

# An Interconnected Planet

# Key Ideas

- How are humans and the environment connected?
- What is the difference between renewable and nonrenewable resources?
- How can the state of the environment affect a person's health and quality of life?

# Humans and The Environment

- We depend of the environment for food, shelter, water, air, fuel, and many more
- BUT, we can impact the quality and availability of those resources



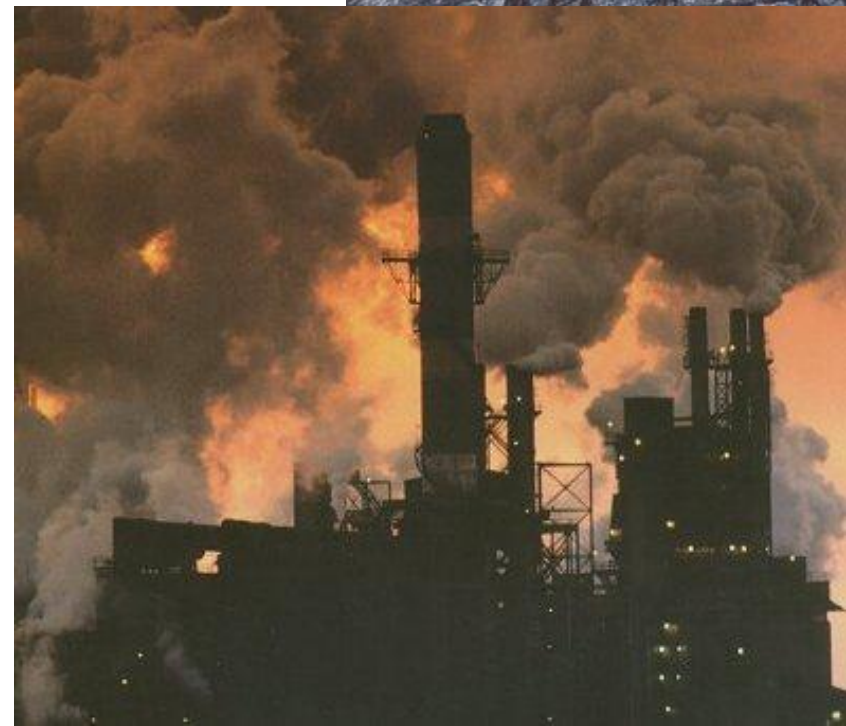
# Resources



- Renewable = can be replaced at the same rate at which they are consumed
  - Wind energy, solar energy, freshwater, trees
- Nonrenewable = form at a rate much slower than they are being consumed
  - Fossil fuels, oil, coal, natural gas

# The Environment and Our Health

- Pollution and habitat destruction destroy our resources that we need to live
  - Air, water, and food



# Key Ideas

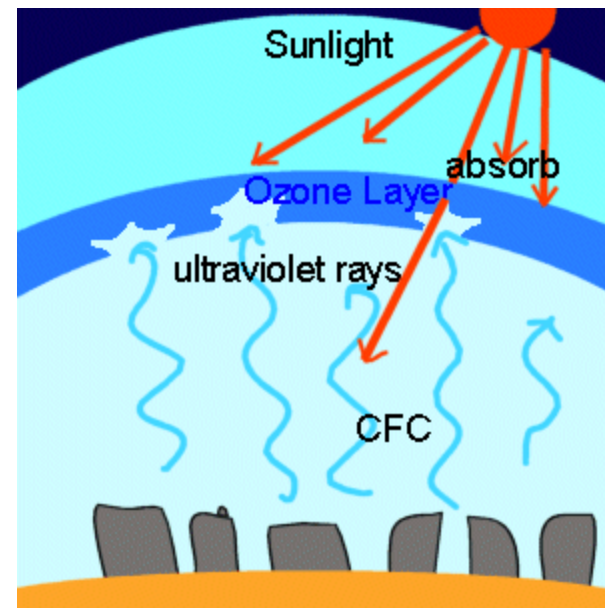
- What are the effects of air pollution?
- How might burning fossil fuels lead to climate change?
- What are some sources of water pollution?
- Why is soil erosion a problem?
- How does ecosystem disruption affect humans?

