Burnt River Agricultural Water Quality Management Area Plan

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Developed by the
Oregon Department of Agriculture
Burnt River Local Advisory Committee

With support from the
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Acronyms and Terms Used in this Document

Ag Water Quality Program – Agricultural Water Quality Management Program
Area Plan – Agricultural Water Quality Management Area Plan
Area Rules – Agricultural Water Quality Management Area Rules
CAFO – Confined Animal Feeding Operation
CNPCP – Coastal Nonpoint Pollution Control Program
CWA – Clean Water Act
CZARA – Coastal Zone Act Reauthorization Amendments
DEQ – Oregon Department of Environmental Quality
DMA – Designated Management Agency
GWMA – Groundwater Management Area
HABs – Harmful Algal Blooms
LAC – Local Advisory Committee
LMA – Local Management Agency
Management Area – Agricultural Water Quality Management Area
MOA – Memorandum of Agreement
NPDES – National Pollution Discharge Elimination System
NRCS – Natural Resources Conservation Service
OAR – Oregon Administrative Rules
ODA – Oregon Department of Agriculture
ODF – Oregon Department of Forestry
ODFW – Oregon Department of Fish and Wildlife
OHA – Oregon Health Authority
ORS – Oregon Revised Statute
OWEB – Oregon Watershed Enhancement Board
PMP – Pesticides Management Plan
PSP – Pesticides Stewardship Partnership
RCA – Required Corrective Action
SIA – Strategic Implementation Area
SWCD – Soil and Water Conservation District
TMDL – Total Maximum Daily Load
USDA – United States Department of Agriculture
US EPA – United States Environmental Protection Agency
WPCF – Water Pollution Control Facility
WQPMT – Water Quality Pesticides Management Team
Preface

Chapter 1 of the Area Plan was developed by the Oregon Department of Agriculture. The Local Advisory Committee and the Local Management Agency did not develop or participate in the development of Chapter 1. ODA developed Chapter 1 to have consistent and accurate information about the Agricultural Water Quality Management Program statewide.

The Local Advisory Committee promotes agricultural management and supports good water quality for multiple uses. However, the Local Advisory Committee also recognizes that the current water quality standards referenced in this document are unattainable.

Foreword

This Agricultural Water Quality Management Area Plan (Area Plan) provides guidance for addressing water quality related to agricultural activities in the Agricultural Water Quality Management Area (Management Area). The Area Plan identifies strategies to prevent and control water pollution from agricultural lands through a combination of outreach programs, suggested land treatments, management activities, compliance, and monitoring.

The Area Plan is neither regulatory nor enforceable (Oregon Revised Statute (ORS) 568.912(1)). It references associated Agricultural Water Quality Management Area Rules (Area Rules), which are Oregon Administrative Rules (OARs) enforced by the Oregon Department of Agriculture (ODA).

Required Elements of Area Plans

Area Plans must describe a program to achieve the water quality goals and standards necessary to protect designated beneficial uses related to water quality as required by state and federal law (OAR 603-090-0030(1)). At a minimum, an Area Plan must:

- Describe the geographical area and physical setting of the Management Area.
- List water quality issues of concern.
- List impaired beneficial uses.
- State that the goal of the Area Plan is to prevent and control water pollution from agricultural activities and soil erosion and to achieve applicable water quality standards.
- Include water quality objectives.
- Describe pollution prevention and control measures deemed necessary by ODA to achieve the goal.
- Include an implementation schedule for measures needed to meet applicable dates established by law.
- Include guidelines for public participation.
- Describe a strategy for ensuring that the necessary measures are implemented.

Plan Content

Chapter 1: Agricultural Water Quality Management Program Purpose and Background. The purpose is to have consistent and accurate information about the Ag Water Quality Program.
Chapter 2: Local Background. Provides the local geographic, water quality, and agricultural context for the Management Area. Describes the water quality issues, Area Rules, and available practices to address water quality issues.

Chapter 3: Implementation Strategies. Presents goal(s), measurable objectives, timelines, and strategies to achieve these goal(s) and objectives.

Chapter 4: Implementation, Monitoring, and Adaptive Management. ODA and the Local Advisory Committee (LAC) will work with knowledgeable sources to summarize land condition and water quality status and trends to assess progress toward the goals and objectives in Chapter 3.
Chapter 1: Agricultural Water Quality Management Program

Purpose and Background

1.1 Purpose of Agricultural Water Quality Management Program and Applicability of Area Plans

As part of Oregon’s Agricultural Water Quality Management Program (Ag Water Quality Program), the Area Plan guides landowners and partners such as Soil and Water Conservation Districts (SWCDs) in addressing water quality issues related to agricultural activities. The Area Plan identifies strategies to prevent and control water pollution from agricultural activities and soil erosion (ORS 568.909(2)) on agricultural and rural lands within the boundaries of this Management Area (OAR 603-090-0000(3)) and to achieve and maintain water quality standards (ORS 561.191(2)). The Area Plan has been developed and revised by ODA and the LAC, with support and input from the SWCD and the Oregon Department of Environmental Quality (DEQ). The Area Plan is implemented using a combination of outreach, conservation and management activities, compliance with Area Rules developed to implement the Area Plan, monitoring, evaluation, and adaptive management.

The provisions of the Area Plan do not establish legal requirements or prohibitions (ORS 568.912(1)). Each Area Plan is accompanied by Area Rules that describe local agricultural water quality regulatory requirements. ODA will exercise its regulatory authority for the prevention and control of water pollution from agricultural activities under the Ag Water Quality Program’s general regulations (OAR 603-090-0000 to 603-090-0120) and under the Area Rules for this Management Area (OAR 603-095-3200). The Ag Water Quality Program’s general rules guide the Ag Water Quality Program, and the Area Rules for the Management Area are the regulations that landowners are required to follow. Landowners will be encouraged through outreach and education to implement conservation management activities.

The Area Plan and Area Rules apply to all agricultural activities on non-federal and non-Tribal Trust land within this Management Area including:

- Farms and ranches.
- Rural residential properties grazing a few animals or raising crops.
- Agricultural lands that lay idle or on which management has been deferred.
- Agricultural activities in urban areas.
- Agricultural activities on land subject to the Forest Practices Act (ORS 527.610).

Water quality on federal lands in Oregon is regulated by DEQ and on Tribal Trust lands by the respective tribe, with oversight by the United States Environmental Protection Agency (US EPA).

1.2 History of the Ag Water Quality Program

In 1993, the Oregon Legislature passed the Agricultural Water Quality Management Act directing ODA to develop plans to prevent and control water pollution from agricultural activities and soil erosion, to achieve water quality standards, and to adopt rules as necessary (ORS 568.900 through ORS 568.933). The Oregon Legislature passed additional legislation in 1995 to clarify that ODA is the lead agency for regulating agriculture with respect to water quality (ORS 561.191). The Area Plan and Area Rules were developed and subsequently revised pursuant to these statutes.

Between 1997 and 2004, ODA worked with LACs and SWCDs to develop Area Plans and Area Rules in 38 watershed-based Management Areas across Oregon (Figure 1). Since 2004, ODA, LACs, SWCDs, and other partners have focused on implementation including:
• Providing education, outreach, and technical assistance to landowners.
• Implementing projects to improve agricultural water quality.
• Investigating complaints of potential violations of Area Rules.
• Conducting biennial reviews of Area Plans and Area Rules.
• Monitoring, evaluation, and adaptive management.
• Developing partnerships with state and federal agencies, tribes, watershed councils, and others.

Figure 1: Map of 38 Agricultural Water Quality Management Areas
Grey areas are not incorporated into Ag Water Quality Management Areas

1.3 Roles and Responsibilities

1.3.1 Oregon Department of Agriculture

The Oregon Department of Agriculture is the agency responsible for implementing the Ag Water Quality Program (ORS 568.900 to 568.933, ORS 561.191, OAR 603-090, and OAR 603-095). The Ag Water Quality Program was established to develop and carry out a water quality management plan for the prevention and control of water pollution from agricultural activities and soil erosion. State and federal laws that drive the establishment of an Area Plan include:

• State water quality standards.
• Load allocations for agricultural or nonpoint source pollution assigned under Total Maximum Daily Loads (TMDLs) issued pursuant to the federal Clean Water Act (CWA), Section 303(d).
• Approved management measures for Coastal Zone Act Reauthorization Amendments (CZARA).
• Agricultural activities detailed in a Groundwater Management Area (GWMA) Action Plan (if DEQ has established a GWMA and an Action Plan has been developed).

The Oregon Department of Agriculture has the legal authority to develop and implement Area Plans and Area Rules for the prevention and control of water pollution from agricultural activities and soil erosion, where such plans are required by state or federal law (ORS 568.909 and ORS 568.912). ODA bases Area Plans and Area Rules on scientific information (ORS 568.909). ODA works in partnership with SWCDs, LACs, DEQ, and other partners to implement, evaluate, and update the Area Plans and Area Rules. ODA is responsible for any actions related to enforcement or determination of noncompliance with Area Rules (OAR 603-090-0080 through OAR 603-090-0120). ORS 568.912(1) and ORS 568.912(2) give ODA the authority to adopt rules that require landowners to perform actions necessary to prevent and control pollution from agricultural activities and soil erosion.

