

OREGON

2007

NONPOINT SOURCE POLLUTION PROGRAM ANNUAL REPORT

AS REQUIRED BY THE CLEAN WATER ACT
SUBMITTED TO EPA REGION X

BY

OREGON
DEPARTMENT OF
ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION

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Oregon Water Quality NPS Program 2007 Update

This program update report is written in response to section 319 (h)(8) and (11) of the Clean Water Act (33 USC 1329). The report documents the activities and accomplishments of the State of Oregon in general and the Oregon Department of Environmental Quality (ODEQ) in particular **regarding the administration of the State's** Nonpoint Source (NPS) pollution water program.

The report covers an update on the NPS activities implemented by the state during the period January – December 2007. Like many other years in the Oregon program, this period was rewarding and productive. As described below, Oregon is clearly making significant progress toward meeting the substantial challenges presented by NPS water pollution.

The State program continues to find innovative, cooperative, community-based, methods to improve water quality and enhance watersheds. Some of the highlights from this year include the following accomplishments:

Distributed over \$1.5 million dollars in nonpoint source grants and another \$22 million in OWEB watershed restoration money to projects all across the State.

Received approval on the Bear Creek, Tenmile and Umpqua TMDL basin studies for about 1980 river miles of sub-basin scale, total maximum daily loads (TMDLs) addressing nonpoint source pollution concerns.

Strengthened partnerships at all levels of government as well as cooperative ventures with private individuals and organizations.

Conducted innovative and effective outreach and education events to inform Oregon citizens about nonpoint source concerns, and to motivate better stewardship of our waters, including the field trips, presentation to varied groups, high **school student's** watershed summit.

Revised Oregon's Water Quality Standards including beneficial use designations and temperature criteria.

Anticipated Activities

Re-evaluate the quality of Oregon's waters and update the "impaired water" list.

Continued implementation of memorandum of agreements with ???

Continue to develop TMDLs addressing non-point sources of water pollution. Please refer to Appendix A for a TMDL schedule map.

Continue to work together with state natural resources agencies in the implementation of **NPS strategies, such as Department of Agriculture's Agricultural Water Quality Management Plans**

Continue work on evaluation of sufficiency of Forest Practices Act rules.

Continue to integrate the state revolving fund loan program into nonpoint source activities,

Continue to distribute grants and loans to projects that will advance the mission and effectiveness of the nonpoint source program, including identifying high priority projects and implementation of TMDL plans.

Identify additional ways of improving our partnership with various State, Tribal, Federal, and Local government agencies, as well as watershed councils, soil and water conservation districts and private individuals and organizations.

We continue to work with our partner agencies to discuss the application of the anti-degradation component of our water quality standards to Nonpoint sources of pollution.

Conclusion

Oregon is tackling the hard issues and meeting the significant challenges posed by the Nonpoint source water pollution. We are well on our way toward greater accountability for **our investments in Oregon's watersheds; partnering to advance restoration efforts;** and greater citizen understanding of the health of their local watershed.

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Oregon's Water Resources

With its nearly 97,000 square miles, Oregon ranks as the tenth largest state in the nation. The Oregon landscape is as diverse as it is beautiful. Surface water resources are a major feature of Oregon. The State has over 100,000 miles of rivers, 6,200 lakes, nine major estuaries, and over 360 miles of coastline.

State programs to protect or improve Oregon's water quality date back to 1938. Oregon's point source permit program was the second approved state program in the Country (September 26, 1973). More recently, in 1996 the State adopted the Oregon Plan for Salmon and Watersheds to focus work on watershed restoration and recovery of endangered salmonid populations.

At present, responsibility for managing its water resources is divided between several State agencies that work in an active and effective partnership to protect State waters. The State water quality program can be divided into the ten interdependent program elements listed below. The 10 basic water quality program components are as follows (not listed in order of priority):

- 1. Water quality standards that establish, for each watershed basin, beneficial uses for the waterbody as well as maximum levels of pollutants that can be discharged without adversely affecting the designated use.*
- 2. Permits for point sources, including storm water, discharging pollutants to State waters.*
- 3. Water quality [401] certifications of certain nonpoint source pollutant discharges including hydroelectric projects, and dredge and fill activities.*
- 4. Nonpoint source water quality management plans specifically developed for forestry, agriculture and urban activities.*
- 5. Biennial assessment of State waters to identify those waters that are not meeting water quality standards*
- 6. Pretreatment, Sewage Sludge Management and On-Site System programs to ensure*

that water quality is not compromised by other land- based activities.

7. Development of total maximum daily loads (TMDLs) to correct those waters that are not meeting water quality standards.

8. Cost-share grants and low interest loan programs to address municipal sewage treatment and disposal needs, and activities to reduce or eliminate nonpoint sources of pollution.

9. Education and outreach activities to continuously remind the public about the importance of understanding NPS pollution and its impact in water quality.

10. Facility or activity-specific compliance assessment, a pilot NPS effectiveness monitoring effort, technical assistance and enforcement as warranted to ensure State water quality requirements are met

.

Oregon's Nonpoint Source Program

Nonpoint source pollution refers to pollutants that reach State waters by non-discreet means (primarily runoff during rain events, or percolation of polluted water to groundwater). Nonpoint sources are often linked with land use activities through which the runoff passes.

Nonpoint sources also include atmospheric deposition and pollutants in groundwater or soils that migrate or travel to surface waters. Nonpoint sources continue to be a leading cause of significant water quality impacts across the State and the nation as a whole.

DEQ first began to address nonpoint source issues in October 1976. A comprehensive survey of nonpoint source pollution was first undertaken in 1978 and in 1988 and more recently in 2000.

Following are the main components of Oregon's NPS program:

NOAA and EPA conditionally approved the State's Coastal Nonpoint Program under section 6217 of the Coastal Zone Management Act in 1998. The base program was updated and re-approved in 2000.

In Oregon, the most prevalent nonpoint source pollutants are temperature, sediment, bacteria and nutrients. These pollutants are most effectively controlling through the use of performance-based standards and best management practices (BMPs). BMPs offer a range of both efficient and cost effective solutions to water quality problems.

Oregon's nonpoint source program primarily focuses on 4 land use sectors: *agriculture, forestry, urban storm water and hydromodification.*

Oregon and the Federal government continue to make a significant investment in addressing nonpoint sources of pollution as well as watershed restoration.

