

Inland Rogue Agricultural Water Quality Management Area Plan

Developed by

**THE ROGUE BASIN LOCAL ADVISORY
COMMITTEE**

and

The Oregon Department of Agriculture

with assistance from

the Jackson Soil and Water Conservation District

May 10, 2001

Revised February 17, 2005

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Acronyms

AgWQM	Agricultural Water Quality Management
Area Plan	Inland Rogue Agricultural Water Quality Management Area Plan
Area Rules	Inland Rogue Agricultural Water Quality Management Area Rules
DEQ	Oregon Department of Environmental Quality
LAC	Local Advisory Committee
NRCS	Natural Resource Conservation Service
OAR	Oregon Administrative Rule
ODA	Oregon Department of Agriculture
ORS	Oregon Revised Statutes
OSU	Oregon State University
OWT	Oregon Water Trust
RUSLE	Revised Universal Soil Loss Equation
SB 1010	Senate Bill 1010
SWCD	Soil and Water Conservation District
TMDL	Total Maximum Daily Load
USLE	Universal Soil Loss Equation
VOC	Volatile Organic Chemical

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Foreword and Applicability

This Agricultural Water Quality Management Area Plan (Area Plan) provides guidance for addressing agricultural water quality issues in the Inland Rogue Agricultural Water Quality Management Area (Management Area). The purpose of this Area Plan is to identify strategies to reduce water pollution from agricultural lands through a combination of educational programs, suggested land treatments, management activities, and monitoring. The provisions of this Area Plan do not, by themselves, establish legal requirements or prohibitions. The Oregon Department of Agriculture (ODA) will exercise its enforcement authority for the prevention and control of water pollution from agricultural activities under administrative rules for the Inland Rogue and Oregon Administrative Rules (OAR) 603-090-0000 through 603-090-0120.

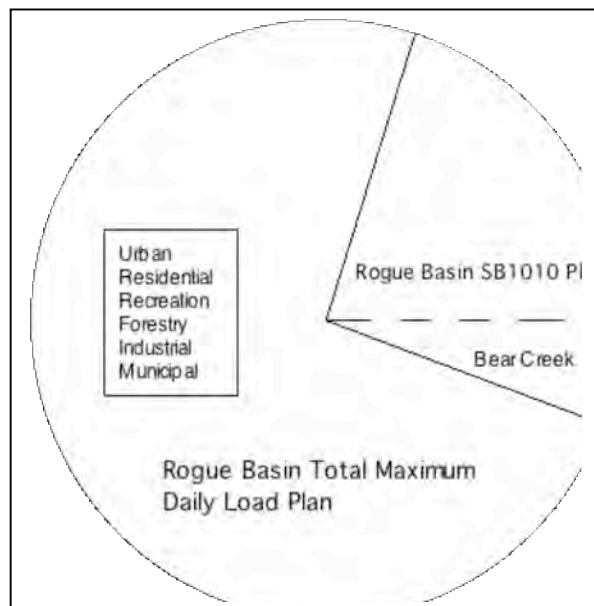
The administrative rules for the Inland Rogue set forth the requirements and/or prohibitions that will be used by ODA in exercising its enforcement authority for the prevention and control of water pollution from agricultural activities. In addition, OAR 603-090-0060 through 603-090-0120 describe the enforcement actions that may be triggered upon the finding of a violation by ODA.

History of 303(d) list and SB1010

In 1972, President Nixon signed into law the Clean Water Act. This was a time in our history when rivers were catching on fire (the Cuyahoga in Ohio), large lakes were completely sterilized (Lake Erie), and there were massive estuarian die-offs (Chesapeake Bay). Point source discharges from factories and treatment plants were targeted for clean up and Total Maximum Daily Loads (TMDLs) were established for contaminants that threatened the well being of our population and our natural resources. In 1999, Lake Erie and the Chesapeake Bay have a thriving fishery while the Cuyahoga River has people swimming and boating its waters. The problem is that there are still large amounts of pollutants entering waterways with no discrete source. This type of pollution is called non-point source pollution.

In Oregon these non-point sources were the focal point of a suit filed in 1986 charging that Oregon was not enforcing the Clean Water Act standards thus harming both fish and human populations. The court agreed and charged the Department of Environmental Quality (DEQ) with cataloging the waters of the state that were impaired as characterized by the beneficial uses they supported. The list became known as the 303(d) list (available at www.deq.state.or.us or local DEQ office (541) 776-6010).

In an effort to insure that the agricultural industry's unique concerns and constraints were addressed under state and federal water quality drivers, industry representatives lobbied the state legislature for a possible solution. The 1993 Oregon Legislature, in passing Senate Bill (SB) 1010, provided for the Oregon Department of Agriculture (ODA) to be the lead state agency to address water pollution coming from private agriculture land. Under the law, the ODA is authorized to develop and carry out a water quality management plan for any agricultural or rural lands where a water quality management plan and its associated rules is required by state or federal law. TMDL development in a basin encompasses all the potential nonpoint pollution sources of which the Agricultural Water Quality Management (AgWQM) Area Plan is but one part (Figure 1). See page 18 and 19 for current administrative history.



Geographic and Programmatic Scope

The Rogue Basin Agricultural Water Quality planning process allows the Rogue Basin agricultural industry to take the leadership in development of a plan that contributes to the attainment of water quality standards in this basin. The areas affected by this water quality planning process are the private, rural lands in Josephine and Jackson counties involved in agricultural activities on at least a contiguous 0.25 acre. (Please see the glossary for the definition of agricultural use.) By law, this plan is limited to areas and activities that are covered by Oregon Department of Agriculture regulations. Federal lands and private commercial forestlands have their own water quality regulations though agricultural activities conducted on private forestland still fall under this basin plan.

The Inland Rogue Basin includes multiple subbasins that bear only slight resemblance to one another hydrologically, climatically, geomorphically, economically, and even culturally. Refer to Appendix A for ODA's divisions of the subbasins. The Upper Rogue, Applegate, Illinois Valley, and the Middle Rogue portions within Josephine and Jackson Counties and outside the Bear Creek Subbasin are the subbasins of concern for this plan. Those areas downstream of the Josephine county border will be planned for, and operate under, the conditions of the Curry AgWQM Area planning process. While this plan is written for the Inland Rogue Basin, excluding Bear Creek, subbasin descriptions and subbasin agricultural characteristics are described because it is recognized that some of the possible solutions to problem conditions that are recommended in one subbasin may be more or less effective in another.

ODA Legislative Authority

In 1995, the Oregon legislature reviewed the water quality authorities that belonged to ODA and the DEQ. While SB1010 gave the ODA the authority to address agricultural water quality issues, the DEQ under ORS 468B still had authority to regulate any water quality problems. SB502 in 1995 clarified the legislature's intent that the ODA should have the primary responsibility for all water quality regulation on lands used for agriculture.

ORS 468B.025 is the existing statute that was developed to address water pollution caused by activities that allow wastes to escape into waters of the state by any means. To implement SB502, the department is incorporating ORS 468B.025 and 468B.050 into all of the AgWQM Area rules in the state. ORS 468B.025 and 468B.050 have been incorporated for the purposes of this plan by including the following language (in the boxed text) in the rules that effectuate this plan.

Existing Statute Addressing Waste Management

Effective upon adoption, no person subject to these rules shall violate any provision of ORS 468B.025 or ORS 468B.050.

ORS 468B.025(1) states:

...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.

ORS 468B.050 identifies the conditions when a permit may be required. In agriculture, under state rules, these are referred to as Confined Animal Feeding Operations (CAFO) and are operations that confine animals for more than four months on prepared surfaces or in buildings, have wastewater treatment works, discharge any wastes into waters of the state, or meet the federal definition of a Concentrated Animal Feeding Operation (40 CFR § 122.23). Permitted facilities are inspected at least annually by the Oregon Department of Agriculture.

Definitions

“Pollution” has the meaning given in ORS 468B.005(3) which states: 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.

“Wastes” has the meaning given in ORS 468B.005(7) which states: 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. Other substances that will or may cause pollution include commercial fertilizers, soil amendments, composts, animal wastes, and vegetative materials.

Geographic Uniqueness within the Rogue Basin

The Rogue Basin is formed by the Rogue River, which flows 215 miles from its headwaters on the western slope of the Cascades near Crater Lake National Park to its mouth on the Pacific Ocean at Gold Beach. Because of the unique geology and climate variations of Southwest Oregon, the Rogue River runs through an extremely diverse landscape. The Rogue River finds its way through the Cascade, Klamath, and Coastal Mountains. Four climate zones meet in Southwest Oregon, northern temperate, southern Mediterranean, eastern high desert, and western coastal. Local weather conditions are highly variable and, combined with geologic conditions, produce widely differentiated ecology.

From the federally managed headwater areas of over 9,000 feet elevation to the privately held, historically significant agricultural and urbanized lowlands in Josephine and Jackson counties, the Inland Rogue River is an extremely diverse watercourse. Most of the area is steep and rugged but the broad valley bottoms have deep soils suited to agriculture. The LAC reminds agencies and individuals that the rugged landscape can isolate unusual weather events in one part of the basin, which may or may not have any impact on other parts of the basin. Appendix B contains geographic information system maps of the private and public land base as well as land use types in the watershed.

Upper Rogue Subbasin

The Upper Rogue Subbasin has its lowest elevation with the emptying of Little Butte Creek into the Rogue River at river mile 132 up to river mile 215. It contains about one-fourth of the land area in the Rogue Basin. The US Forest Service, the Bureau of Land Management, and private timber companies manage most of the 72 percent of the forested land in the subbasin.

Douglas fir, white fir, western hemlock, cedar, and Ponderosa pine are native to the subbasin higher elevations. Oak savannahs, which include white oak, alder, poison oak, madrone, manzanita, and big leaf maple, grow in the lower parts of the subbasin and provide a diversity of habitat for many species of wildlife.

The Upper Rogue Subbasin is listed most frequently on the 1998 DEQ 303(d) list for exceeding the temperature standard. Sedimentation and habitat modification are two other parameters identified for several streams. Fish Lake is listed for chlorophyll and pH. Little Butte Creek has a year around bacteria problem. South Fork of Little Butte has a listing for flow modification. In all, the upper Rogue has 46 out of 150 listings which include temperature (summer only), E-coli, dissolved oxygen, sedimentation, chlorophyll a, pH, and fecal Coliform.

Agriculture and logging have been the historical basis for the economy in the Upper Rogue. Logging has greatly diminished in recent years. The higher elevations are attractive year around to tourists and recreationists. Seasonal hunting and cattle grazing occur throughout the subbasin. Lost Creek Dam, a multi-purpose reservoir, provides cool water for fish, vital flood control for basin residents, irrigation storage, and is a year-round tourist attraction.

Irrigated agriculture and livestock grazing dominate the lower portion of the system. Considerable water is transferred out of the Rogue system to the Bear Creek watershed. Four irrigation districts Talent Irrigation District, Medford Irrigation District, Rogue River Valley Irrigation District, and Eagle Point Irrigation District obtain water from Upper Rogue streams and impoundments.

As in all the other subbasins, the lower elevations have small towns surrounded by ranches and small farms.

Applegate River Subbasin

The Applegate River Subbasin is located in both Jackson and Josephine counties. Much of the Publicly owned upland area is managed by the US Forest Service and the Bureau of Land Management. Those two agencies manage over 70% of the 493,000-acre watershed. Timber companies and private landowners own the remainder of the forested lands.

As with the other subbasins, the Applegate Subbasin's most numerous 303(d) listing is for temperature. Beaver Creek, Palmer Creek, and the Applegate River had listings for flow modification and habitat modification but these parameters no longer appear on the 303(d) list. The list cites 24 out of 150 listed Rogue basin stream segments as being in the Applegate. The Applegate has water quality impairments for temperature (both rearing and spawning), dissolved oxygen, sedimentation, and biological criteria.

