

Figure 2-4

Hunter-Gatherer Societies

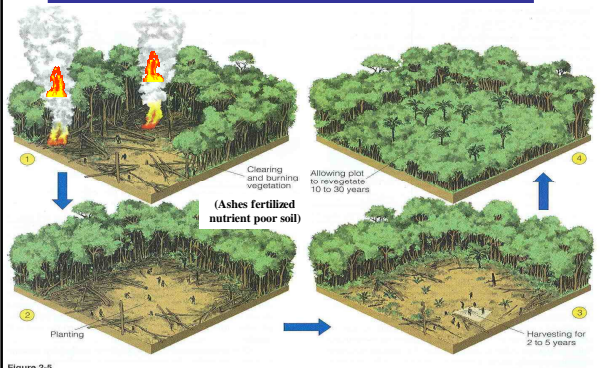
- Survive by collecting edible plants, hunting, fishing, scavenging.
- Lived in small groups of less than 50
- Worked together to get enough to survive.
- Nomadic – moved to find food.
- Sustainable, low resource use society.

Agricultural Societies

- Subsistence farming –families grew enough to feed themselves.
- Small plots
- Invented technology (ex. plow, irrigation)
- Domesticated animals.
- Low population size
- Population increased with reliable food supply.
- Lived in one place tied down by material goods.
- Villages, towns, and cities were possible.

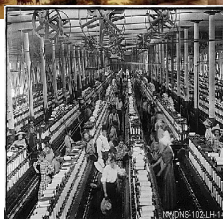


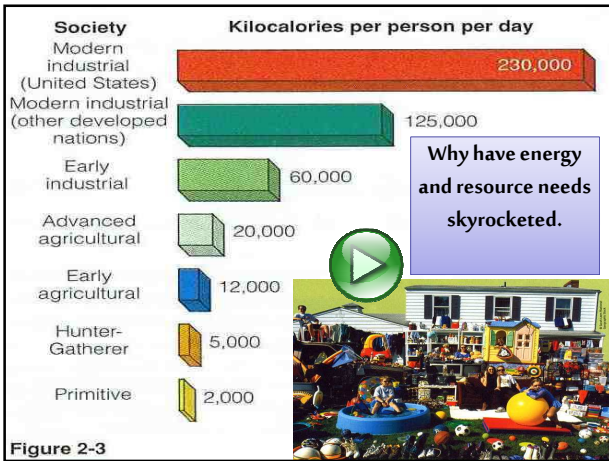
Shifting Cultivation - Slash and Burn



Industrial Revolution

- England in mid 1700-s USA in 1800s
- Energy shift from wood and flowing water to nonrenewable fossil fuels (coal).
- Large scale production in centralized factories
- Rural people moved into cities to find work.
- Farm yields increased with machinery, fertilizer, and plant-breeding.
- Less people can grow more food.
- Infant mortality drops and life expectancy goes up because of better sanitation, hygiene, nutrition, medical care, and education.





Frontier Worldview	Preservationists
<ul style="list-style-type: none"> The "new world" is a hostile wilderness to be conquered, cleared, planted, and exploited for its resources 1850 – 80% of land government owned (most taken from Native Americans) 1900 – 50% of land given away or sold cheaply. 	<ul style="list-style-type: none"> Believed that remaining wilderness areas on public lands should be left untouched.
	Wise-use / Resource Conservation
	<ul style="list-style-type: none"> "stewardship of the land, the water and the air" for the benefit of human beings

Historical Perspective

Over time there were four distinct stages

- Pragmatic Resource Conservation
- Moral and Aesthetic Nature Preservation
- Concern about Health and Ecological Damage
- Global Environmental Citizenship

These stages are not mutually exclusive and parts of each persist today in the environmental movement.

