

ENVIRONMENT

THE SCIENCE BEHIND THE STORIES

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Ch 2

Environmental Ethics and Economics: Values and Choices

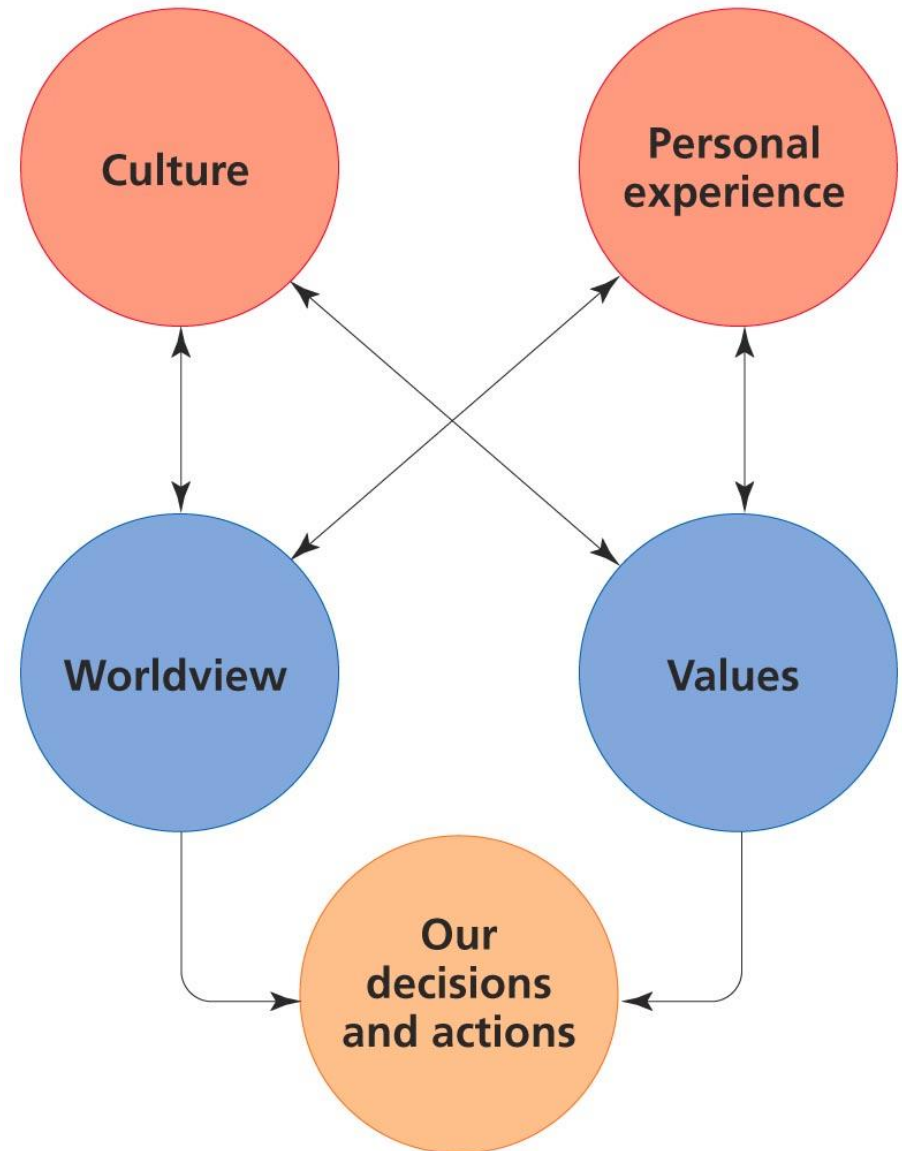
Part 1: Foundations of Environmental Science

PowerPoint® Slides prepared by
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Ethics and economics

- Both disciplines deal with what we value
- Our values affect our environmental decisions and actions



Ethics

- **Ethics** = the study of good and bad, right and wrong
 - **Relativists** = ethics varies with social context
 - **Universalists** = right and wrong remains the same across cultures and situations
- **Ethical standards** = criteria that help differentiate right from wrong
 - Classical standard = virtue
 - The golden rule

Environmental ethics

- **Environmental ethics** = application of ethical standards to relationships between human and non-human entities
 - Hard to resolve; depends on the person's ethical standards
 - Depends on the person's domain of ethical concern

