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 142

Regional Agent Training:

NEMO Improves Stormwater Management

When you hear the word NEMO most people think of the cute animated movie fish or Jules Verne's Captain, but generatlly not the Nonpoint Education for Municipal Officials (NEMO) program. A group of the Region's Extension agents, city planners, EPA employees, watershed volunteers, and Washington State Ecology representatives gathered at WSU's Puyallup Research and Extension Center to learn how they can use strategies developed by NEMO U at University of Connecticut and adapted for use in western state's watersheds by University of Arizona's Kristine Uhlman.

First developed by Cooperative Extension at the University of Connecticut in 1991, the original intent of the NEMO program was to demonstrate the effectiveness of using remote sensing and geographic information system (GIS) technologies in an educational outreach program linking local land-use decisions to water quality issues. The National NEMO network now consists of 32 programs in 31 states, most housed in land-grant universities through Extension. This introduction to NEMO, as developed by University of Arizona Cooperative Extension, provides a western perspective addressing developed lands to mountain slopes, focusing on educational outreach to an adult audience of policy makers, planners, and land use decision makers facing water management decisions.

Learning how to map a creek with GIS.

In tune with Pacific Northwest issues of concern, the two-day program was devoted to how NEMO strategies can be used to introduce Low Impact Development (LID) and other infiltrative methods into planning for new development and retrofitting older styles of construction to manage stormwater runoff to streams and ultimately Puget Sound, Willamette and Columbia Rivers, and other waterbodies in peril from nonpoint pollutants. The workshop participants learned how to map streams with GIS to characterize recharge and discharge stream reaches, pinpoint illicit discharges, invasive species, and failing on-site septic systems leaching nutrients to waterways. Curtis Hinman, Pierce County Water Quality educator and researcher of LID strategies' efficacy to stem stormwater runoff, presented on where to site rain gardens, bioswales, and French drains within landscaping to detain runoff and allow it to filter and cool before it goes to either storm drains or near-by streams.

Because funding new technologies is an ever-present challenge for cities as well as property owners, representatives from Washington State Department of Ecology (Ecology) spoke to the group about Clean Water Act, Section 319 funds, and other potential sources to implement strategies. Since the participants came from the four-state region, information on each state's funding streams for nonpoint pollution prevention was made available along with contact names to answer state-specific questions.

The first step in planning development is satisfying permitting requirements for state SEPA and ultimately compliance to US NEPA standards. A land-use lawyer from Seattle spoke to the group about how the requirements can be met within local jurisdiction zoning ordinances. A Phase II permit writer from Ecology presented on the issues that the state will stipulate to be included in plans in order to obtain a permit. Once again, information for the other three states was provided as take home materials for participants.

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 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.

Faithful to Extension's focus on Impacts the participants were asked to plan, as overnight homework, a project using a Logic Model for discussion on the second day. Always good to practice deciphering outcomes from impacts, the group chose topics ranging from starting a NEMO chapter in their county to developing a new home sub-division demonstrating that our trainings in Logic Model has proven successful.

Participants preparing to challenge the presenter with questions.

At the end of the second day participants were asked to complete an evaluation form divided up into ratings for each presenter and their theme on how clear and understandable the presentation was and the value of the take-home message. The over-all ratings ranged from a low of 8.4 to 9.2 and the value of the total experience achieved a rating of 8.4. Only two people stated that the program did not fulfill their expectations in some way. As the presentations were prepared to give an over-view of NEMO's ability to achieve positive and sustainable change in land-use planning, a few people expressed that they would have liked to have had more of an emphasis on stormwater management and contaminants of concern. In the near future the workshop planners will send out another survey of results through Survey Monkey to gauge impacts more succinctly.

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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