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PNWWATER 191

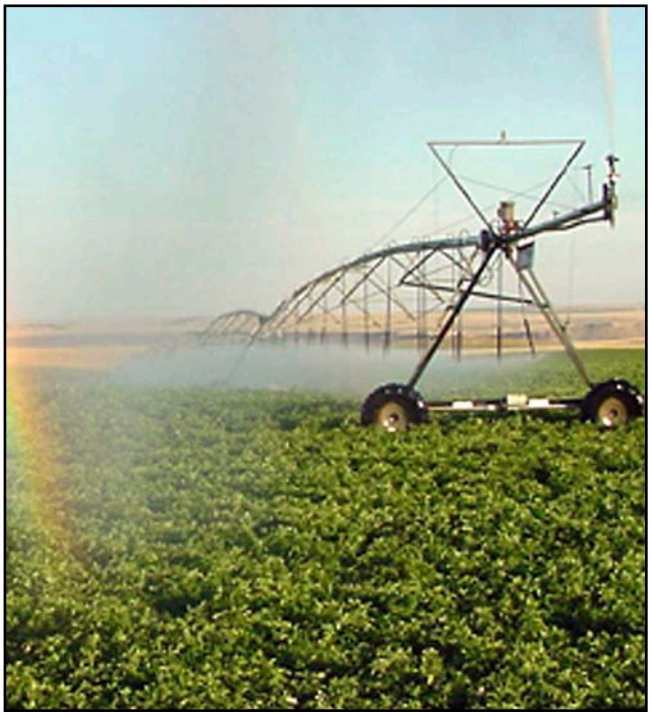
Applying knowledge to improve water quality

Pacific Northwest Regional Water Program

A Partnership of USDA NIFA & Land Grant Colleges and Universities

10 Years of Regional Progress:

Water Conservation and Management



Pacific Northwest (PNW) surface and groundwater resources provide water for industrial, agricultural, residential, hydroelectric, and recreational uses, as well as support ecosystem diversity. Increased demands from population and economic growth, additional agricultural production, and ecosystem management have resulted in localized, temporal shortages of available water. Agriculture is the largest consumptive water user regionally so efforts aimed at conservation can have significant impacts. Inefficient irrigation methods are already being replaced by modern science-based water saving techniques and crops requiring less water are being planted. Land grant universities in the PNW are engaged in water conservation research and educational outreach for agricultural operations. This update highlights some of the documented outcomes in water conservation and management that have occurred over the last 10 years.

Regional Irrigation Management Website

The land grant institutions in Washington, Idaho, and Oregon under the leadership of Dr. Troy Peters, an Extension irrigation specialist at Washington State University, jointly developed a regional "Irrigation in the Pacific Northwest" website. Irrigation specialists Dr. Howard Neibling from the University of Idaho and Dr. Marshall English from Oregon State University were on the website development team. This website (http://irrigation.wsu.edu) is dedicated to improving the understanding of irrigation planning and management—with a significant emphasis on water use efficiency.

Based on clientele use, the site has been a smashing success receiving over 150,000 hits from 16,000 unique users since its inception. Based on observations and collected data, the site's clientele consist primarily of agricultural producers and irrigators. It is estimated that over one-third of potential agricultural irrigators in the Inland Pacific Northwest have visited this regional website.

Residential Water Use

A regional survey conducted by the PNW Water Resources Team in 2007 assessed how PNW residents use water in their yards and found most people water some part of their lawn. However, many people in the region also practice residential landscape water conservation. Because residential landscape uses of water compose a large portion of municipal water use, understanding current uses and conservation practices, motivations to conserve water, and obstructions to conserving water is essential. The findings indicate that climate matters—water conservation is more widely practiced in the drier parts of the Pacific Northwest (Idaho, eastern Washington, eastern Oregon). People are already using the most convenient and low-cost water conservation practices. Barriers to water conservation do not exist for most people.

Washington State University
Oregon State University OSU
University of Idaho
A Legacy of Leading
Northwest Indian College
UAF University of Alaska Fairbanks
United States Environmental Protection Agency
National Institute of Food and Agriculture USDA

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.htm

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 Charlotte Clausing:
360-392-4319
cclausing@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
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Farmers Make Water Quality a High Priority

In conjunction with the USDA funded CEAP (Conservation Effectiveness Assessment Program) we found that 95 percent of growers in the 15 to 25 inch annual precipitation zone of eastern Washington and northern Idaho believe soil erosion rates on their farms have decreased over the last several years. From a watershed standpoint, over 90 percent believe that the reduced soil erosion has improved water quality in their watershed.

The acknowledged reduction in soil erosion rates and improvement in water quality have economic and time commitment prices. Over 60 percent of growers in the region agree that conservation structures have requirements that require effort and 86 percent agree that farmers are often burdened with on-site costs associated with conservation efforts. Nevertheless 90 percent of the growers surveyed indicate that they promote conservation activities. Consequently, over 65 percent of growers prefer not to wait for government incentives to initiate conservation practices.

Factors Affecting Conservation Decisions

Again in conjunction with the USDA funded CEAP program we evaluated the importance of various factors contributing to on-farm conservation decisions and found 85 percent of the growers responding to this survey felt the costs of conservation practices were very important (37 percent) or important (48 percent) in their decision-making process for implementation. After initiating practices to protect soil and water, the costs of maintaining the conservation practices were considered very important (34 percent) or important (47 percent) by the vast majority of respondents. Growers listed both soil quality and water quality stewardship as important factors that led to the establishment and maintenance of conservation practices. Ninety-six percent of survey respondents consider the potential loss of soil quality a very important (65 percent) or important (31 percent) consideration in the implementation of conservation practices. It is apparent that growers in dry land areas of the Inland Pacific Northwest consider conservation practices key to maintaining soil quality.

Outcomes

- Water is a limited resource in the Pacific Northwest.
- A regional irrigation website developed for growers in Idaho, Oregon, and Washington is widely used and very successful.
- Farmers in the rain fed agricultural areas of the Pacific Northwest have made soil erosion control and water quality high priorities.
- Factors including: 1) the costs of installing and maintaining conservation practices, and 2) soil and water quality considerations are important to farmers when making conservation decisions.
- Homeowners are already using the most convenient and low-cost water conservation practices. Barriers to water conservation do not exist for most homeowners.

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 National Institute of Food and Agriculture.

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

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