Oregon's strategy for improving State waters is to approach the problem holistically. The State has been divided into 21 watershed basins and 91 sub-basins. **The State's permitting assessment and TMDL work** has been aligned and prioritized according to these sub-

basins.

Identify and involve as many partners as possible.

Oregon has relied on longstanding partnerships to address these various activities and sources. **Many of the State's Departments, Boards and Commissions are now actively** involved in addressing nonpoint source and watershed concerns. They include but are not limited to the following:

Department of Environmental Quality www.deq.state.or.us

✓ *Department of Agriculture www.oda.state.or.us*

Department of Forestry www.odf.state.or.us

✓ *Oregon Watershed Enhancement Board www.oweb.state.or.us*

✓ *Department of Fish and Wildlife www.dfw.state.or.us*

✓ *Department of Land, Conservation and Development www.lcd.state.or.us*

✓ *Department of Economic & Community Development www.econ.state.or.us*

✓ *Department of Transportation www.odot.state.or.us, and many others.*

Finally, another cornerstone of the Oregon water quality program is, to the maximum extent practical, to identify solutions at the local community level. Watershed Councils, Soil and Water Conservation and Irrigation Districts, Cities and Counties all play an **important part in the State's strategy.**

Nonpoint Source Activities and Accomplishments in 2007

NPS Program Plan – During 2007, the state completed regional reviews of the NPS program plan which has prioritized our work efforts over the next 2 years. The review included regional discussions of strategies of dealing with current and emerging NPS concerns. The meetings identified where the program's successes, challenges, and needs are. A group of regional and HQ staff took this information and created the programs priorities. In short, agriculture has become the #1 program priority. This review of priorities will be turn into a working plan during 2008.

Agency Accomplishments Summary (July 2005 – Dec 2006)

Basin	Plans, Restoration Activities – 319/SRF funded	Technical Assistance/ Compliance
Deschutes	- WSC position to study flow in an effort to restore flow in Whychus Creek and MF Deschutes	-Up. Deschutes WSC WQ program advisor -Crooked River WSC watershed assessment support -Monit. equipment loan to WSC
Grande Ronde	TMDL for Lower Grande Ronde, Wallowa, and Imnaha in development - Union SWCD for WQ monitoring in the Upper Grande Ronde Subbasin	- WQ monitoring equipment loan to GRMWP
Hood	- East Fork Irrigation piping project (address sedimentation) - Install large diameter pipe for transmission of irrigation water, which removes it from open ditches (Farmers Irrigation District)	- Pesticides Stewardship Partnership - ODA/Wasco SWCD RBS (sediment) monitoring - Mt. Hood NF WQ monitoring - WQ monitoring for WSC - Middle Fork Irrigation District Fisheries Management Plan, TMDL Implementation Plan - WQ monitoring equipment loan to WSC - Diesel Oil Discharge into Tributary of Neal Ck – enforcement/issued penalty

Basin	Plans, Restoration Activities – 319/SRF funded	Technical Assistance/ Compliance
John Day	- Ongoing outreach and planning related to development of TMDL assessments, goals and planning related to: temperature, sediment, pH, DO, bacteria and macro-invertebrates	- Participation in basin-wide research addressing salmonid productivity in relation to land use and watershed enhancement (US Bureau of Reclamation, NOAA fisheries, Oregon State University, Oregon Department of Fish and Wildlife, US Forest Service, Oregon Department of Environmental Quality, et al.)
Klamath	Agency Lake Fringe Wetland Restoration Assessment Project (319 funded)	- Site visit for proposed restoration sites
Lower Columbia	Sandy TMDL approved by EPA	- WQ monitoring equipment loan to WSC
Mid Coast		- WQ monitoring equipment, supplies and training to 6 WSC's and SWCD
North Coast - Nehalem	Stormwater Master Plan, completed and adopted by the city 4 miles of new fencing and planting 10 miles of maintenance planting.	- WQ monitoring equipment loan to 2 WSCs
North Coast - Nestucca	2 miles of new riparian planting 15 miles of riparian planting maintenance.	- WQ monitoring equipment loan to WSC
North Coast - Tillamook	5 miles of new riparian planting. 11 miles of riparian planting maintenance	- WQ monitoring equipment loan to WSC
Owyhee - Malheur	- Assisted local groups to develop restoration projects for grant applications	
Powder	Burnt River SWCD – Juniper riprap effectiveness monitoring Powder Valley Water Control District – irrigation piping project (SRF)	
Rogue	- Wet Weather Pilot Project Completed - Applegate Subbasin TMDL completed - Little Applegate River Fish Passage & Stream flow Enhancement	- WQ monitoring equipment loan to 5 WSCs - Ongoing review of progress and technical assistance for TMDL

Basin	Plans, Restoration Activities – 319/SRF funded	Technical Assistance/ Compliance
	<ul style="list-style-type: none"> - Ashland: N Mt Storm Drain Treatment Project - Bacteria Source Fingerprinting. 	<ul style="list-style-type: none"> implementation - Assist in ongoing water quality program data interpretation RVCOG/TMDL Group - Bear Creek Fish kill tracked back to responsible party – - Bear Creek Oil Slick tracked back to responsible party . - Savage Rapids dam on the Rogue – potential sediment release. Enforcement action taken - Truck stop oil-water separator violation. Enforcement action taken. - 2-4,D herbicide spill on I-5. Enforcement action taken. - Improper disposal of fire retardant & surface waters. Southern Oregon and Pacific Railroad. Enforcement action taken.
South Coast	- WQ monitoring equipment loan to 3 WSCs	
Umatilla –	<ul style="list-style-type: none"> - Walla Walla Temperature TMDL approved 9/05 - Willow TMDL - finalizing <p>Walla Walla Subbasin quantified stream temperature reduction resulting from vegetative buffer installation (April 06).</p>	<ul style="list-style-type: none"> - Co-authored publication for the Educational Services District, County, Convention Center and Natural Resource Organizations: Geology, Hydrology and History of the Umatilla River Parkway - Prepared Natural Resources Information Packet for Umatilla and Morrow Counties <p>Technical assistance and funding for Reith to upgrade to a central sewage system</p> <ul style="list-style-type: none"> - Administering General NPDES permits

