

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: Cave cricket (*Ceuthophilus stygius*) in Maucks Cave, Harrison County, Indiana. Photo by Dave Black, March 2009.



IKC QUARTERLY MEETING REMINDER
SATURDAY, JUNE 27th, 11:00 AM EST
BLOOMINGTON, INDIANA
WAYNE CAVE PRESERVE

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

Preliminary Agenda: Recap of recent work projects and promotion of upcoming projects at our various other preserves; Selection of new Cave Patron for Sullivan Cave; Indiana Cave Symposium recap; DNR cave access update; Financial reports; Land acquisition activities; and more....

Stewardship Activities: There will likely be some work activities at the property before and/or after the meeting including mowing in the camping area, trail clearing, invasive control, trash pickup, wildlife pond repair, etc. If you are so inclined, show up early and pitch in.

Directions to the Wayne Cave Preserve: From the intersection of SR 37 and SR 45 in Bloomington, take SR 45 west 1.4 miles to Airport Road. Turn west (right) on Airport Road and continue past the airport to Garrison Chapel Road (approximately 2.7 miles from SR 45). Turn south (left) on Garrison Chapel Road for about 1/4 mile to Gardner Road. Turn west (right) on Gardner Road for approximately 4/10 mile and look for a driveway on the left (marked 8363 on the fence). If the gate is open, proceed up the driveway to the parking area.

ACTIVITIES CALENDAR

Jun 27 – IKC Quarterly E-Board meeting and workday (see above)

Jul 13-17 – NSS Convention (Missouri)

Aug 7-9 – Cave Capers (Lawrence County Recreation Park)

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

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.

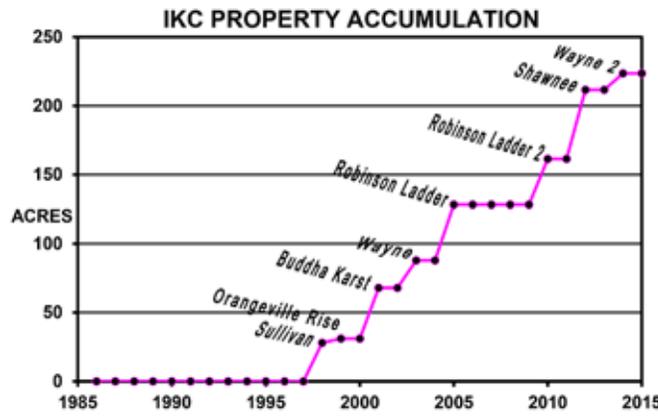
The IKC Update, distributed for free, is published quarterly for members and other interested parties. The purpose of this newsletter is to keep the membership and caving community informed of IKC activities and other news related to cave/karst conservation. Submission of original or reprinted articles for publication is encouraged.

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RAMBLINGS FROM THE PRESIDENT...

Today my thoughts are upon the IKC's partnership with The Nature Conservancy (TNC) and our acquisition of significant properties in Indiana's karstlands. I was inspired to make this my Ramble topic du jour by comments made during a presentation at the recent Indiana Cave Symposium concerning TNC's brief stint as caretaker for two of the entrances to the Lost River Cave System.

It might surprise you to know that of the seven IKC properties, four of them were acquired with significant support from The Nature Conservancy. The first of these was the Orangeville Rise, the second largest spring in Indiana, which was transferred from TNC to the IKC in 1999. That is to say, TNC acquired the property with their funds and then gave it to the IKC. This is an example of a conservation strategy that TNC frequently employs. Their organization does not necessarily want to own a lot of properties, but rather want to get them out of harm's way and into the hands of appropriate stewards. This is a win-win scenario for everyone involved. As the largest conservation organization in the world, TNC has significant liquid financial reserves that can be used to purchase properties.



However, the long-term management of properties requires personnel and TNC's strategy is often to spend their funds purchasing properties and then finding good stewards who will hold the reins to provide for their perpetual upkeep. Thus, the IKC received the Orangeville Rise from TNC and in return we keep an eye on the property, doing things like picking up trash, maintaining the property lines, and fielding requests to conduct research at this important groundwater site.

The next year, in 2000, The Nature Conservancy transferred the conservation easements that they had secured at the Sinks of Indian Creek to the management of the IKC. This is another mega-important site, where the surface stream of Indian Creek sinks underground to merge with the groundwater flowing through the Blowing Hole section of the Binkley Cave System, and from there onward for about four miles to resurface at Harrison Spring (the largest spring in Indiana).

In 2005 the IKC again found itself partnering with TNC in the acquisition of a 40 acre parcel containing Robinson Ladder Cave, a Priority 3 Indiana bat hibernaculum that extended our property holdings into Crawford County. TNC gave the IKC \$30,000 toward the purchase of the \$74,000 property. Then in 2010, The Nature Conservancy transferred two adjacent tracts which they had acquired to the IKC to bring the total preserve at Robinson Ladder to 73 acres, currently our largest preserve. TNC also contributed \$4350 to our Stewardship Fund for the preserve addition, understanding the long-term responsibilities and expenses that goes along with land.

Our most recent partnership with The Nature Conservancy was the acquisition of the 50-acre tract containing the entrance to Upper Twin Cave that in 2012 became our Shawnee Karst Preserve. Purchase of this entrance gives the IKC control of an entrance to another of Indiana's classic, the Shawnee Cave System that includes the Donaldson, Bronson, and Twin caves entrances in the Donaldson Woods Nature Preserve within Spring Mill State Park. In addition to the magnificent cave passages, the system is inhabited by one of the largest known populations of the Indiana cavefish (*Amblyopsis hoosieri*). TNC provided \$50,300 toward the acquisition of the Shawnee Karst Preserve, half the total cost of the property.

Now going back to the concerns voiced during the presentation on the Lost River Cave at the Indiana Cave Symposium. This is an example of an acquisition by the Hoosier National Forest (HNF) that went awry. During the recent meeting for the Regional Forester's review of the HNF, among the twenty or so attendees, I was present as representative of the IKC and Allen Pursell was there for TNC. Allen stated during the meeting that TNC typically extended a 1.5 million dollar line of credit to the HNF. This allows a mechanism for purchases when there are time constraints that can't be met by the frequently cumbersome federal government. TNC can purchase a property under an agreement from

the HNF to only keep the property in a holding pattern until the forest service goes through the longer process of obtaining the funds for acquisition from the federal treasury. In the case of the Blanton tract containing two entrances to the Lost River Cave System, there were some unforeseen complications and general federal funding difficulties that prevented the immediate transfer of the property from TNC to the HNF.

The problem to the caving community occurred when the delay extended and the HNF was unable to complete the transfer of the property in a timely manner. It wasn't on TNC's radar to undertake the management of a major cave system with a mapping project underway. Unfortunately a period of time elapsed in which access to the cave entered a no-man's land... finally the problem was brought to my attention and it took about five minutes to solve. All I had to do was ask... I explained to Ellen Jacquart, the TNC Stewardship Manager for operations of the area at the time, that I had no concerns about visitation on the fauna of the cave... and voila, the IKC became interim managers of the cave until the property was transferred to the HNF. That finally occurred a couple years ago and entry to the cave is now controlled by the Forest Service

– the IKC relinquished control of the entrances as part of our agreement to be interim managers. Entry to the Lost River Cave is now available via a research permit by the Forest Service for mapping or other projects.

I have two take-away messages in this Ramble. First, the accompanying graph shows the continued growth of our IKC cave preserves over the last thirty years. Thanks to our partners, of which our greatest has been The Nature Conservancy, all of the acquisitions are 100% paid for and we're now poised and ready to buy another great cave. Personally, I'd like to see the IKC own one of the many nice caves in the southeastern Indiana karst. The area has hundreds of caves and many would make fine additions to our existing portfolio of preserves. There's no time like the present to make a directed donation to the IKC toward our next acquisition!

