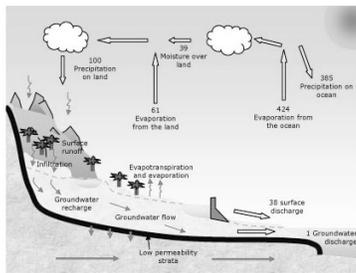


Unit 8: Water Resources *An Overview*

The Habitable Planet
CIS Environmental Science
PLHS Site

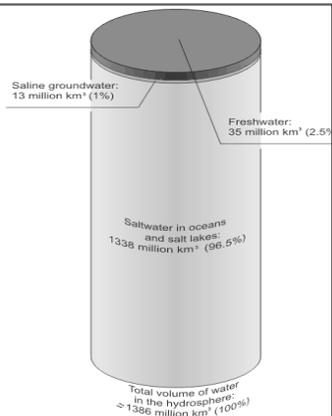
The Hydrologic Cycle



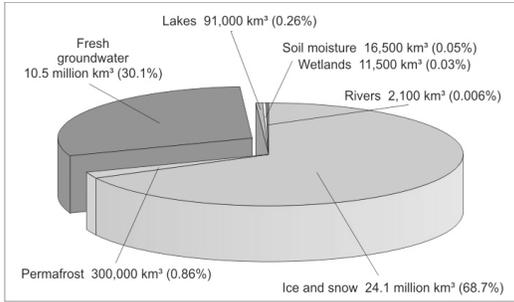
(Yearly flow volumes are in thousands of cubic kilometers)

Water Distribution

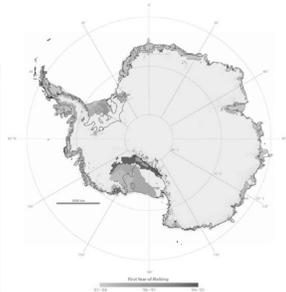
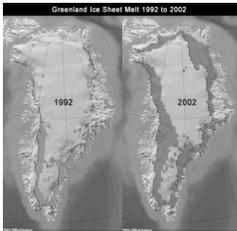
- **Freshwater:** Water without significant amounts of dissolved sodium chloride (salt). Characteristic of rain, rivers, ponds, and most lakes.
- **Groundwater:** Water contained in porous strata below the surface of the Earth.



