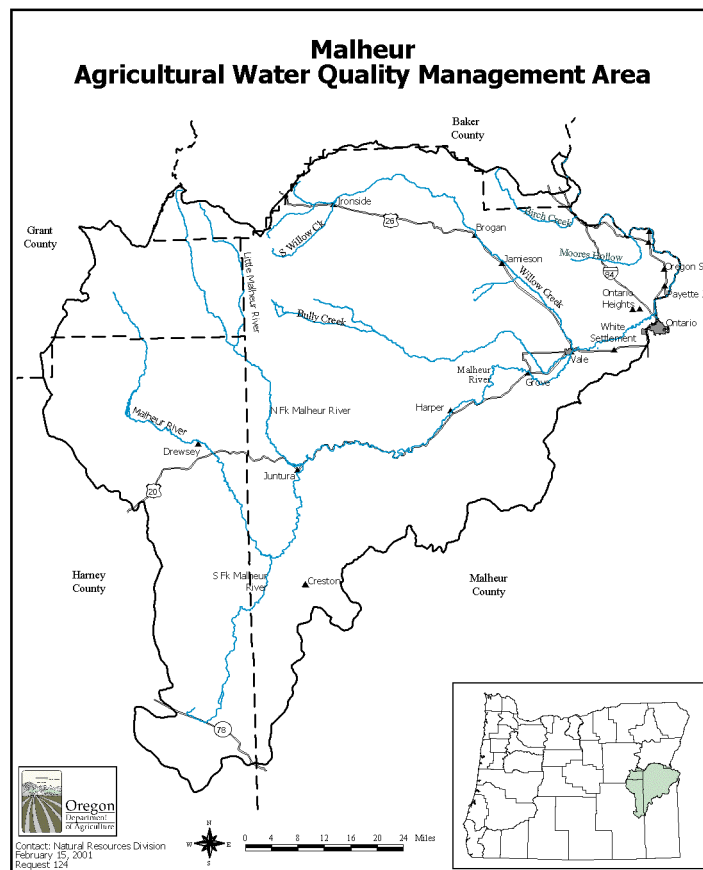


# MALHEUR

## AGRICULTURAL WATER QUALITY MANAGEMENT AREA PLAN AND RULES

### BIENNIAL REVIEW REPORT TO THE OREGON STATE BOARD OF AGRICULTURE

August 28, 2007



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## **I. Purpose**

The Agricultural Water Quality Management Act (ORS 568.900 – 568.933) authorizes the Oregon Department of Agriculture (ODA) and each Local Advisory Committee (LAC) to conduct biennial evaluations of Agricultural Water Quality Management Area Plans (Area Plans) and Rules. In its advisory role to ODA, the LAC is responsible for submitting a written report to the State Board of Agriculture and the ODA Director, summarizing meetings held, advisory committee members present, actions taken, and progress and impediments toward achievement of Area Plan goals. The report may also include recommendations to the Board and the Director regarding modifications to the Area Plan that may be necessary to achieve water quality goals and objectives.

The Malheur LAC submits this report to the Board of Agriculture to summarize and evaluate implementation of the Malheur Agricultural Water Quality Management Area Plan and Rules.

## **II. Introduction**

In response to mounting concerns about agricultural impacts on water quality, the Oregon State Legislature passed the Agricultural Water Quality Management Act (Senate Bill 1010) in 1993. This law allowed ODA to develop Agricultural Water Quality Management Area Plans for basins with water quality problems.

From 1998 to 2000, ODA and the LAC worked to develop a management plan and associated administrative rules for the Malheur Management Area. ODA adopted the Area Plan and Rules in February 2001.

As provided by administrative rule (OAR 603-90-0020), the LAC consisted primarily of landowners residing in the Management Area. These individuals were selected to represent diverse aspects of agriculture in the Malheur River Basin. Representatives of the local community were also part of the committee.

The Malheur County Soil and Water Conservation District (SWCD), as the Local Management Agency (LMA), assisted in nominating the LAC, supported it during development of the Area Plan, and is the local entity responsible for implementing the Area Plan.

## **III. Background**

When developing the Malheur Area Plan and Rules, the LAC identified several goals that, if achieved, would significantly improve water quality in the Management Area. The LAC then recommended rules that had to be met on all agricultural and rural lands within the Management Area.