The second message is to consider learning more about The Nature Conservancy (www.nature.org), the IKC's greatest partner in cave and karst conservation in Indiana. And if you have questions, concerns or issues let me know and I will pursue an answer.

Jerry Lewis

NEWS BRIEFS...

☐ At the IKC annual business meeting on March 21st, Jerry Lewis and Keith Dunlap were re-elected as President and Treasurer, respectively. Sue Vernier was elected Secretary. Dave Haun and Tom Sollman were re-elected Directors, while Joy Baiz and Kevin Smith became new Directors. The full list of the Executive Board can be found on page 2. Our immense thanks to retiring Directors Chris Dick (3 years) and Karen Silvers (6 years).

☐ Also at the March meeting, Kevin Smith was appointed the new Cave Patron for Suicide Cave, replacing Ronnie Burns, who has served as the Patron for 20 years (Ronnie recently moved to Tennessee). In April, Keith Dunlap, Jerry Lewis, Kevin Smith, and Tom Sollman performed gate maintenance at Suicide Cave to address some reoccurring issues. All is good now.



☐ Most of the IKC's basic operating expenses and obligations (newsletter, liability insurance, property taxes, routine stewardship activities) are covered by membership dues. However, we are greatly appreciative of additional donations to supplement and support the many other projects the IKC initiate. Since January 2014, 77 individuals and 6 organizations have made general donations beyond their dues totaling \$9,348. Donors include John Ahlberg, Ray Beach, John Benton, Ted Bice, Don



Bohling, Dayton Boyd, Jeremy Brisch, Carl Brown, Danielle Burden, Larry Bundy, Paul Cannaley, George Cesnik, Thomas Cheinier, Martin Church, Jeff Cody, Jaime Coffman, Laura Demarest, John Dimit, Ralph Doerzbacher, Andrew & Alison Dubois, Dave Everton, Jeff Farr, Peri Frantz, Rick Gikas, Scott Hammon, Barbara Hanka, Horton Hobbs, Tem Hornaday, Don & Kathy Ingle, Paul Kortepeter, Glenn Kotnik, Jerry & Salisa Lewis, Ray Long, George Mattson, Jon Miller, Bill Morrow, Carl & Louie Nelson, Shannon Obendorf, Nathan Pate, Ernie & Jacquie Payne, Gene & Jennifer Pelter, Everett Pulliam, Russ Pulsilo, Kevin Rasmus, Tom Rea, Kelle Reynolds, Gary Roberson, Robert Chlebek, Wes Roeder, Jay Savage, Ralph Sawyer, Bob & Phyllis Sergesketter, Noel Sloan, Gordon Smith, Tom Sollman, Susan Strickland, Bill Tozer, Bruce Trotter, Aaron Valandra, Dick Vernier, Chris Wadsworth, Mark Webb, Norbert Welch, Susam Wilkinson, Rich Whisler, Gary Whittaker, Shelly Wolf, John Worpell, Sue & Dick Vernier, Bluespring Caverns, Indiana Caverns, The Cleveland Grotto, Near Normal Grotto, Northern Indiana Grotto, St Joseph Valley Grotto, and the Hulman Memorial Way Foundation.

- ❑ The IKC also maintains a Cave Acquisition restricted fund which is used to accumulate resources for our next property acquisition. Since January 2014, 36 individuals and 3 organizations have contributed \$4,389 to the fund. Donors include Carl Brown, Chris Carpenter, Jenny Clark, Jeff Cody, Danyeale Cottrell, Keith Dunlap, Dave Everton, Scott Fee, Allen Goodcase, Scott Hammon, Barbara Hanka, Martin Heinlein, Tim Heppner, Hank Huffman, David Hughes, Lynn & Jane Miller, Jon Miller, Ernie & Jacquie Payne, Nate Pate, Kelle Reynolds, Gary Roberson, Cindy Sandeno, Matt Selig, John & Brenda Shultheis, Gordon Smith, Ty Spatta, Mark Webb, Norbert Welch, Rich Whisler, Carla & Jamie Winner, Shelly Wolf, Kevin Wyatt, Indiana Caverns, St Joseph Valley Grotto, and SerVaas Laboratories.
- ❑ The IKC has gained two new members in the last quarter. Welcome Bryan Tomky (558) and Brian Walker (559). The IKC membership currently stands at 192.

CAVE GUIDE WORKSHOPS: BIOLOGY AND BEYOND

by Jerry Lewis

In my work as a cave biologist, I've visited all of Indiana's commercial caves and three of them are owned by friends: Bluespring Caverns, Marengo Cave, and Indiana Caverns. This spring I offered to come out and conduct workshops about caves and cave biology, and Jim Richards

(Bluespring) and Gordon Smith (Marengo) took me up on the offer. It's an opportunity for the cave guides to learn a little more about their places of employment and it allows me to share some of my knowledge and experience while sliding in a conservation message.



I've prepared a PowerPoint presentation that I modify to fit the situation at each cave. At Bluespring Caverns, I actually gave my talk in the cave in their underground camping area. The audience was receptive and interested, and I talked about what kinds of animals occur in Bluespring Caverns, their ecological classification (e.g., troglodite, troglobite, etc.), and where they fit on the food pyramid. After showing some slides we walked around and looked at some terrestrial (land) habitat.



Jim Richards had put out some cheese bait in a couple places to see what might be attracted and the star of the show was a White-footed mouse we found enjoying the free meal.

More recently I visited Marengo to do another workshop. Over twenty of their staff gathered in their education theater where I first gave my little PowerPoint presentation. At Marengo there's a lot to talk about. The cave was commercialized almost immediately from the time it was discovered and seemingly gained a lot of notoriety from the start. The Indiana State Geologist, William Blatchley, visited Marengo Cave during his five-week wagon tour in the summer of 1896. Although Blatchley was a geologist, he was also a biologist of note and much of the earliest information we have on Indiana cave fauna resulted from his nineteenth-century visit. Blatchley discovered the first four troglobites known from Marengo: an isopod, millipede, springtail, and a fly.

The European biologists René Jeannel and Simon Bolivar also visited the cave in 1928 during their 2,000 mile car trip to caves scattered around the eastern United States. They were more attuned to very tiny animals and discovered Jeannel's groundwater copepod along with two kinds of seed shrimps. None of these micro-crustaceans attain even one millimeter in size. Bolivar and Jeannel also discovered the first cave beetle at Marengo, bringing the total number of troglobites found in Marengo in 1928 to eight.

I've visited Marengo and Old Town Spring caves many times over the last forty years, and by the time I'd completed my work with The Nature Conservancy's Blue River Project, the cave had sixteen species of troglobites.

After the PowerPoint session, the entire group took a walk through the cave, where we did some hands-on observations with lots of questions and conversation. Not far from the Dripstone Trail entrance there are many pools and we saw numerous Cave salamander larvae in the water on the mud bottoms. I carried a turkey baster with me, known by biologists as "sucker-uppers" and was able to pull a cave isopod out of a trail-side pool. I put the isopod in a petri dish and everyone got to take a good look at it. I asked where folks thought we might find the micro-crustaceans and after

hearing a few suggestions, had everyone look down at their feet. On past occasions I had found Jeannel's groundwater copepod in the pools right there on the trails! These tiny crustaceans live in the epikarst and constantly travel into the cave from drips off the formations for which the cave is famous.

We walked along for a while and stopped in the area of the Penny Ceiling to talk about things that hibernate in caves. Everyone was familiar with bats, to which I added some of the flies that enter caves in the winter, Herald moths, and mosquitos. Finally we reached the area around the Crystal Palace, where luck smiled upon us when I spotted a little red cave beetle scurrying across the trail. I scooped it up in a petri dish and everyone had the opportunity to see it closely. I heard a lot of comments like "I had no idea that all these animals were right there on the trails!"

