

IKC UPDATE

A Quarterly Publication of the Indiana Karst Conservancy

December 2012

Number 107



Amblyopsis spelaea
in Upper Twin Cave,
Lawrence County, Indiana

INDIANA KARST CONSERVANCY, INC

PO Box 2401, Indianapolis, IN 46206-2401

ikc.caves.org

Affiliated with the National Speleological Society



The Indiana Karst Conservancy is a non-profit organization dedicated to the conservation and preservation of caves and karst features in Indiana and other areas of the world. The Conservancy encourages research and promotes education related to karst and its proper, environmentally compatible use.

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IKC QUARTERLY MEETING REMINDER
SATURDAY, DECEMBER 8th, 2:00 PM EST
BLOOMINGTON, INDIANA
IU GEOLOGY BUILDING, ROOM 143

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: Shawnee Karst Preserve progress report, future project planning, and fund-raising status; Buddha stewardship activities; Other land acquisition projects; I-69 status; White-nose Syndrome update and DNR/HNF cave closure policies; Increased insurance liability coverage; Financial reports; and more....

Meeting directions: The Geology Building is located at 10th and Walnut Grove. Tenth Street runs east/west and is one of the major streets that run across the IU campus. Park behind the building, parking permits are not enforced on weekends. Enter the building from the rear at the west end. The room is halfway down the hall on the right.



ACTIVITIES CALENDAR

Dec 8 – IKC Quarterly meeting (see above)

Dec 8 – Dump Cleanup at Shawnee Karst Preserve (see page 5)

Feb ?? – Executive Board meeting (TBD, if needed)

Mar ?? – IKC Annual Business Meeting (date & location to be determined)

For more information on the Indiana Karst Conservancy, visit our website at ikc.caves.org or write to our PO box. Membership to the IKC is open to anyone or any organization interested in supporting cave and karst conservation. Annual dues are \$15. Please see inside the back cover for a membership application form or to make a much-appreciated donation. Donations can also be made by credit card using the donation button located on our website's home page.

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

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RAMBLINGS FROM THE PRESIDENT...

I tug out a piece of broken concrete block that causes a small landslide of garbage into my lap... broken shingles, pieces of plastic, a crumpled beer can... cascade down into the hole I'm sharing with a large black plastic bag and a couple of other IKC members. It's a beautiful fall day on the Shawnee Karst Preserve (SKP) and twenty or so of us are digging our way down through what is becoming increasingly apparent as an entire house. Rolls of carpeting, linoleum, plumbing, wiring, several layers of different colors of shingles, plus a stove and refrigerator are slowly, but surely, dug from their completely inappropriate resting places in a sinkhole ravine leading down to the SKP's entrance to Upper Twin Cave. The only thing we haven't found is the kitchen sink, but I suspect as we continue to dig that it's in here somewhere.

I've done a number of sinkhole clean-ups over the years and they always bring on mixed feelings – sitting here in my garbage hole I'm experiencing a flood of emotions as this one is special because I'm the Property Manager for the preserve. I imagine that the acquisition of the SKP will be the crowning achievement during my tenure as president of the organization (and no, I have no intention of quitting the job of president any time soon, but the IKC just doesn't buy properties that frequently so I suspect this will be the only one that occurs for a while...) and is thus a place that I take personally. I'm looking up and down the dump that occupies what had at one time been a ravine, watching as a small army of IKC members dig through the garbage, investing what will probably be the last day of beautiful weather before winter sets in. I hear no complaints from anyone, and to the contrary, this seems to be a big "feel-good" experience for everyone, doing their part to rectify an environmental injustice to the karst. I have written

in the past that experiences like this make me very proud of our members and this time is no different. No one would mistake this as being glorious, but it's an important investment in the future of Upper Twin Cave and the surrounding karst ecosystem.