# Air Pollution

- Air pollution = burning fossil fuels that release pollutants into the air
  - Smog – smoke, gas, and fog that produces sulfuric acid (acid rain)
- Can cause difficulty in breathing and other respiratory problems, acid rain, damage to the ozone layer, and may impact global temperatures

# Ozone Depletion

- Ozone layer is used to prevent harmful UV light from entering the atmosphere
- CFC's are destroying the ozone (O<sub>3</sub>)
- Global warming can also contribute to the depletion of ozone





# Global Warming

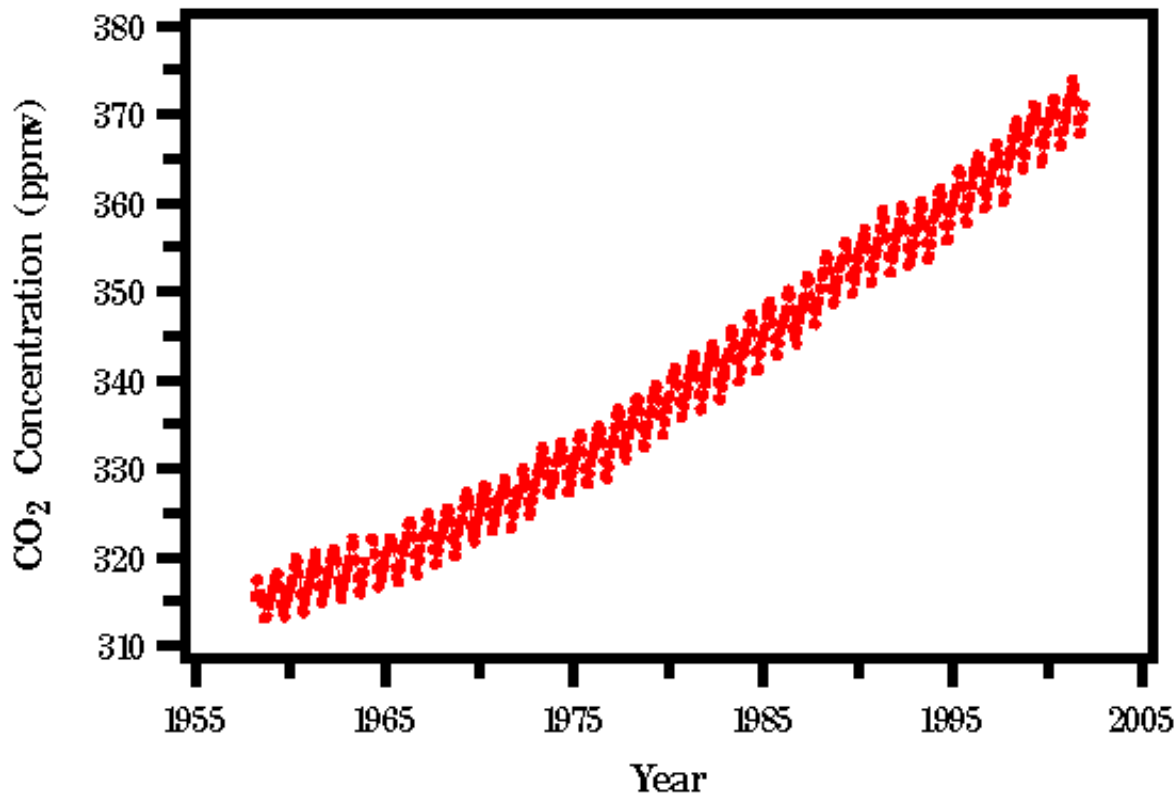
- Greenhouse Effect - the result of heat absorption by certain gases in the atmosphere (called greenhouse gases because they effectively 'trap' heat in the lower atmosphere) and re-radiation downward of some of that heat
- Essential for life on Earth