We finished up the evening at the Crystal Palace, where we laughed at the observation of Bolivar and Jeannel: "Cette grotte, célèbre malgré la médiocrité de ses concrétions..." which translates to "This cave is famous despite the mediocrity of its formations...". Looking at the splendor of the formations in the Crystal Palace we could only shake our heads wondering what it took to impress these guys. The last conversation actually switched to a little geology, and I explained the cycles of cave formation that occurred during the Pleistocene ice ages. When sea level fell as each glacier retained large quantities of the earth's water, cave and surface streams entrenched across the eastern United States, creating passages underground and deepening valleys on the surface.

I enjoyed increasing folks' awareness of the cave life right below their feet... cave conservation and appreciation starts with awareness.



Wyandotte Cave set to reopen in 2016

Lawmakers include \$1.7M in state budget for remodeling

by Chris Adams

Wyandotte Cave, closed for the past several years, will reopen in 2016, as the two-year state budget passed by lawmakers last Wednesday includes \$1.7 million for facility upgrades.

District 74 State Representative Lloyd Arnold, R-Leavenworth, on Friday said work on the park – including the razing of the main building, which will be replaced, and rewiring in the cave – will begin later this year.

“The game plan is we’ll have it open in the summer of 2016,” he said.

Although official tours will not begin until next year, Arnold said there has been talk about volunteers with the Indiana Karst Conservancy taking people through with LED lanterns this summer.

The cave has been closed to protect hibernating bats, including the endangered Indiana bat, and to prevent the spread of the infectious White-nose Syndrome, which was confirmed in 2011.

Arnold said more has been learned about WNS in recent years.

He said he had conversations with officials from the U.S. Fish & Wildlife Service, which had “highly recommended” that the Indiana Department of Natural Resources close the cave. Arnold said he questioned why Wyandotte Cave was closed while the federal Mammoth Cave in Kentucky, which also is infected with WNS, remains open.

Visitors to Mammoth Cave are required to walk the length of an artificial turf mat to remove spores and dirt after exiting the cave. Ar-

nold said he isn’t sure Wyandotte Cave will employ that particular system but said some type of decontamination measures will be enacted.

Arnold said reopening Wyandotte Cave has been a priority of his since he first was elected in 2012. During this legislative session, he authored House Bill 1206, which required the cave to reopen to the public next summer.

The bill was assigned to the Natural Resources Committee, of which Arnold is the vice chair. It then was sent to the Ways and Means Committee, where lan-

may farm it out again, but, right now, it is to be operated by the state.

Besides financially benefiting the state, the cave’s reopening will be a boon to businesses in nearby Leavenworth, Arnold said.

“That area right there is going to see an overall increase in traffic,” he said.

Arnold said Leavenworth business owners and others, including Crawford County Chamber of Commerce president Morton Dale, have been advocating for the cave’s reopening. He noted there even is a Facebook page – “Let’s Work Together to Reopen Wyandotte Cave” – in support of reopening the cave.

Another incentive in getting the cave reopened next summer is the state will celebrate its bicentennial in 2016. With nearby Corydon being Indiana’s first capital, the area is expected to see an increase in visitors.

“I felt like, if we had a state park, it should be open,” Arnold said.

Part of O’Bannon Woods State Park inside the 26,000-acre Harrison-Crawford State Forest, Wyandotte Cave features 25 miles of passages on five levels [*editor’s note: the cave is only 9.2 miles long*]. Included within are Rothrock Cathedral, a room with an almost 1,300-foot circumference, with Monument Mountain, a 175-foot-tall rock pile in the center, and the Pillar of Constitution, a column of white calcite that measures more than 70 feet in circumference.

Reprinted from the May 6, 2015 on-line Clarion News.



gueage from the bill was inserted into the biennial budget.

“I knew the money was going to be there, but I wasn’t confident there was going to be a specific line item,” Arnold said.

Arnold said District 47 State Senator Erin Houchin, R-Salem, was instrumental in gaining support for the \$1.7 million in funding in the Senate. He added he is confident the cave, which will be open April through September, will generate that much revenue for the state within the first three years of operation.

Previously, the cave had been run by Marengo Cave owner Gordon Smith under a concession agreement. Arnold said the state

2015 INDIANA CAVE SYMPOSIUM RECAP

by Keith Dunlap

The Lawrence County Fairgrounds' Community Building was again selected for the 23rd annual Indiana Cave Symposium, which was held this year on April 18th. Indiana cavers were out and about earlier in the day caving and enjoying the wonderful spring weather. The Symposium was once again co-hosted by the Indiana Karst Conservancy and Indiana Cave Survey, with each organization sharing the facilities rental and food expenses, which included burgers, brats, pork loins, buns, condiments, and soft drinks. Approximately eighty attendees helped out by bringing side dishes, desserts, chips, and the like to complete the cookout for the first part of the event. The program part of the Symposium began around 7 PM. The following summarizes the presentations:

- Boone Cave Bioinventory Project – Jerry Lewis presented results from another one of his cave life inventory projects. This one was Boone Cave in Owen County owned by The Nature Conservancy. The scenic cave has a historic background and also suffered a bio-diesel spill in more recent years.
- Big Bat Cave LiDar Map – Ken Bailey has been working on LiDar (3-D radar) mapping Big Bat Cave in Kentucky. The cloud surfaces can be stitched together and computer-simulated “fly-throughs” created to allow virtual caving. No need to ever get muddy again.
- Lost River Cave Survey Project Update – Joy Baiz gave an update of the various survey trips in Lost River Cave (Orange County) and their search for the elusive back entrance. Currently the second longest cave in Indiana, there was an idle threat that the Lost River System may some day surpass Binkley as the longest cave in Indiana.
- 2015 Indiana Bat Census – Keith Dunlap presented the preliminary population results from the just completed 2015 Indiana bat count. The numbers showed some decline in the Indiana bat population, but not nearly as drastic as have been observed in the Little Brown and Tri-colored bats.
- Blue Spring Cave Project Update– Joe Kinder is in the preliminary stages of renewing the survey project in Blue Spring Cave (Lawrence County), currently the third longest cave in Indiana. The main part of the cave has not been pushed in over 30 years.



- Binkley Cave Update - Dave Everton gave the annual update on this on-going project with several major discoveries and new dye-tracing results suggesting there could be much more to the system. The cave is now just under 42 miles.



photo courtesy Dave Black, 2015

- Driveby Cave Survey – Chris Dick gave a chronologically detailed, multi-media presentation on Driveby Cave (Lawrence County) as well as several other nearby caves/pits/digs.

A hearty thanks to everyone who made this year's Indiana Cave Symposium a success, from the symposium organizers, to the presenters, the sponsors, the burger grillers, and all the attendees! Interested in presenting next year? Just let it be known!

Bananas to Bats: The Science Behind the First Bats Successfully Treated for White-Nose Syndrome

by Matt Miller

Last week, seventy-five bats successfully treated for White-nose Syndrome were released back into the wild in Missouri – rare good news in what has become one of the gloomiest wild-life stories in North America.

White-nose Syndrome (WNS), caused by a fungus, has devastated bat populations in the eastern United States since it first appeared here almost ten years ago. An estimated 5.7 million bats have died, and conservationists have scrambled to find solutions.

The bats released last week all had White-nose Syndrome, and were successfully treated with a common bacterium that releases Volatile Organic Compounds (VOC) with anti-fungal properties.

This hopeful story may be an important first step in managing WNS. And its scientific backstory is just as fascinating.

This innovative treatment's development began not with bats, but with bananas.

