Groundwater Protection in McHenry County
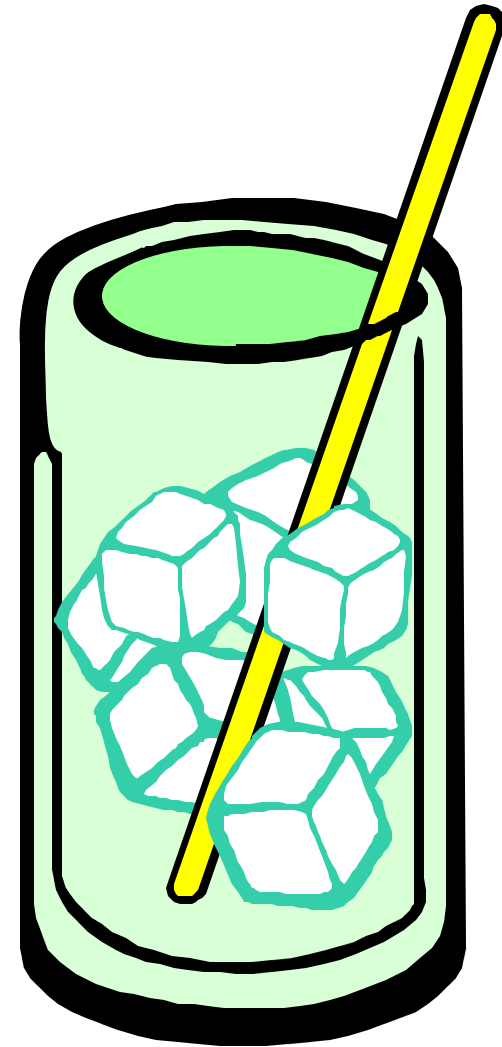
Towards A Sustainable Water Supply

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What Is Groundwater? Aquifer?

- **Groundwater** is water located beneath the ground surface in soil pore spaces.

- **Aquifer** is the geologic formation of sand, soil and gravel where groundwater is stored

- Water fills the pores between sand and gravel soils

- Water can be collected by drilling a well

- A well acts as "a straw in a glass"

What is hydrology?

Hydrology (from Greek: Υδωρ, *hudōr*, "water"; and λόγος, *logos*, "study") is the study of the movement, distribution, and quality of water throughout the Earth, and thus addresses both the hydrologic cycle and water resources.

The Hydrology of a region contains two different kinds of water that have a mutual influence:
1. Surface water
2. Groundwater

The Hydrologic Cycle

The **hydrologic cycle**, describes **the continuous movement of water on, above, and below the surface of the Earth.**

→ **The water cycle is truly a "cycle,"** there is no beginning or end.

→ Water can **change states** among **liquid, vapor, and ice** at various places in the water cycle

→ The **balance of water on Earth** remains fairly constant over time there is always the same amount of water on the surface of the earth.
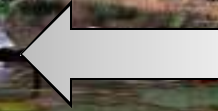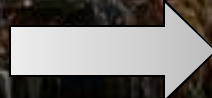
Consider this...

