

IKC Update



No. 36 - March 1995

INDIANA KARST CONSERVANCY, INC.**PO Box 2401, Indianapolis, IN 46206-2401***Affiliated with the National Speleological Society.*

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

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Cover - Toni Golden and Aubrey Thornton overlooking Eversole
 Cave (Lawrence County) in flood. Photo by James Adams.

Publishing courtesy of *Myotis Press*, Editor and Publisher Keith Dunlap.



ANNUAL BUSINESS MEETING REMINDER

SATURDAY, MARCH 25th, 7:00 PM

INDIANAPOLIS, INDIANA

INDIANA WAR MEMORIAL

The annual business meeting is for the explicit purpose of elections. It is also for members and other interested persons to have an open forum for talking about cave 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 meeting is informal, and everyone is encouraged to attend and participate.

Preliminary Agenda Items: elections; brief recaps of last quarter's activities; TNC's Blue River Project (presentation by Allen Pursell); 1995 National Cave Management Symposium update; Gas well drilling in Indiana karst areas; Cave management planning on IDNR properties; Hoosier National Forest cave activities; IDNR activities; Indiana Cave Symposium; Earth Day 25 booth; Under Earth Day VI; HNF ridgewalk/workday; and more....

Meeting directions: The War Memorial is located four blocks north of the circle in downtown Indianapolis. It is bounded by Michigan, Pennsylvania, Vermont, and Meridian streets. Enter by the north door. The meeting room is in the northeast corner.

EVENTS CALENDAR

- 25 MAR = IKC ANNUAL BUSINESS MEETING/ELECTIONS, Indianapolis (see above)
- 26 MAR = IKC/HNF RIDGEWALK/CAVE SURVEY, Bedford (see page 6)
- 15 APR = WYANDOTTE CAVE RESTORATION, Corydon (see page 4)
- 22 APR = INDIANA CAVE SYMPOSIUM, Blue Springs Caverns (see page 7)
- 22 APR = EARTH DAY 25 CELEBRATION, Indianapolis
- 23 APR = UNDER-EARTH DAY VI, Sullivan Cave (see page 8)
- ?? JUN = HANCOCK PROPERTY WORKDAY, Bloomington (same day as meeting)
- ?? JUN = IKC QUARTERLY MEETING, Bloomington (date/location TBD)
- 26 AUG = COON CAVE RESTORATION TRIP, Bloomington
- 25-28 OCT = NATIONAL CAVE MANAGEMENT SYMPOSIUM, Spring Mill Inn

Membership to the IKC is open to anyone interested in cave and karst conservation. Annual dues are \$15. Please see inside back cover for the membership application form or to make a donation.

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...

Well, it's that time of year again -- time to renew our dues and vote for a new group of Officers and Directors of the Conservancy.

First, I would like to thank each of you for your continued support of our efforts. With your help, we were able to place two more significant caves under the stewardship of the Conservancy in 1994. We continue to strengthen our ties with governmental and other non-profit organizations whose agendas overlap with our own... and the 1995 horizon looks awfully bright as we expand our sphere of influence by co-hosting the 1995 National Cave Management Symposium, and pursue our ultimate goal of becoming a landowner of karst features.

Someday soon, I would like to have someone in our organization put together a history of the Conservancy's achievements over the years. I'm afraid I'm personally not the best choice for this task, but I think it would bring our progress into perspective and really give a lot of people some satisfaction to look at all the good we've done in nine years.

Nine years -- has it really been that long?

Of course, there's a lot more to be done, too. Each of you can help determine which direction our course may take in the future. The democratic process that we began a little while ago, when you received your mail-in ballots, is your opportunity to make a difference. If, for whatever reason, you cannot pursue a position on the board yourself, please examine the list of candidates and select those whose positions on Conservancy issues most closely match your own. If you wish your voice to be heard, this is your opportunity to make it happen. Even better, do what you can to attend the meetings yourself and make your feelings known on the topics discussed. The Annual Business Meeting is on March 25th this year... it looks like we will have a full agenda, and it would be wonderful if we could have a large turn-out.

This is **YOUR** organization. Your membership alone makes a big difference, but sharing your viewpoint will make an even greater one.

Thank you for voting.

- Bruce Bowman

NEWS BRIEFS...

- ☐ The staff of Wyandotte Cave are planning their fourth annual cave restoration workday on April 15th, starting at 9 AM. Past activities have included historic graffiti documentation, non-historic graffiti removal, formation repair and cleaning, trail repair, trash removal, and old timber removal. The previous clean-ups have been very successful and productive. In order to properly manage and utilize the participants, the number of cavers will be limited to 40. For more information or to register, contact Roger Gleitz at (812) 738-2782.
- ☐ Speaking of Wyandotte Cave, the Indiana Department of Natural Resources is in the preliminary phase of looking at uniform cave management and protection for all caves on State properties, including Wyandotte Woods State Recreation Area, Harrison-Crawford State Forest, Crosley State Fish & Wildlife Area, and Spring Mill State Park. Initiated last fall by the Division of Forestry, the scope of the task was expanded with additional participants from within and outside the IDNR at a meeting in late February. When their efforts progress a little further, it is anticipated that organized cavers will be invited to comment and contribute in the formal development of these cave protection policies. IKC Directors Larry Mullins, Hank Huffman, and Scott Johnson, who also happen to be IDNR/HNF agency employees, are members of this planning task force.
- ☐ Recent interest in gas exploration in southern Indiana has led to numerous drilling permits being issued by the IDNR Division of Oil & Gas. Of concern is that some of these



permits are in highly karstified areas which could cause significant environmental impacts by their drilling activities, both sub-surface and above ground. A random sample of permits issued to Four Sevens Oil Company (thought to be a "front" for a major US oil company) found drill sites within one-quarter mile of Squire Boone Caverns in Harrison County, another within one-quarter mile of Popcorn Spring Cave in Lawrence County, and a third directly in the headwaters of the Lost River in Washington County.

- ☐ The Draft Environmental Impact Statement is due out this month for the re-use plan for the US Army's Jefferson Proving Ground. It is hoped that the DEIS will thwart the proposals for the two chicken farms and the landfill, and instead, increase the wildlife refuge to approximately 53,000 acres. On a related subject, the JPG was featured in a well written article in *National Wildlife* magazine dealing with military base closures and the "peace dividends" gained through conversions to refuges.
- ☐ The IKC, Central Indiana Grotto, and Bloomington Indiana Grotto sponsored a weekend of exploratory hiking in the Tincher Pond/Hollow Special Area of Hoosier National Forest on March 4th and 5th. The purpose of the hike, led by Larry Mullins, was to expose cavers to this unique, 4,000 plus acre karst area and solicit their input for comments that would help in the development of the area's Management Plan. Sixteen cavers participated on Saturday hiking the area north-west of SR 50, while five braved the rain on Sunday covering the main hollow to the south-east (as it turned out, the constant rain enhanced the experience illustrating the active stream sinks and swallow holes). Participants included Joshua Abdulla, Mark Adler, Bruce Bowman, Gary Conner, Keith Dunlap, Joe Gasperi, Eric Higbie, Don Ingle, Randy Jackson, Anmar Mirza, Carl Nelson, Ray Rough, Walt Serabian, Alena Stephens, Norman Stephens, Dave Stratman, and Kitty Wooldridge.
- ☐ As reported in the last *Update*, Spring Mill State Park is planning to construct a walkway and viewing platform overlooking the Bronson Entrance of the Shawnee Cave System. The project is being funded by a grant from IPALCO and it is hoped that it will reduce entrance erosion and discourage unauthorized entrance. Because this structure will alter the entrance area and introduce an un-natural visual distraction, IKC Directors Bruce Bowman, Hank Huffman, and Keith Dunlap met with park manager Mark Young to express our concerns while keeping an open mind to learn more about the project. The four visited the entrance where Mark explained his plans and the considerations employed to protect the resource. He stated that the walkway and platform would extend into the area only the distance necessary to allow proper viewing and would be high enough to allow partial re-vegetation under the platform to check erosion on the compacted ground. While the meeting provided a much better understanding of the project, the initial concerns still exist and this structure will violate the last unaltered cave entrance in the park.
- ☐ The property adjacent to Mayfield's Cave (Monroe County) is under siege with the threat of a proposed industrial park that could pollute the drainage area of the cave from parking lot runoff or industrial effluents. The cave is noteworthy because it was the subject of an early 1900's biological study preformed by Banta. The research was significant enough that it continues to be cited even today. The only thing standing in the way of the proposed development is the zoning commission who must re-zone the property from agricultural to industrial. The IKC has sent a letter to the Monroe County Planning Committee to express our concerns about the detrimental impacts that could occur should they approve the re-zoning request.
- ☐ Plans are proceeding for the National Cave Management Symposium to be held at Spring Mill State Park in late October. Sixteen hundred announcement flyers were distributed to potential attendees including cavers, cave researchers, cave owners, and agency cave/land managers, and other individual/organizations. A call for papers has already generated interest in making presentations. Two alternative field trips are being planned to illustrate various aspects of cave management within Indiana. Registra-



tion for the 3 1/2 day symposium is just \$80 (\$100 after August 31st). For more information, contact Keith Dunlap or Larry Mullins.

