

IKC Update



No. 37 - June 1995

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

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

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Cover - Delecate formations in Cave of the Winds, Colorado.

Photo by Scott Fee, assisted by Jaime Fee.

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



QUARTERLY MEETING REMINDER

SATURDAY, JUNE 24th, 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 24th workday accomplishments; Discussion of by-law changes pertaining to proxy voting; HEC membership renewal; Wayne's/Shiloh vandalism incidents; Coon & Grotto winter closure ineffectiveness; Other workday proposals; Mayfield's discussion; Binkley's discussion; Highway construction discussions; 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

- 24 JUN = HANCOCK PROPERTY WORKDAY, Bloomington (see page 11)
- 24 JUN = IKC QUARTERLY MEETING, Bloomington (see above)
- 26 AUG = COON CAVE RESTORATION TRIP, Bloomington (see page 4)
- 16 SEP = LOST RIVER TOUR, Orleans (see page 6)
- ?? SEP = IKC QUARTERLY MEETING/COOKOUT, Clayton (date TBD)
- 07 OCT = LOST RIVER TOUR, Orleans (see page 6)
- 25-28 OCT = NATIONAL CAVE MANAGEMENT SYMPOSIUM, Spring Mill Inn

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...

The IKC has had to deal with some very disturbing events lately. These events have made it necessary to send letters via certified mail, quote legal passages, and generally engage in some serious reevaluation. We found damage to two IKC-managed caves that was traced directly to people who had entered after applying for permits. In one instance, the damage was found by a researcher, who then questioned our access policies. This is a very embarrassing situation for the Conservancy.

The nature of the damage was not particularly important; what is important is the significance it has with regard to our management policies. In the past, the IKC has generally taken the position that a person who is responsible enough to apply for a permit is also ethical enough to avoid purposely impacting the cave for selfish reasons. Clearly, this attitude may need some rethinking. Although our requirements are not unreasonable or difficult to comply with, apparently there are those who will not do so.

In both cases, evidence indicated that the person who applied for the permit did not actually do the damage. This brings up the point that the trip leader is responsible for the actions of those accompanying him/her. Whether the trip is to an IKC-managed cave or not, it is a caver's duty to ensure that novices are provided with the

right attitude: a respect for the underground. It's not enough to say "I didn't do it." Those who watch, and do nothing, are just as guilty. Perhaps more so, because they should know better.

"Ramblings from the President," indeed...I'm living up to that title this time!

Perhaps I'm just too flabbergasted by it all...I find it inconceivable that someone would dismiss the incident. Here we are, working to protect caves that aren't even under our stewardship, and there are those who would have us look the other way when disrespect for the cave environment is exhibited right under our noses. But then again, if this never happened, there would be no need for us in the first place.

I really doubt any legal action will take place, and the offending parties have already been denied access to IKC-managed properties for 6 months while the issues are under discussion. But I can't help but wonder if we need to revamp our access policies over this, or whether having this happen in two caves -- almost simultaneously -- was just a fluke that should be shrugged off. So now I'm asking you, the membership, what we should do about this...not just these two instances, but in general. Is the IKC too lenient? Please let your directors know.

- Bruce Bowman

COON CAVE CLEANUP - SATURDAY, AUGUST 26th

The IKC will be sponsoring its 9th annual cleanup into Coon Cave on Saturday, August 26th. As in past several years, our main activity will be graffiti removal and/or mud-washing in the lower levels, 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 in the Bloomington westside K-Mart parking lot (directly behind Bob Evans) 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 weekend to visit Coon until May 1st, 1996 because of the bat hibernacula closure.

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

NEWS BRIEFS...

- ❑ Due to numerous recent "rescues" and other problems associated with Doghill-Donnehue Cave System, the Indiana Department of Transportation has posted "No Parking" signs along SR 37 and "No Pedestrians on Right of Way" signs near the car dealership to discourage use of the culvert entrance to Donnehue Cave. While this does cause problems for legitimate cavers wishing to visit this cave, the notoriety of its entrance location was attracting many unprepared, untrained, and unconservation-minded visitors which needed to be addressed before overuse caused more serious and permanent damage.
- ❑ After several years of discussion, evaluation, and concerns with the human impact to the wintergreen growing along the cliff tops at Hemlock Cliffs, the Hoosier National Forest has decided to close an area of approximately 1000 square feet to protect the plant. While less aggressive alternatives were considered, the closure was deemed the best alternative to protect the wintergreen and the other vegetation from direct damage and soil compaction. The closure area runs along about 100 feet of cliff length and does not include other nearby cliffs which are still available for rappelling. Initially signs will be used to delineate the specific protected area. If this is found to be ineffective, other physical barriers may need to be employed.

Wintergreen is not an endangered plant in Indiana and is relatively common in the northern end of the state. However, this specific location is of great concern because it is the last known location in southern Indiana (sites in Monroe, Montgomery, Crawford, and Clark have all been lost over the past fifty years). In addition to the wintergreen, significant other vegetation damage was being done by soil/root compaction causing several trees to die. Loss of vegetation will eventually lead to additional erosion problems.

The HNF has held several meetings with cavers and others on this cliff issue and have solicited comments by other means. With the observed increase in rock climbing and rappelling at the site, the HNF management concluded the closure was the most appropriate method of protecting the remaining resources and hopefully allow future restoration. As with caving, balancing recreational desires with conservation obligations can be difficult. While everyone may not agree with the action taken by HNF, we must respect the decision and honor it. If you have future questions on this closure, please contact Pat York (812) 547-7051 at the Tell City Ranger's Office.

- ❑ There was some very good news out of the Hoosier National Forest in April dealing with a proposed exchange with US Gypsum that would allow the HNF to acquire Wesley Chapel Gulf and four other high priority properties totaling 703 acres. In return, USG would receive the gypsum mineral rights on 1,162 acres under HNF property near USG's Shoals mine. The gypsum, contained in a 10 foot high vein approximately 500 feet below the surface, would be removed using the sub-surface room and pillar mining technique with no permanent surface impacts (some exploratory core drilling may be required prior to the actual mining). The additional gypsum reserve, about 20 years worth, will assure continued operation of USG, one of the largest employers in Martin County.

In addition to the 189 acres surrounding Wesley Chapel Gulf in Orange County, the HNF will be getting a 40 acre in-holding on Nebo Ridge in Brown County, a 20 acre in-holding in the Deam Wilderness in Monroe County, a 97 acre tract on the Lost River in Martin County, and a 357 acre tract on the Lost River in Orange County and the HNF still retains all surface rights and ownership to the 1,162 acres involved in the exchange.

The proposed exchange is *not* a "done deal". As with many decisions on the HNF, public comments are solicited and evaluated before proceeding. The IKC provided written comments in support of the exchange and also encouraged other organizations and individuals to do the same. While the official comment period is over, if you have comments or questions, contact Dave Hanson (812-275-5987) at the Bedford Forest Office.



- On March 31st, the Department of Defense (DoD) published the Jefferson Proving Ground's Draft Environmental Impact Statement (DEIS) for Disposal and Reuse. This document is *supposed* to evaluate and comment on the various proposed reuses for JPG related to the environmental impacts each proposal may have on the property. The US government is obligated by law to perform such analyses and prevent those found inappropriate from occurring after the land is turned over to other federal, state, and local agencies.

On April 25th, the Department of Defense held the required public hearing on the DEIS. Keith Dunlap attended the hearing to represent the IKC. After introductions and an explanation of the purpose of the meeting and procedural issues, six individuals gave verbal comments on the DEIS. Most of the speakers were critical of the lack of detail/specifics in the Draft EIS and urged significant revision prior to the Final EIS being published later this year (note: there are grounds for legal action against the DoD if the Final EIS does not address specific proposed reuses ignored in the DEIS).

The IKC submitted written comments on the DEIS to criticize the document's complete lack of discussion of the geologic karst topography which makes up much of the JPG's land (note: over the last sixteen months, approximately one mile of total cave passage has been surveyed on the JPG by several IKC members). With landfills and manure producing livestock agri-businesses (chicken farms) proposed as part of the reuse plans, it is critical to discuss their environmental impacts and quantify the potential groundwater and other damage these activities could cause. Several references were suggested to DoD to assist them in better evaluating the proposals for the Final EIS.

- Robert Armstrong of the Lost River Conservation Association is once again conducting tours of the Lost River area. His knowledge of the area is second to none and each tour varies according to weather conditions and time of year. Best of all, the tours are free. Tour dates remaining this year include June 24th, September 16th, and October 7th. There will also be one or two special tours in conjunction with Indiana Cave Capers this year (August 18-20). For more information, contact Bob at (317) 926-4266.

- Over the past five years, the IDNR and the IKC have been monitoring Jim Ray's, Coon, and Grotto caves for winter disturbances of these critical Indiana bat hibernacula. This monitoring is done with passive electronic "speloggers" which record date and time of each disturbance event triggered by light hitting a photocell sensor. The information collected is to provide a means of determining the effectiveness (or ineffectiveness) of the closure methods used (fence, signs, etc.) to discourage unauthorized entry. Above are the tabulated results summarizing the number of disturbances. This past winter had nine disturbances each in Coon and Ray's and at least six in Grotto (note the spelogger malfunctioned 45 days early so the count probably would have been higher).

Winter	Number of Disturbances		
	Jim Ray's	Coon	Grotto
94-95	9*	9*	6* **
93-94	--	--	--
92-93	8*	4*	9*
91-92	6	1	6
90-91	5*	9*	n/a

* Includes one disturbance for bat census
 ** Spelogger failed on day 182 of 227 days
 -- Data loss due to improper batteries

The IKC was originally founded to protect Coon and Grotto from winter traffic and it is very disheartening to see so many violations for caves that are supposed to be closed. It is also amazing that these clandestine spelunkers would risk arrest and a \$20,000 fine just to visit one of these caves. The speloggers indicate that the number of violations are not decreasing. Furthermore, this past winter the barbed wire around the top of the

Grotto fence was cut as was wire around the bottom. In the entrance pit of Coon, a twenty foot wooden ladder was found as was a trail of beer cans inside the cave and two entries entered in the cave register (the ladder, cans, and signatures all from separate visits). Enforcing the closures is not a matter of principle or control, but a true concern to protect the bats from unnecessary disturbance in these three important caves.

The owner of Ray's Cave has thus far resisted the USFWS's suggestion to gate her cave. The IKC has also not considered gates, but it appears our current methods are not working and we may need to explore other options. If you have comments, suggestions, or concerns, please discuss them with the Coon and Grotto patron, Keith Dunlap.

