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**P.O. Box 65  
Hancock, Michigan 49930-0065 USA  
1-906-487-9722 • fax 1-906-487-9405  
[www.georgewright.org](http://www.georgewright.org)**

# Implementing the National Cave and Karst Research Institute Vision

**Louise D. Hose**, National Cave and Karst Research Institute—National Park Service, 1400 University Drive, Carlsbad, New Mexico 88220; lhose@cemrc.org

**Penelope J. Boston**, National Cave and Karst Research Institute—New Mexico Institute of Mining and Technology, 801 Leroy Place, Socorro, New Mexico 87801

## Introduction

The National Cave and Karst Research Act of 1998 (S.231), passed by the 105th Congress, directed the National Park Service (NPS) to establish the National Cave and Karst Research Institute (NCKRI) in Carlsbad, New Mexico (NCKRI 1998). The institute's legislative purposes are to:

- Further the science of speleology;
- Centralize and standardize speleological information;
- Foster interdisciplinary cooperation in cave and karst research programs;
- Promote public education;
- Promote national and international cooperation in protecting the environment for the benefit of cave and karst landforms; and
- Promote and develop environmentally sound and sustainable resource management practices.

Additional mandates within the legislation include that the “Secretary [of the Interior] may spend only such amount of Federal funds to carry out this Act as is matched by an equal amount of funds from non-Federal sources” and that “the Institute shall be jointly administered by the National Park Service and a public or private agency, organization, or institution....” The legislation also cites a study by the NPS that stated: “The National Park Service would have ultimate responsibility for the Institute, and would retain indirect control over its activities and programs. The academic entity would plan, coordinate, and administer the Institute and its programs” (NPS 1994). (The study suggested that the co-administrative partner would be an academic institution.)

The NPS Geologic Resources Division hired an interim director in 2000 to define the scope of operation, design an organizational structure, form partnerships, find funding sources and a physical facility, and define research needs. The state of New Mexico began providing nonfederal operational funding for the project in 2000, and Congress appropriated NPS funds that had been championed by the New Mexico delegation and city of Carlsbad to match their state's contribution. Both appropriation lines have continued to date. By the end of 2002, an NPS-hired director and two full-time New Mexico Institute of Mining and Technology (New Mexico Tech, or NMT) scientists were working in New Mexico and developing NCKRI projects. State and federal funding of about \$2 million each was appropriated in 2003 for the construction of the institute's headquarters building in Carlsbad.

An excellent overview of NCKRI's history is provided by the National Cave and Karst Research Institute 2003 annual report, on-line at [www2.nature.nps.gov/nckri/annual.htm](http://www2.nature.nps.gov/nckri/annual.htm).

### Primary partners

While the institute currently (April 2005) remains a unit within the NPS's Geologic Resources Division, substantial progress has occurred towards forging partnerships. A cooperative agreement between the NPS and NMT identifies the latter as the primary academic partner that will co-administer NCKRI. The partners anticipate transferring day-to-day management of NCKRI to NMT within the next year. The city of Carlsbad (in part through a cooperative agreement with the NPS) is leading the institute's headquarters construction effort. A memorandum of understanding binds the three partners as well.

### Community scoping

New Mexico Institute of Mining and Technology convened a two-day workshop in October 2003 to scope the community's vision for NCKRI. Twenty-three representatives attended from a cross-section of the cave/karst community, six federal agencies, two state agencies, five nonprofit organizations, and six academic programs, as did institute staff. The participants shared perspectives and considered the institute's long-term vision, potential activities, organizational structure, and operating plans. A professional facilitator provided a summary of the discussion (NCKRI 2003).

Several themes emerged from the workshop that participants suggested would provide a needed service while neither duplicating nor undermining the work of established organizations. The group identified gaps and opportunities for the institute, including:

- National assessment, status, and trends of caves and karst;
- Research catalogue of national needs and issues;
- Large-scale perspectives (international, national, regional, watershed);
- Role as catalyst for bringing together cave and karst researchers from other disciplines, tier 1 universities, private cave owners, resource managers, and international researchers;
- Role as clearinghouse for information on cave management, international cave and karst literature and research, volunteer issues and opportunities, and protocols, best practices, and lessons learned;
- Visitor education and public awareness;
- Collections (archiving, preservation, data, physical collections); and
- Field laboratory for resource management practices.

Participants also suggested a variety of goal areas, although these suggestions were not ranked nor necessarily received majority support. Those potential goals were divided into the institute's four major mission realms and include the following.

- **Research:** Avoid competition for research dollars; do "big" science with a large consortium (interdisciplinary, regional, national, cutting-edge); serve as a clearinghouse for

basic research; focus research on applied research and problem-solving; provide grant programs and/or access to grants; publish an annual report of the institute's activities; publish a national report on status and trends of caves and karst; and publish a national research catalogue (priority problems in need of researchers).

- **Education:** Provide grants for curriculum development and lesson plan development using best teaching practices; support and partner with other education programs; provide national curriculum templates for K-12 and college; investigate and provide access to alternative delivery models (computer, Public Broadcasting System, on-line learning, distance learning); develop interpretive materials and provide training venues for interpreters; and serve as a focal point for state-level testing advocacy efforts.
- **Data and information management:** provide access to and translation of international data and information; provide both a physical and virtual library; serve as a clearinghouse (web portal) for distributed databases; provide support for standards as well as the standards for collections; develop and communicate standards (quality assurance/quality control) for web, digital, and other publishing; develop a referral directory of experts in cave and karst from multiple organizations; develop a source list or directory of taxonomist specialists; and be a centralized location for data on projects in progress.
- **Resource management:** develop best management practices for cave and karst management; set and communicate priorities for resource management; provide training, education, and information-sharing venues for cave and karst management; serve as liaison between federal agencies, nongovernmental organizations, academia, and private owners; be a recognized resource for policy developers and decision-makers; develop interpretive materials and provide training venues for interpreters; develop a digest of current studies and publications on resource management; and take a systems view of management.

## Plans for the near future

The city of Carlsbad anticipates beginning the building of a 24,000-square-foot headquarters for the institute in summer 2005, with completion expected in winter 2007. The plans call for a public museum and interpretive area, several laboratories, classrooms, a specialized library, computer center, gift shop, conference room, offices, and appropriate support facilities (NCKRI 2004). Completion of many of these amenities will depend on further fund-raising efforts by the institute's partners. The city hopes that the building site's location adjacent to the mid-town Lake Carlsbad Recreation Area will draw Carlsbad Caverns National Park visitors into the city for more extended visits.

The NPS Geologic Resources Division plans to convene a meeting in early May 2005 with representatives from major NPS cave and karst parks to fully inform them about current institute developments, the impending transfer of day-to-day operations to NMT, and to exchange ideas about how the NPS will continue active engagement with NCKRI. Later the same month, NMT will invite select representatives from the broad cave and karst research, management, conservation, and education communities to their campus in Socorro, New Mexico, to discuss developing an organization and business plan with a charter or by-laws.

Following these meetings, NPS and NMT expect to transition the institute's management to a formal, jointly administrated structure with the NPS retaining "indirect control" and "ultimate responsibility," NMT managing operations, and a council of partner representatives providing vision and planning.

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