
IKC Update

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INDIANA KARST CONSERVANCY

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 - Jim Adams lava tubing in Kaumana Cave, Hawaii. Note the tree roots hanging from the ceiling. Photo by Jim Adams.



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

QUARTERLY MEETING REMINDER

SATURDAY, JUNE 4th, 7:00 PM

BLOOMINGTON, INDIANA

IU GEOLOGY BUILDING, ROOM 143

(SAME ROOM AS BIG MEETING)

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; June 4th workday accomplishments; Big Spring Nature Preserve workday; Coon Cave Restoration Project; Land Acquisition Committee report; SR 37 4-laning project status; Special Reprint Series status; Suicide Cave status; Shiloh Cave gate status; IKC Nongame Donation Fund disposition; NCMS activities; IDNR activities; HNF activities; and more....

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

EVENTS CALENDAR

- 04 JUN = HANCOCK PROPERTY WORKDAY, Bloomington (see page 9)
- 04 JUN = IKC QUARTERLY MEETING, Bloomington (see above)
- 04 JUN = LOST RIVER TOUR, Orleans (contact Bob Armstrong)
- 04-05 JUN = FIBORN KARST PRESERVE WORK WEEKEND, Michigan (contact Tom Rea)
- 09 JUL = OVR/IKC CONSERVATION PROJECT, Big Spring NP (see page 5)
- 16-17 JUL = WOODS NAVIGATION TRAINING (contact Larry Mullins)
- 16-17 JUL = FIBORN KARST PRESERVE WORK WEEKEND, Michigan (contact Tom Rea)
- 01-06 AUG = MAMMOTH CAVES RESTORATION WEEK (contact Norm Rogers)
- 28 AUG = COON CAVE RESTORATION TRIP, Bloomington (see page 4)
- ?? SEP = IKC QUARTERLY MEETING/COOK OUT (date and location TBA)

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

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

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RAMBLINGS FROM THE PRESIDENT...

Well, here I am, President of the IKC. Remarkable. Many of you don't even know who I am; but those of you who are members of the Central Indiana Grotto know me as the "rabid conservationist" who often stands at meetings and goes on and on about the responsibility and indebtedness we have to Mother Earth for allowing us to venture into her depths. I'm sure it is not true of our own membership, but perhaps it was the fact that many cavers in NSS grottos turn a deaf ear to this kind of message that led me to the realization that the IKC is the premier caving organization in this state, and drove me to take an active part in its activities.

By all rights, perhaps this column should now be entitled: "Rantings and Ravings from the President?" Undoubtedly...

As my first act, I would like to thank Keith Dunlap for seven years of service as President of the Conservancy. Believe me when I tell you that his untiring devotion to the cause of cave conservation inspired and continues to inspire me. His are shoes that will be very difficult to fill, but I will do my best to do so and proceed forward in the direction he has set. I have a lot to learn; a lot of good people to meet. Of course, Keith continues as both Treasurer and editor of the *Update*, so perhaps he is still the one who really has his finger on

the pulse of the organization. The pen is stronger than the sword, after all.

As for me, I doubt you will see that many changes in the manner in which the Conservancy is run as a direct result of my presidency. However, the challenges we have before us loom large, and it is these that will likely cause some alteration in the way we do our business. While we do have a good nucleus of active people, it is vital that we have more membership involvement if we sincerely intend to achieve the goals we have set. Don't get me wrong, merely joining the Conservancy and sending in your \$15 is more than most people are willing to do, and it is greatly appreciated! And I know that many of you live remote from the action and can not feasibly participate in all of our activities. But now, more than ever, the Conservancy needs people who will take an active part in landowner contacts, participate in Conservancy events, or simply come to the meetings, provide your viewpoint, and get to know your Directors and Officers. It is only with your help that the Conservancy can continue grow into the 21st century.

Well, now we both have our challenge! I look forward to meeting and working with each of you to further the cause of cave and karst conservation.

- Bruce Bowman

COON CAVE CLEANUP - SUNDAY, AUGUST 28th

The IKC will be sponsoring its 8th annual cleanup into Coon Cave on Sunday, August 28th. As in past years, our main activity will be graffiti removal and/or mud-washing, and of course, having fun.

Coon Cave is approximately 1200 feet long, but has multiple levels which make the cave seem much bigger. There are numerous climbable pits and breakdown crawls, possibly even virgin passage for the more determined. The entrance is a 22 foot pit which will have a cable-ladder rigged for belayed entry (no experience is required). Some may wish to do the entrance "on rope" with their own vertical gear.

Plans are to meet at the Bloomington westside Hardees by 9:30, or at the cave parking lot (at the end of Spicer Lane) by 10 AM. The cave is easy and appropriate for novice and experienced cavers alike. **Everyone must wear a hardhat** and sign a waiver before entering. This will be the last opportunity to visit Coon until May 1st, 1995 because of the bat hibernacula closure.

Anyone needing more information or directions, please contact Keith Dunlap.

NEWS BRIEFS...

- ❑ IKC member Ray Sheldon has initiated and organized a very important cave and karst inventory project on the Department of Defense's Jefferson Proving Ground. The JPG, consisting of 55,320 continuous acres in southeast Indiana, is used for artillery testing and has been essentially closed to all visitation since it was acquired in 1940. As part of the peace initiative, the JPG is scheduled to close by September of 1995. Several potential uses for this property are being studied including a landfill and a wildlife refuge. Obviously the latter use makes a lot more sense for this expansive tract which has five major streams integrated with an extensively developed karst system. Ray and his team are systematically documenting everything they find and carefully surveying the various caves and karst features. Because the proving grounds is still actively testing munitions, an escort must be with the group at all times and trips are limited to approximately one per month. Thus far, six caves have been mapped and several more have been located, but the group have really only scratched the surface. For more information, contact Ray at (812) 579-6481.
- ❑ Fifty-eight cavers participated in Under-Earth Day V at Sullivan Cave on May 24th. Approximately fifty pounds of trash (much of it broken glass) was removed from the cave. Graffiti remains the biggest focus. The first half of the backbreaker looks pretty good, but there is still years of work to be done in the second half and in the passage beyond the Mountain Room crawl. Participants this year included Bruce Bowman, Mac Bradford, Mark Brown, Joe Busby, Isaac Busby, Matt Davis, Amy Dewitt, Mike Dewitt, Amy Douglas, Mike Dowden, A DuBois, Keith Dunlap, Ben Dunwoody, Kathy Franklin, David Greenbers, Tobin Haerner, Jeni Haffre, Dave Haun, Marsha Hughs, Cathy Logan, Richard Long, Roy Logan, Anmar Mirza, Mike Moreland, George Mundy, Sue O'Shanderson, William Owens, Bill Owens, Ernie Payne, Tom Rea, Corliss Rupp, Greg Schmer, Bob Sergesketter, Clyde Simerman, Danielle Simerman, Mary Simerman, Mat Simerman, Melissa Simerman, Barry Smith, Robert Sollman, Tom Sollman, Adam Strain, Dave Strickland, Susie Strickland, Kevin Strunk, Kyla Thompson, Nancy Ann Turner, Bob Vandeventer, Dick Venier, Barry Welling, Debra Wilson, Jim Wilson, Laura Wilson, Jeremy Wisker, Mark Woods, Todd York, Joe ???, and George ???.
- ❑ The IKC sponsored ridgewalk on March 20th in the Hoosier National Forest consisted of Keith Dunlap and Roy Logan. Despite light rains, the pair spent a pleasant afternoon at the west end of Tincher Hollow locating and documenting karst features. No caves were found, but several interesting sinkholes and swallowholes were investigated.
- ❑ Over the past four winters, the IDNR has been monitoring Grotto, Coon, and Jim Ray's caves for unauthorized visitation during the critical bat hibernation closures. This monitoring is done electronically with "speloggers" which can record the date and time of day of each violation. The information is being collected to provide a means of determining the effectiveness (or ineffectiveness) of the closure methods (fences, signs, etc.) at these caves. Above are the tabulated number of disturbances detected. The data this past year shows a significant decrease at Grotto Cave with no violations detected. The instruments in Coon and Ray's caves both malfunctioned (apparently a bad batch of batteries), but there was physical evidence that one or more groups had been in each cave.
- | Winter | Grotto | Coon | Jim Ray's |
|--------|--------|------|-----------|
| 93-94 | 0 | >1 | >1 |
| 92-93 | 8 | 3 | 7 |
| 91-92 | 6 | 1 | 6 |
| 90-91 | n/a | 8 | 4 |
- ❑ The hand pumped mud-sprayer that the IKC has been experimenting with over the last two years has been determined to be inefficient. While it can cover graffiti adequately without brush marks, the effort to operate the sprayer is significantly higher than using a mud brush. It also had problems with nozzle clogging. While this device didn't work out, we will continue to develop new techniques for addressing graffiti.