- ☐ A couple of significant developments are planned for the area south of Corydon directly overlying Binkley's Cave. Sewers would be far enough above the cave-bearing formations to avoid significant contamination. However, there are currently no plans to provide this kind of infrastructure in the area, leaving open the possibility that large areas of industrial or residential development could end up on septic systems and contaminate the cave. Binkley's eventually empties into Indian Creek, which runs right through Corydon. Gary Roberson, Dave Black and other IKC members are working to obtain baseline measurements of coliform bacteria in the cave waters and to prepare a presentation for the city zoning board.
- ☐ Concerns continue regarding the exploratory gas drilling permits being issued by the DNR, and whether caves would be impacted. The source of fossil fuel is the New Albany shale, which underlies the limestones where the caves formed. In hopes of establishing a mutually-beneficial arrangement, Jim Slutz of the Division of Oil and Gas was contacted with our concerns. Although sympathetic, Mr. Slutz felt that confidentiality issues would make it very difficult to arrange a drilling permit review through the auspices of the IKC...his main feeling was that as long as the wells were properly cased, there would be no problems. The IKC will pursue other options to help ensure that any drilling that does occur will not hit known cave passage.
- ☐ The media coverage of the recent incidents at Salamander and Trap Door Caves west of Bloomington was very disappointing, to say the least. The situations were presented as near-death experiences, and "cavers" were portrayed to be thrill-seeking amateurs. Indianapolis's WXIN Channel 59's showpiece, entitled "Cheating Death in the Indiana Underground" was particularly offensive. The IKC faxed letters of disapproval to the news directors of all of the major television stations in central Indiana, explaining not only the difference between a caver and a spelunker, but that the people involved were never in any serious danger as long as they were patient. As a result, several news agencies contacted IKC officers in hopes of preparing a newscast on safe caving. The IKC declined to participate, but did refer them to members of the BIG, who should be commended for the excellent job they did. Although the media now has a more reliable source of information should this situation arise again, the damage of the original coverage has been done; cavers should expect more landowner reluctance when asking permission to enter their caves.
- ☐ The National Cave Management Symposium, to be held at Spring Mill Inn in Spring Mill State Park is only four months away. Organized by the IKC, the Hoosier National Forest, the USFWS Bloomington Field Office, and the Indiana Department of Natural Resources; the Symposium will host nearly 200 of the nation's agency and private cave managers and others dealing with management issues. Approximately fifty papers will be presented in concurrent sessions along with other special presentations, panel discussions, two field trips, a banquet (Horton Hobbs III will be the speaker), and other special activities. The Symposium runs from October 25th through noon on October 28th. The registration fee is \$100 with a \$20 discount before August 31st. For more information, contact Keith Dunlap or Larry Mullins. If you are interested in presenting a paper, contact Bruce Bowman or Hank Huffman before July 15th.

- ❑ Nine cavers participated in the IKC sponsored Hoosier National Forest Karst Inventory workday on March 26th. The cavers, supervised by Larry Mullins, covered three areas on the forest looking for karst features and caves, documenting their locations and other details which will eventually aid in management plans to protect them. Participants included Joshua Abdulla, Jim Adams, Keith Dunlap, Eric Higbie, Kim Kohal, Roy Logan, Ray Rough, and Betty Watson.
- ❑ On April 23rd, for the sixth year in a row, cavers made their little contribution to the Earth by participating in Under Earth Day at Sullivan Cave in Lawrence County. The 58 volunteers continued collecting trash, wire brushing and mud washing graffiti, and helping to restore the decades of abuse the cave suffered prior to 1990 when a gate was installed on its entrance. The crew this year included Daryl Abell, Jim Adams, Mike Archer, Kelly Atteberry, Bruce Bowman, Craig Cantello, Colleen Crist, Leslie Cunningham, Becky Daley, Mark Deebel, Ricky Dell, David Dewitt, Jim DeWitt, Mike Dewitt, Andy Dile, Rick Dile, William Dordson, Matt Dowden, Mike Dowden, Keith Dunlap, Bambi Erwin, Carrie Erwin, Jeff Gold, Cindy Horn, Dick Horn, Dutch Johnson, Kelly Little, Steve Lockwood, Mara MacRoe, Fred Mathes, Chad McKinney, Jennie Mishler, Larry Mullins, Jim Nichell, Bryant Payne, Ernie Payne, Ron Porter, Jan Pursley, Ray Rough, Dewey Runnels, Ann Seifert, Terry Seifert, Walt Serabeau, Bob Sergesketter, Ray Sheldon, Antony Schade, Don Shofstall, Barry Smith, Bob Sollman, Mark Sorenson, Mat Taylor, Tom Sollman, Bruce Trotter, Stefanie Vance, Bob Vandeventer, Richard Venier, Don Wade, and Kevin Wools.
- ❑ The IKC once again participated in Earth Day Indiana celebrations in Indianapolis on April 22nd with a booth. Our display focuses on public education themes depicting groundwater pollution in karst areas and fauna of caves. It does not present information on caving, although upon request, information is provided on the NSS and grottos. Volunteers for the booth this year were Joshua Abdulla and Tom Rea.
- ❑ The IKC display was also used by Boy Scout Troop 510 at the Crossroads of America Council Family Jamboree. The Jamboree was held at the Deer Creek Music Center, May 5th thru 7th. There were approximately 3,000 scouts and adult volunteers involved with the weekend and the show on Saturday was open to the public. Troop 510 used the display to inform attendees what is happening to the caves, karst, and groundwater without them even knowing about it. The troop also set up a "darkroom" to try to inform



Joshua Abdulla working hard at the IKC display at Indianapolis Earth Day celebration.

photo by Tom Rea

people about having enough sources of light if they venture underground. There were a number of people who picked up brochures and spent time discussing the various clubs involved in caving.

- ☐ As part of the overall HNF cave and karst inventorying project, Clyde Simerman of Ft. Wayne has spent considerable effort over the past year to organize all the cave information gathered from various sources and the volunteers working on the HNF into a consistent database. The database lists various identification items (name, ICS numbers, HNF area designations), location information (county, quad, topo dot, location verification status, entrance elevation), and cave specifics (map status, length, vertical extent). The database permits easy identification of the information available, but more importantly, allows determination of the data still needed. If you would like a copy of the database printout, contact Clyde (219-422-3030) or Larry Mullins at the HNF Bedford Office.
- ☐ On March 11th during a level-tube resurvey in Wyandotte Cave, a new room was discovered by cavers at the end of the Operation Exit passage in the Old Cave section. According to the Indiana DNR press release, the room has dimensions of 100 foot wide, 200 foot long and 70 foot high. Dubbed "The Hall of Aeacus", following the Wyandotte tradition of using characters of Greek mythology, the room contains numerous gypsum minerals and formations. Visitation to the new discovery will be restricted indefinitely.
- ☐ As reported in the last *Update*, the Indiana DNR is working to draft a formal and consistent set of management policies related to caves on State-owned properties. Rescue, education, resource protection, and recreation are just some of the issues being addressed. The DNR has requested the IKC to participate by providing a volunteer to represent the cavers' interest. Tom Rea was selected as that representative. If you have concerns, questions, or comments, contact Tom.
- ☐ Scott Johnson and John Marmer of the Indiana DNR's Non-game Section recently published a summary of their 1994 research on the Allegheny woodrat (*Neotoma magister*). The woodrat, declining in population in at least five states, are found only in Harrison and Crawford counties in Indiana. Their prime habitat is along the cliffs of the Ohio River, although several woodrats have been found in numerous caves including Big Mouth, Rat, Heron, Potato Run, Pack Rat Fort, Limekiln Hollow, and PP Pot. The 1994 effort included re-visiting sites where woodrats were live-trapped and documented in 1992. For the most part, the population comparison showed little change over the two year period. For 1994, a total of 95 woodrats were trapped 162 times at 11 sites. Of interest to cavers were a female rat at PP Pot and a male rat at Limekiln Hollow. Both were the same rats (they wear small ear tags) trapped in at their respective caves in 1992. Both appear healthy, but live alone without the potential of finding mates within a reasonable geographic distance.
- ☐ In March, the Natural Resource Commission dropped the citizen's administrative appeal of the IKC/HEC/POW/LRCA groups against the Indiana Department of Transportation (INDOT) related to the SR 37 highway construction between Bedford and Mitchell. While the dismissal was done without the plaintiffs' knowledge, the appeal was in the final stages of being resolved so no further action is anticipated.

Related to the SR 37 construction that was completed last summer, on February 28th, Earth Tech (INDOT's environmental consultants hired to monitor the project) discovered a "collapsed feature" in the side ditch near one of the sinkhole drainage structures. Earth Tech recommended repairs to stabilize the collapse, but when they returned to inspect the situation on March 24th, they found that INDOT had simply dumped limestone rip-rap into the hole rather than performing the recommended repairs.

Finally, the Legal Notice of Intent was issued last month by INDOT to proceed with the construction of the next section of SR 37. This section, four miles in length extends the



just finished construction to one-half mile south of SR 60 in Mitchell. Because of the environmental concerns raised during the northern section construction, the design for this section includes several innovations to improve the highway runoff water quality before it reaches the sinkhole drainage that eventually flows through Blue Spring Cave. Contractor bids are to be accepted this fall with construction to start early next spring.

- ❑ Another INDOT project that could have a major negative impact on sensitive karst areas is the SR 145 re-routing project. Several years ago, there were six alternative routes proposed to connect Mitchell with French Lick, all affecting the Lost River drainage basin. INDOT hired noted karst hydrologist Tom Aley to review the proposals and their corresponding impacts. While the report was not made public, INDOT subsequently dropped the project as too environmentally damaging and expensive. Unfortunately, this new highway is a pet project of several southern Indiana democrats who feel it is essential for them, if they are to eventually get gambling casinos in French Lick. With the help of Governor Bayh who owed them some political favors, the SR 145 project was resurrected and INDOT was to have scheduled a new round of "scoping" meetings for late June. However, the meeting have apparently been postpone until later this year. For more information on this project, contact Keith Dunlap.
- ❑ In the March issue of the *Update*, Thomas Liddle provided an article summarizing recent biological research he had performed on the Hoosier National Forest as part of a larger study being conducted by Horton Hobbs III. Liddle has now formally published his results in a 37 page report which is available to IKC members who wish a copy. Direct your requests to Keith Dunlap.
- ❑ With more and more cavers and organization becoming "wired" on the Internet, it was just a matter of time before caving oriented World Wide Web (WWW) home pages came on line. Three such sites to browse are: the NSS at <http://www.caves.org/~nss/> which contains a caving calender, a searchable index of the NSS bookstore, various documents about the organization of the NSS, and information on cave conservation; the NSS Cave Conservation and Management Section at <http://www.halcyon.com/samara/nssccms/> which includes their newsletter on-line; and Windy City Grotto at <http://ganymede.net/~wcg/index.html> which has a regional calender, information on the grotto, and a gallery of cave photography.
- ❑ The joint CIG/IKC Adopt-a-Highway project for SR 37 south of Bedford, approved by the respective organization's Executive Committees several meeting ago, remains on hold. Adopt-a-Highway is active, but INDOT hasn't accepted any new groups for over a year. Concerned cavers are encouraged to monitor the status of the sinkholes on their own and report anything that needs maintenance.
- ❑ The March E-Board elections resulted in Bruce Bowman, Jim Adams, and Keith Dunlap being re-elected as President, Secretary, and Treasurer, respectively (this was no surprise since they ran unopposed). Of the six Director positions up for grabs, Bruce Devore, Dave Haun, Larry Mullins, and Tom Sollman were re-elected and Joshua Abdulla and Betty Watson we elected. The Board wishes to thank outgoing Directors Mike Hood and Scott Johnson (both elected not to run again) for their past contributions.
- ❑ While obviously the annual dues paid by our membership are the life blood of our organization, several members go the extra distance to show their support for our activities by making additional donations. Thanks should go to Bruce Bowman, George Brutchen, D.A. Burton, Paul Cannaley, Martin & Alice Church, Jeff Farr, Jon Miller, Mark Sheehan, Bob Vandeventer, and Dick Venier. A very special thanks should go to Tem Hornaday, Robert Masta, and Gary Roberson who each made *very* generous donations.
- ❑ Four new members have joined the IKC since March, bringing the total membership up to 171. Welcome Terry Clark, Susan McLoud, Jan Pursley, and Clyde Simmerman.

