

# Protecting Alaska's Water Resources

GWQ-00548

## Changing Alaska Landscapes

Our urban centers and rural communities are growing. Understanding how this affects water quality, habitat and salmon runs can help us protect and maintain the quality of life we hold dear. As someone said, "We are the top predators and if the salmon are asking questions, so should we!" Here are some guiding principles followed by things you can do to protect Alaska's water.

## What is a Watershed?

A watershed is an area of land that drains into a common body of water. The receiving body can be as small as Goose Lake in Anchorage, or as large as the Yukon River and the Bering Sea.

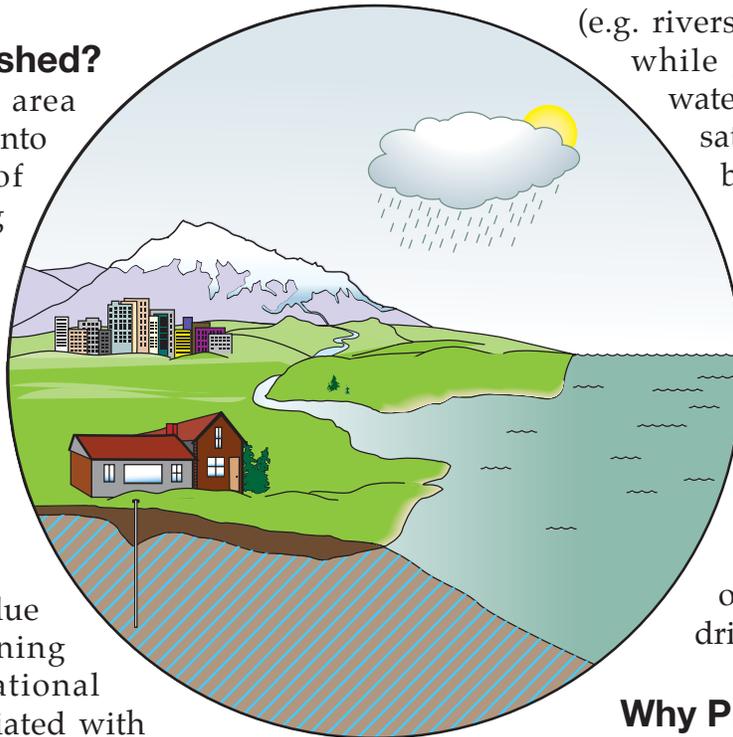
## Living in a Bathtub

As Alaskans we value clean water, returning salmon and recreational opportunities associated with healthy wetlands, riparian ways, ponds, streams and lakes. Whether at home, the cabin, or at fish camp what goes around comes around – especially if you are downhill from a pollution source. Your location within a watershed determines how human activities and natural events influence the quality of

your well water, and the water found in local rivers, creeks, and groundwater supplies. It is like living in the bathtub where everyone contributes to water quality. Just as you might want to preview those ahead of you in line for the bathtub, you may wish to pay attention to changes in your watershed.

## Surface Water and Groundwater

Surface water is the water above ground (e.g. rivers, lakes, and streams) while groundwater is the water stored underground, saturating small spaces between particles of soil and rock. Groundwater is available all year round and provides the water used in 80 percent of Alaska public water systems. In many cases the natural quality is so high that well water requires little or no treatment prior to drinking.



## Why Protect Alaska's Water Resources?

Through careful planning and good stewardship of the land, we increase the likelihood that water quality is maintained during our lifetime and for future generations. It is cost effective – fixing contamination problems is expensive and cleanup is rarely completely satisfactory.

## What is a Public Drinking Water System?

Any source of water, including collection system, treatment works, storage facility, or distribution system — including the container used to distribute the water — is considered a public drinking water system. They include those serving more than one single-family residence, a factory, office, or similar facility. In Alaska, public water systems are divided into three classes according to the number of individuals using the system and the nature of use. Public drinking water systems are operated according to state regulations.

