LOWER JOHN DAY

Agricultural Water Quality Management Area Plan

Guidance Document

Developed by the

Lower John Day Local Advisory Committee

With assistance from

Oregon Department of Agriculture
and
Gilliam and Sherman County Soil and Water Conservation Districts

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Table of Contents

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ACRONYMS

AgWQM	-	Agricultural Water Quality Management
CAFO	-	Confined Animal Feeding Operation
CREP	-	Conservation Resouces Enhancement Program
CRP	-	Conservation Reserve Program
CWA		The Clear Water Act
DEQ	-	Department of Environmental Quality
DMA	-	Designated Management Agency
EQIP	-	Environmental Quality Incentive Program
FOTG		Field Office Technical Guide
LA	-	Load Allocation
LAC	-	Local Advisory Committee
LMA	-	Local Management Agency
NRCS	-	Natural Resources Conservation Services
OACD	-	Oregon Association of Conservation Districts
OAR	-	Oregon Administrative Rules
OCA	-	Oregon Cattlemen's Association
ODA	-	Oregon Department of Agriculture
ORS	-	Oregon Revised Statutes
OSU	-	Oregon State University
OWEB	-	Oregon Watershed Enhancement Board
SB	-	Senate Bill
SWCD	-	Soil and Water Conservation District
TMDL	-	Total Maximum Daily Load
USDA	-	United States Department of Agriculture
WRD		Water Resources Department

FOREWORD

This Agricultural Water Quality Management (AgWQM) Area Plan provides guidance for addressing agricultural water quality issues in the Lower John Day AgWQM Area. The purpose of this Area Plan is to identify strategies to reduce water pollution from agricultural lands through a combination of educational programs, monitoring, suggested land treatment and management activities. This Area Plan will be used by landowners to enhance their awareness and understanding of water quality issues and to provide guidance to solutions for water quality problems. Local management agencies will use this Plan to guide implementation, outreach, and assistance efforts for landowners.

This **Area Plan** does not establish legal requirements or prohibitions for landowners**.** Implementation and enforcement of this Area Plan is through formally adopted **Area Rules**, as provided in Oregon Revised Statutes (ORS 568.912). These Area Rules define the planning area, provide prevention and control measures needed to protect water quality, provide limitations to the prevention and control measures and describe complaint resolution and enforcement processes.

The Oregon Department of Agriculture (ODA) will exercise its enforcement authority for the prevention and control of water pollution from agricultural activities under the Area Rules for the Lower John Day AgWQM Area Oregon Administrative Rules (OARs) 603-095-2900 through 603-095-2960) and state-wide enforcement procedures provided in OAR 603-090-0060 through 603-090-0120. **Area Rules are presented in this Area Plan and indicated by bold type within a border**.

The Area Rules, to implement the Area Plan, were formally adopted by the ODA in February 2007. The Area Plan was revised in 2011 to update the reference information, water quality standards and include Total Maximum Daily Load (TMDL) target information. The TMDL was developed by the Oregon Department of Environmental Quality (DEQ) and approved by the federal Environmental Protection Agency (EPA) in December 2010, to fulfill requirements of the Clean Water Act to develop pollution control targets and improvement plans for impaired waters within the plan area. In the Lower John Day Subbasin, TMDL targets have been established to address instream temperature and focuses on temperature reduction measures.

INTRODUCTION

The 1993 Oregon Legislature, through passage of Senate Bill 1010, the Agricultural Water Quality Act, (ORS 568.900 - 568.933), designated ODA to be the lead state agency working with agriculture to address water pollution. Oregon adopted the law to give agriculture an effective way to meet the requirements of federal and state clean water regulation. Through the Agricultural Water Quality Act, ODA is authorized to develop and carry out a water quality management plan for agricultural or rural lands, whenever a water quality management plan is required by state or federal law. In 1995, the Oregon Legislature passed SB 502 (ORS 561.191) that stipulates that ODA shall develop and implement any program or rules that directly regulate farming practices that are for the purpose of protecting water quality and that are applicable to areas of the state designated as exclusive farm use zones or other agricultural lands. The implications of the legislation are that in Oregon, ODA is the agency solely responsible for regulating agricultural activities that affect water quality. In the 2001 legislative session, ORS 568.900 – 568.933 was amended to clarify that only the Area Rules associated with an Area Plan are enforceable, not the plan itself.

That legislation also clarified that ODA entry onto private property must be consistent with section 9, Article I of the Oregon Constitution, and the Fourth Amendment of the United States Constitution; that ODA may not impose a civil penalty on a landowner for a first violation of any water quality rules unless certain conditions are met; and that any new fees proposed by ODA are subject to legislative approval.

Oregon's agricultural pollution management program requires Area Plans to help identify and control water pollution caused by activities on agricultural and rural lands. These plans recognize that the best way to prevent or control pollution from agricultural and rural land is to work to reduce the conditions on that land that cause pollution.

This Area Plan was developed by volunteer members of the Lower John Day AgWQM Area Local Advisory Committee (LAC) with assistance from ODA and the Sherman County and Gilliam Soil and Water Conservation Districts (SWCD), in consultation with members of the community.

Members are:

Martin Belshe	Gene Burnett	Gary Carlson
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This Area Plan was approved by the Oregon State Board of Agriculture in June 2004. The LAC met in January 2006, to review the progress of implementation and discuss issues relative to compliance. They met again in December 2006, to conduct the formal biennial review of the progress of implementation of the Area Plan and Area Rules. At that time, the LAC agreed, by consensus, to modify the Prevention and Control Measures - Upland Management section of the Area Plan to add a statement clarifying the relationship between the Soil Erosion and Sediment Control Rule (OAR 603-095-2940(3)) and the Waste Management Rule (OAR 603-095-2940(2).

Applicability

This Area Plan applies to agricultural activities on all non-federal agricultural, rural, and forest lands in the Lower John Day AgWQ Management Area. This Management Area consists of 1) all lands drained by the John Day River and its tributaries downstream but not inclusive of the Butte Creek drainage and 2) all streams flowing into the Columbia River between the Lower Deschutes drainage and the Willow Creek drainage (Attachment C). It applies to lands in current agricultural use and those lying idle or on which management has been deferred. It also applies to agricultural operations within incorporated city boundaries.

In summary, this Area Plan provides farmers, ranchers, and other agricultural land users in the Management Area a tool to achieve the following conditions on the land they occupy and manage:

1. Soil erosion on uplands not exceeding acceptable rates.
2. Elimination of placement, delivery, or sloughing of wastes into streams (currently a state law).
3. Riparian vegetation for bank stability and stream shading consistent with vegetative site capability.

Farmers, ranchers, and other agricultural land users are not expected to achieve all the above conditions immediately. Each condition has a timeline associated with it. However, landowners are expected to take current action in adapting their management techniques so they can control the conditions on their property.

The intent of this Area Plan is not to tell anyone how to farm, ranch, or otherwise utilize natural resources. However, SWCD personnel along with the Natural Resources Conservation Service (NRCS) in local offices can provide technical assistance to help farmers, ranchers, and other agricultural land users implement recommendations in this Area Plan. For detailed information, please refer to the "Prevention and Control Measures" section. Each farmer, rancher, or other agricultural land user is expected to observe their property to ensure that undesirable conditions do not exist or that conditions are beginning to improve. If problems are encountered in meeting the goals of this Area Plan, land managers are encouraged to seek assistance, as they will be required to bring the land they own or operate on into compliance with these goals.

This Area Plan recognizes that planning for water quality is only part of a successful plan for overall management of agricultural and rural land and that other, broader objectives must also be considered in total farm or resource management planning. Sustaining agricultural production capacity for future generations is one of those broader objectives. Conserving water and soil resources will help achieve that.

The Gilliam and Sherman County SWCDs have a long history of providing assistance to farmers and ranchers in implementing practices for the protection and conservation of natural resources. The Gilliam SWCD was created on November 4, 1946, and the Sherman County SWCD was created on April 21, 1950, under ORS 568.210 – 800. The SWCD boundaries are consistent with the respective county boundaries.

The SWCD and the USDA Natural Resources Conservation Service (NRCS) have traditionally assisted landowners and operators with conservation planning and practice implementation utilizing many of the U.S. Department of Agriculture (USDA) conservation cost-share programs. When working with operators, the SWCD and NRCS staff follow a nine-step planning process, which helps the landowners identify their conservation objectives, and leads to development of a conservation plan that outlines various alternatives that may be used to address identified natural resource concerns. Staff works with the operators on their land to conduct resource inventories and surveys, and help lay out and oversee the installation of conservation measures on their land. The NRCS and SWCD develop specific conservation measures to control erosion, improve wildlife habitat, and reduce sedimentation.

The 1995 state legislature encouraged the formation of watershed councils within watershed boundaries in order to identify resource concerns and develop action plans. The county court recognizes the watershed councils and the SWCDs provide administrative services. Watershed councils have been formed in the Lower John Day Management Area. The councils are the East Gilliam County Watershed Council and the Sherman County Area Watershed Council that serves as an "umbrella" council for the Pine Hollow/Jackknife, Fulton and Gordon Canyons, Grass Valley Canyon, Macks Canyon, and North Sherman County watersheds.