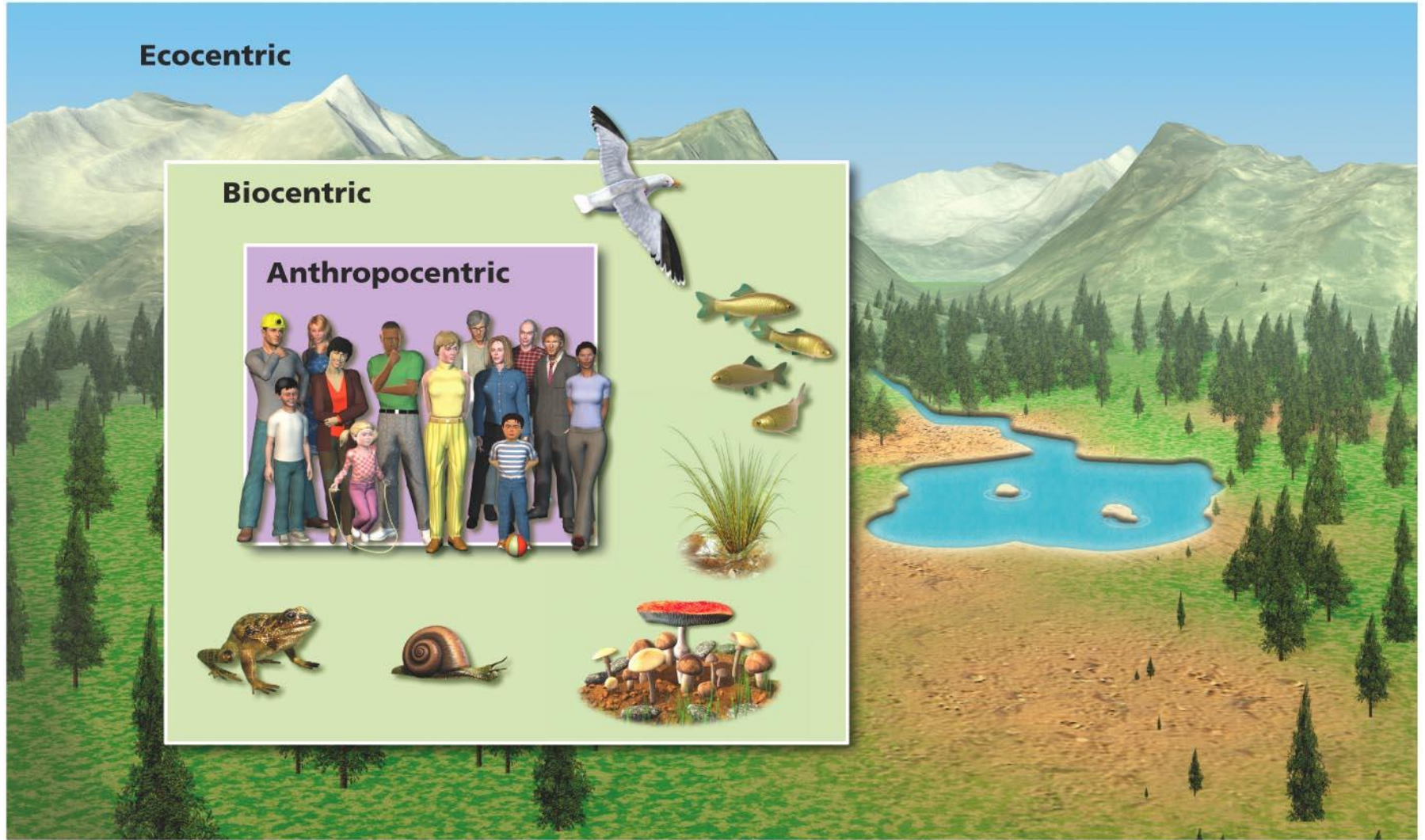
Should we conserve resources for future generations?

Is it OK to destroy a forest to create jobs for people?

Should humans drive other species to extinction?

Is it OK for some communities to be exposed to excess pollution?

Western ethical expansion



Expanding ethical concern

- Why have we expanded our ethical concerns?
 - Economic prosperity: more leisure time, less anxieties
 - Science: interconnection of all organisms
- Non-western cultures often have broader ethical domains
- Three perspectives in Western ethics
 - **Anthropocentrism** = only humans have rights
 - **Biocentrism** = certain living things also have value
 - **Ecocentrism** = whole ecological systems have value
 - Holistic perspective, stresses preserving connections

The preservation ethic



- Unspoiled nature should be protected for its own inherent value
 - John Muir (*right, with President Roosevelt at Yosemite National Park*) had an ecocentric viewpoint

The conservation ethic



- Use natural resources wisely for the greatest good for the most people
 - Gifford Pinchot had an anthropocentric viewpoint

