



Applying knowledge to improve water quality

Pacific Northwest

Regional Water Program

A Partnership of USDA CSREES
& Land Grant Colleges and Universities

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PNWWATER 094

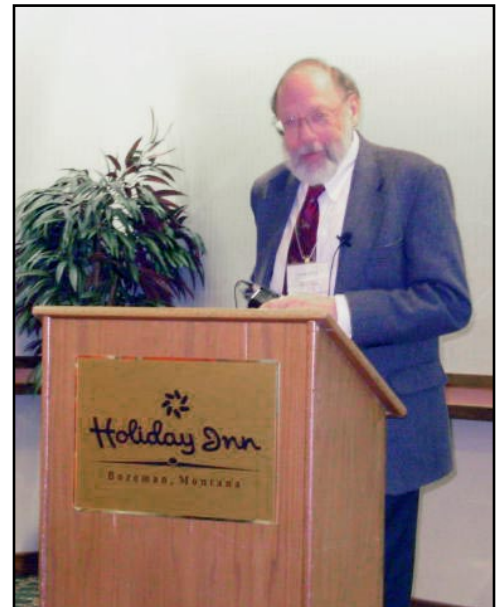
INRA Water Resources Consortium:

Connecting Water Programs in the PNW

The Inland Northwest Research Alliance (INRA), located in Idaho Falls, Idaho, represents a consortium of eight universities in the Pacific Northwest working in cooperation with the US Department of Energy to provide businesses, industries, government agencies, and students with collaborative education and research resources in subsurface science, carbon sequestration, and water resources. INRA consists of the University of Idaho, Idaho State University, Boise State University, the University of Montana, Montana State University, Utah State University, Washington State University, and the University of Alaska Fairbanks. The organization was formed, among other reasons, so that a single point of contact can connect interested parties to the educational resources of one or all of the member schools. The INRA mission is to provide the organizational structure to develop and administer multi-institutional and multi-disciplinary research and education programs; collaborate on research and educational programs with federal laboratories, academic, and government partners; contribute to member institutions education and retention of scientists and engineers in the Inland Northwest; and promote regional economic development by building collaborative programs regionally relevant to the member institutions.

Recent activities include the INRA sponsored “Northwest Water Policy and Law Symposium” and the “2006 Environmental and Subsurface Science Symposium.” The Northwest Water Policy and Law Symposium was designed to explore solutions to three water policy issues that challenge the Northwest: 1) surface water/groundwater interactions, 2) failing water infrastructures, and 3) conflicting land- and water-use laws. The 6th annual Environmental and Subsurface Science Symposium showcased current research activities broadly related to understanding the science, policy, and educational issues related to subsurface contamination and clean-up.

A new INRA Water Resources Research Consortium initiative aimed at creating a multi-institutional interdisciplinary Research and Education Program to understand and manage water shortages has recently been formed. Water shortages are caused by complex interactions between climate variability, ecosystem processes, and increased demand from human activities. In the semi-arid region of the northwestern United States, water availability during drought periods has already reached crisis levels and the problems are expected to intensify as the effects of global climate change and population growth continue to alter water supply and demand patterns. Many of the issues are critical to this region because hydropower, agriculture, navigation, fish and wildlife survival, water supply, tourism, environmental protection, and water-based recreation are vital to state economies and our way of life. Droughts that trigger drastic measures such as water rationing affect all of these uses, with significant impacts on state and regional economies.



Dr. Donald Worster, an environmental historian, addresses the Environmental Subsurface Science Symposium.



**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/index.html>

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.html>

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: Michael Cochrane:
360-392-4299

mcochrane@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/>

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Arid western regions are especially susceptible to impacts of water shortages. In our naturally water-limited area, drought affects both water quantity and water quality. Understanding the complex interaction of anthropogenic and natural factors affecting the water cycle and their resultant impacts on water resources within our geographically dispersed region requires expertise in many disciplines, including agriculture, climatology, chemistry, geography, geology, hydrology, engineering, ecology, economics, forestry, sociology, environmental science, and watershed management.

The objective of the Consortium is to use the INRA member universities research and educational capabilities to improve our ability to predict and monitor water shortages and to provide policy makers with potential remedies to the problems created by water shortages. A program to address these problems must integrate interdisciplinary, multi-institutional research and education. The Consortium will facilitate sharing of expertise, facilities, and information in addressing regional water resources problems. Collectively, the INRA research possesses the depth of understanding necessary to conduct research and education activities in order to understand these complexities, to predict water shortages, and to better manage our water resources. The initiative will take three approaches to achieve this goal:

1) We will create a regional scientific research plan that coordinates future INRA research on key drought and water supply issues. These issues include (among others) complex interactions between climate variability; watershed and landscape alterations; estimating basin water budget; water quality; ecosystem impact and response; demographics; and human impact and response.

2) We will use the understanding developed and information gathered in the regional scientific research plan to develop decision-making and outreach tools for our public policy makers. Such management tools and public education efforts, informed by high-quality research and development, will assist decision makers in addressing the concerns of their constituencies during these drought cycles.

3) We will improve graduate and undergraduate training and educational outreach by accessing collective faculty expertise to meet the critical demand for integrated knowledge of INRA member institutions. This will include development of a multi-disciplinary, multi-institutional graduate education program, distance delivery of courses, graduate fellowships, and coordination among researchers contributing to this program.

The plan is being implemented using a regional needs assessment currently being conducted throughout the Pacific Northwest, a recent call for collaborative research proposals, and a discussion of a regional education plan. Stay tuned for exciting updates!



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 Cooperative State Research, Education, and Extension System.

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| 1. Animal Waste Management | 5. Pollution Assessment and Prevention |
| 2. Drinking Water and Human Health | 6. Watershed Management |
| 3. Environmental Restoration | 7. Water Conservation and Management |
| 4. Nutrient and Pesticide Management | 8. Water Policy and Economics |

CSREES is the Cooperative States Research, Education, and Extension Service, a sub-agency of the United States Department of Agriculture, and is the federal partner in this water quality program.