

Subject: October/November Monthly(???) Report

ASSOCIATE DIRECTOR, NATURAL RESOURCE STEWARDSHIP AND SCIENCE
MONTHLY REPORT FOR OCTOBER AND NOVEMBER 1997
ACCOMPLISHMENTS AND NEW DEVELOPMENTS

CESUs An RFP has been issued for pilot CESUs. Other DOI agencies have committed in varying amounts to these pilots. No new funding is involved; NPS participation is dependent on availability of a funded position. Contact Gary Machlis for information.

GIS GETS FGDC GRANT FOR APPALACHIAN PARKS The NPS GIS Program received a \$40,000 grant from the Federal Geographic Data Committee (FGDC) to promote the use of shared geographic data for environmentally sustainable regional planning in the Blue Ridge Parkway region. The project includes inventorying, documenting and adding metadata (data about the standards for the data themselves) and data to the NPS GIS data clearinghouse. The data to be added are from 3 park units: Shenandoah, Blue Ridge, and Great Smoky Mountains, as well as data from local, state and regional cooperators. As an aside, the NPS GIS Data Clearinghouse will be upgraded to provide distributed search of all NPS GIS data clearinghouse nodes at other locations such as Alaska, Montana State University, and the Alexandria Digital Library at the University of California Santa Barbara. The NPS clearinghouse server is hosted at North Carolina State University and will be running ISITE software, using the Z39.50 protocols and indexing GEO-profiles. The Z39.50 is the international library server standard as well as the standard required by the FGDC.

Check out the NPS GIS Data Clearinghouse at :
<http://hans.nrrc.ncsu.edu/npsgis/>

CANON SCHOLARS The first four Canon Scholarships were awarded at a dinner hosted by Canon and the American Association for the Advancement of Sciences (AAAS). The National Park Foundation is a partner, as well. The AAAS paneled the proposals. The scholarships went to Andrew Suarez, University of California, San Diego for a dissertation on "Measuring the impact of exotic species on natural systems;" Tom Meixner, University of Arizona for a dissertation on "The sensitivity of alpine catchments to changes in climate and atmospheric deposition;" Ilene Grossman-Bailey, Temple University for a dissertation on "Native American resource use in the New Jersey outer coastal plain;" and Dave Smyth, Michigan State University for a dissertation on "Measuring the economic impact of National Parks." The program will result in research related to national parks, and, it is hoped, researchers with an understanding of and interest in national parks. The second year of the science scholars program has been announced, with four new research topics in biological, physical, cultural and social sciences. The applications are due June 15, 1998. Contact Gary Machlis for more information.

PROPOSED SEISMIC OPERATIONS AT BIG CYPRESS NATIONAL PRESERVE CREATE MAJOR STIR - The Collier Resources Company, owner of most of the mineral rights underlying Big Cypress National Preserve, has proposed an ambitious plan for 3D seismic operations and a new well in the Baxter Island area of the park. The plan is the first of a major development program which, according to Collier, may lead to nearly 30 new wells; new wells bring new roads, traffic, production facilities, pipelines, and potential spills. Three sets of regulations or

stipulations apply to different areas of the park, and one section of the plan specifically states Collier's unwillingness to comply with these stipulations. The Collier Company provided its long-range plan to national environmental organizations in Washington, D.C., local environmental groups in Florida, and senior Departmental staff. Already two television stations, several newspapers, and the National Office of the Sierra Club have contacted park resource specialist Pat Kenney. Meanwhile, Calumet Florida, an oil and gas company already operating in the park, has submitted a revised plan of operations addressing deficiencies pointed out by the NPS in an earlier plan. Calumet also informed the park of their intent to submit yet another plan for seismic operations at the north end of the park. The Geologic Resources Division is working closely with the park in reviewing these plans and recommending ways to minimize adverse impacts.

WRANGELL-ST ELIAS NATIONAL PARK & PRESERVE PLANS FOR SAND, ROCK AND GRAVEL EXTRACTION - The Alaska Department of Transportation (ADOT) maintains the 60-mile long McCarthy Road from the town of Chitna, on the west edge of the unit, to McCarthy and Kennicott in the center of the unit. The State operates and maintains the two-lane, bladed gravel road under a Bureau of Land Management right-of-way that predates the Park. To date, the ADOT has used large borrow pits within the right-of-way to maintain the road. The State's authority to use this material is questionable and the uncontrolled, unmitigated impacts of extraction are in the visual foreground of the road. The State is now proposing to do a major reconstruction of the road, requiring millions of tons of fill material, riprap and surface aggregate. Geologic Resources Division and park staff are working to map and inventory all existing sites and to identify potential material sources within the corridor regardless of land ownership compare the material type, quality and quantity, and the relative environmental impacts of extraction at each site. The park will use this analysis to determine the most practical, environmentally sound, and legally defensible way to provide the needed sand, rock and gravel while protecting park resources.