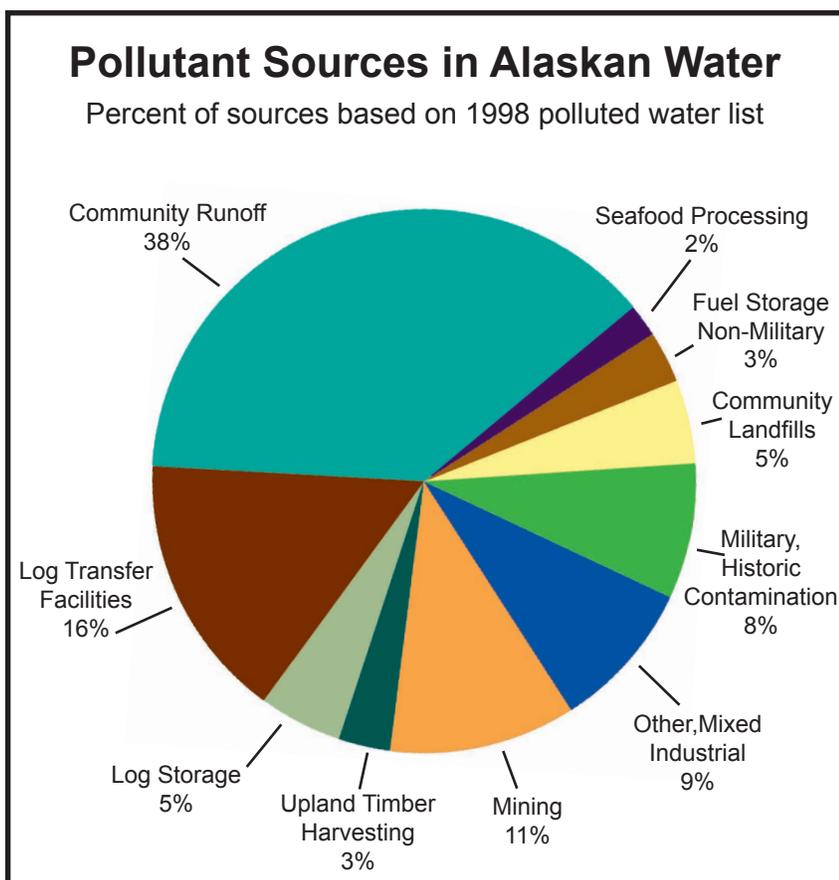
## Common Causes of Surface and Groundwater Pollution

Industrial chemicals, urban runoff, hazardous home chemicals, or waste products leaching from poorly maintained septic tanks may travel

with surface water (especially after heavy rain) or seep into groundwater. Dumps and landfills, underground fuel storage tanks and badly constructed storage lagoons are common causes of water and subsistence resource contamination in Alaska.

Soil type plays an important role in determining how, where and when contaminants travel. Clay soils, which are made up of tiny particles, slow or block downward movement of water. Sandy soils are made up of large particles and water seeps through easily without filtering out or decomposing pollutants.

Rising global temperatures are affecting permafrost, which may eventually allow contaminants to move more widely and freely than they currently do.



Adapted from the Alaska Department of Environmental Conservation

## Alaska's Clean Water Actions Plan (ACWA)

This is a state agency approach to better manage and protect the quantity and quality of Alaska's water and aquatic habitat. Its primary approach includes:

1. Assessment of the effectiveness and gaps in Alaska's water stewardship programs
2. Assessment of the health of Alaska's surface and groundwaters
3. Provision of direct funding for data collection or corrective action projects that protect, restore or recover the valued uses of waters that are at risk of being polluted.

# Things You Can Do!

- **Reduce and Ensure Proper Use, Storage and Disposal of Water Polluting Chemicals**

Household cleaners, lawn and garden fertilizers, pesticides, phosphate detergents, solvents, paints and preservatives help to make our life easier. They each, however, exact a cost on water quality and act indiscriminately against beneficial organisms. There are a growing number of less toxic alternatives (e.g., citrus-based products). Keep fertilizer and pesticide use to a minimum and let good plant and animal husbandry be your ally. Work with UAF Cooperative Extension Service to apply integrated pest management techniques.

- **Pamper Your Vehicles and Heating Fuel Storage Tanks**

Watch out for petroleum products. Spills and leaks may appear small, but cumulatively they cause considerable degradation to our waterways. Check fuel storage tanks regularly for leaks and dispose of all petroleum products correctly. Most local landfills or transfer stations will accept them for free. When topping up engines with oil or fuel take the time to use a funnel so as to hit the mark every time. Junk cars reduce property values and threaten surface water and groundwater sources. Avoid pouring oil products and solvents onto the ground or into a storm drain (most Alaska storm drains connect with a local stream or lake). Wash your vehicle at a local car wash where specialized separators reduce the by-products that would otherwise enter local water bodies.

