NORTH COAST BASIN

AGRICULTURAL WATER QUALITY MANAGEMENT AREA PLAN

March 2004

Prepared by the North Coast Basin Local Advisory Committee with assistance from the Oregon Department of Agriculture

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NORTH COAST BASIN
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ACRONYMS

AgWQM	Agricultural Water Quality Management
CCMP	Comprehensive Conservation and Management Plan
CRMP	Coordinated Resource Management Planning
CZARA	Coastal Zone Act Reauthorization Amendments
DEQ	Oregon Department of Environmental Quality
DSL	Division of State Lands
EPA	Environmental Protection Agency
HRSC	Healthy Riparian and Streambank Condition
LAC	Local Advisory Committee
LMA	Local Management Agency
NRCS	Natural Resources Conservation Service
OAR	Oregon Administrative Rule
ODA	Oregon Department of Agriculture
ODFW	Oregon Department of Fish and Wildlife
ORS	Oregon Revised Statutes
PCM	Pollution Prevention and Control Measures
RUSLE	Revised Universal Soil Loss Equation
SWCD	Soil and Water Conservation District
TAC	Technical Advisory Committee
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture

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PURPOSE

This document is the North Coast Basin Agricultural Water Quality Management (AgWQM) Area Plan (Area Plan) for the enhancement of water quality from agricultural activities in the North Coast Basin. It was developed by the North Coast Basin Local Advisory Committee (LAC) with the assistance of the Oregon Department of Agriculture (ODA). The North Coast Basin LAC consists of affected landowners and other interests residing within the basin. This Area Plan applies to all lands currently in agricultural use in the North Coast Basin, regardless of size. For example, the plan applies equally to large acreages in commercial production and to small rural land holdings. It also applies to all agricultural lands which are lying idle or on which management has been deferred. However, activities subject to the Oregon Forest Practices Act are not subject to this plan.

This Agricultural Water Quality Management Area Plan (Area Plan) provides guidance for addressing agricultural water quality issues in the North Coast Basin 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 establish legal requirements or prohibitions. The ODA will exercise its enforcement authority for the prevention and control of water pollution from agricultural activities under administrative rules for the North Coast Basin Management Area (OAR 603-095-0800 through 603-095-0860), and Oregon Administrative Rules 603-090-0120 through 603-090-0180.

The administrative rules for the North Coast Basin Management Area 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, Oregon Administrative Rules 603-090-0120 through 603-090-0180 describe the enforcement actions that may be triggered upon the finding of a violation by ODA.

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INTRODUCTION

As one of the original stewards of the land and water, agriculture in Oregon has a key role to play in protecting the state's natural resources for future generations of farmers, ranchers, and all Oregonians. Senate Bill 1010, approved by the 1993 State Legislature in part at the request of many in Oregon's agricultural industries, requires the Oregon Department of Agriculture (ODA) to address water pollution from agricultural sources and improve overall conditions in a watershed.

The intent of Senate Bill 1010 is to:

- Encourage voluntary conservation efforts by landowners.
- Conduct education programs to inform operators of water quality issues and conservation solutions.
- Allow farmers and rural landowners the flexibility to choose appropriate methods to meet water quality goals.
- Provide enforcement provisions for operators who refuse to address conditions that contribute to water quality standards not being met.

Characteristics of Land Associated with Water Quality

Stewardship includes an effective program for the identification and control of land conditions that may contribute to water quality degradation. Agricultural lands where good stewardship is practiced have the following characteristics:

- Riparian vegetation is able to respond and function as defined in the Healthy Riparian Streambank Condition described in the Pollution Prevention and Control Measures.
- Active stream bank erosion does not exceed acceptable levels.
- Stream channel modification caused by short-term erosion from agricultural activities is minimal.
- Placement, delivery, or sloughing of suspended solids and associated soil organic matter and minerals is maintained at natural levels.
- Sheet and rill erosion does not exceed applicable soil loss tolerance.
- Agricultural waste is managed to severely minimize contact with waters of the state.
- Runoff associated with agricultural roads and lanes do not increase stream turbidity.
- Agricultural chemicals do not enter waterways through leaching and overland flow.

Strategy for Public Participation

This North Coast Basin AgWQM Area Plan and Area Rules (Oregon Administrative Rules or OARs), are a result of efforts by the North Coast Basin LAC and the ODA, and were presented to the State Board of Agriculture for their review and consultation.

With the State Board of Agriculture approval, the draft plan and the associated rules were presented to the public as part of the State of Oregon's Administrative Rules process. This included informational meetings and public hearings within the agricultural and rural portions of the North Coast Basin. The ODA reviewed testimony presented at public hearings and during the public comment period. With assistance from the LAC, the ODA modified the North Coast Basin AgWQM Area Plan and Area Rules as necessary to address those issues. Recommended

modifications were presented to the Board of Agriculture and the director of the ODA for their review.

Final acceptance and adoption of the Area Plan and Area Rules resulting from this review is the responsibility of the Director of the ODA in consultation with the State Board of Agriculture.

GOALS AND OBJECTIVES

The goal of the North Coast Basin AgWQM Area Plan and Area Rules is to reduce undesirable water quality by promoting good land stewardship, identifying incentives with financial and educational support to promote adaptive management, and defining clear enforcement guidelines. Specific goals of the North Coast Basin AgWQM Area Plan include:

1. Create a high level of awareness of water quality issues and problems among agricultural operators and the rural public in the North Coast Basin.
2. Promote land management that limits the movement of nutrients and bacteria from agricultural and rural lands to state waters.
3. Promote land management that stabilizes streambanks.
4. Promote land management that reduces sedimentation of streams due to soil erosion.
5. Seek to control water pollution as close to its source as possible.
6. Seek funding sources to implement the North Coast Basin Area Plan.

Objectives deemed necessary to reach these goals include:

1. Conduct educational programs to promote public awareness of water quality issues and their solutions.
2. Secure necessary resources to administer and implement the water quality program.
3. Reduce erosion and sediment delivery from agricultural and rural lands to waters of the state.
4. Reduce nutrient and bacteria loading from agricultural and rural lands to waters of the state.
5. Avoid waste discharges to waters of the state.
6. Limit livestock access to streams, wetlands, and the riparian areas.
7. Ensure proper animal waste storage and utilization or disposal.
8. Promote streambank stabilization and the restoration and enhancement of wetlands and riparian habitat.

GEOGRAPHIC AREA AND PHYSICAL SETTING

North Coast Basin

The North Coast Basin Agricultural Water Quality Management Area (Management Area) encompasses far northwest Oregon, including Tillamook, Clatsop, and Columbia Counties (Figure 1), as well as Sauvie Island which straddles the shared Columbia and Multnomah County line. The North Coast Basin Management Area is bounded by the Pacific Ocean to the west, the crest of the Coast Range to the east, Neskowin Creek, and Little Nestucca River watersheds to the south, and by the confluence of the Willamette and Columbia Rivers to the north, where the Columbia River flows west around the northern tip of the Coast Range.

The North Coast Basin is a diverse area characterized by forested mountains, foothills, productive agricultural lands, several estuaries and bays, marine terraces, and dune areas. The largest urban centers include Tillamook, Astoria, and St. Helens, with populations of 4,000, 10,000, and 8,600, respectively. They also serve as the county seats of Tillamook, Clatsop, and Columbia Counties, respectively.

Soils are diverse. Forested mountain and foothill soils dominate the North Coast Basin and have developed in colluvium or residuum weathered from parent materials such as siltstone, sandstone, basalt, and tuff. Floodplain soils have developed in recent alluvium deposited by the area streams. Tidal floodplain soils developed in recent estuarine deposits. Terrace soils have developed in older alluvial deposits of stream or marine origin. Dune soils have developed in recent to slightly older wind deposits of sand (J. Shipman, Soil Survey Party Leader, USDA Natural Resources Conservation Service, Tillamook, Oregon, pers. comm.).

For detailed information about soils in the North Coast Basin Management Area, refer to USDA NRCS Soil Surveys of Clatsop County, Columbia County, and Multnomah County, Oregon. A modern soil survey project is currently in progress for Tillamook County.

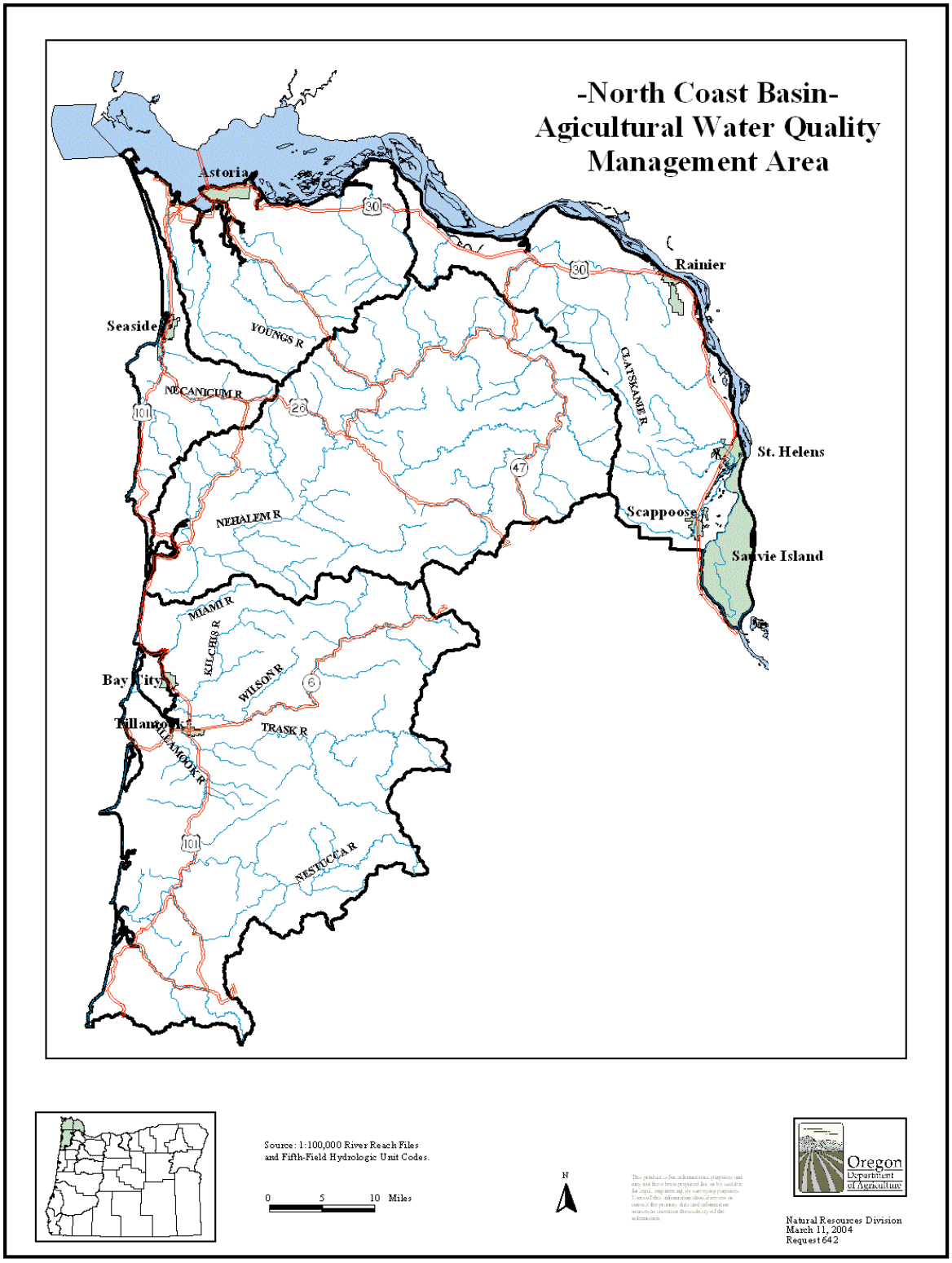
It rains a lot in the North Coast Basin. Annual average precipitation ranges from 40 to 150 inches, mostly rain, with about 80 percent falling between October and April. The greatest precipitation events occur during November, December, and January. Precipitation as high as 200 inches annually has been reported for northeastern Tillamook County at an elevation of over 3,000 feet at the headwaters to the North Fork Wilson River. This represents the highest precipitation in Oregon (Anderson et al., 1998).

Localized flooding is common in the North Coast Basin. In 1996, heavy lowland rain combined with heavy mountain rain on snow caused severe flooding throughout the North Coast Basin, especially Tillamook County, resulting in significant economic and environmental damage.

Dominant westerly winds from the Pacific Ocean moderate coastal temperatures. These winds are almost continuous and can reach gale force in the winter. The mean annual temperature is 50°F, with the average minimum in the low 40s. Snowfall is common on the higher uplands and rare in the lowlands. Lowland areas often experience growing conditions the entire year, interspersed with freezes. Summers are cool and relatively drier, punctuated by easterly winds that can create

episodes of extreme dry weather. The average summer maximum temperature is about 60°F, with normal summer highs between 70°F and 80°F.

Figure 1: North Coast Basin



With a land base of over 1.5 million acres, forestry is the largest commercial activity in the North Coast Basin. Tourism, hunting, fishing, and agriculture represent significant economic producers as well. For the State of Oregon, Tillamook County ranked 13th in gross farm and ranch sales in 1998. Gross farm and ranch sales in 2003 were approximately $88.8 million, with $82.5 million of that coming from the dairy industry. Columbia County follows at $12.6 million, with $9.4 million from specialty products, and Clatsop County at $6.6 million, $2.4million from specialty products, in total 2003 gross farm product sales (Oregon State University, 2004).

