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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PNWWATER 104

Urban Water Resources Directory

Photo courtesy of US EPA

Progress and growth are by-words of our modern world. However, urbanizing landscapes are replacing agricultural lands and forests resulting in lost wildlife habitat and deteriorating water quality. Rapid development surpassing infrastructure completion can cause stormwater runoff that pollutes streams, further endangering wildlife habitat. In many areas of the Northwest, streams run through properties adding charm and value to the home as well as responsibility for the homeowner. These are but a few of the issues facing the 21st Century Cooperative Extension. The traditional constituency of agricultural producers remains the priority in large areas of the region. However, cities keep growing, pushing out into former agricultural lands, changing the face of the land, and broadening the scope of Extension's educational demands and opportunities.

Low Impact Development strategies, when incorporated into community development planning, reduces runoff by causing stormwater to infiltrate into the soils allowing time for filtering and cooling before the runoff enters streams and rivers. Many jurisdictions in rainy, temperate areas in coastal Washington and Oregon are including provisions in ordinances for using these strategies in new construction. Rain gardens and other infiltrative strategy information may be obtained through Master Gardeners and Water Resource faculty in these areas.

4-H programs, devised to interest the urban youth, are offered in metropolitan counties in the region. Some clubs form around urban gardening projects that provide entrepreneurial training or infuse community service principles as youth grow vegetables in low-income neighborhoods. Several counties in the region have instituted after school programs with forestry as the basis for learning. Learning about water quality monitoring, in-stream flows, and revegetation of degraded streambanks empowers the youth and helps to protect and restore urbanizing watersheds. The important relationship of forest heath and economics is a dominant factor for families residing in a community surrounded by forest. More heavily populated areas offer computer and other technology training to high school youth to ready them for the world of business.

Water Resources Education for Real Estate Professionals provides real estate professionals and assessors a background in water resource issues. The knowledge gained through these classes helps the developer make better-informed decisions while planning new construction. The classes provide real estate professionals environmental stewardship and water quality information to pass along to their clients.

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

Master Gardeners' programs are a prominent part of Cooperative Extension's urban outreach. Homeowners attend classes that include water resource information that they can then pass along to others during their required outreach activities. The Native Plant Salvage Project teaches residents to use and retain native plants in their landscapes and restoration efforts to protect water resources.

Several counties throughout the region have instituted Beachwatchers and Watershed Steward programs that train and support volunteers to lead and participate with their communities in environmental stewardship activities. The training programs provide a comprehensive whole watershed perspective, covering the basics of watersheds, wetlands, streams, water quality, forestry, native plants, wildlife, marine ecosystems, geology, and other relevant natural resource topics.

An extended curb design that slows and filters stormwater runoff before it flows into the storm drain. Photo courtesy of Bureau of Environmental Services, Portland, OR

The Pacific Northwest land grant institutions offer science-based information and classes to home and landowners and municipal officials to learn methods to attenuate stormwater runoff, conserve water in the home and garden, and build collaborations within the community to accomplish long-term goals. 4-H Programs, Master Gardener, Watershed Stewards, After School programs, and many other urban oriented activities and fact sheets are offered at no or low-cost to community members.

Oregon State University Contacts

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Oregon State University Publications

VTP 29 After the Rain: Urban Runoff video
EC 1492 Gardening and Water Quality Protection: Understanding Nitrogen Fertilizers
EC 1493 Gardening and Water Quality Protection: Using Nitrogen Fertilizers Wisely
EC 1278 Fertilizing Lawns
EC 1506 Creating Successful Partnerships, by Pat Corcoran (April 1999)
EC 1507 Choosing an Organizational Structure, Mission, and Goals, by Viviane Simon-Brown (April 1999)
EC 1508 Effective Meetings Management, by Viviane Simon-Brown (April 1999)
EC 1510 Effective Communication, by Flaxen D.L. Conway (April 1999)
EC 1511 Dealing with Stumbling Blocks, by Flaxen D.L. Conway (April 1999)
EC 1521 Maintaining a Healthy Lawn in Western Oregon
PNW 299 Turfgrass Seeding Recommendations for the Pacific Northwest