The land ethic



- Healthy ecological systems depend on protecting all parts
 - Aldo Leopold believed the land ethic changes the role of people from conquerors of the land to citizens of it

Land Conservation Efforts

- **Preservation:**
 - Protect land in a pristine, unaltered state
- **Remediation**
 - Removal of pollutants or contaminants
- **Mitigation**
 - Programs or policies intended to offset impacts
- **Restoration**
 - Restore conditions to how they were before humans altered them



Economics

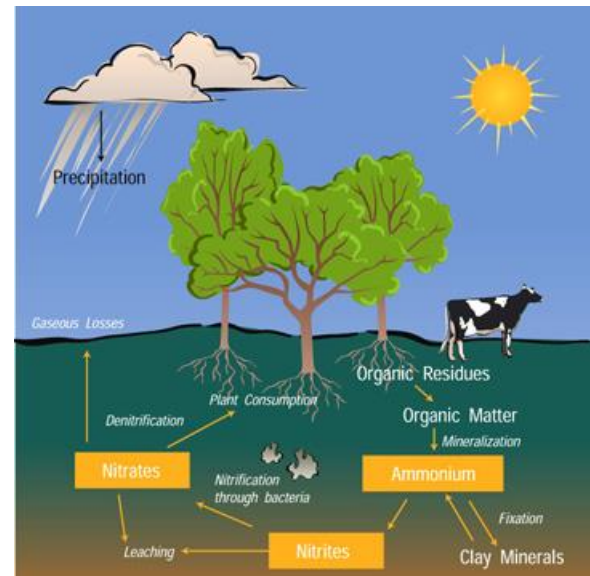
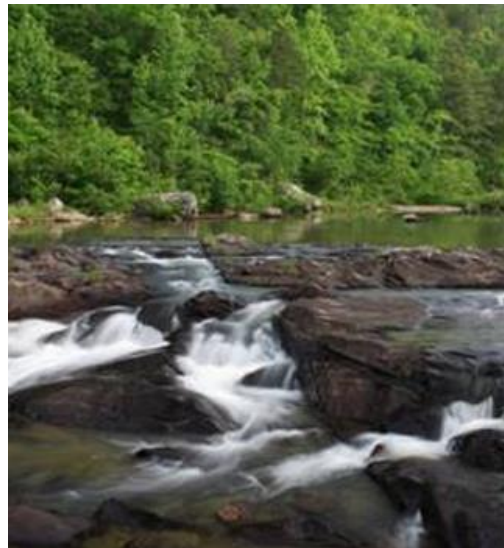
- Friction occurs between people's ethical and economic impulses
- Is there a trade-off between economics and the environment?
 - Generally, environmental protection is good for the economy
- **Economics** studies how people use resources to provide goods and services in the face of demand
- Most environmental and economic problems are linked
- Root “*oikos*” gave rise to both *ecology* and *economics*

Types of modern economies

- **Economy** = a social system that converts resources into
 - **Goods:** manufactured materials that are bought, and
 - **Services:** work done for others as a form of business
- **Subsistence economy** = people get their daily needs directly from nature; they do not purchase or trade
- **Capitalist market economy** = buyers and sellers interact to determine prices and production of goods and services
- **Centrally planned economy** = the government determines how to allocate resources
- **Mixed economy** = governments intervene to some extent