Various stages of conifer and hardwood timber provide diverse wildlife habitat. The valley floor contains grassland, oak savannahs, chaparral, and riparian vegetation. Agriculture and private forestland are the predominant land uses on the valley floor. Wine grape acreage is increasing annually.

The dam at the head of the Applegate system near the California border was completed in 1980. The dam has modified natural flow regimes relative to the creation and maintenance of fish habitat. Regulated water releases have modified the cleansing effects of flood flows on spawning gravels, riparian vegetation, and debris-filled off-channel fish protection sites. While cutting off some historical fish habitat, the dam has several beneficial impacts on both the human and salmonid populations. The dam controls flood flows, cools summer water temperatures, assures flow during normally low flow years, and is a boon for human recreation and agriculture.

Water withdrawals are used for hay and pasture irrigation, livestock watering, and watering of gardens and lawns. In earlier days extensive mining was done in the Applegate. Today most of the mining is recreational.

Illinois River Subbasin

The Illinois Valley encompasses over 628,000 acres of heavily forested and geologically unique land. About 83% of this land is publicly owned, with the majority being managed by the U.S. Forest Service. There are also several large tracts of privately held timberland. The private agricultural land in the Illinois Valley is primarily confined to the broad valley bottoms and deep alluvial soils of Deer, Sucker, and Althouse Creeks, and the Illinois River. Only 4% of the Illinois Valley land area is under some form of agricultural management practice and only 2% (about 14,000 acres) is irrigated.

The climate of the Illinois Valley is considered Mediterranean, with cool, wet winters and hot, dry summers. Water is plentiful during the winter but is severely limited in the summer growing season. The unique soils and geology of the subbasin are major factors in the hydrologic character of the area. The underlying metamorphic geology in the headwaters is relatively non-porous, leading to quick saturation of the shallow, poorly developed soil, and rapid runoff of the approximately 100 inches of annual precipitation that falls in the watershed. In contrast, the alluvial fans where nearly all of the agricultural and residential development has taken place may have a depth of over 180 feet.

Temperature is the overwhelming reason for 303(d) stream listings in the Illinois Subbasin. Thirty-five stream segments are listed for spawning and rearing temperature impairment. Sucker and Grayback creeks are the subjects of the first approved temperature TMDL in the state.

Agriculture continues to be an important part of the subbasin economy, although the tourist and service sectors are growing rapidly. Agricultural production on private land is centered around livestock, hay, and forage production. There is, however, a growing trend toward using agricultural lands to grow wine grapes, Christmas trees, and ornamental bulbs. There are no permitted Confined Animal Feeding Operations, including dairies, in the Illinois Valley Subbasin.

Middle Rogue Subbasin

The Middle Rogue includes the area from the confluence with the Rogue mainstem of Little Butte Creek to the Grants Pass area. Cattle ranching is a major agricultural activity, with smaller farms producing a diversity of crops from Sam's Valley to Grants Pass. About 12,000 acres are under irrigation. Approximately 60-70% of the land in the Middle Rogue is privately owned.

Soil types in the subbasin range from clayey Pearsoll and Jerome series, to shallow, gravelly Josephine and Beekman series. All soil layers sit on granitic or metamorphic parent rock material. In many places hardpan is near the surface and reduces infiltration. Water run-off is high in the wet winter and low in summer when there is little precipitation. The area has a history of periodic flooding, with resulting landscape and channel changes. Annual precipitation ranges from 18 inches in the lower portions to more than 60 inches in the surrounding mountains. Less than one inch falls during the summer months. Snow accounts for very little of the available moisture in the lower elevations. Valleys have deeper soils and are able to support

a wider diversity of agricultural activities. The Middle Rogue Subbasin has 14 listings for excessive temperature and bacteria.

Traditionally, timber production and grazing were the primary natural resource industries within the subbasin. Livestock production is currently the predominant form of agriculture. During the last decade, however, over 400 acres of vineyards have been established while specialty crops such as cut flowers, herbs, and organic fruits and vegetables are also being produced.

The Rogue River mainstem has ten 303(d) listings for temperature (rearing only), pH, and fecal Coliform.

Bear Creek

The Bear Creek AgWQM Area Plan [see Figure 1] is separate but complementary to this Inland Rogue AgWQM Area Plan. Jackson Soil and Water Conservation District (SWCD) is the local management agency for both the Bear Creek and the Inland Rogue Basin AgWQM Area Plans and operates under ORS 568.906 and 568.924.

Rogue Basin Agricultural Production

The following table provides a snapshot of acreage under crop production. Data are taken from the 1996-1997 Oregon Agricultural Statistics Report.

Major Rogue Basin Crops	Acreage
Wheat	1300
Barley	1000
All Hay	31,500
Fruit Trees	10,000
Vineyards	1000
Oats	400
Corn	400

While no official statistics exist for pasturelands, a rough estimated total of 150,000 acres are not accounted for in total farmland in the 1997 Agricultural Census for both Josephine and Jackson counties. The estimate is both anecdotal and intuitive as pastures appear to be the dominant agricultural land use in the basin.

Mission

Goal, Objective, Responsibility, and Intent

General Goal:

To describe reasonable methods and practices all people engaged in agricultural activities may use to maintain and improve water quality while preserving and enhancing economic viability in the Rogue Basin.

Objective:

Attain water quality standards that serve the beneficial uses designated for the Rogue Basin. They are listed alphabetically.

- aesthetic quality
- anadromous fisheries passage, rearing, and spawning
- cold water resident aquatic life
- commercial navigation and transportation
- contact recreation, fishing, boating
- drinking water, both public and private
- irrigation
- livestock watering
- threatened and endangered species
- wildlife and hunting

Responsibility of the Committee:

OAR 603-090-0003 - Create an Agricultural Water Quality Management Area Plan that comprehensively outlines measures that will be taken to prevent and control pollution from agricultural activities...

- OAR 603-090-0024(b) - Recommend strategies necessary to achieve water quality goals and objectives...
- OAR 603-090-0030 - Describe a program to achieve water quality goals and standards necessary to protect beneficial uses related to water quality, as required by state and federal law. An Area Plan shall include, but not be limited to the following:
 - description of the geographic area to which the Area Plan applies
 - a listing of water quality issues of concern
 - a listing of current beneficial uses being adversely affected
 - a statement that the goal is to prevent and control water pollution from agricultural activities and to achieve water quality standards
 - a statement of water quality objectives of the Area Plan
 - a description of the pollution prevention and control measures deemed necessary to achieve the goal
 - a schedule for implementation adequate to meet dates described by law
 - guidelines for public participation
 - implementation and enforcement strategies

Intent of the Rogue Basin Agricultural Water Quality Advisory Committee

The committee's plan is intended to:

- be based on scientifically defensible data
- protect water quality in agricultural settings
- protect the economic viability of the agriculture industry in the Rogue Basin
- help set priorities so that resources are distributed where they will be of the most benefit to help the industry meet its long-term water quality objectives
- address each subbasin as a unique entity
- develop desirable agricultural condition requirements that are not prescriptive and provide for a wide variety of agricultural practices to alleviate potential problems
- develop condition descriptions that allow for the unique character of specific sites

Water Quality Issues of Concern

Nonpoint pollution is characterized by the difficulty in identifying its source. While it is possible to monitor nonpoint source accumulations, it is generally economically unfeasible to identify its origin on anything larger than the tributary scale in the watershed. The intent of this Area Plan is to help landowners identify and reduce potential pollution due to current agricultural land conditions.

Fish habitat in the Rogue Basin has been degraded, in part, due to a reduction in stream water quality. Some of the reduction in water quality is attributed to certain agricultural land conditions. This Area Plan directly addresses the water quality component of fish habitat by controlling potential pollution sources, thus fulfilling its role in the larger Oregon Plan. It also indirectly addresses physical fish habitat in that properly functioning riparian areas enhance many of the stream channel features that create more desirable fish habitat. Each Undesirable Condition has a corresponding list of possible solutions designed to control or prevent one or more potential pollution pathways.

Beneficial Uses in the Rogue Basin

Beneficial uses in Oregon's waters are addressed according to the sensitivity of each of those uses. In the Rogue Basin, the most sensitive beneficial uses are drinking water, cold-water aquatic life, and contact recreation. Agriculture can enhance these beneficial uses by decreasing its contribution to elevated water temperatures, sediment, nutrients, pathogens, degraded streambank and riparian function, and reduced stream flows.

The Oregon Environmental Quality Commission (OEQC) has adopted numeric and narrative water quality standards to protect designated *beneficial uses*. In practice, water quality standards have been set at a level to protect the most sensitive beneficial uses. Seasonal standards may be applied for uses that do not occur year-round. Cold-water aquatic life such as salmon and trout are the most sensitive *beneficial uses* occurring in the Rogue Basin (DEQ, 1995). The specific beneficial uses that apply to the Analysis Area are presented in Table 2 below (Oregon Administrative Rules OAR 340-041-0362).

Table 2. Beneficial Uses Rogue River

<i>Beneficial Uses</i>	<i>Rogue River Main Stem from Estuary to Lost Creek Dam.</i>	<i>All Other Tributaries to Rogue River and Bear Creek.</i>
Public Domestic Water Supply ¹	✓	✓
Private Domestic Water Supply ¹	✓	✓
Industrial Water Supply	✓	✓
Irrigation	✓	✓
Livestock Watering	✓	✓
Anadromous Fish Passage	✓	✓
Salmonid Fish Rearing	✓	✓
Salmonid Fish Spawning	✓	✓
Resident Fish and Aquatic Life	✓	✓
Wildlife and Hunting	✓	✓
Fishing	✓	✓
Boating	✓	✓
Water Contact Recreation	✓	✓
Aesthetic Quality	✓	✓
Hydro Power		✓
Commercial Navigation & Transportation	✓	
¹ With adequate pretreatment (filtration and disinfection) and natural quality to meet drinking water standards.		

Agricultural Impacts to Water Quality

The following broad categories were identified by the Rogue Basin Agricultural Water Quality Advisory Committee as being potential sources of agricultural pollution in this area:

- drainage and runoff
- livestock management
- vegetation management
- irrigation
- croplands
- on-farm storage

Other Contributing Factors

As stated earlier, there are background water quality problems that are not due to human activities. Harmful bacteria reside in streamside soils and wildlife fecal material. Water temperature can be warmed by air temperatures. Sediment and bank erosion are part of the natural hydrologic and geologic system. Nutrients, such as phosphorus, can be dissolved from parent rock material. Background sources of pollutants can be very hard and costly to identify and distinguish from management related sources, especially in an area as populated as the Rogue Basin.

Population increases and their resulting environmental impacts have changed the face of several Rogue Basin systems within the past fifty years. Changes in fire frequency, the severity of peak and low stream flows, waste inputs, flood plain encroachment, degraded riparian areas, and airborne pollutants are all consequences of human population expansion into aquatic and terrestrial habitat. These are consequences that can be buffered but never eliminated.

Impacts to water quality can sometimes be attributed to a single, definable act or land use activity. More often than not, however, the cumulative effects within the entire watershed put the burden on all of the inhabitants of the watershed to live on the land in a manner consistent with the ideals of conservation and stewardship. Cumulative effects can be addressed by the residents of the basin. The contributions to water pollution of a single inhabitant may not seem significant, but the cumulative effects of all the inhabitants do have a significant impact. Residents of the watershed should adapt their resource use and impact in such a way as to lessen even minor contributions, as there is no substitute for the stewardship of committed individuals.