- ☐ IKC Director Scott Johnson wears many hats related to his job as the IDNR non-game mammal specialist. His responsibilities include protecting and studying bats, woodrats, and hundreds of other mammals exclusive of "game" animals. His recent attention has been focused on river otters, and their re-introduction to Indiana waters. In January, he oversaw the release of 25 transplanted otters in the Muscatatuck National Wildlife Refuge and has been monitoring their activities and migration patterns using radio telemetry and helicopters. Most of the otters have thus far stayed relatively close to their release site, although some have ventured up to fifteen miles away. The IDNR plans additional releases in the future in other areas of the state.
- ☐ The IDNR's Non-game and Endangered Wildlife Program (NEWP) is responsible for over 500 Indiana species. Of interest to cavers are the many cave-related biota including bats, cavefish, woodrats, and numerous smaller critters. Over the last several years, the six person staff has funded studies on several cave species which will provide insight to protect them in the future. The NEWP is completely funded by donations much of which is derived from the refund check-off (line 28) on the Indiana income tax form. If you have a refund coming, think about donating all or some to the NEWP. If every eligible person donated just \$1, the program would quadruple their budget. Currently only 3% of Hoosiers donate to this very worthwhile fund.
- ☐ Another way to contribute to Indiana's environment is to support the Heritage Trust program by purchasing the sky blue environmental license plate for your car or truck. For every plate, \$25 goes directly to a dedicated fund to be used exclusively to purchase high quality land that will be protected into perpetuity. Over 60,000 Hoosiers have participated over the past two years, yielding enough funds to purchase almost 700 acres including one property with several small caves and springs on it. The Heritage Trust has identified over 6,000 additional acres it would like to purchase with funding the only constraint. Ask for the environmental plate at any license branch or enclose an additional \$35 (includes a \$10 handling fee) with your mail in registration.
- ☐ As a way to show our appreciation and to strengthen our good relationship with the quarry owner of Shiloh Cave, the IKC prepared two sets of 8" X 10" photos that were presented to the owner and his family. Contributing photographers included James Adams, David Black, and Bill Tozer. The cost to the IKC was approximately \$65.
- ☐ Twelve cavers participated in the December IKC/Central Indiana Grotto restoration trip to Wayne's Cave in Monroe County. Since the cave is in reasonable shape, the trip was

IKC SPONSORED WORKDAY ON HNF

BEDFORD, IN - MARCH 26th

The IKC is once again sponsoring a workday on the Hoosier National Forest. Depending upon the weather and what the participants want to do, we will ridgewalk, survey and map caves, or perform other data collection/verification. All this information will be used to assist in the development of the Forest's land management plans that will better protect karst and caves and the resources they contain.

Anyone interested in carpooling from the Indianapolis area, give Keith Dunlap a call. Otherwise, we will meet at 10 AM at the HNF Office in Bedford (on SR 37 next to the Stonehedge Hotel) and decide what we will do. We will go rain or shine.

Direct questions to Keith Dunlap (317) 882-5420 or Larry Mullins (812) 275-5987.

to primarily perform "maintenance" work, looking for and removing any new trash and graffiti. Participants included Eric Bryant, Ronnie Burns, Jeff Cody, Scott Cummings, Mike DeWitt, Keith Flammang, Dave Haun, Roy Logan, Richard Long, Bill Owens, Betty Watson, and Steve Watson.

- ☐ Members should have received with their *IKC Update* the sixth in an occasional series of special reprints distributed by the IKC. Reprint #6, entitled "*Lost River at Wesley Chapel Gulf, Orange County, Indiana*" was written in 1931 by Clyde A. Malott and originally published in the *Proceedings of the Indiana Academy of Science*. The distribution of the reprint is to further the IKC's mission of karst education while also providing a unique "perk" for the membership. The IKC would like to thank the IAOS for reprint permission, Nancie Carrigan for typing, Keith Dunlap for layout, Larry Reece for proof-reading, and Myotis Press for publishing. Several other members helped with final production including Josh Abdulla, Bruce Bowman, Bruce Devore, Hank Huffman, Tom Rea, Tom Sollman, and others.

The next historic reprint is tentatively scheduled for December and will be on a description of Old Town Spring by Marion Fidler, 1935.

- ☐ The IKC would like to give special thanks to George Brutchan, Keith Dunlap, Dave Haun, Robert Roundy, and the Lawrence North High School for donations that will help further the cause of the IKC.
- ☐ Eight new members have joined the IKC since December, bringing the total membership up to 167. Welcome Joshua Abdulla, Mark Adler, Jim Bowden, Terry Crayden, John Fichter, Jeff Frazier, Joe Gasperi, and Paula Oliver. The complete membership list as of March 12th is printed on page 27.

THE THIRD ANNUAL INDIANA CAVE SYMPOSIUM

by Dave Black / Keith Dunlap

The third annual Indiana Cave Symposium will be held at Blue Springs Caverns on Saturday, April 22. This year's event is being co-sponsored by the Indiana Karst Conservancy and the Indiana Cave Survey with funds from the 1992 NSS Convention Committee honorarium. The purpose of the event is to allow the active caving groups in Indiana to share their projects with each other and to promote cooperation among the groups.

This year's Symposium will begin at noon using the cave room directly inside (above the boat docks) of the commercial entrance of Blue Springs.

The subjects of the talks will be on each groups' recent activities. The emphasis will be on exploration, surveying, and conservation projects. It is preferred that the talks be on activities within Indiana, but if the caving group's most significant project is outside the state, exceptions will be made. The talks should be from 15 to 30 minutes in length with time for questions.

There will be a slide projector and overhead projector available, but visuals are not required.

Following the presentation, around 6 PM, will be a hot-dog roast on the surface. Hot dogs, chips, and related condiments will be provided. It is suggested that everyone bring a salad, dessert, or drink to share.

On-site camping for Saturday night will be available. There is no cost for the Symposium or camping.

On Sunday the IKC will host their Under Earth Day cleanup at Sullivan Cave (see the article on page 8 for more information).

For the weekend to be a success, there needs to be involvement of the active cavers throughout Indiana and the neighboring states. It will be a great weekend with the Symposium on Saturday, the cook-out Saturday evening, and the Sullivan Cave Cleanup on Sunday.

For more information or to schedule a talk, contact Dave Black at (812) 951-3886.

UNDER EARTH DAY VI, APRIL 23th

by Keith Dunlap

The Indiana Karst Conservancy will once again be sponsoring a cleanup in Sullivan Cave (Lawrence Co) to celebrate Earth Day. This year's date is Sunday, April 23th, starting at 10 AM.

For cavers who are not familiar with Sullivan Cave, it is Indiana's third longest, with over nine miles of passage. The cave is privately owned, and has seen its share of abuse over the last thirty years. In 1989, the Central Indiana Grotto installed a gate on the entrance at the request of the owner. Since that time, numerous restoration trips have been completed, improving the aesthetics of the cave significantly. However, there is still much to be done and your participation is needed.

Sullivan is a caver's cave, offering something for everyone. If you are a novice caver, an easy trip to the Mountain Room and back will wet your appetite for this cave. There is plenty of wire brushing and mud-washing that can be done in the Backbreaker area. For the experienced caver, you may wish to venture up or downstream in Sullivan River (assuming the water is not too high) removing graffiti

and collecting trash in the lesser traveled area. Haul bags, plastic bags, wire brushes, and other equipment will be provided, but feel free to bring your own.

Sullivan is appropriate for beginners and older children. ***All that we ask is that everyone have a helmet and adequate light sources.*** A liability waiver must also be signed to protect the owner.

For those coming from the north, we plan to car pool from the west side Bloomington Hardees (SW quadrant at SR 37 and 48, specifically the K-mart parking lot behind Bob Evans), leaving at 9:15 AM. There will be a short safety/orientation meeting at the cave's parking lot at approximately 10 AM. Someone will be stationed at the cave's entrance all day, so you may show up later and still participate. Plans are to be out of the cave by 4 PM. To obtain further information, contact Keith Dunlap (317-242-2505/882-5420) or Bob Vandeventer (317-888-4501).

[Editor's note: To get a better appreciation for this project, see Bob Sergesketter's article below about last year's cleanup.]

UNDER EARTH DAY AT SULLIVAN CAVE

by Bob Sergesketter

The fifth annual "Under Earth Day" cleanup in Sullivan Cave was held on April 24, 1994. Attendance was a little down this year, maybe because the weather was nice for a change. There were 58 participants and activities in the cave ranged far and wide.

Phyllis and I drove up to Spring Mill on Sunday morning to meet Dick and Sue Vernier at the campground. Dick and Sue attended the Lost River tour and the Indiana Cave Symposium on Saturday. I was busy on Saturday but there is still work to do in Sullivan so while Phyllis and Sue roamed around Spring Mill, Dick and I went over to the cleanup.

When we got to the entrance, we were

greeted by the usual crowd of friendly caver faces including EMG members Mic Braford, Ben Dunwoody, both George Mundys, Ernie Payne, Barry Smith, Tom Sollman, and non-member but always welcome Bob Sollman, Tom's father.

My plan for this year was to continue my detailed cleaning of the Backbreaker. Last year I had to stop in the vicinity of the first dome because I ran out of time. This year I just made a quick inspection of the first part of the passage and then started close examination of all the nooks and crannies at the first dome.

I knew that Dick hadn't figured on spending the whole day just five or ten minutes from the entrance but he decided

to work on graffiti in the Backbreaker anyway. We set a time limit on our cleaning activities to allow ourselves an hour or so for caving and still be out by the 4:00 PM deadline.

Small pieces of glass were glistening everywhere as I crawled along the passage checking behind rocks and under ledges. Suspicious looking rocks were overturned to reveal dead batteries, cigarette packs, rusted cans, and yes, even spent carbide was found. It didn't take too long to accumulate a pretty good bag of junk. I'm sorry to report that I found a few new cans in the Backbreaker that I'm sure were dropped in the cave since the last cleanup, so there are still a few who haven't gotten the message.

Well, time passed, and so did a lot of other cavers, both in and out. Dick and I decided to cruise a little of the cave before we had to leave so we put our collection of trash and our implements on a ledge. I put a note on the pile saying that we hadn't abandoned it and that we would be back to carry it out.

We went on into the cave, past the first crawlway into the Mountain Room, and on to the second way, the one that takes off to the left and then doubles back. I have always thought of that passage as one of the neatest connections in the cave, even if it isn't very long. The entrance to the connection used to be a little obscure, but it is a well worn trail now. A lot of people must think it's neat.

As we crawled, I told Dick about the time that Steve Weinzapfel and I decided to travel from the Backbreaker to the Mountain Room, through this passage, with our lights off. (We had too much time on our hands back then.) We almost made it too, but at the last climb up through the breakdown, we kept banging our heads on the ceiling and couldn't get any higher. We finally turned on our lights to see where we were and found that all we had to do was turn around and we could go over the rock and into the Mountain Room.

When Dick and I entered the Mountain Room, no one was there. The room still had that distinctive aroma.

As we climbed toward the top of the breakdown, we started to hear small rocks falling around us. So, someone *was* there. It was no surprise to find Bob and Tom Sollman hidden near the large formations at the top. Actually, they were hidden about as good as Tom and I were in Wyandotte a couple of years ago, but that story has already been told.

