

# Monitoring Case Studies Selected

By Gary E. Davis

Tom Wilson's cartoon character Ziggy found the park "CLOSED FOR INVENTORY" in his cartoon that ran on Sunday, July 8, 1990. Wilson's art does more than imitate life, it foreshadows it. With existing operating funds, the NPS is faced with a Hobson's choice of closing the parks to inventory and monitor them or literally running them into the ground.

How much is needed to inventory and monitor natural resources? Pro-rating from prototype programs like Channel Islands and Shenandoah NPs to account for smaller and larger parks, it appears that the NPS needs about \$200 million a year. Is it worth the investment? How can we find out? Funding a few model programs and gaining firsthand experience is probably the best way, but it will take 10-15 years to reap the real benefits. A much quicker, but less certain, way is to examine case histories of long-term studies that simulate monitoring.

Heeding the adage that those who do not learn from their history are doomed to repeat it, the NPS Inventory & Monitoring Steering Committee commissioned a series of case studies to evaluate cost estimates and to develop confidence in the value of monitoring programs. A group of 19 superintendents and scientists met at Channel Islands NP July 24-27, 1990 and selected 15 examples of major natural resource issues involving monitoring or long-term research. Case studies of the selected issues will be used to determine the relative values and costs of resource monitoring and long-term research for park management.

The Regional Chief Scientists and about 50 senior managers and field scientists nominated nearly 100 candidate cases last spring. We organized those into issue categories identified in the 1987 GAO report on "Threats to the Nation's Parks" to structure the workshop and help assure a representative sample of issues in the final selection. Each workshop participant introduced the nominated cases in one category and moderated the ensuing discussion. After nearly two days of presentations and discussion, the group agreed on 36 cases, all of which addressed major

## Case Studies Selected to Evaluate Monitoring Programs

### ISSUE: THREAT TO ECOSYSTEM INTEGRITY – AESTHETIC DEGRADATION

Adjacent Community Growth & Development –  
SAGU Fire Research & Management – YOSE &  
SEKI

Predator/Prey Relationships and Ungulate  
Herbivory – ISRO

Saguaro Cactus Dynamics – SAGU

### ISSUE: ALTERATION OF WATER QUALITY OR QUANTITY

Devil's Hole Pupfish/Water Rights – DEVA

Water Diversion – EVER

Water Quality – MACA

### ISSUE: CONSUMPTION OF RESOURCES

Native Fish Exploitation (Cutthroat Trout) – YELL  
Fisheries Management – EVER

### ISSUE: IMPACT OF ALIEN SPECIES

Biological Invasions – HALE & HAVO

Goat Management – OLYM

### ISSUE: PHYSICAL IMPACTS OF VISITORS

Wilderness Research & Management – YOSE &  
SEKI

### ISSUE: AIR POLLUTION

WHITEX/Navajo Power Plant – GRCA

### ISSUE: PARK OPERATIONS

Rare Plant Management – INDU

River Use Management – OZAR

DEVA – Death Valley NM; SAGU – Saguaro NM; YOSE – Yosemite NP; SEKI – Sequoia/Kings Canyon NPs; ISRO – Isle Royale NP; EVER – Everglades NP; MACA – Mammoth Cave NP; YELL – Yellowstone NP; HALE – Haleakala NP; HAVO – Hawaii Volcanoes NP; OLYM – Olympic NP; GRCA – Grand Canyon NP; INDU – Indiana Dunes NP; and OZAR – Ozark NP

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**The July-August issue of *BioScience* is devoted to discussions of long-term ecological research.**

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issues, used or needed long-term data sets, and had reached a conclusion. The 15 best cases also showed

some universality in setting precedents for other areas, represented programmatic rather than ad hoc approaches to monitoring, and demonstrated an NPS management commitment to continued monitoring.

The final list contains examples of all 7 major categories of resource issues from 15 parks in 5 regions. The product of the workshop is a document that defines the 15 best cases and describes the contents of each case study. The studies are scheduled to be conducted in FY91 by nationally recognized experts on the issues. Each study will present a history of the case, describe the monitoring program (or long-term research), define the issues addressed, and describe the role of monitoring in determining how issues were perceived, approached, resolved, and evaluated. The relative costs and values of long-term monitoring (or research) will be analyzed and presented at the conclusion of each case study. The case studies will be presented at a national symposium, and compiled, analyzed, and published.

A valuable byproduct of the workshop was the camaraderie and communication that developed among a diverse group of park managers and scientists as they struggled together with a common challenge. The group represented 10 parks, 7 regional offices, and 2 Washington office divisions, and came from many different professional backgrounds. The workshop was conceived and conducted by research scientists Gary E. Davis and William L. Halvorson and superintendent C. Mack Shaver, Channel Islands NP. Participants were Jim Carrico (Big Bend NP), Jay Goldsmith (Western Region), Ron Hiebert (Midwest Region), Gary Johnston (WASO Vegetation & Wildlife), Randy Jones (Olympic NP), Lloyd Loope (Haleakala NP), Cliff Martinka (Glacier NP), Dave Mihalic (Mammoth Cave NP), Bill Paleck (Saguaro NM), Stan Ponce (WASO Water Resources), Mike Soukup (Everglades NP), Brian Underwood (Mid & North Atlantic Regions), John Varley (Yellowstone NP), Jan VanWagtendonk (Yosemite), Richard Whitman (Indiana Dunes NL), Ro Wauer, retired NPS, was an active observer from the National Academy of Sciences panel reviewing NPS science programs.