



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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*grottos with liaison agreements

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Cover: The 600+ foot long straight borehole passage in River Cave in Cave River Valley, Washington County, IN. Photo by Brian Killingbeck (2005).



QUARTERLY MEETING REMINDER
SATURDAY, JUNE 15th, 3:00 PM EDT
MITCHELL, INDIANA
SHAWNEE KARST PRESERVE

The quarterly meetings are for the elected 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 Items: All things about the Shawnee Karst Preserve; Upcoming workdays at our other preserves; Indiana Cave Symposium review; White-nose Syndrome/DNR update; Wyandotte Cave gate; Financial reports; Land acquisition activities; and more....

Directions to the Shawnee Karst Preserve: From the intersection of SR37 and SR 60 in Mitchell, take SR 60 east 4.0 miles (or 0.7 miles east of the main entrance to Spring Mill State Park). The Preserve driveway is on the south side of the road adjacent to the neighbor's green "4030" address sign. Proceed up the driveway to the parking loop at the end. GPS Lat N38.71871 Long W86.40616

Note: In case of inclement weather the meeting may be held in the entrance room of the cave so bring a helmet/light, jacket, and pad to sit on. You may get slightly muddy.

ACTIVITIES CALENDAR

Jun 15 – IKC quarterly meeting (see above)

Jun 15 – Shawnee Karst Preserve workday (see page 10)

Jun ?? – Weed Control Around Trees at Buddha Karst Preserve

Jun 28-30 – Cave Capers (Crawford County Fairgrounds)

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...

First, a few words about the photo... I'm holding the Orb of Knowledge. The picture was taken sitting on a throne in the Treasury of Notre Dame Cathedral in Paris, France. I knew when we were there in March that it would be a useful photo, I just didn't know for what, or when.

So now we fast-forward to the beginning of May... We're back in Indiana and the phone rings. I answer and the person on the other end asks to speak to "Dr. Lewis". No one calls me that unless there's a problem, so I wonder which of my two hats to put on: IKC or cave biologist. The answer to my silent question arrives quickly, as the caller identifies himself as being from a television station in Indianapolis. Ok, I think, this is a public relations moment for the IKC, so I'm going to have to make nice.

This immediately took my thoughts back to an episode that had occurred in Tennessee many years before: the Rumbling Falls Cave debacle. In brief, a sewage treatment plant was about to start operations that included releasing the sewage effluent into a pristine cave system. I was called to do a rapid assessment of the cave's fauna. This became one prong of a battle that eventually resulted in the effluent being released elsewhere and the cave system was saved, at least for the moment.

For some reason Rumbling Falls drew the interest of the national media and for a couple of weeks I never knew who was going to call next: *CNN*, *NBC*, *National Geographic*, or newspapers from across the country. So the phone rings again...

Before going on I have to preface this by saying that during that era I had an open cage in my dining room with 3 guinea pigs in it (I'm sure that speaks volumes about me, doesn't everyone keep guinea pigs in their dining room?).

Anyway, the phone rings, and it startles one of

the guinea pigs who proceeds to fall off his climbing toy onto one of the other pigs, who then all start wheeking loudly and generally acting like the three stooges. I pick up the phone and, not focusing on what I'm doing, look over and say "You stupid pig". For some reason the reporter from the *Washington Post* on the other end of the phone line wasn't accustomed to being called a "stupid pig" as a greeting. Clearly I needed to work on my "people skills".

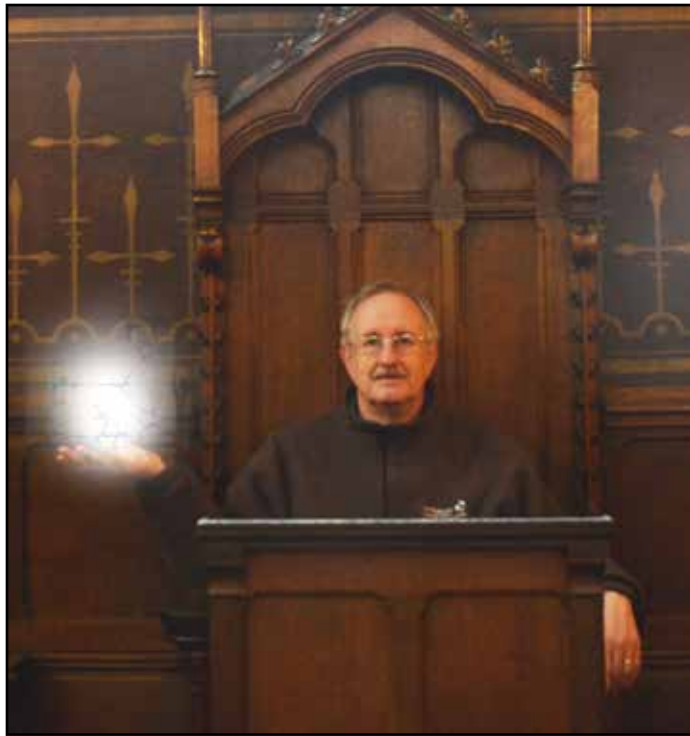
Now back to the present... I've got an Indianapolis TV reporter on the phone who has found me through the IKC website, so I'm representing our organization. I'm thinking I need to find my good manners and try

to remember where I had put the Orb of Knowledge. Come to find out the report has called because a "sinkhole" has opened in a street in Indianapolis and the television folks are scrambling to find someone who might know why a "sinkhole" would occur there.

It becomes quickly obvious that he is hoping this hole is going to become big news. Hopefully it might swallow cars, homes, people, cats... who knows where this might lead, it could become

a Pulitzer Prize for someone. The next thing out of the mouth of the reporter is that he has followed the news of the sinkhole in Florida that swallowed houses and people. "What should we tell the people and businesses that are nearby?"

What I really wanted to say is that they should evacuate Indianapolis, but as fun as that would be I don't say it. The first thing I say is "let's not push the panic button". I start an explanation of karst, the characteristic features of karst topography including sinkholes and karst. I tell him that sinkholes are very common in the landscape of southern Indiana. There were literally thousands of sinkholes carpeting parts of the state. But not



in Indianapolis where the limestone is very deep, and thus, the bad news... why their "sinkhole" is most likely not a sinkhole at all, but a pipe of some sort collapsing under the street, sucking in dirt and pavement. What they have is "just a hole" forming in the street. The reporter was trying to conceal his disappointment as he saw prospects for a spectacular news story evaporating.

Apparently, as predicted, the hole in the street was caused by a leaking culvert that was piping soil away to the nearby White River.

