

# ESRM 350

## Wildlife Conservation: A Brief History

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Autumn 2016

**“We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes – something known only to her and to the mountain. I was young then, and full of trigger-itch; I thought that because fewer wolves meant more deer, that no wolves would mean hunters’ paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view”**

- Aldo Leopold, *A Sand County Almanac*

# (Wildlife) Conservation

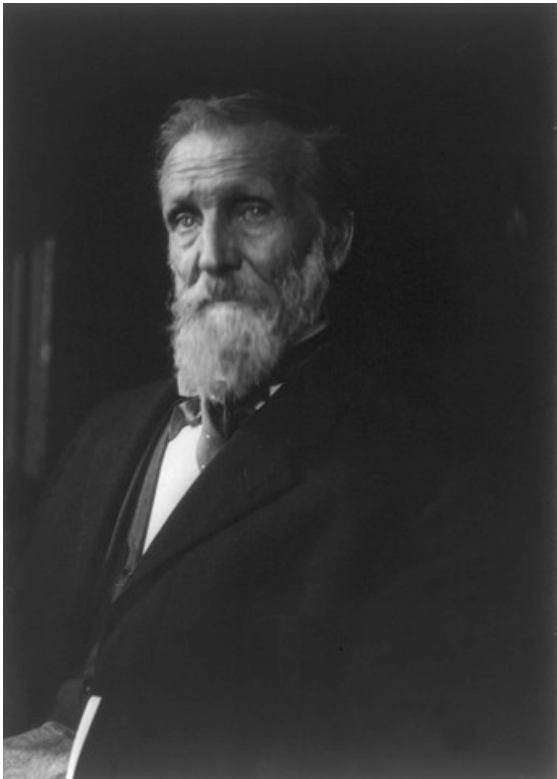
- Effort to maintain and use natural resources (wildlife) in ways that ensure that those resources will be available in the future.
- Traditionally, two schools of thought
  - **Muir School:** preservationist; nature should be protected at least partly for its own sake
    - John Muir, 1838-1914: influential American naturalist, instrumental in promoting the idea of wilderness preservation and in creating the first National Parks

# (Wildlife) Conservation

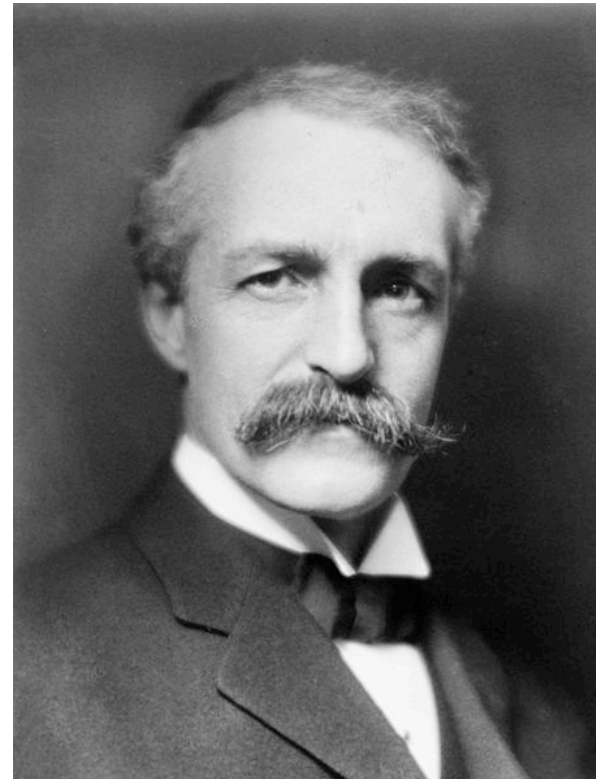
- Effort to maintain and use natural resources (wildlife) in ways that ensure that those resources will be available in the future.
- Traditionally, two schools of thought
  - **Pinchot School:** nature should be protected for benefit of future humans
    - Gifford Pinchot, 1865-1946: first Chief of the United States Forest Service; promoted scientific forestry and termed conservation, “the art of producing from the forest whatever it can yield for the service of man”

# Two Conservation Paradigms

- Not mutually exclusive; rather, the Muir and Pinchot schools emphasize different aspects of conservation



John Muir



Gifford Pinchot

# Wildlife Conservation: Early Years

- Conservation movement originated, in North America, during a period of heavy wildlife exploitation
  - latter half of the 19<sup>th</sup> century
  - e.g., bison reduced from 60 million to ~ 150 by 1890
  - dramatic wildlife declines fueled growing protectionist sentiment