The Area Rules are a set of standards that landowners must meet on all agricultural or rural lands. (“Landowner” includes any landowner, land occupier or operator per OAR 603-95-0010(24)). All landowners must comply with the Area Rules. ODA will use enforcement where appropriate and necessary to gain compliance with Area Rules. Figure 2 outlines ODA’s compliance process. ODA will pursue enforcement action only when reasonable attempts at voluntary solutions have failed (OAR 603-090-0000(5)(e)). If a violation is documented, ODA may issue a pre-enforcement notification or an enforcement Order such as a Notice of Noncompliance. If a Notice of Noncompliance is issued, ODA will direct the landowner to remedy the condition through required corrective actions (RCAs) under the provisions of the enforcement procedures outlined in OAR 603-090-060 through OAR 603-090-120. If a landowner does not implement the RCAs, ODA may assess civil penalties for continued violation of the Area Rules. If and when other governmental policies, programs, or rules conflict with the Area Plan or Area Rules, ODA will consult with the appropriate agencies to resolve the conflict in a reasonable manner.

Any member of the public may file a complaint, and any public agency may file a notification of a violation of an Area Rule. As a result, ODA may initiate an investigation (See Figure 2).
Figure 2: Compliance Flow Chart

[Diagram showing the compliance flow chart with decision points and outcomes]

- ODA Receives Complaint, Notification, or Staff Observation
  - Information Complete? Complaint, Notification, or Observation Appears Valid?
    - YES
      - Conduct Investigation
      - Violation?
        - NO
          - Letter of Compliance
          - Close Case
        - YES or LIKELY
          - * Pre-Enforcement Letter
            - Follow-Up Investigation
            - Violation?
              - NO
                - Letter of Compliance
                - Close Case
              - YES
                - Notice of Noncompliance
                  - Follow-Up Investigation
                  - Violation?
                    - YES
                      - Civil Penalty
                    - NO
                      - Letter of Compliance
                      - Close Case

- Pre-Enforcement "Fix-it" Letter
  - NO Follow-Up If Adequate Response

* May issue a Notice of Noncompliance if there is a serious threat to human health or environment

NOTE: Landowner may seek assistance from SWCD or other sources as needed throughout the process. However, cost-share funds are no longer available once a Notice of Noncompliance has been issued.
### 1.3.2 Local Management Agency

A Local Management Agency (LMA) is an organization that ODA designated to assist with the implementation of an Area Plan (OAR 603-090-0010). The Oregon Legislature’s intent is for SWCDs to be LMAs to the fullest extent practical, consistent with the timely and effective implementation of Area Plans (ORS 568.906). SWCDs have a long history of effectively assisting landowners to voluntarily address natural resource concerns. Currently, all LMAs in Oregon are SWCDs.

The day-to-day implementation of the Area Plan is accomplished through an Intergovernmental Grant Agreement between ODA and each SWCD. Every two years, each SWCD submits a scope of work to ODA to receive funding to implement the Area Plan. Each SWCD implements the Area Plan by providing outreach and technical assistance to landowners. SWCDs also work with ODA and the LAC to establish implementation priorities, evaluate progress toward meeting Area Plan goals and objectives, and revise the Area Plan and Area Rules as needed.

### 1.3.3 Local Advisory Committee

For each Management Area, the director of ODA appoints a LAC (OAR 603-090-0020) with as many as 12 members. The LAC serves in an advisory role to the director of ODA and to the Board of Agriculture. The role of the LAC is to provide a high level of citizen involvement and support in the development, implementation, and biennial reviews of the Area Plan and Area Rules. The LAC’s primary role is to provide advice and direction to ODA and the LMA on local agricultural water quality issues as well as evaluate the progress toward achieving the goals and objectives of the Area Plan. LACs are composed primarily of agricultural landowners in the Management Area and must reflect a balance of affected persons.

The LAC is convened at the time of the biennial review; however, the LAC may meet as frequently as necessary to carry out their responsibilities, which include but are not limited to:

- Participate in the development and subsequent revisions of the Area Plan.
- Participate in the development and subsequent revisions of the Area Rules.
- Recommend strategies necessary to achieve the goals and objectives in the Area Plan.
- Participate in biennial reviews of the progress of implementation of the Area Plan and Area Rules.
- Submit written biennial reports to the Board of Agriculture and the ODA director.

### 1.3.4 Agricultural Landowners

The emphasis of the Area Plan is on voluntary action by landowners to control the factors affecting water quality in the Management Area. However, each landowner in the Management Area is required to comply with the Area Rules. To achieve water quality goals or compliance, landowners may need to select and implement a suite of measures to protect water quality. The actions of each landowner will collectively contribute toward achievement of water quality standards.

Technical assistance, and often financial assistance, is available to landowners who want to work with SWCDs (or other local partners, such as watershed councils) to achieve land conditions that contribute to good water quality. Landowners also may choose to improve their land conditions without assistance.

Under the Area Plan and Area Rules, agricultural landowners are not responsible for mitigating or addressing factors that are caused by non-agricultural activities or sources, such as:

- Conditions resulting from unusual weather events.
• Hot springs, glacial melt water, extreme or unforeseen weather events, and climate change.
• Septic systems and other sources of human waste.
• Public roadways, culverts, roadside ditches and shoulders.
• Dams, dam removal, hydroelectric plants, and non-agricultural impoundments.
• Housing and other development in agricultural areas.
• Impacts on water quality and streamside vegetation from wildlife such as waterfowl, elk, and feral horses.
• Other circumstances not within the reasonable control of the landowner.

However, agricultural landowners may be responsible for some of these impacts under other legal authorities.

1.3.5 Public Participation

The public was encouraged to participate when ODA, LACs, and SWCDs initially developed the Area Plan and Area Rules. In each Management Area, ODA and the LAC held public information meetings, a formal public comment period, and a formal public hearing. ODA and the LACs modified the Area Plan and Area Rules, as needed, to address comments received. The director of ODA adopted the Area Plan and Area Rules in consultation with the Board of Agriculture.

The Oregon Department of Agriculture, the LACs, and the SWCDs conduct biennial reviews of the Area Plan and Area Rules. Partners, stakeholders, and the general public are invited to participate in the process. Any revisions to the Area Rules will include a formal public comment period and a formal public hearing.

1.4 Agricultural Water Quality

The CWA directs states to designate beneficial uses related to water quality, decide on parameters to measure to determine whether beneficial uses are being met, and set water quality standards based on the beneficial uses and parameters.

1.4.1 Point and Nonpoint Sources of Water Pollution

There are two types of water pollution. Point source water pollution emanates from clearly identifiable discharge points or pipes. Significant point sources are required to obtain permits that specify their pollutant limits. Agricultural operations regulated as point sources include permitted Confined Animal Feeding Operations (CAFOs), and many are regulated under ODA’s CAFO Program. Pesticide applications in, over, or within three feet of water also are regulated as point sources. Irrigation water flows from agricultural fields may be at a defined outlet but they do not currently require a permit.

Nonpoint water pollution originates from the general landscape and is difficult to trace to a single source. Nonpoint water pollution sources include runoff from agricultural and forest lands, urban and suburban areas, roads, and natural sources. In addition, groundwater can be polluted by nonpoint sources including agricultural amendments (fertilizers and manure).

1.4.2 Beneficial Uses and Parameters of Concern

Beneficial uses related to water quality are defined by DEQ in OARs for each basin. They may include: public and private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, aesthetic quality,
hydropower, and commercial navigation and transportation. The most sensitive beneficial uses usually are fish and aquatic life, water contact recreation, and public and private domestic water supply. These uses generally are the first to be impaired because they are affected at lower levels of pollution. While there may not be severe impacts on water quality from a single source or sector, the combined effects from all sources can contribute to the impairment of beneficial uses in the Management Area. Beneficial uses that have the potential to be impaired in this Management Area are summarized in Chapter 2.

Many waterbodies throughout Oregon do not meet state water quality standards. Many of these waterbodies have established water quality management plans that document needed pollutant reductions. The most common water quality concerns related to agricultural activities are temperature, bacteria, biological criteria, sediment and turbidity, phosphorous, algae, pH, dissolved oxygen, harmful algal blooms (HABs), nitrates, pesticides, and mercury. Water quality impairments vary by Management Area and are summarized in Chapter 2.

1.4.3 Impaired Water Bodies and Total Maximum Daily Loads

Every two years, DEQ is required by the CWA to assess water quality in Oregon. CWA Section 303(d) requires DEQ to identify a list of waters that do not meet water quality standards. The resulting list is commonly referred to as the 303(d) list. In accordance with the CWA, DEQ must establish TMDLs for pollutants that led to the placement of a waterbody on the 303(d) list.