The North Coast Basin includes five major hydrologic areas as described by the U.S. Geological Service, and are named for their major rivers. Moving north to south, they are:

Lower Columbia - Clatskanie	301.9 square miles
Lower Columbia - Youngs	323.6
Nehalem	850.4
Necanicum	129.1
Wilson-Trask-Nestucca	964.1

North Coast Basin agriculture is located primarily on the rich alluvial floodplains of the area's many river systems. The steep slopes of the uplands provide naturally high levels of sediment and organic material to the alluvial plains. Mainly derived from basalt, tuff, sandstone, and siltstone bedrock, level floodplain soils have developed in sediments deposited by the region's waterways. These alluvial floodplains encompass the most fertile soils in the region. However, some areas are influenced by tides and require drainage and diking for maximum agricultural production.

Much of the agricultural lowland in the area was originally covered by riparian and tidal forests of cottonwoods, spruce, hemlock, maple, alder, yellow fir, cedar, and crab apple, as well as various understory species (Benner, no date). In the 1850s European-American settlers recognized the great agricultural potential of the lowlands, and began clearing the forest lands, installing drainage ditches, dikes, levees, and tide gates. These actions made the rich soils available for row crops and pasture. Significant lowland areas and intertidal and freshwater wetlands were cleared by the early 1900s. This made much land available for agricultural production, but changed the water flow, sedimentation patterns, and fish habitat.

In the North Coast Basin floodplains, the water table is often near the soil surface from late fall through late spring. In the lowlands, floodwaters erode and scour the alluvial topsoil and create channels. Because streambanks in the floodplain are noncohesive and friable, streambanks naturally erode easily during flooding. Without riparian vegetation, this process can be exacerbated, but it may occur even if riparian vegetation is present.

North Coast Basin watersheds are disturbance driven systems. Large pulses of sediment are delivered into North Coast Basin waterways due to a high density of naturally occurring landslides in the basin (C. Jasper, Soil Scientist, USDA NRCS, Tillamook, Oregon, pers. comm.). These disturbances erode streambanks and alter established channels, resulting in river systems naturally high in sediment movement.

Table 1: North Coast Basin Farm Acres, Farm Size, and Major Agricultural Products

	Tillamook	Columbia	Clatsop	Sauvie Island
Total Farm Acres[1]	35,600	65,600	24,700	12,000[4]
Average Farm Size[1] (acres)	114	96	99	200-700[4]
Median Farm Size[1] (acres)	76	34	50	N/A
Average Net Cash Return/Farm[1]	$41,900	$13,600	$1,600	N/A
Hay & forage[2] (harvested acres)	9,750	11,490	4,700	3,000[5]
Small fruits & berries[2] (harvested acres)	____	131	55	190[5]
Field Crops[2] (harvested acres)	____	190	____	1,500[5]
Grass & legume seeds[2] (harvested acres)	____	250	____	500[5]
Vegetables [5] (harvested acres)	____	____	____	3,200[5]
Milk cows (total)[3]	23,100	750	800	____
Beef cows (total)[3]	1,050	5,000	3,000	1,000[5]
Mink (total)[3]	present	present	14,000	____
Sheep & lambs (total)[3]	125	1,000	800	600[5]

[1]USDA National Agricultural Statistics Service, 1997 Census of Agriculture-County Data.
[2]Oregon State University Extension Service, 1997 Oregon County and State Agricultural Estimates.
[3]Oregon State University Extension Service, 1997 Oregon Agricultural Information Network County Report.
[4]Fred Cholick, Sauvie Island Drainage District, estimates of farm size, pers. comm.
[5]Oregon State University Extension Service, 1999 estimates of extension staff. Estimates are for comparison purposes.
"____" indicates zero production or too little production to report.

INDIVIDUAL COUNTY AND WATERSHED INFORMATION

Columbia County

The major subbasins in Columbia County are the Clatskanie River watershed and the Nehalem River watershed. Columbia County waterways typically have high volume, fast and flashy winter flows with low and slow summer flows. Land use along the Clatskanie River and Nehalem River revolve around timber, with beef cattle and hay making up the bulk of agricultural land use.

There are 13 drainage districts in Columbia County, mainly along the Columbia River. Drainage districts, formed to protect and drain agricultural lands, cover approximately 15,000 to 20,000 acres, including an estimated 6,000 acres of hybrid poplars. Winter storm runoff is drained mainly via large pumps (W. Eagle, Soil Conservationist, USDA NRCS, St. Helens, pers. comm.). These districts encompass much of Columbia County's agricultural production and most of its most productive soils.

Sauvie Island

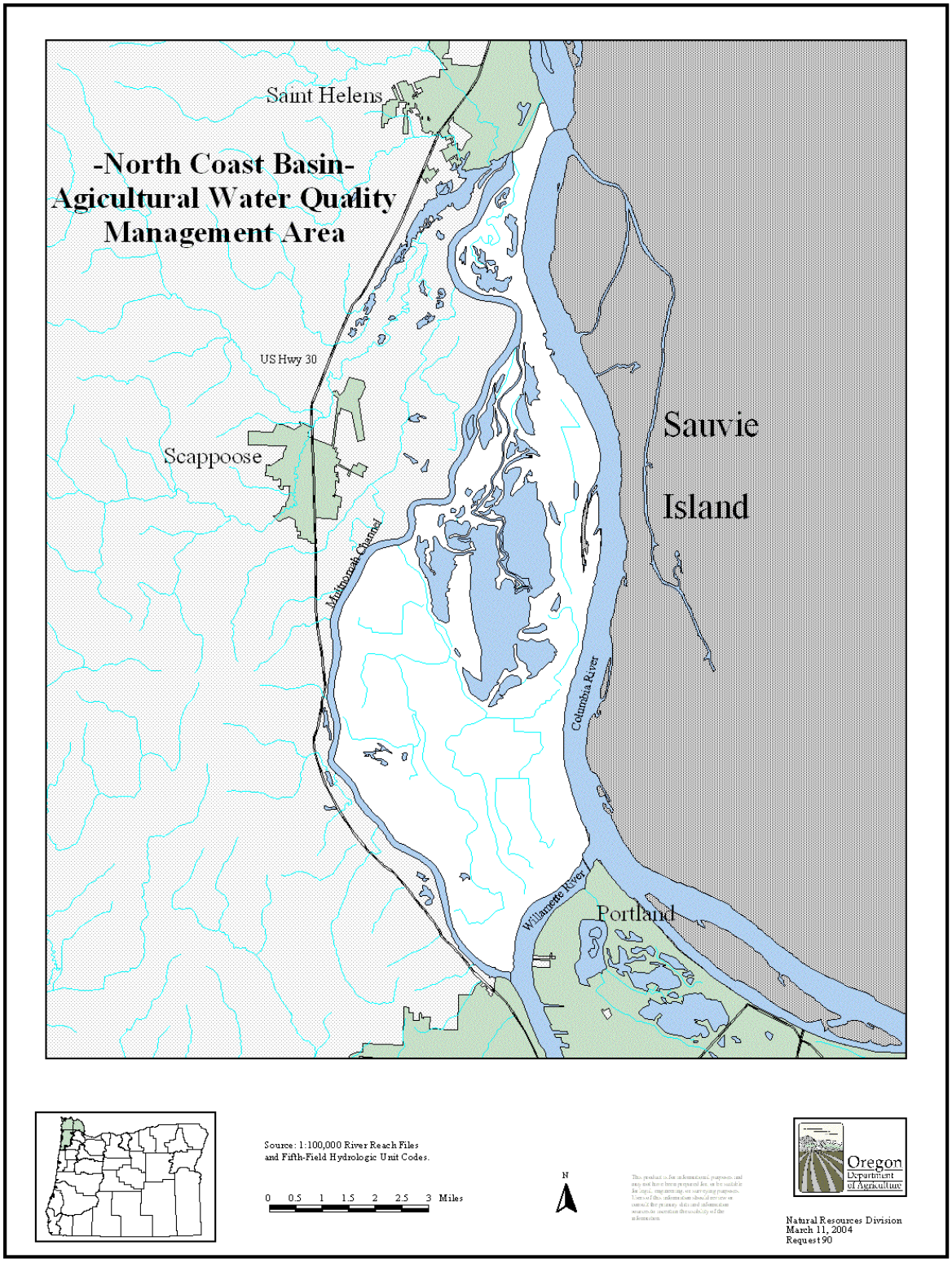
Sauvie Island straddles the county line shared by Columbia and Multnomah Counties. The Willamette River flows toward Sauvie Island from the south. Flowing west, the Columbia River converges with the Willamette River at Sauvie Island, and the Multnomah Channel forks from the Willamette and flows around the west side of the island and then meets the Columbia at the northern end (Figure 2).

Before the application of modern agricultural activities, the Gilbert River was the island's greatest waterway, serving as a seasonal high water channel with relatively low summer flow. In 1921 landowners agreed to build a 21-mile long dike to protect 4,000 acres of farmland from flooding. In 1940 Congress approved funding for 19 more miles of dike, protecting an additional 12,000 acres (Canniff, 1981). For the first 100 years after European-Americans settled the area, dairy farming was the island's largest agricultural producer.

Today, Sauvie Island produces over 30% of Multnomah County's agricultural product. Major crops are grains, potatoes, cabbage, cucumbers, corn, cantaloupe, and young trees. Truck farms and u-pick operations are common, and provide a fun day in the sun for local urban dwellers (Canniff, 1981). Over half the island is in the Sauvie Island Wildlife Management Area.

The Columbia and Sauvie Island Drainage Districts encompass all agricultural lands. Both drainage districts use the old Gilbert River channel for water transport. There are no upland stream flows, and storm and subsurface winter runoff is pumped from the districts via very large capacity pumps.

Figure 2: Sauvie Island



Clatsop County

Major sub-watersheds in Clatsop County are the Youngs River and the Nehalem River. The Necanicum River is the major waterway in the southwest of the county, draining into the Pacific Ocean. These and other Clatsop County waterways have high volume, fast and flashy winter flows with low and slow summer flows. The Brownsmead tidal flats along the Columbia River is a primary agricultural pasture area.

The Nehalem River flows easterly from steep gradient headwaters in eastern Tillamook County into Washington County, then north and west into and through Columbia County into Clatsop County. Near its junction with Highway 26 it slows. Through much of Clatsop County the Nehalem is a flat, wide, slow-moving waterway, with large winter flows. In the summer, flows are narrow and of little volume. In wide floodways, the channels are often too wide for existing riparian vegetation to provide significant shade.

In wide floodways, the Nehalem has naturally low flows and warmer stream temperatures (W. Eagle, Soil Conservationist, USDA NRCS, St. Helens, pers. comm.). These characteristics continue as the Nehalem flows south into Tillamook County and into Nehalem Bay, where stream temperatures are moderated by tidal influence.

There are 16 drainage districts in Clatsop County, located primarily along the Columbia River. Drainage districts have been established to maintain agricultural production, including an estimated 5,000 acres of hybrid poplars. Winter storm runoff is controlled via large tide gates (W. Eagle, Soil Conservationist, USDA NRCS, St. Helens, pers. comm.). These drainage districts encompass much of Clatsop County's productive agricultural soils.

Tillamook County

Major subbasins in Tillamook County are: the Nehalem as it enters from Clatsop County in the north; the Tillamook Bay Basin and its five major rivers; and the Nestucca subbasin.

Tillamook soils are very unique, with high phosphate and nitrate retention capability. Much of the upper Tillamook watersheds have Andisol soils, a very rare and young soil type. It is expected that this is what gives some of the terrace and floodplain agricultural soils their unique characteristics. These soils are naturally high in Phosphorus (P), and will bind up much of added P, thus making it unavailable for plant growth. Andisols and Andisol-type soils also have anion exchange capacity (i.e. they will adsorb negatively charged ions such as nitrate (NO3-). Thus, Tillamook soils are much more likely to take up nitrate, reducing the likelihood of nitrate leaching (C. Jasper, Soil Scientist, USDA NRCS, Tillamook, Oregon, pers. comm.).

Of the five rivers in the Tillamook watershed, the Tillamook River flows through the most agricultural acres of the five Tillamook coastal plain rivers. It is also the slowest with the most meanders, making its way through the area's poorest drained soils. The other four major rivers emanate from steeper watersheds and move much faster through the system to the bay. Most dairies are in the Tillamook Basin, with fewer in the lower end of the Nestucca watershed, centered around the town of Cloverdale. There are nine drainage districts in Tillamook County, incorporating several hundred acres in tidal lands. It is estimated that at least one-quarter of Tillamook

agricultural lands are in these drainage districts (B. Pedersen, Basin Team Leader, USDA NRCS, per. comm.).

WATER QUALITY PARAMETERS OF CONCERN

Many waterbodies throughout the North Coast Basin are water quality limited for one or more parameters. Oregon DEQ is required to submit a list of these waterbodies to US Environmental Protection Agency (USEPA) every two years under section 303(d) of the Federal Clean Water Act. Parameters of concern in the North Coast Basin are: temperature, bacteria, sedimentation, and dissolved oxygen.

In response to these listings, the Oregon Department of Environmental Quality has developed total maximum daily loads (TMDLs) for some of these parameters that apply to the entire north Coast Basin. TMDLs limit the total amount of a pollutant that can be discharged to a waterbody, and allocate the remaining capacity of these pollutants (loading allocations) to various categories of land use. In general, loading allocations for these parameters have been developed for each subbasin. Allocations are generally expressed as percentage reductions from existing conditions that would be required to meet water quality standards. The TMDL allocations have been specifically designed so that when attained, waterbodies of the North Coast Basin will meet water quality standards. The following recommendations may be used as a guide for landowners in meeting the prohibited conditions and TMDL allocations for agriculture.

Stream temperature is affected by shade, channel morphology, groundwater influence, as well as direct discharges from municipal and industrial sources. Allocations designed to meet temperature standards reduce solar radiation, and are expressed as percent effective shade that a given site is capable of providing. Shade at a given location is controlled by many factors acting in concert, including vegetation, channel width, topography, latitude, and others physical features. Shade curves have been developed that provide shade targets for streams of various widths and orientations. Small streams (0-20 feet) should be in the range of 90% effective shade or greater. Effective shade targets are as low as 40% on the widest streams owing to the inability of tall trees to shade the entire width.

Bacteria allocations calling for the reduction of loads from agricultural and other sources have also been established. Target runoff concentrations generally call for reductions of 70-90% relative to current conditions.

