

Tags

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APES Sem 2 2021–2022

APES Sem2

Housekeeping items:

- Syllabus reminder: FIRST missed homework is dropped
- HW fixed at 20% (no effective change for you)
- Please bring iPads to class

Overview:

The biggest challenges your generation will face are sustainability, pollution/climate change and resource constraints

Recall: energy->water->food->culture

In semester one, we learned about the building blocks of these concepts.

In semester two, you will see them integrate more and more...

Consider:

Europeans -> The New World

Earth 2022 -> Mars

"go west young man"

Sustainability 2022: Semester two

1. Conservation/Land use
2. Energy
3. Pollution/climate change

Challenge:

How can you describe a round staircase to someone without using your hands?

How can you describe deep nature to someone who has never seen it?

National parks: positive, motivated by joy of the wilderness and nature

Sustainability/climate change: negative, based on fear

Tito: "the climate crisis is the biggest business opportunity in the history of mankind"

Land Use: Chapter 10, modules 29–30

Homework: Chapter 10 PQ and chapter questions

Three main points: Living together, thinking of forever...

1. Tragedy of the Commons
2. Conservation movement
3. Urban Sprawl

email: GPS ranching–why is this closer to pre–contact buffalo herds?

Tragedy of the commons (old idea, new article) 1968 Garret Harding KNOW THIS...

An old 1833 concept from farming villages, article updated in 1968 this to include rivers, streams, ocean, air...

https://en.wikipedia.org/wiki/Tragedy_of_the_commons

Econ students may know this one:

Externalized costs, externality: shedding financial responsibility for your impact the the whole

e.g. Minamata: https://en.wikipedia.org/wiki/Minamata_disease

Conservation movement: Important peeps

Ralph Waldo Emerson–"Nature" "behind nature, throughout nature, spirit is present" 1837

https://en.wikipedia.org/wiki/Ralph_Waldo_Emerson

Henry David Thoreau–Walden "truth in nature and wilderness over the deceits of urban civilization". 1845

https://en.wikipedia.org/wiki/Henry_David_Thoreau

Ansel Adams: Photographer championed the National Parks: 1920–1980

http://physics.hpa.edu/physics/apenvsci/videos/ansel_adams.mp4

0:00–8:00

"More than any other artist of the century, he would help transform the meaning of "wilderness" in America and change what people thought and felt about their own land"

"it's a place that you step into, and you don't know what's going to happen, a place that can surprise you, it's a place where you are small, where being small is not a bad thing, where being small is actually a wonderful thing"

–Carl Pope, Sierra Club

"...the world is beautiful, that humanity is part of this larger world, that the concerns of the moment are part but not separate from a larger system of forces that connect us to all of creation"

Jonathan Spaulding, Biographer

Question: How did his photographs change the awareness of the public? People usually care about what they know...

Aldo Leopold–environmental ethics, wildlife management, conservation, Sand County Almanac (Wisconsin)

https://en.wikipedia.org/wiki/Aldo_Leopold

John Muir–started the Sierra Club: "wilderness mirrors divinity, nourishes humanity and vivifies the spirit"

https://en.wikipedia.org/wiki/John_Muir

Rachel Carson–silent spring DDT (persistent pesticide, weakens bird egg shells), 1963:

https://en.wikipedia.org/wiki/Rachel_Carson

<https://en.wikipedia.org/wiki/Dichlorodiphenyltrichloroethane>

MSY: maximum sustainable yield: max renewable output without compromising future

See: native peoples: "seventh son of seventh son"

Also: "Sustainability = thinking about forever"

See diagram in chapter, greatest growth is at 50% of carrying capacity (there's that word again!)

Protected lands:

Click for full-size image

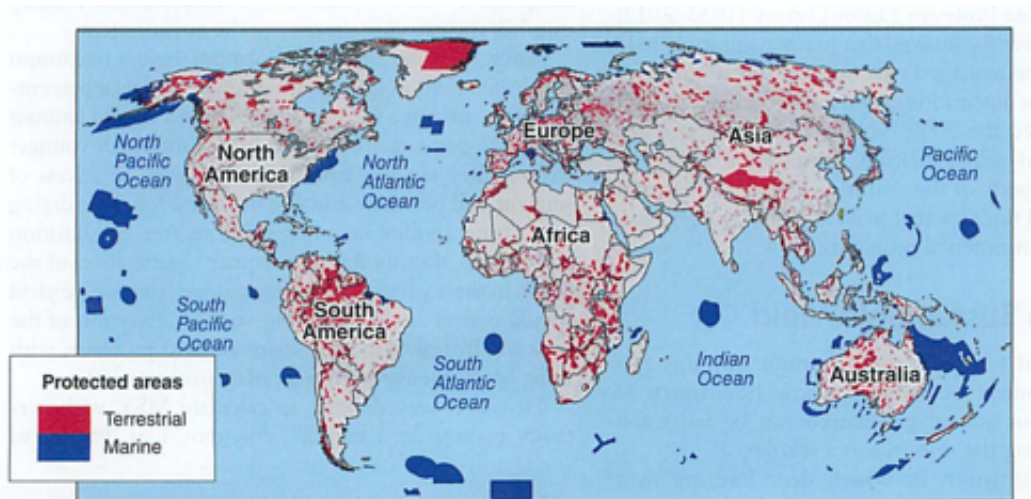


FIGURE 29.5 Protected land and marine areas of the world. Protected areas are distributed around the globe. (Data from http://wdpa.s3.amazonaws.com/Files_pp_net/Global_map_template_Dec2016.png)

Public lands: often victim of economic predation (e.g. Burma illegal logging)

Other side: NRDC and others, purchase lands to protect them from predatory practices (e.g. Amazon basin)

In the US: National Parks are one example of a national recognition of several things:

1. Spiritual/psychological benefit to nature
2. Preservation of resources for future generations
3. Recreation
4. Habitat preservation for species (can be land, ocean, islands, etc.)

See also Amboseli in Kenya, Serengeti in Tanzania (Tanganyika+Zanzibar), Kruger park in S. Africa (Afrikaans)

Public Lands

In the US, we classify public lands as

Rangelands—open range, enables some ranching with leases

National forests—old growth and new growth, limited forestry

National parks—national treasures, limits on visitors, infrastructure (e.g. Denali)

National wildlife refuges—usually associated with an endangered species or transit/migration path (e.g. wolves)

Wilderness areas—no development, often noise abatement as well (think of helicopters in Waipio or Haleakala)

We have several of these here in Hawaii:

Kilauea Volcano (Madame Pele)

Haleakala ("House of the sun")

Honokohau ("City of Refuge")

Pearl Harbor

Pu'u Kohola (Whale Heiau)

Papa hanau moku a kea–Northwest Hawai'ian Islands NWHI

Federal lands: owned by the people, but can be leased to individuals

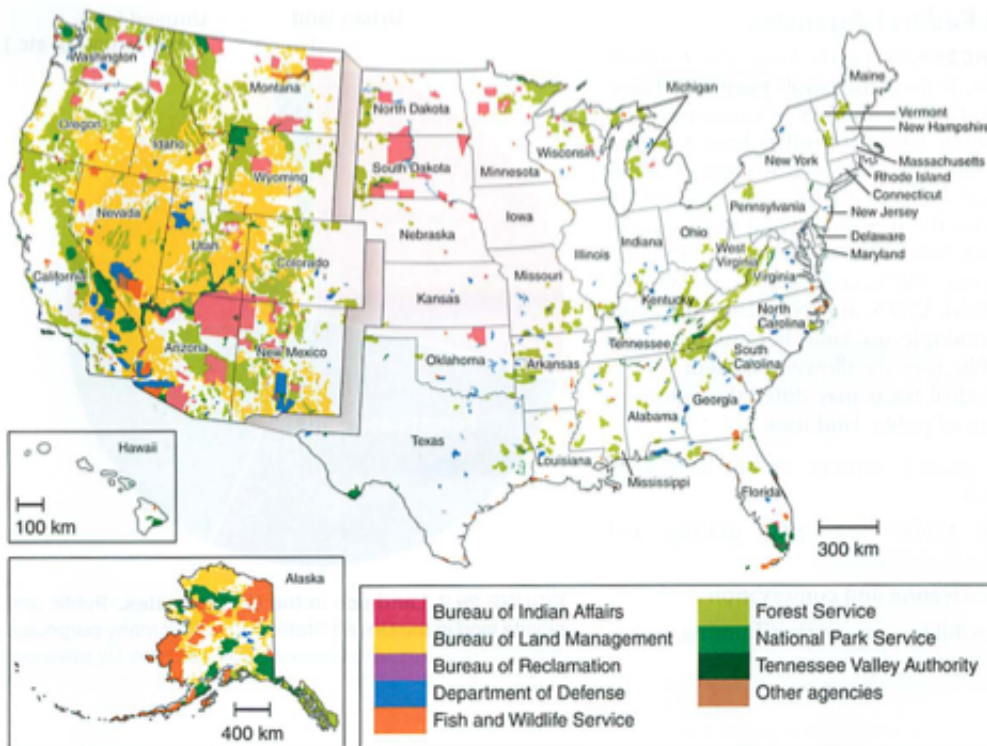


FIGURE 29.8 Federal lands in the United States. Approximately 42 percent of the land in the United States is publicly owned, with 25 percent of the nation's land owned by the federal government. (Data from <http://nationalatlas.gov>)

Click for full-size image

Two ethics are in competition:

Resource conservation ethic–maximum use based on greatest good for everyone, usually preservation

Multiple use lands–designated lands for grazing, timber, minerals, leased to individuals or companies for profit

Land Management in the US:**BLM: Bureau of land management**

Grazing, ranching, monitors rangeland health, erosion

USFS: Us Forest Service

Manages timber harvesting, where, how, what trees

Old growth vs. new growth, replanting, clear cut?

