

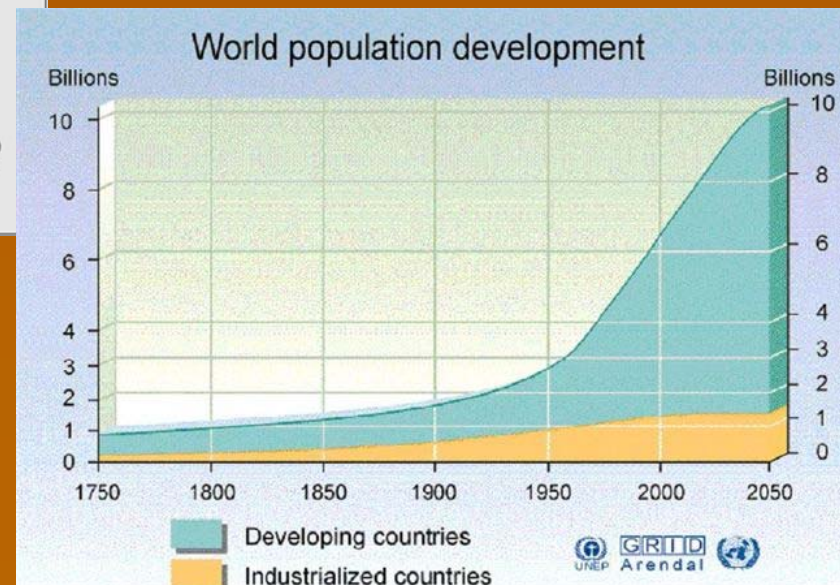
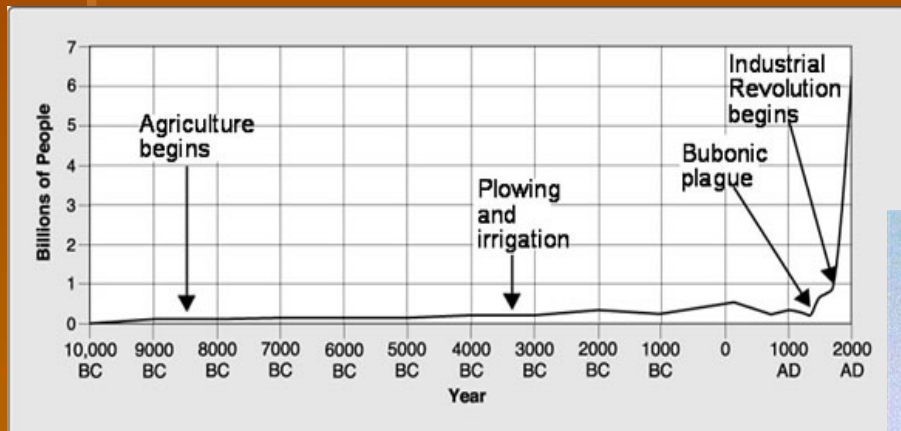
# Human Impact on the Environment



mother nature

# Human Population Growth

- There are more than 7 billion people on Earth now, and roughly one in eight of us doesn't have enough to eat.
- The question of how many people the Earth can support is a long-standing one that becomes more intense as the world's population—and our use of natural resources—keeps booming.



# Habitat Destruction

**Deforestation:** cutting or burning trees for:

- ✓ Farming
- ✓ Urbanization
- ✓ Harvesting of timber for construction, fuel, and other products

**Consequences:**

- ✓ Loss of biodiversity
- ✓ Decreased genetic diversity
- ✓ Soil erosion & flooding
- ✓ Loss of potential medicines & cures
- ✓ Loss of local forest based income
- ✓ Local increase in CO<sub>2</sub> & decrease in O<sub>2</sub>

[deforestation](#)



# Imported Species

**Invasive species:** non-native species that can cause harm to the environment or to human health.

- ✓ As a threat to our biodiversity, they have been judged second only to habitat loss.
- ✓ Invasive or imported species have no natural predators in their new environment, so they quickly become pests, overpopulating and crowding out native species.
- ✓ Many countries have laws restricting the transport of foods, plants, and livestock in order to minimize the chance introducing alien species that may harm crops or other native organisms.
- ✓ Quarantines may be required (confined isolation) to make sure that plants, animals, and/or produce are pest free.