There are three documents available that describe conditions and pollutant sources, and include allocations of these pollutants (temperature, sedimentation, and bacteria) among sources. These documents and TMDLs are:

Tillamook Bay Watershed TMDLs
Temperature and Bacteria
Approved by USEPA 7/31/2001

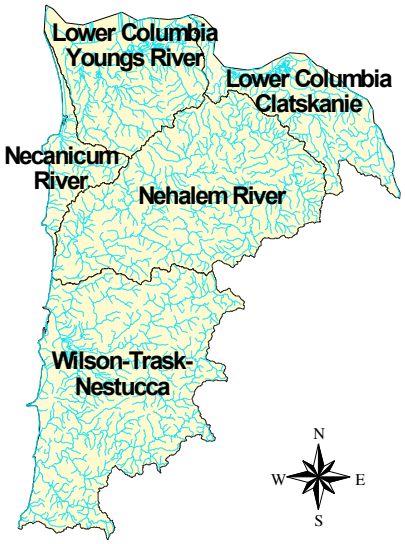
Nestucca Bay Watershed TMDLs
Temperature, Bacteria, and sedimentation
Approved 5/13/2002

North Coast Subbasins TMDLs (including Nehalem, Necanicum, Lower Columbia-Youngs and Lower Columbia-Clatskanie Subbasins)
Temperature and Bacteria
Approved 8/20/2003

These TMDLs cover all areas in the North Coast Basin having listings for temperature, bacteria, and sedimentation and are available on the DEQ agency website at:
http://www.deq.state.or.us/wq/TMDLs/TMDLs.htm

Remaining Listings Requiring TMDLs Include:

Parameter	Number of Listings
Lower Columbia – Youngs Subbasin	
Aquatic Weeds	2
Dissolved Oxygen	5
Metals	2
Lower Columbia – Clatskanie Subbasin	
Dissolved Oxygen	2
Biological Criteria	1
Necanicum Subbasin	
	No Listings
Tillamook Subbasin	
Dissolved Oxygen	11
Iron	1



BENEFICIAL USES ADVERSELY AFFECTED

Beneficial uses are defined by federal law and include recreation, aquatic life, shellfish harvesting and consumption, fisheries, agriculture (e.g., irrigation and livestock watering), and drinking water. Agricultural production is dependent on clean water, and it is important for the health of farm families and their communities.

There are many beneficial uses that show negative impacts from failure to meet water quality standards. These uses are wide ranging, and include those for humans as well as animals. Table 2 shows the impacted beneficial uses associated with violating water quality standards. When there are several beneficial uses in a river or stream, federal law requires the states to protect the most sensitive of these beneficial uses.

Perhaps the most sensitive beneficial uses impacted by poor water quality in the North Coast Basin are salmonid fish spawning and rearing, and resident fish and other aquatic life survival. The decline of Pacific salmon populations is a driving force behind much of Oregon's water quality efforts. Salmon are considered an indicator species of the health of coastal watersheds. The Oregon Plan for Salmon and Watersheds (Oregon Plan) was developed to protect and restore viable salmon populations in part by protecting watersheds. The Agricultural Water Quality

Table 2: Water Quality Parameters and Impacted Beneficial Uses

Water Quality Parameter	Impacted Beneficial Use
Bacteria, fresh water *e.coli*.	- human water contact recreation
Bacteria, bay fecal coliform	- human consumption of shellfish
Temperature	- resident fish & other aquatic life survival - salmonid fish spawning & rearing
Aquatic Weeds	- human water contact recreation - aesthetics - fishing & boating
Dissolved Oxygen	- resident fish & other aquatic life survival - salmonid fish spawning & rearing
Habitat Modification	- resident fish & other aquatic life survival - salmonid fish spawning & rearing
Sedimentation	- resident fish & other aquatic life survival - salmonid fish spawning & rearing
Flow Modification	- resident fish & other aquatic life survival - salmonid fish spawning & rearing

Oregon's 1998 Section 303(d) List of Water Quality Limited Waterbodies, 1999. Oregon Department of Environmental Quality.

Management Act of 1993 (Senate Bill 1010) has been incorporated into the Oregon Plan for Salmon and Watersheds to be agriculture's response to water quality issues associated with the salmon decline. This AgWQM Area Plan and associated Area Rules (OARs) reflect the area's agricultural commitment to implementing the Oregon Plan. Other volunteer efforts through the Soil and Water Conservation Districts (SWCDs) and watershed councils further represent agriculture's strong role in reducing water pollution where necessary.

The plight of salmon is well documented. In the late 1800s, over-fishing caused a rapid decline of Chinook salmon in Oregon. Today, Coho, Chinook, steelhead, and coastal cutthroat trout populations in the North Coast Basin show similar signs of trouble (Table 3). No single cause is to

blame for decline of the salmon. Human population growth, dams and other river modifications, agriculture, industry, logging, mining, and grazing have all played a part in the salmon's decline.

The effect of these factors on the health of salmon has accentuated the impact of predator populations and poor ocean conditions. In some cases, human activity has actually aided predator ability to feed on salmon as they migrate to the ocean. Aiding and restoring salmon and salmon habitat is a complex issue with many factors.

Improving the health of pacific salmon populations will require a broad based action plan and the commitment of the entire community. This plan outlines how the agricultural community will address these issues and outlines how it will work toward salmon recovery.

North Coast Basin agriculture has an important role to play in water quality improvements and salmon recovery. North Coast Basin crop and pasturelands are mainly located in the lowland floodplains where stream flow is slow and streambanks are formed by alluvial deposits. These areas contain a diverse collection of water dependent animal and plant species. These agricultural lands often encompass river mainstem reaches that are vital salmon migration routes (State of Oregon, 1998).

Table 3: Salmonid Federal Endangered Species Act Listing Status along the North Coast Basin

Species	**Area**	
	Oregon Coast	**Lower Columbia River**
Coho	Threatened	Candidate
Chum	_____	Threatened
Chinook	_____	Threatened
Steelhead	Candidate	Threatened

USFWS Threatened and Endangered Species System Listings by State and Territory as of 02/05/2004
Personal communication with Chris Knutsen, November 2003

Table 4 reviews the major salmonid (salmon as well as steelhead and sea run cutthroat trout) species of the North Coast Basin and their habitat requirements. In general, current science indicates that salmon require cold water free of excessive sediment, streams with plenty of deep pools and clean gravel, and streambanks with trees and shrubs that provide food and important hiding places for young salmon.

While very well managed livestock access to riparian areas can prove beneficial, grazing and pasture management can affect salmonid habitat and water quality. Unless controlled, livestock will congregate in riparian areas, damage native vegetation, and trample soil. Unrestricted livestock access to streams can result in decreased vegetative cover, reduced organic litter, loss of trees and bushes through browsing, and reduced natural establishment of new plants. This in turn may reduce streambank stability, increase streambank erosion, and increase in stream water temperatures (State of Oregon, 1998).

The effects of cropping in and near riparian areas can be more severe that those of grazing. Soil preparation and cropping can permanently remove riparian vegetation, and soil disturbance can occur several times each year. This may result in complete loss of stream shading, significant increases in sedimentation, and decreases in streambank stability. In addition, the likelihood increases that agricultural chemicals will enter waterways during runoff events (State of Oregon, 1998).

Management changes in other land uses will also be needed if this area's water quality is to improve. Some of the nonagricultural sources of water pollution include municipal sewage treatment plants, leaking on-site septic systems in rural areas, forest roads and legacy issues, and residential homes located too close to streams. Localized high populations of geese have the potential to overgraze isolated areas and serve as sources of fecal coliform contributions. Growing deer and elk populations, in addition to recovering beaver populations, challenge efforts at riparian restoration in both agricultural and nonagricultural areas. However, it is expected that through cooperation and strong commitments to the Oregon Plan, our communities will improve water quality.

Table 4: Salmonid Habitat Requirements

			Salmonid Habitat Requirements Northern Oregon Coastal Streams						
	Migration	Spawning	Location	Gravel Size		Water Temperature		Fry Habitat	Juvenile Habitat
					Spawning	Incubation	Rearing		
Chinook-Fall	Sep-Dec	Oct-Jan	Mainstem & large tributaries	Pea to Orange	42°F-57°F	32°F-68°F	45°F-58°F; growth stops @ 69°F; lethal @ 77°F	Stream; river edges	Deeper water in main river channel
Chinook – Spring	Apr – Jun	Sep – Oct	Upper mainstem streams	Pea to Orange	42°F-57°F	32°F-68°F	45°F-58°F; growth stops @ 69°F; lethal @ 77°F	Stream; river edges	Deeper water in main river channel
Coho	Sep – Jan	Oct – Jan	Small tributaries	Pea to apple	40°F-57°F	40°F-56°F	53°F-48°F; growth stops @ 69°F; lethal @ 78°F	Backwater pools & stream edges	Pools, off chnnel alcoves
Chum	Nov – Dec	Nov – Dec	Lower mainstem and tributaries	Pea to Orange	45°F-55°F	40°F-56°F	44°F-48°F; growth stops @ 69°F; lethal @ 77°F	Move directly to estuary	High ediment will kill
Steelhead – winter	Nov - May	Jan – May	Small tributaries	Pea to apple	39°F-49°F	40°F-56°F	45°F-58°F; growth stops @ 69°F; lethal @ 78°F	Stream edges	Pools, rifles, & runs of tributary streams, large woody debris
Steelhead – Summer	May – Jul	Jan – Apr	Small tributaries	Pea to apple	39°F-49°F	40°F-56°F	45°F-58°F; growth stops @ 69°F; lethal @ 75°F	Stream edges	Pools, rifles, & runs of tributary streams, large woody debris
Sea Run Cutthroat Trout	Un - Oct	Dec - Feb	Small headwater tributaries	Pea to golf ball	43°F-63°F	43°F-63°F	49°F-55°F; growth stops @ 69°F; lethal @ 73°F	Stream edges & backwater pools, large wood important	Pools and side channels

Adapted from Salmon Habitat Requirements For Northern Oregon Coastal Streams, Tillamook Bay National Estuary Project. 1997. This information is general, and will vary throughout the North Coast Basin.

POLLUTION PREVENTION AND CONTROL MEASURES

The Oregon Department of Environmental Quality (DEQ) has determined that many of the State's waters do not support designated beneficial uses as a result of factors associated with water quality. Once the DEQ has determined that a water body is "water quality limited" as required by the federal Clean Water Act section 303(d), it is placed on the "303(d) list." DEQ has developed Total Maximum Daily Loads (TMDLs) for temperature, bacteria, and sedimentation for North Coast subbasins that had listings for these parameters (see Water Quality Parameters of Concern). Plans to meet Total Maximum Daily Load (TMDL) - allocations are required for industry, municipalities, forestry, and agriculture to improve water quality so that all beneficial uses are supported. The North Coast Basin AWQMAP is designed to meet TMDL allocations.

As part of the federal Coastal Zone Amendments Reauthorization Act (CZARA), in 1990 Congress enacted Section 6217(g) to specifically address the impacts of nonpoint source pollution in coastal areas. Each state with an approved coastal zone management program must develop and submit to the U.S. Environmental Protection Agency (USEPA) and the National Oceanic and Atmospheric Administration (NOAA) a Coastal Nonpoint Pollution Control Program. The purpose of the program "shall be to develop and implement management measures for nonpoint source pollution to restore and protect coastal waters, working in close conjunction with other state and local authorities." Under "A Pollution Prevention and Control Program for Oregon's Coastal Waters" the State of Oregon presented agricultural management measures to meet the requirements of the CZARA Section 6217(g). These measures have been found to be effective to control and prevent agricultural water pollution and are listed in Attachment C.

These Pollution Prevention and Control Measures (PCMs) have been developed to help agricultural operators reduce agricultural water pollution and, combined with pollution control efforts from other land uses in the planning area, achieve water quality standards to be addressed within the TMDL parameters when the DEQ defines them. The PCMs have also been designed to implement the agricultural measures required by Section 6217(g) of CZARA. The PCM identifies Required and Prohibited Conditions from the North Coast Basin Agricultural Water Quality Management Area Rules (Area Rules), and suggests ways they may be achieved through flexible management solutions.

Agricultural landowners should review the Area Rules -- cited in the box within each PCM -- to evaluate their operations and determine if they are in compliance with the rules, and review the PCMs for ideas how to improve water quality through their management activities.

Based upon this assessment, landowners should develop their own site-specific adaptive management strategy to meet these conditions. The PCMs are intended to be flexible enough for landowners to develop feasible and affordable approaches to meet water quality standards.

Healthy Riparian Streambank Condition

Required and Prohibited Conditions

OAR 603-095-0840

(2) Healthy Riparian Streambank Condition. Effective upon rule adoption.

(a) Allow the natural and managed regeneration and growth of riparian vegetation -- trees, shrubs, grasses, and sedges -- along natural waterways (as defined in OAR 141-085-0010(27)) to provide shade to moderate water temperatures and bank stability to maintain erosion near background levels.

(b) The technical criteria to determine compliance with OAR 603-095-0840(2)(a) are:

(A) Ongoing renewal of riparian vegetation that depends on natural processes (including processes such as seed fall, seed bank in soil, or sprouting from roots, rhizomes, or dormant crowns) is evident.

(B) Ongoing growth of riparian vegetation that has a high probability of remaining or becoming vigorous and healthy is evident.

(C) Management activities minimize the degradation of established native vegetation while allowing for the presence of nonnative vegetation.

(D) Management activities maintain at least 50% of each year's new growth of woody vegetation -- both trees and shrubs.

(E) Management activities are conducted in a manner so as to maintain streambank integrity through 25-year storm events.

(c) Exemptions:

(A) Levees and dikes are exempt from the Healthy Riparian Streambank Condition OAR 603-095-0840(2)(a) and (b), except for areas on the river-side of these structures that are not part of the structures and which can be vegetated without violating U.S. Army Corps of Engineers vegetation standards.