### **Area Plan Mission Statement**

*“While emphasizing commodity production, ensure that surface water and groundwater influenced by agricultural activities comply with or are making measurable progress toward achieving water quality standards.”*

### **Area Plan Goals**

**Primary Goal:** *“Encourage voluntary compliance by agricultural producers with federal and state requirements to solve point and nonpoint source pollution through voluntary farm planning, technical assistance, financial assistance, and educational programs to increase awareness.”*

To achieve the Primary Goal, the Area Plan incorporates six additional goals, each with its associated tasks. The Area Plan goals are:

- Secure adequate funding for administration and implementation of the program to achieve this plan's mission, goals, and objectives.
- Enhance the level of awareness and understanding of water quality issues in the public and the agribusiness community.
- Determine the site capabilities of riparian areas in the Malheur River Basin.
- Foster the development of new Effective Management Practices so that Effective Management Practices are viewed as a changing array rather than a static set of practices. Innovations in science are needed to improve and broaden practice options.
- Increase the adoption of Effective Management Practices to improve water quality.
- Monitor and evaluate the effectiveness of the plan.

#### **Area Rules**

The LAC developed Area Rules specifically for the Malheur Basin. These rules address water quality concerns identified in the Malheur Basin that are affected by agricultural activity such as sedimentation, nutrients, bacteria, and temperature. The Area Rules require agricultural landowners in the Management Area to:

- Avoid placing waste where it is likely to cause pollution.
- Prevent irrigation return flows from causing an excessive, systematic, or persistent increase in sediment levels in receiving waters.
- Avoid causing active streambank erosion beyond natural levels.
- Allow development of riparian vegetation consistent with site capability to control

erosion, filter sediment, moderate solar heating, and allow water infiltration into the soil profile.

- Manage range and pastures to maintain watershed functionality.

#### **IV. Area Plan and Rules Implementation Activities, 2005-2007**

As described in the Area Plan, the Malheur County SWCD is the Local Management Agency for the Malheur Plan. Malheur County SWCD directors and employees have worked closely with ODA, USDA Natural Resources Conservation Service (NRCS), and Oregon State University Extension Service (OSU Extension) to hire competent technicians, coordinators, monitoring services, workshop presenters, and initiate mass media campaigns.

#### **Malheur County SWCD Activity Summary 2005-2007**

**Newsletters**— Four conservation newsletters have been produced by the Malheur County SWCD on conservation topics to assist and educate landowners.

**Newspaper articles**— Six newspaper articles have been written covering water quality, education, and other conservation topics. The articles were distributed to over 10,000 producers.

**Presentations or displays to groups**— The Malheur SWCD has been a key partner in producing an annual Irrigation Water Management seminar that has contacted more than 130 producers in the county. For two years staff has set up and disseminated information at the Malheur County Fair.

**Coordination with other agencies**— The Malheur County SWCD continues to be the leading agency for conservation

coordination in the county. New relationships and successful projects have been achieved working with the five local irrigation districts, covering over 241,000 acres. Coordinated activities included work with Oregon Department of Fish and Wildlife (ODFW) on sage grouse projects. Coordination with the Oregon Department of Environmental Quality (DEQ) has occurred on water quality monitoring. Malheur County SWCD assistance to NRCS has yielded several Environmental Quality Incentive Project (EQIP) contracts and completed engineering designs to enhance activity for conservation projects.

**Fact Sheets / brochures** – The Malheur County SWCD has produced eight factual brochures on the following conservation topics: rotational grazing, weed control, stream bank protection, horse pasture management, feedlot protection, SWCD program spotlight, irrigation water management classes, and economic partnerships.

**Information Clearinghouse**— The Malheur County SWCD and NRCS have served the local agricultural community as resources of technical information related to positive management practices.

**Archive for LAC**— The Malheur County SWCD District Manager has coordinated and archived all LAC correspondence, LAC meetings, and meeting records.

**Farm plans**— Four farm plans have been and continue to be developed with Malheur County SWCD planners working in coordination with NRCS.

**Grant projects developed by the Malheur County SWCD**— Attached is a spreadsheet showing the projects completed during the 05-07 period (Attachment A). New funding

grants have been secured and are being implemented for constructed wetlands, irrigation improvements, irrigation system analysis, stream protection, juniper removal and riparian enhancements.