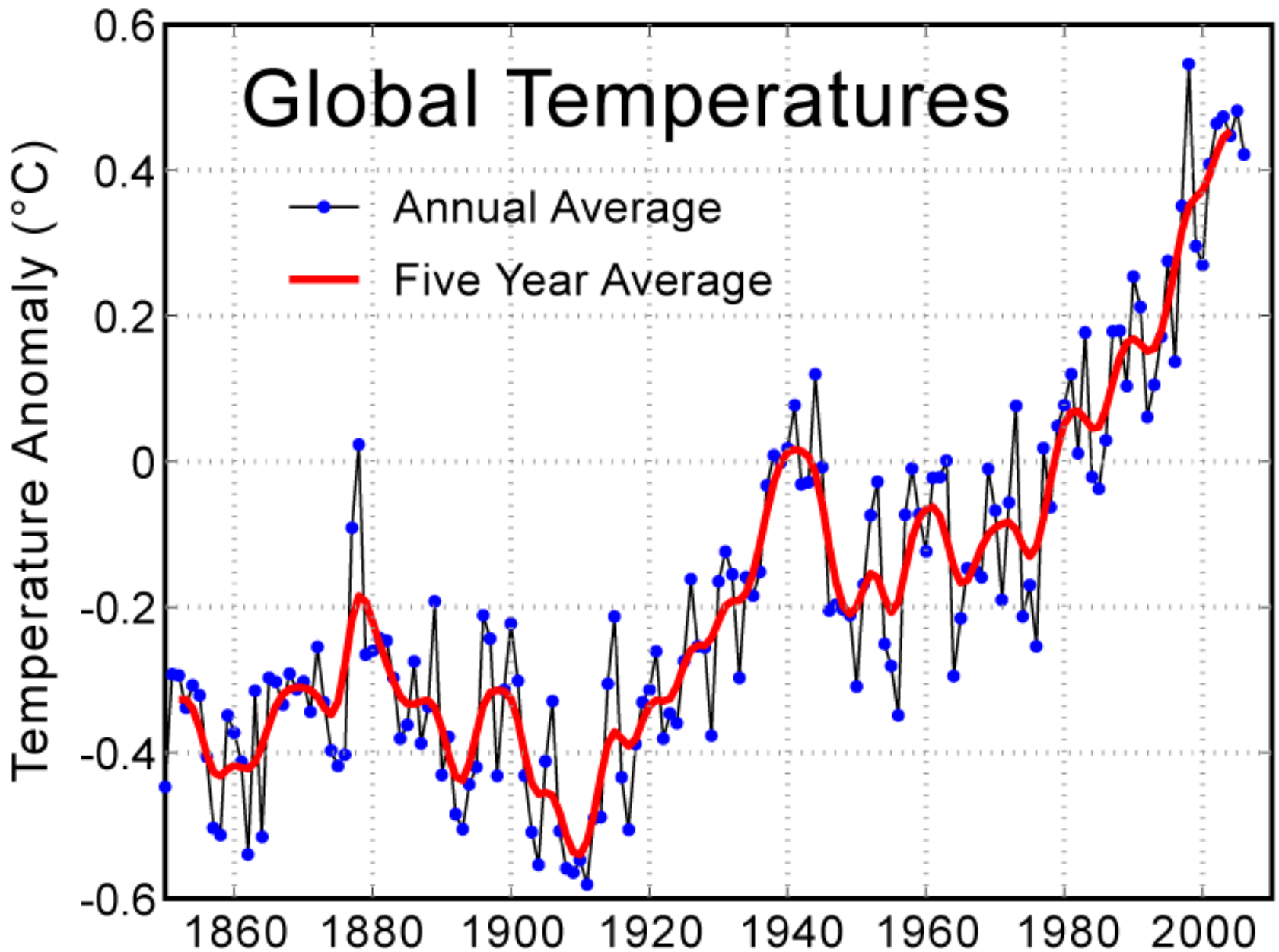
"I'd like to see 'em refute *this* evidence of global warming."

- Burning fossil fuels increases the amount of CO<sub>2</sub> in the atmosphere, which can lead to an increase in global temperatures

Carbon dioxide concentration as measured at Mauna Loa, Hawaii. These measurements represent the globally mixed concentration.



