

Freshwater Resources

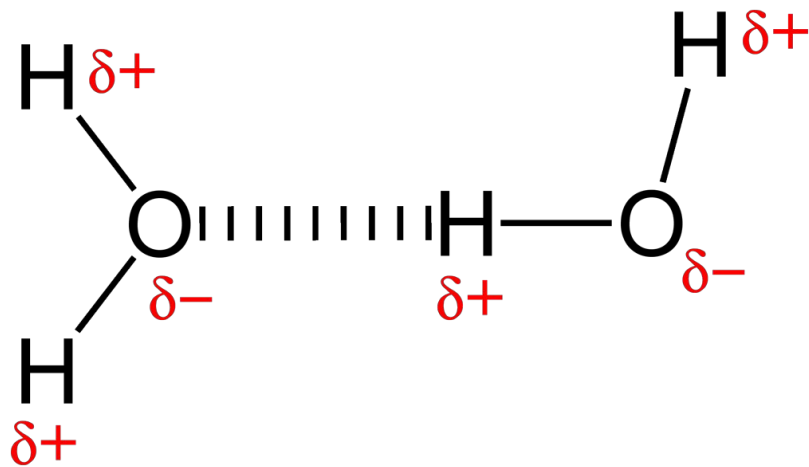
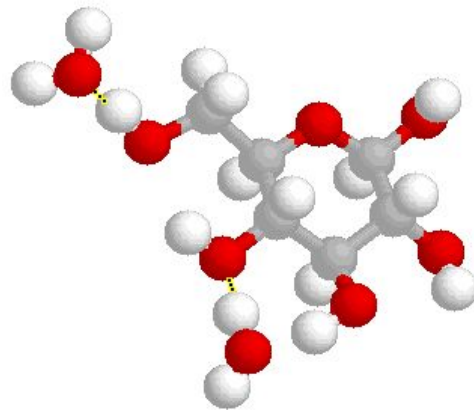
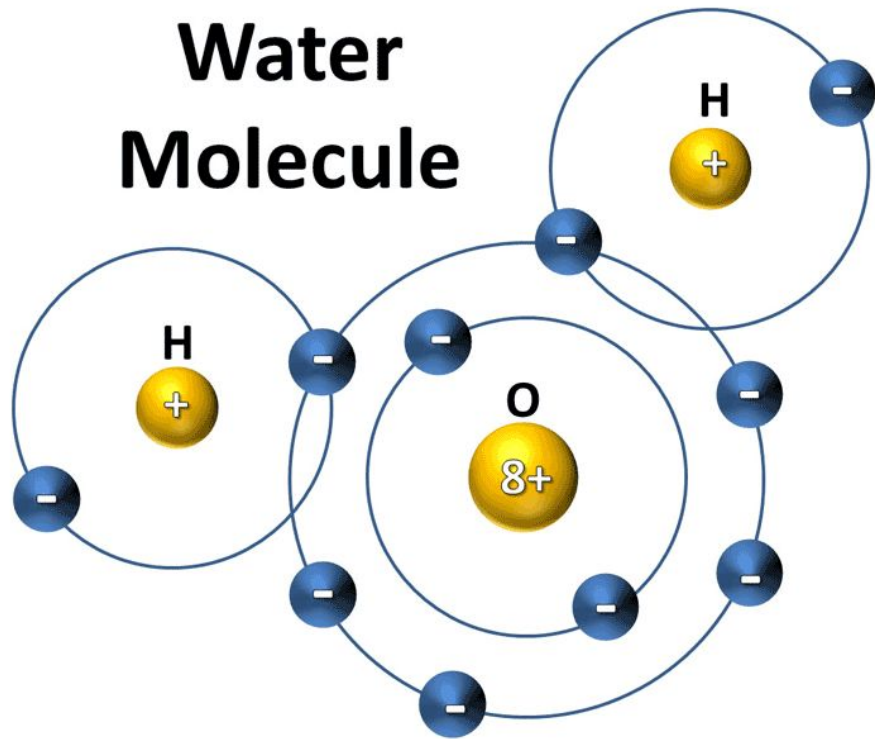
Ms. Larsh

Important Properties of Water

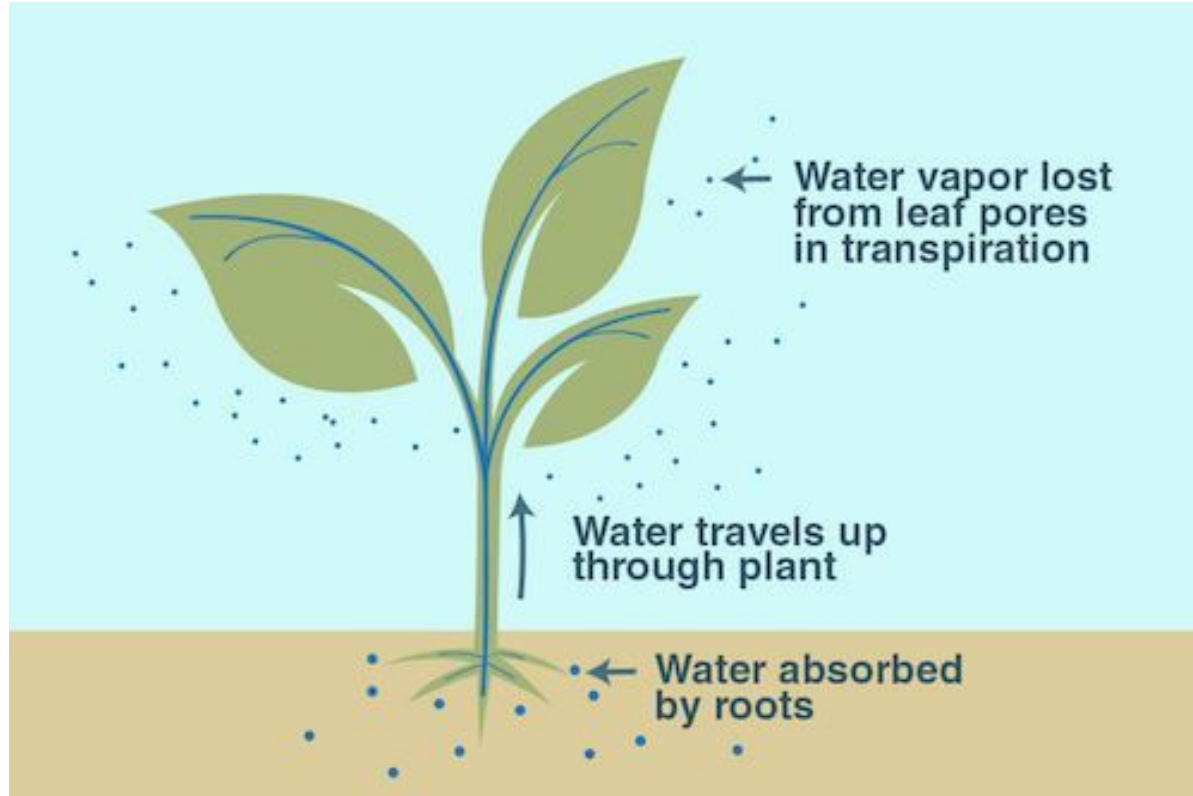
Hydrogen Bonds - allows water to exist as a liquid over a wide range of temperatures