Keith Dunlap and I had been at the SKP a couple of weeks earlier working on the new hiking/nature trail that will meander through the preserve. Progress in blazing the trail was slowed by the large number of downed tree tops and each one has to be removed by cutting through it with a chainsaw. Before arriving the day of the clean-up I had pondered the possibility of leaving the clean-up site to walk a few hundred feet away and continue to chainsaw my way down the intended route of the path. That day I (with my wife Salisa, son Geoff and friend Jared) am the first person on the site and I think of a scene from a war movie ("We were soldiers once and young", the story of the Battle of Ia Drang in Viet Nam). In the movie Colonel Hal Moore – from Bardstown, Kentucky – stated that he would be the first person to arrive and the last person to leave. This is the essence of the adage that one leads by example and I decided that the work elsewhere on the



preserve could wait... it is more important for me to be here, in this hole, leading the effort.

It can be amazing how much can be accomplished by working together as a team. What had been a flat piece of garbage-filled ground at 9:00AM is now becoming a ravine again. The poster-child for teamwork is what I'm watching happen down at the farthest point in the ravine as a group works at freeing a junk refrigerator that has been trapped underneath a fallen tree. Slowly but surely they dig other garbage from under the appliance that allows it to drop enough that the tree frees its grip. This fridge is heavy and is by far the largest thing in the dump that



needs to be removed. A rope is attached to it and a group starts hauling it out. Expecting it to be an arduous trip, I'm at the front of the line of people pulling on the rope. I'm amazed as the refrigerator pops out of the ravine like a cork out of a champagne bottle... it comes up so quickly that I have to scramble to step aside so that I'm not run over by it as it travels up to the top of the ravine. Team work...WOW!

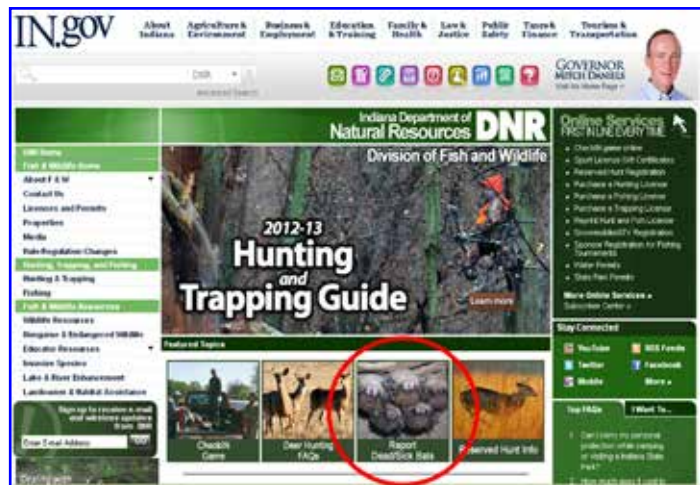
The other emotion that I'm experiencing is frustration... everything we are doing should be

unnecessary. At least half of what we're pulling out of the dump, e.g., steel, aluminum, metal fencing and glass, will be taken for recycling. The rest of the garbage is carefully bagged and will be taken to a landfill. When the previous owners of the property demolished this old house why is it that the materials could not be disposed of properly in the first place? Clearly there is still a lot to be achieved in karst education...

Jerry Lewis

NEWS BRIEFS..

- ❑ The organized caving community has provided considerable long-term support to bat conservation efforts across the Hoosier state. With the arrival of White-nose Syndrome (WNS) in Indiana in 2011, cavers are encouraged to help manage the occurrence and impact of this devastating disease by honoring the various agency cave closures/advisories, avoiding private caves in winter used by hibernating bats, and using the most current USFWS decontamination procedures to reduce the potential risk of human-assisted transmission of WNS, especially to non-infected areas. Cavers can also assist researchers by reporting sick or dead bats and/or unusual bat behavior observed during the winter months. The Indiana Division of Fish and Wildlife home page has a link to an on-line form to facilitate the timely reporting of dead/sick bats in the state. Reports submitted through this link are received by a wildlife biologist for review and subsequent follow-up. Cavers can also use this system to report the observation of healthy-looking bats during the winter. Such information will help better define the extent and geographic spread of WNS in Indiana. The link to the report form is: <http://www.in.gov/dnr/fishwild/6386.htm>



- ❑ The IKC has gained four new members in the last quarter. Welcome Daniel Gray (526), John Shukle (527), John Sies (528), and Nicole Miller (529). The IKC membership currently stands at 180.

