



Oregon Department of Agriculture's  
Agricultural Water Quality Program

# Water Quality and Agriculture

It's everyone's job.



Oregon  
Department  
of Agriculture

# Welcome to the Oregon Department of Agriculture's QUICK GUIDE to the Agriculture Water Quality Program.

Inside this Quick Guide you will find a wealth of information, ideas and contacts to help you do your part in keeping Oregon's water clean. We've organized it like this:

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## OREGON AGRICULTURE AND WATER QUALITY STEWARDSHIP

Oregon's farmers and ranchers have an intimate relationship with the land on which they depend. All who produce food or fiber are stewards of land and water, and play a key role in protecting the state's natural resources for current and future generations.

## THE AGRICULTURAL WATER QUALITY MANAGEMENT PROGRAM

In 1972, the Federal Clean Water Act was developed to clean up water pollution from human activities such as forestry, factories, wastewater treatment plants, and agricultural irrigation runoff.

Oregon's Agricultural Water Quality Management Act, also known as Senate Bill 1010, was created in 1993 with the input and support of the agricultural industry and the State Board of Agriculture to further help the industry address agricultural water quality issues.

This legislation is the foundation of the Oregon Department of Agriculture's (ODA) **Agricultural Water Quality Program** (the

Program) administered through the Natural Resources Division. The Act directed ODA to assist the industry in reducing pollution from agricultural sources.

In 1995, the legislature supplemented the Act with ORS 561.191. This statute reinforces ODA's responsibility for and jurisdiction over agricultural practices and water pollution associated with farming practices on agricultural and rural lands. Administrative rules adopted to guide Program administration are found in Oregon Administrative Rules (OAR) Chapter 603, Divisions 90 and 95.

Working in partnership with the 45 local Soil and Water Conservation Districts, the ODA identified 39 watershed-based **Agricultural Water Quality Management Areas** across the state.

Water Quality Specialists worked with local farmers, ranchers and community leaders to serve as **Local Advisory Committee (LAC)** members for each management area. Each LAC identified local water quality problems and opportunities for improvement.

The 39 resulting **Agricultural Water Quality Management Area Plans**, now approved by the Board of Agriculture, guide the resolution of agricultural water quality issues in the 39 management areas. As the LACs created the plans, they also developed companion



administrative rules for that management area. The rules provide an enforceable backstop to ensure all landowners do their part to avoid and resolve water quality problems.

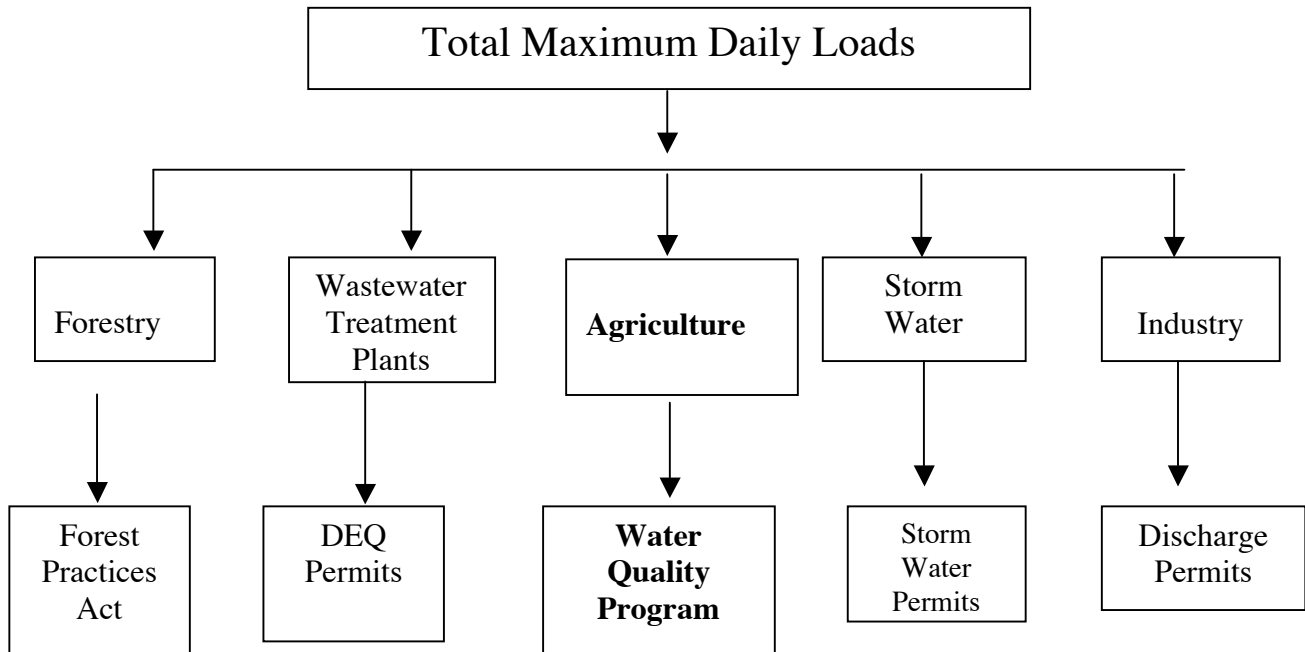
### **WITH THE AGRICULTURAL WATER QUALITY PROGRAM IN PLACE, IS WATER QUALITY STILL A PROBLEM IN OREGON?**