GEOGRAPHIC AREA AND PHYSICAL SETTING

Location, Description and Land Use

The Lower John Day AgWQ Management Area is an interior plateau generally situated between the Blue Mountains to the east and the Cascades Mountain Range to the west in North Central Oregon.

The John Day River in northeastern Oregon is unique – it's the second longest undammed river (500 river miles) in the continental United States, behind the Yellowstone River. It contains designations of federal Wild and Scenic and State Scenic River in some sections and hosts a diversity of fish and wildlife.

Located in the southern section of the Columbia Plateau Ecological Province, the John Day River Basin is an 8,100 square mile drainage area, the fourth largest basin in the state. The flows originate in the Strawberry Mountains (9,000 ft.) and flow generally westward and then northward for approximately 284 miles, discharging into the Columbia River east of Rufus (200 ft.), at River Mile (RM) 217.

Counties within this area include Gilliam, Morrow, Sherman, Wasco, and Wheeler. Major towns in the AgWQ Management Area include Arlington, Condon, Grass Valley, and Moro. This area is not a highly populated area (0.9 – 2.2 people / square mile).

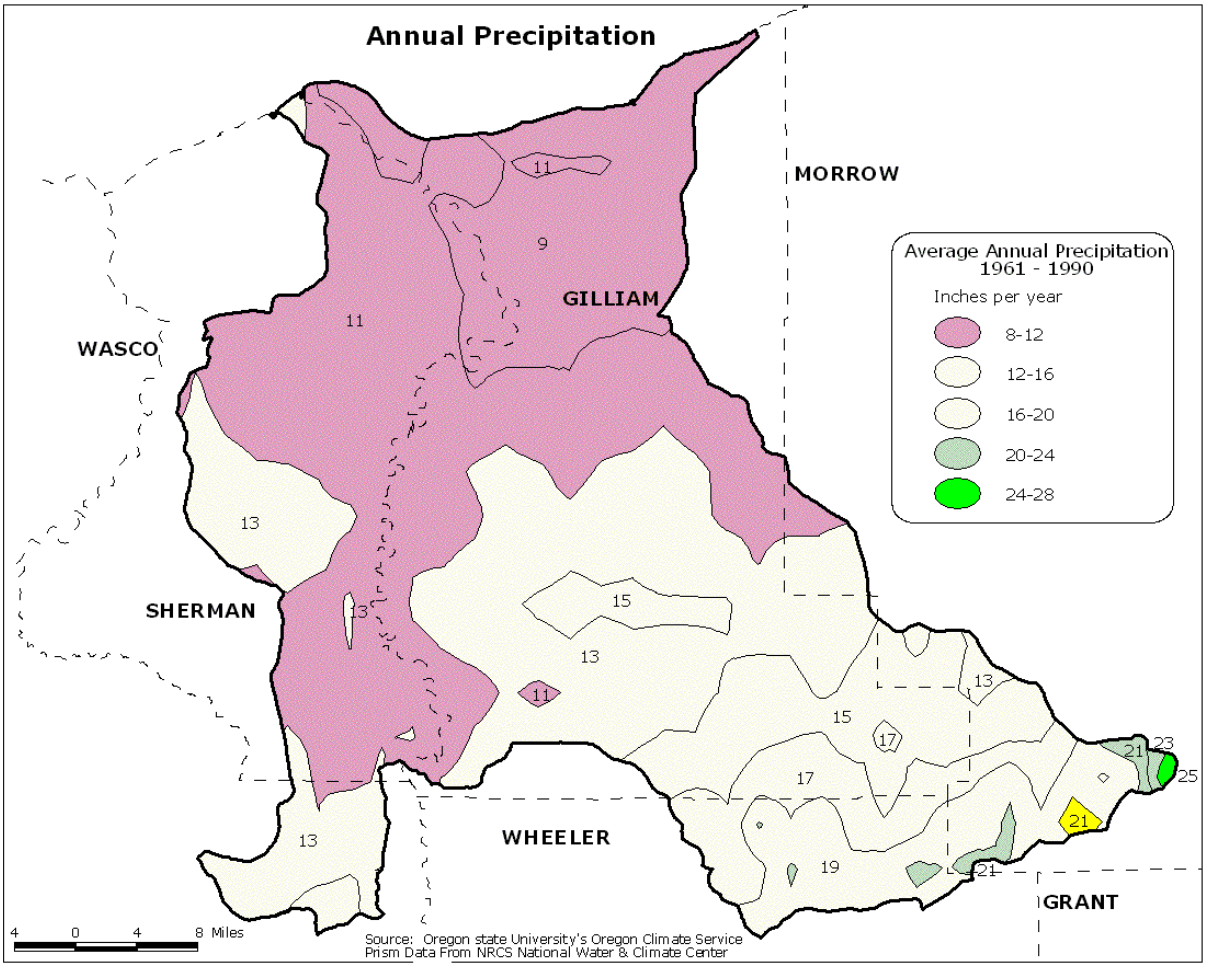
The Management Area contains 1,181,194 acres (1,845 square miles). Most of the land (1.07 million acres) in the Management Area (91 percent) is privately owned. Bureau of Land Management manages 88,566 acres (7.5 percent), mostly along the John Day River, while the U.S. Forest Service National Forest only occupies 13,551 acres (1.1 percent) in the southeastern corner of the Management Area.

Today the economy is heavily based on agriculture, tourism, and agriculture-related industries. The small population, isolation from major cities, and limited transportation facilities limit expansion of the economy. The timber industry (logging) is most important in the forested upper portions of the basin. Dryland production of grain crops is the major economic activity on the plateaus of the Management Area. Livestock agriculture is important throughout the basin, comprised mostly of cattle and sheep ranching and associated hay crops. Tourism and recreation are growing industries, constituting a significant sector of the subbasin's economy and are inextricably tied to the production of natural resources. Hunting, fishing, boating, camping, wildlife observation, photography, hiking, swimming, and scenic viewing are among the most common recreational activities. Federal Wild and Scenic river segments and State Scenic Waterway designation have undoubtedly contributed to the rise in tourism and recreation. These river segments contain outstandingly remarkable values and provide opportunities for white water rafting, warm-water bass fishing, and wildlife viewing.

Climate

The climate in the John Day Subbasin ranges from sub-humid in the upper basin to semi-arid in the lower basin. The area has a continental climate, characterized by low winter and high summer temperatures, low average annual precipitation and dry summers. The low annual rainfall on the majority of the landscape is characteristic of the Intermountain Region, which receives most precipitation (70-80 percent) between November and March. Less than 10 percent of the annual precipitation falls as rain during July and August, usually from sporadic, but violent thunderstorms. The other events that produce substantial and damaging runoff in this area are heavy precipitation or

rapid snowmelt on frozen soils. These events occur relatively infrequently and cannot be predicted. Annual rainfall varies from about 8 inches in the northeast portion of the Management Area to about 28 inches in the extreme southeast, higher elevation, forested areas. Most of the agricultural areas receive between 10 and 14 inches of precipitation per year. Mean annual temperatures vary inversely with elevation. Mean annual temperature ranges from 38° F in the upper subbasin to 58° F in the lower basin. Throughout the subbasin, actual temperatures vary from sub-zero during the winter months to over 100° F during the summer. Inflows of moist Pacific air moderate extreme winter temperatures. The average frost-free period is 50 days in the upper basin and 200 days in the lower basin.



Hydrology

The John Day and Columbia rivers are the largest watercourses within the area. Most water in the John Day Subbasin is derived from the upper watersheds, primarily in the form of melting snow. The John Day is a free-flowing system with highly variable discharge from peak to low flows. Discharge usually peaks from March through June and seasonal low flows typically occur from August to October. The John Day River tends to experience flood events in December and January when warm temperatures and high precipitation results in rain on snow events, which lead to extreme runoff. Average annual discharge of the John Day River into the Columbia River is approximately 1.5 million acre feet (or 2,103 cfs), with a range of 1 million to 2.25 million acre feet. Peak flow at the McDonald Ferry gauging station (RM21) is typically over 100 times greater than the lowest flows the same year. From year to year, peak flows can vary as much as 300 – 700 percent. Major tributaries of the Lower John Day in the Management Area include Rock Creek, Grass Valley Canyon, Pine Hollow, Thirty-mile Creek, Dry Creek, Blalock Canyon and Juniper Creek.

Topography/Geology
Rock assemblages within the John Day Subbasin include masses of oceanic crust, marine sediments, volcanic materials, ancient river and lake deposits, and recent river and landslide deposits. Major geologic events included volcanic eruptions, uplifting, faulting, and erosion. Volcanic activity in the form of lava flows, mudflows, and ash fall formed and stratified three key formations in the subbasin over the course of approximately 37 to 54 million years – the Clarno Formation, the John Day Formation, and the Columbia River Basalt Group. The Columbia River Basalt Group, a less erodible formation, resulted from a series of flood basalt 12 to 19 million years ago. The Columbia River Basalt is the dominant rock at elevations below 4,000 feet. Igneous rocks are exposed in the higher reaches of the subbasin, while the lower basin exposures are primarily extrusive rocks, ash, and wind-blown loess. After volcanic activity ceased (10 million years ago), erosion and faulting continued to alter the landscape.