The take-home message? Education is a never-ending process. All of us in general and our

education coordinators in particular have lots to do. I believe that society has a somewhat greater environmental awareness than, say, 75 years ago, but we still have a long way to go. If people still don't know what sinkholes are it is probably safe to assume that they still don't know the consequences of throwing garbage in them.

So as they say in Indiana, the Orb is in our court....

Jerry Lewis

[Editor: see related article on page 11].

NEWS BRIEFS..

- ❑ The IKC annual elections on March 9th saw one change to the Executive Board. Bruce Silvers was elected a Director, replacing Don Ingle who decided to not run again. Jerry Lewis was re-elected President, Kevin Smith was re-elected Secretary, Keith Dunlap was re-elected Treasurer, and Everett Pulliam, Carla Streigel-Winner, and Jamie Winner were re-elected as Directors. The full Board can be found on page 2.
- ❑ In January and February, the biennial Indiana bat census was conducted in the ten most-populous Indiana hibernacula. Preliminary results showed the total number of Indiana bats found was approximately 224,500 or slightly greater than the count in 2011. This is promising news considering almost all the hibernacula now have evidence of being infected with the fungus that causes White-nose Syndrome. However, there were some major shifts between caves and there seemed to be some correlation of the caves that lost the most, being infected the longest. Wyandotte, Twin Domes, Batwing, and Grotto each decreased by 10% or more; while Jugehole, Wallier, Endless, Coon, and Clyfty caves gained by 10% or more. Ray Cave was up only slightly. A more extensive report will be published in the *IKC Update* once the final numbers are released.
- ❑ Since 2009 when the Indiana DNR closed the 300+ caves located on the public lands they manage due to concerns over White-nose Syndrome, cavers have continued conversations with the leadership of the Division. Over the past year, discussions have escalated as the focus of the closures has evolved from preventing the introduction of the *Geomyces destructans* into Indiana caves (which was unsuccessful) to preventing it from being humanly-transported to non-infected regions in the west. Recent conversation between the parties has shown some encouragement that a limited number of caves could be re-opened with the understanding that cavers can practice proper decontamination procedures. At this point, draft proposals are being refined on the logistics of the access program and the caves involved. It is likely the IKC will end up taking on some administrative/coordination responsibility for the access program. More to come, hopefully.
- ❑ Over the past few years, there have been some discussions about replacing the bat gate in Wyandotte Cave with a new gate located closer to the entrance. The motivation was that over time, more and more bats have been hibernating in the entrance room exterior to the gate installed in 1991. For the last three bat counts, approximately 20% of the population (up to 10,000 bats) were roosting outside the gate making them vulnerable to disturbance or worse. Recently, funding for the new gate was made available by BP Wind Energy and Bat Conservation International was contracted to perform the work. They approached the IKC about sub-contacting the design, project management, construction of the new gate, and removal of the old gate. Initially we declined the project, but after further consideration and discussion, the IKC Board decided to take on the task. The contract schedule requires the project be completed by the end of July.
- ❑ The IKC has gained eight new members in the last quarter. Welcome Matt & Jennifer Laherty (533), Charles Vetter (534), Indiana Caverns (535), Susan Wilkerson (536), Brian Welp (537), Kevin Romanak (538), Joseph Gerling (539), and Tim Mikesell (540). The IKC membership currently stands at 195.

SHAWNEE KARST PRESERVE PROJECT UPDATE

by Keith Dunlap

As you can see below, the IKC has surpassed our \$102,600 fund-raising goal to cover the initial cost for the acquisition of the 50-acre Shawnee Karst Preserve (SKP). As such, donations for land acquisition after June 30 will be credited to whatever our next project might be. If you have not yet made a donation to SKP and still want to, or if you would like to jump to the next donor level, please do so soon (if you want to know your exact donation to date, contact Keith Dunlap). The donation list will remain on our website indefinitely and may also be displayed on an on-site kiosk.

Stewardship activities over the past three months have been significant. Jerry Lewis, Seth Gower, and Keith Dunlap finished the eastern loop trail, worked on some timber stand improvements (TSI), eradicated autumn olive, and cut grapevines. Further, on April 20th we had a large turnout for Under-Earth Day where we tackled two large projects. First we planted 400 hardwood seedlings (red oak, white oak, chinkapin oak, and black walnut) in an open field in the northeast corner of the property. Next we started a sinkhole cleanup adjacent to where the trees were planted. The sinkhole con-

SHAWNEE KARST PRESERVE GRANTS / DONATIONS			
\$10,000 or more			
The Nature Conservancy			
\$5,000 to \$9,999			
Richard Blenz Keith Dunlap National Speleological Society			
\$2,500 to \$4,999		\$1,000 to \$2,499	
George Brutchen Andrew & Alison DuBois National Speleological Foundation		Bruce Bowman Tom Sollman Bruce Trotter In Memory of Paul Barker Central Indiana Grotto	
\$500 to \$999		\$250 to \$499	
Barb & Don Coons Robert Decker Carl & Louise Nelson Nate Pate Matt Selig	Gordon Smith Richard Vanrheenen Sue & Dick Vernier Bob Zatarski In Memory of Robert Dunlap Saint Joseph Valley Grotto	Miriam & Paul Ash Keith Calkins Jeff Farr Scott Fee Scott Hammon Barbara Hanka Timothy Heppner David Lasser Jerry & Salisa Lewis Everett Pulliam	Kelle Reynolds Bob & Phyllis Sergesketter Kevin Smith Bill Tozer Norbert Welch Rich Whisler Bluespring Caverns Evansville Metro Grotto Northern Indiana Grotto
\$100 to \$249			
Joy Baiz Ray Beach Carl Brown Ari Doucette Jaime Fee Allen Goodcase	Tom Hornaday Dan McDowell Bill Morrow Nick Noe Ernie & Jacqueline Payne Don Peters	Gary Roberson Wes Roeder Russ Romme Cindy Sandeno Brenda & John Shultheis Richard Vanrheenen	Gary Whittaker Carla & Jamie Winner In Celebration of Carla & Jamie Winner Dogwood City Grotto Eastern Indiana Grotto Greater Cincinnati Grotto Near Normal Grotto
\$50 to \$99			
John Ahlberg David Anderson Danielle Burden Pat & Debbie Burns Chris Carpenter George Cesnik Mike Clark	Jeff Cody William Combs John Dimit Dave Everton Rick & Rhonda Gikas Hank Huffman Kim & Tom Metzgar	Lynn & Jane Miller Shannon Obendorf Kevin Rasmus Tom Rea Ralph Sawyer Ray & Beth Sheldon Dave Tibbets	Mark Webb Gerry Woltering In Memory of Wilbur Isom In Memory of Jerry Litaker In Memory of Craig Williams Indiana Caverns
\$5 to \$49			
Ron Adams Tim Alkema Bob Armstrong Brad Barcom Ted Bice Thomas Boehler Chris Carpenter Thomas Chenier Larry Coker Patty Cummings Christopher Dick Daniel Gray	Dave Haun Hal Hempt Horton Hobbs III David Hughes Rob Jarboe Mark Kraus Brian Leavell Robert Masta George Mattison Andrew Mehlihop Jon Miller Douglas Moore	Gene & Jennifer Peltier Russell Pusilo Steve Ragsdale Charles Rex Patty Ruback Martin Ryan Jay Salvage Bruce Silvers Karen Silvers Ty Spatta Susan Strickland Mark Van Buskirk	Nicholas Walden Kathy Welling David Whorral Scott Worpell Kevin Wyatt Laura Young In Memory of Norman O. Flory Jr In Memory of Ava Darlene Mullen Elkhart Environmental Center Louisville Grotto Sub-Urban Chicago Grotto
Project goal: \$102,600 Raised/Pledged to date: \$104,764 Percent of goal: 102.1 June 1, 2013			

