



IKC Update

A QUARTERLY PUBLICATION OF THE INDIANA KARST CONSERVANCY
JUNE 1997, NUMBER 45

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 - Formations in Suicide Cave, Washington County.

Photo by James Adams © 1992. Layout by James Adams.

Publishing by **Myotis Press**, Editor and Publisher Keith Dunlap.



QUARTERLY MEETING REMINDER

SUNDAY, JULY 6th, 10:00 AM

BLOOMINGTON, INDIANA

INDIANA MEMORIAL UNION, DOGWOOD ROOM

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. The IKC Board *wants* your input.

Preliminary Agenda Items: Brief recaps of last quarter's activities; Suicide lease and gate rap-up; Shiloh re-gating project; Oil & Gas Division permit requirements update; Dry Cave (Ohio) protection project; Land Acquisition Committee progress; IDNR activities; HNF inventorying project; HNF/IKC committee status; Wesley Chapel Gulf discussion; other HNF activities; Reprint #9 status; and more....

Meeting directions: The Indiana Memorial Union is on the campus of IU on 7th Street, east of Indiana Street. Enter the building at the main (north) entrance on the circle drive (next to the pay parking lot). Go up one floor to the mezzanine level. Transverse the side of the large lounge and turn left past the elevators. The Dogwood Room is on the left.

EVENTS CALENDAR

- 04-06 JUL = SHILOH CAVE RE-GATING, Bedford (see page 4)
- 06 JUL = IKC QUARTERLY MEETING, Bloomington (see above)
- 12 JUL = LOST RIVER TOUR, Orleans (contact Bob Armstrong)
- 19 JUL = HOOSIER FORESTS PROJECT COMMITTEE MEETING (see page 5)
- 03 AUG = INDIANA CAVE SURVEY MEETING, Bloomington (10 AM at Capers)
- 31 AUG = HANCOCK PROPERTY WORKDAY, Bloomington (see page 5)
- ?? SEP = IKC MEETING & COOK-OUT (date and location TBD)
- 07-10 OCT = NATIONAL CAVE MANAGEMENT SYMPOSIUM, Bellingham, WA (see page 7)

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...

Over the years, the IKC has developed very good relationships with a number of organizations. The Indiana Cave Survey is one of those organizations. The ICS database is the main repository of cave information in the state; clearly, this is the best tool we have to help protect caves from commercial developments, road construction, and so on. The IKC and the ICS have worked hand-in-hand with state and federal agencies to license this data and control its distribution. I'm very pleased that we've been able to accomplish these goals. Indeed, in some states, conservancies have their origins in the survey, or vice versa.

Central to the issue of sharing this information is what kind of security is maintained. It would be inappropriate for cavers' work to be distributed freely, since the caves would then suffer for it. One need only look at some existing publications, and the caves described in them, to see a cause-and-effect relationship.

However, this is only the first line of defense. What are we, as cavers, doing to protect this information? Are we displaying the same degree of discretion? Caves have a limited carrying capacity, even of good cavers. Do we recognize this in our day-to-day caving activities? Are we "educating" people who would never consider caving on their own?

In the last couple of months, I've been approached by scout leaders on several occasions about caving opportunities. I'm not out

to pick on scouting, but I still found myself in a real dilemma. These kids are probably going to be taught how to do it right; but wouldn't it be better if they didn't do it at all? Can we decry publication of cave data, then take a scout troop caving? I suspect for every person introduced to the underground by a book, there are 50 who were introduced by cavers.

I've introduced my share of people to caving. I enjoy caving and want to share the experience with friends. It's only natural to do that. But then I watched them take their friends, who told their friends. The conservation message I was giving became increasingly diluted and ineffective -- but everyone remembered where the caves were. I don't realistically expect all cavers to stop taking new people caving. At the same time, it seems that cave conservationists should be more in the business of educating cavers than creating them. Introducing a newbie is a big responsibility that shouldn't be taken lightly.

So... what did I tell the scout leaders? I told them about "adventure" trips offered by commercial caves. I passed them along to other people, who don't feel this dilemma as keenly as I do (i.e., they weren't nearly as paranoid). I'll probably do the same thing the next time I'm asked. However, I can't help but wonder if another cave vandal will come of it -- somewhere down the line.

- Bruce Bowman

SHILOH CAVE GATE REPLACEMENT

In order to help restore the original ecology of the Church Entrance to Shiloh Cave (near Bedford), the IKC is replacing the existing solid-wall masonry gate (constructed in the early 70s) with a more environmentally-friendly angle-iron gate. Per our agreement with the owner, access will still *not* be allowed through this new gate, but the cave will continue to be accessed via our lease on the Quarry Entrance (also gated). The new gate will restore air-flow and nutrient input and hopefully encourage added use by bats.

Volunteers are needed to assist with the removal of the old gate and construction of the new structure. The project is scheduled for the three-day July 4th weekend. The existing gate removal and site prep will start at 8 AM on Friday, July 4th and may take most of the day. We will start on the new gate bright and early Saturday morning and should be done by evening. We will have Sunday afternoon to complete the project and paint the gate (can't work Sunday morning at the cave due to church services at Shiloh Church -- so we will hold our quarterly meeting in Bloomington). Four to six volunteers are needed on Friday, about a dozen people are needed on Saturday, and two to four are needed for Sunday. If you can help one or more of these days, *please* contact Keith Dunlap (317-882-5420).

NEWS BRIEFS...

- ❑ Federal agency down-sizing has affected the Indiana caving community in the form of Larry Mullins transferring to the Talladega National Forest near Birmingham, AL. Larry is a long time Indiana caver who had a number of Forest Service assignments before returning to the Hoosier National Forest in 1988. Larry's nine-year tenure here has been very productive. He was a prime mover for cave and karst protection on the Hoosier, drafting the precedence-setting karst management plan in 1991 which many other Forests have used as a model. Staff cuts were announced last December with Larry having until October to find another opening. The Talladega opening became available in April. While Larry is gone, his carefully crafted management plan will continue on, protecting the caves and karst on the Hoosier. Inventorying, documenting, and drafting cave-specific management prescriptions will continue.
- ❑ Since being rejuvenated in late February, the Hoosier Forest Projects Committee (HFPC) has held two meetings. The first meeting was geared mainly toward having Larry Mullins (before his departure to Birmingham) give some background on the project, and his vision of the future for HNF cave management. The committee also had the opportunity to meet the new karst resource specialist for the forest, Ellen Jacquart. The second meeting was spent on a discussion of committee responsibilities, recent events, and disposition of the Wesley Chapel Gulf property. A new chairman for the committee, Steve Lockwood, was also elected. A third meeting will be held on July 19th.

Thanks to the following people for agreeing to serve on the committee: Bruce Trotter (ICS and HFPC Secretary), Keith Dunlap (ICS alternate), Nick Noe (CIG), Barry Welling (CIG alt), Steve Lockwood (SJVG and HFPC Chairman), Clyde Simerman (NIG), Steve Petruniak (WCG), Jeff (EIG), Pam Frazier (EIG alt), Dick Vernier (EMG), Richard Newton (LG), Dave Black (HCG), Ronnie Burns (HCG alt), Bruce Bowman (IKC), Larry Mullins (IKC alt), and Kriste Lindberg (BIG and HFPC personnel coordinator).

Inventory activities for the forest continue, with a scheduled workday each month. There's plenty left to do. For the latest information, contact either Steve or Kriste. Those performing inventory activities are reminded to submit their report forms to BOTH the HNF and the Indiana Cave Survey.

- ❑ Due to summer IKC meeting being held in conjunction with the Shiloh Cave re-gating project, the tradition of having a Hancock property surface workday on the afternoon before the meeting will change this year. The workday will be scheduled for Sunday, August 31st, starting at noon. Trash pickup, trail maintenance, fence repairs, and other chores will be accomplished. We will not have a formal clean-up in Coon Cave this year, but Coon, Grotto, and Shaft caves will be open for those wanting to "inspect" the caves and do informal clean-ups. Just a reminder, this workday will be the last opportunity to visit Coon or Grotto until May 1st due to the hibernacula closure enforced for these two caves.
- ❑ On April 20th, forty-four cavers made their annual trek to Sullivan Cave (Lawrence County) for the 8th Under-Earth Day restoration work project. Armed with plastic bags, mud-wash buckets and brushes, and determination, the volunteers removed trash and graffiti from the cave. Each year the cave gets a little cleaner due to the managed access, which keeps the irresponsible visitors out and the clean-up moving forward. Participants this year included Josh Abdulla, Jim Adams, Ted Bice, Bruce Bowman, Jeff Cody, John Couch, Bambi Erwin, Matt Davis, Mark Deebel, Joe Deka, Jim Dewitt, Mike Dewitt, Andy Dile, Rick Dile, Ricky Dile, Keith Dunlap, Bill Hathy?, Dwight Hazen, Allen Huntchison, Pat Jarboe, James Lewis, Sharon Lewis, Steve Lockwood, Clinton Machino, Rebecca Machino, Tim McLain, Bryant Payne, Ernie Payne, Ray Rough, Bob Sergesketter, Davis Short, Tom Sollman, Bob Vandeventer, Richard Vernier, Sharon Walker, Chris Warren, Michele Warren, Wanda Warren, Steve Weinzapfel, Barry Welling, Shannon Whinite, Wes Wilson, Jerry Wynn, and Russell ??then.
- ❑ Indiana has two new grottos. In Terre Haute, the Western Indiana Grotto has reformed with a number of their members also being IKC members. Also in far northern Indiana, the St Joseph Valley Grotto based in Mishawaka has formed, better serving the more westerly area of



northern Indiana. Again, a number of their members were already IKC members. For more information on these new grottos, see their contact person on page 2.

- ☐ Every year, the Ohio Valley Region sponsors a conservation project. The last such project in Indiana was the joint OVR/IKC/IDNR workday at Big Spring Nature Preserve. The OVR project rotates among the member states of the OVR, and 1997 is again Indiana's year.

Brian Leavell of the Eastern Indiana Grotto and the IKC are seeking opportunities that might serve for this year's project. The IKC has provided two ideas, but additional ideas are welcome. If you have a worthy karst-related cause that will keep a couple dozen people busy for a summer afternoon, let Brian know.