Stage 1. Pragmatic Resource Conservation

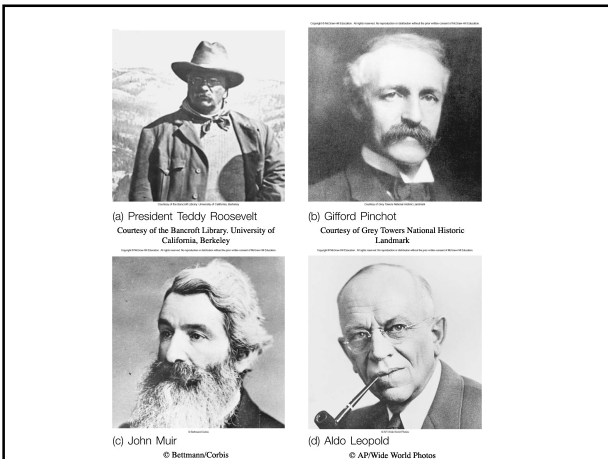
- George Perkins Marsh - *Man and Nature* published in 1864
 - Influenced Theodore Roosevelt and his conservation advisor, Gifford Pinchot.
 - Pinchot's policy was one of
 - Pragmatic Utilitarian Conservation
 - » “For the greatest good for the greatest number for the longest time”
 - » Reflected today in the Multiple Use Policies of USFS

Stage 2. Ethical and Aesthetic Nature Preservation

- John Muir - President Sierra Club
 - Nature deserves to exist for its own sake - regardless of degree of usefulness to humans.
 - Biocentric Preservation – “Why ought man to value himself more than...the one great unit of creation.” He opposed Pinchot's view.
- Aldo Leopold –
 - A student of Pinchot's
 - Authored “The Land Ethic” – “we abuse land because we regard it as a commodity belonging to us.”


Stage 3. Modern Environmental Movement

- The industrial expansion after WW II added new concerns to the environmental agenda.
- Rachel Carson---awakened the public to the environmental threat posed by pesticides in her book *Silent Spring* (1962)
 - David Brower---introduced the use of litigation, regulatory intervention, and the use of mass media to environmental activists.
 - Barry Commoner---an activist scientist who spoke out about environmental hazards emphasized the link between science, technology and society .
 - Wangari Maathai---founded the Green Belt Movement in 1997 to organize poor rural African women to restore the local environment by planting trees, also promoting justice and equality



Stage 4. Global Environmentalism

Modern information technology now allows for increased international communications. Local and regional environmental leaders increasingly have a worldwide impact.



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A Divided World

- World Bank estimates more than 1.4 billion people live in extreme poverty earning < \$1.25 (U.S.) per day.
- Poor are often both victims and agents of environmental degradation. They are trying to meet their present survival needs at the cost of long term sustainability.
- Cycle of poverty continues over generations as people who are malnourished and ill cannot work productively and raise healthy children.

A Divided World

- About 1/5 of the world's population lives in countries with per capita income > \$35,000 per year (U.S.). The other 4/5 lives in middle or low income countries.
- Gap between rich and poor continues to increase.
- The gap affects many quality of life indicators.

Some Quality of Life Indicators

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Table 1.1 Quality of Life Indicators

	Least-Developed Countries	Most-Developed Countries
GDP/Person ¹	(U.S.)\$1,006	(U.S.)\$35,768
Poverty Index ²	60%	~0
Life Expectancy	58 years	81 years
Adult Literacy	58%	99%
Female Secondary Education	11%	95%
Total Fertility ³	4.8	1.8
Infant Mortality ⁴	120	5
Improved Sanitation	23%	100%
Improved Water	61%	100%
CO ₂ /capita ⁵	0.2 tons	13 tons

Is There Enough for Everyone?

- Wealthy nations consume an inordinate share of the world's resources and produce an unsustainable amount of pollution.
- The U.S. makes up 4.6% of the world's population, but consumes 25% of all oil production and generates 50% of all toxic wastes in the world.
- If all the residents of China were to match American consumption, it would take four extra planet Earths to support them using current technology.

Economic Progress

- Since WW II, average real income in developing countries has doubled and life expectancy has increased by 30%.

BUT AGAIN-

- The worldwide gap between rich and poor has widened.

Indigenous People

Indigenous (native) people are often the least powerful, most neglected people in the world.

- At least half the world's 6,000 distinct languages are dying.
- Indigenous homelands may harbor vast percentage of world's biodiversity.
- Recognizing native land rights and political rights may often be a solid ecological safeguard as indigenous people have a rich knowledge of local habitats.