A TMDL includes an assessment of water quality data and current conditions and describes a plan to achieve conditions so that water bodies will meet water quality standards. TMDLs specify the daily amount of pollution a waterbody can receive and still meet water quality standards. In the TMDL, point sources are allocated pollution limits as “waste load allocations” that are then incorporated in National Pollutant Discharge Elimination System (NPDES) waste discharge permits, while a “load allocation” is established for nonpoint sources (agriculture, forestry, and urban). The agricultural sector is responsible for helping achieve the pollution limit by achieving the load allocation assigned to agriculture specifically, or to nonpoint sources in general, depending on how the TMDL was written.

Total Maximum Daily Loads generally apply to an entire basin or subbasin, not just to an individual waterbody on the 303(d) list. Water bodies will be listed as achieving water quality standards when data show the standards have been attained.

As part of the TMDL process, DEQ identifies the Designated Management Agency (DMA) or parties responsible for submitting TMDL implementation plans. TMDLs designate the local Area Plan as the implementation plan for the agricultural component of the TMDL. Biennial reviews and revisions to the Area Plan and Area Rules must address agricultural or nonpoint source load allocations from relevant TMDLs.

For more general and specific information about Oregon’s TMDLs, see: www.oregon.gov/deq/wq/tmdls/Pages/default.aspx. The list of impaired water bodies (303(d) list), the TMDLs, and the agricultural load allocations for the TMDLs that apply to this Management Area are summarized in Chapter 2.

1.4.4 Oregon Water Pollution Control Law – ORS 468B.025 and ORS 468B.050

In 1995, the Oregon Legislature passed ORS 561.191. This statute states that any program or rules adopted by ODA “shall be designed to assure achievement and maintenance of water quality standards adopted by the Environmental Quality Commission.”
To implement the intent of ORS 561.191, ODA incorporated ORS 468B.025 and 468B.050 into all of the Area Rules.

ORS 468B.025 (prohibited activities) states that:
“(1) Except as provided in ORS 468B.050 or 468B.053, 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 CAFOs that meet minimum criteria for confinement periods and have large animal numbers or have wastewater facilities. The portions of ORS 468B.050 that apply to the Ag Water Quality Program state that:
“(1) Except as provided in ORS 468B.053 or 468B.215, without holding a permit from the Director of the Department of Environmental Quality or the State Department of Agriculture, which permit shall specify applicable effluent limitations, a person may not:
(a) Discharge any wastes into the waters of the state from any industrial or commercial establishment or activity or any disposal system.”

Definitions used in ORS 468B.025 and 468B.050:
‘ “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.’ (ORS 468B.005(5)).

‘ “Water” or “the waters of the state” include lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, 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 affect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.’ (ORS 468B.005(10)).

‘ “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.’ (ORS 468B.005(9)). Additionally, the definition of “wastes” given in OAR 603-095-0010(53) ‘includes but is not limited to commercial fertilizers, soil amendments, composts, animal wastes, vegetative materials or any other wastes.’

1.4.5 Streamside Vegetation and Agricultural Water Quality

Across Oregon, the Ag Water Quality Program emphasizes streamside vegetation protection and enhancement to prevent and control water pollution from agriculture activities and to prevent and control soil erosion. Streamside vegetation can provide three primary water quality functions: shade for cool stream temperatures, streambank stability, and filtration of pollutants. Other water quality functions from
streamside vegetation include: water storage in the soil for cooler and later season flows, sediment trapping that can build streambanks and floodplains, narrowing and deepening of channels, and biological uptake of sediment, organic material, nutrients, and pesticides.

Additional reasons for the Ag Water Quality Program’s emphasis on streamside vegetation include:

- Streamside vegetation can improve water quality related to multiple pollutants, including: temperature (heat), sediment, bacteria, nutrients, and toxics (e.g., pesticides, heavy metals, etc.).
- Streamside vegetation provides fish and wildlife habitat.
- Landowners can improve streamside vegetation in ways that are compatible with their operation.
- Streamside vegetation condition is measurable and can be used to track progress in achieving desired site conditions.

**Site-Capable Vegetation**

The Ag Water Quality Program uses the concept of “site-capable vegetation” to describe the vegetation that agricultural streams can provide to protect water quality. Site-capable vegetation is the vegetation that can be expected to grow at a particular site, given natural site factors (e.g., elevation, soils, climate, hydrology, wildlife, fire, floods) and historical and current human influences that are beyond the program’s statutory authority (e.g., channelization, roads, modified flows, previous land management). Site-capable vegetation can be determined for a specific site based on: current streamside vegetation at the site, streamside vegetation at nearby reference sites with similar natural characteristics, Natural Resources Conservation Service (NRCS) soil surveys and ecological site descriptions, and/or local or regional scientific research.

The goal for Oregon’s agricultural landowners is to provide the water quality functions (e.g., shade, streambank stability, and filtration of pollutants) produced by site-capable vegetation along streams on agricultural lands. The Area Rules for each Management Area require that agricultural activities allow for the establishment and growth of vegetation consistent with site capability to provide the water quality functions equivalent to what site-capable vegetation would provide.

Occasionally, mature site-capable vegetation such as tall trees may not be needed for narrow streams. For example, shrubs and grass may provide shade, protect streambanks, and filter pollutants. However, on larger streams, mature site-capable vegetation is needed to provide the water quality functions.

In many cases, invasive, non-native plants, such as introduced varieties of blackberry and reed canarygrass, grow in streamside areas. This type of vegetation has established throughout much of Oregon due to historic and human influences and may provide some of the water quality functions of site-capable vegetation. ODA’s statutory authority does not require the removal of invasive, non-native plants, however, ODA recognizes removal as a good conservation activity and encourages landowners to remove these plants. Voluntary programs through SWCDs and watershed councils provide technical assistance and financial incentives for weed control and restoration projects. In addition, the Oregon State Weed Board identifies invasive plants that can negatively impact watersheds. Public and private landowners are responsible for eliminating or intensively controlling noxious weeds as may be provided by state and local law enacted for that purpose. For further information, visit [www.oregon.gov/ODA/programs/weeds](http://www.oregon.gov/ODA/programs/weeds).

### 1.5 Other Water Quality Programs

The following programs complement the Ag Water Quality Program and are described here to recognize their link to agricultural lands.
1.5.1 Confined Animal Feeding Operation Program

The Oregon Department of Agriculture is the lead state agency for the CAFO Program. The CAFO Program was developed to ensure that operators do not contaminate ground or surface water with animal manure or process wastewater. Since the early 1980s, CAFOs in Oregon have been registered to a general Water Pollution Control Facility (WPCF) permit designed to protect water quality. A properly maintained CAFO must implement a site-specific suite of structural and management practices to protect ground and surface water. To assure continued protection of ground and surface water, the 2001 Oregon State Legislature directed ODA to convert the CAFO Program from a WPCF permit program to a federal NPDES program. ODA and DEQ jointly issue the NPDES CAFO permit, which complies with all CWA requirements for CAFOs. In 2015, ODA and DEQ jointly issued a WPCF general CAFO permit as an alternative for CAFOs that are not subject to the federal NPDES CAFO permit requirements. Currently, ODA can register CAFOs to either the WPCF or NPDES CAFO permit.

Both of the Oregon CAFO permits require the registrant to operate according to a site-specific, ODA-approved, Animal Waste Management Plan that is incorporated into the CAFO permit by reference. For more information about the CAFO program, go to www.oregon.gov/ODA/programs/NaturalResources/Pages/CAFO.aspx.

1.5.2 Groundwater Management Areas

Groundwater Management Areas are designated by DEQ where groundwater has elevated contaminant concentrations resulting, at least in part, from nonpoint sources. After the GWMA is declared, a local groundwater management committee comprised of affected and interested parties is formed. The committee works with and advises the state agencies that are required to develop an action plan that will reduce groundwater contamination in the area.

Oregon has designated three GWMAs because of elevated nitrate concentrations in groundwater: Lower Umatilla Basin, Northern Malheur County, and Southern Willamette Valley. Each GWMA has a voluntary action plan to reduce nitrates in groundwater. After a scheduled evaluation period, if DEQ determines that voluntary efforts are not effective, mandatory requirements may become necessary.

1.5.3 The Oregon Plan for Salmon and Watersheds

In 1997, Oregonians began implementing the Oregon Plan for Salmon and Watersheds referred to as the Oregon Plan (www.oregon-plan.org). The Oregon Plan seeks to restore native fish populations, improve watershed health, and support communities throughout Oregon. The Oregon Plan has a strong focus on salmonids because of their great cultural, economic, and recreational importance to Oregonians and because they are important indicators of watershed health. ODA’s commitment to the Oregon Plan is to develop and implement Area Plans and Area Rules throughout Oregon.

1.5.4 Pesticide Management and Stewardship

The ODA Pesticides Program holds the primary responsibility for registering pesticides and regulating their use in Oregon under the Federal Insecticide Fungicide Rodenticide Act. ODA’s Pesticide Program administers regulations relating to pesticide sales, use, and distribution, including pesticide operator and applicator licensing as well as proper application of pesticides, pesticide labeling, and registration.