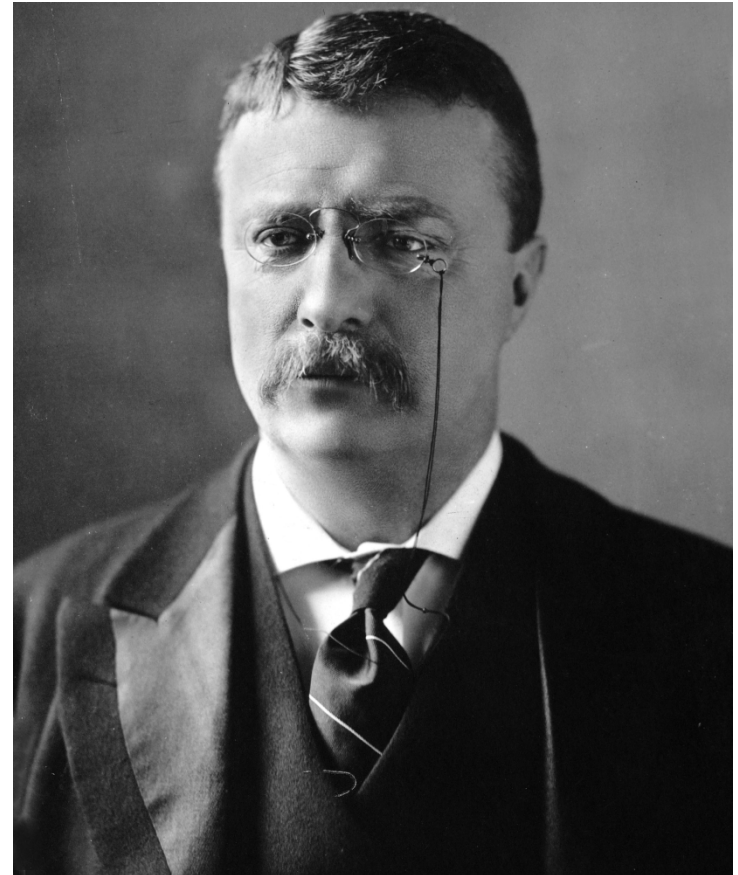
Pile of American bison skulls  
waiting to be ground for fertilizer  
(mid-1870s)

# Era of Protection

- Late 1800s to early 1930s
  - tool for conservation: legal protection
  - science not much involved
- Notable events
  - Supreme Court case, “Geer vs. Connecticut” (1896)
    - dealt with the transportation of wild fowl over state lines
    - established public (state) ownership of wildlife
    - allowed state governments to regulate use of wildlife
  - Yellowstone National Park, est. in 1872, became first area where wildlife species were federally protected in 1897

# Era of Protection

- Theodore Roosevelt establishes first national wildlife refuge (1903)
  - Pelican Island, FL
  - first time area protected *specifically* for wildlife
- Roosevelt pens the Antiquities Act, 1906
  - enabled presidents to proclaim historical landmarks, prehistoric structures, and other objects of historical or scientific interest as national monuments
- Roosevelt brought the idea of wildlife “conservation through wise use” to forefront of American politics
  - also pushed for more use of science in conservation