Basin	Plans, Restoration Activities – 319/SRF funded	Technical Assistance/ Compliance
		<p>for stormwater and other activities in the Umatilla Basin</p> <ul style="list-style-type: none"> - Ongoing review of progress and technical assistance for TMDL implementation - WQ monitoring equipment loan to WSC - Meacham Creek Fish Kill – enforcement/ issued penalty - Umatilla River 80 Million-Gallon Wastewater Release – enforcement/ issued penalty
Umpqua	<ul style="list-style-type: none"> - Umpqua TMDL – finalizing (Includes some 219 listed reaches (temperature 159, bacteria 25, pH 17, D.O. 7, Biocriteria 6, Aquatic weeds/algae 3, Chlorophyll a 1, Phosphorus 1.) About 32.8% of DEQ’s submitted and approved TMDLs for the state.) - 319 funded Partnership for the Umpqua Rivers (Watershed Council) to develop action plans to restore WQ. <p>Provided 319 funds to match OWEB funds to reduce nutrients and bacteria as well as establish riparian vegetation to reduce rates of stream warming on several local small streams tributary to nutrient and bacteria listed streams. Deer Creek (Demotta Br., North (Dixon Creek) and South Umpqua (Myrtle Creek restoration and outreach) tributaries 2005, 2006.</p>	<ul style="list-style-type: none"> - Provided TA during Diamond Lake Restoration effort which would be considered as implementation measures of the Diamond Lake TMDL (pH, aquatic weeds/algae and D.O) - WQ monitoring equipment, supplies and training to WSC
Willamette	- Willamette TMDL – finalizing	- WQ monitoring equipment, supplies or training to 10 WSC’s

Basin	Plans, Restoration Activities – 319/SRF funded	Technical Assistance/ Compliance
	<ul style="list-style-type: none"> - EWEB Non-Point Source Agreement (Assessment documents on existing condition of Forestry, Ag, septic, construction. Determined priority areas) - SRF loan to purchase of land from willing sellers, to prevent development in flood prone areas (City of Portland Margaret Nover -503-823-7623) - SRF to fund new stream channel alignment and excavation of adjacent areas to reconnect the created stream with a former floodplain surface (City of Portland) - SRF to fund riparian revegetation along various Willamette River tributaries (City of Portland) 	
<p>Willamette</p> <p>-</p> <p>Clackamas</p> <p>s</p>	<ul style="list-style-type: none"> - Clackamas River Basin Council Action Plan, June 2005 - In progress, 319 grant awarded to Metro partnering with the watershed council and Clackamas Soil and Water Conservation District to promote sustainable development in urbanizing areas and develop a restoration project prioritization plan. 	<ul style="list-style-type: none"> - Action plan technical committee; Participation in watershed council project implementation planning team (PIP Team). - Forest Conversion consultation: ODF and DEQ met with owner and contractor on-site to discuss water quality protection measures to be taken during and after conversion. - In-progress 319 grant to Marion Soil and Water Conservation District for education, outreach, technical assistance as part of Pesticide stewardship Partnership. DEQ has collected samples since spring 2005 and shared that information with the SWCD. SWCD presents that

Basin	Plans, Restoration Activities – 319/SRF funded	Technical Assistance/ Compliance
		information to the agricultural community through partners such as Wilco.

A. Temperature, Toxics and Bio-criteria parameters in water quality criteria: Review of Standards

Every three years, Oregon is required to review and revise its water quality standards, and submit any new or revised standard to EPA for review and approval.

The Oregon water quality standards, including the narrative and numeric criteria, are set out in Chapter 340, Division 41 of the Oregon Administrative Rules. Currently, the turbidity standard and several temperature criteria are under review.

DEQ revised temperature standards and fish use designations in December 2003 and EPA for approved the standards in March 2004. For reference the related documents, including tables can be found under **"WATER QUALITY STANDARDS and BENEFICIAL USES – Division 41** at <http://www.deq.state.or.us/wq/wqrules/wqrules.htm>

DEQ has also been working on a update Turbidity criteria.

For more information on these efforts, please contact Debra Sturdevant, at DEQ, at (503) 229-6691.

Toxics

In May of 2004, the Oregon Environmental Quality Commission adopted new water quality criteria for over 150 toxic pollutants and submitted these criteria to the US Environmental Protection Agency (EPA) for approval. As of the end of 2005, EPA had not yet approved or disapproved those criteria. In February of 2005, Oregon Department of Environmental Quality began using those new criteria that were more stringent than the previous criteria for Clean Water Act purposes (except for designating waters as impaired), such as NPDES permitting and Total Maximum Daily Loads (TMDLs).

During 2005, DEQ met with EPA, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), and other agencies from Washington and Idaho to develop the Columbia River Initiative that will address issues regarding toxics in several important areas, such as a pilot project to minimize runoff that contains toxic pollutants from agricultural lands in Eastern Oregon. The measures in this Initiative will be submitted

to EPA Headquarters for consideration for funding as part of their National Strategy that would guide efforts into the next decade.

C. Clean Water State Revolving Fund – Oregon 319(h) Grants increased cooperation

The Oregon DEQ is committed to identify water quality project as it seeks to orient the NPS programs toward watersheds as management units and to begin comprehensive control projects in targeted watersheds. In an effort to reinforce this commitment to address NPS water quality needs the CWSRF Loan Program went through rule making in **2003 to include NPS criteria in the selection of projects. The program's rules** continue to focus the program on **a project's** environmental benefit, and less emphasis on compliance for both point and non-point source pollution control.

Since these changes were made in the program, the number of NPS projects funded by **the program continues to grow. The "sponsorship option" which allows** a water restoration project to be funded in conjunction with a traditional wastewater project - at a reduced interest rate - is being used to restore or protect important water resources that would have been difficult to fund in the past. The cities of Gold Beach, Portland and Woodburn have utilized this financial incentive.

Irrigation districts have become active borrowers in the program where the funds have been used to move water from irrigation ditches to pipes resulting in water quality improvements within the systems themselves and in the quality of the water returned to **Oregon's rivers. The Farmer's Irrigation District in north central Oregon continues to** borrow from the CWSRF program as does the East Fork Irrigation District.

Another area of growing interest is using the CWSRF program to assist financially in the implementation of TMDLs. The recently completed Willamette River TMDL will provide opportunities for cities, counties and special districts to use the fund to implementing their various activities.