MAYFIELD'S CAVE THREATENED

by Bruce Bowman

The Monroe County Planning Commission has recently rezoned a 270-acre tract of farmland and karst, off Vernal Pike just west of Bloomington, for Northwest Industrial Park. The affected property lies upstream and within 200 feet of known passage in Mayfield's Cave. Concerned citizens associated with Protect Our Woods notified the IKC of this issue several months ago; but even with a letter campaign and expert testimony from local environmentalists, the DNR and the IKC had no discernible impact on the rezoning plans. To my knowledge, no environmental assessment has been filed.

The Mayfield property is one of the oldest homesteads in the area. The cave itself has experienced many visitors over the years, and contains many historic names and dates. Mayfield's was the subject of Arthur Banta's classic study of North American cave fauna in 1907¹, and his name has also recently been found in a remote portion of the cave. For these reasons, Mayfield's was evaluated in 1980 by the National Park Service for eligibility as a National Natural Landmark, one of only 32 sites in Indiana found to qualify for that status. However, the landowners at that time wished to avoid publicity; therefore the cave did not receive official recognition.

Unique in its thorough inventory of biota nearly 90 years ago, Mayfield's Cave also was the recipient of several northern blind cavefish, *Amblyopsis spelaea*, in a relocation experiment by Carl Eigenmann of Indiana University. Although this state-endangered species is not known to remain in the cave, two other species were first discovered or described in conjunction with the cave. *Orconectes inermis testii* is a cave-adapted crayfish which is not rare but is known only from a few cave streams in Owen, Greene and Monroe counties. Even more significant is the cave-adapted beetle, *Pseudanophthalmus mayfieldensis*, known to reside nowhere else. Eighty-four species of this genus

are under review for federally endangered or threatened status.

The Department of Natural Resources and the IKC are in the process of negotiating with a local cave biologist to see if we can repeat the cave fauna inventory of Banta. This effort would provide invaluable information on the adaptability of these species and the impact of human activity.

The potential for disaster from parking lot runoff or industrial effluent is self-evident. Nonetheless, protestations about the significance of this cave have gone unheeded by the Planning Commission. In the most recent newsletter of Protect Our Woods, County Commissioner Tim Tilton is quoted as saying, "We need to expand for economic growth." While the IKC is not opposed to development in its own right, it is very important that it be done with caution and a recognition of the fragility of the unique resources at this site. To this end, an ad hoc poll of the directorship was initiated to provide \$200 of assistance in the legal opposition to this development.

Although it is the IKC's goal to avoid development of this area altogether, this seems unlikely to occur. The area is adjacent to other properties which already support industry, and the record noted that this site is ideally suited for development because the proposed I-69 extension would pass nearby. Nonetheless, this situation fits so well into the IKC agenda it is almost imperative that we take some action. Even if we're unsuccessful at stopping the development, we can at least slow it down and get some people's attention. Hopefully these representations will convince the developers of the need to build some protective safeguards into their plans, as it did with INDOT during the widening of State Road 37 south of Bedford.

¹ Banta, A.M. 1907, *The Fauna of Mayfield's Cave* Carnegie Inst. Washington Pub 72, 114 pp. 2 pls, 1 map.

HANCOCK PROPERTY WORKDAY - SATURDAY, JUNE 24th

Prior to the IKC Quarterly Meeting in Bloomington on Saturday, June 24th, the IKC will be working on the Hancock property (off of Spicer Lane), starting at noon (we will finish up around 5 PM). This year we need to make several repairs to the Grotto fence and work on the IKC signs. Other specific tasks include walking all the trails to collect trash, posting new No Trespassing signs on the trail to Salamander, 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.

TINCHER SPECIAL INTEREST AREA MANAGEMENT PLAN

by Keith Dunlap

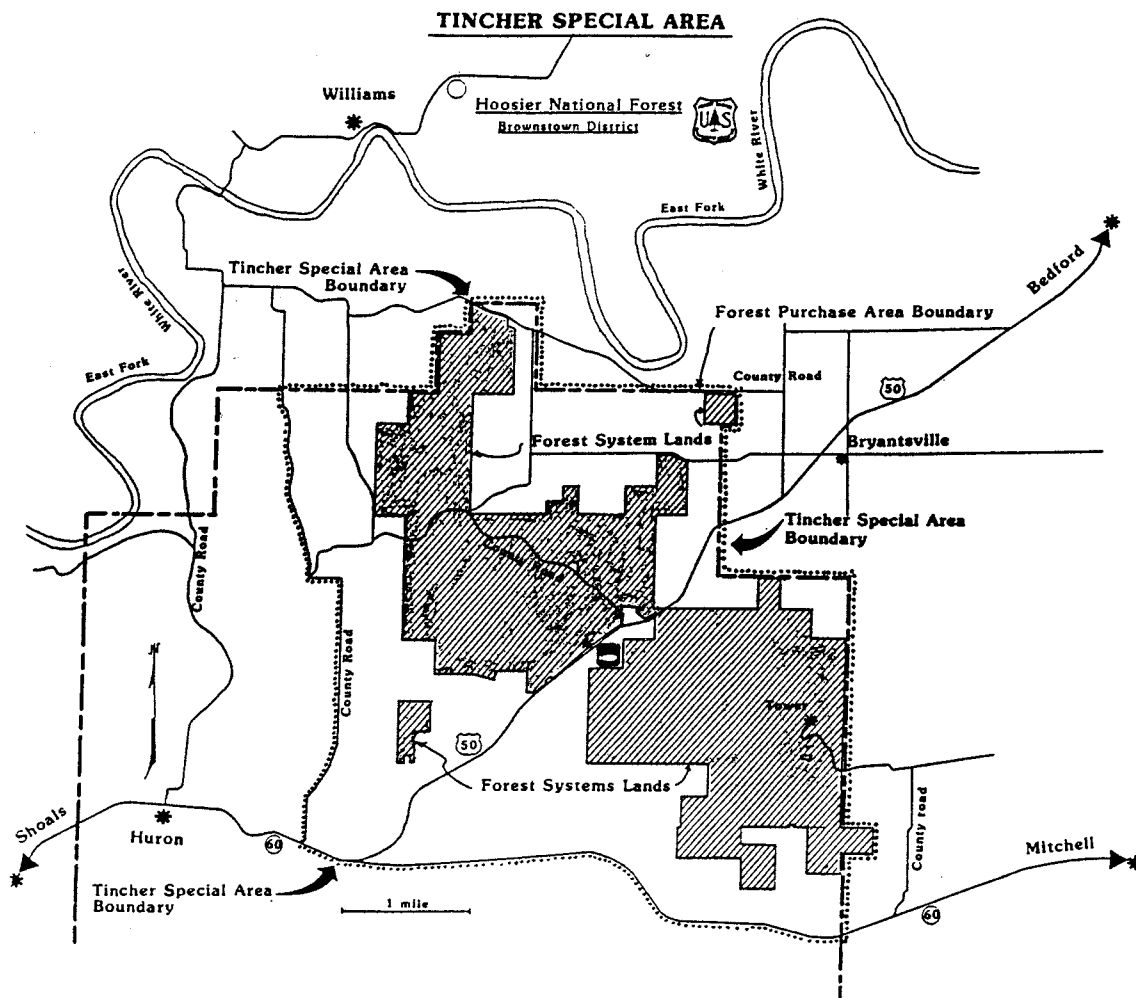
On May 18th, the Hoosier National Forest solicited public comments for the development of the Tincher Hollow/Tincher Pond Special Interest Area (SIA) Management Plan (see letter on the following page). The Tincher SIA consists of 4,305 acres which in 1991 was segregated out from the rest of the forest to allow special consideration and management attention due to its extraordinary karst topography. The SIA designation is significant in that it totally focuses the area's management plan in protecting the special resource in question, in Tincher's case, the karst features. In addition to protecting the resource, where appropriate, SIAs are often used as interpretive tools to educate the public.

The HNF is to be highly commended for initially recognizing and designating the Tincher SIA in their 1991 Forest Plan. However, in order to justify continuance of this status, the Forest planners need strong public interest and support. Without support, the area could be undesignated and re-

classified into general "multi-use" land, potentially even allowing future timber harvesting.

It is imperative that cavers respond to this public comment solicitation. Letters do not have to be fancy or typed. They do need to express support for the Tincher SIA and the permanent protection of its karst features. Your personal comments on the proposed management activities suggested in the fourth paragraph of the HNF letter would be highly beneficial. This is especially true related to the appropriateness of an interpretive hiking trail in the SIA (the IKC is supporting this initiative, but individuals need to express their thoughts on this issue).

Letters need to be sent to the HNF by June 30th (the June 19th deadline was extended at the request of the IKC to allow notification via this newsletter). Questions can be directed to Larry Mullins at the HNF Bedford office. I am also quite familiar with Tincher Hollow and the issues related to the Tincher SIA.





United States
Department of
Agriculture

Forest
Service

Hoosier
National
Forest

Brownstown Ranger District
811 Constitution Ave.
Bedford, IN 47421
Office: 812-275-5987
FAX/TTY: 812-279-3423

File Code: 1950/2360

Date: May 18, 1995

Dear Forest Friend:

You are invited to provide comments and suggestions regarding the development of a management plan for the Tincher Pond/Tincher Hollow (Tincher) Special Area. Located six miles east of Mitchell, Indiana (see attached map), this 4,305-acre area was designated as a Special Area (Management Area 8.2) in the 1991 Forest Land and Resource Management Plan as a prime example of upland karst landform development.