continued...

- ☐ At the March IKC meeting, the Board voted to participate in the Indiana Department of Transportation's Adopt-a-Highway program. This program assigns volunteer organizations two-mile section of state highways to collect trash and litter three to four times per year. In exchange for our environmental efforts, signs are placed along the adopted section of highway. The section of highway we will be requesting is on SR 37 just south of SR 50. This is the section that was the focus of our dispute with INDOT and it is only fitting that we continue to monitor it and keep the trash removed. The Central Indiana Grotto has agreed to adopt the next two miles, thus covering almost the entire section that was of concern. Once all the details are finalized with INDOT, we will be soliciting volunteers to perform the cleanups. Contact Bruce Bowman for more details.
- ☐ The IKC will once again attempt to replace the existing gate on the Quarry Entrance of Shiloh Cave this summer. Four attempts last year were unsuccessful due to wet weather that prevented the water from being lowered for construction. Tentative plans are to try in early July. If high water persists, an alternate design and location may be considered. Once the old gate is replaced, managed access will be permitted. Contact Jim Adams for more details.
- ☐ At the Indiana Cave Symposium in April, Roger Gleitz, representing Wyandotte Cave and the State of Indiana, made a special presentation. The Governor's Voluntary Action Community Service Awards was given to the "Wyandotte Ridge Exploration Group" for their years of dedication in exploration, surveying, and documentation of the caves on Wyandotte Ridge. Their most notable accomplishment has been to connect Easter Pit Cave to Wyandotte Cave, extending the combined system by over 2.4 miles, requiring 67 trips and 6000 manhours of effort. While numerous cavers have participated in their various projects, the core group consists of Ron Adams, Tony Akers, Dave Black, George Cesnik, Holly Cook, Danny Dible, Glenn Lemasters, Greg McNamara, Joe Oliphant, Tina Shirk, Ted Wilson and Chris Yeager.



- ☐ Recent contacts with the landowner of Suicide Cave (Washington County) have been very promising. A letter received from the owner's attorney indicated that he was "very interested in an agreement" and to let him know what steps were necessary to execute a lease. The IKC has provided the attorney with a copy of a sample contract, liability waiver, and other materials; hopefully the attorney may even be able to help improve on the language on our own forms. In essence, we are on the threshold of a contract to protect this interesting and sporting cave while providing access for the enjoyment of conservation minded cavers. Until then, please do not undermine this effort -- please do not visit Suicide Cave until things can be finalized.
- ☐ The interim report of the "Status and Distribution of the Northern Cavefish, *Amblyopsis spelaea*" has been prepared for the IDNR by Dr. William Pearson and Chuck Boston. This two year project is being funded by the Nongame Section as a prerequisite for listing the fish as a federally endangered species (it currently is State listed). The range of this species is southern Indiana and north/central Kentucky. Most of Dr. Pearson's work last year concentrated in Kentucky where less information is available. He visited twelve caves with confirmed sightings in nine. One cave was found to have 515 cavefish! This is several times the population known in any other cave, regardless of size. This year they plan to visit up to nineteen additional Kentucky caves.

Dr. Pearson visited five caves and two springs in Indiana last year with confirmed sightings in only two caves. Up to twenty additional caves will be visited this year. There are approximately thirty-five other Indiana caves with cavefish that will not be visited because reliable documentation (most from cavers) exists. The interim report acknowledges the significant contribution of Dave Black's database of references on cavefish sites.

- ☐ The final report of the "1992/1993 Winter Census for the Indiana Bat (*Myotis sodalis*) in Hibernacula of Indiana" has been published. The seventy page report recaps the caves surveyed, the populations counted, and summaries including previous census results. The report was co-authored by Dr. Virgil Brack, Dr. Karen Tyrell, and Keith Dunlap. Funding for the census was provided by the IDNR's Nongame and Endangered Wildlife Program. Copies of the report are available by contacting Keith Dunlap.
- ☐ The 1993 progress report on continuing work to assess the distribution of the Allegheny Woodrat has been published by the IDNR Nongame Section. While most of the habitat for this endangered species are cliff faces on the bluffs of the Ohio River in Harrison-Crawford Counties, several rats have been found in caves in these two counties. The report was co-authored by Bob Madej and Scott Johnson. Copies of the report are available by contacting Keith Dunlap.
- ☐ The Indiana DNR, Fish and Wildlife Division is hosting the 56th Midwest Fish and Wildlife Conference on December 4-7th in Indianapolis. The conference provides an opportunity for resource managers and professionals from the central United States to communicate research findings, success stories, and new management strategies. For further information regarding the conference, contact Debbie Fairhurst at (317) 232-7535.
- ☐ The Missouri Caves & Karst Conservancy (MCKC) has published their first newsletter, the *MCKC Digest*. The newsletter is very professionally edited and laid out (lots of photos, white space, and pull quotes). It is obvious they will recruit members on the basis of the newsletter alone. A featured interview with Tom Aley by Dwight Weaver, an article by Richard Clawson on bats, and an article by Ken Midkiff on the karstlands of Boone County were all very informative. The MCKC was specifically formed to purchase and manage cave properties and is closely affiliated with the Missouri Speleological Society. For more information, contact Rosie Weaver, R 2 Box 234, Eldon, MO 65026.
- ☐ The Karst Water Institute (Charles Town, WV) is offering a four day course on cave fauna and their protection. The course is directed towards public and private land managers but would also be of interest to cavers. The location is in Lewisburg, WV starting on

continued. . .

Friday, November 11th thru Monday, November 14. The class is limited to the first twenty-four paid participants and costs \$395 (includes motel lodging, site transportation, workshop materials, caving equipment, breakfasts, and lunches). For more information, contact Dr. David Culver at (304) 725-1211.