**Employment of staff**— During this time the Malheur County SWCD has employed a District Manager, a full time clerical assistant, a full-time Watershed Technical Specialist (engineer), and a full-time Conservation Technician. As of August 2007, the District Manager, a Watershed Technical Specialist (WTS), and Conservation Technician work for the Malheur County SWCD.

### **USDA Natural Resource Conservation Service and Farm Service Agency Accomplishments**

The Natural Resources Conservation Service (NRCS) and Farm Service Agency (FSA) administer several federal conservation funding programs and provide technical assistance to landowners who enroll. Ontario NRCS has allocated \$1,400,506 in EQIP and Wildlife Habitat Incentive Project (WHIP) conservation projects on private ground over the past two years in the Malheur Watershed. They have also provided technical and engineering assistance on conservation grants to enhance the goals of the Agricultural Water Quality Management Area Plan.

### **Watershed Council Activities**

Together with the Malheur County SWCD and NRCS partners, the Malheur Watershed Council has completed several projects on agricultural lands. These on-the-ground partners are vital in helping agricultural landowners protect their resources and help themselves.

## V. Monitoring and Evaluation

Evaluation of the Area Plan's success involves several types of monitoring. These are:

- Baseline condition monitoring
- Trend monitoring
- Implementation monitoring
- Effectiveness monitoring

### Baseline Condition and Trend Monitoring – What are current conditions and how are they changing?

Baseline condition monitoring provides a starting point for assessing water quality trends and land conditions. To evaluate the effects of the Area Plan and Rules, implementation partners must establish a picture of conditions prior to plan and rule implementation.

Trend monitoring evaluates long-term changes in landscape conditions and water quality. In general, trend-monitoring activities are a continuation of baseline monitoring activities. Ideally, areas selected for baseline monitoring will also be used for trend monitoring.

To assess existing water quality conditions, Oregon Department of Agriculture water quality staff review water quality data from the Oregon Department of Environmental Quality's Laboratory Analytical Storage and Retrieval (LASAR) database. In many cases, monitoring sites included in this database are adequate to track water quality in agriculturally influenced watersheds. In other cases, ODA staff may recommend additional monitoring sites that would be useful for tracking agriculture's effects on water quality.

ODA looks at all data for trends, but focuses on the parameters of concern for the specific subbasin.

ODA applies the following criteria to water quality data used for trend monitoring:

- 1) Monitoring stations must have at least partial influence from agricultural lands.
- 2) Data must not be older than 1985.
- 3) Data must be a continuous record of at least two years (the frequency of monitoring was not considered).
- 4) Data set ideally should include at least the following constituents:
  - a) Total Suspended Solids
  - b) Nitrate
  - c) Ammonia
  - d) *E. coli* or fecal coliform
  - e) Total Phosphorus or orthophosphate
  - f) Dissolved Oxygen, or Chemical Oxygen Demand/Biochemical Oxygen Demand
  - g) pH

The above constituents are considered needed for tracking changes in water quality related to agricultural activities.

Temperature is not included on this list because it is continuously monitored, rather than periodically like the parameters above, and because ODA expects changes in temperature to take place more slowly with changes in land conditions.

An ODA review of monitoring stations in the Management Area concluded the existing stations provide enough data to characterize water quality trends as part of ODA's larger statewide effectiveness monitoring efforts. Below is a summary of water quality trends from the existing stations in the LASAR database reviewed by ODA, followed by summaries of watershed

council monitoring data and the LAC's recommendations for additional monitoring sites.

### LASAR Data Summary

The following was provided by Oregon Department of Environmental Quality:

### **Oregon Water Quality Index Status and Trends - Malheur River Basin – Long Term Ambient Monitoring (Water Years 1997 – 2006); by Steve Mrazik, DEQ**

#### **Background - Oregon Water Quality Index**

The Oregon Water Quality Index (OWQI) analyzes a defined set of water quality variables and produces a score describing general water quality. The water quality variables included in the OWQI are temperature, dissolved oxygen (percent saturation and concentration) (DO), biochemical oxygen demand (BOD), pH, total solids, ammonia and nitrate nitrogens, total phosphorus, and bacteria. The bacterial indicator for the OWQI changed from fecal coliform to *E. coli* in 2002 (Cude, 2005). OWQI scores range from 10 (worst case) to 100 (ideal water quality).