Yes, unfortunately, it is. We know this because the Clean Water Act requires testing of waterways. The Department of Environmental Quality (DEQ) does this work in Oregon. DEQ has identified many streams throughout Oregon that do not meet water quality standards.

### **WATER QUALITY STANDARDS – WHAT ARE THEY, AND HOW DO THEY WORK?**

As part of the overall water quality standards for Oregon waterways, DEQ is developing Total Maximum Daily Loads (TMDLs) for streams statewide. TMDLs are defined as the amount of pollution a body of water can absorb from a variety of sources, including agricultural activities, and still meet water quality standards.

Each activity is allocated a percentage of the TMDL determined for that stream. The Agricultural Water Quality Management Program is one of the primary means by which the agricultural community will work with its watershed partners to meet these water quality standards.



The Agricultural Water Quality Program and Area Plans and Rules are designed to assist anyone engaged in agricultural activities to meet those water quality standards.

## **HOW MIGHT MY FARM, RANCH OR OTHER AGRICULTURAL ACTIVITY BE CONTRIBUTING TO WATER QUALITY PROBLEMS?**

Depending on how they are managed, agricultural lands can have both positive and negative effects to water quality. Below are some examples of water quality problems that can occur on agricultural lands.

- ❖ Sediment from eroding croplands, pasture lands, and streambanks reduces water quality.
- ❖ Erosion and runoff from roads degrades water quality.



- ❖ Pesticides, herbicides and fertilizers from agricultural operations gets into and harms waterways used for drinking water supplies, recreation, and fish and wildlife habitat.
- ❖ Bacteria and nutrient runoff from animal waste degrades water used for drinking and recreation.



- ❖ Removal or reduction of streamside (riparian) vegetation increases bank erosion, destroys wildlife habitat, and contributes to increased water temperature that harms cold-water fish, as well as the insects they eat.
- ❖ Uncontrolled livestock access to streams results in reduction in riparian vegetation, streambank erosion, and degraded water quality from erosion and manure going into the stream. The resulting water quality fails to meet the water quality standard established for that waterbody.

## **DOES THE PROGRAM TELL ME WHAT I HAVE TO DO TO PROTECT WATER QUALITY, OR DO I HAVE A CHOICE?**

Area rules for each of the 39 management areas prohibit water pollution and activities that degrade or can lead to impaired water quality. But the rules don't specify how each agricultural landowner must do this.

Instead, the area plans suggest several solutions and options that are available, crafted to meet each planning area's unique water quality issues. Each landowner or operator can decide which solution best suits their operational needs.

## **IS THE PROGRAM ENFORCED? WILL MY PROPERTY BE INSPECTED?**

It is up to each individual landowner to ensure that his or her operation does not pollute Oregon's waters, and most already are. However, ODA investigates complaints associated with water quality problems and erosion resulting from agricultural and rural activities.



If violations are found, corrective actions must be taken. ODA first works with producers on a voluntary basis to solve problems through education and technical assistance. Those who are asked to solve a problem but who refuse to do so could be subject to enforcement actions, including the assessment of civil penalties.