- ❑ The IKC participated in Indiana Earth Day festivities on April 23rd. This event is always a great opportunity to convene with members of other organizations devoted to conservation and the environment and share the work they are doing. Although the weather was beautiful and the facilities at Military Park in Indianapolis were much better this year, remarkably few people showed up (perhaps 4000 over the course of the day). Still, almost all of our available flyers were distributed, and there were some people who showed a great deal of interest in our concerns for protecting caves and karst. Bruce Bowman manned our booth (see photo below) and gave a speech on "Your Personal Commitment to the Environment," excerpts of which may be printed in a future *Update*. Although this event typically conflicts with the Indiana Cave Symposium, it is nonetheless very rewarding and hopefully next year others will volunteer to assist in this worthwhile educational project.
- ❑ The IKC Publications Committee has been reviewing material to re-initiate our Special Reprint Series. It has been several years since Reprint #5, Blatchley's *Gleanings from Nature*, was distributed and the Committee wishes to propose a more established schedule, such as one small (4 to 12 pages) and one large (more than 10 pages) reprint annually. The focus of the Series is to promote education through re-publishing "classic" Indiana cave/karst papers, theses, and articles that would be of general interest to our members. As has been done in the past, the reprints would be distributed for free to all members and available to other at cost.
- ❑ Along with their renewal dues, sixteen members gave a little extra that totaled \$275 in donations. Contributors included Tom Ahler, DA Burden, the Church Family, Allen Clawson, Keith Dunlap, Jeff Farr, Allen Goodcase, Tem Hornaday, Marengo Cave (Gary Roberson), Steve McKenzie, Jon Miller, Victor Porter, Mark Sheehan, Bob Vandeventer, and Dick Vernier. The IKC would like to especially recognize Robert Masta for his generous contributions the past two years.
- ❑ Four new members have joined the IKC in the past three months. Welcome Chris Cruzan, Amy Cullison, Diana Schuh, and Thomas Mullen.

Bruce Bowman providing educational information and brochures on Indiana karst at Indianapolis Earth Day festival.



photo by Kevin Strunk

BIG SPRING NATURE PRESERVE WORKDAY - JULY 9th

by Keith Dunlap / Hank Huffman

The IKC, in cooperation with the Ohio Valley Region and the Indiana Department of Natural Resources, will be sponsoring a workday on July 9th at the Big Spring Nature Preserve, located in south-central Indiana. The goal is to provide labor for several tasks that need to be completed at this new Nature Preserve owned by the IDNR.

Big Spring in Washington County is one of the larger springs in Indiana and feeds into the Blue River, probably the most ecologically important river in the state. The picturesque spring is situated at the base of a steep alcove and represents an alluviated cave spring (one which has been previously covered with stream sediment). The rise pool is approximately fifteen feet in diameter and an estimated six to eight feet in depth. The water which supplies the spring originates from the sinkhole plain to the northeast. The minimum flow has been recorded at 450 gallons per minute, but can be significantly greater when in flood. The nine acre preserve contains a relatively high quality old growth forest forming a scenic backdrop to the spring.

The property was acquired and dedicated in 1992 and will remain substantially "natural." However, there are several potential projects/tasks that need to be accomplished during this workday including: 1) installation of proper Nature Preserve boundary signage along the perimeter; 2) assembling and installation of a large routed wood Nature Preserve sign near the

parking area; 3) reconstruction of the legal property survey and mark the boundaries with nine permanent concrete markers; 4) construction of a primitive foot trail with erosion boards from the parking area to the spring (approximately 500 feet); and 5) relocation and replacement of current cattle fence at the rise pool with a split rail fence (approximately 140 feet in length), allowing for better access and viewing. The Big Spring NP project was selected to allow volunteers of all ages and skill levels to participate while accomplishing something constructive and meaningful at this interesting and important karst feature.

Big Spring is located nine miles south of Salem, Indiana just off SR 135. For convenience, we will meet at the McDonald's on the southside of Salem and caravan from there, leaving at 10 AM (Indianapolis time). Comfortable camping is available at Delaney Park (north of Salem) on Friday and Saturday nights. There are numerous restaurants in Salem and a well stocked country store just down the road from Big Spring for Saturday lunch. We will have several suggested caving opportunities for participants on Sunday to round out their Indiana weekend before heading home.

While tools and equipment will be provided, we would appreciate those who have additional hand tools to bring them along.

For more information or specific direction to Big Spring, contact Keith Dunlap (317-882-5420/242-2505) or Hank Huffman at the Division of Nature Preserves (317-232-4052).

HANCOCK PROPERTY WORKDAY - SATURDAY, JUNE 4th

Prior to the IKC Quarterly Meeting in Bloomington on Saturday, June 4th, the IKC will be working on the Hancock property (off of Spicer Lane), starting at 1:00 PM (we will finish up around 5:00). This year we need to remove several trees that were put in the entrance pit of Coon Cave over the winter. Other specific tasks include walking all the trails to collect trash, posting new NO TRESPASSING signs as needed, and performing whatever other maintenance needs to be done. Grotto Cave will be open and available for those wishing to make a quick trip into this cave.

Anyone needing more information or directions, please contact Keith Dunlap.

LAND ACQUISITION COMMITTEE REPORT

by Bruce Bowman

At the IKC Annual Business meeting in March, some reservations and concerns were expressed regarding the IKC owning land for protection of karst resources. Previously, the Land Acquisition Committee (LAC) had been established in order to address just these concerns and to ascertain an appropriate strategy towards land acquisition in light of our available financial resources. This committee met on May 12th to summarize the membership's concerns and to provide responses. This article will do just that -- but first it seems reasonable to present a brief chronology of the activities of the LAC up to this point.

The idea to pursue land acquisition was first formally presented at the Quarterly meeting in June of 1993. Not surprisingly, this concept brought about a lengthy discussion among those present, and for that reason the LAC was appointed and the motions were tabled until such time as the committee could investigate approaches to acquire land. At the first meeting of this committee, input was solicited from the appointees (and others outside the committee) to assist in putting together a list of caves worthy of protection and a short summary of why a given cave was significant. After this data was accumulated, the committee met again to discuss the input received and to familiarize each member with the properties listed. Some of the suggestions were rejected at that time with the rest compiled into a list.

Now came the somewhat difficult procedure of ranking the caves/karst features to assist in prioritization of subsequent landowner contacts. This was done by providing each committee member with a list of the properties, and rating each on a scale of 1-10 in the categories of "value of the resource/need for protection" and "practical likelihood of acquisition by the IKC." In doing so, it was necessary to take into account a number of concerns; including such things as the likelihood that another conservation organization/agency would purchase the property and thus protect it (The Nature Conservancy, DNR, HNF, etc.), the age/accessibility of the landowner, previous contacts (both nega-

tive and positive), and the recreational, conservation, and scientific value of the cave/karst feature. A weighted average of each member's ratings was compiled and the ranked list was provided to the committee members and Board at the February Board meeting. While the order of the list is admittedly a little arbitrary and may have some bias, it is felt that the majority of the membership would agree with the properties that ended up in the upper 20% of the list. Again, this list is intended as an order to pursue communications with the landowner, and not necessarily the order of purchase. [NOTE: *We don't have any current plans to share the contents of the list with the membership at large. While this may appear exclusionary, it is based on a sound principle: should a landowner discover the extent of our interest, the price would probably increase. It would not be wise in negotiations for the landowner to know that their cave was, for example, first on the list. A quick review of other land purchasing organizations has shown that this has occasionally caused very detrimental effects on their efforts. Also, the list should be considered a living document and is by no means the final word -- if you wish to add a particular cave to the list, please make a case with one of the LAC members. The list is by no means exhaustive, so please contribute. We can tell you whether that cave is already on the list, but not its current ranking.*]