That's right: the bananas on your supermarket shelf play a surprising supporting role in bat conservation.

From Bananas to Bats

When researchers at Georgia State University began research on the common bacterium *Rhodococcus rhodochrous* they were not thinking about bats. They were not even thinking about fungi.

They were thinking about fruit. When bananas, peaches, and other fruit are picked, the plants emit their own chemical signals. These begin the fruit's ripening process.

When fruit has to be delivered thousands of miles to supermarkets – as is so often the case – it's a race against time. The fruit can ripen and rot before it makes it to the store's shelves.

Researchers were investigating the effectiveness of VOCs – emitted by the bacterium *R. rhodochrous* – in delaying ripening in fruit.

Researchers and graduate students began noticing another effect of these VOCs: fungus inhibition. The fruits exposed to the bacterium were not getting moldy.

Chris Cornelison was at the time a graduate student at Georgia State. He had been seeing the photos of dead bats piling up in caves, and a thought crossed his mind.

"I was standing there looking at a bucket of moldy bananas

next to a bucket of bananas with no mold," says Cornelison. "If the bacterium could be so effective on fungi on bananas, could it have similar effects on fungus on bats? It was one of those leaps of thought in science that maybe only a grad student could make."

Cornelison, now a post-doctoral research associate at Georgia State, exposed petri dishes of the fungus that causes WNS (*Pseudogymnoascus destructans*) to the bacterium.

"The first exposure seemed too good to be true," says Cornelison. "I had to test it five more times before I believed the results. It had dramatic effects on the fungus. It seemed like this could be a big step in managing white-nose syndrome."

A Cooler Full of Bats

Other bat researchers and conservationists saw the potential for this bacterium and the potential to take action against a conservation issue that was frustratingly difficult to combat.

"When White-nose Syndrome was first documented, we were scrambling to find information," says Katie Gillies, director of the imperiled species program at Bat Conservation International (BCI). "We had to research the disease, understand how it works, how it spreads. But we also knew we had to take action."

A number of partner organizations – including BCI, The Nature Conservancy, and the U.S. Forest Service – worked with Georgia State researchers to test this bacterium as an initial tool to help manage WNS.

"In 2012, we tried our first crazy idea to build an artificial bat cave that could help us provide a hibernating place for bats that we



could clean every year,” says Gina Hancock, state director for The Nature Conservancy in Tennessee. “Then when we formed a partnership with BCI, we kicked around what was the most promising work being done, and bio-controls came to the top of the list.”

Hancock notes that there was no public money being spent on this kind of research, so The Nature Conservancy and BCI sought proposals to accelerate the research.

At Georgia State, the laboratory results continued to be impressive. The next step was to test the bacterium on bats in a laboratory setting, and it worked. Bats suffering from WNS recovered.

Of course, the bacterium is essentially a bio-control – a biological method of controlling an invasive species. As Cornelison notes, the use of bio-control has a checkered history, one filled with unintended consequences.

The impacts of the bacterium on other native organisms would have to be fully vetted. But in the meantime, bats could be treated in a limited field setting.

First, bats suffering from various levels of WNS were collected in the wild. They are not actually treated with the bacterium; it’s the VOCs that have the anti-fungal properties.

The bats were placed in a mesh bags, then put in a large Yeti cooler containing plates of the bacterium. They stay there for 24 to 48 hours.

The treated bats were then placed in an enclosure in a wild cave, where they spent their hibernation. This spring, they were collected and tested for presence of WNS.

“We tested for their fungal load and compared that to the fungal load when we first captured them,” says plant pathologist Daniel Lindner, of the U.S. Forest Service’s Center for Forest Mycology Research. “The bats had no detectable signs of White-nose

Syndrome and could be released.”

Some of the bats had such severe wing damage from the fungus that they could not be released (these animals will serve as conservation ambassadors), but seventy-five were released at the Mark Twain Cave Complex in Hannibal, Missouri.

The bacterium does not cure WNS; it arrests the development of the fungus and inhibits its growth. But it is still a tremendous first step in finding ways to manage the disease.

From Lab to Cave

Could this bacterium be used to treat caves? Yes, but first more tests are needed. The treatment has to be tested for potential toxicity to other cave organisms, including native fungi. (This is why fungicides have not been used to fight WNS; they typically kill all fungi, not just the harmful species).

“We have to make sure it’s not going to upset the cave’s delicate ecology,” says Lindner.

Once those tests are completed, how do conservationists actually treat a wild cave? Researchers are considered a nebulizer that pumps the VOCs into the cave. “It’s a very sophisticated version of a commercial grade air freshener, like what a hotel might use,” says Lindner.

It could lead to treatment of

caves, mines, and bunkers – potentially creating safe havens for bats. “In this trial, we had to touch every single bat,” says Gillies. “The goal is to optimize this tool so that we can treat a large number of bats without touching them.” Even then, this tool will not eliminate WNS.

“This is one tool, but we will need many more to manage this disease,” says Lindner. “But tools like this could help us manage the disease. It buys time for bats to adapt to the disease and develop resistance. That could prevent extinctions and allow healthy bat populations to rebound.”

For several years, talking to bat conservationists was an exercise in despair, in helplessness. WNS is still a major problem, and one that will continue to require innovation and research on a number of fronts.

But the sight of bats – bats that would have died of the disease – flying through the woods after successful treatment suggests a new chapter in this story. A new hope. “We are finally at the point where we can intervene on White-nose Syndrome,” says Gillies. “It is not a silver bullet. We need more tools. But it is a first step. A huge first step.”

Reprinted from Cool Green Science (Science Blog of The Nature Conservancy), May 27, 2015.



A LOOK BACK AT INDIANA KARST

by John M Benton

GEORGE F. JACKSON, NSS 151, first visited Wyandotte Cave in southern Indiana's Crawford County in 1923 as a thirteen year old Boy Scout from New Albany, Indiana. He became enthralled with the cave and its history and massive, eerie, mysterious passageways. Later, he became a tour guide there and ended up marrying into the Rothrock family, who owned the cave from the early 1800s until 1966 when the heirs sold the cave to the state. George's first wife was Lotys Rothrock (who later died of cancer), daughter of Charlie Rothrock, who himself was one of the main explorers of the New Discovery in 1941 at Wyandotte. George went on to participate in numerous cave explorations in Indiana and Kentucky; among them was the well-known Russell T. Neville Salts Cave (now part of Mammoth Cave) Expedition with Neville and some of the Collins brothers in 1927 (Floyd Collins had died in Sand Cave in 1925). In 1929, George had an account published in NSS Bulletin #8 on the Unexplored Regions of Wyandotte Cave.

He joined the NSS in 1941, its first year of existence. George soon began to knock out cave articles left and right. By 1973, he had well over 100 articles published, many in the *NSS News* and *NSS Bulletin*. He was an avid photographer and contributed many of his pioneer cave photos for his and others articles. Much of his adult life, he worked in an Evansville Indiana camera shop, enabling his photographic endeavors. He helped to organize the first grotto in Indiana.

In the 1940s and 1950s he served two long stretches on the NSS Board of Governors and from 1948 to 1966 he prepared the annual index for the *NSS News*. In 1955, George moved from Indiana to New Jersey. There he was active with the Philadelphia, Northern New Jersey, and Kittatinny grottos. He was a member of the

NSS News staff and in 1956 was Associate Editor. Also in that year he served as editor of the *NSS Occasional Papers* and from 1956 to 1968, was Assistant Editor of the *NSS Bulletin*. In 1958 he became NSS Vice-President for publications.

In 1963 George moved to California and assisted the Sierra-Mohave and Southern California grottos with publications and as a board member. In the 1970s he became active in spelean history with numerous publications and talks with the American Spelean History Association. He wrote two books, a pamphlet, and innumerable articles about Wyandotte Cave.

