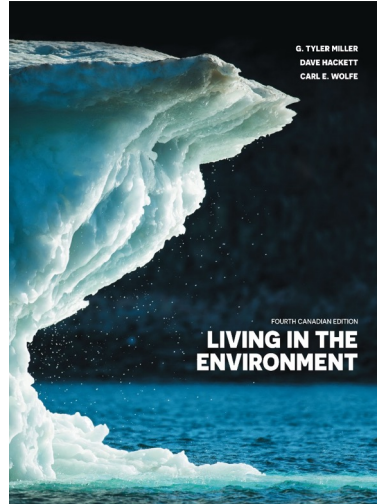


NETA PowerPoint® Slides
to accompany



prepared by
Ian Dawe

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Chapter 1

Environmental Issues and Solutions: An Introduction and Overview

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Solution

- The City of Vancouver has a Greenest City action plan
 - Corporate waste reduction
 - Use of local food in City-run facilities
 - Green community events
 - Reduce greenhouse gas emissions

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Food in the nude – NZ ditching plastic packaging of fruit and vegetables in supermarkets



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Key Concepts

- Growth *versus* Sustainability
- Resources *versus* Resource Use
- Pollution
- Causes of Environmental Problems
- The Age of Environmental Solutions

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Living More Sustainably

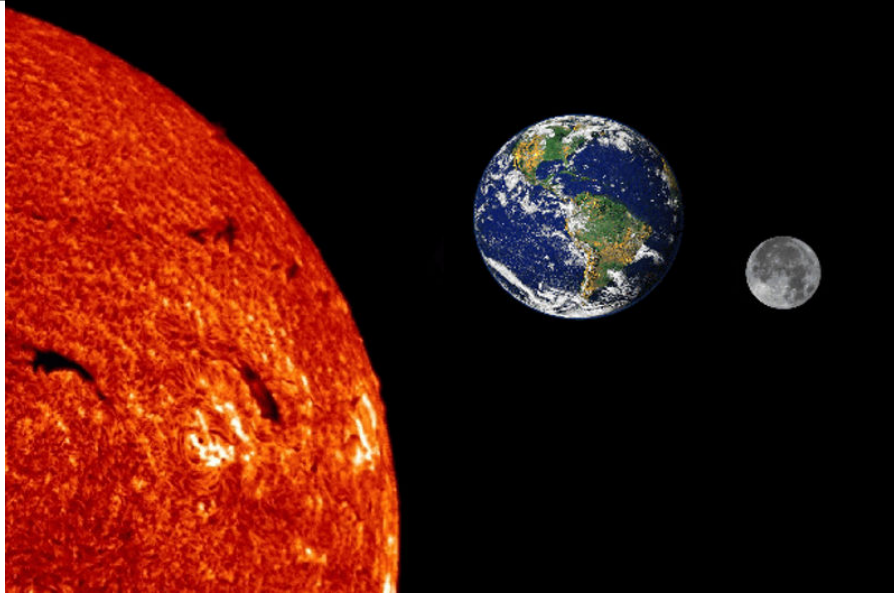
What is the difference between

- Environment
- Ecology
- Environmental Science
- Environmentalism

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What keeps us alive?



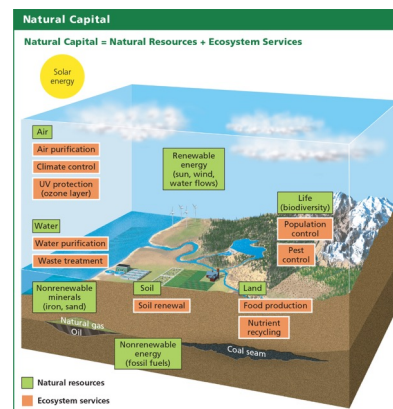
What Keeps Us Alive?

Solar Energy



Natural Capital

- Resources
- Ecological Services



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Carrying Capacity and Sustainability

Carrying Capacity

- *How many* can be supported?

Sustainability

- *How long* can a system survive?