[Snakefish  
snake invasion](#)



# Examples of Invasive Species

Gypsy moth



Asian Longhorn Beetle



Zebra mussels



Purple Loosestrife



# Direct Harvesting

- Each year, hundreds of millions of plants and animals are caught or harvested from the wild and then sold as food, pets, ornamental plants, leather, tourist curios, and medicine.
- Illegal and unsustainable wildlife trade directly threatens the survival of many species in the wild.
- It also directly affects the livelihoods of millions of people, especially the world's poorest, who depend on local wild animals for meat and on local trees and plants for fuel and medicine.
- Illegal trade undermines countries' efforts to protect and sustainably manage their natural resources.



Illegal animal trade

# Extinction: Passenger Pigeon

- The Passenger Pigeon is North America's best-known extinct species. It once flew in flocks of hundreds of thousands of individuals. About three to five billion Passenger Pigeons ranged across eastern North America; they may have been the most numerous bird species in history.
- The notable decrease of passenger pigeons started when professional hunters began netting and shooting the birds to sell in the city markets. Although the birds always had been used as food to some extent, even by the Indians, the real slaughter began in the 1800s.
- By 1850 the destruction of the pigeons was in full force, and by 1860 it was noticed that the numbers of birds seemed to be decreasing, but still the slaughter continued.

# Martha: The Last Passenger Pigeon

- The last known individual of the passenger pigeon species was "Martha" (named after Martha Washington).

## MARTHA

Last of her species, died at 1 p.m.,  
1 September 1914, age 29, in the  
Cincinnati Zoological Garden.

- The extinction of the passenger pigeon aroused public interest in the need for strong conservation laws. As a result, many other species of migratory birds and wildlife have been saved from extinction.



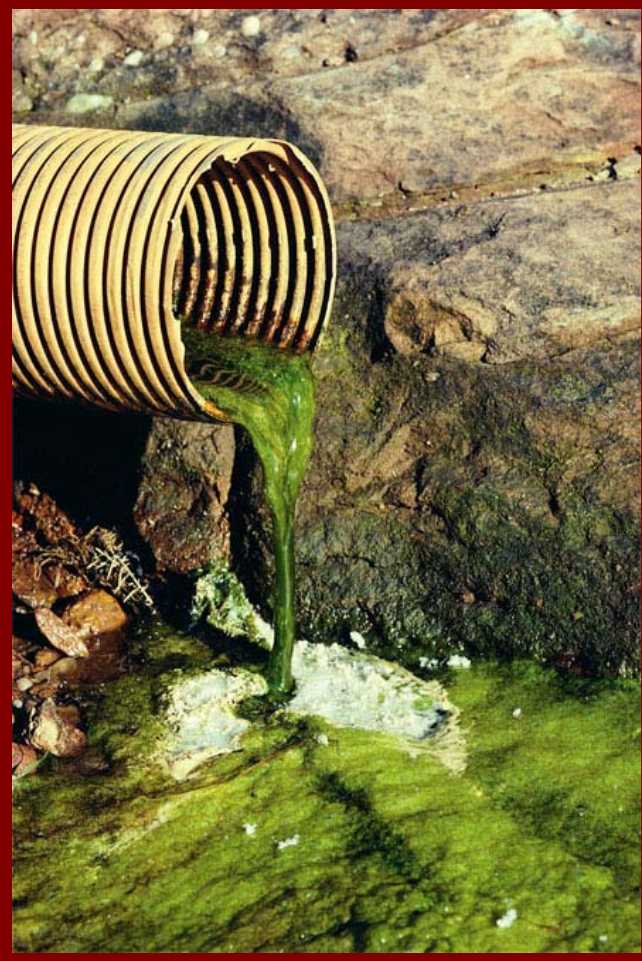


# The Impact of Technology and Industrialization

- **Industrialization:** development of an economy in which machines produce many of the products humans use.
- **Technology:** using scientific knowledge and technical processes to meet human needs.
- Although technology and industrialization have improved our way of life, they have increased the demand for energy, water, and other non-renewable resources like coal and oil and contributed to the pollution of Earth.