Another significant contributor to impaired water quality is the lack of financial resources and incentives to accomplish the education and land use management changes necessary to address the economic realities of the landowners in the basin. The public can petition for legislation to establish incentives for landowners in the form of grants, tax breaks, low interest loans, and/or community volunteer labor. Incentives must be commensurate with reduction of production value for land or water conserved in order to be effective. It is equally important to quickly and reasonably address perceived disincentives in current water rights law and county tax code.

The following narrative, tables, and lists focus on the mandate of the SB1010 legislation. Agriculture activities are only a small part of the land use in this basin. The conditions identified by the farmers and ranchers of the Local Advisory Committee will meet the stewardship and conservation needs on private agriculture lands to help alleviate the cumulative effects of our human impacts in the Rogue Basin.

303(d) list - Addressing 303(d) listed Parameters

Currently, the most prevalent water quality issue in the Rogue Basin is the violation of the 64°F water temperature criterion. Table 1 below illustrates the of Rogue Basin stream segments listed on the 303(d) list that exceed the federal Clean Water Act standards for temperature and other parameters for which valid data sets are available.

Table 1

Parameter (from 2002 303(d) list)	# Exceeding Standard
Temperature [64° F average daily maximum]	104
Dissolved Oxygen	19
Bacteria [406 <i>E. coli</i> organisms per 100 ml]	15
Sedimentation [appreciable bottom or sludge deposits...deleterious to fish or other aquatic life...]	7
Biological Criteria [60% or less of expected reference benthic macroinvertebrate populations]	11
Chlorophyll <i>a</i> [0.01-0.015 mg/l]	1
pH [6.5-8.5 range]	3

Once a TMDL is adopted for the basin, the stream segments no longer appear on the 303(d) list. A TMDL was adopted for the Sucker and Grayback watersheds in May 1999. The Lower Sucker temperature TMDL was adopted in May 2002. Those streams were not mentioned in the 2002 303(d) list. A TMDL for temperature, sediment, and biological criteria was submitted for approval in January 2004.

The above table accomplishes two purposes. First, it is a guide for the LAC and residents of the area to understand that temperature is the main reason for a stream being listed in the planning area. The more reduction efforts are focused on the contributors to temperature, the sooner these streams can be taken off the list. Second, it is intended to show that there are very few other listings aside from temperature. With some concentrated effort on the part of the agriculture community, the potential contributions from our activities can be easily eliminated. Agriculture is not responsible for all the contribution to water pollution so when agriculture meets its responsibilities it will not entirely solve the problem. This plan is a reasonable attempt to address a realistic goal.

TMDL Development in the Inland Rogue

In May of 1999, DEQ issued a Total Maximum Daily Load and Water Quality Management Plan for the Sucker/Grayback Creek drainage in Illinois Valley. The TMDL only covered temperature impairments for that watershed. In May of 2002, Lower Sucker Creek was integrated into that temperature effort. Chapter 2 of the document identifies agriculture as one of the many land uses in the area and adopts tables from this SB1010 document as an example of items that link unsound agricultural activities and potential pollution contribution. It also draws a linkage between the things agriculture can do to minimize their potential contribution to poor water quality.

In 2004, DEQ submitted a TMDL for the Applegate subbasin to EPA for evaluation and approval. The Applegate TMDL covers 303(d) listings for temperature, sediment and biological

criteria. This document also references portions of the Inland Rogue Plan as agriculture's efforts to reduce or eliminate the potential contributions from their activities.

In review of the draft Applegate subbasin TMDL, the EPA commented that the Inland Rogue Agriculture Water Quality Management Plan was well written and made important strides in addressing unsustainable practices.

How the AgWQM Area Plan Addresses the Temperature Standard

The intent of the Area Plan's riparian zone recommendations is to draw attention to the multiple beneficial functions of healthy and diverse riparian zones. A variety of activities can take place within riparian zones if those activities are carefully managed to protect the beneficial functions of the vegetation and soil structure.

Five main factors influence surface water temperature: exposure to solar radiation, channel shape, volume of flow, turbidity, and air temperature. The undesirable conditions and possible solutions in Tables 2 through 7 of this plan are designed to address four of these physical factors.

Exposure to Solar Radiation - The two major agriculturally related conditions that contribute heat to surface waters are inadequate shading from riparian vegetation and inflows of warmed irrigation surface returns. Agricultural activities that eliminate the possibility of natural regeneration of trees and shrubs along waterways are to be avoided. By limiting near-stream riparian management to seasons and practices that enhance growth of grasses, shrubs, and trees, canopy vegetation is encouraged. The increased shade reduces direct solar exposure of stream water and irrigation return flows through the riparian area. Any irrigation surface return flowing through a properly sized and functioning riparian area has a greater opportunity for infiltration and sub-surface return to the stream. The conditions described in this Area Plan are designed to encourage appropriate management of riparian areas to facilitate healthy riparian structure and function.

Volume of Flow - While agricultural water rights are regulated and monitored by the Oregon Water Resources Department, irrigation efficiency (uniformity, application rate) is a factor that is controlled by individual irrigators. Perceived disincentives in current water law discourage irrigation management changes, but there are simple management activities that can both reduce overuse of irrigation water and decrease the detrimental impacts of surface return flows. The conditions described in this Area Plan are designed to encourage appropriate application of irrigation waters and water conservation by the landowners.

Properly functioning riparian areas act as sponges with the capacity to store water from high flow events and release it slowly back to the stream during low flow times. Riparian management focuses on seasons and practices that reduce consumption and trampling of grasses, shrubs, and trees and will enhance the function of the riparian area to capture, store and release cool groundwater in the summer.

Channel Shape - Some channel morphology processes that are not within the control of the land manager are high flow events, bed material composition, and off-property upland/upstream condition. However, some channel morphology factors are within the control of the land manager. Riparian buffers act as sediment traps from adjacent lands and for stream suspended sediments during high water. In this way, the banks rebuild themselves causing deepening and

narrowing. These rebuilt banks are generally hydrologically well connected to the stream. A well-managed riparian area, whether excluded or properly grazed, will enhance streambank stability and will contribute to improved overall riparian condition. The conditions outlined in this plan describe riparian conditions known to increase age, species, and structural diversity of the riparian vegetation for the purpose of limiting bank loss, adding large woody debris, and encouraging a narrower and deeper channel profile.

Turbidity - Diverse, healthy riparian zones are able to function as sediment filters. The riparian conditions outlined in this plan are designed to protect appropriate riparian grasses so as to eliminate the possibility of sediment-laden overland flow reaching the stream or drainage. Close attention must be paid to management strategies when allowing access for watering and grazing in riparian areas. Soil disturbance due to agricultural activities in riparian areas without employing appropriate erosion control methods will be avoided whenever possible.

How the AgWQM Area Plan addresses the Bacteria Standard

Bacteria (*E.coli*) from agricultural sources may enter the surface waters of the state through the introduction of animal waste into the stream or from nearby sources through shallow groundwater flow and surface runoff. Unacceptable conditions related to the bacteria standard are designed to reduce unrestricted direct deposition of manure and movement of waste by surface water from the uplands.

Direct Deposition - Livestock that loaf in riparian areas are likely to defecate directly into the waterway or onto adjacent riparian areas. By encouraging practices that move livestock through riparian pastures quickly, direct animal introduction of manure will be minimized. Manure spreading designed to distribute feedlot and dairy manure should never be done near waters of the state. Disposing of dry manure directly into waters of the state, or placing it where it is likely to enter there, is already prohibited under ORS 468B.

Indirect Deposition - Bacteria can remain viable in a manure pile for over two years. Improper storage of livestock manure can be an agricultural source of *E. coli* bacteria in the water. Precipitation on a manure pile or surface flows contacting the manure can carry bacteria. Overland flows can transport animal wastes from upland or overstocked areas, especially if the slope is poorly vegetated or highly erodible. Filter strips or flow controls can effectively prevent bacteria from reaching waterways. Streamside areas planted to dense grass or properly functioning riparian areas can act as filters preventing contaminated surface flows from reaching vulnerable waterways.

Menu of Better Management Practices

The “possible solutions” listed below are intended to increase awareness, provide information, and educate the general public and the agricultural community about management methods that can be individually tailored to reduce or eliminate agricultural contributions to water pollution. They are not intended to be mandates to land managers. This Area Plan is designed to maintain as much flexibility in farming and ranching as possible to achieve water quality goals and objectives. The Inland Rogue Local Advisory Committee encourages custom-made solutions to fit the unique needs of individual landowners.

Agricultural management for the Inland Rogue Basin consists of those management practices that are generally accepted as the most effective, economical, and practical for the area and that address water quality issues. These activities should also maintain the economic viability of agriculture in the basin. Appropriate management for individual farms and ranches may vary with the specific cropping, topographical, environmental, and economic conditions existing at a given site. Because of these variables, it is not possible to recommend uniform Better Management Practices for every farm or ranch in the Rogue Basin. The Natural Resources Conservation Service's (NRCS) Field Office Technical Guide contains extensive lists of Conservation/ Management Practices.

Another important reference for conservation methods is found in the 1990 Coastal Zone Reauthorization Amendments, section 6217 (Appendix E). The Rogue basin falls under these guidelines. This Inland Rogue AgWQM plan, along with other ODA water quality protection rules (i.e. Pesticide applications), are the implementation program for those EPA recommendations in this part of the state of Oregon.

What follows is a summary of some of the practices that the Oregon Department of Agriculture, the Soil and Water Conservation District, and the Local Advisory Committee will encourage landowners to adopt, if they haven't already. Widespread adoption of these practices will reduce or eliminate agricultural inputs to the listed water quality parameters of concern in the Rogue Basin.

Drainage and Runoff Management Problems and Possible Solutions

Table 2

Problems	Affected 303(d) listed parameter	Possible Solutions Include
Nutrient Inputs from Over-Application of Fertilizers	pH	-Test soil to know when application rate and timing matches agronomic need
	Chlorophyll a	-Follow instructions and label application procedures
Concentrated Manure	Sediment	-Store organic material in such a way as to prevent water from precipitation or surface flows from moving through the pile and into waters of the state
	pH	-Store silage and compost well away from water/drainage ways
	Chlorophyll a	-Maintain vegetated filter strips
Erosion more than tolerable for the specific soil (T)*	Sediment	-Recover tailwater for recirculation or infiltration
		-Use cover crops and break up effective slope length
Overwatering	Temperature	-Use responsible set duration and nozzle size based on agronomic need and soil moisture holding/infiltration capacity
	Sediment	-Use retention ponds to collect and re-use surface returns
	Flow Modification	-Measure soil moisture with tensiometers, gypsum blocks, etc.
Pooling and Stagnation	Temperature	-Level field where appropriate
		-Clean distribution ditches and channels
		-Install pipe where feasible

*T - is defined as the tolerable soil loss level. This is a number given in the NRCS Soil Survey which is dependent on climate, parent material, topography, and biotic factors. In OAR 603-095-0010(44) "T" means maximum average annual amount of soil loss from erosion, as estimated by the Universal Soil Loss Equation (USLE) or the Revised Universal Soil Loss Equation (RUSLE), and expressed in tons per acre per year, that is allowable on a particular soil. This represents the tons of soil (related to the specific soil series) which can be lost through erosion annually without causing significant degradation of the soil or potential for crop production.