tained mostly scrap metal which will be recycled, but also had typical household trash (e.g., glass bottles, cans) which was bagged and will be properly disposed. While we didn't get the cleanup 100% done, a few hours on the June 15th workday should wrap things up. Under-Earth Day participants included Joy Baiz, Terry Clark, Bambi Dun-

lap, Keith Dunlap, Greg Dunwoody, Dave Everton, Seth Gower, Bill Greenwald, Jesse Houser, Jerry Lewis, Nicole Miller, Bill Morrow, Austen Noyes, Ernie Payne, Everett Pullman, Ralph Sawyer, Bob Sergesketter, Brenda Shultheis, John Shultheis, John Sies, Paula Sies, Kevin Smith, Tom Sollman, Aaron Valandron, and Charlie Vettters.



Under-Earth Day at the Shawnee Karst Preserve where 25 volunteers planted 400 trees in an open field (left), then worked to cleaned up an old sinkhole dump (right) where the steel was separated to be recycled.

EXPLORING THE MOLECULAR GENETICS OF INDIANA'S SUBTERRANEAN ISOPODS

by Jerry Lewis

In May the Indiana Karst Conservancy received notice from the Indiana Academy of Science that it had been awarded a small grant to conduct an analysis of the molecular genetics of subterranean isopods occurring in Indiana. This grant was matched by funds from the Indiana Chapter of The Nature Conservancy.

Many Indiana cavers see isopods early in their caving experience because the little creatures are seemingly ubiquitous in Indiana caves. Almost every cave in southern Indiana that has any water in it also has isopods. This group of crustaceans is quite variable in appearance if one considers the many kinds that live in the oceans, or the land-dwelling “rolly-polly” bugs, but in groundwater in Indiana, if you’ve seen one isopod you’ve pretty much seen them all. The differences from one species to the next are mostly in the details of the pair of appendages used for sperm transfer. Called “pleopods”, tucked away on the underside of the crustaceans behind the penes (yes, isopods have two), they are visible only under the high magnification of a compound microscope.

And therein lies the problem. In larger animals the differences between species are fairly obvious. For example, in birds, a cardinal, robin, and blue jay can be identified by anyone. However, in invertebrates like isopods, it can be very difficult to tell them apart. However a new tool has been added to the kit of things used for differentiating these creatures: molecular genetics. Biotechnology now exists to allow characterizing animals based on the differences in their genetic materials. In humans much of the genome, i.e., the chromosomes have been “mapped”, whereas in more obscure creatures like isopods only a gene or two in a few species have been examined. Whereas knowing the chemical composition and function of the chromosomes has immense implications for medicine in humans, the structure of even one gene in another organism can vary enough from species to species to offer insight into their relationships. All of this quickly becomes

very complicated, but put simply, the greater the differences in a gene between species, the more distant the relationship.

Unfortunately, the chemicals called nucleic acids that comprise genetic material require special preservation to allow analysis. So for that reason I have been travelling around the state to collect fresh specimens of the seven species of subterranean isopods known from Indiana. Note that I’m using the word “subterranean” rather than “cave”. That is because of the seven species of isopods occurring in groundwater habitats in Indiana, only two of them live in caves.

The best known of the two cave species is the Stygian cave isopod (*Caecidotea stygia*). This species was the first isopod discovered in a cave in North America, where it was described by Alpheus Packard in 1871 from a specimen collected in a tiny stream in Mammoth Cave (the stream is still visible next to the tourist trail if one knows where to look). This is the isopod that most cavers have seen in Indiana, where I’ve collected it from 17 counties. The second of Indiana’s cave isopods, the Frost cave isopod (*Caecidotea rotunda*) is known only from a few northern counties of the southeastern karst region (and adjacent Ohio).

Indiana’s other five species occur in the saturated interstices of non-cave habitats, or more simply put, water flowing through soil and gravel. These isopods can crawl through the spaces between soil particles the way a person swims through water... it’s incredible. In most respects these species are less well known than their cavernicolous relatives. The rarest species in Indiana was a new species discovered in 2011 in Vigo County, where I found it emerging from groundwater flowing out of an



