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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: Stalagmite in South Peacher Cave, Orange County, Indiana Photo by Kevin Smith, March 2013.





Hoosier National Forest

ANNUAL BUSINESS MEETING REMINDER SATURDAY, March 21st, 11:00 AM EST ELLETTSVILLE, INDIANA MONROE COUNTY PUBLIC LIBRARY (ELLETTSVILLE BRANCH)

The Annual Business meeting is for the purpose of Executive Board elections. Annual reports from the IKC Cave Patrons and Property Managers are also presented. And as always, the meeting is for members and other interested persons to have an open forum for talking about caves, karst conservation, and related topics. Past, present, and future IKC projects are discussed to solicit comments and input from our members and the caving community as a whole. The meeting is informal, and everyone is encouraged to attend and participate. The IKC Board wants your input.

Preliminary Agenda: Elections; Cave Patrons/Property Managers annual reports; Upcoming projects at various other preserves; Selection of new Cave Patron for Suicide Cave; Indiana Cave Symposium; DNR cave access update; Financial reports; Land acquisition activities; and more....

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

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



ACTIVITIES CALENDAR

Mar 21 – IKC Annual Business meeting (see above)

Apr 18 – Indiana Cave Symposium (see page 9)

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

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

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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GUEST RAMBLINGS..

In the spirit of being the First Lady of the IKC, I offered to write this issue's Rambling. Over the years I've had the opportunity to do a lot of good work, get to know a lot of good people, and spend a lot of time in the great outdoors, feeling good about Life. All this was brought to me by the IKC and by *you*, as a member of the IKC. Sure, I pay my dues like everyone else, so you could say I had all that goodness for just \$15/year. But my \$15, and the extra dollars from Jerry and our family, doesn't make the organization run. Add in the \$15 x 15 Board members and nope, you're still not there. The IKC, as it is today, is supported by *all* of its members.

The members, that includes *you*, as well as me, have put nearly 250 acres in protected conservation, have partnered with state and national organizations to conserve and protect karst, and have appeared all over the state to educate the public. As the time for

the annual business meeting rolls around, I start thinking about the future of the IKC. The purpose, the mission, the membership. Who is the IKC? We stand at just under 200 members, making the IKC a small, but vital, nonprofit dedicated first to the management, protection, and acquisition of karst lands in Indiana. The IKC also supports research and promotes education related to karst and its appropriate use. We have money available to support

land acquisition, land stewardship, and whatever else might be deemed appropriate use of our funds to conserve and protect karst features in Indiana. The IKC's efforts are supported by its membership. Its membership is *you*.

As a member, do you know the purpose of the IKC? Have you ever been to Under Earth Day or the Indiana Cave Symposium? Have you visited one of the IKC properties in the last year? Have you held office? Did you vote this year?

An organization is only as vital as its members. We have maintained membership between 150-200 members for nearly 30 years. Yet the Executive Board members have changed very little during this time. When the Board positions open for re-election, frequently the Board members run unopposed. The Executive Board consists of 15 members. Those 15 members represent all the membership. They are *your* Board. They represent *you*. Do you know the members of the Board? Do you discuss your thoughts with them? Have you been to a Board meeting recently? Ever?

The Board can act on acquiring land, using funds for land stewardship, education, or outreach. They can only use those funds for lands and activities they know about. Are there caves near your home that might be for sale? Are there fairs or events where the IKC would be welcome, or better yet, where karst education is needed?

When I go to Board meetings, work days, the Indiana Cave Symposium, and any events where the IKC has a presence, I am struck by the amount of grey hair I see. The founding members of the IKC have established a strong organization with a solid fiscal base, excellent professional contacts, and land protection for some of Indiana's most popular caves. We maintain active work-

> ing relationships with The Nature Conservancy, the Indiana Department of Natural Resources, and other state and national organizations. The IKC allows me to help conserve unique places in Indiana, spend innumerable hours with various scout troops teaching conservation to children, and the opportunity to meet other like-minded individuals. Those are things that are important to me. My borrowed

son Seth told me the IKC let him go in Marengo Cave, and introduced him to the greatest cavers ever (no, I can't tell you). The IKC allowed us both to do good, feel good, and meet others who shared our values. It can do the same for *you*.

What part of the IKC purpose and goals speak to you? What kind of activity speak to you? Where would you most like to see your membership dues spent?

Remember that I said that the IKC *is* its members. It is *you*! *You* joined the IKC because something about it called to you. I challenge you to be an active member in 2015. Come to a meeting, contact a Board member, volunteer. *Be* the IKC!

I look forward to seeing *you* around. To learn more about *your* IKC, go to *ikc.caves.org*.

Salisa Lewis

NEWS BRIEFS..

- □ The biennial Indiana bat survey was conducted in January for the larger population caves. While the final numbers have not been released, preliminary results were about what was expected. White-nose Syndrome continues to have significant impacts on the various species. Little brown and tri-colored bat populations have been hit the hardest with total numbers down more than 90% compared to pre-WNS counts. The overall Indiana bat 2015 population was down 18% compared to 2013, although the changes varied drastically from cave to cave. Ray's, Clyfty, Coon, Grotto, Batwing, and Twin Domes caves dropped between 20% and 98%. Endless and Wyandotte dropped 9% and 5%, respectively. Jughole was up 9%, making it the largest hibernacula in Indiana for the second survey in a row. Wallier Cave's population of Indiana bats nearly doubled compared to the 2013 count, although its total number is still minor compared to some of the other hibernacula (it now ranks fifth). A more detailed analysis of the numbers will be presented at the Indiana Cave Symposium on April 18th.
- □ In October, the IKC presented a proposal to the DNR to conduct limited tours in Wyandotte Cave during the summer months. While there appears to be some initial interest, the proposal appears to have figuratively disappeared in a black hole. Parallel to the IKC's proposal, State Representative Lloyd Arnold introduced House Bill 1206 which simply states, "Requires that Wyandotte Cave be open to the general public during the summer months of 2016." The Bill was assigned to the House Natural Resource committee where it was heard and unanimously passed. Because the Bill included a budget of \$3.6 million, it was subsequently assigned to the House Ways and Means committee where it and several other DNR funding projects were combined. The budgetary process over the next six weeks to develop the final biennial budget for the State is often mysterious and political, so there is no way to know if the legislative proposal to re-open Wyandotte Cave will survive and be funded.
- □ After many years of volunteering as the IKC's Education & Outreach Coordinator, Don Ingle is retiring due to other obligations. If you are interested in taking over this position, please contact Jerry Lewis. The Coordinator's responsibilities can include working with schools, clubs, and other groups to explain caves and karst, and why they need protecting. The IKC also has an "inflatable cave" which is popular with kids. The position is open-ended as to how much time you care to contribute. As with all IKC volunteers, there is no compensation (other than personal satisfaction), but we can cover reasonable out-of-pocket expenses.
- □ The IKC has gained four new members in the last quarter. Welcome Marc Milne (554), Peri Frantz (555), Kim Metzgar (556), and Joe Kinder (557). The IKC membership currently stands at 190.