Discussions at the Annual meeting about land acquisition led to the May 12th meeting in which the issues raised were discussed and addressed. These are outlined individually below:

How are we going to pay for these properties? Current plans are to start a fund specifically for purposes of land acquisition. Unless we have an active project, there is little likelihood of obtaining outside funding in the form of grants and donations -- we will never hit a target if we don't establish one. Perhaps we can focus initially on a piece of property that we know will remain on the market, and use this as a catalyst for a grant which, once

obtained, could be used as a revolving source of finances. It is not beyond the realm of possibility that we would go into debt for a piece of property; some have already expressed the viewpoint that if the property was right, they would personally incur the debt on behalf of the organization until such time as they could be repaid. Contacts are already being made with other organizations in hopes of establishing a National Karstlands Trust. There is also the possibility that a landowner, with whom we have a particularly good relationship, would bequeath or donate the land to us; but first we have to establish this special kind of relationship for this to be feasible. We also anticipate that membership in the IKC may increase if we have our own properties, which in itself would help through dues and donations.

How do we deal with liability and insurance? While the liability waivers we require everyone to sign will help us in this regard, keep in mind that we already have incurred liability for the properties we lease. The Land Trust Alliance, which we would join, provides very comprehensive insurance at a reasonable rate that should easily remain within our budget. Also, as a corporation, keep in mind that we are not subject to losing more than our corporate assets. Should a catastrophe occur, the IKC might go bankrupt, but individual members would not have to shoulder such a burden.

What about property taxes? Since the IKC is a 501(c)(3) non-profit organization, we are exempt from Indiana property taxes for the first fifty acres per county (this number may actually be larger in some counties). Should we acquire larger acreage, we could also seek tax reductions in the form of classified forests or classified wildlife habitat (usually at the annual rate of \$1/acre). It would be wise to do this in any case.

What will be the access policy for IKC-owned lands? The establishment of an access policy would not be done without caver input. The actual decisions, however, will depend largely on the nature of the resource; and a management plan would

be specific to the property in question (as is currently done for leased properties). The IKC is a conservation organization dedicated to wise cave *use*, and we do not intend to capriciously indulge in exclusionary tactics. However, if occasion demands, a restrictive policy may be necessary for protection of the cave resources and the biota therein. We are obtaining some materials from the Hoosier National Forest as a strawman to help prepare a draft land management philosophy for the IKC.

What are the current action plans for acquiring properties? The highly-ranked caves on the list will be assigned IKC contacts and the landowners will be personally contacted. This activity has already begun. If you have a good relationship with a particular landowner, please contact a member of the LAC. For caves and karst features that are further down the list, we will obtain the landowner's name from county records and send them a personalized letter expressing our interest should they ever consider selling. A dedicated LAC computer database will be established to store qualitative information on each landowner and give an overview of the nature of the resource in question. Funding possibilities (grants, donations) will be explored. We may even issue special certificates/awards/plaques to landowners who have taken a protective action in an effort to help foster a cooperative relationship. Further ideas are, as always, appreciated.

Becoming a landowner will be a big step for the IKC. However, we believe that it is the natural next step in the growth of the organization. The LAC has a nucleus of good, intelligent, and active decision-makers. We can also leverage our efforts with the assistance of other landholding organizations who have more experience in such matters. The challenges are nothing we cannot overcome with a modicum of thoughtfulness and initiative.

[Editor's note: the current Land Acquisition Committee members are Jim Adams, Bruce Bowman, Keith Dunlap, Hank Huffman, Larry Mullins, and Tom Rea.]

ELECTION RESULTS AND COMMENTS

by Bruce Bowman / Keith Dunlap

The March elections resulted in several changes to the Executive Board. Foremost Bruce Bowman was elected President and Keith Dunlap became Treasurer. Newly elected to the Board were Larry Bundy, Mike Hood, and Bob Sergesketter. Re-elected were Hank Huffman, Tom Rea, Eric Schmidt, and Bill Tozer. Continuing their terms are Bruce Devore, Dave Haun, Scott Johnson, Larry Mullins, and Tom Sollman.

The IKC would like to thank the three retiring Board members for their contributions over the years. Scott Fee served one year as Treasurer, while Jeff Cody served four years and Ernie Payne served six years as Directors.

There were also a few comments on the IKC election process that should probably be addressed. First, there were some concerns about the need for "ranking" the vote for Directors on the absentee ballot. The need for ranking is because up until the

time of the actual election, it is sometimes not known the exact number of Directors needing to be elected. In the past, this has been because the Board size is dependent upon the number of IKC members (up to a maximum of fifteen). This year the ranking was required because Bruce Bowman's Director's position needed to be filled, but it was contingent upon him being elected as President. We will not use rank voting on the absentee ballots except when necessary.

There were some other concerns regarding the lack of information on the candidates and their positions on various issues. The Board has in the past discussed having candidates submit a bibliography and platform statement. This is an worthy idea and should be considered again for future elections. However, this can potentially favor long time cavers who can list lots of impressive credentials while discriminating against newer members wanting to get involved and contribute.

INDIANA BATS DON'T LIKE HIGHWAYS

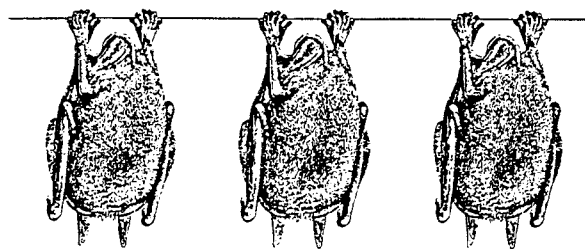
Information from a study for the Illinois Department of Transportation (Garner and Gardner, 1992) shows the Indiana bat's relationship to forests, streams, and human disturbance. It was found that this endangered species roosts in dead trees 92% of the time, mostly in trees over twenty inches in diameter at breast height. They prefer Shagbark Hickory (55%), but also use Red Oak (17%), Slippery Elm (12%), Cottonwood (6%), Post Oak (4%), and others (6%). Most of the roosts (62%) were in closed canopy forests, while 29% were in intermediate canopy forests.

It was concluded that Indiana bats do not roost in open canopy, old fields, residential, or farm land. Pastures with scattered trees are acceptable habitat, and Indiana bats commonly forage in livestock grazing areas. Adult Indiana bats remain within 800 meters of perennial streams and within 200 meters of intermittent streams. It was also found that mature

females stay about 1600 meters away from paved highways.

Indiana bats clearly prefer big trees, closed canopy forests near streams, and no roads. They probably keep further away from interstate highways than other roads. John Whitaker concludes from his experience that, "Indiana bats don't like interstates anymore than you or I do."

[Adapted from the Protect Our Woods newsletter, Spring 1994. The proposed I-69 (Indy-to-Evansville) interstate could have potential negative impacts on the bat's summer roosting and feeding habitats.]



SR 37 HIGHWAY UPDATE

by Keith Dunlap

Very little activity has occurred on the SR 37 four-laning project either physically or administratively since the March status report was printed. Some minor erosion control deficiencies were addressed and construction continues to be wrapped up, but for the most part, physical work was minimal.