Thermal Energy Storage Capacity - Liquid water can store a large amount of thermal energy without a significant increase in temperature

Water Molecule



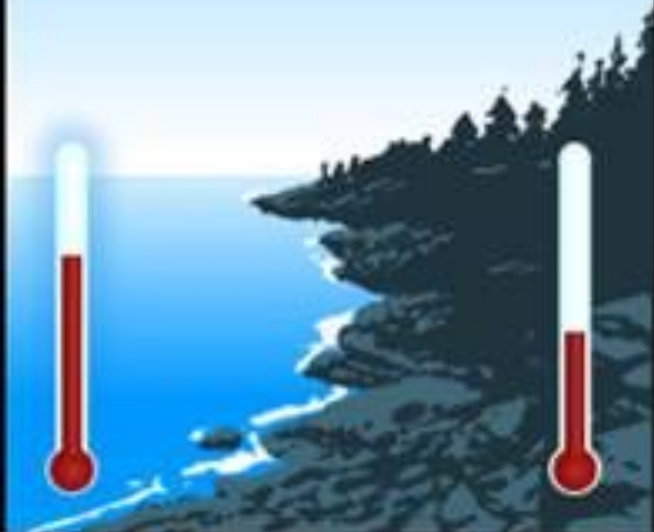
Hydrogen Bonds & Transpiration



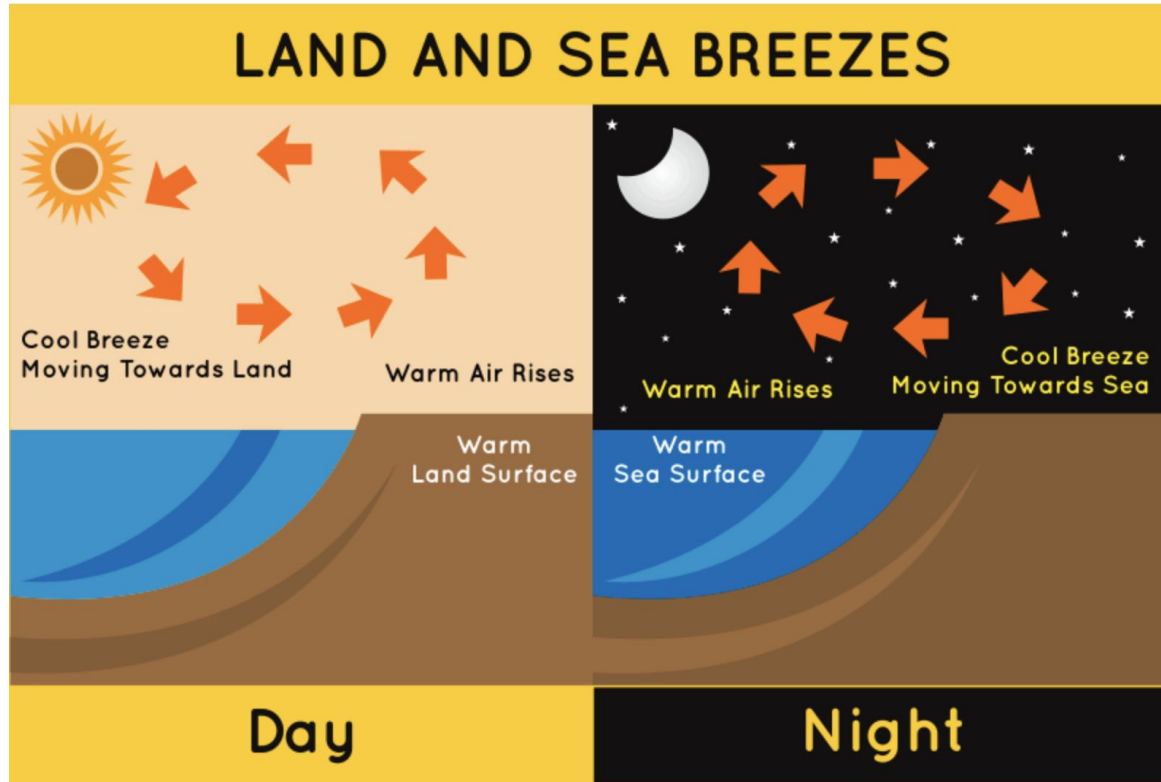
Water as a heat sink