In his later years, George moved back to



southern Indiana, relocating to New Albany, not far from his beloved Wyandotte Cave. Although I had corresponded with George with dozens of letters in the 1970s while attending IU, I had never met him personally, but got a chance to do so, once he was back in Indiana. I treasure his personally autographed copies of his Wyandotte books, although some say (in jest) that his books are worth more unsigned! His health was failing and I regret I never got underground with George. He was quite the story teller

and had lived many TLA's (True Life Adventures). George passed away in August 1981 at age 74; and is buried in Fairview Cemetery in New Albany, Indiana.

Among the items that I ended up getting from the George Jackson Estate, are some cassette tape recordings that George made in 1976-77, in which he relates some incidents and stories from his Wyandotte Cave recollections, some of which are very interesting. I wish there was more detail, but nevertheless, some interesting history is recorded. I plan on doing a future IKC Look Back article on these tapes, 'down the crawlway'.

Thanks go to Dr. William "Bill" Halliday, NSS 812, for help in gathering info for this article.

ANNUAL CAVE PATRON / PROPERTY MANAGER REPORTS

Each year at the Annual Business Meeting, the Cave Patrons and Property Managers are asked to present a verbal summary and submit a written report describing the prior year's activities and incidents, and to make any future recommendations needing implementing. The following is a compilation of the reports for calendar year 2014:

Buddha Cave Patron Report (Jeff Cody)

In 2014, there were a total of six trips to Buddha Cave. Three trips were arranged through the Cave Patron and three were arranged through Dave Everton. The number of trips this year was very similar to last year. We had a total of 26 people inside the cave this year. On April 26, 2014 I made a trip into the cave on the day of the Indiana Cave Symposium. On this day the inside of the cave appeared in a similar state as before. Nothing out of the ordinary in the way of trash, graffiti or damage to the cave. The property appeared to be in good shape also as trails were mowed and the parking area and gate appeared to be in good shape as well. The water level in the lower level seemed kind of low given the time of year. The only concern I had was the climb up near the entrance. To me this is kind of difficult, especially on the way down. I know we had one incident there several years ago. I am not sure if it is possible but some kind of assist there may be in order. Maybe a bolt to rig it from where the upper passage drops off ?? I did not look close enough to see if there are any natural rig points in the upper passage. Some kind of ladder would be best, but not sure if this is possible or acceptable. My fear is we may have an accident due to fall at this climb up. It is awkward, especially on the way down. Other than that, the cave appears to be in great shape and our stewardship seems to be working well. Nice to see that all trips this year were groups of less than ten, hopefully this will minimize impact of formation areas.

Buddha Property Report (George Cesnik)

Activities included:

- 4/26/14 – Keith Dunlap, Tom Sollman, Brian Welp, Everett Pulliam, Seth Gower, Jerry Lewis, and Jamie Winner planted 7 chestnut trees. They also installed a bridge over the creek on the trail. George Cesnik cut some grapevines near the bridge.
- 5/19/14 – Keith Dunlap mowed the trails and

also cut down and chemically treated several autumn olive trees. Looked like one of the seven chestnut trees did not survive. Keith also cut off the protruding re-bar on the bridge that was installed in April.

- 6/25/14 – Keith Dunlap mowed the trail and sprayed three tanks of weed treatment. He re-staked the tubes around the chestnut trees. Six of the seven chestnut trees were doing great. The other trees on the property are also doing great.
- 7/4/14 – Keith Dunlap sprayed four tanks of weed control around the trees planted in 2007-2008. They are on the left side of the trail starting 100 feet from the parking lot. These are the small trees that didn't start out well (weather?), but there *are* some nice looking ones that are gaining height, mostly oak, walnut, cherry, and persimmon. Also three-quarters of a tank of weed control was applied on Johnson grass next to the county road.
- 7/19/14 – Keith Dunlap mowed the trails and did some brier trimming along the trails. He also installed the address sign on the new post he installed. The purpose of the address sign is twofold: It is useful for giving directions to visitors and cavers so they know where they are and where to park. More importantly, the address is registered/assigned by the Lawrence County Emergency Management, so if there was ever an accident or need for the EMS/Fire/Sheriff, we can use the address 855 Buddha Road, Bedford, and it should show up in the dispatchers database for a quicker response.
- 7/24/14 – Keith Dunlap replaced the parking lot gate hinges so the gate will swing easier.
- 9/23/14 – Discussion about feral pig control. Feral pigs are in the vicinity of the preserve. The IKC gave permission to Steve Backs, wildlife research biologist, Indiana Division of Fish and Wildlife, and others to enter the property as needed and authorization to do what is necessary to control the pigs if they are found on the preserve.
- 10/17/14 – Keith Dunlap mowed the parking lot and loop trail.
- 11/3/14 – Three tanks of herbicide were sprayed on honeysuckle at the back of the property by Keith Dunlap.

Sullivan Cave Patron Report (Anthony Owens)

No report submitted.

Sullivan Property Report (Keith Dunlap)

This was the IKC's 16th full year of ownership and we continue our long-term stewardship projects. The trees in the small field, planted in 2000, are doing fine with some reaching eight inches in diameter and thirty feet tall. Those in the larger ridge-top field planted in 2001 have a more mix pattern with some species doing very well and others just holding their own. Fescue is more of a problem in the open areas in the larger field. There was no tree maintenance/improvements completed in 2014. We likely should walk the mature woods again to cut grape vines.

The "camping" area and the area out by the highway were mowed three times last year. I did not get a fourth mowing after the leaves fell due to an early snow. Weather permitting; I hope to do some grass over-seeding in the camping area this fall.

There was a tree blow-over in late 2013 near the southwest corner of the camping area with the tree hung at a 30-degree angle creating a potential safety issue. This tree was dropped by Tom Sollman in March 2014, partially cut into firewood, and stacked near the fire pit.

The lane and parking areas are in good shape and no major maintenance is anticipated for 2014. I do hope to get some new crushed rock placed where the driveway intersects the highway as there is a three inch plus drop at the shoulder of the blacktop (I keep hoping InDOT will add a new apron onto the driveway).

In June, I installed a 911 address sign by the driveway for easier directions to the property.

Several members took advantage of the camping area and firewood over the past year, but overall use seemed down compared to a few years back. We are discouraging campers from bringing their own firewood to reduce Emerald Ash Borer transportation, although EAB is now pretty widespread in Lawrence County.

The porta-potty is still functioning. I likely will have it pumped this spring.

Locks are being serviced by Anthony Owens, as needed (new series started in March 2014).

There were no major management problems or concerns encountered during 2014.

On the adjacent property to the east, I continued to cut grape vines during the winter month (to date I've covered about 30 of the 35 acres). Some

additional cleanup around the home site is needed and some earth grading is planned to restore the area. Overflow parking is available there and I have been keeping an area mowed for alternative camping.

Wayne Cave Patron Report (Dave Everton)

There were ten trips to the cave during 2014. As far as I know, every one of the 67 cavers who went in, came out. There were no mishaps reported.

There was a minor problem passed along to the Patron, which was trash and food wrappers found by a reliable source one day after a previous group had visited. My attempts to communicate with the trip leader of the likely-offending group resulted in never hearing back from them. Needless to say, they'll have some explaining to do, lectures to endure, and restitution to complete if they wish to ask for access again.

Wayne Cave continues to be a source of enjoyment and pleasure for the average visitor. Thanks goes to the IKC for many years of past protection and restoration, as well as regular continued protection and property access.

Wayne Property Report (Robert Sollman)

This will be the 12th year the IKC has owned Wayne Cave. Property Maintenance included:

- An large information kiosk was built.