DEQ provided \$4,345,630 of SRF funds to NPS projects implemented during July 05 to present. \$3,196,618 funded on the ground projects, and \$1,149,012 was spent on purchasing flood prone areas from willing land owners.

- DEQ Water Quality Division went through a planning process to identify Nonpoint Source Program Priorities and drafted NPS program plan for 2006-2007. The Plan identified working more closely with agricultural agencies and groups as one of the priorities.

Forest Conversion Memorandum of Agreement is scheduled to be finalized in fall 2006 to prevent water quality pollution during forestland conversions to other land use. The MOA promotes interagency communication and training to prevent unintended water quality degradation.

- DEQ conditionally approved the BLM and USFS' Northwest Forest Plan Temperature TMDL Implementation Strategy in fall 2005. The strategy provides tools for BLM and USFS to thin overly dense stands in riparian reserves to achieve mature forest conditions while minimizing short term impact to water quality.
- Oregon's Water Quality Monitoring Strategy was completed in 2005, which provides a complete description of DEQ's water monitoring activities throughout the state. Its purpose is to describe DEQ's monitoring objectives and sampling design, as well as explain the parameters sampled for different monitoring programs. Finally, it provides a summary of current funding and monitoring priorities for the agency. The document is intended to function as a strategic planning document to guide future monitoring work by DEQ.

D. DEQ's role in protecting Oregon's surface water quality

DEQ is the state agency responsible for protecting Oregon's surface waters to keep them safe for a wide range of uses, such as drinking water, recreation, fish habitat, and **irrigation**. DEQ's Water Quality Program accomplishes this in part through the development of water quality standards, identifying waters that do not meet the standards and developing plans with goals and pollution control targets designed to achieve the standards in the watersheds where they are not being met. DEQ periodically identifies the waters that do not meet water quality standards – a process **known as "303d listing" (named after the section of the federal Clean Water Act that requires it)** and conducts monitoring and analyses leading to the development of a Total Maximum Daily Load (TMDL) document. A TMDL describes the amount (load) of each pollutant a waterway can receive while maintaining compliance with water quality standards.

Table 1 Oregon TMDLs Approved by USEPA - May 2000 through December 2006

Waterbody (Basin/TMDL Segments)	Water Quality Concern Addressed	TMDL Parameters	USEPA Approval Date	Completed TMDL Segments (cumulat.)
Upper Grande Ronde Sub-basin (Grande Ronde/73)	Temperature, pH, Algae, DO, Sedimentation	Temperature, Sediment, Nitrogen, Phosphorous	5/03/00	73
Upper South Fork Coquille River (South Coast/4)	Temperature	Temperature	3/23/01	77
Umatilla River Basin (Umatilla/45)	Temperature, pH, Sedimentation, Turbidity, Aquatic Weeds, Algae	Temperature, pH, Sedimentation, Turbidity, Aquatic Weeds, Algae	5/09/01	122
Tillamook (North Coast/40)	Temperature, Bacteria	Temperature, Bacteria	7/31/01	162
Tualatin (Willamette/101)	Temperature, Bacteria, DO, Algae, pH	Temperature, Bacteria, DO, Settleable Volatile Solids, Ammonia, Chlorophyll a, pH, Phosphorus	8/07/01	263
Little River (North Umpqua/16)	Temperature, pH, Sedimentation	Temperature, pH, Sediment	1/29/02	279
Western Hood (Hood/7)	Temperature	Temperature	1/30/02	286
Nestucca Bay (North Coast/6)	Temperature, Bacteria, Sediment	Temperature, Bacteria, Sediment	5/13/02	292
Lower Sucker Creek Watershed (Illinois/3)	Temperature	Temperature	5/30/02	295

Table 1 Oregon TMDLs Approved by USEPA - May 2000 through December 2006

Waterbody (Basin/TMDL Segments)	Water Quality Concern Addressed	TMDL Parameters	USEPA Approval Date	Completed TMDL Segments (cumulat.)
Lobster Creek Watershed (Rogue/3)	Temperature	Temperature	6/13/02	298
Upper Klamath Lake Drainage (Klamath/32)	Temperature, pH, DO, Chlorophyll a	Temperature, pH, DO, Chlorophyll a	8/07/02	330
Lower Columbia River (Lower Columbia/7)	Total Dissolved Gas	Total Dissolved Gas	11/18/02	337
North Coast Subbasins (North Coast/56)	Temperature, Bacteria	Temperature, Bacteria	8/20/03	393
Alvord Lake Subbasin (7)	Temperature, Dissolved Oxygen	Temperature, Dissolved Oxygen	2/11/04	400
Snake River – Hells Canyon Reach (15)	Temperature, Total Dissolved Gas, Pesticides	Temperature, Total Dissolved Gas, Pesticides	1/03/04	415
Snake River – Hells Canyon Reach (5)	Phosphorus, Dissolved Oxygen	Phosphorus, Dissolved Oxygen	09/09/04	420
Applegate Subbasin (17)	Temperature, Sedimentation	Temperature, Sedimentation	10/15/04	437
Sandy River (8)	Temperature, Bacteria	Temperature, Bacteria	4/15/05	445
Walla Walla River (4)	Temperature	Temperature	9/29/05	449
Willamette	Temperature, bacteria, mercury	Temperature bacteria, mercury	9/29/06	657

Table 2. Full Schedule for TMDL Development (numbers represent impaired stream segments)

Year	TMDL's Approved by EPA	# TMDL's Submitted to EPA	# TMDL's Required Yet To Be Submitted to EPA	TMDL's Required to be Approved by EPA, Cumulative Totals.
1991	8	-		
1992	20	-		
1993	16	-		
1994	13	-		
1995	-	-		
1996	5	-		
1997	-	-		
1998	10	-		
1999	-	1	207	
2000	74	74	160	
2001	177	23	124	
2002			310	
2003			324	
2004			311	310
2005			143	
2006			134	
2007			112	
2008				982
2010				1153

