

Chapter Twenty-one: Environmental Problems and Solutions

Section One: Environmental Problems

- Pollution-an unwanted change in the environment that is caused by harmful substances, wastes, gases, noise, or radiation.
- anything that causes pollution is called a pollutant
- some pollutants are caused by natural events and others by humans

Garbage

- average American throws away more trash than in any other nation
- landfills contain medical waste, lead paint, and other hazardous materials
- hazardous waste is waste that can catch fire, wear through metal, explode, or make people sick

Chemicals

- chemicals that help people can harm the environment
- fertilizers and pesticides pollute water and soil
- CFCs destroy ozone; PCBs poisonous and may cause cancer
- use of CFCs and PCBs is banned
- High-powered Wastes
- radioactive wastes produced by nuclear power plants

Gases

- Carbon dioxide in the atmosphere has increased trapping heat around the Earth and may be increasing global temperature.
- could result in the melting of polar ice caps and make the ocean rise

Noise

- affects ability to hear and think clearly; may damage your hearing
- Resource Depletion
- Renewable Resource-a natural resource that can be replaced at the same rate at which the resource is consumed.
- example-solar and wind energy
- Nonrenewable Resource-a resource that forms at a rate that is much slower than the rate at which it is consumed.
- example-fossil fuels such as oil and coal
- Renewable or Nonrenewable?
- some resources thought to be renewable are becoming nonrenewable
- fresh water in some areas is being used faster than it can be replaced.

Exotic Species/Invasive Species

- people carry other species with them; boats, airplanes, and cars carry plant seeds, animal eggs, and adult organisms from one part of the world to another.
- exotic species often thrive in a new location but can drive out nativespecies

Human Population Growth

- Advances in medicine and farming have caused population to increase overall this is beneficial

- Overpopulation-the presence of too many individuals in an area for the available resources.
- scientists think human growth will slow down before this happens

Habitat Destruction

- when land is cleared for construction, crops, mines, or lumber, and topsoil may erode.
- chemicals may pollute nearby streams and rivers
- Biodiversity-the number and variety of organisms in a given area during a specific period of time.
- if habitats are damaged or destroyed biodiversity is lost

Forest Habitats

- deforestation-the clearing of forest lands
- today lumber companies often plant new trees to replace the trees that were cut down
- tropical rain forests often can't be replaced with the same biodiversity that was once there; also this soil is often harmed by the clearing.

Marine Habitats

- point-source pollution-pollution that comes from one source
- example-an oil spill
- nonpoint-source pollution-comes from many different sources
- chemicals wash into rivers, lakes, and oceans
- plastics are also sometimes dumped into marine environments
- is against the law but difficult to enforce

Effects on Humans

- effects air we breathe, pollutes drinking water, chemicals may cause cancer

Section Two: Environmental Solutions

- Conservation-the preservation and wise use of natural resources
- conservation means use fewer natural resources
- helps reduce waste and pollution; helps prevent habitat destruction
- Reduce-to use less

Reducing Waste and Pollution

- as much as 1/3 of the waste produced by some countries is packaging material
- biodegradable is a material that can be broken down by living organisms
- companies are trying to use less hazardous materials
- farmers not using chemicals on crops but instead using natural methods such as mulch, compost, manure, and natural pest control

Reducing the Use of Nonrenewable Resources

- scientists looking into other energy sources that can replace fossil fuels.
- looking at wind, tides, and falling water
- electric and hydrogen-fueled automobiles

Reuse-using items more than once

- Reusing Products

- plastic bags being used to make benches
- building materials that can be reused include wood, bricks, tiles

Reusing Water

- water can be reclaimed by using organisms to clean the water
- include filter-feeding animals
- reclaimed water may not be clean enough to drink but can be used to water crops, lawns, and golf courses or can be returned to them groundwater supply
- Recycle-the process of recovering valuable or useful materials from waste or scrap; the process of reusing some items.

Recycling Trash

- plastics, paper, aluminum, wood, glass, and cardboard are materials that can be recycled
- a ½ million trees are used to make Sunday papers
- 95% of energy needed to change raw ore into aluminum can be saved by recycling cans

Recycling Resources

- waste that can be burned can be used to generate electricity
- resource recovery-using waste to produce electricity

Maintaining Biodiversity

Protecting Species

pass laws like the Endangered Species Act to protect endangered animals

Protecting Habitats

entire web needs to be protected including habitat

Environmental Strategies

- Reduce Pollution-recycle as much as possible; buy recycled items; don't dump hazardous waste
- Reduce Pesticide Use-avoid pesticides that might harm beneficial insects; use natural pesticides that interfere with the way certain insects grow, develop, and reproduce; develop biodegradable pesticides
- Protect Habitats-preserve entire habitats; conserve wetlands; reduce deforestation
- Enforce the Endangered Species Act-ask the government to protect species that might be endangered
- Develop Alternate Energy Sources-increase the use of solar power, wind power, and renewable energy sources

What You Can Do

- Reduce, Reuse, Recycle!