Washington State University Contacts

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Tara Zimmerman, Water Resources, 206-205-3203, tara.zimmerman@metrokc.gov

Washington State University Publications

DVD 0126 Stormwater Management from a Watershed Perspective
DVD 0127 Stormwater Management from a Watershed Perspective: Extreme Western Climates
EB 1579 Landscape Plants for the Inland Northwest
EB 1874 Backyard Composting
EB 1930 Creating Effective Groups to Address Pressing Local Problems: A Resource Guide for Watershed Councils in the Pacific Northwest
MISC 0250 Workbook for Interest-based Problem Solving in Local Government
MISC 0254 Perennials in the Inland Northwest Vol. 1
MISC 0255 Perennials in the Inland Northwest Vol. 2
MISC 0304 Gardening in the Inland Northwest
VT 0043 Hands-on Science: An EnviroSci Curriculum (2 parts)
VT 0123 Improving Community Involvement in Watershed Restoration
WREPT 0128 Community Ventures: Focus Groups – A Tool for Understanding Community Perceptions and Experiences
Low Impact Development: Technical Guidance Manual for Puget Sound – available at:
http://www.pierce.wsu.edu/Water_Quality/LID/LID_manual2005.pdf

University of Idaho Contacts

Susan Bell, Urban Horticulture, 208-377-2107, sbell@uidaho.edu
Bob Tripepi, Master Gardeners, 208-885-6635, btripepi@uidaho.edu
Robert Mahler, Water Quality Coordinator, 208-885-7025, bmahler@uidaho.edu

University of Idaho Publications

BUL 644 How to Prune Coniferous Evergreen Trees
http://info.ag.uidaho.edu/Resources/PDFs/BUL0644.pdf
BUL 819 How to Prune Deciduous Landscape Trees
http://info.ag.uidaho.edu/Resources/PDFs/BUL0819.pdf
BUL 795 Soil and the Environment: A Land and Homesite Evaluation Handbook and Training Guide
CIS 873 Water Testing http://info.ag.uidaho.edu/Resources/PDFs/CIS0873.pdf
CIS 893 Household Water: Do's and Don'ts
CIS 990 Water Conservation in the Landscape
CIS 991 Landscape and Utilities: Problems, Prevention, and Plant Selection
http://info.ag.uidaho.edu/Resources/PDFs/CIS0991.pdf
CIS 1004 Storing and Treating Emergency Home Water Supplies
http://info.ag.uidaho.edu/Resources/PDFs/CIS1004.pdf
CIS 1019 Pesticides for the Home Garden and How to Use Them
http://info.ag.uidaho.edu/Resources/PDFs/CIS1019.pdf
CIS 1027 Care and Maintenance of Your Home Septic System
CIS 1068 Fertilizing Landscape Trees
http://info.ag.uidaho.edu/Resources/PDFs/CIS1068.pdf

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 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 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.

PNW 500 Plant Materials for Landscaping: A List of for the Pacific Northwest
http://extension.oregonstate.edu/catalog/pdf/pnw/pnw500.pdf
PNW 550 Encouraging Beneficial Insects in Your Garden
WREP 134 Community Ventures: Interest-based Problem Solving Process and Techniques
The Idaho Master Gardener Program Handbook
http://www.ag.uidaho.edu/mg

University of Alaska Contacts

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Fred Sorensen, Water Quality, 907-786-6311, dffes@uaa.alaska.edu

University of Alaska Publications

FGV 49 Pulling Together in Alaska: A Volunteer's Guide to Community Weed Pulling Events
http://www.uaf.edu/ces/publications/freepubs/FGV-00049.pdf
HGA 231 Recommended Variety List for Southeastern Alaska
http://www.uaf.edu/ces/publications/freepubs/HGA-00231.pdf
HGA 239 Managing Alaskan Lawns: Weed Identification, Prevention, and Control
http://www.uaf.edu/ces/publications/freepubs/HGA-00239.pdf

Northwest Indian College Contact

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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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