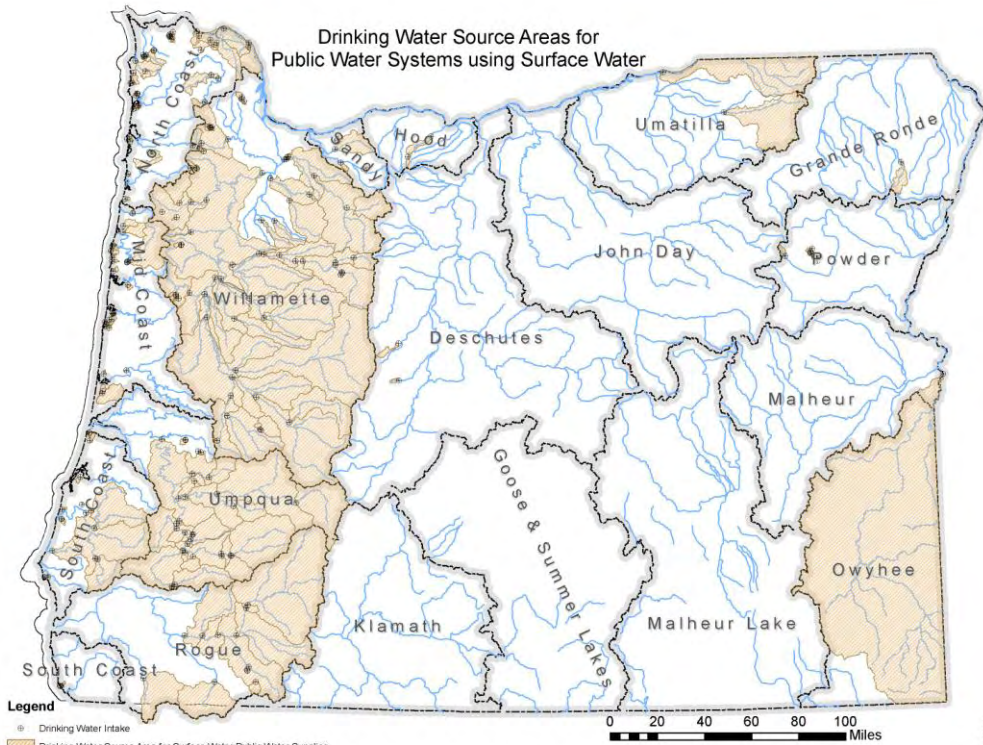
E. Drinking Water: Drinking Water Protection in Oregon

Approximately 75% of Oregon's citizens get their drinking water from public water systems that are regulated by the Department of Human Services (DHS). DHS is the "primacy" agency that administers the federal Environmental Protection Agency (EPA)

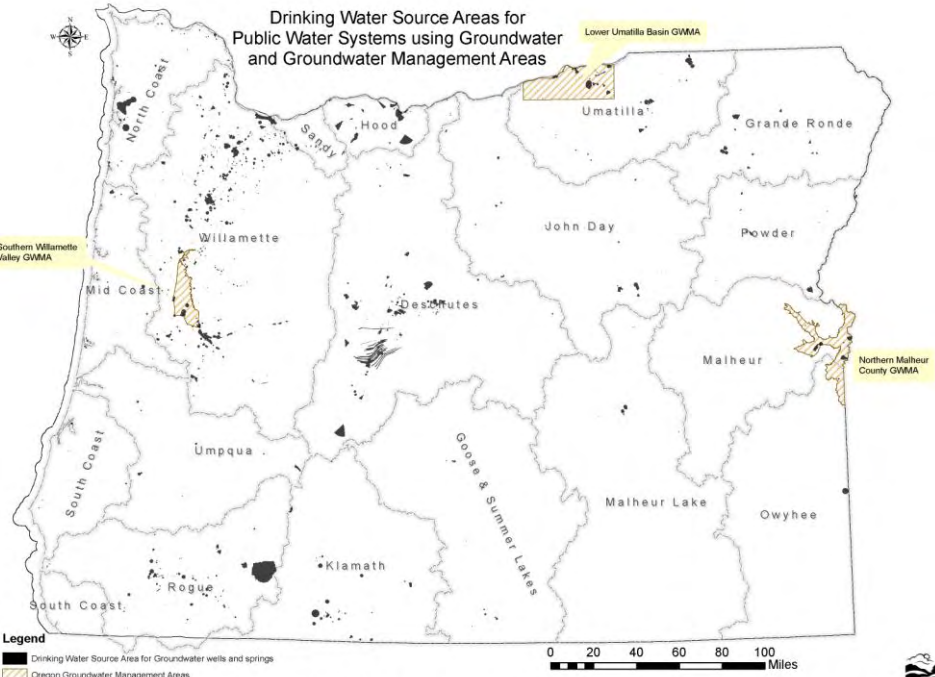
regulations for drinking water standards and water treatment requirements. Safe drinking water is vital to the health of citizens in every Oregon community. Most drinking water, particularly in urban areas, is obtained through public water systems that serve multiple homes---these can be groundwater wells or surface water intakes (pipes drawing from streams or rivers). If the well or intake serves more than 3 homes, it is regulated as a public water system in Oregon.

The 1996 Federal Safe Drinking Water Act (SDWA) Amendments provide the means to protect drinking water at its source. In developing the new amendments, the US Congress recognized that we need to go beyond the traditional emphasis on treatment to address the new challenges to provide clean drinking water. The SDWA amendments mandated **that states conduct "source water assessments" for all public water systems**. These assessments include delineating the contribution zones or source areas for all groundwater and surface water- supplied public water systems and identifying potential sources of contamination for drinking water in each state. Source Water Assessments were required for all systems with at least 15 hookups, or that serve more than 25 people year-round.

Each public water system in Oregon has now received a Source Water Assessment report completed by the DEQ and DHS Drinking Water Programs. The assessment gives the water system and the community information on the watershed or recharge area that **supplies the well, spring or intake (the "drinking water source area") and identifies** potential risks within the source area. Source water assessments are the foundation of planning for drinking water protection. Public water systems and local communities can use the assessment results to develop and implement drinking water protection strategies.



Notes: This map includes Oregon Department of Environmental Quality (DEQ) and Oregon Department of Human Services' (DHS) Drinking Water Program Source Water Assessment results for community and non-transient non-community public water systems (PWS) that were active in June 1999 (when Oregon's Source Water Assessment Plan was approved by EPA). The Drinking Water Source Area (DWSA) for surface water intakes is defined as the geographic area (watershed) that supplies the water body where the intake is located. Oregon's methodology required the use of 5th-field watersheds for surface water source area delineations. Oregon's Source Water Assessment methods and more information on Oregon's Drinking Water Protection Program are available at <http://www.deq.state.or.us/wq/dwp/dwphome.htm>.