The Administrative Judge overseeing our Appeal has been prodding INDOT to supply the various component documents required to obtain closure, but there seems to be a lot of foot dragging. Also, INDOT, IDNR, USFWS, and the Appellants (IKC, Hoosier Environmental Council, and Protect Our Woods) are supposed to have a "final" on-site inspection on May 26th.

The results from the third water quality sampling period were distributed by WW Engineering, INDOT's environmental consultants. Compared with the previous year's winter sampling, silt levels (total suspended solids) were down considerably, an expected outcome considering nearly all the construction had been completed and INDOT also installed better erosion control protection.

On the other hand, sodium/calcium chloride levels, a direct indication of road

salts, increased from the previous winter (last winter had several heavy snows in that area). Measurements at several of the monitoring stations exceeded the Acute Aquatic Criterion (AAC) which could potentially be fatal to aquatic cave life.

One of the early IKC/HEC/POW "demands" was for a *no* salt zone, but the IDNR/USFWS compromised with INDOT for a "low" salt zone. Even though INDOT agreed to this strategy last summer, they failed to implement it last winter and are only now composing their procedures. The IKC has received a draft copy of their strategy and it was found to be mostly "warm fuzzy" generalities with no specifics.

I would like to clarify something I wrote in last *Update* pertaining to the peat filters being used to improve water quality. In that report, I erroneously stated that the peat filters were only partially installed for the winter when in fact they were complete. The confusion came about because INDOT had changed the design (with approval from Tom Aley) without distributing the new drawings to any of the outside parties. In an future *Update*, I will go into more detail on the construction and functionality of these peat filters.

This sign was installed by the IKC last January near the entrance of Jim Ray's Cave. It was requested by the landowner to hopefully reduce winter traffic in this critical hibernacula.



photo by Bruce Bowman

WYANDOTTE CAVE CONTINUES CLEANUPS

submitted by Roger Gleitz

The third annual Easter Weekend cave clean-up was held April 2nd at Wyandotte Caves State Recreation Area. Participants were Doug Hanka, Lorilie Esterly, Pat Bays, David Black, John Benton, Nick Benton, Tom Sollman, Steve Lanning, Chris Schotter, John Vargo, Doug Mayes, Mike Mays, Pedro Lornes, Roy Logan, Neal Gleitz, and Roger Gleitz, coordinator. Grottos represented included the Bloomington Indiana, Central Indiana, Evansville Metro, Harrison-Crawford, and Louisville.

The focus of this year's cleanup efforts was on the New Discovery of 1941 and Monument Mountain. Thirteen hundred feet of graffiti were removed from walls and ceilings with the use of a power sprayer, brushes, water misters, and elbow grease. Old wooden posts and stairs, fencing, and tourist garbage were also removed from behind the Crater Room, Mountain Room, and the Counterfeiter's Room. Some large slanting, slippery rocks on the tourist trail were also covered with a level path of damp mud after it was determined they were too large to move. Several pre-Civil War signatures were found by the Auger Hole after soot was removed. All names over fifty years old were spared. Photo-documentation of names and dates, and before and after shots were taken by David Black.

Two large finds were made as a result of this year's efforts. One of the old paint-

ed advertisements from 1871 on "Fat Man's Misery" was uncovered near the Counterfeiter's Room. Gleitz also discovered a prehistoric granite chipping hammer in the Mountain Room below an aragonite mining spot. It was near the old wooden stairway and probably rolled down the breakdown when the prehistoric miner dropped it 1200 to 1800 years ago. The artifact was left in the room for the State Archeologist to examine.

Past cleanups have focused on removing unnatural materials from Little Wyandotte Cave and other sections of Big Wyandotte. Next year's cleanup will concentrate on one of the Long Route areas, either the All Day or Pillar tour routes. No graffiti removal is to be attempted in archeological areas and trash removal will be strictly monitored, according to Gleitz. "It would be a travesty to destroy a pictograph or throw away an artifact that has remained intact for thousands of years," he says. All activities must be pre-approved by the IDNR's Division of Historic Preservation and Archeology as well as the Division of Forestry, he noted.

"The hard work by the volunteers and the cheerful nature and camaraderie is something I look forward to," say Gleitz. "There is no way we could accomplish some of the details without them. The staff at Wyandotte overwhelmingly appreciates their efforts."

"...In terms of damage done to caves, most cavers, when they speak of conservation, are concerned about the traffic in caves. But the damage caused by land use is far greater than that caused by direct human visitation. The damage caused by poor waste disposal systems can do more damage than tracks in mud, a few broken speleothems, beer cans on the floor, or graffiti on the walls.

You have to put things in proper perspectives. I'm not saying we need to ignore the broken stalactites, beer cans, and graffiti, but if we are to protect cave resources, owners and managers have to understand the intimate and integral connections between the surface and the subsurface. We have to think of karst lands as three dimensional systems..."

- Tom Aley [*Excerpt from the MCKC Digest, April 1994*]

TEMPERATURE MONITORING IN JIM RAY'S CAVE

by Keith Dunlap

ABSTRACT: During the winter of 1993-94, electronic temperature recording devices were installed in Jim Ray's as part of long term monitoring project. The first results will be presented.

BACKGROUND: For the past twelve years, systematic population counts of Indiana bats (*Myotis sodalis*) have been conducted in Indiana caves known to serve as hibernacula for this species. This information has been periodically published in the *Update* (see issue #29 for the most recent summary) and generally shows that most of the hibernacula populations are stable or increasing. The most dramatic increase has been documented in Jim Ray's Cave in Greene County. From 1981 to 1991, the population more than tripled to almost 42,000 bats. The 1993 census showed a slight decrease at Ray's which may be a one time anomaly or it may be an indication that whatever was causing the population to increase has reverted back to its previous conditions.

As a rule, *sodalis* select caves that can maintain winter air temperatures between 40 and 45°F which help them hibernate more efficiently. Since the usual air temperature for Indiana caves is 55°F, these hibernacula caves must exhibit special climatic characteristics. Most of the hibernacula have pit or downward sloping entrances that allow cold air to be drawn in and "trapped" in low areas (examples include: Twin Domes, Wyandotte, Jughole, Batwing, Coon, Grotto, Parker's Pit, Robinson Ladder, Saltpeter (Crawford), Saltpeter (Monroe), Leonard Springs, Wildcat, Bentz, Nichols, and Buckner). The other possibility is to have a cave with two or more entrances at different elevations such that a chimney effect is created where rising warm air escapes from an upper entrance, drawing cold air into the lower entrance and through the cave between the entrances. Ray's is a classic example of this second cooling mechanism.

Generally, one would not expect significant *natural* changes to occur that would alter airflow, but this may be just the case

at Ray's Cave. The upper (beech tree) entrance in 1967 was described as blocked by breakdown and unpenetrable (BIG, Vol 7, #2), but now is easily passable. The vertical hole on the surface is also thought to have enlarged significantly over the past twenty years.

Based upon these conjectural physical changes at the beech tree entrance, it has been hypothesized that the population increase in Ray's Cave is related to increased airflow and the resultant cooling in the cave during the winter. Since temperature data does not exist for the "before" condition, the hypothesis will remain just that. There are however, several reasons that temperature monitoring in Ray's Cave needed to be initiated.