(B) Drainage areas where the only connection to other waterbodies are through pumps shall be exempt from the Healthy Riparian Streambank Condition OAR 603-095-0840(2)(a) and (b).

(C) Access to natural waterways for livestock watering and stream crossings are allowed such that livestock use is limited to only the amount of time necessary for watering and crossing the waterway.

(D) Drainage and irrigation ditches managed in compliance with OAR 603-095-0840(3) are exempt from the Healthy Riparian Streambank Condition OAR 603-095-0840(2)(a) and (b).

Benefits of a Healthy Riparian Streambank Condition

In the landscape, riparian areas comprise a small percentage of total land area but are essential for maintaining water quality and quantity, for ground water recharge, and for dissipating stream energy. It is anticipated that the Healthy Riparian Streambank Condition (HRSC) will protect and enhance water quality through establishment, maintenance, and protection of healthy riparian areas on agricultural lands.

HRSCs benefit both the landowner and the environment. Riparian areas are often indicators of watershed health, as they are among the first landscape features to reflect damage from improper management or natural events within the watershed (National Riparian Service Team, 1997).

Landowners benefit from riparian streambank stabilization through soil deposition on streambanks and vegetative bank stabilization, prevention or rate reduction of crop and pasture land damaged or lost to floods, and prevention or reduction of flood debris deposited on fields. The environmental benefits of a HRSC include more shade to improve water temperature moderation and reduce heating, enhanced habitat for wildlife, and a reduction in the quantity of sediment, chemicals, bacteria, and nutrients contained in surface water runoff reaching a stream.

General Description of Healthy Riparian Streambank Condition

A stream in Healthy Riparian Streambank Condition (HRSC) provides the following functions:

- shade to help maintain cool water temperatures;
- streambank stabilization and protection;
- filtering of sediment, animal waste, and chemicals in surface runoff; and
- sources of food, hiding, and resting places for fish, including large wood for fish habitat.

To provide these functions, North Coast Basin riparian areas need the following:

- Complex Vegetation Structure and Diverse Species Composition
  - The riparian area supports a diverse assortment of plants, trees, shrubs/groundcover, in two or more vertical layers. Riparian areas should be dominated by native species with a diverse age class distribution. Where suitable, conifers are the preferred dominant tree species.
- Vegetative Cover
  - Vegetation should cover approximately 90% of the soil surface, with less than 10% bare soil or impervious surfaces.
- Width
  - Riparian area width should be sufficient to fulfill site-specific functions, and meet Healthy Riparian Streambank Conditions.
- Stream Shading
  - Riparian vegetation should shade 75% of a Natural Waterway where the water body is not too wide and when achievable in the summer.
- Streambank Stability
  - Streambanks should be stable without the use of rip rap or other artificial structures when feasible. Streambank vegetation is comprised of those plants and plant communities that have root masses capable of withstanding 20 to 25 year storm events.

The Conservation Reserve Enhancement Program (CREP) is a State-Federal partnership that provides a modest rental payment and substantial cost share to encourage protection of riparian areas on agricultural lands. Participation in this program would meet or exceed the Healthy Riparian Streambank Condition. Landowners are encouraged to contact the local Soil and Water Conservation District or USDA Natural Resources Conservation Service office for more information. See Attachment B for contacts information.

Potentially Impacted 303(d) List Parameters
Water temperature, bacteria, sedimentation, and habitat modification.

Definitions

Dike: A structure that encloses or encircles a patch of ground, such as a former tidal wetland, preventing tidal flooding (Tillamook Bay National Estuary Project, 1998b).

Levee: A linear structure, generally placed along a riverbank, which prevents flooding of a former floodplain during periods of high water (Tillamook Bay National Estuary Project, 1998b).

Native: OAR 603-073-0001(9). Any indigenous or resident species currently or historically found in this state.

Natural Waterways: OAR 141-085-0010(27). As used in ORS 196.800(14), means waterways created naturally by geological and hydrological processes, waterways that would be natural but for human-caused disturbances (e.g. channelized or culverted streams, impounded waters, partially drained wetlands or ponds created in wetlands) and that otherwise meet the definition of waters of the state, and certain artificially created waterways included under the definition of "Other Bodies of Water."

Other Bodies of Water: OAR 141-085-0010(29), means
(a) Wetlands and ponds created by human activity entirely from uplands, unless specified in subsection (c) below, that are:
(A) Greater or equal to an acre; or
(B) Protected as a water resource in the local comprehensive plan; or
(C) Compensatory mitigation sites.
(b) Created stream channels or ditches that:
(A) Are constructed from upland;
(B) Have food and game fish; and
(C) Have free and open connection to other natural waters.
(c) Other bodies do not include wetlands or ponds created by human activity entirely from uplands for the purpose of:
(A) Waste treatment;
(B) Storm water treatment;
(C) Farm or stock watering;
(D) Settling of sediment;
(E) Cooling water;
(F) Surface mining where the site is protected for interim wetland values or not protected as a wetland resource in the local comprehensive plan; or
(G) Log ponds not protected for wetland values in the local comprehensive plan.

Riparian Vegetation: OAR 603-095-0010(38). Plant communities consisting of plants dependent upon or tolerant of the presence of water near the ground surface for at least part of the year.

Wetlands: OAR 141-085-0010(40). Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Implementation Time Frame:
Upon rule adoption.

Drainage and Irrigation Ditches

Required and Prohibited Conditions

OAR 603-095-0840

(3) Drainage and irrigation ditches (channels legally constructed). Effective upon rule adoption.

(a) Construction, maintenance, and use of surface drainage ditches shall not result in sediment delivery to waters of the state from soil erosion caused by excessive channel slope, unstable channel cross section, or placement of disposed soils.

(b) Ditch bank vegetation shall be present to stabilize earthen ditch banks.

(c) Technical criteria to determine compliance with OAR 603-095-0840(3)(a) and (b) are:

(A) Construction and maintenance of drainage and irrigation ditches utilize ditch slope and ditch cross section that are appropriate to the site.

(B) Disposed soils from construction and maintenance of drainage and irrigation ditches are placed such that sediment delivery to waters of the state from the placement of these soils is consistent with natural background sediment delivery from these sites.

(d) Exemptions:

(A) Bank vegetation damaged and soils exposed during maintenance (as defined in OAR 141-085-0010(22)) and construction, in accordance with Division of State Lands rules. Bank vegetation must be reestablished as soon as practicable after construction and maintenance are completed. However, sediment delivery to waters of the state shall not result from inappropriate ditch slope and cross section or from placement of disposed soils.

Benefits of Drainage and Irrigation Ditches

Ditches provide important drainage functions for agricultural lands. It is anticipated that this measure will minimize impacts on fish and water quality from agricultural ditches while preserving landowner ability to effectively construct, maintain and use their ditches.

Appropriate construction, use, and maintenance of ditches will protect waters of the state from erosion, sediment delivery, and sloughing from ditches. The environmental benefits of proper drainage and irrigation ditch operation include a reduction in sediment and bacteria conveyance to the state's waters.

General Description of Satisfactory Drainage and Irrigation Ditch Conditions

The following characteristics are found in a well-maintained and operated drainage or irrigation ditch:

- Ditches are protected from erosion, sediment delivery, and sloughing with appropriate vegetation;
- Ditch side vegetation does not restrict water flow or prohibit ditch maintenance.

Ditches that provide important drainage functions for agricultural land require periodic maintenance. Although ditch bank vegetation may be damaged during maintenance, care should be taken to minimize this damage and provide for revegetation.

When required, either a joint permit from the U.S. Army Corps of Engineers and the Division of State Lands (DSL), or a General Authorization permit from DSL, must be obtained to clean or dig new ditches. Suggested management strategies can be found in Attachment A, and a list of resources can be found in Attachment B of this Area Plan.

Potentially Impacted 303(d) List Parameters
Sedimentation and bacteria.
Definitions

Maintenance: OAR 141-085-0010(22). The repair, rehabilitation or reconstruction of a structure pursuant to the provisions of ORS 196.905.

Natural Waterways: OAR 141-085-0010(27). As used in ORS 196.800(14), means waterways created naturally by geological and hydrological processes, waterways that would be natural but for human-caused disturbances (e.g. channelized or culverted streams, impounded waters, partially drained wetlands or ponds created in wetlands) and that otherwise meet the definition of waters of the state, and certain artificially created waterways included under the definition of "Other Bodies of Water."

Waters of the State: ORS 468B.005(8). 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.

Wetlands: OAR 141-085-0010(40). Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Implementation Time Frame
Upon rule adoption.

Tide Gates

Required and Prohibited Conditions

OAR 603-095-0840
(4) Tide Gates. Effective upon rule adoption.
(a) Tide gates shall open and close as designed.

Benefits of Tide Gates in Satisfactory Condition

It is anticipated that this measure will improve water quality upland of tide gates where it is degraded and also improve fish passage. This measure will also improve the drainage and flood management functions of malfunctioning tide gates.

Tide gates in satisfactory condition serve several key functions. Tide gates that open and close as designed improve drainage, protect water quality, support agricultural flood management, and provide the means for fish to access habitat and refuge areas that may be present behind the gate. Poorly operating tide gates can reduce water column exchange that results in stream and slough water that exceeds water quality standards, most notably that for temperature and dissolved oxygen.

This measure does not require the replacement of existing tide gates, however, it does encourage landowners to replace malfunctioning and "fish unfriendly" tide gates in a time and manner determined by the landowner. Landowners are encouraged to replace poorly operating tide gates with "fish friendly" tide gates that provide improved fish access to vital rearing and winter habitat that may be present upland of the tide gate. Landowners are encouraged to participate with local watershed councils and Soil and Water Conservation Districts (SWCD) to obtain cost-share funding to utilize the best "fish-friendly" tide gates available. Contact the local SWCD for more information (Attachment B).

General Description of Tide Gates in Satisfactory Condition

Tide gates in satisfactory condition are those that open and close as designed and are maintained regularly. They provide a healthy water column exchange where appropriate, such as in sloughs, though this may not be desired in drainage canals. Lightweight aluminum tide gates function at lower tides and mimic natural drainage patterns better than do older, heavy, iron and steel gates.

Potentially Impacted 303(d) List Parameters
Temperature, Dissolved Oxygen, Habitat Modification.

Definitions

Tide gate: A flap gate mounted on a culvert which runs through a levee or dike. When the water level outside the structure is higher than inside, tide gates close, preventing flooding of protected land. When the water level inside the levee or dike is higher, tide gates open, allowing water to flow off the protected land. (Tillamook Bay National Estuary Project, 1998b)

Fish friendly tide gate: Tide gates identified by the Performance Partnership of Tillamook County, USDA NRCS , and/or the Oregon Department of Fish and Wildlife (ODFW) that have adequate designs to allow fish passage through the gate.

Implementation Time Frame
Upon rule adoption.

Pesticide Management

Pesticide control is presently regulated by ODA under ORS 634 and OARs 603-057. Waterbodies in the North Coast Basin have not been identified on the 303(d) list for pesticide contamination. There are no Required and Prohibited Conditions for this measure.

Benefits of Appropriate Pesticide Use

It is anticipated that this measure will encourage the appropriate management of pesticides, and to support the application of pesticides when economically beneficial to the producer, while reducing the risk of pesticide contamination of surface water and ground water.

Carefully following label instructions and implementing Integrated Pest Management strategies can generally reduce pesticide use, increase yields, increase net returns, minimize surface and ground water exposure to pesticides, and decrease economic risk.

General Description of Appropriate Pesticide Use

Proper pesticide use begins with reading the label on the container, and following the instructions. As required by ORS 634, users of pesticides must follow label recommendations for both restricted and non-restricted use pesticides.

Agricultural users of pesticides are encouraged to:

a. Evaluate pest problems, previous pest control measures, and cropping history of the site;
b. Evaluate the soil and physical characteristics of the site including mixing, loading, and storage areas for potential leaching or runoff of pesticides. If leaching or runoff is found to occur, steps should be taken to prevent further contamination;
c. Use Integrated Pest Management strategies that:
    1. Apply pesticides when there is an economic benefit to the producer;
    2. Apply pesticides according to label requirements, efficiently, and at times when runoff losses are unlikely; and
    3. Periodically calibrate pesticide spray equipment, and use anti-backflow devices on pesticide tank-filling equipment.

Definitions

Pesticides: ORS 634.006(8)(h). Any substance or mixture of substances intended to be used for defoliating plants or for preventing, destroying, repelling or mitigating all insects, plant fungi, weeds, rodents, predatory animals, or any other form of plant or animal life which is, or which ODA may declare to be a pest, which may infest or be detrimental to vegetation, humans, or be present in any environment thereof.

Integrated Pest Management: a pest population management system that anticipates and prevents pests from reaching damaging levels by using all suitable tactics including natural enemies, pest-resistant plants, cultural management, and the judicious use of pesticides. (U.S. Environmental Protection Agency (EPA), 1993).

Implementation Time Schedule
Existing law currently in effect.

Irrigation and Water Use

Irrigation tail water has not specifically been identified as a contributing factor for the 303(d) listing of North Coast Basin waters. Nutrients and pesticides that could be transported in irrigation tail water have not been identified on the 303(d) list for the North Coast Basin waters. Furrow irrigation is rare in the North Coast, and most irrigation occurs via sprinklers on pasturelands. There are no Required and Prohibited Conditions for this measure.

Benefits of Appropriate Irrigation and Water Use

It is anticipated that this measure will reduce nonpoint pollution of waterways from sediment, particulate-bound nutrients, chemicals and metals, soluble nutrients, and bacteria while maintaining the economic feasibility of irrigation where irrigation water is applied.

Appropriate irrigation and water use benefits the environment by reducing irrigation water run-off and leaching, and total pollutant discharge from an irrigation system. Landowners benefit from appropriate irrigation and water use by maximizing water use efficiency and minimizing waste.