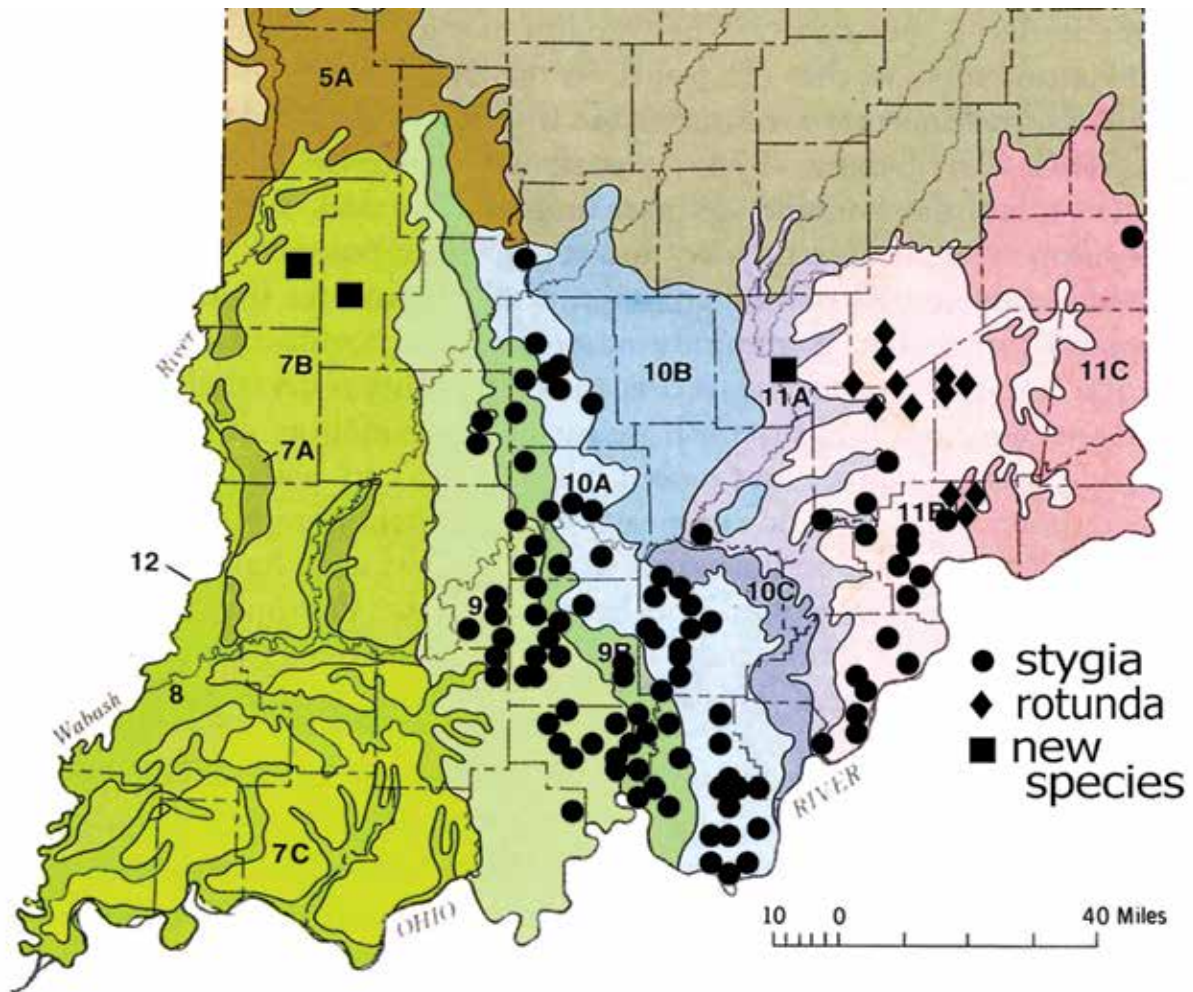
Most of the different species of subterranean isopods that occur in Indiana look very similar. Shown here is Jordan’s groundwater isopod (*Caecidotea jordani*), a soil-dwelling species that is known from only four sites in Clark, Crawford, Lawrence and Monroe counties.

agricultural field drain tile outlet (below). Since then I've discovered it at two more sites, in Clay and Bartholomew counties. This species occurs around the northern edges of the karst, but based on only three collections it is difficult to speak in more than generalities about its range. Below is a range map showing the collection sites of the two cave species as well as the new species.

The evolutionary relationships of this assemblage of seven species are obscure. From the anatomy of the creatures it appears like they can be divided into two "species groups", but beyond that how they are related to one another remains mostly a question mark. Hopefully the analysis of their genetic material will allow new insights into their identities.



Systems of drainage lines are commonly placed under farm fields in Indiana to make them dry enough to cultivate. The groundwater is piped to the edges of the fields where it is drained into ditches or creeks. These drain tile outlets frequently are excellent places to find groundwater crustaceans that have accidentally been washed out of the soil. Shown here is the location of two drain tile outlets (indicated by arrows) in Vigo County, Indiana where a new species of isopod has been discovered.



2013 INDIANA CAVE SYMPOSIUM RECAP

by Keith Dunlap

The Lawrence County Fairgrounds' Community Building was again selected for the 21th annual event, which was held this year on April 20. Indiana cavers were out and about earlier that day; many of them participating in the IKC's Under-Earth Day at the nearby Shawnee Karst Preserve, while others were off caving, or just enjoying the wonderful spring weather. The Symposium was again co-hosted by the Indiana Karst Conservancy and Indiana Cave Survey, with each organization sharing the facilities rental and food costs, which included burgers, brats, pork country ribs, buns, condiments and soft drinks. Approximately 60 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:

- **Cavers, National Disasters, and Speleology** – Kriste Lindberg and Maria Carrasquillo gave an interesting presentation on the similarities between organizing large caving events and how the Red Cross organizes and responds to large natural disaster. The parallels became apparent from the personal experiences Kriste encountered while volunteering for Hurricane Sandy relief effort.
- **Interpretive Development of the Shawnee Karst Preserve** – Jerry Lewis reported on the various stewardship activities accomplished since last year's presentation: Road construction, erosion control restoration, tree planting, two sinkhole cleanups, wildlife pond repairs, and trail construction. Jerry also summarized the bio-inventory he conducted in the Shawnee Cave system, with 17 cave-dependent species identified.
- **Indiana Saltpeter Operations** – Bill Shulze gave us all an interesting history lesson on the importance of caves and saltpeter related to the War of 1812. There were several Indiana caves used to extract saltpeter, although most of the large operations were in Kentucky.
- **Cave Publications, Past and Present** – Sam Frushour traced the history and contrasted the content of several general Indiana cave publications including the book he recently authored and published.
- **The Importance of Grotto Newsletters** – Bill Greenwald gave a short talk on the importance of publishing articles in grotto newsletters to preserve history and to promote synergy within the various grottos.
- **Buckner Cave Restoration Update** – Bill Baus gave a recap on the graffiti removal project and progress made in the past year.
- **ICS Website enhancements** – Aaron Valandra highlighted work he has been doing to completely refresh the ICS's public site

SHAWNEE KARST PRESERVE WORKDAY – JUNE 15th

On the morning/afternoon prior to the Quarterly meeting, we will have a workday at the preserve. Activities will include limb lopping on the loop trails, trash removal from a sinkhole and metal removal from a ravine for recycling. Start time will be 10 AM EDT and continue until around 3 PM. Even if you don't have the time to volunteer, stop in and take a quick tour of the property before the meeting.

The entrance to the property is 0.7 miles east of the entrance to Spring Mill State Park on the south side of SR 60. Look for the neighbor's "4030" address sign and our driveway is immediately to the west of that sign. For more information, contact Property Manager Jerry Lewis (see page 2 for contact information).

including improvements in the interactive forms cavers can use to report new caves or update existing caves. The changes should “go live” in the near future.