## **HOW DO I KNOW IF I AM IN COMPLIANCE WITH MY LOCAL RULES?**

The easiest way is to call your local ODA water quality specialist and have them make a site visit to your property for this purpose. You can find the specialist for your area on the back page of this brochure. You can also look through the plan for your area, or contact your local Soil and Water Conservation District.

## **ARE HELP AND MONEY AVAILABLE?**

Technical assistance from local Soil and Water Conservation Districts, Watershed Councils, the Natural Resources Conservation Service, OSU Extension and ODA is available at no charge to the landowner.

In some cases, funds are available through special grants and programs that deal specifically with water quality issues. Many times implementing production alternatives are not only helpful to the environment but can make operations more productive and profitable.

## **WHAT ARE OTHER BENEFITS OF THE WATER QUALITY MANAGEMENT PROGRAM?**

- ❖ Maintains flexibility for landowners to improve and protect water quality.

- ❖ Promotes coordinated watershed planning.
- ❖ Demonstrates agriculture's commitment to water quality stewardship.
- ❖ May prevent the need for more restrictive regulation



## **ISN'T AGRICULTURE ALREADY DOING ITS PART TO IMPROVE WATER QUALITY?**

Absolutely. As dedicated land stewards, many farmers and ranchers are already practicing conservation to protect water quality.

- ❖ Livestock operators are using rotational grazing, off-stream water sources, and storing manure appropriately.
- ❖ Nurseries are recycling irrigation water.
- ❖ Row crop growers are using crop rotation strategies, are applying straw mulch and

cover crops to control water runoff, reduce erosion and nutrient loss.

- ❖ Dryland farmers are using conservation practices to minimize field erosion. Many landowners, large and small, are planting streamside buffers that strengthen streambanks, slow erosion, cool the water, and provide wildlife habitat.

## WHAT CAN I DO TO HELP IMPROVE WATER QUALITY?

In the next few pages, we discuss a number of these “best management practices” or BMPs, that may be appropriate to help you improve water quality, and ensure that you are operating within the guidelines of your local Plan. It’s highly probable that you’re already doing one or more of these BMPs. As long as the goals of the Water Quality Management Area Plan are being met, the solutions chosen are up to the individual operator or landowner.

### Animal Grazing



Many simple and inexpensive methods are available to protect water quality and support animal health. One suggestion is to

rotate grazing between two or more pastures. This allows the vegetation in one pasture to recover and reduces trampling and resulting erosion and runoff. Rotational grazing will improve the pasture plant community and help prevent weed problems.

Desirable grazing and re-growth height will depend on whether you live on the east or west side of the Cascades. It is important to allow grasses to recover before the autumn frosts or the

dormant season. This encourages better growth and recovery, improves capture of precipitation, and reduces the amount of trampling damage that leads to upland erosion and runoff.

Consider providing off-stream watering opportunities in each pasture. This reduces overgrazing of near-stream and riparian areas, and improves forage utilization away from the stream.



*A guzzler in Umatilla County provides livestock water well away from a stream*

### Manure and Animal Heavy Use Area Management

Ideally, store manure on an impervious surface or concrete pad, covered with a tarp or roof. This helps prevent nutrient leaching so that manure applied to crops or pasture has a higher nutrient content. Keep manure storage areas away from surface water to prevent nutrient and bacteria runoff.

Cover heavily used animal walkways with sand, rock and/or geotextile fabric, and regularly clean



confinement areas. This helps prevent sediment and runoff into Oregon’s waters. It helps to improve animal health because the animals are not wading in mud and muck.

Establish a heavy use area away from streams and cover with a thick layer of sand, gravel or hog fuel. A heavy use area protects pastures

from compaction during the winter months, improving plant health and growth as well as animal health. It also helps rest pastures throughout the year to allow grasses to re-grow to proper grazing height.



*Heavy use area - Eastside*

Install gutters and downspouts on buildings next to heavy use areas. Route the clean water out of the heavy use area to a waterway, pasture, or tank. This lessens mud in heavy use areas, and if you hold clean water in a tank, can even provide drinking water for livestock.

### **Manure and Nutrient Application**

Apply manure and other fertilizers evenly to pastures and only as much as your crops or pasture can use (agronomic rate). This helps prevent nutrient and bacteria runoff into surface and groundwater, as well as reduce the costs for chemical fertilizers.

