SUPPORTING BASIC RESEARCH IN U.S. NATIONAL PARKS

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ESA, Madison, WI
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Grand Canyon of the Yellowstone

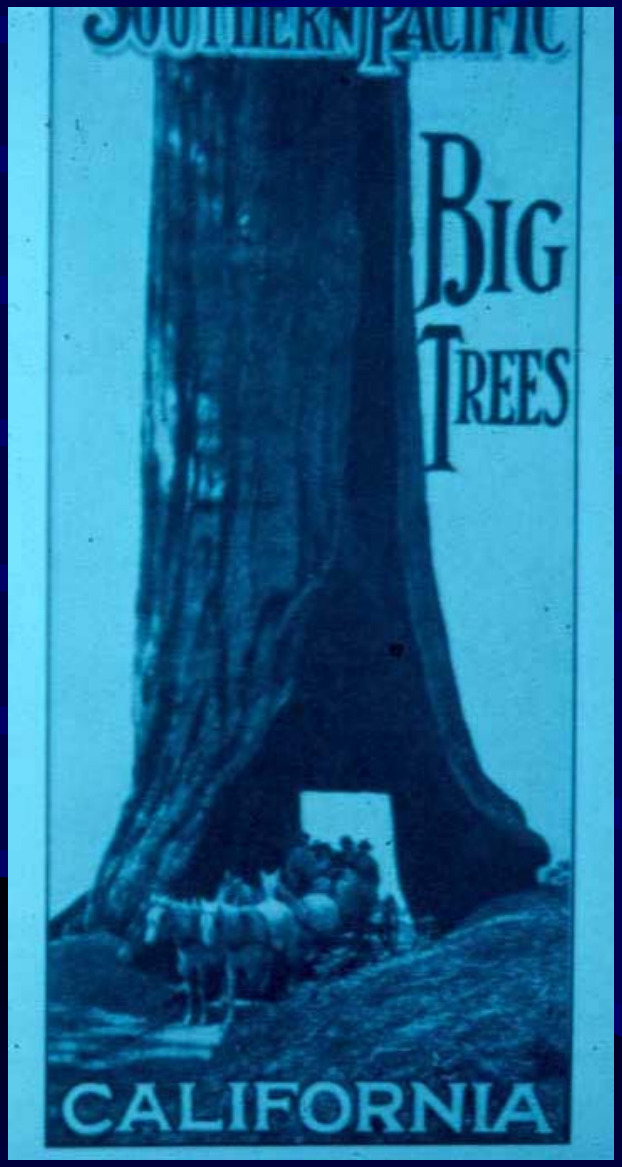
Moran, 1893

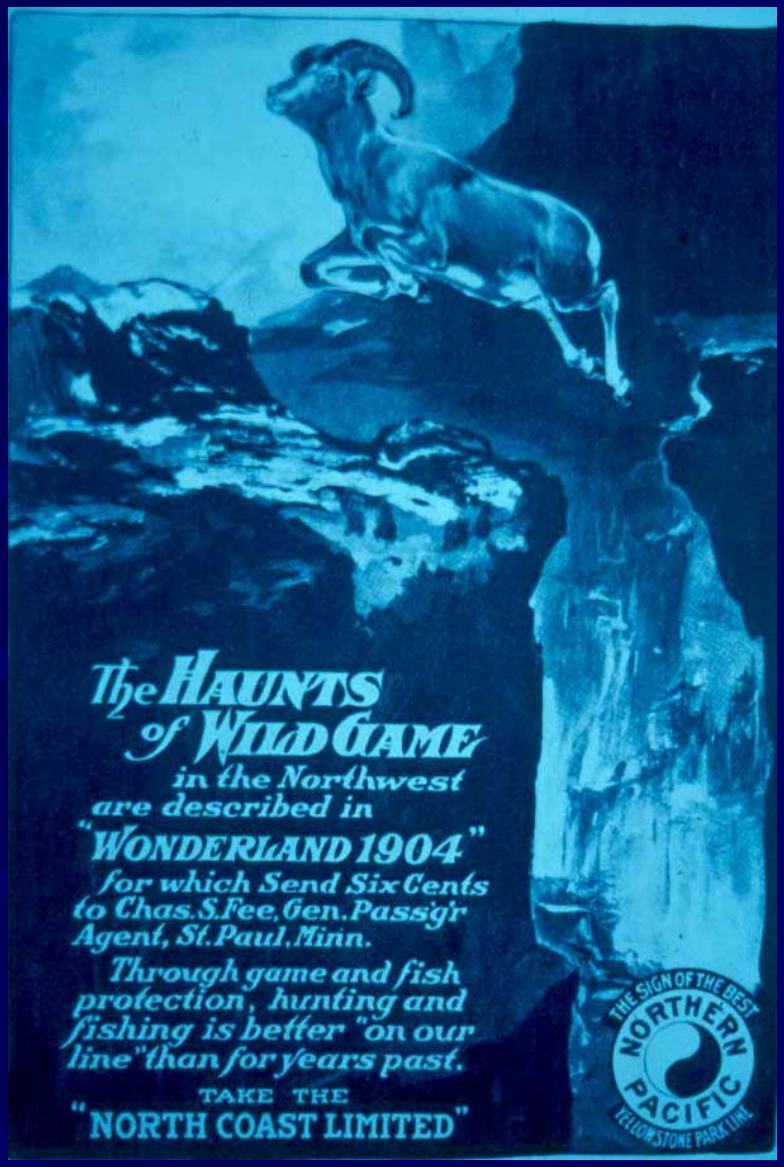
Yosemite Falls,
Yosemite NP

General Sherman Tree, Sequoia NP

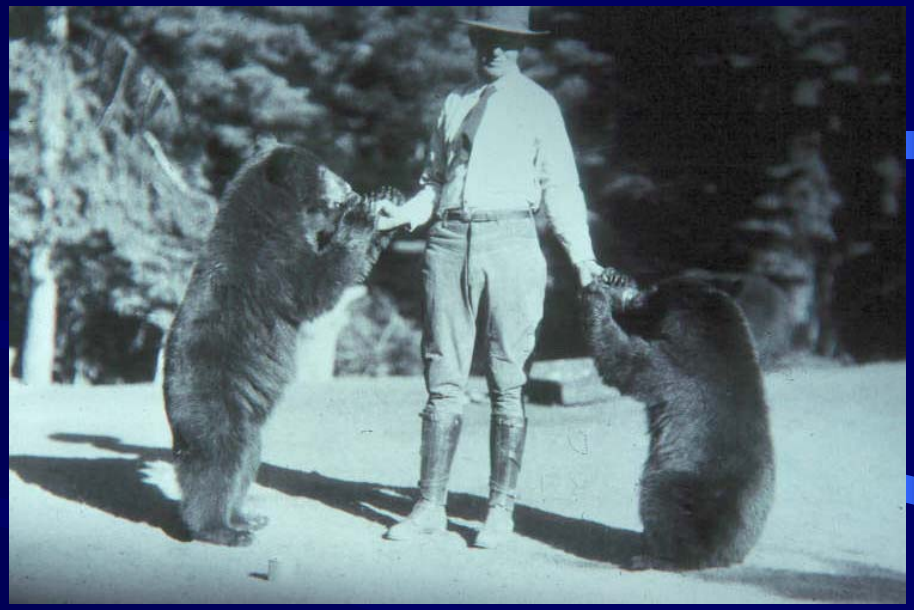
Emphasis on “protection”