The Tincher Hollow and Tincher Pond areas contain large karst blind valleys, entirely drained through subterranean drainage systems. Karst is a term from Yugoslavia for topography characterized by solutional rock features, such as those that develop in limestone. The area contains caves, swallow holes, karst windows, pits, karst springs, collapse features, solution sinks and other unique geologic features.

The management plan is now being developed per the 1991 Forest Plan. It will identify special features, the desired future condition, and specific management direction to achieve the desired conditions in the Tincher Special Area.

The Tincher Special area plan could allow vegetative management activities such as tree cutting, prescribed burning, seeding, or planting. Exotic plants could need to be eliminated or controlled. However, timber management activities will not occur unless necessary for maintaining unique ecosystems, and mineral activity is not allowed. Caves and karst hydrologic systems may need restoration if choked with debris or sediment. Recreation activities, including trail development, could be allowed where it is consistent with protecting the area's unique values. Interpretative information could also be provided.

We welcome your input to help us consider all aspects of managing this special area for future generations. Please provide information and comments about plant, cultural, geologic, or other special features, and any use concerns or suggested management actions. Your comments will be most helpful if received by June 19, 1995. For more information, please contact Larry Mullins at the phone or fax numbers listed above. To provide written comments, please address them to:

Tincher Special Area
Hoosier National Forest
811 Constitution Avenue
Bedford, IN 47421

Sincerely,

BRUCE L. SLOVER
Brownstown District Ranger



Caring for the Land and Serving People

Earth Day "Spring" Clean-up planned

A community clean-up of the Fairground Spring is planned for Saturday April 22 from 9:00 AM until 12:00 noon. The clean-up is being organized by the Harrison County Soil and Water Conservation District and the Harrison County Solid Waste Management District and is being sponsored by a number of local businesses. Several youth groups have already registered to assist with the clean-up effort, but volunteers are still needed. Refreshments will be available and the organizers are trying to make it possible for all volunteers to receive a commemorative t-shirt.

"This is one of the few areas that can be cleaned-up and remain clean," says Elaine Reed, Conservation Educator with the Harrison County Soil and Water Conservation District. "There are no signs of recent dumping. I hope that it continues to stay that way after the community's efforts to restore the area to its natural beauty,"

"Any recyclable items retrieved will be recycled," noted Anna Morris, Director of the Harrison County Solid Waste Management District. "Any large items too heavy for volunteers to

handle will be backhoed out at a later date.

"The spring at the Harrison County Fairground has some historic value," said Fred Griffin, Harrison County Historian.

The spring marks the spot of the first settlement in the neighborhood of Corydon and it is the area where General Wm Harrison got his inspiration to name the town, and its waters served as a favorite drink for the community.

In 1806 Edward Smith built a log cabin just below the mouth of the spring. General Harrison often stayed at the Smith cabin during his travels.

Miss Jennie Smith was an excellent singer. Voice music was rare in the wilds of Harrison County, and Miss Jennie was always requested by the General to sing from her "Missouri Harmony" song book. His favorite song, which he never failed to request to be sung, was "The Pastoral Elegy." This song was plaintive lament for the death of a young shepherd by the name of Corydon. Therefore when the town was laid out near the Smith home in 1809, General Harrison lost no time in naming it after his favorite song, sung so often by Miss Jennie, "Corydon".

"The Fairground Spring is connected to what is known as the Binkley cave system," says Bill Moran, District Conservationist with the Natural Resource Conservation Service. "It is listed in the spelunker's magazines as one of the longest cave systems in the world."

Folklore has it that the accessible part of the cave system runs approximately six miles on one level towards the southwest, then drops down and runs another six miles or so towards the southwest again, roughly paralleling the Indian Creek drainage basin. "Underground water drainage is a prominent geologic feature here in Harrison County," he added. "Sinkholes serve as primary rain-water runoff drainage entrances to the underground system. The spring is a resurfacing of the underground water that runs through the Binkley cave system."....

Volunteers should bring rubber boots, protective gloves, and dress appropriately for the weather....

[reprinted from April 19th, 1995 *Corydon Democrat's* Earth Day Supplement. Submitted by IKC member John Benton.]

"Sinkhole, Sinkhole, What Have I Found?"

by Elaine Reed

Sinkholes, Sinkholes, in the ground
How I wonder what I've found...

On MY land, rests these dubious creations
Periodic depressions in land configurations.

Is it nature's way of contouring the land?
Or something for me to misunderstand?

Perhaps a place to dump refuse
To scorn and succumb to my misuse.

Perhaps it's there for a nature function
To carry run-off. I'll make an assumption.

I see where the water flows from high to low
To the sinkhole, and then to somewhere below.

Underground to places I do not know
A stream beneath my sloping meadow.

When drawing water from my well
Is it full because of the sinkhole's spell?

Sinkholes, sinkholes, all around
Passages to waters underground!

[reprinted from the April 19th, 1995
Corydon Democrat's Earth Day Supplement]

INVENTORY OF THE CAVE ANIMALS OF THE CROSELY STATE FISH & WILDLIFE AREA

by Julian J. Lewis, Ph.D.

As part of an ongoing survey of the animals inhabiting Indiana's caves (Lewis 1983, 1993, 1994, 1995), an inventory of the cavernicoles of the Crosley State Fish and Wildlife Area, Jennings County, Indiana was conducted in 1994. The Crosley Wildlife Area is found about three miles south of the town of North Vernon. The property is managed primarily for the production and harvest of game species by hunters and fishermen. To this end ponds, access roads, trails, parking lots, and a shooting range have been established on the wildlife area.

The Crosley Wildlife Area occurs in the physiographic landform called the Muscatatuck Regional Slope. Rocks of Ordovician, Devonian or Silurian age comprise the bedrock of the region. In much of the Muscatatuck Regional Slope slightly dipping strata of limestone and dolomite are exposed at the surface. To the west lie the Scottsburg Lowland, the Norman Upland, and the Mississippian rocks of Indiana's other karst region, the Mitchell Plain and Crawford Upland (Powell, 1959).

Streams flowing across the Muscatatuck Regional Slope characteristically cut deep narrow channels on their routes to the Ohio River or East Fork White River. At Crosley the Muscatatuck River flows at an elevation of about 580 to 600 feet with the adjacent hills rising to around 730 feet in elevation. The flat, glaciated plains of Jennings County have been dissected by the river to create scenic wooded valleys, shallow canyons, and gently rolling hills in the adjacent uplands.

Not surprisingly caves, springs, sinkholes, and other karst features are common in the limestone terrain at Crosley. Nearly every valley in the wildlife area contains one or more caves. Compared to the caves of the Mitchell Plain, caves of the southeastern Indiana karst are usually shorter and have simpler plans. The cave entrances are typically associated with streams (many are spring entrances) and multiple entrances are common due to the relatively shallow relief. The majority of Crosley caves are short, although four have been listed on Indiana's list of long caves as having over 1,000 feet of passages (Fee, 1994). These are Biehle, Crosley I, Wool's Whim, and Brown's Farm caves. The longest cave in Jennings County

is Meek Cave, at 2,067 feet ranking 127th among Indiana's caves in length. The passages of Crosley caves range from the walking height canyons of Biehle Cave to the miserable stream crawlways of Crosley I or Brown's Farm caves.

During the 1994 field work, 21 caves at the Crosley State Fish and Wildlife Area, in Jennings County Indiana, were entered. Three other Jennings County caves were also visited and sampled for fauna. A total of 126 species, including 105 invertebrates and 21 vertebrates, were found during the field work, in the literature, or in the unpublished records of other zoologists'. Fourteen species were found that were felt to be troglobitic, including two amphipods (*Crangonyx packardi*, *Crangonyx* sp.), two aquatic isopods (*Caecidotea rotunda*, *Caecidotea stygia*), two spiders (*Phanetta subterranea*, *Porhomma cavernicola*) one milliped (*Trichopetalum unicum*), five collembolans (*Pseudosinella* sp., *Sinella alata*, *Sinella cavernarum*, *Sinella* sp., *Onychiurus* sp.) one beetle (*Pseudanophthalmus chthonius*), and one fly (*Spelobia tenebrarum*).

Four undescribed species (new to science) of troglobites were found at Crosley: the *Crangonyx* amphipod and *Pseudosinella*, *Sinella*, and *Onychiurus* collembola.

Two new state records (species not previously found in Indiana) were found: the pseudoscorpion *Chthonius virginicus* and the milliped *Pseudopolydesmus collinus*.

Three species known from the southcentral Indiana karst, but not previously known from caves in the southeastern karst, were found: the terrestrial *Carychium exile*, and the millipeds *Trichopetalum unicum* and *Conotyla bollmani*.

New localities were found for two species of Indiana endemic troglobites that were formerly known from less than five sites: the isopod *Caecidotea rotunda* and the springtail insect *Sinella alata*.

A rare, but widespread troglobitic spider, *Porhomma cavernicola*, that had been found in only two other Indiana cave systems was found at Muscatatuck Caverns.

One record of a federally endangered species, the Gray bat *Myotis grisescens*, was in-

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1995 INDIANA CAVE SYMPOSIUM

by Holly Cook

The third annual Indiana Cave Symposium was held on Saturday, April 22nd at Blue Springs Caverns near Bedford, Indiana. The talks began at around noon *inside the cave* and continued until about 5:30 PM.

David Black, President of the Indiana Cave Survey began the symposium with a welcoming and a brief explanation of the goals of the ICS. Dave welcomed anyone interested in joining the ICS.

Bruce Bowman, Chairman of the Indiana Karst Conservancy gave an interesting talk on the ten year history of the IKC. Beginning from 1985 to the present, he covered the IKC's changing roles and perception of others concerning the IKC. The evolution of the IKC's image as just a cave gating organization to its role in cave cleanups, pollution control, bat counts, and cave entrance leasing to keep access, not prevent it, were a few of the topics Bruce covered. Bruce gave a slide show of karst areas and projects that the IKC has been involved in, for example, Coon Cave, Grotto Cave, and Shaft Cave.

Keith Dunlap, past President of the IKC, gave a talk on the tracking of the Indiana bat. Keith has assisted in the bat counts for the last eight years and has published the results in the *IKC Update*. Although there are six winter cave species of bats in Indiana, the Indiana bat is considered endangered and is of primary interest to the IKC, the IDNR, and the US Fish and Wildlife Service. Keith explained how the census is taken, and showed charts of population trends. The census is taken every two years. Twin Domes contains approximately half of the known population. The population of the Indiana bat has increased in Indiana, but has declined in Kentucky and Missouri. Several reasons for the bats' endangered status were discussed. One reason is that large groups cluster into single caves, this can expose the population to any number of devastating events.