On Deadly Ground

# Water Pollution



**Toxic Pollutants**



**Thermal Pollution**

great pacific garbage patch

# Air Pollution



**Smog**

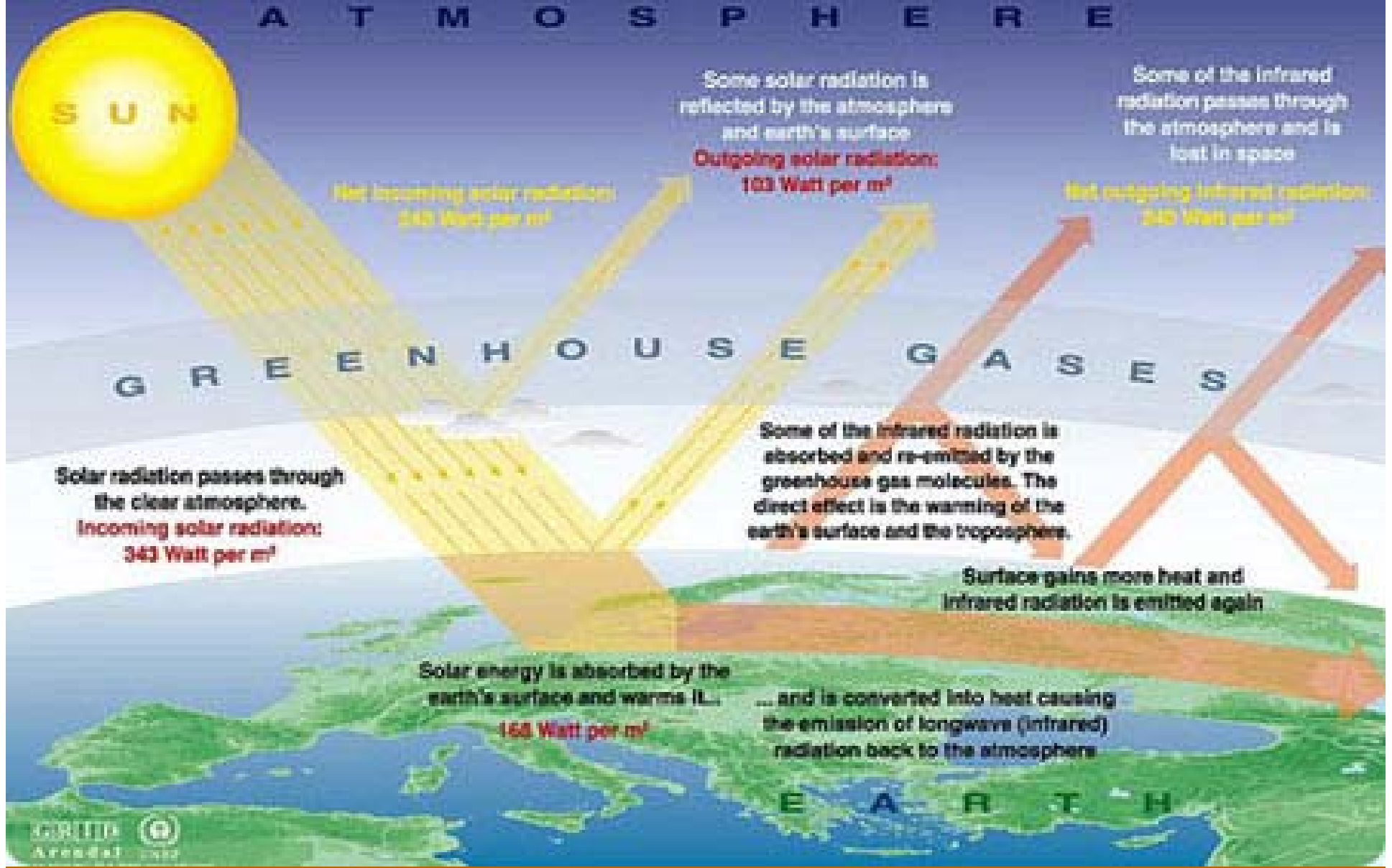
**Acid Rain**



acid rain



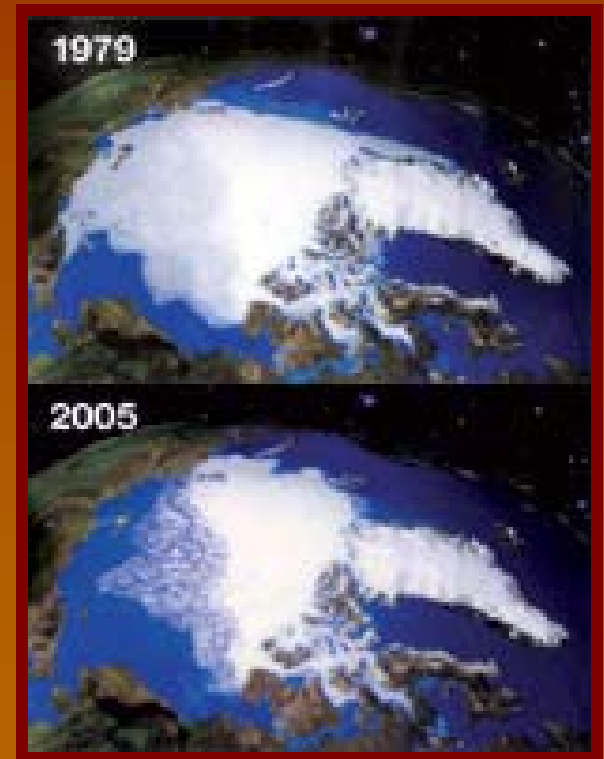
# The Greenhouse effect



greenhouse effect