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Environmentally-sustainable society

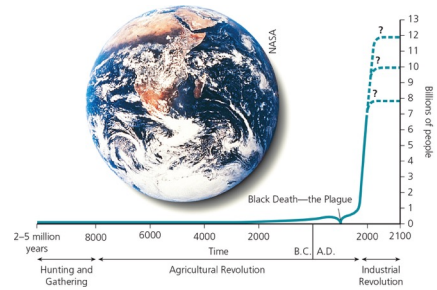
- Preserves natural capital and lives off its income
- Thinks of future generations
- Eliminate waste and discontinue depletion of resources
- Apply social, political, and technological solutions

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Population Growth

- Exponential growth rate (1.2%)
- 97% of population increase in developing nations



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Data from the World Bank and the United Nations

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Economics: Growth *and* Development

Growth

- Higher production and consumption

Development

- Increased living standards

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Economics: Growth *and* Development continued

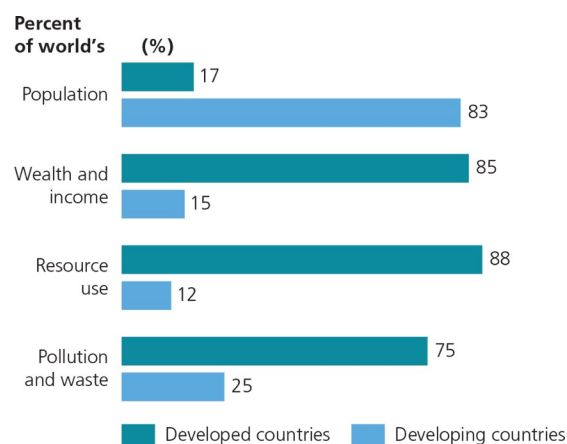
How do we *evaluate* growth *versus* development?

- Gross domestic product (GDP)
- Per capita GDP
- Degree of industrialization

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Developed *versus* Developing Nations



Source: Data from the World Bank and the United Nations

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Trade-Offs: Economic Development

Good News

Life expectancy doubled since 1950

Infant mortality halved since 1990

Food production ahead of population growth since 1978

Pollution down in most developed countries since 1970

Number of people living in extreme poverty dropped 50% since 1990

Bad News

Life expectancy 11 years less in developing countries

Infant mortality rate in developing countries over 8 times higher

Poor agricultural practices may limit future food production

Pollution levels in most developing countries too high

About half of world's people live on less than \$4 per day

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What Is Globalization?

Increasing interconnectedness

- Social
- Economic
- Environmental

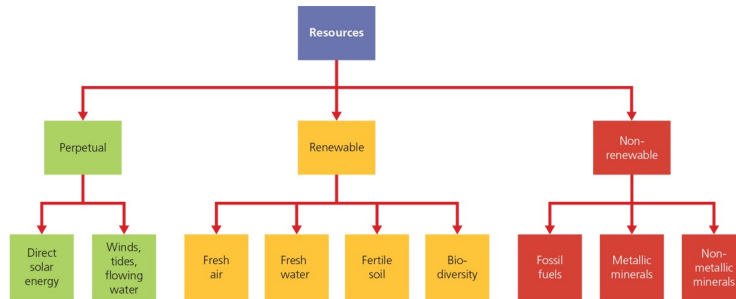
Rapid globalization promoted by

- Communication technology
- Human mobility
- International trade

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Resources



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Renewable Resources

Compare rate of **use** *versus* **replenishment**

- Rate of use < Rate of replenishment
= **Sustainable Yield**
- Rate of use > Rate of replenishment
= **Environmental Degradation**

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The Tragedy of the Commons

Overuse of common resources

- *How do we protect common property?*
 - Regulate access
 - Privatization

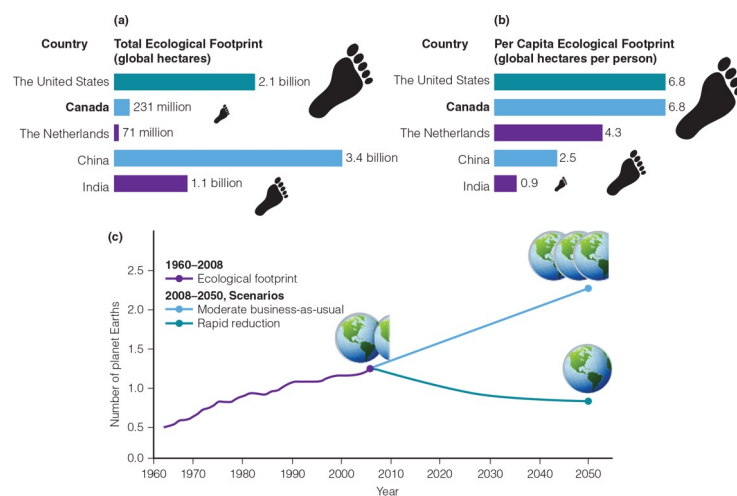
Case Study: Canada-Spain Turbot War

- Declining fish stocks in international seas

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Ecological Footprint



Source: © 2015 Global Footprint Network. www.footprintnetwork.org

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Pollution

What makes a substance a pollutant?