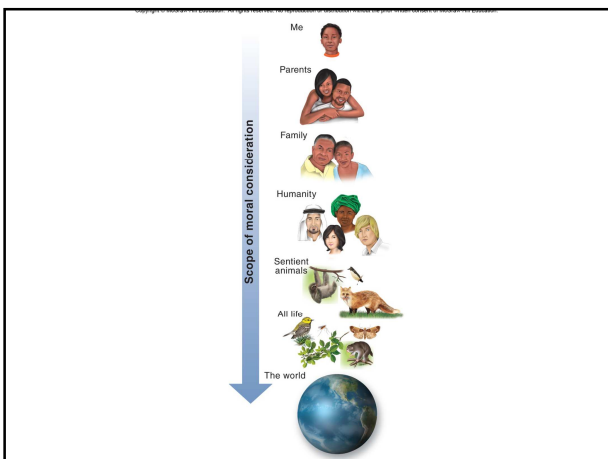
Environmental Ethics & World Views

- **Ethics** is a branch of philosophy concerned with what actions are right and wrong.
- **Environmental ethics** deals with our moral obligations to the world around us.
- **Worldviews** - sets of basic beliefs, images and understandings that shape how we see the world around us. Worldviews also determine what questions are valid to ask.

How we relate to the environment depends largely on our values and world view.

Who or What has Moral Value?

- **Moral extensionism** - extending moral values to others
 - Should moral extensionism include granting some degree of moral value to animals, plants and the environment?
- **Value** - a measure of the worth of something
 - Inherent value - intrinsic right to exist or innate worth
 - Instrumental value - items have worth only because they are of use to or valued by another person



Religious Traditions

- Ethical and moral values are often rooted in religious traditions.
- **Stewardship** - taking care of the resources we are given.
- Calls for both environmental stewardship *and* human domination over nature can be found in most world religions.
- Increasingly, many churches and religious leaders today are promoting faith-based environmental stewardship and conservation.

Environmental Justice

- Because of their economic status, minorities in the U.S. and globally may be subjected to a disproportionate amount of environmental health risks in their neighborhoods and work places.
- The field of **environmental justice** combines civil rights with environmental protection to demand a safe and healthy environment for everyone.

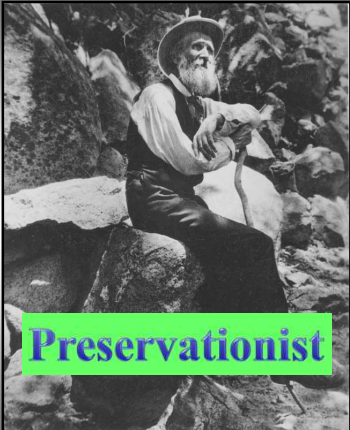


Environmental Racism

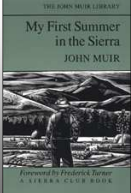
- **Environmental Racism** is an inequitable distribution of environmental hazards based on race.
- Lead poisoning in children as a result of drinking water from aging plumbing or eating paint chips in older buildings is an example of this phenomenon.
- At all income levels, black children are 2 to 3 times more likely to suffer lead poisoning in the U.S. than are white children.

Toxic colonialism

- **Toxic colonialism** is the practice of targeting poor communities or communities of color in developing nations as waste disposal areas.
- For example, Native Americans have been subject to numerous attempts to set up hazardous waste sites, landfills or incinerators on their reservations.
- The short-term economic incentive of such attempts can be overwhelming for a poverty stricken population.

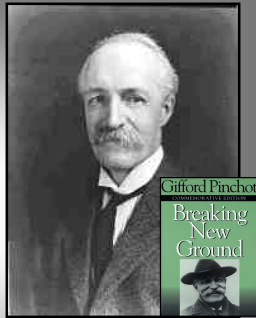


John Muir
(1838-1940)
“When we try to pick out anything by itself, we find it hitched to everything else in the Universe.”



Gifford Pinchot
(1865-1946)

America's first professional forester. He founded the United States Forest Service. Under Pinchot millions of acres were added to the national forests where the federal government controlled their use and regulated their harvest.