SHAWNEE KARST PRESERVE WORKDAY – DECEMBER 8th

Prior to the IKC Quarterly meeting on the December 8th, we hope to finish up the ravine dump cleanup at the Shawnee Karst Preserve (see the article on page 6 on the start of this project). We plan to start around 9 AM EST and be finish by 1 PM before having to head to Bloomington for 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.

SHAWNEE KARST PRESERVE PROJECT UPDATE

by Keith Dunlap

Over the past three months, several restoration projects have progressed on the Shawnee Karst Preserve, south of Spring Mill State Park.

First was the major effort to cleanup an old trash dump in the ravine just above our cave entrance to Upper Twin Cave. This activity is particularly important since a lot of surface runoff percolates through this trash and drains directly into the cave and the subterranean stream. One of our goals in acquiring the property was to improve and protect the water quality of the Shawnee drainage system, so addressing this dump is a action towards that end.

While we had done some prior exploratory digging in the trash to get an idea of its content, it was not until November 10 that we had an organized workday, with nineteen volunteers

turning out on a perfect fall day to make a huge dent in the dump. Fortunately, much of the materials in the ravine were concrete blocks, steel, wood (although some treated), shingles, glass, and other mostly non-toxic items. There was a stove and refrigerator, but not much true household "garbage" as is often found in typical farm dumps. The effort to remove the trash included separating the recyclable items and bagging the rest. In less than six hours, all the big stuff was removed and an estimated 80% of the buried trash had been dug up.

Approximately twenty-five large bags of trash were hauled off to a proper landfill that day, and a like number of bags and other large trash item were removed the following weekend. In total over a ton of rubbish excavated from the ravine. The recy-



SHAWNEE KARST PRESERVE GRANTS / DONATIONS			
\$10,000 or more			
The Nature Conservancy			
\$5,000 to \$9,999			
Richard Blenz Keith Dunlap National Speleological Society			
\$1,000 to \$4,999			
Bruce Bowman George Brutchen Andrew & Alison DuBois Tom Sollman		Bruce Trotter Central Indiana Grotto In Memory of Paul Barker	
\$250 to \$999			
Miriam & Paul Ash Keith Calkins Barb & Don Coons Robert Decker Jeff Farr Scott Fee	David Lasser Jerry & Salisa Lewis Carl & Louise Nelson Nate Pate Bob & Phyllis Sergesketter Gordon Smith	Kevin Smith Bill Tozer Sue & Dick Vernier Norbert Welch Rich Whisler	Bob Zatarski Bluespring Caverns Evansville Metro Grotto Northern Indiana Grotto Saint Joseph Valley Grotto
\$100 to \$249			
Joy Baiz Ray Beach Ari Doucette Scott Hammon Barbara Hanka Timothy Heppner	Dan McDowell Bill Morrow Nick Noe Ernie & Jacqueline Payne Don Peters Everett Pulliam	Kelle Reynolds Gary Roberson Wes Roeder Russ Romme Matt Selig Richard Vanrheenen	Gary Whittaker Carla & Jamie Winner In Celebration of Carla & Jamie Winner In Memory of Robert Dunlap Eastern Indiana Grotto Greater Cincinnati Grotto
\$50 to \$99			
David Anderson Danielle Burden Pat & Debbie Burns Chris Carpenter Mike Clark	Jeff Cody John Dimit Dave Everton Jaime Fee Allen Goodcase	Shannon Obendorf Kevin Rasmus Cindy Sandeno Ralph Sawyer Ray & Beth Sheldon	Brenda & John Shultheis Mark Webb In Memory of Wilbur Isom Near Normal Grotto
\$5 to \$49			
Ron Adams John Ahlberg Tim Alkema Bob Armstrong Brad Barcom Ted Bice Chris Carpenter George Cesnik Thomas Chenier Larry Coker Patty Cummings	Christopher Dick Rick & Rhonda Gikas Dave Haun Hal Hempte Horton Hobbs III David Hughes Rob Jarboe Mark Kraus Brian Leavell Robert Masta Andrew Mehlhop	Jon Miller Lynn & Jane Miller Douglas Moore Gene & Jennifer Pelter Steve Ragsdale Tom Rea Charles Rex Patty Ruback Jay Salvage Bruce Silvers Karen Silvers	Ty Spatta Susan Strickland Dave Tibbets Mark Van Buskirk Nicholas Walden Kathy Welling Scott Worpell Kevin Wyatt Laura Young In Memory of Ava Darlene Mullen Elkhart Environmental Center
Project goal: \$102,600			
Raised/Pledged to date: \$91,589			
Percent of goal: 89.3%			
November 24, 2012			

cables were also hauled off, with 2300 pounds of steel and 37 pounds of aluminum and copper converted into \$275.08 that will go into the property's acquisition fund. The plans for the extracted inert concrete blocks and bricks are to strategically build erosion barriers in the ravine, if needed.