We told of our activities during the day and they told us their's and then we decided to start out. Now I've been in and out of the Mountain Room a few times over the years but I wasn't paying attention as we scrambled down the breakdown and I started walking in a circle away from the crawlway exit. Tom was quick to point out that I was lost and proceeded to "rescue" me. Really, Tom, I would have probably found my way out in an hour or two.

Once all four of us were out in the Backbreaker, Tom wanted to see the entrance to the passage that Dick and I had earlier taken into the Mountain Room so we made a quick trip to show him where it was.

On the way out, Tom asked where the passage at Bardangis Hole went so we crawled up to it and looked at the entrance to the narrow canyon. I remember being in there years ago and I saw as much of it as I care to see.

When we got to the spot where Dick and I left our tools and trash collection, we saw that some kind soul had taken some of the stuff out already. We took what was left and beat it for the entrance....

Tom was last out. The gate was locked and everyone went home. See you next year at Under Earth Day VI.

[Reprinted from the EMG's Petroglyph.]



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ECOLOGY AND OBSERVED BIOTA OF SELECTED CAVES IN THE HOOSIER NATIONAL FOREST, INDIANA

by Thomas D. Liddle

The passage of the Federal Cave Resource Protection Act (FCRPA) in 1988, has stimulated efforts to inventory biological, geological, paleontological, historical, recreational, and archeological resources in caves on federal lands. Caves which qualify for protection under this legislation must have resources of the above mentioned nature and must be nominated by an interested caver or scientist. It is important to note that the FCRPA does not automatically cover all caves on federal lands, nor does it blanket areas containing a high concentration of caves or karst resources. During late December 1994 and January 1995 Tom Liddle and Scott Sievertsen conducted a biological inventory of fourteen caves in the Hoosier National Forest. This study was a contribution to a project initiated by Dr. Horton Hobbs III, a biologist at Whittenberg University in Ohio. This report deals only with the research conducted during the above mentioned time by myself and Scott Sievertsen.

Fourteen caves were examined for biological resources and physical characteristics such as air and water temperature, pH, and relative humidity. Documenting the taxonomic classification, distribution, and abundance of the organisms discovered was an important part of the study. However, emphasis was also placed on assessing the diversity and health of cave habitats and how they might be negatively impacted by resource extraction, pollution, or overuse.

Methods and Materials:

Because most of the caves visited are relatively small (under 1000 feet) we were able to cover the terrain thoroughly. Most of our discoveries were made by sight, although occasional collections were made with the help of aspirators, tea strainers, bulb basters, forceps, and small paint brushes. In three caves pit-fall traps were used to collect terrestrial invertebrates. The traps were not terribly successful, probably because they were not left long enough. An aquatic trap was used in vari-

ous caves containing fast running streams, but was successful in only one case; again, probably because it was not left long enough. The eighteen samples taken were preserved in 70% ethyl and have been sent to appropriate specialists for identification. Only organisms not identifiable in situ were collected and in all cases only representative species were sampled.

Discussion:

Caves in the HNF are diverse in two respects. First, many of them house an abundance of different species including some that are troglobitic. In addition to species diversity, HNF caves also contain a wide array of possible habitats. Dry/wet walls, breakdown, fast/slow streams, mud banks, gravel beds, drip pools, stream pools, and organic matter are the primary broad categories of niches found in HNF caves. Within each of these niches are variations which make them unique and therefore more or less attractive to various inhabitants.

Tucker Lake Spring Cave was found to harbor nineteen species of animals including a healthy population of the troglobitic crayfish, *Orconectes inermis inermis*. In addition, Gypsy Bill Allen, Gory Hole, Rose, and Spring Springs Caves all have diverse faunas. Perhaps our most exciting discovery was a small community of pseudoscorpiones from Digger's Delight Cave. One of our project goals was to examine as many caves as possible; therefore, most were only entered once. It is likely these caves contain additional species which were not observed during this study. In addition, many of the troglloxenic animals which use caves as a winter domicile will not be present at other times of the year.

Like many caves in Southern Indiana, most HNF caves contain an active stream passage. In general, streams containing a gravel substrate were found to house more organisms than those containing sandy ones. Moreover, streams with a bedrock bottom were usually devoid of life save for a few isopods. However, the pigmented crayfish, *Cambarus leavis*, is commonly



seen in streams which contain sandy substrates. Although reported from several HNF caves, but not observed during this research, the endangered blind cave fish, *Amblyopsis spelea*, finds its niche in deep stagnant pools.

Because cave organisms are very sensitive to environmental conditions, the temperature and speed of a stream may determine which, if any, group of organisms will live there. Isopods were the most commonly seen aquatic invertebrate. These small segmented creatures primarily occupy fast moving streams containing a gravel substrate, but are sometimes found in calm drip pools. They are frequently found clinging to the underside of rocks. Amphipods, on the other hand, were less frequently seen, but small populations of them exist in many of the caves examined. Amphipods were seen in streams moving both fast and slow, although they were never observed in areas containing substrates other than gravel.

In the deep zone of HNF caves (as opposed to the entrance, twilight, or variable temp. zone), the most diverse areas are usually not the streams themselves, but rather the terrestrial areas adjacent to them. Organic matter such as mammal feces, tree roots, and leaf matter commonly contained dung flies, collembola, nematodes, or rove beetles. Carabid beetles were the only organisms found in association with mud banks. These arthropods burrow into this substrate and can sometimes be provoked to come out by pounding a fist on the bank. Planarians were commonly found in drip pools or other small divets filled by receding floodwater. In all ecological zones common troglophilic species such as harvestmen, cave crickets, and several types of flies inhabit the damp walls and ceilings of HNF caves. Hibernating bats seen during the research were primarily eastern pipistrells or big brown bats. The big browns were commonly found closer to entrances where the temperature was cooler. Eastern pipistrells were found solitarily throughout the deep parts of caves.

Habitats closer to the entrance are, despite their lack of troglobites, where most spelean diversity is found. Cave entrances are attractive to organisms because they provide a sheltered, more static

niche while still being, in most cases, a food-rich location. In entrance zones, organic matter from the surface is frequently teeming with life. Soil beds containing earthworms, several species of centipedes, millipedes, and terrestrial isopods are found here. Animals which live in this environment have a considerable advantage over their troglobitic counterparts which dwell in the deeper parts of caves. The entrance zone of a cave is a high energy environment. Unlike other parts of the cave it is frequently replenished with organic matter such as leaf debris, feces, and animals that have been forced in against their will (by flood, falling, being carried in, etc.). These creatures are termed accidentals and usually only remain in caves a short time or they are eaten by organisms more at home there.

Conclusion:

Hoosier National Forest caves were found to be diverse not only in their content of species, but also in their array of possible habitats. Twenty eight species representing seventeen families, eighteen orders, and three phyla have been recognized to exist within the fourteen caves inventoried. The physical characteristics such as air and water temperatures, pH, and relative humidity were found to be consistent with those of other caves in this part of the country. By no means does this study represent a comprehensive account of species diversity in the HNF caves sampled. There is much more work to be done regarding not only biology, but also the hydrology and geology of caves in the forest. Caves in some areas of the HNF are susceptible to the negative impacts of logging, water contamination, or overuse. Scientific studies are important in compiling base line data which can be used in management to preserve and study the caves and their inhabitants.

The habitats in which these cave organisms dwell were mostly in pristine condition; therefore, efforts should be made to keep them this way. In all Indiana caves including those on the HNF, organisms are very vulnerable to human disturbance. Invertebrates are very fragile and difficult to see; thus they are easy to step on if one

continued on page 22...

HOOSIER LANDSCAPES: SAVING OUR LAST GREAT PLACES THE BLUE RIVER

by John Shuey

[Editor's note: The following article is an introduction to TNC's major initiative focusing on the Blue River. The IKC and TNC are very interested in working together in this important karst drainage region and will undoubtedly undertake future protection projects together. Allen Pursell, Manager of the Blue River Project, will be at the March IKC meeting to present further information related to TNC's protection vision.]

With the establishment of TNC's on site Blue River Project Office, the Indiana Chapter accepts another ambitious challenge. The Blue River project targets a watershed that supports one of the most diverse assemblages of rare species in Indiana. The ecosystem is among the most diverse aquatic/terrestrial in the Midwest.

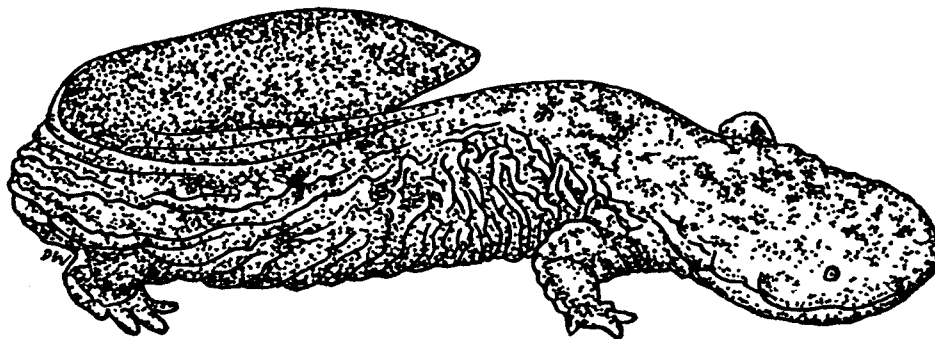
The Importance:

The Blue River is a fairly small tributary of the Ohio River, once one of the richest aquatic resources in the United States. It is one of the few streams remaining that still supports its original complement of species. It ranks as one of the best remaining stream systems in the entire Ohio River drainage area.

For example, over one hundred types of fish live in the Blue River, and many state and federally endangered mussels are also present. Perhaps the most interesting animal here is the hellbender, which at nearly two feet long is the largest sala-

mander in the Western Hemisphere. In fact, only two other salamanders in the world are bigger. The hellbender, which many people consider bizarre looking, if not grotesque, was once common throughout the larger streams and rivers of Indiana. Today it has been eliminated from almost every other stream in the state, but thrives in the Blue River.