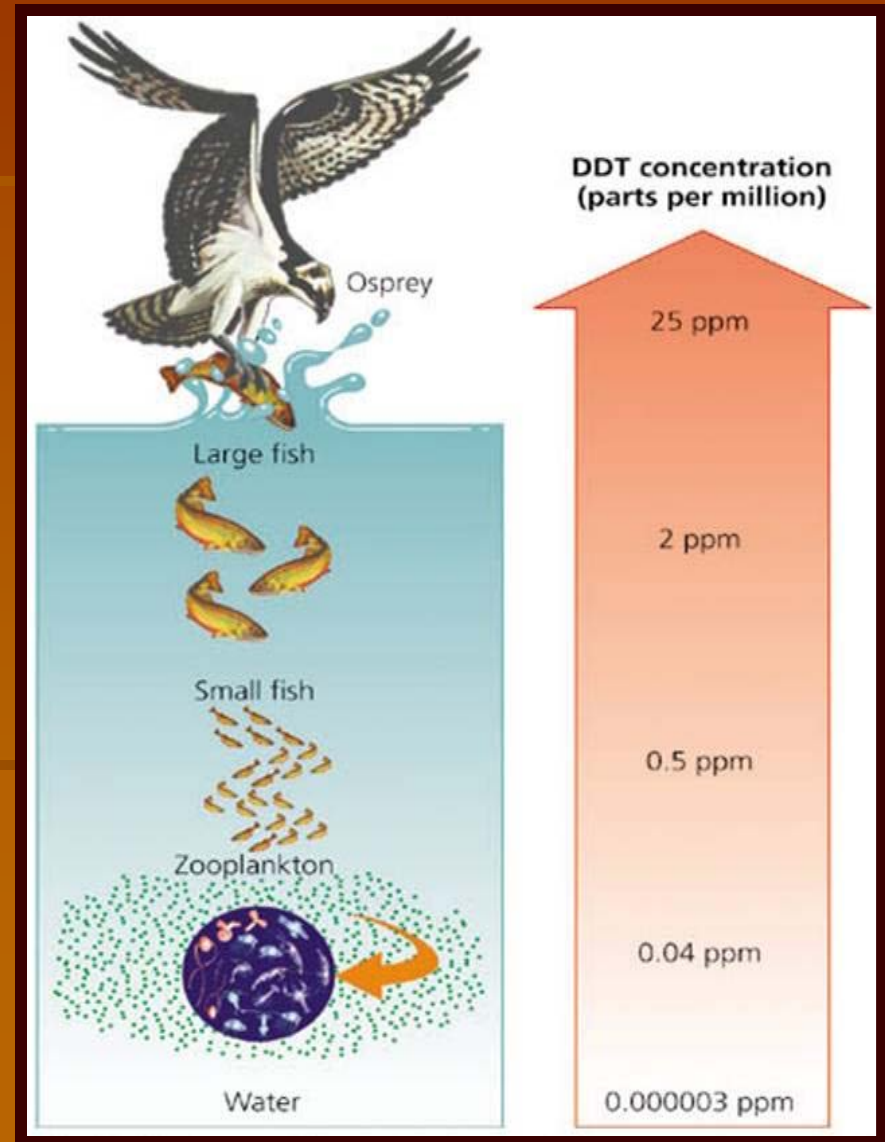
# The Effects of Global Warming

- The melting of polar ice caps
- Rising of sea levels
- Destruction of coastal ecosystems
- Loss of species unable to adapt to changes in temperature, including food grains and other plant species.



