

International Experiences

- Exploration Seminars

<http://depts.washington.edu/explore/>

- UW Worldwide

<http://depts.washington.edu/uwww/>



Introduction to Environmental Science

Today's Class goals:

1. Begin Regular use of clickers
2. Define Environment
3. List & Compare Environmental Issues
4. Understand Scale
5. Understand borders

Assigned Readings & Questions - 1

- (A) [National Research Council's Committee on Grand Challenges in Environmental Sciences](#). 2001. Grand Challenges in Environmental Sciences. National Academy Press, Washington, D.C. (pdf). What are the environmental challenges listed in this summary?

Assigned Readings & Questions - 2

- (B) <http://www.metrokc.gov/enviro.htm> (examine & answer:
 - (1) What major environmental issues, in your opinion, that are highlighted on this page are similar to the grand challenges cited by the NRC paper (see 1 above), select no more than six,
 - (2) what is meant by stewardship,
 - (3) what is a 'green' building?,
 - (4) what are biosolids?,
 - (5) what is a watershed and what is the Cedar River Watershed?

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering and Medicine

National Academies

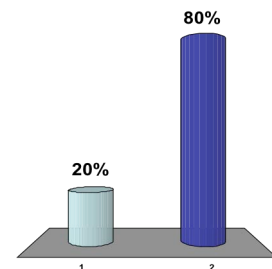
- [National Academy of Sciences](#) is an honorific society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare.
 - The NAS was signed into being by President Abraham Lincoln on March 3, 1863, ...to keep pace with the growing roles that science and technology would play in public life.
 - [National Research Council](#) in 1916.
 - [National Academy of Engineering](#) in 1964.
 - [Institute of Medicine](#) in 1970.
 - Main floor of Suzzallo library



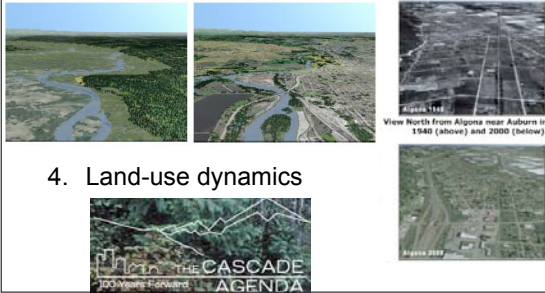
Reading question: National Research Council listed 8 environmental issues

1. "Loss of biodiversity"
2. "Biological diversity & ecosystem functioning"

Which of these two was one of them?



Highest Priority for Study



4. Land-use dynamics

Evaluate King County's Environmental Web Page



Environmental Issues - NRC vs. KC

Issue	National Research Council	King County
1	Biogeochemical cycles	Water and watersheds, lawns, energy
2	Climate variability	Floods, global warming info. KC Climate Plan
3	Biological diversity & ecosystem functioning	Shorelines, wetlands, forests, salmon
4	Hydrological forecasting	Floods, stormwater
5	Infectious diseases & the environment	Noxious weeds, wastewater Separate webpage
6	Institutions and resource use	Environmental services in King County
7	Land use dynamics	Stewardship, dumps, regional planning, zoning atlas
8	Reinventing the use of materials	Biosolids, recycling

Two Relatively New Local Initiatives

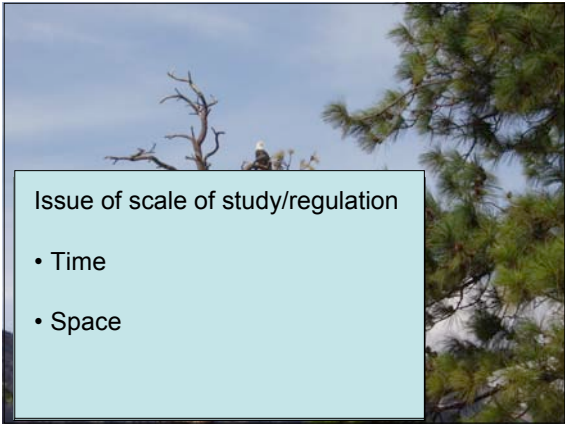
- Snohomish County - Biodiesel proposal
- Washington State -
 - Cut greenhouse gases emissions from 2005 by 15% by 2020
 - 7 States, 4 Canadian Provinces
 - Gregoire's goal (1990 emissions by 50% by 2050).
- References
 - <http://www.ecy.wa.gov/climatechange/index.htm>
 - <http://www.cted.wa.gov/energy/archive//papers/wa-ghg99.pdf>

Questions

- What were levels in 2005, 1990?
- Which greenhouse gases, all, or just CO₂?
- Why isn't Alberta part of the Canadian group?