Vegetation
The present plant communities differ from the original flora found in the Lower John Day subbasin as a result of intensive grazing, fire suppression, and introduction of exotic plants. Native bunchgrasses have been largely replaced by western juniper, sagebrush, and exotic plants (e.g. cheatgrass). Land cover is predominantly rangeland and cropland. Agriculture is the primary private sector economic activity in the Lower John Day subbasin. The primary agricultural products in the Management Area are small grain and beef cattle production. The maximum allowable acreage (25% of total cropland) has been enrolled in the Conservation Reserve Program (CRP), removed from crop production and planted to perennial grasses. Classifiable plant communities (ecological sites) in the Lower John Day subbasin are categorized into four basic divisions, according to the topographic position which they occupy: riparian, terrace, upland, and forest-woodland. Grass, shrub, and juniper communities dominate the valleys; ponderosa pine, lodgepole pine, Douglas fir, and white fir communities dominate higher elevations. Soil diversity also contributes to the variety of vegetation types. Exotic plants (noxious weeds) and uncontrolled growth of some native species (e.g. juniper) is a growing problem within the region. The single greatest threat to native rangeland biodiversity and recovery of less than healthy watersheds is the rapidly expanding invasion of noxious weeds. Although many weeds occupy lands in the Lower John Day subbasin, those causing most concern are diffuse, spotted, and Russian knapweeds; Dalmation toadflax; yellow starthistle; Scotch thistle; purple loosestrife; rush skeletonweed; leafy spurge; poison hemlock; Russian thistle; Canada thistle and medusahead rye.

Fish and Wildlife Resources
Historically, the John Day River was one of the most significant anadromous fish producing rivers in the Columbia River basin. Today, the John Day continues to support some of the most diverse native and non-native fish assemblages and healthiest populations of anadromous fish in the basin. It is estimated that there are 27 species of fish, including 17 native species, found in the John Day Basin. The relative health of these populations has been largely attributed to the absence of any large dams, limited releases of hatchery fish and the presence of quality habitat in headwater areas. The John Day Basin supports wild runs of spring and fall chinook salmon, summer steelhead, and Pacific lamprey; resident populations of westslope cutthroat, interior redband, and bull trout also exist.

A variety of wildlife species, including large and small mammals, waterfowl, passerines, raptors, reptiles, and amphibians, are associated with the John Day Subbasin riverine, wetland, and upland habitats. Many wildlife species reside within the subbasin in association with Shrub-Steppe habitat.

Certain populations of wildlife species are being managed by federal and state wildlife managers throughout the subbasin, including big game, fur bearer, upland birds, and waterfowl species. Many raptors inhabit the subbasin as well.

WATER QUALITY ISSUES

The Clean Water Act (CWA) requires that each state designate beneficial uses for every stream and lake, decide which parameters to measure to determine whether beneficial uses are being met, and set water quality standards based on the beneficial uses and parameters. Section 303(d) of the CWA directs states to develop a list of water quality limited streams, which are streams that violate water quality standards and do not support their beneficial uses. The CWA also directs states to develop Total Maximum Daily Loads (TMDLs) for 303(d)-listed streams.

The TMDL results in allocations of pollutant loads to different sources such as agriculture, urban areas, and federal lands. Each jurisdictional authority then develops water quality management plans to achieve the load allocations. The John Day Basin TMDL, that includes this management area, was approved in 2010. This Area Plan serves as the implementation plan for agriculture's load allocation and may be revised to address the load allocations as they are implemented.

A TMDL assessment uses scientific data collection and analysis to determine the amount and source of each pollutant entering streams. A TMDL is the maximum amount of pollutant that can be present in a waterbody while meeting water quality standards. These maximum allowable pollutant loads are assigned to contributing sources, typically to land use authorities. This plan addresses the agricultural sources.

Stream pollution is closely tied to land use. In the John Day Basin, 45 percent of the land is forested and more than 50 percent is in agricultural use. Other uses include urban, rural residential, parkland and industrial. The TMDL planning applies to all land uses that contribute pollution to the basin's streams and rivers.

ODA consulted with DEQ to determine whether this Area Plan was sufficient to meet load allocations and achieve water quality standards. DEQ's water quality temperature standards state that farming and ranching operations that are in compliance with the Agricultural Water Quality Management Act requirements will not be subject to DEQ enforcement.

Beneficial Uses

Beneficial uses in the Lower John Day AgWQ Management Area include public and private water supply, irrigation, industrial, livestock watering, anadromous fish passage, salmonid fish rearing and spawning, resident fish and aquatic life, wildlife and hunting, boating, fishing, water contact recreation, and aesthetics (OAR 340-41-602, Table 10). Of the beneficial uses of water in the John Day River Basin, the most sensitive use for most waters and parameters of concern is spawning and rearing of cold-water fisheries.

Water Quality Parameters of Concern

The DEQ has identified several water quality concerns in the basin, including high temperature and bacteria levels, low oxygen concentrations and impaired biological conditions**.** The Lower John Day is listed only for high summer water temperatures. The following discussion of water quality parameters of concern in the watershed addresses the CWA requirements for standards to be established for the most sensitive beneficial use.

Stream Temperatures

Water temperature is the most widespread concern in the basin. The causes of stream heating are excess solar radiation, decreased groundwater interaction and instream flow reduction. These can result from natural disturbances and human-related stream modifications such as vegetation disturbance, irrigation withdrawal and channel straightening. Excessive water temperatures affect the survival of aquatic species. The purpose of the temperature criteria is to protect designated temperature-sensitive beneficial uses, including specific salmonid life cycle stages in waters of the state.

> *Where DEQ determines that the natural thermal potential of all or a portion of a water body exceeds the biologically-based temperature standards, the natural thermal potential temperatures supersede the existing biologically-based criteria, and are deemed to be the applicable temperature criteria for that water body (OAR 340-041-0028(8)).*

DEQ computer simulation of heating along the John Day River indicates that the biological-based criteria are not attainable in much of the subbasin. In such situations, the temperature standard specifies that the target of the TMDL is natural thermal potential temperature. The TMDL defines natural thermal potential as the best estimate of vegetation, channel shape, stream flow and other thermal controls that would occur without past and present human disturbance.

For nonpoint sources of stream heating (e.g. vegetation disturbance, stream channel alteration) attributed to agriculture and rural lands, the temperature TMDL establishes thermal goals for on-the-ground conditions that would lead to more natural stream temperature patterns. The TMDL recovery targets call for natural shade-producing vegetation along all streams in the plan area and the removal of stressors that are impeding that attainment of a natural vegetative and channel geometry conditions. In certain areas, shade producing riparian vegetation may not be appropriate due to local site conditions. Site-specific determinations will be made by the OR Department of Agriculture.

Water temperature is important because it affects most aspects of an aquatic environment, and many factors influence stream temperatures. Natural factors such as climate, air temperature, topography, and stream hydrology have a large influence. Human influence is limited to activities that affect:

- volume of water flowing in the stream
- width-to-depth ratio of the stream
- ground water recharge
- shade

Vegetation affects all of these factors and humans have, depending on the site, some degree of direct influence on vegetation. Riparian vegetation can help narrow and deepen stream channels, which protects water from heating by exposing less stream surface area to the surrounding environment.

Healthy vegetation in both the uplands and in the riparian area will capture, store and safely release water later in the season. Releasing water later in the summer will reduce temperatures in two ways. The first way is that a higher volume of water requires more energy to heat it. Secondly, infusion of groundwater, usually between 45 and 55° F, can help hold down stream temperatures.

Shade, provided by tall vegetation, blocks solar radiation. Solar radiation is the single most important energy source for heating streams during daytime conditions. Thus, streamside vegetation, via the shade it produces, moderates summertime stream temperatures. Shade does not cool water, it merely reduces the rate at which water temperature increases. Another benefit from shade is that summer air temperatures under a dense canopy can be cooler, thus further reducing the rate of increase in stream temperature. In winter, the vegetation can act as an insulator helping maintain the steady temperatures that are important for fish.

Given the general trend that streams are cool at the headwaters and temperatures gradually increase as the water progresses to the mouth, attempts to reduce the rate of heating should focus on the small streams high in the watershed. Humans have much more influence on these types of streams than on larger rivers. It is important to note that the majority of stream miles in this and other watersheds are represented by the small streams human management can affect. This is not to say that reaches lower in the system should be ignored. The climate and topography also have a profound influence on stream temperatures. Because eastern Oregon's summer climate is hot and dry, water temperatures are naturally high and flows are low late in the summer

Clearly, developing healthy, functioning riparian plant communities and stabilizing stream banks will improve critical aquatic and riparian habitat. However, because of the natural factors listed above and the technical and biological challenges (e.g. site capability, and beaver, deer and rodent damage) of developing riparian vegetation it is unlikely that portions of most stream segments will meet the temperature criteria. But the numerical criteria are only part of the temperature standard. The standard itself focuses on limiting human-caused warming of surface waters to the extent it is feasible.