Vegetation Management Problems and Possible Solutions

Table 3

Problems	Affected 303(d) listed parameter	Possible Solutions
Overgrazing* the riparian area	Temperature	-Fence where appropriate -Plant native and non-native species to enhance properly functioning conditions -Manage grazing to restore proper functioning condition -Water livestock off-channel -Provide animals with shade away from the riparian area
	Bacteria	
	Flow Modification	
Overgrazing the uplands	Sediment	-Salt, water and feed on hardened area -Match stocking rate to forage production capacity of the pasture -Account for slope and soil type for management
	Flow Modification	
Tillage in riparian areas and exposed soils during or right before the rainy season	Sediment	-Use settling basins consisting of depressions at the bottom of the field -Construct curtain drains at the bottom of the field -Put straw bales in unconstructed drainage ways -Plant grass filter strips designed for slope and sediment yield potential
Allowing noxious and invasive weeds to dominate riparian sites	Temperature	-Interrupt seeding cycle -Control root reproducers -Control weed populations systematically -Plant competitive species
	Flow Modification	

*Overgrazing is described as a condition when stocking rate on a pasture is greater than the forage production capability of the pasture species, due to time of year, soil type and water availability.

Livestock Management Problems and Possible Solutions

Table 4

Problems	Affected 303d parameter	Possible Solution
Visible gully erosion on more than 10% of livestock trails, paths, stream banks, and pastures	Sediment	-Use hardened crossings -Use culvert crossings or bridge streams and ditches -Install gates and rotate pasture use -Use drainage appropriate to site: i.e. drain tile, curtain drains, etc.
Riparian pastures managed in such a way as to degrade the shade density capability of near-stream areas (The result is inadequate vegetation cover.)	Temperature Sediment Bacteria	-Attract livestock to upland areas with off-stream shade, water and salt -Fence off riparian areas to facilitate proper management (permanent or temporary)
Pastures managed in such a way as to reduce forage basal area coverage to less than 50%.	Temperature Bacteria	-Rotate pastures: use the 8” and 3” rule *to turn in and out. -Use electric fences for flexibility in rotation schedule -Balance livestock numbers with regrowth potential.
Accumulation of manure within 50 feet of a drainage way where it has opportunity to enter waters of the state	Bacteria Nutrients	-Store in covered, dry area away from surface water -Spread manure when runoff potential is minimal -Balance livestock numbers with area available
Grazing animals during irrigations in such a way as to lead to compacted soils, as indicated by ponded water and poor vegetation production.	Sediment Bacteria	-Rotate animals off of pastures during and right after irrigation sets -Construct buffer and filter strips
In-stream livestock watering in such a way as to degrade bank stability, increase sediment yield, and increase introduction of bacteria into waters of the state.	Sediment Bacteria Flow Modification	-Use water gaps along fenced streams -Provide off-stream watering -Create visual barriers on far side of stream -Harden stream crossings

*8” and 3” Rule - Turn animals into a pasture when forage averages 8 inches tall then take them out to allow regrowth when the forage has been utilized down to an average 3 inches of stubble height. Irrigated only.

Irrigation Management Problems and Possible Solutions

Table 5

Problems	Affected 303d parameter	Possible Solutions
Overuse of water (indicators include growth of “wetland species” in pastures (i.e. Baltic rush, sedges, horsetail))	Temperature Flow Modification	-Improve scheduling, timing, and set changes -Improve knowledge of crop needs, i.e. specific crop water requirements -Improve distribution methods, i.e. upgrade from flood to sprinkler where feasible, or upgrade ditch and lateral system -Schedule irrigation with soil moisture measurements using gypsum blocks or other simple moisture monitoring devices -Improve diversion techniques and maintenance i.e. location of diversion -Consider leasing unneeded water rights to Water Resources Department or Oregon Water Trust
Excessive runoff/tailwater	Temperature Nutrients Sediment	-Improve timing and integrate with livestock rotations to prevent compaction of pasture soils (OSU Extension recommends 4-5 days after irrigation before animals are allowed back on.) -Consider collection and redistribution of tailwater -Facilitate percolation of tailwater on vegetated area with well-drained soils -See scheduling requirements above

Cropland Management Problems and Possible Solutions

Table 6

Problems	Affected 303(d) listed parameter	Possible Solutions
Exposed slopes with less than 20% effective cover going into the rainy season	Sediment	-Plant cover crops -Leave stubble from harvest -Spread crop residue in vulnerable areas -Use other effective erosion control methods
Movement/loss of soil into waters of the state beyond the tolerable NRCS soil loss limits as defined by soil type and position	Sediment	-Use sediment retention structures -Plant filter strips -Construct hay bale filters appropriately spaced in drainages -Use other effective erosion control methods
Excess fertilizer applications beyond agronomic need. (An excellent indicator of excess nutrient is a heavy blooms of aquatic weeds and algae in receiving waters.)	Chlorophyll a	-Mix in “least likely third”* area -Test soil regularly -Time fertilizer applications to avoid periods of heavy precipitation or excess irrigation to prevent leaching and runoff
Over application of irrigation water beyond replacement of soil water holding capacity and reasonable leaching factors	Temperature Sediment	-Use soil moisture measurement to schedule irrigation application -Match application rate with infiltration rate of the soil
Inadequate distribution ditch maintenance causing excessive leakage and/or forcing excess flow to compensate for ditch loss	Flow Modification Temperature Flow Modification	-Clean and repair ditches on regular schedule to facilitate flow -Line ditches -Install pipe where applicable

*Least Likely Third: Siting strategy for potentially hazardous materials. When locating storage and staging areas on a property, select the third of the property that is least likely to allow contaminants from a spill or leak to runoff directly into waters of the state.

Farm Storage Problems and Possible Solutions

* “Least likely third” rule is recommended for all conditions below.

Table 7

Problems	Affected 303(d) parameter	Possible Solutions
Machinery and chemical storage within 50’ of water/drainage ways	No streams are currently listed for toxins or Volatile Organic Chemical (VOCs)	-Follow label rules for chemical and petroleum storage -Avoid storing equipment in floodplains even temporarily -Meet DEQ requirements for fuel storage and refueling
Drains from storage areas hydraulically connected to water/drainage ways	No streams are currently listed for toxins or VOCs	-Secure storage areas from leakage into water/drainage ways -Keep a Haz-Mat control kit nearby
Storage areas without containment barriers	No streams are currently listed for toxins or VOCs	-Construct an appropriately sized containment barrier around storage areas
Chemicals not in properly labelled and sealed containers	No streams are currently listed for toxins or VOCs	-Label and seal all containers -Store money instead of chemicals. Buy chemicals as needed
Silage and compost piles stored in such a way as to allow water to move through them and enter water/drainage ways	-Chlorophyll a	-Disperse runoff from drainages and gutters through appropriately sized filter strips or other equally effective pollution control mechanism

*Least Likely Third: Siting strategy for potentially hazardous materials. When locating storage and staging areas on a property, select the third of the property that is least likely to allow contaminants from a spill or leak to runoff directly into waters of the state.

Unacceptable Conditions

The following unacceptable conditions have been identified by the Local Advisory Committee as those being so blatant and injurious to the land and water resources that they constitute a violation of the Rogue Basin Agricultural Water Quality Area Plan Administrative Rules and are subject to the compliance procedures outlined in the rules. The term “Effective Date” means the date after which an unacceptable condition becomes subject to the compliance procedures.

The official rule language is in the box within each of the condition explanations.

Unacceptable Condition #1-Excessive Soil Loss (Addressing Drainage and Runoff Problems)

Issue/Intent

Soil erosion is a natural process but agricultural practices can accelerate or slow it down. Unrestrained erosion deposits sediment at the bottom of any slope, which can then enter the waters of the state. The intent of this committee is not to penalize agriculture for a natural process but to encourage thoughtful, well-planned management of this most basic and essential agricultural resources.

Four groups of management measures and structures are commonly used to control erosion and sediment yield from an agricultural site: 1) surface protection such as mulches and vegetation; 2) mechanical treatment such as deep ripping and land surface manipulation; 3) diversion structures such as terraces and hay bales; and 4) detention structures such as artificial wetlands (exempt from delineated wetland regulation), settling basins and curtain drains. Riparian setbacks are not only the most effective filtering component to keep sediments from the waters of the state but also contain multiple erosion control benefits.

Switching from conventional tillage to no till, planting a cover or residue-producing crop, and deep ripping a field to improve water infiltration are some of the practices that reduce erosion. Properly designed and maintained sediment control measures such as strip cropping, installing catch basins, seeding waterways with grass, planting cover crops, using straw bales, and several other methods can be effective in preventing and retaining sediment movement. Retention of soil should be the farmer’s first goal.

Excessive Soil Erosion

OAR 603-095-1440(1)

(a) Effective four years following adoption of these rules, there shall be no visible evidence of erosion resulting from agricultural management in a location where erosion has contributed or will contribute sediment to waters of the state. Visible evidence of erosion consists of the following features:

(A) Sheet wash, noted by visible pedestalling, surface undulations, and/or flute marks on bare or sparsely-vegetated ground;

(B) Visibly active gullies, as defined by OAR 603-095-0010 (1);

(C) Multiple rills, which have the form of gullies, but are smaller in cross-sectional area than one square foot.

(b) Written, limited duration exemptions to the condition described in OAR 603-095-1440(1)(a)(A) above will be considered for short-term activities included in a department (or its designee) approved plan intended to enhance the long-term soil stability of an agricultural site.

Pedestalling referred to in the above rule language is described as differential erosion of soil due to sheetwash which leaves less erodible units such as grass roots or stones elevated above the eroded, sparsely-vegetated surrounding material.

303(d) listed parameters which may be affected: Sediment

Effective Date: June 2005

The following terms are specifically defined in OAR 603-095-0010(1)(14)(15). As used generally, they have the following meanings.

- Sheet Erosion: soil particles that are detached and transported in water moving as a “sheet” across an exposed soil surface. Continued flow of this type will eventually differentiate itself into definable channels, rills, and gullies.
- Rill Erosion: a series of small channels less than one square foot in area. It often begins as sheet erosion across an unprotected soil surface. If left unprotected, rills usually converge to become gullies.
- Visibly Active Gully Erosion: a channel equal to or greater than one square foot in cross-sectional area. Gullies, if left unprotected, may carry large amounts of suspended sediment and become a physical hazard to humans and livestock.
- "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 effect 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(8))

Unacceptable Condition #2-Riparian Vegetation Destruction (Addressing Vegetation Management and Grazing Lands Problems)

Issue/Intent

This committee does not intend to exclude riparian areas from sound/sustainable management. Farmers and ranchers must be able to provide livestock with access to adequate pasture and water. The intent is to ensure access to these resources while minimizing negative impacts on riparian vegetation, maintaining stable stream banks and protecting water quality. Properly functioning riparian areas have so many positive benefits for the agricultural landowner that it is imperative these areas be managed well. Riparian exclusion is one effective option but areas that have been previously managed may need continued management to prevent invasion and dominance of weedy or exotic plant species. Consult Oregon State University (OSU) Extension, the SWCD's and the Oregon Department of Agriculture for ideas and assistance on rotational grazing, off-stream watering, and riparian pasture management.

Riparian Vegetation Destruction

OAR 603-095-1440(2)

Agricultural management of riparian areas shall not impede the development of adequate riparian vegetation to control water pollution.

(a) Effective four years after rule adoption, vegetation and streambank conditions in riparian areas shall not result in the following:

(A) Sloughing of streambanks due to management practices which result in sediment entering a stream beyond what would be expected; or

(B) Destabilized streambanks beyond what would be expected in that specific hydrologic regime; or

(C) Damage to riparian vegetation that degrades its proper function and the vegetative recovery that is reasonably necessary to withstand a 25-year high flow event; or

(D) Absence of seasonally appropriate regeneration and recruitment, according to site capability.

(b) This condition is not intended to prohibit riparian grazing where it can be done while managing for proper functioning riparian condition.

(c) Exceptions:

(A) Written, limited duration exemptions to conditions described in OAR 603-095-1440(2)(a)(C) and (D) above will be considered for short-term activities included in a department (or its designee) approved plan intended to enhance the long-term function and quality of the riparian area.