- ☐ Many of our members may not be aware that the IKC has a presentation package to share with grottos and other interested groups. This package consists of a display showing how groundwater becomes contaminated in karst areas, and a slide show (complete with a script to go with each slide). Members may borrow the slide show by contacting one of the IKC officers.
- ☐ Speak of the IKC display and presentation, Bruce Bowman recently gave two such programs. The first was made to a group of roughly two dozen people at the Dayton Underground Grotto meeting on May 10. Another presentation was made on June 4 to about a dozen members of the Western Indiana Grotto in Terre Haute. These presentations lasted nearly 90 minutes each, and audience participation made them particularly enjoyable.
- ☐ Our counterpart to the south, the Southeastern Cave Conservancy has been very active over the past six months in leasing and acquiring cave properties. By being very aggressive, they have purchased an impressive number of classic TAG caves in need of protection. To date, they now own/lease ten caves on eight properties, totaling approximately 250 acres in three states (TN, AL, GA). They are also about to close on another 330+ acre property in Georgia with numerous significant caves. How do they do it? Well first off, they cover a much bigger region so their pool of available caves to buy is much larger, and their pool of cavers for donations is also much greater. Secondly, for most of their properties, land prices seem to be much lower than in Indiana (the exception was Fricks Cave which cost \$108,000 for 31 acres). Finally, they have decided to leverage their buying power by taking on several large mortgages, a risky proposition, but one that definitely is producing results. If you would like to financially support their efforts, please send a donation to Buddy Lane, c/o SCCI, PO Box 71857, Chattanooga, TN 37407-0857. You may also put a donation on your credit card by contacting Scott Fee at (205) 854-7487 or ScottFee@usa.pipeline.com. To find out more about the SCC, visit their web site at <http://www.scci.org>.
- ☐ Another property the Southeastern Cave Conservancy is investigating is the sinkhole containing the Woodard Entrance of the Dunbar-Woodard Cave System, near Clarksville, TN. The IKC currently holds a lease on this cave entrance for the Northern Indiana Grotto, but logistically, it is very difficult for either the IKC or the NIG to actively manage the cave other than to occasionally check on the gate installed by the NIG in 1986. After several discussions between IKC and NIG members on how to best protect Dunbar-Woodard in the future, it was decided to contact the SCC and encourage their participation in acquiring or leasing the entrance. To date, the SCC has made a preliminary contact with the landowner who seems interested in exploring various purchase/donation/lease options. The greatest concern for all parties involved is the liability issue of the trash and cars that have been discarded in the sinkhole and the potential cost to clean the sinkhole up.
- ☐ According to the Indiana Scientific Speleological Association (ISSA) newsletter, Reeves Cave (Monroe County) has been gated. The cave changed owners last winter and the ISSA worked with the owner to install a gate on the entrance sometime in May. While the cave for the most part has not suffered the vandalism or over-use problems of its neighboring Garrison Chapel caves, it was just a matter of time if left unprotected. The cave will still be available for visitation by experienced cavers, but there have been some conflicting reports on the actual process and requirements needed to obtain permission. For more information, contact the ISSA, PO Box 62, Napolen, IN 47037.

- ❑ The 1997 National Cave Management Symposium is quickly approaching. This biennial event (co-hosted in Indiana in 1995 by the IKC, IDNR, HNF, USFWS) will this time be in Bellingham, Washington, October 7-10. Emphasis will be given on "temperate coastal rain forests" related karst management, but there will be many other cave management topics of interest. To find out more on the symposium and to obtain registration information, visit their web site at <http://www.halcyon.com/samara/ncms97/>.
- ❑ As reported by Tim Maloney, Natural Heritage Director for the Hoosier Environmental Council, progress is being made to convert the Jefferson Proving Ground in southeast Indiana into a National Wildlife Refuge. As you may recall from previous issues of the *Update*, this 51,000 acre munitions testing facility was officially closed in September of 1995. The USFWS has been interested in taking over management responsibilities, but wants all potential environmental liabilities (estimated to be as high as \$30 billion for a complete clean-up) to be retained by the Department of Defense. Public support for the Refuge proposal has been strong thanks to HEC's focused attention. This public attention has persuaded the Secretary of the Army to also support the Refuge re-use alternative and as a first step, the DoD has contracted with the USFWS to manage the property, placing three to four FWS staffers on the grounds.

Thanks to the recent work of IKC members Ray Sheldon, Bruce Trotter, Kevin Wools, and others, 32 caves with 52 entrances have been located, surveyed, and documented on JPG. While many of the caves are small, one is over a quarter-mile long and the combined footage of the 32 caves is almost 5800 feet.

- ❑ Jerry Litaker has taken an active role in the fight to keep large hog confinement farms (hog factories) from locating in karst terrain. The specific battle is near Deputy in Jefferson County where citizens are afraid that their groundwater will be polluted. Their concerns are legitimate as these large farms can produce as much sewage as a town of 20,000 people. But rather than finely treat the sewage as required by municipalities, the large hog operations are allowed to spread the manure on adjacent fields. This may work in areas with good top soil, but in karst topography with thin soils and sinkholes, the path to the groundwater can be very swift and without much "filtering".

Jerry's involvement has been to serve as an expert witness related to caves and karst in the southeast karst region of Indiana. The appeal of the permits for the hog farm near Deputy was denied. The judge stated that the citizens failed to demonstrate that the Indiana Department of Environmental Management had inadequately evaluated the site *because* IDEM's guidelines do not consider location geology as a relevant factor, thus locating a hog farm in karst topography in itself is not appealable on that ground.

Jerry was also invited to participate in a panel discussion at Purdue University on the subject of environmental concerns related to hog factories. Also represented were IDEM regulators and confinement farm operators. Jerry said there is considerable support for more stringent regulations and hopes that IDEM will revise their permit guidelines.

- ❑ While your tax-dollars continue to be spent on promoting and designing the I-69 (Indy-to-Evansville) interstate highway across southwest Indiana, the project took a severe setback when the US Environmental Protection Agency agreed with opponents of the road (the IKC being one) that the Draft Environmental Impact Statement was "seriously deficient." The main EPA criticisms were the DEIS's lack of establishing a need and the absence of investigating alternatives (such as upgrading US 41), two key requirements of any EIS. With the rejection of the DEIS by the EPA, money is not supposed to be spent, nor can construction begin. However, this has not stopped several members of the Indiana Congressional delegation to recently request almost \$1 billion in various federal appropriation bills for the highway.
- ❑ As featured in the March issue of the *IKC Update* (pp 8-11), Keith Dunlap and Scott Johnson have been conducting a temperature monitoring project in three *Myotis sodalis* bat hibernacula (Coon, Grotto, and Jim Ray's caves). The first three years of their research has been published in a report to the Indiana DNR who partially funded the project. The report details the relative dynamics of the air temperature in each of the cave compared to outside temperatures.



It also characterizes the stability of the temperatures at the locations of the largest clusters in hopes of better understanding the requirements of these endangered bats. As additional years of data are collected, the results will become more meaningful and statistical methods can be applied to refine the observations. A limited number of extra copies of this first report are available by contacting Keith Dunlap.

- Three other Indiana DNR reports that might be interesting to IKC members are: the Spring issue of Natural Areas News (published by the Division of Nature Preserves) containing an article by Dr. Jerry Lewis on his on-going cave biota study of the Blue River drainage basin; the 1996 Nongame and Endangered Wildlife Program Annual Report (published by the Division of Fish & Wildlife) describing several cave related projects conducted during the past year; and the 1996 Allegheny Woodrat Monitoring Program status report (published by the Division of Fish & Wildlife) covering woodrat activities including monitoring several woodrats living in caves (and several caves which no longer have active woodrats). Copies of all three of these reports can be obtained from Keith Dunlap.
- As briefly reported in the March *IKC Update* (page 5), the biennial *Myotis sodalis* bat was conducted in late January and early February. Prior to reducing the data, it was reported the *perception* was that the populations were down in many of the caves. As it turns out, most of the twenty-four caves surveyed had relatively stable or slightly increasing populations. Of the large caves, Twin Domes and Batwing were down significantly, but Wyandotte, Jim Ray's, and Jughole were up more than enough to offset the difference. The two hibernacula managed by the IKC, Coon and Grotto, were both up slightly (7% and 15%, respectively). An article to present the detailed results was planned for this issue of the *Update*, but postponed until September to keep our page count within reason.
- Over the past seven years, the Indiana DNR and the IKC have been monitoring Coon, Grotto, and Jim Ray's caves for winter disturbances in these critical *Myotis sodalis* hibernacula. This monitoring is done passively with electronic "speloggers" which are installed in the caves and records the date and time of each human disturbance. The information collected is providing a means to determine the effectiveness (or ineffectiveness) of our closure methods in discouraging unauthorized entry. This past year's closures saw NO unauthorized entries. The only disturbances recorded were the brief visit in each cave to conduct the biennial bat census. The remarkable decrease in disturbances compared to previous years was the result of the DNR installing elaborate alarm systems in each cave and posting warning signs outside the entrances. Furthermore, no vandalism was inflicted on the alarms or signs, an initial concern when the systems were proposed.

Winter	Number of Disturbances		
	Jim Ray's	Coon	Grotto
96 / 97	1 ⁽¹⁾	1 ⁽¹⁾	1 ⁽¹⁾
95 / 96	3	9	4
94 / 95	9 ⁽¹⁾	9 ⁽¹⁾	6 ⁽¹⁾⁽²⁾
93 / 94	-- ⁽³⁾	-- ⁽³⁾	-- ⁽³⁾
92 / 93	8 ⁽¹⁾	4 ⁽¹⁾	9 ⁽¹⁾
91 / 92	6	1	5
90 / 91	5 ⁽¹⁾	9 ⁽¹⁾	n/a
1) Includes one visit for biennial bat census			
2) Spellogger failed on day 182 of 227 days			
3) Data loss due to faulty batteries			

- Last March's severe flooding in southern Indiana, southern Ohio, and northern Kentucky was not without lasting effects. In Carter County, Kentucky, rising water in an unnamed cave killed about 3,000 of the 30,000 Indiana bats which hibernated there. The cave was home to Kentucky's largest colony. In Indiana, it is believed that all the bats in the historic entrance to Binkley (Harrison Co) were also drowned. Several months earlier, 84 Indiana bats, 197 Little Brown bats, and 17 Pipistrelles were counted there.

It is also thought that flooding in Crawford County, Indiana during May of 1996 caused the deaths of 200 to 1000 (rough estimate) Indiana bats in a significant hibernacula. During an August visit, biologists noticed new silting and numerous bat carcasses in the lower levels

where the bats hibernate. Subsequent trips were made to document the observations and install indicators to capture future flood events. This cave did not flood this spring.