Industries, agencies, cities and other groups including agriculture are required to write and implement a basin-wide management plan, such as this Area Plan, that describes how these sources will attempt to control stream temperatures if a stream in the basin exceeds the temperature criterion. It is important to note that the standard says any source, including individual landowners and land managers, in compliance with the required management plan shall not be deemed to be causing or contributing to a violation of the numeric criterion even if their stream's temperature exceeds the criterion (OAR 340-41-0028(13)(f)).

Sources of Water Quality Impairment

Sources of water pollution can be generalized into two types: point source pollution and nonpoint source pollution. Point source pollution emanates from clearly identifiable discharge points such as wastewater treatment plants, piped effluent from industrial operations and other discrete conveyances. Permits are required for significant point source discharges. These permits, administered by DEQ require that certain effluent standards be met or require a zero discharge level. Certain Confined Animal Feeding Operations (CAFO) requires permits that are administered by ODA.

Nonpoint source pollution is pollution emanating from landscape scale sources and cannot be traced to a single point. Probable nonpoint sources of pollution in the John Day River watershed include eroding agricultural and forest lands, eroding streambanks, runoff and erosion from roads and urban areas, and runoff from livestock and other agricultural operations. Pollutants from nonpoint sources are carried to the surface water or groundwater through the action of rainfall, snowmelt, irrigation and urban runoff, and seepage.

A major nonpoint source of water quality impairment is heat input that results in high water temperatures. Water temperature naturally fluctuates with air and soil temperatures on a daily and seasonal basis. Temperature increases may be caused by both natural and man-caused events resulting in vegetation removal, low seasonal flows, changes in channel shape and alteration to the floodplain. Channelization or alteration of stream courses can alter gradient, width/depth ratio and sinuosity, causing sediment and temperature increases.

While there may not be severe impacts on water quality from a single source or activity, the combined effects from all sources contribute, along with impacts from other land uses and activities, to the impairment of beneficial uses of the John Day River.

TMDL Implementation

TMDL implementation is carried out through two primary mechanisms: water quality permits for facilities and water quality management plans for nonpoint sources.

The TMDL document includes a water quality management plan with strategies and approaches for implementing the TMDLs. The plan designates organizations to prepare and carry out source-specific TMDL implementation plans. The organizations designated to prepare and carry out TMDL implementation plans include the U.S. Forest Service and Bureau of Land Management, Oregon Departments of Agriculture and Forestry, counties, cities and others. The timeline for submittal of these plans is generally 18 months following issuance of the TMDL.

PURPOSE, GOALS, AND OBJECTIVES

Purpose

The purpose of this Area Plan is to establish a framework to minimize agriculture's impact on water quality within the Lower John Day AgWQ Management Area. The Area Plan establishes procedures to identify and control factors that contribute to pollution originating on agricultural and rural lands. It also describes a program designed to achieve the goals of this Area Plan.

Goal

The goal of the Area Plan is to promote the most economical preventative measures to reduce water pollution from agricultural activities and seek to meet applicable water quality standards.

Objectives

To achieve the Area Plan purpose and goal, the following water quality related objectives are established:

- **Control soil erosion on uplands to acceptable rates.**
  Intent: While all soil lost from fields through erosion may not necessarily enter streams, due to distance from stream or practices such as sediment basins, the reduction in such erosion will reduce the likelihood that soil will enter streams.

- **Control pollution caused by the introduction of or discharge of wastes into waters of the state.**
  Intent: This ensures that high nutrient concentrations, pathogens associated with high animal density areas, high sediment concentrations in run-off, or other potential pollutants are not readily transported to streams and groundwater. It is also consistent with existing state statutes.

- **Provide riparian vegetation for streambank stability and stream shading.**
  Intent: The purpose of this objective is to provide for streambank stability and stream shading, consistent with site capability, not to restore riparian areas to their pre-settlement conditions or to address wetland areas away from streams. Because most of these changes take time and may require planning and implementation of management changes, landowners should take current actions necessary to achieve the desired conditions.

STRATEGIES TO ACHIEVE GOALS AND OBJECTIVES

To achieve clean water, an effective strategy must increase awareness of the problem and the range of potential solutions, motivate appropriate voluntary action, and provide for technical and financial assistance to plan and implement effective conservation practices. The following strategies will be employed, at the local level, by the Sherman County and Gilliam County SWCDs through an annual workplan and Memorandum of Agreement with ODA, in cooperation with landowners and other agencies and organizations.

1. Work to improve the quality of water in the Management Area through planning and implementation of technically sound and economically feasible conservation practices that contribute to meeting Area Plan objectives.
    A. Limit soil erosion and pollution caused by agricultural activities, as close to the source as possible, by achieving soil erosion targets and sediment control.
    B. Show progress in reduction of pollution from agricultural and rural lands through periodic surveys of stream reaches and associated lands. Methods will be selected as targets become better understood and quantified.
    C. Implement successful practices for streambank stabilization, reduction in high summer water temperatures, and restoration and enhancement of wetlands and riparian areas, while avoiding adverse fish habitat modification.
    D. Implement conservation practices to improve irrigation water use and conveyance efficiency to reduce the impact of seasonal flow modifications on streams resulting from water withdrawals and to reduce the potential of polluted return flows.
    E. Identify priorities for pollution source identification and determining areas for implementing restoration activities including reasonable timelines for management strategies targeting TMDL attainment.

2. Create a high level of awareness and an understanding of water quality issues among the agricultural community and rural public in a manner that minimizes conflict and encourages cooperative efforts through education and technical assistance activities.
    A. Incorporate implementation of the Area Plan as a priority element in the Sherman County and Gilliam County SWCD annual work plans, and long-range plans, with support from partner organizations.
    B. Inform landowners of the Area Plan and Rules and encourage landowners to make such changes as may be needed.
    C. Showcase successful practices and systems and conduct annual tours for landowners and media.
    D. Recognize successful projects and practices through appropriate media and newsletters.
    E. Promote cooperative on-the-ground projects to solve critical problems identified by landowners/operators and in cooperation with partner organizations.
    F. Conduct educational programs to promote public awareness of water quality issues and their solutions.
    G. Examine current research and monitoring results and conduct such monitoring as may be necessary to better quantify current conditions and objectives contained in this Area Plan in preparation for biennial Area Plan reviews.

3. Encourage active participation by the agricultural community and rural public in the process of solving our water quality problems.
    A. Encourage development of individual conservation plans by assisting landowners with plans that address water quality and with the implementation of conservation practices adopted in those plans.
    B. Promote the continued development, evaluation, and adoption of practices and technologies that enhance water quality in an efficient, effective, economic manner, by reviewing research and development needs with agriculture assistance agencies and consultants.
    C. Promote incentive and cost-share programs to assist with implementation of Area Plans and related practices, by annually identifying water quality funding needs with agencies providing cost-share and technical assistance to agricultural operations.

4. Encourage adequate funding and administration of the program to achieve Area Plan goals and objectives.
    A. Implement systematic, long range planning, focusing on coordinated efforts on full-scale, watershed-based approaches.
    B. Identify needs, develop projects, actively seek funding, and ensure successful implementation of funded projects.

In addition to these voluntary strategies, required measures (Area Rules) are included as an implementation strategy. ODA will use enforcement where appropriate and necessary to gain compliance with the Area Rules. Any enforcement action will be pursued only when reasonable attempts at a voluntary solution have failed (See Resolution of Complaints and Enforcement Action section).

Prevention and Control Measures

A landowner or operator's responsibility under this Area Plan is to implement measures that prevent and control the sources of water pollution associated with agricultural and rural lands and activities. A landowner or operator is not responsible for conditions caused by other landowners or for circumstances not within their reasonable control including unusual weather events. Reasonable control means that the landowner or operator is using technically sound and economically feasible measures to address conditions that can result in water pollution.

603-095-2940
Prevention and Control Measures
(1) Limitations: All landowners or operators conducting activities on agricultural lands are provided the following exemptions from the requirements of OAR 603-095-2940 (2), (3), and (4).

(a) A landowner or operator shall be responsible for water quality resulting from conditions caused by the management of the landowner or operator.

(b) These rules do not apply to conditions resulting from unusual weather events or other circumstances not within the reasonable control of the landowner or operator. Reasonable control of the landowner means that technically sound and economically feasible measures are used to address conditions described in Prevention and Control Measures

(c) The Department may allow temporary exceptions when a specific integrated pest management plan is in place to deal with certain weed or pest problems.

(d) The capability of a site is the highest ecological status a site can attain given political, social, or economic constraints.

The sections that follow describe more detailed information related to potential agricultural water quality concerns, provides definitions of commonly used terms, provides dates when rules are effective, and provides some exemptions to the rules.

To implement proper management practices and ensure an area is healthy or functioning properly, the capability and potential of a site must be understood. Site capability is the highest ecological status a site can attain considering political, social, or economic constraints. These constraints are often referred to as limiting factors. Site potential is the highest ecological status a site can attain given no political, social, or economic constraints and is often referred to as the "potential natural community".