In 2007, the interagency Water Quality Pesticide Management Team (WQPMT) was formed to expand efforts to improve water quality in Oregon related to pesticide use. The WQPMT includes representation from ODA, Oregon Department of Forestry (ODF), DEQ, and Oregon Health Authority (OHA). The
WQPMT facilitates and coordinates activities such as monitoring, analysis and interpretation of data, effective response measures, and management solutions. The WQPMT relies on monitoring data from the Pesticides Stewardship Partnership (PSP) program and other monitoring programs to assess the possible impact of pesticides on Oregon’s water quality. Pesticide detections in Oregon’s streams can be addressed through multiple programs and partners, including the PSP.

Through the PSP, state agencies and local partners work together to monitor pesticides in streams and to improve water quality (www.oregon.gov/deq/wq/programs/pages/pesticide.aspx). ODA, DEQ, and Oregon State University Extension Service work with landowners, SWCDs, watershed councils, and other local partners to voluntarily reduce pesticide levels while improving water quality and crop management. Since 2000, the PSPs have made noteworthy progress in reducing pesticide concentrations and detections.

The Oregon Department of Agriculture led the development and implementation of a Pesticides Management Plan (PMP) for the state of Oregon (www.oregon.gov/ODA/programs/Pesticides/water/pages/AboutWaterPesticides.aspx). The PMP, completed in 2011, strives to protect drinking water supplies and the environment from pesticide contamination, while recognizing the important role that pesticides have in maintaining a strong state economy, managing natural resources, and preventing human disease. By managing the pesticides that are approved for use by the US EPA and Oregon in agricultural and non-agricultural settings, the PMP sets forth a process for preventing and responding to pesticide detections in Oregon’s ground and surface water.

1.5.5 Drinking Water Source Protection

Oregon implements its drinking water protection program through a partnership between DEQ and OHA. The program provides individuals and communities with information on how to protect the quality of Oregon’s drinking water. DEQ and OHA encourage preventive management strategies to ensure that all public drinking water resources are kept safe from current and future contamination. For more information see: www.oregon.gov/deq/wq/programs/pages/dwq.aspx.

1.6 Partner Agencies and Organizations

1.6.1 Oregon Department of Environmental Quality

The US EPA delegated authority to Oregon to implement the federal CWA in our state. DEQ is the lead state agency with overall authority to implement the CWA in Oregon. DEQ coordinates with other state agencies, including ODA and ODF, to meet the requirements of the CWA. DEQ sets water quality standards and develops TMDLs for impaired waterbodies, which ultimately are approved or disapproved by the US EPA. In addition, DEQ develops and coordinates programs to address water quality including NPDES permits for point sources, the CWA Section 319 grant program, Source Water Protection, the CWA Section 401 Water Quality Certification, and GWMAs. DEQ also coordinates with ODA to help ensure successful implementation of Area Plans.

A Memorandum of Agreement (MOA) between DEQ and ODA recognizes that ODA is the state agency responsible for implementing the Ag Water Quality Program. ODA and DEQ updated the MOA in 2012.

The MOA includes the following commitments:

- ODA will develop and implement a monitoring strategy, as resources allow, in consultation with DEQ.
- ODA will evaluate the effectiveness of Area Plans and Area Rules in collaboration with DEQ.
ODA will determine the percentage of lands achieving compliance with Area Rules.
ODA will determine whether the target percentages of lands meeting the desired land conditions, as outlined in the goals and objectives of the Area Plans, are being achieved.

- ODA and DEQ will review and evaluate existing information to determine:
  - Whether additional data are needed to conduct an adequate evaluation.
  - Whether existing strategies have been effective in achieving the goals and objectives of the Area Plans.
  - Whether the rate of progress is adequate to achieve the goals of the Area Plans.

The Environmental Quality Commission, which serves as DEQ’s policy and rulemaking board, may petition ODA for a review of part or all of any Area Plan or Area Rules. The petition must allege, with reasonable specificity, that the Area Plan or Area Rules are not adequate to achieve applicable state and federal water quality standards (ORS 568.930(3)(a)).

1.6.2 Other Partners

Oregon Department of Agriculture and SWCDs work in close partnership with local, state, and federal agencies and organizations, including: DEQ (as indicated above), the United States Department of Agriculture (USDA) NRCS and Farm Service Agency, watershed councils, Oregon State University Agricultural Experiment Stations and Extension Service, tribes, livestock and commodity organizations, conservation organizations, and local businesses. As resources allow, SWCDs and local partners provide technical, financial, and educational assistance to individual landowners for the design, installation, and maintenance of effective management strategies to prevent and control agricultural water pollution and to achieve water quality goals.

1.7 Measuring Progress

Agricultural landowners have been implementing effective conservation projects and management activities throughout Oregon to improve water quality for many years. However, it has been challenging for ODA, SWCDs, and LACs to measure progress toward improved water quality. ODA is working with SWCDs, LACs, and other partners to develop and implement strategies that will produce measurable outcomes. ODA is also working with partners to develop monitoring methods to document progress.

1.7.1 Measurable Objectives

A measurable objective is a numeric long-term desired outcome to achieve by a specified date. Milestones are the interim steps needed to make progress toward the measurable objective and consist of numeric short-term targets to reach by specific dates. Together, the milestones define the timeline needed to achieve the measurable objective.

The AgWQ Program is working throughout Oregon with SWCDs and LACs toward establishing long-term measurable objectives to achieve desired conditions. ODA, the LAC, and the SWCD will establish measurable objectives and associated milestones for each Area Plan. Many of these measurable objectives relate to land conditions and primarily are implemented through focused work in small geographic areas (section 1.7.3), with a long-term goal of developing measurable objectives and monitoring methods at the Management Area scale.

The State of Oregon continues to improve its ability to use technology to measure current streamside vegetation conditions and compare it to the vegetation needed to meet stream shade targets to keep surface waters cooler. As the State’s use of this technology moves forward, ODA will use the information to help LACs and LMAs set measurable objectives for streamside vegetation. These measurable
objectives will be achieved through implementing the Area Plan, with an emphasis on incentive programs.

At each biennial review, ODA and its partners will evaluate progress toward the most recent milestone(s) and why they were or were not achieved. ODA, the LAC, and LMA will evaluate whether changes are needed to continue making progress toward achieving the measurable objective(s) and will revise strategies to address obstacles and challenges.

The measurable objectives and associated milestones for the Area Plan are in Chapter 3 and progress toward achieving the measurable objectives and milestones is summarized in Chapter 4.

1.7.2 Land Conditions and Water Quality

Land conditions can serve as useful surrogates (indicators) for water quality parameters. For example, streamside vegetation generally is used as a surrogate for water temperature, because shade blocks solar radiation from warming the stream. In addition, sediment can be used as a surrogate for pesticides and phosphorus because they often adhere to sediment particles.

The Ag Water Quality Program focuses on land conditions, in addition to water quality data, for several reasons:

- Landowners can see land conditions and have direct control over them.
- Improved land conditions can be documented immediately.
- Reductions in water quality from agricultural activities are primarily due to changes in land conditions and management activities.
- It can be difficult to separate agriculture’s influence on water quality from other land uses.
- There is generally a lag time between changes on the landscape and the resulting improvements in water quality.
- Extensive monitoring of water quality would be needed to evaluate progress, which would be cost-prohibitive and could fail to demonstrate improvements in the short term.

Water quality monitoring data will help ODA and partners to measure progress or identify problem areas in implementing Area Plans. However, as described above, water quality monitoring may be less likely to document the short-term effects of changing land conditions on water quality parameters such as temperature, bacteria, nutrients, sediment, and pesticides.

1.7.3 Focused Implementation in Small Geographic Areas

Focus Areas

A Focus Area is a small watershed with water quality concerns associated with agriculture. The Focus Area process is SWCD-led, with ODA oversight. The SWCD delivers systematic, concentrated outreach and technical assistance in the Focus Area. A key component of this approach is measuring conditions before and after implementation to document the progress made with available resources. The Focus Area approach is consistent with other agencies’ and organizations’ efforts to work proactively in small watersheds and is supported by a large body of scientific research (e.g. Council for Agricultural Science and Technology, 2012. Assessing the Health of Streams in Agricultural Landscapes: The Impacts of Land Management Change on Water Quality. Special Publication No. 31. Ames, Iowa).

Systematic implementation in Focus Areas provides the following advantages:

- Measuring progress is easier in a small watershed than across an entire Management Area.
- Water quality improvement may be faster since small watersheds generally respond more rapidly.
• A proactive approach can address the most significant water quality concerns.
• Partners can coordinate and align technical and financial resources.
• Partners can coordinate and identify appropriate conservation practices and demonstrate their effectiveness.
• A higher density of projects allows neighbors to learn from neighbors.
• A higher density of projects leads to opportunities for increasing the connectivity of projects.
• Limited resources can be used more effectively and efficiently.
• Work in one Focus Area, followed by other Focus Areas; will eventually cover the entire Management Area.