First, there is a demonstrated need to install gates on the entrances of this cave to protect the bats from unintentional and deliberate human disturbance during their hibernation season. While current bat-friendly gate designs are thought to not impact airflow, it is beneficial to have baseline data to support this assumption should there be questions regarding this aspect of the gates after installation occurs.

Second, there is concern that this hypothesized airflow improvement in the cave could now potentially have negative consequences if too cold of air is pulled through the cave. Continuous sub-freezing temperatures are potentially fatal and could catastrophically wipe out a significant portion of the colony. While passively monitoring temperatures will not prevent this natural phenomenon from occurring, it will at least provide an explanation of a drastic population decrease observed during the biennial censuses.

Third, there is a need to understand why some hibernacula (such as Ray's, Coon, Wyandotte, Jughole) have increasing populations while others (Batwing, Grotto) have decreasing colonies. By collecting significant temperature information at these various caves, perhaps a better understanding of population trends can be formulated, explaining observed fluctuations.

continued...

METHODS: Dr. Virgil Brack has had a long term interest in Jim Ray's Cave (he did his PhD work there in the early 80's). He has been wanting to conduct an extensive thermal mapping project in this cave for a number of years and in 1991 made a formal recommendation to the IDNR to initiate such a project. However, until recently, expensive, bulky, temperamental multi-channel data loggers were the only alternatives to accomplishing this research. Furthermore, these devices and the thousands of feet of cabling required to completely instrument a cave are vulnerable to vandalism and theft in an ungated cave.

This all changed last year with the introduction of a small, inexpensive (\$120), self-contained, solid-state single-channel data logger. These devices (see actual size below) can be easily concealed on ledges or buried with much less risk of being tampered with or stolen.

In order to evaluate these new data logger, I purchased one last June to experiment with. Meeting my initial expectations, I purchased three more and obtained permission from the owner of Ray's Cave to install them.

One was placed approximately sixty feet into the cave from the main entrance which coincided with the location where the first bats are normally found. The second one was located about 150 feet in where the main clusters hangs. The third data logger was placed about fifty feet from the beech tree entrance in the

"active" area (the location where the bats fly to during the short periods of time they are active in the winter). The final logger was placed outside the cave in a tree to capture ambient temperature.

The monitors were placed in the cave on September 21, 1993 and removed on April 20, 1994 (note: the data logger near the beech tree entrance was stolen -- it was the only one with the thermistor cable visible and the only one that did not require a ladder to reach -- a lesson learned the hard way). The loggers were set to sample every 3.2 hours, collecting approximately 1600 data points each during the study period. The information was downloaded from the loggers and imported into Microsoft Excel for plotting. Figure 2 shows the outside temperature (gray line) along with the temperature information at the main cluster location (black line). I did not include the temperature plot at the location near the main entrance to simplify the graph, but basically it fell in between the other two curves just as one would expect.

OBSERVATIONS: If ever there was a winter to do this monitoring, it was last year with record low temperatures. The outside thermistor recorded a low of -32°C (-26°F) on the morning of January 19th. Consequently, the in-cave temperature dipped to -3°C (26°F) and was below freezing for over twenty-four hours. During that cold spell, the in-cave temperature was below 4°C (40°F) for a period of eight days. This is perhaps better observed in figure 3 where the same data was smoothed using a ten day (75 point) moving average.

It is not known what, if any, detrimental effects this extreme cold had on the bats. The biennial census will be conducted next winter and may provide more insight. Until several more years of temperature monitoring is completed, few conclusions can be made.

FUTURE WORK: Plans call to continue this project at Ray's with at least four data loggers. A grant proposal has also been submitted to the IDNR to expand this monitoring project to include Coon and Grotto caves using a total of thirteen instruments.

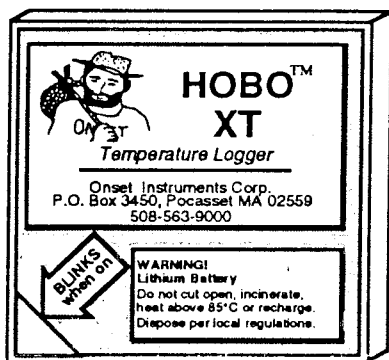


Figure 1 - Actual size of the Onset data logger (thickness = 0.6 inch)

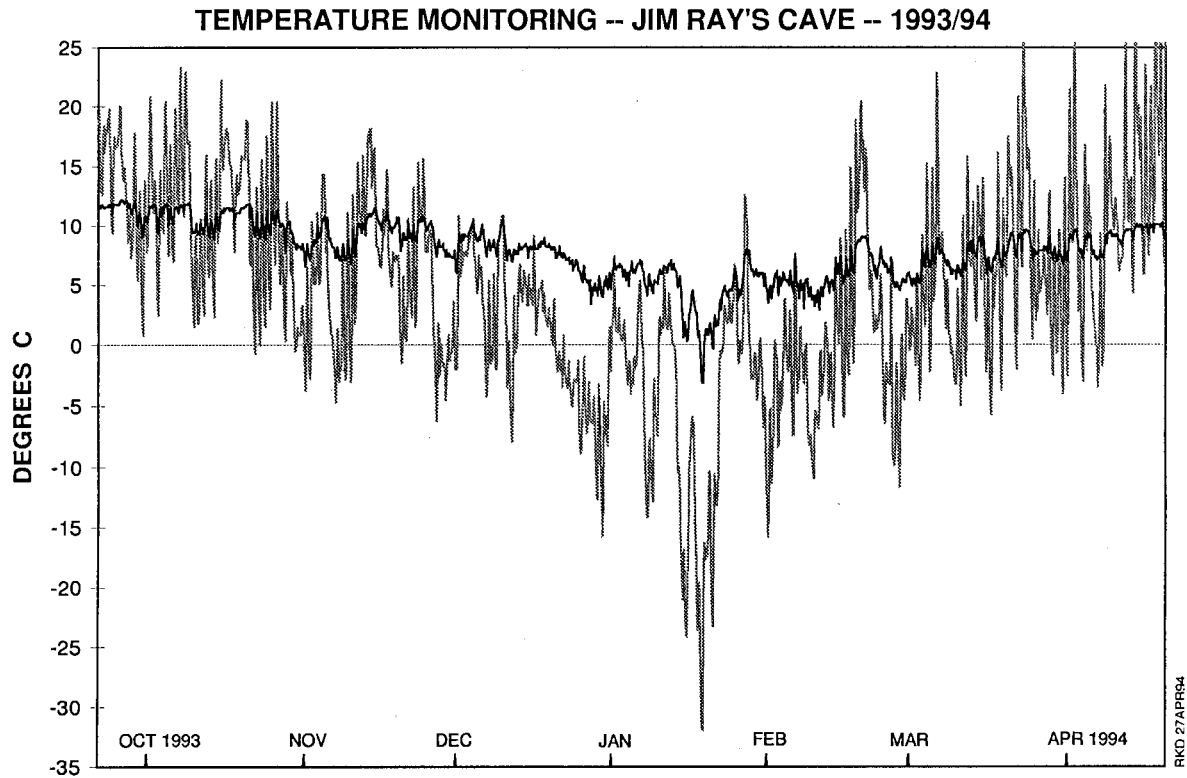


Figure 2 - Temperature data (raw data)