The other new project started this past quarter was the western perimeter nature trail, which will be approximately one mile long when complete. Part of the trail will follow existing logging trails and the rest will be "new terrain" skirting various sinkholes. A four-foot wide path is being cleared with emphasis upon missing trees. Much of the work is in chain sawing and clearing downed tree

tops left over from the logging that occurred by the previous owner. A small brush mower finishes up the trail. This section of the trail should be completed before the end of the year. An eastern loop nature trail is on the agenda for 2013. Firewood cutting and timber stand improvement work is also on-going as time permits.

Volunteers this quarter include Joy Baiz, Pat Clark, Ron Clark, Bambi Dunlap, Keith Dunlap, Roberta Engel, Geoff Lewis, Jerry Lewis, Salisa Lewis, Nicole Miller, Ernie Payne, Everett Pulliam, Jared Sanders, Kyle Schnepf, Molly Schnepf, John Sies, Kevin Smith, Bob Vandeventer, Dick Vernier, and Sue Vernier.



Workday photos of sinkhole ravine cleanup at the Shawnee Karst Preserve. Before (lower left), during (upper left and right), and after (lower right). *Photos by Jerry Lewis*

AN EXAMINATION OF THE CAVE CARABIDAE IN INDIANA

by Kyle Schnepf

In North America there are generally three groups (families) of beetles that are consistently found in caves and that are specifically adapted for living in cave environments (troglobitic). The cave Leiodidae (round fungus beetles) in North America are not as speciose as the other two groups, but one of its members, *Glacivicola bathyscioides*, is fairly well known. It is blind and flightless and occurs in lava tube ice caves in Idaho and Wyoming, giving it an enigmatic quality. Another family, the cave Pselaphinae (short-winged mold beetles) are commonly found throughout the southeastern United States with some members found further west. There is only one member of this group in southern Indiana that may truly be a troglobitic species, but it is not eyeless or wingless and may eventually be found outside of caves. Finally, there are the cave Carabidae (ground beetles) which are eyeless and have no flight wings.

There are six genera of cave beetles in the Carabidae in North America, with only the genus *Pseudanophthalmus* occurring in Indiana. Members of *Pseudanophthalmus* occur in 10 states, the highest concentration of species occurring in Kentucky and Tennessee, with 42 and 48 species, respectively. There are 145 described species throughout their range, with an estimated 225 species total. In Indiana there are currently nine described species and at least three undescribed.

Most *Pseudanophthalmus* beetles are found on mud banks and gravel bars along streams in caves. Some species are found more frequently on the walls and ceilings of caves. Once disturbed the beetles will run quickly along the mud or gravel, trying to find a crevice in which to hide. No one is sure when these beetles moved off of the surface and into the caves. Some other members of this family occur in deep leaf litter or in soil and are blind and flightless as well.

I am interested in looking at these beetles because the current classification is inadequate. There are some species such as *Pseudanophthalmus stricticollis* that range from Marengo Cave in Crawford County north to Twin Cave in Law-

rence County. This large of distribution for an animal that has such specific habitat requirements and limited dispersal capabilities (walking only) seems unusual. There are two possible causes for this. First, there may be multiple species involved in what is currently treated as one species, but limited morphological differences make species identification very difficult. The lack of selective pressures in such a stable environment reduces the amount of viable characters to use in species determination. Second, there may be fewer species with larger distributions than is currently thought. Some morphological differences may be derived from simple factors such as founder effect or other genetic bottlenecks. There may be continued gene transfer between populations by immigration through fissures or cracks in bedrock. We simply don't know at this point.

