual(s) on the List ahead of time, and the IKC would need to tell those individuals where all of IKC's properties were located in order to properly notify them. However, the ability to prohibit individuals from leading cave trips requires no notice to those individuals and therefore there are no legal issues with that. The Cave Patrons and Grotto Liaisons currently have the authority to deny anyone from leading trips into caves, so communicating/circulating a list of names of "problem" individuals between Cave Patrons and Grotto Liaisons is doable. Laura asked if there is a way to make right what wrongs were done by a "problem" individual? Keith replied in the affirmative and that currently the potential list is only one or two individuals long. However, individual pleas would be reviewed on a case-by-case basis. Jeff suggested allowing Grotto Liaisons and Cave Patrons the authority to deny entry to any individual. Carla asked what if they don't feel comfortable making those decisions? Jeff stated that caves require waivers from participants and if waivers aren't approved, then it's an easy decision. Keith stated that the IKC is proposing to send a list of "problem" individuals to all Cave Patron and Grotto Liaisons. Jeff agreed with that policy. Laura asked if this has been a problem in the past of people disregarding policies. Keith said yes, we have had problems with people not returning keys. Keith said that he is commonly in contact with Cave Patrons and Grotto Liaisons and in one of those communications, he could tell them to watch out for these "problem" participants. Sue suggested that Keith remind Cave Patrons and Grotto Liaisons that in order to allow participants go into caves, they must have a waiver. Carla disagreed with having a "problem" list because people make mistakes and they should have the opportunity to be forgiven for those mistakes. Laura stated that it's unlikely that one of those "problem" individuals would actually request entrance into a cave again. Jeff and Laura both favored giving a "watch" list of people who violated policies in the past to Cave Patron and Grotto Liaisons. Goni stated that letting these individuals into caves is the risk to the IKC, not the Grotto Liaisons, and therefore we (the IKC) should make the decision of who should or should not be allowed into caves, not the Grotto Liaisons. Jeff stated that the IKC should trust the Cave Patrons and Grotto Liaisons. Keith made a motion to communicate with the Cave Patron and Grotto Liaisons the names of people that we have had problems with in the past and that we encourage the Cave Patrons and Grotto Liaisons to not let them lead cave trips. Seconded by Goni. Passed unanimously (15-0).

Education and Outreach Report

NCKMS: Jerry stated that he and Salisa attended the National Cave and Karst Management Symposium in October and that Salisa did a presentation on behalf of the IKC. The IKC received ad space in the NCKMS proceedings donated by Jerry and Salisa. Jeff asked if any of the techniques suggested from other conservancies might be implemented by the IKC. Jerry said that he had conversations about legal matters that were enlightening. Salisa said that one person did a presentation on a legal issue that was interesting and useful. Jerry stated that there was one conservancy that said that they just gave up on waivers for one very popular cave. Salisa stated that this was the opposite approach that the IKC took to Sullivan Cave and that this conservancy practically abandoned conserving their cave. Jerry said that the IKC is moving towards an online existence and that a big jump will be to get the waivers online. Laura said that other conservancies have waivers online, but the bigger ones like SCCi miss touching base with a human being about the cave trips. Phone calls with Cave Patrons would be important so that Cave Patrons can gauge experience levels and caver characteristics. A pure on-line waiver system may be insufficient in this regard. Dick said that caving accidents due to social media have increased because unqualified/uninformed people learn about the cave. Jeff said that the SCCi encourages cave participation and reports their cave visitation numbers to try and boost funding. Laura said that having on-line waivers wouldn't necessarily speed up the process because keys for cave gates would still need to be mailed or picked up.

Graduate student project updates – spiders and cave cricket projects: Jerry said that he took two different students into caves for spider and cave cricket projects. Keith also escorted the spider student to other caves. Jerry took them to Buddha Cave, but found no spiders there or in Chase Cave, with other caves being good sources for the Cave orb weavers (*Meta ovalis*). Over the course of two days Jerry took the student working on cave crickets (*Ceuthophilus* spp.) to 10 caves. The most crickets were found in Sullivan Cave.

Project committee formation: Jerry stated that he likes promoting science at IKC preserves, but thinks that the IKC should consider forming a committee for screening and approval of these projects. He proposed drafting a permit form that students could fill out to request conducting science at an IKC property. Laura asked if a committee would be necessary or, alternatively, someone could be appointed as a Research Liaison. Jerry said that it would largely be him leading research trips, but he didn't want to make all the decisions. Keith said that he felt that it was actually good to engage the Board with these decisions rather than just a smaller committee. Jerry stated that

he didn't necessarily want to increase the amount of infrastructure in the IKC with a committee; informal e-mail votes would work too as long as the Board is okay with it. He said that he has permission to conduct bio-inventories at every preserve, so as long as he goes with the researchers, his permission extends to them. Tom said that the IKC needs to demand a report from these researchers after research is concluded. Jerry said that the IKC could create a permit and put some requisites on it about a report. Matt encouraged the Board learning about research topics conducted at IKC properties, though cautioned that the Board may not be informed enough to vote on research topics. Laura discouraged extra infrastructure and was interested in learning about research conducted at IKC properties. Bruce stated that documentation is an important part of these projects and these permits that would be created would be helpful with that effort. Dave asked about removing fossils/geological formations from caves. Jerry said that that's a completely different project than biological inventorying of invertebrates, and that fossil or geological formation manipulation would not be covered under a basic permit and would need review by the Board.