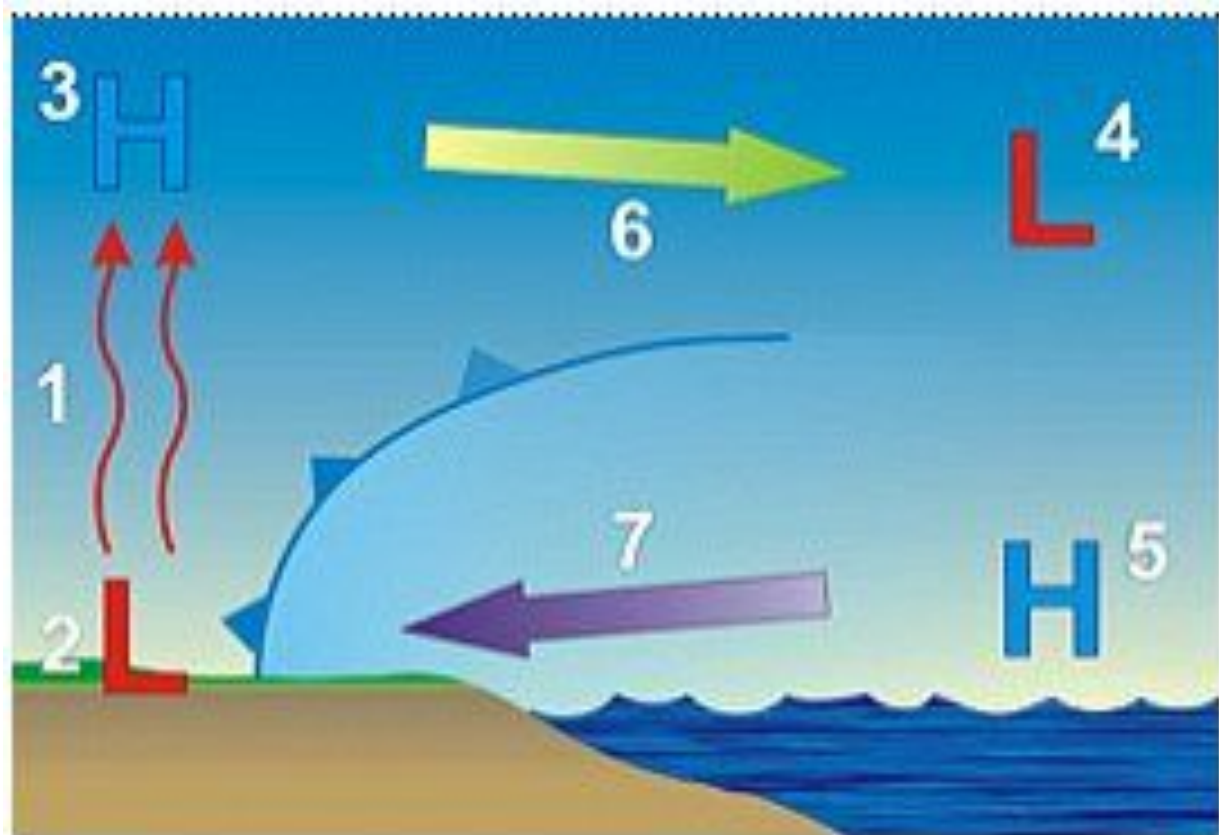
Water as a heat source



Thermal Energy Storage Capacity



Thermal Energy Storage Capacity



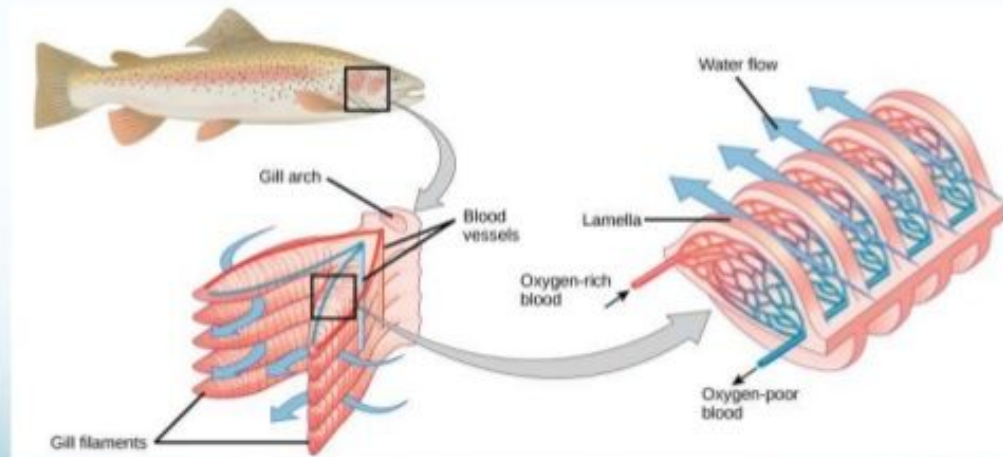
Important Properties of Water

Water as a Solvent - Liquid water dissolves a variety of compounds (transfer of nutrients, etc.)