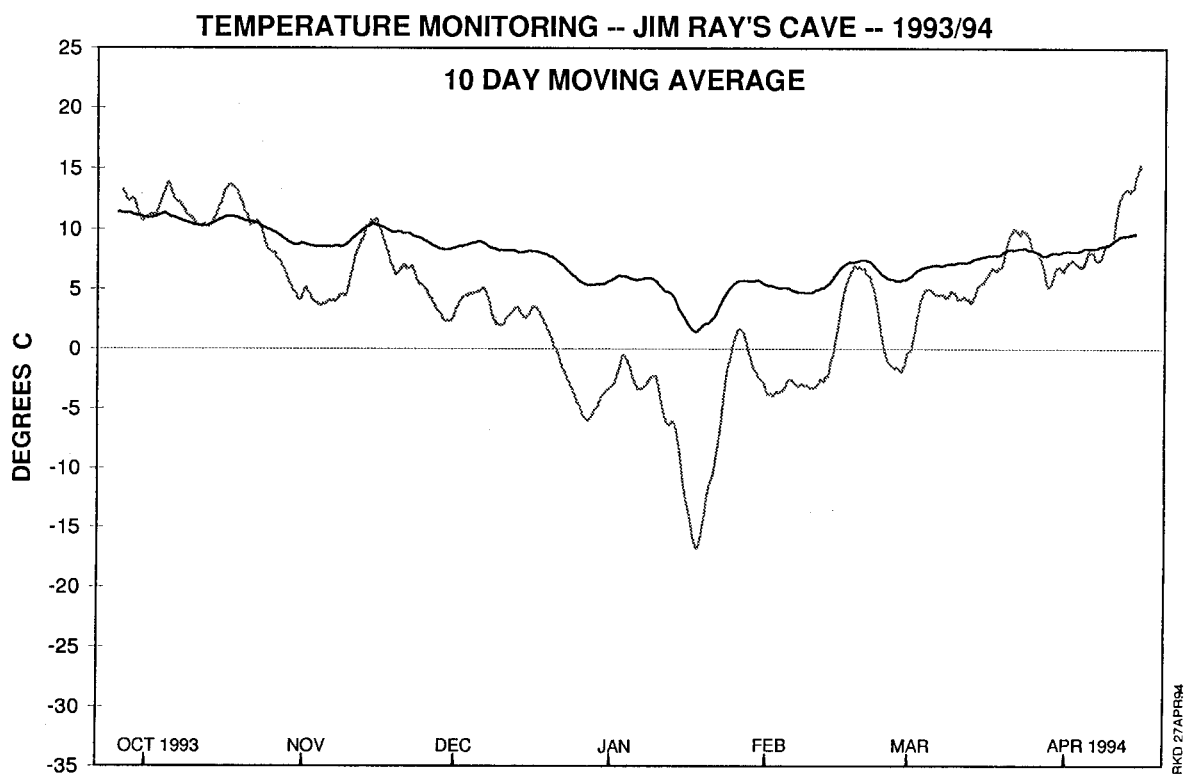


Figure 3 - Temperature data (smoothed)

THE SECOND ANNUAL INDIANA CAVE SYMPOSIUM

by Keith Dunlap

The 1994 Indiana Cave Symposium was successfully held on April 23 at Spring Mill State Park. Nine interesting papers were presented to an audience of approximately sixty-five.

The Symposium began at 5 PM with a pitch-in supper. Chef Holly served up a couple hundred hot dogs supplied by the Symposium sponsors.

At approximately 6:30, Symposium organizer, Dave Black, started the program with opening remarks and quickly moved into the presentations.

The first presenter was Roger Gleitz, Assistant Manager of Wyandotte Cave, with an interesting and entertaining slide show depicting some of the projects completed during the past three annual clean-ups. Several "before" and "after" examples were shown to illustrate their progress in graffiti and soot removal (also see a related article on page 14).

The second presentation was by Andy Duwelius, a hydrologist for WW Engineering. Andy's talk was on recent dye tracing activities that WW performed for the Indiana Department of Transportation related to the SR 37 widening project. Using five different dyes simultaneously, the engineering firm was able to trace all fifteen sinkholes along the project in just three batteries of tests, reducing field time and costs significantly. The traces showed that the two northern most sinkholes drain to Pless Cave while the remainder of the sinkholes all the way south to SR 60 in Mitchell drain through Blue Springs Cavern. These traces delineated the overall Blue Springs drainage system on the south and extended it considerably farther than previously thought. A final dye trace on the southern most sinkhole (south of SR 60 on Mitchell's far southside) yielded surprising and unexpected results, connecting to Hamer Cave in Spring Mill State Park, 2.4 miles to the east. This is believed to be the longest up-dip dye trace ever completed in Indiana.

The next presentation was by Dr. Bill Pearson, University of Louisville, providing a status report on two projects he is doing related to *Amblyopsis* cavefish. The first project is a study being funded by the

IDNR to determine the status and distribution of the Northern cavefish (see page 7 for further details). The second project is documenting cavefish (both northern and southern species) in the Mammoth Cave National Park area.

Joe Parks from the Evansville Metro grotto presented next on the exploration of Carter Cave in western Kentucky. The cave currently has over two miles of surveyed passage and could potentially connect to nearby Glovers.

The fifth talk was on the extension of Baker Hollow Cave (Harrison) by Terry Clark (EMG). By pushing a tight drain in 1992, Matt Clark discovered an extensive passage which is currently being surveyed.

The next presentation was by Keith Dunlap (IKC) on temperature monitoring in Jim Ray's Cave (Greene). Using small, inexpensive data loggers to record information, plots of outside and in-cave temperatures were shown from this important Indiana bat hibernacula (see page 15 for more details).

The seventh presenter was Tom Sollman from the IKC/EMG giving a status report on his continuing research in Shiloh Cave (Lawrence) related to crayfish populations. This work is a follow-on to studies which were performed several decades ago and will also serve as a monitoring baseline when visitation is permitted to this cave in the future. Tom presented a number of charts with the most interesting relationship shown to be crayfish counted versus stream level.

The next talk was by Ray Sheldon (CIG/ICS/IKC) on his surveying and documentation work initiated at the Jefferson Proving Grounds in southeast Indiana. So far six caves have been mapped and inventoried and several more located (see page 5 for more information on this project).

The final presentation was by David Black (HCG) on the discovery, exploration, and survey of Milltown Quarry Cave. Numerous slides were used to show the complexity of the cave and its many sporting characteristics.

Financial sponsors for this year's Symposium included the IKC, the Indiana Cave Survey, the Central Indiana Grotto,

INDIANA KARST CONSERVANCY TREASURY REPORT
Income Statement
From January 01, 1994 to March 31, 1994

INCOME:

Fourth Quarter Dues	\$667.50	
Donations	\$270.00	
Interest	\$23.42	
		\$960.92

EXPENSES:

IKC Update (Printing/Production/Mailing):	\$180.31	
Membership Renewal Letter Expenses	\$63.67	
Bat book postage	37.94	
President's postage / expenses	\$24.10	
Secretary's postage / expenses	22.14	
Rays Cave Sign	\$10.25	
Leases	\$1.00	
State annual filing fee	\$10.00	
Total Expenses:		(\$349.41)
Current Operating Excess (Deficit)		\$611.51

Balance Sheet
March 31, 1994

ASSETS:

Prepaid Exp: 1995 Cave Management Symposium	\$734.00	
Cash in Bank	\$5,680.57	
Total Assets		\$6,414.57

LIABILITIES & OPERATING EXCESS:

Hancock Property Maintenance Fund	\$218.49
DNR Non-Game Fund	\$270.00
Indiana Cave Symposium Fund	\$597.00
Deferred Dues Fund: 108 members @ 100%	\$1,620.00

Previous Operating Excess	\$3,097.57
Net Excess (Deficit) This Period	\$611.51

Current Operating Excess	\$3,709.08
Total Liabilities & Operating Excess	\$6,414.57

the Evansville Metro Grotto, the Harrison-Crawford Grotto, and the Northern Indiana Grotto. Funding for the next four to five years has already been secured with the transfer of the 1992 NSS Convention Committee honorarium to the Symposium (this money will be maintained as a restricted fund by the IKC).

