

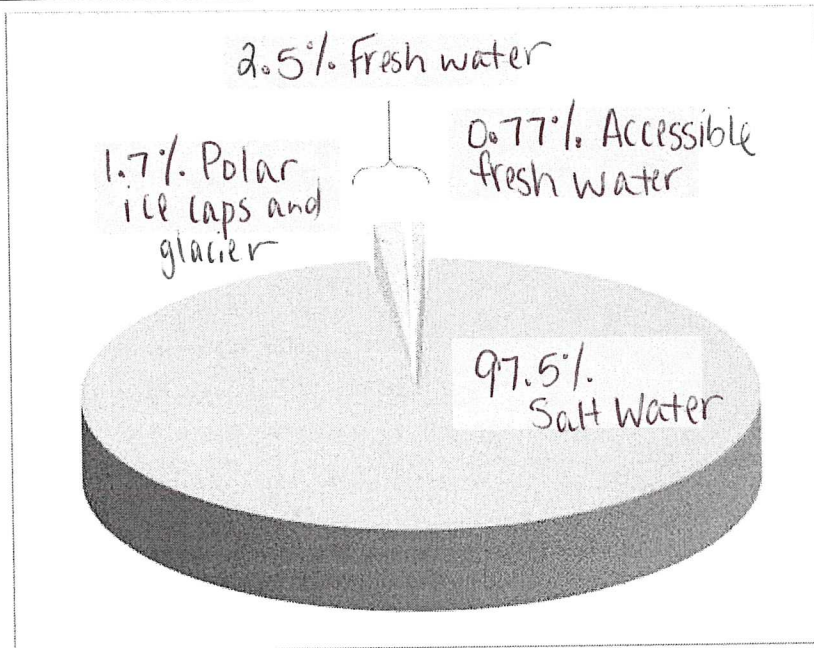
Humans and The Environment: Human impact on Water

EQ: What effect can human activities have on water?

Why is water important?

- Water shapes earth's surface
 - Affects weather and climate
 - Vital for life. Every living thing is made up of water and life processes use water.
 - Urbanization—growth of towns and cities that results from the movement of people from rural to urban areas.
- ⇒ Greater demand for fresh water

Where do we get fresh water?



Surface Water—Water above ground
Ex: snow, ice, rivers, streams, lake

Ground Water— water in spaces below Earth's surface.

In aquifers - a body of rock or sediment that can store a lot of water. Allows it to flow.

What are water quality and supply?

Water quality - measures how clean or polluted water is
⇒ Humans and other organisms depend on clean water in order to survive

Water supply measures the availability of water
Influences where farmers grow crops
Influences where cities are built

What threatens water supply?

Water pollution - when waste or other material is added to water so that it is harmful to organisms that drink it or live in it

Point Source—comes from one specific source and usually can be controlled
(Ex. chemical spill, factory waste)

Non-point Source—comes from many small sources, more difficult to identify and control
(Ex. city street runoff, fertilizer run off, farm run off, mines)

What threatens fresh water quality?

- 1. Thermal Pollution**— heating of water sources
(Ex: power plants release warm water used to cool equipment)
⇒ When water is returned to rivers or lakes it is warmer and has less oxygen for organisms
- 2. Chemical pollution**—When harmful chemicals are added to water supplies
⇒ Reach water supplies by seeping into groundwater.
Ex: pesticides, fertilizers, acid rain and waste from factories
- 3. Biological Pollution**— live or dead organisms are added to water supplies
⇒ waste water: water that is used by people and may contain disease-causing microbes
(Ex: flushing toilet, showering, washing dishes, farms)
- 4. Eutrophication**—Increased nutrient levels in water
⇒ Occurs naturally from decomposition
⇒ Artificial Eutrophication: occurs when human activity increases nutrient levels from waste water and fertilizer run off.
⇒ Causes fast growth of algae and kills fish.

How is water treated?

- Water that is used as drinking water is treated to remove harmful chemicals and organisms.
⇒ Many steps needed to make it potable (drinkable).

Who monitors and protects our water quality?

- Once water is used, it becomes wastewater.
⇒ Enters sewage system and gets carried to a wastewater treatment plant.
⇒ The Safe Drinking Water Act is a federal law that ensures safe drinking water for people in the United States.
⇒ The Environmental Protection Agency enforces this law and sets the standards that drinking water must meet.

How does water get to the faucet?

- Surface water is collected and pumped to places where people need it.
- Ground water can be found by digging wells into aquifers.
- Water is then pumped into pipes that supply homes, farms, factories and cities.

What threatens our water supply?

- In many areas, demand for water is greater than the supply.
⇒ Can cause water shortages.

How do supply efforts affect the environment?

- More people can lead to more pollution entering the water supply.
- More wastewater is produced and needs treated.
- Pollutants can seep into surface water and groundwater, possibly entering the water cycle.