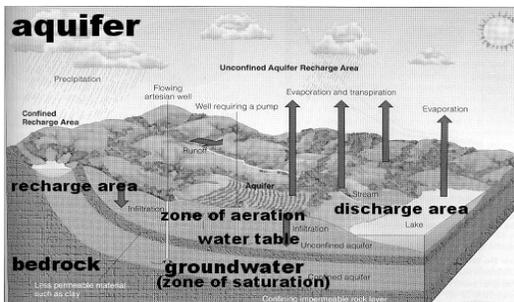
Distribution of Fresh Water



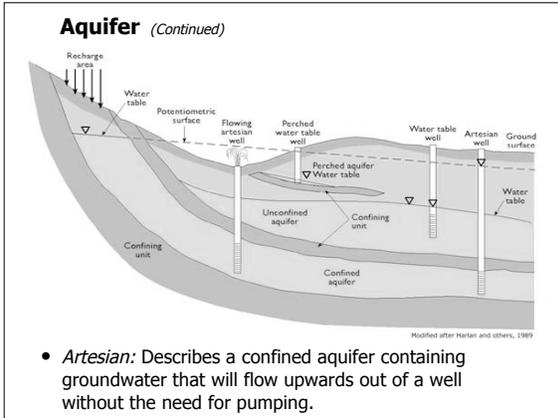
Icecaps

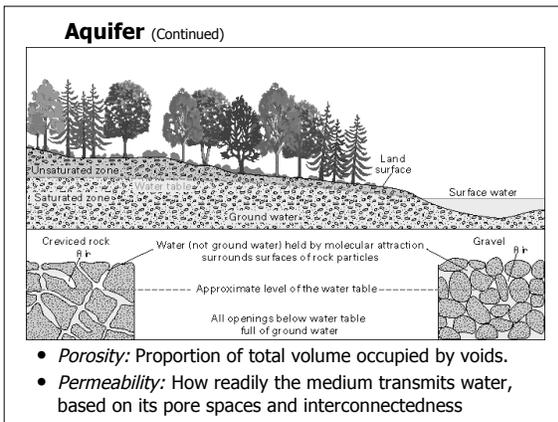


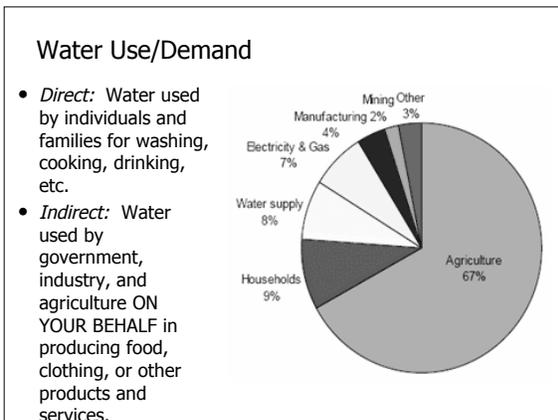
- The ice - salt water balance will change dramatically if the ice of Greenland continues to melt at its current rate.
- Even more dramatic effects will occur if the west Antarctic ice melts as well. Ocean levels could rise by more than 10 feet.

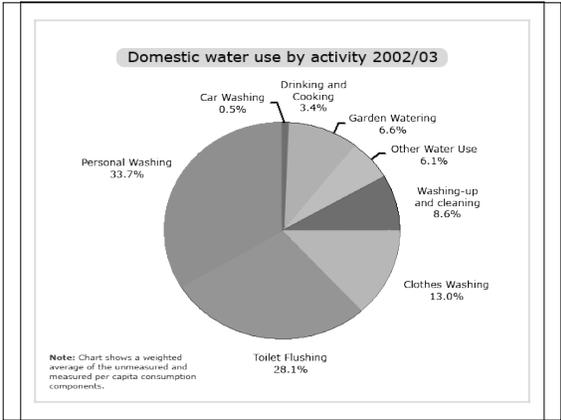


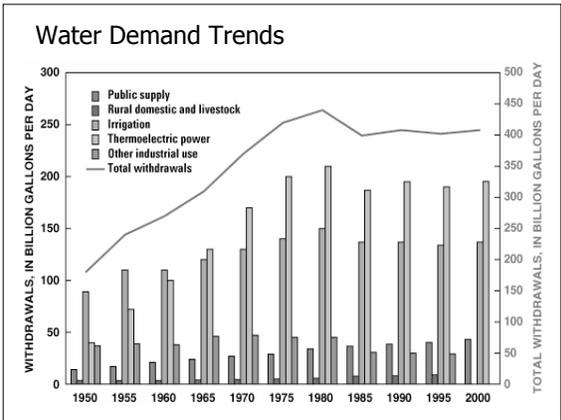
- **Aquifers:** Underground formations, usually composed of sand, gravel, or permeable rock, capable of storing and yielding significant quantities of water.