Clyde Simerman, of the Northern Indiana Grotto, handed out a paper on the current status of the Hoosier National Forest K.A.R.-S.T. research team's work. The database contained old and new information on HNF caves. It is hoped the list will provide a good foundation for groups to use who want to assist the Indiana Cave Survey and the HNF in getting good accurate cave locations and information.

Larry Mullins, Cave Specialist for the Hoosier National Forest, gave a talk on the guidelines for karst management that the HNF is putting together. He stressed the importance of management by individual prescription versus management by classification. There is still much to be done on the HNF and volunteers are always needed for ridgewalking, surveying, resource inventorying, and documenting.

Ray Shelton, of the Central Indiana Grotto, gave a status report and slide show on his cave surveying within the Jefferson Proving Grounds, a 55,000 acre Department of Defense ammunitions testing base near Madison, Indiana. He showed some beautiful shots of cave entrances and the surrounding countryside. On each trip Ray, Bruce Trotter, and others working on the project had to be led by an ammunitions specialist in order to prevent any accidents. This is quite an interesting project he has started. Currently, Ray and Bruce have been on twenty-one survey trips to the proving grounds since the spring of 1994. They have finished twenty-three caves and have surveyed over 5,413 total feet. The longest cave is called Graham Creek #6 which is over 1400 feet in length.

Dr. Bill Pearson, a Biologist at the University of Louisville, gave a talk and slide show on a study that he and his students conducted on *Amblyopsis Spelaea*, the Northern Blind cavefish. One purpose of the study was to determine the fish's range and habitat. It was found that Blue Springs Caverns contained the northern most distribution. Edmonson County in Kentucky contained the most southern distribution. The fragmented and fragile environment of this cave fish and its relatively low populations contribute to its potential as a rare and endangered species.

Terry Clark, of the Evansville Metropolitan Grotto, gave an entertaining slide and sound presentation on Baker Hollow Cave. Baker Hollow Cave in Harrison County, Indiana has been a known cave for years. In 1992, Matt Clark found the opening to an extension of the cave that doubled its length. It is currently 3291 feet. The slide show, to the sound of Manheim Steam Roller's music, gave us a glimpse of the cave's fine features.

Ronnie Burns, President of the Harrison

continued on page 17...

WYANDOTTE CAVE RESTORATION - 1995

by Roger Gleitz

The fourth annual Wyandotte Caves Clean-up was held Saturday, April 15, 1995 at Big Wyandotte Cave, Leavenworth, Indiana with 18 cavers representing 6 grottoes in Indiana, Illinois, and Kentucky.

The workers removed mud, graffiti, and smoke soot from walls, ceilings, and formations in the Throne and Canopy, the Sepulchre, and Crawfish Springs. Trail stabilization was completed in Rocky Hill, Lost Rivulet, and Helen's Dome. Mudball vandalism was removed between Monument Mountain and Butler Point. A spot was cleaned for seismograph installation in the South Branch section. Old fence and posts were removed from Pillared Palace and old stairways from Rothrock's

Cathedral. A pressure water sprayer was utilized at Throne and Canopy with fantastic results. Photographs and videotaping was done in some areas before, during, and after work was completed. The clean-up was an overall success.

Participants were Ron and Kathy Logan, Darrell Greenwald, Buddy and Steve Watson, Tony Rainbolt, Tom Salmon, John and Nick Benton, Steve Petruniak, John Vargo, Ronnie Burns, Michael Mayes, Steve Lanning, Andy Messer, Mark Adler, Kyla Thomas, and Roger Gleitz. All participants were given free T-shirts with a silk-screening resembling Pillared Palace. A free trip was conducted the following day through Jewel Box Cave by Aaron Green.

...continued from page 15

cluded in bat census records provided by Dr. Ralph Kirkpatrick.

Acknowledgements -- This project was funded entirely by the Nongame and Endangered Wildlife Program, Division of Fish and Wildlife, Indiana Department of Natural Resources.

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Lewis, Julian J. 1983. The obligatory subterranean invertebrates of glaciated southeastern Indiana. National Speleological Society Bulletin, 45: 34-40.

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_____. 1994. Lost River cave and karst biological survey. Louisville District, U.S. Army Corps of Engineers, Environmental Analysis Branch, 63 pages.

_____. Inventory of the troglobitic fauna of the Crosley State Fish and Wildlife Area, Jennings County, Indiana. Special Project of the Non-game and Endangered Wildlife Program, Indiana Department of Natural Resources, 71 pages.

Powell, Richard L. 1961. Caves of Indiana. Survey, Circular 8, 127 pages. Indiana Geologic Survey, Circular 8, 127 pages.

...continued from page 16

Crawford Grotto, gave a slide show and talk on the exploration and mapping of Nelson Maudlin Spring Cave in Washington County, Indiana. The entrance to this cave was first noted by Bob Hosely in 1964. Bob named the cave Pipe Cave because it goes back into the hillside like a pipe, half filled with water. The entrance was not checked again until Ronnie Burns checked it in the summer of

1994. After nearly 500 feet, the water crawl opened up at the base of the dome. At the top of the dome the passage goes for nearly half a mile before becoming too tight. The most noteworthy feature in the cave was some blood red flowstone.

After the presentation, the attendees enjoyed a pitch-in dinner and campfire. Funding for the symposium was provided by the 1992 NSS Convention Staff honorarium donation.

POPULATION TRENDS OF INDIANA BATS IN INDIANA

by Keith Dunlap

In the last *Update*, specific details of the 1995 Indiana bat census were presented. In this article, I will present the full cumulative data systematically collected over the past eight biennial censuses (1981-1995), along with some historic data dating as far back as 1950. The majority of the recent data has been amassed by Dr. Virgil Brack, originally as part of his PhD work in the early 1980's, and more recently under contract with the Indiana Department of Natural Resources. The exception is the population figures for Batwing and Twin Domes caves which were collected under the direction of Richard Clawson of the Missouri Department of Conservation. Clawson is the USFWS Indiana Bat Recovery Team leader and since 1981 has been responsible for censusing the original seven Priority I caves in Indiana, Kentucky, and Missouri.

The table on the following page represents the summary of over 120 cave visits to twenty-six different caves documented to have had Indiana bats in recent years. In addition, another twenty-eight caves have been visited one or more times over the past fourteen years to look for Indiana bats without success (although four caves have historic records).

It is interesting to note that more than half of the active hibernacula have been "discovered" in the last dozen years, many originally reported by cavers. Most of these new caves have small colonies that do not contribute much to the overall population; nevertheless, these caves could be significant in the long term recovery of the species.

The table lists the caves in descending order of colony size based upon the most recent census. As you can see from the accompanying pie chart (figure 1), almost half of the state's population is in a single cave, while 94% of the population hibernate in just five caves.

POPULATION TRENDS

The Indiana bat (*Myotis sodalis*) was one of the first species to be protected under the 1973 Endangered Species Act. The reason for the bat's listing was the well

documented observations of population declines in the seven major hibernacula known at the time in Indiana, Kentucky, and Missouri. From 1960 to 1987, the population declined by over 50 percent. This downward population trend continues

MYOTIS SODALIS IN INDIANA
1995 WINTER POPULATION

Total Population = 176,800

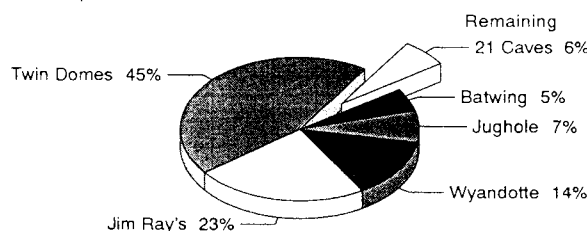


Figure 1

today in Missouri and to a lesser degree in Kentucky. Indiana appears to be the only bright spot for the species with the 1995 population probably the highest since the mid-1970s.

Figure 2 shows the estimated "adjusted" Indiana bat population in Indiana hibernacula for the period from 1981 to 1995. As can be seen, since 1985 the population has been gradually increasing. It should be noted that this increase is *real*, not just the result of more caves being included in the census. The adjustments made to the totals consisted of adding ap-

WINTER POPULATION OF MYOTIS SODALIS IN INDIANA

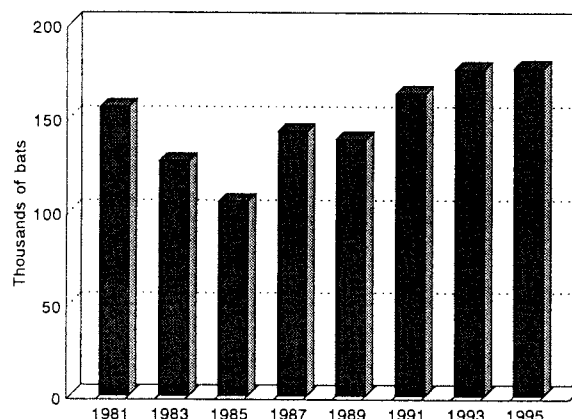


Figure 2

proximated populations in then unknown hibernacula to the earlier totals. This minimizes the biasing of the trend due to more caves being included in the latter counts.

Looking at population trends in individual caves is interesting in that several caves have been showing consistently increasing trends, others caves have been generally decreasing, while the remainder have undeterminable trends or there has not been enough data collected to make a determination. *(I should state a disclaimer here that all the trend predictions made in this article are completely unscientific and represent a relatively short sampling period which may or may not reflect anything significant.)*

Recent Indiana bat populations in Twin Domes cave (figure 3) have fluctuated but for the most part have demonstrated a rel-

atively stable trend which is good since this cave's population is such a large component of the total population.

The biggest disappointment among Indiana hibernacula has been in Batwing Cave (figure 4) where the population has decreased every census except one since the cave was originally found to be a hibernacula in the mid-70's. While it is conceivable that the gates installed in June of 1988 could be part of the problem, the design has proven successful in other situations (including Wyandotte). It is also speculated that increased entrance debris may have restricted airflow causing the cave to warm sufficiently to be a marginal habitat.

