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# **IKC Update**

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**NUMBER 43**

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**DECEMBER 1996**

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**INDIANA KARST CONSERVANCY**

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**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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 Land Acquisition/ Hank Huffman ..... (812) 876-9645  
 Membership/ James Adams ..... (317) 882-3724  
 Publications/ Keith Dunlap ..... (317) 882-5420  
 Hoosier Forests Project/ Kevin Komisarck ..... (812) 339-2394

\*\*\*\*\* MANAGED CAVES/PATRONS \*\*\*\*\*

Coon Cave/ Keith Dunlap ..... (317) 882-5420  
 Grotto Cave/ Keith Dunlap ..... (317) 882-5420  
 Shaft Cave/ Jeff Cody ..... (317) 888-9898  
 Shiloh Cave/ James Adams ..... (317) 882-3724  
 Suicide Cave/ Ronnie Burns ..... (812) 883-6252  
 Wayne's Cave/ Serena Smith ..... (812) 339-2394  
 Woodard Cave (TN)/ NIG - contact John Simerman ..... (219) 424-0361

\*\*\*\*\* GROTTOS/LIAISONS \*\*\*\*\*

Bloomington Indiana Grotto/ Anmar Mirza ..... (812) 339-1506  
 Bloomington Indiana Grotto/ Kriste Lindberg ..... (812) 339-7210  
 Central Indiana Grotto/ Keith Dunlap ..... (317) 882-5420  
 Dayton Underground Grotto/ Mike Hood ..... (513) 252-2978  
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 Harrison-Crawford Grotto/ Dave Black ..... (812) 951-3886  
 Louisville Grotto/ Richard Newton ..... (812) 365-2495  
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 Northern Indiana Grotto/ John Simerman ..... (219) 424-0361  
 Stygian Grotto/ Richard Orr ..... (314) 521-0355  
 Windy City Grotto/ Gary Gibula ..... (708) 778-6747

Cover - Multi-flash shot in Animal Farm Cave, Tennessee.  
 Photo by Jerry Litaker.



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# QUARTERLY MEETING REMINDER

**SATURDAY, DECEMBER 14st, 1:00 PM**

**BLOOMINGTON, INDIANA**

Home of Larry Mullins & Kitty Wooldridge (812-834-5313)

The quarterly meetings are 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 meetings are informal, and everyone is encouraged to attend and participate.

Preliminary Agenda Items: brief recaps of last quarter's activities; discussion of several unpublished projects; Suicide lease and gate status; Oil & Gas Division permit requirements; Dry Cave (Ohio) protection project; Land Acquisition Committee progress; Election nomination solicitation and committee formation; bat census; hibernacula temperature project; other IDNR activities; HNF inventorying project; HNF/IKC committee status; Wesley Chapel Gulf discussion; other HNF activities; T-shirt and hat promotion; Reprint #9 status; and more....

Meeting directions: see page 23 (the inside back cover) for written directions and maps.

## EVENTS CALENDAR

- 14 DEC = IKC QUARTERLY MEETING (see above)
- ?? FEB = IKC EXECUTIVE BOARD MEETING, Greenwood (date and location TBD)
- ?? MAR = IKC ANNUAL BUSINESS MEETING, Indianapolis (date and location TBD)
- 05 APR = LOST RIVER TOUR, Orleans (see page 5)
- 19 APR = INDIANA CAVE SYMPOSIUM, Milltown (date and location tentative)
- 20 APR = INDIANA UNDER-EARTH DAY, Sullivan Cave (date tentative)
- 24 MAY = LOST RIVER TOUR, Orleans (see page 5)

Membership to the Indiana Karst Conservancy 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...

This time of year, a certain task comes before the IKC board that's rarely as straightforward as you might expect. That task is identifying new candidates to run for the board and officer positions. I believe the best measure of the health of any organization is the amount of "new blood" you can assimilate into your ranks and empower to get work done. Although the IKC is far from "ill" in this context, we don't often have an excess of people who come forward to say "I'd like to do that."

I got to thinking about this, and decided that perhaps we simply don't publicize this enough. So I'm using "my" column to do just that. Please bear with me and read further.

In all candor, the job of being an IKC Director doesn't require a great deal of commitment. We need people with diverse backgrounds (yet a common desire for conservation of karst resources) to come together and share their opinions and vote on the issues. The Directorship only has five meetings a year, and if you can't make it to a meeting you do have the option of sending a proxy (you must notify the president ahead of time, however). *I know for a fact that we have some opinionated people out there!* If you like, or *DON'T* like, what the IKC is doing — here is your chance to make a difference.

Any member can also run for an Officer position. Realistically, none of us will remain in these jobs forever; so it's important to have others who are ready to step up and challenge us to do them better. Only in this way can the organization

grow. It's probably best that a potential Officer spend a year or two as a Director to get a better idea of what's involved; but I can't think of a single current Director that couldn't do this job if he was sufficiently motivated. It isn't all that difficult, *really!*

Also, we're still looking for grotto representatives to serve on the Hoosier National Forest Committee. Each grotto needs a rep to support the karst-related activities of the HNF and to encourage the members to participate. After the initial orientation, there is only one meeting per year. The responsibility isn't that great and is comparable to becoming an IKC Director. Nonetheless, a recent letter sent to the grotto chairmen, asking for new people to serve on this committee, has failed to generate much grassroots support. Without this support, it's quite possible that the five-year relationship we have enjoyed could come to an end. The MOU with the HNF has been a model of caver-agency cooperation in the past, and with your help it can become that again.

Only by participation can cavers maintain an active voice in the treatment of the karst resources managed by the IKC and the Forest Service. This is your chance to make a difference; to accomplish some of your own objectives as cavers and environmentalists. Please take advantage of this opportunity: Contact either me, Larry Mullins, or your "local" IKC Director, and let us know where your interests lie.

- Bruce Bowman


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## NEWS BRIEFS...

- On November 16-17th, the Hoosier National Forest presented several training sessions to approximately thirty caver volunteers. These volunteers will help the HNF inventory the known caves on the HNF (between 90-100) which will provide the information necessary to formulate specific management/protection plans for each cave as well as supply the needed documentation to have the cave designated as significant under the Federal Cave Resource Protection Act. Over the next nine months, the volunteers, divided into various multi-discipline teams, will visit each of the caves, complete the "values" report forms, and draft detailed issues and site-specific prescriptions which will form the basis for the individual management plans. While participation on the inventory teams requires the training sessions (which are not expected to be repeated), other volunteers are needed to perform other cave related tasks on the HNF. If you are interested in helping, contact Larry Mullins at 812-275-5987.

- ❑ This past summer, the floor of the old iron bridge across the dry bed of the Lost River located just south of the Orangeville Rise was replaced. As part of the renovation, the bridge was painted a bright red. Unfortunately, the painting contractor sprayed the bridge along with much of the surrounding trees, limestone, and dry bed. They also supposedly spilled a five gallon bucket of paint into the stream bed. A nearby resident photo-documented the spill and called the IDEM, but the contractor cleaned up most of the spill before the IDEM inspector could visit the site. IDEM could still fine the painting contractor for all the overspray, but it will likely be classified as allowable "construction" disposal. As a side note, it's interesting that the painting contractor was rushed (including painting on windy days) to complete the job by October 31st so the county commissioners could have a "ribbon cutting" rededication ceremony and photo-op on November 1st, just a couple of days before elections.
- ❑ After a very successful 1996 tour season with record attendance, Bob Armstrong of the Lost River Conservation Association has announced his 1997 Lost River tour schedule. The free tours will be held on the following Saturdays: April 5, May 24, July 12, September 20, and October 18. If you've never been on one of these Lost River tours, mark these dates on your calender.
- ❑ After nine years, the IKC has decided to discontinue the annual December restoration trip to Wayne's Cave. Much hard work has been expended to significantly improve the cave and there is still additional work to be completed, but it was decided that the large cleanup trips of the past into the cave were becoming counter-productive. Furthermore, with the new two-vehicle per group parking rule imposed, logistically the trips would be much more difficult to coordinate. Smaller restoration trips will still be encouraged and all groups visiting the cave will hopefully leave the cave in a little better shape than they found it.
- ❑ While the Indiana Karst Conservancy is probably the most active state-based cave conservation organization, several of our peer organizations (Michigan Karst Conservancy, Butler Cave Conservancy, Southeast Cave Conservancy) have taken a lead in land acquisition activities. The SCC was recently successful in purchasing Neversink Pit in Alabama and has just negotiated an agreement to purchase 100 acres including Kennamer Cave, also in Alabama. The future is clear, in order to protect cave and karst features, direct ownership by a conservation-oriented entity will be required. Unfortunately, for the caves needing the most protection in Indiana, the land prices are already very high due to competing land uses (residential, industrial, etc).
- ❑ While political support for the new terrain Indianapolis-to-Evansville highway (I-69) seems to be strong, the citizens of Indiana seem to have a different opinion. At the close of the public comment period for the Draft Environmental Impact Statement, there were 2100 letter and telegrams critical of the billion dollar project compared to only 300 letters in support of the road. Additionally, there were over 70,000 petition signatures collected against the project with only 15,000 mustered for it. The opposition is coming from several fronts due to flaws in the Statement's underestimation of costs, environmental damage, and rural lifestyle impacts. Critics were also vocal on the Statement's lack of consideration for alternative routes, especially the I-70/US 41 upgrade opinion which is estimated to cost only one-third as much with much less impact. The strong citizen outcry was partially gained through the coalition efforts of the Hoosier Environmental Council (HEC), Citizens for Appropriate Rural Roads (CARR), Heartwood, Hoosier Audubon Council, IKC, Protect Our Woods, Save the Dunes Council, and Sierra Club.
- ❑ An educational brochure focused on sinkhole protection is being developed. The joint effort of the IKC, The Nature Conservancy and several state and federal agencies in producing this brochure will hopefully reduce sink hole dumping and agricultural practices that are detrimental to caves, their fauna, and groundwater. Pamphlet distribution will target Crawford, Harrison, Orange, and Washington counties.



