

APES Review

Love Canal, NY

- 1976-77
- chemicals buried in old canal, school and homes built over it led to birth defects and cancers.

Most Populous Nations

- 1) China
- 2) India
- 3) U.S.
- 4) Indonesia
- 5) Brazil
- 6) Russia
- 7) Pakistan

Endangered Species Act

- Identifies threatened and endangered species in the U.S., and puts their protection ahead of economic considerations.

Plate Tectonics

- 3 types of plate boundaries:
 - divergent—two plates spread apart.
 - convergent—two plates move together.
 - transform faults—two plates slide along one another.
- Mineral deposits are most abundant at convergent plate boundaries.
- Volcanoes and earthquakes occur at plate boundaries.
- The U.S. is on the North American plate

Safe Drinking Water Act

- Set maximum contaminant levels for pollutants that may have adverse effects on human health.

Kyoto Protocol

- Controversial attempt to control global warming by setting greenhouse gas emissions targets for developed countries.
- Not ratified by the U.S.

Montreal Protocol

- International treaty to phase out the use of ozone depleting substances.

Ogallala Aquifer

- World's largest aquifer.
- Holds enough water to cover the U.S. with 1.5 feet of water.
- Under parts of Wyoming, South Dakota, Nebraska, Kansas, Colorado, Oklahoma, New Mexico, and Texas (the Midwest).
- Being depleted for agricultural and urban use.

Most Populous Regions of the World

- 1) Asia
- 2) Europe
- 3) Africa
- 4) Latin America
- 5) North America
- 6) Oceania

Convention on International Trade in Endangered Species

- Also known as: "CITES"
- Lists species that cannot be commercially traded as live specimens or wildlife products.

LD50

- "Lethal Dose 50"
- The amount of a substance that kills 50% of the subjects in a test population

Surface Mining Control & Reclamation Act

- Requires coal strip mines and others to reclaim the land following mining operations.

Minamata, Japan

- 1950s
- Mental impairments, birth defects, and deaths caused by mercury dumped in Minamata Bay by factory. Mercury entered humans in diet (fish).

Keystone species

- Species whose role in an ecosystem is more important than others.

Three-Mile Island, Pennsylvania

- March 29, 1979
- Nuclear power plant loses cooling water 50% of core melts, radioactive materials escape into atmosphere, near meltdown.

Clean Air Act

- Set emission standards for cars, and limits for release of air pollutants.

Chernobyl, Ukraine

- April 26, 1986
- Unauthorized safety test leads to fire and explosion at nuclear power plant—millions exposed to unsafe levels of radiation.

Reproductive Strategies

- K-strategists
- Organisms reproduce late in life
- Bear few offspring
- Care for and protect offspring
- Large bodied
- Examples: humans, elephants
- r-strategists
- Organisms reproduce early in life
- Bear many offspring
- Do not care for and protect offspring
- Small bodied
- Examples insects, mice

Lacey Act of 1900

- Prohibits interstate transport of wild animals dead or alive without federal permit.

Valdez, Alaska

- March 24, 1989
- The oil tanker Exxon Valdez hits submerged rocks in Prince William Sound—worst oil spill in US waters.

Most Abundant elements in Earth's crust

- 1) Oxygen
- 2) Silicon
- 3) Aluminum
- 4) Iron
- 5) Calcium
- 6) Sodium
- 7) Potassium

Yucca Mountain, Nevada

- Controversial, proposed site for the permanent storage of high-level nuclear waste, 70-miles northwest of Las Vegas, near volcano and earthquake faults.

Carrying capacity

- The number of individuals that can be sustained in an area.

Clean Water Act

- Set maximum permissible amounts of water pollutants that can be discharged into waterways. Aim: to make surface waters swimmable and fishable.

Cellular Respiration

- Oxygen consuming producers, consumers & decomposers break down complex organic compounds & convert C back into CO_2
- $C_6H_{12}O_6 + O_2 \rightarrow CO_2 + H_2O$

Alternate sources of Energy

- Solar
 - Passive
 - Active
- Wind
- Fuel cells
- Geothermal
- Ocean waves/tides
- Biomass

Indicator species

- Species that serve as early warnings that an ecosystem is being damaged

Photosynthesis

- Plants convert CO_2 (atmospheric C) into complex carbohydrates (glucose $C_6H_{12}O_6$)
- $CO_2 + H_2O \rightarrow C_6H_{12}O_6 + O_2$

Municipal solid waste

- The trash you and I throw away.
- In the U.S., it is mostly paper and mostly put into landfills.

Demographic Transition Model

- Preindustrial stage
- Transitional stage
- Industrial stage
- Postindustrial stage

Replacement level fertility

- The number of children a couple must have to replace themselves.

Bhopal, India

- December 2, 1984
- Methyl isocyanate released accidentally by Union Carbide pesticide plant kills over 5,000.

Current World Population

- Slightly over 6 billion people

Thomas Malthus

- Theorized that human population cannot continue to increase without leading to war, famine & disease

Age of Earth

- Approximately 4.5 billion years

Beginning of Human Agriculture

- Approximately 10,000 years ago