- ❑ IKC member, former IKC Director, and full time endangered species biologist Scott Johnson was named the Division of Fish & Wildlife's biologist of the year for 1996. Scott, who has contributed significantly to the preservation of Indiana bats and other endangered cave species, has worked with the IKC for over ten years on various projects including the Batwing and Wyandotte bat gates, the biennial bat counts, and numerous research projects. He has also contributed significantly in terms of educating others in conservation methods and awareness, through public presentations. Congratulations Scott!
- ❑ All IKC members should have received last month a special mailing with a poster entitled "Bats of the Eastern United States." This high quality color poster was produced by a coalition of environmental groups and government agencies including the Indiana DNR's Fish & Wildlife Division. The DNR provided the poster to the IKC to distribute to our membership. To show our appreciation, a \$100 donation will be made to the DNR's Nongame and Endangered Species Fund which supports a number of cave fauna projects.
- ❑ The IKC promotional polo shirt and hats have all been delivered. Hopefully everyone was pleased with the quality and the Board would like to thank Tom Sollman for taking care of getting these custom items made. A total of 45 shirts and 48 hats were purchased. All the shirts are gone, but we still have about a dozen hats left. If you would like one, send a check to the PO box. Hats are \$7 for members and \$10 for non-members, plus \$1 for postage. Please specify green or blue trim (our option to substitute colors).
- ❑ Thanks and appreciations to member Larry Reece for donating several cases of mailing envelopes to the IKC. Due to a change of address of his employer, Xerox discarded the envelopes which Larry recovered and the IKC can use by placing a sticker over the pre-printed return address. Not only will it save the IKC money, but it also reduces waste being burned or land-filled.
- ❑ The March IKC elections saw all but one of the previous Board re-elected. Bruce Bowman, James Adams, and Keith Dunlap continue as corporation's officers. Re-elected two-year board members were Bruce Devore, Dave Haun, Larry Mullins, Nick Noe, and Tom Sollman. Newly elected was Kriste Lindberg, replacing Joshua Abdulla who decided not to run for a second term. Continuing on the board (terms ending next year) are Larry Bundy, Tom Rea, Eric Schmidt, Bob Sergesketter, Clyde Simerman, and Bill Tozer.
- ❑ Annual dues from our membership cover the basic operating expenses of the IKC. However, donations are vital for funding many of our special projects and the IKC is fortunate to have a large number of members that make annual donations in addition to their \$15 dues. This year's list include Bluespring Caverns, DA Burden, George Brutchen, George Cesnik, the Church family, Scott Fee, Joe Gasperi, Tem Hornaday, Glenn Kotnik, Steve McKinzie, Jon Miller, Tom Sollman, and Derk Walker. Special recognition should go to Jeff Farr, Bob Masta, and Robert Roundy who each renewed their membership at \$100 or more.
- ❑ To cover the expenses of this summer's Suicide and Shiloh gate projects, the IKC Board solicited several grottos, private companies, and individuals for donations. Without too much effort, the IKC received almost \$1300 which will cover most of the direct expenses for the two gates. Donors include C Miller & Son (\$325), Dahm Brothers Roofing Co (\$325), Evansville Metro Grotto (\$151 - purposely \$1 more than the CIG), Central Indiana Grotto (\$150), Bruce Bowman (\$100), Keith Dunlap (\$100), Tom Sollman (\$100), and the Harrison-Crawford Grotto (\$30).
- ❑ There have been a number of new members joining the IKC in the last quarter including Ron Dowell (315), Barry Welling (316), Don Kedzie (317), Steve Weinzapfel (318), and Stan Weinzapfel (319). Welcome to all and the IKC appreciates your support. The membership now stands at 160.

INTRODUCING: THE IKC WEB PAGE

by Bruce Bowman

The IKC has kicked around the idea of creating a web page for some time, without a great deal of interest. However, at the IKC Director's meeting last December, general agreement was reached that the World Wide Web was becoming a force in education and it was time to make our presence felt. Joshua Abdulla offered space on the NSS server (Josh runs the NSS web page), but didn't have time to actively compose the pages. Being somewhat computer-literate (and owning a 1200 dpi color scanner), I volunteered to take on the task. Eventually a draft was prepared and circulated at the Annual Business meeting, after which I was given approval to put the page on-line.

The pages are optimized for Netscape Navigator in 640x480 pixel mode, but any browser and resolution should display them just fine. The URL for the index page is <http://www.caves.org/~joshua/ikc/> (don't omit the trailing slash!). After pointing your browser at this URL, you will see the screen shown below. The actual screen has a mottled background and displays the IKC logo in four colors. This is the best starting point for viewing the IKC page, so you might want to bookmark it. You'll find arrows at the bottom of all the other pages to assist you in navigation. To return to the index page, click your mouse on the HOME arrow. Most pages also have click-able BACK and NEXT arrows that provide a self-guided tour. Click

the NEXT arrow to continue with the tour, or click BACK to return to the previous page. Arrows like these are a standard navigation approach for the web.

Four of the links explain what "karst" is, what the IKC does and how to join our organization. If you've seen our membership flyer, these pages are almost word-for-word; except we now have a nice color graphic image to go with each topic. There's also a page listing typical or periodic IKC activities. Most of this is designed to give an overview of who we are and encourage others to sign up. Although I've received some compliments on its content, we haven't exactly had a major influx of new members.


Perhaps the most controversial page is the one entitled "Where are Indiana's Caves?" Don't worry; the title is purposely designed to entice neophytes to click on it. When they do, they'll find that the IKC doesn't facilitate caving, and suggests that interested folks visit commercial caves instead. This page includes addresses, phone numbers, and links to all the commercial caves in Indiana. For those who insist on "wild" caving, there's also a link where people can get a list of NSS grottos in Indiana. No locations are given, yet I've received several inquiries from people who haven't been to Indiana in years and want to visit

Continued on page 27.....



THE INDIANA KARST CONSERVANCY

"Protecting caves through active conservation"

What is KARST?	IKC-sponsored activities	 IKC Slide Show
What is the IKC?	How do I join the IKC?	Cave conservation LINKS
Why is the IKC needed?	Where are Indiana's caves?	Other useful information

This page has been visited 724 times.

THE INDIANA CAVE SYMPOSIUM

by Holly Cook

The 1997 Indiana Cave Symposium was held in Milltown, Indiana on April 19th. Thanks to the kind offer of the owners of Cave Country Canoes, Gary Roberson and Gordon Smith, the talks were given in a church building that is used as the group center/bunkhouse for the canoe rental business. The building proved to be the best place so far for the talks. It was large with plenty of seating, and of course had electricity. Prior to the symposium, the hot dog "banquet" was held at the campground owned by Cave Country Canoes. Anyone wanting to camp there after the talks was allowed to at no charge.

Bruce Bowman, President of the IKC was the first speaker. He gave a well organized presentation on recent activities of the IKC. Bruce also talked about the public outreach programs that the IKC has provided, for example, grotto presentations, flyers, promo items, as well as a new web page (<http://www.caves.org/~joshua/ikc/>). He went on to discuss cave projects such as the Sullivan Cave Cleanup held every Earth Day, cave leasing and monitoring, and property acquisition as a way to better protect karst areas.

Ray Sheldon presented an update on his survey of the caves at the Jefferson Proving Grounds. Located near Madison, Indiana, this Department of Defense facility covers over ninety square miles and has five major creeks. After gaining special clearance for this project, both Ray and Bruce Trotter began the inventory in January of 1994. After surveying 32 caves with 52 entrances they have finished. They have compiled a log with records of their trips, tables, and cave data to give to the Department of Defense. This data will be invaluable to whichever federal agency eventually takes over management responsibilities.

Dr. Jerry Lewis, who is currently involved in the Nature Conservancy's Blue River Project, gave an account of the biological inventory he is conducting in Indiana. He spoke of some of the projects that have or will be funded. For example, the inventory at the Army Ammo Plant in Charlestown, and the Blue River Bioreserve. He also talked about the interconnection of animals in their habitats. For example, a difficult to find pseudo scorpion is often found in woodrat nesting areas. Jerry will probably be remembered most for his humorous slide show of caving in Indiana.

Keith Dunlap gave his biennial update on

the IKC's bat count of the *Myotis sodalis*. He illustrated bat populations in various caves with colorful charts and postulated as to why there were differences from year to year. He mostly covered bats in Indiana but also talked about other areas in which the Indiana Bat is found.

Joe and Tina Oliphant gave an impressive multi-media presentation/display of their most recent expedition into Mexico. The area that is being explored is Cerro Ocote (Pine Mountain), in the state of Oaxaca, in southern Mexico. Danny Dible, Jonathan Schwer, Aaron Green, as well as Greg McNamara, Valerie Pierotti, Jacqueline Peyerer (from Germany), and Tony Akers camped for fourteen days in this area in which time they found and explored several promising pits. On the last day of camp they came to an, as yet, undescended pit estimated to be "deep". While in this area, the group made some invaluable friends and contacts with the local Indians. They look forward to returning this Christmas.

Andrew DuBois, an IU meteorology student gave a brief talk on an independent study project involving Reeves Cave. Using a device that measures wind, he postulates that it may be possible to calculate cave volume. I'm sure I've butchered what he was actually saying, but it was interesting nevertheless.

Tom Sollman presented his finding on his crayfish count which he has been conducting in Marengo Cave since 1995. Tom has logged over 109 hours and twenty trips. What is so important about his survey is that he is establishing one of the best baselines that has been done. On solitary trips, with no tagging, under every imaginable condition Tom, with the use of a high-powered beam records the number of crayfish he observes. In addition, he records water temperature, PH, air temperature, water conductivity, and water depths at a number of locations in the cave.

John Benton gave an interesting talk on "Caving in the 70's." John has apparently been interested in karst and caving since a young man, (not that he is old now). He showed slides he had taken during the construction of I-64 and the straightening of SR 135 in which many karst features were altered, uncovered, and re-covered. He also showed slides of the commercialization of

Continued on page 24....

SUICIDE CAVE ACCESS RENEWED

by Bruce Bowman and Keith Dunlap

In August of 1994, the IKC established a leasing agreement with the owner of Suicide Cave; the term of the lease being five years. Unfortunately, the owner was an elderly gentleman who passed away in November of 1995. Ownership of the cave reverted to the owner's daughter, who initially had little interest in maintaining the lease with the IKC. Thus, legitimate access to Suicide Cave ended and the cave was once again considered closed by the owner.

As soon as all this came to light, Bruce Bowman started communications with the new owner to see what could be done to negotiate a new access agreement. The main concern revolved around liability for caver injury. The IKC pointed out that the landowner of record already carries this liability, and any activities of the IKC could only help the situation. The IKC even offered to purchase the property. The landowner was not receptive to this and wanted the IKC to indemnify her against suits by carrying insurance, an unacceptable proposition.

Progress was very slow, but the landowner's willingness to continue discussion was a hopeful sign. Over time, a level of trust was established. The landowner works part-time as a park naturalist/cave tour guide in Kentucky and talked with the owners of Maren-go Cave. She received some very favorable feedback on what kind of organization the IKC is and what level of stewardship we provide. This went a long way towards cementing relations. Eventually, an agreement was reached that neither the IKC nor the landowner was entirely comfortable with, but something both parties could live with.