A solution to this mystery is to use genetic information to infer relationships between populations, species, and species groups. This is done by taking DNA from multiple specimens from each location and comparing their differences. So far Jerry and Salisa Lewis, Molly Schnepf, John Shukle, Seth Grower, Sara Blevins, Evan McCoy, and I have visited Binkley, Marengo, Upper Twin and Donnehue caves. I have taken around 50 specimens total of what may be three or four different species. *Pseudanophthalmus* species are known from many caves, including Sullivan, Wayne, Buddha, and other IKC owned properties, which will be



good places to look in the coming months.

In the future I hope to get more specimens of the rarer species and to get representatives of all species known to occur within Indiana. It would also be advantageous to get specimens of "common" species occurring throughout the state from different sites. Straightening out relationships between the beetles found in Indiana with the species found throughout the range is also a possibility. I would like to clarify the taxonomy of Indiana *Pseudanophthalmus* and eventually deduce their relationships to other cave Carabidae in the United States and, perhaps, the cave Carabidae in Europe.

WHITE-NOSE SYNDROME BAT RECOVERY MAY PRESENT SIMILARITIES TO SOME RECOVERING AIDS PATIENTS

by Carol Meteyer, Alex Demas, and Judith Mandl

Bats recovering from white-nose syndrome show evidence of immune reconstitution inflammatory syndrome (IRIS), according to a hypothesis proposed by the U.S. Geological Survey and collaborators at National Institutes of Health. This condition was first described in HIV-AIDS patients and, if proven in bats surviving WNS, would be the first natural occurrence of IRIS ever observed.

IRIS is a syndrome in which an organism's immune system, having been suppressed for a time, reactivates and, perceiving a serious infection around it, goes into overdrive resulting in severe inflammation and tissue damage in infected areas.

In both human patients with HIV-AIDS and bats with WNS, the functioning of the immune system is severely reduced. For humans, this occurs when the HIV virus attacks the patient's white blood cells, and for bats, this occurs during normal hibernation. For both humans and bats, IRIS can be fatal.

"The potential discovery of IRIS in bats infected with white-nose syndrome is incredibly significant in terms of understanding both the reasons for bat mortality and basic immune response," said USGS Director Marcia McNutt. "This discovery could also prove significant for studies on treatment for AIDS."

IRIS was first described in humans with HIV-AIDS after patients with low counts of helper T lymphocytes, the type of white blood cells the HIV virus attacks, had increases in those cell numbers following treatment with antiretroviral therapy. In some patients, who had secondary bacterial or other opportunistic infections due to their suppressed immune system, their condition significantly worsened as the restoration in immune cell function resulted in an over-response to pre-existing infection and substantial damage to healthy tissue.

In bats, IRIS might be a result of changes in immune system function during hibernation. During hibernation, all internal systems for the bats enter a reduced state, including the immune system, so as to conserve resources. This reduced immunity allows *Geomyces destructans*, the fungus that causes white-nose syndrome, to spread unchecked over the wings, muzzle, and

ears of bats eroding through skin.

If they survive the fungal infection through winter, when the bats emerge in the spring, they face a new challenge – intense inflammation at sites of infection with *G. destructans*. This inflammation in the wings can be so severe that it contributes to death.

Scientists from the USGS National Wildlife Health Center and National Institutes of Health propose this sudden reversal of immune suppression in bats with WNS, accompanied by intense inflammation is a form of IRIS.

Although never before observed outside a clinical setting, there is strong evidence that the inflammation observed in bats with WNS is IRIS.

"We see strong similarities between human IRIS and the pathology associated with WNS, with potentially fatal outcome in bats," said USGS lead researcher Carol Meteyer. "We hope that these findings will stimulate more experimental studies that yield insight into the role of the immune response during IRIS in humans as well as hibernating bats."

Even as the *G. destructans* fungus spreads throughout the bat's body, there is no obvious inflammation in response to this hibernation-dependent fungal skin infection. This lack of inflammatory cell response is consistent with hibernation-induced inhibition of immune cell activity as the body temperature of hibernating bats drops to ambient temperatures 35-50 degrees Fahrenheit (2-10 degrees Centigrade).

