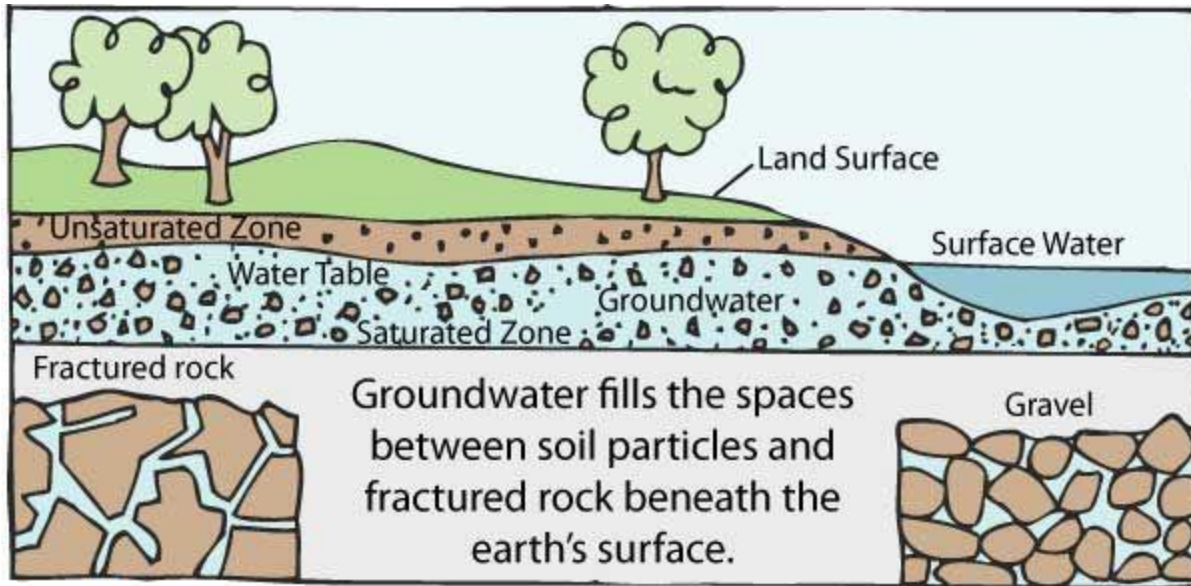
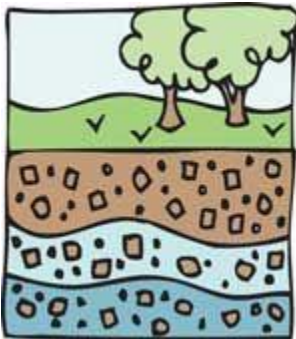


WHAT IS GROUNDWATER? Source: groundwater.org

Groundwater is used for drinking water by more than 50 percent of the people in the United States, including almost everyone who lives in rural areas. The largest use for groundwater is to irrigate crops.



The area where water fills the aquifer is called the saturated zone (or saturation zone). The top of this zone is called the water table. The water table may be located only a foot below the ground's surface or it can sit hundreds of feet down.



Aquifers are typically made up of gravel, sand, sandstone, or fractured rock, like limestone. Water can move through these materials because they have large connected spaces that make them permeable. The speed at which groundwater flows depends on the size of the spaces in the soil or rock and how well the spaces are connected.

Groundwater can be found almost everywhere. The water table may be deep or shallow; and may rise or fall depending on many factors. Heavy rains or melting snow may cause the water table to rise, or heavy pumping of groundwater supplies may cause the water table to fall.

Groundwater supplies are replenished, or **recharged**, by rain and snow melt that seeps down into the cracks and crevices beneath the land's surface. In some areas of the world, people face serious water shortages because groundwater is used faster than it is naturally replenished. In other areas groundwater is polluted by human activities.



Water in aquifers is brought to the surface naturally through a spring or can be discharged into lakes and streams. Groundwater can also be extracted through a well drilled into the aquifer. A well is a pipe in the ground that fills with groundwater. This water can be brought to the surface by a pump. Shallow wells may go dry if the water table falls below the bottom of the well. Some wells, called artesian wells, do not need a pump because of natural pressures that force the water up and out of the well.

In areas where material above the aquifer is permeable, pollutants can readily sink into groundwater supplies. Groundwater can be polluted by landfills, septic tanks, leaky underground gas tanks, and from overuse of fertilizers and pesticides. If groundwater becomes polluted, it will no longer be safe to drink.

MORE ABOUT THE HYDROLOGIC CYCLE

Source: groundwater.org



Hydrologic Cycle

When water from the earth's soil, plants, and water bodies turns into water vapor, the process is called **evaporation**. This invisible vapor, most of which comes from the world's oceans, travels up into the atmosphere and condenses, forming clouds. This is called **condensation**. The vapors in the clouds condense more and more until they form water droplets.

Water vapor continues to combine with the water droplet until it is too heavy to stay in the sky any longer. The water falls to the earth as **precipitation**, such as rain, hail, sleet, and snow.



Recharge

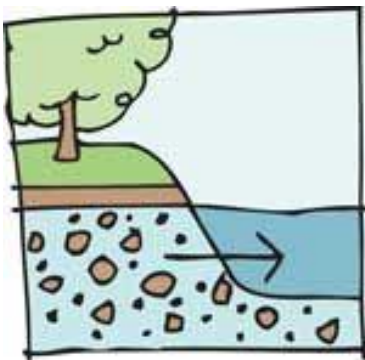
When precipitation reaches the earth's surface, some of it will flow along the surface of the land and enter surface water like lakes, streams, and rivers, as **runoff**.

The rest of it soaks or percolates into the soil, called **recharge**. The water then moves down through the soil as groundwater and is stored in the aquifer below.

Runoff



Once the water has joined the aquifer, it doesn't stop there. The groundwater slowly moves through the spaces and cracks between the soil particles on its journey to lower elevations. This movement of water underground is called **groundwater flow**.



Discharge

Eventually, after years of underground movement, the groundwater comes to a **discharge** area where it enters a lake or stream and becomes surface water. There, the water will once again be evaporated and begin the cycle again. Water has been transported through the water cycle for millions of years and will continue this cycle forever. In the water cycle, water is constantly on the move.