- The clearing at the top of the hill has been left to grow naturally with the exception of glyphosate sprayed on invasive species (autumn olive, multiflora rose, etc...).
- Trash was removed along the road-frontage as well as the driveway.
- Several trips were made to the property for clearing the trail to the cave of down trees/branches, as well as weed-eating the trail.



Future Projects include:

- Creation/installation of interior informational displays for kiosk.
- Removal of scrap woodpile dumped by gate.
- A workday for invasive and grapevine control as well as Beech and Maple reduction.
- Routine maintenance of property.

Robinson Ladder Property (John Benton)

2014 Property activities:

- In late May 2014, IKC member Jamie Winner used his own tractor and mower to mow the drive lanes, parking and camping areas. For several years, Jamie has donated his own time, equipment, and labor to do this and the IKC appreciates the work and thanks him.
- Six chestnut trees were planted on April 29, 2014 by John Benton and Keith Dunlap. These were planted in the lower field of the original 40 acre tract. They are obvious inside white vinyl tubes to shield the seedlings from becoming wildlife food and somewhat from wind, etc. All six appear to be growing well, going into 2015. Keith also randomly cut some grapevines on the property that day.
- June 9, 2014, John Benton cut and removed poison ivy growing on and around the entrance drive gate. Some IKC members are not particularly fond of this plant!
- There was an IKC workday at RLC preceding the evening IKC meeting at the cabin of Kevin Smith in Milltown on June 21, 2014. About a dozen IKC members assisted cutting grapevines, and trimming the access lane of overgrowth (as this had not been done for a few years). Kudos go to IKC member Tom Sollman who did much limb removal with his trusty chain saw. At the IKC meeting Carla Striegel-Winner gave a report on collecting ideas on how to best manage the two open fields, soliciting ideas from the membership and consulting on and off with Mark Bennett (IDNR Biologist) and Allen Pursell (TNC). Most members felt that whatever would be best for the bats is what the management plan should follow. This is on ongoing developing plan and at the Fall IKC meeting Carla reported that possibly spraying, bush-hogging, strip mowing, burning, doing

nothing (let nature take its course), are the options. Jerry Lewis (IKC president) asked about using the herbicide Plateau, and suggested doing this first on a small test plot at RLC. Carla continues to gather info on this and will have an update at future IKC meetings.

- November 13, 2014, Keith Dunlap and John Benton met up with District Forester (IDNR) Abby Irwin at the property for the five-year review inspection required to remain as Classified Forest status. We walked over the tract and gave her an overview to insure we are within the standards of Classified Forest (thus lowered property taxes). All was acceptable; she did find a small grove of the invasive “tree of heaven” which needs to be treated so they will die and do not seed/spread.
- December 2014 saw an overland survey crew of Jamie Winner, Keith Dunlap, Bambi Dunlap, and John Benton, to attempt to find and permanently mark the two survey pins on the NW corner (21.8 acre addition known as Campbell tract). Winner had recently purchased a survey transit and equipment. Using the two pins at the NW corner, we surveyed the north boundary line east towards the Blue River. Upon checking figures, Winner determined we may have an error of 14 feet, or so. So on January 10, 2015, Winner and Dunlap spent eight hours and retraced the full perimeter survey of the Campbell tract, and tying in to original IKC survey done by Jess Gwinn. This time Winner came up with a closure error 1.4 feet on a 4200’ loop. Along the north and west boundaries, T-posts were driven into ground for markers and 2” PVC white covers were placed on most of line posts for better visibility. Temperature that day stayed in the single digits.

FUTURE WORK? Continue to minimize grape vine growth; treat for ‘tree of heaven’ where found, and plans for upper and lower fields.

RL Cave Patron Report (John Benton)

- January 2014, Keith Dunlap and Scott Johnson (IDNR) conducted the biennial bat count in Robinson Ladder Cave; in the past there has been a small colony of Indiana bats hibernating in the entrance room area. On this census, only one Big Brown bat was noted and no Indiana bats.
- August 8th or 9th, 2014, there was a Cave Ca-



pers trip to the cave, with six waivers signed. And also information provided by Ron Adams that he has eight signed waivers from a June 29, 2013 Capers trip that had not been previously reported.

- Early January 2015, Breakdown Falls Cave was re-opened by cavers Ryan Cox, Chris Bell, and Larry Wyman. They reported a couple of tight squeezes and good air movement. This is a separate cave than Robinson Ladder Cave.
- Robinson Ladder Cave itself continues to get light visitation.

Shawnee Karst Preserve Report (Jerry Lewis)

The trail was mowed periodically through the warm months of the year to maintain and prevent re-growth of saplings. In a few instances it was necessary to use a chainsaw to remove trees that had fallen across the trail. In 2014 an interpretive trail guide was written that features twenty stops along the 1.6 mile trail. Karst features, and frequently seen plants and animals were highlighted. To mark the stations along the interpretive trail we cut cedar trees from the property and made twenty posts, each three feet long. One end was cut at a slant, then using a router the posts were numbered 1-20. A group of volunteers from the University of Evansville organized by Alexandra Lewis spent a weekend digging postholes and placing the posts to mark stations for the trail leaflet. It was also necessary to cut a dead tree from across the lane on one occasion and a second dead tree leaning in the direction of the lane was cut down and removed preemptively.

The twenty stations are also used as the sites for conducting bird monitoring surveys. Two surveys were conducted in 2014, marking the spring breeding and winter residence seasons, compiled and published in the *IKC Update*.

A work day was hosted by IKC volunteers on 26 April 2014. At that time six chestnut trees (hybrid American/Chinese mix) were planted, protected in plastic plant tubes and staked. A sinkhole dump in the ravine next to the entrance to Twin Cave was cleaned out. The debris included kitchen appliances and a quantity of domestic trash, i.e., bottles, cans, and other discarded items. The rubbish was removed to a spot near the cave entrance where it can be loaded onto a trailer and taken from recycling or disposal. A large tree was also found lying across the bridge over the wildlife pond dam – this was cut away and minor damage to the bridge was repaired. Stones and masonry

waste from the sinkhole cleanups was placed in the breach in the wildlife pond near the cave entrance and volunteers shoveled soil to restore the dam. A four inch PVC drain pipe was installed to handle overflow from the pond.

The chestnut trees were monitored periodically and watered during the summer as needed. Five of the six trees appeared to be healthy and growing. In the grassland area of the preserve a day was spent cutting out tree suckers and new trees with chainsaw and loppers. The goal is to maintain this area as a savannah-like environment.

Despite restoration of the dam the wildlife pond adjacent to the cave entrance held little water. A motion to fund a plastic liner for the pond was passed and a durable liner was purchased. This was installed and the pond now holds water. Continued work to seal the area where the plastic drain pipe passes through the liner is anticipated when it becomes warm enough in 2015.

Upper Twin Cave Patron Report (Dave Everton)

As far as I was informed or knew of, there were five trips to the cave during 2014. Twenty-three persons visited, and I was one of them on one trip. It has been reported to me that the former Patron took liberties of making undocumented trips into the cave. Maybe he reported them to himself? This may remain a mystery we'll never know. There were no mishaps reported to me.

It was a cold, rainy, crappy day to put on a wet-suit on October 31, when the IKC hosted an open house for the Nature Conservancy. Several of them did an approved through-trip with Jerry and Salisa Lewis; I just happened to be along. It was delightful changing into dry clothes at the boat dock entrance, thanks to Keith the Clothes Courier.

I believe the popularity of visiting the IKC entrance to the cave will increase since the DNR has approved use of their entrance during the time the boat tours aren't running. Thanks goes to the IKC for cave and property protection, as well as cave access.