Hoosier National Forest Cave Closure Extended to 2017

Officials have renewed the closure order of caves in Indiana's Hoosier National Forest.

Despite being initially closed in 2009 in an attempt to protect bats from white-nose syndrome, the disease has since been found in most caves on and around the Forest.

Bat surveys are beginning to see the impact of the disease, with decreased numbers of hibernating bats being discovered in the last few years.

There are several ways the dis-

ease is spread. We cannot control bat-to-bat transmission or the spread from already infected environments to bats. By limiting access to the caves, however, we can try to slow the rate at which humans spread the disease to previously uninfected areas, stated Mike Chaveas, Hoosier National Forest Supervisor.

The closure prevents anyone from "entering any cave on National Forest System lands within the Hoosier National Forest," with the exemption of people holding permits, firefighters and other rescuers, and Forest Service employees.

Although this latest closure officially expires, if not renewed, on December 22nd, 2017, the order will be evaluated annually and may be withdrawn early.

Reprinted from the January 13, 2015 on-line issue of *Caving News*.

The full order can be found here: www.fs.usda.gov/Internet/FSE_ DOCUMENTS/stelprdb5288163.pdf

A LOOK BACK AT INDIANA KARST

by John M Benton

For this issue, I conducted a written interview with Dr. Jerry Lewis, President of the IKC.

Q – How did your caving career begin? Which came first, the interest in biology or caving? What year? How did your interest in cave biology start?

As a kid my parents had summers off, as my dad was a principal and my mom a teacher... so we'd go on epic camping trips for weeks on end, jumping from one national park to the next. By the time I was a teenager I'd visited Mammoth Cave, Wind Cave, Carlsbad Caverns, and of course, Marengo and Wyandotte caves. And lots of smaller "mom and pop" caves. On one of these

family vacations I remember visiting a little cave in South Dakota that was up on the side of some mountain... the staircase to the entrance looked like it might collapse at any moment, but the cave tour featured a blacklite viewing of the formations, which sticks in my mind to this day.

I became an "organized caver" (is that an oxymoron?) in 1971. During my first week at Southern Illinois University I saw a mimeographed sign on a bulletin board "GO CAV-ING" with the Little Egypt Student Grotto. I guess I took that as a command because I've been caving ever since, 44 years now and counting as

an NSS member (#13576). I went to the grotto meeting and that Saturday I found myself waist deep in 56 degree water in Mystery Cave, Perry County, Missouri, sporting a white coal miner's helmet and a Justrite carbide light from the grotto rental bin. I was immediately addicted.

There were about ten of us on that first trip and after crawling through a barrel gate into the stream passage, we sloshed a couple hundred feet to a passage intersection at a breakdown room. We went up into the North Upper Passage and there, on my first trip, my interest in cave animals began. There was a small stream and the trip leader stopped to show us some bugs... some snow white, funny-looking things that the leader said were called isopods. And big pinkish-white flatworms sliding across the floor of the pool. I asked for particulars, but the trip leader had expended everything he knew about cave fauna at that point.

It was one of those moments in life where a door opens. I have no earthly idea why I cared what those bugs were. I had gone to Southern Illinois University - Carbondale because of their photography program... I was a *photography* major. I was there to learn fine arts photography, everything one could point a camera at from news to nudes. So, cave bugs... not on the agenda. Back then was the heyday of M3 flashbulbs, a dozen for 88 cents at K-Mart, so I started combining the two

interests, and some of the first photos I submitted for class assignments were photos of large Ozark cave passages... and isopods, flatworms, and spiders.

But I really wanted to know more about those bugs. To make a long story short, I was a Presidential Scholar at the university so I had some doors open to me from that standpoint, and found a faculty sponsor in the Zoology Department: Dr. Joe Beatty. Shortly after meeting Dr. Beatty I had an office with microscopes and a blank check for any supplies or materials I needed. Within the first weeks of meeting him I had sent a

thermos bottle of live flatworms from Mystery Cave to Dr. Roman Kenk, and a vial of preserved isopods to Dr. John Holsinger, both in residence at the Smithsonian Institution at the time. I started getting letters in Smithsonian Institution envelops (that was decades before e-mail)... with news that I'd discovered my first new species. It was heady stuff for an eighteen year old.

Q – What colleges did you attend? Your early years where you grew up? Who have been your mentors in cave biology?

So the die was cast as a young child, then caving and biology, then solidified during my years at SIU. I graduated with a Bachelor of Science



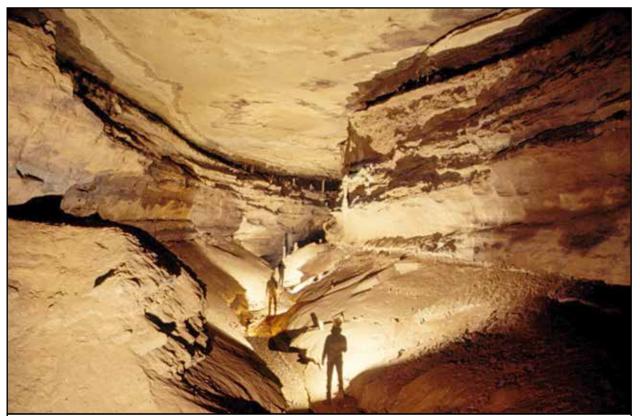
in photography, with one of my souvenirs of the years in Illinois being published in the NSS Bulletin in 1978: "Zoogeography and evolution of the subterranean invertebrate faunas of Illinois and southeastern Missouri" co-authored with mentor and cave biologist Dr. Stewart Peck.

From Carbondale I went to Old Dominion University in Virginia at the invitation of Dr. John Holsinger. John is a renowned cave biologist and literally "wrote the book"... *Caves of Virginia*, in addition to hundreds of published papers about cave animals. I went to ODU ostensibly to do a Master's degree concentrating on Dr. Holsinger's area of specialization: subterranean amphipods. That path diverged when I was captured by the gravitational pull of Dr. Tom Bowman at the Smithsonian, who threw gas on the fires of my interest in cave isopods. That resulted in "*Subterranean Caecidotea of Illiinois*" published in Smithsonian Contributions to Zoology, with Dr. Bowman as the second author.

