Applying knowledge to improve water quality

Pacific Northwest

Regional Water Program

A Partnership of USDA CSREES
& Land Grant Colleges and Universities

Spring 2005
PNWWATER 058

Drought Resources

The Natural Resources Conservation Service (NRCS) maintains an extensive system to collect snowpack data in the western United States. This system is called SNOTEL (for SNOpack TELemetry). This system has been automated in the mountains of Alaska, Idaho, Oregon, and Washington since the 1980s. Data from this system is providing us with an early warning of a significant water shortfall for this summer.

As of April 14, 2005 the SNOTEL system estimated that the snowpack in the Oregon and Washington Cascades was only 25 to 45 percent of normal for April. While somewhat better, the snowpack in the Idaho mountains was only 50 to 70 percent of the long-term average.

This low snowpack has serious implications for irrigated agriculture, power generation, fish runs, and recreation associated with the large tourism industry this coming summer throughout the Pacific Northwest.

Our low snowpack will translate into low stream flows this spring which in turn will not provide enough water to fill storage reservoirs. The lack of adequate water in our reservoirs will limit the amount of water available for irrigation which in turn adversely impacts agriculture. Low stream flows will reduce the amount of hydroelectric energy produced causing our utilities to purchase higher priced energy from outside our region. Low stream flows will damage fish runs and reduce recreational opportunities (i.e. rafting, fishing, etc.) on our rivers.

Dr. Richard Koenig, the drought coordinator at Washington State University, indicated that snow levels in the Cascades in January and February 2005 put the Pacific Northwest on pace for a record drought year. Rains in March and April provided some improvement; however, the region is still faced with a major drought problem. Dryland farmers in eastern Washington, eastern Oregon, and Idaho face the prospects of diminished yields due to the lack of water.

Farmers within the Columbia Basin Project are in good shape from a water standpoint because the Columbia River Basin snowpack in the Canadian Rockies is normal. Farmers west of the Cascades in Oregon and Washington are also in better shape today compared with February as increased rainfall is filling storage reservoirs.

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
mcochrane@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, indivudual 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.

The water shortfall problem is greatest for irrigated areas east of the Cascades in Washington that depend on snowpack for their summer water needs. The Yakima Valley is a prime area of concern. To help alleviate problems in the Yakima Valley, emergency measures include: (1) trying to buy water from other basins, (2) bringing emergency wells on line, and (3) trying to pump more water from existing wells.

Land grant institutions in our region have developed materials to help citizens cope with our projected drought situation. Key university sites include:

- WSU Drought Alert Web Site: http://www.drought.wsu.edu/
- UI Drought Web Site: http://www.uidaho.edu/extension/drought/
- OSU Web Site on Drought: http://wellwater.oregonstate.edu/drought.php
- WSU Experts and Contacts: http://www.drought.wsu.edu/experts.html
- UI Disaster Web Site: http://www.ag.uidaho.edu/disaster/

Other potentially helpful sites include:

- WSU Drought Publications: http://www.drought.wsu.edu/pubs.html
- UI Drought Publications: http://www.uidaho.edu/extension/drought/
- OSU Publications: http://extension.oregonstate.edu/catalog
- University of Alaska Publications: http://www.alaska.edu/uaf/ces/publications/
- USDA-NRCS: http://www.wcc.nrcs.usda.gov/wcc.html
- NOAA Web Site: http://www.noaanews.noaa.gov/stories/s663.htm
- University of Nebraska Drought Web Site: http://www.drought.unl.edu/dm/monitor.html

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.