(B) Constructed irrigation delivery and drainage ditches are exempt from conditions described in OAR 603-095-1440(2)(a)(C) and (D).

303(d) listed parameters which may be affected: Temperature, Sediment, Bacteria, Nutrients

Effective Date: June 2005

Unacceptable Condition #3-Irrigation Management Problems

Issue/Intent

The intent of this committee is not to prescribe a type of irrigation. Nor is the intent to eliminate all surface returns. Some drainage following a set may be unavoidable. The intent, however, is to discourage wasteful water management practices which are not necessary to irrigate effectively and beneficially. Flooding, sprinkling, and dripping have their specific applications in particular sites and situations. How the water is managed and its efficiency of management are the factors that determine a particular distribution method.

The goal of this committee is to encourage wise use of a natural resource and to mitigate the detrimental results of excessive surface runoff. One factor is maintenance of delivery systems and another is the use of delivered water. In the Rogue Basin, irrigation water is applied by surface or subsurface dripping, flood irrigating, overhead sprinkling, or a combination of methods, depending on the crops and water distribution capability. Slope of the land has a great bearing on the use of water. System type, design, and management should be consistent with the needs of the land and the operator.

Beneficial use of delivered water is of absolute importance. While irrigation district and association patrons often have little control over the timing of their water delivery, they are

encouraged to make as efficient use of it as possible. Those who pump directly from the source must be sure that the water is used when needed and not wasted. Different crops have different requirements and effort should be made to determine those needs so as to plan a schedule and supply system that conforms to those needs. Too much water at the wrong time or too little can lead to inhibited plant production. Livestock owners should make every effort to rotate livestock in such a way as to allow the water to do its work without contributing to water quality degradation. Overuse of water can lead to the deterioration of the land and crop over which it is being applied.

Tailwater resulting from too rapid application should be avoided. Every possible effort should be made to collect irrigation tailwater in order to divert it to better draining soils for percolation or to distribute it where it may be applied beneficially. Steep slopes are difficult to irrigate without being terraced or at least ditched in a way that breaks the slope length and slows the water down to allow for infiltration. The diverted water is beneficially used only when it has an opportunity to percolate into the soil and supply the transpiration needs of plants or drinking requirements of livestock. It is also indirectly beneficial to stream temperatures as the water is cooled to the soil temperature before it re-enters surface waters. Unmanaged surface runoff is wasteful and ultimately of no benefit, or even harmful, to the irrigator and the resource. Surface returns could be described as surface irrigation drainage re-entering waters of the state after the soil to which it is being applied is saturated. They are considered unmanaged if the source is unregulated by the operator after the soil is saturated.

Irrigation scheduling decisions should be based on specific factors having to do with weather, soil conditions, fertilizer, and chemical applications. As our most limiting agricultural resource, water must be managed and not just used.

Irrigation Surface Return Flows

OAR 603-095-1440(3)

(a) Effective two years after rule adoption, unmanaged surface irrigation returns from unchanged sets that are above state standards and that flow into waters of the state are unacceptable.

(b) This condition is not intended to discourage flood irrigation where it can be done beneficially.

(c) Exceptions:

(A) An exemption to OAR 603-095-1440(3)(a) and (b) will be considered if an irrigator has no direct control over delivery of irrigation water. Irrigation systems that collect and discharge surface or sub-surface drainage shall implement a return flow mitigation system that prevents pollution of waters of the state. Tailwater used by multiple irrigators should be treated as waters of the state for return flow quality.

303(d) parameters which may be affected: Temperature, Sediment

Effective Date: June 2003

Unacceptable Condition #4-Crop Nutrient and Animal Waste Management Problems

Issue/Intent

It is not the intent of this committee to eliminate the application of crop nutrients. This condition should encourage management of nutrients and animal waste to do the most benefit for the intended production goals. Application of crop nutrients, or fertilizer of any kind, can be a necessary and beneficial agricultural practice. Improper application of fertilizer, however, can be costly to the grower and harmful to the environment. Growers are encouraged to use regular soil testing to determine the nutrient needs of their crops. Using a pre-set amount of fertilizer year after year may limit crop yields and cause nutrients to run off into waters of the state. Excess nutrients in water can cause unnatural algae growth, increased pH, and lead to a decrease in dissolved oxygen.

To prevent water from carrying concentrated animal waste, silage and compost leachates (nutrients) to streams, they should be stored in such a way that water cannot move through the pile into waters of the state. With the small land areas that are the dominant agricultural land use in the basin, close attention must be paid to where nutrient laden materials are stored. Even if it is impossible to store materials far away from the waters of the state, the material can be covered and protected from surface flow and precipitation. ORS 468(b) applies to this condition. The statute required that wastes be stored, managed, and disposed in such a way that they do not pollute waters of the state.

Excessive Nutrient Introductions

OAR 603-095-1440(4)

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

303(d) listed parameters which may be affected: Bacteria, Sediment, Nutrients, Dissolved oxygen, pH, chlorophyll a

Effective Date: June 2001

Nutrients are usually described as any material spread on the soil to enhance plant growth, microbial activity, soil tilth, and infiltration capacity. Animal manure, milk waste effluent, chemical fertilizers, compost, and spoiled silage are a few examples of materials with high nutrient content.

Strategies for Implementation

Education and Outreach

We believe that the vast majority of landowners want to do the things that will benefit the land and their production. A great deal of effort and resources should be used to inform landowners of the management strategies that will improve both their land and the quality of their water.

Mass mailings - While the LAC agreed in 2001 that random mailings may help public awareness, timing and funding for random mailings has been discouraged. Instead, targeted audiences will receive water quality management plan mailings in 2005. These will be focused

on water quality activities, seasonal or special circumstance notices (such as pasture management in drought or wet season manure handling), and proposed changes to the plan and rules that may affect the particular audience.

Demonstration Projects/workshops - In conjunction with the OSU Cooperative Extension, local SWCDs, watershed councils and cooperating landowners, the local management agency will coordinate a basin-wide series of demonstration projects related to improving water quality by restoring riparian health, implementing prudent irrigation water management and protecting soil productivity. In the years since plan adoption, class time and field visits have included hundreds of private landowners in the basin learning about Horses and Mud, Small Acreage workshops, Irrigation Management workshops, Pasture Improvement workshops, and Proper Functioning Condition field days, to name a few. Upcoming workshops aimed at irrigation district patrons include irrigation scheduling and efficiency assessments.

Tours - Visiting other agricultural operations is a valuable tool for consolidating a shared vision of how farming activities can work in conjunction with water quality protection. With the cooperation of the above groups, the Local Management Agency staff will schedule topic-specific Ag Water Quality tours, as educational funds are available. Three tours have been conducted to date highlighting horse operations, irrigation strategies, and one related to compliance with the 1010 plan.

Neighborhood meetings/educational reviews - ODA's Regional Water Quality Planner, along with the Local Management Agency staff, have organized local presentations with commodity groups, service clubs, schools, and individual landowners.

Technical and Financial Assistance

Watershed Councils and Soil and Water Conservation Districts should be your primary resources for technical and financial assistance. (Appendix D)

Administrative Roles and Responsibilities

Designated Management Agency/Local Management Agency

The Oregon Department of Agriculture is the “Designated Management Agency” for nonpoint source pollution control activities on agricultural and rural lands in the Rogue Basin. In turn, through Memoranda of Agreement, ODA has designated the Jackson Soil and Water Conservation District as its Local Management Agency to assist with the development and implementation of the water quality management area plan and projects in the Rogue Basin. Implementation priorities will be established on a periodic basis through annual work plans developed jointly by the Jackson SWCD and ODA, depending on available funding.

The Oregon Board of Agriculture appointed a Rogue Basin Local Advisory Committee representing local agricultural producers, local landowners, local environmental interests, and the Jackson SWCD for the purpose of assisting with the development of this Area Plan and the associated draft Oregon Administrative Rules to implement core elements of the plan. The draft Area Plan and Rules, resulting from the committee’s and department’s efforts, will be presented to the Oregon Board of Agriculture for their review and consultation prior to adoption by the department.

The draft Area Plan and the proposed OARs were presented in public information meetings and public hearings within the agricultural and rural portions of the Rogue Basin. Testimony presented at public hearings and during the public comment period was reviewed by ODA and the LAC. Recommended modifications will be presented to the Oregon Board of Agriculture and the Director of the department for their review. The final OARs resulting from this review will be adopted through the Administrative Rules process by the director of the department.

The Local Management Agency and the Local Advisory Committee will participate in biennial review of plan implementation progress. Any future amendments to the administrative rules will be subject to the public participation process outlined in Oregon law.

Monitoring and Evaluation of the Plan's Effectiveness

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. The number of private and public groups doing water quality trend monitoring will insure the LAC's awareness of water quality trends throughout the basin. ODA plans to conduct land condition assessments and outreach evaluations but will leave water quality monitoring to those who are funded for that task.

Approximately two years after Area Plan and Rule adoption, the ODA, with the cooperation and assistance of the Jackson SWCD, the LAC, and the DEQ, will assess the progress of plan implementation toward achieving plan's goals and objectives. These assessments may include:

1. An accounting of the number of operations with approved farm plans that address water quality concerns, the number of requests for farm plans, and the acreage they cover.
2. An estimate of the amount of pollution prevented based on number of farm plans implemented and their acreage.
3. Identification of additional agricultural sources of sediment, nutrients, and other contributors to 303(d) listed streams not addressed in the original plan.
4. An evaluation of the effectiveness 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 the sources for technical and financial assistance that are available to the agricultural community.
7. Review of load allocations as found in Rogue Basin TMDLs and the effectiveness of this plan in meeting agricultural load allocations.

The three meetings of the 2004/2005 Inland Rogue biennial review was attended by a quorum of the original and new LAC members. They heard reports from NRCS, ODA, DEQ, and the Jackson SWCD. Discussion followed concerning changes to the plan language to make it up to date and clarify some confusing language. It was determined that the rules are currently sufficient to meet the TMDL requirements that are being developed in the Inland Rogue planning area. The LAC recommended a few changes to plan language and none to rule language.

Complaints and Inspections

It is the intent of this plan that the Oregon Department of Agriculture consider severe weather conditions when evaluating compliance with unacceptable conditions adopted in the rules. The department recognizes that every farm and situation is different and will take into account each individual situation when evaluating compliance with unacceptable conditions listed in the rules.

Complaints against operators or landowners alleged to be out of compliance with the rules associated with this Area Plan will be investigated by the Oregon Department of Agriculture. In order to be carefully considered for investigation, a complaint must be formal. The complaint must relate to a specific site with specific information related to the undesirable condition, must be submitted in writing, must be signed by the complainant, must be filed with the department, and will be made available to the party alleged to be in violation. Informal, unsigned complaints will not be accepted. The department will determine if a condition violation exists. Based on this determination, appropriate action will be implemented to remedy the condition as indicated by the appropriate rules.

Compliance Procedures

If an approved farm plan that addresses water quality concerns exists for a site which has been determined to have a conditions violation, and if the plan is being implemented on schedule, the operator and/or landowner will be given an opportunity to refine or modify the plan, or to develop an updated implementation schedule to remedy the condition within a specified time frame. The revised plan and/or implementation schedule must be approved by the LMA to verify its compliance with NRCS/FOTG standards and/or ODA/AgWQM Area Rules, whichever is applicable.