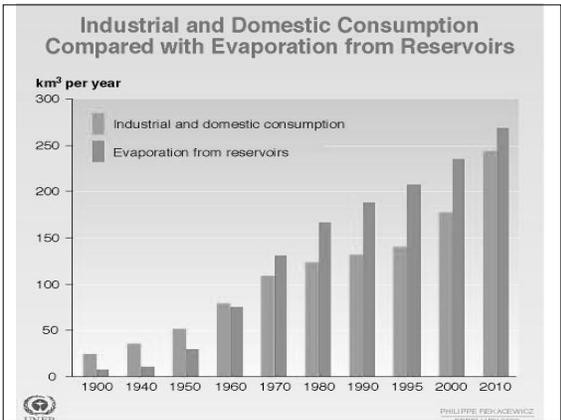


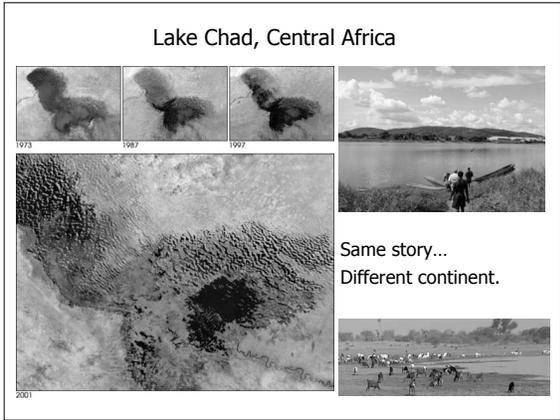


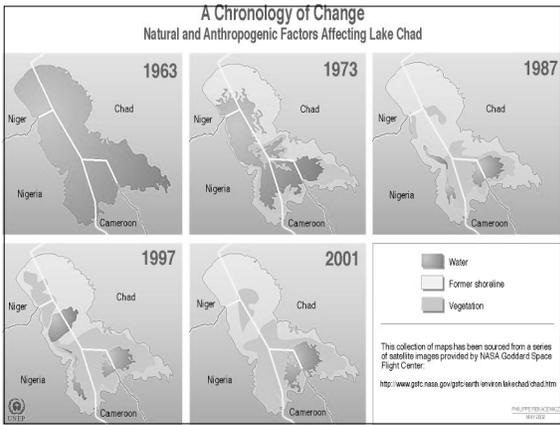


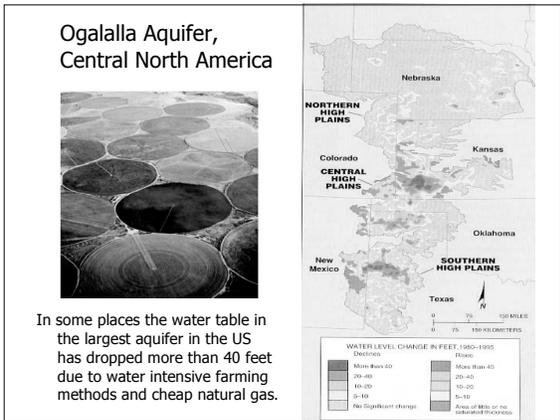




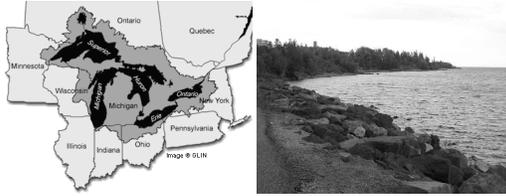




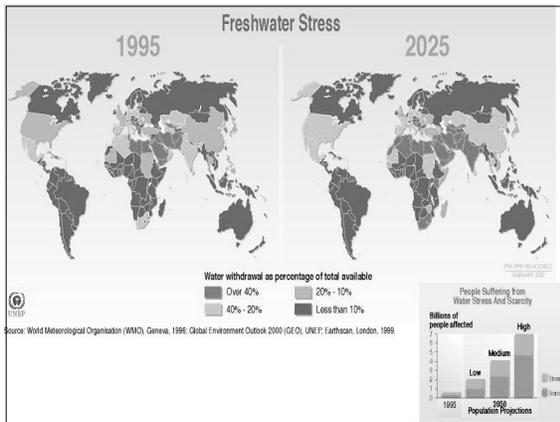




Great Lakes, North America



- Lake Superior is more than one foot below its "historic average" and has been warming since 1980.
- Hundreds of sites around the Great Lakes are considered toxic clean-up sites, heirs to decades of industrial waste dumping.



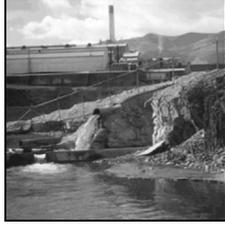
Impaired Waters in the US

- Waters contaminated by one class or another of water contaminants



Major Laws and Treaties

- *Clean Water Act (1972)*: Focused on point source pollution. Polluters must obtain permits to discharge of into "navigable waters."
- *"Total Maximum Daily Load"* - The maximum quantity of a particular water pollutant that can be discharged into a water body without violating a water quality standard.



Point Source pollution from an industrial site along the Great Lakes.



- *The Safe Drinking Water Act (1974)*: Regulates contaminants in public water supplies. The law sets mandatory limits on 90+ contaminants and recommends voluntary standards for others.



- *UN Convention on the Law of the Sea (1982)*: Creates international rules regarding use of the oceans including each country's rights and responsibilities for pollution control and resource management. The United States is not among the 149 nations that have ratified this treaty.
