



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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In the Pacific Northwest:

Our Water Challenges

As we enter 2009 many of us are confronted with an abundance (some would say too much) of snow and/or rainfall. However, our region (Washington, Idaho, Oregon, Alaska) does face many water quantity and water quality challenges in the near future. Some of the issues that deserve immediate attention include: (1) our growing population, (2) climate change, (3) water quality in Puget Sound, (4) water for agriculture, (5) water conservation, (6) ground water protection, and (7) surface water quality. Here are some thoughts on each issue....

- 1. Growing Population Coupled with Limited Water Resources.** Despite a slowing economy, our region's population is growing much faster than most other regions in the USA. This growth provides us with water resource challenges. As our population grows we will have less available water per person assuming that our water resources remain constant. This will require us to use water more efficiently and consider options including water conservation, water reuse, improving water use efficiency in our major industries, and better water allocation strategies.
- 2. Climate Change.** A changing climate could have a significant impact on the water resources of our region. In Alaska melting permafrost may result in the loss of many lakes as the surface waters seep into the newly unfrozen ground. In Idaho, Oregon, and Washington the snowpack in the mountains may be reduced resulting in less spring runoff for hydropower generation, lower water levels in storage reservoirs, less water for irrigated agriculture, and less water in traditional shipping lanes. Even if the snowpack is not diminished, increasing spring temperatures may result in faster water runoff from the mountains that can increase the potential of floods and reduce the efficiency of water use by industry.
- 3. Puget Sound.** Many once rural areas around Puget Sound are experiencing rapid development. This increased human activity presents major storm water runoff issue challenges. Increased storm water runoff moves polluted water (nutrients, sediments, oils) off paved surfaces rapidly into the Sound. This problem could be the biggest threat to water quality in the Puget Sound.



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/>

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 Dan Burns:
360-392-4328

dburns@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.

- 4. Water for Agriculture.** The 7,000,000 acres of irrigated agriculture in Idaho, Washington, and Oregon have traditionally used about 80 percent of the water diverted from surface water sources (rivers, reservoirs) in the Pacific Northwest. However, with a growing urban and industrial demand for water, irrigation systems will have to become more efficient as some water is slowly diverted away from agriculture over the next several years.
- 5. Water Conservation.** Water conservation will become more important across the region in the future. Even in urban areas, stagnant water supplies will force consumers to conserve water in their yards and homes. Xeriscaping, the practice of landscaping yards with native plants that use less water, will become more widespread. Inside homes consumers will likely continue to install water saving devices including low flow shower heads, low flush toilets that can reduce water use by 75 percent over traditional toilets, and appliances that are more water efficient.
- 6. Ground Water Protection.** Ground water is the main source of drinking water for almost half of the residents of the Pacific Northwest. Unfortunately, several of our ground water sources have become contaminated with chemicals such as nitrates, pesticides, and petroleum-based products. Protection of these drinking water sources is currently a priority of state environmental agencies and this protection will become even more important in the future in both rural and urban areas.
- 7. Surface Water Quality.** Significant portions of our surface water resources (lakes, rivers, streams) are degraded. Additions of sediments from erosion, the addition of chemicals from industrial process, and wastes have compromised surface water quality. In some cases surface water temperatures are too high (because of vegetation removal) to support viable fisheries. All four states have passed laws that require the implementation of management strategies to improve surface water quality.

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.

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