INVENT A BETTER SAND TRAP AND THE WORLD WILL BEAT A PATH TO YOUR DOOR - Most golfers see "sand traps" as an obstacle in their path to reaching the green. But geologist and aeolian sedimentologist researcher Stephen Freyberger has been working 18 years to build a better "sand trap" research tool to better understand the behavior of sand dunes as they migrate back and forth in their lakeshore, seashore, and desert environments. A partnership between Freyberger, the Colorado School of Mines, and the Geologic Resources Division is continuing research to develop a new tool to measure sand flux. The project director for the senior design program at the college has accepted the challenge of taking a prototype sand trap and creating a portable, durable, affordable, reliable, and accurate trap. Once completed, the tool will be available for research in more than 25 park units to study dunes. Dune migration from changes in vegetation cover due to grazing, changes in water table levels due to excessive pumping, and changes in wind patterns due to construction are all possible impacts that could be monitored to give managers an opportunity to better manage the resource.

DETERIORATING GEOTHERMAL WELL PLUGGED AT LASSEN In 1962 and 1978, energy development companies drilled a geothermal exploration/production well on private mineral rights in Lassen Volcanic National Park. Renewed development activity in 1979 prompted the Park Service to condemn the private land and mineral rights to protect the park's sensitive geothermal features. In the declaration of taking, the park acquired the land, the mineral rights and the liability for plugging the well and reclaiming the site. The well sat

unmonitored and unmaintained for fifteen years. In 1994, Geologic Resources Division staff received calls from the U.S. Geological Survey warning that the well casing was deteriorating and that the well could fail, which could lead to decades of uncontrolled flow, public safety hazards and damage to the park's thermal features. Division staff notified the park of the potential well failure and assembled a multi-agency team to meet on-site to develop a well plugging and site restoration plan. The division developed the written well-plugging and restoration design, including cost estimates, and assisted with the contract. On October 10, 1997, the geothermal well was successfully plugged and abandoned. The BLM provided a geothermal engineer to supervise and witness the procedure.

HEADS UP

GIS REMINDER - the annual "right to use" fees are due the beginning of each fiscal year for ArcInfo GIS software bought under the USGS contracts. Contract fees and information are available on the cc:mail GIS Bulletin Board.

PROGRESS

FEE DEMONSTRATION RESEARCH The NPS Social Science program has reviewed proposals submitted for two research projects related to the Fee Demonstration Program. One project will survey park managers regarding current park experiences with imposing and using fees. The other project will survey park visitors regarding their reactions to finding fees imposed on them.

OZARK LEAD MINING INTERAGENCY SCIENCE MEETING - NPS staff from the Geologic Resources and Water Resources Divisions and the park coordinated an interagency meeting October 14 and 15 in Rolla, Missouri to discuss science issues related to potential lead mining near the Ozark National Scenic Riverways. The NPS convened this meeting in response to Departmental managers need for technical information to address our concerns about the significant threats to water quality, quantity, and related resources in Ozark posed by lead mining. In addition to NPSers, representatives from the BLM, the U.S. Forest Service, the U.S. Fish and Wildlife Service, and the USGS (Biologic, Geologic, Minerals, and Water Resources) participated in the meeting to review the state of present knowledge, identify research needs, chart a course for technical analysis, and begin to develop a budget strategy. The geology and subsurface hydrology in this karst region presents complex and difficult scientific questions that need to be resolved to protect the world-class springs and river systems in Ozark. NPS technical staff are preparing a risk assessment analysis to ensure that BLM and Departmental managers responsible for the mineral leasing decision are fully aware of the risks, uncertainties, engineering feasibility, and likely costs and benefits associated with potential lead mining and preservation of this world-class water resources.