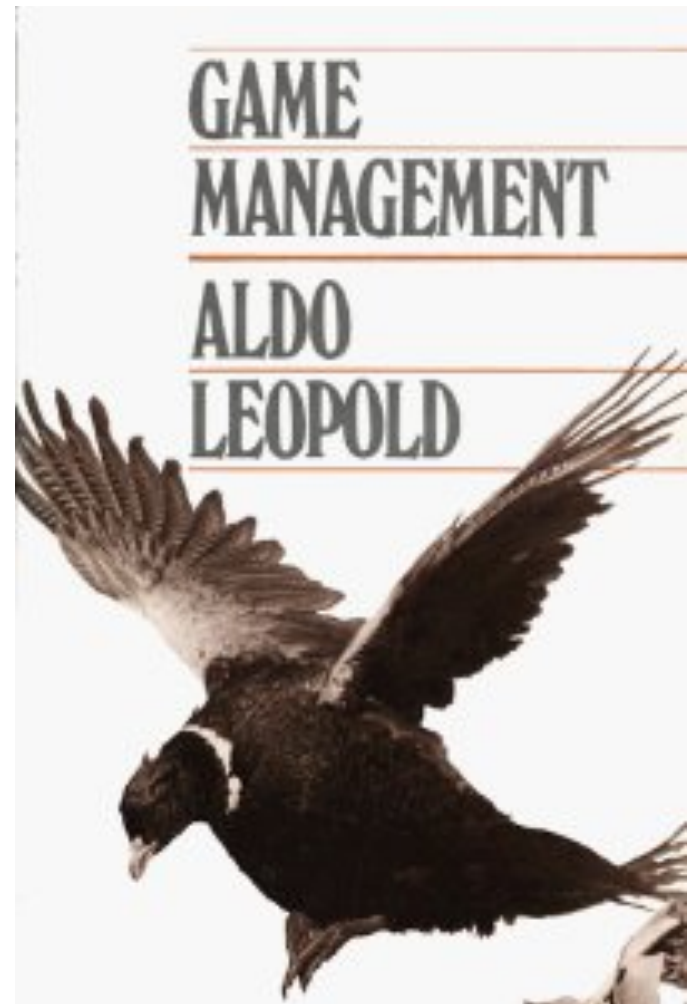


Theodore Roosevelt (1858-1919)  
President from 1901-1909



# Era of Game Management

- Landmark publication – Aldo Leopold’s *Game Management*, 1933
  - defined the skills and techniques for managing and restoring wildlife populations
    - premise – populations need to be studied, understood to allow for effective conservation
  - used as a training guide for ‘game managers’
- *Game Management* promoted idea that conservation is about *both*
  - legal protection, and
  - intervention (manipulation of populations based on scientific understanding)

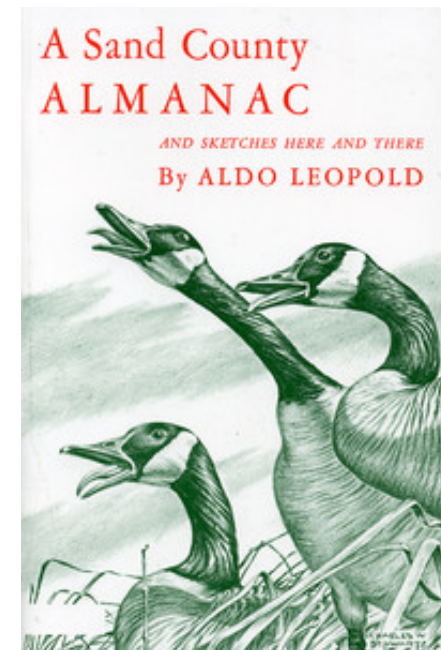
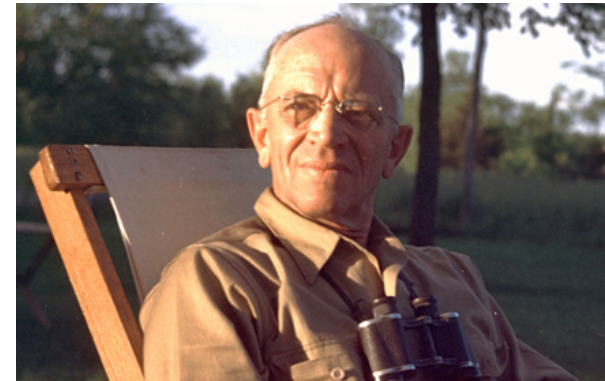


# Wildlife Management

Wildlife management is the application of ecological knowledge to populations of vertebrate animals and their plant and animal associates in a manner that strikes a balance between the needs of those populations and the needs of people.

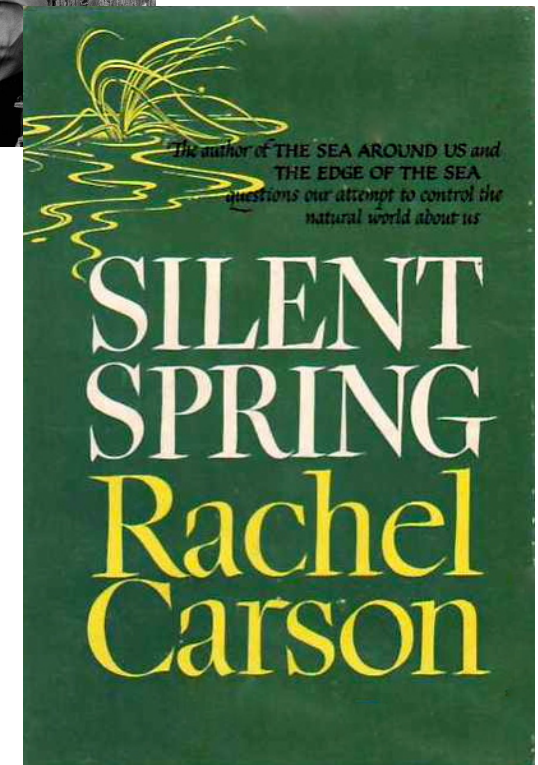
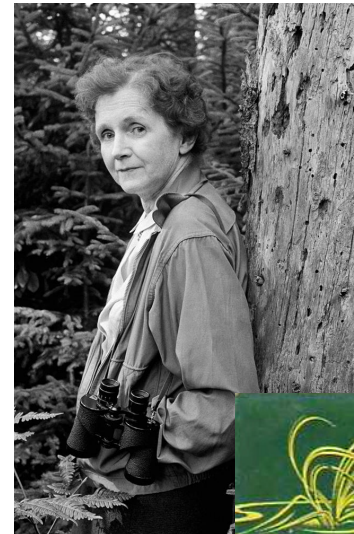
# Aldo Leopold, 1887-1948