Notes: This map includes Oregon Department of Environmental Quality (DEQ) and Oregon Department of Human Services' (DHS) Drinking Water Program Source Water Assessment results for community and non-transient non-community public water systems (PWS) that were active in June 1999 (when Oregon's Source Water Assessment Plan was approved by EPA). The drinking water source area for groundwater wells or springs is defined as the area on the surface that overlies that portion of the aquifer that supplies water to the well or spring over a 10- or 15-yr time period. Oregon's Source Water Assessment methods and more information on Oregon's Drinking Water Protection Program are available at <http://www.deq.state.or.us/wq/dwp/dwphome.htm>.

All maps of the groundwater and surface water source areas are available as GIS data layers. In addition, the over 15,150 "potential contaminant sources" identified as part of Oregon's

source water assessments are also available in an Access database and a GIS data layer. **DEQ's drinking water protection program uses this information to prioritize our work with** other programs and agencies. For purposes of sharing the statewide results of the assessments, we have compiled a summary of the top five categories of potential sources of contamination for each type of public water system. The data are presented below, along with a brief explanation as to why the specific land use or activity may present a risk to the water system. For a complete list of the inventory categories and risks information, please refer to the DEQ drinking water website.

Contaminant sources	
Surface water	Groundwater
Managed Forests (harvests/pesticides)	High Density Housing (>1/.5 acre)
Crops – Irrigated	Transportation Corridors – Highways
Grazing Animals (>5 large /acre)	Above/Under Ground Tanks
Above Ground Tanks	Spills, leaks
Auto Repair	Crops/over application pesticides

The assessment inventory results are an important first look at POTENTIAL risks to Oregon public water systems, the assessments were completed in 2005. The program is now in its implementation phase. Encouraging community based strategies and planning is the main focus of the Drinking Water Protection Program.

Drinking Water Protection Strategies

Implementation of a successful drinking water protection program at the state level will involve several key elements. Most importantly, it is essential that a recognition and consensus is established for the need for drinking water protection. Oregon state agencies must work together to recognize the importance of protecting these source areas and be strong partners with the local communities that are committed to ensuring their citizens safe drinking water. The second key element is to develop a long-term strategic plan for source water protection that will ensure progress toward achieving the greatest level of public health protection, with a realistic understanding of the number of staff and agency resources available for the program. Lastly, to ensure accountability, it is


important to develop performance measures that determine whether the program is using **the limited resources in the most effective way. Oregon’s benchmarks play a role in this,** as well as the US EPA national goals and measures.

The intent of drinking water protection is to reduce the risks of contamination for the public water systems, as it is highly unlikely that we can eliminate all risks. Recent examples of public water system contamination in Oregon include volatile organics, nitrates, and bacteria. These contamination incidents are preventable and it is a goal of drinking water protection efforts to minimize these types of incidents. The typical drinking water protection plan seeks to reduce the risks of contamination by a) raising public awareness of potential water quality impacts from ALL land uses/owners, and b) encouraging voluntary actions that can be taken to assist the community to protect their drinking water.

Drinking Water Protection Successes – Non-Regulatory

Municipal – Com/Ind/Res

- Hubbard
 - Education program for local businesses and residents
- Salem
 - Teamed with UST for high risk tanks
- Coburg
 - Transition to community wastewater treatment due to septic risks and effects




To effectively promote and accomplish drinking water protection, it is important that public water system operators and local community officials become more actively engaged in land management issues in their source areas. One of the values of the source water assessment is that it provides the community with a discreet area to focus on protecting. The assessments were designed to produce a map of the most sensitive areas that are vulnerable to contamination for their public water system. We will seek to share this information with counties and communities so that they can take action

to minimize risks in these areas.

Drinking Water Protection Successes – Non Regulatory

Forests and Agriculture

- McKenzie and Middle Fork Willamette Watershed (EWEB/SUB and others)
 - Legacy pesticides collection
 - 50 Farmers Participated
 - 2,400 lbs & 1,000 gal pesticides
 - 5,100 lbs fertilizers
 - 800 gal waste oil
 - 400 gal other chemicals
- Port Orford
 - Private timber operator increased protective streamside buffer
 - City purchased some land; established conservation easement on 160 acres
- Detroit
 - ODF removed drinking water source area from proposed timber harvest area



It is widely recognized that water quality protection (in any program) is more effectively achieved by engaging Oregonians to take voluntary actions beyond compliance. The basis of most new water quality protection planning is to involve, empower, and provide incentives to private landowners to make voluntary commitments to watershed restoration and habitat restoration. Developing a plan to protect a watershed or groundwater recharge area that serves a public water system uses the same approach. Voluntary actions by private landowners can be very effective in assisting communities downstream or downgradient to provide safe drinking water.

Since there are no new authorities associated with drinking water protection in Oregon, state agencies must rely upon integration and coordination with other programs. Our primary focus is to encourage other programs to use the sensitive areas as priorities within their programs. We will continue to coordinate with other established programs, especially at DEQ, such as spill response, household hazardous waste collection, hazardous waste cleanup, underground storage tank cleanup, and pollution prevention technical assistance, to focus on preventing the contamination of public water supplies. It is important to consider all components of the water cycle, such as addressing groundwater issues within municipal watersheds where groundwater may be contributing to the water quality problems in nearby surface waters.

When it comes to implementing water quality protection, there are similarities between this

program and other water quality efforts, such as watershed streamside buffers to save endangered salmon. Many of these efforts can be coordinated to increase the likelihood of success. *Where the programs have complimentary goals and priorities, we will work to leverage our resources to accomplish water quality protection.* There are programs that are not driven by the same priorities and do not address the same water quality parameters. One such example is the Total Maximum Daily Load (TMDL) program. For the Clean Water Act Section 303D-listed streams (64 total) that serve as drinking water sources, completing and implementing the TMDL will most likely have very little impact on drinking water treatment issues. This is primarily due to the fact that most TMDL efforts are not directly addressing relevant drinking water parameters in the modeling and implementation process. The TMDL may be addressing the temperature issues on a stream, for example, while the public water supply may be seeking to reduce sediments and turbidity. There are many federal and state water quality programs that address endangered species and aquatic life, but do not address drinking water issues.

As mentioned earlier, DHS and DEQ are working together at this time to develop a detailed work plan and strategic goals to guide the drinking water protection effort. In Oregon, protection is voluntary and this makes it even more essential to develop a program that uses incentives and strong technical assistance to make it happen.

