Conservation Biology 406R/506R

1. What is Conservation Biology?
2. 3x5 cards

Lab Friday (tomorrow)
1230 5 side BSE
(4th and Highland)
Hat, water, sunscreen
Tumamoc Hill website:
http://wwwpaztcn.wr.usgs.gov

Consilience in Conservation Biology

Science and the Humanities

Ecological Footprint

- Reproduction
- Housing
- Travel
- Food
- Etc.

Ecological Footprint

HOMEWORK!

How many planets needed, at 4.5 acres/person, to live like the mean ECOL406R/506R student?

= mean/4.5 = ??

Compare US to other countries using same answers.

AVERAGE ECOLOGICAL FOOTPRINT IN USA IS 24 ACRES PER PERSON.
WORLDWIDE, THERE EXIST 4.5 BIOLOGICALLY PRODUCTIVE ACRES PER PERSON.

http://www.earthday.net/footprint/index.asp

Photos courtesy of Ben Joslin 2003
The big choices seem to matter the most:
- transportation
- food (unprocessed, local, trophic level)
- housing
- reproduction

Recycling etc. important, but not as big an impact

Paper or Plastic? - Bring your own.
What is Conservation Biology?

When and what were the origins of the discipline?

Ethical and Conceptual Roots

1. Intrinsic Value
2. Ecosystem services
3. Aesthetic, spiritual enrichment

It all starts in Colter’s Hell…

John Colter 1807
~Lewis and Clark
Yellowstone Area
Romantic-Transcendentalist Ethic
vs.
Resource Conservation Ethic

Preservation
vs.
Conservation

Ralph Waldo Emerson
Henry David Thoreau
John Muir
- Sierra Club 1892
- NGO
- Education, Lobby, Law/Politics

Yellowstone National Park 1872
Yosemite National Park 1890
ESA 1917 --> Nature Conservancy 1950

---Romantic-Transcendentalist Ethic:

Ralph Waldo Emerson
1803-1882

“To laugh often and much; to win the respect of intelligent people and the affection of children; to earn the appreciation of honest critics and endure the betrayal of false friends; to appreciate beauty; to find the best in others; to leave the world a bit better, whether by a healthy child, a garden patch, or a redeemed social condition; to know even one life has breathed easier because you have lived.”

- Ralph Waldo Emerson -

Henry David Thoreau
(1817-1862)

“Many go fishing all their lives without knowing that it is not fish they are after.”

“Beware of all enterprises that require new clothes.”

“It is not worthwhile to go around the world to count the cats in Zanzibar.”

“Wherever a man goes, men will pursue him and paw him with their dirty institutions, and, if they can, constrain him to belong to their desperate oddfellow society.”

---Resource Conservation Ethic:

John Muir
(1838-1914)

“poetico-trampo-geologist-botanist and ornithologist-naturalist etc. etc. !!!!”

Teddy Roosevelt
(president 1901-1909)

Figure 1.3

Teddy Roosevelt, the twenty-sixth president of the United States, greatly supported the role of the federal government in conservation.
“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.

Sustainable Use
Maximum Sustained Yield

USE those resources!

Modern Conservation Biology
National Parks
U.S.

Transferable?

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

Land Health and the A-B Cleavage
Commodities (A)
vs. Processes (B)

Rachel Carson
Silent Spring 1962

- Bioaccumulation
- Levels and scale
- Environmental degradation threaten human health

- Increased Public Awareness
Problems Addressed by Conservation Biologists:

1. Genetic Diversity
   variation, inbreeding, drift, hybridization
2. Species
   MVP, PVA
   small populations
   declining populations
   metapopulations
3. Habitat
   loss, fragmentation, isolation, heterogeneity
4. Ecosystem Processes
   scale
5. Human sustainability
   the crux

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
   (~Soulé’s normative postulates)

Objectivity vs. Neutrality (Van Dyke p. 57)
Journal of Wildlife Management (1937)
Wildlife Society Bulletin

vs.

Conservation Biology
Biological Conservation

Noss 1999
Is there a special conservation biology?

Origins
Soulé et al. 1978+
SCB 1986
Conservation Biology 1987

Ideas
- Precautionary Principle
- Value Laden
- Species differences...
- Umbrella species
- Advocacy

Responsible Advocacy?

Ethical Advocacy?
  p.117, Noss 1999:
  tropical rainforest
  vs.
  economic development program

Is ConBio distinct discipline?