Protecting Groundwater

The King County Department of Natural Resources and Parks and Public Health – Seattle & King County work together with many cities and water suppliers to protect groundwater quality and quantity.

From developing policies that protect groundwater supplies and collecting groundwater data, to testing wells and monitoring flows, to providing education and technical assistance to residents, our shared goal is to ensure safe, renewable, and reliable water for ourselves, our children, fish and wildlife.

For more information about groundwater contact your local water supplier or the Groundwater Protection Program at:

King County Department of
Natural Resources and Parks
Water and Land Resources Division

201 S. Jackson St., Suite 600
Seattle, WA 98104
PH: 206-296-6519
FAX: 206-296-0192
http://dnr.metrokc.gov/groundwater
TTY Relay: 711

This information will be made available in alternate formats for individuals with disabilities upon request.

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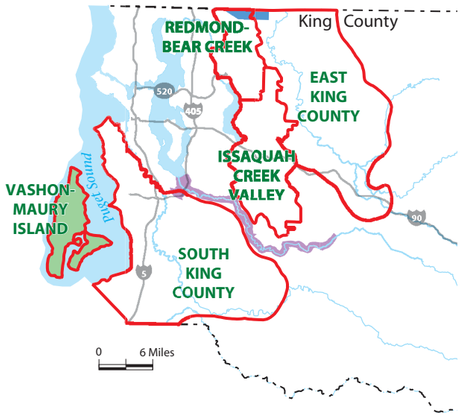
Groundwater in King County

In King County, approximately one-third of our 1.8 million residents rely on groundwater for their drinking water. In fact, almost all public water supplies from a single family well to large public water systems in King County depend on groundwater to some extent.

Much of King County soil is made up of loose sand and gravel or "unconsolidated material" left by ice age glaciers. This material is great for storing water and makes up the most common type of an aquifer.

In King County, there are five specific areas that have been designated as Groundwater Management Areas under state law to help manage groundwater quantity and quality. Among King County's numerous aquifers there are three federally designated sole-source aquifers (SSA), meaning a majority of the water in those areas comes from underground sources.



- Cedar Valley (Renton Aquifer) (SSA)
- Cross Valley Aquifer (SSA)
- Vashon-Maury Island Aquifer System (SSA)
- King County Groundwater Management Areas

Department of
Natural Resources and Parks
Water and Land Resources Division
201 South Jackson Street, Suite 600
Seattle, WA 98104

King County

Groundwater – the Hidden Resource

Drink it, protect it, conserve it.

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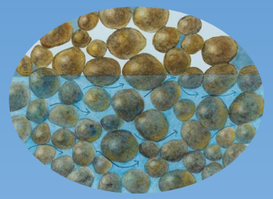

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What is Groundwater?

Groundwater is the buried treasure of earth's natural resources. It is essential to all living things —humans, fish and wildlife—yet it moves hidden beneath the earth's surface. Out of sight. Out of mind. But not out of danger.

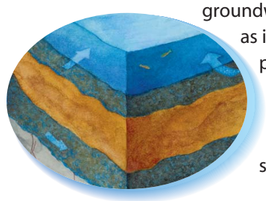
As water moves through the hydrologic cycle—from rain clouds, to water bodies, to aquifers below the earth's surface—it changes forms many times. Raindrops filter through the soil, saturating it and recharging aquifers. This water—groundwater—supplies our wells with drinking water and discharges into our streams and rivers. In the dry summer months groundwater provides water essential for fish.

Groundwater… as Pure as You Keep it

Drink It! Drinking water is healthy; drinking unsafe water is not. Routine testing of water wells for bacteria, nitrates and other chemicals helps ensure the safety and health of your water supply.

Protect It! What you put on the ground is what you put into our groundwater. Hazardous materials. Pesticides. Fertilizers. Oil or gasoline. Anti-freeze. All of these pollutants, if dumped on the ground or in your septic system, can infiltrate the soil and seep into our groundwater. Pollutants can contaminate the water we drink and damage fish and wildlife habitat. Handle and dispose of hazardous materials properly. Use lawn and garden products sparingly or, better yet, use natural yard care practices.

Conserve It! Our region's groundwater is limited…so don't waste it! Protecting groundwater quantity is just as important as protecting its quality. Everything you do to conserve water today means that more is saved for tomorrow.



Groundwater – the Hidden Resource

Drink it, protect it, conserve it.

Atmosphere & Area of Runoff

Water changes forms—from liquid to gas—as it moves through the above ground phase of the hydrologic cycle.

Condensation

Transpiration

Evaporation

Precipitation

Runoff

Surface water

Water Table & Shallow Aquifers

Groundwater saturates sand and gravel, defining this area as an unconfined aquifer, filling it up to the water table. Groundwater now begins to flow horizontally toward rivers and lakes. Wells withdraw water from this saturated soil, drawing down the water table in a "cone of depression."

Sand & Gravel

Wells

Unconfined aquifer

Cone of depression

Confined Aquifer (Deep Aquifer)

Deeper, older layers of sand and gravel, covered by a confining layer of soil, are filled with groundwater and considered confined aquifers. These aquifers sometimes contain artesian wells where pressure may cause water to flow to the surface naturally.

Sand & Gravel

Artesian wells

For more information:
http://dnr.metrokc.gov/groundwater

Groundwater & the Hydrologic Cycle

Area of Infiltration

Water begins to infiltrate loose soil on its way to recharge aquifers. This area is the most influenced by human activities. Small pockets of less permeable soil halt infiltration, creating small perched aquifers.

Underground storage tanks

On-site septic systems

Recharge

Perched aquifers

Confining Layers

Layers of clay and silt slow groundwater movement due to their low permeability. These confining layers separate different aquifers and provide very little water for well withdrawal.

Clay & Silt

Little to no water for withdrawal

Bedrock

Lying deep beneath the earth's surface, bedrock is a layer of hardened material that usually yields less water than sand and gravel.

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