Items from the Floor

Jeff and Laura stated that the property containing the entrance to Studebaker Pit may come up for sale soon.

Keith stated that Dick fabricated 24 SpeLoggers and the IKC has so far sold 21. These sales resulted in a small profit for the IKC. The IKC currently has three more units left to sell that will net additional funds. The Board thanked Dick for his work on the SpeLoggers.

Keith said that the IKC has received a request from DARPA concerning device testing in a cave. Researchers are developing a "robot" that goes through caves looking for items. The researchers are competing in a challenge created by DARPA. DARPA wants to find a suitable cave to hold the challenge in testing these contraptions and has asked us to hold their contest at one of our caves. We responded that we did not have such a cave that would be appropriate.

Keith stated that an anonymous donor at the meeting has made a Lowry Cave Acquisition funding challenge that any donations towards Lowry made between December 8th and December 31st will be matched up to \$3,000. Keith will send out an e-mail to the membership announcing the challenge.

March Election Nomination Committee

Keith stated that the President, Secretary, and Treasurer are up for Board election, along with Directors Dick, Matt, Bruce, and Bob. Matt, Bob, and Dick have agreed to run for re-election. Bruce has decided to retire. The current President (Jerry), Secretary (Marc), and Treasurer (Keith) have also agreed to stand for re-

election. Danyele and Laura agree to be on the Nominating Committee to find additional candidates to run in the upcoming elections.

March Business Meeting Scheduling

It was agreed that the next IKC business meeting will be on March 21st, 2020 (which is also Laura's birthday). The preferred meeting location be at Ellettsville

Library at 10:30 AM. [Editor's note: The location of the meeting will be at the main branch of the Monroe County Library in downtown Bloomington]

Adjourn

The meeting adjourned at 12:45 PM.

Respectfully submitted by Secretary Marc Milne.

...Continued from page 6

expenses and the many other projects that the IKC initiate. During 2019, fifty-four individuals/couples and five organizations made general donations beyond their dues totaling \$3,761. Donors include John Ahlberg, John Benton, Ted Bice, Jeremy Brisch, Carl Brown, Larry Bundy, Martin Church, Jeff Cody, Laura Demerast, Jeff Farr, Danyele Green, Barbara Hanka, Dave Haun, Shawnee Hogbin, Tem Hornaday, Goni Iskali, Kevin Johnson, Glenn Kotnik, Matt Laherty, Chris Landis, Marcella Larch, Ryan Laudermilch, John Lawrence, Jerry & Salisa Lewis, Timothy List, George Mattson, Todd McCartney, Ray McCormick, William Morrow, Carl Nelson, Katherine O'Malley, Nathan Pate, Jacqueline & Ernie Payne, Matt Pelsor, Joseph Powers, Everett Pulliam, Kevin Rasmus, Tom Rea, Wes Roeder, Kevin Romank, Jim & Rita Rosenstelle, Michael Sanders, Jay Savage, Ralph Sawyer, Bob & Phyllis Sergesketter, Bill Tozer, Bruce Trotter, Aaron Valandra, Bob Vandeventer, Dick & Sue Vernier, Dan Vettters, William Wayne, Scott Worpell, Bob Zatarski, Bluespring Caverns, Greater Cincinnati Grotto, Near Normal Grotto, Northern Indiana Grotto, and The Cleveland Grotto. The overall number of donors were up in 2019 compared to the prior year, as were the total donation dollars (both up about 50%). Those who donated to our land acquisition activities last year are listing in the Lowry Cave donors list on page 7.

- ☐ The IKC would also like to recognize A1 Porta Potty out of Floyds Knobs IN for their generous donation of two "gently used" port-a-johns (worth ~\$250 each). One of these "new" units will soon replace the old one at the Sullivan Cave Preserve that has served us well since 2008 (and it was not in the best of shape when we acquired it back then). The other unit will be placed in storage as a spare and perhaps deployed on special occasions. The unit at Sullivan Cave is pumped/serviced several times a year (another thing your dues and donations support), as this is a "necessary evil" to properly facilitate the large number of visitors to that cave and property.
- ☐ The IKC has gained nine new members in the last quarter. Welcome Thomas Stahl, Jerremy Were-meichik, Amanda Stofan, Ralph Moshage, Mike Drake, Doug Van Demark, Ed LaRock, Paul Webb, and Matthew Bryant. The IKC membership currently stands at 227.

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.