Wyandotte Cave is an interesting contradiction in resource management. While it serves as an ever increasingly significant hibernacula, it is also a commercial

RECENT POPULATIONS OF MYOTIS SODALIS IN INDIANA CAVES

CAVE NAME	1981	1982/83	1985	1987	1989	1991	1993	1995
Twin Domes (Harrison) ¹	98250	70750	56650	79650	70800	78500	87350	78875
Ray's Cave (Greene)	12500	13475	16200	22990	28581	41854	38386	41157
Wyandotte (Crawford)	2152	4550	4627	6681	10344	12994	17304	23878
Jug Hole (Harrison)				5535	6424	7640	13924	12463
Batwing Cave (Crawford) ¹	29950	26650	14750	17450	14500	13150	9350	9300
Coon Cave (Monroe)	1190	550	777	2950	2103	3696	4451	4455
Grotto Cave (Monroe)	3190	2692	4198	3778	2985	1996	1568	2018
Parker's Pit (Harrison)		(500)		1803	1104	926	1045	1276
Saltpeter (Crawford)		352		427	295	508	375	647
King Blair/Brinegar (Monroe)				(12)			442	514
Wallier Cave (Harrison)						36	72	465
Endless Cave (Washington)		2		1		134	335	450
Clyffy Cave (Greene)		66		198	412	357	307	299
Robinson Ladder (Crawford)					(95)	388	376	219
Saltpeter (Monroe)		(83)		(19)		221	245	175
Nichols Cave (Orange)						(200)		
Sexton Spring Cave (Greene)							67	117
Panther/Neyman (Washington)								86
Leonard Springs (Monroe)					135	112	92	82
Buckner Cave (Monroe)		480	301	336	24	51	25	41
Wildcat Cave (Crawford)		29		0		31	61	34
Achcraft Cave (Greene)							20	28
Mitchell Quarry (Lawrence)						9		
Bentz Cave (Crawford)		0			3			
River Cave (Washington)		104		5		1		
Salamander Cave (Monroe)		74		0		0		
TOTAL (adjusted)²	155800	127000	105500	143000	138900	163100	176000	176800

¹ Censused by Richard Clawson for the USFWS, the remainder censused by Dr. Virgil Brack for the IDNR.

² For the purpose of comparisons, populations for non-censused (or unknown) caves were estimated to give an adjusted total.

MYOTIS SODALIS IN TWIN DOMES CAVE

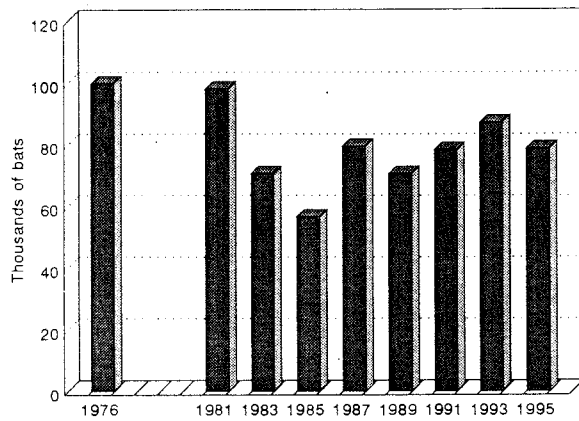


Figure 3

MYOTIS IN SALTPETER CAVE (CRAWFORD)

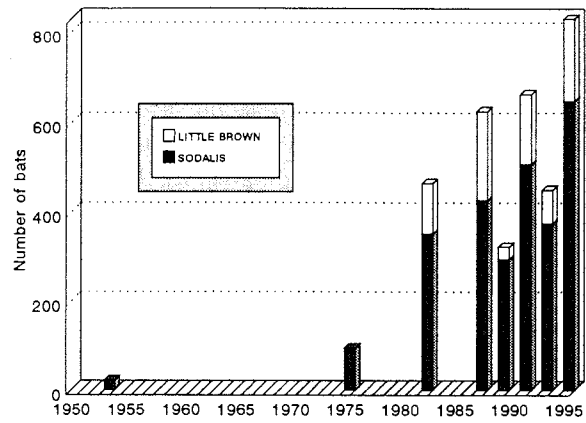


Figure 3

MYOTIS SODALIS IN BATWING CAVE

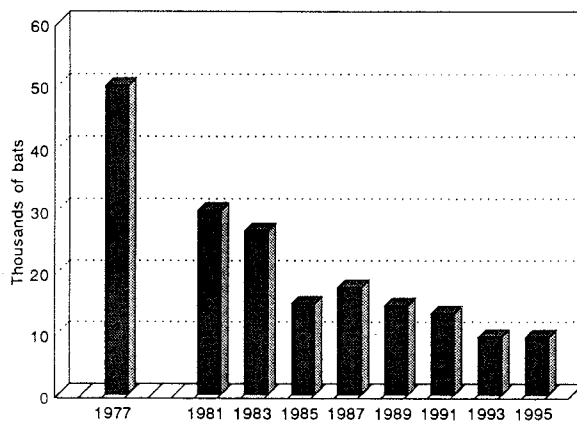


Figure 4

MYOTIS SODALIS IN "WYANDOTTE AREA" CAVES
(Twin Domes, Batwing, Wyandotte, Saltpeter caves)

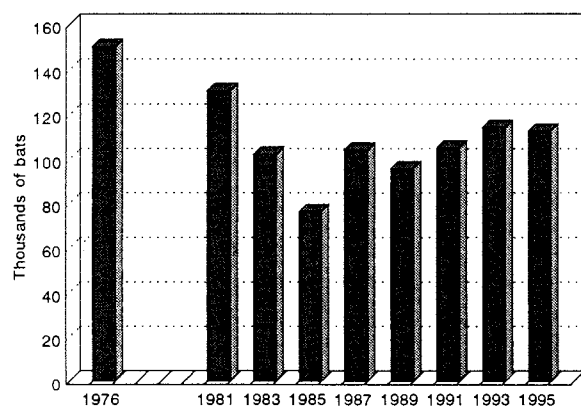


Figure 7

MYOTIS SODALIS IN WYANDOTTE CAVE

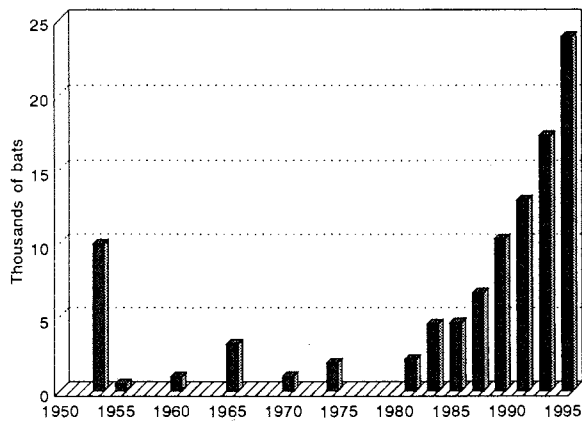


Figure 5

MYOTIS SODALIS IN JUGHOLE

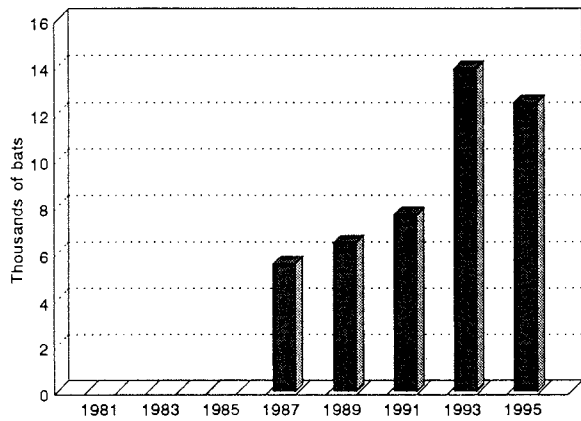


Figure 8

tourist cave run by the Department of Natural Resources. Large populations of bats have been documented in this cave for over one hundred years (in fact, the *sodalis* was first classified as a separate *Myotis* species in this cave and thus the "Indiana" designation). Numerous gates have been placed on the cave with different degrees of air flow restrictions. A 1953 report by Mumford estimated the population at 10,000 bats (see figure 5). However, just a few years later and after a solid stone wall gate was installed, the population was only one-tenth that size. The population fluctuated around 2000 bats until the late 1970's when the original gate was replaced with a more open grate-type gate. It is presumed that this restored the pre-gate airflow into the cave, providing a better winter habitat. Since 1981, the population has increased to almost 24,000 (number 3 in Indiana). The gate replacement in July of 1991 apparently has been acceptable to the bats and may have further improved airflow into the cave, witnessed by a significant increase the past two counts.

Just a short distance north of Wyandotte Cave is Saltpeter Cave. While the number of bats hibernating there is small compared to its neighboring caves just discussed, it is nevertheless an important cave for Indiana bats and was probably a very significant hibernacula historically. Figure 6 shows a general seesaw, but increasing trend that hopefully will continue.

Previous research supports the observation that Indiana bats are very habitual in using the same hibernacula year after year. But with the population increasing so fast at Wyandotte while similar decreases are being experienced at Batwing and Twin Domes, one can only speculate that at least some transferring is occurring. To better quantify this Wyandotte area meta-population, figure 7 shows the combined numbers from Twin Domes, Batwing, Wyandotte, and Saltpeter which accounts for approximately two-thirds of the total Indiana population. It can be observed that the population appears to be much more stable and indicates that the number of bats has only increased slightly since 1983. It is my hypothesis that the majority of new bats in Wyandotte are migrating from Batwing and Twin Domes because Wyandotte has now become a bet-

ter hibernacula with its airflow restored. Since banding Indiana bats is disallowed and recovering banded bats in Wyandotte would be difficult anyway due to the inaccessibility of the bats on the high ceilings, the question of bat inter-cave transferring may go unanswered.

Of the other caves in the Harrison/Crawford County area, Jughole has shown the greatest action. First censused in 1987 with 5500 bats (see figure 8), the populations in 1989 and 1991 showed modest increases, but nearly doubled in 1993 to almost 14,000 bats. The latest census showed a slight decrease, but it remains the fourth largest hibernacula in Indiana. Due to the high ceilings in Jughole, part of the population variation can be attributed to the difficulty of estimating cluster sizes.

Figure 9 shows the number of bats counted in Parker's Pit. This is another difficult cave to census, not in counting the bats per se, but in getting the "counters" to the bats. The 1987-1995 counts include all areas from the entrance pit to the eⁱ Room. The 1982 count (performed by Michelle Wright) included only the entrance pit area and the room below the second drop (just before the S-bend). Since the majority of the bats are found in the eⁱ Room, this explains the much lower count shown in the first census.

The final cave in the Harrison/Crawford area to highlight is Wallier Cave, south-east of Laconia. The 1991 and 1993 census included 36 and 72 Indiana bats respectively. For the 1995 census, 465 bats were found. It is unclear what caused this significant jump or from where these additional bats came; and there are no other known hibernacula even remotely close. It will be interesting to see what the future holds for this cave.