For the most part, the new lease is comparable to those of other IKC-managed properties relative to providing caver access. However, several concessions were agreed to in order to move forward and re-execute the lease:

- The IKC was required to gate the cave with a bat-friendly gate. The IKC didn't feel a gate was necessary to adequately protect this resource, nor was there any significant bat population. However, the landowner was willing to extend the lease to ten years and pro-rate the gate value over this period. Thus a dollar amount

will be reimbursed to the IKC should the lease be ended prematurely.

- At least one IKC member must be present on every trip. The IKC objected to this, since we were very concerned that cavers may feel we were using this to force them to join the IKC! Also, being an IKC member gives no assurance that the person is qualified to visit the cave. This was addressed by another requirement whereby the trip leader must be an experienced caver. However, we were unable to talk the owner out of the IKC-membership notion; and the lease was signed with this requirement still in place. We believe this idea came from the landowner's attorney.
- No one under the age of 18 may visit the cave. Again, this is not typical of IKC management plans; we generally require parental signature on the liability waivers for minors to visit IKC-managed caves. Again, this undoubtedly came from the owner's attorney.

Another cave is present on the property which the landowner wanted the IKC to gate. This cave is very small and simply not worth visiting, let alone gating -- fortunately, we were able to talk her out of that idea. There was also some discussion about how large of a parcel of land was involved in the lease, which was settled at twenty acres.

When all is said and done, we're not overjoyed by the lease content; but it's certainly better than none at all. The lease was signed on March 25 and we were given sixty days to install the gate. Arrangements were immediately begun and the weekend of May 10-11 was chosen to do the field work.

Originally, the thought was to place a small gate at the narrow spot about fifty feet into the cave. However, after visiting the site to take measurement, it was decided that location was unsuitable for a number of reasons. The only other alternative was to place the gate at the cave's entrance dripline. This location was also not without negatives, foremost the gate would be visible from outside, detracting from the entrance's natural appearance, and secondarily, the gate would be much larger and thus more expensive.

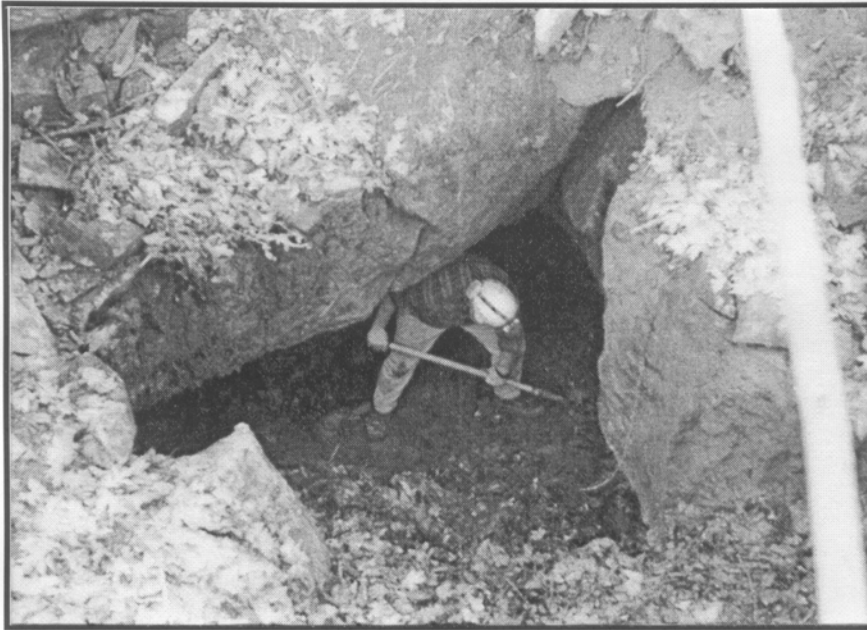


photo by Bruce Bowman

Looking down into the entrance of Suicide Cave before the gate is installed. Tom Sollman is preparing the site for gate's sill plate.

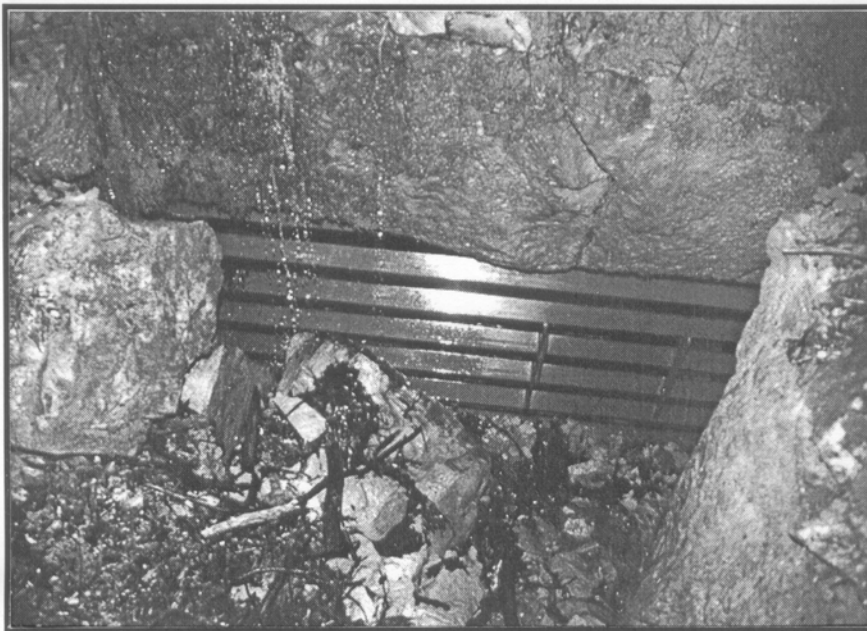


photo by James Adams

Looking down into the entrance of Suicide Cave (slightly different angle than above) after the gate is installed. The door is towards the right of end of gate. The section of the gate shown is approximately twelve foot wide by four foot tall.

The gate plans were drawn up by Keith Dunlap, based primarily upon the ACCA/Roy Power's angle-iron design. Keith added his own engineering innovation by coming up with a door design that could be completely pre-constructed off-site, thus greatly reducing the on-site construction time.

Several days before the gating, Kenney Carrigan used his truck and trailer to pick up the three tons of steel in nearby Shelbyville (approximately half the steel was for the Suicide gate, the rest is to be used on the Shiloh gate). Buying the steel in quantity from a high volume dealer saved the IKC several hundred dollars.

The morning of May 10th was perfect weather. Volunteers started arriving about 7:30. Tom Sollman, Dick Vernier, and Bob Sergesketter started preparing the entrance by moving several large rock and other debris until a solid base was found. Other volunteers started hauling the necessary equipment (torches, generators, drills, etc) to the cave. Because the entrance is relatively close to the road, we were able to run 350' of welding leads back to Kenney's truck and use his heavy-duty stationary welder.

The entrance to Suicide is climbable "pit", about ten foot in diameter and ten foot deep. At the bottom of the pit, partially filled with breakdown, the cave is entered horizontally under ledges about four foot high. The ledges extend along two sides of the pit to form

an "L", one leg twelve foot long, the other eight foot. The two-segment gate would basically follow these ledges, offset about one foot beyond the dripline.

By mid-morning, the 6"x6"x $\frac{3}{8}$ " angle iron sill plates were located, leveled, and pinned in place. Three 4"x4"x $\frac{3}{8}$ " vertical supports were then attached to the sill plates and pinned to the ceiling. At that point, the rest of the gate went up very quickly. Basically a 4" angle iron bar was positioned horizontally with the "point-up". The bar is supported by removable "gage blocks" that set the spacing at 5 $\frac{3}{4}$ " vertically. Brackets were then welded to the vertical supports and to the horizontal bar. Once the bar was secure, the process is repeated, working your way to the ceiling. This construction technique was developed and refined by Roy Powers who has built over 100 gates. The only real crafting required was trimming the ends of each bar to fit flush with the irregular walls. The "bottom" crew consisted of Kenney who did most of the welding, Keith who did most of the measuring, and Tom, Dick, Bob, Bruce Trotter, and Ray Sheldon. Top side was another dozen volunteers who were kept busy hauling the twenty-foot pieces of steel (200 pounds each) to the cave, and cutting them to the proper lengths.

By five o'clock, the gate was basically complete. While equipment was being hauled back to the road, other volunteers

Bruce Trotter standing next to gate during construction.



photo by Ray Sheldon

started wire-brushing the gate to prepare it for the next day's priming.

Sunday morning, Keith, Bruce Trotter, Bambi Erwin, Bruce Devore, Ronnie Burns, and Jeff Cody returned to wipe down the gate with mineral spirits, then apply a coat of primer. A protective top coat will be put on later this summer.

There are a large number of folks who deserve a great deal of thanks for their work on this project. Keith Dunlap deserves thanks for his engineering skills and pre-fabrication of the door, equipment loan, and coordinating the project and the volunteers. Steve Collins provided all the machined parts for the door. Kenny Carrigan deserves special thanks for use of his truck, trailer, and welding equipment. In addition to the volunteers previously mentioned, the following people showed up to lend a helping hand over the weekend: Bruce Bowman, Larry and Linda Bundy, Aaron Howell, Angela and David LeClerc, Nick Noe, Sue Vernier, Stan Weinzapfel and Virginia White. There were members from the CIG, EIG, EMG, HCG, ICS, IKC, MHG, NIG, and WIG; so this truly was a state-wide caver supported project.

During Saturday's construction, several IKC members were also fortunate enough to meet the landowner and her family who were invited to stop by. Bruce Bowman escorted them to the entrance and explained what was being done with the gate installa-

tion. The owner seemed very impressed with our professionalism and how monumental of task the installation was. She never expected such a rigorous gate design -- or as many volunteers as we had (21 people)!

Funding for the gate came from private donations by C Miller & Sons and Dahm Brothers Roofing Company, both of Ft Wayne. Special thanks should go to these two businesses for their generous conservation contributions (\$650), and to Clyde Simerman for soliciting the donations. Significant donations were also received from the Evansville Metro Grotto (\$151), the Central Indiana Grotto (\$150) and the Harrison-Crawford Grotto (\$30). Because the donations were more than the cost of the gate (about \$750), the remainder of the funds will be rolled over to assist with the Shiloh regating project. Finally, our thanks to Jeff Cody and Duron Paints for donating all the painting supplies.

Now that the gate is in place, visitation to Suicide Cave can resume (notices to this effect have been sent to the individual grotto liaisons). Ronnie Burns will continue in his capacity as cave patron, and may be reached via the phone number listed on page 2. If you do decide to visit the cave, please remember these cave-specific policies: at least one member of your party must be an IKC member; and all visitors must be over the age of 18.

