

# Looking Back

## The National Park Service and the U.S. Global Change Research Program: 1990–1993

By John G. Dennis

**THE NATIONAL PARK SERVICE HAS** been concerned about the effects of climate change on park natural and cultural resource preservation for more than two decades. In October 1988, the Service helped sponsor a World Wildlife Fund conference on the greenhouse effect on biological diversity (National Park Service 1989; Peters and Lovejoy 1992). Working proactively and cooperatively under the aegis of the Department of the Interior (DOI), the Service joined the United States Global Change Research Program (USGCRP) at the end of that year.

Experienced in working collaboratively and involving parks, the NPS representative to the Departmental Working Group on Global Climate Change in January 1989 solicited information about existing NPS activities to show how they related to USGCRP interagency science elements, what issues of concern they addressed, what funding existed for each, and how augmenting them could increase their value to the larger climate change research effort. The outcome was authorization for the National Park Service to prepare a draft budget proposal for integrated inventory, monitoring, and research in 12 geographic areas.

### NPS research program takes shape

The resulting NPS program contributed to four interdisciplinary science elements: (1) ecological systems and dynamics, (2) earth system history, (3) human interactions, and (4) solid earth processes. As integrated into the U.S. Global Change Research Program, the NPS investigations focused on learning ecological histories of participating parks and using that information together with ongoing park research and results of downscaled climate models to

assess how changing climate might cause ecological change in parks.

Drawing from years of experience with the interdisciplinary Man and the Biosphere Program and its partnership-oriented biosphere reserve network, the National Park Service concentrated its global change research program on areas that grouped parks according to biogeographic region, with some parks serving as core research areas and other parks and ecologically associated areas acting as cooperating research areas. Biogeographic regions involved “a special combination of physiography, climate, vegetation, characteristic species, natural processes, human populations and resource uses” (Gregg and Comanor 1992).

Given collaborative enthusiasm from across the Service, the NPS director announced the NPS Global Change Program (GCP), established a GCP committee of scientists and managers to assist in program development, invited parks interested in participating to develop biogeographic area program proposals, and established a process for both administrative and peer review. By the end of August 1990, the Service had appointed a GCP coordinator; articulated purpose, structure, and components of the NPS program; and issued guidelines and calls for interested parks to prepare capabilities and interest statements and, for successful parks, follow-up global change operations and conceptual research plans. Proposal development, review, and selection thus involved three increasingly focused stages:

1. **Capabilities and Interest Statement:** described the biogeographic area’s sensitivity to global change,

identified its related research interests, and discussed its operational capabilities for supporting those research interests.

2. **Global Change Operations and Conceptual Research Plan:** identified relevant research questions, presented preliminary research proposals, and described the base operating program and several more substantial levels for carrying out the proposed research.

3. **Research Proposals:** provided detailed descriptions of proposed research project designs, work plans, and implementation requirements to enable obligation of funds.

Interested groups across the National Park Service submitted 27 Capabilities and Interest Statements that the GCP committee ranked with the aid of a cadre of outside experts. The top 11 groups and a separate Coastal Systems–themed initiative were asked to produce Global Change Operations and Conceptual Research Plans. Each accepted plan was scheduled to receive one full-time employee and approximately \$60,000 to initiate its base program and start preparing detailed research proposals. The National Park Service issued a second call for Capabilities and Interest Statements from previously unselected areas with the hope that there would be opportunity to increase the number of funded biogeographic programs in the FY 1992 budget.

### Denouement

In May 1991, the Service provided base funding to six biogeographic areas and first-year funding for 14 of their research

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projects. These collaboratively conducted projects were designed to be multiyear, multiscale (local to international) efforts drawing on outputs of global climate models to contribute predictive understanding of global change effects on parks. Principal investigators came from parks, Cooperative Park Studies Units, other universities, and other agencies. By mid-1992, 10 biogeographic areas and two thematic programs were funded or approved for requested FY 1993 funding and some also received project contributions from partners. Research areas and themes included ocean and coastal regions, Ozark forest, grasslands, western Great Lakes, southwestern desert, Rocky Mountains, Sierra Nevada, and the Olympic Range. They encompassed 15 core and 31 cooperating national parks and 26 research projects.

Although direct NPS involvement in this first phase of U.S. global change research ended 1 October 1993 with transfer to the newly formed National Biological Survey of all NPS biological research, including the \$3 million and 12 full-time staff of the global change research program, excitement and enthusiasm for the initiative continued. Elements of this former NPS Global Change Program can be found today in U.S. Geological Survey (USGS) global change research activities, such as the Western Mountain Initiative (USGS 2008). Additionally, the interdisciplinary and landscape-scale approach continues in the research of many of the federal and academic scientists who were then involved. The experience of parks cooperatively coming together into joint, landscape-oriented programs lives on in the National Park Service's Inventory and

Monitoring networks, Research Learning Centers, and involvement with the inter-agency and interdisciplinary Cooperative Ecosystem Studies Units.

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<sup>1</sup> In author's possession. National Park Service, Washington, D.C.

<sup>2</sup> See the online version of this article for the full list of memoranda related to the USGCRP.