- **Living the Miller High Life** – Dave Everton wrapped up the evening with recent discoveries in the Binkley Cave System including the connection of Miller Cave to the upper section

of Blowing Hole section. This connection is significant in efficiently pushing this part of the system and many new opportunities now exist.

A hearty thanks to everyone who made this year’s Indiana Cave Symposium a success, from planners, to presenters, to sponsors, to burger grillers, and attendees! Interested in presenting in the future? Just let it be known!! Hope to see you next year!



Cave Symposium attendees enjoying a pitch-in meal, then an evening of cave-focused presentations.

Sinkholes, potholes... is our city crumbling?

by Dan McFeely & Jon Murray

Shout the word “pothole” a thousand times and folks will barely notice. But whisper the word “sinkhole” – or tweet it a thousand times – and panic quickly sets in.

Don’t these things swallow houses in Florida, golfers near St. Louis, and cars in Chicago?

But here’s the truth: Indianapolis has a long tradition of dealing with sinkholes, although they are not the same kind (and not nearly as big) as those in Florida. And we’ve always had potholes to contend with after messy winters and hot-and-cold extremes of spring.

Blame both on the rain, especially that strange sinkhole on the North-eastside that captured our attention

Tuesday night.

“That area is fairly new. I suspect this is just the result of recent high rains” said Robert Barr, a research scientist at the Center for Earth and Environmental Science at Indiana University-Purdue University Indianapolis.

“These kinds of things can happen. Heavy rainfall can put a lot of stress on the system.”

Sinkhole hysteria

Indianapolis city officials tried to ease fears as Wednesday’s daylight images of the huge hole in the 9000 block of River Road, near the ritzy Keystone at the Crossing area, were shown live on TV.

The fears were no doubt kindled by social media and hovering

“chopper” views of the scene... #slownewsday?

Some of those TV reports were misleading, according to one disgruntled expert.

“The report incorrectly indicated that the area is part of the limestone area of Southern Indiana, which it is not,” said Richard Powell, a researcher with the Indiana Geological Survey at Indiana University.

“Limestone may be the surficial bedrock in places in eastern Marion County, but it is generally buried under 50 to 100 feet or more of glacial drift.”

By mid-morning Wednesday, the city’s public works department officially backed off using the word sinkhole. It was, instead “an erosion problem,” according to spokeswoman



an Lesley Gordon, who blamed it on high water under the nearby bridge. By late afternoon, city officials has modified their doomsday lexicon again, referring to it as a “giant pothole.”

Experts say a sinkhole, in the traditional sense of the word, is caused by “karst” or underground landscapes of limestone rock, prone to deteriorate over time (and we mean geological time, not a few years but thousands of years).

As that landscape gives way, underground openings are revealed (like caves or old mine shafts) and they suck water into the opening – sometimes followed by dirt, pavement, trees, houses, pets, small children and occasionally adults. It can be quite tragic, but such disasters are rarely seen in Central Indiana. Most sinkholes are quite small, compared to the monsters that swallow homes and an entire lake in Florida.

Sinkholes are more common in parts of Southern Indiana, where geologists have long known about the Mitchell and Muscatatuck plateaus, both stretching toward the Ohio River and layered with significant limestone near the ground surface.

The area is known to be home of the Lost River, a flowing body of water that literally disappears into the ground at one point, only to emerge a bit later on the other side of a dry river bed.

“Sinkholes are incredibly common in those two regions; we have new ones occur all the time,” said Julian Lewis, director of the Indiana Karst Conservancy, a group dedicated to preserving the area.

No deaths or injuries by way of sinkholes have ever been reported in Indiana.

“Mostly, we see country roads collapse and from time to time you hear of the ground collapsing into a small cave system,” said Lewis.

But none of that’s going to happen in Indianapolis, where any layers of limestone are far below the surface. “Here in our area it is so deep that you’d never get a naturally occurring sinkhole,” said Keith Dunlap,

Greenwood, who is also a karst expert (and serves as treasurer for the Karst Conservancy).

Asked what he would call that big hole on River Road, Dunlap said maybe the best term is “piping hole,” given that it was rushing water through underground pipes that could have caused the erosion to take hold.

“Technically, it could be called a sinkhole, but it’s not caused by a natural cavern, but more like a man-made pipe,” said Dunlap.

And there’s no need to panic, he added. “I think it’s pretty rare. Not typical, but it does occur.”



Potholes rattling our cars

In Indianapolis, a more typical winter has resulted in a more typical chuckhole season – which is to say, while the city has had plenty of pockmarked roads, it’s been nothing like the minefield drivers navigated two years ago.

So far this year, the Department of Public Works said, city crews have received 5,270 pothole reports through the Mayor’s Action Center and DPW’s RequestIndy online and mobile tools.

During the winter, water seeps under pavement and then expands, pushing upwards during freeze cycles. When the ice melts under the resulting bulges, cavities are left over, making the pavement vulnerable to damage when cars drive over it. Potholes are the result.

An ice storm in 2011 and persistent sub-freezing weather made a mess of local roads, with about 23,000 pothole requests reported to the city that year.

Last year – one of the mildest winters Central Indiana had seen in years – city crews received just 4,600 pothole reports. That’s fewer

than have been received so far this year, which has seen more snow storms and freeze-and-thaw cycles.

The city has sent 10 or so three-member crews out daily for a couple months, DPW spokeswoman Gordon said, and officials expect to keep patching potholes until June. Pothole reports peaked in March.

So far, the city has received 86 claims from motorists for pothole-related damage, but it’s paid out only \$273, mayoral spokesman Marc Lotter said. That compares to 145 claims in all of 2012 and payouts totaling \$469.

The city denies the vast majority of claims. That’s because it only accepts liability if DPW knew about the pothole for more than seven days.

Two years ago, following that brutal winter’s cascade of chuckholes, the city received 1,247 claims and paid out an unusually high total of \$152,849 for pothole damage.

Earlier this year, DPW launched a Pothole Viewer website that allows the public to keep track of pothole reports by viewing them on a map and tracking whether they’ve been fixed.

About 260 reported potholes were waiting for repair Wednesday on city streets. Since December, according to the Pothole Viewer site, DPW crews have fixed more than half of reported chuckholes within three days and 80 percent within a week.

Though pothole reports are up over last year, they’re still below levels that typically exceeded 10,000 just a few years ago. City officials attribute the change to the city’s RebuildIndy road resurfacing and infrastructure program, which since 2010 has tapped into \$425 million in proceeds from the sale of the city’s water and sewer utilities to repave deteriorated roads around the city.

