Values and Ethics in Conservation

Ch3 and Leopold readings for Tuesday
No lab this Friday (01 Sept 2006)

Housekeeping, 31 August 2006

If not in lecture last week, please see us after class.

Upcoming Readings

today: Noss 1999, Textbook chapter 3; Callicott 1997
Tues 05 Sept: Textbook Ch. 3, Leopold readings
Thurs 07 Sept: Text Ch.4, Costanza 1997, Driessen 2004

Short oral presentations
31 Aug Kevin Gilliam and Whitney Henderson
05 Sept open
07 Sept open
Carl Bock, SNR Seminar, 30 Aug 2006

National Audubon Society
Appleton-Whittell Research Ranch
Elgin, Arizona

Grazed | Ungrazed
--- | ---
Exurban | 12 | 12
~Ranch | 12 | 12

Grass, Oak, Mesquite

Cori, Grant, Allison
Sonoita Valley, Carl Bock, working hypothesis

Is there a special conservation biology?

Noss 1999

Origins
Soulé et al. 1978+
SCB 1986
*Conservation Biology* 1987
1. Are there principles of conservation biology?

2. Is advocacy appropriate?

3. Are we educating conservation biologists appropriately?

4. Is conservation biology distinct from other disciplines?

Principles:
1. Species with large ranges safer than spp. with small.
2. Prefer large blocks of habitat and large populations.
3. Prefer habitat blocks in close proximity to each other.
4. Prefer unfragmented habitat.
5. Prefer interconnected habitat to isolated.
6. Prefer roadless and inaccessible habitat.
7. **PRECAUTIONARY PRINCIPLE**
   - If we don’t have enough data, err on side of caution.
8. Prefer ecosystem approach to species approach.
Noss 1999

2. Is advocacy appropriate?

Objectivity vs. Neutrality

\[ \text{Value-laden} \]

Responsible Advocacy?

4. Is conservation biology distinct from other disciplines?

Normative Postulates:

1. Diversity of organisms is good
2. Ecological complexity is good
3. Evolution is good
4. Biotic diversity has intrinsic value

Michael Soule, 1985, 1986 (see p. 57 Van Dyke)
Ethical Advocacy?

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

Noss 1999

3. Are we educating conservation biologists appropriately?

Science

Management  Policy
Pattern and Generality vs. Special Case

p. 116, Noss 1999

Hutchinson 1948, as cited in Noss 1999

We should worry about global warming as a result of altering geochemical cycles
Values, Ethics, Philosophy...

Systematic organization of values

Basis for estimation of worth

VALUE OF BIODIVERSITY

- Instrumental/utilitarian
- Intrinsic/inherent

Table 2.1

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goods</td>
<td>Food, fuel, fiber, medicine</td>
</tr>
<tr>
<td>Services</td>
<td>Pollination, recycling, nitrogen fixation, homeostatic regulation</td>
</tr>
<tr>
<td>Information</td>
<td>Genetic engineering, applied biology, pure science</td>
</tr>
<tr>
<td>Psycho-spiritual</td>
<td>Aesthetic beauty, religious awe, scientific knowledge</td>
</tr>
</tbody>
</table>

Callicott 1997
Values, Ethics, Philosophy...

Monetizing
- discount rate
- rates of growth and reproduction

Economic development short sighted?

BCA

Valuation methods
- willingness to pay/ accept
- travel cost
- existence value
- contingent valuation
- bequest value

Madagascar Periwinkle Argument
(Callicott p. 30)

“Arrogant and Trivial”? 
Figure 2-2: Conventional view of economic activity. In a market economic system, economic goods and money flow between households and businesses in a closed loop. In many economics textbooks, such market economic systems are shown as here, as if they were self-contained and thus independent of the natural resources that support all economies and all life. This model reinforces the idea that unlimited economic growth of any kind is sustainable.

Conventional Economics

Pure Market Economic System

Flow of money

- Money flows from households to businesses to pay for products.
- Products flow from businesses to households.

Flow of factors of production

- Labor and other factors of production flow from households to businesses.
- Money flows from businesses to households to pay for labor and other production.

Figure 2-3: Ecological view of economic activity. Ecological economies use all economies as human subsists that depend on resources and services provided by the sun and the earth's natural resources. A consumer society devoted to economic growth is satisfied even expanding wants assumes that our technological cleverness will allow us to find (1) substitutes to overcome any limits on resources and (2) ways to keep pollution and degradation at acceptable levels. Ecological economists such as society is unsustainable because of its depletion and degradation of natural resources, many of which have no substitutes.
Ecological vs Conventional Economics

![Figure 2.4: Comparison of unsustainable economic growth and environmentally sustainable economic development.]

Anthropocentric

Biocentric

Ecocentric
Evolution of rights...

monarchs
white males
“all men”
humanity
sentient beings
nature?

