



BEST PRACTICES

How is Groundwater Connected to Streams & Rain?

In the Pacific Northwest we are known for salmon, evergreen trees, mountains and a lot of rain! With so much rain, did you know that 98% of the water we drink in Thurston County comes from groundwater?

What is Groundwater?

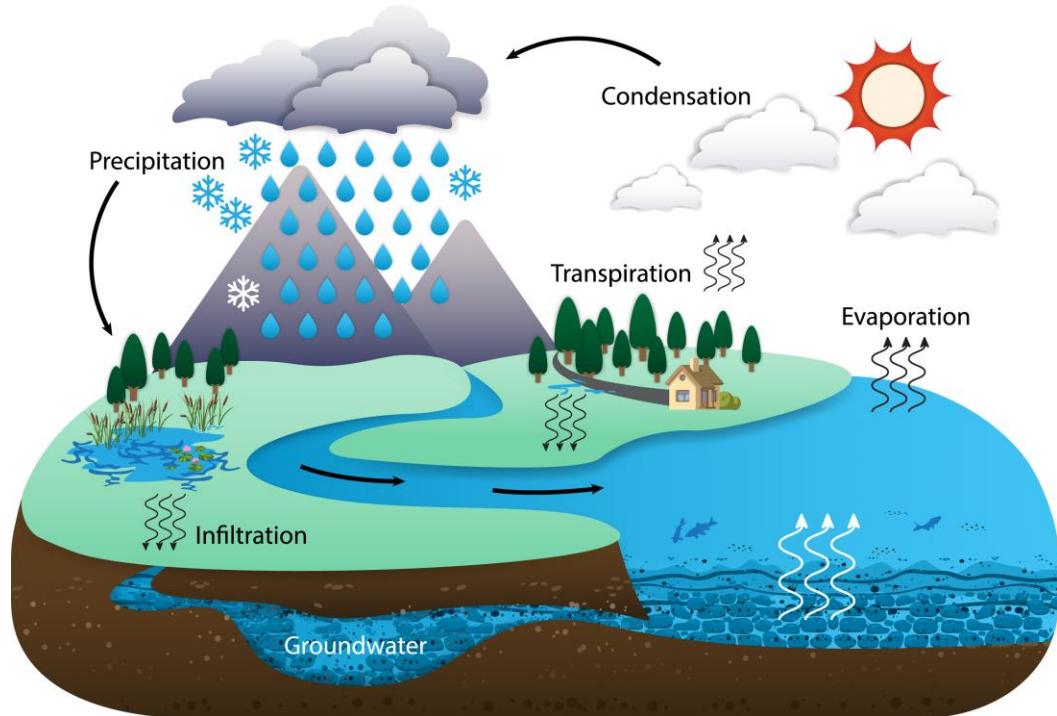
Groundwater is the water found under the Earth's surface. It is stored in and moves slowly through geologic formations of soil, sand and rocks called aquifers.

Groundwater supplies are replenished, or recharged, by rain and a little bit of snowmelt that soaks down into the spaces, or "pores," in the soil.

Groundwater keeps our streams flowing.

Sixty to ninety percent of the water in our streams comes from groundwater. While it is true that rainwater does flow into streams during heavy rains, it's groundwater that keeps our streams flowing, especially during hot, dry summer months!

When rainwater soaks into the ground, it becomes groundwater. Some of it flows slowly underground and seeps into streams, feeding them the nice, cold-water fish depend on! The rest flows deeper into underground aquifers. The majority of the water we use at home comes from those aquifers.



Groundwater levels are lower than average.

Despite receiving some heavy mid-winter rains, we only received an average amount of our annual rainfall this past fall and winter. We did not get enough winter rain to make up for previous years' droughts. Thus, we "lost" water storage in our groundwater supplies.

The light springtime rains we are currently receiving will likely not make up for this groundwater re-supply shortage. Historically the new growth of plants and trees in spring tends to uptake most of our light spring rains before it can soak into the ground and replenish groundwater levels.

What does this mean for our streams this summer?

Current streamflow levels are below normal and we are not even into the dry season yet! If current trends continue, we may be headed not just for a summer/fall drought, but for near record lows in some of our streams and underground wells. This is because our groundwater levels have not been re-supplied by rains to average levels for the past couple of years. Thus, there is less groundwater available to recharge our streams in the hot, dry summer months.

When stream levels are low the summer sun heats up the water more quickly. This isn't good for streams or salmon. And, if stream levels are lower than normal going into the fall, then this would not be good for fall run salmon, such as chum, who need plenty of cool water in streams to dig their nests and lay their eggs.

Rainfall levels are below average for most sites in Thurston County

As of April, most of the rainfall monitoring sites in Thurston County received below average rainfall amounts. The chart below shows rainfall levels for three sites in Thurston County.

SITE NAME	WY2020	10 YR AVG	DIFFERENCE	%
Yelm	21.15	23.39	-2.24	90%
Summit Lake	49.25	54.45	-5.20	90%
Olympia Airport	35.61	34.17	1.44	104%

- The precipitation is in inches.
- The WY2020 column is rain from Oct. 2019 – Feb. 2020. The next column shows the 10-yr. average for each site for those same months.
- The Yelm site is 2" less than normal and Summit Lake is 5" less than normal. The airport site is a little above average. (This reflects that rainfall varies across the County.)
- What's important to note is that we are moving into the less wet time of year and some areas of the County are already below average in rainfall.

How can you help our streams and salmon?

1. **Plant native trees along streams (at home or with Stream Team).** Trees help shade streams and keep water temperatures cooler.
2. **Plant native or drought-tolerant plants in your landscape.** These types of plants use less water than more water-loving species.
3. **Aerate your lawn and top dress with fine compost.** Let your lawn go golden during the summer. But remember to water 1" each rainless month!
4. **Take your car to a commercial car wash.** They use less water than washing your car at home, and they capture the dirty water so it doesn't flow into storm drains or streams.
5. **Use less water at home— switch to water-saving appliances and fixtures.** Check with your local jurisdiction to see if you qualify for any water-saving rebates. If you are a LOTT wastewater customer, you can qualify for free water-saving kits or rebates by visiting <https://lottcleanwater.org/programs/conservation-rebates/offers-and-rebates/>.

Source: Stream Team News, Summer 2020