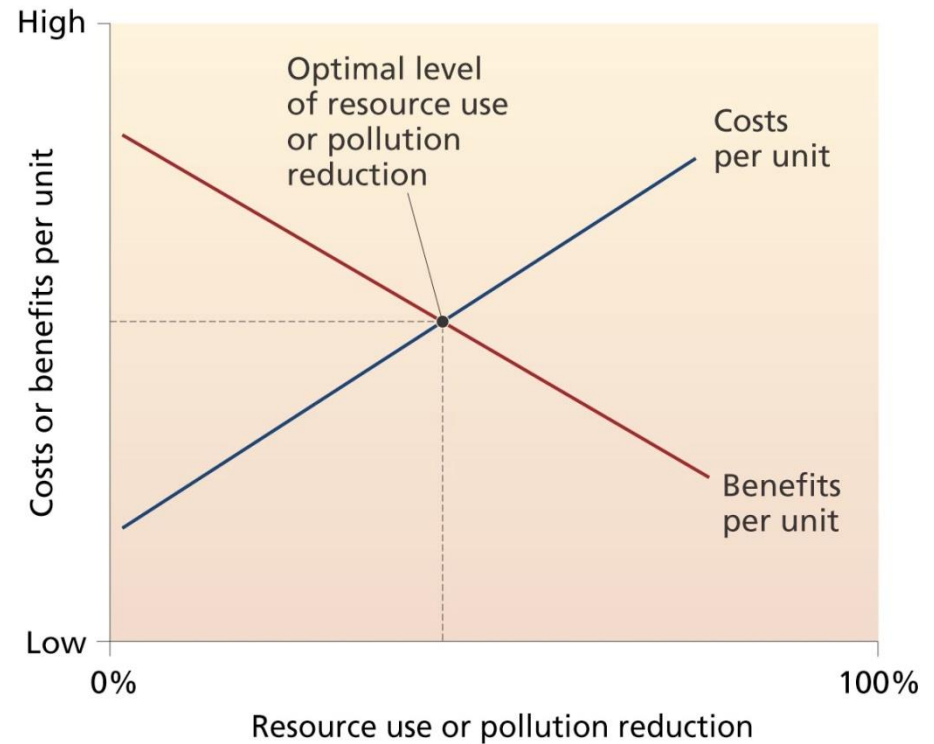
Environmental systems support economies

- **Ecosystem services** = essential services support the life that makes economic activities possible
 - *Soil formation
 - *Water purification
 - *Climate regulation
 - *Pollination
 - *Nutrient cycling
 - *Waste treatment



Marginal benefit and cost curves

- **Cost-benefit analysis** = the costs of a proposed action are compared to the benefits that result from the action
 - If benefits $>$ costs: pursue the action
- Not all costs and benefits can be identified



(b) Marginal benefit and cost curves

Assumption: Costs and benefits are internal

- Costs and benefits are experienced by the buyer and seller alone
- **External costs** = borne by someone not involved in a transaction
 - Human health problems
 - Resource depletion
 - Hard to account for and eliminate
 - How do you assign monetary value to illness?



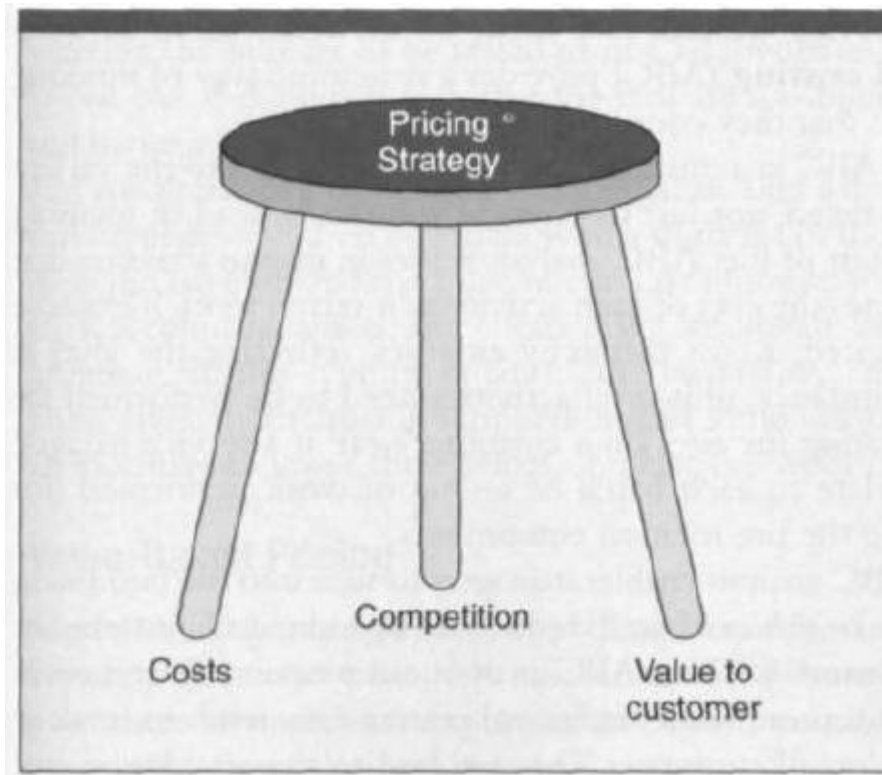
Is economic growth sustainable?