When a Notice of Noncompliance is issued for an AgWQM Area Rule conditions violation, the landowner/operator will be directed by the Oregon Department of Agriculture to remedy the condition under provisions in OAR 603-090-0060 through 603-090-0120. It is the policy of the department to direct the landowner to available assistance through state and federal partners so as to achieve a resolution rather than an enforcement action. If an approved farm plan does not exist for the site, the operator and/or landowner may be given assistance to create and implement a farm plan. A farm plan, however, is not necessary to be in compliance with the rules. Authority for any enforcement action rests with the Oregon Department of Agriculture.

The LAC strongly recommend that there be established in the Rogue Basin a landowner appeals board consisting of at least four members of the LAC and duly elected SWCD members. The purpose of this citizen board would be to act as a check on the interpretation of the plan rules between the compliance inspector and the intent of the LAC. While no authority would rest with this board, it could recommend a review of the evidence if an appeal was justified.

Review Period

The Oregon Department of Agriculture, Jackson SWCD, the Local Advisory Committee, and the Oregon Board of Agriculture will consider making appropriate modifications to the basin plan and/or the associated Oregon Administrative Rules on a biennial basis.

The Rogue Basin Agricultural Water Quality Management Local Advisory Committee has committed to reconvening two years after adoption of this plan. The purpose of reconvening is to address the implementation, language, or newly listed 303(d) parameters of concern to agriculture in the basin.

Two years after plan adoption, it is anticipated that ODA, along with the Jackson SWCD, will conduct a random survey of a statistically significant number of anonymous agricultural holdings in the Inland Rogue Basin. This survey will establish a baseline of compliance with OAR 603-95-1440 upon which the LAC can reconvene to set benchmark compliance targets. The benchmarks will not have any regulatory impact. They are only to be used as guidelines for prioritizing educational activities and incentives.

Inland Rogue Basin Area Water Quality Plan Glossary

Agricultural Use - means the use of land for the raising or production of livestock or livestock products, poultry or poultry products, milk or milk products, fur-bearing animals; or for the growing of crops such as, but not limited to, grains, small grains, fruit, vegetables, forage grains, nursery stock, Christmas trees; or any other agricultural or horticultural use or animal husbandry or any combination thereof. Wetlands, pasture, and woodlands accompanying land in agricultural use are also defined as in agricultural use. (OAR 603-095-0010(4)).

Benthic Macroinvertebrates - aquatic insects that spend part of their life cycle on the bottom of a stream or perennial waterway.

Channel Morphology - shape of the stream channel. (Example: wide and shallow vs. narrow and deep).

Cold Water Aquatic Life - organisms that require cold water as part of their sustainability requirements.

Contact Recreation - recreational activities that put humans in direct contact with the water, i.e. swimming, boating, etc.

Field Office Technical Guide - means the localized document currently used by the soil and water conservation district and developed by the United States Department of Agriculture, Natural Resources Conservation Service which provides:

- soil descriptions
- sound land use alternatives
- adequate conservation treatment alternatives
- standards and specifications of conservation practices
- conservation cost-return information
- practice maintenance requirements
- soil erosion prediction procedures and
- a listing of local natural resource related laws and regulations

Formal Complaint - means a complaint against a landowner or operator alleging a violation of a requirement of any Agricultural Water Quality Management Area Plan adopted pursuant to ORS 568.900 through 568.933 at a specific site. The complaint shall be submitted in writing stating the nature and location of the violation and shall be filed with the department or by

agreement with the department, with the Local Management Agency with jurisdiction over the site in question. (OAR 603-095-0010(19)).

Geomorphic - the shape or surface configuration of the earth.

Hydraulically Connected - groundwater and surface waters influenced by each other's condition.

Farm Plan - (same as voluntary conservation plan) is developed to facilitate daily and seasonal management decisions which impact production and resource quality. While not required, they are still a good operational idea and strongly encouraged.

Least Likely Third - siting strategy for potentially hazardous materials. When locating storage and staging areas on a property, select the third of the property that is least likely to allow contaminants from a spill or leak to runoff directly into waters of the state.

Parent Material - the underlying rock from which surface soils are formed. (Example: Serpentine rock formations give rise to serpentinitic soils).

Proper Functioning Condition Assessment - a consistent approach for considering hydrology, vegetation and erosion/deposition (soils) attributes and processes to assess the condition of riparian-wetland areas. Simply put, it is an assessment to see if the landform, stream flow and soils, indicated by current vegetative growth and capability, are acting in a way they would be expected to act given the current landscape. More importantly, a stream reach is considered to be in proper functioning condition if the components of the riparian system are able to consistently dissipate the energy associated with a 25-year high flow event.

Riparian Vegetation - plants and plant communities dependent upon or tolerant of saturated soil near the soil surface for at least part of the year. (Example: Willows, sedges, and rushes can grow in saturated soils). Riparian areas are commonly described as the area from the average high water level up to the area no longer influenced by the stream as defined by changes in soils and plant communities.

Riparian Setback - the purposefully designated or protected area away from the stream's normal flow mark back to a point where riparian functions for that site will not be adversely affected by land management practices.

Soil loss tolerance factor or "T" - means maximum average annual amount of soil loss from erosion, as estimated by the Universal Soil Loss Equation (USLE) or the Revised Universal Soil Loss Equation (RUSLE), and expressed in tons per acre per year, that is allowable on a particular soil. This represents the tons of soil (related to the specific soil series) that can be lost through erosion annually without causing significant degradation of the soil or potential for crop production. (OAR 603-095-0010(45)).

Streambank - means the boundary of protected waters and wetlands, or the land abutting a channel at an elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape; commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For

perennial streams or rivers, the streambank shall be at the ordinary high-water mark. (OAR 603-095-0010(46)).

Waters of the State - "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 effect 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(8))

Appendices

A - Map - Inland Rogue AgWQM Area

B - Map - Inland Rogue AgWQM Area Ownership

C - Compliance Procedures Flow Chart

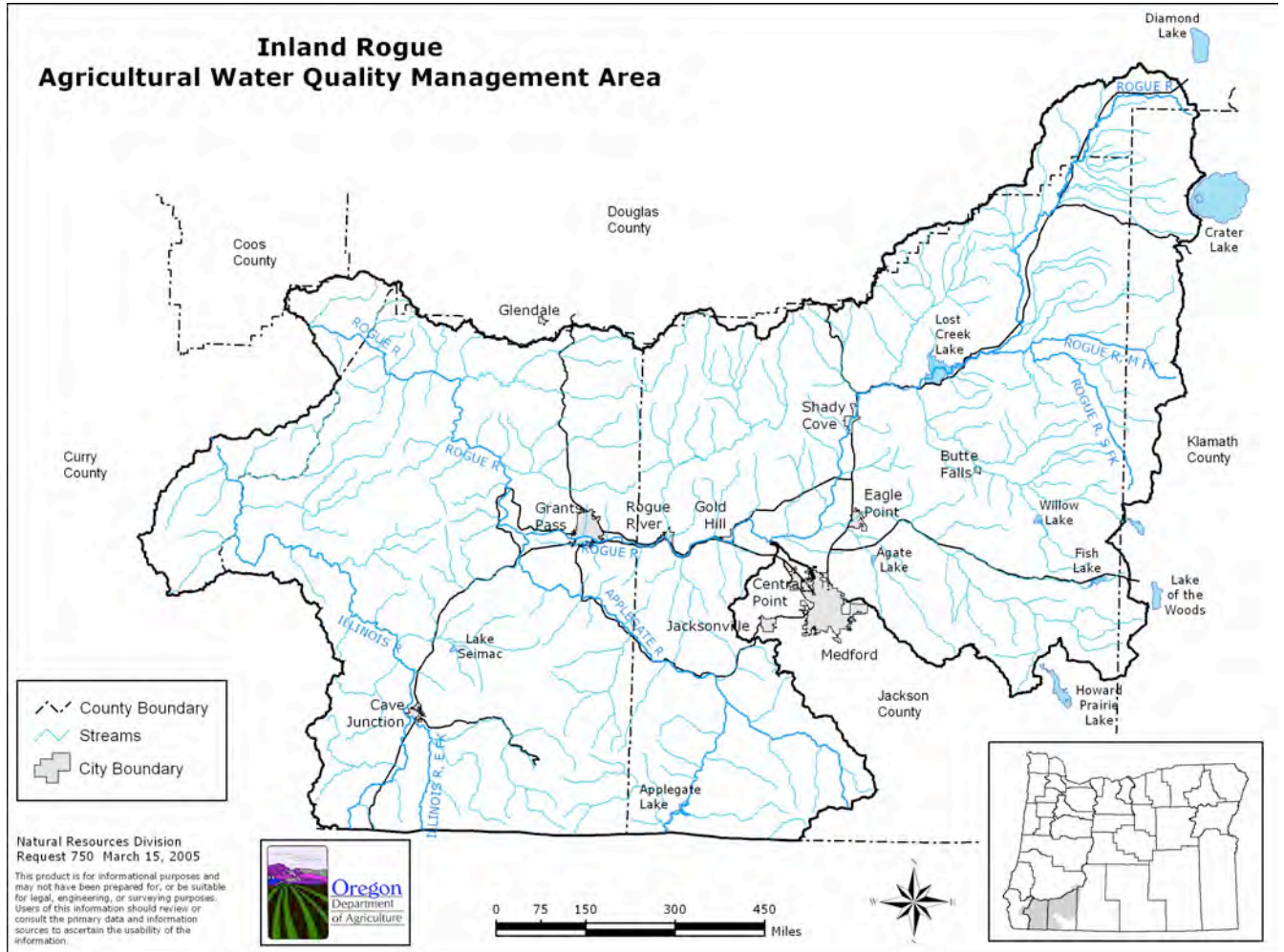
D - Watershed Council and Soil and Water Conservation District Contact Information

E - Coastal Zone Reauthorization Amendment agricultural management measures

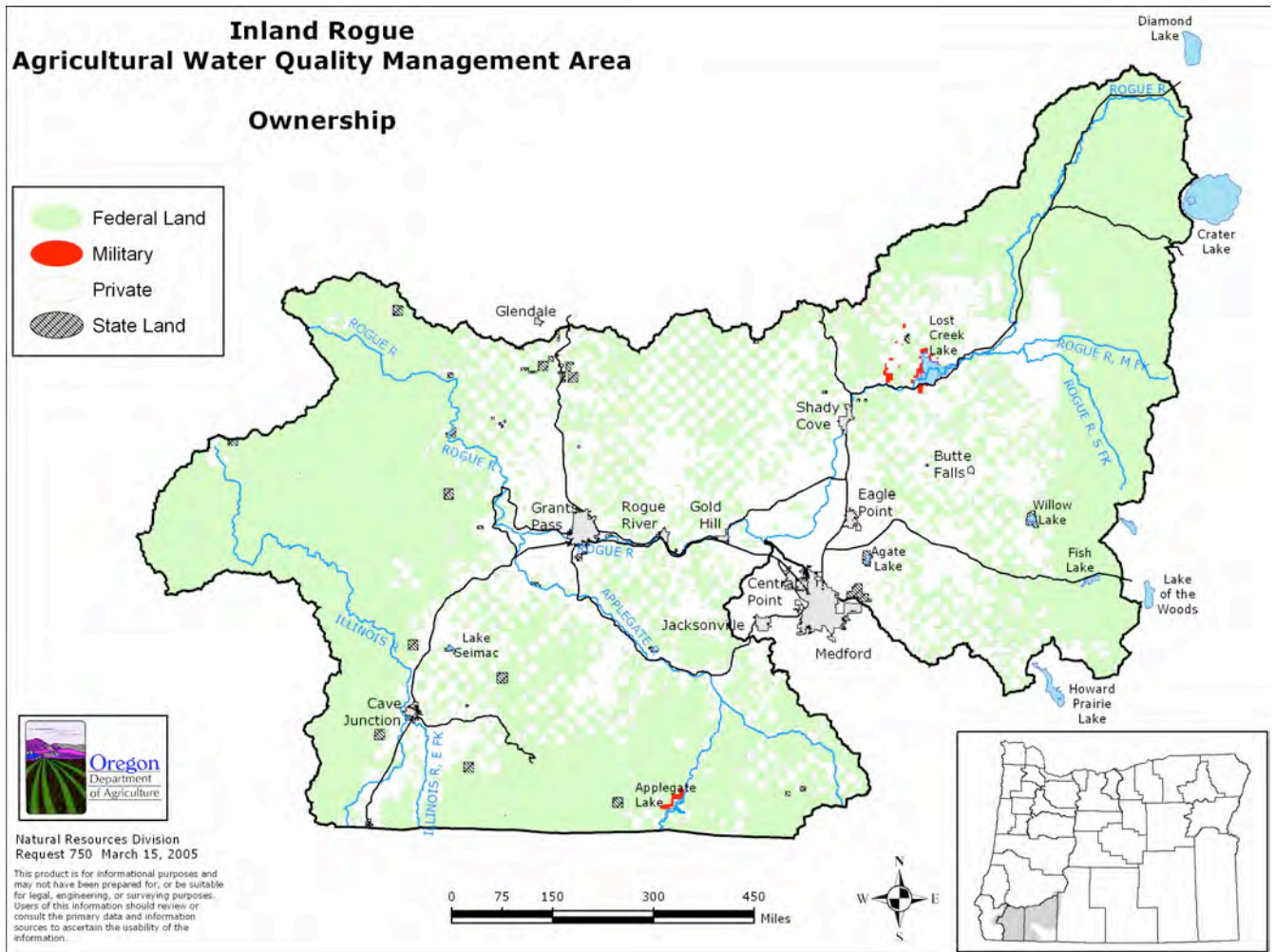
F - 2004 staff report to the Board of Agriculture