My stay at Old Dominion was cut short by my father's development of lung cancer. With great regret I departed from Virginia and returned to Indiana to help with my dad's care, and to try to shore up my mom after his death. I have real mixed emotions about that era and sometimes think leaving ODU might have been one of the biggest mistakes I've made in life... it was a real toss-up between duty to family vs. duty to self, and I chose my family. C'est la vie.

So I enrolled in the University of Louisville graduate program and eventually achieved an Masters of Science in Biology and a Ph.D. in Aquatic Biology. If I had that to do over again, I would have driven down the road to UK-Lexington and done my Ph.D. with Dr. Thomas C. Barr. During that era Tom became the next in a line of mentors and called me his "academic grandson", because John Holsinger had been his first doctoral student, and then I studied under John. That somehow morphed into me being Tom Barr's grandson, a distinction I carry with honor. Tom and I became life-long friends, a friendship that ended a couple of years ago when I said good-bye to him as his pall bearer, helping to lower him into the red karst soil that became his final resting place.

Universities? Last month I graduated with my fourth degree, a Bachelor of Arts in French from Indiana University. Go figure. I guess this stems back to another mentor, Dr. Guy Magniez, a good friend at the Université de Dijon, who helped me during my years at U of L. One of my memorable experiences with Guy was at the Wendy's in Cave



A multi-flash photo (Jerry Lewis setting off all three flashes) in the North Upper Passage of Mystery Cave, Perry County. Missouri, taken as a photography class assignment at Southern Illinois University, circa 1973.

City, Kentucky... trying to explain the concept of a "dry county" to a Frenchman attempting to order wine for lunch in a hick town in the central Kentucky karst.

Q - Do you have a favorite cave?

Hmmm... My favorite cave, that's a tough question. I've been in over 600 caves in Indiana. Twin Domes sticks out for both the beauty of the entrance pits and some fine bugs, not to mention the Indiana bats. Devil's Graveyard has impressive formations. Upper Twin with all its cavefish. Binkley, of course, just because it's Binkley.

Salisa and I did one of our scuba certifications in the underwater caves in the Yucatan. It's a memorable experience to breath bubbles out of the regulator and watch them rise through the stalactites of an immense cavern that's been under water since the last ice age.

One of my oldest cave-related memories was reading about the cave paintings in southern France. It was surreal years later to actually visit les Grottes préhistoriques de Cougnac in southern France to see the paintings in person.

The soda straws in White Scar Cave in England rival those in Karchner in Arizona. Favorite cave? Maybe someday I'll make a list of my top fifty favorites...

Q – How about a favorite cave animal?

I've studied isopods for over forty years now, but I have to admit I'm partial to pseudoscorpions and flatworms.



Q – Most memorable cave trips? (good or bad)

I'm not sure if I've ever had a cave trip that wasn't memorable. I proposed to Salisa at Baseline Barren (near Fredericksburg) and then we did Twin Oaks Pit to celebrate our engagement. Salisa and I took Mike Rowe and his film crew from "Dirty Jobs" through Hidden River Cave in Kentucky... that was a bizarre day. I spent a couple days taking the folks from NPR-National Geographic Radio Expeditions looking at caves and cave bugs in Tennessee... that was also interesting, too.

I had a ledge around a pit collapse while I was standing on it in Mammoth Cave. We were in the Historic Section of the cave and there must have been thousands of people who had been on that same ledge. I rode hundreds of pounds of soil and rock down the slanted edge of the pit, clawing as I slid toward the lip. I managed to stop myself with my legs hanging over the edge of the silo pit. That was pretty exciting. Just one of those things... wrong place at the wrong time, but it wasn't my day to die, I suppose.

Q – Tell us about your kids and wife also involved in caving?

Salisa and I met during my years working for the Division of Neonatal Medicine at U of L. During that era I was teaching things like Human Anatomy and Physiology at the university, it's a facet of my background most people don't know about. Salisa and I had offices about ten feet apart, so not tough to see how we met. Salisa's dad is a soybean geneticist and she spent her childhood walking around in farm fields helping with her dad's work. It wasn't much of a leap from field dirt to cave dirt. Now almost twenty years later, we've been caving all across the U.S., from Hawaiian lava tubes to sea caves in Maine, diving in Mexican caves, and caves in Europe. We're pretty much inseparable, one of life's gifts to me to be able to find my soulmate, and we're usually happiest when we're under something, be it ground or water.

I have three sons and a daughter. All have spent their fair share of time in caves, helping collect cave bugs, planting trees at Buddha, growing up with karst. None have really been bitten by the cave bug, but the elder twins are both in biology doctoral programs in molecular genetics (Jim at Cornell, Vic at U of Washington) so I suppose all that time with a biologist dad rubbed off. I've been told the apples didn't just fall off the tree, the tree was in a sinkhole and the apples rolled back to the base of the trunk. One of my souvenirs of the twin's childhood is the cave pseudoscorpion *Kleptochthonius lewisorum*, which Dr. Bill Muchmore named after Vic, Jim, and I for our work collecting bugs in Indiana caves.

Q – What accomplishments in cave biology are most important to you?

I'd like to think that I've made a difference in some things. As a biological consultant on numerous large scale engineering projects I've been able to divert the destruction of caves from here to Texas. For example in Austin, Texas my work diverted an enormous water project around a cave because of an endangered bug. In eastern Kentucky a landowner caused quite a stir when she came in and hugged me in the middle of a public meeting... the cave bugs that Salisa and I found on their farm diverted an interstate away from their property, preventing the destruction of their home. I've evaluated countless caves for organizations like The Nature Conservancy and state natural heritage programs, and many caves have now been afforded protection because of the fauna we found in them. It's a legacy I'm proud of.

I've picked up a few awards along the way, the NSS Ralph Stone Award for graduate research, then becoming an NSS Fellow, and receiving the NSS Science Award for lifetime achievement. Others from The Nature Conservancy, Cave Research Foundation, Hoosier National Forest... it's truly an honor to be recognized for just doing something that I love.

And all of that prepared me for one of my proudest accomplishments... being President of the IKC.

Q – Anything you'd like to add? Free reign...

