WATER PROGRAMS IN THE PACIFIC NORTHWEST

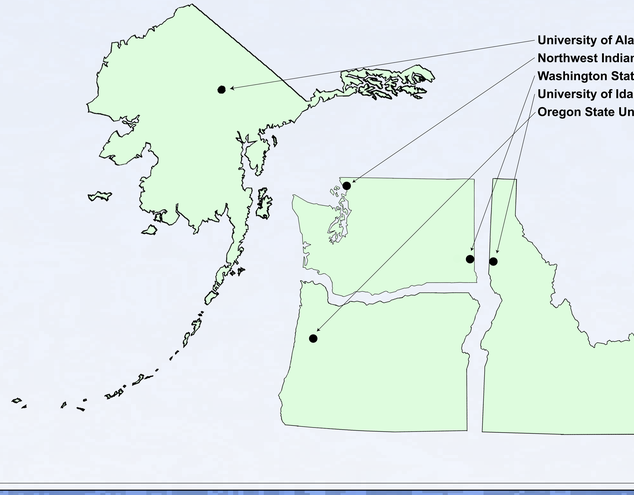
Applying knowledge to improve water quality
Pacific Northwest
Regional Water Program
A Partnership of USDA CSREES & Land Grant Colleges and Universities

KEY 2005 ACCOMPLISHMENTS

- Developed and distributed 24 PNWWATER UPDATES
- Conducted national satellite conference on stormwater management in developing areas
- Planned and conducted regional "Groundwater Under the Pacific Northwest" conference (Stevenson, WA)
- Developed and distributed regional watershed management expertise directory
- Developed and distributed drought and related water security information to our stakeholders
- Partnered with EPA Region 10 to deliver "Getting in Step — Phase II" program in region (Boise, ID)
- Co-sponsored (with Western IPM Center) "Pesticides and Water in the West" conference (Portland, OR)
- Updated Regional Web Site (www.pnwwaterweb.com)
- Developed long-term strategy to deliver drinking water and watershed management educational programs on a regional basis

Washington State University · Oregon State University OSU · University of Alaska Fairbanks · University of Idaho · Northwest Indian College · United States Environmental Protection Agency

OUR LAND GRANT INSTITUTIONS



University of Alaska
Northwest Indian College
Washington State University
University of Idaho
Oregon State University

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 acheiving this goal is for the Partners to develop a coordinated regional water quality effort based on, and strengthening, individual state programs.

Our Strengths

The Project promotes regional collaboration by acknowledging existing programs and successful effort; assessing 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.

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Winter 2006 PNWWATER 076

Regional Team Moves Forward:

Seago Named New Liaison to EPA Region 10

Jan Seago, new EPA Region 10 liaison.

As of January 30th Jan Seago is our new land grant institution (LGI) liaison to EPA Region 10. Jan's job is to "smooth the way" for the rest of the liaison position's is to increase the visibility of water resource research, outreach, and education programs conducted by the land grant institutions (LGIs) in the Pacific Northwest and to develop joint programs with EPA Region 10. This liaison position supports water quality priorities in the region and is a unique partnership because it is jointly administered by the five co-operator land grant institutions (Northwest Indian College, Oregon State University, University of Alaska, Washington State University, University of Idaho). The goal of the liaison position is to strengthen collaboration between LGIs, EPA, Tribal and Native Nations, and the Environmental Protection Agency Region 10.

The water resource programs of the EPA and LGIs are complimentary rather than competitive. Karl Arne describes the partnership between the outreach component of land grant institutions and EPA as "a marriage made in heaven because both parties do well together." Arne, EPA's regional facilitator recent team leader, is EPA's liaison to the LGI's regional water program, "Extension's outreach mission is a good fit for EPA's mission."

Ms. Seago is the fourth person to fill the liaison position which has been in existence since 2000. Jan replaces Sharon Cullinan who left the position in November to take a new job. Jan's job is a job with her first love — urban integrated pest management (IPM) with Extension in Snohomish County. We appreciate Sharon's numerous contributions and wish her well in this new job.