DISPRO PARKS MEET On November 3-6, 1997, the NPS Air Resources Division and the Environmental Protection Agency sponsored a meeting of the natural resource management staffs from 13 of the 14 parks involved in the Demonstration Intensive Site Project (DISPro) at the YMCA of the Rockies Conference Center. At this meeting we presented information on the status of air and UV-B monitoring at the DISPro parks, described the process for selecting research proposals to establish dose-response relationships for atmospheric stresses at these parks, and heard a proposal from the EPA to carry out fish contaminant monitoring. Park representatives from ACAD, BIBE, CANY,

EVER, DENA, GLAC, GRSM, ROMO, OLYM, SHEN, SEKI, THRO, and VIIS gave an overview of their parks' resource management issues. During a field trip we visited air monitoring sites at ROMO and the NOAA UV test facility at Table Mountain, near Boulder, CO.

REGIONAL HAZE HEARING On October 28, 1997, Mike Soukup testified before the Senate Subcommittee on Forests and Public Lands Management, Committee on Energy and Natural Resources, at an oversight hearing on EPA's proposed regional haze regulations for Class I areas. The Associate Director applauded EPA's decision to develop such regulations and supported EPA's concept of having measurable targets and criteria for assessing the effectiveness of the regional haze program in making reasonable progress toward the national visibility goal of no manmade impairment. As noted at the hearing, EPA's suggested "reasonable progress" target needs to be examined closely, as it would allow 220-330 years to achieve the national visibility goal in some heavily degraded areas, such as Shenandoah and Great Smoky Mountains National Parks.

JOTR SCIENCE COMMITTEE The first meeting of the Joshua Tree National Park Science Steering Committee was held recently. The steering committee is comprised of representatives from the University of California, Utah State University, The Nature Conservancy, the Pacific West Region and WASO. Representatives of both the Water Resources Division and the Natural Resource Information Division attended the first meeting. The purpose of the steering committee is to provide advice to the park on short-term and long-term inventory, monitoring, and research needs and also to advise the park on the development of an effective natural resources program at the park to meet these needs. The objective of this first meeting was to discuss the role and function of the committee and to focus on the short- and long-term inventory, monitoring, and research needs facing the park associated with construction and operation of the Eagle Mountain Landfill.

ATTENDANCE/PAPERS PRESENTED AT TECHNICAL MEETINGS

AMERICAN GEOPHYSICAL UNION At the annual AGU meeting in San Francisco, researchers from the Ecological Effects Program of the NPS Air Resources Division presented two papers on nitrogen deposition effects on watersheds in the Rocky Mountains of Colorado. Kristi Heuer (student intern at CU-Denver) and Kathy Tonnessen were co-authors on a poster paper describing watershed processing of nitrogen during snowmelt a high elevation site on the western slope of the Rockies. Soil microbial processes under the snowpack was an important factor in the amount of inorganic nitrogen "leaking" into the headwater streams. Kathy Tonnessen co-authored a paper with Mark Williams (CU-Boulder) on a synthesis of deposition and watershed data for the Front Range of the Rockies, with the recommendation that "critical loads" for nitrogen deposition be set for these sensitive systems to protect against episodic acidification of high elevation streams.

GEOLOGICAL SOCIETY ANNUAL MEETING - The Geological Society of America's (GSA) annual meeting in Salt Lake City drew over 5,600 people involved in all aspects of geology including industry, academia, government agencies, research, and education. The Geologic Resources Division hosted an exhibit on geology in the National Parks, with staffing assistance from Capulin Volcano, New Mexico, and Tipanogos Cave, Utah. The booth was highly successful as a point of contact for general geologic information about the NPS. Over 350 geologist-in-the-parks flyers were handed out and over a thousand park brochures were given away. Major topics of questions and comments

were about leading field trips in parks, obtaining research permits to work in parks, and teaching geology of National Park classes in addition to questions about the Geologist-in-the-Parks program and employment opportunities. Division staff gave three talks; (1) Science and Advocacy in the Resource Management of the National Park Service, David Shaver, (2) Geoscience in Context with the National Park Service Timeline, Robert Higgins, and (3) Hiding What They Seek: Examples of Oil Industry Operations Designed to Minimize Impacts on the Surrounding Ecosystem, Bruce Heise. About forty abstracts specifically addressed research or educational programs conducted in parks, and many more included information about national park areas. Division staff also took the opportunity to talk with park geologists and interpreters who attended the meeting, and to meet with GSA program directors about the soon-to-be-submitted National Science Foundation grant proposal for informal education in National Parks, as well as other potential.