So I get to ask myself a question... how about "What's the most stupid thing you've done caving?" Back when I was working on the Blue River Project for The Nature Conservancy, my friend Allen Pursell and his young son Asher used to accompany the twins and myself on cave bug hunts. We'd just come out of Route 66 Cave and the twins had found a suspicious-looking hole in the bottom of a little sink. They didn't need much encouragement to dive face forward into the hole. It didn't go anywhere but they emerged holding a common southern Indiana reptile. They handed it to me and we were standing in a circle having this big nature moment with the kids. Back then Asher looked up to me as some sort of latter day Audubon. So with some flare I look over at Asher, holding the now squirming reptile in my hands, and tell him "Asher... this... is a squirrel."

There's this prolonged silence. Asher looks at me, and then at his dad, and back to me. Allen finally breaks the silence, saying "Uh, Jerry... I think that's a turtle". (I was holding a box turtle). Allen and I still laugh about that day and despite not being able to tell a squirrel from a turtle, I continue to work with TNC. I am, after all, an *invertebrate* zoologist.

2015 INDIANA CAVE SYMPOSIUM PREVIEW

by Keith Dunlap

The 23rd annual Indiana Cave Symposium, co-sponsored by the Indiana Karst Conservancy and Indiana Cave Survey, will be held on Saturday, **April 18**, in the Community Building at the Lawrence County Fairgrounds (one mile west of SR 37 on US 50 south of Bedford). 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 7 PM. The *tentative* presentation titles and presenters (not in any particular order) include:

- Boone Cave Bioinventory Project Jerry Lewis
- Lost River Cave Survey Project Update Joy Baiz
- Bluespring Caverns Project Update- Joe Kinder
- Driveby Cave Survey Chris Dick
- 2015 Indiana Bat Census Keith Dunlap
- Big Bat Cave LiDar Map Ken Bailey & Ben Shinabery
- Binkley Cave Update Laura Demarest

For more information about the Symposium, contact Dave Everton (*deverton@indiana.edu* or evening phone 812-824-4380) or visit the Indiana Cave Survey website (*www.caves.org/survey/ics*).



IDNR INTERIM CAVE ACCESS PROGRAM REPORT (YEAR 1)

by Dave Everton

History & Background

On April 24, 2009 the Hoosier National Forest (USDA) issued a cave and mine closure proclamation to protect endangered bat species, due to the uncontrolled spread of White-nose Syndrome (hereafter referred to as WNS). The initial closure, which stated that "scientists believe the fungus is spread bat-to-bat as they cluster in caves and mines..." was declared to be effective for one year, but to be reevaluated at that time.

Shortly afterward, the Indiana Department of Natural Resources (hereafter referred to as IDNR) announced a public meeting to be held in conjunction with the United States Fish & Wildlife Service (USFWS) at Spring Mill State Park on May 21. They invited representatives from the Indiana Karst Conservancy (IKC) and other Indiana caving organizations, along with bat researchers, commercial cave operators, and other interested persons to attend.

At that meeting, it was announced that like the Hoosier National Forest closure, all caves on IDNR-managed properties would be temporarily closed for at least one year, retroactively starting on May 1, 2009, and that this closure also would be re-evaluated at a future time. While the motivation for the closing was understood, the news did not go over well with the attending cavers, and there was unfortunately some hostility shown to the meeting hosts. In addition to closing caves on state properties, the IDNR and USFWS also expressed a desire in reaching out to private cave landowners, asking them to also close their caves. To my knowledge, the latter idea was never formally implemented. On September 22, 2009, the Natural Resource Commission amended the IDNR's Cave and Karst Management policy to include the "Temporary Closure" with the exception of Twin Caves in Spring Mill.

By January 2010, an effort by cavers was undertaken with the intentions of encouraging the IDNR to reopen some caves. A proposal was created and later presented to IDNR Deputy Director John Davis by a small group of cavers from Indianapolis, although they first sought input from cavers statewide. There were several meetings held afterward, but on April 21, 2010, during another public meeting, held once again at Spring Mill State Park, the IDNR announced the cave closure was to be continued indefinitely. Again, there was much hostility (perhaps even more than during the first meeting) displayed toward the agency members by some cavers present, and more hard feelings were created with persons on each side of the issue. By this time, the Hoosier NF had already extended their closure period for another three years, to be reevaluated annually.

Time continued to roll by, and cavers continued having periodic meetings with Deputy Director Davis and other IDNR and USFWS staff members. In March 2012, another proposal was submitted to the IDNR for a handful of caves to be reopened, again with a strong focus on implementing established decontamination protocols to control the potential spread of WNS, which had by this time already spread to Indiana. In addition to other cavers becoming involved with the meetings, District 73 State Representative Steve Davisson was invited, and some progress seemed to be in the works toward reopening selected caves. In November 2013, an Interim Cave Access Program Letter of Agreement was negotiated between the IDNR and the IKC. The final version of the Agreement was executed in January 2014. Specifically, the pilot program included reopening Donaldson-Bronson Cave in Spring Mill SP year around, along with the boat entrance to Upper Twin Cave during the winter month, when boat tours were not in operation. Further, two caves in Cave River Valley (River and Endless) would be open during the summer (May to August), but closed the remainder of the year to protect hibernating (federally-endangered) Indiana bats. The IKC would administer the access program, which required using proper WNS decontamination protocols. The Agreement also required the appointment of an IKC Cave Access Coordinator, who would essentially be the liaison between persons wanting cave access and the Spring Mill SP staff. I was subsequently appointed to that position by the IKC Executive Board.

On April 7, 2014, the IDNR issued a press release, which stated it was relaxing cave restrictions, starting on May 1. In addition to the four caves listed in the Agreement, the dry side of Donaldson Cave would reopened year round, as would Wolf Cave in McCormicks Creek State Park.

Implementation

In preparation for and as part of administering the access program, the IKC developed new pag-

es on their website as a means of communicating the required rules and WNS training procedures, which was completed well in advance of the press release. Requests for cave access started trickling in not long after the release, with the majority of them, as expected, from organized, NSS-affiliated groups.

I have for some time served as an IKC Grotto Liaison to the Bloomington Indiana Grotto, and more recently as Cave Patron to IKC-owned Wayne Cave, so those positions served me well toward filling the newly-created Access Coordinator role. However, there were some initial adjustments which needed to be made, mainly in communication, and I found myself experiencing minor challenges with the permission forms not being completed correctly. That was resolved fairly easily, although it seemed that some individuals still struggled to complete the paperwork accurately, and in a consistent manner with other persons on the same trip. Most of these issues were minor and of little consequence, although it is my belief that if cavers can't fill out a simple form correctly, that does not a leave very good impression with the IDNR, who plans to re-evaluate the Interim Access program in 2016.

