

Environment, Chapters 1 and 2

Chapter 1, “Introducing Environmental Science and Sustainability”

- Why does the book open with a passage on Las Vegas (or, for the 7th edition, climate change)? Why is the city in need of a *systems perspective*? Why does “each “solution” ha[ve] the potential to cause additional problems”?
- How long did it take for the human population to reach one billion? Two billion? Three? Six? (Ten?)
- How does the textbook define **extreme poverty**? What distinguishes **highly developed countries** from **moderately developed countries**? From **less developed countries**?
- What is the difference between people overpopulation and consumption overpopulation? [see Figure 1.6 on p. 5]
 - What does it mean to say that “consumption is both an economic and a social act” [6]
- What distinguishes **renewable resources** from **nonrenewable resources**? What are some examples of each?
- What is an **ecological footprint**? [see Figure 1.8, 6th / 1.7, 7th]
- **IPAT** [Influence = population x affluence per person x technology]
- What are the ‘three pillars’ of **sustainable development** as defined at the Earth Summit in Rio de Janeiro in 1992?
- “**environmental science** tr[ies] to establish general principles about how the natural world works. [It] uses these principles to develop viable solutions to environmental problems”
 - **Systems, models, and ecosystems**
 - What is **dynamic equilibrium**?
- What distinguishes **negative** from **positive feedback mechanisms**?
- The core of the **scientific method** = testing hypotheses [pp. 15-16]
- What distinguishes **inductive** from **deductive** reasoning?
- The five stages of addressing environmental problems (what example does the text use?)
 - 1) scientific assessment, 2) risk analysis, 3) public education and involvement, 4) political action, 5) evaluation

Chapter 2, “Environmental Laws, Economics, and Ethics”

- Who are the **stakeholders** in the opening page’s focus on old-growth coniferous forests in the Pacific Northwest?
- What effect did the **frontier attitude** have on the US environment in the 17th-19th centuries?
- What is a **utilitarian conservationist**? A **biocentric preservationist**? What are some examples of each?
- What were the social and political effects of Rachel Carson’s *Silent Spring* and Paul Erlich’s *The Population Bomb*?
- Examine the timeline on p. 28
- What is the role of the **environmental impact statement** as established by the **National Environmental Policy Act (NEPA)** [See Figure 2.7 on p. 30]. This is a form of **cost-benefit analysis**
- Economic assumptions: the **rational actor**, the **efficient markets hypothesis**, and the presence of **externalities**
 - Why are we looking at economics in an environmental studies textbook?
 - Why are externalities usually more complex than the simple blacksmith soot and neighboring laundry shop example given in the textbook?
- The **optimal amount of pollution**: where the **marginal cost of pollution** equals the **marginal cost of abatement**
 - The role of ‘**low-hanging fruit**’ in environmental policy decisions
 - What happens when private actors (companies, etc.) have a different marginal cost to pollute than does society? [Figure 2.11] How do governments correct these ‘inefficiencies’ [Figure 2.12]
 - § Example of **green taxes**: tradable permits...what are some other examples?
- How do the authors distinguish between **western** and **deep ecology** worldviews? What does it mean to be anthropocentric? Biocentric? To emphasize **environmental justice**?