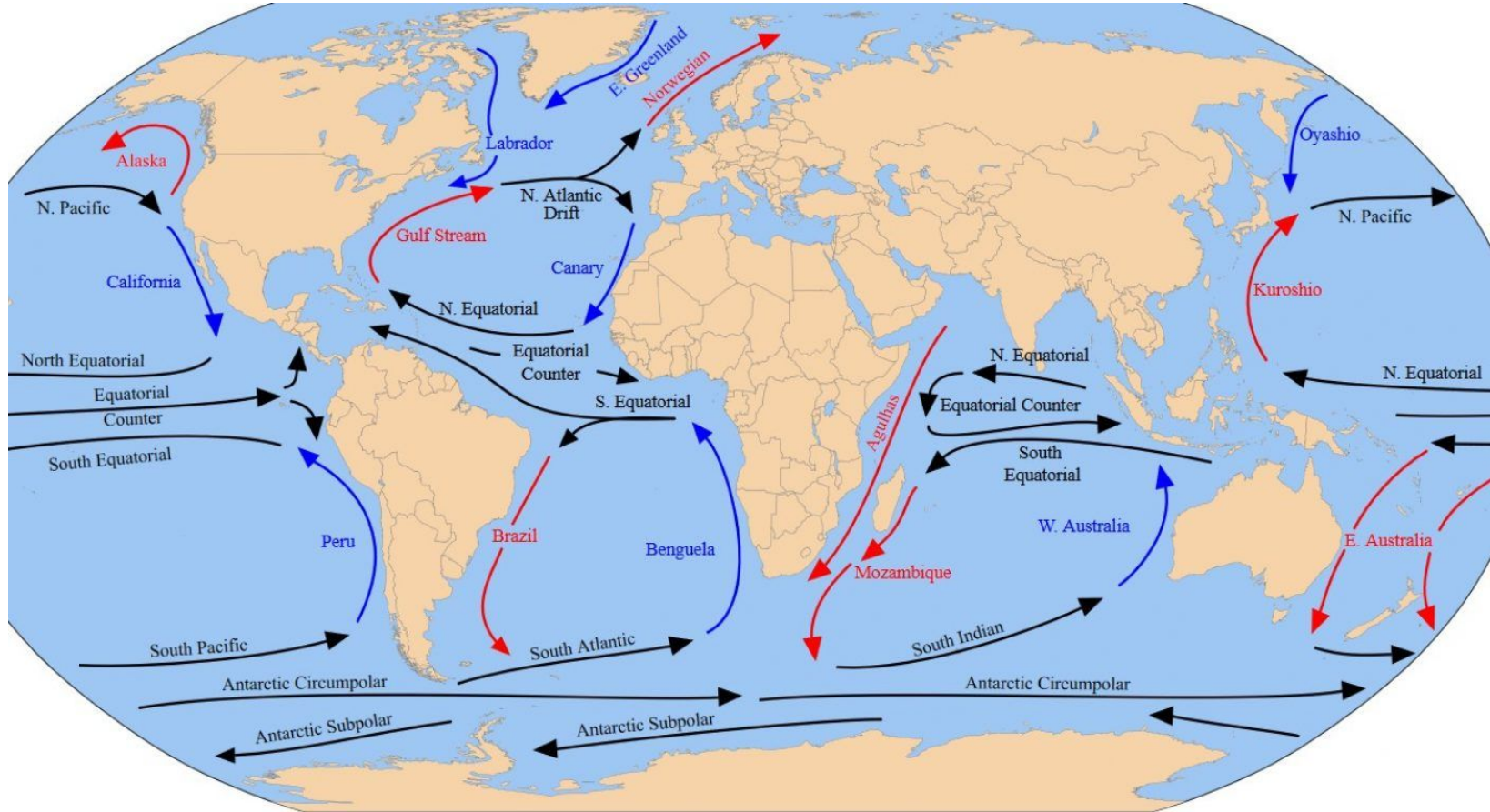
Solid Water - Water expands when it freezes, and ice floats due to its lower density

Water as Solvent in Environment

How do aquatic organisms get oxygen and carbon dioxide?

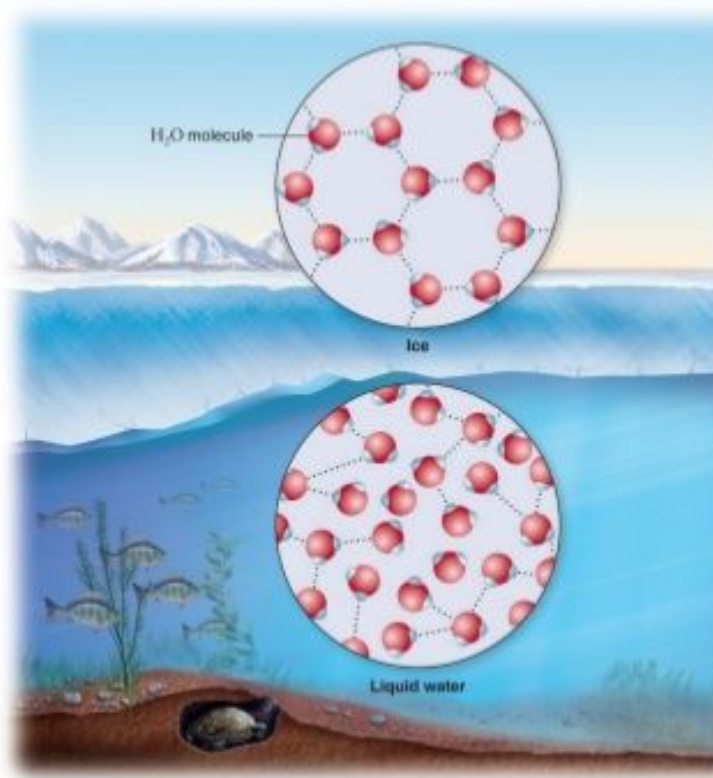


Ocean Currents & Water as a Solvent



Water Is Essential to Life

Water expands as it freezes



Water expands when it freezes.

-Ice is less dense than liquid water.

-Aquatic life survives the winter.