[Editor’s addendum: Later reports on the Indianapolis 4-foot diameter by 4’ deep “sinkhole” said it would cost \$50,000 to fix. I think the IKC needs to go into the “sinkhole” repair business.]

Reprinted from May 1, 2013 IndyStar

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 2012:

Buddha Cave Patron Report (Jeff Cody)

Last year had 14 trips into Buddha with a total of 69 waivers filled out for the trips. This is an increase over the total of 2011 trips. There was one trip arranged through me that was canceled. Of the 14 trips, 8 were arranged by the Patron and the rest were arranged by Liaisons. One trip was turned in to me from Cave Capers on Aug 11 with 4 participants. Other notable trips include a trip on Jan 20 including biologist Scott Johnson confirming WNS. I was told of a trip where the connection was passable due the dry summer. I would love to find out how many times in the past the connection was passable and how dry it has to be for that to be possible. No accidents or incidents were reported to me by trip leaders who arranged any trips through me or by any grotto liaisons. We did have a case where a light was left behind and found by another party. I make it a point to advise the leaders of any trips arranged through me to not attempt the crevice traverse to free climb down to the lower level to avoid rigging the drop.

There were a few cases where trip leaders were referred to me by the Property Manager where they had contacted the Property Manager or other IKC officers for cave access. The system of Grotto Liaisons arranging trips seems to be working out well. Some trip leaders who contacted me were not aware they had a local person who could arrange access. I inform them they can go through the Grotto Liaison or myself. Some who are filling out waivers were not filling in trip leader and date. This was not really an issue for me this year as Liaisons made it easy for me to know who went when.

Buddha Property Report (George Cesnik)

Activities included:

- May 4 - Keith Dunlap mowed trail and parking area.
- May 11 - Keith Dunlap and George Cesnik treat-

ed the weeds around planted trees with 8 tanks of glyphosate.

- May 18 - Keith and George continued the weed treatment around planted trees applying an additional 8 tanks of glyphosate.
- June 1 - Keith and George applied 4 tanks of glyphosate around the planted trees.
- June 15 - Keith and George did additional glyphosate treatment around the planted trees.
- June 24 - Keith applied 3 tanks of glyphosate around the planted trees and mowed the trails.
- June 29 - Keith and George finished up with the glyphosate treatment for the year. In total approximately 9 acres were treated in 2012.

Sullivan Cave Patron Report (Anthony Owens)

No report submitted.

Sullivan Property Report (Keith Dunlap)

This was the IKC's 14th full year of ownership and we continue our long-term stewardship projects. The trees in the small field, planted in 2000, have grown impressively. 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. Other than walking the fields several times, there were no maintenance performed on the trees.

The "camping" area and the area out by the highway were only mowed only twice last year due to the drought. Hopefully in 2013 we will fare better rainfall-wise to provide additional exercise opportunities for me. I also hope to try to re-seed some of the grassy areas.

The lane and parking areas are in good shape and no maintenance is anticipated for 2013.

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.

The porta-potty is still functioning and was last pumped in December 2011. At last check it was at half capacity, but I may have it pumped by mid-year anyway.

Locks are being serviced by Anthony Owens, as needed.



There were no major problems or concerns encountered during 2012.

On the adjacent property to the east, I cut grapevine several times over the last few months and may plant a few more trees. 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 may keep an area mowed for alternative camping.

Wayne Cave Patron Report (Dave Everton)

Question: How many cavers does it take to remember a 2012 visit to Wayne Cave? **Answer:** 129 cavers: one to have fond recollections and 128 to wonder why they went!

Just kidding! This year's records show 26 trips during calendar year 2012. As always, it doesn't really matter for my records whether a particular trip was liaison-arranged or patron-arranged, although several of the cavers who visited are affiliated with Indiana grottos. A few persons made more than one visit, but most of the 129 visitors went only once. There was at least one trip per month with the exception of April and May, which had none.

No problems were passed along to the Patron other than complaints about the lack of a conveyor belt through the crawlway, or the lack of an elevator shaft in the Camp One area. A few expressed disappointments about the failure of the concession stand to have fresh food, but I reminded them of the difficulties of obtaining good delivery service at low cost to the IKC. The cave gate lock was not changed during the year.

In all seriousness, Wayne Cave continues to be a source of enjoyment and pleasure for the average visitor, although the individual reaction to the infamous crawlway varies greatly. Needless to say, 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 mark the IKC's tenth year of ownership of Wayne Cave. For 2012, several trips to Wayne included overnight camping in the clearing on the hilltop with no problems. The combination lock system for ease of access to the property is working well.

Property Maintenance:

- The gate was readjusted to help keep the bottom from dragging during use. The combination lock is still functioning and has been oiled

several times.

- Trash was removed from the clearing and along driveway.
- Autumn Olives were removed and sprayed along the parking lot, driveway, and road frontage.
- The trail to the cave was cleared of debris and mowed.
- There were no major problems or concerns encountered during 2012.

Future Projects include:

- Construction of an informational Kiosk at a later date.
- Routine maintenance of property.

Robinson Ladder Property (John Benton)

2011 RLC Property activity:

- The bat census was conducted on February 20, 2012 by Keith Dunlap along with Andy King (USFWS) while Scott Johnson (IDNR) waited outside. Numerous WNS infected bats (luci and pips) were observed in the cave, with many bats closer to the entrance than normal, typical of an infected cave. On a positive note, no Indiana bats in the cave showed signs of having or being infected with White Nose Syndrome. There were approximately 50 Indiana bats observed in the cave.
- There was a request from Paul Kolak to visit the cave in early winter of 2012. He was advised of the hibernacula closure of RLC and referred info on other IKC properties (Sullivan, Waynes) by Dr Jerry Lewis and others.
- There was some brush trimming on the SE corner of the property in April 2012, for maintenance of the power lines, done by power line contractors.
- July 26 2012, the drive and camping areas were mowed by member Jamie Winner. Due to the ongoing drought of the summer 2012, brush was not as heavy as usual. Thanks Jamie for mowing with his own tractor and equipment.
- Most of the land at RLC continues to be enrolled in the Classified Forest Program, only the barn, that is a structure, does not qualify.
- In March 2012, the IKC Executive Board vot-



ed to once again allow recreational caving at RLC, from May until Labor Day, since WNS has already been found there. Standard methods of decon are to be followed; also permits to be filled out with all participants.

- Sometime after June 2012, the speleologist battery died, but trips prior to that were all verified, with no unauthorized visits.
- There were no requests to camp at the property for 2012.

Future work needed?

