

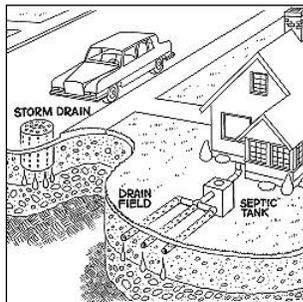


## THE SPOKANE AQUIFER

The 370 mile Spokane Valley-Rathdrum Prairie Aquifer provides all the water used in the Spokane-Coeur d'Alene metropolitan areas. The EPA has listed it as a "sole source aquifer", meaning the community has no other economically feasible source of drinking water. The aquifer extends from Pend Oreille and Coeur d'Alene Lakes, under the Rathdrum Prairie of Idaho and the Spokane Valley of Washington, then terminates just west of Nine Mile Falls, WA. The aquifer is as much as 400 feet below the surface in northern Idaho, rising to only 30-40 feet below the surface near the east Spokane city limits. The water seen at the bottom of several Spokane Valley gravel pits is actually the aquifer.

- An aquifer is an underground region where the pore space between and within sand, gravel or rock is saturated with water. That water can be pumped from a well to provide a useful supply.
- As much as 650 million gallons of water flow from Idaho into Washington each day. It has one of the fastest flow rates in the United States, flowing as much as 60 feet per day in some areas. The volume of the entire Aquifer is about 10 trillion gallons, making it one of the most productive aquifers in the country. The aquifer is recharged by several bordering lakes, precipitation, and from water applied to the land over the aquifer. Hillside runoff also contributes to the recharge.
- The Spokane River and the aquifer interact extensively. During high flow, water seeps from the riverbed to the aquifer along reaches between Coeur d'Alene and Upriver Dam. Around Upriver Dam and downstream, the Spokane River gains water from the aquifer. The springs along the Little Spokane River are fed by the aquifer.

There are no known protective rock or silt and clay layers to prevent the percolation of gardening chemicals or other chemical contaminants into the aquifer. The geology of our aquifer provides a direct path from the land surface to the groundwater. Bacterial and chemical contamination found in wells drawing from the aquifer verifies the system's vulnerability.



### Potential Problems from Homes, Yards and Gardens

Irresponsible use of pesticides, herbicides and fertilizers poses a threat to the aquifer. These chemicals enter the water stream by leaching through the soil or through runoff entering the storm water drains. Contamination of water by activities like the misuse of yard and garden chemicals is referred to as non-point source pollution. Unlike industrial discharges, which can be traced to a single source, non-point pollution comes from dispersed sources. The small amounts associated with non-point may seem insignificant but can add up to an aquifer contamination problem.

Visit our website at <https://extension.wsu.edu/spokane/master-gardener-program/home-lawn-and-garden/>  
e-mail your garden questions to: [mastergardener@spokanecounty.org](mailto:mastergardener@spokanecounty.org)

*Extension programs and employment are available to all without discrimination. Evidence of noncompliance may be reported through your local Extension office.*

### **What can you do to protect your drinking water?**

- Use pesticides responsibly.
- Identify the pest problem and choose the most environmentally sound solution.
- Consider using organic fertilizers that release nutrients slowly. This reduces the potential leaching of soluble nitrates.
- Consider skipping a fertilizer application if your lawn meets your personal standards for color and growth. Instead of applying a large amount of fertilizer once a year, fertilize lawns and gardens in smaller amounts several times a year.
- Plant less area in lawn and more in flowerbeds, shrubs, trees or ground covers. These plants usually require fewer chemicals to maintain than the same area of turf, therefore reducing the amount of contaminants that may enter the aquifer.
- Sandy soils drain rapidly, allowing dissolved chemicals to move quickly into the groundwater. Add organic material to the soil to increase the water and garden chemical holding capacity of the soil.
- Over-watering can wash away soil, pesticides and nutrients that can end up in storm drains. Do not water at a rate faster than the soil can absorb. The type of soil will determine how you water your plants. In sandy soil, use less water per application but water more frequently. In clay soil, do not water so there is overflow. Allow the water to penetrate the soil. Slow, deep, infrequent watering is better for root development than frequent, shallow watering in loamy soil. A general rule is ½ inch or less of water per hour to avoid runoff. Small containers placed around the garden can be used to measure the amount of water applied by sprinklers.
- Do not use gardening chemicals near open bodies of water such as streams, rivers or lakes. To reduce runoff to storm drains, avoid watering impermeable surfaces such as concrete, asphalt or compacted ground. Water from these hard surfaces can carry contaminants into the water system.
- Dispose of all chemicals properly. Avoid having leftovers. Buy only chemicals you need and will use. Don't pour them down the drain or in a storm sewer. If household and garden chemicals cannot be used in a timely manner, contact a designated drop off site for hazardous materials.
- Use integrated pest management (IPM) practices to maintain plant health and reduce pests to a tolerable level. IPM practices include:
  - Use disease and pest resistant varieties of plants.
  - Keep plants healthy: properly water and fertilize, aerate the soil, rotate crops and add organic matter to the soil.
  - Use biological control methods, such as insects that eat other insects, to help with pest populations.
  - Match plants with growing conditions: plant shade lovers in shady areas and choose plants adapted to our climate.
  - Watch closely for signs of pests or disease and then identify the problem and its stage of development before deciding on a treatment strategy.
  - Use chemical methods as a last resort, choosing least toxic compounds such as horticultural oils, soaps and botanical insecticides.

[www.spokaneaquifer.org](http://www.spokaneaquifer.org)

[www.spokanecounty.org/1219/Spokane-Valley-Rathdrum-Prairie-Aquifer](http://www.spokanecounty.org/1219/Spokane-Valley-Rathdrum-Prairie-Aquifer)

**Take a “Virtual Tour” of the aquifer at**

<https://www.spokaneaquifer.org/virtual-tour-of-important-places-around-the-svrp-aquifer/>