Seago is excited to become the region's new liaison to EPA Region 10. She sees this job as "something new and innovative to do – there are tremendous networking possibilities." Jan relates that she likes to be challenged by her work and she finds the challenge she will face in this job between EPA, LGIs and water resources. Her passion is seeing that science gets used — so that good ideas are utilized and implemented.

Jan Seago brings many talents to her new liaison job. Her experience includes many years working with the public — which she enjoys immensely. Another plus she possesses is the knowledge of working protocols within both federal agencies and Extension. Most recently, Jan has been a member of Washington State University's (WSU) Extension Leadership Team and a member of WSU's Tenure Board. Her work has served on this team her role changed from initially being a team support person and well-master into being the team's co-leader along with Bob Simmons.

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Winter 2005 PNWWATER 075

November 2005 Conference:

Groundwater Under the Pacific Northwest

The evaluations are in and the Groundwater Under the Pacific Northwest conference held in Stevenson, WA, on November 1-3 by the PNW Water Quality Team in Newtoko was a huge success! A total of 225 attendees participated in the two-day event. The conference was a joint effort between the hydrologic understanding of the current science, policy, and outreach needs of groundwater resources and to facilitate connections between research, extension, regulatory, and technical assistance groups, and 3) identify critical research needs and outreach needs for groundwater resource management. From research to outreach, the conference covered a wide range of groundwater topics including groundwater quantity and quality issues including: groundwater-surface water interaction, groundwater quality, hydrogeology, and groundwater modeling. Participants came from the Willamette valley groundwater, and Hydrogeology of the Cascade Mountains helped insure that materials were relevant to regional water resource managers.

In addition to the impressive slate of speakers, each day of the conference began with a key note presentation. Keynote presentations included Dr. Dave Sarr, Professor of Geology at Oregon State University, and Dr. Gleason is the Morris K. Udall Professor of Law and Public Policy in the Rogers College of Law at the University of Arizona and author of Water Follies. Dr. Wenter is a Senior Research Hydrologist with the U.S. Geological Survey in Portland, Oregon. Dr. Gleason's presentation was a fascinating look at water law, and the audience was able to see how the region's challenges are being faced throughout the country.

The conference included two expert panel discussions; the first focusing on the challenges to addressing groundwater quality and quantity issues in the region, and the second focusing on the issue of groundwater sustainability. After hearing the opinions voiced by the expert panels, the audience was asked to help prioritize the range of concerns. In response to the groundwater-surface water challenges the audience identified a need for more research on the effects of land use on groundwater resources, more research on the effectiveness of technical issues and need for improved data collection infrastructure to aid scientists and engineers. The audience identified the need for creative leadership rather than postponement of hard choices and the need for education of the public and decision makers. Participants also felt that pure self-interest on the two areas that should be addressed to help achieve groundwater sustainability.

A poster competition was held on the first evening of the conference to provide further opportunities for small group discussions and interactions. The poster competition was judged by a panel of experts who had a wealth of exceptional posters. Jan ultimately Ms. Deanna Olson and Ms. Kate Dyke took first prizes with their poster titled "Drinking Water Area Protection Plan on the Confederated Tribes of the Umatilla Indian Reservation."

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Fall 2005 PNWWATER 074

Master Gardener Program Protects Water Quality in the PNW

The Master Gardener Volunteer Program began in 1973 as a plan to train volunteers in horticultural science and environmental stewardship. Master Gardener programs now exist in all three states in the Pacific Northwest. From a modest beginning of 200 volunteers working to answer questions during the garden season in the urban counties of Clark, Pierce, Snohomish, and Spokane, the program has grown into a year-round volunteer effort in over 35 Pacific Northwest counties involving over 3,000 volunteers.

Dr. David Gibby and Bill Dunn, area agents in King and Pierce counties, developed the program modeled after the professional "Extensmaster Program" in Germany, which trains young professional horticulturists, in 1973. Gibby and Dunn recognized that the demand for the "Extensmaster" was not for young professionals and evolution was dawning. Migrants from rural farms were unfamiliar with city yards and climate. They turned to their traditional source of information, Washington State University (WSU) Extension, and found that the "Extensmaster" was not the right fit. Gibby and Dunn felt that it was almost impossible. As Gibby has said, "The program was born out of desperation."