- Follow-up on autumn olive control by spraying.
- Burn fields again to follow-up to Oct 2011 burn
- Locate 2 metal pins at NW corner boundary of Campbell tract (one of former TNC)
- Watch/minimize grapevine growth, mostly on former TNC tracts.
- Other work?

2012 Robinson Ladder Cave activities: 4 total trips; 28 people total; average 7 people per trip; cavers were from either IN or KY.

Shawnee Karst Preserve Report (Jerry Lewis)

Stewardship projects (requiring funds):

Resurvey and monument posts	\$715
Driveway gravel and grading	3490
Road gate construction	305
Grading/reseeding log staging area	1314
Dump cleanup & erosion control	246
Trees (to be planted in 2013)	137
Miscellaneous expenses	67
Total expenditure:	\$6274

Stewardship projects (funds donated):

- Wildlife pond repair
- Grassland clearing
- Invasive plant control
- West trail loop creation
- Creation of campsites

Evaluations

- Bioinventory of cave fauna
- Evaluation of grassland and sinkhole pond (IDNR)
- Winter bird survey
- Article for Conservation Issue of *NSS News* (2013)
- Multiple articles in *IKC Update*

Upper Twin Cave Patron Report (Jerry Lewis)

Eleven trips, mostly for science and stewardship projects:

- Bioinventory
- Photography for N.S.S. News article
- Purdue University research
- USGS research
- Turn-around marker placement
- One primarily recreational trip

Average trip size: 2 people

Largest trip size: 10 people

Suicide Patron Report (Ronnie Burns)

Please accept my 2012 annual report for Suicide Cave in Washington County. Visitation was light with only four visits for the entire year for a total of 22 cavers. The gate itself is still doing well but might need a coat of paint in the next year or so. As usual, I replace the lock at least once a year. There have been no reported injuries, lost cavers, or mishaps.

Orangeville Rise Report (Steve Lockwood)

The property continues to attract trash due to the large road frontage and seasonal flooding, but it remaining relatively clean between trash pickups. Trash was collected from the property in March 2012, and October 2012. Every cleaning of the property yielded a large garbage bag full of trash or more. The trash collected included plastic bottles, plastic jugs, Styrofoam cups, plastic bags, aluminum cans, boards, ropes, and etc. A mailbox, wooden post, and concrete base were removed from the edge of the rise pool during the October 2012 trash pickup.

The fence built in 2003 on the western side of the property has collected some 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. 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 that was washed away still has not been located even during low water. The west bank of the Orangeville Rise streambed at the intersection of the Lost River streambed continues to slowly erode closer to the fence posts along the west property line.

Activities planned for 2013 include trash pickups, and cleaning more trash from a small ravine located on the west side of the property, which

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INDIANA KARST CONSERVANCY TREASURY REPORT

**Income/Expense Statement
From January 1, 2012 to March 31, 2013**

INCOME:

Dues Apportionment and Residuals	693.75	
Donations - General	796.50	
Donations - Land Acquisition Fund	7,430.00	
Interest	261.62	
	<u> </u>	\$9,181.87

EXPENSES:

IKC Update (printing, production, mailing)	251.96	
Education / Outreach	75.00	
Stewardship/Conservation	59.15	
Business (insurance, PO Box rental, misc fees)	98.34	
Transfer to Stewardship Fund ¹	10,000.00	
Transfers to/from restricted funds/other adjustments	7,624.40	
	<u> </u>	(\$18,108.85)

NET OPERATING EXCESS (DEFICIT) THIS PERIOD: (\$8,926.98)

**Balance Sheet
March 31, 2013**

ASSETS:

Cash in Checking / Saving Accounts / CDs	106,774.12	
Robinson Ladder Cave Preserve (73.48 acres)	162,000.00	
Shawnee Karst Preserve (50.31 acres)	105,000.00	
Wayne Cave Preserve (20.00 acres)	75,000.00	
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> </u>	<u><u>\$556,787.28</u></u>

FUNDS & OPERATING EXCESS:

Land Acquisition Restricted Fund	27,008.95	
Deferred Dues Restricted Fund (192 members)	3,810.00	
Stewardship Endowment Restricted Fund ¹	52,920.63	
Previous General Fund (total)	31,974.68	
Net Excess (Deficit) This Period	<u>-8,926.98</u>	
Current General Fund (unrestricted)	23,047.70	
Current General Fund (committed)	675.00	
Real estate liquidity (basis value)	<u>450,000.00</u>	
Total Liabilities & Operating Excess		<u><u>\$556,787.28</u></u>

NOTES:

1) Board action to contribute \$10,000 to the Stewardship Fund for Shawnee Karst Preserve

IKC ANNUAL BUSINESS MEETING MINUTES

Saturday, March 9th, 2013 – Greenwood Public Library, Greenwood, Indiana

Board Members Present:

Jerry Lewis, President
 Keith Dunlap, Treasurer
 Kevin Smith, Secretary
 Bruce Bowman
 Christopher Dick
 Dave Haun
 Don Ingle
 Everett Pulliam
 Bob Sergesketter
 Karen Silvers
 Tom Sollman
 Bob Vandeventer
 Richard Vernier
 Carla Winner
 Jamie Winner

Board Members Absent:

none

The Annual Business Meeting was called to order at 1:15 PM at the Greenwood Public Library, Greenwood, Indiana. IKC President Jerry Lewis presiding.

Keith Dunlap moved to accept the minutes of the December quarterly meeting as published in the March 2013 *IKC Update*. Bruce Bowman seconded the motion and the motion passed 15-0. There were no e-mail motions made during the past quarter.

Treasurer's Report

Treasurer Dunlap reported cash assets of \$102,322.12 and land assets of \$450,000, for total assets of \$552,322.12. Funds include Stewardship: \$42,726.23; Deferred Dues: \$3,843.75; Land Acquisition: \$22,963.95; and General Fund: \$32,788.19.

The IKC membership currently stands at 189. One-hundred twenty-eight members have renewed and 61 members have yet to renew, however many renewals are still coming in.

Cave Symposium

Keith Dunlap moves to spend up to \$175 for expenses (food and room rental) related to the 2013 Indiana Cave Symposium, cosponsored by the Indiana Karst Conservancy and the Indiana Cave Survey. Everett Pulliam seconded the motion and the motion passed 15-0.

Elections

Sue Vernier was appointed as Election Teller. Nominations were opened for the three officer positions. Lewis (President), Smith (Secretary) and Dunlap (treasurer) were re-elected unopposed as officers. Keith Dunlap

nominated Terry Clark as Director from the floor, in addition to Everett Pulliam, Bruce Silvers, Carla Striegel-Winner, and Jamie Winner who were on the mailed ballot. Directors elected were Everett Pulliam, Bruce Silvers, Carla Striegel-Winner, and Jamie Winner. New terms begin April 1.