Suicide Patron Report (Ronnie Burns)

Suicide Cave had no visitation in 2014 making me think I could write a brief report but there was finally a visit in February of 2015. Since my term as Cave Patron ends with the March meeting, I will go ahead and report on the February trip and not burden the new Patron with having to do so.

Bill Pea led a Scout group to the cave on 2-15-15. The trip itself had no problems or incidents,



but the trip leader did report to me that he could not get the gate shut. This is common but I can usually shut the gate on the first attempt, knowing its peculiarities. This time however, when I went out to shut the gate, it took me about 30 minutes. I had to scrape rust and mud off the gate and finally got it closed after many attempts. I therefore recommend to the new patron that the following be done:

- The gate needs some routine maintenance. The accumulated rust and grime needs to be ground or sanded away and new primer and paint applied to the metal.
- The hole that the padlock goes through should be enlarged ever so slightly so that it is easier to insert the lock. Getting the lock to pass through the hole is the most common problem reported to me.
- Make a 3" x 5" sign with wording similar to the following and attach to the gate: "Attention Cavers. To close this gate, lift up forcibly on the side away from the hinges and slam hard."

If the above recommendations are followed, it will save the new Patron the trouble of having to go to the cave to close the gate after almost every trip as I have had to do.

Orangeville Rise Report (Steve Lockwood)

The property continues to attract trash due to the large road frontage and seasonal flooding, but it is remaining relatively clean between trash pickups. Trash was collected from the property in March 2014 and October 2014. Every cleaning of the property yielded a large garbage bag full of trash or more. The trash collected included glass bottles, plastic bottles, plastic jugs, Styrofoam cups, plastic bags, aluminum cans, boards, and etc.

The fence built in 2003 on the western side of the property has collected more flood debris, but remains straight and structurally sound. The high strength wire in the fence will eventually need to be stretched again because it is slowly losing tension. A few trees are starting to grow up in the fence also. The concrete property markers installed in 2004 are still intact on the southeast corner and northwest corner of the property. The property marker on the east side of the property near the bridge over the creek that enters the channel to the rise still has not been located after being washed away in 2011. The erosion on the west bank of the Orangeville Rise streambed at the intersection of the Lost River

streambed seems to have decreased in the direction of the fence posts along the west property line.

Activities planned for 2015 include biannual trash pickups, and cleaning further trash from a small ravine located on the west side of the property which continues to erode and uncover objects such as old bicycles, fencing, boards, posts, a lawn mower and other items.

Shiloh Patron Report (James Adams)

The Indiana Karst Conservancy has continued, with the permission of the landowner, to permit up to six recreational trips into Shiloh Cave for the general caving community per calendar year. Each trip is limited to ten participants with three vehicles on the property. During 2014, only three of the allowed six trips were taken into the cave, totaling twenty-one cavers. No requests for visitation were denied. The trips were taken in March, April and November.

Indian Creek CE Report (Jamie Winner)

Annual inspection of the conservation easement was performed on May 30, 2014 after informing all landowners. One conservation easement lot owner sold their property during the year, and contact was made with the new owner explaining the easement and associated restrictions. Also, owners of the legal access point also sold their property and contact was established with the new owners.

During the annual inspection things appeared mostly as they had in previous years. There was a slight amount of excessive mowing on the lot that ended up being sold, which happened to be the same lot that contained the previously encroaching picnic shelter.

The other issue was a more serious issue of excessive mowing on an adjoining lot. The owner was mowing a rather large area within the easement and also within the old stream channel of Indian Creek. The offender was notified of this by certified letter (was not home when I visited during day of inspection) and explained the applicable section of the easement that applied to excessive mowing. A second follow-up inspection was performed three months later on August 29 after notifying all landowners, although a couple landowners were upset about the second follow up. The offending landowner did not contact me in any way after these notifications. However when I re-inspected the property, it appeared that the excessive mowing had ceased at some point since my first inspection, so I considered the matter closed... at least for this year.

INDIANA KARST CONSERVANCY TREASURY REPORT

**Income/Expense Statement
From January 1, 2015 to March 31, 2015**

INCOME:

Dues Apportionment and Residuals	701.25	
Donations - General	3,906.50	
Donations - Land Acquisition Fund	865.00	
Interest	259.09	
	<u>259.09</u>	\$5,731.84

EXPENSES:

IKC Update (printing, production, mailing)	294.85	
Education / Outreach	78.00	
Stewardship/Conservation	47.45	
Business (renewal letters, annual meeting, etc)	138.79	
Ind Acad Science grant	0.00	
Transfers to/from restricted funds/other adjustments	1,070.16	
	<u>1,070.16</u>	(\$1,629.25)

NET OPERATING EXCESS (DEFICIT) THIS PERIOD: \$4,102.59

**Balance Sheet
March 31, 2015**

ASSETS:

Cash in Checking / Saving Accounts / CDs	141,631.07	
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)	13.16	
	<u>13.16</u>	<u>\$601,644.23</u>

FUNDS & OPERATING EXCESS:

Land Acquisition Restricted Fund	33,554.95
Deferred Dues Restricted Fund (180 members)	4,020.00
Indiana Acad of Science	696.12
Stewardship Endowment Restricted Fund	55,280.93

Previous General Fund (total)	43,989.64	
Net Excess (Deficit) This Period	<u>4,102.59</u>	
Current General Fund (unrestricted)	48,092.23	
Current General Fund (committed)	600.00	
Real estate liquidity (basis value)	<u>460,000.00</u>	

Total Liabilities & Operating Excess \$601,644.23

IKC ANNUAL BUSINESS MEETING MINUTES

Saturday, March 21, 2015 11:00 AM EDT – Ellettsville, Indiana

Board Members Present:

Jerry Lewis, President
 Kevin Smith, Secretary
 Keith Dunlap, Treasurer
 Christopher Dick
 Dave Haun
 Everett Pulliam
 Bob Sergesketter (proxied by Sue Vernier)
 Tom Sollman
 Carla Striegel-Winner
 Bob Vandeventer
 Richard Vernier
 Jamie Winner (proxied by Salisa Lewis)

Board Members Absent:

Bruce Bowman
 Bruce Silvers
 Karen Silvers

The meeting was called to order by President Jerry Lewis at 11:00 AM at the Monroe County Public Library (Ellettsville Branch), located in Ellettsville, Indiana.

Introductions were made by everyone attending the meeting.

Two proxies were accepted: Sue Vernier for Bob Sergesketter, and Salisa Lewis for Jamie Winner.

Minutes of the previous quarterly meeting were accepted as published in the December 2015 *IKC Update*.

E-Mail Motions

On February 7th, 2015, President Jerry Lewis called for a motion to accept the slate of candidates for the upcoming election of the Board of the Indiana Karst Conservancy. Christopher Dick made the motion that the slate of candidates (listed below) be accepted, which was seconded by Everett Pulliam. Lewis called for the vote on February 8th, 2015, then declared the motion passed by unanimous decision on February 10th, 2015, having heard “Yes” from all 15 members of the IKC Board. The candidates are as follows:

President: Jerry Lewis
 Secretary: Sue Vernier
 Treasurer: Keith Dunlap
 Board Members:
 Joy Baiz
 Christopher Dick
 Dave Haun
 Kevin Smith
 Tom Sollman

Treasurer’s Report

Treasurer Dunlap reported cash assets totaling

\$138,626.94 and land assets totaling \$460,000.00 for total assets of \$598,626.94. Funds include Stewardship: \$55,075.77; Deferred Dues: \$3,765.00; Land Acquisition: \$33,099.95; General Fund: \$45,990.10; Ad hoc Science Fund: \$696.12.

IKC membership currently stands at 190. One hundred thirty nine members have renewed and 51 members have yet to renew.

