Sustainability

What does it really mean?

Professor Ed Krumpe
CSS 235 Society & Natural Resources

Common Definitions

- **Sustainability**, in a general sense, is the capacity to maintain a certain process or state indefinitely.
- **Sustainability** seeks to maintain a constant supply of a given resource or set of resources which are of value to humans.
- As applied to the human community, sustainability has been expressed as meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Bruntland, G. H. (ed.), 1987. *Our common future: The World Commission on Environment and Development*, Oxford, Oxford University Press.

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Sustainability concept has a long history in America

- 1872 Yellowstone National Park Act:
  - ". . . to conserve the scenery & the natural & historic objects & the wildlife therein & to provide for the enjoyment of the same in such manner & by such means as will leave them unimpaired for the enjoyment of future generations."

"…*meeting the needs of the present without compromising the ability of future generations to meet their own needs.*" *Our common future*

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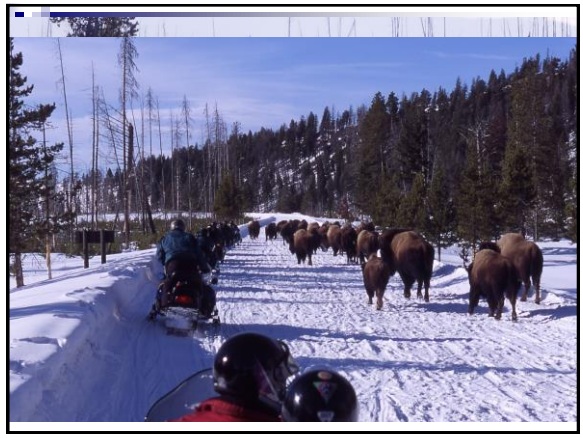

Historic Focus -- Using resources

- Sustained yield of a biological resource (forests or fish)
- Maintaining a constant supply of a given resource or set of resources which are of value to humans (coal, fish, irrigation water, timber...)
- Carrying Capacity: the levels of use of a resource (e.g. number of cattle that can be grazed on a given meadow) that can be maintained over a period of time

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Historic Focus – Recognizing Complexity

- Maintain the supply of a single resource (hardwoods, range, elk, sturgeon)
  - Keeping *exploitation* levels below *regeneration* levels
- Maintain a group of related resources (lake fisheries, waterfowl & wetlands, rangelands)
- Maintain the viability of all the complex systems which support society (the *ecological*, *social* & *economic* systems of our world)

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Historic Focus – Economic Growth

- Debate over limits to growth in 1970s
- Questioning the ability of the earth to sustain unlimited economic growth!
- Are we polluting our own nest?
- What about equity & environmental justice?
- Are we merely shifting the economic & ecological burden overseas?

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Historic Focus – Values & Equity

- Economic growth vs. Ecological stability?
- Which receives priority?
- What about social systems? (protecting neighborhoods, ethnic diversity, lifestyles—logging, ranching, mining, farming, hunting?)
- Urban vs. rural? Upper class vs. lower class? Indigenous vs. Colonizers? Immigrants vs. "Local" people? "Old timers" vs "Newbies"

Evolving Concepts

- "A sustainable society is one that can persist over generations, one that is far-seeing enough, flexible enough, and wise enough not to undermine either its physical or its social systems of support."
- It's the integrated nature of the components which support society & ultimately ensure sustainability.
- It's holistic, not just a matter of taking care of any one of the cultural, social, economic or ecological components, it's an "ecosphere" approach.

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Ethical Considerations

- An ethical stance extends our moral obligations to future generations.
- *"We should pass on to our children an adequate supply of natural capital which they will need to live adequately. . ."*
- ***"But not at the expense of minority, underprivileged or indigenous people."***

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Temporal Considerations

- "Much planning takes place at too short a temporal scale."
- How far into the future should we sustain things? (5 years? 50 years? 500 years?)
- Who decides?
- Decisions we MAKE today, or DON'T MAKE, can affect the condition of human & natural resources 100 or more years from now!

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A More Holistic Approach

- "We cannot simply choose between a healthy economy or a healthy environment for the two are inextricably linked and, ultimately, we cannot have one without the other." (Young 1991: 32)

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Eight Fundamental Questions Must Always Be Asked

- 1. What is being sustained?
- 2. For whom are we sustaining it?
- 3. For how long are we sustaining it?
- 4. Why sustain it?

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Eight Fundamental Questions

- 5. What are the appropriate indicators of sustainability?
- 6. Who are the key institutional players?
- 7. Who is responsible for sustaining it?
- 8. What are the consequences of sustainability?

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1. What is being sustained?

- Are we talking about sustaining:
  - the ecology of the defined protected area,
  - the benefits which flow from or are encompassed in the area,
  - the management structure of the area,
  - the jobs created by managing the area, or
  - the people who visit the area?

  Or Jobs for UI graduates!

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2. For whom are we sustaining it?

- Are we sustaining *protected areas* for the use of all people alive (intra-generational equity) and those yet unborn (inter-generational equity)?
- Or are they being sustained for a smaller subset (e.g. scientists, timber industry, conservationist, or the economically privileged)?
- The ecosphere perspective would suggest the broader interpretation is more appropriate.

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3. For how long are we sustaining it?

- We need to make our time assumptions explicit. “Forever” is not really a viable answer because all human & natural systems undergo change. And change is natural.
- So pick a reasonable target

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4. Why sustain it?