Moving north, Jim Ray Cave in Greene County has had remarkable population growth in recent years (see figure 10). Historic records by Mumford and others showed the cave's population never exceeded 3200 bats in nine visits between 1952 and 1975. Brack's visits in the early 1980's showed the population had jumped to approximately 12,000 Indiana bats and several thousand Little Brown bats (*Myotis lucifugus*). In 1987, 1989, and 1991, the population exploded, topping out at almost 42,000 Indiana bats (making it the second largest hibernacula in Indiana). In

MYOTIS IN PARKER'S PIT

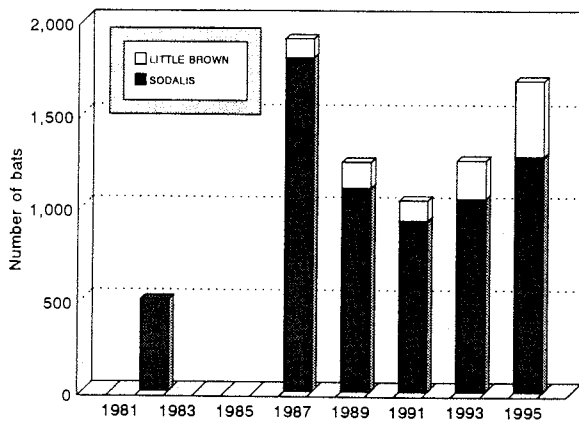


Figure 9

MYOTIS IN GROTTA CAVE

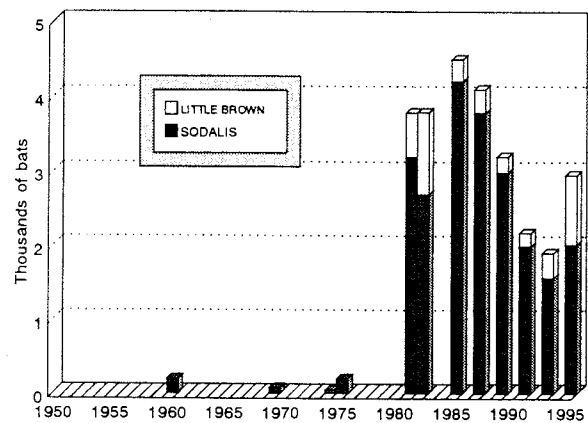


Figure 12

MYOTIS IN JIM RAY'S CAVE

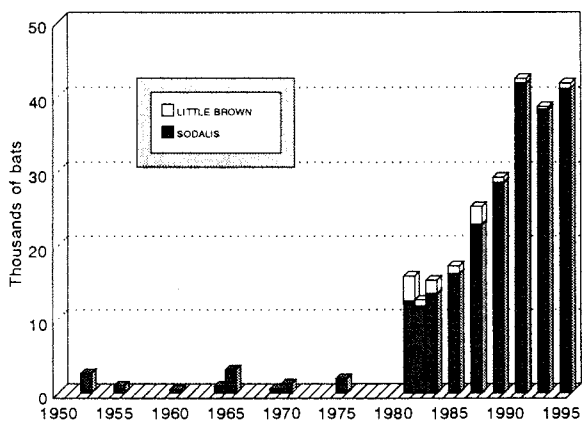


Figure 10

MYOTIS IN COON CAVE

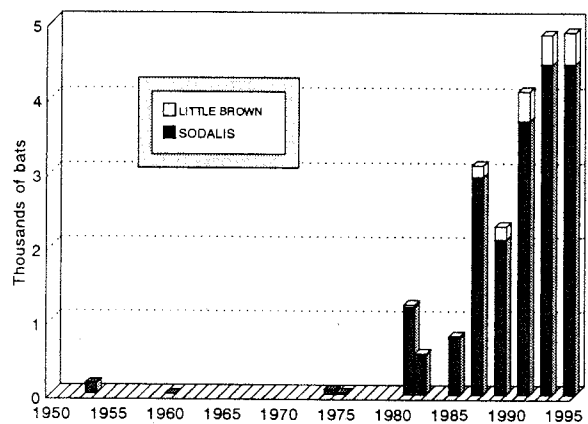


Figure 13

MYOTIS IN CLYFTY CAVE

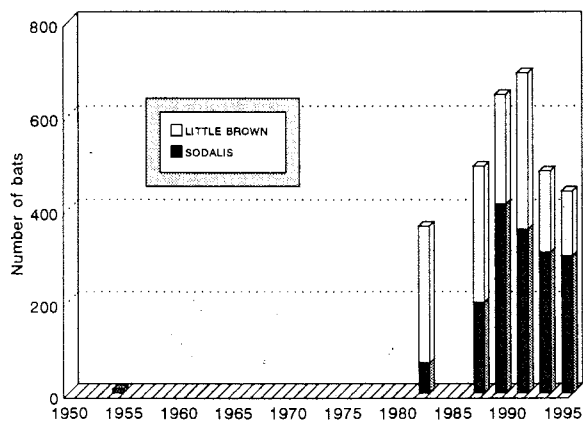


Figure 11

MYOTIS IN GROTTA & COON CAVES COMBINED

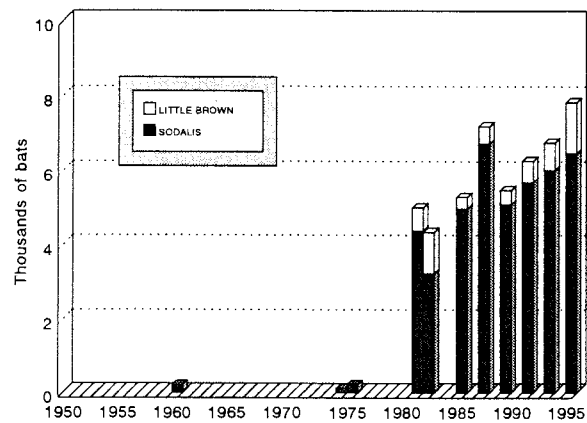


Figure 14

1993, the population decreased slightly, but rebounded to near record levels during the most recent count.

There is no clear explanation for the dramatic population increases, but two contributing factors may have played important roles. First it is known that a medical researcher from IU was illegally collecting perhaps thousands of bats each winter during the 1970's. This may have kept the population below some critical level to grow. Second, the "rear" entrance to the cave may have naturally enlarged itself over the past twenty years, allowing more airflow to cool the cave, and thus making it a better hibernacula. Currently there is a winter temperature study being conducted in Ray's to see if there is anything obvious to make this such an ideal cave for Indiana bats.

Approximately five miles to the northeast of Ray's is Clyfty Cave. Figure 11 shows a bat population that appears relatively stable although the last several counts have been down slightly from the 1989 peak of 412 Indiana bats.

Moving to Monroe County, Grotto Cave has been another disappointing and puzzling hibernacula. Historic records showed very small populations in the 1960's and 1970's (see figure 12). However, in the early 1980's Brack reported significant numbers of Indiana and Little Brown bats. The cave peaked in 1985 with 4200 Indiana bats and then decreased the next four census to a low of less than 1600. In 1995, the population finally rebounded slightly to just over 2000 Indiana bats. One observation is that the cave appears warmer than optimum, possibly making it a marginal hibernacula at times. A second speculation is a negative reaction to the fence that was installed around its entrance in August of 1985, but similarly constructed fences have been successful at other caves.

The "sister" cave to Grotto is Coon Cave. It too had historic records in the 1950's through 1970's of only a few hundred bats (see figure 13). Brack's observations in the early 1980's were around 1000 bats. Since 1987, the population has increased significantly and exceeded 4400 Indiana bats in both 1993 and 1995. Part of this increase could be speculated to be another instance of inter-cave migration from Grotto. Looking at the combined numbers for Grotto and Coon (figure 14)

shows that the meta-population appears to be gradually increasing.

The other cave in Monroe County for which there is long term data is Buckner Cave. Historically Buckner has had a stable population of 300 to 500 bats in its entrance room (see figure 15), but since 1989 there has not been more than 50 bats

MYOTIS SODALIS IN BUCKNER CAVE

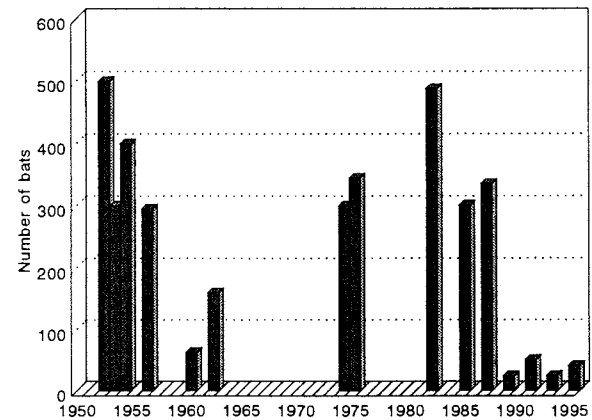


Figure 15

found. Obviously repeated disturbance could be blamed, but the sudden drop between 1987 and 1991 would be more indicative of a single-event, intentional or accidental eradication (e.g., shotgun or entrance room campfire).

The final cave with sufficient data to discuss is Endless Cave in Washington County. Visits in 1982 and 1987 found only 2 and 1 Indiana bats, respectively (see

...continued on page 25

MYOTIS IN ENDLESS CAVE

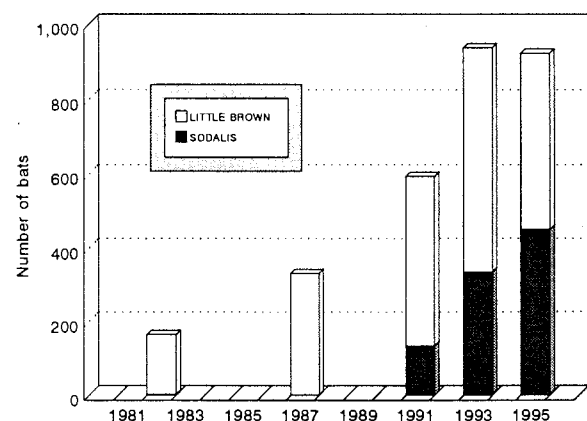


Figure 16

USGS LOST RIVER REPORT, PART 2

commentary by Keith Dunlap

In the March issue of the *IKC Update* (page 16), I reprinted a news release from the US Geological Survey publicizing a hydrology project that this agency had completed and the subsequent report they prepared on the Lost River entitled *Directions of Groundwater Flow and Locations of Groundwater Divides in the Lost River Watershed Near Orleans, Indiana* by Bayless, Taylor, and Hopkins. At the end of that news release, I added some editorial comments that the funding for the project and report had come from a larger initiative which I considered to be "pork-barrel" spending. This comment disturbed several USGS employees (one of whom *was* an IKC member). While I stand by my original comments, I by no means meant to offend anyone, especially the researcher and authors of the report, nor was I passing judgment on the merits or quality of the work performed by the USGS.