General Description of Appropriate Irrigation and Water Use

Agricultural irrigators are encouraged to:

a. Operate irrigation systems so that the timing and amount of irrigation water applied match crop water needs;
b. Operate chemigation systems to meet crop water needs and have any necessary tailwater management system;
c. Screen all irrigation intake openings in natural waterways to prevent the uptake or death of fish; and
d. Incorporate irrigation monitoring to determine uniform application rates.

Definitions

Natural Waterways: OAR 141-085-0010(27). As used in ORS 196.800(14), means waterways created naturally by geological and hydrological processes, waterways that would be natural but for human-caused disturbances (e.g. channelized or culverted streams, impounded waters, partially drained wetlands or ponds created in wetlands) and that otherwise meet the definition of waters of the state, and certain artificially created waterways included under the definition of "Other Bodies of Water."

Implementation Time Schedule
Not applicable.

Erosion and Sediment Control from Sources Beyond Streambanks

Required and Prohibited Conditions

OAR 603-095-0840

(5) Erosion and Sediment Control. Effective upon rule adoption.

(a) No cropland erosion in excess of the soil loss tolerance factor (T) for the subject field, as determined by the Revised Universal Soil Loss Equation (RUSLE) for soil loss will occur.

(A) Exceptions: The department shall establish an alternate erosion control standard for croplands which the department determines cannot practically or economically achieve the soil loss tolerance factor. Any alternate erosion control standard for croplands established by the department shall assure that delivery of sediment to adjacent water sources is reduced to the maximum extent practicable.

(b) Private roads that traverse rural lands or private roads used for agricultural activities shall be constructed and maintained such that road surfaces, fill and associated structures are designed and maintained to limit contributing sediment to waters of the state. All private roads on agricultural lands not subject to the Oregon Forest Practices Act are subject to this regulation.

(A) Exceptions: Roads subject to the Oregon Forest Practices Act.

(c) Agricultural lands shall be managed to prevent and control runoff of sediment to public road drainage systems.

(d) Except for operations governed by the Oregon Forest Practices Act, no activities related to the conversion of woodland to non-woodland agricultural uses that require removal of the majority of woody material from a parcel of land, such that the land no longer meets the definition of woodland, shall be conducted in a manner which results in the placement of soil, the delivery of sediment or the sloughing of soil into waters of the state, the initiation or aggravation of streambank erosion, or the loss of a healthy riparian streambank condition as defined in OAR 603-095-0840(2).

Benefits of Satisfactory Erosion and Sediment Control

It is anticipated that this measure will reduce sedimentation of streams while economically protecting the most valuable agricultural resource, the soil.

Proper erosion and sediment control from agricultural activities retains important soil resources on the farm and minimizes the opportunity for excess sediment to enter waterways. Normal or natural levels of sediment are vital for aquatic systems and proper river functions. However, excess sediment levels are harmful to humans and fish. Agricultural erosion and sediment control protects drinking water quality and reduces water treatment costs. Stream bottoms are protected from fine sediment that can fill streambed gravel, prevent fish from spawning, and suffocate eggs. Excessive levels of sediment may also clog fish gills.

General Description of Satisfactory Erosion and Sediment Control

Agricultural managers are encouraged to:

a. Utilize erosion control management alternatives such as maintenance of healthy and vigorous pasture, cover and green manure cropping, no till, conservation tillage, and other activities that reduce the detachment and movement of soil; and

b. Utilize sediment control management alternatives such as strip cropping, vegetative filter strips, straw bales, grass-lined waterways, and catch basins.

Potentially Impacted 303(d) List Parameters
Sedimentation, Dissolved Oxygen, Habitat Modification.

Definitions

ODA: Oregon Department of Agriculture.

Soil Loss Tolerance Factor, or "T": As used in OAR 603-095-0010(45), 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. It is estimated by the Universal Soil Loss Equation (USLE) or the Revised Universal Soil Loss Equation (RUSLE), and expressed in tons per acre per year.

Revised Universal Soil Loss Equation, or "RUSLE": OAR 603-095-0010(38). A method used to estimate soil loss by sheet, rill, and wind erosion.

Erosion, rill: OAR 603-095-0010(14). An erosion process in which numerous small channels only several inches deep are formed and which occurs mainly on recently disturbed soils. The small channels formed by rill erosion would be obliterated by normal smoothing or tillage operations.

Erosion, sheet: OAR 603-095-0010(15). The removal of a fairly uniform layer of soil from the land surface by runoff water.

Time Frame Schedule
Upon rule adoption.

Manure, Nutrients, and Other Waste

Required and Prohibited Conditions

OAR 603-095-0840

(6) Manure, Nutrients, and Other Waste. Effective upon rule adoption.

(a) No person conducting agricultural land management shall 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) No person conducting agricultural land management shall 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.

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

(d) Exceptions:

(A) Access to natural waterways for livestock watering and stream crossings are allowed such that livestock use is limited to only the amount of time necessary for watering and/or crossing the waterway.

Benefits of Manure and Nutrients

Manure and fertilizers are important nutrient sources for crop and pasture production. This measure is designed to decrease nutrient and bacteria contamination of water resulting from agricultural activities. It is a goal of this measure to minimize nutrient and bacteria contributions while allowing managed riparian grazing and providing limited livestock crossing and water access.

Appropriate manure and nutrient use can help save operators money through considering more efficient utilization of nutrients that minimize leaching from the plant root zone and losses from surface runoff and tile drainage. Reducing leaching and surface runoff will also reduce ground water and surface water pollution from agricultural activities.

General Description of Appropriate Manure and Nutrient Control

Manure and nutrients are most efficiently tracked and utilized through the development and implementation of a nutrient management plan. Landowners are encouraged to develop a nutrient management strategy that provides guidance to:

a. Apply nutrients at rates necessary to achieve realistic crop yields;
b. Improve the timing of nutrient applications. Avoid nutrient applications during periods with a high potential for leaching or runoff, identify timing and application methods to provide nutrients at rates necessary to achieve realistic crop yields, and reduce losses to the environment;
c. Use agronomic crop production technology to increase nutrient use efficiency;
d. Identify the limiting nutrient and manage to not exceed application of that nutrient (e.g. nitrogen, phosphorus, potassium) greater than the recommended rate;
e. Properly calibrate and operate nutrient application equipment;

f. Land application of manure and fertilizer should ensure all nutrients are applied in the proper amounts and in a way that controls movement of soil;
g. Tillage, crop residue management, grazing management and other agricultural activities are performed in a manner that minimizes movement of soil, organic materials, nutrients, and bacteria to surface and ground water;
h. Livestock barnyards, feedlots, drylots and other non-pasture areas should not be located adjacent to natural waterways unless a runoff control system is installed and maintained so that suspended solids are kept from waters of the state;
i. A functional and effective vegetative buffer or equally effective pollution control application should be established adjacent to waters of the state to minimize soil and manure transport to waters of the state.

Useful nutrient management information that a land manager may consider is located in Attachment A and Attachment C, subsection 3, Nutrient Management Measure. Landowners are encouraged to contact the local SWCD or USDA NRCS office listed in Attachment B for more information.

Potentially Impacted 303(d) List Parameters
Bacteria, Dissolved Oxygen.

Definitions

Manure: The fecal and urinary defecations of livestock and poultry; may include spilled feed, bedding litter, or soil (Soil Conservation Society of America, 1982).

Nutrients: Elements, or compounds, essential as raw materials for organism growth and development, such as carbon, nitrogen, phosphorus, etc. (Soil Conservation Society of America, 1982). For the purposes of this plan, manure shall be considered a source of nutrients.

Pollution or water pollution: ORS 468B.005(3). "Pollution" or "water pollution" means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses or to livestock, wildlife, fish, or other aquatic life or the habitat thereof.

Wastes: ORS 468B.005(7). "Wastes" means sewage, industrial wastes, and all other liquid, gaseous, solid, radioactive or other substances which will or may cause pollution or tend to cause pollution of any waters of the state.

Water or Waters of the State: ORS 468B.005(8). "Water" or "the waters of the state" includes 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.

Implementation Time Schedule
Upon rule adoption.

Livestock and Grazing

This Pollution Prevention and Control Measure (PCM) incorporates Area Rules (OARs) developed to address other soil and vegetative conditions. Many of the Required and Prohibited Conditions that address water quality as impacted by livestock and grazing management are described in the OARs quoted in PCMs "A" and "G."

Required and Prohibited Conditions

OAR 603-095-0840

(2) Healthy Riparian Streambank Condition. Effective upon rule adoption.

(a) Allow the natural and managed regeneration and growth of riparian vegetation -- trees, shrubs, grasses, and sedges -- along natural waterways (as defined in OAR 141-085-0010(27)) to provide shade to moderate water temperatures and bank stability to maintain erosion near background levels.

(b)Technical criteria to determine compliance:

(A) Ongoing renewal of riparian vegetation that depends on natural processes (seed fall, seed bank in soil, or sprouting from roots, rhizomes, or dormant crowns) is evident.

(B) Ongoing growth of riparian vegetation that has a high probability of remaining or becoming vigorous and healthy is evident.

(C) Management activities minimize the degradation of established native vegetation while allowing for the presence of nonnative vegetation.

(D) Management activities maintain at least 50% of each year's new growth of woody vegetation -- both trees and shrubs.

(E) Management activities are conducted in a manner so as to maintain streambank integrity through 25-year storm events.

(c)Exemptions -- any of the following are exempted:

(A) Levees and dikes are exempt from the Healthy Riparian Streambank Condition rules, except for areas on the river-side of these structures that are not part of the structures and can be vegetated without violating U.S. Army Corps of Engineers vegetation standards.

(B) Drainage areas where the only outlet to other waterbodies is through pumps shall be exempt from the Healthy Riparian Streambank Condition OAR 603-095-0840(2)(a)(b).

(C) Access to natural waterways for livestock watering and stream crossings are allowed such that livestock use is limited to only the amount of time necessary for watering and crossing the waterway.

(D) Drainage and irrigation ditches managed in compliance with OAR 603-095-0840(3) are exempt from the Healthy Riparian Streambank Condition rules.

(6) Manure, Nutrients, and Other Waste . Effective upon rule adoption.

(a) No person conducting agricultural land management shall 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) No person conducting agricultural land management shall 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.

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

(d) Exceptions:

(A) Access to natural waterways for livestock watering and stream crossings are allowed such that livestock use is limited to only the amount of time necessary for watering and/or crossing the waterway.

Benefits of Appropriate Livestock and Grazing Strategies

It is anticipated that this measure will minimize the impact of livestock on and protect riparian vegetation, maintain stable streambanks, encourage alternative and off-stream water sources, and protect and improve water quality. It is also a goal of this measure to provide for livestock crossing and water access such that large numbers of livestock do not loiter in natural waterways, while allowing managed riparian grazing.

Appropriate livestock and grazing management can benefit landowners through developing healthy and vigorous pasture grass. Utilizing grazing management alternatives can protect and improve riparian habitat, stabilize streambanks and reduce sedimentation, and minimize nutrient and bacteria access to waterways.

General Description of Appropriate Livestock and Grazing Strategies

Landowners are encouraged to develop livestock control and grazing strategies that protect water quality, streambanks, stream channels, wetlands, estuaries, ponds, lakeshores, riparian soils and vegetation, and upland areas. Some examples of suitable strategies may include:

a. Manage in-stream crossings to minimize erosion beyond background or normal conditions;
b. Manage in-stream crossings so that fish passage is not impeded as provided by ORS 498.351 - Fishway required for artificial obstruction across body of water;
c. Where riparian grazing occurs, use improved grazing management techniques such as riparian pasture delineation and management to control the timing of grazing to keep livestock off stream banks and out of waterways when they are most vulnerable to damage;
d. Maintain any pasture in the riparian area in a healthy and vigorous condition, with adequate growth going into the wet season to filter surface water; and
e. Maintain a strip of pasture on upland of the riparian area with adequate growth going into the wet season to filter surface water.

Potentially Impacted 303(d) List Parameters

Temperature, Bacteria, Dissolved Oxygen, Habitat Modification, Flow Modification.

Implementation Time Schedule

Upon rule adoption.

STRATEGY FOR ENSURING IMPLEMENTATION OF THE POLLUTION PREVENTION AND CONTROL MEASURES

Monitoring

The progress and success of implementation efforts of the North Coast Basin AgWQM Area Plan will be assessed through determination of changes in land management systems and the measurement of water quality improvement over time. This section provides a framework for designing a monitoring strategy associated with implementing this Area Plan.

Since the prevention and control measures are land condition-based they provide landowners a straightforward way to determine if their management is protective of water quality. It also provides an opportunity to monitor land condition to determine effectiveness of the North Coast Basin rules. ODA plans to evaluate landscape conditions, as funding allows, for long-term trends in riparian vegetation.

Initially, the program will focus on monitoring landscape conditions in riparian areas because these areas profoundly influence a variety of water quality parameters. Riparian vegetation moderates solar heating of streams, stabilizes streambanks, and filters sediment, nutrients, and other pollutants from overland and subsurface flows before they reach a stream. However, other parameters such as nutrients, bacteria, and turbidity may be monitored in some areas as appropriate.

ODA will review existing water quality information, notably the Tillamook Bay National Estuary Project and Columbia River Estuary Project Comprehensive Conservation Management Plans, DEQ data, and watershed council assessments to establish long-term trends in water quality.

Tillamook County contains the majority of the impaired waterbodies. In addition, the county has completed the Tillamook Bay National Estuary Program, resulting in the Comprehensive Conservation and Management Plan (CCMP) to improve water quality in Tillamook Bay Estuary. The CCMP has identified multiple actions and monitoring requirements to build upon past Tillamook Bay National Estuary Program data collection efforts that should lead to cleaner water. The North Coast Basin AgWQM Area Plan monitoring component will link with the CCMP implementation efforts to improve the understanding of agricultural impacts, as well as to assess impacts of other land uses.

The Lower Columbia River Estuary Project has also developed its own CCMP to improve water quality in the Lower Columbia River, including Clatsop and Columbia Counties. The North Coast Basin AgWQM Area Plan will also link with this CCMP.