The first year of the program, the bunfers throughout the area flowered, and then died. For weeks, the phones rang continuously with the question, "What's wrong with my bunfer?" Gibby and Dunn decided to train more than 200 volunteers with training and support from WSU to meet that demand for information. Plant clinics, fair booths, and phone clinics, all provided science based education to solve community problems.

Left to right, back row: Dr. David Gibby and Bill Dunn, Master Gardener Program Agents. Left to right, front row: Dr. Kathleen Fang, County Agent, Dr. Arlene Corkill, Master Gardeners and Dennis Wysenberg representing Master Gardener Service Mentoring, WSU Extensiberry Program. Not pictured: Dr. Jim Fox, Extension Leader for the Program.

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Applying knowledge to improve water quality — Pacific Northwest Regional Water Program — A Partnership of USDA CSREES & Land Grant Colleges and Universities
Fall 2005 PNWWATER 073

2005 Satellite Broadcast:

Stormwater Management from a Watershed Perspective

Over 4,000 people attended the "Stormwater Management from a Watershed Perspective" satellite conference at 100+ facilitated sites in October 2005. As participants arrived, they were greeted by a "stormwater" video produced by the Oregon State University computer-training unit. This was the fourth in a series of annual satellite conferences sponsored by the Pacific Northwest Regional Water Program and the Western Water Quality Regional Team. This broadcast, which highlighted stormwater management in developing areas, was produced by the Pacific Northwest Regional Water Program. Specially-produced video segments highlighted innovative stormwater management strategies in North Carolina, Ohio, and Oregon.

The annual satellite conference from the Pacific Northwest Water Quality Program is a stakeholder driven program. Each year, participants are asked to fill out surveys to identify topics for the next year's conference and to provide feedback on video for future broadcasts. The 2004 broadcast on improving community environment in watershed issues audience overwhelmingly suggested that stormwater Best Management Practices (BMPs) and Low Impact Development (LID) were an important topic for towns and cities facing more stringent regulations on non-point source pollution. Consequently, the stormwater issue became the topic of the 2005 broadcast.

The Environmental Protection Agency (EPA) considers stormwater runoff the most significant threat to good surface water quality across the USA. Stormwater starts as clean rainwater; however, as the water moves across the land it picks up a "load" of pollutants. Pollutants from stormwater runoff can make water so polluted it eventually degrade surface water quality. A good stormwater program reduces the impacts of both sediments and pollutants in both urban and developing areas. The WSU production crew took their cameras to three locations in the Pacific Northwest to show how stormwater management can improve or degrade water quality. The satellite program attendees saw how a restored wetland and stream both filter and contain stormwater runoff in western North Carolina. The second video segment highlighted how innovative zoning and land use practices can reduce stormwater impacts in Ohio. The final segment, from Oregon, the video segment highlighted innovative stormwater management in Portland, Oregon. Broadcast attendees were also introduced to ecoroofs. These structures retain and slow the flow of stormwater to the Willamette River in Portland, Oregon. Ecoroofs are a form of green infrastructure installations appear as public art rather than a traditionally engineered management structures.

The results of evaluations filled out by conference attendees are not yet completely tallied, however, the following observations can be made:

- The majority of respondents rated the quality of the broadcast as very good or excellent.

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Fall 2005 PNWWATER 072

Water Quality and Pesticide Symposium

In late August experts in water quality and pesticides met in Portland, OR at the Water, Wildlife, and Pesticides in the West Symposium. The event was hosted by the Western IPM Center and brought together a diverse group of water quality, environmental, pesticide and wildlife specialists. Discussions about issues covered the thirteen (13) western states represented by the Western Water Quality Coordination Committee (WQCC).

One of the main objectives of IPM is to decrease the use of pesticides in the environment. Pesticides are toxic by design and can have adverse impacts on the environment directly or indirectly. This symposium was designed to help address issues from the broad perspectives of water quality, pesticide use, best management practices (BMPs), endangered species, invasive species, and urban pesticide use.

