

Lecture 02, 27 Aug 2003

What is Conservation Biology?

Conservation Biology

ECOL 406R/506R

University of Arizona

Fall 2003

Kevin Bonine

1. Review Names and Faces
2. New folks need photos and 3x5 cards
3. VanDyke Ch1,  
Meffe and Carroll Ch1,  
Noss 1999

Ansel Adams etc.:

<http://dizzy.library.arizona.edu/branches/ccp/>

**The Center for Creative Photography presents:**

**Reception and Curator's Slide Lecture: *Edward Weston and the Late Miss Mather***

Friday, August 29, Reception, 5-6 pm/Lecture, 6 pm, Auditorium

Beth Gates Warren, exhibition curator and author of *Margrethe Mather & Edward Weston: A Passionate Collaboration*, is an historian of photography and the former director of Sotheby's New York Photographs Department. She has lectured and taught classes at such institutions as The New School, the International Center of Photography, New York University, and the Phillips Museum of Art in Washington, D.C.

**GENERAL INFORMATION**

**CURRENT EXHIBITIONS: *Margrethe Mather and Edward Weston: A Passionate Collaboration***

***Edward Weston: A Vision Conserved***

**DATE:** July 19 - October 12, 2003

**HOURS:** The gallery is open Monday- Friday, 9 a.m. to 5 p.m.; weekends, noon to 5 p.m. CCP will be closed May 26 for Memorial Day, and July 4 for Independence Day.

**ADMISSION:** CCP exhibitions, PrintViewings, and events are always FREE and open to the public.

**LOCATION:** Center for Creative Photography; The University of Arizona; 1030 North Olive Road, Tucson, Arizona, 85721 (In the Fine Arts Complex, SE corner of Park Ave. & Speedway)

**PARKING:** Convenient parking is available at the Park Avenue Garage at the NE corner of Park Avenue and Speedway Boulevard. The pedestrian underpass gives you direct access to the CCP.

**INFORMATION:** Call (520) 621-7968 or visit <http://www.creativephotography.org>

**PRESS CONTACT:** Nancy Solomon, (520) 626-5215, [solomonn@u.library.arizona.edu](mailto:solomonn@u.library.arizona.edu)

**What Else Is On View:**

Lobby (South)

Tseng Kwong Chi: Selections from The Expeditionary Series

Lobby (East)