Education

The goal of the North Coast Basin Area Plan education effort is to create a high level of awareness and an understanding of water quality issues among the agricultural community and rural public, in a manner that minimizes conflict and encourages cooperative efforts through education and technical assistance activities. The North Coast Basin agricultural community and rural landowners

are encouraged to unite with LMAs and watershed councils to solve identified water quality problems.

North Coast Basin LMAs will coordinate the development of education projects with the ODA, and implement the education program as resources are available. The LMAs will work with other partner agencies such as the USDA Natural Resources Conservation Service (NRCS), Oregon State University Extension Service, and North Coast Basin watershed councils to carry out education strategies.

To define, implement, and measure the success of the North Coast Basin education effort, the following quantifiable tasks should be incorporated into North Coast Basin SWCDs Annual Work Plans and Long Range Plans:

- Conduct education programs to promote public awareness of water quality issues.
    - Hold workshops on water quality issues and the conservation practices that will help improve water quality.
    - Develop demonstration projects to highlight successful conservation practices and systems.
    - Organize tours of demonstration projects for agricultural managers and producers.
    - Produce and distribute brochures about water quality issues.
    - Include updates on the status of the North Coast Basin AgWQM Area Plan and water quality data in North Coast Basin SWCD and watershed council newsletters.
    - Prepare standard presentations for agricultural producer groups.
    - Develop detailed, one-page North Coast Basin fact sheets for erosion control, nutrient and waste management, livestock and grazing management, and riparian and streambank management.
    - Conduct one-on-one and small group visits with landowners to discuss the North Coast Basin AgWQM Area Plan and adaptive management solutions.

- Conduct a media program to inform North Coast Basin agricultural operators, rural landowners, and the public of conservation issues and events.
    - Submit news articles and public service announcements to area newspapers, radio stations, and newsletters.
    - Invite media to conservation tours and workshops.

- Involve the agricultural community in conservation education.
    - Create and maintain a list of experienced agricultural operators willing to share management solutions with other interested people by speaking, leading tours, and providing tour sites.

- Build partnerships with commodity groups to promote conservation.
    - Co-sponsor workshops and tours between the North Coast Basin SWCDs, watershed councils, and commodity groups.
    - Share education materials with commodity groups and their representatives.
    - Develop educational materials in conjunction with commodity groups and watershed councils.
    - Partner with other agricultural and natural resource agencies, watershed councils, estuary partnerships and commodity groups to access and acquire the material and financial resources to implement the North Coast Basin AgWQM Area Plan and its educational component.
    - Meet with other agencies and organizations, and develop a strategy to obtain funding from traditional and nontraditional sources.

Conservation Planning

This North Coast Basin Agricultural Water Quality Management (AgWQM) Area Plan gives landowners and farm operators the flexibility to choose appropriate management approaches and practices that address water quality issues on their lands. They may implement conservation systems on their own -- without an approved plan -- or may submit a written conservation plan to the appropriate Local Management Agency (LMA) for approval.

The North Coast Basin Local Advisory Committee (LAC) and the ODA encourage agricultural producers to develop voluntary conservation plans. Voluntary conservation plans describe the management systems and schedule of conservation practices that the landowner will use to conserve soil, water, and related plant and animal resources on agricultural land. Voluntary conservation plans may be developed by landowners or operators, consultants, or SWCD and USDA NRCS technicians. An individual conservation plan should outline specific measures necessary to address the Pollution Prevention and Control Measures in this North Coast Basin AgWQM Area Plan. These voluntary conservation plans are not enforceable.

For a list of agencies and organizations to contact for more information about resource management, please refer to Attachment B: Educational and Technical Contacts for Natural Resource and Farm Management.

Enforcement Actions and Resolution of Complaints

The ODA will use enforcement mechanisms where appropriate and necessary to gain compliance with the OARs for the North Coast Basin (OARs 603-095-0800 through 603-095-0860). The ODA may take enforcement actions when reasonable attempts at initiating voluntary landowner involvement have failed pursuant to OAR 603-090-0060 through 603-090-120.

The ODA may investigate complaints against operators or landowners who are alleged to be out of compliance with OARs for the North Coast Basin. The complaint must relate to a specific site and contain a thorough description of the problem. The complaint must be filed with the ODA in writing and be signed by the complainant.

The ODA will determine if a violation of a rule in OARs 603-095-0800 through 603-095-0860 exists using professional judgement, best available science, and the applicable OAR. Based on this determination, appropriate action will be taken by the ODA to ensure the condition is remedied.

The ODA recognizes that every farm and situation is different and will take into account each individual situation when enforcing the OARs. A land occupier shall be responsible for only those conditions caused by activities conducted on land managed by the landowner or occupier. Criteria do not apply to conditions resulting from exceptional circumstances that could not have been reasonably anticipated, such as fire, natural disaster, or extreme weather conditions such as flooding.

Complaint Investigations and Protocols

a. If the ODA receives a written complaint of a violation of AgWQM Area Rules/Oregon Administrative Rules (OARs) on an agricultural operation, a complaint investigation may be initiated. ODA staff may also initiate an inspection if they are alerted to or directly observe violations of conditions or measures outlined in the OARs.
b. Before conducting a complaint investigation, the ODA makes every attempt to establish contact with the operator to schedule a site visit.
c. During the course of the investigation the ODA will:
    - Determine if the complaint is valid.
    - Verify compliance or noncompliance with conditions or measures required in the North Coast Basin Area Rules/OARs. If in compliance, the investigation is complete. If out of compliance, the ODA will:
    - Determine the cause of the violation.
    - Establish the facts surrounding the violation.
    - Review any existing farm plan the operator is implementing.
    - Photo document the situation.
    - Collect water samples if necessary.
    - Conduct a closing conference with the operator and provide a preliminary evaluation report that includes a summary of observations and corrective actions.
    - Develop a formal investigation report.
d. Where noncompliance is verified, depending on the outcome of the investigation and the severity of the violation(s), the ODA may issue a Notice of Noncompliance and/or a Plan of Correction to the agricultural operator explaining the actions which need to be taken in order to be in compliance with the conditions or measures required in the appropriate OARs. To the greatest extent possible, the ODA will consult with agricultural landowners and operators in the development of solutions and the appropriate timelines for addressing noncompliance or other water quality concerns. If a rule violation does not exist during the time of an investigation, the ODA may choose to send the operator a Water Quality Advisory Letter if it is likely that a violation will occur in the future if the conditions which were present during the investigation are not corrected.

PLAN EVALUATION AND MODIFICATION

The progress and success of implementation efforts will be assessed through determination of necessary changes in land management systems, measurement of water quality improvement over time, and evaluation of educational techniques and technical and financial tools.

Two years after the adoption of the North Coast Basin Area Rules/OARs and approximately every two years following, the ODA, in cooperation with the North Coast Basin Local Management Agencies, the Local Advisory Committee, and DEQ, will assess the progress of the Area Plan implementation toward achievement of plan goals and objectives. These assessments will include:

- An accounting of the numbers and acreage of operations with approved Voluntary Plans that address the prevention and control measures and the best available estimate of the amount of soil erosion and pollution prevented;
- A review of projects, demonstrations, and tours used to showcase successful management practices and systems;
- An evaluation of outreach and education programs designed to provide public awareness and understanding of water quality issues;
- An evaluation of the effectiveness of technical and financial assistance sources available to the agricultural community;
- Documentation of violations of the prevention and control measures and subsequent corrections;
- An evaluation of available current water quality monitoring data and sources of pollution in the North Coast Basin; and
- A review of load allocations as found in any completed North Coast Basin Total Maximum Daily Loads (TMDLs) and the anticipated effectiveness of this plan in meeting the load allocations as described in the TMDLs for the North Coast Basin.

Based on these assessments, the ODA, the North Coast Basin LMAs, the LAC, and the State Board of Agriculture will consider making appropriate modifications to the North Coast Basin AgWQM Area Plan and the associated Oregon Administrative Rules.

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APPENDIX

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ATTACHMENT A: Agricultural Conservation Practices

Conservation Practices for Potential Water Quality Protection

Key: Large "X" = Potentially High Water Quality Protection
Small "x" = Potentially Medium Water Quality Protection
Blank = Potentially Low to No Water Quality Protection

Conservation Practices	Temperature		Bacteria	Sediment		Dissolved Oxygen
	Shade	Hydraulics		Bank Erosion	Runoff	
Waterbody Buffers						
Grass Filter Strip			x	x	X	**x**
Healthy Riparian Condition	x	X	x	X	x	x
Manure Management						
Wetlands		X	X		X	X
Manure Storage			X			
Manure Application at Agronomic Rates/Timing			X			
Source Separation						
Limited Livestock Access To Riparian Areas	x	x	x	X	x	
Waste Not Directly Linked To Waterbody			X			
Healthy Riparian Condition	X	X	X	X	X	x
In-stream Structures						
Biotechnical Barbs	x	X		x	x	x
Streambank Erosion Protection						
Off-stream Watering	x	x	X	X		x
Healthy Riparian Condition	X	x	x	X	X	x
Limited Livestock Access To Riparian Areas	x	x	X	X		

Adapted from the US EPA Tillamook Bay National Estuary Project "Restoring The Balance" Comprehensive Conservation and Management Plan, June, 1999. Cooperative Agreement CE-980127-01. Table 5-1, pp. 5-6.

FOR HELP TO DEVELOP CONSERVATION PRACTICES

Contact the local Soil and Water Conservation District or Natural Resources Conservation Service office identified in Attachment B.

Erosion and Sediment Control

Management

- Conservation tillage
- Contour farming
- Contour strip cropping
- Delayed seed bed preparation

Vegetative

- Cover crops
- Critical area planting (including wetland and riparian zone protection)
- Filter strip/field border
- Grassed waterway

Structural

- Streambank stabilization
- Clean water diversion
- Grade stabilization structure
- Sediment basin/retention pond
- Terrace

Confined Animal Facility Management (Wastewater Runoff Management)

Management

- Agronomic application of manure, composted manure or wastewater to agricultural land

Vegetative

- Heavy use area protection (e.g., cover crops)
- Grassed Waterway

Structural

- Heavy use area protection (e.g., concrete)
- Roof runoff management (e.g., gutters & downspouts)
- Dikes
- Clean water diversion
- Terrace
- Waste storage pond/structure
- Waste treatment lagoon
- Constructed wetland

Nutrient Control

Management

- Overall nutrient management planning (e.g., nutrient budgeting)
  - Soil testing
  - Manure, sludge, and compost testing
  - Proper timing, formulation, and application methods of nutrients for maximum crop utilization
  - Plant tissue testing

Vegetative

- Cover crops
- Filter Strip/field border

Pesticides

Management

- Use of Integrated Pest Management (IPM) strategies and systems
  - Biological controls, pheromones, crop rotations, cover crops, economic thresholds, etc.
  - Maintain inventory of current and historical pest problems, cropping patterns, and use of pesticides for each field
  - Consider the persistence, toxicity, and runoff and leaching potential of products, and current label requirements in making a selection when a choice of pesticide materials exists
- Recalibrate spray equipment each spray season
- Use of anti-backflow devices on hoses used for filling tank mixtures

Structural

- Protect against leaching and runoff potential in loading, mixing, and storage areas

Grazing

Management

- Planned grazing systems
  - deferred grazing & pasture rotation
- Pasture management
  - pasture renovation, cross-fencing, brush/weed management, prescribed burning

Structural

- Alternate water supply practices (off-stream water sources)
  - placement of water and salt supplement facilities away from streams
- Limit livestock access to waterways
  - fencing, livestock exclusion, stream crossing

Irrigation

Management

- Sprinkler calibration
- Irrigation scheduling practices
    - irrigation water management*;* utilization of water measuring devices and soil & crop water use data
    - evaporation monitoring

Vegetative

- Cover crops and straw mulch
- Filter strip/field border

Structural

- Irrigation water application methods
    - drip or trickle irrigation, sprinkler irrigation, microjet irrigation
- Drainage water management
    - ditch and canal lining, subsurface drainage
- Surface and subsurface irrigation systems
    - furrows, borders, contour levees/ditches
- Irrigation land leveling
- Tailwater recovery/recycling systems
- Sediment basin/retention pond
- Rip hardpans and compacted soil layers to improve infiltration rates

Irrigation and Drainage Ditches

Management

- During maintenance, remove only sand silt; avoid removing gravel important for native fish
- Conduct excavation operations with land-based equipment from one side of the channel
- Properly dispose of dredged sediments away from the channel, either on uplands or spread in a thin layer (3 inches or less) on farmed wetland or wet pasture in a manner that does not convert the wetland to upland
- Conduct maintenace and excavation only during the time period specified in the "Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources" prepared by the Oregon Department of Fish and Wildlife

Vegetative

- Promote and maintain woody vegetation along ditches and channelized streams in a manner that provides shade and shelter for fish, yet allows regular maintenace and cleaning
- Plant channel banks and work areas with grass and/or trees and shrubs after maintenance in order to minimize erosion as much as possible

Structural

- Construct and maintain ditches utilizing ditch slope and ditch cross section that are appropriate to the site and prevent ditch bank sloughing

Riparian Areas and Vegetation

Management

- Exclude livestock from riparian areas
- Create riparian pasture and manage to protect riparian vegetation and streambank stability
- Avoid manure, fertilizer, and chemical applications in the riparian area or where the riparian area could be affected
- Control noxious weeds
- Limit in-stream livestock access and crossings to the absolute minimum

Vegetative

- Riparian forest buffer
- Riparian herbaceous cover
- Vegetative buffers

Structural

- Fencing riparian areas to limit or exclude livestock access
    - electric "New Zealand" style high tensile wire fences are low cost and flood resistant
- Install off-stream water sources for livestock
- Development of appropriately sized bridges and culverts for livestock crossings
- Biotechnical barbs for streambank stability

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ATTACHMENT B: Educational and Technical Contacts for Natural Resource and Farm Management

Soil and Water Conservation Districts (SWCDs)
Prepares and helps implement management plans by coordinating with other technical experts in natural resources.