One particularly recurring annoyance is that even in spite of having what I consider plenty of advance notice to complete and submit the required paperwork, some cavers seem to wait until the very last minute, which then causes problems coordinating with the Spring Mill staff. I try very hard to be flexible to cavers, instructing each trip leader what the deadline is, while building in a little bit of flexibility for myself, so if someone is a day late getting the form back to me, I can still accommodate them on the approved trip. It does take time and effort for me to pull the paperwork together. It was with sorrow that I had to refuse permission to one person who went beyond the deadline. The bottom line is this: I don't think it is unreasonable at all to ask cavers to meet a deadline in order to participate on a trip, and perhaps if they aren't willing to do so, then perhaps they aren't willing to follow other requirements as well? In this matter, the single biggest factor is that once I've sent the trip authorization paperwork to the State Park Manager, I consider it out of the question to later ask that additional cavers be added to that trip.

2014 Trip Summary

- Endless Cave (May 1 to August 31): eight trips (47 cavers).
- River Cave (May 1 to August 31): five trips (36 cavers).
- Donaldson-Bronson (year around): seven trips (67 cavers).
- Upper Twin (November 1 to May 15): four trips (34 cavers).
- Grand total: 24 trips on 15 different dates

There were at least three requested trips that didn't take place for one reason or another, and several initial requests that I replied to, but never heard back from the requestor again. Weather and



The spring entrance to Donaldson Cave in Spring Mill State Park during higher flow.

water levels pretty much cooperated with nearly all of the trips (which amazed me), but one group decided not to make an approved trip to Cave River Valley due to very iffy weather and water level conditions the day before.

One puzzling incident took place on the June 8 trip with Windy City Grotto (Chicago) members, who had gotten authorization to enter Bronson and exit Donaldson Cave. I was informed early the week after their visit that they had been stopped by a log blockage, and had to turn around and exit the cave the way they entered. Although I'm not intimately familiar with the cave, I was very much puzzled by their report. It was only later that I found out that one of the Spring Mill SP staff members had mis-directed the cavers to the Lower Twin entrance (just downstream from the boat dock). I had incorrectly assumed the cavers knew where the Bronson entrance was located relative to the Upper Twin Cave parking area, so I felt really badly about failing to communicate adequately regarding their trip. However, after apologizing later to the trip leader and another caver in that group, I was told the gang simply went to the Donaldson entrance, and had a successful trip anyway from that side.

I was very surprised that I did not get many inquiries from cavers not affiliated with organized groups. Of all the requests, there was only one group falling into that category. I did get contacted by one non-caver, and because she couldn't get friends to go with her just a few hundred feet into Endless Cave, I offered to take her, along with a couple of good friends of mine who I rarely get the opportunity to go caving with. It made for a short, but fun trip.

According to my records, 148 cavers in the first year took advantage of the opportunity to visit the IDNR caves which required authorization. Included in that number are a few cavers who went more than once. Unfortunately, and not unexpected, there were several unauthorized trips that took place in Endless Cave, as discovered from the electronic monitoring devices installed in the cave. I certainly suspect there were additional unauthorized visits to the other three caves as well (for that matter, I suspect there are an unknown number of unauthorized trips into all the other closed caves on IDNR-managed properties). As with any new program, we hope some lessons will be learned, processes evolve, and ways to improve the program will be implemented.

I am personally grateful to the IDNR for being open-minded and cooperative in implementing this program, and am committed to doing everything we possibly can to hold up our end of the Agreement. I truly hope this experience will lead to an expanded number of caves on IDNR lands being reopened for visitation, and more importantly, create a better relationship between Indiana cavers and the state and federal agencies.

Why Bats In Indiana Face A Dire Future

by Casey Kuhn

White Nose Syndrome has hit bats in Indiana hard, and experts say the worst is yet to come.

In an attempt to prevent the spread of the deadly bat disease White Nose Syndrome, Indiana closed its caves to the public in 2009. The fungus showed up two years later and has wiped out a large portion of the state's bat population.

Experts say, even with more research being done, the worst is yet to come for bats in Indiana.

The Current State Of White Nose Syndrome In Indiana "People fear bats because they think of them as creepy crawly," Joy O'Keefe, director of Indiana State University's bat center, says. "But everyone I know that's thought that, as soon as they see one up close they melt and think they're super cool."

O'Keefe says there are a lot of misconceptions when it comes to bats.

"They live in places we can't get to, they come out at night and we don't know a lot about them," she says. "When you don't know much about something, it's easy to be scared of it."

O'keefe has been studying bats for 14 years. She came to Indiana four years ago, about the same time as White Nose Syndrome first appeared here.

The white fungus that gives the disease its name started in New York and spread quickly westward.

This winter marks the first time since white nose was found in Indiana that surveyors are getting a chance to see its impact on the significant places where bats hibernate. For example, Endless Cave in Cave River Valley near Mitchell, Ind.

"As far as the Midwest we were probably the first one for it to show up and so some of these caves, this is minimum of five white nose winters," Scott Johnson, game biologist with the Indiana Department of Natural Resources, says.

He went out on one of the first cave surveys of the winter to get cave swabs and count the number of bats. The cave swabs will be sent to a national effort to track and research the spread of WNS across North America. Endless Cave was the first place White Nose Syndrome was found in Indiana, and now officials say over 30 other caves in the state have the fungus.

Along with Johnson was a team of contracted cave surveyors who have been doing these surveys since the 1980's when the effort to keep the endangered Indiana bat population first started. He says early indications show a decrease in little brown bats and what is hopefully a stable population of Indiana bats.

"It was about what we expected," he says after coming out of the cave. "The little browns, very few, maybe 100-150. [The cave]'s been averaging about 1200 little browns for the past 10-12 years, and 2 years ago there were 700 in here. The Indiana bats I wouldn't think it would be down significantly, but I don't think it's up, I hope it's a wash. Considering what we've seen in other caves, I'll take that."

What's Being Done To Help Affected Bats

Johnson and the other surveyors follow strict decontamination protocol when going in and out of caves. They make sure the bodysuits they use are thrown away afterwards, and all clothes and gear are boiled or washed off in lysol to kill any fungus spores that may have gotten on them.

"Those protocols are there to hopefully not transport the fungus to new or additional sites where it hasn't been detected," Richard Geboy, midwest white nose syndrome coordinator for the U.S. Fish and Wildlife Service, says. Geboy works with the Indiana DNR to bring them up-to-date information and research.