But there is more to this Hoosier Landscape than simply the Blue River. The Blue River flows through a geologic formation that is largely composed of soft, soluble limestone, which is riddled with caves, fissures, and sinkholes. These conduits support a sizable and largely undocumented community of animals restricted to deep, dark caves. Most of these animals never enter the sun-lit world above. Such animals, wholly adapted to a life underground, are known as troglodytes (cave dwellers). These include species such as the northern cavefish, various cave crayfish, scuds (small shrimp-like animals), and assorted insects that rely on the abundant, clean water in the underground stream habitats. Several of these animals, especially some of the insects and scuds, are likely found nowhere else on earth. Many of the imperiled species living in the Blue River and the caves depend on a continuous supply of high-quality water for their survival. The mouths of these caves are also critical roosting and over wintering areas for bats, including the federally endangered Indiana and gray bats.



Hell bender

This rich pattern of biodiversity extends above ground, too. Although much of the upland habitats have been converted to agriculture, there are still extensive forests clothing the rougher lands of the southern watershed. These dense forests are becoming more and more critical as nesting habitats for forest inhabiting birds, especially as other tracts of forests are cleared in the Midwest. Scattered through these forests are interesting geological features and plant communities. Prairie-like chert barrens and limestone glades, sinkhole ponds and wetlands support gray coneflowers, shooting stars, and asters which abound among the prairie grasses of the glades and barrens. Snakes, turtles, and frogs make their homes in the sinkhole wetlands. Nearer to the river itself, scenic limestone cliff communities are common, supporting rare species such as the Allegheny woodrat and French's shooting star.

Conversion of deciduous land is a threat to the ecological features of the stream and cave communities. Increased erosion of the soils from cleared lands and subsequent runoff of pollutants into the river and sinkholes reduce water quality which, in turn, disrupts the life cycles of the animals.

The Challenge:

The enormous task of identifying and correcting erosion and runoff problems in a watershed of over 600 square miles is well beyond the capability of any single organization. Much as we have done at the Fish Creek ecosystem project, we will have to develop close and effective partnerships with local citizen groups, and local, state, and federal agencies. Together, we and our partners will be able to mobilize the resources and people required to ensure that the supply of clean waters that these unique animals require to survive will continue to flow.

In many ways, the threats to terrestrial communities are more straightforward. The continuing fragmentation and loss of the forests in the region presents short and long term concerns. We will plan to explore some innovative alternatives to protect forests within the system. By demonstrating that good stewardship of the environment is compatible with eco-

nomically productive forest land, we hope to help retain the long-term value of the forest in the Blue River watershed. At the same time, we will fall back upon our time-proven method for protecting smaller natural "core" areas. We will continue to purchase and protect the glades, barrens and wetlands, much as we have always done to protect the special natural areas of the state.

The biodiversity in the Blue River watershed stands at a historic threshold between sustainable ecological integrity and the more typical slide towards ecosystem degradation. Too many other watersheds have already passed quietly through this threshold. It is our role at Blue River to guide future land uses toward compatible paths that will ensure the survival of these important resources far into the future.

If conservation practices are not implemented soon in many of the critical areas of the watershed, we are likely to begin to lose significant portions of our state's natural heritage, including those species that occur nowhere else on earth.

Over the next few years, we will develop our understanding of social and economic drives within the watershed, and we will develop strategies to promote a vibrant local economy that can co-exist with the rich array of biodiversity which makes the Blue River watershed its home. Over the long term, survival of the Blue River ecosystem will depend upon the availability of productive and compatible land use practices within the watershed. It is towards that end that we have established the Blue River Project Office.

[Reprinted with permission from the Winter 1995 Indiana Chapter's The Nature Conservancy Newsletter.]



Quietly Preserving Indiana

MARENGO RESTORATION WEEKEND - 1995

by Larry Reece

The third annual Marengo Restoration Weekend was held at Marengo Cave on February 11-12, 1995. It was attended by approximately 35 cavers from Indiana and surrounding states. The IKC was well represented by its members.

Past events have concentrated in removing graffiti and debris from the tourist areas of Marengo Cave as well as cleaning mud covered rimstone in the Crystal Palace area. This year's event concentrated on cleaning graffiti and trash out of Old Town Spring Cave which is the stream exit for the stream in the new discovery area of Marengo. About six of the group were chosen to work in Marengo Cave at the start of the day while the rest went to Old Town Spring Cave.

Old Town Spring Cave has been visited by locals for many years, possibly even longer than Marengo itself. The cave is located just a few feet off of one of the main roads and can be easily seen and accessed. Due to this it had accumulated quite a bit of graffiti in some areas of the cave. It is primarily one long stream passage with few side leads or rooms. There is a small room near the entrance that appears to be subject to flooding where the first significant amount of graffiti was encountered. This was soon removed with wire brushes and mud painting and the room restored to a more natural appearance.

The group proceeded down the stream passage removing graffiti on the way as it

was encountered. Shortly after the first small room a much larger room was found on the right side of the passage and above the stream. This room was covered with graffiti and red spray paint. It looked like this would take a long time to restore. Surprisingly it went quite quickly as the surface of the rock had a thin coating of mud and sand that allowed the graffiti to be easily removed with a wire brush. In a couple of hours what looked like a two day project was finished and people continued on down the stream passage cleaning as they went.

Meanwhile in Marengo those working there were cleaning formations with a power washer. Marengo has been using this method quite successfully for a year or so. It involves using a small compressor which provides a pressurized spray similar to a carwash. This method removes accumulated grime, soot and lint from the formations without doing any damage to the formations or the cave life. The water source is a ground water well which is about the same temperature as the cave.

After a break for lunch which was graciously provided by Marengo Cave both groups returned to their respective caves to finish their work and wrapped it all up around 4 PM.

For those who wished to participate, Sunday was a trip into Marengo's New Discovery. This was quite an exciting trip in

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Volunteer uses high pressure washer to clean formations in Marengo Cave during restoration weekend.

photo by Larry Reece



PROBLEMS AT ENDLESS CAVE

by Bruce Bowman

Early last summer, I received a call from Cathy Engler, the current owner of Cave River Valley. She was having continued instances of visitors reporting debris, particularly disposable diapers, washing from the entrance of Endless Cave. At that time, I put her in contact with some people from the Indiana Department of Environmental Management to see if they could assist, and also sent a topographic overlay map of the cave so that others finding this debris could plot the location where it was found. Using this map, I'd hoped that the source of the trash could be determined. However, it soon became clear that IDEM would not be able to exert much influence unless the source of the problem could be found.

This issue became the source of much discussion at subsequent IKC and grotto meetings. The situation got some more attention when Cathy mentioned the situation in conjunction with a (relatively minor) rescue event that occurred last summer. Several people mentioned that another entrance to the cave system was open at times, but an attempt to find this entrance (in conjunction with Cave Capers) could not be accomplished without trespassing. Discussions with members of the Northern Indiana Grotto at the fall IKC meeting indicated that a side passage, not too far past the "Y" split, was a potential source. Due to some difficulties in finding the Englers at home during the summer months, a formal trip was delayed until winter. Finally, a time and place was arranged and announced at the December meetings of both the IKC and Central Indiana Grotto.

January 14th was an unseasonably warm, if wet, day -- perfect for the activity at hand. Joshua Abdulla, James Adams, Keith Dunlap, Tom Rea and I convened at the Cave River Valley road gate at 11 AM to meet Kathy, hoping we could figure out where the contamination was coming from. Jim and I decided we would do an in-cave investigation to attempt to determine the source, while the rest of our crew proceeded with an overland ridgewalk to see if they could find any candidate sinkhole dumps.

Jim and I worked our way into the cave. Neither of us had previously been particularly far into the cave, which was probably the main reason we were eager to pursue this task! As we continued, we took special care to avoid disturbing the hibernating bats, which were present in fairly large numbers. Although we missed both the formation room and the side passage where we felt the trash might be coming from, we were still finding diapers as we continued upstream. Within a couple of hours we were joined by Tom Sollman. Pushing the main stream passage another fifty feet (as Tom is prone to do), he found yet another diaper. This was back near the anastomoses where the passage lowers to a crawl more suited to wetsuit activity.

Working our way back out, we stopped by the formation room (as a tourist activity), and also picked up the debris we had set aside on the way in. I'd estimate we removed perhaps 20 pounds of trash, including about a dozen diapers. We also came across a very localized portion of the cave that smelled strongly of fuel oil. Perhaps there is a farmer above who would appreciate knowing that he has a leak in his fuel storage tank, but we haven't determined for certain where this area plotted out on the surface.

We exited Endless to find that our overland investigators had covered a lot of ground and found some leads, but could not find the offending sinkhole in question with any degree of certainty. Based on our knowledge, we did some more searching from the road, and saw one pile of trash that had some white material in it that could have been diapers, but again, this could not be verified without trespassing, nor was it clear that a sinkhole was associated with the site. We reported our findings to a grateful Mrs. Engler, then returned home.

Hopefully our information will allow the sheriff's office to narrow their aerial search later this winter, and perhaps this effort will bear fruit (or is that diapers). However, I feel it is likely that we'll be making at least one more trip to Endless Cave before this issue is put to rest. Many thanks to those who participated in this effort.

STUDY REVEALS "SECRETS" OF LOST RIVER WATERSHED

press release from the US Dept of Interior

The hydrology of the Lost River watershed is the subject of a report recently released by the U.S. Geological Survey (USGS), U.S. Department of the Interior. The watershed was studied to improve an understanding of the hydrology near Orleans, Indiana. The results of ground-water-level mapping, dye-tracing tests, and a geomorphic assessment of the watershed conducted by the USGS in cooperation with the U.S. Army Corps of Engineers (USACE) are being used by the USGS and USACE to determine factors that might contribute to periodic flooding of Orleans.

The Lost River Watershed is best known for features that include disappearing streams, caves, and some of the State's largest springs. Some of the features in the Lost River Watershed are listed as National Landmarks, and many provide habitat to rare flora and fauna such as blind cavefish and blind crayfish.

"Study results indicate that Orleans has several factors working against it," says Randy Bayless, a hydrologist with the USGS. "During intense thunderstorms, about 6 square miles of land immediately upslope from Orleans drain mostly to one sinkhole near the center of town. Unfortunately, the sinkhole is blanketed with relatively impermeable silt and clay. During heavy rainfall, this one sinkhole can't accept stormwater to prevent occasional flooding."