Source: Dave Keeling and Tim Whorf (Scripps Institution of Oceanography)





- Levels of atmospheric methane have risen 145% in the last 100 years
- Sources include cow flatulence, rice patties, and fossil fuel production





- Deforestation is responsible for 20-25% of all carbon emissions entering the atmosphere, by the burning and cutting of about 34 million acres of trees each year



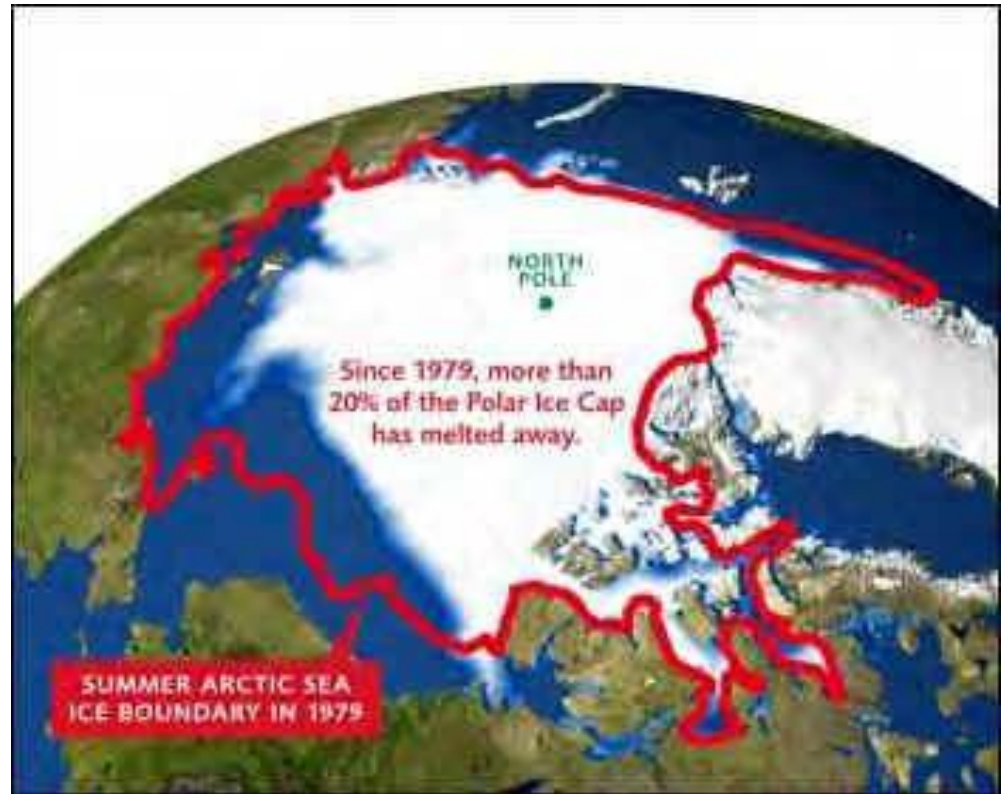
30 May 2006 image of  
the Xingu River in Brazil

- About 20% of U.S carbon dioxide emissions comes from the burning of gasoline in internal-combustion engines of cars and light trucks





- A NASA high-tech aerial survey shows that more than 11 cubic miles of ice is melting along Greenland's coasts yearly, accounting for 7% of the annual global sea level rise

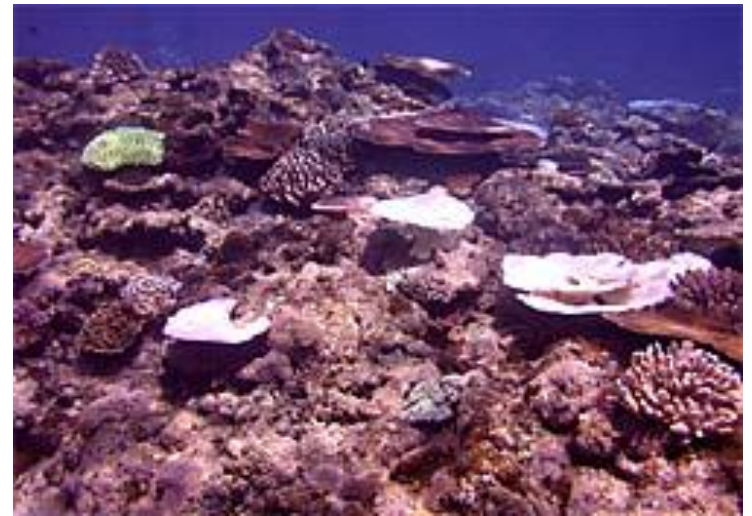


Current picture taken in 2005

- Oceans Warming With Coral Bleaching & Disintegration
- Devastating loss of coral in the Caribbean - March, 2006