Clatsop County:	503/ 325-4571	Astoria
Columbia County:	503/ 397-4555	St. Helens
Tillamook County:	503/ 842-2240	Tillamook
Multnomah County:	503/238-4775	Portland

USDA – Natural Resources Conservation Service (NRCS)
Provides information on soil types, soils mapping, and interpretation. Administers and provides assistance in developing plans for Conservation Reserve Program (CRP), Conservation Reserve Enhancement Program (CREP), Environmental Quality Incentives Program (EQIP), Wetland Reserve Program (WRP), and other cost share programs. Prepares management plans. Makes technical determinations on wetlands and highly erodible land.

Clatsop and Columbia Counties:	503/ 397-4555	St. Helens
Tillamook County:	503/ 842-2240	Tillamook
Multnomah County:	503/238-4775	Portland

Oregon State University Extension Service
Offers educational programs, seminars, classes, tours, and publications to guide landowners in managing their resources.

Clatsop County:	503/ 325-8573	Astoria
Columbia County:	503/ 397-3462	St. Helens
Tillamook County:	503/ 842-3433	Tillamook

Oregon Department of Agriculture (ODA)
Oversees the Agricultural Water Quality Management (Senate Bill 1010) program, issues permits and helps producers comply with confined animal feeding water management programs, and provides support to SWCDs.

Natural Resources Division:	503/ 986-4700	Salem
North Coast Water Quality Planner:	503/ 986-4707	Salem
Livestock Water Quality Specialist:	503/ 842-6278	Tillamook
Livestock Water Quality Specialist:	503/ 986-4780	Salem

Department of Environmental Quality (DEQ)
Responsible for protecting and enhancing Oregon's water and air quality, cleaning up spills and releases of hazardous materials, and managing the proper disposal of solid and hazardous wastes. Maintains a list of water quality limited streams, sets Total Maximum Daily Load (TMDL) allocations.

State Office:	800/ 452-4011	Portland

Division of State Lands (DSL)
Administers state removal/fill law and provides technical assistance.

State Office:	503/ 378-3805	Salem
Salmon Habitat Specialist:	same, extension 297	Salem
Clatsop County:	same, extension 234	Salem
Columbia County:	same, extension 246	Salem
Tillamook County:	same, extension 234	Salem
Multnomah County:	same, extension 246	Salem

USDA – Farm Service Agency (FSA)
Maintains agricultural program records and administers various Federal cost share programs. Also provide up-to-date aerial photography of farm and forestland.

Columbia and Multnomah Counties:	503/ 648-3014	Hillsboro
Clatsop and Tillamook Counties:	503/ 842-2240	Tillamook

Oregon Water Resources Department
Provides technical and educational assistance, water rights permits and information.

State Office:	503/ 378-3739	Salem
North Coast Office:	503/ 842-2413(#119)	Tillamook

North Coast Basin Agricultural Water Quality Management Area Plan
Local Advisory Committee (LAC)
Voluntary committee composed of 12 agricultural producers in the North Coast Basin. Charged with developing the **North Coast Basin Area Plan** in accordance with the 1993 state Agricultural Water Quality Management Act (Senate Bill 1010).

ODA North Coast Water Quality Planner:	503/ 986-4707	Salem

Oregon Department of Fish and Wildlife (ODFW)
Works with landowners to balance protection of fish and wildlife with economic, social, and recreational needs. Advises on habitat protection. Offers technical and educational assistance for habitat and restoration projects. Provides plan review for special property tax assessment for wildlife habitat projects.

North Coast Basin District (wildlife & fish):	503/ 842-2741	Tillamook
Clatsop County (fish issues only):	503/ 338-0106	Astoria
North Willamette Watershed Wildlife Dist.:	503/ 621-3488(#31)	Sauvie Island
North Willamette Watershed Fish Dist.:	503/ 657-2000(#231)	Clackamas

Oregon Department of Forestry (ODF)
Technical assistance with State and Federal cost sharing, Oregon Forest Practices Act, Forest Resource Trust, forestry practices, forest management plans, and Oregon property tax programs.

Clatsop County:	503/ 325-5451	Astoria
Columbia County:	503/ 397-2636	Columbia City
Tillamook County:	503/ 842-2545	Tillamook - District Office
Multnomah County:	503/ 357-2191	Forest Grove - District Office

ATTACHMENT C: Pollution Prevention and Control Program for Oregon's Coastal Waters

Developed to meet the requirements of Section 6217(g) of the Coastal Zone Act Reauthorization Amendments of 1990.

This state program was developed to meet the requirements of Section 6217(g) of the Coastal Zone Act Reauthorization Amendments (CZARA) of 1990. It was submitted to the federal government by the DEQ and the Oregon Department of Land Conservation & Development.

The EPA explains the history and reasoning for the CZARA in part as follows:

On November 5, 1990, Congress enacted the CZARA of 1990. These Amendments were intended to address several concerns, a major one of which is the impact of nonpoint source pollution on coastal waters.

Nonpoint source pollution is increasingly recognized as a significant factor in coastal water degradation. In urban areas, storm water and combined sewer overflow are linked to major coastal problems, and in rural areas, runoff from agricultural activities may add to coastal pollution.

To address more specifically the impacts of nonpoint source pollution on coastal water quality, Congress enacted section 6217, "Protecting Coastal Waters," which was codified as 16 U.S.C. - 1455b. This section provides that each state with an approved coastal zone management program must develop and submit to EPA and the National Oceanic and Atmospheric Administration for approval a Coastal Nonpoint Pollution Control Program. The purpose of the program "shall be to develop and implement management measures for nonpoint source pollution to restore and protect coastal waters, working in close conjunction with other state and local authorities."

Under “A Pollution Prevention and Control Program for Oregon’s Coastal Waters,” to meet the requirements of the CZARA of 1990 6217(g), the following management measures for agriculture were developed, based upon the original measures provided in the USEPA's "Guidance Specifying Management Measures For Sources Of Nonpoint Pollution In Coastal Waters."

MANAGEMENT MEASURES FOR AGRICULTURE

1. Erosion and Sediment Control Management Measure

Apply the erosion component of a Conservation Management System (CMS) as defined in the Field Office Technical Guide of the USDA NRCS to minimize the delivery of sediment from agricultural lands to surface waters; or

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.

2. Facility Wastewater and Runoff from Confined Animal Facility Management

(g) Guidance Management Measure (Large Units)

Limit the discharge from the confined animal facility to surface waters by:

1. Storing both the facility wastewater and the runoff from confined animal facilities that is caused by storms up to and including a 25-year, 24-hour frequency storm. Storage structures should:
    a. Have an earthen lining or plastic membrane lining, or
    b. Be constructed with concrete, or
    c. Be a storage tank;

and

2. Managing stored runoff and accumulated solids from the facility through an appropriate waste utilization system.

(g) Guidance Management Measure (Small Units):

Design and implement systems that collect solids, reduce contaminant concentrations, and reduce runoff to minimize the discharge of contaminants in both facility wastewater and in runoff that is caused by storms up to and including a 25-year, 24-hour frequency storm.

Implement these systems to substantially reduce significant increases in pollutant loadings to ground water.

Manage stored runoff and accumulated solids from the facility through an appropriate waste utilization system.

3. Nutrient Management Measure

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. Nutrient management plans contain the following core components:

A. Farm and field maps showing acreage, crops, soils, and waterbodies.
B. Realistic yield expectations for the crop(s) to be grown, based primarily on the producer's actual yield history, State Land Grant University yield expectations for the soil series, or NRCS Soils-5 information for the soil series.
C. A summary of the nutrient resources available to the producer, which at a minimum include:
    1. Soil test results for pH, phosphorus, nitrogen, and potassium;
    2. Nutrient analysis of manure, sludge, mortality compost (birds, pigs, etc.), or effluent (if applicable);

3. Nitrogen contribution to the soil from legumes grown in the rotation (if applicable); and
4. Other significant nutrient sources (e.g., irrigation water).

D. An evaluation of field limitations based on environmental hazards or concerns, such as:
1. Sinkholes, shallow soils over fractured bedrock, and soils with high leaching potential,
2. Lands near surface water,
3. Highly erodible soils, and
4. Shallow aquifers.

E. Use of the limiting nutrient concept to establish the mix of nutrient sources and requirements for the crop based on a realistic yield expectation.

F. Identification of timing and application methods for nutrients to: provide nutrients at rates necessary to achieve realistic crop yields; reduce losses to the environment; and avoid applications as much as possible to frozen soil and during periods of leaching or runoff.

G. Provisions for the proper calibration and operation of nutrient application equipment.

4. Pesticide Management

To reduce contamination of surface water and ground water from pesticides:

A. Evaluate the pest problems, previous pest control measures, and cropping history;

B. Evaluate the soil and physical characteristics of the site including mixing, loading, and storage areas for potential leaching or runoff of pesticides. If leaching or runoff is found to occur, steps should be taken to prevent further contamination;

C. Use integrated pest management strategies that:
1. Apply pesticides only when an economic benefit to the producer will be achieved (i.e., applications based on economic thresholds); and
2. Apply pesticides efficiently and at times when runoff losses are unlikely;
3. When pesticide applications are necessary and a choice of registered materials exists, consider the persistence, toxicity, runoff potential, and leaching potential of products in making a selection;
4. Periodically calibrate pesticide spray equipment; and
5. Use anti-backflow devices on hoses used for filling tank mixtures.

5. Grazing Management

I. Riparian Areas: Implement one or more of the following as necessary to protect water quality, streambanks, stream channels, wetlands, estuaries, ponds, lakeshores, and riparian soils and vegetation:

A. For privately owned lands, implement (1) or (2) below:

(1) Implement one or more of the following:

a) Provide stream crossings or hardened watering access for drinking;
b) Provide alternative drinking water locations away from the stream channel and sensitive areas;
c) Locate salt and additional shade, if needed, away from sensitive areas;
d) Use improved grazing management techniques including the application of scientifically sound grazing systems. The following are some examples of such techniques:

1. Include riparian areas in separate pastures and manage them under separate objectives and strategies, including periodic rest.
2. Fence or, where appropriate, herd livestock out of riparian areas for as long as necessary to avoid negative impacts to streambanks.
3. Control the timing of grazing in riparian areas to (1) protect streambanks when they are most vulnerable to damage; and (2) coincide with the physiological needs of key plant species.
4. Add rest, as needed, to the grazing cycle to increase plant vigor and encourage more desirable plant species composition.
5. Limit grazing intensity, frequency, and duration to a level that will maintain desired plant species composition and vigor.
6. Manage livestock away from riparian areas that are at high risk or with poor recovery potential.

(e) Exclude livestock from sensitive areas.

2) Implement a Conservation Management System (CMS) as defined in the Field Office Technical Guide of the USDA Natural Resource Conservation Service (NRCS) by applying the progressive planning approach of the USDA NRCS.

B. For publicly owned or managed lands, maintain rangelands, pasturelands, and other grazing lands in accordance with plans established by the responsible agency such as the USDI Bureau of Land Management, the USDA Forest Service.

II. Uplands: To protect water quality from grazing impacts on upland areas that are not protected under (I),

(A) For privately owned lands, implement (1) or (2) below:

(1) Implement one or more of the following:

(a) Locate livestock watering facilities away from sensitive areas such as springs and seeps;

(b) Locate salt and additional shade, if needed, away from sensitive areas;

(c) Use improved grazing management techniques including the application of scientifically sound grazing systems. The following are some examples of such techniques:

1. Control the timing of grazing to (1) protect soils and vegetation when they are most vulnerable to damage; and (2) coincide with the physiological needs of key plant species.
2. Add rest to the grazing cycle to increase plant vigor, or encourage more desirable plant species composition.
3. Limit grazing intensity, frequency, and duration to a level that will maintain desired plant species composition and vigor.

(2) Implement a Conservation Management System (CMS) as defined in the Field Office Technical Guide of the USDA Natural Resource Conservation Service (NRCS) by applying the progressive planning approach of the USDA-NRCS.

(B) For publicly owned or managed lands, maintain rangelands, pasturelands, and other grazing lands in accordance with plans established by the responsible agency such as the USDI Bureau of Land Management, the USDA Forest Service.

6. Irrigation Water Management

To reduce nonpoint source pollution of surface waters caused by irrigation:

A. Operate the irrigation system so that the timing and amount of irrigation water applied matches crop water needs. This will require, as a minimum: (a) the accurate measurement of soil-water depletion volume and the volume of irrigation water applied, and (b) uniform application of water.
B. When chemigation is used, include backflow preventers for wells, minimize the harmful amounts of chemigated waters that discharge from the edge of the field, and control deep percolation. In cases where chemigation is performed with furrow irrigation systems, a tailwater management system may be needed.

The following limitations and special conditions apply:

A. In some locations, irrigation return flows are subject to other water rights or are required to maintain stream flow. In these special cases, on-site reuse could be precluded and would not be considered part of the management measure for such locations.
B. By increasing the water use efficiency, the discharge volume from the system will usually be reduced. While the total pollutant load may be reduced somewhat, there is the potential for an increase in the concentration of pollutants in the discharge. In these special cases, where living resources or human health may be adversely affected and where other management measures (nutrients and pesticides) do not reduce concentrations in the discharge, increasing water use efficiency would not be considered part of the management measure.
C. In some irrigation districts, the time interval between the order for and the delivery of irrigation water to the farm may limit the irrigator's ability to achieve the maximum on-farm application efficiencies that are otherwise possible.
D. 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.
E. Where leakage from delivery systems or return flows supports 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.
F. 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.

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ATTACHMENT D: Coordinated Resource Management Planning (CRMP)[1]

Coordinated Resource Management Planning (CRMP) is a process by which natural resource owners, managers, and users work together as a team to formulate plans for the management of major resources within a specific area, and/or seek to identify and resolve specific conflicts concerning management activities.

CRMP has been in existence in Oregon for over 40 years and has helped many landowners to more effectively manage their resources. The concept of CRMP follows the principle that adjoining landowners who work together to solve resource issues can be more effective than they can be by working individually.