Like an underground plumbing network, the fractures in the underlying bedrock work like a drainage network that conveys stormwater to an ultimate discharge in the Lost River channel. Once those fractures are full, the system backs up and flooding occurs. "The fractures are not as well developed in the area northeast of Orleans, and we know that their capacity to drain stormwater is limited--that's the source of flooding," says Bayless. "However, the study revealed the existence of a fracture between Orleans and the Lost River channel that might be able to convey large volumes of storm drainage if the channel were connected to the flood-prone sinkhole."

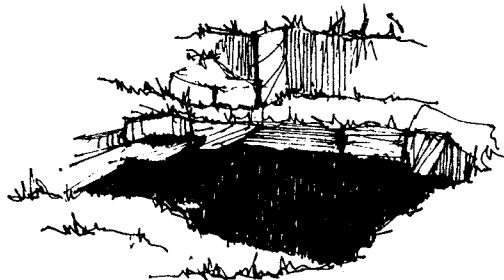
Dye-tracing tests were used to identify ground-water divides. Dye-tracing tests

involve pouring a small amount of fluorescent dye into a sinkhole and capturing the dye as it discharges to rivers and springs. Connecting the locations where the dye was injected to the site where it reappeared at the surface indicates the general direction of ground-water flow.

Results of the dye-tracing tests indicate that most storm runoff that infiltrates the ground near Orleans eventually resurges at the Orangeville Rise, about 6 miles southwest of town. Lesser amounts of storm runoff that infiltrates the ground near Orleans eventually resurge through swallow holes in the stream bed of Lost River. About 2.5 miles northeast of town, the ground water begins to flow north-eastward, eventually discharging from the caves in Spring Mill State Park.

The report, titled "Directions of ground-water flow and locations of ground-water divides in the Lost River Watershed near Orleans, Indiana," by E. Randall Bayless, Charles J. Taylor, and Mark A. Hopkins, is published as U.S. Geological Survey Water-Resources Investigations Report 94-4195. Copies of that report are available for inspection at U.S. Geologic Survey, 5957 Lakeside Boulevard, Indianapolis, IN 46278 and may be purchased for \$13.00 from the Open-File Reports Section, Denver Federal Center, Box 25286, MS 517, Denver, CO 80225 (phone: 303-236-7476). Orders must include check or money order payable to the U.S. Department of the Interior--U.S. Geological Survey and must specify the report number (WRIR 94-4195).

[Editor's note: This project was part of a larger \$400,000 pork-barrel study conducted by the US Corp of Engineers and funded with your federal tax dollars.]



SUICIDE CAVE STATUS

by Bruce Bowman

As mentioned in the last *Update*, Suicide Cave in Washington County has recently become available for limited visitation via a lease agreement with the landowner. Those who attended the 1992 NSS Convention may recall that the cave saw a great deal of activity during that event; but shortly thereafter the property changed hands, not once, but twice, and access to Suicide was lost for a period of about two years. Due to vandalism events shortly before the convention demonstrating the need for protection, and the desire to renew access for qualified cavers, the Conservancy appointed a contact person to discuss the situation with the new landowner in hopes of negotiating and securing a lease. The landowner did not live near the property and proved somewhat difficult to contact. Also, the original liaison moved out-of-state, and a new one had to be appointed. Understandably, the landowner was reluctant to embark on this venture without some assurance that his liability would be minimized, and many formal pieces of correspondence were made with him and his attorney. Ultimately, a level of trust was established, and a Memorandum of Agreement was signed on the 28th of August, 1994. The Management Plan was subsequently approved by the Board of Directors two weeks later.

The body of the Management Plan (less Appendices) follows on pages 18-19, but I feel it worthwhile to highlight a few issues:

- 1) Both the frequency of trips and size of a given group are restricted. This is necessary pending review of caver impact of the resource. In particular, the trips are limited to twelve (12) per year. However, this number is subject to annual review and may be increased later, if deemed necessary and approved by the landowner.
- 2) The landowner has serious liability concerns. Therefore, it is mandatory that every person participating in a trip have a liability waiver form ON FILE before embarking on visitation.
- 3) Due to the need to keep track of how many trips occur, all trips are arranged/coordinated through the patron, rather than directly through the grotto

liaisons as is done with most IKC-managed caves.

- 4) The cave is not gated, and the Conservancy recognizes that gating the cave is neither necessary nor desirable at this time. However, this is also open to review and the policy may change if the cave sees abuse.

Clearly, this is a more restrictive access policy than many the Conservancy has issued in the past; however, restricted access is clearly better than none. Whether the current restrictions are relaxed or tightened depends largely on the manner in which the property is treated by both legitimate cavers and any clandestine visitors. The landowner is free to terminate the lease at his discretion, and it is the wish of the Conservancy to demonstrate a level of stewardship and respect for his property so that access to Suicide may continue and the cave is protected.



Bruce Bowman installing IKC information sign at the entrance to Suicide Cave.

CAVE MANAGEMENT PLAN

SUICIDE CAVE, WASHINGTON COUNTY, INDIANA

INTRODUCTION: The Indiana Karst Conservancy, Inc. has negotiated a management agreement with the owner of Suicide Cave. The owner wishes to protect the cave and its natural resources. He also understands the desires of qualified cavers to visit this cave and is agreeable to provide limited access.

The Conservancy will manage Suicide Cave so that it will be available for recreational caving and study by responsible cavers while at the same time protecting the cave from damage and protecting the landowners from liability and caver-related problems. At the same time, the Conservancy will continually evaluate the resource and undertake a conservative restoration and maintenance program where necessary.

HISTORY OF THE CAVE: Suicide Cave is so named due to an incident in the 1920s in which a man named Bailey Bowling took his own life. Rumor has it that Bailey may have kept a moonshine still during Prohibition. During an altercation with the local Sheriff, Bailey fired two shots over the heads of the Sheriff and a deputy. Both quickly dropped to the ground, and Bailey, thinking he had injured or killed the lawmen, took refuge in the cave. His body was found a few days later by three teenagers on a pleasure trip to the cave; the cause of death a grievous gunshot wound to the head. A more complete (and perhaps embellished) account of the incident may be found in the 1992 NSS Convention Guidebook¹.

Suicide Cave, due to its proximity to the road and the presence of the entrance on the Kosuth topographical map, has seen much traffic over the years. However, the cave has remained in good condition due to conscientious visitors and the conservation activities of the Central Indiana Grotto just prior to the 1992 NSS Convention. The cave was also the subject of an extensive mapping project at that time. During this period, some vandalism in the form of spray paint was noted in the cave. With the help of a local police officer who is also a caver, the perpetrators were brought to justice, fined, and sentenced to community service. This incident is noteworthy because it was the first successful prosecution of vandals of a noncommercial cave under the Indiana Cave Protection Act (IC 35-43-1-3)².

Due in part to this experience, the Conservancy targeted Suicide Cave as needing continued stewardship and protection from unauthorized visitation and set out to negotiate with the new landowner. In October of 1993, the owner was contacted and a lease agreement was signed in August of 1994.

SUBSURFACE RESOURCES: Suicide Cave currently has over 4,511 feet of mapped passages which trend in a generally east-west direction (see Appendix A). The cave consists primarily of two passages, although there are a large number of small side passages and diversions. The main, upper passage is mostly dry and varies from about 4 to 20 feet in height and is about 20 feet in width for most of its length. The lower level is wetter and in general the passages are narrower. About 350 feet into the cave, a passage branches off to the east at three points. This passage is lower and contains some bear wallows. The two levels are connected at numerous points via holes and drop-offs in the floor of the upper level, so care should be taken to avoid falling in these areas. During normal rainfall the cave is not known to flood; nonetheless, it is advisable to avoid the lower levels in wet weather. Most of the formations in the cave are concentrated in the back (west) end of the upper passage. Suicide Cave has been observed to contain considerable aquatic biota in many of its small pools and care should be taken to avoid disturbing these micro-environments.

ACCESS POLICY: Access to Suicide Cave is by permit only. The cave is not currently gated, nor are there any plans to gate the entrance at this time. Nonetheless, it is important

that visitors obey the warning sign(s) and contact the cave patron in order to gain access. Should a significant level of unauthorized entry occur, it may become necessary to install monitors and/or gate the cave for its protection. However, the Conservancy recognizes that this is not the optimal approach for either the cave or its biota, and we anticipate that the sign(s) will prove a sufficient deterrent so the Conservancy will not have to intervene to this extent. The cave is open to organized, responsible cavers who are willing to apply for a permit in advance, sign a liability release covering the landowner and the Conservancy, and agree to abide by the management policies. Unless the Board of Directors of the Conservancy closes the cave for a special project, the cave will be open under the above conditions at all times. Because of the coordination required to arrange trips with the absentee landowner, a single contact person (the patron) will be appointed to grant permission and make the proper arrangements. In order to minimize impact on the landowner and the cave, the number of recreational trips will be limited to twelve (12) per year. Priority will be given to NSS grottos. The group size for each trip will be between two (2) and ten (10) people. Additional trips for legitimate scientific research, restoration and survey work may be permitted at the discretion of the patron. Depending on the success of the management plan and the degree of respect displayed for the property, these numbers may be changed by the Conservancy, subject to the permission of the landowner. Prior to the trip, the trip leader will be mailed a liability waiver/information form (see Appendix B) and a sheet of visitation rules (Appendix C) to be followed while on the property. The trip leader will also receive a Letter of Permission (Appendix D) which will act as a parking permit and serve to verify that the group has received authorization to visit the property. Each vehicle is required to display a signed copy of this Letter of Permission while on the property. The trip leader will be responsible for having each participant read and sign a copy of the liability waiver/information form, then return the waivers to the patron before the trip. The trip leader will also inform all the participants of the visitation rules before entering the property. The rules will cover the maximum number of participants per trip, where to park, the maximum number on vehicles allowed, appropriate precautions while changing clothes before and after the trip, other rules to assure a low profile, the specific path to take from the parking spot to the cave, precautions related to the weather, and information pertaining to emergencies. In order to maintain access, proper landowner relations must be practiced at all times. Any improper behavior reported to the patron may result in those persons or the grotto being barred from future visits. Monetary compensation of the trip leader (cave-for-fee) is strictly prohibited. The release forms will be kept on file and will not be required each time the cave is visited. As a matter of convenience, cavers who anticipate a trip to Suicide Cave are encouraged to file release forms early to expedite future trips. The patron will maintain a log of trips and visitors to the cave to help assess visitation impact on the resource. The Conservancy will vigorously prosecute any violations of the Indiana Cave Resource Protection Act, IC 35-43-1-3, or any other vandalism on the property (see Appendix E).