Andrew Everhart inside the gate next to the closed door.

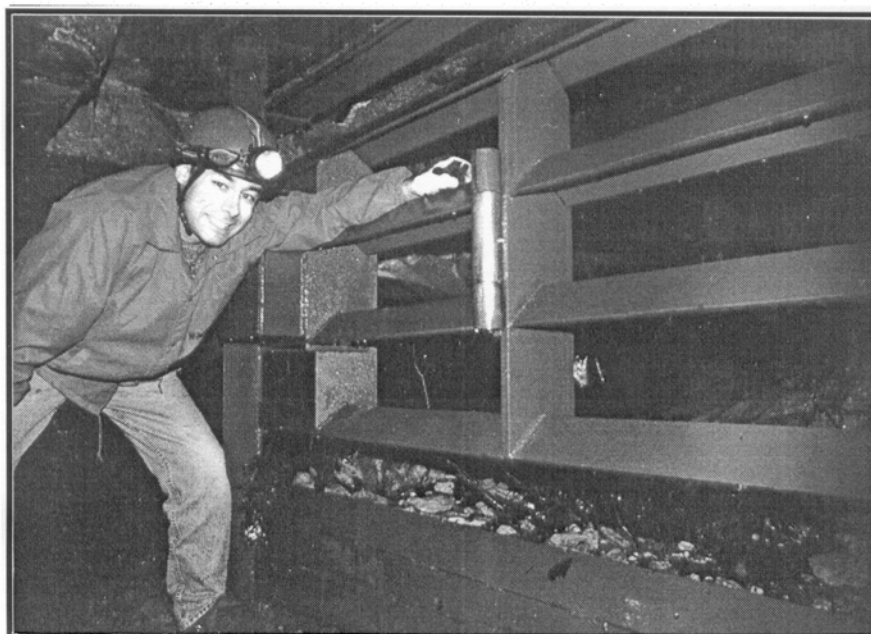


photo by James Adams

GAS DRILLING IN KARST AREAS

by Bruce Bowman

As reported in *IKC Update* #43 (last December), the IKC is working with the Oil and Gas Division of the Indiana Department of Natural Resources to develop permit requirements that will mitigate possible impacts of renewed gas drilling in the karst regions of southern Indiana (see figure 1). This article is the third installment in a series of articles to inform our membership on this important project. As of our last report, the Oil and Gas Division was putting together a workgroup to finalize these permit requirements, under the leadership of Mr Mike Nickolaus.

This workgroup was to originally consist of eight people, but the group size soon ballooned to twelve. The first meeting was held at the Oil and Gas Division's office on the afternoon of April 16. Present were three representatives from the oil-producing companies, and two from the Oil and Gas Division of DNR. Also present were representatives from the Division of Nature

Preserves, Fish and Wildlife Division, DNR Water, and the Indiana Geological Survey. The consultant interest was represented by Kevin Strunk (Wabash Resources, Inc.). Keith Dunlap and I represented the environmental interests.

The IKC had really done our homework and both Keith and I learned more about gas drilling than I'm sure either of us ever wanted to. We gathered and forwarded a great deal of information beforehand on how other agencies had handled this situation, including Virginia's Department of Conservation and Recreation and the New Mexico Bureau of Land Management (the latter graciously provided by consultant Rick Bridges). We also had a proposal lined up with the Indiana Cave Survey, whereby ICS would license cave location data to individual consultants. The oil exploration companies would then contract with these consultants for a nominal fee to compare the site against the ICS database and do preliminary field work to

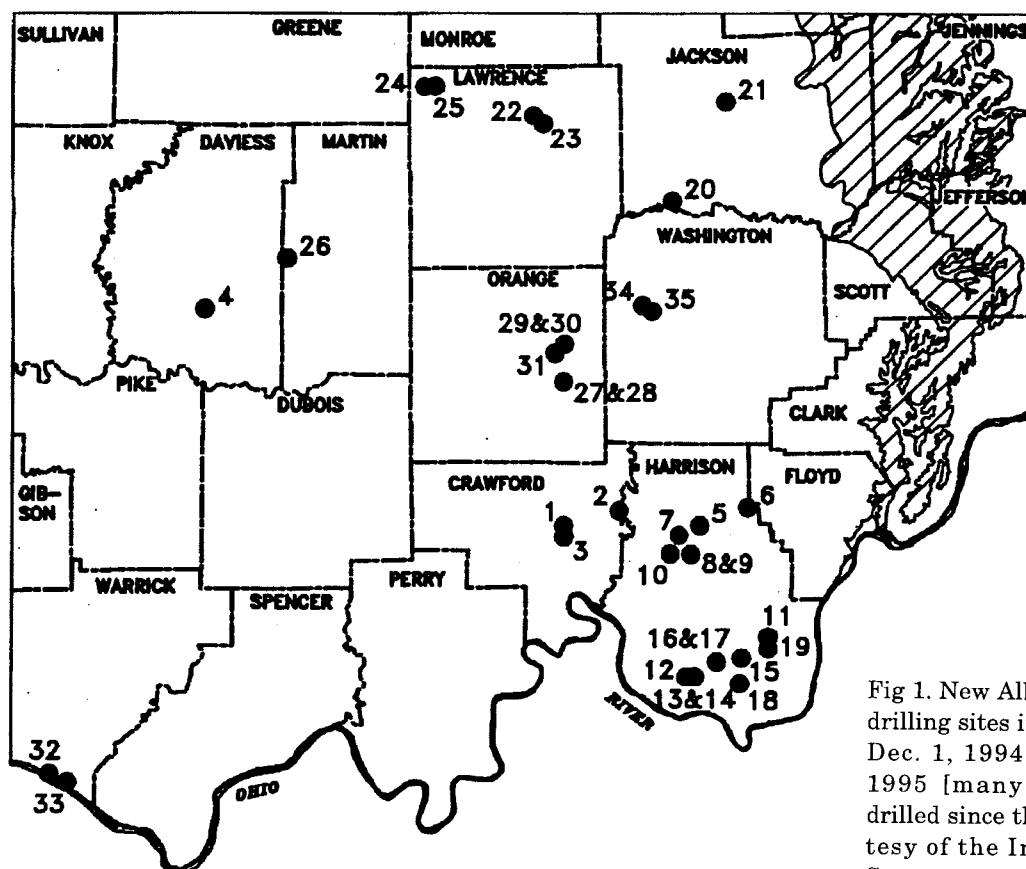


Fig 1. New Albany shale test well drilling sites in southern Indiana: Dec. 1, 1994 through Aug. 31, 1995 [many more have been drilled since then]. Graphic courtesy of the Indiana Geological Survey.

help them avoid cave passages. This would only be required for permits being requested for sites in known subterranean drainage areas. As noted in the previous article, hitting a void costs these companies money; and we went into this meeting fully expecting they would be supportive of this win-win opportunity.

Unfortunately, a great deal of the first meeting was spent educating some of the late-comers on how drilling is performed. Although I learned a little too, little progress was made towards our goal. A great deal of time was also spent talking about whether the existing Oil and Gas Rules were sufficient to address all the karst issues without additional permit requirements. Mr James McGill of the Southern Triangle Oil Company was the main proponent for no additional requirements and his comments clearly carried some weight with the other gas producers and the Oil and Gas Division (I later found out that he also represented the Tri-State Independent Oil Producers Association).

I thought that we were beyond all this; the stated objective of the meeting was to create permit requirements, not debate their necessity. Neither the Oil and Gas Division, nor the producers would have anything to do with our idea of licensing the ICS database; Oil and Gas wasn't receptive to anything that added even a single day to their permit review turnover time. The other DNR representatives came to our aid, but the meeting adjourned without any real progress.

Although a secretary was present to take minutes, minutes were never issued for this first meeting. Fortunately, we did receive a draft proposal from Oil and Gas that gave some reassurance that they hadn't completely given in to the gas-producing interests. Still, I came to the subsequent meeting prepared to pound on the table, if necessary.

The April 23 meeting went much better (and without any table-pounding on my part). Mr McGill was again present and opened the meeting with letters from the presidents of the Tri-State IOPA and the Indiana Oil and Gas Association, supporting what he'd said the previous week. Little attention was paid to them; instead, we discussed some of the issues surrounding gas production methods, and made fairly good progress.

Some of the good news:

- There is currently no mechanism by which rig operators report significant drill bit drops. How often do these drilling operators hit a cave? The IKC suggested that operator's drilling records in karst areas report all bit drops of four feet or more. . . they would not have to stop drilling, but only record it. The producers were receptive to this, but the data cannot be made public until a year has passed.
- Oil and Gas was planning to use Powell's "Caves of Indiana" as the primary reference for cave avoidance. Mr Strunk presented a binder with an old copy of the ICS files. Remarkably, they became much more receptive to doing the review against this database themselves (I suspect they talked this over after the 4/16 meeting). This is actually preferable to the consultant option and could be done under an MOU. The Geological Survey representative stated that they had obtained sensitive data in a similar fashion and been able to protect it from outside inquires using copyright laws. Oil and Gas is reviewing this option with their attorneys.
- The drilling operation requires some circulating medium to bring cuttings up and out of the drill hole. The Oil and Gas proposal requires operators to drill using compressed air as this circulating medium. This is economically feasible in Indiana because the wells aren't very deep. This has the significant advantage of not introducing foreign materials into any cave passage they happen to intersect.
- All lost circulation zones (including caves) would be isolated by use of baskets or other appropriate means. As shown in figure 2, the operator first drills to a level sufficiently below the potable water level and sets a "surface casing". Cement is pumped down the outside of this casing to seal it against the bedrock (this avoids having the drill hole outside the casing become a means of "communication" between rock strata and their water levels). Setting a basket above the cave keeps the operators from



blocking the cave passage with this cement. We're told this is an industry "best practice" anyway, but that doesn't provide any guarantees that an unscrupulous operator won't do it.

- After setting the surface casing, the hole is inspected and a smaller diameter production hole is drilled below the surface casing. A production casing is then set inside the surface casing down to the level of the gas-bearing formation. Under the existing rules, the production casing must be cemented up to a depth that's only a short distance above the bottom of the surface casing. Under the proposed requirements, all casings would be cemented to the top of the well. This provides an extra level of well integrity, so there's little chance of gas leaking into the cave.

There's one thing that I still find a little disturbing. The Oil and Gas people are operating on the notion that some caves are not significant and don't deserve special protection. If the cave is big, well-mapped, and/or clearly significant (commercialized, significant biology, etc.), they would insist that the operator move their drilling rig (up to what is allowed by the existing rules). Caves without good maps or other helpful information would receive only an advisory note to the operator ("there's a cave under there somewhere, so watch what you're doing"). I don't think any of us like this very much, but we have neither a good alternative to offer nor the legal means to force such protection.

