Applying knowledge to improve water quality
Pacific Northwest
Regional Water Program
A Partnership of USDA NIFA
& Land Grant Colleges and Universities

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Regional Web Site:

Irrigation Management in the Pacific Northwest

Most people think of the Pacific Northwest as being a water rich region. However, over half the area of Idaho, Oregon, and Washington is arid and receives less than 25 inches of annual rainfall. In the last 100 years humans have transformed much of this arid landscape into highly productive farmland thanks to irrigation technology. Consequently, today there are over 6,000,000 irrigated acres of farmland in the arid Inland Pacific Northwest. Water in this dry area is not unlimited and farmers are highly dependent on the annual mountain snowpack to supply adequate amounts of irrigation water. With increasing demands for the region's limited water resources an emphasis has been placed on increasing irrigation efficiency in this region.

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

Web site highlights include: (1) sprinkler, chemigation, general, and water measurement calculators, (2) irrigation scheduling tools and aids, (3) sprinkler and drip irrigation equipment, (4) and irrigation strategies for regionally important crops. There is an emphasis on sprinkler irrigation management since 80 percent of the agricultural land in the region is irrigated with sprinklers. The three major types of crop watering in our region include flood, sprinkler, and drip. Flood is the least efficient method (about 40 percent water use efficiency), while drip is the most efficient method (up to 98 percent efficiency). Approximately 15 percent of the land in the Inland Pacific Northwest is watered using flood irrigation practices (primarily furrow irrigation). Almost 5 percent of the land is now watered with drip irrigation. Although drip is the most efficient method from a water efficiency standpoint, it is also the most expensive method. Thus drip is used primarily on the highest value crops grown in the region such as grapes grown for the production of wine.

Based on clientele use, the web site has been a smashing success as it has received over 150,000 hits from 16,000 unique users in the last 12 months. Based on observations and collected data it is obvious that the clientele using this web site consist primarily of agricultural producers and irrigators. It is estimated that approximately one-third of potential agricultural irrigators in the Inland Pacific Northwest have visited this regional web site.

Washington State University
Oregon State University OSU
University of Idaho
A Legacy of Leading
Northwest Indian College
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
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Contact Mike Gamroth: 541-737-3316
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University Publications:
http://extension.oregonstate.edu/catalog/

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

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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 National Institute of Food and Agriculture (NIFA).

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.

As the demands for the finite supply of water in the Inland Pacific Northwest continues to increase it is important for agricultural producers to know how much water they are using. In the past, over-watering has raised water tables, has required higher application rates of fertilizer due to increased nutrient leaching losses, and has resulted in increased levels of both nitrates and pesticides in groundwater. This regional web site will help farmers maximize irrigation efficiency that should result in increased profits, less agricultural water use, and enhanced environmental protection.

In addition to this regional web site's targeted audience this site provides useful irrigation information for homeowners that irrigate lawns and/or gardens. Consequently, a significant number of our site viewers have come from urban locations. Use of this site by homeowners should reduce overall urban water use in yards and protect both surface and groundwater from chemicals (pesticides, fertilizers) commonly used in the urban environment.

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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