Soil and Water Conservation Districts select a Focus Area in cooperation with ODA and other partners. The scale of the Focus Area matches the SWCD’s capacity to deliver concentrated outreach, technical assistance, and to complete projects. The current Focus Area for this Management Area is described in Chapter 3. The SWCD will also continue to provide outreach and technical assistance to the entire Management Area.

**Strategic Implementation Areas**

Strategic Implementation Areas (SIAs) are small watersheds selected by ODA, in cooperation with partners, based on a statewide review of water quality data and other available information. ODA conducts an evaluation of likely compliance with Area Rules, and contacts landowners with the results and next steps. Landowners have the option of working with the SWCD or other partners to voluntarily address water quality concerns. ODA follows up, as needed, to enforce the Area Rules. Finally, ODA completes a post-evaluation to document progress made in the watershed. Chapter 3 describes any SIAs in this Management Area.

**1.8 Monitoring, Evaluation, and Adaptive Management**

The Oregon Department of Agriculture, the LAC, and the LMA will assess the effectiveness of the Area Plan and Area Rules by evaluating the status and trends in agricultural land conditions and water quality (Chapter 4). This assessment will include an evaluation of progress toward measurable objectives. ODA will utilize other agencies’ and organizations’ local monitoring data when available. ODA, DEQ, SWCDs, and LACs will examine these results during the biennial review and will revise the goal(s), measurable objectives, and strategies in Chapter 3 as needed.

**1.8.1 Agricultural Water Quality Monitoring**

As part of monitoring water quality status and trends, DEQ regularly collects water samples at over 130 sites on more than 50 rivers and streams across the state. Sites are located across the major land uses (forestry, agriculture, rural residential, and urban/suburban). DEQ collects water quality samples every other month throughout the year to represent a snapshot of water quality conditions. Parameters consistently measured include alkalinity, biochemical oxygen demand (BOD), chlorophyll a, specific conductance, dissolved oxygen (DO), DO percent saturation, *E. coli*, ammonia, nitrate and nitrite, pH, total phosphorus, total solids, temperature, and turbidity.

At each biennial review, DEQ assesses the status and trends of water quality in relation to water quality standards. Parameters included in the analysis are temperature, pH, and bacteria. DEQ will add additional parameters as the data become available, depending on the water quality concerns of each Management Area. ODA will continue to work with DEQ to cooperatively summarize the data results and how they apply to agricultural activities.
Water quality monitoring is described in Chapter 3, and the data are presented in Chapter 4.

1.8.2 Biennial Reviews and Adaptive Management

All Area Plans and Area Rules around the state undergo biennial reviews by ODA and the LAC. As part of each biennial review, ODA, DEQ, SWCDs, and the LAC discuss and evaluate the progress on implementation of the Area Plan and Area Rules. This evaluation includes discussion of enforcement actions, land condition, water quality monitoring, strategic initiatives, and outreach efforts over the past biennium. ODA and partners evaluate progress toward achieving measurable objectives and milestones, and revise implementation strategies as needed. The LAC submits a report to the Board of Agriculture and the director of ODA describing progress and impediments to implementation, and recommendations for modifications to the Area Plan or Area Rules necessary to achieve the goal of the Area Plan. ODA and partners will use the results of this evaluation to update the measurable objectives and implementation strategies in Chapter 3.
Chapter 2: Local Background

Figure 3: Management Area Map

2.1 Local Roles

2.1.1 Local Advisory Committee

The Area Plan was developed with the assistance of the LAC. The LAC was formed in 2005 to assist with the development of the Area Plan and Area Rules and with subsequent biennial reviews.

Table 1: Current LAC

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Bonnie Clugsen</td>
<td>Unity</td>
<td>Rancher</td>
</tr>
<tr>
<td>Pat Sullivan</td>
<td>Hereford</td>
<td>Rancher</td>
</tr>
<tr>
<td>Dick D’Ewart</td>
<td>Durkee</td>
<td>Rancher</td>
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<tr>
<td>Ted Bloomer</td>
<td>Durkee</td>
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<td>Rodd Bunch</td>
<td>Durkee</td>
<td>Rancher</td>
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<tr>
<td>Waynette Morin</td>
<td>Hereford</td>
<td>Rancher</td>
</tr>
<tr>
<td>Wes Morgan</td>
<td>Sumpter</td>
<td>BRID</td>
</tr>
</tbody>
</table>
2.1.2 Local Management Agency

Implementation of the Area Plan is accomplished through an Intergovernmental Grant Agreement(s) between ODA and the Burnt River SWCD. This Intergovernmental Grant Agreement defines the SWCD(s) as the LMA(s) for implementation of the Ag Water Quality Program in this Management Area. The SWCD(s) was/were also involved in development of the Area Plan and Area Rules.

The LMA implements the Area Plan by conducting the activities detailed in Chapter 3, which are intended to achieve the goals and objectives of the Area Plan.

2.2 Area Plan and Area Rules: Development and History

The director of ODA approved the Area Plan and Area Rules in 2003.

Since approval, the LAC met every two years to review the Area Plan and Area Rules. The biennial review process includes an assessment of progress toward achieving the goals and objectives in the Area Plan.

2.3 Geographical and Physical Setting

The Burnt River basin generally drains east from the Blue Mountains to the Snake River. After leaving the forested lands, the Burnt River and its main tributaries, the North, West, Middle and South forks, pass through meadowlands in the area above Unity Reservoir. These streams converge into Unity Reservoir. Downstream from the reservoir the river flows through mountainous terrain for more than a mile. It then emerges into a relatively flat meadow near Hereford. After meandering through these flat meadow areas for about 35 miles, the river enters the 16-mile long Burnt River Canyon—a steep, rocky canyon with limited irrigation and very limited grazing. After leaving the canyon, the river meanders through another meadow area around Durkee. This meadow reach is 7.5 miles and then the river enters another canyon. East of Huntington the Burnt River joins the Snake River. The river drains about 1,100 square miles, ranging in elevation from about 7,900 feet above sea level at the headwaters to some 2,100 feet near Huntington.

The irrigated portions of the basin, or the valley floors, were primarily settled in the mid-to-late 1800s. Much of the uplands were taken up later under the Grazing Homestead Act in the early 1900s. Cow/calf beef operations are the predominate industry in the Plan area. Most ranches are situated along the Burnt River and its tributaries where water is diverted from the river system to supplement sparse rainfall for forage production. Ranchers use these irrigated lands adjacent to the river primarily for pasture and forage production with about 25 to 30 percent dedicated to alfalfa production. There are also large areas of public and private land adjacent to streams that are suited for livestock grazing, wildlife habitat, recreation, timber production, and limited mining.

Flood irrigation is the predominate practice for most of the 20,000 acres in the Burnt River Irrigation District and for several thousand acres outside the irrigation district. A few sprinkler systems are used on bench areas. Historically, 85 percent of the Burnt River watershed’s runoff occurs from March through June with very low stream flows occurring the remainder of the year. The U.S. Bureau of Reclamation (BOR) completed construction of the Unity Reservoir in 1939 to provide supplemental irrigation water for about 12,000 acres of land. Prior to the construction of the reservoir, this land depended entirely on natural stream flow from the Burnt River for its irrigation supply. At that time, late summer flows on the main stem were often intermittent. At times, ranchers in the Bridgeport area had to go upstream tearing out beaver dams to get stock water in the fall. Records tell of pioneers coming over the Oregon Trail in
late summer and fall being able to use the Burnt River’s dry riverbed for the trail in an area below Durkee Valley.

The average Unity Dam stream flow release to the Burnt River is about 90 cubic feet per second (cfs), 125 to 140 cfs during the irrigation season (April 1 to October 1) and two to 40 cfs during the non-irrigation season. The reservoir holds about 25,000 acre-feet, which is less than one-third the average annual runoff for the basin. Sediment accumulation during the past 60 years has resulted in a negligible reduction in reservoir storage capacity.

2.4 Agricultural Water Quality

2.4.1 Water Quality Issues

Most of the streams on the 2010 303(d) list (Appendix A) are almost entirely on U.S. Forest Service land. Most of the listings on private lands are for the main stem of the Burnt River. The Burnt River is listed for:

- Temperature
- Chlorophyll a (Burnt River from Clarks Creek to Unity Reservoir)
- Dissolved Oxygen (Burnt River Unity Reservoir to Mouth, also SF Burnt R., MF Burnt R., WF Burnt R.)
- *E. coli*
- Arsenic
- Sedimentation (Patrick Cr., Trout Cr., Geiser Cr., Camp Cr., SF Dixie Cr.)
- pH (NF Burnt R.)
- Biocriteria (MF Burnt R.)

There is also a total phosphorus allocation of 0.07 mg/l for all Snake River tributaries, including Burnt River that was developed in the Snake River Hells Canyon TMDL in 2004.