Rhonda Grizzard, Group Project Intern Joseph, Dusty Eddy, Bob Gladden, and Wayne Greenhalgh discuss a point on the panel.

The overarching theme of this symposium was the use of the panels of experts tool with immediate break out sessions where the participants could discuss with the panelists what they heard, or saw up on the screen. Some of the issues addressed were:

- Why are we finding pesticides in our waters and what can we do about it?
- If you detect pesticides in the stream, is it a problem?
- What is the highest water quality priority in your state?
- What do water quality data mean to landowners, the public, the agencies, and the press?
- What would get solutions more widely adopted that keep pesticides out of water in both agricultural and urban settings?
- What long-term processes can we develop to address resource problems while minimizing impacts to communities throughout the Klamath Basin?
- How can the regulatory, environmental, and agricultural communities work together more effectively to address water quality concerns?
- What needs to be done to make progress on invasive species issues while still protecting endangered and threatened species habitat?
- How can government encourage incentives to the private sector to adopt IPM practices that minimize adverse impacts on water quality?

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Fall 2005 PNWWATER 069

The OnePlan:

Supporting Agriculture, Protecting Water

The OnePlan is a web-based user-friendly suite of conservation planning tools for use by farmers, ranchers, and conservation districts. The OnePlan project has been over the past six years and is set to expand into Oregon next year. The goal is to provide producers with a "one stop shopping" place for information, guidelines, and assistance in order to help them make informed decisions about their farms and natural resources. Concerns about the role of agricultural operations as a source of non point pollution have prompted federal and state government agencies to offer financial assistance programs to help farmers and ranchers implement practices that are good for producers to be eligible for financial incentives, a Conservation Plan needs to be in place.

The OnePlan began as an effort by state and federal agencies, working in collaboration, to encourage producers to adopt a conservation planning approach in order to voluntarily comply with regulations and protection of threatened and endangered species. Agencies involved in the OnePlan are: NRCS, Farm Service Agency, Fish and Wildlife Services, Forest Service, Bureau of Land Management, Bureau of Reclamation, Idaho State Department of Agriculture, Idaho Department of Environmental Quality, Idaho Department of Water Resources, Lands, Fish and Game, University of Idaho, and the Idaho Association of Soil Conservation Districts. Producers can access the OnePlan through a web-based interface called OnePlan. The concept has now expanded to include specific planning tools for topics including nutrient management.

Integrated pest management, and irrigated management which are all interactive with the basic planning tool, the Conservation Plan.

The nutrient management planning tool has been utilized by the state of Idaho to fulfill a state mandated requirement that all Idaho dairies develop a nutrient management plan by the end of 2005. The OnePlan Project worked diligently with the dairy industry, university specialists, NRCS personnel, and regulatory agencies to complete the nutrient management planning module for use with this requirement. The planner consists of environmental, economic, and agronomic information to develop site specific plans for the field application of animal waste according the Idaho Nutrient Management Standard.

Wayne Greenhalgh, OnePlan Coordinator in Idaho.

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Fall 2005 PNWWATER 070

Water Protection:

Dryland Nutrient Guidelines Updated

Over 20,000,000 acres of farmland in the Pacific Northwest is dedicated to dryland crop production. Dryland farming in the Pacific Northwest requires large quantities of grains, fruits, and vegetables which are exported to feed people in the region, throughout the USA, and to many countries around the world. Dryland farming is a high risk enterprise and must be used in a knowledgeable way to prevent undesirable environmental side effects such as the contamination of surface and groundwater with nutrients.

The land grant institutions in the region (Oregon State University, University of Alaska, University of Idaho, Washington State University) have invested a significant amount of money conducting research on the use of fertilizers in dryland farming and developing fertilizer guidelines for major crops grown in the region. These research-based guidelines known as fertilizer guides, suggest nitrogen and phosphorus fertilizer rates for dryland crops based on expected yield and soil test results. These guidelines, if followed, will result in maximum economic yields when coupled with good agronomic management practices. In the last 12 months several of the fertilizer guides have been updated to reflect new research results and to incorporate new fertilizer prices and to emphasize management practices that result in both maximum economic yields and the protection of surface and ground water quality.