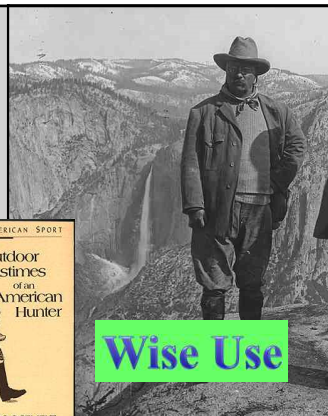
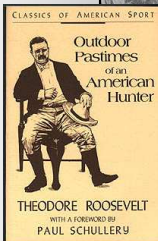


First Chief of U.S. Forest Service

Wise Use

Teddy Roosevelt
(1858-1919)

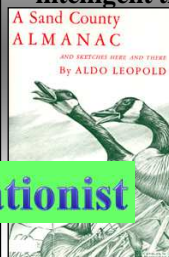
"It is not what we have that will make us a great nation; it is the way in which we use it."



Wise Use

Aldo Leopold
(1886-1948)


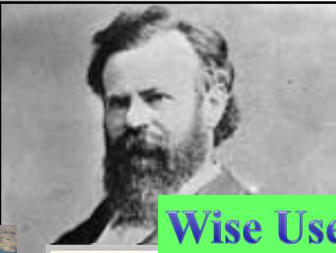
"To save every cog and wheel is the first precaution of intelligent thinking."




The father of wildlife management and of the United States wilderness preservation system.

Preservationist

John Wesley Powell
(1834-1902)
Only build where there is sufficient snowmelt or access to water. No large dam's sending water far away.







Wise Use



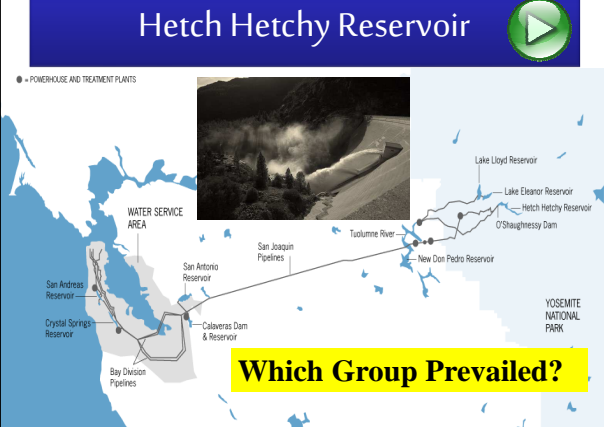
A Local Battle between Preservationists and Wise-use – Hetch Hetchy

To Dam or Not To Dam?

O'Shaughnessy Dam on the Tuolumne River built in 1913 to supply water to.....

Hetch Hetchy Reservoir



Which Group Prevailed?

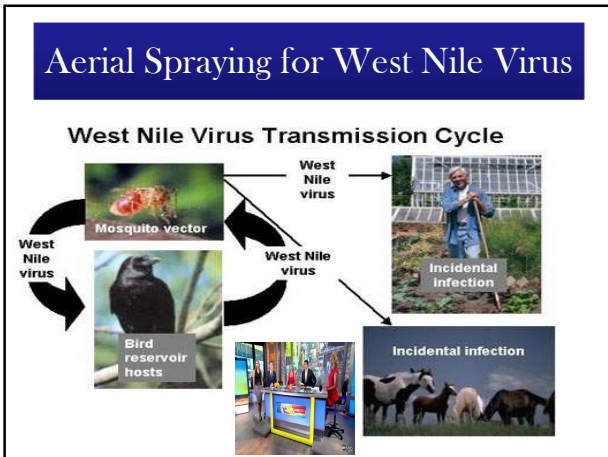


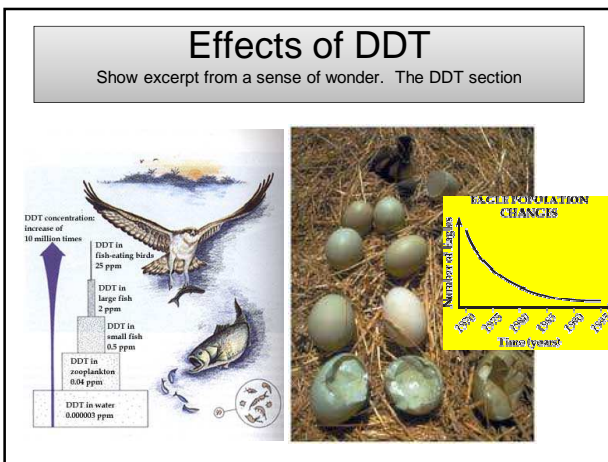
Figure 2-7 The first national wildlife refuge was established off the coast of Florida in 1903 to protect the brown pelican from overhunting and loss of habitat. In the 1960s this species was again threatened with extinction when exposure to DDT and other persistent pesticides in the fish it eats caused reproductive failures. Now it is making a comeback. (E. R. Degginger)

The Call To Action!