Shawnee Karst Preserve Update

Keith Dunlap moved to transfer \$10,000 from the IKC General fund into the SKP Stewardship fund to maintain approximately 10% of the property value in the stewardship account. Bruce Bowman seconded the motion and the motion passed 15-0.

Keith Dunlap reports that the goal of raising \$102,600 for the cost of the preserve has been met (as of March 8th). Donations toward the reserve will continue to be accepted through June 30th. Any donations received after that date will go into the general Land Acquisition fund for the next project.

Jerry Lewis announced a work day at SKP before the next IKC meeting on June 15th. Cleanup activities will start at 10 am. Additionally, an Under Earth Day project involving planting approximately 400 trees is planned for April 20th. Trees will be planted in an open area on the east side of the property.

Jerry Lewis reports that the west trail loop is complete and the east loop is approximately 50% complete. Jerry also reports that Mike Homoya (DNR botanist) and Allen Pursell (The Nature Conservancy) have conducted assessments of the sinkhole pond and the prairie/grassland area of the preserve that was cleared of cedars and other invasives last year. Jerry reports that a visitation logger has been installed in the cave and a single WNS-infected bat has been found in the cave. The exact wording for the turn-around marker to be placed in Upper Twin Cave is still being discussed. There is also a possibility that cave trips through Upper Twin cave to the boat dock in Spring Mill State Park may be possible during periods when boat trips are not being offered. (Additional information on the preserve can be found in the Property Manager and Cave Patron Report to be reprinted in the June *IKC Update*).

Buddha Cave Update

Keith Dunlap reports that many of the smaller trees were treated last year using 36 backpack tanks of glyphosate (generic Round-Up) over an area of 9 acres. This year some of the larger, more established trees will be treated and the trails will be mowed. Some trees were lost due to the hot summer last year. There were some questions raised about the use of herbicide and whether it



could potentially contaminate the water entering the cave. Per Keith Dunlap, glyphosate is a fairly inert, contact-based herbicide that should not pose any problems. Jerry Lewis also offered some anecdotal evidence that glyphosate does not impact sub-surface fauna.

Suicide Cave Update

There was some discussion regarding the gate lock. It was suggested that the hole through which the lock is inserted could be enlarged to make lock removal and replacement a little easier.

Land Acquisition Activities

Keith Dunlap reports he is keeping an eye on several tracts north of the Shawnee Karst Preserve. Combined, these properties total approximately 30 acres. It is possible one of these acquisitions could result in ownership of another entrance to Upper Twin Cave.

Dunlap is also looking into a property adjacent to the west side of the Buddha Cave Preserve. A letter of inquiry was sent to the current property owner, but a response has yet to be received.

Dunlap is investigating several other long term projects.

Education and Outreach Report

Don Ingle has agreed to remain as Chairman for the committee. Don reports that he will be assisting with the Indiana Outdoor Experience to be held on Sept. 15th. Don also reports giving a cave/karst presentation at the Linton, Indiana Grade School. Future pre-

sentation dates for the Education/Outreach program are forthcoming.

Items From the Floor

Dave Haun proposed that the IKC make a donation to the new NSS headquarters fund, perhaps through the Team 404 option. Dave will provide more information at the next IKC quarterly meeting.

Don Ingle reports that the Mammoth Cave Cleanup weekend had good IKC representation including attendance by Larry Matiz, Everett Pulliam, Susan Wilkinson, and Don Ingle.

With regards to the IKC grotto liaison program, Keith Dunlap moved to withdraw the Western Indiana Grotto from the Liaison program as the grotto is no longer active. Susan Wilkinson was present to request adding the Louisville Grotto to the liaison program with Susan being the primary liaison representative. Keith Dunlap moved to add the Louisville grotto to the Liaison program and Don Ingle seconded the motion to make the aforementioned changes. The motion was passed 15-0. Susan Wilkinson provided the necessary paperwork.

Next Meeting

The next quarterly meeting was scheduled for June 15th at the Shawnee Karst Preserve. The meeting will start at 3 pm. There will be a workday prior to the meeting.

Meeting adjourned at 3:00 PM.

Respectfully submitted, Kevin Smith, IKC Secretary.



Under-Earth Day at the Shawnee Karst Preserve where volunteers planted 400 trees in the above field using an eight-foot by eight-foot spacing. Each bare-root tree is planted in a hole approximately 12 inches deep, then flagged. Later, weed treatment is applied around each tree to kill back the fescue grass to reduce competition. In ten years, the trees should be ten to fifteen feet tall. In twenty-five years, this area will look fully-forested.

Continued from page 15...

contains old bicycles, fencing, boards, posts, 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 trips into Shiloh Cave for the general caving community per calendar year. Each trip is limited to 10 participants with no more than three vehicles on the property. During 2012, only four of the allowed six trips were taken into the cave, totaling 39 cavers. No requests for visitation were denied.

Lost River Cave Patron Report (Dave Tibbets)

Last year saw a minimal amount of additional footage appended to the Lost River Cave System. Nine survey trips were made involving 9 cavers. Twenty leads were eliminated from the list, and 4 new leads were added. A potential new entrance was pushed to its sumped limits without achieving a connection to known passage. Five of the trips used the Pea Hole entrance, 3 were through the HNF's Wesley Chapel Gulf entrance, and no trips used the Lost River entrance. Locks were

replaced on both gates in November. New footage totaled 0.37 mi., bringing the system to 22.20 miles, still good for #25 on Caver Bob's U. S. list.

Indian Creek CE Report (Jerry Lewis)

Jerry Lewis, with the help of Seth Gower, conducted the annual inspection of the easement and reported acceptable results. The only issue identified was a landowner near the west end of the easement that was mowing a portion of the land within the easement boundary.

Six postcards were sent out to landowners with land adjacent to the easement property offering them a free copy of Gary Roberson's book, *Fifty Years Under the Sinkhole Plain*. Three landowners returned postcards requesting a copy. One of the landowners had several questions about the Binkley Cave system and expressed some concern about the commercialization effort of Indiana Caverns.

It suggested to the Board a possible future goodwill gesture towards one of the landowners was to offer to plant some trees on his property. Alternatively, the IKC could offer to donate trees to the landowner.

Keeping cavers out of caves to prevent the spread of WNS is analogous to keeping toilet seats out of bathrooms to prevent the spread of syphilis. — Anonymous Cave Biologist

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.