In many cases, the initial impetus for CRMP comes out of a conflict or crisis over some aspect of natural resource use or management. Often, in the process of trying to resolve a particular issue, a more general plan is developed and the original issue becomes only one of many that are constructively dealt with in both planning and the implementation that follows.

Seldom are natural resource problems confined to single ownerships, single resources, or single resource uses. Moreover, almost never does a single agency, owner/manager, or group have all the answers and expertise needed to deal with resource management issues or conflicts.

Especially helpful in these situations is an approach that involves various resource disciplines, agencies, and users, working together from beginning to end, to develop a rationale upon which management decisions can be based. In such a process, resource owners and managers do not relinquish authority and responsibility over their own final decisions, but they make those decisions only after listening to the viewpoints, experiences, and options of others. Consensus, not voting, is a fundamental element of the CRMP.

Most often, CRMP is initiated at the local level by a request from a person, group, organization, or agency that perceives the need for a group-action approach to averting or resolving a local resource problem. The local SWCD (see Attachment B) can respond to this request because these SWCDs are legal subdivisions of state government with responsibilities for land and water conservation. Following such a request, an informational meeting is usually held, which is open to all affected stakeholders and interested parties. At this time, the CRMP process is presented and discussed, and a decision is reached as to whether or not to proceed in this way.

The planning group which emerges from this initial stage should be kept as small as practical, yet it must include representatives of significant user groups as well as representative owners and managers of the resources within the area of concern. Agency participants in the local planning group should be qualified to address the issues and generally to have the authority to make decisions for their agencies.

The next steps are for the planning group to begin setting meeting goals or objectives for the process. Once this is accomplished, it is ready to tackle the potentially more controversial problems that have brought it together. The CRMP process uses the concept of resource management systems to aid in the making of decisions on a wide range of practices, measures, or items that should be considered.

The decisions of the planning group can be:

- to take an action,
- to do nothing,
- to state a need, or
- to postpone a decision pending further study or consultation.

Once a decision has been reached, the group moves on until all of the resource issues have been addressed. Again, consensus is the method of decision-making, and can be defined as offering the following options:

- agree,
- do not fully agree, but can live with it,
- disagree, but will not object if others wish to have this included, and
- disagree strongly and cannot accept a plan with this item in it.

Once the Plan is completed, it is ready to be implemented. The plan itself is not the end product, but a guide that will be measured by effectiveness in achieving resolution of conflict, accomplishments on the ground, and contribution to social change.

To find out more about CRMP, contact the local SWCD.

ATTACHMENT E: Native Vegetation List

Tree and Understory Species Lists - Listed in order of importance starting with the most common species first. All species on these lists are native to Tillamook County, and local seed sources should be used to propagate these trees. The tree species lists are taken, for the most part, from *An Environmental History of Tillamook Bay Estuary and Watershed*.

Forested Uplands - Sitka spruce, western hemlock, Douglas-fir, western red cedar, black cottonwood, red alder, big leaf maple, Oregon ash, crabapple, hawthorn, vine maple, bitter cherry. Understory ferns, red elderberry, berries (salmon, thimble, native black, rasp) ninebark, ocean spray, cascara, red-osier dogwood, red huckleberry, hazelnut, blue elderberry, oregon grape, salal, and willows (Sitka, Erect/Upright).

Floodplain - Black cottonwood, Sitka spruce, western hemlock, big leaf maple, western red cedar, Douglas-fir, Oregon ash, willows (Hooker, Scouler, Pacific, Sitka, Erect/Upright), red alder, crabapple, hawthorn, vine maple. Understory ferns, red elderberry, berries (salmon, thimble, native black, rasp) ninebark, ocean spray, cascara, salal, oregon grap, red-osier dogwood, wild rye grass, wild rose, indian plum, and honeysuckle.

Tidally Influenced Lands (brackish water) - Sitka spruce, western hemlock, western red cedar, willows (Hooker, Scouler, Pacific, Sitka), crabapple, big leaf maple, red alder, Oregon ash. Understory ferns, red elderberry, berries (salmon, thimble, native black, rasp) ninebark, ocean spray, cascara, red-osier dogwood, wild rye grass, salal, sweet gale, honeysuckle.

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ATTACHMENT F: Alternative Plant Species for Pest Prone Riparian Areas

Giant sequoia - Sequoiadendron giganteum

Giant Sequoia is not native to Oregon. It occurs naturally in a narrow belt along the west slope of the central Sierra Nevada Mountains.

As the name implies, Giant Sequoia grows to become a large tree. The tree grows rapidly, approximately two feet per year, until it reaches a height of approximately 200 feet. At this point more lateral that vertical growth occurs. The tallest specimen is supposedly 310 feet tall with a trunk that is 347 inches in diameter.

Culturally, this species thrives in ample sunlight and well-drained, moist soils.

The Giant Sequoia is extremely resistant to decay; however, the wood is very brittle and is frequently destroyed in the falling process. This makes the species undesirable for timber harvest.

It has been noted that beaver and elk do not find the Giant Sequoia palatable. This characteristic would make the tree a good possibility for inclusion in a riparian planting where animal damage is likely going to be a problem. The North Coast Local Advisory Committee is offering this information as a suggestion to project managers with the caution that some funding organizations may not allow non-native species to be planted in projects they are supporting. Check with your funding source before including this plant in your planting plan.

Information References:

Bidwell, R. and S. Jensen. 1998. Tree-of-the-Month 2/98 (Giant sequoia). http://www.cof.orst.edu/cof/fr/outreach/treeomth/sequoia/index.htm (22-Jun-2002)

Washington Association of Conservation Districts Plant Materials Center Plant Guide, *Right Plant – Right Place, Ensuring Project Success.* WACD Plant Material Center, Bow, WA.

Randy Bergman – personal observations

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ATTACHMENT G: Selected Programs and Rules of the Oregon Division of State Lands

The Removal-Fill Program

In general, Oregon's Removal-Fill Law (ORS 196.800-990) requires people who will remove or fill 50 cubic yards or more in waters of the state to obtain a permit from the DSL. "Waters of the state" are defined as "natural waterways including all tidal and nontidal bays, intermittent streams, constantly flowing streams, lakes, wetlands and other bodies of water in this state, navigable and nonnavigable, including that portion of the Pacific Ocean which is in the boundaries of this state."

In areas designated by the DSL as essential indigenous anadromous salmonid habitat and in State Scenic Waterways, most removal-fill activities require a permit, regardless of the number of cubic yards affected.

The following activities are statutorily exempt from the permit requirements:

- Fills for building, operating and maintaining dams that have a valid water right and a hydroelectric permit or license.
- Fills and removals in non-navigable waterways that are part of a forest management practice conducted in accordance with Oregon's Forest Practices Act.
- Fills and removals associated with normal farming and ranching activities on converted wetlands.
- On lands zoned for exclusive farm use, fills and removals for:
  - Drainage or maintenance of farm or stock ponds.
  - Maintenance of farm roads that does not affect wetlands.
  - Fills and removals for the maintenance or reconstruction of structures such as dikes, dams, levees, rip rap, tide gates, and drainage and irrigation ditches that were serviceable within the past five years, provided the activity does not affect wetlands.
- Fills and removals for maintenance and emergency reconstruction of currently serviceable roads.

Even though these activities are exempt from the permit requirements, they still must be conducted in a manner that does not adversely affect other resources and uses (e.g., water quality, fish and their habitats, recreation, cultural resources). If you are not sure whether your proposed project meets the requirements for an exemption, or if you are not sure of the "Best Management Practices" for an exempt activity, please contact the DSL. DSL contact phone numbers are provided in Attachment B.

All permits include design and operating conditions "Best Management Practices" that are intended to ensure the protection, conservation and best use of state water resources and prevent harm to fishery and recreational uses of the waters. In the case of projects involving wetlands, you also may be required to provide mitigation to compensate for any loss of wetland resources.

In most cases, it takes up to 90 days for the DSL to issue a permit. This is because of the number of other agencies and interested parties (e.g., adjacent landowners) who must have an opportunity to review the permit application. If you need a permit, you should apply at least three months before you plan to do the work, taking into consideration the in-water work periods. However, in an emergency, the DSL can authorize work orally as soon as all necessary information about the project has been received. Also, for certain types of activities the DSL issues a streamlined type of permit called a General Authorization. Currently General Authorizations are available for road construction, erosion control, fish habitat enhancement, wetland restoration and enhancement, and recreational and small-scale placer mining. General Authorizations have uniform permit conditions that apply to all projects.

Most projects that need a state removal-fill permit will also require a federal permit from the Army Corps of Engineers. The DSL and the Corps use a joint permit application form, so you will only need to fill out one application to obtain both permits. When you send in your completed permit application, the Corps will notify you whether you need a federal permit.

Essential Indigenous Anadromous Salmonid Habitat

Oregon's Removal-Fill Law requires a permit for most removal and fill activities in areas designated as "essential indigenous anadromous salmonid habitat." Essential salmonid habitat is defined as the habitat necessary to prevent the depletion of native salmon species (chum, sockeye, chinook and coho salmon, and steelhead and cutthroat trout) during their life history stages of spawning and rearing. The designation applies only to those species that have been listed as “sensitive,” “threatened,” or “endangered” by a state or federal authority.

In addition to those activities that are exempt from all permit requirements, the following exemptions apply to activities affecting less than 50 cubic yards within areas designated essential salmonid habitat:

- Activities customarily associated with agriculture (e.g., maintenance of an existing irrigation or drainage structure).
- Non-motorized mineral prospecting affecting less than one cubic yard at any one site and not more than five cubic yards annually within a designated stream.

The DSL, in consultation with the ODFW, designates essential salmonid habitat areas based on field surveys and/or the professional judgment of ODFW's district biologists.

Current Division of State Lands Rules for Removing and Disposing of Sediment behind Tide Gates for Channel Maintenance

DIVISION 89

141-089-0060

Purpose

These rules set forth the conditions where a person may, with a letter of authorization from the DSL, remove and dispose of sediment for the purpose of maintaining natural or artificially created drainage channels upstream from tide gates.

141-089-0065

Applicability

This General Authorization applies to sand and silt sediment depositional areas in legally constructed or altered channels upstream of tide gates that are regularly maintained. Such channels have a free and open connection (as defined in OAR 141-85-0010(14)) to other natural waterways (as defined in OAR 141-85-0010(27)) and are presumed to have food and game fish.

141-89-0070

Conditions

(1) **To be eligible for this General Authorization, a project must conform to the following**:

(a) Removal of existing woody vegetation, other than that growing within the maintained channel bed is prohibited;

(b) Only sand and silt sediments may be removed. This authorization is not for the removal of gravel;

(c) Erosion of disturbed areas (i.e., channel banks and work areas) shall be minimized through revegetation with grass and/or Planting of trees and shrubs;

(d) Excavation operations shall be conducted with land based equipment from one side of the channel unless specifically authorized by the DSL;

(e) Dredged sediments may be temporarily side-cast on top of the levee (if one exists) or away from the top of bank (to allow drying of the sediments for spreading) provided the dredged material does not erode back into the channel. If upland dredged material disposal is not feasible, then the dredged material may be spread in a thin layer (three inches or less) on farmed wetland or wet pasture provided there is no permanent conversion from wetland to upland. Freshwater wetland (other than farmed wetland or wet pasture mentioned above), salt marsh, tidal flats, or permanent or semipermanent open water areas shall not be used for dredged material disposal;

(f) Dredged material removal and disposal shall be conducted during the time period specified in the "Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources" prepared by ODFW;

(g) Sediment removal and disposal shall not violate applicable state water quality standards; and

(h) Removal of sediments shall be kept to the minimum amount necessary to remove recently deposited materials. Additional channel widening or deepening beyond that amount is prohibited.

(2) An application for a General Authorization under this rule shall be submitted on the Joint Permit Application Form provided by the DSL in accordance with the requirements of ORS 196.815(1) and OAR 141-85-025. The DSL shall send copies of the application to adjacent property owners, Oregon Department of Fish and Wildlife, Department of Environmental Quality, Department of Land Conservation and Development, ODA, the local Soil and Water Conservation District, and the local planning department.

(3) Within 45 working days of receipt of a completed application, the DSL shall notify the applicant whether or not the proposed project qualifies for this General Authorization. If the project qualifies, the written authorization may contain additional operating conditions deemed appropriate by the DSL. If the DSL determines that the proposed project does not qualify for the General Authorization, the project may be reviewed as an individual permit under OAR 141-85-035 if requested by the applicant.

(4) The DSL may require an individual permit for projects which would otherwise be authorized by this General Authorization, upon a showing by the DSL or the reviewing agencies listed above that the project would have more than minimal individual or cumulative environmental effects.

(5) The DSL may, at any time, by notice to affected operators revoke or modify any project approval granted under this General Authorization if it determines the conditions of the General Authorization are insufficient to minimize individual or cumulative environmental impacts.

(6) This General Authorization shall be reviewed by the DSL on or before July 1, 2003, at which time it shall be modified, reissued, or rescinded. The review will include public notice and opportunity for public informational hearing.

141-089-0075

Expedited Review Process for Fill or Removal Less than 50 Cubic Yards in Essential Indigenous Anadromos Salmonid Habitat

Any person proposing to conduct a fill or removal of less then 50 cubic yards under this General Authorization in Essential Indigenous Anadromos Salmonid Habitat and seeking expedited approval must still comply with the standards set forth in OAR 141-089-070(1)(a) to (h). The project proponent seeking expedited approval under this section shall so notify the DSL by submitting a complete notification form provided by the DSL. The DSL shall send copies of the notification form to the Oregon Department of Fish and Wildlife, the Department of Land

Conservation and Development, the Department of Environmental Quality, and the local planning department. Within 15 working days of receipt by the DSL of the complete notification form, the DSL shall either mail written confirmation along with authorization to proceed; or, if the project does not qualify for a General Authorization, the DSL shall so inform the applicant in writing and may review the project for an individual removal-fill permit (ORS 196.800 to 196.990).