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Appendix A - Inland Rogue AgWQM Area

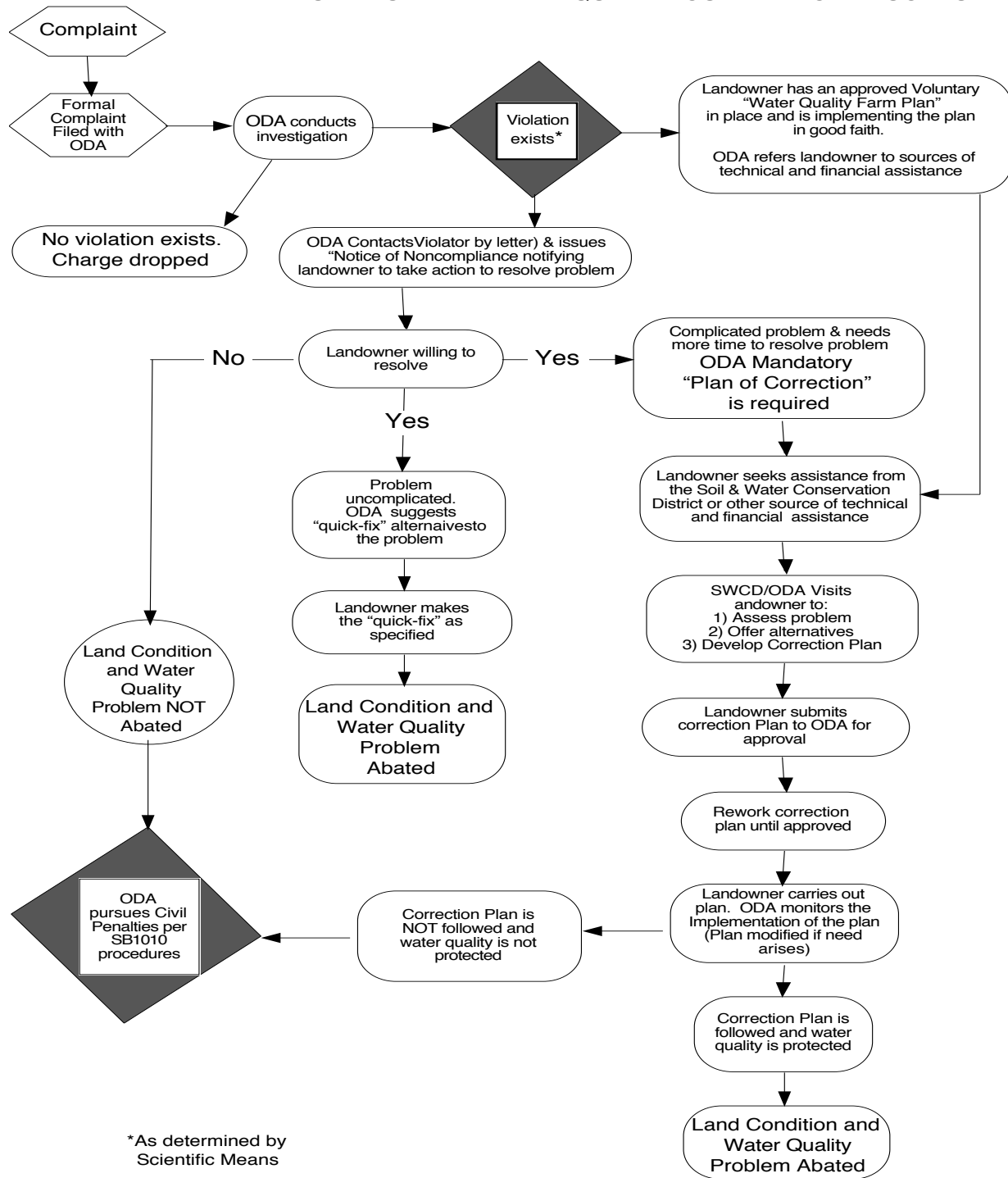


Appendix B - Inland Rogue AgWQM Area Ownership



Appendix C - Compliance Procedures Flow Chart

APPENDIX D - ODA FORMAL WATER QUALITY COMPLIANCE PROCEDURE



Appendix D - Watershed Council, SWCD, and Financial Assistance Contact Information

Watershed Councils

Upper Rogue Watershed Council, Coordinator – Pam Galey, PO BOX 1128, SHADY COVE, OR 97539. Tel. (541) 878-1446 email: urwatershed@yahoo.com

Applegate River Watershed Council, Coordinator – Daniel Newberry, 6941 UPPER APPLGATE RD, JACKSONVILLE, OR 97530. Tel. (541) 899-9982 email: staff@arwc.org

Bear Creek Watershed Council, Coordinator – Kara King, P.O. Box 1548, Medford, OR 97501. Tel. (541) 840-1810 email:

Illinois Valley Watershed Council, Coordinator – Kevin O’Brien, PO BOX 352, CAVE JUNCTION, OR 97523. Tel. (541) 592-3731 email: ivwc@cavenet.com

Little Butte Creek Watershed Council, Coordinator - LU ANTHONY, 1094 STEVENS RD, EAGLE POINT, OR 97524. Tel. (541) 826-2908 email: luanthony@earthlink.net

Williams Creek Watershed Council, Coordinator - EVELYN ROETHER, PO BOX 94, WILLIAMS, OR 97544. Tel. (541) 846-9175 email: wccw@cdsnet.net

Middle Rogue Watershed Association, Coordinator – Brad Carlson, 576 NE. E ST., GRANTS PASS, OR 97526. Tel. (541) 474-6799 email: mrwa@cpros.com

Seven Basins Watershed Council, Coordinator – Dave Graham, P.O. Box 909, Gold Hill, OR 97525, Tel. (541) 770-6977 email: contact@sevenbasins.org

Soil and Water Conservation Districts

Jackson Soil and Water Conservation District
1119 Ellen Avenue
Medford, Oregon 97501
(541) 743-3143

Josephine Soil and Water Conservation District
576 NE E Street
Grants Pass, Oregon 97526
(541) 476-5856

Illinois Valley Soil and Water Conservation District
PO Box 352, Cave Junction, OR 97523
(541) 592-3770
email: ivswcdwc@cdsnet.net

Available Technical and Financial Assistance

Since most agricultural landowners are unable to make a living directly from their land based enterprise, financial incentives are required to encourage basin wide adoption of sound and sustainable management practices. While record keeping of various aspects of the operation may be required for various government incentives (for example, the Conservation Security Program requires two years of records to be kept before you can apply for Best Management Practice payments), VOLUNTARY, PRIVATE record keeping is encouraged as a tool for operational and strategic decision making. Some government programs do NOT require record keeping.

- **CREP** - Conservation Reserve Enhancement Program (541-734-3143 or 476-5856) made available \$250 million dollars to pay rent to landowners who set aside areas immediately adjacent to anadromous fish-bearing streams. It is intended to protect water quality and enhance spawning, rearing, and habitat quality.
- **OWEB** - Oregon Watershed Enhancement Program (541-471-2886) provides funding for watershed enhancement projects under the general categories of education/public awareness, monitoring, management, and assessment/action planning.
- **EQIP** - Environmental Quality Incentives Program (541-476-5856 and 592-3731 in Josephine County) pays landowners a majority cost-share for on-farm projects that protect natural resources and improve wildlife (including fish) habitat. EQIP information can also be obtained from the Farm Service Agency in Medford (541-734-3143).
- **EPA 319** - Environmental Protection Agency administers the 1972 Clean Water Act section 319 grants through DEQ (541-776-6010) to help meet their water quality mandates. The projects EPA likes to fund are those with directly measurable benefits for water quality and endangered species. Check out EPA's Ag Info Center: <http://es.epa.gov/oeca/ag/index.html>
- **NRCS** - Natural Resources Conservation Service (541-476-5856) can provide technical assistance and administers a number of cost-share programs for on-farm projects that improve farm production while protecting natural resources and improving wildlife (including fish) habitat. In Medford call (541-776-4267).
- **OWT** - Oregon Water Trust (503-226-3480 in Portland) offers lease and buy-out options for abandoned or unused water rights. This market-based approach to increasing stream flow may also be used to fund irrigation system changes in watersheds identified as priorities for OWT.
- **OSU Cooperative Extension** (476-6613 in Josephine County and 772-5165 in Jackson County) offers a wide variety of levels of technical assistance and planning help. OSU has been instrumental in the Oregon Cattlemen's extremely successful Watershed Ecosystem Education Program. Since its inception, it has grown into several distinct natural resource related workshops that are offered to ranchers and farmers free of charge. The Watershed Ecosystem Education Program workshops help ranchers and farmers understand their watersheds and stream function better through assessments and monitoring. OSU has also been providing Proper Functioning Condition (PFC) Workshops and assessments with landowners. PFC assessment should be a major component of a conservation plan.

Appendix E - Coastal Zone Management Act Measures

In 1990, the Federal Coastal Zone Reauthorization Amendments were enacted. This law mandated that all states and territories with approved coastal zone management programs develop and implement coastal nonpoint pollution control programs. Listed below are the Coastal Zone Management measures that were developed for use in Oregon for coastal basins such as the Rogue.

The following section contains the approved management measures for coastal nonpoint pollution in Oregon as developed for the Coastal Zone Reauthorization Amendments.

Sedimentation

- Apply the erosion component of a Resource Management System as defined in the Field Office Technical Guide of the U.S. Department of Agriculture, Natural Resources Conservation Service to minimize the delivery of sediment to surface waters.
- Design and install a combination of management and physical practices to settle the settleable solids and associated pollutants in runoff delivered from the contributing area for storms of up to and including a 10 year, 24 hour frequency.

