

Regional Highlights

Rocky Mountain Region

The Region's biannual Science and Resource Management conference, to be combined in 1993 with Interpretation's biannual Alliances conference, will be held Dec. 6-10 in Denver. The regionwide Alliances VI Conference will focus on improving coordination and information exchange among interpretation, resource management, and research. The conference will explore ways in which interpretation can better be utilized in resource management and ways interpretation can better incorporate information from resource management and research. Coordinators are Dave Dunatchik, Laura Joss, Bob Schiller, and Janet Wise (303) 969-2000.

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Planning has begun for the Fourth Conference on Fossil Resources, to be held in Colorado Springs in Fall 1994. The Fourth Conference will be sponsored by NPS and BLM. Florissant Fossil Beds NM and BLM's Canon City District Office will be hosts, in partnership with Friends of Florissant Fossil Beds and the Garden Park Paleontological Society. Assistance is needed in developing a program to address major issues affecting paleontological resources on public lands. Program development questionnaires have been mailed out. For a questionnaire or information on the conference, contact Dale Ditmason or Maggie Johnston at (719) 748-3253.

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The Region has initiated an ethnographic research project in Bighorn Canyon NRA, with Dr. Larry Loendorf—an independent researcher in Tucson, AZ—heading the study in collaboration with the Crow Tribe. The study will identify areas and resources of cultural significance to the Crow and results will be used in environmental assessments. The Crow Tribe will also help determine ways to protect areas in the park used for traditional cultural purposes. The USFS has requested the NPS to expand the work scope to include study areas within the Custer NF. BLM and the State of Montana also have expressed interest in having the project address their land and resource management responsibilities.

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Glen Canyon NRA is funding a survey for northern leopard frogs (*Rana pipiens*) along the Colorado River corridor from Glen Canyon Dam to Lees Ferry. The frog surveys will be coordinated and conducted by Charles

Drost (Zoologist, CPSU/UC) and Mark Sogge (Ecologist, CPSU/NAU), and will document abundance, distribution, and habitat utilization.

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The Colorado Plateau Vegetation Advisory Committee (CPVAC) in conjunction with the NPS CPSU/NAU sponsored a field training session at Mesa Verde NP on June 16-17. Participants received hands-on instruction in the use of the Brown, Lowe and Paez vegetation classification system. Anyone interested in what transpired at the session can contact either Steve Budd-Jack (MEVE) at (303) 529-4510 or Elena Deshler (CPSU/NAU) at (602) 523-9090.

Southeast Region

SER Chief Scientist Dominic Dottavio has accepted a position as the dean at Ohio State University in Marion. His extensive research record and administrative background were cited as factors in his selection. Dottavio, a native of Ohio, was the first choice of the selection committee after a year long search that attracted 200 applicants. He begins his new work in August.

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A draft coastal park inventory and monitoring handbook has been completed and distributed to coastal parks from Acadia to Padre Island. The handbook contains draft protocols developed as a result of the I&M workshop held at U/VA in August 1992.

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The second annual Big Cypress Wildlife Research Colloquium was held Feb. 4, 1993, at the Oasis Visitor Center. Presentations were made by representatives from NPS, the U/FL, and the Florida Game and Fresh Water Fish Commission.

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William Loftus, Research Ecologist at Everglades NP, began a collaborative project with Dr. Horton Hobbs of the U.S. National Museum to redescribe the Miami Cave Crayfish (*Procambarus milleri*), a subterranean species with very localized range. Life history information also will be presented for the first time.

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U/GA CPSU Director Bob Warren travelled to Mexico at the invitation of the University of Veracruz in Xalapa. He presented four seminars to faculty and graduate students, toured their Tropical Rain Forest Park

for Wild Plants and Animals, and met with administrators to discuss future joint research and graduate education efforts. University researchers and park administrators were interested in the bobcat reintroduction research Dr. Warren has directed on Cumberland Island National Seashore (NS), his research on raccoon ecology and sea turtles at Canaveral NS, and his research on white-tailed deer.

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Recently published reports include:

Van Cleave, R. 1993. *Trail Use in the Cades Cove and Abrams Creek Area of Great Smoky Mountains NP*. NPS/SERGRSM/NRTR 93/03.

Cole, A., and K. Turner (eds.). 1993. *Barrier Island Ecology of the Mid-Atlantic Coast: A Symposium*. NPS/SERCAHA/NRTR-93/04.

Articles published:

Jodice, Patrick G.R. 1993. *Movement patterns of translocated Big Cypress Fox squirrels (Sciurus niger avicennia)*. Florida Scientist 56(1):1-6.

North Atlantic Region

"Is commercial shellfish harvesting compatible within an urban national wildlife refuge?" This question is the title of an article published in *Fresenius Environmental Bulletin* 2:174-178 (1993) Birkhauser Verlag, Basel/Switzerland, by John Tanacredi of Gateway NRA. Tanacredi concludes that such shellfishing is incompatible with the wildlife protection mandates of the urban national park concept, and that such programs based solely on bacteriological monitoring are inappropriate.