Waste Management
A landowner or operator's responsibility under this Area Plan is to prevent the introduction of waste materials into nearby bodies of water. There are existing statutes and rules that regulate water quality that remain in effect and are enforced by other designated management agencies.

(2) Waste Management:
Effective on rule adoption, no person subject to these rules shall violate any provision of ORS 468B.025 or 468B.050.

Current Oregon Law, **ORS 468B.025** states that:
(1)"...no person shall:

(a) Cause pollution of any waters of the state or place or cause to be placed any wastes in a location where such wastes are likely to escape or be carried into the waters of the state by any means.

(b) Discharge any wastes into the waters of the state if the discharge reduces the quality of such waters below the water quality standards established by rule for such waters by the Environmental Quality Commission."

(2) No person shall violate the conditions of any waste discharge permit issued under ORS 468B.050

ORS 468B.050 identifies the conditions when a permit is required. A permit is required for Confined Animal Feeding Operations that meet minimum criteria for confinement periods and have large animal numbers or have wastewater facilities (Refer to OAR 603-074 for complete rules).

Definitions (ORS 468B.005)

"Wastes," means sewage, industrial wastes, and all other liquid, gaseous, solid, radioactive or other substances, which will or may cause pollution or tend to cause pollution of any waters of the state. Additionally, OAR 603-095-0010(53) includes but is not limited to commercial fertilizers, soil amendments, composts, animal wastes, vegetative materials, or any other wastes.

"Pollution or water pollution" means such alteration of the physical, chemical, or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive, or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.

"Water or the waters of the state" include lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creek, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

Upland Management

A landowner or operator's responsibility under this Area Plan, is to implement measures that seek to control water pollution from agricultural activities and soil erosion. This includes agricultural and rural lands that may not be in close proximity to waterbodies but have the potential to contribute to water quality degradation.

Upland areas are the rangelands, forests and croplands, upslope from the riparian areas. These areas extend to the ridge tops of watersheds. With a protective cover of crops and crop residue, grass (herbs), shrubs or trees, consistent with site capability, these areas will capture, store and safely release precipitation thereby reducing the potential of excessive soil erosion or delivery of soil or pollutants to the receiving stream or other body of water. Vegetation is dependent on physical characteristics including soil, geology, landform, water and other climate factors. Proper management of upland vegetation considers physical and biological conditions, controls soil erosion, and minimizes transport of soil and nutrients to the stream. Upland management also considers crop

and livestock production while, at the same time, should consider forest health and protection of fish and wildlife habitat. Healthy uplands maintain productivity over time and are resilient to stresses caused by variations in physical conditions such as climatic changes.

Healthy upland areas provide several important ecological functions. These include:

- Capture, storage and safe release of precipitation
- Provide for plant health and diversity that support habitat (cover and forage) for wildlife and livestock
- Filtration of sediment
- Filtration of polluted runoff
- Provide for plant growth that increases root mass that utilizes nutrients and stabilizes soil against erosion

Indicators of these conditions include:

- Recruitment of beneficial plant species
- Groundcover to limit runoff of nutrients and sediment
- Cropland cover that is sufficient to limit movement of nutrients and sediment
- Roads and related structures designed, constructed and maintained to limit sediment delivery to streams
- Noxious weed and insect pest populations contained (see state weed laws and county weed regulations to determine weed species that must be controlled)

Factors to evaluate upland area condition may include:

- Vegetation utilization through stubble height measurements
- Plant species composition to measure plant health and diversity
- Groundcover (live plants, standing plant litter and ground litter) as a measure of potential erosion
- Evidence of overland flow (pattern and quantity)
- Site productivity (domestic livestock and wildlife carrying capacity)
- Soil erosion potential through prediction models available through NRCS

Location and management of roads and road/utility rights of way can have a significant impact on upland and riparian condition. Weed infestations and runoff causing erosion are common problems associated with roads. Farm roads are considered as part of the agricultural operation and must be managed to control erosion. Public roads and rights of way should be managed to reduce the impact of runoff onto agriculture lands and into waterways. This includes practices, similar to agricultural practices, such as: grass seeding of rights of way, rock placement in barrow ditches, sediment basins, proper culvert placement, sizing, and management, and weed control. Similarly, agricultural lands must be managed to reduce the impacts of runoff onto public rights of way.

This Area Plan does not prescribe specific practices to landowners for management of upland areas to reduce runoff of sediment and other wastes. Site specific recommendations for management to protect water quality, including grazing management systems, desirable vegetation types and road construction and maintenance, can be obtained from sources listed in the Implementation Strategies section of this Area Plan.

The Soil Erosion and Sediment Control Rule (OAR 603-095-2940(3)) that follows addresses the basic requirements of an Area Plan to prevent and control water pollution from soil erosion. At a watershed scale, it minimizes sediment at its source by controlling erosion on-site and recognizes an established system of conservation plans and farming practices that is likely to provide compliance with the Waste Management Rule (OAR 603-095-2940(2)). Most landowners or operators exercising control of soil erosion in compliance with the "soil erosion" rule would avoid discharging sufficient sediment into a stream to cause violation of the "waste management" rule. However, if monitoring demonstrates a water quality problem, then existing conservation plans may need to be modified to assure protection of beneficial uses.

In addition to complying with this rule, landowners should be aware that the waste rule requires them to prevent pollution from sediment delivery to streams. While an NRCS-approved farm plan may show compliance with the erosion rule, farming in accordance with the plan may still result in pollution in violation of rule #3 (OAR 603-095-2940(3)). If ODA determines during a compliance investigation that a landowner's farm plan is not adequate to comply with the waste rule, ODA will work with the SWCD, NRCS and the landowner to modify the plan to comply with the waste rule.

(3) Soil Erosion and Sediment Control: By January 1, 2008, landowners must control upland soil erosion using technically sound and economically feasible methods.

(a) On croplands, a landowner may demonstrate compliance with this rule by:

- **(A) operating consistent with a Soil and Water Conservation District (SWCD) approved conservation plan that meets Resource Management Systems (RMS) quality criteria for soil and water resources; or**
- **(B) operating in accordance with an SWCD-approved plan for Highly Erodible Lands (HEL) developed for the purpose of complying with the current US Department of Agriculture (USDA) farm program legislation; and farming non-HEL cropland in a manner that meets the requirements of an approved USDA HEL compliance plan for similar cropland soils in the county; or**
- **(C) farming such that the predicted sheet and rill erosion rate does not exceed 5 tons/ acre/year, as estimated by the Revised Universal Soil Loss Equation (RUSLE); or**
- **(D) constructing and maintaining terraces, sediment basins, or other structures sufficient to keep eroding soil out of streams.**

(b) On rangelands, a landowner may demonstrate compliance with this rule by:

- **(A) operating consistent with a Soil and Water Conservation District (SWCD)-approved conservation plan that meets Resource Management Systems (RMS) quality criteria for soil and water resources, or**
- **(B) maintaining sufficient live vegetation cover and plant litter, consistent with site capability, to capture precipitation, slow the movement of water, increase infiltration, and reduce excessive movement of soil off the site; or**
- **(C) minimizing visible signs of erosion, such as pedestal or rill formation and areas of sediment accumulation.**

(c) Landowners must control active gully erosion to protect against sediment delivery to streams. 'Active Gully Erosion' means gullies or channels that at the largest dimension have a cross sectional area of at least one square foot and that occur at the same location for two or more consecutive years of cropping or grazing.

Riparian and Streamside Area Management

A landowner or operator's responsibility under this Area Plan is to implement measures that seek to control water pollution from agricultural activities. Areas near waterbodies are especially important to water quality and sensitive to management activities.

The riparian area, as defined in OAR 141-110-0020(28), is a zone of transition from an aquatic to a terrestrial system, dependent upon surface or subsurface water, that reveals through the zone's existing or potential soil-vegetation complex the influence of such surface or subsurface water. A riparian area may be located adjacent to a lake, reservoir, estuary, pothole, spring, bog, wet meadow, muskeg, slough, or ephemeral, intermittent or perennial stream.

The streamside area is defined as the area near the stream where management practices can most directly influence the conditions of the water. This area usually ranges from 10 feet to 100 feet from the water, depending on the slope, soil type, stream size and morphology.

Water is the distinguishing characteristic of riparian areas but soil, vegetation and landform also exert strong influence on these systems. In a healthy riparian ecosystem, these four components interact to produce a wide variety of conditions.