- Worked for many years for the Forest Service
- In 1933, became country's first professor of 'Game Management' at the University of Wisconsin
  - instrumental in launching field of wildlife management as an academic discipline
- Most famous for *A Sand County Almanac* (1949)
  - The land ethic
  - *"A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."*



# Era of Environmentalism

- 1960s to the present
- New paradigm
  - environment viewed holistically (as ecosystems)
  - science used as basis for *adaptive* management
  - focus on endangered species
- Key figure: Rachel Carson, 1907-1964
  - *Silent Spring* (1962)
    - documented detrimental effects of pesticides on the environment (particularly birds)
    - led to ban on DDT
    - galvanized public concern, interest



# Era of Environmentalism

- Landmark Laws
  - Wilderness Act of 1964
    - Written into law by Lyndon Johnson, originally protected > 9 million acres of federal land
    - *“A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.”*
  - National Environmental Policy Act, 1970
    - Environmental Impact Statements

# Era of Environmentalism

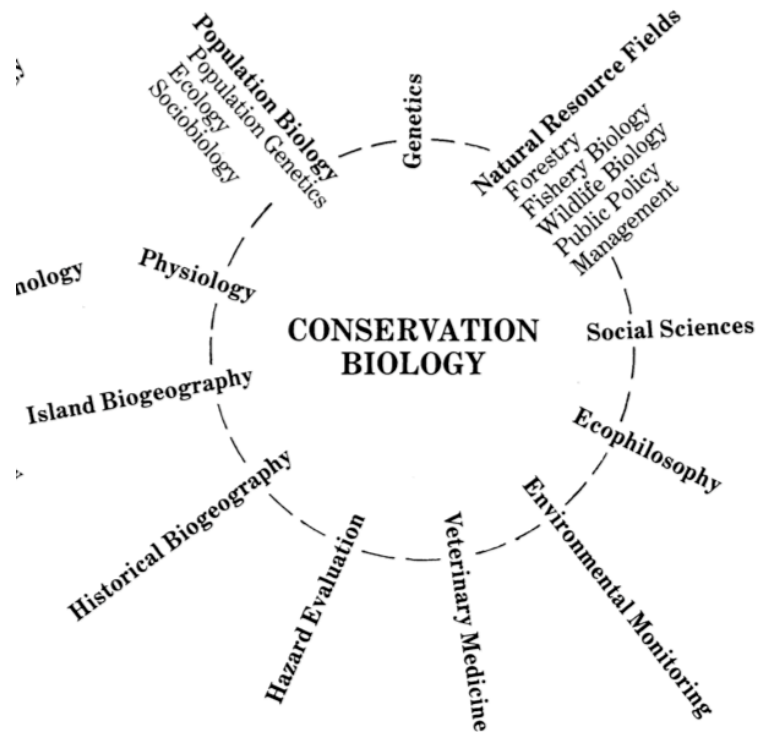
- Landmark Laws
  - Marine Mammal Protection Act, 1972
    - prohibited harvesting and importation of cetaceans, pinnipeds, sirenians
  - Endangered Species Act (ESA), 1973
    - Originally species focused; now protects species and habitats in the interest of conserving functioning ecosystems and natural landscapes

# The Science of Conservation Biology

“Conservation biology seeks to integrate evolutionary theory with environmental reality to predict how an animal/population/species will react to future/current changes, usually human caused, in its environment/density/distribution. Most importantly, whether it will survive and what to do to prevent extinction.”

# The Science of Conservation Biology

- “Crisis Discipline”
  - draws on theory from multiple fields but practitioners must often make decisions without all the facts





***"There are no hopeless cases, only people without hope and expensive cases"***  
- Michael Soulé, *Viable Populations for Conservation*