Locations of Freshwater Resources

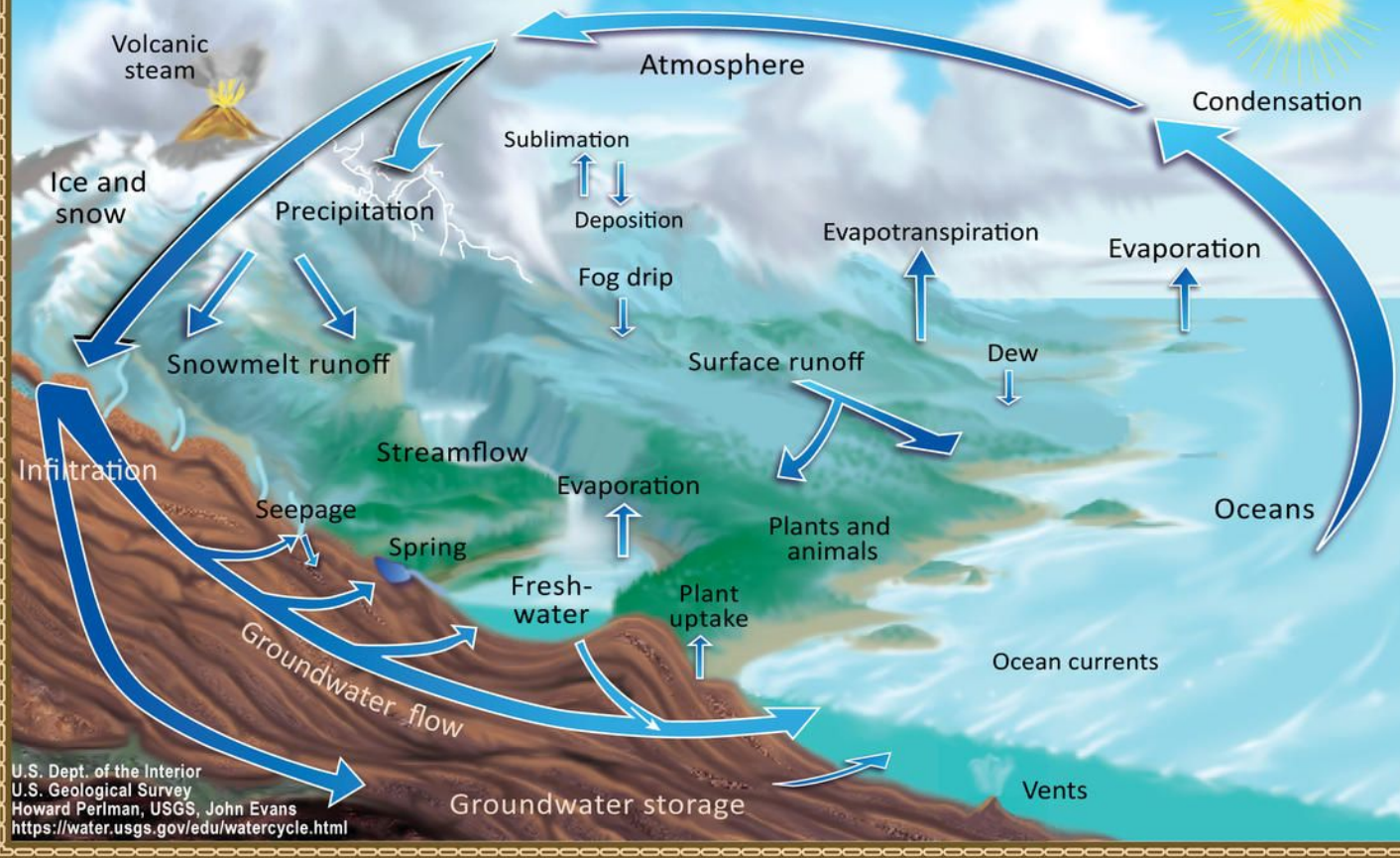
Where do we find Freshwater on Earth?

