

# The Evolution of Park Stewardship

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# Science

- Science is the pursuit and application of knowledge and understanding of the natural and social world following a systematic methodology based on evidence.

- *UK Science Council*



# However,



- Traditional ecological knowledge is equally, if not more, important.
- Traditional ecological knowledge describes aboriginal, indigenous, or other forms of traditional knowledges regarding sustainability of local resources.





# Scientific Eras

- 1851-1930: Trees, Mice, Flowers, and Rocks
- 1931-1962: George Wright and the Doldrums
- 1963- 1993: Leopold, Robbins, and NPS Science
- 1994-Present: Bruce Babbitt, NBS, and USGS



# Trees, Mice, Flowers, and Rocks

- Sudworth
  - Forest Trees of the Pacific Slope
- Hall and Hall
  - A Yosemite Flora
- Grinnell and Storer
  - Animal Life in the Yosemite
- François Matthes
  - Geologic History of Yosemite Valley



# George Wright and the Doldrums

## George Wright

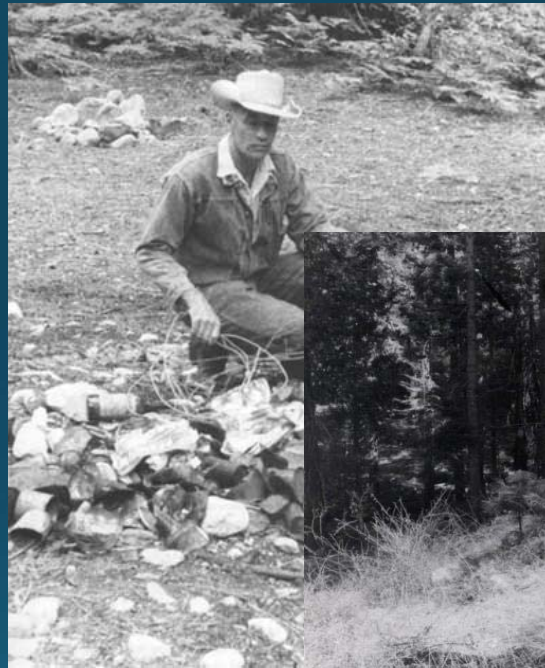
- Used his own funds to conduct a survey of wildlife in the national parks
- Chief, Division of Wildlife in 1932
- Staff of 27 scientists
- Published *Fauna of the National Parks 1* in 1933
- Died in 1936
- Last 3 scientists transferred to Fish and Wildlife Service in 1939