While in the source water assessment phase, there were few resources dedicated to protection activities. The drinking water protection technical assistance aspect of the program has increased now that the assessments are completed. The agencies are focusing on helping communities understand the utility of the assessment data, and help them in setting objectives and resolving technical questions about drinking water protection. DEQ and DHS are available to provide assistance to communities that want to take specific steps to develop a local plan to protect their drinking water, such as:

direct process-oriented assistance to communities: early involvement by community leaders in the assessment process, hold community workshops, assistance to increase public participation in the plan development process, assemble a team of local stakeholders, operate successful team meetings and provide examples and guidance associated with plan development

providing technical assistance for selecting and implementing protection activities
coordination of drinking water protection with other agencies (such as DLCD, ODF, ODA)

and programs
technical support for individual drinking water watershed maps using statewide GIS coverage for drinking water protection areas
updating drinking water protection guidance and fact sheets to better meet local community needs and concerns
encouraging community applications for the Drinking Water Protection Loan Fund to develop drinking water protection plans or implementing projects that protect their sources of drinking water
integrating the local assessment information into other water quality efforts, e.g., TMDLs, Water Quality Management Plans, salmon recovery, etc., and addressing potential future rule requirements, e.g., microbial susceptibility for the Groundwater Rule.

There are a number of Oregon communities currently working to develop and implement plans to protect their drinking water source areas. The following communities or public water systems should be commended for their work on various phases of drinking water protection: Eugene, Springfield, Bandon, Hubbard, Portland, Gresham, Fairview, Salem, Sutherlin, Port Orford, Albany, Lebanon, Maupin, Mollala, Oak Grove, Crystal Springs, Sweet Home, Avion (Bend), Medford, Canby, Bend, Scappoose, Wheeler, the Clackamas River providers, and others. Some of these communities were working to protect their source waters many years before the source water assessments were mandated. In other cases, the SWA Reports provided key information to the community that enabled them to focus limited resources on the higher-risk areas within the watershed or recharge zones for wells.

The successful drinking water protection plans developed in Oregon already are available to communities as templates or examples. There are also extensive written materials available to local community groups or consultants to assist in their efforts to develop a drinking water protection plan. This can be provided to the local communities as part of the technical assistance offered by DHS and DEQ, or by researching the materials on the various websites listed below.

Potential "Management" Options

Examples of Ideas For Implementation and Reducing the Risks of Contamination to Drinking Water

Commercial/Industrial Land Uses

Employee education / notification using:
Local media (TV, Radio, Newspaper either paid or Public Service Announcements)
Letters to land owners/operators
Bill stuffers/customer mailings
Hold educational meetings/workshops/fairs
Post signs including spill response contacts
Distribute fact sheets or newsletters about drinking water protection, include:

“Best Management Practices (BMP)” for specific businesses

Extension Service training for proper pesticide use

Provide recognition for “Environmentally Friendly Businesses” (eg., EcoLogical program of Auto Repair shops)

Green awards; Plaques, flags, signs, door stickers

Residential Land Uses

Public Education/Notification using:
Local media (TV, radio, newspaper - either paid or Public Service Announcements)
Letters to residents; Bill stuffers/customer mailings
Hold educational meetings/workshops/fairs
Distribute fact sheets or a newsletter on DWP, BMPs, and available resources including:

Household hazardous waste
Septic systems use, maintenance, and abandonment
Pollution prevention/waste reduction in the home Lawn and garden maintenance

Municipal Land Uses (parks, maintenance facilities, sumps, nurseries, etc.)

Facilitate training workshops
Chemical applicators license for pesticides
Pollution prevention/waste reduction (use of alternatives)

Petroleum/hazardous waste/maintenance chemicals use, storage, disposal

Spill Response Plans

Notify local Emergency Response Planners of DWPA location

Ensure public water system notification in spill event

Stormwater Control/Pretreatment

Encourage use of pre-treatment and BMPs (detention ponds, retention ponds, vegetated swales and filter strips, urban forestry, sand filters), street cleaning, parking lot pretreatment requirements.

Property Purchase/Donation Program

Conservation easement purchase

Agricultural Land Uses (

Public education / notification using:
Letters to land owners / growers
Educational meetings/workshops/fairs for

growers

Survey owners to assess current practices

Set up a publicly coordinated resource center or forum

Facilitate training / workshops staffed by ODA, Extension Service, or DEQ

Chemical applicators license for pesticides

Fertilizer storage and handling BMPs

Livestock waste storage and treatment

Pollution prevention/waste reduction (use of alternatives)

Petroleum/hazardous waste/maintenance chemicals use, storage, disposal

Secure tax credits, grants, or funding to provide incentives

Low interest loans

Direct subsidies/cost sharing (i.e. for well abandonment, PCAP installation, and hazardous waste roundup)

Institute a local tax on pollution

Provide information on pollution liability and potential costs

Provide recognition for "Environmentally Friendly Practices"

Green awards; signs for fences adjacent to crops (for public recognition)

Set up local materials exchange program (or publicize existing programs)

Conservation easement purchase – coordinate with NRCS

Miscellaneous - Transportation Corridors

Notify local Emergency Response Planners of DWPA location

Notify responsible parties (i.e. County,

ODOT, railroads, businesses) of location within DWPA

Establish / review spill response procedures

Ensure public water system notification in spill event

Set up regional spill number

Provide fire department and spill responders with good maps of storm and sanitary sewer systems

Request conservative practices for right-of-way maintenance

Regulate hazardous materials transport

F. TMDLs addressing nonpoint source pollution

The Oregon Department of Environmental Quality is on schedule to complete Total Maximum Daily Loads (TMDLs - water quality analysis on watershed scale) as approved by the U.S. Environmental Protection Agency (EPA). ODEQ has been delegated responsibility for conducting this analysis through the federal Clean Water Act (CWA) of 1972. The CWA authorized states to assess water quality and develop a list of rivers and streams that do not meet water quality criteria (the 303(d) listing process), and then determine pollution reductions that will meet water quality criteria (the TMDL process). While ODEQ conducts the TMDL, the US Environmental Protection Agency (USEPA) has approval authority for all TMDLs.

