



Applying knowledge to improve water quality

# Pacific Northwest

## Regional Water Program

A Partnership of USDA CSREES  
& Land Grant Colleges and Universities

Fall 2005  
PNWWATER 070

### Water Protection:

## Dryland Nutrient Guidelines Updated

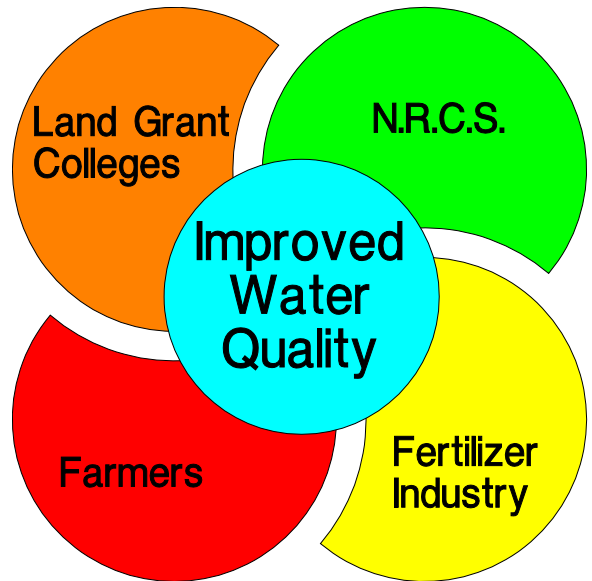
Over 20,000,000 acres of farmland in the Pacific Northwest is routinely fertilized with nitrogen and/or phosphorus fertilizers. The use of commercial fertilizers allow farmers in the Pacific Northwest to produce large quantities of grains, fruits, and vegetables which significantly contributes to the region's economy. This food feeds people in the region, throughout the USA, and in many countries across the globe. Fertilizers make this all possible; however, they must be used in a knowledgeable way to prevent undesirable environmental side effects such as the contamination of surface and ground waters in the region.

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 over the last 60 years in developing fertilizer rate guidelines for major crops grown in the region. These research-based guidelines, known as *fertilizer guides*, suggest nitrogen and phosphorus fertilizer application rates based on soil testing information and good science. 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 for dryland crops in the region have been revised to make recommendations more uniform across state lines and to emphasize management practices that result in both maximum economic yields and the protection of surface and ground water quality.

It is important that fertilizer recommendations 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 EQUIP (Environmental Quality Incentives Program) and CSP (Conservation Security Program) programs require the use of sound nutrient management strategies which can be documented through record keeping by landowners. The land grant university generated fertilizer guidelines serve as the source for sound nutrient management and the protection of water quality.

In August 2004 representatives from the fertilizer industry, the Natural Resources Conservation Service (USDA-NRCS), and the land grant universities met in Moscow, Idaho to discuss current fertilizer guidelines for dryland crops grown in the region. As a consequence of this meeting scientists from the land grant institutions agreed to revise existing guidelines for dryland crops so that recommendations would become more uniform across state lines and to emphasize the importance of water quality protection when providing guidance on the timing and application method of nitrogen fertilizers in the guides.

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



**Pacific Northwest Regional Water Quality Coordination Project Partners**

**Land Grant Universities**

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<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.html>

**Oregon**

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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  
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into the OnePlan nutrient management strategies developed by NRCS for use in Idaho and Oregon.

A copy of the new *Dryland Winter Wheat Eastern Washington Nutrient Management Guide* (EB1987) can be obtained from the Washington State University Bulletin office, 1-800-723-1763, or online at <http://pubs.wsu.edu/>.

Oregon State University has developed/revised five fertilizer guides for cereal crops in eastern Oregon. These guides are all available online at: <http://extension.oregonstate.edu/catalog>. The titles of the new guides include:

*Winter Wheat in Summer Fallow Systems* (low precipitation zone) FG 80E

*Winter Wheat and Spring Grains in Continuous Cropping Systems* (low precipitation zone) FG 81E

*Winter Wheat in Summer Fallow Systems* (intermediate precipitation zone) FG 82E

*Winter Wheat in Continuous Cropping Systems* (intermediate precipitation zone) FG 83E

*Winter Wheat in Continuous Cropping Systems* (high precipitation zone) FG 84E

The University of Idaho has revised four fertilizer guides for cereal crops in the dryland region of northern Idaho. These guides are all available online at: <http://info.ag.uidaho.edu/Catalog/catalog.html>. The titles of the revised guides include:

*Northern Idaho Fertilizer Guide: Winter Wheat*, CIS 453

*Northern Idaho Fertilizer Guide: Soft White Spring Wheat*, CIS 1101

*Northern Idaho Fertilizer Guide: Spring Barley*, CIS 920

*Northern Idaho Fertilizer Guide: Winter Barley*, CIS 954

**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.*