- ❑ In the September *IKC Update*, it was reported that the US Geological Survey's master database for geologic names included thousands of cave names and location, both on public and private lands. After pressure was applied from contacts within the BLM and NPS, the USGS voluntarily removed the cave locations, at least temporarily. It is likely the removal of the locations of caves on public land will be permanent due to the confidentiality requirements of the Federal Cave Resource Protection Act. It remains to be seen what the fate of the cave locations on private land will be.
  - ❑ A just-released video on an Indiana in-cave paleontology project is available from the Indiana State Museum. The video, written by paleobiologist Ron Richards and produced by Butler University is entitled *Trapping Time: Discoveries at the Megenity Peccary Cave*. The 34-minute tape summarizes over a decade of work, which uncovered the largest number of peccary skeletons in a single site, along with dire wolf, black bear, and other extinct animals. The video can be ordered by calling 317-632-5007 and costs \$19.95 + \$3 shipping. All proceeds will benefit the Indiana State Museum Society.
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- ❑ Another new release is a book entitled *Indiana from the Air*. The large format "coffee table" photo book highlights many interesting sites all over Indiana photographed from the air. The photographer for the book is DNR's Rich Fields and the co-author is Hank Huffman (an IKC member). Published by the IU Press, part of the proceeds will benefit the Indiana Heritage Trust to be used for purchasing high quality public lands. The book is available in most Indiana book stores and retails for \$39.95. It can also be ordered directly from the IU Press by calling 1-800-842-6796. By mentioning special price code "D9ED", the book is discounted to \$31.95, plus \$3.75 shipping.
  - ❑ The Indiana Karst Conservancy received an honorable mention (green) ribbon in the NSS Graphic Arts newsletter cover salon during the 1996 NSS Convention. The winning cover was the December 1995 (#39) issue, featuring the Herald moth pen and ink artwork by Christine Gerace.
  - ❑ Delivered with this issue, members should have received a separate insert describing an offer for IKC embroidered shirts and hats. This offer is in response to several inquiries from members wanting high quality apparel that identifies IKC supporters and promotes our educational mission through increased (but appropriate) exposure. Because of the relatively high cost of these symbolic items, it was decided to basically offer the shirts and hats to our membership "at cost", while making a small profit from non-members and/or providing an incentive for non-members to join. Director Tom Sollman provided much of the effort in organizing this promotion.

## IKC EXECUTIVE BOARD NOMINATIONS

As the end of the year approaches, it is time to start thinking about the upcoming March elections. The three officer (President, Secretary, and Treasurer) and six of the twelve Director positions are up for a vote. All members are eligible, with the only requirements being the willingness to be involved and to attend the five meetings each year (the four Quarterly meetings plus the February Board meeting). Officer positions are single year terms while the Director terms are two years in duration. Contact Bruce Bowman for more information, to nominate yourself, or to suggest other IKC members who might be interested.

## UPDATE: OIL AND GAS DRILLING IN KARST AREAS

by Bruce Bowman

Nearly two years ago, an IKC member (Kevin Strunk) noted increased interest in gas exploration in the cave regions of Indiana; particularly in the Mitchell Plain. The New Albany Shale, which underlies almost all of southern Indiana, is the gas-bearing formation (the karst-bearing limestone formations lie above the New Albany Shale). Until recently, most gas exploration was restricted to the southwest portion of the state; where wells don't need to be as deep, and glacial activity has removed the karst. However, newer technologies and increasing gas prices have made development of the more easterly areas economically feasible; and several companies are doing exploratory drilling in these areas. Needless to say, the IKC became concerned that these activities and the associated development could adversely affect the karst.

Last winter, the IKC was able to get an audience with the Director of IDNR's Oil and Gas Division, James Slutz. Mr Slutz helped us to understand the situation, and shared our desire to address these concerns before a problem arose. Our plan was to suggest additions to Indiana's Oil and Gas Rules that all companies must abide by in their operations. However, such rules are typically promulgated under state legislation. To address the issue in a more timely fashion, Mr Slutz suggested that we approach it in terms of permit requirements. We obtained a commitment that the Division would draft some requirements and hold a public input hearing (on the assumption that their legal department felt this was in keeping with existing laws). Legal review and preparing the draft took nearly a year. During that time, the IKC forwarded some relevant documents on what other states are doing.

The hearing occurred on November 19. The IKC was represented by Bruce Bowman, Keith Dunlap, and Kevin Strunk. Other attendees included representatives from the Geological Survey, four divisions of IDNR, and no less than six gas companies. The IDNR's draft consisted of actions that the operator needed to take to help ensure drilling was performed in a karst-friendly manner and the well is properly cased, with a view of avoiding introducing

foreign materials into the cave environment. However, it contained little to address concerns that the drilling site was chosen to avoid penetrating a cave to begin with. Kevin prepared a handout suggesting additional, common-sense activities the permittee must complete before submitting an application (such as talking to landowners about known caves in the area, reviewing the topography for karst features, etc.). Taken together with the draft from IDNR, these requirements made for a reasonable and inexpensive mechanism to avoid impacting karst.

The companies involved were more receptive to these ideas than expected. It's important to understand that they don't want to hit voids either, because it costs them money when they do. One representative even went so far as to say that these ideas would be something that they would do anyway, and didn't need to be a permit requirement. However, we made it clear that environmentalists can't petition IDNR or a court of law based on "lack of common sense," therefore it needed to be in writing. Another mentioned that they prefer to drill using air instead of an abrasive "mug" slurry, which would eliminate most concerns about introducing toxic foreign materials into a cave environment. In general, the proposals were well-received in the context of working together to avoid a mutually-unpleasant outcome. The Oil and Gas Division plans to have another hearing to finalize the permit requirements.

Clearly, it would be best if no drilling was occurring in karst areas at all. It's also likely that a cave will be compromised despite efforts to avoid it (it's already happening with water wells). The IKC has little influence on what people choose to do with their private land, but putting these procedures in place should avoid willful damage and minimize any accidental damage. The IKC will strongly resist any expansion of drilling activity into public lands. To our knowledge, no other organization is taking action on this matter; so it's a good thing the IKC is!

Special thanks to Kevin for not only bringing this to the IKC's attention, but also for donating his expertise in geology.

## HOOSIER ENVIRONMENTAL CONGRESS

by Nick Noe

On October 5-6, I was able to represent the IKC at the annual Hoosier Environmental Council (HEC) Congress and Business Meeting at the Athenaeum in downtown Indianapolis. It was quite an experience. HEC is a collection of environmentally concerned organizations (Sierra, Audubon, etc.) in Indiana. Here are some of the issues discussed in which the IKC has an interest.

I-69 through Southwest Indiana is favored by both candidates for Governor. Steve Goldsmith was a no-show although invited. Frank O'Bannon favors the highway for economic development; although he is not unwilling to revisit his decision based on new evidence and public opinion, which is running 9-1 against building the road. I was able to speak briefly with O'Bannon following his presentation. Either his business or family apparently had a bad experience with I-64 affecting ground water when it was built near Corydon. *HE IS A CAVER* (spelunker)!!! He has done some flashlight exploring with friends in his youth and liked it, but hasn't done any since he became involved with his business interests and politics. I offered him a guided trip, whenever he has the time, to show him the effects of underground pollution in a Karst area. He said he could not accept my offer at the present time due to his busy schedule, but to keep the offer open for the next time he has free time in Corydon.

The two biggest events of the entire meeting were a *LARGE* Big Brown bat (same one) unhooking and buzzing the meeting room during O'Bannon's and Ed Garvey's speeches. He had probably hung up for a good day's rest in an alcove behind the meeting area and was awakened by the rush of hot air. Mr. Coyte from Sassafras Audubon and I rescued him and turned him loose outside, where he promptly took off for the top of the building. Heaven only knows what else is roosting in the top of the ancient Athenaeum. He must be nabbing table scraps somewhere, because this guy was pushing the scales bat-wise.

The political workshops were good,

although not particularly useful to IKC unless we drop our non-profit status to lobby. Guest Murray Fishel had some pragmatically sound advice for environmentalists concerning political strategy versus tactics.

At the Business meeting, the 1997 HEC Program Plan was reviewed, explained and adopted without much controversy. It is their blueprint for action in the coming year.

The hottest issue at the meeting was a debate concerning two radio ads taking the Bayh administration to task for zero movement on the coal ash waste issue. The timing and wording of the ads brought comments from all sides. IKC did not join the debate because it is uncertain if there is any potential impact to caves or karst due to waste ash disposal.

Another hot issue HEC is taking on is campaign finance reform. HEC passed a joint resolution to develop a position on reform, educate members and other allied groups on the position, build a coalition of groups to work for reform, and have HEC finance and lobby both state-wide and nationally to adopt reforms.

There was some discussion about reorganizing HEC and HECAF (Hoosier Environmental Council Action Fund — the lobbying arm which is not tax exempt) to split away HELL (Hoosier Environmental Legal League), which would be a network of lawyers organized to do *pro bono* work on environmental cases. I can't think of a better place for a lawyer than HELL.

Elections for the HEC Board were closely contested. Nine candidates were running for six seats. I cast IKC's ballot for the following individuals based on resume data as shown:

- o Lisa Haile — Supported Wildlife Refuge concept for Jefferson Proving Ground in SE Indiana Karst Area.
- o Mary Kay Rothert — Has worked to protect natural areas in the Hoosier National Forest.
- o Julian Zizak — Opposes Confined Feeding Operations (CFO's, i.e., hog lots) in SE Indiana Karst Areas which adversely affect water quality.