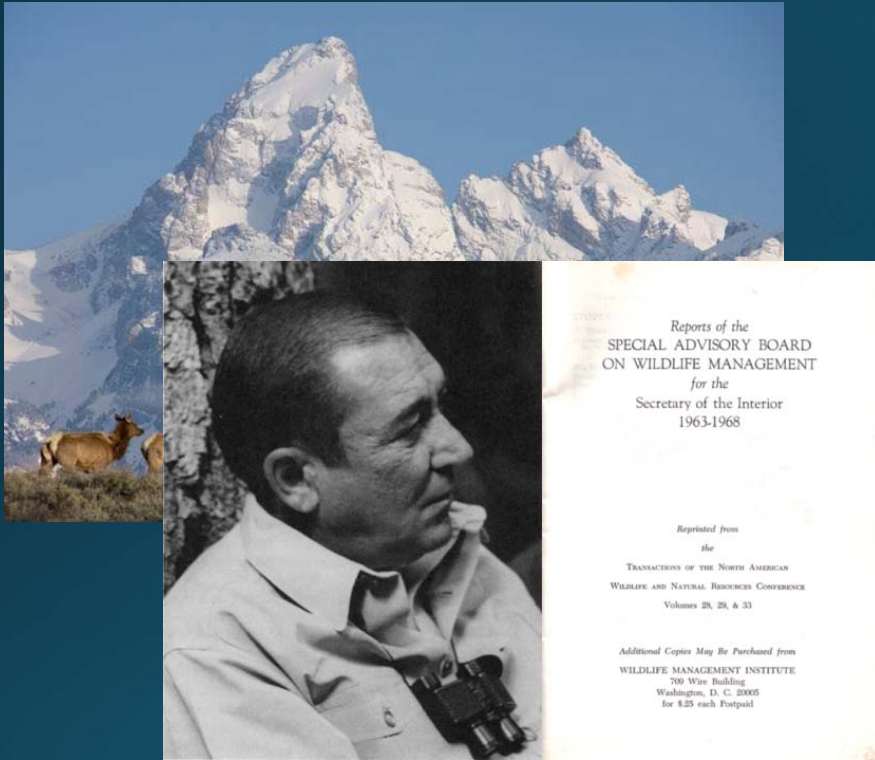
# George Wright and the Doldrums

- Lowell Sumner (1942) – The Biology of Wilderness Protection.
- Emil Ernst (1949) – Vanishing Meadows in Yosemite Valley



# Leopold and Robbins Reports -1963

- Leopold Report - March 4, 1963

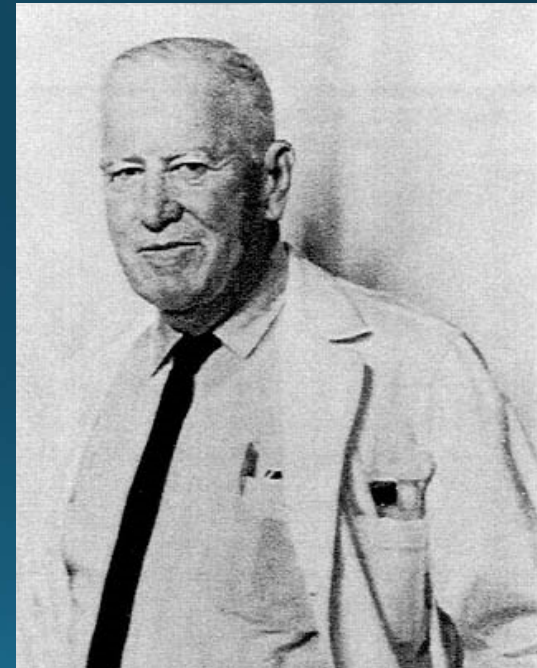


- Convened to look at wildlife conditions in national parks, specifically elk in Grand Tetons.
- Biotic associations within each park should be maintained, or where necessary, be recreated as nearly as possible to the conditions when first visited by Euro-Americans.
- A greatly expanded research program, oriented to management needs, must be developed within the National Park Service.



# Leopold and Robbins Reports -1963

- Robbins Report – August 1, 1963
- Appointed to report on the natural science research needs and opportunities in the National Park Service.
- A permanent, independent, and identifiable research unit should be established within the National Park Service.
- The results of research undertaken by the National Park Service should be publishable and should be published.



# Office of Natural Science Studies - 1967

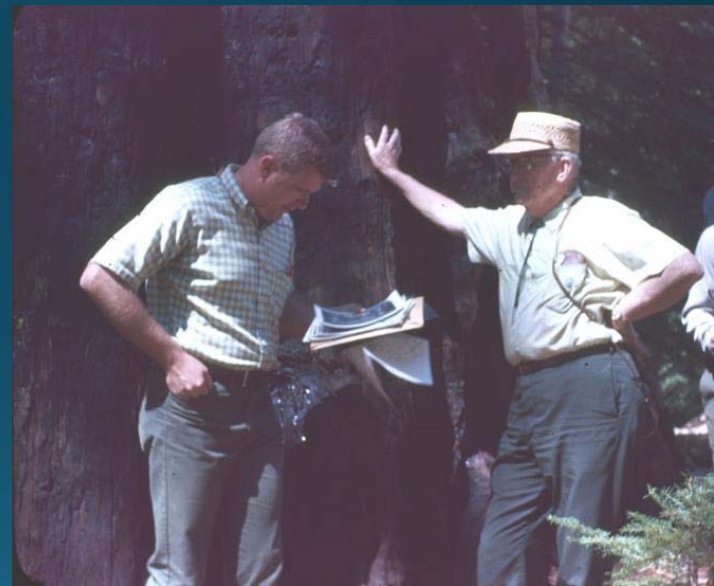


- Starker Leopold was appointed Chief Scientist (WAE)
- 14 scientists in parks became research scientists
- Neal Guse, Jr. became the first research scientist assigned to Yosemite
- All newly appointed scientists had to have PhDs
- Research on prescribed burning started in 1970