Sources of Impairment

Both point and nonpoint sources contribute to water pollution. The accumulation of point and nonpoint source pollution results in water quality impairment. Point sources discharge pollutants into the water through a pipe or conveyance. In contrast, nonpoint source pollution is pollution emanating from landscape scale sources and typically cannot be tracked to a single point of discharge. Nonpoint sources of pollution in the area can include the effects of weather events causing runoff and erosion from agricultural and forest lands, leaching of pollutants to groundwater, eroding stream banks, and runoff from roads and urban areas. Pollutants from nonpoint sources can be carried to the surface water or groundwater through the actions of rainfall, snowmelt, irrigation, and leaching. Increased heat input due to vegetation removal, seasonal flow reduction, changes in channel shape, and floodplain alteration are major sources of water quality impairment. Channelization and bank instability may alter gradient, width/depth ratio, and sinuosity, thereby causing undesirable changes in sediment transport regime, erosional and depositional characteristics, and elevated temperature.

The high stream temperatures and low summer streamflows are the main water quality problems in the Burnt River Subbasin. Stream temperatures can increase or decrease from various types of land management activities and natural disturbances, that cause the removal of riparian vegetation or changes in channel morphology, from hydrological factors such as groundwater recharge and discharge and from other factors such as high sediment loads.

Protection of riparian and streamside areas for moderation of stream temperatures is the subject of rules
created from this Area Plan. Low summer streamflows often result from channel loss and water withdrawals for beneficial uses, primarily irrigation, along with normal seasonal reductions of streamflow. Water withdrawals are regulated by the Oregon Water Resources Department (WRD) and will not be addressed by rule or in this Area Plan.

2.4.1.1 Beneficial Uses

Clean water supports many uses. Water quality standards are established to protect beneficial uses of Oregon’s waters, which are defined in OAR 304-041-0002(17) and designated for the Powder/Burnt Basin in 304-041-0260 – Table 260A. Beneficial uses include: public and private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality.

The following beneficial uses have been identified as adversely affected in the Plan area:
- Salmonid fish rearing and spawning (OAR 340-41-762)
- Resident fish and aquatic life (OAR 340-41-762)

Of the beneficial uses of water in the Burnt River Basin, the most sensitive use for most waters and parameters of concern is spawning and rearing of cold-water fisheries. There are no anadromous salmonids or bull trout in the Burnt River. Redband trout exist only in the headwaters.

2.4.1.2 WQ Parameters and 303(d) list

See Appendix A

2.4.2 Basin TMDLs and Agricultural Load Allocations

DEQ is in the process of developing a TMDL for the Burnt River.

2.5 Voluntary and Regulatory Measures

Voluntary efforts are the focus of the ODA, the Burnt River SWCD, and the LAC. However, if a particular landowner refuses to correct a verified adverse condition on his or her property the ODA has a regulatory backstop to ensure pollution control. At the same time, ODA does not want to mandate or prohibit any specific agricultural activity. To maintain this flexibility, this Plan and its associated administrative rules describe Prohibited Conditions.

Readers should note that this Area Plan is only a guidance document. By itself it is not regulatory, however, it does refer to administrative rules that set requirements for landowners. To help distinguish between this Area Plan and its associated rules, all rule language is separated from the rest of the text by solid lines.

This Plan encourages farmers and ranchers to manage their land to control conditions that have been identified as contributing to undesirable water quality using adaptive management techniques.

### OAR 603-095-3240

**Prohibited Conditions**

(1) A landowner shall be responsible for only those conditions caused by activities conducted on land owned or managed by the landowner. Criteria do not apply to conditions resulting from unusual weather events or other exceptional circumstances that could not have been reasonably anticipated.
2.5.1 Pollution and Waste Management
The objective of this Area Plan is to prevent the introduction of waste materials into bodies of water.

Waste includes livestock manure from situations like seasonal feeding and birthing areas, gathering pastures and corrals, rangelands and pasture, and any other situations not already covered by Oregon’s Confined Animal Feeding Operation Laws.

Indicators of potential noncompliance include:
- Runoff flowing through areas of high livestock usage and carrying wastes into waters of the state;
- Livestock waste accumulated in drainage ditches or areas of flooding;
- Fecal coliform (E. coli) counts that exceed state water quality standards;
- It is the LAC’s opinion that the current water quality standards are unattainable.

OAR 603-095-3240
(2) Pollution and Waste Management
Effective upon adoption, no person subject to these rules shall violate any provision of ORS 468B.025 or ORS 468B.050. (See Section 1.4.4 Water Pollution Control Law, page 13, for complete text of 468B rules and definitions).

2.5.2 Streamside Conditions

Maintaining and improving riparian vegetation is an important factor to help achieve our goal of working toward a reduction in any identified undesirable water quality issues related to agricultural land use practices. Healthy, functioning riparian vegetation communities in the Burnt River will help stabilize stream banks, filter sediments and nutrients, and protect critical aquatic and riparian habitat.

Healthy riparian vegetation can also help control stream temperatures in certain circumstances. However, because of natural factors and the technical and biological challenges (e.g. site capability, and beaver, ungulate, and rodent damage) of developing riparian vegetation it is unlikely that all of the listed tributaries of the Burnt River will meet the temperature criteria of 68°. Some headwater streams meet criteria or are likely to meet it with healthy riparian vegetation and improved flood plain connection. It is also noted that no amount of riparian vegetation can of itself produce sufficient benefit to bring any portion of the main stem into compliance with the 68° criterion in as much as summertime releases from Unity reservoir often exceed 70°.

However, 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.

OAR 603-095-3240
(3) Streamside Conditions
(a) By January 1, 2006, activities will allow the establishment and development of riparian vegetation, consistent with site capability. Site capability will be determined by ODA in consultation with local resource management agencies.
(b) Landowners are not responsible for browsing and grazing by wildlife.

Site Capable Vegetation

As described in Chapter 1 the Agriculture Water Quality Program uses the concept of “site-capable vegetation” to describe the vegetation that agricultural streams can provide to protect water quality. Site-capable vegetation is the vegetation that can be expected to grow at a particular site, given natural site factors (e.g., elevation, soils, climate, hydrology, wildlife, fire, floods) and historical and current human
influences (e.g., channelization, roads, modified flows, past land management). Site-capable vegetation can be determined for a specific site based on: current streamside vegetation at the site, streamside vegetation at nearby reference sites with similar natural characteristics, Natural Resources Conservation Service (NRCS) soil surveys and ecological site descriptions, and local or regional scientific research. ODA does not consider invasive, non-native plants such as introduced varieties of reed canary grass and blackberry to be site-capable vegetation.

The goal for Oregon’s agricultural landowners is to provide the water quality functions (e.g., shade, stream bank stability, and filtration of pollutants) produced by site-capable vegetation along all streams flowing through agricultural lands. The agricultural water quality regulations for each Management Area require that agricultural activities provide the water quality functions equivalent to what site-capable vegetation would provide.

In some cases, for narrow streams, mature site-capable vegetation such as tall trees may not be needed. For example, shrubs and grass may provide shade, protect stream banks, and filter pollutants. However, on larger streams, mature site-capable vegetation is needed to provide the water quality functions. Limited exceptions include:

- Upland species such as sagebrush can be the dominant site-capable vegetation along streams with erosional down cutting but they do not improve water quality.
- Junipers are mature site-capable vegetation in central and eastern Oregon but they reduce bank stability and increase erosion.

The Riparian Rule does not specify any activities that must cease and does not require any particular activity to take place. Landowners are not responsible for wildlife browsing and grazing.

The Rule allows for management activities to take place. Some examples of management that are compatible with water quality objectives are:

- Properly managed grazing
- Hazard tree removal
- Traditional harvesting of forages

This rule only applies to the streamside area of natural streams and not to artificial irrigation ditches and diversion points, which are used for the primary purpose of delivering irrigation and stock water to lands that hold a valid water right. The streamside area is defined as the area near the stream where management practices can most directly influence the conditions of the water.
Chapter 3: Implementation Strategies

Goal

The goals of the Plan are to:
- Prevent and control water pollution from agricultural activities and soil erosion and achieve applicable water quality standards;
- Work toward a reduction in any identified undesirable water quality areas by attempting to prevent and control characteristics on agricultural lands in the Plan area that contribute to undesirable water quality;
- Continue and expand, if necessary, the current water quality monitoring program established by the SWCD and the Burnt River Irrigation District; and
- Apply the lessons learned from the Burnt River Temperature Study.

3.1 Measurable Objectives

3.1.1 Focus Area

The Burnt River SWCD worked with ODA and the Oregon Department of Fish and Wildlife (ODFW) to select the Burnt River Focus Area, which consists of two watersheds (Camp Creek and South Fork Burnt River). This area offers potential restoration projects based on the following: sage grouse habitat, riparian restoration, aspen renewal for wildlife habitat, push-up dam removal and replacement for aquatic habitat, off-stream watering, riparian pastures, cooperative landowners, and DEQ 303(d) listing for main tributaries.

ODFW Conservation Strategy – Blue Mountain Eco-Region Burnt River -
- Key Habitats – Aquatic, Riparian, Sage Brush Steppe;
- Strategy Habitat - Aspen Woodlands;
- Maintain and enhance sage brush habitats;
- Maintain or enhance in channel watershed function, connection to riparian habitat flow, and hydrology;
- Maintain or restore riparian habitat and ecological function; ensure sufficient habitat complexity for wildlife.