Protection from fire, disease, predators and other evil forces





Parks were dependent on tourists to justify existence

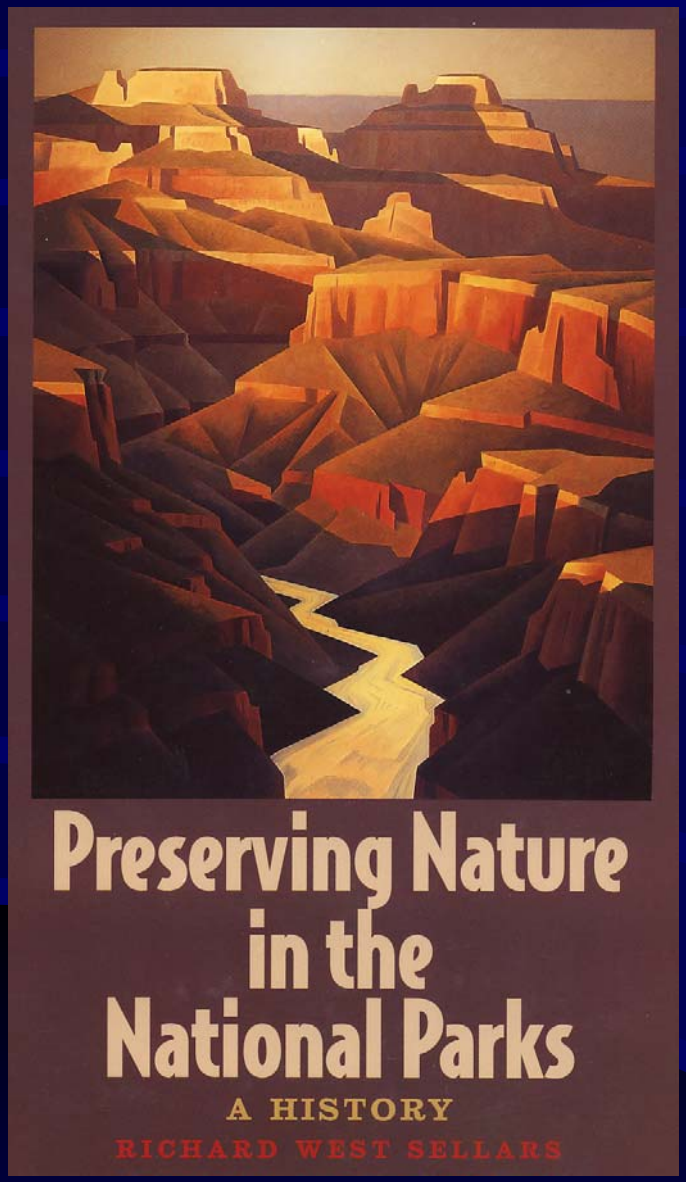


Key management decisions often made in absence of data
Managers “knew” what was needed
Emphasis on “appearance” of healthy ecosystems

Among the Sierra Nevada.
Bierstadt, 1868

If the parks could be “protected” they would survive forever, “preserved forever in their natural state” Horace Albright

Role for science largely restricted to descriptions of flora, fauna, geology



1997, Yale University Press

Richard W. Sellars

History of resource management in national parks

Emerging ecological concepts; conflicts with traditional tourism/scenery management

"apathy towards scientific resource management"

"reluctant to abandon traditional assumptions"

"ingrained disregard for scientific research"

- : First direct support of research by NPS

  Survey of park wildlife (funded largely through personal fortune of biologist George Wright)

  Later became NPS Wildlife Division

1930's Wildlife biologists promoted ecological awareness

  Questioned utilitarian and recreation focus of agency

  Recognized limitations of boundaries, loss of key species, loss of habitat

1932: At urging of NPS biologists (and ESA), established system of Research Reserves to "preserve permanently" selected natural areas – value to science

1936: Andrews Bald Reserve (GRSM) declassified to permit cleanup following severe windstorm

- Debate within NPS regarding role of reserves
- Demonstrated vulnerability of NPS reserves to administrative discretion (concern persists)

1940 Biologists moved to Biological Survey (FWS)

No one left to challenge traditional assumptions & practices

1940's & 50's: the few biologists hired by NPS worked for naturalists or rangers

1960's Increasing call for NPS science program

1963: National Academy of Sciences report on NPS research needs (Robbins Report)

Leopold Report on wildlife management

-NPS largely uninformed about it's resources

-Need for ecological (science) based management

-Recognized scientific value of parks

-Criticized NPS for failure to support science

-Urged NPS to support a strong, independent research program; science should form the basis for all management programs

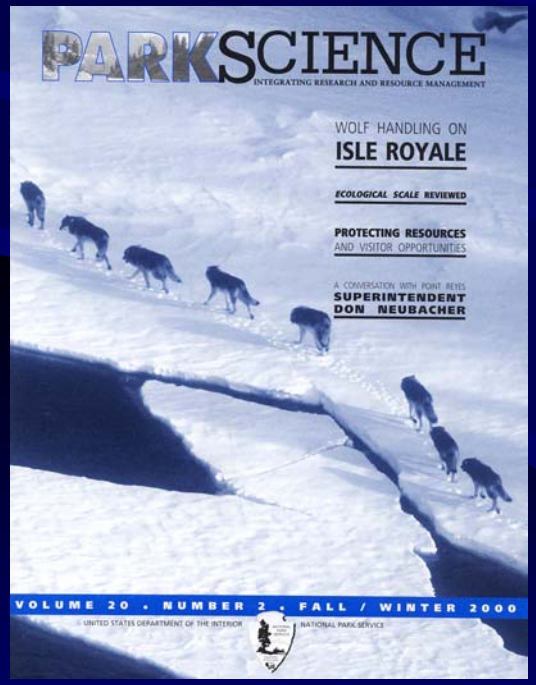
Major influence on 1968 policy revision

Funding and organizational change slow to follow:

- In-park research centers (EVER, GRSM)
- Park research programs (SEKI, YELL, CHIS, INDU, REDW)
- Logistical support for external research (ISRO)
- CPSU's (first established in 1970; 35 by 1980)

1980: Park Science

Research and it's application to park management



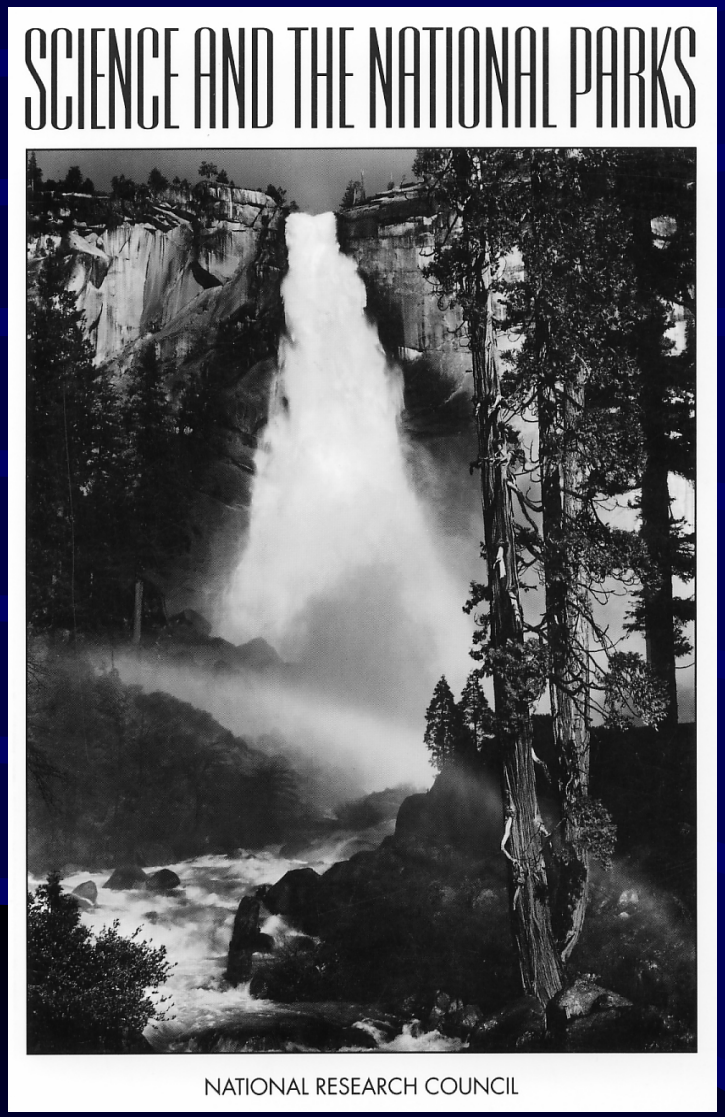
1981: George Wright Society & GW Forum

Professional society and journal to support application of science to park issues - policy, planning, management

Continued Concerns:

- Lack of in-house support
- Independence of research
- Restrictions on science activities
- Uneven quality of science produced
- Lack of application of best science

Additional internal and external reviews of NPS science held throughout 1970's & 80's



1992 NRC Report

Chair: Paul Risser

Emphasized value of "Science for Parks" and "Parks for Science"

Criticized NPS for lack of support for science & research based management

Problems "rooted in the culture"; organizationally driven by recreational tourism management

- : NPS/ESA Ecological Research Program Workshop

  Report prepared by Paul Risser and Jane Lubchenco
  Articulated vision for a NPS ecological research program

  Address current/future needs
  Develop basic knowledge
  Contribute to larger body of science

- : NPS Advisory Board committee: Science and the National Parks II

  10 person committee (including 5 scientists) revisited 1992 NRC report (Risser, Lubchenco, Christensen, Policansky)