Elections

Tom Rea was appointed Election Teller. Keith Dunlap moved to open nominations for the three officer positions beyond those candidates identified in the e-mail motion. Dave Haun seconded the motion. The motion was closed with no additional nominations made. Jerry Lewis moved to open nominations for the four open Director positions. Dave Haun seconded the motion. The motion was closed with no additional nominations made. After the votes were tallied, Jerry Lewis was re-elected President, Sue Vernier was elected as the new Secretary, and Keith Dunlap was re-elected Treasurer. Dave Haun and Tom Sollman were re-elected as Directors. Joy Baiz and Kevin Smith were elected as new Directors replacing Christopher Dick and Karen Silvers. The new officers and Directors will be seated April 1, 2015.

Buddha Cave Preserve

The Classified Forest inspection report has been received from the assistant District Forester. The report includes observations of honeysuckle on the property as well as active emerald ash borer. It was also noted that there is an EAB-infected tree near the parking lot gate that will eventually die and become a hazard and will also be a problem with the adjacent power lines. It was agreed to allow the utility company to handle removing the tree. Dunlap reports that the chestnut trees planted on the property are looking good.

Regarding previous reports of feral pigs being seen in the vicinity of the preserve, Keith Dunlap will follow up with the IDNR/USDA representative to get an update on any activities relating to management of the wild hog population in or around the preserve.

A report was received that a portion of the ledge in the entrance room of Buddha Cave that cavers must climb up to access the remaining portions of the cave had failed/collapsed. Alternate options to access this upper level were discussed including rigging a permanent rope, however, it was agreed that the most appropriate and safe means of gaining access to the upper level would be by an extension ladder. There was also some discussion regarding whether a permanent bolt had been installed in the upper level to safely facilitate ac-

cess (via rappel) to the lower level, and whether a permanent bolt was appropriate.

Orangeville Rise

It was noted that the USGS has a datalogger on the property to monitor water level, however that data has not been shared with the IKC. The presence of a geocache on the property was also questioned.

Robinson Ladder Cave Preserve

There was some discussion surrounding an undocumented visit to the cave during the 2014 Cave Capers event. It was deemed appropriate to discuss this situation with the CIG chairman.

There was also discussion regarding the future management of the preserve including what to do with the upper and lower fields. Discussions included the pros and cons associated with periodic burning, the use of herbicides, and the importance of managing the growth of invasives. Hank Huffman, retired biologist with the IDNR, provided some interesting stories of his experiences with prescribed burns on his property as well as some history on the chestnut tree. Allen Pursell, with the Nature Conservancy, is amenable to bush-hogging the fields every two or three years and eradicating invasive plants as necessary. There were also discussions regarding the encouragement of milkweed growth which is beneficial in supporting Monarch butterfly populations which have been in decline. The consensus of the Board was to selectively bush-hog the open areas on the property on a periodic basis. This plan will be discussed with property manager John Benton.

There was some discussion around Breakdown Falls Cave which was reopened on the RLC property by cavers earlier this year. It was noted that the entrance that was dug out is extremely unstable. There was discussion around whether it would be appropriate to install a culvert in the entrance to mitigate concerns and whether the IKC should generate a new waiver form for cave access. Keith Dunlap agreed to take a closer look at the waiver options and make a recommendation.

Shawnee Karst Preserve

Keith Dunlap and Jerry Lewis will install a new visitation spelogger in the Upper Twin Cave entrance to replace the failed unit. Jerry Lewis has an old Cave Research Foundation report describing the Broken-back Syndrome that has been associated with cavefish found in Donaldson and Upper/Lower Twin Caves. Keith Dunlap agreed to distribute a copy of the paper to the Board via e-mail.

Sullivan Cave Preserve

The annual Cave Patron report was not provided to the Board by the Cave Patron. Keith Dunlap will follow-up with the Patron and provide assistance as appropriate.

Wayne Cave Preserve

Keith Dunlap mentioned that he has received a “scrap book” of historical information and pictures for Wayne Cave from Don Martin. Some of this information may eventually be posted on the information panels in the new kiosk on the property in addition to a map of the cave, visitation rules, etc.

Suicide Cave

Jerry Lewis inquired if anyone was interested in taking on the role of Cave Patron, as Ronnie Burns is moving to Tennessee. Both Kevin Smith and Dave Haun expressed an interest. After some discussion, Keith Dunlap moved to appoint Kevin Smith as the new Cave Patron. Bob Vandeventer seconded the motion. The motion passed with a unanimous vote. Kevin agreed to get with Ronnie to obtain the cave gate keys and any other information/data he has collected as Cave Patron. Keith also offered to arrange a meeting with Kevin and the current owner of the cave property and assist with needed repairs to the cave gate as described in the annual patron report.

Stewardship Activities

IKC member Glenn Kotnik is also affiliated with the Indiana Chapter of The American Chestnut Foundation. He has suggested TACF might be interested in providing some hybrid trees for one or more of our preserves if we would commit to caring for them and covering the maintenance costs. The trees are still in short supply (and high demand) so it would likely be the spring of 2016 before any trees would be available. Keith Dunlap volunteers to escort Glenn to our Shawnee Karst and Robinson Ladder Cave preserves for evaluating those potential sites and soil conditions.

Under Earth Day - Keith Dunlap has several small projects in mind but an official date has not yet been set for the annual cleanup/workday at one of our cave preserves.

Land Acquisition Activities

Keith Dunlap mentioned that he contacted the owners of Parker’s Pit/Borden Pit cave to inquire about the possibility of purchasing their forty-acre property containing the caves. The IDNR attempted to buy the property in the early 1990s, but they could not agree on a price. This time, the owners indicated they were not currently interested in selling.

Education & Outreach Coordinator Position

No volunteers yet for the vacant coordinator position. Keith Dunlap reports that the Central Indiana Grotto will take over as primary coordinator for the annual Hoosier Outdoor Experience held at Fort Harrison State Park. In addition to providing cave/karst related info for visitors, they will also utilize the inflatable cave.

IDNR Cave Access Update

There was some discussion around whether signage would be established at the entrance to Endless Cave in Cave River Valley to deter people from wandering into the cave without permission.

Dave Haun asked about the fence around Grotto Cave in Monroe County and whether the cave was on private land. Keith Dunlap stated that the Indiana Department of Transportation executed a mitigation easement in 2011 on the property resulting in the termination of the IKC lease. The US Fish & Wildlife Service now controls the locked fence gate.

2015 Indiana Cave Symposium

Keith Dunlap called for a motion to approve up to \$200 for expenses (food and venue rental) related to the symposium, co-sponsored by the Indiana Karst Conservancy and the Indiana Cave Survey. Sue Vernier (proxy for Bob Sergesketter) seconded the motion and the motion passed with a unanimous vote. The symposium this year will be held at the Community Building on the Lawrence County Fairgrounds on April 18th.

Items from the Floor

Tom Sollman stated that the gate post at the entrance to the Wayne Cave property is in need of repair and that he would like to purchase a picnic table for the property. Chris Dick moved to approve up to \$250 to cover gate repairs and purchase a picnic table. Sue Vernier (proxy for Bob Sergesketter) seconded the motion and the motion passed with a unanimous vote.

Kevin Smith presented the IKC with a donation of \$1000 courtesy of Mike Smith and the Hulman Memorial Way Foundation.

Next Meeting

The next quarterly meeting was scheduled for 11:00 AM on June 27th, 2015 at the Wayne Cave Preserve. A workday at the preserve will also be arranged either before or after the meeting.

Adjourn

Meeting adjourned at 1:00 PM.

Respectively submitted, Kevin Smith, IKC Secretary.

Charlie Rothrock and George Jackson, circa 1940, in the parking lot of Wyandotte Cave, near where the visitor center is now located. Photo from the archives of John Benton. See related article on page 12.



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.