- o Sandra Tokarski — Has worked in Monroe County to educate citizens about waste disposal in Karst areas.
- o Scott Wells — Active in promoting protection of Lake Monroe watershed.
- o Alex Geisinger — Brings strong environmental legal experience to NE Indiana (Valpo Univ). Could influence HEC's position if we have to take someone to court over I-69.

Haile, Rothert, Tokarski, Wells and Zimmer were elected to the Board on the first

ballot. The sixth position was a 3 way tie between Geisinger, Zizak, and Karel Harrison.

On the second ballot, I cast our tie-breaker for Geisinger who was elected to the sixth position.

Overall, my impression of HEC was that these are good folks doing good work, and we need each other to be our most effective in an environmentally hostile world. I appreciate the support of IKC in sponsoring me to attend this event.

## WESLEY CHAPEL GULF WORKDAY III

by Bruce Bowman

On October 12th, the IKC held yet another workday at Wesley Chapel Gulf. This workday (and all previous workdays) was designed to keep the property looking "lived-in" until the land-for-mineral-rights exchange between US Gypsum and the Hoosier National Forest can be finalized.

The day dawned warm and promised to be quite beautiful — we've been very fortunate that the weather has cooperated with us for all three workdays. I arrived at the site promptly at 10 AM — Bambi Erwin and Keith Dunlap had arrived moments before. Tom Sollman, on the other hand, had come early and given us a good head-start on the mowing. This was very advantageous, since it was apparent that no one had come by to bush-hog the property as had been done before our previous workdays. After chatting a moment, I resumed the mowing operation with my high-wheeled mower. Keith had brought along a generator and used his electric hedge trimmer for awhile. Bambi and Tom attacked the weeds with string trimmers.

In about an hour, we were making good headway; but Bambi ran into a nest of yellow jackets and one of them stung her. No serious damage done, but it put all of us on alert! Becoming overcautious, I resumed mowing only to have a shadow cast upon me — I ducked and darted a few steps away. It was a butterfly! I had been chased off by a butterfly! Instinctively, I glanced around to see if anyone had noticed my foolishness. Sure enough, Bambi was having a good belly laugh at my expense. I have to admit it was pretty funny, and I laughed with her. Eventually I finished up mowing on the north side where the heaviest

grass was, and even mowed the place where the yellow jackets were (a safer thing to do with a mower than with a string trimmer). You can bet I had to hear about that escapade more than once before the day was over.

Meanwhile, Tom had switched back to his mower and had completed the south side, the edges of the driveway, and had even mowed a path back to Elrod Cave. Keith completed the shrubs and was beginning to cut down some weed trees that had sprouted out back. I was thinking these were locusts, but Tom felt they were sumac and in retrospect I believe he was correct. In any event, a great many of them had come up during the course of the year and these were hauled off and added to a brush pile we started in a previous workday. By 11:30, the lion's share of the work was complete and we stopped for lunch.

At around 12:15, we were getting ready to resume work. A red car came up the driveway — it was Nick Noe, ready to pitch in. I resumed cutting and hauling off the remaining weed trees while the rest of the crew hacked and mowed a path back to the gulf itself. Keith had wanted to actually mow all the way back to the rise pool, but that objective proved a little too ambitious for our equipment! Tom had some fence posts and used them to help support the small shelter that appeared to be on the verge of collapse. While he did that, the rest of us used a bow saw to cut up a downed limb on the north side of the house and add it to the pile. By 1:30 we were done; I took off for home while the others went caving elsewhere.

continued on page 20.....

# THE NITRIC ACID CAVES OF THE INDIANA ARMY AMMUNITION PLANT

article and photos by Julian J Lewis, PhD

## Introduction

To find the cave I was told to follow Jenny Lind Run downstream to "where a dam was built to keep the water out of the cave." Standing in the stream bed above the entrance to the cave, the directions I had been given for finding it had been curious, but easy to follow. There was, indeed, a 2-1/2 foot high concrete dam across the mouth of the cave. Today the water has undermined the dam, and the stream mostly flows under the concrete to cascade down a series of drops to the floor of the cave thirty feet below. The question remained, why would anyone build a dam to keep water out of a cave? Answering this required looking over fifty years into the past.

## The World War II Era

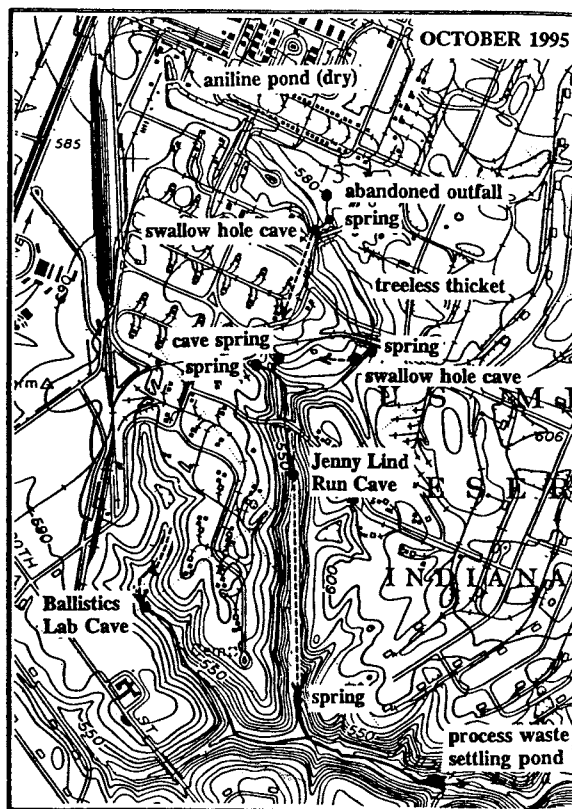
In 1940 the people around the sleepy southern Indiana community of Charlestown lived on small farms that dotted the countryside, many with spring houses built of the native limestone. Unlike a few miles to the north, where the landscape was much flatter due to the glaciation of the area, here streams cutting through the glacial plains on their way to the nearby Ohio River produced a terrain of rolling hills and valleys.

This serene countryside was in contrast to the war that was breaking out in Europe and the Pacific. Recovering from the throes of the Great Depression, the people of the Charlestown area looked forward to the construction of the huge Indiana Ordnance Works (Plants 1 and 2) and the Hoosier Ordnance Works as a source of jobs. Over 1,400 buildings were built on an area of 10,649 acres for the production, shipping, and storage of propellants and explosives to fuel the war effort. At its peak, over 19,000 people were employed there.

At Plant 1, in the Propellant and Explosives (P&E) Area, much of the operation was dedicated to the production of nitrocellulose "smokeless" powder used as a propellant for artillery and naval weapons. In essence, the production of nitrocellulose consisted of combining a mixture of nitric and sulfuric acids with cotton or wood pulp. The waste product

of this process was a reported average of 22,500 gallons per minute of nitric acid, which was discharged at pH 2.3 and a temperature of 80 degrees Fahrenheit to the upstream head waters of Jenny Lind Run. To ameliorate the situation somewhat, pulverized limestone was added to the acid to bring the pH up to about 3.2. Other things included in the waste were a variety of toxic organic chemicals generated during the production of nitrobenzene, aniline, diphenylamine and dimethylaniline, along with the conventional sewage produced at the plant.

A professor at nearby Hanover College, Grant T Wickwire, visited the ammunition plant during the World War II era and recorded the changes to the karst land forms caused by this acidic effluent. In the fall of 1942 (probably October), the first major change in the karst of Jenny Lind Run occurred. At that time the effluent disappeared into a swallowhole and reappeared



*The upstream part of the Jenny Lind Run drainage as it appeared fifty years after the nitric acid discharge was discontinued in October 1945.*



*A typical section of Jenny Lind Run (above the March, 1943 swallet) illustrating the nitric acid channel, here about four feet deep by twelve feet wide. A remnant of the pre-war stream bed remains to the right of the acid channel.*

about 1,750 feet downstream at a spring. The acid had eaten a trench in the limestone stream bed as much as eight feet deep by over eight feet wide.

In March of 1943 a new swallowhole appeared upstream of the first, undermining a railroad trestle across the Jenny Lind Run valley. The railroad was abandoned due to fears that the trestle would collapse. Two months later, in May of 1943, yet another swallowhole appeared only 800 feet downstream from the sewage outfall. The upstream part of the effluent flow now sank at this swallowhole, then re-emerged at two different springs, one of which was formerly a small cave. Between the swallet and the springs some of the effluent seeped back to the surface, creating an acidic wetland that killed the vegetation. After emerging from these two springs, the acid flowed on the surface down Jenny Lind Run until the downstream swallowhole was reached, where it

again sank and reappeared at the original spring.

Finally, about July of 1944, a large cave-in occurred only 225 feet below the sewage outfall, creating yet another new swallowhole. Besides the two springs and wetland described previously, acid waters now started to flow from a cave behind the Ballistics Laboratory in an adjacent side-valley of Jenny Lind Run.

With the end of World War II, powder production ceased and the discharge of acid to Jenny Lind Run stopped in October 1945.

### **The Korean War Era**

With the onset of the Korean War, the facility was redesignated the Indiana Ordnance Plant and the production of powder was resumed in 1950. Professor Wickwire did not continue his documentation of the discharge of acid waste to the caves and karst of Jenny Lind Run, but the procedure undoubtedly continued. In 1953, the Jenny Lind Flume was built. This structure was a heavy wooden trough measuring five feet wide by four feet deep. The flume carried the acid effluent from the outfall several thousand feet to a point just below the downstream spring, bypassing all of the swallowholes and caves.