- We need to understand the values attributed to different outputs which are perceived as being sustained.
- Traditional responses: to preserve biodiversity, to ensure a clean constant water supply, to provide for tourism which will supply hard currency, because we have an ethical responsibility to do so, or because people like diverse natural landscapes.
- From an ecosphere approach, protected areas should be sustained because of their role as one of the essential cogs which make up the larger ecosystem.

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5. What are the appropriate indicators of sustainability?

- How will we know that our efforts to sustain protected areas are successful?
- By measuring key indicators which may include things such as:
  - level of species diversity,
  - presence & relative condition of key wildlife populations,
  - water quality (turbidity, temp. O_2, etc.),
  - attitudes of local people towards the protected area,
  - the level of satisfaction of visitors

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6. Who are the key institutional players?

- Will the local people, political, cultural and governmental structures be supportive? Will more distant regional, national or international corporations or politics become a factor? Who is likely to be supportive of our vision of sustainability and who will resist and why?
- *"If you ignore these players it won't be sustainable."*

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7. Who is responsible for sustaining it?

- An ecosphere approach would require knowing who is taking responsibility for seeing that sustainability is achieved.
- To be successful we must get as broad a commitment to implementing sustainability as is possible.

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8. What are the consequences of sustainability?

- The ecosphere approach to sustainability requires that we give *equal* emphasis to ensuring the resiliency of the cultural, social, economic and ecological components.
- We need to understand the consequences of potential trade-offs (or of failure).

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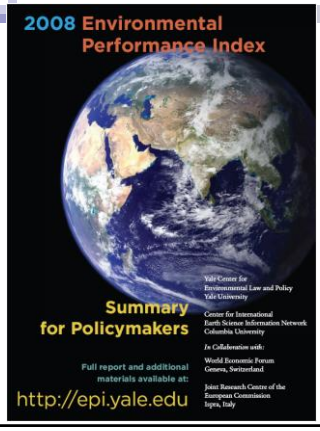

- It's not a yes or no
  - Combine multiple measurements
    - An INDEX for comparisons

http://epi.yale.edu/

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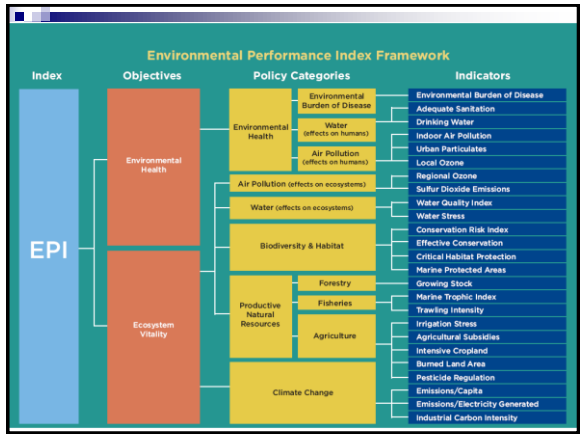

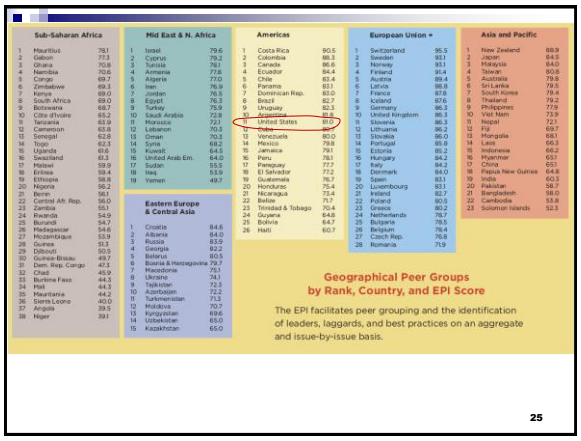

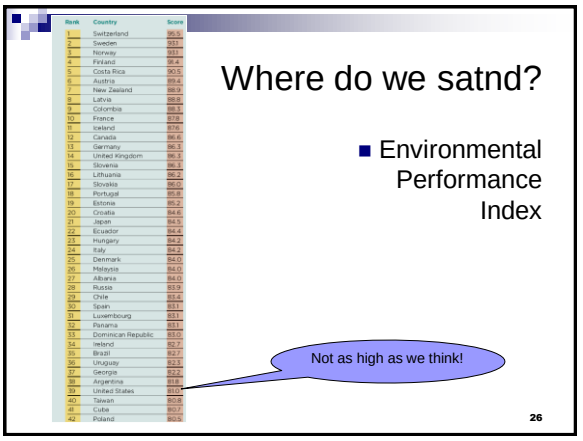

Principles of Sustainability from an Ecosystem Perspective

1. Think long-term
2. Manage protected areas as “integrated systems”
3. Plan & implement in an interdisciplinary atmosphere
4. Monitor progress towards achieving the defined vision of sustainability

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Principles of Sustainability from an Ecosystem Perspective

5. Adapt ongoing management based upon monitoring.
6. Plan collaboratively with broad community involvement at the local level.
7. Educate leaders & citizens about sustainability & the role protected areas play.

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- 5. What are the appropriate indicators of sustainability?
- 6. Who are the key institutional players?
- 7. Who is responsible for sustaining it?
- 8. What are the consequences of sustaining it or not?

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