For this report, OWQI results are calculated on all samples taken from October 1996 through September 2006. These data are analyzed to determine which variables limit general water quality during various seasons. Each site with sufficient data is analyzed for the presence of significantly increasing or decreasing trends. The Seasonal-Kendall test (WQHydro) is used for trend analysis to ensure that the significant trends that exist are not due to normal seasonal variation. Seasonal averages were calculated for the summer season (June - September) and FWS season (fall, winter, and spring: October - May).

The minimum of these seasonal averages is used for ranking purposes. The minimum seasonal average takes into account seasonal variability between different river systems. The seasonal delineation for OWQI calculations is used to provide a standardized comparison of all streams in Oregon.

There are four long-term ambient water quality monitoring stations in the Malheur Basin (Attachment B, Table 1). DEQ collects water chemistry data bi-monthly at the monitoring locations. Table 1 highlights the Oregon Water Quality Index status and trend information for the Malheur Basin.

Results: The Minimum Seasonal Average OWQI scores for all Malheur Basin sites fall in the Very Poor category. The Malheur River at Little Valley has the highest OWQI score within the Malheur Basin.

#### **Malheur SWCD Monitoring Data**

During the past two years 24 agricultural drains have been monitored by the Malheur County SWCD through a monitoring grant provided by the Oregon Watershed Enhancement Board (OWEB). These drain samples are full spectrum analysis 12 months of the year and are a continuation of a previous two-year monitoring program. The samples are processed by the U.S. Bureau of Reclamation (USBR) water quality lab in Boise, Idaho. The resulting data are regularly sent to irrigation and drainage district partners. The results have helped increase the awareness of irrigation district partners and have resulted in a system-wide assessment of the irrigation system that is currently under way. The assessment is developing long-term goals for the combined irrigation district and developing highly accurate GIS digital mapping and LIDAR technologies.

### **Implementation monitoring**

Implementation monitoring tracks the conservation practices that have been implemented to benefit water quality. The local SWCD and NRCS use quarterly reports to ODA to track practices that have been implemented. In addition, projects that have received funding from OWEB are tracked in OWEB's restoration database.

It is more difficult to track beneficial practices that landowners have implemented on their own without funding or outside technical assistance.

The results of the implementation monitoring have resulted in the development of ten new water quality projects, including pressurized irrigation designs, constructed wetland filters, large system pumpback systems and other irrigation efficiency projects accounting for more than \$560,000 in upcoming water quality projects.

Accomplishments within the Malheur Management Area between 2005 and 2007 are summarized on pages 4 and 5 of this report.

### **Effectiveness monitoring – Are efforts protecting and improving water quality?**

Effectiveness monitoring occurs on two scales. At a Management Area scale, land condition data and water quality data are compared over time to determine if changes in land conditions are improving water quality. Effective monitoring may occur once adequate water quality and land condition data are obtained.

### **VI. Complaints**

Since the last biennial review, ODA received one complaint in the Malheur Management Area. The landowner was

determined to be in compliance with the Area Rules and was issued a Letter of Compliance. The Malheur County SWCD staff has worked with the landowner to address other water quality concerns identified during the complaint investigation.

### **VII. Malheur Area Plan and Rules Review Process**

In August of 2007, as provided by OAR 603-090-0020, the LAC met to conduct the second periodic review and update of their Area Plan and Rules. Management Area landowners representing agricultural commodities serve on the LAC.

The following LAC members participated:  
Jim Bentz - Rancher  
Loren Weideman – City of Ontario

### **VIII. Recommendations for the Next Two Years of Implementation**

The group's recommendations for the next two years included a handbook for new landowners coming into Malheur County, additional juniper and weed control projects in the uplands, the development of farm plans aimed at improving water quality, projects that address tillage sequences, and continued education to farmers and ranchers.

### **IX. Conclusions**

The LAC believes that Area Plan and Rules implementation is going smoothly. Landowners continue to work with a variety of local partners to implement water quality improvement activities. Many landowners are working with partner agencies and organizations to access funding to support water quality improvement activities.

The LAC is concerned about the decreasing trend in DEQ's OWQ Index and encourages the Malheur County SWCD and ODA to continue monitoring and implement practices to address these issues. The LAC believes that additional monitoring should be done to determine the activities that are contributing to agricultural water quality trends.

The LAC also supports continued outreach to inform more landowners about the Area Plan and Rules.

The Malheur County Soil and Water Conservation District will continue implementing the Area Plan in cooperation with ODA and other partners.