Healthy riparian areas provide several important ecological functions. These include:

- Dissipation of stream energy associated with high flows and thus influencing the transport of sediment
- Capturing suspended sediment and bedload that builds streambanks and develops floodplain function
- Retaining floodwater and recharging ground water
- Stabilizing streambanks through plant root mass
- Developing diverse channel characteristics providing pool depth, cover, and variations in water velocity necessary for fish production
- Supporting biodiversity
- Shading for moderation of solar heat input
- Recruitment of large woody debris for aquatic habitat

Indicators to determine improvement of this condition include:

- Recruitment of desirable riparian plant species
- Maintenance of established beneficial vegetation
- Maintenance or recruitment of woody vegetation—both trees and shrubs
- Streambank integrity capable of withstanding 25-year flood events

Factors used to evaluate improvement of the riparian area condition could include:

- Expansion of riparian area as evidenced by development of riparian vegetation and plant vigor
- Reduction in actively eroding streambank length beyond that expected of a dynamic stream system
- Community composition changes reflecting an upward trend in riparian condition. (Increases in grass-sedge-rush, shrubs, and litter and decreases in bare ground)

- Plant community composition reflecting an upward trend as indicated by decreases in noxious plant species
- Stream channel characteristics show upward trend consistent with landscape position (i.e. a decrease of width to depth ratio of the channel)
- Shade patterns consistent with site capability
- Stubble height of herbaceous species and leader growth of shrubs and trees

Riparian area management addresses the water quality parameters of concern identified in the 303(d) list. Streamside vegetation influences water temperature through shade, stream width-to-depth ratio, groundwater recharge and discharge, and other hydrological factors. Sediment reductions improve fish and invertebrate habitat. Healthy riparian condition improves biological criteria and habitat by reducing stream disturbances, preventing excessive heat and contaminant inputs, and adding to stream habitat complexity.

Healthy riparian areas may be directly influenced by management. This Area Plan does not prescribe specific practices to landowners for management of riparian areas. Site specific recommendations for management to protect water quality, including buffer width, vegetation types, and grazing timing, can be obtained from several sources listed in the Implementation Strategies section of this Area Plan.

(4) Streamside Management: By January 1, 2008, management must allow the establishment and improvement, over time, of riparian vegetation for streambank stability, filtering sediment and shading, consistent with site capability.

Livestock Management

A landowner or operator's responsibility under this Area Plan is to implement measures that seek to control water pollution from livestock operations. Livestock production is a common agricultural activity in the management area. Careful management of areas used for grazing, feeding and handling are critical to the success of livestock operations and have potential to affect water quality by the runoff of sediment and animal wastes.

Livestock management can be done in a manner that limits soil erosion and minimizes the delivery of sediment and animal wastes to nearby streams. A grazing management system should promote and maintain adequate vegetative cover, for protection of water quality, by consideration of intensity, frequency, duration and season of grazing.

Grazing near streams should be managed to prevent negative impacts to streambank stability, allow for recovery of plants, and leave adequate vegetative cover to ensure protection of riparian functions including shade and habitat. Offstream watering systems, upland water developments, feed, salt and mineral placement are examples of methods to be considered as ways to reduce impacts of livestock to streamside areas.

Factors used to evaluate effectiveness of management may include:

- Safe diversion of runoff
- Protection of clean water sources
- Off stream watering systems
- Lot maintenance - smoothing, mounding, seeding

- Structural measures – i.e. filter strips, catch basins, berms
- Waste collection, storage and application methods

Irrigation Management

A landowner or operator's responsibility under this Area Plan is to implement measures that seek to control water pollution from irrigation. Diversion of water for irrigation or other uses and the return of excess water to the stream are activities that have potential for contributing to water quality problems.

Irrigated lands are lands either riparian, floodplain or uplands upon which water is applied for the purpose of growing crops. Diversion of water from a waterbody to be applied on land for the purpose of growing crops is a recognized beneficial use of water. Irrigation water use is regulated by the Oregon Water Resources Department (WRD) in the form of water rights, which specify the rate and amount of water that can be applied to a particular parcel of land. Refer to WRD Rules (OAR 690 – Division 250 and ORS 536 through 543) for more details.

Irrigation in this basin is done by either flooding or sprinkler application. Water usually is diverted from a surface source (stream or pond) but may also be from groundwater sources. Water withdrawals can have an affect on stream flows and thus, indirectly affect water quality. Irrigation management in this basin recognizes there may be some positive benefits occurring from flood irrigation application - including flow augmentation as water returns back to the stream, cooling and filtering of water through underground percolation, and the recharge of shallow wells and springs due to the connectivity of surface water to groundwater sources. Irrigation water may be used more than once as it returns to the stream and is available for instream uses or by other irrigators. Ultimately, streamflows will be enhanced by upland and riparian management practices promoting natural upstream storage and properly functioning floodplains that catch, store, and safely release precipitation for beneficial uses during summer months.

Characteristics of an irrigation system that has minimal effect on water quality include:

- Efficient delivery of water to the land within legal water rights
- Minimal overland return flows
- Return flow routing that provides for settling, filtering and infiltration
- Minimal effect on stability of streambanks and minimal soil erosion
- Appropriate scheduling of water application to the site including consideration of soil conditions, crop needs, climate and topography
- Diversion structures that are installed and managed to control erosion and sediment delivery, and protect the stability of streambanks. If funding becomes available, temporary diversions, which must be reinstalled every year, should be replaced with suitable permanent diversions (ie. pumping stations, infiltration galleries, dams)
- Diversions that are adequately screened and which provide for fish passage. Refer to ORS 498.268 for screen requirements

Implementation Strategies

The following guidelines will apply for public participation in implementation and review of the Area Plan. ODA and the SWCDs intend to encourage participation in this water quality improvement program by:

- Providing educational programs to raise public awareness and understanding of water quality issues and solutions
- Providing incentives for the development and implementation of voluntary water quality plans
- Offering technical assistance for the development and implementation of effective agricultural management practices for pollution control
- Developing a monitoring program to identify current and potential water quality problems
- Following up on any water quality complaints and provide assistance in solving identified problems. Authority for any enforcement action rests with the ODA under provisions in OAR 603-090-0060 through 603-090-0120

Educational Programs

As resources allow, the SWCDs, watershed councils, and OSU Extension Service (Extension), in partnership with other agencies and local organizations, will develop educational programs to improve the awareness and understanding of water quality and quantity issues. The objective of the educational programs is to promote the programs in a manner that reduces conflict and encourages cooperative efforts through education and technical assistance activities by:

- Incorporating implementation of the Area Plan as a priority element in the Sherman County and Gilliam County Soil and Water Conservation Districts' annual work plans and long-range plans with support from partner organizations
- Showcase successful practices and systems and conduct annual tours for landowners and media
- Recognize successful projects and practices through appropriate media and newsletters.
- Promote cooperative on-the-ground projects to solve critical problems identified by landowners and in cooperation with partner organizations
- Conduct educational outreach to promote public awareness of water quality issues. Coordinate the review of information and education materials with agencies or organizations as appropriate
- Coordinate the review of information and education materials with agencies or organizations as appropriate

Voluntary Water Quality Plans

Landowners and operators have flexibility in choosing management approaches and practices to address water quality issues on their lands. They may implement management systems on their own without a plan or may develop a plan that suits the needs of their operation. The local management agencies recommend that voluntary water quality plans be developed to assist the landowners and operators to assess the conditions on their lands, identify problems or potential problems on their land and to describe measures and resources needed to address those problems.

Voluntary water quality plans describe the management systems and schedule of conservation practices that the landowner will use to conserve soil, water, and related plant and animal resources on all or part of a farm or ranch unit. Voluntary water quality plans may be developed by landowners or operators, consultants, or technicians available through the SWCD or NRCS. An effective individual water quality plan will outline specific measures necessary to prevent or control water pollution and soil erosion from agricultural activities and to address the "Prevention and Control Measures" outlined in this AgWQM Area Plan.

Farm planning assistance is available from these and other sources:

- Technical Assistance
  - NRCS – planning, design, implementation
  - SWCD – planning, design, implementation, grant-writing
  - Watershed councils –planning, implementation, grant-writing

- Workbooks and Publications
  - Voluntary Conservation On Your Land, NRCS/Oregon Association of Conservation Districts (OACD)
  - Oregon Small Acreages Conservation Toolbox, NRCS/OACD
  - WESt Program Workbook, Oregon Cattleman's Assoc. (OCA)/OSU
  - Ranch Water Quality Planning Workbook, Oregon State University (OSU) Extension
  - The Oregon Plan Toolbox, Oregon Watershed Ehancement Board (OWEB)

- Programs
  - Farm*A*Syst Program, OSU Extension
  - Stream*A*Syst Program, OSU Extension
  - Home*A*Syst Program, OSU Extension

Technical & Financial Assistance

It is not the intent of this Area Plan to impose a financial hardship on any individual. It is the responsibility of the landowner or operator to request technical and/or financial assistance and to develop a reasonable timeframe for addressing potential water quality problems.

As resources allow, the Sherman County and Gilliam County SWCDs, NRCS, area watershed councils, and other natural resource agency staff are available to assist landowners in evaluating effective practices for reducing runoff and soil erosion on their farms, where it exists, and incorporating these practices into voluntary individual water quality plans. Personnel in these offices can also design and assist with implementation of practices, and assist in identifying sources of cost-sharing funds for the construction and/or use of some of these practices.

Technical and cost-sharing assistance for installation of certain management practices may be available through current USDA conservation programs such as Environmental Quality Incentive Program (EQIP), Conservation Reserve Enhancement Program (CREP), Conservation Reserve Program (CRP), EPA's non-point source implementation grants (Section 319), or state programs such as OWEB, the Riparian Tax Incentive Program, and the Wildlife Habitat Conservation and Management Program. Other agencies may also be available to provide technical assistance or financial assistance to private landowners.