PUBLICITY POLICY: To balance the desire for recreational caving with the necessity of protecting the cave, the Conservancy will neither promote nor discourage appropriate recreational trips into the cave. As previously stated, the Conservancy wishes to minimize the impact on the landowner, and thus the owner's name, address, or phone number will not be publicized. For the same reason, the Conservancy will not widely publish the patron's name, address, or phone number. The patron's name and phone number will be listed in the Conservancy newsletter and provided to the various grotto liaisons.

REFERENCES:

- 1) Rea, G. T., Editor, Caving in the Heartland -- 1992 NSS Convention Guidebook, National Speleological Society, 1992.
- 2) Washington Circuit Court Records, Cause No. 88C01-9206-CM-479 and Cause No. 88C01-9206-CM-481, personal communication from Ronnie Burns, 1994. 20-AUG-1994

1995 INDIANA BAT CENSUS

by Keith Dunlap

As part of the USFWS's Recovery Plan to protect and increase populations of the federally endangered Indiana bat (*Myotis Sodalis*), a census is conducted biennially to monitor the status of the species. The census is conducted by several individuals and coordinated by Richard Clawson from Missouri. For consistency, the goal is to have the same biologists survey the same caves each time. Clawson, the Recovery Team leader, conducts the census in the seven original "Priority I" caves including Twin Domes and Batwing caves in Indiana. The census of the remaining caves (Priority II and III) in each state are generally carried out by the states' respective natural resource agency. In Indiana, that responsibility falls on the IDNR's Non-game Section, which contracts this work out to Dr. Virgil Brack. He has conducted the Indiana survey since 1981.

The goal of the census is to collect long term trends of the *sodalis* populations. This will help to determine if the protective actions being taken by the USFWS and others are having any positive effects. Since the censusing process introduces an unnatural winter disturbance to the bat, the count is performed only every second year. The actual survey methodology is pretty straightforward. In most caves, the individual bats are identified by species and counted. In the few caves where large clusters are present, the area of the clusters are measured or estimated and a conversion factor of 300 bats per square foot is applied. Additional information collected includes the various locations of the bats within the cave, the temperature at these locations, and the number of bats per cluster. Occasionally, a banded bat will be found and the band number, color, and other information are recorded.

To minimize the overall time in the cave, the count is generally performed by a team of three or four as follows: the identifier/counter (Dr. Brack), the "spotter" to assist the counter in systemically keeping track of what has or hasn't been counted, the data recorder who transcribes the information from the counter, and usually a fourth person who records temperatures, serves as a secondary spotter, scouts side

leads for bats, and does whatever else needs to be done.

Assisting this year at one or more caves were Dr. Karen Tyrell (a bat biologist from Knoxville, TN), Steve Collins (IKC), Tom Sollman (IKC), and myself.

The caves visited this year included eighteen caves that have been previously censused and known to have *sodalis*, plus four other caves that were potential hibernacula. The following, in order of visitation, is a brief log of this year's activities:

Grotto Cave (Monroe) 27JAN - Brack, Dunlap, and Tyrell. This IKC-managed cave has been showing a steady population decline since 1985 (from 4,198 Indiana bats down to 1,568 in 1993), but the count this year reversed the trend with 2,018 Indiana bats counted. The number of little brown bats (*Myotis lucifugus*) was also up, numbering over 900, the highest count since 1982.

Coon Cave (Monroe) 27JAN - Brack, Dunlap, and Tyrell. This IKC-managed cave has been doing just the opposite of Grotto with the population steadily increasing since 1982 (with 550 bats) leading to speculation that bats are shifting between the two caves. This year's count of Indiana bats (4,455) was basically identical to the 1993 count while the number of Little Brown bats increased to 423. Both populations were the largest numbers ever recorded for this cave. The location of the bat clusters in Coon were considerably closer to the entrance this year, indicative of the milder/warmer winter. We also found a historic *Neotoma* (woodrat) latrine on a ledge providing further evidence of their past range as far north as Monroe Co.

Buckner (Monroe) 27JAN - Brack, Dunlap, and Tyrell. As amazing as it may seem, there are still a small number of Indiana bats in the entrance room of Buckner. Forty-one *sodalis* were found hiding in cracks and crevices. However, in 1982, there were ten times that number. True to the Bruckner tradition, after completing the survey, we became involved in a "mini-rescue" to

search for two high schoolers that had become separated from the rest of their group and were three hours overdue. They were found lost in the loop, but otherwise okay.

Clyfty Cave (Greene) 28JAN - Brack, Dunlap, and Sollman. This cave *had* one of the most scenic entrances in Indiana, but a tornado in 1993 flattened most of the trees. On this visit, heavy rains the night before had the cave's stream in flood and water backed-up into the usually dry entrance crawl. There were 130 *sodalis* and 141 *lucifugus* counted, the lowest number for both species since 1982. The cave appears to be getting increased visitation and vandalism.

Jim Ray's Cave (Greene) 28JAN - Brack, Dunlap, Tyrell, and Sollman; plus several Ohio-based USFWS observers. Over the past ten years, this cave has become the second largest hibernacula in Indiana (second only to Twin Domes). This year 32,587 *sodalis* were counted, down considerably from 1993 and the record high of 41,854 bats in 1991 (the 1995 population is still significantly higher than the numbers documented in the early 80's). One possible explanation for the observed decline is the bitter cold temperatures of last winter that might have killed some of the bats. The entrances are such that the cave can draw very cold air into the main hibernation areas. Monitoring devices recorded below freezing (potentially fatal) temperatures at the main clusters during the record cold spell of January 1994.

Leonard Springs (Monroe) 28JAN - Brack, Dunlap, Tyrell, and Sollman. Eighty-two *sodalis* and 260 *lucifugus* were counted. This was the lowest number of Indiana and the highest number of Little Browns recorded since censusing began in 1989.

Saltpeter Cave (Monroe) 29JAN - Brack, Dunlap, and Tyrell. The 1995 census documented 175 *sodalis*, down somewhat from past years. This cave appears to be experiencing increased visitation and vandalism despite the owner's attempt to keep the cave closed.

Neyman Cave (Washington) 29JAN - Brack, Dunlap, and Tyrell. This was the first time this cave had been included in the census and was suggested by an IKC member. Eight-six *sodalis* and

277 *lucifugus* were found along with three other bat species.

Endless Cave (Washington) 29JAN - Brack, Dunlap, and Tyrell. This cave is another interesting hibernacula of increasing importance with 450 *sodalis* and 772 *lucifugus* counted (record numbers for both). In 1982 and 1987, only a couple *sodalis* were found and only a few hundred *lucifugus*. The last three counts have shown significant and steadily increasing growth.

Saltpeter Cave (Crawford) 03FEB - Brack and Dunlap. This cave is just up the valley from Wyandotte with 647 *sodalis* counted. This is the largest population recorded since censusing began 1982, but past numbers have been fairly cyclic with no definitive pattern.

Wildcat Cave (Crawford) 03FEB - Brack and Dunlap. This cave is also located near Wyandotte with 34 *sodalis* (about typical) and 582 Little Browns (the highest recorded since censusing began in 1982).

Wallier Cave (Harrison) - 03FEB - Brack and Dunlap. This cave has a very scenic entrance and is one of the southern-most caves in Indiana. This year 435 *sodalis* were found which is a significant jump from the past two counts of 36 and 72 bats (in 1991 and 1993, respectively).

Penny Well (Harrison) - 03FEB - Brack and Dunlap. This pit cave was added to the survey due to its potential to trap cold air. However, the cave was found to be too warm and no Indiana bats were found.

Parker's Pit (Harrison) 04FEB - Brack, Dunlap, and Collins. This was the fifth time this cave has been surveyed with 1,276 *sodalis* found. The population seems to be relatively stable. Probably because of the warmer winter, there were many more bats in the main pit and fewer in the e¹ Room (at the bottom of the third drop beyond the X-canyon).

Jug Hole Pit (Crawford) 04FEB - Brack, Dunlap, and Collins. This small cave (not to be confused with Jughole in Harrison Co) is located just down hill from the entrance to Wyandotte Cave. It was added to the census because of its proximity to Wyandotte, because of its potential to trap cold air, and because the IDNR may eventually place a gate on its entrance. No Indiana bats

were observed in the cave.

Robinson Ladder (Crawford) 04FEB - Brack, Dunlap, and Collins. There were 219 *sodalis* found in the entrance room, approximately half the number found during the past two counts.

Jughole (Harrison) 05FEB - Brack, Dunlap, and Collins. After a significant jump in the population in 1993, the number of bats counted this year dropped slightly to 12,463 *sodalis*.

Easter Pit (Crawford) 05FEB - Brack, Dunlap, and Collins. This was the last of the new caves for the year. It was added to be census because of its proximity to Wyandotte and because bats have been reported just beyond the A0 Room. We found our way through the canyon, crevice, and into the main trunk passage and out again without incident. Approximately 100 Little Browns were observed but no Indiana bats.

Wyandotte Cave (Crawford) 05FEB - Brack, Dunlap, Johnson, and Tyrell. Perhaps the highlight of the census this year was the population increase in Wyandotte Cave. Every count since 1981 (2,152 bats) has increased with this year setting a record of 23,878 bats. Because of the mild winter, the majority of the bats were located in Washington Avenue rather than the Rugged Mountain area. One can only speculate that the new "bat friendly" gate installed in 1991 has had a positive influence on the

population by improving airflow. It is also ironic that the bats seems oblivious to the tours that pass directly below them every day.

King Blair/Brinegar (Monroe) 18JAN - Brack, Dunlap, and Sollman. This was only the second census through the King Blair entrance. Compared to 1993, the number of bats increased with 514 *sodalis* and 673 *lucifugus* counted this year. Because the cave has excellent airflow, it has the potential to be a significant hibernacula and visitation should be avoided during the winter months.

Sexton Spring (Greene) 18FEB - Brack and Sollman. This was only the second visit to this cave with 117 *sodalis* found, compared to 67 in 1993.