Wayne Greenhalgh, Fertilizer Specialist, presenting 2005 new barley fertilizer guidelines to community extension educators. Photo courtesy of Joe Fournier, Jefferson County Extension.

The new fertilizer guidelines for nitrogen and phosphorus be updated on a regular basis because of the current emphasis on the protection of water resources in our region. The federal EQIP (Environmental Quality Incentives Programs) and CSP (Conservation Security Programs) programs require the use of these fertilizer guidelines in order to be eligible for financial assistance to implement these programs. The land grant university generated fertilizer guidelines serve as the source for sound nutrient management and the protection of water quality.

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As a consequence of this meeting fertilizer guides for dryland cereal crops have been published for eastern Oregon, eastern Washington, and northern Idaho. The newly revised fertilizer guidelines will be incorporated

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Summer 2005 PNWWATER 068

Beach Watchers

The WSU Island County Beach Watchers Program has expanded into a northwest regional program involving Jefferson, Clallam, Snohomish, Skagit, San Juan, and Island counties in Washington. The mission statement of the Beach Watchers program is to "Increase the capacity of Beach Watchers program to join the other counties in a unified effort to protect and improve water quality and to educate people in the region, throughout the USA, and in many countries around the world, about the importance of Puget Sound and what must be used in a knowledgeable way to prevent undesirable environmental side effects such as the contamination of surface and groundwater with nutrients.

Puget Sound Beach Watchers presenting 2005 new barley fertilizer guidelines to community extension educators. Photo courtesy of Joe Fournier, Jefferson County Extension.

Puget Sound Beach Watchers presenting 2005 new barley fertilizer guidelines to community extension educators. Photo courtesy of Joe Fournier, Jefferson County Extension.

The expansion of Beach Watchers to the northern Puget Sound counties is designed to also offer Washington State University Extension a unified approach to the Puget Sound Marine Resources Committees (MRCs) of the Northwest in Seattle. These MRCs are county commissioner appointed citizen advisory committees that assess the marine conditions and needs in their respective counties and provide recommendations to their county commissioners. Volunteers are needed on all levels — planning, research, education — to accomplish these projects. After assuming

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Spring 2005 PNWWATER 067

Agricultural Water Security

As population continues to increase in the USA and around the world, there is an increasing demand for safe, reliable sources of water to meet the needs of people, industry and agriculture. The demand by urban communities are particularly susceptible to the growing pressures to provide more water to urban and urbanizing areas. Agriculture is the largest water user in the agricultural economy. As urban and rural water security is defined as the need to maintain adequate water resources for the economic, social, and health well-being of population – maximizing the efficiency of water use by farmers, ranchers, and rural communities.

Drought and the reliability of water supplies for agriculture and rural communities historically have been a major concern. Recently, concerns and issues surrounding agricultural water security have expanded beyond western states and now represent a national concern. Water supplies for irrigated agriculture in Georgia, South Carolina, and Florida are being consumed by rapidly expanding urban populations. Shifts in the allocation of these water resources could have dramatic negative impacts on the long-term supply of food and fiber in the USA.

Pioneer Farm, Ephrata, Washington. Photo courtesy of Pioneer Farm.

In response to this potential crisis, Interior Secretary Gale A. Norton and Agriculture Secretary Ann M. Veneman signed an agreement in 2003 aimed at promoting improved water management and rapid response to emerging water shortages. The goal of the agreement is to provide information and technical assistance to farmers and ranchers and to foster improved water management of water resources. In response to this challenge USDA CREES asked Dr. Jon Dobrowolsky from Washington State University to work with the agency and develop a strategy to ensure agriculture water security for our future.

Dr. Dobrowolsky developed a document that details important research and extension actions that should be taken to ensure that the agricultural sector can continue to provide economic and environmental benefits to the citizens of the USA. Department of Interior, and land grant universities. The summary below highlights a proposed federal budget initiative to address these issues.

What are the research needs in Agricultural Water Security?

There is considerable scientific information regarding the efficient use of water for agricultural irrigation. Similarly, there is much that will focus on expanding the knowledge base of agricultural water security through research programs aimed at

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