Water Quality Management Practices

Effective agricultural management practices for pollution control, are those management practices and structural measures that are determined to be the most effective, practical means of controlling and preventing pollution from agricultural activities.

Appropriate management practices for individual farms may vary with the specific cropping, topographical, environmental, and economic conditions existing at a given site. Due to these

variables, it is difficult to recommend any uniform set of management practices to improve water quality relative to agricultural practices.

Management practices and land management changes are most effective when selected and installed as integral parts of a comprehensive resource management plan based on natural resource inventories and assessment of management practices. The result is a system using the management practices and land management changes which are designed to be complementary, and when used in combination are more technically sound than each practice separately.

A detailed listing of a number of specific practices and management measures which can be employed to control or reduce the risk of agricultural pollution are contained in other documents such as the Field Office Technical Guide (FOTG), available for reference at the local NRCS office. Refer to Attachment A for examples of effective management practices for controlling water pollution.

Monitoring and Evaluation

The progress and success of implementation efforts will be assessed through determination of changes in land management systems and the measurement of water quality improvement over time. Monitoring activities are integral components of the Area Plan. For the purposes of this Area Plan, three main types of monitoring are appropriate. These are:

1. Baseline condition monitoring
   Baseline condition monitoring provides a starting point for assessing water quality trends and for future evaluation of the effectiveness of water quality improvement efforts. Baseline condition monitoring typically includes identification and analysis of data previously and currently collected in the area according to accepted protocols.

2. Water quality trend monitoring
   Water quality trend monitoring can help to track how water quality (typically on a watershed or sub-watershed scale) is changing over time, including after implementation of an AgWQM Area Plan.

3. Effectiveness monitoring
   a) Evaluate the effectiveness of specific management practices in reducing losses or loadings of components such as sediment or nutrients. The NRCS has a good amount of information about the effectiveness of various practices in protecting surface water and groundwater quality.
   b) Evaluate the net effect of the implementation of an AgWQM Area Plan and watershed improvement activities on water quality trends

It is recommended that monitoring follow recommendations in the *Oregon Plan Water Quality Monitoring Technical Guide*. This guide book describes accepted procedures and protocols for most activities that would be used to conduct baseline condition and trend monitoring on a watershed scale, including development of quality assurance/quality control plans to assure quality of data and protocols for data collection.

When effectively used, monitoring activities can provide valuable information on how much effect a plan is having, how extensively it is being implemented, and where more efforts are needed in a basin.

Biennial Review

This Area Plan and the associated Area Rules are subject to a two-year review process. Two years after adoption, ODA, in cooperation with SWCDs and the LAC will assess the progress of Area Plan implementation toward achievement of Area Plan goals and objectives. These assessments will include:

1. An accounting of the numbers and acreage of operations with Voluntary Water Quality Plans and the calculated amount of soil erosion and pollution prevented.
2. Identification of additional sources of sediment, heat inputs and other contributors to non-attainment of all applicable water quality standards.
3. An evaluation of available current water quality monitoring data.
4. An evaluation of outreach and education programs designed to provide public awareness and understanding of water quality issues.
5. A review of projects, demonstrations, and tours used to showcase successful management practices and systems.
6. An evaluation of the effectiveness of technical and financial assistance sources available to the agricultural community.
7. Review of load allocations and effectiveness of this plan in meeting load allocations as described in the TMDL for the John Day Basin.

Based on these assessments, the ODA, SWCD, LAC, and the State Board of Agriculture will consider making appropriate modifications to the Area Plan and Rules. Any future amendments to the administrative rules will be subject to public participation process as defined in Oregon law.

ADMINISTRATIVE ROLES AND RESPONSIBILITIES

Designated Management Agency

The ODA is the DMA for water pollution control activities on agricultural and rural lands in the Lower John Day AgWQMArea. The department is authorized to develop and carry out a water quality management plan for any agricultural or rural lands where such a plan is required by state or federal law.

Sherman County and Gilliam County Soil and Water Conservation Districts are the local management agencies (LMA) designated by the department for development and implementation of the AgWQM Area Plan and projects in the AgWQM Area. The SWCDs will assume responsibility for the implementation of the Area Plan and related projects within those districts under agreement with ODA. Area watershed councils may assist the LMA in implementation and review of the Area Plan and related projects. Implementation priorities will be established on a periodic basis through annual work plans developed jointly by the SWCD and ODA with input from partner agencies.

The director of ODA appointed an LAC representing local agricultural producers, landowners, agencies, tribes, environmental organizations, and the SWCD for the purpose of assisting with the development of this Area Plan and the associated OARs to implement core elements of the Area Plan.

Resolution of Complaints and Enforcement Action

ODA will investigate complaints against landowners or operators who are alleged to be out of compliance with the Rules associated with this Area Plan. If the landowner is in non-compliance, ODA will consult with the landowner/operator and the SWCD using FOTG to develop solutions and timelines. The authority and procedures for complaint investigation rests with the ODA under provisions of OAR 603-095-2960.

ODA will use enforcement mechanisms where appropriate and necessary to gain compliance with the prevention and control measures. Any enforcement action will be pursued only when reasonable attempts at voluntary solutions have failed. Landowners with chronic or egregious violations of Area Rules will be subject to enforcement action by ODA under authority provided in OAR 603-090-0060 through 603-090-0120.

Entry onto private property is authorized for the purpose of investigating lands within the Management Area to determine sources of pollution. ODA may investigate lands within the Management Area to determine those actions that may be required of landowners under the Area Rules and to determine whether the landowner is carrying out the required actions. ODA will not enter onto private lands without first seeking landowner consent.

603-095-2960
Complaints and Investigations

(1) When the department receives notice of an alleged occurrence of agricultural pollution through a written complaint, its own observation, through notification by another agency, or by other means, the department may conduct an investigation. The department may, at its discretion, coordinate inspection activities with the appropriate Local Management Agency.

(2) Each notice of an alleged occurrence of agricultural pollution shall be evaluated in accordance with the criteria in ORS 568.900 through 568.933 or any rules adopted thereunder to determine whether an investigation is warranted.

(3) Any person allegedly being damaged or otherwise adversely affected by agricultural pollution or alleging any violation of ORS 568.900 through 568.933 or any rules adopted thereunder may file a complaint with the department.

(4) The department will evaluate or investigate a complaint filed by a person under section OAR 603-095-2960(3) if the complaint is in writing, signed and dated by the complainant and indicates the location and description of:

(a) The waters of the state allegedly being damaged or impacted; and

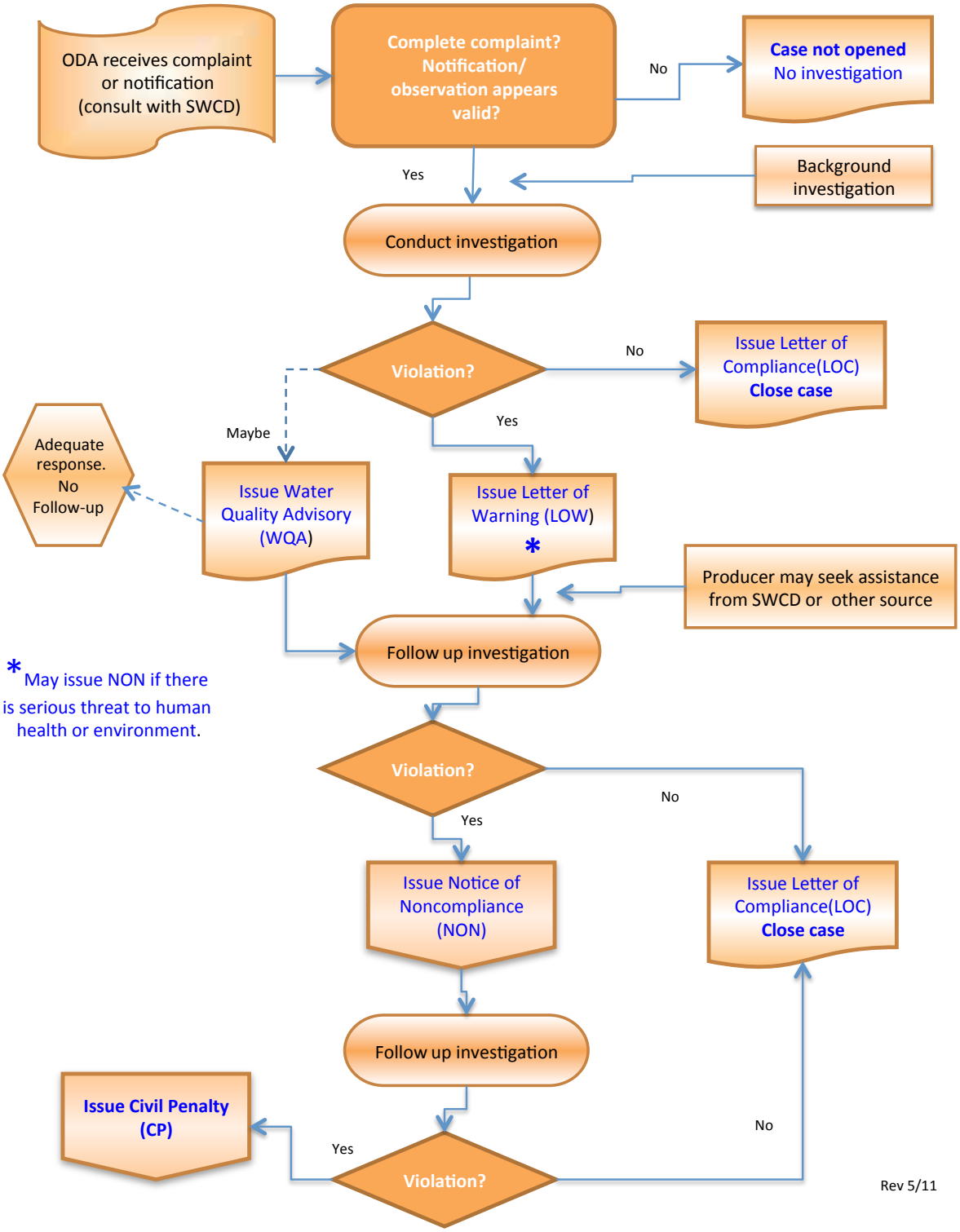
(b) The property allegedly being managed under conditions violating criteria described in ORS 568.900 through 568.933 or any rules adopted thereunder.