Midwest Region

David Figlio, a PhD. candidate at U/WI-Madison, conducted a cost/benefit analysis of Pictured Rocks National Lakeshore (NL) as part of an internship program sponsored by the Great Lakes CPSU at U/WI-Madison.

For a 30 year time frame, Figlio determined the benefits to the local economy accrued from tourism spending, park salaries and expenditures, and payments in lieu of taxes. He then compared these benefits to costs due to loss of logging opportunities and lakeshore development. Results showed that economic benefits of the park's establishment greatly outweigh the costs, even when maximum lakeshore development and liquidation logging practices are considered.

The results will be used to counter local perceptions that the park has negatively impacted the local economy. Other parks may find Figlio's methodologies useful for showing how resource preservation makes economic sense. Copies of the complete report are available from Pictured Rocks. A less technical version is available in the park's series of Resource Reports. For more information, contact Resource Management Specialist Brian Kenner, Pictured Rocks NL, P.O. Box 40, Munising, MI 49862; (906) 387-2607.

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From Jack Oelke, Natural Resource Specialist at Isle Royale NP, and Rolf O. Peterson, Michigan Technological University at Houghton, comes word of the 35th annual winter study program of wolf/moose monitoring at Isle Royale. The program, a cooperative effort with the park and Dr. Peterson at MI/Tech/U, ran from Jan. 14 to March 2, 1993. Previous trends were maintained—the wolf population remained at 12 animals while moose population continued to grow to its highest level in 60 years—close to 1500 animals.

Two wolf pups born in 1992 countered the loss of two adult loners (one was never found, the second was killed by other wolves when it strayed into that pack's territory). The present 12 animals are organized into three packs; the single reproducing pack has increased to seven members; the other two packs consist of two wolves each. Only one lone wolf is present. Three females, one from each pack, were in breeding condition and courted in 1993, however only one pack has successfully raised young since 1988.

Chronic wolf population decline led to more intensive studies beginning in 1988. Disease may have played a role in the population decline, but the current belief is that genetic loss is primarily responsible for lack of recovery. Genetic analysis of several Island wolves indicates that all are descended from a single female, probably a founder of the population. Substantial genetic variability has been lost, leading to inbreeding depression or reduced reproductive success arising from genetic isolation of a small breeding population.

Current expectation is that the wolf population will die out on the Island, although when is not known. Of the 10 animals of known sex, only three are female. Live-trapping and collaring of animals continued in 1993, raising the number of collared animals to six. Monitoring continues throughout the summer and early fall.

National Capital Region

The Rachel Carson House in Silver Spring, MD was dedicated as a National Historic Landmark on April 18. Dr. James L. Sherald, Research Plant Pathologist and IPM Coordinator for NCR represented the NPS at the dedication. Sherald spoke of the advances made in IPM in the NPS and on Rachel Carson's influence on pest management throughout the world.

Western Region

Recent evidence indicates that amphibians are declining on a global basis. Healthy, seemingly well-protected populations have disappeared for no obvious reason, even from parks and large wilderness areas. At the same time, the status of amphibians has been poorly documented and little research has specifically addressed these issues. Dr. Gary Fellers, Research Biologist at Point Reyes NS, has begun a three year study of declining amphibians in California parks, to:

- Assess the status and distribution of selected amphibians in nine park areas.
- Evaluate possible causes of amphibian declines.
- Determine the feasibility of experimentally reestablishing frog populations that have been lost.
- Determine the genetic diversity of selected amphibians that might be used in reintroductions.
- Develop a monitoring program that will allow the NPS to monitor key populations.

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The Second Biennial Conference on Research in Colorado Plateau NPs will be held on the campus of Northern Arizona University, Flagstaff, AZ, Oct. 25-28, 1993. Hosted by the University and the NPS/CPSU at NAU, the conference will highlight biological, cultural, social, and physical science research in national parks and related areas on the Colorado Plateau.

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Charles van Riper III, Unit Leader and Mark Sogge, Ecologist, both of the NPS/CPSU at NAU, are authors of a new publication, *Changing nest placement of Hawaiian Common Amakihi during the breeding cycle*, in Wilson Bulletin Vol. 105. Sogge attended a meeting of the Cooper Ornithological Society in Sacramento and delivered a paper on *Status of the Southwestern Willow Flycatcher along the Colorado River in Grand Canyon*; Van Riper, at the same meeting, gave a paper titled *A comparison*

of avian hematozoan epizootiology in two California coastal scrub communities. Research Ecologist Peter G. Rowlands, also of the NAU/CPSU, has had accepted for publication in Southwestern Naturalist a paper on *Climatic factors and the distribution of woodland vegetation in the Southwest*.