- **Affluenza** = material goods do not always bring contentment
- Uncontrolled economic growth is unsustainable
- Many economists believe technology can solve everything



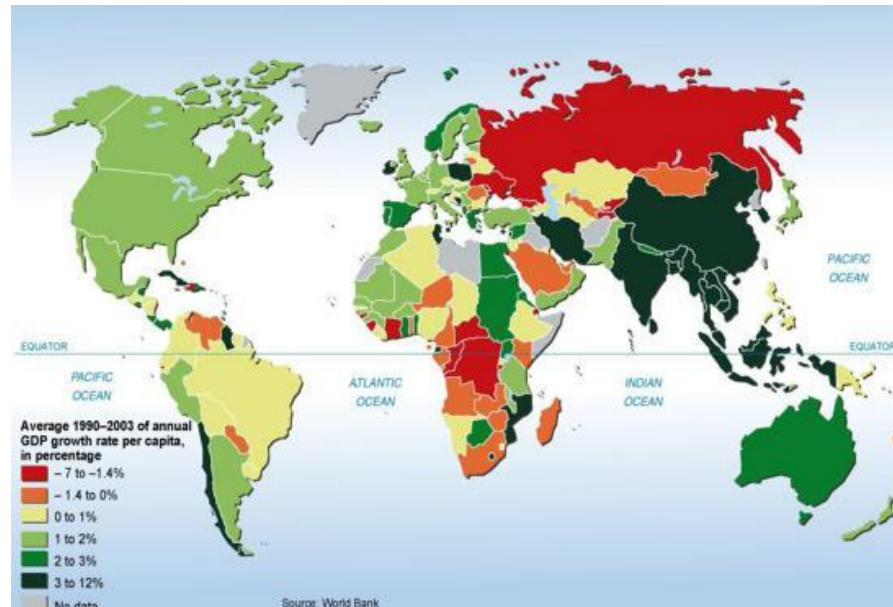
Full-cost pricing

- Economic approach of including external costs in the price of goods and services



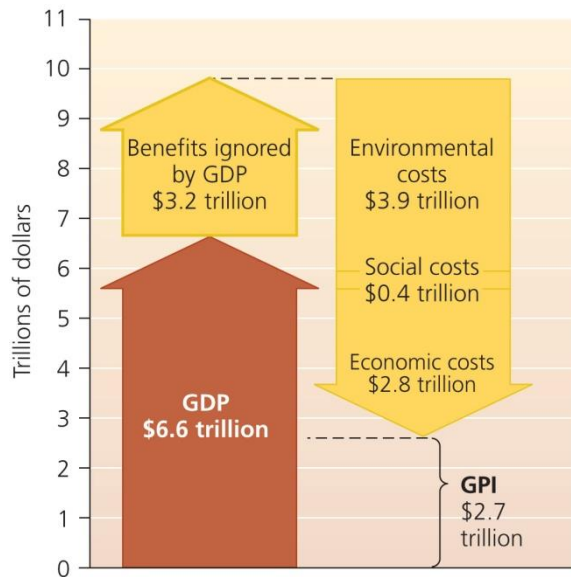
A steady state economy

- Economies are measured in various ways
 - **Gross Domestic Product (GDP)** = total monetary value of final goods and services produced
 - Does not account for nonmarket values
 - Pollution increases GDP



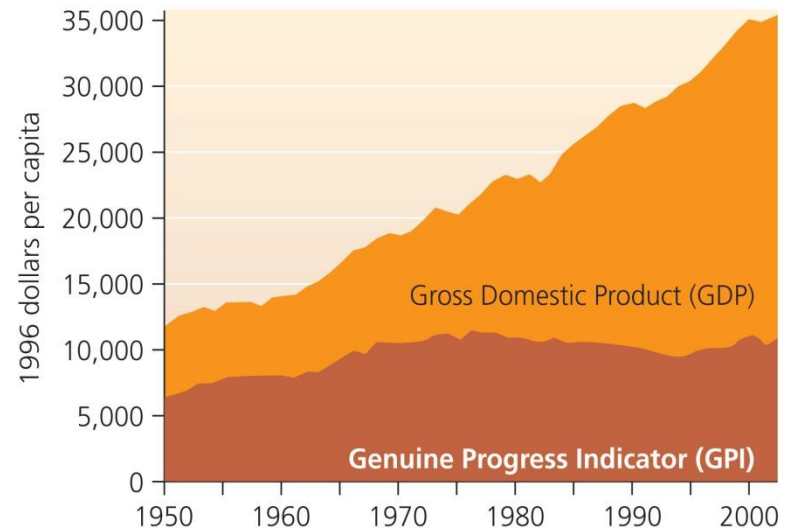
GPI: An alternative to the GDP

- **Genuine Progress Indicator (GPI)** = differentiates between desirable and undesirable economic activity
 - Positive contributions (i.e. volunteer work) not paid for with money are added to economic activity
 - Negative impacts (crime, pollution) are subtracted



(a) Components of GDP vs. GPI

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(b) Change in U.S. GDP vs. GPI

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In the U.S., GDP has risen greatly, but not GPI