What launched the environmental movement?

Dichloro-
Diphenyl-
Trichloroethane





Rachel Carson (1907-1964)

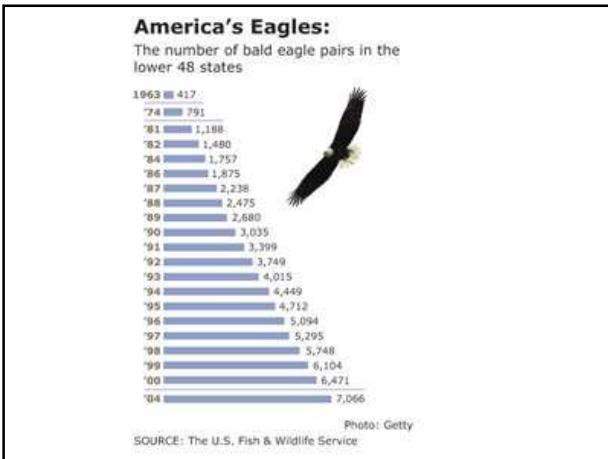
- Working for the Fish and Wildlife Service she became concerned.
- Wrote *Silent Spring* (1962) which was a scientific account of the effects of DDT.
- A huge controversy ensued
- This prompted the government to

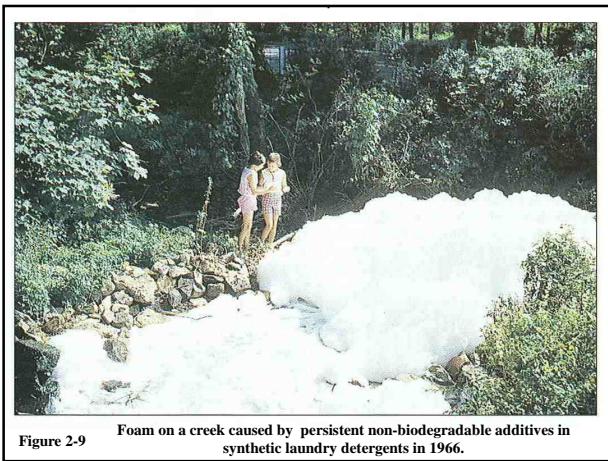
Preservationist

SILENT SPRING
Rachel Carson

Figure 2-10

As a result DDT was banned in 1972 launching the current environmental movement.

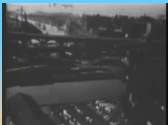

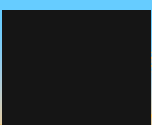








Lessons from the Cuyahoga

<p>History of the Cuyahoga River</p> 	<p>Don't Fall in the River</p> 	<p>What's it like now?</p> 
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River of fire: Chinese waterway becomes so polluted it bursts into flame after lit cigarette is thrown into it

- Lit cigarette ignited polluted river in Zhejiang province, eastern China
- The flames went up more than 16ft in the air before they were extinguished
- Locals blame factories and packaging firms upstream for pollution

	
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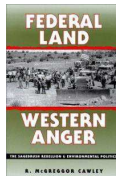
The first Earth Day, observed across the country on April 22, 1970, crystallized a growing public concern about ecological crises. Earth Day was the product of local grassroots action to increase environmental awareness.



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**Senator Gaylord Nelson
1916 – 2005**

The Sagebrush Rebellion

- Starting in the 70's angry ranchers, loggers, miners etc. wanted **less federal control** over the West's land, water and mineral resources.



What About Today?

In today's political and economic climate we still have private interests proclaiming jobs, growth, and progress squaring off against environmental interests preaching preservation and benefits of nature.

WHICH SIDE IS CORRECT?
