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Inside earth newsletter: a newsletter of the Cave & Karst Programs of the National Park Service

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INSIDE EARTH



A NEWSLETTER OF THE NATIONAL PARK SERVICE CAVE & KARST PROGRAMS

Edited by Dale L. Pate

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NATIONAL CAVE AND KARST RESEARCH INSTITUTE--STATUS AND PLANS

by Zelda Chapman Bailey

The National Cave and Karst Research Institute (the Institute) was established by act of Congress in 1998 within the National Park Service. The Act stipulated that the Institute will be located in the vicinity of Carlsbad Caverns National Park in New Mexico (but not inside Park boundaries), and that the Institute cannot spend Federal funds without a match of private funds. The main purposes of the Institute are to further the science of speleology, to encourage and provide public education in the field, and to develop and promote environmentally sound cave and karst resource management practices.

An Interim Director for the Institute, Zelda Chapman Bailey, reported in July 2000 for a two-year period to define the purview and scope of operation, design an organizational structure, form partnerships, find funding sources, find a physical facility, and define specific research needs and priorities. She has been a hydrogeologist with U.S. Geological Survey for 23 years, specializing in groundwater flow modeling, and has worked in Indiana, Tennessee, Puerto Rico, Colorado, and Wyoming. The last decade of her career has been spent in management of a wide range of technical programs.

Mission and Goals

The mission provides a framework for the Institute to achieve its defined goals and to guide development of an appropriate scope of activities in the National interest:

The National Cave and Karst Research Institute furthers the science of speleology by facilitating research, enhancing public education, and promoting environmentally sound cave and karst management.

The goals (purposes) of the Institute are clearly and simply stated in the text of the 1998 Act. Following are expanded statements of goals that provide a broader view of the operational intent of the Institute:

- Further the science of speleology through coordination and facilitation of research.
- Provide a point-of-contact for dealing with cave and karst issues by providing analysis and synthesis of speleological information and serving as a repository of information.
- Foster partnerships and cooperation in cave and karst research, education, and management programs.
- Promote and conduct cave and karst educational programs.
- Promote national and international cooperation in protecting the environment for the benefit of caves and karst landforms and systems.
- Develop and promote environmentally sound and sustainable cave and karst management practices, and provide information for applying these practices.

The Institute will pass through several phases before it becomes a recognized presence in the research community with the ability to sponsor a wide range of activities. The *Interim phase* is anticipated to span about three years (August 1999 to August 2002). This phase began when a Steering Committee convened to articulate expectations for the Institute and to draft specifications for recruiting an Interim Director, and will end when the Interim Director completes the initializing tasks.

The *Gearing Up phase* is likely to take one additional year (2003), and will consist of staff recruitment, move into a building (possibly a temporary facility), initial operational setup, and the transition from the Interim Director to the Director. If funding became available, then research grants could be distributed during this phase and the real work of the Institute could begin.

The *Basic Institute phase* will take another one to two years (2004-05) while the experience of the staff and the capacity

of the Institute gradually increase, and financial resources for full operation are accumulated. If a building is constructed, it may be completed during this phase. A grant process would be operational, and results of research supported by the earliest grants may become available.

The *Fully Operational phase* should be attained by 2006, when the Institute becomes a significant and recognized resource in cave and karst research, education, and support of cave and karst management.

Plans, Activities, and Current Status--Interim Phase

Define the purview and scope of operation: Discussions will be held with future users to help determine the most appropriate priority activities of the Institute. The question of the Institute being only a granting organization or, additionally, having an in-house research staff, will be explored. The relation of the Institute to other institutes and organizations will be defined in conjunction with those groups. A Working Group has been formed to assist the Interim Director in developing the operating plan for the Institute. The Group is comprised of representatives from National Park Service, U.S. Geological Survey (USGS), Bureau of Land Management (BLM), Fish and Wildlife Service (FWS), and U.S. Forest Service (USFS). Additionally, each person in the Group has responsibility to represent and communicate with non-Federal constituency groups.