# Natural Resource Management Program

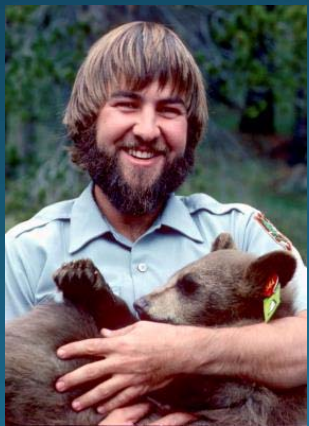
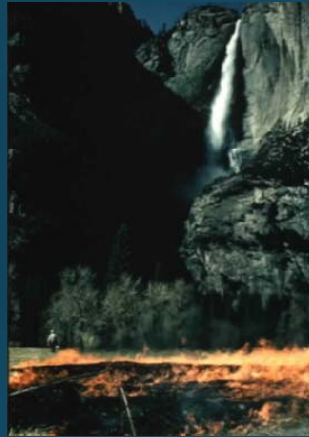
- NPS Policies revised in 1968
- Colorado State Master's Program
- Bob Barbee is first Resource Management Specialist in Yosemite
- Dick Riegelhuth became first Chief of Resources Management in 1971
- Program focused on bears and hazard trees



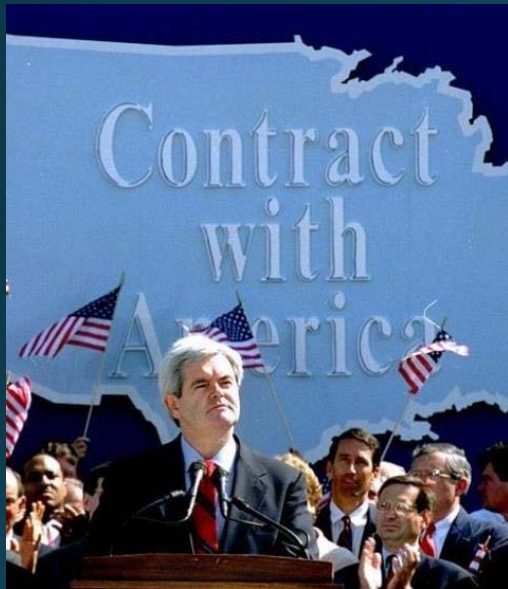


# Yosemite NP Research: 1972-1993

- Fire
  - Prescriptions
  - Fuel characteristics
  - Fuel mapping
- Wilderness
  - Carrying capacity
  - Trailhead quotas
- Wildlife
  - Black bears
  - Bighorn sheep
  - Great gray owls



# Bruce Babbitt, NBS, and USGS

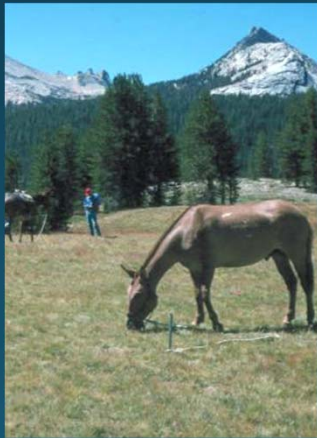
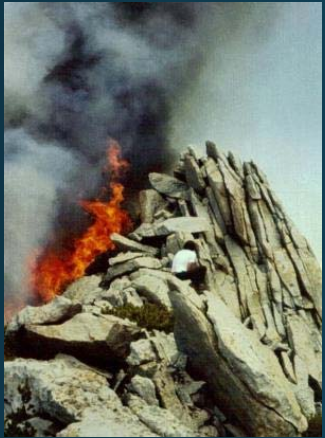