# Biomagnification

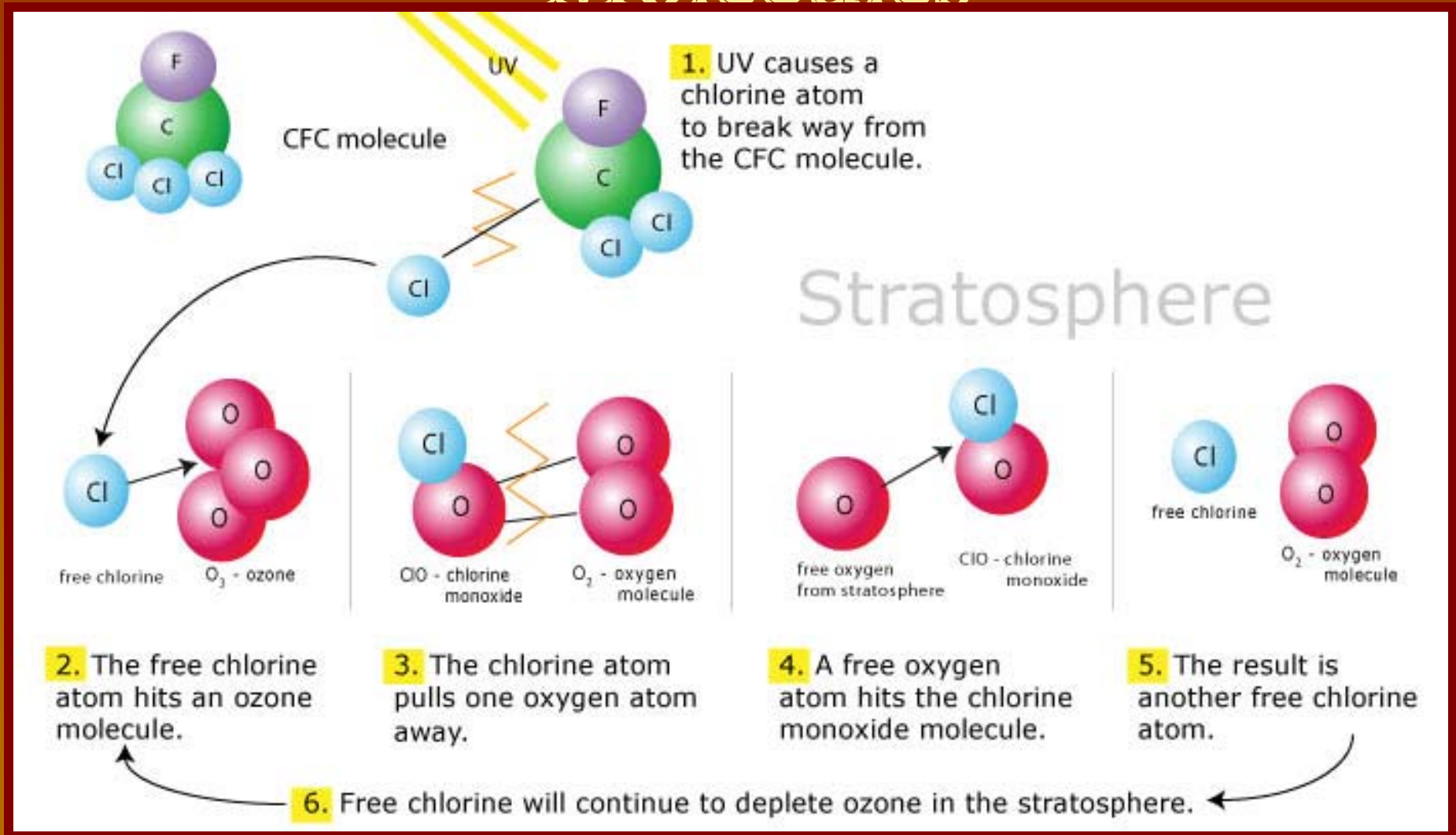
- **Biomagnification** is the increase in concentration of a pollutant from one link in a food chain to another.
- Pesticides, fertilizers, and other pollutants enter aquatic ecosystems as a result of **RUNOFF**.
- These pollutants pass up the food chain, becoming more concentrated at each trophic level.
- The top level consumer has the greatest concentration of pesticide, which can cause a variety of reproductive problems, resulting in a decrease in its population.