(5) As used in section OAR 603-095-2960(4), "person" does not include any local, state or federal agency.

(6) Notwithstanding OAR 603-095-2960(4), the department may investigate at any time any complaint if the department determines that the violation alleged in the complaint may present an immediate threat to the public health or safety.

(7) If the department determines that a violation of ORS 568.900 through 568.933 or any rules adopted thereunder has occurred, the landowner may be subject to the enforcement procedures of the department outlined in OAR 603-090-0060 through 603-090-0120.

Oregon Department of Agriculture
WQ Program Compliance Protocol



Letter of Compliance

A Letter of Compliance tells the owner/operator that at the time of the inspector's site visit, the property was in compliance with all Area Rules and there were no conditions observed during the investigation, such as manure piles near drainages or heavily grazed areas, that are likely to cause a water quality problem in the near future.

Water Quality Advisory

A Water Quality Advisory means the owner/operator is in compliance because there were no violations of Area Rules documented at the time of the inspector's visit, but the conditions on the property have the potential to violate the Area Rules in the future. Examples: a riparian area is in poor condition, and if management changes are not made, conditions will not improve; there is manure in a corral that could be transported to surface water in a rain event; there is build up of sediment in a sediment basin.

A Water Quality Advisory letter includes a description of the conditions that have the potential to violate the Area Rules, the statute or rule that may be violated, consequences of future documented violations, and a schedule of recommended corrective actions. The letter may also refer the landowner to other sources of technical assistance, and summarize other issues discussed during the investigation. The inspector will usually follow up to see if the changes effectively reduced the potential for a water quality problem.

Letter of Warning

A Letter of Warning means the inspector found a violation of Area Rules during the investigation, but the pollution-causing activity was not egregious and was not done intentionally to cause water pollution. The Letter of Warning is an unofficial compliance action (not defined in Administrative Rule) that gives the landowner or operator at least one opportunity to correct the problem before he/she receives a Notice of Noncompliance. A Letter of Warning is not considered an enforcement action by the State.

A Letter of Warning includes a description of the conditions that violate the Area Rules, the statute or rule that is violated, consequences of future documented violations, and a schedule of recommended corrective actions. The letter may also refer the landowner to other sources of technical assistance, and summarize other issues discussed during the investigation. Although the landowner has the flexibility to choose the recommended actions or other practices best suited to correct the problem on the operation, the inspector will follow up to see if the violation has been addressed.

Notice of Noncompliance/Plan of Correction

A Notice of Noncompliance (NON) means the inspector found a violation of Area Rules during the investigation, and the violation was either (1) egregious or done to intentionally cause water pollution, or (2) a second violation after being issued a Letter of Warning. A Notice of Noncompliance includes a description of the conditions that violate the Area Rules, the statute or rule that is violated, consequences of current documented violations, and a schedule of required corrective actions. The letter may also refer the landowner to other sources of technical assistance, and summarize other issues discussed during the investigation. A Plan of Correction usually accompanies a NON if the corrective actions require more than 30 days and directs the landowner to take specific steps to correct the problem. An inspector will follow up to confirm the landowner completed the required corrective actions and effectively addressed the violation.

Civil Penalty

A Civil Penalty is a fee that is assessed to a landowner whose agricultural activities caused either a willful and intentional violation of Area Rules, or who repeatedly failed to take steps to correct a violation. Oregon Department of Agriculture's Division 90 rules include a matrix for calculating the value of civil penalties for the Water Quality Program.

ATTACHMENT A—EFFECTIVE WATER QUALITY MANAGEMENT PRACTICES

Effective management practices for controlling soil erosion and sediment delivery

- Conservation tillage (Crop residue management) - reduced tillage, minimum tillage, direct seeding, modified conventional tillage, reservoir tillage, sub-soiling, or deep chiseling
- Nutrient management – soil testing, fertilizer timing and placement
- Cover crops – perennial or annual
- Contour farming practices - strip cropping, divided slopes, terraces (level and gradient), contour tillage
- Crop rotations
- Early or double seeding in critical areas
- Vegetative buffer strips - filter strips, grassed waterways, field borders, contour buffer strips
- Irrigation scheduling - soil moisture monitoring and application rate monitoring
- Prescribed burning
- Weed control
- Road design and maintenance
- Sediment retention basins and runoff control structures

Effective management practices for prevention and control of impacts from livestock

- Grazing management or scheduling based on intensity, duration, frequency, and season of use; pasture rotation including resting and deferrals
- Vegetation management - grass seeding, weed control, controlled burning
- Fencing – including temporary, cross, and exclosures
- Watering facilities - spring development, water gaps, off-stream water
- Salt and mineral distribution
- Waste management systems - waste collection, storage, and utilization; facilities operation and maintenance
- Safe diversion of runoff
- Protection of clean water sources
- Lot maintenance - smoothing, mounding, seeding, filter strips, catch basins, berms

Effective management practices for prevention and control of impacts to streamside areas

- Critical area planting
- Vegetative buffer strips - Continuous CRP, CREP, riparian buffers, riparian forest buffers
- Livestock management - seasonal grazing, fencing - exclusion, temporary
- Water developments - off-stream watering, water gaps, spring developments
- Conservation tillage practices
- Weed control
- Nutrient and chemical application scheduling
- Road, culvert, bridge, and crossing maintenance
- Wildlife management

Effective management practices for prevention and control of impacts from irrigation

- Irrigation scheduling based on crop needs, soil type, climate, topography, infiltration rates
- Irrigation system efficiency and uniformity monitoring
- Diversion maintenance - push-up dam management, fish screens
- Return flow management
- Flow measuring devices
- Backflow devices
- Cover crops

ATTACHMENT B—REFERENCES TO INFORMATION USED IN THE DEVELOPMENT OF THE AREA PLAN

Field Office Technical Guide, NRCS

Influences of Human Activity on Stream Temperatures and Existence of Cold-Water Fish in Streams with Elevated Temperature: Report of a Workshop, Interagency Multidisciplinary Science Team, 11/8/2000.

John Day Basin Report, Oregon Water Resources Department, 1986

John Day River Basin Total Daily Maximum Load (TMDL) and Water Quality management Plan (WQMP), DEQ, Nov. 2010

John Day Subbasin Summary, prepared for the Northwest Power Planning Council, 2001

North/Middle Forks John Day River Agricultural Water Quality Management Area Plan, ODA, 2002

Oregon Final 1998 Water Quality Limited Streams - 303(d) List, DEQ, Nov. 1998

Oregon Administrative Rules, Chapter 340, Division 41, DEQ, March 1996

Oregon Administrative Rules, Chapter 603, Divisions 90 and 95, ODA

Oregon Revised Statutes, 468B

Oregon Revised Statutes, 561.191

Oregon Revised Statutes, 568.900 through 568.933

Oregon Small Acreages Conservation Toolbox, NRCS /OACD, 1999

Pollution Limits and Water Quality Plan for the John Day River Basin, DEQ. Nov. 2010

Questions and Answers About DEQ's Temperature Standards, DEQ, February 1998

Ranch Water Quality Planning Workbook, OSU Extension,

Relationship Between Agriculture Water Quality Management Area Plan Conditions and Water Quality Standards, ODA, Sept. 2000

Restoring Water Quality Throughout Oregon, DEQ, February 1998

Riparian Area Management; A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lotic Areas, BLM/USFS/NRCS, 1998

Riparian Area Management; Process for Assessing Proper Functioning Condition, BLM, 1995

Riparian Area Responses to Changes in Management, BLM/OSU, 1999

The Ecological Provinces of Oregon, Oregon Agricultural Experiment Station, May 1998

The Oregon Plan Toolbox, OWEB

Water Quality Monitoring: Technical Guide Book, OWEB, July 1999

Wallowa Agricultural Water Quality Management Area Plan, ODA, 2002

WESt Program Workbook, Oregon Cattleman's Association, 1998

ATTACHMENT C—MAP