### **The Present**

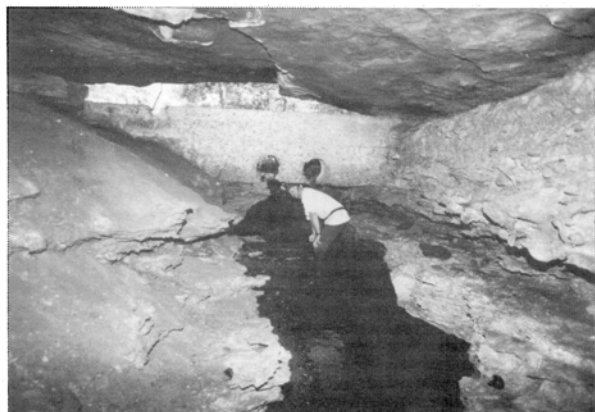
In 1995, in conjunction with the creation of Charlestown State Park, I started an in-



*The March, 1943 swallowhole, now the entrance to Jenny Lind Run Cave. The dam was built at the cave's entrance to divert the water downstream. Behind the cave entrance is the Jenny Lind Flume. A remnant of the railroad trestle undermined by the acid is barely visible to the far right.*

ventory of the cave animals of Clark County as a project of the Indiana Department of Natural Resources Endangered/Nongame Wildlife Program. During my 1983 inventory of the cavernicoles of the southeastern Indiana karst, I looked at a number of Clark County caves. However, at that time the ammunition plant grounds were off-limits and I could only imagine the caves there waiting to be entered.

Now the plant had been deactivated and the Gate 26 section bordering the scenic Fourteen Mile Creek had been given to the state of Indiana and dedicated as Charlestown State Park. Due to the steep hills, cliffs and deeply incised valleys, no major plant buildings were constructed in this area. As a Division of Natural Resources property, I had no trouble in being granted permission to enter the Gate 26 area of the



*Steve Knowles ducking under the dam in the entrance to the Ballistics Lab Cave. Formerly a crawlway, discharge of acid to this cave undermined the dam and created an acid channel.*

plant to search for cave life. In a study of karst features of the area by Dave Black, many small springs were found but only two caves, the longer having only 110 feet of passage. However, Dave's field notes included a sketch map and description of CC Dryer Cave, a cave with over 1,500 feet of walking height passage in the Propellant & Explosives Area.

I contacted Kerry Dupaquier at ICI Americas, the explosives company now in charge of the Indiana Army Ammunition Plant grounds, and was given permission to enter the ammunition plant to conduct my biological survey. I was issued a security pass to get through the gates (still maintained by armed guards) and was given directions to

find the entrance of Jenny Lind Run Cave by one of the people at the administration building. I was also shown several Polaroids of the cave's large entrance. At that point I still couldn't understand why even the government would build a dam to keep water out of a cave, but soon I found the Wickwire report and it all became clear.

My first trip into one of the nitric acid caves was with Steve Knowles, at that time naturalist for Falls of the Ohio State Park (now with Charlestown State Park). We climbed down the breakdown in the fifteen by thirty foot wide entrance of Jenny Lind Run Cave, reaching the top of a ten-foot high waterfall. We rigged a handline around a boulder to aid us in climbing the narrow ledges leading into the cave, not because of the size of the drop, but rather the appearance of the rock. The acid had etched out the limestone into thin layers. There was no way forward other than picking out the sturdiest looking ledges and inching forward along them. I made it to the base of the waterfall uneventfully, but Steve's luck ran out and he found himself riding a collapsed ledge to the floor of the passage.

Continuing downstream in the walking height passage, we looked up at the swiss-cheese that was masquerading as the passage ceiling. The acid had flooded the entire passage, eating a honeycomb of holes into the roof. A long, flat piece of breakdown in the first room we reached suggested that the passage ceiling was no more stable than it really needs to be! We continued to a point about 300 feet into the cave, where we measured out a three meter transect of stream riffle and started counting and measuring the tiny animals living there.

"What's this?" Steve asked, pulling a piece of what looked like black rubber hose about  $\frac{3}{4}$  inch long from the gravel. I had seen these pellets lying all around the P&E section of the plant . . . it was a piece of "live" propellant, still very much explosive. We completed our stream census as quickly as possible and got out.

The results of our inventory of the cave's fauna were good news and bad news. Amazingly, in this cave that had been flooded to the ceiling with nitric acid for several years, we found several species of troglobites (obligatory cavernicoles). On the mudbanks were troglobitic spiders, flies and millipedes. In the stream we found many eyeless, white isopod crustaceans, but these were out-



numbered by surface organisms. We recognized this as the typical "signature" of a disturbed cave community: the prevalence of surface animals to cave-adapted ones. For example, in the relatively undisturbed CC Dryer Cave (about a mile away, also in the P&E area) the aquatic community was 100% troglotic.

On another day, my wife Marie and I found ourselves walking through the woods behind the Ballistics Laboratory Building to look for the cave that had started discharging acid in July 1944. Several Wild Turkeys scurried past us on the way down the hill. Wildlife was abundant on the Indiana Army Ammunition Plant grounds, and we frequently saw White-tailed deer, several species of hawks, and Great Horned Owls. We reached the spring stream and followed the acid channel upstream to the cave's entrance. In this side branch of Jenny Lind Run the acid had eaten a narrow, but deep channel leaving a small, but rather scenic canyon through part of its length.

The entrance to what we coined the Ballistics Lab Cave was (or had been) a typical Indiana spring cave, complete with a pair of nesting Phoebe living under the dripline. Some former owner of the cave had dammed the entrance, filling much of the four foot high by twelve foot wide passage with concrete. This no longer presented any problems in entering the cave as the acid had eaten a four foot hole under the dam! Marie and I were able to duck under the dam into an eight foot high walking height passage, formerly a crawlway. Fossil corals etched out by the acid protruded from the walls everywhere. The floor gradually rose toward the ceiling and after about 200 feet the passage yielded a back entrance. The stream was visible on the surface, flowing about fifty feet through a karst window, then disappeared upstream into a crawlway.

A sunny October day found me parking the van at the PCB storage building, avoiding a fifty-five gallon drum with the word "leaker" scratched in the paint. The day's mission was to hike the upstream part of Jenny Lind Run to look for some more of the 1943-44 swallowholes. I walked across the field to the Aniline Pond, used as a settling pond for the organic chemical wastes generated by the plant. That day the sun glistened off the rainbow of colors swirling on the surface of the water at the toxic waste site. I picked my way around the tarry

wastes seeping to the surface of the soil and continued my walk downstream.

The Aniline Pond emptied into the South Ash Settling Basin, where slurried coal waste was discharged from the South Generating Plant. Topographic maps prior to the war showed a line of sinkholes in this area, which the plant had improved upon by bulldozing them into a continuous ditch for the waste ponds. Downstream of this I found the large pipes that had poured out more than 30 million gallons of acid each day of the war. Below the pipes the acid channelized limestone appeared. Water emerged from a small spring and flowed down the floor of the channel. Jumping across the small stream I slipped and did a pratfall onto the mud bank, catching myself on both palms. Dusting myself off I noticed that I had beet red stains on both hands. I looked down to see what kind of berries I had fallen



*An example of the use of the karst landscape at the INAAP, the Aniline Pond and the adjacent South Ash Settling Basin were created by excavating a line of sinkholes in the head water region of Jenny Lind Run. The Aniline Pond was used as a settling basin for toxic organic chemicals before allowing the waste to continue downstream in Jenny Lind Run.*

into and found only my palm prints in the moist soil. Apparently I had chemical stains from the residue in the mud. Fifty feet further the water disappeared into a crawlway cave under a ten foot high cliff. I considered entering the cave to look for life (there were troglobitic isopods in the spring), looked at my chemical-stained hands, and thought "No thanks, I'll pass this one up."

### Conclusion

The Indiana Army Ammunition Plant karst constitutes a grim legacy of wartime stewardship of our land. It may be possible for the toxic wastes to be removed or eventually erode away, but forever remaining will be the acid channels and etched cave walls. This destruction of the environment has to be weighed as a casualty of World War II.

### Acknowledgments

The work at the Indiana Army Ammunition Plant was funded by the Endangered/Nongame Wildlife Program, administered by Dr Katherine Smith. I would also like to thank Kerry Dupaquier and the administration of ICI Americas for allowing my entry into the grounds of the plant. Larry Gray, Property Manager of Charlestown State Park, facilitated my entry to the new Division of Natural Resources grounds.

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## BOB KLAITTER DIES IN TRAGIC ACCIDENT

The Environmental Movement in Indiana received a devastating blow on September 10 when Protect Our Woods Executive Director Bob Klawitter was killed in a head-on collision on State Road 37 near Oolitic. On his way to a meeting with the Student Environmental Action Coalition at Indiana University to discuss ways to pressure Indiana University administrators to stop blocking the Environmental Fund for Indiana, Bob's vehicle was struck head-on by a pickup driving the wrong way in the Northbound lane. The driver of that truck and his female passenger were also killed in this terrible accident.

Family, friends, neighbors, and fellow environmentalists across the state are still reeling from this tragic death. Those of us who worked closely with Bob know how

much he did and find that he leaves behind a space that will be difficult, if not impossible, to fill. Bob's life was devoted to making the world a saner, better place, and his own life was a living reflection of all that he believed.

The week before he died, Bob spoke to a group of farmers in Ferdinand who oppose a bypass that would take acres of farmland. Another of his last acts was to sign the Pleasant Run Salvage Sale appeal on behalf of Protect Our Woods. The day before his death he learned that the judge had ruled in favor of Protect Our Woods and the Hoosier Environmental Council on the Kohenlager mine suit setting a precedent by allowing that environmental groups do not need to be represented by a lawyer in order to appeal decisions allowing the disposal of toxic coal

ash in Indiana.

But the work is unfinished, and we who are left behind must carry on Bob's dream. We must continue to work in the best ways we can to create a sustainable future for all

of us in rural Southern Indiana and across the state, and do our part to promote the future health and well-being of the planet.