Nutrients

- Develop, implement, and periodically update a nutrient management plan to: (1) apply nutrients at rates necessary to achieve realistic crop yields, (2) improve the timing of nutrient application, and (3) use agronomic crop production technology to increase nutrient use efficiency. When the source of the nutrients is other than commercial fertilizer, determine the nutrient value and the rate of availability of the nutrients. Determine and credit the nitrogen contribution of any legume crop. Soil and plant tissue testing should be used routinely.

Pesticides

- Evaluate the pest problems, previous pest management practices, and cropping history.
- Evaluate the soil and physical characteristics of the site, including mixing, loading and storage areas for potential of leaching or runoff of pesticides. If leaching or runoff is found, steps should be taken to prevent further contamination
- Use integrated pest management (IPM) strategies that:
 - Apply pesticides only when an economic benefit to the producer will be achieved (i.e. application based on economic thresholds).
 - Apply pesticides efficiently and at times when runoff losses are unlikely.
 - When pesticide applications are necessary and a choice of registered materials exists, consider the persistence, toxicity, runoff potential, and leaching potential of products being used.
 - Periodically calibrate pesticide spraying equipment.
 - Use anti-backflow devices on hoses used for filling tank mixtures.

Riparian Areas

- Exclude livestock from riparian areas that are susceptible to overgrazing and when there is no other practical way to protect the riparian area when grazing uplands.
- Provide stream crossings and hardened access areas for watering.
- Provide alternative drinking water locations.
- Locate salt and shade away from sensitive riparian locations.

- Include riparian areas in separate pastures with separate management objectives and strategies.
- Fence, or where appropriate, herd livestock out of areas for as long as necessary to allow vegetation and streambanks to recover.
- Control the timing of grazing to: (1) keep livestock off streambanks where they are most vulnerable to damage, and (2) coincide with the physiological needs of target plant species.

Irrigation

- Operate the irrigation system so that the timing and amount of water match crop water needs. This will require, at a minimum: (a) the accurate measure of soil water depletion and the volume of irrigation applied, and (b) uniform application of water.
- When chemigation is used, include anti-backflow devices for wells, minimize the harmful amounts of chemigated waters from the field, and control deep percolation.
- In cases where chemigation is performed with furrow irrigation systems, a tailwater management system may be needed.
- In some locations, irrigation return flows are subject to other water rights or are required to maintain stream flow(s). In these special cases, on-site use could be precluded and would not be considered part of the management measures for such locations.
- In some locations, leaching is necessary to control salt in the soil profile. Leaching for salt control should be limited to the leaching requirement for the root zone.
- Where leakage from delivery systems or return flows support wetlands or wildlife refuges, it may be preferable to modify the system to achieve a high level of efficiency and then divert the “saved water” to the wetland or wildlife refuge. This will improve the quality of water delivered to wetlands or wildlife refuges by preventing the introduction of pollutants from irrigated lands to such diverted water.
- In some locations, sprinkler irrigation is used for frost or freeze protection, or for crop cooling. In these special cases, applications should be limited to the amount necessary for crop protection, and applied water should remain on site.

Appendix F - Biennial Review Report to the Board of Agriculture

Draft Staff Report to the Oregon Board of Agriculture on Inland Rogue Ag Water Quality Management Plan and Rules Biennial Review January 2004

Purpose

The Inland Rogue Local Advisory Committee (LAC) is submitting this report to the Board of Agriculture to summarize implementation of the Inland Rogue Agricultural Water Quality Management Area Plan and Rules, as required in Oregon Administrative Rule (OAR) 603-090-0020 (4).

II. Introduction

Senate Bill 1010 requires that the Oregon Department of Agriculture (ODA) develop and implement an Area Plan and Rules wherever such a Plan is required by state or federal law.

The Inland Rogue Agricultural Water Quality Management Area consists of non-Federal and non-Tribal Trust lands in the inland Rogue drainage. The area described as the “inland Rogue” is essentially bounded by the Josephine and Jackson County boundaries. These two counties have a drainage area of over 4,400 sq. miles. The Rogue River watershed encompasses a total of 5,156 sq. miles. It is a major river in southwest Oregon.

An Area Plan and Rules were required for the Inland Rogue Agricultural Water Quality Management Area because Total Maximum Daily Loads (TMDLs) were being developed from the Department of Environmental Quality (DEQ) for temperature and bacteria. Private agriculture is required to provide reasonable assurance that it will meet its load allocations for listed parameters. Additionally, stream segments were also listed on DEQ’s 2002 303(d) list of water quality limited waterbodies for sediment, dissolved oxygen, pH, and algae. Coho salmon are listed as an “Endangered Species” in southern Oregon and northern California in what is known as the Oregon and Pacific Coast ESU’s by the National Oceanic and Atmospheric Association - Fisheries Service.

In early 2001, the LAC, working with ODA and the Jackson Soil and Water Conservation District (SWCD) completed the Area Plan and Rules. The rules were adopted in June 2001 under the guidance of Tim Stevenson. ODA then worked with the Jackson SWCD, the Natural Resources Conservation Service (NRCS), OSU Cooperative Extension, private landowners, and other partners to implement the Area Plan and Rules.

III. Background

When developing the Inland Rogue Area Plan and Rules, the LAC identified several objectives that, if achieved, would significantly improve water quality in the Management Area. The LAC then developed rules that had to be met on all agricultural and rural lands. Each rule was intended to prevent pollution as close to the source as possible, and to meet agriculture’s expected load allocations in the TMDL.

The mission statement for the Inland Rogue AgWQMAP adopted by the LAC is:

General Goal:

To describe reasonable methods and practices all people engaged in agricultural activities may use to maintain and improve water quality while preserving and enhancing economic viability in the Rogue Basin.

The objectives of the Inland Rogue AgWQMAP are:

Attain water quality standards that serve the beneficial uses designated for the Rogue Basin.

They are listed alphabetically.

- aesthetic quality
- anadromous fisheries passage, rearing, and spawning
- cold water resident aquatic life
- commercial navigation and transportation
- contact recreation, fishing, boating
- drinking water, both public and private
- irrigation
- livestock watering
- threatened and endangered species
- wildlife and hunting

The committee's plan is intended to:

- be based on scientifically defensible data
- protect water quality in agricultural settings
- protect the economic viability of the agriculture industry in the Rogue Basin
- help set priorities so that resources are distributed where they will be of the most benefit to help the industry meet its long-term water quality objectives
- address each subbasin as a unique entity
- develop desirable agricultural condition requirements that are not prescriptive and provide for a wide variety of agricultural practices to alleviate potential problems
- develop condition descriptions that allow for the unique character of specific sites

Summary of the high points of the 2001 Inland Rogue AgWQMAP

The LAC developed a series of pollution control and prevention guidelines specifically for the Inland Rogue. This section was developed around the water quality standards listed in the Inland Rogue which are directly affected by agricultural activity; sedimentation, nutrients, bacteria, and temperature. For each of these parameters, the committee identified:

- Information about the parameter to provide basic understanding of the reason for concern.
- A statement identifying the unacceptable condition which will be reflected in the Oregon Department of Agriculture Administrative Rules.
- Steps that will be taken by the Oregon Department of Agriculture when investigating a complaint.
- Examples of situations that could lead to an unacceptable condition. These examples are provided to alert landowners and managers to potential problems, rather than to prescribe particular treatments.

Also, a list of educational and project oriented objectives were identified.

Summary of Inland Rogue local management agency activities to achieve the stated objectives (Jackson SWCD)

As described in the plan, Jackson County SWCD is the Local Management Agency for both the Bear Creek and the Inland Rogue Plans. Illinois Valley and Josephine SWCD's are also within the plan boundaries. Jackson SWCD directors and employees have worked closely with ODA, NRCS, and OSU Extension to hire competent technicians, coordinators, monitoring services, workshop presenters, and initiate mass media campaigns. In the first biennium, Jackson SWCD hired someone who was primarily an outreach and education coordinator. The accomplishments reflect that role.

Jackson SWCD LMA Summary 2001-2003 (Rose Marie Davis - Outreach Coordinator)

Subject	Number	Nbr. Participants
Workshops Presented	11	246
Meetings Held	51	217
Meetings Attended	122	1,826
Tours Conducted	6	76
Displays Prepared & Staffed	6	312
Demonstrations Given	3	412
Grant Preparation Assistance Given	10	50

Illinois Valley SWCD SB1010 activities summary 2001-2003 (Glen Ginter and Chris Anderson)

Watershed Friendly Steward Awards	6
CMS/RMS Plans	35
Acres	620

Alternatives to Push-up Dams

- McIntosh Pump Station design completed about to begin construction
- Crutchfield Pump station almost completed
- Sommers Pump station almost completed
- Lewis Ditch
- Moser Ditch
- Holland Ditch
- Elliott Ditch
- Seyforth Ditch

Bank Stabilization/Fish Habitat Improvement (Large Wood Placement)

- Brock 2001 These projects will probably need more work after this winter.
- Crutchfield 2001
- McIntosh 2001
- Sommers 2001

Assessments/ Monitoring

- Water quality Monitoring of 3-5 sites 1996-2002
 - Temperature, dissolved oxygen, ph, conductivity + flow

Groundwater Assessment, mapped all geology, drill test wells summer 2003
Water quality monitoring grant ends June 30, 2002 will write OWEB Grant Feb 2003 to carry on.

Josephine SWCD SB1010 activities summary 2001-2003

Landowners assisted	118
Acres	731

The **ODA regional representative** in southwest Oregon, Tim Stevenson, has participated in a number of educational and “regulatory” visits with local landowners. Working closely with local partners, OSU Extension, DEQ, Jackson SWCD, Rogue basin watershed councils, and local landowner groups, he has been able to respond to complaints, make courtesy visits, and teach classes to the Inland Rogue’s affected parties.

Workshop presentations

Regional State Agency meetings (OSP, WRD, ODFW, DEQ)

Four “Horses and Mud” workshops

OACD Small Acreage Workshops

OSU Extension Irrigation series

North Middle School Field School

Reports to watershed councils, commodity groups, and local governments.

Jackson Stockmen’s, Farm Bureau, Frontiers for Freedom, Jackson, Josephine, Illinois Valley SWCDs, Josephine County Commissioners, Grants Pass and Eagle Point Irrigation Districts, Illinois Valley, Seven Basins, Middle Rogue, Little Butte Creek, and Upper Rogue Watershed Councils, State legislators Carl Wilson, Gordon Anderson, and Jason Atkinson.

Finally, ODA has received only seven formal, written complaints in the Inland Rogue planning area. ODA also responded to four informal complaints with visits and phone calls. In all of these cases, with the help of the SWCD and LAC members, the threat to water quality has been alleviated.

Inland Rogue AgWQM Area Plan and Rules Review Process

In December 2003, as required by OAR 603-090-0020, the LAC met to conduct the first periodic review and update of their Area Plan and Rules. Management Area landowners representing agricultural commodities (cattle, hay, sheep, vine and row crops, and horses) serve on the LAC. Other interests include timber owners and an irrigation and wastewater company. The LAC reviewed the progress and effectiveness of the Plan and Rules in preventing and controlling water pollution from agricultural activities in the Management Area. They also reviewed the compliance issues initiated in the past two years. The Basin Coordinator for DEQ, Bill Meyers, commented on the objectives of the Rogue TMDLs. Based on that evaluation, the LAC recommended updates and clarification language to the Area Plan but no changes to the Rules were required. By the time of the next review in 2005, DEQ will have completed TMDLs for the Applegate, the middle Rogue, and Illinois

V. Conclusions

The Inland Rogue LAC believes that the plan and rules have been implemented appropriately thereby improving water quality in the basin. The Jackson, Josephine, and Illinois Valley SWCD directors and staff remain committed to the intent and implementation of SB1010 in their region. They have added new directors who are former and current LAC members.

Respectfully submitted,

Tim Stevenson
ODA Water Quality Planner
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