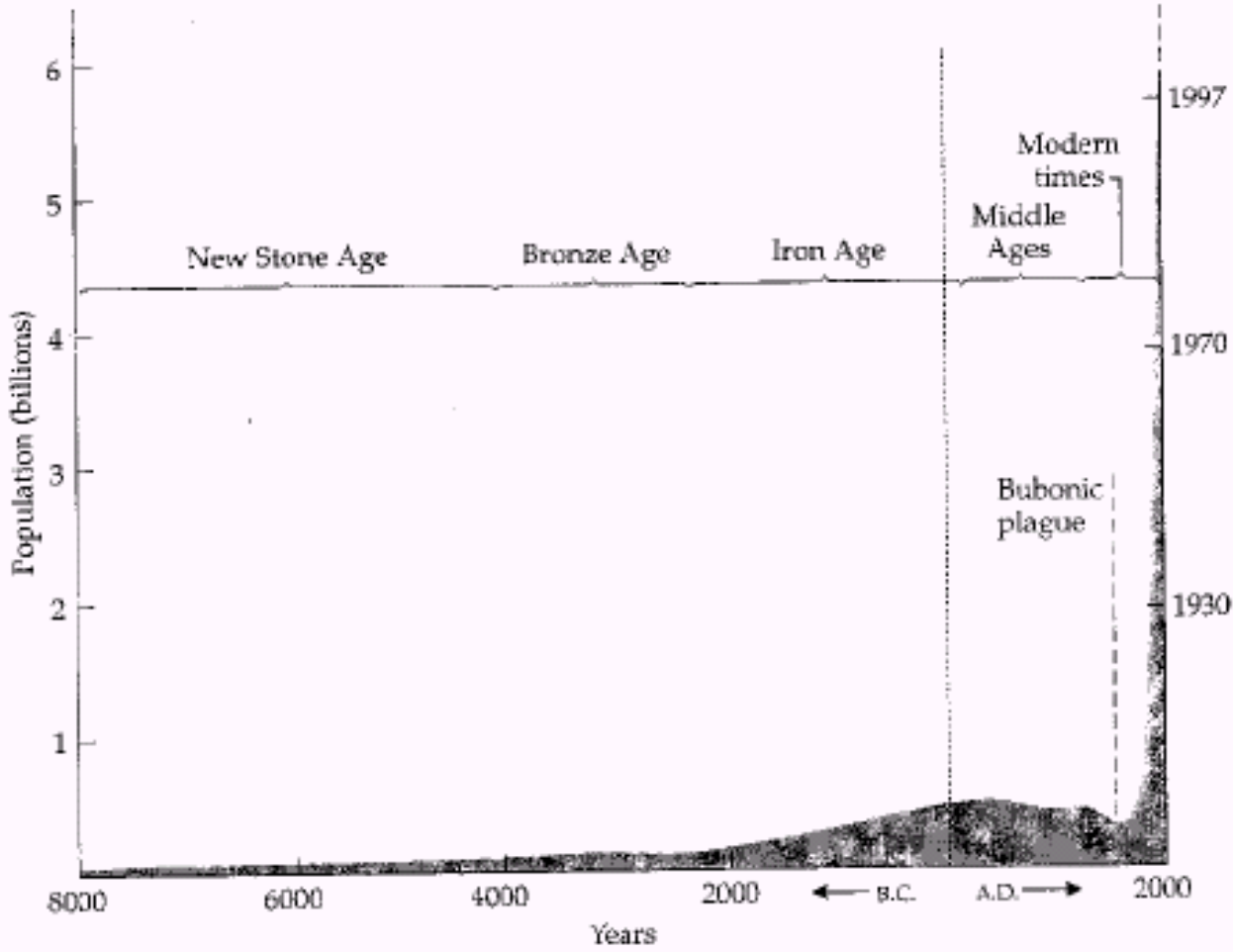
Selections from the Ansel Adams Collection

Lobby (Hallway)

Mars Pathfinder, UA Lunar & Planetary Lab:

**Figure 1.1** Estimated global human population size from the last Ice Age to the present, illustrating the exponential nature of human population growth since the Industrial Revolution. Note that the human population took hundreds of thousands of years to reach 2 billion, but then more than doubled in 40 years. (Modified from various sources.)

Meffe and Carroll 1997



# Human Impacts (population and technology)



When and what were the origins of the discipline?

Figure 1.5 The first issue of the journal *Conservation Biology*, published in May 1987. (Photograph courtesy of E. P. Pister.)