CONDENSATION PRECIPITATION

EVAPORATION TRANSPIRATION
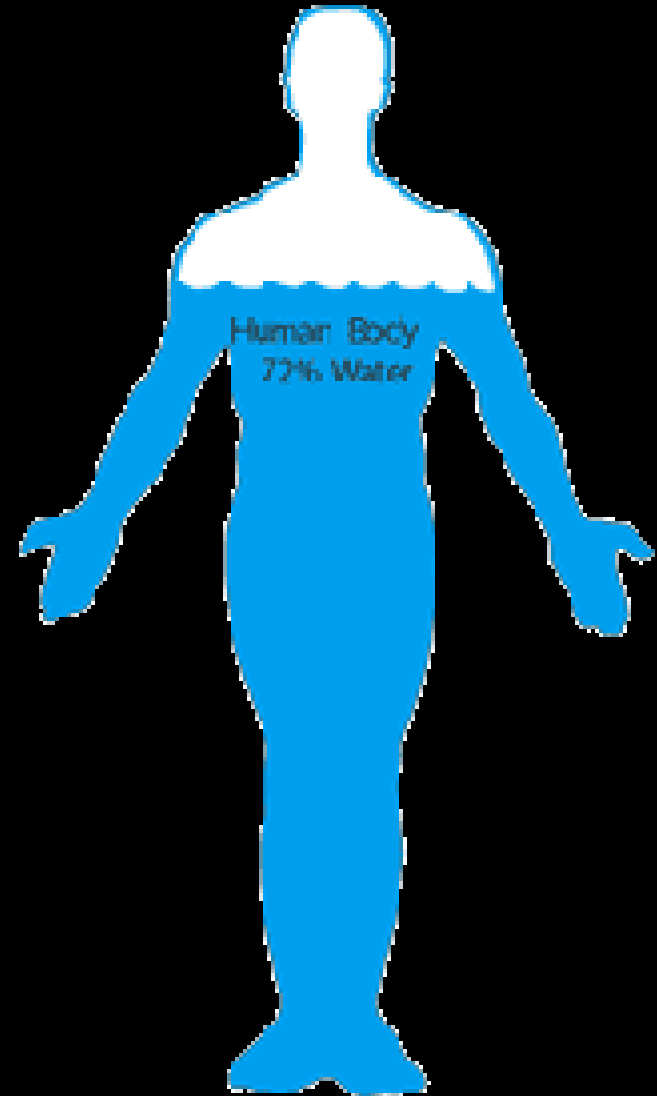
RUNOFF INFILTRATION

GROUNDWATER SURFACE WATER WETLANDS/FENS

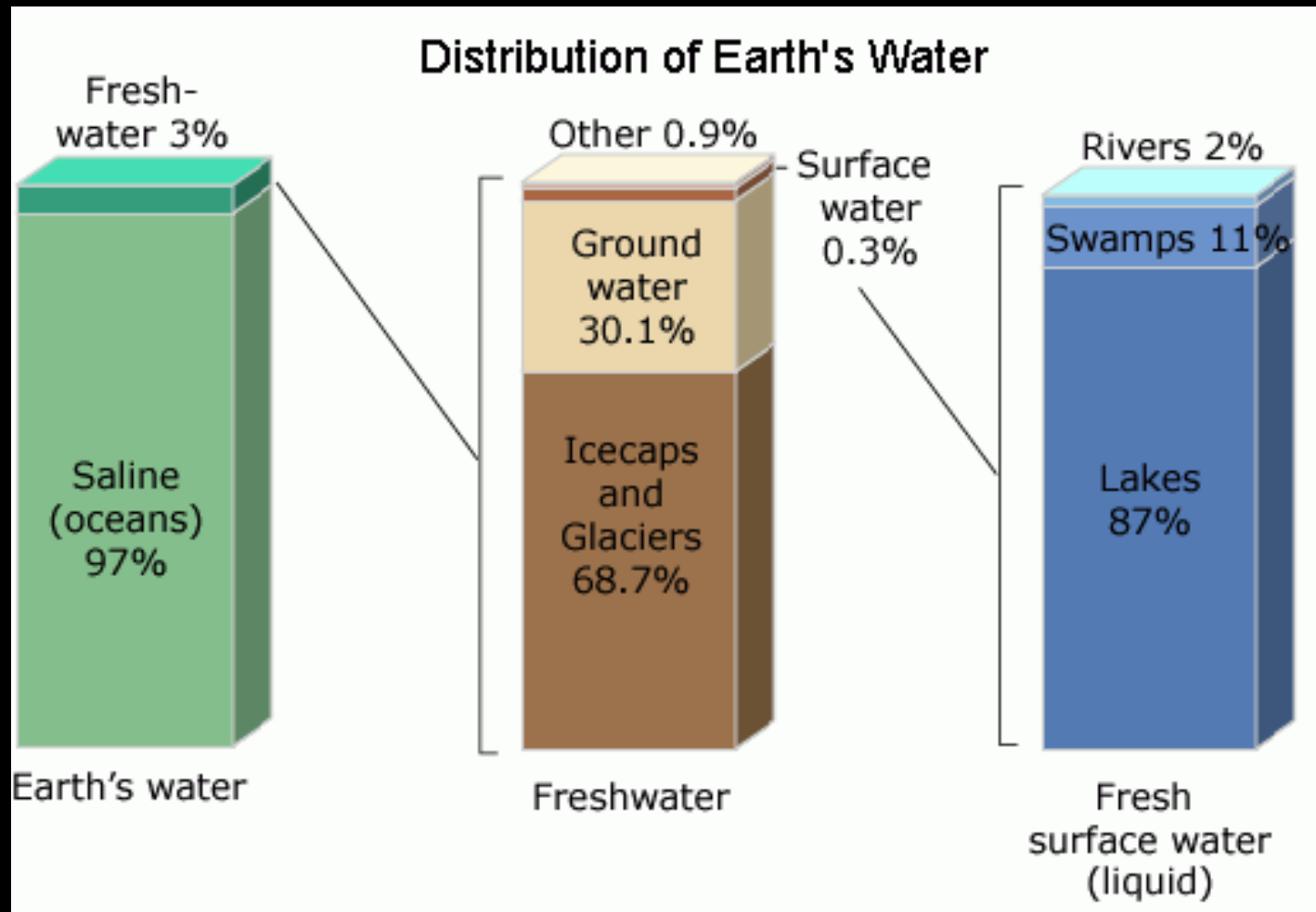Providing habitat for all living things
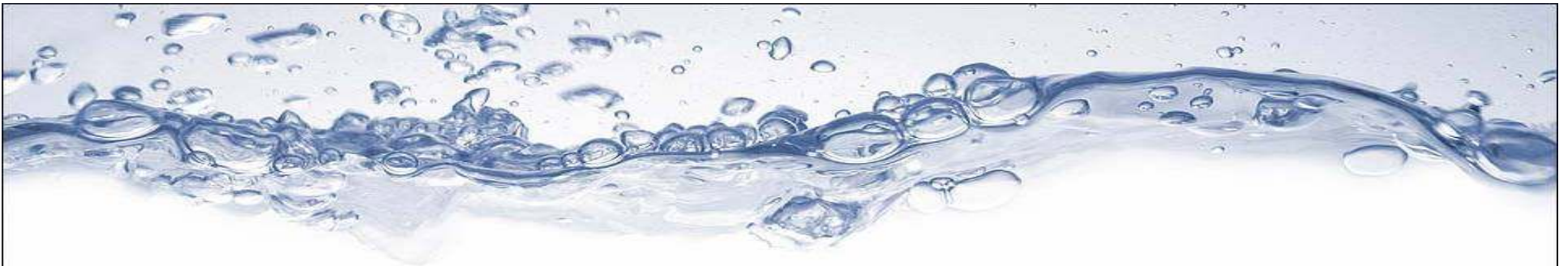
The average human requires 10.5 cups of water per day!

Human Body
72% Water

Water is a Finite Resource

Only a tiny fraction of the water on the earth is fresh

Distribution of Earth's Water

Water is Vulnerable…

Drought…

Pollution...

Pollution...

Mismanagement
Impervious Surfaces, Overuse & Irrigation, Sprawl

Vulnerabilities lead to…

Potential Water Shortages
Water Quality Concerns