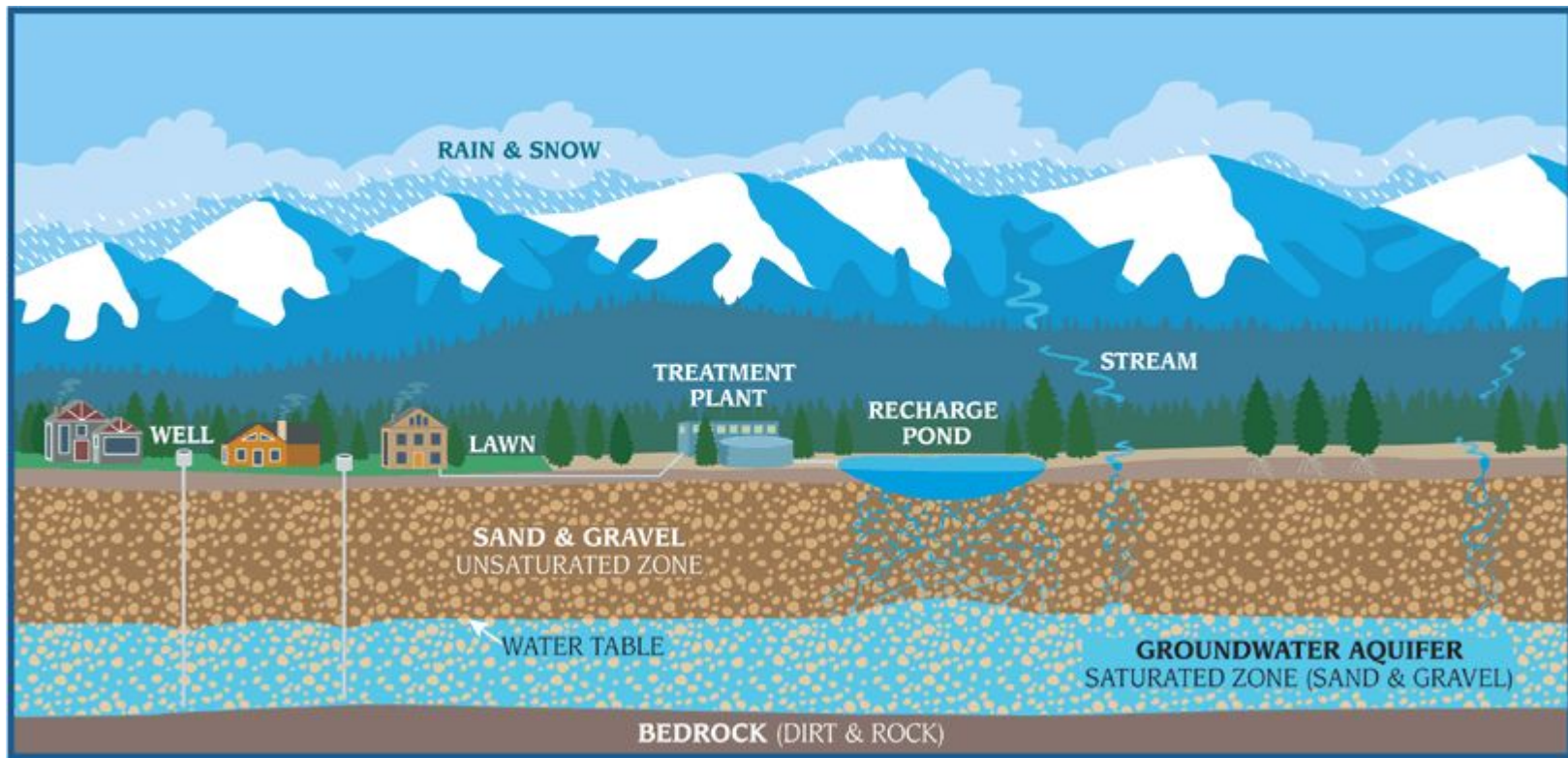
Locations of Freshwater Resources

Surface Water - Streams, Rivers, & Lakes

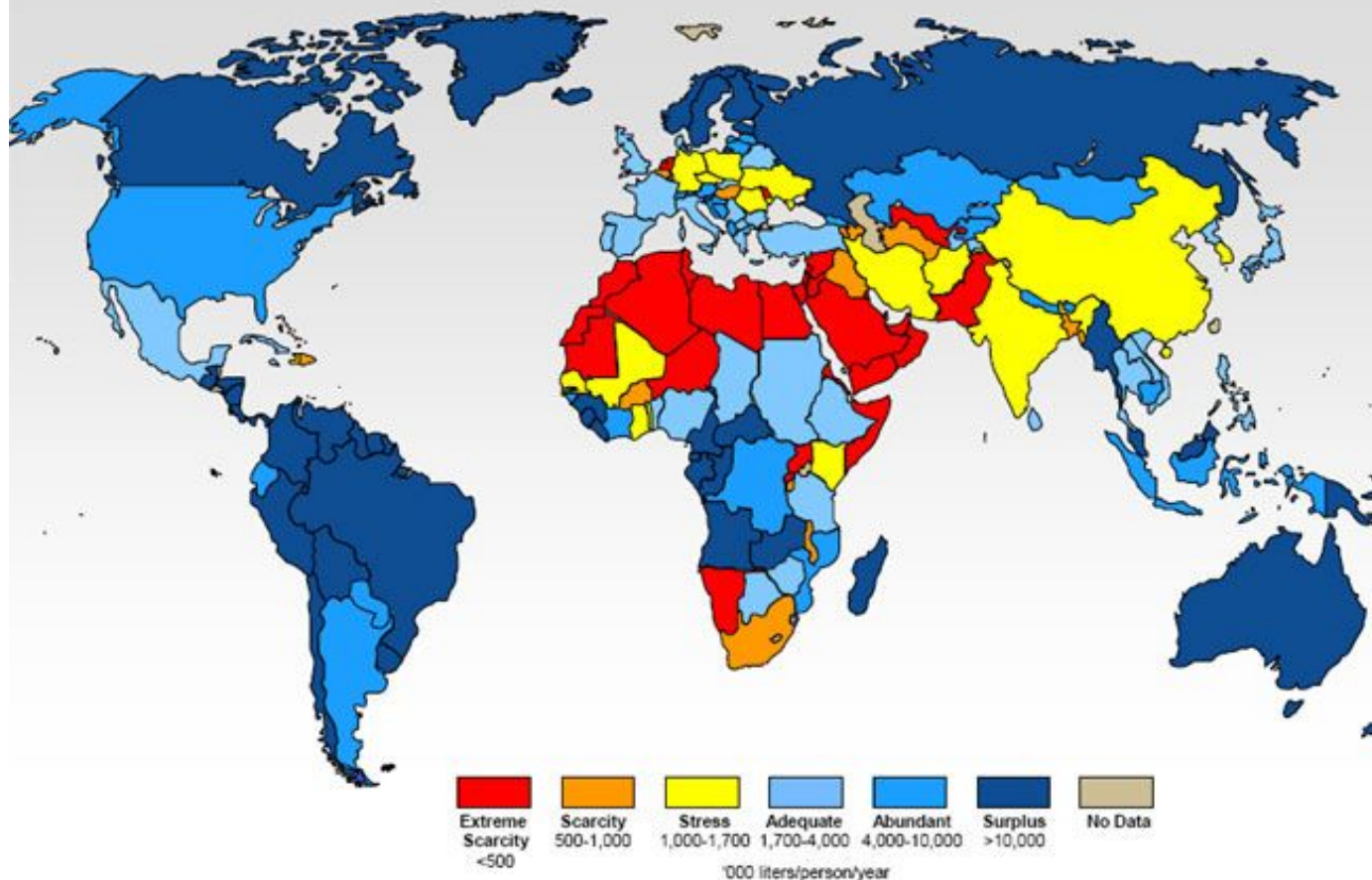
Groundwater - Aquifers supplied by watersheds

The Water Cycle





Global Per Capita Water Availability (2025)



Source: 'Global Water Initiative' (June 2005), GEF International Waters Conference, The Coca-Cola Company

Management of Freshwater Resources

How do we manage Freshwater Resources?