To clarify my position on my "pork" comment, let me give a little more background: In 1993, a \$400,000 Congressional appropriation was mandated to the US Army Corps of Engineers for studying flooding problems in Orange County. The Corps, being the expert in such matters, had not requested the funding, nor did they really want to perform another study since several previous studies over the past forty years had concluded there was very little that could be done (other than move to higher ground) to alleviate the natural flooding events in the Lost River area. At a public hearing where the Corps was soliciting comments on flooding problems to investigate, I asked the Corps' representative if the taxpayers would be better served by not performing another study. He replied that the Corps was not in a position to refuse a request of Congress in performing the study and was obligated to spend the \$400,000.

In an attempt to appease the environmentalist who have in the past lobbied strongly against the Corps and their flood control activities, the Congressional mandate stipulated that one-fourth of the appropriation was to be earmarked on "envi-

ronmental issues." A number of projects were identified by several federal agencies; one of which was contracted to the USGS to perform dye traces and other research which could be used to further delineate drainage divides of the Lost River. Regardless of the benefits, cost-effectiveness, or other justifications, the funding for this project was originally obtained from an unsolicited "gift" from Congress at full taxpayer's expense which by anyone's definition, is "pork".

Now with all that said, I would like to recognize the USGS on their work and report. Despite time constraints and uncooperative weather, the USGS employees were able to conduct eight additional dye traces to complement the ten previous traces documented by Powell, Bassett, and others. Using all this data, the sub-surface Lost River drainage divides were better defined and plotted.

The second task the USGS completed was to examine a large number of water well drilling records (maintained by the IDNR) to attempt the construction of a composite groundwater level map. However, water levels were obtained during different seasons and over a twenty year period, so I'm suspect of the usefulness of the plots derived from this information.

The final contribution made by the USGS report is a relatively complete list of approximately 80 Lost River references. This list alone is worth the purchase price of the report.

In conclusion, the work completed by the USGS was professionally performed and will make a positive contribution to the knowledge and protection of the Lost River area. It is just unfortunate that the funding did not come about in a more appropriate manner where the project justification comes prior to the money being allocated.

To obtain a copy including two large foldout maps, send \$13 check or money order to the USGS, Open-File Reports Section, Denver Federal Center, Box 25286, MS 517, Denver, CO 80225. Request report number WRIR 94-4195.

INDIANA KARST CONSERVANCY TREASURY REPORT
Income Statement
From January 01, 1995 to March 31, 1995

INCOME:

Dues Apportionment and Residuals	606.25	
Donations	427.00	
Interest	36.38	
		<u>\$1,069.63</u>

EXPENSES:

IKC Update (Printing/Production/Mailing):	263.38	
Special Reprint #6	167.53	
Membership Correspondence/Expenses	110.50	
Misc Correspondence/Info Request/Conservation	30.00	
Property Management Expenses	89.23	
Secretary of State fees	10.00	
		<u>(\$670.64)</u>

NET OPERATING EXCESS (DEFICIT) THIS PERIOD \$398.99

Balance Sheet
March 31, 1995

ASSETS:

Prepaid Exp: 1995 Cave Management Symposium	1174.37	
Cash in Bank	5723.19	
Total Assets		<u><u>\$6,897.56</u></u>

LIABILITIES & OPERATING EXCESS:

Hancock Property Maintenance Fund	215.73
DNR Non-Game Fund	270.00
Indiana Cave Symposium Fund	508.29
Deferred Dues Fund: 103 members - 1995 100%	1545.00

Previous Operating Excess	3959.55
Net Excess (Deficit) This Period	<u>398.99</u>

Current Operating Excess	4358.54	
Total Liabilities & Operating Excess		<u><u>\$6,897.56</u></u>

continued from page 23...

figure 16). However, the last three counts have shown an encouraging population jump with the most recent count topping 450 Indiana bats (and a similar number of Little Brown bats).

There are other interesting observa-

tions and speculations that can be made from this census data, but in reality the number of sample points is too few and the time duration is too short to truly make any meaningful conclusions. Perhaps in another ten or twenty years of systematic censusing, definitive trends can replace general speculations.

IKC ANNUAL BUSINESS MEETING MINUTES

March, March 25, 1995

Indianapolis, Indiana

BOARD MEMBERS PRESENT:

James Adams	Bruce Bowman
Bruce DeVore	Keith Dunlap
Hank Huffman	Larry Mullins
Larry Reece	Eric Schmidt
Tom Sollman	Bill Tozer

BOARD MEMBERS ABSENT:

Larry Bundy	Dave Haun
Mike Hood	Scott Johnson
Tom Rea	

The meeting was called to order at 7:09 PM by IKC President, Bruce Bowman at the World War Memorial in Indianapolis. Introductions were made.

The December Quarterly Meeting Minutes and February Directors Meeting Minutes were approved as published. Treasurer Keith Dunlap reported a current balance of \$6,525.91.

Kevin Strunk reported on new developments in shale gas exploration in the New Albany shale layer which is found in Southern Indiana. New techniques may allow economical drilling for gas in this area.

According to Kevin, about ten test wells have been drilled. Some are known to be near major caves. Kevin feels that these test drills would be hard to stop unless there were a potential problem with ground water pollution or a threat to an endangered species.

The wells might prove to be unproductive forcing the drilling companies to shut down their operations or the operation might take off and many more producing wells would be drilled.

If the wells prove to be profitable, Kevin felt that cave locations should be made available to the gas companies so that they can be avoided. A partnership between the cavers, DNR and the industry needs to be formed in the next six to twelve months.

The annual elections followed and Bruce Bowman, James Adams and Keith Dunlap retained their officer positions. Directors elected: Joshua Abdulla, Bruce DeVore, Dave Haun, Larry Mullins, Tom Sollman and Betty Watson.

While the ballots were being counted, President Bruce Bowman passed out Certificates of

Appreciation to the 1994 Board of Directors and Officers.

The next IKC Special Reprint will probably be available in December. The paper will be on Old Town Springs in Crawford County.

Jeff Cummings of the Department of Natural Resources informed the membership of a Cave Management Task Force which will establish management policies to enhance karst resources on DNR properties. The task force would like to include an IKC representative.

The group is meeting monthly at Spring Mill State Park. There are six subcommittees. Bruce will follow up with Jeff Cummings and make an appointment before the June Meeting.

Allen Pursell of The Nature Conservancy presented a brief slide show about the conservancy and the Blue River Project. He offered their assistance in the IKC's land acquisition efforts.

The Directors have been following developments in two cases of vandalism in Shiloh and in Wayne's Cave. Letters were sent to the trip leaders of the groups which are believed to have caused the vandalism. One response has already been received and another is expected.

Keith noted that the trip leaders need to make sure that novices on their trips be made aware of their responsibilities. Larry Mullins commented that with each generation of cavers, the environmental message can be "watered down". Constant reinforcement is necessary.

Signage on the Hancock Property needs to be replaced. Jim Adams has taken measurements and photos for reference and passed those on to Tom Rea. Keith needs to get a router to Tom.

The annual Hancock workday will again be scheduled for June. There was discussion about sending a notice to nearby landowners along Spicer Lane of upcoming activities. Most everyone agreed that this would be a good idea, but no one wanted to do the work.

Keith Dunlap gave the membership an update on the Winter Indiana Bat census. There were some corrections noted as the data has been refined. There was a population drop at Clyffy Cave but not as large a drop as first reported. Rays Cave had reported a population drop from 38,000 to 32,000. There was actually an

increase from 38,000 to 41,000 individuals. In total there were about 71,000 bats reported in 1991, 79,000 in 1993 and about 88,000 in 1995.

The National Cave Management Symposium is on track. Hank Huffman and Bruce have put out a call for papers. Four people have pre-registered. A banquet speaker needs to be lined up.

The Indiana Cave Symposium is scheduled for April 22nd. No money is needed because the 1992 NSS Convention honorarium fund is covering expenses.

Also on April 22nd, Joshua Abdulla has agreed to man the IKC booth at Earth Day in Indianapolis. Jim Adams moved to fund the booth. Motion Passed.

There will be a Hoosier National Forest workday tomorrow (3/26). There are a variety of projects available, depending on who and how many people show up. Larry Mullins reported that there will be more survey work done this summer. Also, a management plan will be written for each cave.

A new section has been discovered in Wyandotte Cave.

Mayfield's Cave may be at risk from Northwest Industrial Park, a new development which is planned nearby. The IKC has already sent a letter expressing our concern.

Hank Huffman recently attended the Missouri Cavefish Conference. He found it interesting and noted that it has been determined that cavefish can be found in two environments: caves and in jars in museums.

Keith Dunlap received a phone call concerning some new signs that have been placed around

the area of the culvert entrance to Donnehue Cave. The signs proclaim a no parking area and that no pedestrians are allowed in the culvert drainage.

The next IKC meeting will be on June 24th at 7:00 PM in Bloomington. The afternoon will be spent at the Hancock property. A few things need to be done.

Keith Dunlap reported that the DNR has dismissed the administrative lawsuit on SR37 South of Bedford. Keith also noted that the Jefferson Proving Ground draft environmental impact statement is supposed to be released. It is late, however. A public hearing will be held.

Bob Armstrong will, again this year, conduct a series of Lost River Tours.

There was a question about some pipelines at the Orangeville Rise. Bruce learned that they are fresh water pipes and should not be a problem. Keith noted that a photo was published in the *Protect Our Woods* newsletter. Hank reported that a permit for crossing a body of water was filed, but he was not concerned.

The Indianapolis Power and Light Company is now accepting applications for their Golden Eagle Grants. The deadline for submitting applications is June 30th. There will be 12 projects funded. Several ideas were brought up including updating the IKC booth. Bruce will try to get more information from IPALCO.

Jim Adams moved to destroy the ballots. Motion Passed.

Jim Adams moved to adjourn. Motion Passed at 9:53 PM.

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 _____

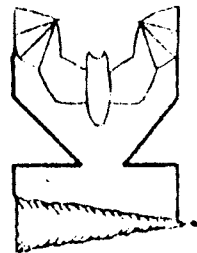
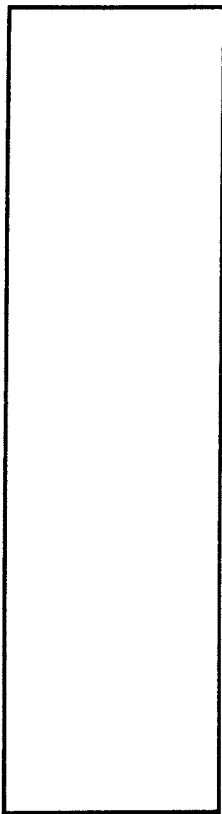
PHONE # _____

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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