Meffe and Carroll 1997

1. Intrinsic Value

2. Ecosystem services

3. Aesthetic, spiritual enrichment

Conservation  
vs.  
Preservation

Ralph Waldo Emerson

Henry David Thoreau

John Muir

- Sierra Club 1892

- NGO

- Education, Lobby

Yellowstone National Park 1872

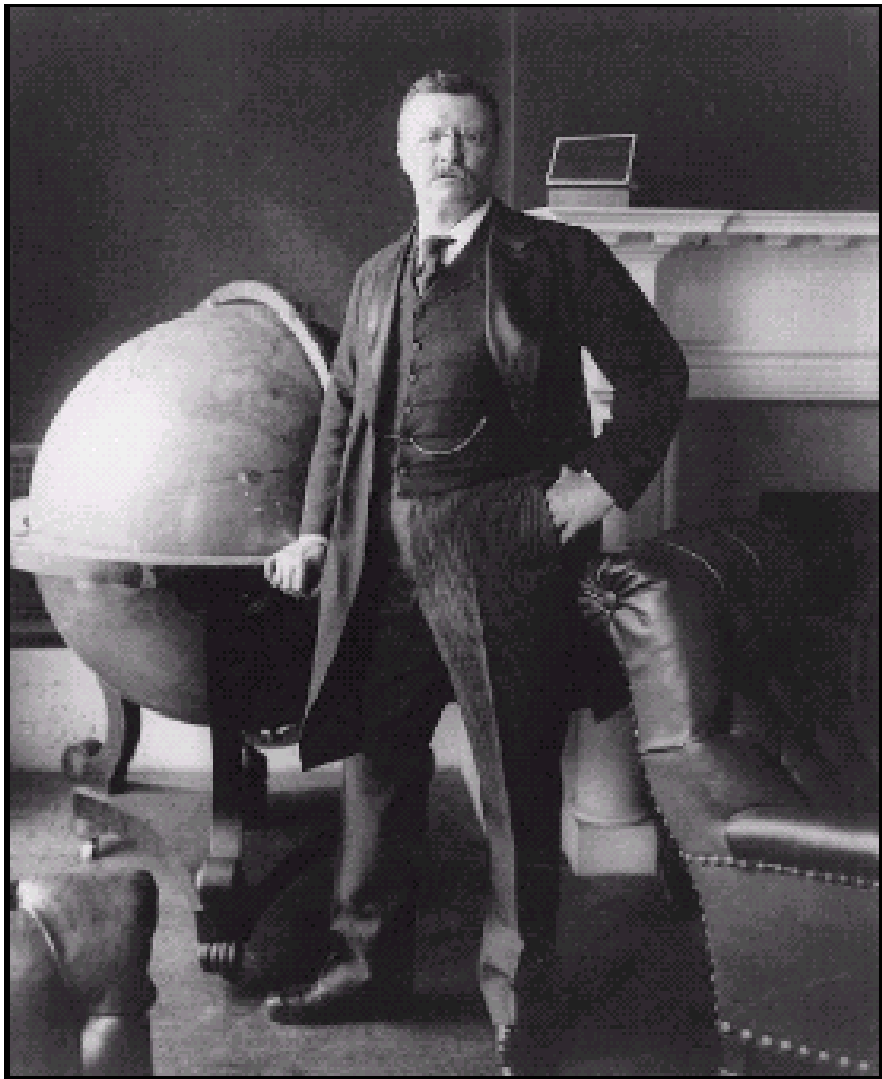
Yosemite National Park 1890

ESA 1917 --> Nature Conservancy 1950

“To Roosevelt, it was clear that a handful of individuals and their companies were reaping most of the profits from natural resources that rightfully belonged to all citizens.” Van Dyke 2003, p. 10

early 1900s “Trustbuster”

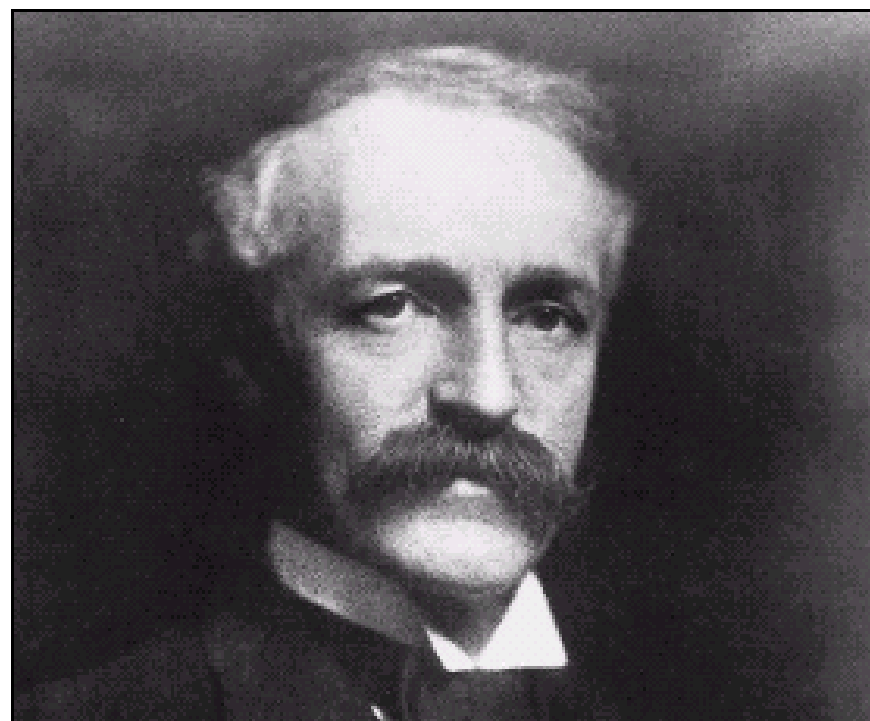
Resources for use, but forever.