“Bonuses?”
(Callicott p. 47)

Shift Burden of Proof/Responsibility (precautionary principle)

SMS (safe minimum standard)

<table>
<thead>
<tr>
<th>~Developers</th>
<th>~Conservationists</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Instrumental</td>
<td>B of P</td>
</tr>
<tr>
<td>2 Intrinsic</td>
<td>B of P</td>
</tr>
<tr>
<td>3 BCA</td>
<td>B of P</td>
</tr>
<tr>
<td>4 SMS</td>
<td>B of P</td>
</tr>
</tbody>
</table>
Plastic Trees in Los Angeles?

knowledge -> advocacy?

“Perhaps our grandsons, having never seen a wild river, will never miss the chance to set a canoe in singing waters.”

-Leopold

Values, Ethics, Philosophy...

Rolston Essay (p. 35 in Callicott Chapter)

- species vs. species in the system (definition of species)

- value of evolutionary trajectory

- extinction and doors (temporal and spatial scales)
Values, Ethics, Philosophy...

**Ethics:**
constrain self-serving behavior in
deferece to some other good

**Tragedy of the Commons**

**Role of religions?**
interpretation...

---

*Science, Vol 162, Issue 3859, 1243-1248, 13 December 1968*

**The Tragedy of the Commons**

Garrett Hardin

The tragedy of the commons develops in this way. Picture a pasture open to all. It is to be expected that each herdsman will try to keep as many cattle as possible on the commons. Such an arrangement may work reasonably satisfactorily for centuries because tribal wars, poaching, and disease keep the numbers of both man and beast well below the carrying capacity of the land. Finally, however, comes the day of reckoning, that is, the day when the long-desired goal of social stability becomes a reality. At this point, the inherent logic of the commons remorselessly generates tragedy.

As a rational being, each herdsman seeks to maximize his gain. Explicitly or implicitly, more or less consciously, he asks, "What is the utility to me of adding one more animal to my herd?" This utility has one negative and one positive component.

1) The positive component is a function of the increment of one animal. Since the herdsman receives all the proceeds from the sale of the additional animal, the positive utility is nearly +1.

2) The negative component is a function of the additional overgrazing created by one more animal. Since, however, the effects of overgrazing are shared by all the herdsmen, the negative utility for any particular decision-making herdsman is only a fraction of -1.

Adding together the component partial utilities, the rational herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another; and another. . . . But this is the conclusion reached by each and every rational herdsman sharing a commons. Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit--in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.
Personal Example?
Virtue?
(Van Dyke p. 75)

"Conservation may be a sign of personal virtue but it is not a sufficient basis for a sound, comprehensive energy policy."

-Vice President R. Cheney, April 2001
Judeo-Christian Tradition

Intrinsic value by divine decree.
Noah saving “species”.

Islam

No separation of church and state.
Unity, Trusteeship, Accountability.

Hinduism

Core of all being is one reality, *Brahman*.
*Prakrti*; matrix of the material creation

Buddhism

Limit use of resources.
Nirvana: self+surroundings

Jainism

Each living thing has a soul.

Taoism

The way of nature; don’t buck it.
Iroquois consider the impact of their decisions on the seventh generation to come.

Chipko (Hindu links)
The ultimate tree-huggers.
Himalayas of India

<table>
<thead>
<tr>
<th>WORLDVIEW</th>
<th>TYPE OF VALUE</th>
<th>MOTIVATION FOR CONSERVATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hindu-Christian stewardship</td>
<td>Theocentric</td>
<td>Preserve the ecological systems that God has committed humans to care for, as exemplified by the planting of trees in the garden to work it and take care of (Genesis 2:15). Humans should respect and not destroy God’s framework. The rights and duties of nature attributed to every man must be respected.</td>
</tr>
<tr>
<td>2. Deep ecology and related value systems</td>
<td>Ecocentric</td>
<td>Respect the spiritual value of nature, which provides us to consider the deepest questions and can cure human alienation.</td>
</tr>
<tr>
<td>3. Transformational/transcendental</td>
<td>Anthropocentric</td>
<td>Resource use is primarily a problem of human economics. Because involving irreversible damage to the environment is beneficial, the environment should be preserved where the economic cost is not too great. Low risk taking, common sense, and avoiding irreversible damage to the environment are justification.</td>
</tr>
<tr>
<td>4. Constrained economics</td>
<td>Anthropocentric</td>
<td>Scientific theories of evolution and ecology reveal necessary limits on population growth and violence in the land. Dynamics and constraints are emphasized.</td>
</tr>
<tr>
<td>5. Scientific rationalism</td>
<td>Science-centered/ ecocentric</td>
<td>Because man’s domination over nature is symbolic of his domination over women, possessing the environment rights to cure both environmental and social problems.</td>
</tr>
<tr>
<td>6. Ecocentrism</td>
<td>Anthropocentric</td>
<td>Anthropocentric</td>
</tr>
</tbody>
</table>


Van Dyke 2003
Role of scale...

Five axioms of consensus among environmentalists:

1. Dynamism
2. Interrelatedness
3. Nested systems
4. Creative processes
5. Differential fragility

Norton 1991 (see Van Dyke p. 72)