DDT



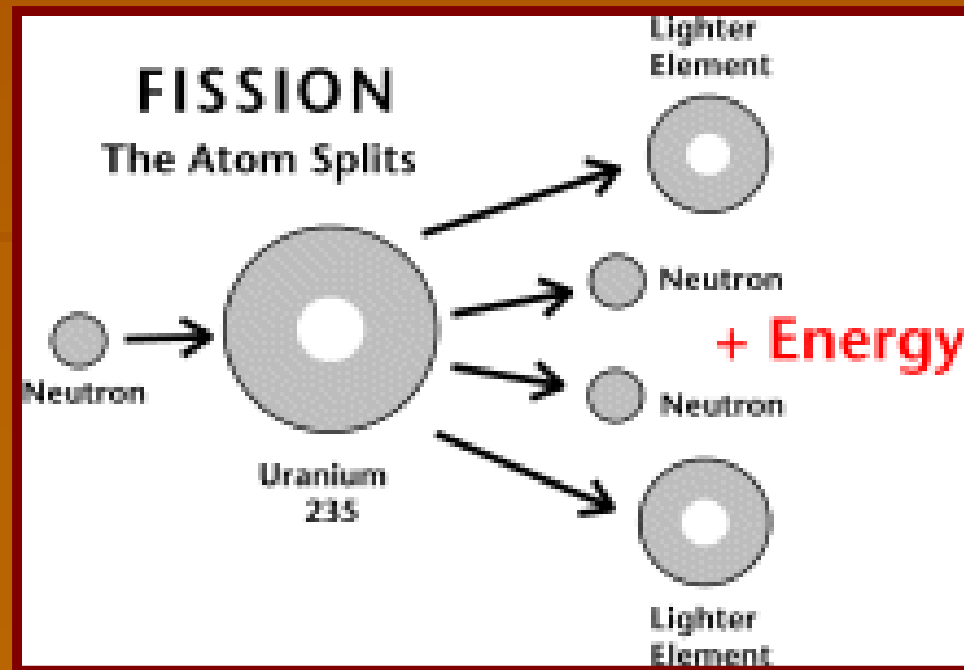
# Breakdown of Ozone Molecules



ozone depletion

# Nuclear Power

- Nuclear energy is energy in the nucleus of an atom. There is enormous energy in the bonds that hold atoms together. Nuclear energy can be used to make electricity. But first the energy must be released.
- In nuclear fission, atoms are split apart to form smaller atoms, releasing energy. Nuclear power plants use nuclear fission to produce electricity.



# Nuclear Power: Pros

- Technology is readily available and does not have to be developed.
- Large amounts of electricity can be generated from a single plant with the use of minimal fuel.
- Considered green energy because it adds minimal amounts of carbon dioxide to the atmosphere.
- Nuclear power plants are improved and more safely constructed with a greater number of failsafe measures.
- Recycling of spent nuclear fuel which generates new reactor fuel. This reduces the amount of nuclear waste that must be stored.
- Creates new jobs and is a boost to the local economy.





# Nuclear Power: Cons

- Even though nuclear plants are better designed with more safety features, meltdowns can occur.
- High level nuclear waste products are highly radioactive and can stay this way for thousands of years.
- Safe storage containment sites must be developed that can house radioactive wastes until they are no longer harmful.
- Public fear of nuclear power
- The “not in my backyard syndrome” particularly in finding sites for nuclear power plants or storage of nuclear wastes. One currently controversy is the proposed long-term storage site in Yucca Mountain, Nevada.
- During the spent fuel recycling process, uranium and plutonium are recovered. Some people fear that recovered plutonium fall into the wrong hands and could be used to make nuclear weapons.
- High costs of building nuclear plants and nuclear fuel recycling centers.

[Yucca Mountain](#)

# Controlling Pest Populations

- **Biological Control:** add a predator of the pest to the ecosystem. The predator will only eat the pest species. However, sometimes the predator adapts too well to the new environment and becomes a pest itself.
- **Hormone Traps:** use of chemical scents to attract insects into traps.
- **Sterilization:** Sterilize male insects by exposing them to x-rays and releasing them back into the environment. Helps to lower the overall population of the pest insect.

# ENVIRONMENT

THINGS YOU CAN DO TO  
**HELP THE ENVIRONMENT**



*The earth we abuse and the living things we kill will, in the end, take their revenge; for in exploiting their presence we are diminishing our future."*

*Marya Mannes*

[miniature earth](#)