Design an organizational structure: Business models of other research institutions will be studied for ideas and to determine the most appropriate model for this Institute to adopt. It is envisioned that the initial Institute will be a staff of six or seven people that, in addition to the Director, might include a Scientist Coordinator, Education Coordinator, Computer/GIS, two administrative or support positions, and a Librarian if the library collection is significant. Some operational support, such as contracting and other administrative duties, may need to be supported out of other NPS units for a time. A voluntary Science Advisory Board is likely to be part of the organization that will assist in defining research priorities and with a grant review and ranking process. Additionally, a volunteer Strategic Advisory Board may be formed to advise the Director of the Institute on the priority activities to focus on each year.

Form partnerships: A concerted effort is being made by the Interim Director to meet with a wide variety of groups. An important partnership is being negotiated with New Mexico Tech as a research and education partner. The Interim Director also is making International contacts in order to lay a foundation for the International collaboration in cave and karst research and information exchange. A partnership agreement has been signed between the Institute and New Mexico State University, which has a campus in Carlsbad, for a small amount of office space and administrative support during the interim and gearing up phases. Several NPS agreements, although not specific to the Institute, are available for use by the Institute.

Funding sources: Private or State/local government funds must match Federal funds. The focus on funding at this time is for building construction. The source(s) of funding for basic Institute operations and for research and educational activities have not yet been clearly identified.

Find a physical facility: The Institute has the option of renting space (or to accept existing space as an in-kind contribution) or constructing a building. The City of Carlsbad and New Mexico Tech are collaborating to request building funds from the New Mexico legislature. If successful, the physical facility for the Institute will include office, laboratory, library, and computer space.

Assess specific research needs and priorities: The Institute can provide a national scope and overarching goals to cave and karst research. These needs will be compiled and prioritized through discussions with a wide variety of interest groups, scientists, and resource managers. Ideas for research priorities are being accumulated through informal and formal, focused discussions with scientists and resource managers in individual and group discussions. The February 2001 USGS Karst Interest Group Workshop constitutes one of the opportunities to discuss research needs and add to the growing priority list, and focus groups could be convened at professional meetings as a special session, such as at AGU or GSA.

PARK UPDATES

CARLSBAD CAVERNS NATIONAL PARK

by Dale Pate

DRAFT CARLSBAD CAVERN PROTECTION PLAN & EA - This plan and Environmental Assessment to help protect Carlsbad Cavern is nearing completion. While there is no firm date for release of this draft document to the public, several key components were recently completed. We will make announcements when this document is available.

LECHUGUILLA CAVE CULVERT REPLACEMENT PROJECT - This project also nears completion. The new stainless steel culvert is in place and the construction of an airlock on top of the culvert is in progress.

RECENT LOSSES - It is with great sadness that we must report the recent deaths of the following cavers who have worked in the park as volunteers or researchers. In September, **Joe Ivy** was killed in a caving accident in Texas. Joe had been part of the resurvey effort in Carlsbad Cavern as well as the recent survey of Lake Cave. In December, **Kiym Cunningham**, a researcher involved with a number of projects in Lechuguilla Cave died from a two-year battle with cancer. Also in

December, **Pat Copeland** was killed in a car accident in Texas. Pat spent many hours restoring a number of different areas in Carlsbad Cavern. We will miss their enthusiasm, dedication and friendship.

LINT CAMP - On October 1-7, 21 volunteers led by Pat Jablonsky removed approximately 25 pounds of lint from various portions of Carlsbad Cavern. This dedicated group donated 535.5 hours to rid Carlsbad Cavern of this unsightly and damaging material. Thanks to all who participated. Your efforts are appreciated.