  EM as guiding principle
  Professionalization of workforce
  Partnerships and linkages (ESA, NBS)
  Need for legislative mandate

Loss of NPS Research Program

1993: Administrative transfer of NPs research program to NBS

- Stripped NPS of its biological research capability
- Focus on independent science
- NBS immediately became a political target
- NPS forbidden from hiring researchers
- NBS incorporated into USGS in 1995

Today: NPS has no researchers

- Relies on scientists from USGS, other agencies, and universities
- Some parks have lost support infrastructure
- Increasing interest in how to restore science expertise

Recent developments re. restoration of science expertise

Professional Activities

- 1996 ESA symposium and 1999 special section in *Ecological Applications* on Wildlife Management Issues in National Parks

Canon National Parks Science Scholars Program

- 1997: 5 year agreement to provide $25,000 per yr for up to 3 years to support 32 PhD students' research important to future of national parks
- AAAS coordinates competitive selection
- 21 students supported to date

Cooperative Ecosystem Studies Units (CESU's)

- Regional partnerships between universities and Federal agencies
- Provide research, technical assistance and education to Federal resource managers
- First 4 CESU's selected in 1999 (UM, NAU, UT, URI)
- Federal partners: NPS, BLM, FS, B. Rec., USGS, Dept. Energy
- NPS has placed science coordinators at each CESU
- Currently are 8 CESU's

Focus on communication, cooperation and coordination between agencies and universities (driven by NPS)

1998 National Parks Omnibus Act

- Provided research authority
- Encourages "others to use NPS for study to the benefit of park management as well as broader scientific value"
- Authorized and directed establishment of CESU's

Gates of the Arctic NP

Research Permit and Reporting System

- Facilitates use of parks for research
- Standard procedures for obtaining permits
- Catalog of research needs, projects, reports

FY 2000: Natural Resources Challenge

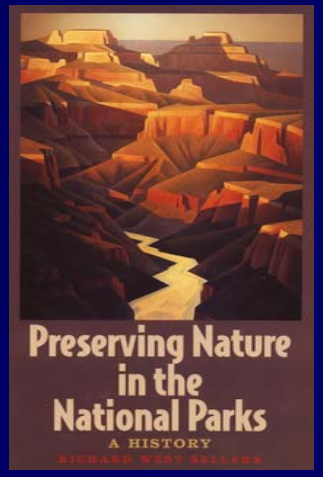
Major 5 year initiative funded by Congress to address past neglect in natural resources management (nearly $20 million in first year with increases in subsequent years)

Inventory & monitoring networks, resource management projects, science support, efforts to make parks more science friendly

Learning Centers: Physical locations for scientists and education activities in or near groups of parks.

-5 funded to date, 8 approved for FY02,
32 targeted by 2005

The NRC was a targeted response to Sellars' book



Mellon Post-Doc Program

Andrew Mellon Foundation provides generous support ($50,000 per yr for up to 3 yrs) for three new post-doc fellows each year to conduct ecological research related to the flora of the national parks

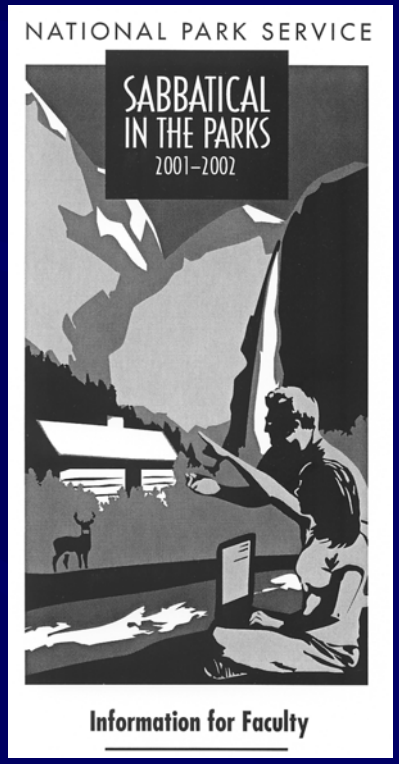
National Park Foundation administers program

ESA provides selection panel

First 3 grants awarded in 2000

Sabbaticals in the Parks

Beginning in 2001 NPS is facilitating sabbaticals in parks to match academic scientists with parks in need of professional expertise



For more information on NPS science programs:

www.nature.nps.gov