



Applying knowledge to improve water quality

Pacific Northwest

Regional Water Program

A Partnership of USDA CSREES
& Land Grant Colleges and Universities

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PNWWATER 078

Safe Drinking Water:

Water for Emergencies



Recent events such as the hurricanes in the Gulf of Mexico have reminded many of us how vulnerable we are to catastrophic disasters. During emergencies, basic life necessities that we take for granted can be cut off immediately and if we are not prepared physically or know how to respond properly it can be life threatening.

Water is essential for life. It is the transportation system in our bodies, moving nutrients and other needed materials to and within each cell. In an emergency such as floods and earthquakes we need to make sure that a clean supply is readily available. Often in such emergencies the local supply system is shut down or damaged. In flood conditions, in particular, the ample supplies of surface water may be contaminated.

It is estimated that the average person needs 1 gallon of water per day. There should be at least 3 days

worth of water available for every person in case of emergency. Water should be stored in plastic containers manufactured for food use; i.e. plastic bottles, juice or soda bottles, water jugs with screw caps, or camping carriers. The containers should be stored away from cleaning supplies, fertilizers, or other products with strong odors. Replace stored water every 6 months.

In an emergency, if you have not stored water ahead of time and the water source is not safe, you can use other sources found inside your home.

First turn off the water supply to the house to prevent contamination from the supply source. Water in the water heater (be sure to turn off the water heater before emptying it); or the toilet tank (not toilet bowl) can be used. Do not use water from the toilet tank if it has a cleaner/deodorizer in it.

Outside the house you can use rainwater; catching it directly from the sky. Be sure to use a clean food grade container. Ponds or rivers should only be used if you are certain that they have not been contaminated. Avoid water with material floating in it, if it has an odor, or is dark in color. Do not drink or attempt to treat floodwater.

Your city or your local Cooperative Extension Service (CES) office can provide a list of water testing labs if you would like your water tested.

If you are on city water it is already treated. If your water comes from a well, spring, or other surface source, treatment may be needed. Water can be treated with typical household chlorine bleach. Add 1 drop of 5.25%-6% chlorine bleach per quart and let it stand for 30 minutes. "Ultra" contains 6% chlorine bleach. Be sure the bleach you use is fragrance and soap free. The following table provides information for larger quantities of water to be treated.



Pacific Northwest Regional Water Quality Coordination Project Partners

Land Grant Universities

Alaska

Cooperative Extension Service
Contact Fred Sorensen:
907-786-6311

<http://www.uaf.edu/ces/water/index.html>

University Publications:

<http://www.alaska.edu/uaf/ces/publications/>

Idaho

University of Idaho
Cooperative Extension System
Contact Bob Mahler: 208-885-7025

<http://www.uidaho.edu/wq/wqhome.html>

University Publications:

<http://info.ag.uidaho.edu/Catalog/catalog.html>

Oregon

Oregon State University
Extension Service
Contact Mike Gamroth: 541-737-3316

<http://extension.oregonstate.edu/>

University Publications:

<http://extension.oregonstate.edu/catalog/>

Washington

Washington State University
WSU Extension
Contact Bob Simmons:
360-427-9670 ext. 690

<http://wawater.wsu.edu/>

University Publications:

<http://pubs.wsu.edu/>

Northwest Indian College
Contact: Michael Cochrane:
360-392-4299

mcocrane@nwic.edu or

<http://www.nwic.edu/>

Water Resource Research Institutes

Water and Environmental Research Center (Alaska)

<http://www.uaf.edu/water/>

Idaho Water Resources Research Institute

<http://www.boise.uidaho.edu/>

Institute for Water and Watersheds (Oregon)

<http://water.oregonstate.edu/>

State of Washington Water Research Center

<http://www.swwrc.wsu.edu/>

Environmental Protection Agency

EPA, Region 10

The Pacific Northwest

<http://www.epa.gov/r10earth/>

Office of Research and Development, Corvallis Laboratory

<http://www.epa.gov/wed/>

For more information contact Jan Seago at 206-553-0038 or seago.jan@epa.gov

The Project

Land Grant Universities, Water Research Institutes, and EPA Region 10 have formed a partnership to provide research and education to communities about protecting or restoring the quality of water resources. This partnership is being supported in part by the USDA's Cooperative State Research, Education, and Extension System (CSREES).

Our Goal and Approach

The goal of this Project is to provide leadership for water resources research, education, and outreach to help people, industry, and governments to prevent and solve current and emerging water quality and quantity problems. The approach to achieving this goal is for the Partners to develop a coordinated water quality effort based on, and strengthening, individual state programs.

Our Strengths

The Project promotes regional collaboration by acknowledging existing programs and successful efforts; assisting program gaps; identifying potential issues for cross-agency and private sector collaboration; and developing a clearinghouse of expertise and programs. In addition, the Project establishes or enhances partnerships with federal, state, and local environmental and water resource management agencies, such as by placing a University Liaison within the offices of EPA Region 10.

	Amount of 5.25% to 6% chlorine bleach (in teaspoons) to use per gallon of water for purification.					
Gallons	5	10	20	30	40	50
Clear water	¼ t	½ t	¾ t	1 t	1¼ t	1½ t
Cloudy water	½ t	1 t	1½ t	2 t	2½ t	3 t

If you have a water filter (such as one you take hiking) be sure it is a microfilter not greater than 0.2 – 0.5 microns. Water can also be treated by boiling. It is recommended that the water be boiled at a full rolling boil for one full minute. Let the water cool and place in a sealable food grade container. Once the container has been opened the water should be used and not stored again for emergency use.

Boiled and stored water can have a flat taste. If it has a flat taste, pour it back and forth several times between two clean food grade containers to freshen it.

Note that these methods of treating contaminated water are only effective against microorganisms. NONE of these methods will rid the water of chemical toxins.

During an emergency when the water supply has been disrupted, it is best to assume the source has been contaminated. Take precautions by turning the water line off that enters your house to prevent back siphoning contamination. If you are not sure if the water in your pipes is contaminated or not, assume that it is and either chemically treat the water or boil it prior to using it for cooking and drinking. Water should always be stored in food grade containers.

A copy of the pamphlet entitled "Emergency Water" can be downloaded at <http://www.alaska.edu/uaf/ces/publications/> or contact the UAF Extension office at 907-786-6311.

National Water Quality Program Areas

The four land grant universities in the Pacific Northwest have aligned our water resource extension and research efforts with eight themes of the USDA's Cooperative State Research, Education, and Extension System.

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| 1. Animal Waste Management | 5. Pollution Assessment and Prevention |
| 2. Drinking Water and Human Health | 6. Watershed Management |
| 3. Environmental Restoration | 7. Water Conservation and Management |
| 4. Nutrient and Pesticide Management | 8. Water Policy and Economics |

CSREES is the Cooperative States Research, Education, and Extension Service, a sub-agency of the United States Department of Agriculture, and is the federal partner in this water quality program.