Its not too soon to start planning for next year's Symposium. If you are working on a cave survey, cave research, or other cave/karst related project, consider sharing your experiences and results with other cavers who would be interested in hearing about them. Contact Dave Black for more information.

IKC QUARTERLY MEETING MINUTES

Saturday, March 19, 1994

Indianapolis, Indiana

BOARD MEMBERS PRESENT:

James Adams	Bruce Bowman
Bruce Devore	Keith Dunlap
Scott Fee*	Dave Haun
Hank Huffman	Scott Johnson
Larry Mullins	Eric Schmidt
Tom Sollman	Bill Tozer

BOARD MEMBERS ABSENT:

Jeff Cody*	Ernie Payne*
Tom Rea	

*Retiring board members

The meeting was called to order at 7:10 P.M. by IKC President, Keith Dunlap at the Indiana World War Memorial.

The December 1993 and February 1994 meeting minutes were approved as published. Later in the meeting, however, it was noted that the Lost River Tours which will be held in conjunction with the Indiana Cave Symposium will take place on Saturday, not Sunday.

Treasurer Scott Fee reported that \$572 in donations to the Indiana Cave Symposium are being held by the IKC. We have just over \$5000 and everything is "Oh-Key-Doe-Key".

Elections - No additional candidates were nominated for President, Secretary, or Treasurer. In each case Bill Tozer moved that the single candidate for each office be accepted by acclamation. Motions passed. A nomination was received for Roy Logan as a candidate for a Director position. There were no write-in nominations.

The newly elected officers are:

President - Bruce Bowman
Secretary - James Adams
Treasurer - Keith Dunlap
Directors (2 year terms) - Larry Bundy
Hank Huffman, Tom Rea, Eric Schmidt
Bob Sergesketter, Bill Tozer
Director (1 year term) - Mike Hood

While the ballots were being tabulated, President Keith Dunlap continued with the meeting. Tom Sollman continues to monitor the

Crayfish population in Shiloh Cave. It's about time to begin thinking about working on the gate again.

Bruce Bowman had nothing new to report on the status of Suicide Cave since the last Director's meeting in February. Bruce has written to the land owner and is waiting for a reply.

The watchdog role that the IKC and other conservation-minded organizations has played during the SR 37 expansion has had some positive results. INDOT seems to be taking more care with their construction practices. A Memorandum Of Understanding has also been signed. This was published in the March 1994 *IKC Update*.

At this point in the meeting the election results were announced. Keith Dunlap stepped down as President and Bruce Bowman took over the meeting.

INDOT has a program that allows organizations or businesses to "adopt" a two-mile section of highway to clean up on a regular basis. The IKC would like to adopt a section of SR 37 south of SR 50. This will allow us to keep an eye on the newly designed section. Other grottos are already participating. The highway department picks up the trash after we bag it. Aluminum could be recycled to benefit the IKC. Keith moved to participate in the program. Motion passed.

The IKC should begin looking for another in our series of "classic" reprints from caving literature. Most recently the IKC distributed *Gleanings From Nature*, a chapter on Indiana caves by W.S. Blatchley, originally published in 1899. If anyone has any ideas, let us know. A review committee was established to look at possibilities. The committee will consist of Bruce Bowman, Keith Dunlap, and Eric Schmidt.

The Land Acquisition Committee met in December to prioritize a list of possible cave and karst areas that might be good investments for purchase by the IKC if they should become available. Bruce opened the floor for discussion. There was a lot of input. Bruce suggested that a general management plan should be considered and that a list of "pros & cons" of

land ownership be made. Jane Miller suggested that we might want to do a special mailing to the membership. Bill Tozer suggested that more information be published in the *Update* to keep the membership better informed.

Scott Fee announced that there will be a "going-away" party for he and Jaime at the Strickland's house directly following the meeting.

HNF Ridgewalks are scheduled for March 20th and April 10th.

Keith Dunlap moved that the IKC fund a booth at Earth Day for \$30. Motion passed. Bruce Bowman has volunteered to man the booth but needs help.

There are several other events coming up. Under-Earth Day V is scheduled for Sullivan Cave on April 24th. The Buffalo Riders meeting is scheduled for Spring Mill State Park on May 14th. Bob Armstrong will, once again this year, conduct his Lost River Tours. The Indiana Cave Symposium is set for April 23rd at Spring Mill State Park.

The 1995 National Cave Management Symposium hosted by the IKC and the Hoosier National Forest will be chaired by Keith Dunlap. The inn at Spring Mill State Park has been reserved. Bruce is trying to get a mailing list from the 1993 chairman.

The Big Springs Nature Preserve project has been confirmed as the Ohio Valley Region of the NSS conservation project for 1994. This will take place on July 9th.

Larry Mullins has made a KARST events schedule available. May 14th is Take Pride In

America Day. A canoe trip and cave clean up are being planned. There will be a KARST meeting and picnic on May 15th. In July, look for a woods navigation course.

From the DNR, Scott Johnson reported that the Woodrat report is finished. The sites will be visited again in 1994. Also, the signage at Rays Cave has been completed. INDOT has also moved a city sign that was used as a marker to the cave.

There is talk that someone has applied for a permit for gas exploration in the Harrison-Crawford State Forest. This situation is similar to what is going on in New Mexico.

The 1993 bat census report is now available. See Keith if you'd like a copy.

The February issue of the *NSS News* had a very Hoosier flavor. It should be noted that Bill Tozer took several of the photographs. These were incorrectly attributed to Jim Adams.

The zoning board has given the go-ahead for the amusement park West of Indianapolis in Hendricks County. A class-action suit is being considered.

Dave Haun asked if we'd consider placing an ad in the Speleofest guidebook. The general feeling was "sure". Dave will work with Bruce on the details.

The next meeting will be on June 4th at 7:00 PM in the IU Geology Building. This will also be a work day on the Hancock property. Meeting adjourned at 9:08 P.M.

Submitted by James Adams, IKC 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 _____

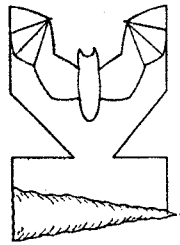
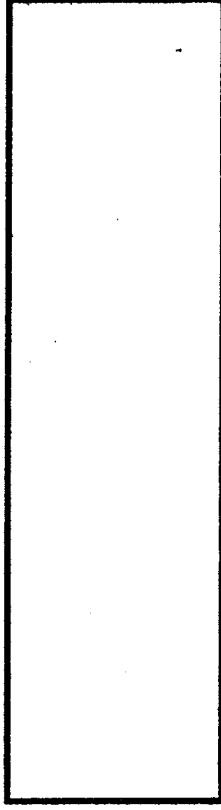
PHONE # _____

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.

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