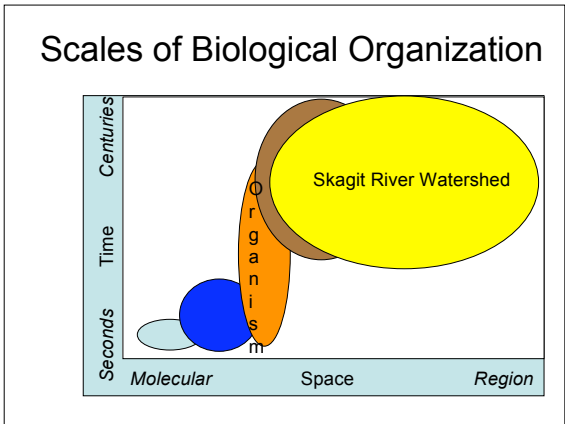
Definition of Environment

- "The combination of all things and factors external to the individual or population of organisms in question."
- Example bald eagle



Scale: what is meant by scale

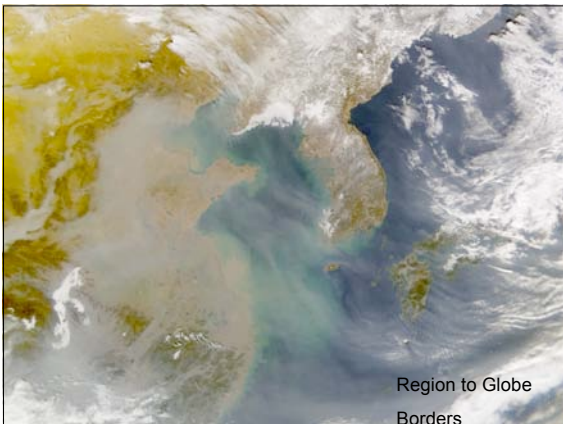
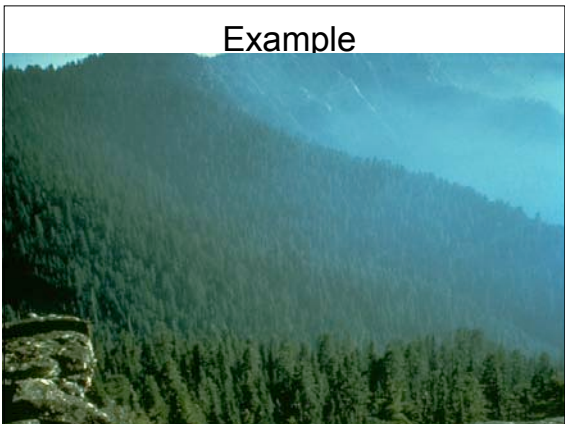
- **Scale:** dimensions of space and time. Often used to refer to levels of biological organization
 - Example: Cell, tissue, organisms (bacteria, flea, cat, elephant), ecosystem, region, the globe
- Patterns, processes, measurements
- Why relevant?
 - Lots of knowledge about small scale things
 - Lots of questions about large scale processes & patterns



Learning Format/Scaling

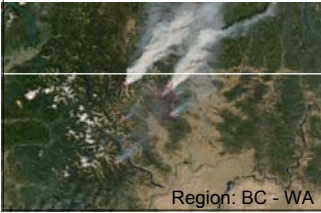
January 26 & 27, 2008
Concrete, Rockport, Marblemount

Issue(s)	Endangered Species Act
Concepts • Biophysical • Social • Ethical	Population Population
Implications	Cultural Relevance
Connections/ Links to Other Issues	Development, Recreation



Two Recent Border Issues WA

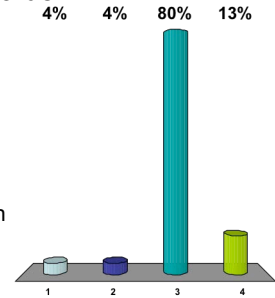
- Fires of 2006
- Trail, BC Smelter
 - Subject to US Superfund Law
 - Confederated Tribes of the Colville vs. EPA



Region: BC - WA

The series of Washington State Fires of 2006 DID NOT involve the following border:

1. BC - WA
2. North Cascade National Park - US Forest Service
3. King - Pierce Counties
4. Chelan - Okanogan Counties



Environmental Issues - list

- Air and water pollution
- Climate Change
- Ozone depletion
- Loss of biodiversity
- Invasive organisms
- Loss of habitat
- Hazardous chemicals
- Population growth and consumption
- Energy and energy use
- Poverty, environmental and social justice

Summary

- Environment define/exploration
- Environmental issues
- Scale
- Examples using eagle & ozone or smog
- Environmental problems do not follow human borders
- Makes measurements and solutions interesting