Johnson says beyond these defensive strategies, there's really not much more the DNR, or anyone, n do at the moment

can do at the moment.

"I don't think anyone's been able to stop it or contain it," he says. "We've taken steps to try and minimize the chance for humans to transport it, we take precautions with decon, we contribute as much as we can to national efforts to study the disease... but we've done everything we can to slow it and we haven't been very successful."

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There have been ideas for more aggressive strategies to slow the spread, but a cave,s delicate ecosystem requires biologists to carefully



weigh whether introducing something new is worth the risk.

And, a lot of people are paying attention right now to what Indiana is doing. The state has the largest population of the Indiana Bat.

So researchers are watching how the disease spreads and waiting to see if it starts to heavily impact the Indiana bat.

"All indications are that we still have worse days ahead of us," O'Keefe says.

O'keefe says the bats in Indiana face a dire situation, and even if the populations stabilize like they've done in the Northeast, it's still unknown how the bats will come out on the other side. She says the possibility of total extinction for the bats in Indiana is a real possibility.

"Stabilizing at a very low population doesn't mean the species will continue to persist," she warns. "If they can't sustain normal summer population sizes then they can't get sufficient sizes of populations in winter. And because they do rely on each other for body heat to some degree then maybe they won't persist as a species."

How Does The Bat's Future Look In Indiana?

In Bloomington, dozens of families and residents have taken the day off to help with the Community Orchard. They're building small boxes to put up in the orchard for bats to roost in.

Bogdan Dragnea is one of those residents. He lives close to Yellowwood Forest, and he says bats have become an important part of his life by eating insects.

"I guess it's part of the normal ecological balance that we are also part of," Dragnea says. "So every little link in this chain can trigger unexpected consequences so we would like to tread lightly when changing that equilibrium."

And that attitude is exactly what O'keefe says is important for the future of bats in Indiana.

She also says building bat boxes is one way anyone can help bats. Once bats leave hibernation, they try to find shelter in trees, and since their habitat is increasingly getting smaller, bat boxes are a good way to try to sustain their numbers.

Bats play an important part in the ecosystem, even if it happens when we don't see it. They are not only integral in eating crop pests, bats also serve scientific and medicinal purposes particularly related to researching sonar and vaccines.

"Bats play a huge role though in the environment and I think it's something that we really need to take note of and realize because they really benefit our crops, our forest and consequently us," Geboy says.

Posted February 20, 2015 at www. indianapublicmedia.org/news/ bats-indiana-face-dire-situation-2-78361 or watch the video version of the article at www.youtube.com/watch?v=5zLFJPNYn6g

SHAWNEE KARST PRESERVE CHRISTMAS BIRD COUNT

by Jerry & Salisa Lewis

All across the United States thousands of birders conduct bird counts during the Christmas season. For example, Big Oaks National Wildlife Refuge conducts a day-long count and the bird club in Louisville fields several teams of people from dawn-todusk in a fifteen mile radius of the city in southern Indiana as well as Kentucky. The results are subjective, depending on how many people show up to do the counts, their skill level, degree of motivation, and very importantly... the weather.

Rather than an all-day affair like other bird counts, I've set up the count at the Shawnee Karst Preserve to take less than two hours. We stop for three minutes at each of twenty stations that I established shortly after the IKC purchased the property, and watch and listen for any birds that appear. This year on the day we planned to do the survey it was raining, so we waited until after lunch for the rain to stop (we don't like doing this so much that we're willing to stand in the rain to do it, and birds are generally hunkered down and tough to find).

The rain had stopped but conditions were mediocre... cold (35 degrees), breezy, and heavy overcast. The birds were indeed hunkered down, mostly hiding and quiet. We identified on sixteen species, mostly crows and Blue jays that were noisy and obvious as they flew around in the treetops. The most interesting bird of the day was a very brief look at a Winter wren. These birds are tiny and secretive... they are usually identified not so much by getting a clear look at them, but for their habit of diving into a pile of logs. Identification typically consists of a one second glimpse of a small bird's short brown tail disappearing into a hole... not a very gratifying bird-watching experience, but the Winter wren is the only bird in southern Indiana with this behavior, so it has to suffice.

Otherwise, we heard a Red-tailed hawk and

	Shawnee Karst Preserve Winter Bird Survey																												
Surveyors: Jerry & Salisa Lewis, 28 December 2014																													
	Gen	General conditions: 35 degrees, heavy overcast, breezy, rain just ended																											
	Othe	Other species noted but not recorded during count: Mourning dove, White-breasted nuthatch																											
E	Turkey vulture	Red-tailed hawk	Wild turkey	Pileated woodpecker	Red-headed woodpecker	Red-bellied woodpecker	Hairy woodpecker	Downy woodpecker	Mourning dove	Blue jay	American crow	White-breasted nuthatch	Tufted titmouse	Carolina chickadee	American robin	Winter wren	Carolina wren	Yellow-rumped warbler	Eastern bluebird	Northern cardinal	Eastern towhee	Dark-eyed junco	White-throated sparrow	White-crowned sparrow	Fox sparrow	Song sparrow	sparrow spp.	House finch	
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saw a Turkey vulture circling high overhead. Several sparrows are just listed as "sparrows" were seen too poorly to identify specifically, but most were probably the common White-throated sparrow. We also saw a scratched-up area on the ground that was probably attributable to turkeys and a "white-washed" cedar tree that is usually evidence of an owl roost, but neither bird was at home at the moment. The trails were covered with deer hoof prints everywhere we looked, and we saw a couple moving through the forest near the hilltop campsite. In two places along the trail we noted scat that looked like evidence that coyotes were travelling the refuge as well.

In Indiana one just never knows what weather we'll get. One year we did the bird count in snow, this year on a dark, gray day. Next year maybe we'll get a crisp sunny day!

Beware of ticks, state health chiefs say

by Dann Denny (Associated Press)

Hoosiers who suffer bites face disease and death

The cases add up:

- 32 "probable and confirmed" cases of Rocky Mountain spotted fever in Indiana last year, caused by the American dog tick.
- 109 cases of Lyme disease, courtesy of the deer tick.
- 49 cases of ehrlichiosis, transmitted by the lone star tick. Because of these statistics, Indiana State Department of Health officials say, people should take measures to protect themselves from the oval-shaped, eightlegged creatures that can latch onto your skin and drink blood until they balloon to the size of a grape. They also can make you seriously ill or even kill you.