- Concentration
- Location
- Effects

Sources

- Point *versus* Nonpoint

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Dealing With Pollution

Prevention (input control)

versus

Cleanup (output control)

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Environmental and Resource Problems

Major Problems

- Air pollution
- Biodiversity depletion
- Food supply problems
- Waste production
- Water pollution

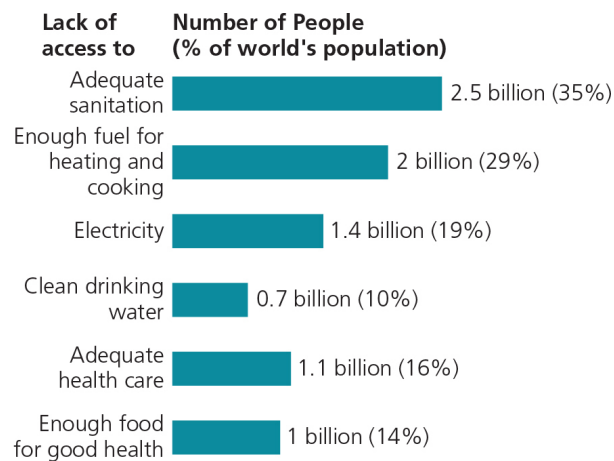
Major Causes

- Rapid population growth
- Unsustainable resource use
- Poverty
- Market prices not reflecting environmental costs
- Inadequate understanding of the environment

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Natural Capital Degradation: Results of Poverty



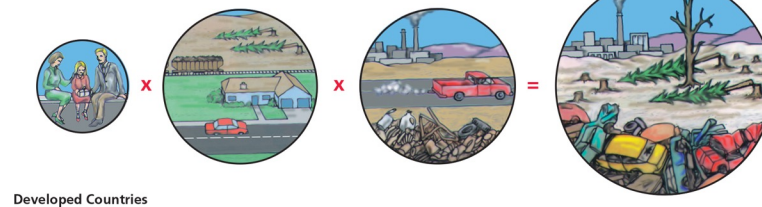
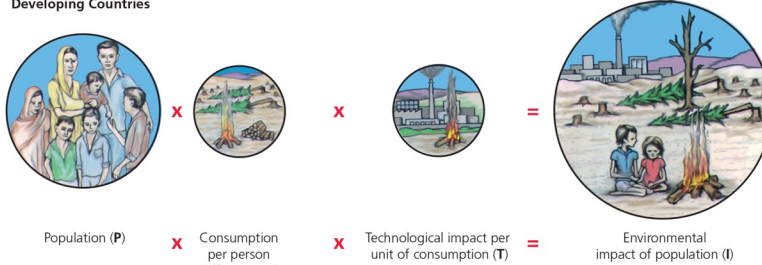
Source: Data from the United Nations, the World Bank, and World Health Organization

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Environmental and Resource Problems continued

Developing Countries



Developed Countries

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Affluenza

- Addiction to overconsumption and materialism
- Prevalent in Canada, U.S., Europe...
- Buy more – get happy
 - Before buying ask:
 - Do I need it?
 - Can I buy it second-hand?
 - Can I borrow from a friend?
- Shopaholics should avoid malls.

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Use affluence for good

- Develop technologies to reduce:
 - Pollution
 - Environmental degradation
 - Resource waste
 - Clean air
 - Big donators:

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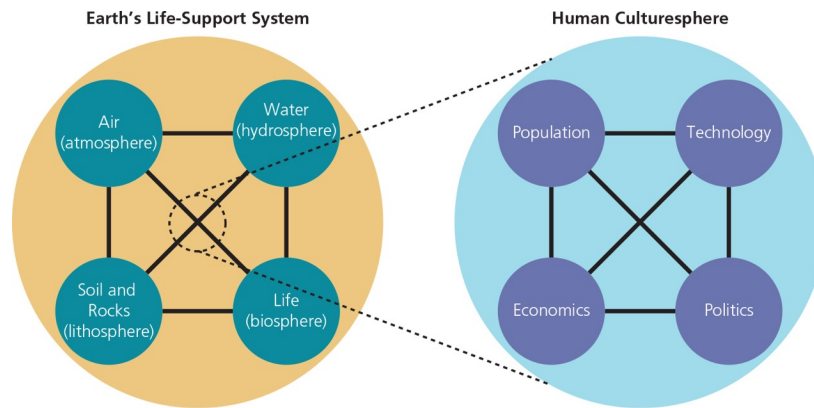
Donators



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Environmental Interactions



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Is Our Present Course Sustainable?

Are things getting better or worse?