Oil and Gas is convening a smaller group in the next month or two to finalize these plans. The IKC will have one representative in this group. There are a number of issues remaining:

- We have no formal agreement on the above permit requirements. It's likely that at least some of them will be raised as an issue again.
- We still need to discuss mitigation of above-ground erosion and avoiding the use of sinkholes as circulation/collection pits.
- There exists a hearing system whereby operators can appeal permit requirements in some circumstances. While this is entirely appropriate, I'd like some

assurance that Oil and Gas will apply the agreed-upon requirements in good faith and not use this process as a loop-hole.

- We must arrange a licensing agreement between the ICS and the Oil and Gas Division. The ICS is open to such an agreement if all the confidentiality concerns can be worked out. Indiana Cave Survey.

Note that drilling activity continues even now, without any additional protection to the caves. I feel very good about what the IKC and ICS are doing to address this situation, but we must be careful not to take an uncompromising stance. If we bog down the process too much, we could end up achieving none of our objectives. The sooner we can get these requirements in place, the better for the caves.

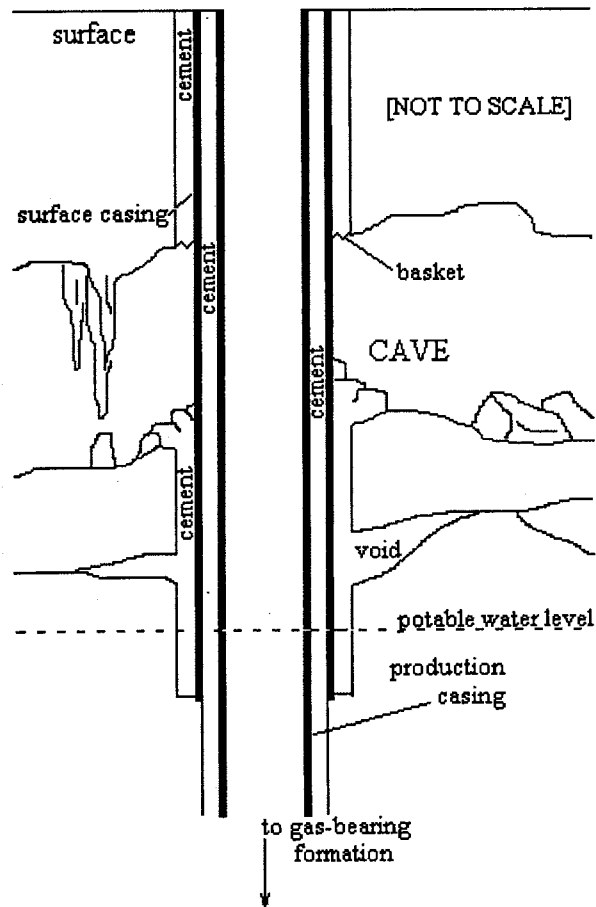


Fig 2. Schematic of a typical production well.

1997 SIXTH ANNUAL WYANDOTTE CAVE CLEAN-UP

by Thomas Sollman

The lobby of Wyandotte Cave's office was crowded the morning of March 29, 1997, as another cave clean-up got underway. Roger Gleitz, Assistant Property Manager, welcomed us, explained the day's goals, and gave a short safety talk. Several projects were planned which included removing an overhanging ledge near the Crater Room where visitors were hitting their heads, removing non-historic trash, and removing "carbide dumps." This dumping occurred when people refueled their carbide lamps and dumped the spent fuel (this practice was previously common but is now frowned on).

Walking down the asphalt road to the cave, we assembled again near Roger's truck and collected our equipment.

The Entrance

Wyandotte Cave's entrance has changed much from when Indians with hickory bark torches entered in search of flint and minerals some 1,500 to 2,000 years ago (Munson and Munson 1990). Some excerpts from previous visitors reports:

"The entrance is an aperture of 12 or 15 feet wide, and three or four feet in height; with an easy decent" (Adams 1818).

"The entrance to the cave is an irregular hole in the side of a hill, about four feet in diameter, the passage sloping downward at an angle of about forty-five degrees" (Gray 1868).

"The mouth of Wyandotte . . . looks mysterious enough. It is of an odd shape, looking indeed, not unlike a huge mouth, the upper lip represented by a great over-hanging ledge of rock. It is about 20 feet wide and just high enough to enter without stooping" (Cottman 1894).

I imagine the earliest explorers were forced to almost crawl into the cave. By the early 1800's the entrance was about four feet high, by the middle of the eighteenth century, the entrance had assumed the present dimensions allowing a person to walk in upright.

Passing through Faneuil Hall, Washington Avenue, and Bandits Hall, we took the trail to the right, by-passing the steep ascent to the left and the "Old Cave."

Bat's Lodge

In November of 1850 some loose stones were moved by a group to uncover the New

Cave. Cox (1879) said the group was composed of three men from Fredonia named O'Bannon, Cummings, and Collingwood. Hovey (1882) agreed while noting that one newspaper account, *New Albany Ledger*, credited Norman Coleman with this. Hovey thought Coleman discovered the Auger Hole instead. Blatchley (1899) safely left it at "a party from Fredonia." Jackson (1953) diplomatically called them "the 1850 explorers." George (1991), with extensive research, settled that it was all four men, probably along with Henry A. Rothrock, a guide.

This major discovery was immediately capitalized upon by the owner who fastened a door upon the find and started guided cave trips. The door was described as "hinged to the solid rock" (Gray 1868) and as made of oak (Hovey 1882). Roger Gleitz says there are pieces of wood that he believes are from this door still laying in this area "as light and punky as an unused sponge" and "too thin to be from an old stairway, about 1 inch by 25 inches wide" (e-mail correspondence, May 19 & 20, 1997).

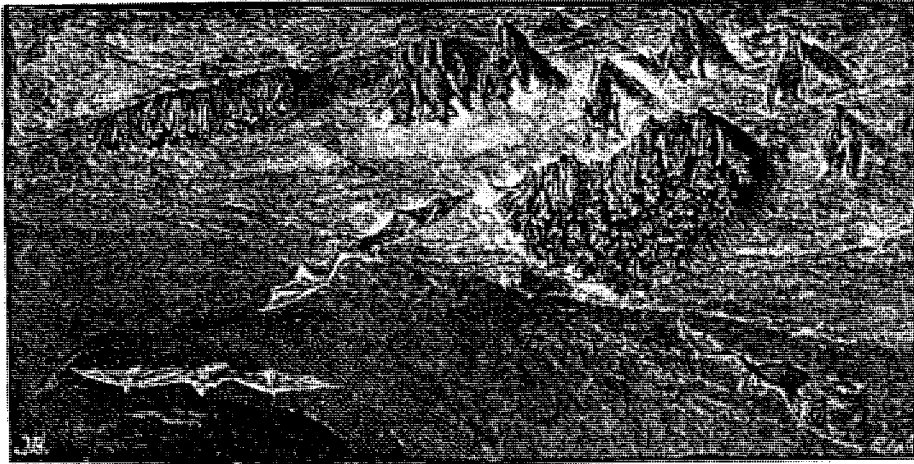
We gripped the highly polished handrails of the old wooden steps and comfortably descended through the former "Fat Man's Squeeze" down to Bat's Lodge, so named for the tens of thousands of bats that were found "... suspended from the rocks in large clusters, like bees in swarming." (Butler 1851).

The 1997 bat census recorded only 3,365 *Myotis sodalis* (the Indiana bat, the principal bat in the cave) in Bat's Lodge and the Rugged Mountain area, which is just past here (Keith Dunlap, e-mail correspondence, April 23, 1997). This is only 13.3% of the present total bat population in the cave.

What caused the bat population in Bat's Lodge to almost disappear? The door might have had the immediate effect of blocking their path. "It is said that when the proprietor fixed an oak door to this lower entrance . . . the bats flew against it with such force as to kill themselves in large numbers" (Hovey 1882). Or the long term effect of altering the air flow caused a temperature change. *Myotis sodalis* is very specific in temperature requirements for hibernating. However, the door was only in place for a short time and the bats have not returned.

The continuous passage of tourists through this low room might have excessively disturbed the bats.





A colony of bats,
Wyandot Cave.

from *Celebrated
American Caverns*

"Rothrock rubbed his hand over the mass, causing every little red mouth to fly open, displaying needle-like teeth. A chorus of quaint cries now arose from the little colony thus rudely disturbed" (Hovey 1882).

"The doctor quietly requested Sylvester to discharge his pistol. He did so. The cluster suddenly dissolved, and the air was filled with myriads of bats. The ladies screamed Several candles were extinguished by their wings, and for several minutes the cave resounded with their rustling flight and twittering cries." (Gray 1868). (Wyandotte Cave management currently discourages rubbing the bats or shooting pistols in the cave.)

It might be that the digging out and enlarging the passages to the rest of the cave has increased the air flow changing what was a near-perfect cold air trap to a much different environment. Whatever the reason, or combination of them, Bat's Lodge was sadly almost empty as we passed through.

Proceeding through Counterfeiter's Trench to the Junction Room, we took a right to the Pillared Palace, then through the Discovery of 1941 to the Crater Room.

I had the distinction of being the very last person to crack his head upon the protruding ledge in the ceiling whose removal was one of today's projects. Four people, lead by John Vargo, volunteered to work on this project while the rest of the group hurried on to the Mountain Room, turned right, and down towards:

The Auger Hole

The discovery of the Auger Hole by a group that felt a draft of air while resting near the Sulphur Spring occurred just a few weeks after that of the New Cave and led to another major extension of Wyandotte. This

discovery proved too much for Crawford County, which raised Rothrock's property taxes \$500 (Pleasant 1926). Some excerpts from previous visitors' reports:

" . . . Auger Hole . . . a narrow, cylindrical passage, but twenty inches in diameter. Woe to the corpulent man who enters therein! Many a visitor has been compelled to make this the end of his journey" (Hovey 1856).

" . . . white men found this space closed to a space of ten by five inches At the side of the spring is a small hole in the floor, which would only be observed by close inspection; the guide calls all to prepare for a new mode of locomotion, and making profound obeisance to visitors, with face to the floor, feet first, then legs disappear, and soon a voice from the lower regions invites all to follow. . . . The Auger Hole is one and a half feet in cross section, and seven feet deep" (Cox 1879).

" . . . an orifice was detected in 1850, which, on being enlarged from 6 to 21 inches, admitted the owners to many miles of new territory The opening is far from inviting, as it is splashed by the overflowing of the spring. . . . fortunately the passage is only 10 feet long" (Hovey 1882).