Ashcraft Cave (Greene) 18FEB - Brack, Dunlap, and Sollman. The final cave of the year with 28 Indiana and 170 Little Browns observed. This was approximately the same number of bats found during the first census here in 1993.

It should also be noted that many of these caves are closed to protect the bats from September 1st to April 30th, and some of the caves are off limits year around at the request of the landowners.

[Editor's note: Additional population trends and graphical information will be presented at the Indiana Cave Symposium and in the next IKC Update.]

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is not watching out for them. Bats which hibernate in Indiana's caves are also very susceptible to disturbance by human visitors. This includes not only the endangered Indiana Bat, but also common bats such as eastern pipistrells or big brown bats. When bats are seen hibernating in caves, speaking and other loud noises should be kept to an absolute minimum. Although frequently overlooked, the ability to move smoothly, carefully, and quietly through a cave is an important skill for both safety and conservation.

Acknowledgements:

I am very thankful to Horton Hobbs III

who was incredibly generous in loaning me equipment and providing guidance for the study. Larry Mullins of the Hoosier National Forest was very helpful to us in locating the caves and providing information on them. Clyde Simmerman was also very helpful in locating several caves. Many thanks to W. Scott Sievertsen for groveling around underground with me all month. Finally, I am very grateful to the Indiana Karst Conservancy for providing financial assistance.

[Editor's note: Tom is a senior at Prescott College, Prescott, AZ. He received a \$150 grant from the IKC to offset some of his out-of-pocket expenses while working on this research project.]

INDIANA KARST CONSERVANCY TREASURY REPORT
Income Statement
From September 01, 1994 to December 31, 1994

INCOME:

Dues Apportionment and Residuals	607.50	
Donations	175.00	
Aluminum recycling	14.61	
Interest	35.69	
	<u> </u>	\$832.80

EXPENSES:

IKC Update (Printing/Production/Mailing):	272.09	
Other publication expenses	126.13	
Membership Correspondence/Expenses	44.98	
Misc Correspondence/Info Request/Conservation	25.37	
Property Management Expenses	7.00	
Suicide Signs	90.00	
Research Grant	150.00	
IKC PO Box	49.00	
	<u> </u>	(\$764.57)

NET OPERATING EXCESS (DEFICIT) THIS PERIOD \$68.23

Balance Sheet
December 31, 1994

ASSETS:

Prepaid Exp: 1995 Cave Management Symposium	877.73	
Cash in Bank	4777.09	
Total Assets	<u> </u>	<u>\$5,654.82</u>

LIABILITIES & OPERATING EXCESS:

Hancock Property Maintenance Fund	215.73
DNR Non-Game Fund	270.00
Indiana Cave Symposium Fund	508.29
Deferred Dues Fund: 159 members - 1994 25%	596.25
7 member - 1995 100%	105.00

Previous Operating Excess	3891.32
Net Excess (Deficit) This Period	<u>68.23</u>

Current Operating Excess	3959.55
Total Liabilities & Operating Excess	<u> </u> <u>\$5,654.82</u>

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through the original route to the new discovery and out through a recently drilled second entrance. Here you have the opportunity to get wet, muddy, and cold going in and on the way out its even nastier. Although the new exit will get better after

the water and mud from the drilling operation are gradually removed by the passage of caver bodies on the way out.

It was a great weekend and all in attendance had fun. As usual the staff at Marengo Cave went above and beyond the call of duty to make the cavers feel welcome and appreciated.

IKC QUARTERLY MEMBER'S MEETING MINUTES

Saturday, December 3, 1994

Bloomington, Indiana

BOARD MEMBERS PRESENT:

James Adams	Bruce Bowman
Larry Bundy	Keith Dunlap
Hank Huffman	Larry Mullins
Tom Rea	Eric Schmidt
Tom Sollman	

BOARD MEMBERS ABSENT:

Bruce DeVore	Dave Haun
Scott Johnson	Mike Hood
Robert Sergesketter	Bill Tozer

President Bruce Bowman presiding. Introductions were made and the September 1994 meeting minutes were approved with one correction. Hank Huffman noted that, concerning his report that he has been consulting on a problem at Indian Cave, sewer "routes" should have been recorded as "lines".

A quorum was not available at this meeting [Secretary's note: After the meeting, President Bruce Bowman contacted Director Dave Haun who added his approval to each motion.]

Treasurer Keith Dunlap reported that we have \$6,100 plus \$500 that the IKC is holding for the Indiana Cave Symposium. There are currently a few bills outstanding.

Indianapolis Power and Light Company has given the Department of Natural Resources a grant for a walkway to an observation platform at the entrance to Bronson Cave at Spring Mill State Park. Several species of bats and cave fish are known to use this cave. It is hoped that the walkway and platform will keep visitors away from actually poking into the entrance. Hank Huffman expressed concerns for the cave life and the fact that no census has been done. This is also the only non-modified cave entrance in the system. There may be other alternatives than the proposed "structural improvements."

Hank also elaborated on developments at Indian Cave. The city has re-evaluated the situation and has agreed to re-use the old sewer line route, which is preferable.

Bruce Bowman reported that Cathy Engler, owner of Cave River Valley, is interested in having a crew do a cleanup and try to figure out where the diapers in Endless Cave are coming from. A trip is scheduled for January 14th.

Tom Sollman continues his crayfish count at Shiloh Cave. He inspected the gate earlier today and greased the hinges. A motion was made to fund up to \$100 for photos to be given as appropriate gifts to Elliott Special Products, Elliott Stone Company and the Church Entrance owner. Motion passed.

Also concerning Shiloh, Patron Jim Adams noted that the Quarry Entrance owner added one provision to the Shiloh Cave Management Plan. If the owner has to close the cave suddenly, a notice will be posted at the parking spot. All visitors should look for a notice before proceeding to the cave. Otherwise, the plan has been accepted by the owner and copies were passed out to the Directors.

Bruce Bowman reported that a recent cleanup at Suicide Cave in Washington County went well.

A cleanup trip is scheduled for Wayne's Cave on December 11. Dave Haun is coordinating this annual trip with the Central Indiana Grotto.

The discussion then turned to recent events at Donnehue Cave in Lawrence County. There have been several "rescues" at the cave. People are entering at the Culvert Entrance on SR 37. Does the IKC want to support an effort with the Indiana Department of Transportation to work to close this entrance?

Larry Mullins reported that he doesn't see a lot of vandalism in the cave. We shouldn't gate the cave for safety reasons -- we shouldn't try to protect cavers from themselves.

Tom Rea noted that this entrance used to be a terminal breakdown room before the highway opened it up. It could return to this state with a few big rocks.

Keith Dunlap agreed with Larry Mullins and added that we should encourage occasional clean-up trips.

Keith reported that his temperature monitoring project is ready to go for the Winter. He has 14 units for Grotto, Coon and Rays Cave.

The Jefferson Proving Ground survey is also continuing. Keith has played an important role in this ongoing project. To date, 21 caves have been surveyed and another dozen or so have been identified. The longest cave is 600

feet. Of the available land, 45,000 acres has been set aside as a National Wildlife Refuge. US Fish and Wildlife want to obtain 53,000 acres and still might be able to negotiate more land.

Two reprints of significant cave literature are scheduled per year to further the educational goals of the Conservancy. A piece on the Wesley Chapel Gulf will be distributed with the Spring *IKC Update*.

Larry Mullins took the floor to clarify a point in the most recent *IKC Update*. Tom Liddle is working with Horton Hobbs on a biological study in Hoosier National Forest caves. The HNF contract is with Horton Hobbs.

Keith moved to fund up to \$150 of Tom Liddle's expenses on the project. Tom must provide an expense accounting and supply a copy of his paper to the CIG Library and an article for the *IKC Update*. Motion passed.

Larry Mullins updated everyone on HNF activities. Most importantly, the Tincher Pond area has been set aside as the second largest special interest area for a period of ten years. A management plan needs to be prepared. Larry has proposed a 20-mile hiking trail that will also be an interpretive trail with trail side stations and a guide book. A couple of days will be scheduled to allow cavers to walk the proposed trail and look at the potential. Some significant sites will include Fuzzy Hole, the Gardner Mine and Gory Hole.

Larry also said that WW Engineering will be doing some dye tracing and the KARST program is gearing up again for the year. There will be some ridgewalking activities in March, April and May.

Hank Huffman noted that he recently attended a seminar in Lewisburg WV. Scott Johnson is working on the otter release program. A trapper recently caught a river otter in Monroe County.

Keith added that the 1995 bat census is ready to begin in late January and will continue into February.

The first promotional flyers for the National Cave Management Symposium have gone out. The National Speleological Society will send notices to all the grottos. Another 500 people on the symposium mailing list will soon be getting material. One hundred and fifty attended the last symposium at Carlsbad Caverns. The next planning meeting is December 20th.

Finally, the HNF and IKC need to set up fund transfers to facilitate payment of expenses for the National Cave Management Symposium. HNF will transfer the funds to the IKC.

A committee was formed to solicit candidates for the IKC elections in March. Tom Rea, Hank Huffman, Larry Bundy and Bill Tozer agreed to serve on the search committee. So far, the following candidates have stepped forward: President, Bruce Bowman; Secretary, Jim Adams; Treasurer, Keith Dunlap; Directors, Bruce DeVore, Tom Sollman and Larry Mullins.

Tom Rea pointed out that his mailbox that the IKC has been using has been closed. We need to change the signs at the Hancock property.

Keith brought in several electronic flash units that were donated by George Brutchten. Jim Adams will dispose of them in the most profitable manner.

Keith asked if the *IKC Update* was getting too expensive. Everyone seemed to agree that it was money well spent. Keep up the good job, Keith!

The Land Acquisition Committee will meet at Keith Dunlap's at 7:00 PM on January 10th.

The meeting was adjourned at 9:10 PM.