Technological optimists

versus

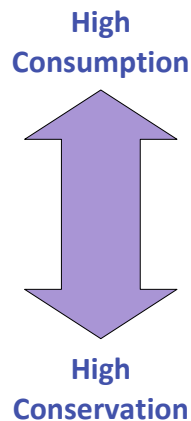
Environmental pessimists

- Both extremists
- Instead of trying to wade through confusion – be active & involved.

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Environmental Worldviews



- Planetary Management
- Stewardship
- Environmental Wisdom

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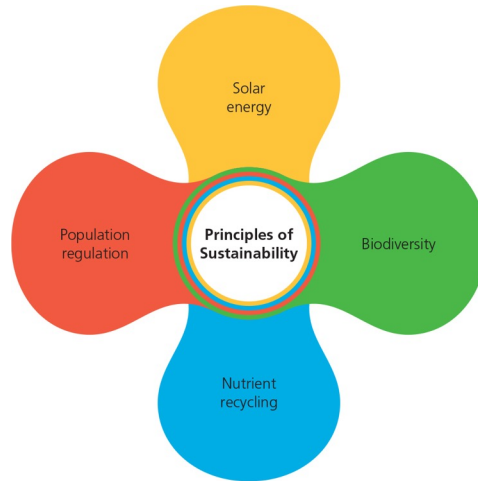
Environmental Worldviews continued



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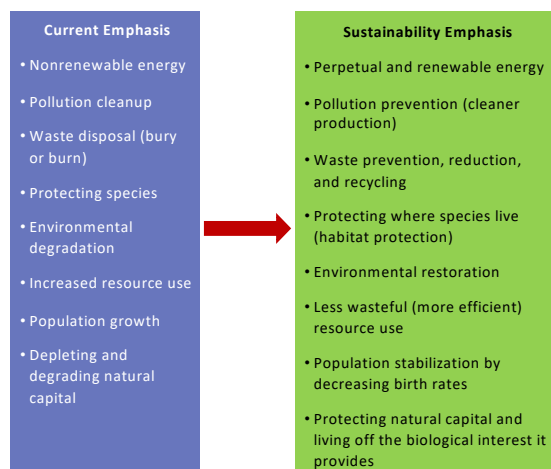
Principles of Sustainability



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Solutions: Shifting Toward a Sustainable Future



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UN Millennium Development Goals



Goal 1: Eradicate Extreme Hunger and Poverty



Goal 2: Achieve Universal Primary Education



Goal 3: Promote Gender Equality and Empower Women



Goal 4: Reduce Child Mortality



Goal 5: Improve Maternal Health



Goal 6: Combat HIV/AIDS, Malaria, and Other Diseases



Goal 7: Ensure Environmental Sustainability



Goal 8: Develop a Global Partnership for Development

Source: Courtesy of the UNDP

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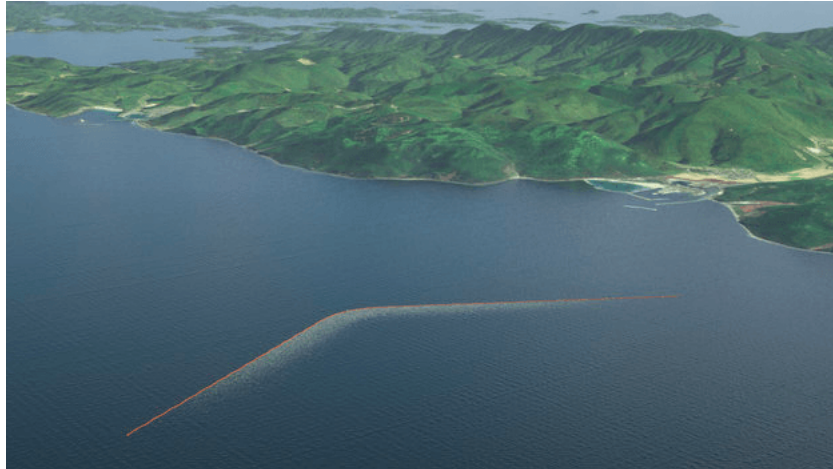
Conclusions

- Environmental management involves balancing growth with sustainability
- Requires ecological worldview
- Involves science, politics, economics, and philosophy

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Solution



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- 23-year-old boy genius, Boyan Slat, is the founder and president of [The Ocean Cleanup](#), a foundation which is dedicated to developing advanced technologies to rid the oceans of plastic. The Dutch inventor is in the works of creating a 62-mile underwater, V-shaped barrier to trap plastic trash as it floats along ocean currents. Slat said the technology, which he hopes to deploy by 2020, could remove half of the trash—amounting to 150 million pounds of trash—from the [Great Pacific Garbage Patch](#) within 10 years. Once removed, much of that plastic could be properly recycled.

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