In addition, inflammation is not seen until the bat's body temperatures reach their active levels of 93-102 degrees Fahrenheit (34-39 degrees Centigrade). These temperature levels indicate that the bat's internal systems have come back online, including the immune system. Only then is the inflammation observed, and only in areas where the *G. destructans* fungus has taken hold. This behavior is consistent with IRIS observed in human HIV-AIDS patients.

The report, entitled "***Pathology in euthermic bats with white nose syndrome suggests a natural manifestation of immune reconstitution inflammatory syndrome***," is published in the November issue of the journal *Virulence*.

INDIANA KARST CONSERVANCY TREASURY REPORT

**Income/Expense Statement
From July 1, 2012 to September 30, 2012**

INCOME:

Dues Apportionment and Residuals	667.50	
Donations - General	313.57	
Donations - Land Acquisition Fund	2,175.00	
Interest	<u>342.53</u>	
		\$3,498.60

EXPENSES:

IKC Update (printing, production, mailing)	250.19	
Education / Outreach	0.00	
Stewardship/Conservation	3,534.62	
SpeLoggers	25.74	
Business (website)	12.00	
Transfers to/from restricted funds/other adjustments	<u>2,501.05</u>	
		(\$6,323.60)

NET OPERATING EXCESS (DEFICIT) THIS PERIOD: (\$2,825.00)

**Balance Sheet
September 30, 2012**

ASSETS:

Cash in Checking / Saving Accounts / CDs	90,949.41	
Robinson Ladder Cave Preserve (73.48 acres)	162,000.00	
Shawnee Karst Preserve (50.31 acres) ¹	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)	<u>13.16</u>	
		<u><u>\$540,962.57</u></u>

FUNDS & OPERATING EXCESS:

Land Acquisition Restricted Fund	13,062.87
Deferred Dues Restricted Fund (176 members)	2,790.00
Stewardship Endowment Restricted Fund	42,397.65

Previous General Fund (total)	35,537.05	
Net Excess (Deficit) This Period	<u>-2,825.00</u>	
Current General Fund (unrestricted)		32,712.05
Current General Fund (committed)	650.00	
Real estate liquidity (basis value)		<u>450,000.00</u>

Total Liabilities & Operating Excess \$540,962.57

NOTES:

1) Property value increased by \$2,000 for capital improvements (driveway, gate, etc)

IKC QUARTERLY BOARD MEETING MINUTES

Saturday, September 22, 2012 – Ferdinand State Forest, IN

Board Members Present:

Jerry Lewis, President
 Keith Dunlap, Treasurer
 Kevin Smith, Secretary
 Bruce Bowman
 Dave Haun
 Don Ingle (proxy by Salisa Lewis)
 Everett Pulliam
 Bob Sergesketter
 Tom Sollman (proxy by Sue Vernier)
 Bob Vandeventer
 Richard Vernier
 Carla Winner
 Jamie Winner

Board Members Absent:

Chris Dick
 Karen Silvers

The quarterly Meeting was called to order at 4:00 PM at Ferdinand State Forest at the home of Carla and Jamie Winner. IKC President Lewis presiding. Sue Vernier was accepted as proxy for Tom Sollman and Salisa Lewis was accepted as proxy for Don Ingle.

Minutes of the June 9, 2012 meeting were accepted as published in the June 2012 *IKC Update*. There were no e-mail motions made during the past quarter.

Treasurer's Report

Treasurer Dunlap reported total assets of \$540,875.23. Funds include Stewardship: \$42,071.60; Deferred Dues: \$3,352.50; Land Acquisition: \$12,892.87; and General Fund: \$32,558.26. \$500.00 from the General Fund has been committed by previous Board actions.

The IKC has 176 members (18 not renewed).

Robinson Ladder Cave Preserve

Richard and Sue Vernier report rescuing a box turtle from the cave during a recent trip.

Wayne Cave Preserve

Nothing new to report.

Sinks of Indian Creek Conservation Easement

Jerry Lewis, with the help of Seth Gower, conducted the annual inspection of the easement and reported acceptable results. 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. Jerry Lewis sent out six postcards 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 post-

cards 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. Jerry Lewis suggested to the Board a possible future good-will gesture to one of the landowners to offer to plant some trees on his property. Alternatively, the IKC could offer to donate trees to the landowner.

