

A Word From the Watershed: Water Quality Is Everyone's Responsibility

By Corrie Aiuto

The Upper Nehalem Watershed Council welcomes you to a new year and a new decade! This month we will cover a topic that is timeless and relevant today: water quality. Clean, fresh water is a precious resource, necessary for life, easily taken for granted, and consistently degraded by human use. Learning about how we pollute our water and how to reduce our impact is vital to preserving our freshwater resources for human and aquatic life.

To understand how much humans impact water quality we must first look at our water sources. The United States Geological Survey estimates that over 96% of all water on Earth is saltwater and of the approximately 2.5% freshwater, most is locked in polar ice, glaciers, permanent snow, and groundwater. That means less than 1% of less than 3% of all water resources exist on Earth's surface in lakes, rivers, and wetlands. The surface freshwater we rely on to sustain life is replenished by rainfall, snowmelt, and underground aquifers.

water. Before water is treated it can contain sediment, organic matter, bacteria, and many other substances. Some of these are benign and may even be beneficial, such as certain minerals, but some can be harmful in high enough concentrations.

In 2012, the Oregon Health Authority and the Department of Environmental Quality tested 14 drinking water sources in the Vernonia area – seven groundwater and seven surface water. Their results showed that out of over 230 chemicals tested for, 12 were detected, all in low concentrations that posed no significant health risks. Included in the findings were cholesterol and e.coli that are all found in human and animal waste. Overall, even considering the 12 chemicals detected, we are in a fortunate location and our fresh water sources are fairly clean.

Our city drinking water is pumped from Rock Creek into the water treatment plant. There sediment is filtered out and the water treated with chlorine to kill harmful bacteria. Then it is pumped into reservoirs where it sits

es into the water, oftentimes unwittingly. Soaps and detergents, pesticides and herbicides, food scraps, cosmetics, lotions and fragrances, prescription and over-the-counter drugs, automobile fluids, and plastics are just a few of the materials found in our water that only humans produce. Identifying potential sources of pollution is sometimes easy and obvious, like laundry or dish soap, which wash away in wastewater. Other chemicals, such as pesticides, are washed by the rain into streams, groundwater, or wastewater systems making it difficult to trace and remedy. Things like unmetabolized pharmaceuticals pass through the human body and when flushed down the toilet, encounter sewer treatment systems unequipped to remove them from the water.

Treating wastewater is an important, yet imperfect task. Wastewater treatment facilities are quite sophisticated, but are still not able to capture, remove, or treat for all substances. Ingredients in pharmaceuticals and personal care products (often referred to as PPCPs or PCPs) can be particularly difficult to remove along with industrial, energy, and manufacturing waste.

Contaminated water is dangerous to human and aquatic life in many ways. Pollutants damage neurological, reproductive, respiratory, or hormonal systems and some have been linked to cancer. Some substances are biodegraded within a few days while others remain in the water indefinitely due to the strength of their chemical bonds; an example of these are per- and polyfluoroalkyl substances (PFAS). Used in non-stick cookware, waterproof clothing, and firefighting foam, they are known as "forever chemicals."

We as individuals and as a community must embrace practices that protect our water sources from pollution and maintain good water quality. It is important that we each think about how we use our water, what products we use, and what condition the water is in when we send it downstream. Here are just a few tips to keeping our water cleaner:

- 1. Reduce.** Much good can come from simply reducing our consumption of resources.
 - Reusable coffee cups, water bottles, and produce bags reduce plastic waste.
 - Reduce cooking waste by using the

ugly parts of your vegetables.

- Use the minimum amount of soaps and detergents. Choose phosphate free detergents.
- Reduce fertilizers, herbicides, and pesticides by using them only as a last resort. Contact Chip Bubl with the OSU Columbia County Extension Service in St. Helens for alternatives.
- Keep your vehicles well maintained to reduce oil and fuel use.
- Take 10 minute showers instead of 20.
- Repair and repurpose clothes rather than buying new. Take pride in conserving; look for new and creative ways to reuse and reduce.

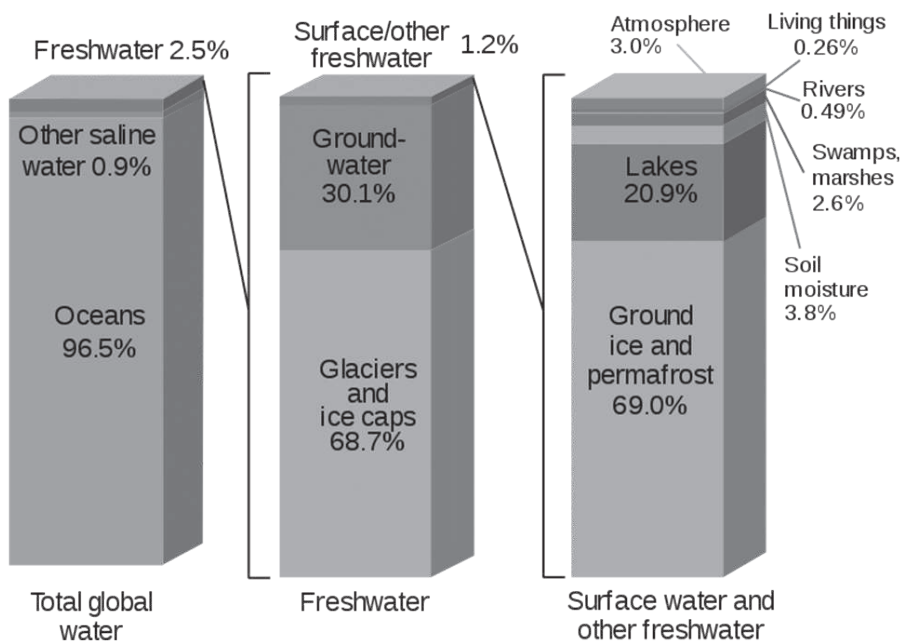
2. Dispose of things properly. Knowing how, when, and where to dispose of wastes can have a significant positive impact on our environment.

- Compost non-meat food waste.
- Live by the rule that if you're unsure if something is safe to go down a drain or a toilet, don't dump or flush. Cooking grease should be captured and put into the garbage, never the sink. Chemicals, automotive fluids, and paints should be treated as hazardous waste and segregated. The Columbia County Transfer Station in St. Helens accepts electronics, batteries, oil, paint, and many other items for free. Call (503) 397-9811 for disposal details.
- Recycle properly. Make sure you are following guidelines for recyclables.
- Take old prescription and over-the-counter medications to drug take-back facilities. The City of Vernonia Police Department has a green drop box in City Hall for old and unused pharmaceuticals (they do not accept medical sharps or liquids).

It can be difficult to take greater responsibility for our own environmental impact; once we begin to learn about all the ways humans alter the Earth it can seem an enormous and impossible task to change for the better. But when each of us tries, even a little, we make a positive impact.

For more information about the Upper Nehalem Watershed Council and our work, questions about water quality, or concerns contact us at (503) 429-0869 or visit our website at unwc.nehalem.org.

Where is Earth's Water?



Water Distribution Graph, United States Geological Survey

Here in Vernonia, our rivers and streams are mostly replenished by rainfall and groundwater seepage with snowmelt contributing little. Many households in and around Vernonia have access to city water, which is pumped from Rock Creek, and others utilize well

until it is drawn out by city users turning on their faucets. Once humans use that water, whether by washing our clothes or bodies, hydrating us or our pets, or even watering our gardens, things get decidedly less clean.

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