*Reprinted from Protect Our Woods newsletter.*

## ACCIDENT COSTS STATE'S ENVIRONMENT AN OLD FRIEND

Protect Our Woods chief led the fight to preserve Patoka Lake, Hoosier National Forest.

by Kyle Niederpruem and  
Marcella Fleming

Bob Klawitter was a Renaissance man of sorts living off the resources of the land at his forested home. Railroad worker, janitor, steelmaker, organic farmer, author, and Yale graduate, there wasn't much that this widely known environmental activist hadn't done in his 57 years.

Klawitter was killed Tuesday in a traffic accident on Ind. 37 near Bedford, struck by a driver who had traveled miles on the wrong side of the highway. The driver and his passenger also died.

Friends and activists mourned Klawitter's loss Wednesday. "Bob changed people's lives in Indiana in a way they didn't even know," said longtime friend Andy Mahler and coordinator for Heartwood, a conservation group.

Klawitter, executive director of the 1,500-member Protect Our Woods environmental group in southern Indiana, will be remembered for his even-handed approach to problem solving, his intellect and ability to compromise.

He is perhaps best known for working in the mid-1980s to protect the Hoosier National Forest, successfully fighting the federal government's efforts to clear cut timber.

Klawitter also played a key role in blocking a subsidized

resort development at Tillery Hill near Patoka Lake, where endangered eagles nest.

In the continuing debate on extending I-69 southwest from Indianapolis, Klawitter was working to persuade policymakers to examine other routes that wouldn't destroy vast acres of farmland.

As an assistant professor at Indiana University in the late 1960s and early '70s, Klawitter was outspoken in the anti-war, civil rights, and student rights movements. He held meetings at his home and helped publish an underground newspaper.

Klawitter said that when he was denied tenure, he moved south. "I knew I wanted to live near the forest. I wanted to be more physically involved in life and be less academic," he said in a recent interview with *The Indianapolis Star* and *The Indianapolis News*.

He and his wife, Kathy, were living quietly in the southwest corner of Orange County. They had rescued a log cabin and moved it north of Patoka Lake, relying on solar power even to operate their computer. They also carried their drinking water from a spring and piped in water from a nearby pond to do their wash.

"We live like we're set up for an emergency all the time," Klawitter told the newspapers. "I don't think it's a hard life, it's a luxurious life."

Corporate officials had just

as much respect for Klawitter as did his own activist peers.

Susan Hanafee, vice president of corporate affairs for IPALCO Enterprises, worked with him to select recipients of grant money from the company.

"His work came from the heart. And he understood the value of compromise, the importance of all segments of society working together to benefit the environment," she said.

On the night of his death, Klawitter was en route to Bloomington to address student activists about the Environmental Fund for Indiana.

In a mission statement that he previously distributed, Klawitter said the fund began "as a search for stable long-term funding for grassroots environmentalism." The program was taken into workplaces where employees were asked to deduct a portion of their wages to environmental causes.

Resistance from the United Way, Klawitter wrote, had kept the fund out of many workplaces.

"It will take Indiana's employees, businesses, universities, governments, and environmental groups working together to restore environmental health to this badly degraded state. How likely are we to succeed? Luckily, unlikely success is an environmentalist specialty."

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## GOING UNDERGROUND

NUVO finds vandals are destroying the environment and aesthetic beauty of Southern Indiana's caves

article by Fred Ramos, photos by Katie Murphy

The first known cavers in Indiana were the prehistoric Algonquins Indians. But unlike present day cavers, they didn't discard used Eveready batteries, thereby polluting the ground water beneath the cave. Nor did they become psychotic with a can of Krylon spray paint and vandalize a cave's aesthetic appeal.

Unfortunately, many of today's weekend cave explorers are likely to destroy both the fragile ecology and the natural beauty of Indiana's massive network of caves.

Cavers are taught to carry three independent light sources when exploring a cave. Irresponsible cavers often discard used flashlight batteries in the cave, not realizing that mercury found in batteries is highly toxic to other cavers, wildlife, and the surrounding environment. Mercury can cause kidney damage, as well as genetic, neurological, and psychological disorders. And cadmium found in rechargeable batteries is a known carcinogen and poisonous when ingested or inhaled.

There are about 2,200 known caves in Indiana, stretching hundreds of miles, mostly in the southern part of the state. Indiana is also home to several thousand avid spe-

lunkers (cavers).

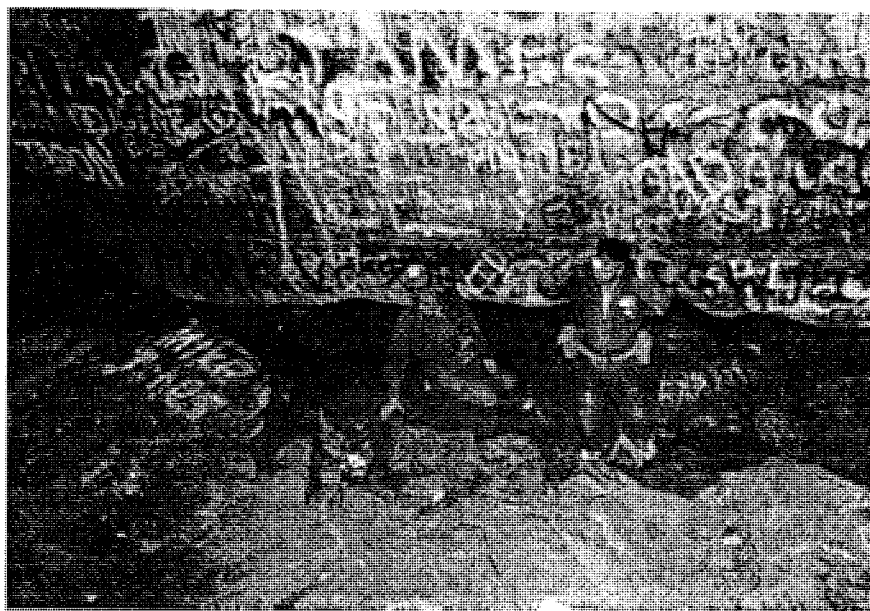
One of the best known caves in Indiana is Buckner's Cave. It's a winding, tortuous three-mile long subterranean cavern that makes its way through the outskirts of Bloomington, Indiana. It can provide a dangerous challenge to the novice caver while accommodating the needs of a serious, seasoned spelunker. At its highest point, the cave is about 40 feet tall. However, the first 700-foot long portion of the cave is about two-feet high and requires that the caver crawl, face first in the mud, through the entire passage.

But regardless of the difficulty or ease in navigating a particular cave, spelunkers are advised to be cautious. One caver was paralyzed recently after falling into a massive pit located in the Volcano Room in Buckner's Cave. His back was broken in three places due to the fall, and emergency workers were forced to use a back board to remove him from the cave.

Several NUVO staff members, led by account assistant and amateur spelunker Matt Selig, traveled recently to Bloomington to survey the damage to Buckner's cave, which is typical of the damage at many other Southern Indiana caves, experts say.

Inside, NUVO found broken liquor bottles, beer cans, discarded flashlight batteries, and a cave — thousands of years old — covered with graffiti.

Bruce Bowman is an expert caver and a member of the Indiana Karst Conservancy (IKC), a group that lobbies for responsible cave exploration. Bowman says the IKC also works



*Spelunking is a dangerous sport. The added treachery of broken glass and aluminum cans is one factor all cavers can do without.*



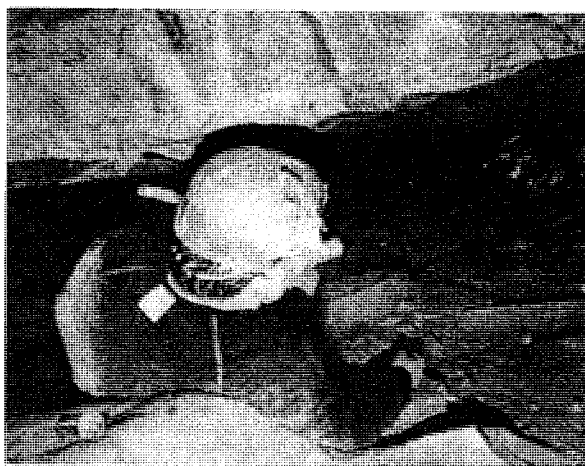
to maintain the biological purity of Southern Indiana's caves, in addition to educating novice cavers about spelunking safety. He says a greater effort should be made to protect the cave's environmental and aesthetic value. "I think the preference of our group would be that all caves be maintained in a fashion that's environmentally a little more responsible than Buckner's is currently," says Bowman.

Bowman said Buckner's was "sacrificed" and turned over to amateur cavers so that other caves could be reserved for the more experienced spelunkers. "The premise being if we have Buckner's Cave, where a lot of neophytes go and do their thing, they would be less inclined to go to other caves and cause similar damage." However, Bowman is unsure if sacrificing Buckner's Cave has reduced destruction and environmental damage in other Southern Indiana caves. "You can look at it two ways, either it really has the desired effect, or what it does, it encourages people to look [at the destruction at Buckner's Cave] and feel that this is a standard of behavior that can be emulated in other caves without a whole lot of concern." Bowman says he believes allowing Buckner's Cave to be ruined has led to the destruction of other Indiana caves.

A small group of cavers can discard over a dozen flashlight batteries during the course of a day's exploration. And with an average of one hundred cavers a weekend, that amounts to over a thousand batteries strewn inside of Buckner's Cave every week. Instead of disposing of used batteries as they travel along the cave route, responsible cavers wait to safely dispose of used batteries when they return to the surface.

Bowman says that not only are irresponsible cavers endangering the health and safety of other cavers, but also nearby residents who use the underground water as their primary water source. "There's mercury associated with alkaline batteries and it does poison the groundwater in that vicinity and the biology in that area.... and of course, there's well water in these vicinities as well," says Bowman. "Obviously that's contrary to what we need to be doing."