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Six Technical Reports (Nos. 45 through 50) were published by the NPS/CPSU at U/CA Davis in October 1992, and five 1993 Technical Reports (Nos. 4 through 8) are currently in preparation. For titles of the reports, which range widely over subject matter from Bighorn Sheep reintroduction in the Sierra Nevada to Great Grey Owl Hunting Behavior in Yosemite, from kelp forest monitoring in the Channel Islands to characteristics of nine forest stands in Sequoia NP, write to the NPS/CPSU, Wickson Hall, U/CA, Davis, CA 95616, or call Unit Leader Stephen Veirs at (916) 752-6086.

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Sequoia and Kings Canyon NPs were represented at the conference on "Fire in Wilderness and Park Management: Past Lessons and Future Opportunities," held in Missoula, MT March 30-April 1. Poster presentations were made by Tom Ritter, David Parsons, Mark Finney, and Mary Beth Keifer.

In late May, Sequoia/Kings Canyon hosted a Principal Investigators' workshop for all PIs working on the Sierra Nevada global change research program. Also, Research Scientists David Parsons, David Graber, and Nate Stephenson are cooperating with the USFS in developing a proposal for in-depth analysis of the status of old growth forest and associated ecosystems in the Sierra Nevada.

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In March, 1993, the Division of Humanities and the Environmental Studies program at U/CA Santa Cruz co-hosted the second in a series of University conferences with the common title "Reinventing Nature." According to David Graber, Research Biologist at Sequoia/Kings Canyon NPs and the NPS/CPSU at U/CA, the intentionally ambiguous title refers to powerful concepts of invention and deconstruction applied to nature, wilderness—even the science of ecology.

To what extent is "nature" a cultural determination? How possible is it to know the actual structure of nature? How durable is the American myth of wilderness in the light of revelations about the long-term plasticity of the continent and interactions of

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native Americans with the pre-Columbian landscape? The way these questions are answered, Graber suggest, may have profound consequences on the way national parks are managed in the future.

Graber's invited paper was entitled *Resolute biocentrism: managing for wildness in national parks* and he has promised *Park Science* an article in a future issue based on what he terms "the most important scholarly meeting I have attended in my NPS career."

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4 NP Videos Win Awards

K.R. Cranson, with Lansing Community College's science department, alerts *Park Science* to four new videos made in national parks that won awards at the 30th National Outdoor-Travel Film Festival sponsored by the Michigan Outdoor Writers Association. Cranson's review of the videos will be carried in the Fall issue of *Park Science*.

Southwest Region

A three-year study, a cooperative effort by the NPS/CPSU at NAU and the AZ Game and Fish Department, will examine the physical and biological factors influencing Arizona pronghorn habitat use. Objectives are to determine pronghorn movements within, into, and out of park boundaries, to identify home ranges of the pronghorn herds and core use areas within and outside the park, and to

determine pronghorn fawn behavior and the influence of vegetation structure on pronghorn fawn mortality.

The study also is being conducted in Petrified Forest NP, to compare to Wupatki NM data. The project is being supervised and administered by Van Riper and NPS/CPSU Wildlife Research Biologist Henry E. McCutchen.

Pacific Northwest

A superbly conceived and executed 14-panel folder, *Wildflowers of Craters of the Moon National Monument*, has been produced and is on sale for \$2 by the Craters of the Moon Natural History Assn. The full color folder is pocket size, with photos of the Monument and 14 of the plants to be found there. Portions of the text are adapted from *Common Plants of Craters of the Moon NM*, by Karl A. Urban. Each plant photograph has a check-off box beside its description, for easy record-keeping.

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The NPS held its annual Rivers, Trails, and Conservation Assistance (RTCA) training in Portland, OR April 18-23, 1993. This year's training focused on environmental negotiation and upon involving culturally diverse and economically depressed communities in the care and management of their natural resources. PNR Director Charles Odegaard has committed to providing staff

resources for planning and developing the Evergreen Agenda, an initiative underway in Washington State to create a community-based statewide system of natural and open space lands.

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The first ever biological survey of the Oregon Caves was carried out in 1992 by Rod Crawford, an invertebrate specialist at U/WA's Burke Museum. This initial effort found more than 20 species inhabiting the cave. Two, and possibly three, of the species had never before been known and occur nowhere else in the world. One is a millipede of the genus *Speoseya*, a species represented elsewhere by only two specimens. The second is a water mite, likely parasitic on a yet-unknown species occurring in the cave.

A third specimen, a grylloblatid, is suspected to be a new species but this cannot be confirmed until a male is found. Grylloblatids are primitive insects found mostly in ice fields and in lava caves. They have always been found in glaciated or formerly glaciated areas. The current find conforms to this pattern. Glaciation has occurred within 2,000 meters of Oregon Caves, and the grylloblatid is believed to be a glacial relict. The pit-traps, baited with limburger cheese, are still set in the cave and are checked by park staff every 20 days. The survey is continuing in 1993 and will be tied to a five-months-long Earthwatch project.