The Focus Area covers approximately 127,000 acres; 70,000 acres are estimated to be public lands with 57,000 acres estimated on private lands. Of the private land, 7,000 acres are agricultural irrigated lands with the remaining 50,000 acres being range/pasture lands. The Focus Area averages 9-35” of precipitation yearly, with elevations of 3,500 feet to 7,500 feet.

Both ODA and the SWCD are assessing streamside vegetation conditions.
ODA will use their Streamside Vegetation Assessment (SVA) in 2018(?) to characterize the type of ground cover within 35 feet of the stream. The metric is the percent of the different types of land cover (agricultural infrastructure, bare ground, bare due to agricultural activities, grass, agricultural grass, shrubs, trees, and water) viewed on aerial photographs.

The SWCD visually assesses land conditions by examining available aerial photography and ground truth from public viewpoints followed by site visit determination. Land will be classified as:

- Class I = Little to no resource concerns = LOW priority
- Class II = Few resource concerns = MEDIUM priority
- Class III = Numerous resource concerns = HIGH priority

**Current Conditions (From Pre-Assessment) *The following is an estimate of stream miles***

- In 2017: Class I = 35% (14.35 acres), Class II = 65% (26.65), Class III = 0%

**Focus Area Milestone for 2017-2019**
By June 30, 2019: Class I = 45%, Class II = 55%

### 3.2 Strategies and Activities

The SWCDs and ODA are responsible for implementing the Area Plan. The Burnt River SWCDs, as the LMAs, will maintain an Intergovernmental Grant Agreement with ODA that outlines their responsibilities for providing educational outreach and technical assistance.

Education and cooperation are key to the success of this Plan. The SWCDs will work together to provide farmers and ranchers in the Management Area with information about the goals and objectives of this Plan.

Individual farmers and ranchers in the Management Area may request assistance to determine what can be done to meet the goals and objectives of the Plan by contacting the local office of the SWCDs or the NRCS.

The Burnt River SWCD will:
- Participate in developing and delivering outreach and education programs designed to provide public awareness and understanding of water quality issues;
- Develop reports, projects, demonstrations and tours to showcase successful management practices and systems;
- Provide technical and financial assistance to the agricultural community to implement recommended practices, monitoring and education.

### 3.3 Monitoring and Evaluation

Several entities have active monitoring programs. The main ones are:
- DEQ monitors one site in the Management Area as part of their ambient monitoring network (Burnt River at Snake River Road in Huntington);
- The Bureau of Reclamation monitors phosphorus at eight sites;
- The Burnt River Irrigation District monitors temperature continuously at multiple sites. The irrigation district has agreed to have ODA review and analyze the data with DEQ’s help in 2018 and present to the LAC.
DEQ has completed a status and trends analysis for the area (http://www.oregon.gov/deq/wq/programs/Pages/wqstatustrends.aspx). The report will be updated for future biennial reviews and the LAC can make informed decisions on management activities within the coverage area.

For a description of monitoring and evaluation results, see Chapter 4.
Chapter 4: Implementation, Monitoring, and Adaptive Management

4.1 Progress Toward Measurable Objectives

4.1.1 Focus Area

Table 2: The Burnt River Focus Area has only had a pre-assessment.

<table>
<thead>
<tr>
<th>Class</th>
<th>2017: Pre-Assessment</th>
<th>2019: Post-Assessment</th>
<th>Reason for Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>14.35 acres (35%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>26.65 acres (65%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>0 acres (0%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (I-IV)</td>
<td>41 acres (100%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.2 Activities and Accomplishments

Table 3: Activities and Accomplishments

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Accomplishments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community and Landowner Engagement</td>
<td>▪ Summer Newsletter- 450 Recipients</td>
</tr>
<tr>
<td></td>
<td>▪ Idaho Power Riparian Program Brochure Available for Distribution</td>
</tr>
<tr>
<td></td>
<td>▪ Newspaper Articles- 7 Submitted</td>
</tr>
<tr>
<td></td>
<td>▪ Spring Newsletter- 444 Recipients</td>
</tr>
<tr>
<td></td>
<td>▪ Outdoor School (Soils Class- 2 years) – 410 Students (Total)</td>
</tr>
<tr>
<td></td>
<td>▪ NACD Poster Contest- 24 Contestants</td>
</tr>
<tr>
<td></td>
<td>▪ Staff Training (Rain, Soil Health, Livestock Water, OWEB, Grant Writing, IP Mapping)- 59 Hours</td>
</tr>
<tr>
<td></td>
<td>▪ Cub Scouts Presentation on Water Cycle- 10 Students</td>
</tr>
<tr>
<td></td>
<td>▪ University of Idaho Range Tour- 17 Students</td>
</tr>
<tr>
<td></td>
<td>▪ Baker FFA Chapter Outreach</td>
</tr>
<tr>
<td></td>
<td>▪ LAC Coordination</td>
</tr>
<tr>
<td></td>
<td>▪ Site Visits- 54 Individuals</td>
</tr>
<tr>
<td></td>
<td>▪ Monitoring- 7 Reports</td>
</tr>
<tr>
<td></td>
<td>▪ New Funding Applications- 8 Applications</td>
</tr>
<tr>
<td></td>
<td>▪ Ag Water Quality- 4 Projects (250 Acres)</td>
</tr>
<tr>
<td></td>
<td>▪ Total Landowners Provided Technical Assistance- 182 Individuals</td>
</tr>
<tr>
<td>Individual Projects/Activities worked on during 15/17 Biennium:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Sage Grouse Initiative</td>
</tr>
<tr>
<td></td>
<td>▪ Candidate Conservation Agreement with Assurances</td>
</tr>
<tr>
<td></td>
<td>▪ NRCS Work Group</td>
</tr>
<tr>
<td></td>
<td>▪ Idaho Power Small Grants</td>
</tr>
<tr>
<td>Technical Assistance</td>
<td>▪ Oregon Association of Conservation Districts Meetings/Work</td>
</tr>
<tr>
<td></td>
<td>▪ RCPP/USFWS</td>
</tr>
<tr>
<td></td>
<td>▪ SWAT Completion</td>
</tr>
<tr>
<td></td>
<td>▪ All Counties Sage Grouse Meetings</td>
</tr>
<tr>
<td>Funding and Grants</td>
<td>OWEB: $70,254.00</td>
</tr>
<tr>
<td></td>
<td>NRCS: $2,953,706.11 (Obligated Funds for all of Baker County)</td>
</tr>
</tbody>
</table>
4.3 Monitoring—Status and Trends

4.3.1 Water Quality

For this biennial review, DEQ reviewed data from 99 sites, of which nine had sufficient data for status and trends analysis. The analyses showed that the main concerns were related to phosphorus (highlighted in grey and discussed below). Data were insufficient to evaluate water temperatures.

Table 4: Status and Trends Analysis

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site Description</th>
<th>E. coli</th>
<th>pH</th>
<th>Dissolved Oxygen</th>
<th>Total Suspended Solids</th>
<th>Total Phosphorus</th>
</tr>
</thead>
<tbody>
<tr>
<td>11494</td>
<td>Burnt River @ Huntingdon (mouth)</td>
<td>11/103</td>
<td>1/108</td>
<td>~10/104</td>
<td>104/105</td>
<td>0.15</td>
</tr>
<tr>
<td>BUR003</td>
<td>Unity Res above dam</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>POW130</td>
<td>Dixie SFK @ county line</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>POW132</td>
<td>Dixie NFK above Kitchen Gulch</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>POW134</td>
<td>Dixie Crk below Beaver Crk</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>POW144</td>
<td>Pritchard Crk above Laurence Crk</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>POW146</td>
<td>Lawrence Crk above Pritchard Crk</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>POW162</td>
<td>Sisley Crk headwaters</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>POW168</td>
<td>Burnt River @ Dark Canyon</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

1 N = total # of observations
2 80 mg/L is a very, very rough equivalent of 30 NTUs of turbidity, which is a target for the Umatilla TMDL
3 Snake River TMDL load allocation = 0.07 mg/L
4 Significant degrading trend
5 Significant improving trend

The data show that phosphorus concentrations decrease between the dam and Dark Canyon and then almost double at the mouth of the Burnt River. The tributaries do not contribute sufficient phosphorus to account for the increase in the Burnt River below Dark Canyon.

While dissolved oxygen levels still meet the standard at the mouth, the average has decreased from 11 mg/L in 2000 to -10 mg/L in 2017. Another potential concern is E. coli, which generally meets the water quality standard but is rising at the mouth.

At the biennial review, the LAC asked ODA to research all available data for the management Area and provide it at a LAC interim data meeting next winter.