- **Use Only What You Need**

Water conservation measures don't just "save" water — they help to keep it clean! Pay close attention to water usage in the home and garden. When water is drawn from surface or subsurface sources, it generally picks up pollutants before being returned to the system. Localized areas of the Anchorage Hillside and those of the Matanuska-Susitna Borough are already experiencing lowered water tables due to increased water demand. Impermeable surfaces (e.g. large area of homes, wide roads and parking lots) reroute water to local creeks that would otherwise recharge the underground aquifers.

- **Use Less, Reuse and Recycle**

Use less, reuse and recycle in that order and you help to limit landfill space, cut natural resource and water use, and prevent contamination. Landfills produce some of the most potent and polluting chemical cocktails. Support cleanup and recycling programs when talking with friends, business contacts and government representatives.

- **Clean Up Pet Waste**

Scoop the poop to prevent unwanted nutrients and bacteria in public places and nearby water bodies. Bag it and dispose of it by flushing it down the toilet, by burying it or by placing it in the trash.

- **Educate Your Family and Friends**

Strong values and water-friendly lifestyles are contagious. Share them. Volunteer with local groups working on watershed stewardship projects. If you live by a lake, talk to neighbors about developing a lake management plan. Support community council, borough and assembly actions designed to provide creek/lake buffers or improved planning. Call your local Cooperative Extension Service office — we can help!

# Cooperative Extension Service Water Resources Program

CSREES Pacific Northwest Regional Water Quality Program Land Grant Universities, Water Research Institutes and EPA Region 10 have formed a partnership to provide research and education to northwest communities about protecting or restoring the quality of water resources.

Watershed Planning, Rural Safe Drinking Water

and Home Environmental Assessment Extension is involved in several ongoing grant projects sharing water quality information and expertise with families in rural and urban settings. If we can't answer your questions we will help you find someone who can! For more information come in to the Cooperative Extension Service office at 2221 E. Northern Lights Boulevard, Suite 118, or call us at 786-6300.

Try our website at [www.uaf.edu/ces/water](http://www.uaf.edu/ces/water)

## Additional Resources:

**Alaska Department of Environmental Conservation** 269-7500  
555 Cordova  
Anchorage, AK 99501  
[www.state.ak.us/dec/](http://www.state.ak.us/dec/)

**Alaska Department of Natural Resources** 269-8431  
550 W. 7th Ave., Suite 1400  
Anchorage, AK 99501  
[www.dnr.state.ak.us/](http://www.dnr.state.ak.us/)

**Anchorage Waterways Council** 277-9287  
1565 Bragaw St., Suite 205  
Anchorage, AK 99508  
[www.anchoragecreeks.org/](http://www.anchoragecreeks.org/)

**Environmental Protection Agency** 271-5083  
222 W. 7th Avenue #19  
Anchorage, AK 99513  
[www.epa.gov/region10/](http://www.epa.gov/region10/)

**Natural Resource Conservation Service** 271-2424  
510 L Street, Suite 270  
Anchorage, AK 99501  
[www.ak.nrcs.usda.gov/](http://www.ak.nrcs.usda.gov/)

**Soil & Water Conservation District** 271-2424  
510 L Street, Suite 270  
Anchorage, AK 99501  
[www.aswcds.org](http://www.aswcds.org)

**U.S. Geological Survey** 786-7000  
[www.alaska.usgs.gov/science/water](http://www.alaska.usgs.gov/science/water)  
4230 University Drive, Suite 201  
Anchorage, AK 99508

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*For more information, contact your local Cooperative Extension Office or Fred Sorensen, Extension Faculty, Natural Resources and Community Development, at 907-786-6311 or [dfes@uaa.alaska.edu](mailto:dfes@uaa.alaska.edu). This publication was originally written by Malcolm Ford in 2002. Technical review by Fred Sorensen in April 2009.*

**Visit the Cooperative Extension Service website at  
[www.uaf.edu/ces](http://www.uaf.edu/ces) or call 1-877-520-5211**