Submitted by James Adams, Secretary

DON'T FORGET TO RENEW YOUR DUES

IKC BOARD OF DIRECTORS MEETING MINUTES

Saturday, February 18, 1995

Greenwood, Indiana

BOARD MEMBERS PRESENT:

James Adams	Bruce Bowman
Larry Bundy	Bruce Devore
Keith Dunlap	Mike Hood
Hank Huffman	Tom Rea
Robert Sergesketter	Eric Schmidt
Tom Sollman	Bill Tozer

BOARD MEMBERS ABSENT:

Dave Haun	Scott Johnson
Larry Mullins	

The meeting was called to order at 7:35 P.M. by IKC President, Bruce Bowman at the Greenwood home of Treasurer Keith Dunlap. In the absence of Secretary Jim Adams for the first ten minutes of the meeting, Keith Dunlap recorded the minutes at the beginning of the meeting.

Both the Treasurer's Report and the approval of the December Quarterly Meeting Minutes were postponed until the March Annual Business Meeting. Also, The Nature Conservancy Blue River Project Update was postponed until the March meeting, however, the "who" and "what" of The Nature Conservancy were discussed.

The upcoming elections were discussed. Some Directors will seek re-election while others have declined to be nominated. A ballot mailing to all members is scheduled for Friday, February 24.

New vandalism was discussed in two IKC managed properties. Graffiti was discovered shortly after groups had been in the caves. The graffiti matches names from the standard waivers and in an NSS register, as well.

Keith moved to pursue prosecution in at least one instance. No second. Jim Adams moved that appropriate letters be written to the trip leaders and sent from the President. Motion passed.

Signage needs to be changed at the Hancock Property to reflect the current IKC Post Office Box. Jim Adams agreed to take measurements and photos. Tom Rea agreed to make the signs. Keith volunteered his router for Tom's use.

The issue of protecting a fern at Hemlock cliffs,

a popular rappelling spot on Hoosier National Forest property, has come up again. Bruce Devore will attend the Saturday (2/25/95) meeting.

Hank Huffman reported on the proposed walkway and observation deck at Bronson Cave in Spring Mill State Park. There is a problem with erosion at the site and something does need to be done. Hank is not especially happy with the idea but agreed that the walkway and deck are probably the best solution. Some re-thinking was done by the designers and the platform will not extend as far into the entrance area of the cave as was first proposed.

Six cavers representing the IKC visited Endless Cave in January to try to trace the source of diapers that have been washing through the cave. One passage was eliminated as a source and a dozen diapers were removed from the cave. More work needs to be done.

Keith reported that some of the results of the most recent bat census should be available in March.

The next significant karst literature reprint is on schedule to be mailed with the March *IKC Update*.

The National Cave Management Symposium is also on schedule. Several people have already shown an interest in presenting papers.

Keith reminded everyone that the HNF is planning a two day Tincher Ridge hike through the Special Interest Area on March 4 & 5. Also, drilling permits for gas have been purchased in Harrison County near Squire Boone Caverns, in Lawrence County near Popcorn Springs and in Washington County in the Lost River drainage area.

Hank Huffman noted that the Ozark Cave Fish Conference is scheduled for March 23 & 24 near Fantastic Caverns in Missouri. Also, the Department of Natural Resources is forming a Cave Management Task Force to develop guidelines for cave and karst areas on all DNR properties. They are in the very earliest stages of planning.

Meeting adjourned at 9:52 PM.

Submitted by James Adams, IKC Secretary

----- INDIVIDUAL MEMBERS -----

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David	Anderson	15 S Sixth Ave	La Grange	IL 60525-2402	(708) 354-2404	0591
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D A	Burden	3410 South Rural St	Indianapolis	IN 46237	(317) 781-0701	0393
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Christopher L	Carpenter	3221 Georgetown Rd	Indianapolis	IN 46224	(317) 291-7085	0789
Kenny	Carrigan	6647 West Loretta Dr	Indianapolis	IN 46122		0488
George	Casey	418 South Main St	Pataskala	OH 43062	(614) 927-1195	0393
George	Cesnik	4331 Clifford Rd	Brownsburg	IN 46112-8533	(317) 293-9247	0386
The	Church Family	9156 E BC Ave	Richland	MI 49083	(616) 629-5348	0393
Allen	Clawson	9007 E 200 S	Lafayette	IN 47905-9455		0691
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Christopher	Cruzan	140 Pearl St	Carmel	IN 46032	(317) 920-1040	0494
The	Cunningham Family	990 N 400 W	Columbia City	IN 46725	(317) 327-3259	1093
Rane	Curl	2805 Gladstone	Ann Arbor	MI 48104		0387
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Royal P	DeLegge	2003 Harvard Ave	Rockford	IL 61107-3230	(708) 620-6031	0393
The	DeVore Family	15001 Mill Rd, #32	Ft Wayne	IN 46816-9745	(219) 639-7249	0990
The	DeWitt Family	1505 Peck St	Greenwood	IN 46143	(317) 882-7662	1193
Robert	Decker	3401 E Loretta Dr	Indianapolis	IN 46227	(317) 784-5205	0293
Ralph	Doerzbacher	3133 Kiser Lake Rd	St Paris	OH 43072	(513) 663-4671	0593
Ron	Dowell	2231 E French Dr	Pimento	IN 47866	(812) 696-2526	0293
Keith	Dunlap	32 Troon Ct	Greenwood	IN 46143-1937	(317) 882-5420	0186
Cheryl L	Early	70 E Kelso Rd	Columbus	OH 43202	(614) 261-0876	0393
James A	Eastridge	RR 2 Box 218A	English	IN 47118		0293
Lorlie	Esterly	RR 2 Box 262	Pekin	IN 47165		0393
Jeffrey P	Farr	2100 Kitchen Dr	Anderson	IN 46017	(317) 378-7773	0393
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John Jay	Fichter	1421 N Main St #206	Evansville	IN 47711	(812) 428-0387	0195
Jeffrey	Frazier	1101 N Main St	Frankfort	IN 46041	(317) 654-6759	0196
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Allen J	Goodcase	8940 Shields Ave	Brookfield	IL 60513	(708) 485-7113	0390
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Penny	Hibbard	7903 15 1/2 Mile Rd	Marshall	MI 49068	(616) 781-7234	0391
Kevin	Hieber	53574 County Rd 7 N	Elkhart	IN 46514	(219) 262-8713	0393
Mike	Hood	23 Wells Dr	Dayton	OH 45431-1420	(513) 252-2978	0293
Duke	Hopper	1858 Marlboro Dr	Lexington	KY 40505-1655	(606) 273-6823	1192
Tem	Hornaday	706 W Dodds St	Bloomington	IN 47403	(812) 333-6811	0590
Henry	Huffman	8358 N Mt Tabor Rd	Ellettsville	IN 47429-9545	(812) 876-9645	0187
Donald	Ingle	4357 W Gifford Rd	Bloomington	IN 47403	(812) 825-3303	0594
Jeffrey	Jackson	7458 W Palmer Rd	Greens Fork	IN 47345	(317) 966-0388	0488
Kate L	Johnson	1705 Safari Dr	St Joseph	MO 64506		0393
Scott	Johnson	IDNR, 553 East Miller Dr	Bloomington	IN 47401		0390
Stephen	Johnston	140 Bruce Dr	Westmilton	OH 45383	(513) 698-5051	0393
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Louie	Kitcoff	1050 Clifford Rd	Brownsburg	IN 46112	(317) 297-7030	0393
Jonathan E	Knott	2227 Lucas St	Muscataine	IA 52761		0491
Amy	Koch	50 B St	Linton	IN 47441		0394
John R	Koch	50 B St	Linton	IN 47441		0493
Kim	Kohal	4841 Covered Bridge Rd, Apt B	Indianapolis	IN 46268	(317) 293-5346	0794
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Tom	Kopp	6500 Brown Rd	Oxford	OH 45056-9718	(513) 726-6607	0393
Glenn A	Kotnik, MD	4085 Country Pl	Zionsville	IN 46077-9609	(317) 923-2250	0392
David	Landess	1404 Williamsburg Dr	Champaign	IL 61821-2019	(217) 234-9881	0593
Steve	Lanning	105 Vann Ave	Evansville	IN 47714	(812) 476-0850	0493
Brian	Leavell	1627 South M St	Elwood	IN 46036	(317) 552-7619	1088
Glenn	Lemasters	508 Rahkeewood Dr	Indianapolis	IN 46217	(317) 786-8433	0186
Robert M	Letsinger	7261 Sacramento Dr	Greenfield	IN 46140	(317) 894-3792	0393
Tom	Liddle	2316 Lafayette Ave	Columbus	IN 47201		0194
Stephen D	Lockwood	RR 1 Box 107	Mitchell	IN 47446-9720		0393
Roy	Logan	1004 S Keystone	Indianapolis	IN 46203	(317) 261-1129	1093
Daniel C	Lucas	11234 Lantern Rd	Fishers	IN 46038	(317) 849-2784	0491
David	Luckins	3683 Oakleaf Dr	West Bloomfield	MI 48324-2545		0388
Bob	Masta	2247 Prairie	Ann Arbor	MI 48105	(313) 662-2284	0393
Richard	Maxey	173 W Kanawha Ave	Columbus	OH 43214	(614) 888-2285	0293
Angie	May	2422 Cedar Crest Dr	Columbus	IN 47203	(812) 376-6753	0187
The	McCamman Family	7709 Grizzly Dr	Nineveh	IN 46164-9261		0294
Steve	McKenzie	PO Box 11101	Ft Wayne	IN 46855-1101	(219) 426-2522	1191
The	Melton Family	8104 Poinsettia Dr	Louisville	KY 40258	(502) 933-1024	0393
Jane	Miller	4020 S Rural St	Indianapolis	IN 46227	(317) 784-3724	0387
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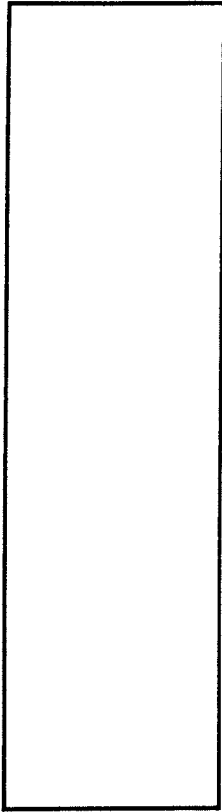
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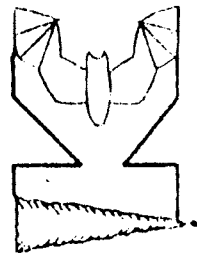
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