The Hoosier Environmental Council is the state's largest environmental organization and has lobbied for a statewide battery recycling program. According to HEC, alkaline batteries have a one percent mercury content, while cancer-causing rechargeable bat-



*There are many tight squeezes in Buckner's Cave, putting garbage and graffiti in the path on NUVO reporter Fred Ramos.*

teries contain up to 15 percent cadmium. HEC spokesman Matt Waldo says the amount of damage to the groundwater surrounding Buckner's Cave is unknown. "Any hazardous substance coming in contact with groundwater would not be beneficial to the aquatic and human population," says Waldo. "The question is how many batteries are being dumped on a yearly basis and what level of contamination is coming out of those batteries."

Waldo says irresponsible cavers should be more aware of the destruction and environmental damage they're causing by discarding used batteries in Indiana caves. "It's something that cavers should avoid doing.... Dumping batteries is more damaging to groundwater than dumping a paper bag."

But long-time caver Jerry Bailey says the likelihood of groundwater contamination is minimal in Southern Indiana as opposed to the health risks faced by cavers themselves. "Polluting groundwater and polluting cave water is two different things," says Bailey, "because the cave water stays on the ground and cavers are exposed to that contaminated cave water."

Bailey, who received his degree in environmental science and has been caving for the last 16 years, says even nearby construction can cause environmental damage to a cave.

According to Bailey, nearby highways can cause pollution and disrupt a cave's fragile ecological balance. "It comes from car exhaust and the chemicals the road is made of," says Bailey. "After it rains, all that washes into the ground.... There's a lot of

toxins in that pollution, a lot of petroleum and other chemicals, and herbicides and pesticides that get sprayed along the road and nearby cornfields." All those chemicals can affect the ecological health of caves and endanger the health of the cavers, he says.

Stephanie Biehn, Monroe County Hazardous Waste Specialist, says that although batteries only make up about one percent of an average community's household trash, they account for 52 percent of the cadmium and 88 percent of the mercury found in solid waste. "Both of those are very toxic," says Biehn. "They can contaminate fish, soil, and groundwater."

Biehn says there's no reason for cavers to leave flashlight batteries in the caves they're exploring. "Pop those batteries in your pockets and drop them off at your nearest participating retailer," says Biehn. According to Biehn, there are 30 retailers in the Bloomington area that act as a collection point for used batteries.

Keith Dunlap has been exploring caves for the last 20 years and is a member of several conservation and spelunking organizations. He's quite concerned about the biological damage which has occurred in Buckner's Cave. "Buckner's is a site for an endangered species that's basically being ignored; that's the Indiana bat," says Dunlap. "Buckner's recently did have a large population, but basically human disturbances have gotten rid of almost all of them."

Dunlap is also in favor of restricting access to many of Indiana's caves. Dunlap proposes that only experienced spelunkers who have strong environmental ethics be allowed to explore the majority of Southern Indiana caves. "Do you let strangers come in on your property and just do whatever they want?" asks Dunlap. "Or do you take control and make sure that those that are given permission are at least adequately trained and have the right conservation ethics? Otherwise you end up with a cave like Buckner's."

Indiana University Physics Department supervisor Dick Blenz owns the property where Buckner's Cave is located. He's decided to turn Buckner's Cave into a "sacrificial" cave. "Since I cannot prevent people from going caving, the best thing to do is to give them one in which they can do what they want to train people in caving," says Blenz. "It keeps them out of the good caves and out of the dangerous caves."

Several inexperienced cavers have been

lost in Buckner's Cave in recent years requiring dangerous rescue efforts. "The problem is that nearby Bloomington has one of the world's largest universities — Indiana University. There's around 30,000 students here," says Blenz, "so the traffic into the local caves is quite high."

As for the graffiti which defaces Buckner's Cave, Blenz says he's not able to police the cave and stop the vandalism. "Well, the graffiti goes back to 1832," says Blenz. "We don't like it but I don't see any other alternative. If I was able to be on the property all the time, then things would change real rapidly."

Blenz concedes that the property owner is responsible for maintaining a cave. "It's up to the owner who is going to go in the cave and who isn't," says Blenz.

However, no one seems to be taking responsibility for maintaining Buckner's Cave. Consequently, Boy Scout troops are often called upon to haul out trash bags full of soft drink cans, beer bottles, and corroding batteries. "We're strong on this business. Take out what you take in," says Blenz. "Now in



*Some caves have been gated, like the entrance to Wayne's Cave, to keep inexperienced and disrespectful spelunkers out.*

Buckner's it isn't working very well, because it is a sacrificial cave."

Critics say Blenz is mismanaging Buckner's Cave and allowing novice cavers to believe they can destroy other Indiana caves. "That's one thing we're worried about," says Blenz. "That's why we don't talk about the other caves very much."

On the day that NUVO staffers traveled to Buckner's Cave, a group of about 20 teenagers from a Michigan correctional facility had just finished spending two days in the cave. As part of their mission they collected several bags full of trash and couldn't understand why anyone would want to destroy one of Indiana's greatest natural resources. "We saw beer cans, broken glass. It was a pig sty," said one inmate. "I don't understand why people would throw all that junk in the cave," said another inmate. "I was in the cave for

only three seconds and I saw my first piece of trash."

Many of Southern Indiana's caves are protected by conservation and spelunking organizations, but the protection of many more are left to individual property owners. The result is a mishmash of pristine and debris-filled caverns.

While irresponsible cavers destroy the ecology and the natural beauty of Indiana's caves, others work to restrict access or are attempting to educate the novice caver. Meanwhile, Indiana's groundwater continues to become polluted, and the health of all cavers is being endangered.

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## Plan commission OKs controversial subdivision after three-month delay

by Cary Stemle

Three months after it was first proposed, the Rolling Ridge subdivision near New Salisbury received preliminary approval from the Harrison County Plan Commission last week. Three Harrison Countians — Robert Walker, Roger Walker, and Kevin Burch — want to develop the subdivision on SR 64 near Mayden Trail.

Their request was tabled at the commission's July meeting amid concern about sinkholes and access off SR 64. The subdivision also failed to get the five votes needed for approval at the commission's meetings in August and September.

Last Thursday, after an attorney detailed how the developers had addressed the concerns and pointed out that the commission has no legal basis for denying the subdivision, the

commission reluctantly approved it.

"I'm only voting 'yes' because I have to" planner Marlene Kopp said. "I don't like it. There's too many sinkholes, and I think it's a safety hazard."

There are at least 26 sinkholes on the 56-acre site, but engineer Paul Primavera has designed easements to prevent anything from being built on sinkholes.

Allen Morris, an attorney representing the developers, listed the things they've done to address the problems and said they've lost money doing so. He pointed out that all three are long-time Harrison Countians.

"These are three guys who are from here," he said. "They're going to be here a long time, and I don't think they'd do anything to harm the county."

Morris said the homes will likely be in the \$75,000 to \$125,000 range, which would address a need for affordable housing that is expressed in final draft of the county's comprehensive plan.

Angela Beaver, who owns property adjacent to the site, opposes it because of the sink-

holes. She said the draft of the comprehensive plan includes a section regarding "character of land" that justifies disallowing development when sinkholes are excessive.

"There are 18 large sinkholes," she said. "I say let it go to court. This property is unsafe. There are serious problems."

Planner Gerald Dryden, who made the motion to approve, did so with the stipulation that septic field for each lot be located at the most distant site from sinkholes even if it requires a pump. Effluent from lots that aren't large enough for a septic field would also have to be pumped to a field on an adjacent lot, which would require a septic easement or clustering of septic systems.

"I have to admit — there are sinkholes there," Morris said. "Along with about 80 percent of Harrison County. It is possible to deal with sinkholes. If a grinder and pump are needed for every house, we'll do it."

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Reprinted from the October 16, 1996 issue of *The Corydon Democrat*. Submitted by John Benton.

**INDIANA KARST CONSERVANCY TREASURY REPORT**  
**Income/Expense Statement**  
**From July 01, 1996 to September 30, 1996**

**INCOME:**

Dues Apportionment and Residuals	558.75	
Donations	45.00	
Transfer from Reprint restricted fund	250.00	
Transfer from IDNR restricted funds	126.66	
Cans for Karst (#42 of Aluminum)	10.60	
Interest	172.87	
		<u>\$1,163.88</u>

**EXPENSES:**

IKC Update (Printing/Production/Mailing):	196.17	
IKC Reprint #8	350.59	
Membership Correspondence/Expenses	104.08	
Misc Correspondence/Info Request/Conservation	55.19	
Property Management Expenses	135.48	
		<u>(\$841.51)</u>

**NET OPERATING EXCESS (DEFICIT) THIS PERIOD** \$322.37

**Balance Sheet**  
**September 30, 1996**

**ASSETS:**

Cash in Checking Account	122.39	
Cash in Savings Account	14783.31	
Total Assets		<u>\$14,905.70</u>

**LIABILITIES & OPERATING EXCESS:**

1995 National Cave Management Symposium	5360.01	
Indiana Cave Survey	1196.43	
Indiana Cave Symposium Fund	220.55	
Hancock Property Maintenance Fund	201.83	
DNR Non-Game Fund	143.34	
Deferred Dues Fund: 144 members - 1996 50%	1080.00	
4 members - 1997 100%	60.00	

Previous Operating Excess	6321.17	
Net Excess (Deficit) This Period	<u>322.37</u>	

Current Operating Excess	6643.54	
Total Liabilities & Operating Excess		<u>\$14,905.70</u>

**Actual IKC Assets (minus NCMS, ICS, & ICSym accounts)** **\$8,128.71**

Continued from page 109....

The exchange is expected to be finalized this winter. Most likely, this will be the last activity of this nature that we perform for US Gypsum. However, expect the IKC to continue some involvement with the Forest

Service in managing the property after the exchange takes place. Thanks to everyone who participated in these workdays. Special thanks goes to Bambi for supplying most of our lunch this time out!