Jerry Lewis expressed a desire to step down as the Conservation Easement Monitor and Kevin Smith agreed to head a committee to select a new monitor. Jerry offered to assist the new monitor with the transition by providing templates for notification/inspection follow-up letters, and to accompany the new monitor on the 2013 inspection. It was also noted that the Binkley/Blowing Hole Cave system has been found to run under portions of the Indian Creek Conservation Easement.

Buddha Cave Preserve

Keith Dunlap reported that he and George Cesnik have treated nine acres of the property with herbicide for weed control around the trees planted in 2010. The IKC has been reimbursed \$459 through the EQIP grant for the weed treatments completed thus far in 2012. Expenses incurred total approximately \$60 for the cost of the herbicide/dye. In general, the trees planted in 2010 still look good, however some of the trees appear to be stressed due to the lack of rainfall this summer. Additionally, some areas planted in 2005/2006 are not doing well. Keith and George are planning to eradicate some of the honeysuckle on the property this fall after a killing frost.

Sullivan Cave Preserve

Keith Dunlap reports that he has planted 25 persimmon trees on his land that is adjacent to the Sullivan property.

Shawnee Karst Preserve

Road hardening has been completed. Special thanks to Jamie Winner for his assistance and equipment. Development of the wildlife pond continues by using a tractor to move dirt to repair the breach in the pond dam. Work has also begun to remove trash and debris from the ravine containing the cave entrance. A work day has been planned for November 10th to continue trash removal. The debris will be sorted and then recycled or disposed of in an appropriate manner. Bob Vandeventer offered to allow use of his trailer to help remove debris from the site.

Planning for tree planting in 2013 was discussed. Approximately 400 trees are needed to cover an area about 6/10 of an acre. Desirable trees to purchase



include black walnut, oak, and black cherry. Keith Dunlap moved to spend up to \$150 to purchase trees. Everett Pulliam seconded the motion. Motion passed with a vote of 13-0. Land owner adjacent to the SKP property will need to be notified about removal of some barbed wire within the boundary of the preserve

Creation of a loop trail around the site was discussed. Jerry Lewis submitted that this would be a good project for the Boy Scouts. The first step would be laying out the trail and flagging the proposed route.

Installation of a better turn-around marker inside the cave was discussed to demarcate the limit of travel downstream in the cave such that encroachment into the portion of the cave owned by Spring Mill State Park would be prevented. One idea submitted was to install a sturdy stainless steel cable across the cave passage from which signage would be attached indicating the turn-around point. Plans for more robust signage will be further discussed at the next board meeting.

It was noted that there were no issues with the trips taken into the cave during the Cave Capers event. Installation of a kiosk was also discussed to provide additional information regarding cave visitation.

Jerry Lewis is in the process of writing an article to be submitted for publishing in the *NSS News*. The article will include several pictures taken by Dave Everton and Jerry Lewis.

As of September 22, 2012, \$90,368.00 has been raised through the IKCs fund raising efforts for the property, which represents approximately 88% of our \$102,600.00 goal. Flyers soliciting donations have been sent to IKC members and each of the grottos in the state. The Central Indiana Grotto has donated another \$500 (\$1000.00 total).

Jerry and Salisa Lewis have begun conducting a bio-inventory of Upper Twin Cave by placing pitfall traps in the cave. They will try to invite the Naturalist from Spring Mill state Park to participate in retrieving the traps from the cave.

Education & Outreach Report

Bob Vandeventer informed the Board of a program called "Project Underground" that will be held at Spring Mill State Park. The program is being organized by the Sycamore Land Trust and entails a day-long class for teachers that provides instruction relating to current issues, awareness, and general management of caves, karst and groundwater resources. A discussion ensued regarding how the IKC would be represented if we co-sponsored the program. One idea was to have the IKC logo on the program's literature. Monies donated would help cover the cost of books, lunches, maps, etc. Carla Winner moved that the IKC donate up to \$500 to co-sponsor the program with the Sycamore Land Trust provided they match the IKC

donation and the IKC sponsorship is appropriately represented. Keith Dunlap seconded the motion and the motion passed with a vote of 12-0 with 1 abstention. Details of the donation and the exact amount will be contingent on Bob Vandeventer obtaining additional information from the Sycamore Land Trust.