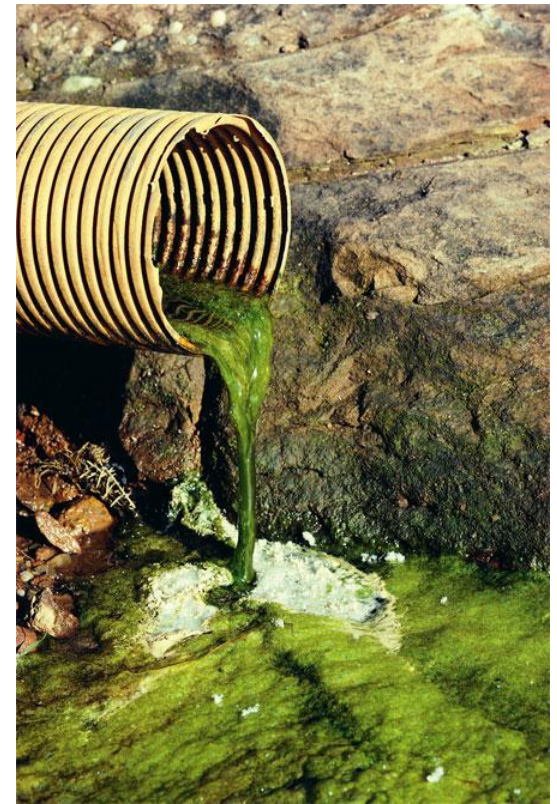
Healthy reef





# Water Pollution

- Water pollution = can come from fertilizer and pesticide use in agriculture, livestock farms, factories, oil from highways, and unlined landfills
  - Can affect drinking water



# Soil Damage

- Soil erosion = destroys fertile soil that we need to produce our food
- Soil conservation = sustainable agriculture
  - Crop rotation, cover crop, contour plowing



# Ecosystem Disruption

- Can result in a loss of biodiversity, food supplies, potential cures for disease, and the balance of ecosystems that supports all life



# Can Lead To...

- Endangered Species – manatee, sea turtles, gray bat, pitcher plant
  - Because of protection, Bald Eagle is no longer on the endangered species list
- Extinction – permanent loss of a species

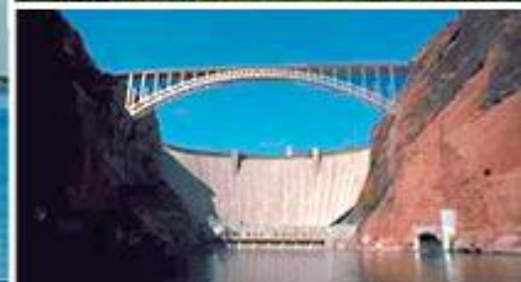


# What Can We Do?

- Recycle, Reduce, Reuse
- Conserve resources – water and energy
- Restoration – clean up and restore damaged habitats
- VOTE!!
- Research solutions
- Educate the public about environmental issues
  
- **Above all: EDUCATE YOURSELF and Do All You Can To Help The Environment**

# Alternate Sources of Energy

- Wind turbines
- Solar cells
- Hydroelectric dams
- Nuclear power
- Wave or tidal power
- Geothermal power



# Hybrid Cars

- A **gas-powered car** has a fuel tank, which supplies gasoline to the engine
  - Engine then turns a transmission, which turns the wheels
- An **electric car** has a set of batteries that provides electricity to an electric motor
  - Motor turns a transmission, and the transmission turns the wheels
- The **hybrid** is a compromise



Saturn Vue