## IKC QUARTERLY MEETING MINUTES

Saturday, September 21, 1996

Greenwood, Indiana

### BOARD MEMBERS PRESENT:

Joshua Abdulla  
James Adams  
Larry Bundy  
Bruce DeVore  
Keith Dunlap  
Dave Haun  
Hank Huffman (proxy for Bill Tozer)  
Kim Kohal (proxy for Bruce Bowman)  
Larry Mullins  
Nick Noe  
Tom Rea  
Eric Schmidt  
Bob Sergesketter  
Clyde Simerman  
Tom Sollman

### BOARD MEMBERS ABSENT:

none

The meeting was called to order at 5:20 PM by IKC Treasurer, Keith Dunlap in the absence of the President. The Secretary deferred leadership to the Treasurer in order to take minutes and avoid deferring the Secretary's duties.

Proxies were accepted: Kim Kohal for Bruce Bowman and Hank Huffman for Bill Tozer.

Treasurer Keith Dunlap reported a balance of \$8,290.17 excluding the cost of the cookout.

The National Cave Management Symposium is wrapped up except for closing the books which will be done by December 31st. The proceedings books have been mailed and there is an excess of about \$5,600.

Several ideas were discussed as possible promotional items to accompany the 1997 membership drive. Tom Sollman brought in information on shirts with embroidered logos. The cost is about \$13.90 and up. Most members stressed quality.

The idea of having a member price and a non-member price was discussed. Other giveaway items suggested included pocket knives, calculators, desk clocks, and IKC logo decals.

The Ohio Valley Region of the NSS is in need of a conservation project for 1997. The project will come back to Indiana this year. A volunteer to act as the Conservation Chairman and coordinate the project is needed.

Larry Mullins discussed the transfer of the Wesley Chapel Gulf property from US Gypsum. He spoke of his "vision" for the project which could include a welcome center, an interpretive display, research facilities and volunteer housing.

Mullins stressed that funding may not allow for the continued maintenance of the house on the property. Perhaps the IKC or another organization could take on the maintenance of the property. Mullins asked that the IKC study the possibility of putting together a proposal and suggest a plan.

Bruce Bowman has expressed an interest in revitalizing the Hoosier National Forest Committee. New representatives from each grotto need to be appointed. Mullins discussed the importance of the work that this committee needs to take on. It's a team effort between cavers, the IKC, and the HNF.

Finally, training session for the ongoing HNF K.A.R.S.T. inventory project will be held in November in Bedford.

Hank Huffman spoke of the status of the departmental Cave Management Task Force of the Indiana Department of Natural Resources. The most recent meeting was in June. The task force was supposed to wrap up its work in August, however, there has not been any new activity.

Dunlap summarized some of The Nature Conservancy activities. This included the publication of a sinkhole dumping brochure that will include references to Crawford, Harrison, Washington, and Orange counties. Also, the Indiana Cave Survey has a meeting scheduled for Monday (9/23) to discuss the Memorandum Of Understanding on cave location data sharing. Finally, biologist Jerry Lewis is undertaking a two-year inventory for The Nature Conservancy.



Bruce DeVore met with the new owners of Porter Cave in Owen County. The owner has cleaned up the property a bit and may continue to make it available to school groups. He is unsure of exactly what they want to do with the property. Bruce Bowman will follow up in a few weeks.

The Spring Mill State Park Memorandum Of Understanding is still up for renewal. Dunlap has this one, but hasn't actively pursued it.

Dunlap also moved to renew the IKC's dues for the Hoosier Environmental Council. Minimum dues are .25 per member, but Dunlap suggested a \$100 donation instead. Adams seconded. Motion passed.

Kathy Franklin has contacted the IKC concerning help that they would like installing a gate on Dry Cave in the Highland Nature Preserve located in South Central Ohio.

The IKC Land Acquisition Committee was scheduled to meet directly before the regular meeting, but did not. The transfer of the Orangeville Rise will probably take place soon, however, this is not a priority with The Nature Conservancy and the IKC needs to get some insurance matters settled for this property. Also, the Organ Springs Cave property has been listed in an upcoming delinquent taxes sale. We may be able to get the cave. Nothing new to report on the Carter Byrnes Cave or Indian Creek Sinks properties.

Regarding Suicide Cave, there are still a few items in the draft lease with the property own-

er that we don't like. The consensus of the membership at the meeting was that everyone wanted to pursue the lease.

It was reported that Indiana Memorial Union Outfitters has scheduled commercial caving trips to Gory Hole. Everyone was astounded that anyone would attempt such a "stunt". Mullins assured the membership that this would not be tolerated.

Dunlap provided some extra copies of the latest reprint.

Mullins suggested that we might want to look at gift memberships.

The Hoosier Environmental Council meeting is coming up. Nick Noe volunteered to represent the IKC. Joshua Abdulla moved to fund the registration fee. Mullins seconded. Motion Passed.

The next quarterly meeting of the IKC will be on December 14th at the home of Larry Mullins near Bloomington. The meeting will start at Noon. (Secretary's note: This was later changed to 1:00 PM.)

Meeting adjourned at 6:45. The annual cook-out and desert bake off was held for the remainder of the evening. Kitty Wooldridge placed first with her mint-topped brownies. Keith Dunlap was second with his pecan pie entry, and Deb DeVore placed third with her delicious chocolate brownies.

Submitted by James Adams, Secretary.

#### INDIANA KARST CONSERVANCY, PO BOX 2401, INDIANAPOLIS, IN 46206-2401

I would like to help the IKC protect Indiana's unique caves and other karst features. Enclosed is:

\$ \_\_\_\_\_ for IKC membership dues at \$15 per year (dues expire March 31st of each year, please pro-rate @ \$1.25/month).

\$ \_\_\_\_\_ donation to the general IKC fund.

\$ \_\_\_\_\_ donation restricted to a specific IKC project. Please specify: \_\_\_\_\_

\_\_\_\_\_ I know of an area worthy of protection. Please contact me.

\_\_\_\_\_ I would like to volunteer to help. Please contact me.

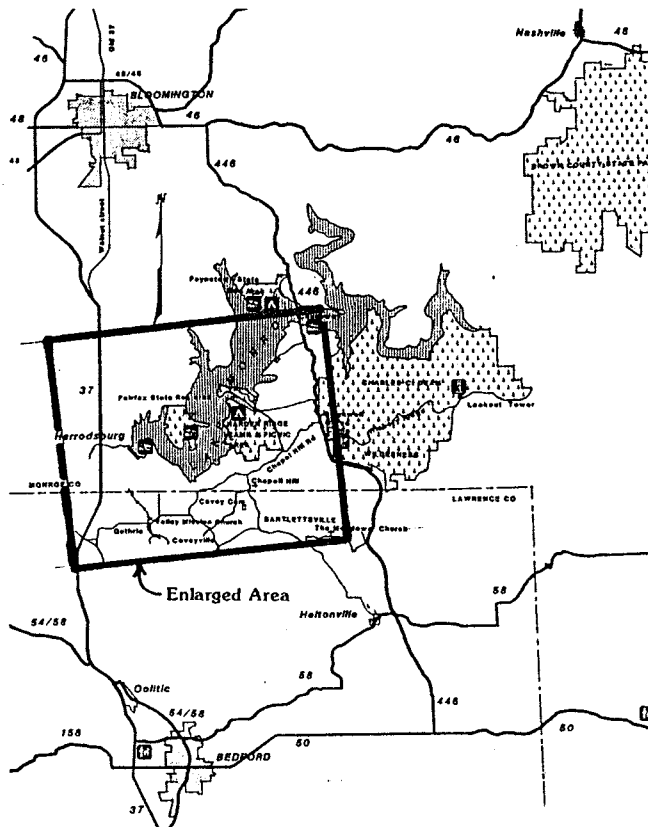
NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY/STATE/ZIP \_\_\_\_\_

PHONE # \_\_\_\_\_

Make checks payable to the Indiana Karst Conservancy, Inc. and mail to the IKC Treasurer, c/o Indiana Karst Conservancy, PO Box 2401, Indianapolis, IN 46206-2401. The IKC is an IRS recognized 501(c)(3) non-profit organization with membership dues and donations fully tax deductible.

Residence and Location InformationLarry MullinsDIRECTIONSTRAVELING HY 37 SOUTH FROM BLOOMINGTON

- (1) Beginning at the 4-way stoplight on new 37 at South Walnut street, travel Highway 37 South for 8.3 miles.
- (2) Arriving at the 4-way stop light located on New 37 and its junction with Old 37, Note the Brown Sign, "Hoosier National Forest, Harden Ridge Campground," and the Green sign, "Guthrie (arrow pointing left)", and Camp In-da-co-so (arrow pointing right)", also note the 76 gas station on the SW corner and the Pig Farm on the SE Corner of the intersection, Turn left.
- (3) Pass old motel on left, Travel .5 miles to County Road T'ing in from left. Note brown Forest Service Sign, "National Forest Recreation Area, Harden Ridge, 8 mi." Turn Left.
- (4) Travel 2.9 mi. to "T" road coming from right. Pass Quarry seen on left at 1.0 mi.; cross RR tracks and 2 roads intersecting from right at 2.3 mi. (this is Guthrie). Pass Guthrie church seen on right at 2.4 mi.; cross bridge over Salt Creek at 2.5 mi.; curve left pass road intersecting at Right at 2.7 mi; Note, Brown Forest Service sign, "Harden Ridge." Turn Right.
- (5) Travel on straight stretch of flat road for .8 miles; begin climb up hill. At 3-way intersection at 1.0 mi, note Forest Service, "Harden Ridge" sign with left arrow, and Donica Church sign with right arrow. Turn left.
- (6) Travel curvy road for 2.5 mi.; Pass Corn fields with distinctive black posts both sides of road; Pass Kinser Cemetery road T'ing in from right; Pass deep ravines on left; Pass, "Prince Road" T'ing in from left at 2.1 mi.; Pass, "Old Chapel Hill Church" seen on right at 2.35 miles; encounter Forest Service sign, "Harden Ridge" at "T" intersection. Turn right (left is dead end).
- (7) Travel .6mi; pass Antique "Phillips 66" sign seen on left, to 3-way intersection. Note, "Bartlettville Road" and "Dam (with icon)" signs at junction. Turn right (south) onto Bartlettville Road.
- (8) Travel .7 mi to Mullins' A-frame house; pass Chapel Hill Pentecostal Church & Cemetery seen on left at .35 mi.; pass 3-way intersection at .5 mi; bear left; pass Sawmill seen on right at .6 mi; arrive at Mullins house. House is a large A-frame structure w/Brown Roof and Tan/Glass front w/large glass yard. It sits about 100' back from road.