IKC Liability Insurance Coverage

Keith Dunlap reported that our insurance agent contacted him about our liability insurance policy. The agent suggested an additional \$1,000,000 of coverage could be inexpensively obtained under an umbrella type policy. The IKC has not yet received a new quote for the liability coverage. Currently, the IKC holds a \$1,000,000 standard liability policy. Details regarding our liability insurance will be further discussed at the next board meeting if a quote is received.

Salamander Research Project Update

Jerry Lewis reports that the phylogenetic study being conducted by Hilary Edgington from the University of Virginia has been started. Jerry accompanied Hilary to the Fairground Spring entrance of Binkley Cave where she collected ten samples (i.e., a portion of a salamander's tail) and to Robinson Ladder Cave where she collected six samples. Keith Dunlap accompanied her to Sullivan Cave where she collected seven tail samples and to Elrod Cave where she collected an additional seven or eight samples. Dave Everton took her to other caves in Greene County where she collected additional samples (details not available).

Binkley Cave Grant for Fossil Recovery

Jerry Lewis reports that a grant is being offered to conduct fossil recovery from Binkley Cave where a significant deposit of Pleistocene-era bones has recently been discovered in an area of the cave that is in the process of being commercialized.

The grant is being offered through the Harrison County Community Foundation and the IKC was approached to act as the non-profit administrator for the grant which essentially entails managing the reclamation project including hiring the work out to an appropriate reclamation entity. Jerry voiced some concern with taking on the project and is reluctant based on the timing of the project and whether the IKC has the needed experience and resources for this type of project.

Items From the Floor

Keith Dunlap mentioned that the Hoosier National Forest Cave Closure Policy is up for reconsideration in the spring and asks whether the IKC should attempt to influence the HNF to reopen cave on their land. Dunlap also reported that discussions are being held with the IDNR with regards to relaxing their closure policy. However the USFWS is pushing to keep the current policy in force. The IKC will also look

into current/future cave access policies for Henderson Park, owned by the city of Salem.

Carla Winner asked if there was update on the small sewage treatment plant near US 50 and SR 37 in Lawrence County and their permit renewal request to dump "treated" waste water into a sinkhole that will impact Pless Cave and Blue Spring Caverns. It does not appear that a public hearing has been scheduled.

Next Meeting

The next quarterly meeting was scheduled for December 8th at 2:00 PM EST. The meeting location will be identified at a later date.

Meeting adjourned at 5:45 PM.

Respectfully submitted, Kevin Smith, IKC Secretary.

INDIANA BATS APPEAR HEALTHY HEADING INTO HIBERNATION

by Amanda Solliday

As the weather cools this fall, bats around the state are mating and entering hibernation.

White Nose Syndrome, a deadly fungal disease which can devastate bat populations, first appeared in southern Indiana caves in February 2011. Based on the latest information available to local scientists, White Nose Syndrome does not appear to have killed substantial numbers of bats.

Joy O'Keefe, an Indiana State University biology professor, works with the Center for North American Bat Research and Conservation.

"We haven't seen any declines in our cave roosting bats this summer as compared to previous summers," O'Keefe says. "So, from the summer survey perspective, the bat populations look normal and healthy."

Winter hibernation is a critical time for bats. If infected with White Nose Syndrome, the bats will wake up during hibernation and leave the caves in search of food – at a time when insects are scarce.

Scavenging for food burns energy, and many sick bats do not have enough fat to survive on until spring.

O'Keefe says researchers look for signs of bat health during the summer months that can provide some information on how the bats will fare during winter months.

"In years following the onset of the disease, they would first find bats that had some signs of damage to their wings when they were catching bats in the summer," O'Keefe says. "Then the next summer and the summer after that, they just wouldn't catch those bats, an indication that white nose had a significant impact on the population, but we haven't seen those kinds of declines here."

To slow the spread of White Nose Syndrome, the Indiana Department of Natural Resources (DNR) closed all but one state-owned cave to visitors in 2009. DNR wildlife biologist Scott Johnson says the state will conduct winter population surveys, with results available next spring.

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 _____

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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.