- Bruce Babbitt moved all NPS, FWS, and BLM scientists to the new National Biological Survey in 1994.
- “We are doing is strengthening the credibility of science by putting some distance between federal scientists and those in government who make policy and execute it.”
- The Contract With America targeted NBS for elimination.
- A name change to National Biological Service did not satisfy the critics.
- NBS was merged into the U.S. Geological Survey in 1996





# Yosemite Field Station 1994-2008



- Jan van Wagtendonk
  - Fire ecology
- Les Chow
  - Pacific fisher
- Susan Roberts
  - Spotted owl
- Peggy Moore
  - Invasive species survey
  - Grazing impacts
  - Vegetation mapping





# Retirement - January 3, 2009



# Yosemite Field Station: 2009-Present

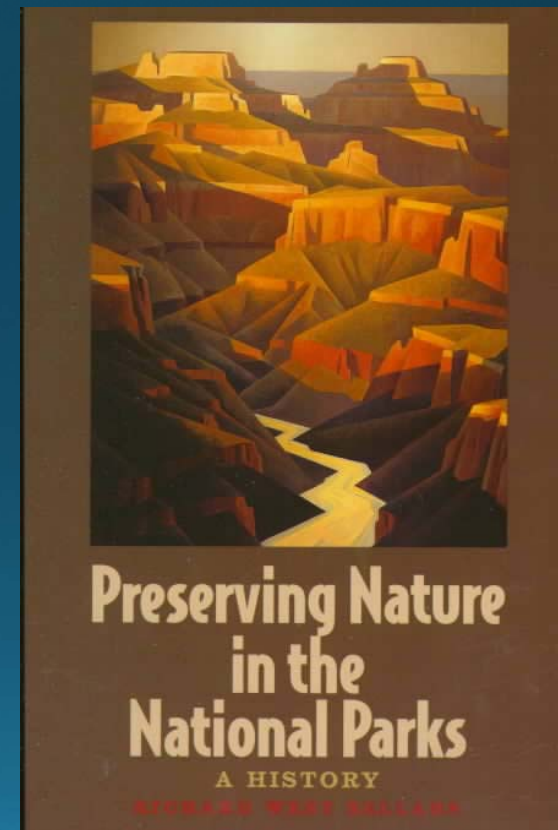
- Staff

- Matt Brooks
- JR Matchett
- Peggy Moore
- Steve Ostoja
- Rob Klinger
- Steve Lee
- Susan Roberts



# Preserving Nature in the National Parks

- Richard Sellars
- Looked natural resource management in the NPS
- NPS needs a lobotomy
- Natural Resource Challenge
- New funding!





# Division of Resources Management and Science



# Resources Management and Science

- Geology
- Hydrology
- Fire
- Carbon





# Resources Management and Science



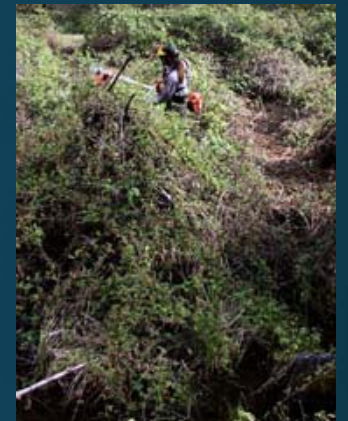
- Bears
- Birds
- Amphibians
- Invasive Plants
- Rare Plants
- Archeology





# Invasive Plant Projects

- Bull Thistle
- Himalayan Blackberry
- Yellow Star-thistle
- Velvet Grass
- Puncture Vine



# Last Words



- Sound science is critical for sound management of resources
- Science must be peer-reviewed and published
- Scientists must be evaluated based on their productive science
- Place-based scientists best serve the management of resources
- There will always be a need for more science!