---

**Figure 1.3** VanDyke 2003

Theodore Roosevelt, the twenty-sixth president of the United States (1901–1909), greatly supported the role of the federal government in conservation.



The greatest good for the greatest number for the longest time

resource conservation ethic:

1. Equity
2. Efficiency

---

**Figure 1.4** VanDyke 2003

Gifford Pinchot, early head of the U.S. Forest Service and father of the resource conservation ethic. From an original staff of only 123 in 1898, Pinchot built the Forest Service to an organization of 1,500 people administering 150 million acres of public land within 10 years.



Commodities (A)  
vs. Processes (B)

**Figure 1.5**

Aldo Leopold, early twentieth-century conservationist and father of the modern land ethic.

Van Dyke 2003

Game Management 1932  
A Sand County Almanac (1966)  
-evolution/ecology land ethic



-Bioaccumulation  
-Environmental degradation  
threaten human health

**Figure 1.6** Van Dyke 2003

Rachel Carson, U.S. Fish and Wildlife Service biologist and author of *Silent Spring* (1962), a seminal book in the modern environmental movement.

Is conservation biology a distinct discipline?

Biodiversity (levels and scales)

Prevent degradation and loss

1. Scarcity and Abundance

2. Value laden and mission driven

3. Diversity and complexity good

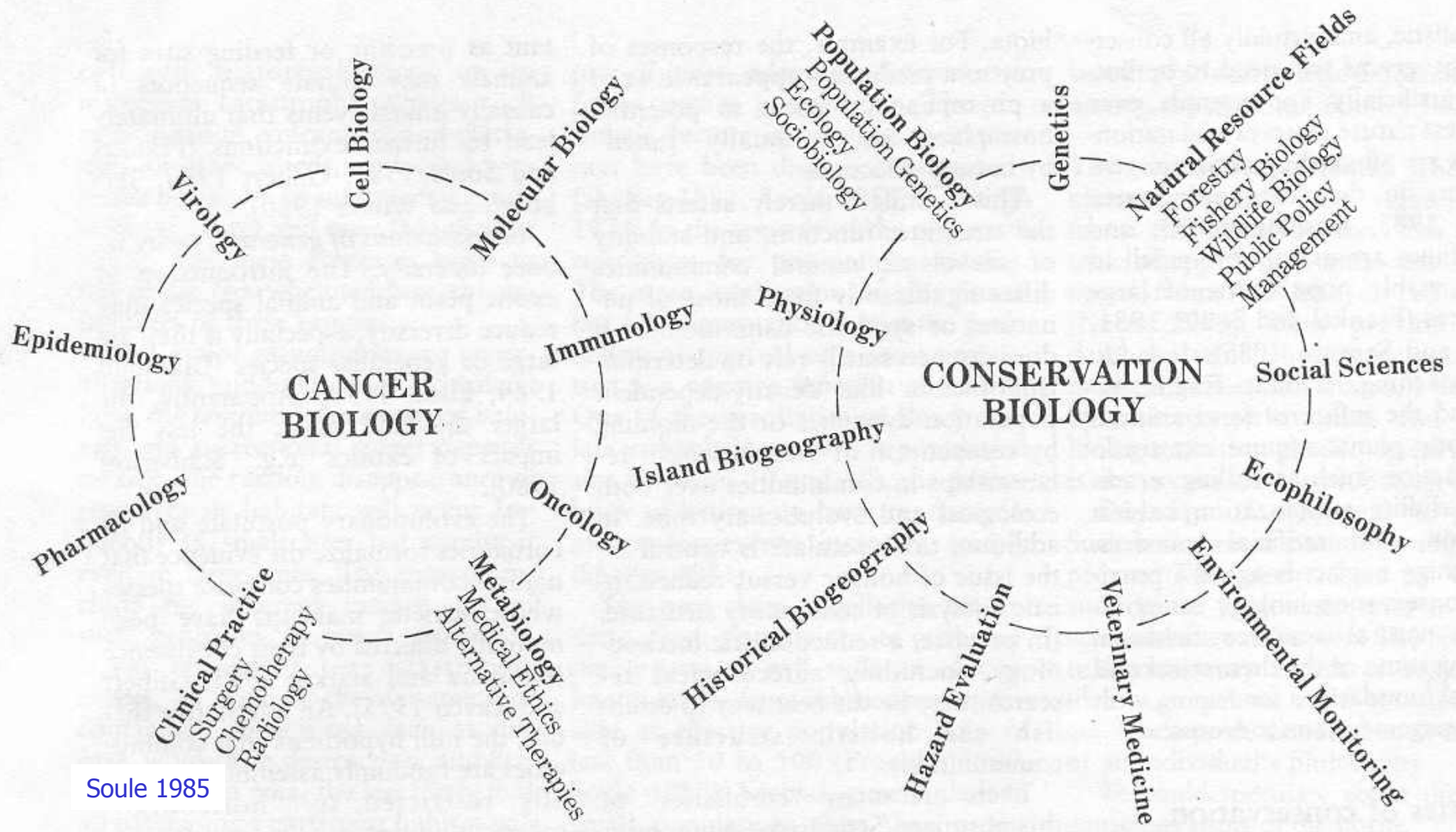
Untimely extinction bad

4. Evolution is good (genotypic variation)

-process

5. Biotic diversity has intrinsic value

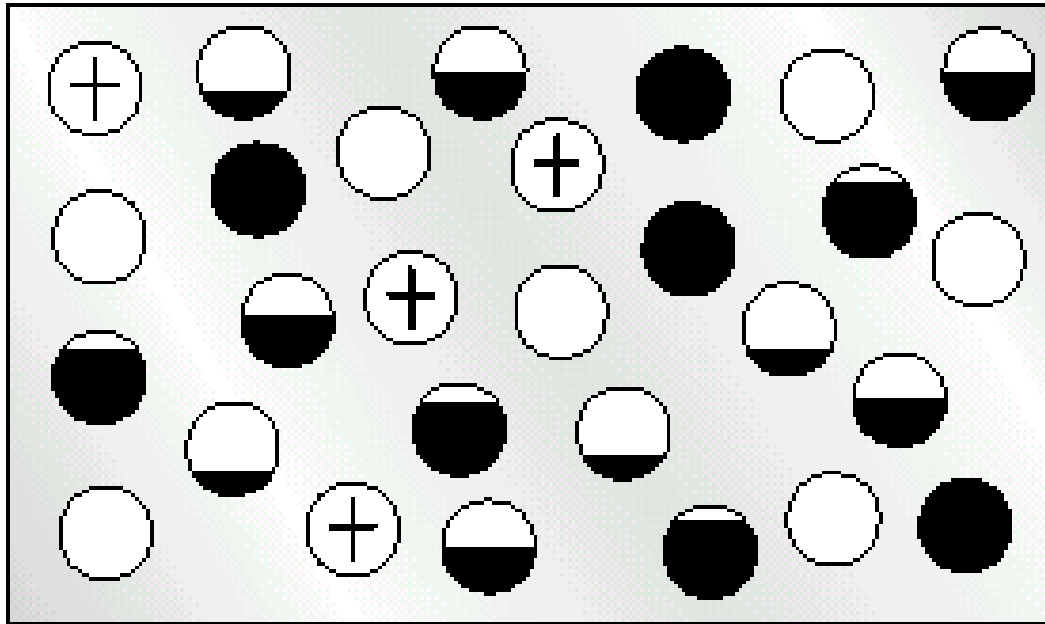




Soule 1985

Figure 1. Cancer biology and conservation biology are both synthetic, multidisciplinary sciences. The dashed line indicates the artificial nature of the borders between disciplines and between “basic” and “applied” research. See text.

## 6. Crisis Discipline?



**Figure 1.8**

Diagrammatic representation of an arrangement of local populations ("metapopulation") based on Andrewartha and Birch (1954). Empty circles represent favorable habitats that individuals do not occupy. Partially or completely filled circles represent favorable habitats and relative densities of individuals in them as a proportion of the habitat's maximum capacity. Crosses indicate habitats in which local populations recently became extinct.

-Metapopulations

-Island Biogeography  
MacArthur and  
Wilson 1963

-Testable Hypotheses

-Thresholds

END

'3x5' card

Registered? 406R or 506R?

Name (and what you prefer to be called)  
-Distinguishing characteristic

Email address

Year in school

Major

Relevant courses taken, or research projects, etc.

Why are you taking this course?

hold until photo