Ticks are waiting in naturally vegetated areas and woodlands, craving blood. Though not all ticks are infectious, many are capable of transmitting potentially fatal diseases. In the spring of 2011, a Mitchell man died of complications resulting from a bite by an American dog tick, which infected him with Rocky Mountain spotted fever.

Similar symptoms

The initial symptoms of Rocky Mountain spotted fever and ehrlichiosis are similar. They include a fever, fatigue, muscle aches and pains, severe headache and chills. A rash may develop shortly after onset — first appearing on the arms, legs, palms of the hands and soles of the feet before spreading to other parts of the body. Scot Moore, a pediatrician with Riley Physicians at IU Health, said Lyme disease is a bacterial infection transmitted to humans through the bite of a blacklegged deer tick. The State Health Department said there have been 443 cases of Lyme disease in Indiana in the past five years. "Some



believe that the cases are under-reported," Moore said. "With changes in the deer population and migratory habits of white-footed mice - animals required in the life cycle of the Lyme disease bacteria — Lyme disease is predicted to become more prevalent in the future." Moore said Lyme disease symptoms generally develop seven to 14 days after a person is bitten by an infected tick. Early symptoms often include fever, headache, fatigue, neck pain and joint stiffness. More than half of patients develop a rash that appears as an expanding red ring around the tick bite, resembling a target.

He said late symptoms might include arthritis, heart rhythm disturbances, meningitis, encephalitis or cranial nerve abnormalities - most commonly Bell's palsy, a paralysis of the facial nerve that weakens the eye blink and the ability to smile on one side of the face. There is no cure for Lyme disease, but Moore said antibiotics typically will treat the illness. In 2009, Bloomington's Dale Jones was diagnosed with Lyme disease after a tick bite left a red mark on his skin with a red circle around it A doctor treated him with antibiotics, and within a few months he fully regained his strength. But a person with late or chronic Lyme disease, the State Health Department website says, often requires intravenous antimicrobials for two to three weeks. Moore said the medical caregiver must order the correct confirmatory tests to diagnose the illness. He said there are different tests for Lyme disease, but the Centers for Disease Control and Prevention recommends a specific two-step blood test for accurate diagnosis.

Moore said that while many people think they have symptoms of Lyme disease, few actually have the disease. "Lyme disease is not contagious and can only be contracted via a tick carrying the bacteria," he said. "Few tick bites can actually transmit the disease. It must be a deer tick; the tick must carry the bacteria; and the tick must be attached and en-

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	Total Liabilities & Operating Excess	-		\$595,417.73						

NOTES:

1) Estimated value of the 11.85 acre tract with mitigation easement restrictions

2) Costs include closing costs/title policy + \$1000 transfer into Stewardship Endownment Fund

IKC EXECUTIVE BOARD MEETING MINUTES

Saturday, December 13, 2014 11:00 AM EDT – Bloomington, Indiana

Board Members Present:

Jerry Lewis, President Kevin Smith, Secretary Keith Dunlap, Treasurer Bruce Bowman Dave Haun (proxied by Salisa Lewis) Everett Pulliam Bob Sergesketter Bruce Silvers Karen Silvers (proxied by Dave Everton) Tom Sollman Carla Striegel-Winner Bob Vandeventer Richard Vernier Jamie Winner

Board Members Absent:

Christopher Dick

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

Minutes of the previous quarterly meeting were accepted as published in the December 2014 *IKC Update*.

E-Mail Motions

None to report this quarter.

Treasurer's Report

Treasurer Dunlap reported cash assets totaling \$131,616.07 and land assets totaling \$460,000.00 for total assets of \$591,616.07. Funds include Stewardship: \$53,875.09; Deferred Dues: \$3510.00; Land Acquisition: \$30,064.95; General Fund: \$43,469.91; ad hoc Science Fund: \$696.12.

IKC membership currently stands at 185.

Shawnee Karst Preserve

Jerry Lewis reported that he and Salisa Lewis had finished installing a pond liner in the second wildlife pond. Both ponds are now holding water nicely.

The water level datalogger was successfully installed by Keith Dunlap and Jerry Lewis in Upper Twin Cave near the IKC entrance. The datalogger will be used to monitor the stream level and water temperature and hopefully allow us to correlate stream levels to conditions in passages that are prone to flooding, as well as determine when the cave may be unsafe to enter.

Dunlap reported that the visitation spelogger installed in the cave had apparently failed and was no longer operating. Dunlap borrowed a new spelogger from Scott Johnson as a replacement. There was some discussion about which of the IKC caves are equipped with speloggers including the unit installed in Robinson Ladder Cave which has apparently been lost or stolen.

Jerry Lewis fabricated a rocket box bat house that will be installed at the preserve when the weather warms up a little in the spring. The support post of the box will also be used to hold brochures providing information on Upper Twin Cave and the Shawnee Karst Preserve property including the 1.6 mile nature trail.

Jerry Lewis reported that the TNC Open House at the preserve in late October was a success with eight TNC members and four IKC members participating. Everyone took a trip into the IKC entrance of Upper Twin Cave and Jerry, Salisa, and Dave Everton led a thru trip for a few of the participants from the IKC entrance to the Spring Mill Park entrance. Jerry even had a cavefish and a cave crayfish temporarily corralled in buckets near the IKC entrance for everyone to view.

A winter workday is being planned to remove several bags of trash and scrap metal. Bob Vandeventer agreed to use his trailer for hauling purposes. The specific work day will be determined based upon worker availability. An additional work day is needed to remove logs from a sinkhole on the property and Jamie Winner agreed to let the IKC utilize his tractor for this purpose. Dryer conditions will be needed before this work can be done.

Wayne Cave Preserve

Tom Sollman reported the super-kiosk installation is complete. Signage is still needed to provide visitors with information on the preserve and the cave. This information could include a brief history of the cave, a map of the preserve and cave, IKC visitation rules, and a list of donors. There was also some discussion on installing a white board for people to write/share comments.

Jerry reported that the expansion of the preserve with the transfer of Keith Dunlap's adjacent property has been completed. The IKC is appreciative of acquiring this additional holding and Dunlap's generosity. There was some discussion regarding whether transferring money from the General Fund to the Stewardship Fund for the Wayne Cave Preserve was necessary and made sense from a financial standpoint. The pooled Stewardship Fund has typically been funded with approximately 10% of the properties' appraised values to cover maintenance and other long-term expenses relating to upkeep of the properties. The value of the new expansion has been appraised at approximately \$10,000.00. Bruce Bowman moved to transfer \$1,000.00 from the IKC's General Fund to the Stewardship Fund. Carla Striegel-Winner seconded the motion. The motion carried with a vote of 11 to 2 with one abstention.