TRAVELING HY 446 SOUTH FROM HY 46 AND BLOOMINGTON

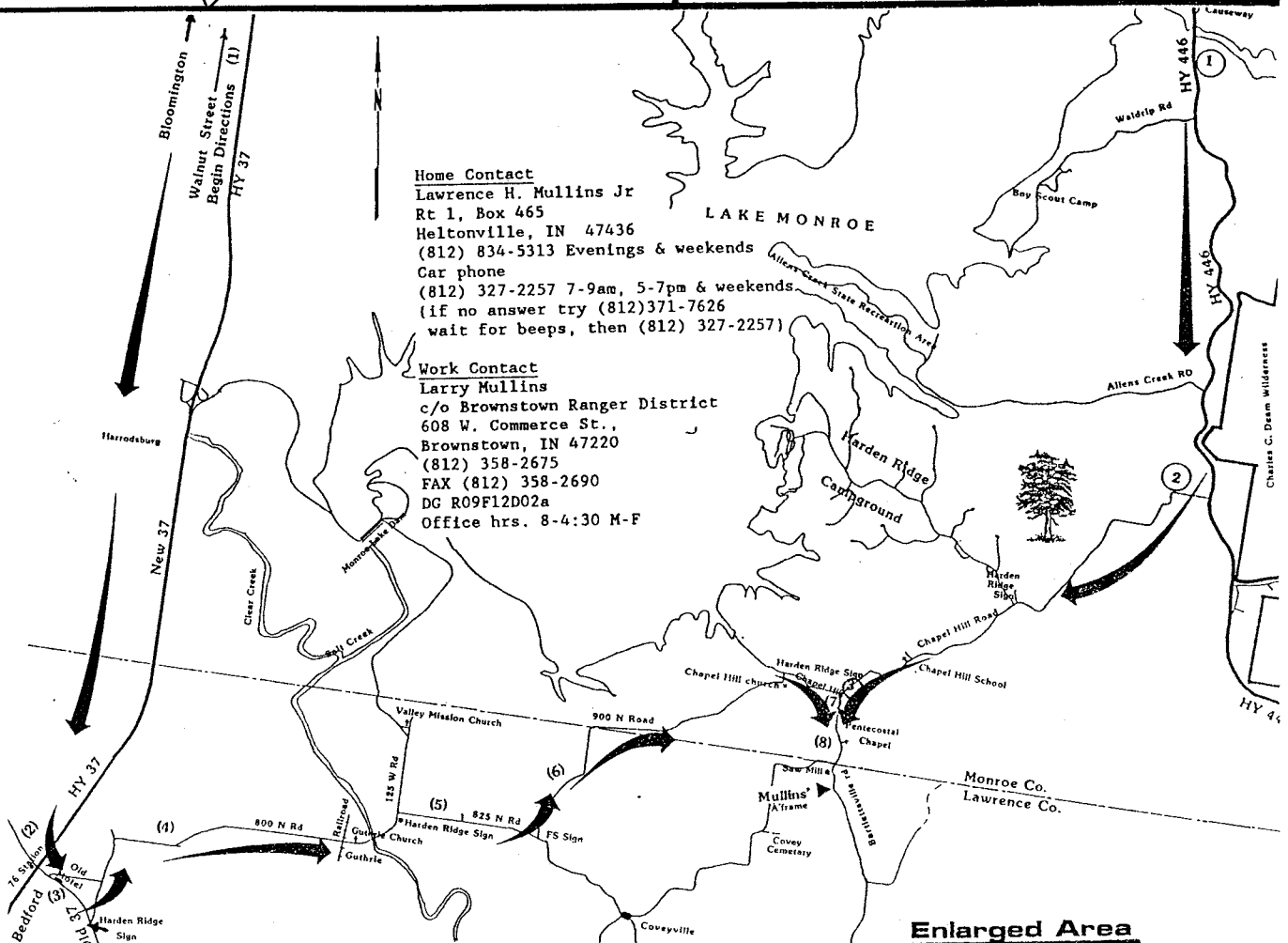
- ① Beginning at the South end of the Causeway across Lake Monroe. Travel Highway 446 south, 3.7 mi. to the Chapel Hill road intersection with HY 446. Pass Brown Sign "Ransburg Scout Reservation," and "Waldrup Creek Road" sign at Waldrup road intersection seen on right at .6 mi; Pass Brown sign "Monroe Reservoir, Allens Creek," and green sign "Allens Creek road" at the Allens Creek road intersection at 2.8 mi; Note, brown Forest Service sign, "Harden Ridge Campground," and Highway "Monroe Reservoir Dam" sign at intersection with Chapel Hill road; Turn Right onto Chapel Hill Road.
- ② Travel west 3.3 mi. on Chapel Hill road; Pass, large, brown Forest Service sign with stone base, "Hoosier National Forest recreation area, Harden Ridge" and road at 1.8 mi; Pass "76" station seen on left at 2.1 mi; at 3-way intersection with Bartlettville road, Note, "Bartlettville Road" and Dam (with icon) signs at junction. Turn left (south) onto Bartlettville Road.
- ③ Follow Step (8) directions described above.

Home Contact

Lawrence H. Mullins Jr  
Rt 1, Box 465  
Heltonville, IN 47436  
(812) 834-5313 Evenings & weekends  
Car phone  
(812) 327-2257 7-9am, 5-7pm & weekends  
(if no answer try (812) 371-7626  
wait for beeps, then (812) 327-2257)

Work Contact

Larry Mullins  
c/o Brownstown Ranger District  
608 W. Commerce St.,  
Brownstown, IN 47220  
(812) 358-2675  
FAX (812) 358-2690  
DG R09F12D02a  
Office hrs. 8-4:30 M-F



# SPECIAL LIMITED TIME OFFER!

Do you have enough caving T-shirts in your wardrobe? If so, it's time to go upscale with a limited edition IKC "polo" shirt. Available in four color choices, this high quality, 50/50 blend, two button with collar, short sleeve shirt has the IKC logo **embroidered** on the left chest. The logo (see below) has the IKC letters stitched in red, the stream in blue, the stalactites in white, and the cave, bats, and other lettering in black. The available shirt colors are Dandelion (yellow-gold), Sand (tan), Teal, and White.

To complement your shirt, we are also offering ball caps with the same multi-colored embroidered logo. The crown color is "natural", with a contrasting bill and trim color of forest green or royal blue (we reserve the right to substitute hat colors).

The shirts and hats are being offered to IKC members at our costs. Non-members can show their support for the IKC by purchasing the apparel at the non-discounted price, or by joining the IKC and take advantage of the membership pricing.

The shirts are being custom ordered and will not be available after the **January 15, 1997 order deadline**, so don't delay and miss out. Delivery should be by early March.

Direct questions to: Tom Sollman (812-753-4953 / Sollman@juno.com)  
Keith Dunlap (317-882-5420 / KDunlap@atd.gmeds.com)



----- ✂ -----  
Name \_\_\_\_\_ Address \_\_\_\_\_  
City/State/Zip \_\_\_\_\_ Phone(s) \_\_\_\_\_

## ORDERING DEADLINE: January 15, 1997

member / non-member

Shirt: colors: \_\_\_\_\_ Dandelion \_\_\_\_\_ Tan \_\_\_\_\_ Teal \_\_\_\_\_ White @ \$15.50 / \$20.00 each \_\_\_\_\_  
sizes: \_\_\_\_\_ S \_\_\_\_\_ M \_\_\_\_\_ L \_\_\_\_\_ XL \_\_\_\_\_ XXL \_\_\_\_\_ XXXL (white only)

Hat: trim color: \_\_\_\_\_ Forest Green \_\_\_\_\_ Royal Blue @ \$ 7.00 / \$10.00 each \_\_\_\_\_

Shipping (exclude if an IKC Director can deliver to you in person): @ \$ 3.00 per item \_\_\_\_\_

IKC dues for non-members (membership thru March 31, 1998): @ \$15.00 \_\_\_\_\_

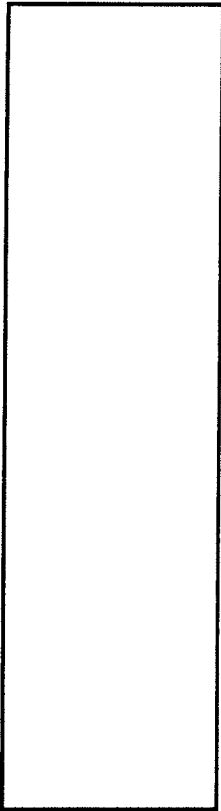
Make checks payable to the Indiana Karst Conservancy  
and mail to PO Box 2401, Indianapolis, IN 46206.

Total \_\_\_\_\_

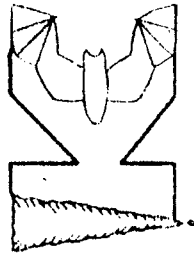


**Indiana Karst Conservancy**  
**PO Box 2401**  
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