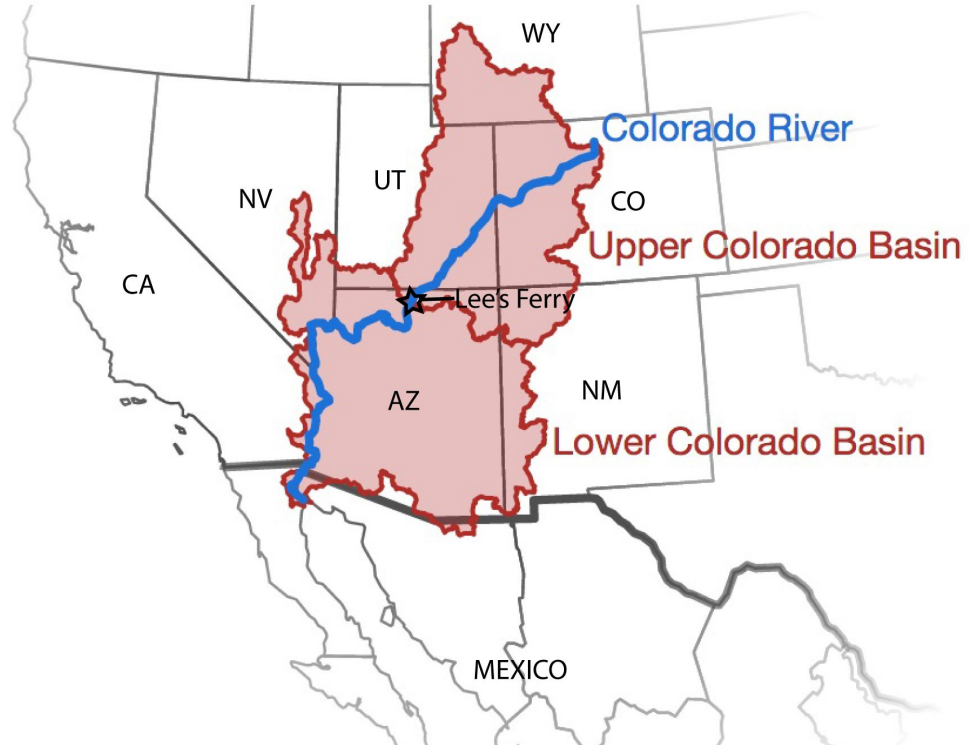
Management of Freshwater Resources

Dams - Built across rivers

Reservoirs - capture river water, rain, and snow melt behind dams

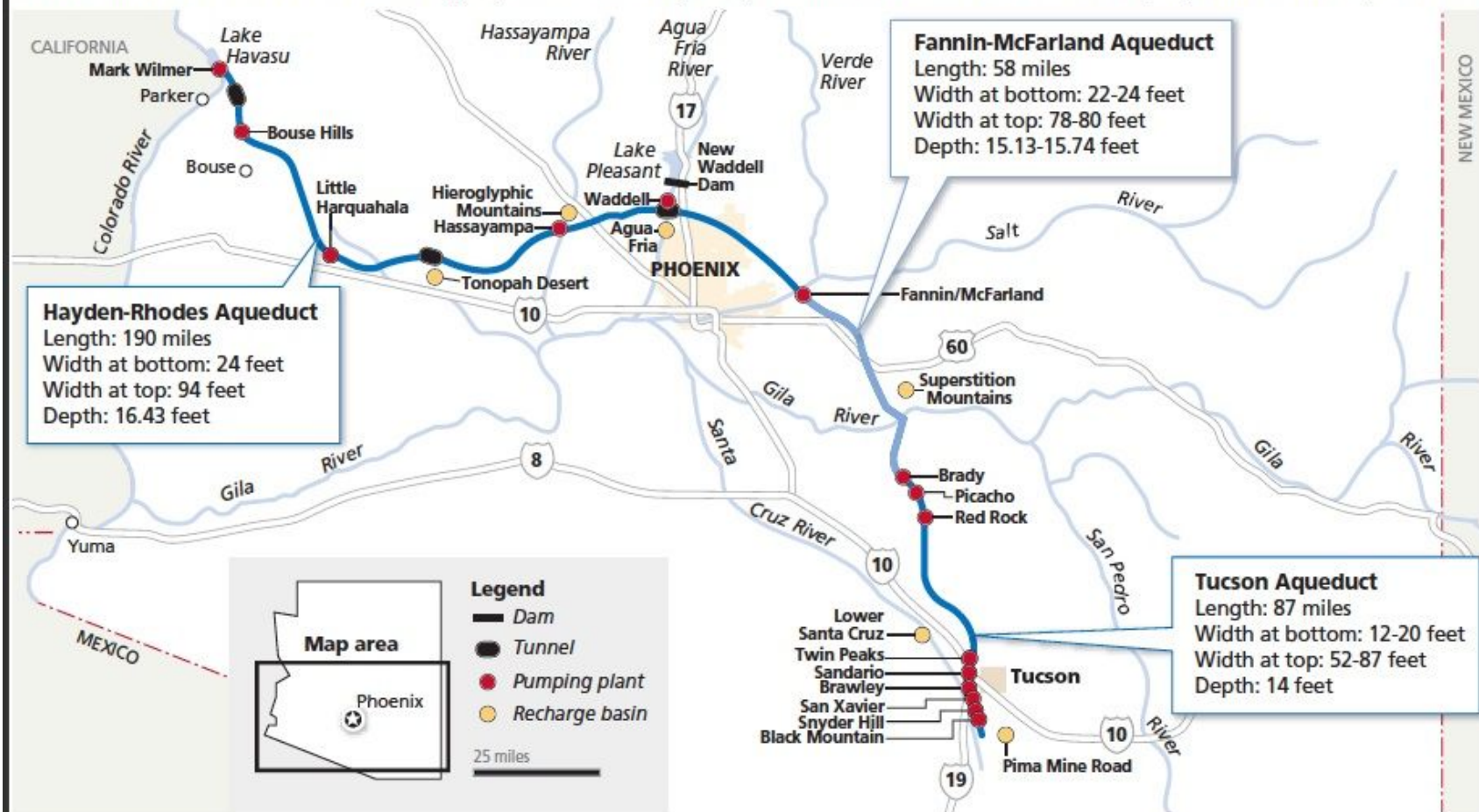
Aqueducts - series of canals to transport water from one place to another above ground