Lint Camp Crew



TOP ROW (3rd row at back and standing)

Ron Schumann, Richard Geissler, Dan Shultz, Clarence Williams, Mike Hanson, Walt Kaminski, Greg Hanson, Roger Laird, and Bonnie Curnock.

SECOND ROW (sitting): Linda Schumann, Stephanie Geissler, Frank Stickler, Kerrylea and Larry O'Brien, Marti Ebersman.

FRONT ROW (standing): Bill Stickler, Steve Petruniak, Pat Jablonsky, Tem Hornaday, David Owens, Eric Dutton and mascot, Clyde. (Photo © Clarence Williams)

CRATERS OF THE MOON NATIONAL MONUMENT

by John K. Apel

The summer of 2000 proved to be a productive one for the cave management program at Craters of the Moon National Monument. With funding provided by the NPS Geologic Resource Division's (GRD) Geologist-in-the-Park program, the monument selected Jody Brandrup as a Resource Assistant through the Student Conservation Association. Jody's continued the cave inventory program begun the year before. This year's activities included additional field Global Positioning System (GPS) mapping of known or recently discovered cave locations and expanding the cave inventory database structure to include more detailed data fields on biological, geological and cultural resources within individual caves. The fieldwork completed GPS mapping of 29 previously

known caves and an additional 50 caves not previously known.



Jody Brandrup (Geologist In Parks/Student Conservation Association) works on the cave inventory for the park. (NPS Photo)

The Boise based Gem State Grotto of the National Speleological Society (NSS) returned in September to remove a twenty-year-old culvert type gate in Arco Tunnel. Grotto members were instrumental in the design and construction of a new bat gate, which was installed in 1999 as a replacement for the culvert gate.



Gem State Grotto members work to remove an old gate from Arco Tunnel. (NPS Photo)

Concerns about the stability of loose ceiling rock within several heavily visited caves prompted site inspections by Phil Cloues, a geologist with the NPS GRD and Joel Despain, Cave Management Specialist at Sequoia King Canyons National Park. While these recommendations were being reviewed and evaluated several of the caves have been closed to public entry.

A significant event effecting cave resources, was the recent addition of 661,287 acres to the monument by Presidential Proclamation on November 8, 2000. The new monument will be jointly administered by the NPS and

BLM, with the NPS having the primary management authority for 463,952 acres of the monument. The new area of the monument contains numerous caves but much of the area is very remote and roadless and has not been extensively surveyed for caves.

WIND CAVE NATIONAL PARK

by Rod Horrocks

Matt Reece recently joined our cave management staff as a seasonal cave management technician. Matt had previously volunteered as the Jewel Cave Intern for Mike Wiles in 1997 and he is currently working on his Masters thesis in Karst Geomorphology.

Matt has now completed a new customized database for our cave inventory data. He has also nearly completed entering the entire backlogged cave inventory data into this user-friendly database. This database will be compatible with ESRI's ArcView software and will become part of our cave GIS program.

We have started weekly cave restoration projects in Wind Cave along the Natural Entrance Tour Route. Thus far, sixty, five-gallon buckets of asphalt, wood, or trail construction debris have been removed from the cave in the vicinity of the Model Room.

The perched lake that sumped the route to the Lakes and the deep point in the cave has dropped seven tenths of a foot during October. This is the largest drop in the lake since its started forming in 1996.

A feral cat was recently found on the Garden of Eden Tour Route in Wind Cave. The cat entered the cave through the 10" diameter natural entrance and traveled about 2,100 feet from the natural entrance while climbing 390 steps along its path. It was trapped in W.C.T.U Hall using tuna fish and a Havahart live trap.

On November 3, ABC World News Tonight with Peter Jennings did a 2½-minute story on the ongoing survey and exploration program at Wind Cave. Since the last issue of Inside Earth, the surveyed length of Wind Cave has been increased by 2.39 miles, raising it to 93.7 miles, thus maintaining its position as seventh longest cave in the world. This brings the total survey and inventory for 2000 to just under seven miles.

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