Figure 5: TOTAL PHOSPHORUS: Burnt River
4.4  Biennial Reviews and Adaptive Management

There are currently no open compliance cases in the Management Area. There continues to be an impediment in the for continued funding for monitoring and assessments dealing with sampling and analyzing data collected to look at status trends. The current LAC is still concerned about the age of their LAC members and are going to work on recruiting new LAC members. There is also a concern on all the absentee landowners in the watershed and how to get them connected to this Plan and the overall Oregon Department of Agriculture’s Water Quality program. There were no modifications recommended for this biennium.
Appendix A:  2012 Water Quality Limited List- 303(d)

<table>
<thead>
<tr>
<th>Waterbodies</th>
<th>Boundaries (River Mile)</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auburn Creek</td>
<td>0 – 6.6</td>
<td>Temperature</td>
</tr>
<tr>
<td>Burnt River*</td>
<td>0 – 77.9</td>
<td>Arsenic</td>
</tr>
<tr>
<td>Burnt River</td>
<td>45.1 – 77.3</td>
<td>Chlorophyll a</td>
</tr>
<tr>
<td>Burnt River**</td>
<td>0 – 77.9</td>
<td>Dissolved Oxygen</td>
</tr>
<tr>
<td>Burnt River*</td>
<td>0 – 45.1</td>
<td>E coli</td>
</tr>
<tr>
<td>Burnt River</td>
<td>0 – 77.9</td>
<td>Temperature</td>
</tr>
<tr>
<td>Camp Creek</td>
<td>0 – 6.9</td>
<td>Sedimentation</td>
</tr>
<tr>
<td>China Creek</td>
<td>0 – 7.7</td>
<td>Temperature</td>
</tr>
<tr>
<td>Clarks Creek</td>
<td>0 – 8</td>
<td>Temperature</td>
</tr>
<tr>
<td>Cottonwood Creek</td>
<td>0 – 5</td>
<td>Temperature</td>
</tr>
<tr>
<td>Dark Canyon</td>
<td>0 – 5.9</td>
<td>Temperature</td>
</tr>
<tr>
<td>Dixie Creek</td>
<td>0 – 6.9</td>
<td>Temperature</td>
</tr>
<tr>
<td>East Camp Creek</td>
<td>0 – 8</td>
<td>Temperature</td>
</tr>
<tr>
<td>Geiser Creek</td>
<td>0 – 4.9</td>
<td>Sedimentation</td>
</tr>
<tr>
<td>Lawrence Creek</td>
<td>0 – 17.7</td>
<td>Temperature</td>
</tr>
<tr>
<td>MF Burnt River*</td>
<td>0 – 11</td>
<td>Biological Criteria</td>
</tr>
<tr>
<td>MF Burnt River*</td>
<td>0 – 11</td>
<td>Dissolved Oxygen</td>
</tr>
<tr>
<td>MF Burnt River*</td>
<td>0 – 11</td>
<td>E coli</td>
</tr>
<tr>
<td>NF Burnt River*</td>
<td>1.9 – 28.7</td>
<td>pH</td>
</tr>
<tr>
<td>NF Burnt River</td>
<td>1.9 – 28.7</td>
<td>Temperature</td>
</tr>
<tr>
<td>NF Dixie Creek</td>
<td>0 – 11.2</td>
<td>Temperature</td>
</tr>
<tr>
<td>Patrick Creek</td>
<td>0 – 1.3</td>
<td>Temperature</td>
</tr>
<tr>
<td>Patrick Creek</td>
<td>0 – 1.3</td>
<td>Sedimentation</td>
</tr>
<tr>
<td>SF Burnt River*</td>
<td>0 – 11.5</td>
<td>Dissolved Oxygen</td>
</tr>
<tr>
<td>SF Burnt River*</td>
<td>0 – 11.5</td>
<td>E coli</td>
</tr>
<tr>
<td>SF Dixie Creek*</td>
<td>0 – 9.6</td>
<td>Sedimentation</td>
</tr>
<tr>
<td>SF Dixie Creek</td>
<td>0 – 9.6</td>
<td>Temperature</td>
</tr>
<tr>
<td>Trout Creek</td>
<td>0 – 8.8</td>
<td>Temperature</td>
</tr>
<tr>
<td>Trout Creek</td>
<td>0 – 8.8</td>
<td>Sedimentation</td>
</tr>
<tr>
<td>WF Burnt River*</td>
<td>2 – 5.4</td>
<td>Dissolved Oxygen</td>
</tr>
</tbody>
</table>

* Added to list in 2010
Temperature

Water temperature is the most widespread concern in the basin. The causes of stream heating are 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. The Plan calls for increased stream shade to moderate water temperatures. Water conservation and flow restoration are encouraged.

The streamside landscape provides shade that reduces solar heating of the water. The Total Maximum Daily Load will estimate the amount of natural, streamside vegetation needed to reduce solar heating to acceptable levels. Vegetation species and heights are determined by considering climate, soils, slope, elevation, historic vegetation, and protected areas.

Excessive water temperatures affect the survival of aquatic species. Cold-water fish, such as salmon and trout, are particularly sensitive to stream warming at all life stages. 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.

OAR 340-041-0028 provides numeric and narrative temperature criteria. The map provided in OAR 340-041-260A specifies where and when the criteria apply. The biologically-based numeric criteria applicable to the Burnt River Basin, as measured using the seven-day average maximum stream temperature consists of:

The seven-day-average maximum temperature of a stream identified as having Lahontan cutthroat trout or redband trout use on subbasin maps and tables set out in OAR 340-041-0101 to 340-041-0340: Tables 121B, 140B, 190B, and 250B, and Figures 180A, 201A, 260A and 310A may not exceed 20.0 degrees Celsius (68.0 degrees Fahrenheit)

However, the Burnt River studies by Borman, Larson and Mangelson have indicated that irrigation withdrawals on the main stem are beneficial to water quality in as much as they provide late-season, cool subsurface return flows. It has also been pointed out, although not mentioned in the studies, that the withdrawals are also beneficial in filtering out Chlorophyll a.

One solution that could be beneficial to both problems would be the construction of the two proposed storage projects on the headwaters of the Burnt River - the 14,000 acre-feet Hardman project on the South Fork Burnt River and the 6,500 acre-feet Ricco project on the North Fork. Both projects could provide additional in-stream flows to address flow modification and at the same time provide fresh water infusion to Unity Reservoir. This would avert the stagnation, which could reduce concentrations of Chlorophyll a and improve water quality.

Dissolved Oxygen

Low levels of dissolved oxygen can harm fish and other aquatic life. The availability of nutrients, warm temperatures and light stimulate aquatic plant and algae growth that reduces the oxygen content of water. Animal manure (livestock, wildlife, and fowl) and other organic wastes break down and also remove oxygen from water.

The dissolved oxygen standard for water bodies identified as providing cool-water aquatic life habitats, which applies to most of the basin, is as follows:

OAR 340-041-0016(3).For water bodies identified by the Department as providing cool-water
aquatic life, the dissolved oxygen may not be less than 6.5 mg/l as an absolute minimum (as a 30
day mean minimum).

Cold water DO criteria, of 8.0 mg/l or 90 percent saturation, applies to headwater streams.

**Bacteria**

Bacteria levels, particularly Escherichia coli, (*E. coli*), pose a threat to the health of water contact
recreation users and domestic water supplies. Potential sources of bacteria include animal manure,
waterfowl and septic systems.

*The DEQ bacteria standard (OAR 340-41-0009(1)(a)) states that organisms of the coliform
group commonly associated with fecal sources shall not exceed a 30-day log mean of 126 *E. coli*
oranisms per 100 ml, based on a minimum of five samples and no single sample shall exceed
406 *E. coli* organisms per 100 ml.*

**Sediment**

Sediment includes fine silt and organic particles suspended in the water column, settled particles, and
larger gravel and boulders that move at high flows. Sediment movement and deposition is a natural
occurrence but high levels of sediment can degrade fish habitat by filling pools, creating a wider and
shallower channel and covering spawning gravels.

Sediment above natural levels affects drinking water for humans and impacts salmonid reproduction and
rearing. The formation of appreciable deposits of sediment interferes with the quality of gravels in the
streambed that are essential for successful spawning, incubation, and rearing of salmonids.

DEQ is in the process of developing quantitative methods and benchmarks to evaluate sedimentation
impairment in Oregon streams. Because this work is not yet complete, DEQ postponed the sedimentation
TMDL until these methods are in place.

This Area Plan addresses sedimentation through prevention and control measures that reduce runoff from
upland areas, provide filtration in riparian areas, and reduce overland return flows from irrigated areas.

**Chlorophyll a**

Chlorophyll a is associated with the growth of phytoplankton or algae in water bodies. It is not the focus
of this Plan because problems with Chlorophyll a primarily originate in Unity Reservoir as a result of it
being a shallow, warm, stagnant pool during the hot summer months, which landowners have no control
over.

*Nuisance Phytoplankton Growth OAR 340-041-0019 (1)(a) The following values and
implementation program must be applied to lakes, reservoirs, estuaries and streams, except for
ponds and reservoirs less than ten acres in surface area, marshes and saline lakes:*

(b) The following average Chlorophyll a value must be used to identify water bodies where
phytoplankton may impair the recognized beneficial uses:

(A) Natural lakes that thermally stratify: 0.01 mg/l;

(B) Natural lakes that do not thermally stratify, reservoirs, rivers and estuaries: 0.015 mg/l.