"To the left of Sulphur Spring, in the smooth and slippery stalagmite, is an opening thirty inches wide by fifteen inches high. This is the famous Auger Hole. . . ." (Blatchley 1889).

Sometime in the early 1950's a new six foot doorway was cut through the wall to one side, completely by-passing the Auger Hole (Jackson 1953). The new entry was a very easy walk-through for us yet, somehow, I felt a sense of something lost. The original Auger Hole is still there, however. Unfortunately the flow from Sulphur Spring is much diminished from its former size and no long-

er would splash you as it did the early explorers (Jackson 1972). Still, it would make an interesting side trip to recapture some of the excitement of the "old" days.

Descending Slippery Slope to Spades Grotto, we started our clean-up. We quickly found that previous work had gathered all the conspicuous litter. We were forced to poke and pry under ledges and behind rocks to find where people had hidden their trash.

In a cave with as rich a history as Wyandotte, it is always a big decision as to what to take and what to leave. Some litter has been there so long as to have assumed historical significance. A newspaper dated Aug. 24, 1902, was left, as was a half-pint whiskey bottle with a cork stopper. Some sticks, covered with black fungus, and a mummified bat were left as food sources for native life. (something to read, something to drink, something to eat....) Candy wrappers, batteries, partly consumed road flares, broken household light bulbs (I have no idea....), a working mini-mag flashlight, broken Coleman lantern guards, all are examples of items found and taken.

Finding myself working near Gary Roberson, I mentioned that there might be some trash in near-by Milroy's Temple. Agreeing that there might be, he suggested we check it out and after slithering through Worm Alley we found ourselves in the huge circular room looking at Wyandotte's only waterfall which was quite impressive. We did find some carbide dumps, which we took, but left an old rusty metal candle holder which was balanced precariously on a ledge over a steep drop.

Retracing our path to the main passage, Wildcat Avenue, we found the rest of the crew had worked their way far ahead of us. We hurried to rejoin them.

A Wrong Turn at the Isle of Confusion

At the aptly named Isle of Confusion, there is a choice of passages; we took the left one. Like Hansel and Gretel following bread crumbs, Gary and I followed carbide dumps working our way ever deeper into the cave.

We noticed a broken chert nodule, six inches across, that had written across its face, with purple ink in the flowery script of an earlier era the words "Broken by Jamy O. Tibbits, Feb. 16, 1884, Jeffersonville, Ind." I found out later, from John Benton, that the matching half of this nodule may be found close to Slippery Slope.

Slowly, it dawned on me that we should have caught up with the group by now and

that the passages looked increasingly unfamiliar. A dark thought formed that we might be (gasp) lost! I confessed my fears to Gary, but was reassured by his reply that there was a large passage to the right just before the close-by "Ice House" that he thought might be the way.

We ascended a break-down pile of stone, turned right, and entered the aforementioned passage "... the sides and walls ... are completely dressed in snowy whiteness, equaling the brightest marble halls of dream-land, song or story" (Blatchley 1899).

Morton's Marble Halls visage has been marred since Blatchley's eighteenth century visit. One of the most unsightly areas was where carbide had been slung out and splattered on the floor, a pile of trash was uncovered under some rocks, and names were smoked on the walls.

Gary recognized some of the names and told this story: In the 1960's a group of teenagers were tunneling under the old stone wall gate, covering up their trail, and spending weekends camping and exploring in the cave. These clandestine trips extended over a six month period, ultimately culminating in their camping being suddenly moved to the Crawford County jail!

Further on, we found an old one by one and a half foot sheet metal picnic box with irises painted on it. Inside was an empty gin bottle and a shoe. We left this artifact, wondering what kind of a picnic they had.



THE AUGUR HOLE.

We entered an area where the ledges on the walls were covered with hundreds of small clay tablets with names scratched on their soot-blackened surfaces. It was a remarkable sight and of course we didn't disturb them. Judging by the dates the practice seemed to stop about the Depression Era.

Passing through a low stoop walk area, we started seeing more gypsum deposits; this was Crystal Palace. Continuing on we entered Fairy Palace, a large decorated room where it seemed every loose stone had been piled into rock cairns.

Jacks, Jugs, and Jones Discovery

George Jackson and George Jones famous 1930's assault on the limestone boulder that blocks the end of Jones Discovery, a low crawl off of Fairy Palace, left two of the most interesting items we saw. The first, a mechanical screw jack ten inches tall and five inches across its circular base, we found stuck under a ledge with six rocks balanced on it. This jack was used in an attempt to lift the boulder so they could wiggle under it (Jackson 1970a). Roger Gleitz says the jack has been moved all over the area and he is the one who placed it in its present location. The other item was a brown glass gallon jug that had been broken and neatly stacked in an upper alcove. This is one of the jugs that Jones hauled into the cave that was filled with 99% Acetic acid that he poured on the offending rock in an attempt to "soften it up" prior to breaking it (Jackson 1970b). An alternate story goes that at least some of the jugs were filled with moonshine. I guess all that digging builds up a powerful thirst.

The Way Out

Realizing this wasn't the way out, we retraced our steps all the way to the Mountain Room where we found our companions just finishing off several pizzas that had been delivered.

A tour group came along and we joined them in listening to some Wyandotte tall tales and seeing the spooky candle shadow show reflected off of Wallace's Grand Dome overhead. It really does look like that giant hand is going to grab you!

Going back to check on the group working near the Crater Room, we found some of them retrieving some long hidden chicken wire and cedar posts and getting ready to pack them out of the cave. Shouldering the posts we started out, passing without incident through the area where I had previously hit my head.

They had done a lot of work removing that

ledge! We exited into bright sunshine to find everyone else waiting for us.

Attendees included: John Benton, Nick Benton, Steve Ebinger, George Garr, Roger Gleitz, Neil Gleitz, Bill Greenwald, Steve Lanning, Chris Parks, Gary Roberson, Tom Sollman, John Vargo, and Lee Wenning.

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IKC AT EARTH DAY 1997

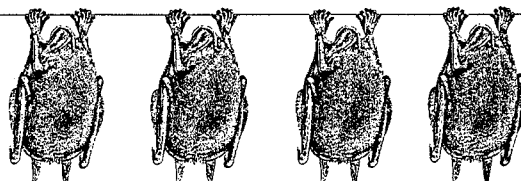
by Nick Noe

Once again the IKC had a display at the April 19th Earth Day 1997 Celebration in downtown Indianapolis. After a slow start in the morning, the display was well attended in the afternoon when the sun finally put in an appearance. Many people had a chance to ask questions -- "What's a Karst?", "Do all these animals really live in caves?", "What's the NSS?", "Where do the cavers meet?", "Where are the caves?", "Are there any caves in Indiana?", and most important, "What can I do to help?"

A big hit at the display was the full size poster "Bats of the Eastern United States." These were selectively distributed to teachers and youth who promised to take them back to their classrooms and explain why we need bats and what can be done to increase their numbers. Earth Day is also an

excellent chance for the IKC to show its wares to the environmental movement as a whole and establish its credibility as a conservation organization deserving of support from those outside the caving community as well as those within.

It was my happy fortune to be able to man the display with Bruce Bowman and collect my "Kiss for Karst" as a reward for staying till the end of the day from a nearby purveyor of organic foods (thanks Cissy, I needed that). The weatherman willing and the symposium too, we will do this again next year. If you are interested in helping with the display or attending Earth Day 1998, let Bruce or myself know. It's a good way to educate the public about cave values and establish a positive image for the IKC.



BATTY ABOUT BATS

by Bill Tozer

The Annual Hoosier Association of Science Teachers Inc. held its annual meeting at the Indiana Convention Center in February. HASTI has a membership of over 2,000 Indiana science teachers from across the state. As one of the thousands, I attended the meeting. The program held many presentations and workshops across the spectrum of science from elementary to high school. While, I'm a physical science teacher, I couldn't pass up the interdisciplinary workshop on "Batty about Bats" presented by Angie Knight and Connie Brannan from Frankfort Middle School. They presented a 45 minute workshop on an interdisciplinary unit on bats. The 45 page booklet had lists of bat facts and amazing trivia, a "Test Your Bat Q" quiz, drawings of bats, and templates for bat masks. A high light of the workshop was bat fruit salad made from the fruits that

are pollinated by bats. They also had some fried grubs to eat, which I did not eat! Activities suggested, how bats compare to me, bat charades, bat crossword puzzles and bat resources including the world wide web.

It seems the presenters had attended a Bat Conservation International workshop last summer. With the BCI educational resources, they developed the above program and used it as a unit in their science curriculum at the middle school. They did not know of any other bat education programs in the state. However, 30 some educators received the information and heard the presentation. Perhaps there will be other bat conservation/ education programs reaching many more students in the coming year.

The presentation and education program was quite well done, and an excellent approach to conservation.

INDIANA KARST CONSERVANCY TREASURY REPORT

Income/Expense Statement From January 1, 1997 to March 31, 1997

INCOME:

Dues Apportionment and Residuals	556.25	
Donations	510.24	
Interest	<u>83.43</u>	
		\$1,149.92

EXPENSES:

IKC Update (printing, production, mailing)	130.53	
Membership (postage, meeting notices, etc)	101.37	
Conservation/Management	68.05	
Misc (HEC Congress, Earth Day booth, etc)	<u>65.00</u>	
		(\$364.95)

NET OPERATING EXCESS (DEFICIT) THIS PERIOD: \$784.97

Balance Sheet March 31, 1997

ASSETS:

Cash in Savings Account	1962.04	
Cash in Savings Account	7487.70	
Shirt & Hat Inventory	<u>148.50</u>	
		<u>\$9,598.24</u>

LIABILITIES & OPERATING EXCESS:

Hancock Property Maintenance Fund	197.51
Indiana DNR Nongame Fund	270.00
Deferred Dues Fund: 115 members - 1997	1725.00
4 members - 1998	60.00
1 members - 1999	15.00

Previous Operating Excess	6545.76
Net Excess (Deficit) This Period	<u>784.97</u>
Current Operating Excess	<u>7330.73</u>

Total Liabilities & Operating Excess \$9,598.24

Continued from page 11....

Squire Boone Cave' in which he, Gary Roberson, and others had helped survey.

Mark Deebel unfortunately was given the last time slot of talks. I say unfortunate because his talk was on the Wesley Chapel Gulf area. He, along with others from the NIG have been surveying the caves in this famous

"sinkhole". Mark showed slides of the caves, and cave maps. He is currently doing the re-mapping of Elrod Cave and has started on Wesley Chapel Gulf Cave.

I would say the 1997 Indiana Cave Symposium was a success. Thanks should be given to everyone who attended and especially those who stayed until the end. It was a long night but one full of excellent presentations.