Robinson Ladder Cave Preserve

Carla Striegel-Winner provided a report on the status of the options provided at the last quarterly meeting relating to prairie restoration on the property. Carla reported that she had solicited ideas from Mark Bennett and Allen Pursell and is still collecting information and developing her recommendations. Jerry Lewis suggested that we should test a small area with an herbicide called Plateau to evaluate its efficacy. Jerry will pursue acquiring a small amount of the herbicide.

A winter work day at the preserve was also suggested to work on eradicating the grape vines and other invasives. Additionally, The Nature Conservancy recommends removal of some of the smaller beech trees – one to three inches in diameter. There was also a discussion regarding the location of the boundary marker at the northwest corner of the property. Jamie Winner has the necessary survey equipment and a date in March or April will be set to locate and establish this corner boundary marker.

Keith Dunlap reported that he, John Benton, and District Forester Abby Irwin conducted the five year inspection of the property. The property was deemed to be in acceptable condition; however, they identified a small grove of "Tree of Heaven" trees which is considered an invasive species that should be treated. Keith agreed to treat with herbicide this spring.

Suicide Cave Patron

The current Cave Patron, Ronnie Burns, will be moving next year and has requested to relinquish his position. Dave Everton volunteered to be the interim Cave Patron until a more permanent person could be established. Keith Dunlap moved to appoint Dave Everton as the Patron for Suicide Cave effective January 1, 2015. Bob Sergesketter seconded the motion and the motion passed with a unanimous vote. The IKC would like to thank Ronnie for his reliable service as Cave Patron.

Education and Outreach Report

Don Ingle, the current chairperson of the Education and Outreach Committee reported on an interesting year of activities. Don provided a brief description of the following events he participated in and organizations he visited as the IKCs Education and Outreach representative:

- Conner Prairie Interactive History Park
- Bloomington, Indiana, Boys & Girls Club "Camp Rock" program
- Indiana Bat Festival held at the IUPUI campus.
- Hoosier Outdoor Experience held at Fort Harrison State Park (with assistance from Charlie Vetters and Susan Wilkinson)

• Islamic Center in Plainfield Indiana

Don reported several issues dealt with at the various events included high winds, low participation, event access issues, and a general lack of interest at certain events. High winds precluded the use of the inflatable bat cave at a couple of the events. Although these education & outreach events are sometimes difficult to manage, the positive experience and awareness that Don provided to hundreds of people regarding caves and karst resources in Indiana is greatly appreciated. Don stated that due to other commitments, he was stepping down as chairperson of the Education & Outreach committee. Bob Vandeventer agreed to temporarily store the materials and resources, including the inflatable bat cave, at his home until a new committee chairperson is appointed. The IKC would like to thank Don for his commitment and service as the chairperson of the IKC's Education & Outreach Program.

Wyandotte Cave Tour Proposal Update

Dunlap reported nothing official has been communicated back from the State with regards to the IKC's proposal to open the cave for limited tours, however, John Davis, DNR Deputy Director, seemed open to the proposal. Additional discussions may be needed regarding logistics and financial considerations. Given the preparation time needed to properly deliver the tour program, it may not be feasible to implement in 2015 even if the state accepts the proposal. Many details are yet to be worked out including a website/advertising, staffing logistics, insurance issues, etc. Dunlap will continue to communicate with John Davis and Lloyd Arnold with respect to the proposal and other alternatives.

Land Acquisition Activities

No new land acquisition activities to report.

Items from the Floor

Keith Dunlap reported that the DNR interim access policy established earlier this year allowing the IKC to manage visitation to select caves in Cave River Valley and Spring Mill State Park has been working well. Discussion ensued of a letter from Ginger Murphy, Deputy Director for Stewardship for Indiana State Parks, stating her concerns with regards to several "unauthorized" visits to Endless Cave. This was based on discrepancies between the number of visits arranged through Dave Everton, IKC's Access Coordinator for the program, and a spelogger placed in Endless Cave by the DNR. Discussion among the Board included gaining more clarity regarding Ginger's concerns and the proper time to address them.

Next Meeting

The annual business meeting was scheduled for 11:00 AM on March 21, 2015 at the Monroe County Public Library [later switched to the Ellettsville Branch].

MARCH 2015

Adjourn

Meeting adjourned at 1:00 PM.

Respectively submitted, Kevin Smith, IKC Secretary.

Continued from page 15... gorged for at least 48 hours to transmit illness."

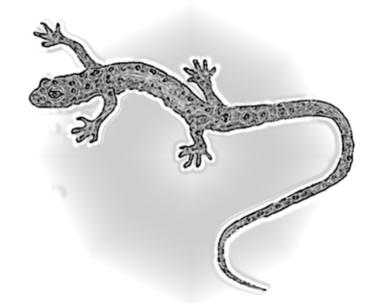
To protect yourself

Health officials say if you plan to enter a grassy or wooded area where ticks are often present, the best way to protect yourself is to wear a longsleeved shirt and light colored pants, with the shirt tucked in at the waist and the pants tucked into the socks. For added protection, insect repellents containing DEET or picaridin can be sprayed on skin and clothing. People who expect to be exposed to ticks for extended periods of time should use products containing permethrin on their clothing, but not on bare skin. Permethrin is an insecticide that kills ticks and other insects on contact. After leaving a grassy or wooded area, people should check for ticks on their clothing and skin.

State health officials say ticks attached to your skin can be safely

removed with tweezers or forceps by grasping the tick as close to the skin as possible and pulling upward with steady and even pressure. You should not remove ticks with your fingers, but if tweezers or forceps are not available, you can use tissue paper or a paper towel to prevent the passing of any possible infection.

Reprinted from *The Indianapolis Star* 05/08/2014.



artwork by kriste Lindberg

INDIANA KARST CO	NSERVANCY, 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 a	t \$15 per year (dues expire March 31st of each year, please pro-rate @ \$1.25/month).								
\$ donation to the general IKC	donation to the general IKC fund.								
\$ donation restricted to a spec	cific IKC project. Please specify:								
I know of an area worthy of	f protection. Please contact me.								
I would like to volunteer to help. Please contact me.									
NAMEADDRESS	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 organiza-								
CITY/STATE/ZIP	tion with membership dues and donations fully tax deductible.								
PHONE #									