Applying it at the rate appropriate for the pasture or other crop ensures that plants receive needed nutrients for growth, and makes them more competitive against weeds. It is also a good way to empty out your manure storage area to make room for the next season's storage requirements. Do not apply to soils that are saturated or frozen.



To find out how much manure your crop or pasture can use, compare manure nutrient content with OSU fertilizer guide recommendations. You can have a manure test or use book values for your livestock type. Consider taking regular soil tests to determine the amount of nutrients already in the soil, to avoid over-application.

### **Irrigation Management**

Schedule irrigation based on crop needs, soil type, climate, topography, infiltration rates, and your existing water rights. Monitor irrigation to avoid over-watering and subsequent leaching of nutrients.

Minimize irrigation tail water and return flows to streams. These measures improve water quality by preventing nutrients and agricultural chemicals (pesticides and herbicides as well as chemical fertilizers) from entering and degrading Oregon's waterways.



*Furrow irrigation with polyacrylamide (PAM) substantially reduces erosion*

Improve irrigation efficiency by maintaining existing systems in good condition. Where appropriate, consider upgrading to a more efficient delivery system.



*Before.....*



*and  
after*

### **Riparian Management**

Agricultural and land use activities must allow for establishment and development of riparian vegetation of the type one would expect to find growing there naturally, given the limitations of soil type and weather. The vegetation needs to have a chance to become established, either in a natural succession or by planting, and to grow to maturity.

Healthy riparian vegetation provides shade, enhances streambank stability and integrity, filters nutrients and sediment, and provides fish and wildlife habitat.

Fence livestock away from the riparian area or allow only rotational grazing in the riparian area.



This substantially improves the opportunity for riparian vegetation to become established and develop

so that it can do its job. This also works to reduce erosion, helps control weeds, and can help reestablish natural channel shape and flow patterns.

Consider providing off-stream livestock watering opportunities through watering troughs and nose pumps, or hardened access points or stream crossings. Not only do you reduce the erosion potential from trampling and allow riparian vegetation to establish, the time required to manage livestock grazing in riparian areas is lessened. Monitor crossings to prevent them from becoming sources of pollution.

Help nature along. Plant willows, alders and other riparian vegetation appropriate for your area. ODA's plant conservation staff has developed excellent plant lists to assist in determining what is appropriate for your locale.

Soil and Water Conservation District staff are highly knowledgeable and can provide good suggestions and assistance.

You may qualify for financial assistance through the Conservation Reserve Enhancement Program



*Restoration through plantings*

(CREP) or another funding program designed to improve riparian health.

### **Erosion Control**

Maintain trees, shrubs, grasses and forbs on steep slopes, drainage canals, ditches and other bodies of water. Seed bare ditches to create grassed waterways and after construction or maintenance activities. This assists in preventing sediment runoff and pollution of

Oregon's waterways and can help prevent water damage on farm roads.

Use cover cropping, hay or straw to help stabilize exposed areas. This is effective whether you are growing Christmas trees or food crops, pasture or orchards. Not only does it help prevent runoff of applied fertilizers, it can reduce weed problems and help prevent soil loss.



*Cover crop in an orchard*

Consider direct seeding or tillage methods that leave high amounts of crop residue on the fields to protect the soil.

Minimize hard surfaces to maximize water absorption. Catch and store rain from barn and shed roofs.

Runoff and eroding soil can be captured and slowed with structures such as terraces and sediment basins.

Use filter strips and grassed waterways, terraces and sediment basins to catch and slow sediment runoff and keep your soil where it belongs – on your fields.



*Grassed waterway*

## **WHERE CAN I LEARN MORE ABOUT THE PROGRAM AND MY AREA PLAN AND RULES?**

Information about the Program, Agricultural Water Quality Management Area Plans and Rules, best management practices, Soil and Water Conservation Districts and other water quality and agricultural issues are available on-line at:

**ODA website: <http://oregon.gov/ODA>.**

Additional help is available from:

### **ODA Regional Water Quality Specialists:**

(541) 523-4924 Eastern

(541) 278-6721 Northeast

(541) 617-0017 Central

(541) 302-3043 Southwest

(503) 986-4707 North Coast – North Willamette Valley

(503) 986-4761 Mid Coast- South Willamette Valley

Natural Resources Division

635 Capitol St. NE

Salem OR 97301-2532

Website: [www.oda.state.or.us](http://www.oda.state.or.us)

(503) 986-4700

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