

Aquifers, our water source for today and tomorrow.

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If you don't already know where your water comes from, you may want to find out. Did you know that most of our drinking water comes from Florida's aquifers? So, you may ask, what is an aquifer? The *American Heritage Science Dictionary* defines aquifer as "An underground layer of permeable rock, sediment (usually sand or gravel), or soil that yields water. The pore spaces in aquifers are filled with water and are interconnected, so that water flows through them. Sandstones, unconsolidated gravels, and porous limestones make the best aquifers. They can range from a few square kilometers to thousands of square kilometers in size." Basically an aquifer is an underground reservoir of water. Because of the groundwater, which is released from our aquifers, natural ecosystems, agriculture, outdoor recreation and human health are sustained.

Florida's aquifers are among the most productive in the world, producing over 8 billion gallons of water each day. They supply almost all of the state's drinking water and feed into over 600 natural springs. There are different types of aquifers and Florida's aquifers vary in depth, composition, and location, and are divided into two general categories: Surficial and Floridan.

Surficial aquifers are not as deep as the Floridan aquifer. They are generally less than 100 feet underground and are made up of shells and sand. In these aquifers, the groundwater moves constantly from areas of recharge to places of discharge. They are affected by the local water table and can be influenced by drought and rainfall. Because they are fairly shallow, surficial aquifers may become polluted by the activities that take place above ground. Highlands County has sandy soils which allow the water above to percolate down into these areas somewhat rapidly. These aquifers are the most easily polluted and may not be suitable for drinking water.

The Floridan aquifer underlies about 100,000 square miles and provides water to many major cities and rural areas in the southeastern United States. This aquifer is considered one of the most productive in the world. In Highlands County it is located about 200 feet below the surface. In contrast to surficial aquifers, the groundwater in the Floridan aquifer is contained under pressure by a bed of impermeable sediments. When the water pressure is high enough, the groundwater breaks to the surface and a spring flows. Because of this, the water temperature and flow from these springs are fairly constant.

Groundwater in the aquifer is replenished by surface water that leaches into the limestone bedrock. When the aquifer is full, surface water drains into nearby lakes, rivers and oceans where it evaporates back into the atmosphere and eventually precipitates to the surface again.

It is very apparent now why aquifers are so vital to our existence. They are the reservoirs and natural water filtration systems for our water. However, groundwater that is stored in the aquifers is becoming more and more threatened from the dangers of pollution. It is important to remember that whatever we do above ground impacts our water below ground. For example, if oil is spilled on the ground, it will eventually penetrate through the layers until it reaches the aquifer. Pesticides, herbicides, oil, chemicals, fertilizers, salt, gases, human and animal waste all affect our aquifers.

There are many ways that you can be part of the solution in protecting our precious groundwater. Be aware of where your water comes from. Be mindful and protect your ground water from household pollutants. Make sure to follow directions when fertilizing or using chemicals around the house or try organic gardening and natural fertilizers and pesticides. Cut down on household chemical use and dispose of chemicals properly. Take used motor oil to a recycling center. Use less water – conserve whenever you can. Get involved in your community’s land use planning and zoning decisions.

Our groundwater is a vital resource and it takes several hundred to several thousand years for polluted ground water to be cleansed by natural recycling. Ecologist Lee Talbot once said “Treat the earth well. It was not given to you by your parents; it was loaned to you by your children.”