Colorado River & the Hoover Dam

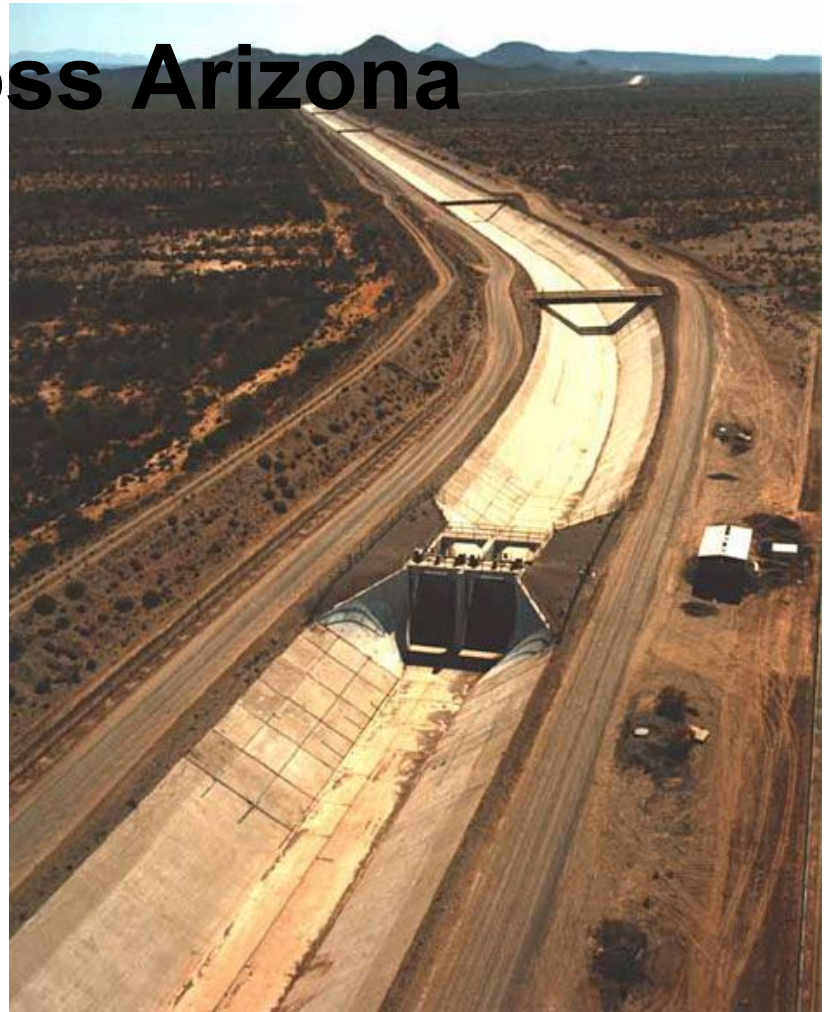
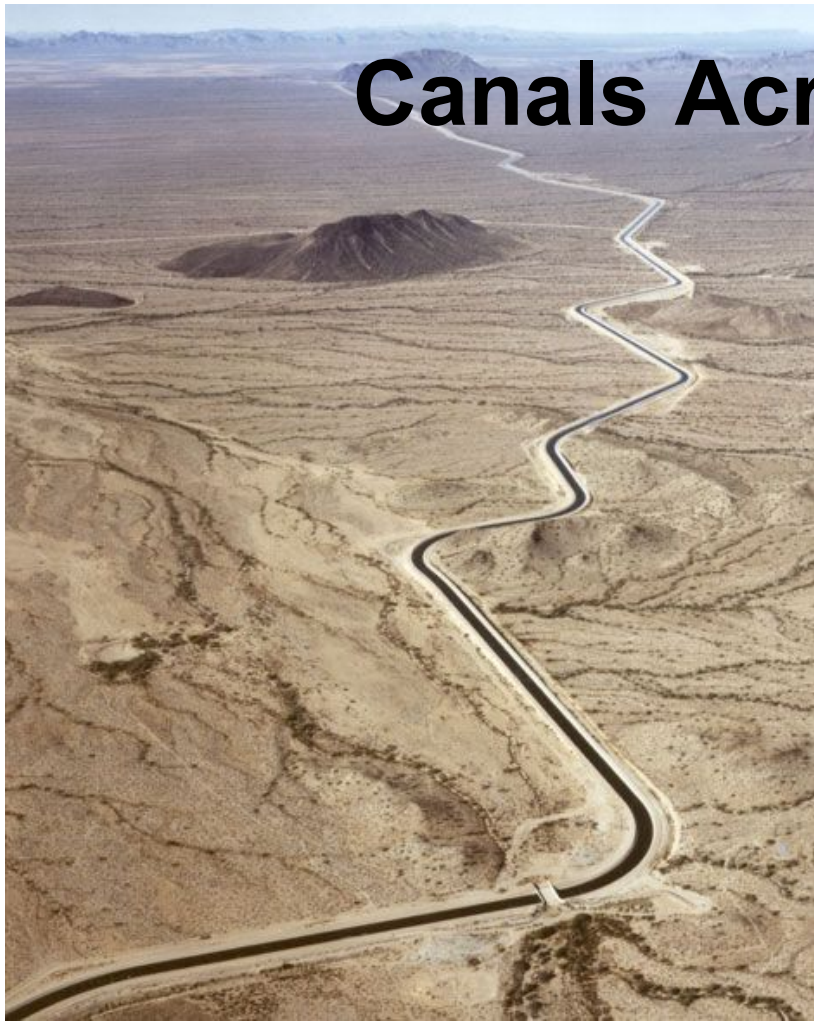


CENTRAL ARIZONA PROJECT CANAL

The CAP Canal has allowed the cities it serves to grow, even in arid country. It begins at the Colorado River and moves water uphill, from Lake Havasu (elevation 447



Canals Across Arizona



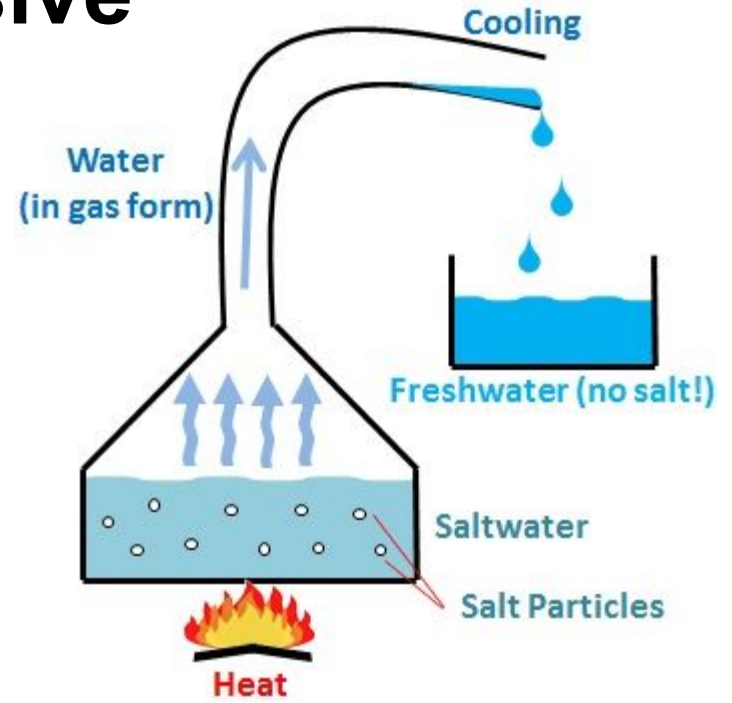
Saguaro Lake



Desalination

The process of removing salt from seawater to provide freshwater

Heating Water is Expensive



Solar Desalination is a Slow Process

