

Geologic Research Opportunities in the Parks

National Park Service
U.S. Department of the Interior

Geologic Resources Division
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The National Park Service encourages partnerships with researchers to assist with the inventory, monitoring, protection, and restoration of our Nation's geologic resources. National Parks offer opportunities in all disciplines of geologic research including, but not limited to: Paleontology, Coastal/Marine Geology, Geomorphology, Cave and Karst, Petrology/Mineralogy, Stratigraphy/Sedimentology, Aeolian processes, Volcanology, Glaciology, and Geo-hazard studies.

Opportunities for Geologic Research in the National Parks

Partnerships between the geological community and the NPS allow both researchers and park managers to gain a better understanding of dynamic geologic processes and features within National Park units. These cooperative efforts enable park managers to make informed decisions concerning our nation's priceless natural resources.

The National Park Service strives to preserve and protect the natural resources and habitats within park boundaries and the processes that maintain them. By maintaining ecosystems in their "natural

state," the NPS provides unique research settings for scientific investigations. Examples of past and current studies conducted within our National Parks include: the discovery of *Alamosaurus*, a rare dinosaur excavated at Big Bend National Park; the use of LIDAR, a laser form of radar, to monitor coastal change at Assateague Island National Seashore; the compilation of a geology training manual for Grand Canyon National Park; the analysis of avalanches as transport mechanisms in Glacier National Park; and paleoclimate reconstruction from Carlsbad Cavern speleothems.

NPS Research Permit and Reporting System

The NPS Research Permit and Reporting System enables potential investigators to apply for permits to conduct fieldwork within units of the National Park Service, review permit requirements and restrictions, examine the results of previous studies, submit annual accomplishment reports, and to search and review research activities that will further the preservation of park resources. Applications for

permits must include a research proposal and should be submitted at least 90 days in advance of planned field activities. Each proposal will be reviewed for compliance with National Environmental Policy Act (NEPA) requirements and other laws, regulations, and policies. Individuals may obtain materials via the Internet (http://science.nature.nps.gov/servlet/Prmt_PubIndex) or by contacting the park in which the work will be conducted.

Funding Sources

Scientific research that addresses park specific resource management issues may qualify for internal funding. These sources may include the Natural Resources Preservation Program, Fee Demonstration Program, and/or Challenge Cost Share Program. This funding **MUST** be secured through a park or regional office. Based on information provided by the researcher, the park will submit a proposal in a Project Management Information System (PMIS) format.

For information concerning student grants and scholarships please visit <http://www.nps.gov/socialscience/tech/oppor.htm> (see also the Geoscientists in the Parks Program under "Research Programs"). Funding may be available to researchers from individual parks, regional park divisions, or cooperating associations (visit <http://www.nature.nps.gov/datasci/research.htm>, or visit park web page).

General Research Guidelines and Considerations

- Proposals MUST be prepared in collaboration with NPS staff and MUST be submitted by an NPS office.
- Applied research that meets NPS needs is preferred. For a list of park specific needs please visit <http://www.nature.nps.gov/datasci/research.htm>, or individual park webpages.
- Benefits to park interpretation programs should be a clearly stated component of every proposal.
- Linkages between geological and biological sciences are encouraged. NPS reviewers have a wide range of

backgrounds, not necessarily in geology.

- Please be patient in research permit processes. Revision and resubmission of proposals should be anticipated.
- Once each year, for the duration of the study, researchers are required to submit a written Investigator's Annual Report (IARs). This may be submitted via the internet. You can acquaint yourself with this process at http://science.nature.nps.gov/servlet/Prmt_systemSearch?type=iar.

National Park Service Research Programs

Geoscientists in the Parks

<http://www2.nature.nps.gov/grd/geojob/index.htm>

Positions are available to experienced students, professionals, and retired geologists through the Geoscientists in the Parks program. These positions include research, resource management, interpretation, and education. These jobs usually range from 2-6 weeks, seasonal or temporary positions. Researchers work with park staff to investigate park specific needs. This research is then used to assist park managers in making decisions concerning resource management issues.

Cooperative Ecosystem Studies Units (CESUs)

<http://www.cesu.org/cesu>

CESUs are multidisciplinary partnerships between federal agencies and universities. At present, there are more than 70 universities acting as host institutions for CESU agreements with the NPS. CESU activities are funded via cooperative agreements that enable federal, state, and university researchers to share facilities, equipment, and expertise to better understand our natural resources.

Learning Centers

<http://inside.nps.gov/programs/>

Learning centers merge scientists, resources and the public. By providing a connection to the general public, especially educators, learning centers enable scientists to share their discoveries with the outside world. In addition, learning centers provide logistical support to researchers, including lodging facilities and laboratory equipment.

Sabbatical in the Parks Programs

<http://www.nature.nps.gov/Sabbaticals/>

University faculty may take advantage of the Sabbatical in the Parks Program to conduct academic research in support of park management activities. This program manages a sabbatical clearinghouse that coordinates the research interests of university professors with the research needs of individual park units.

National Cave and Karst Research Institute

<http://www2.nature.nps.gov/nckri>

The National Cave and Karst Research Institute facilitates speleological research, enhances public education, and promotes environmentally sound cave and karst management. The Institute Web site has identified an extensive list of research needs. Contact the Interim Director, Zelda Bailey (zelda_bailey@nps.gov), for additional information.

Cave and Karst Program

<http://www2.nature.nps.gov/grd/geology/caves>

The NPS Cave and Karst Program provides scientific research, cartographic mapping and inventory programs, and increased public awareness and educational opportunities as related to cave and karst resources within 121 NPS units (81 units contain caves). For additional information, please contact the Cave and Karst Program Coordinator, Ron Kerbo (ron_kerbo@nps.gov), for additional information.

Paleontology Program

<http://www2.nature.nps.gov/grd/geology/paleo/index.htm>

With more than 150 parks with identified fossil resources, there are numerous opportunities for paleontological research within the NPS. Please contact the individual park in which you would like to conduct research, or the Paleontology Program Coordinator, Greg McDonald (greg_mcdonald@nps.gov) for more information.

Coastal Geology Research

<http://www2.nature.nps.gov/grd/geology/shoreline/index.htm>

The NPS encompasses 97 coastal park units and include more than 7,300 miles of shoreline. The NPS is actively seeking research partnerships to protect and preserve the vital geologic, biological, and physical resources found within our coastal National Parks. Please contact the NPS Coastal Geology Coordinator, Rebecca Beavers (rebecca_beavers@nps.gov) for more information.

Research Publications

Opportunities exist for the publication of scientific research within National Park Service journals and technical reports. The quarterly journal, *Park Science* (<http://www2.nature.nps.gov/parksci/guidelines.htm>), integrates research and resource management. National Park Service *Technical Reports* present

scientific data that has been collected within National Parks, and NPS *Natural Resource Reports* describe how scientific research can be applied to resource management issues. Contact the individual park for these and other publishing opportunities.