IKC QUARTERLY MEETING MINUTES

Saturday, March 8th, 1997

Greenwood, Indiana

BOARD MEMBERS PRESENT:

James Adams
Bruce Bowman
Larry Bundy
Jeff Cody
Bruce DeVore
Keith Dunlap
Dave Haun
Kriste Lindberg (seated after elections)
Larry Mullins
Tom Rea
Bambi Erwin (proxy for Eric Schmidt)
Robert Sergesketter
Tom Sollman
Clyde Simerman
Bill Tozer

BOARD MEMBERS ABSENT:

Joshua Abdulla

The Annual Business Meeting was called to order at 10:09 AM at the Greenwood Community Center, Greenwood, Indiana. President Bruce Bowman presiding. Introductions were made and the minutes of the December and February meetings were approved as published in the March *IKC Update*.

Elections were held. Since there were no opposing candidates for the positions of President, Secretary, and Treasurer, Bill Tozer moved that Bruce Bowman, James Adams, and Keith Dunlap be accepted for these positions by acclamation. Election Teller Larry Reece also noted that the absentee ballots gave a majority to these candidates over the membership present. Motion passed.

Six Directors positions were then filled on the first ballot. The elected Directors for 1997-1999 are Nick Noe, Larry Mullins, Dave Haun, Tom Sollman, Bruce DeVore and Kriste Lindberg. An alternate has been noted by Reece but not revealed to the membership. This person will be seated as a Director should one of the elected Directors not be able to fulfill their term. (Secretary's Note: the Directors were actually seated later in the meeting since it took a few minutes to tally the ballots.)

Bowman passed out Certificates Of Appreciation to the Officers and Directors who served the IKC during 1996.

The IKC promotional shirts and caps are in and will be distributed at the end on the meeting.

Bowman updated the membership of the resolution of an incident at IKC managed Shaft Cave. An indi-

vidual was seen on the property who did not display a valid access permit. Bowman has contacted the person and it appears that the individual did have permission to visit the property, however, failed to display the proper paperwork.

Two events are scheduled on April 19. The IKC will participate in Earth Day in downtown Indianapolis. Assistance is needed at the IKC display booth. Also, The Indiana Cave Symposium is being held at Cave Country Canoes in Milltown. Food will be served at 5:00 PM with presentations scheduled for 6:30 PM. There are slots still available for presentations. Dave Black is coordinating the event.

The next special reprint will hopefully be mailed with the June IKC Update. Dunlap asked for opinions on possible papers for reprinting. Sinkholes of the Lost River and a paper on Mayfields Cave are under consideration. Mayfields seemed to be more popular with the membership, however, the piece is lengthy. Other reprints may be delayed to allow for the Mayfields publication without allocation of additional funds.

Wyandotte Cave is sponsoring a clean-up over Easter weekend. An Easter egg hunt is planned for Saturday. Bowman mentioned that the publication of the sinkhole flyer appears to be stalled. Evidently, business concerns at Wyandotte is delaying final proofing of the flyer.

At this point in the meeting, the new Officers and Directors were seated. Lindberg was seated for outgoing Director Joshua Abdulla.

Bowman passed out prints of screens from the IKC web page. There are still changes to be made but the page should go online soon.

Treasurer Dunlap reported a balance of \$8,531.42 with about half of the membership renewed for the 1997-1998 year. The National Cave Management Symposium books have been closed and the excess funds have been turned over to the NCMS steering committee. (Secretary's Note: Dunlap later reported an error and corrected the current balance, as of 3/8/97, to \$9,019.92.)

The Nature Conservancy will hold a conservation easement on the Sinks of Indian Creek. Six lots along the creek have been purchased by a single person. This same developer also owns the Carter Byrnes Cave property but this is currently not set for immediate development. The Nature Conservancy also owns the Orangeville Rise. This will probably be transferred to the IKC, however this is not a priority with TNC. The IKC will also need to

obtain insurance on the property before it can be transferred.

The new Suicide Cave lease will be signed soon. The IKC will be installing a gate on the cave. Dunlap has taken measurements. This L-shaped gate will be more extensive than first thought and positioned at the drip line. It will not be attractive, but it will be easier to work on and more secure than the first proposed gate location. The largest cost will be for the steel. Money may come from the NSS or other Indiana grottos. A donation of steel will be sought.

Reece moved to increase funding for the gate to \$1,000. Haun seconded. Motion passed.

Haun also reported that a recent Indiana court case involving the use of liability waivers, similar to those used by the IKC, has upheld their use.

Dunlap noted that there are several land acquisition efforts in the works by other organizations such as The Nature Conservancy and the Sycamore Land Trust, that eventually may involve the IKC.

Bowman awarded a special Certificate of Appreciation to Larry Mullins for all his work with the Hoosier National Forest on behalf of the caving community and the IKC. Mullins has taken a position in Alabama.

The Indiana bat census has been going on again. There is one more cave to check. Twenty four caves have been investigated this year. Dunlap will do a presentation at the upcoming Indiana Cave Symposium and an article will appear in the next *IKC Update*. His initial feeling is that the populations are down.

Under Earth Day is scheduled for April 20 at Sullivan Cave in Lawrence County. Bring your own bucket.

Cave Capers, sponsored by the Central Indiana Grotto will be at Pic-A-Chic Farms near Bloomington on August 1, 2 and 3. There will be four led trips to IKC managed caves.

The IKC wants to beef-up the oil and gas drilling permit system in use in karst areas of the state to emphasize karst-friendly drilling practices. A meeting is scheduled for March 10 to discuss making use of the Indiana Cave Survey database. A working group has been formed which will include representatives from the oil and gas companies, the Department of Natural Resources, and environmental groups.

The proposed "Lost River Resource Center" located at Wesley Chapel Gulf is still being discussed. This idea would almost certainly require someone to live at the property. Bob Armstrong has scheduled a

tour of the area on April 5. Interested groups will again meet at the Wesley Chapel Gulf property on April 6 to discuss possible management plans for the property. Mullins suggested that a cost-sharing proposal is needed with the HNF. Transfer of the property to the HNF should happen on May 1.

The Hoosier National Forest Committee will meet on April 12. A representative from the Indiana Cave Survey is still needed. Also, a flyer is being prepared for mailing on Advanced Team Training and activities.

The DNR has given the IKC bat posters to mail to the membership. Dunlap reported that it will cost about \$150.00 to mail them in cardboard tubes. Adams moved to fund \$250 for the mailing and a donation to the DNR. Tozer seconded. Motion passed. Bowman abstained.

Work will continue on a Memorandum Of Understanding for the Blue River Project between the ICS, TNC, and the DNR. The Nature Conservancy didn't like certain wording of the most recent draft of the MOU because it did not mention the DNR Heritage database.

Dunlap mentioned that Twin Domes Cave is a candidate for a photo monitoring project. Known scales are needed. If anyone is interested, call Dunlap.

Tom Rea served on the DNR Cave Management Proposal committee. The DNR has a final draft copy, but there is still concern that some issues are not addressed. It does recognize that caving is a legitimate use of the cave resource. Rea doesn't expect any problems with the document.

At this time the President declared a closed meeting to discuss special considerations of cave gating. After about five minutes the meeting was again opened for general discussions.

Members mentioned that there is construction at the Culvert Entrance of Doghill-Donnehue cave and that there seems to be an increase of silt in the cave. Also, a fuel smell has been noticed in Salt Creek Cave. Next Saturday (3/15), Ohio cavers are assessing the plan of placing a gate on Dry Cave (OH). Dunlap is planning to attend and can take a couple of people.

Barry Welling noted a NUVO article on logging activities in the Hoosier National Forest. The article is pro-environment.

The next IKC meeting will be in Bloomington at the IU geology building [location later changed] on Sunday, July 6, beginning at 10:00 AM. Meeting adjourned at 12:06 PM.

Submitted by James Adams, Secretary

Continued from page 10....

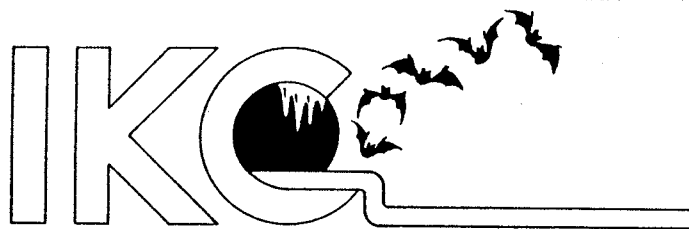
Salamander Cave again. It's perhaps for the best that they contact knowledgeable people instead of relying on published information that's nearly three decades out-of-date (if you know what I mean).

Of course, the IKC isn't the only cave conservation organization. Another page gives links to organizations that do similar work as the IKC; including the NSS Conservation Section, the Michigan Karst Conservancy, the Missouri Caves and Karst Conservancy, and several others. Perhaps interested people who aren't local to Indiana will join up with one of these worthy organizations instead. You'll also find a "miscellaneous" page where web surfers can find instructions on building a bat box or give feedback on page content. This page also provides access to a number of relevant legal documents; including our bylaws, MOUs with other organizations, and state and federal cave protection regulations.

From an education and entertainment perspective, the highlight of the IKC pages is clearly the Slide Show. Many of the graphics were donated for our use by government and private organizations. The first nine slides

address karst-related geology; including how the karst areas of Indiana originated, how caves are formed, and descriptions of various karst features. The next few slides discuss some of the life in caves, including several endangered and threatened species. The rest of the slide show displays some of the hazards affecting caves and karst and what the IKC is doing about it. There's a slide covering some of the educational and public outreach activities of the IKC, closing with Scott Fee's photo of Jug Hole. Some planned improvements include expanding the section on cave life, a few more examples of karst features, and adding some slides about cave archeology and paleontology.

The IKC web page has seen a number of incremental improvements over several months. As an opportunity to educate the public on karst-related issues, it's probably as successful as anything we've done. I've searched the web a great deal and found nothing that can compare to it. If you have any further ideas, or illustrative photos that will contribute to its educational value (not just pretty cave formations), please pass them along.



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 _____

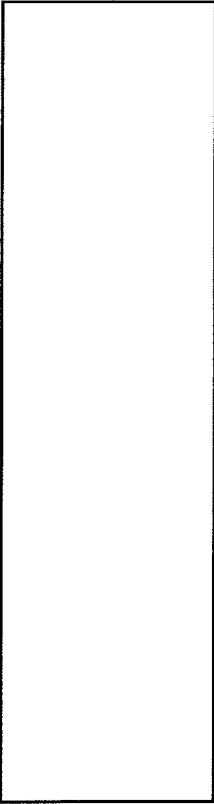
PHONE # _____

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.

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