FSC: Forest stewardship council:

FSC certification: no clear cut, no damage to land, replanting, selective cutting, underbrush considerations

HUGE debate over underbrush, USFS believes in regular forest fires to deplete the amount of underbrush (as in nature)

See also California and Australia wildfires: drought, no regular fires, buildup of underbrush

See Yellowstone fire of 1988–result of overgrowth of underbrush

Forests: clear cut vs. selective cut

FSC wood–how different?

https://en.wikipedia.org/wiki/Forest_Stewardship_Council

Fire management: Yellowstone fire 1988

<https://www.northcountrypublicradio.org/news/npr/94114095/series-overview-yellowstone-s-evolution>

USFS prefers many small fires, removing flammable underbrush

NPS: National park service

Manages parks for recreation, multiple use ethic, preservation of timber, minerals and "natural curiosities"

Also significant native peoples monuments (see above)

FWS: Fish and wildlife service

Manages fishing and hunting on all public lands

Know these:

BLM: Bureau of Land Management

USFS: US Forest Service

NPS: National Park Service

FWS: Fish and Wildlife Service

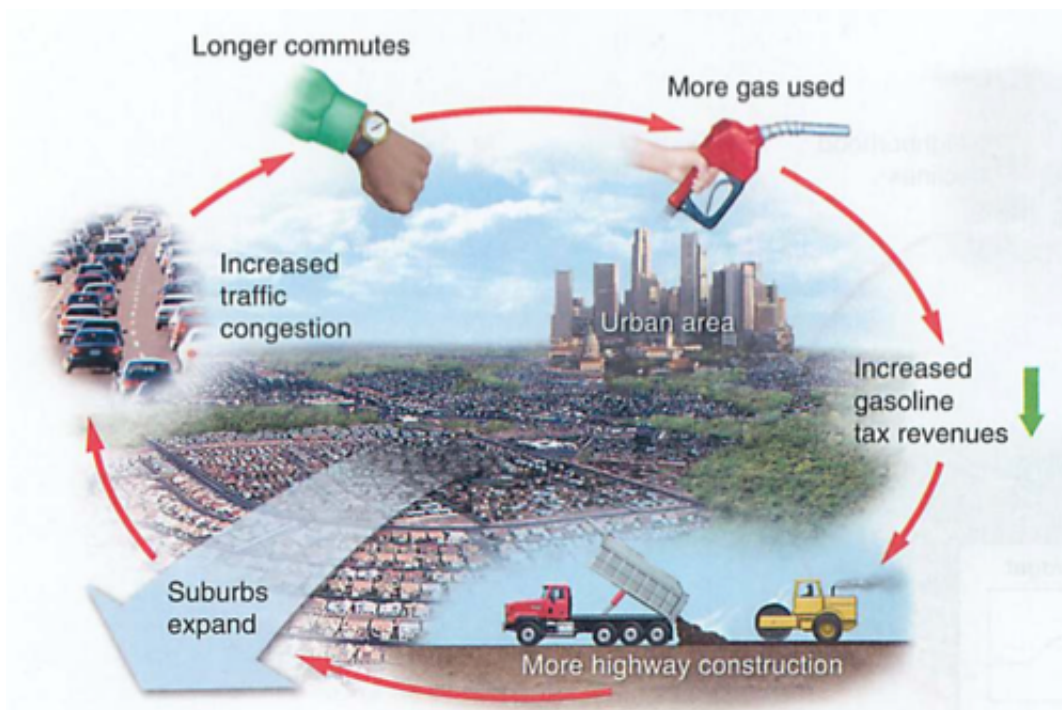
NEPA: National Environmental Policy Act 1969 (why then?) mandates an EIS for all development

EIS (environmental impact statements) are new standard for any project

ESA endangered species act—often brought in where development could impact ES

Urban development-----

Urban sprawl:



Click for full-size image

Note impact of autos post WWII on this...

Solution: Urban Growth Boundary (UGB) ex. Portland, OR

UGB (Urban Growth Boundary)—see Portland

Prevents Urban Sprawl (richer folks move to the suburbs, commute, need parking, city dies from the inside, food deserts, etc.)

Portland Example of urban planning:

Tom McCall Governor of Oregon, 1967–1975

Charlie Hales Mayor of Portland 2013–2017

Videos:

e2: Portland sense of place

e2: The green apple