According to the most recent (1998) assessment **of the State's water quality, 13,687 miles** of State waters are not currently achieving water quality standards. Over 12,100 of these miles are impaired due to temperature. Under Federal law, a total maximum daily load (TMDL) analysis and allocation must be undertaken for these water bodies. Given the numbers of impaired waters, DEQ has elected to perform its TMDL work on a subbasin basis, rather than water segment by segment. Table I presents completed TMDLs.

The majority of the State's TMDL work involves nonpoint sources of pollution. DEQ estimates that 75 percent (68) of the 91 watershed sub-basins are primarily affected by forestry, agriculture, urban development and other nonpoint sources. Nonpoint sources of pollution also play a significant role in the remaining 23 sub-basin where impairment is attributed to both point and NPS.

G. Willamette River TMDL

During the 1990s, the Legislature provided resources for the Department of Environmental Quality (DEQ) to work with others to study the health of the Willamette River. The studies included a number of key findings, including a high incidence of deformities in the skeletons of certain fish, as well as the presence of toxic chemicals in fish tissues at levels that make the fish unsafe to eat. The studies also found that the majority of water pollution came from urban and rural runoff.

During 2006, the Oregon DEQ received approval on the Willamette TMDL basin study or 208 individual TMDLs, for about 2,219 river miles of sub-basin scale, total maximum daily loads (TMDLs) addressing nonpoint source pollution concerns. The focus of the Willamette TMDLs is on the most commonly 303(d) listed pollutants in the basin, which are bacteria, mercury, and temperature, although there are listings for other pollutants as well.

The TMDLs included the: Lower Willamette Subbasin, Middle Willamette Subbasin, Clackamas Subbasin, Upper Willamette Subbasin, McKenzie Subbasin, Coast Fork Willamette Subbasin, and the Middle Fork Willamette Subbasin.

Pollutants being addressed by the Willamette TMDL:

- **Bacteria (Four subbasins and main stem Willamette River)**
- **DDT (Johnson Creek; Lower Willamette Subbasin)**
- **Dieldrin (Johnson Creek; Lower Willamette Subbasin)**
- **Dissolved Oxygen (Upper Willamette Subbasin)**
- **Mercury (phased TMDL for all 12 Willamette Subbasins)**
- **Temperature (Nine subbasins and main stem Willamette River)**
- **Turbidity (Upper Willamette Subbasin)**

The Willamette Basin is the largest geographical TMDL undertaken by ODEQ to date.

While a TMDL must be conducted for every 303(d) listed waterbody, it is important to note that a waterbody can be listed for more than one pollutant not meeting water quality criteria. As a result, TMDLs are actually many TMDLs assembled into one document because they are conducted parameter by parameter or pollutant by pollutant. Additionally, the scale of the TMDL may include more waterbodies than just the listed waterbody. For example, stream temperature is affected by upstream tributaries as well as from more localized impacts. Therefore a temperature TMDL would consider all streams that affect the listed waterbody.

The Problem

The Willamette River Basin is home to seventy percent of Oregon's population. Those who live or work in the basin depend on the river for many resources, and also contribute to potential pollution problems that come with any residential, municipal, industrial, or agricultural operation.

For the amount of land area in the basin, more water flows from the Willamette River than

from any other major river basin in the United States. The basin, 180 miles long and 80 miles wide, is bordered by the crest of the Cascade Mountains to the East, the crest of the Coast Range to the West, and the Columbia River to the North where the two rivers meet. About 2.3 million people live in the river basin near its 16,000 miles of rivers and streams, and more than half of them live in the Portland metropolitan area.

As population increases, and land conversion to urban and industrial uses continues in the basin, these changes affect the Willamette River.

For example, the household chemical products applied in and around the home, including pesticides and fertilizers, may end up in the Willamette after passing through treatment plants or in storm water runoff. Pollutants can reach the river through groundwater as well as from runoff and pipes.

In 2001, DEQ began working with a group of “stakeholders” to create a plan to bring the Willamette up to water quality standards. This group participates as the Willamette River TMDLs Council.

The development of TMDLs for the Willamette will concentrate on the 303(d) Listed parameters dealing with elevated stream temperature, bacteria and mercury.

The Solution

Decades of work and millions of dollars of investment by the State, industry, and cities has reversed some of the worst damage to the Willamette River. Cities and industries began **treating wastewater in the 1950’s, and treatment has improved steadily since.** Flood control reservoirs built by the federal government have increased summer flow, providing waste dilution during this critical period. Today the river is cleaner and healthier than it once was for people and fish. However, there is still much work to be done.

The Oregon Plan **is a commitment from Oregon’s citizens, businesses, agencies and governments** to work together to ensure our children will inherit healthy watersheds. The Oregon Plan is people working locally; watershed councils coordinating the work; local landowners and governments initiating new ways of doing things; funding and expertise from state, tribal and federal agencies, and businesses and industries; and implementing existing laws and regulations. Most of all, it is a spirit of volunteerism and stewardship characteristic of Oregon and Oregonians.

Efforts to restore the watershed involve everyone in the watershed. Actions include planting

vegetation to reduce erosion and keep water cool; changing habits at home, at work, and at play to prevent or reduce pollutants entering waterways; improving fish passage and opening habitat that was blocked by past practices; and reducing erosion and sediment entering streams. For more information on how to help, view Preventing Surface Water Runoff.

Mercury is another key issue that people can learn more about to reduce its impairment on the environment. DEQ is actively involved in a study to reduce mercury pollution in the Willamette.

In 2006, DEQ staff assigned to implementation of the Willamette TMDL conducted extensive outreach to the media, the general public, point sources and the various designated management agencies (DMAs) who have responsibilities for taking actions to address the TMDLs. Staff worked with numerous partners (Soil and Water Conservation Districts, Watershed Councils, Councils of Governments, and DMAs) to communicate the recommendations, findings, and requirements of the TMDL and to offer assistance in the development of TMDL implementation plans. Working as a team, staff also developed templates, guidance materials, and case studies that will assist DMAs in meeting their requirements associated with the TMDL.

As a specific example of an accomplishment related to TMDL implementation, the Willamette team took advantage of some carryover 319 funds to support 11 nonpoint source agreements in the summer of 2006. In a few short months, team members solicited projects, developed work plans, signed agreements and assisted sponsors with implementation of projects. As a result, three livestock manure storage areas are being built, restoration is being completed on riparian areas in two areas, pesticides have been removed from critical watersheds, mud and manure workshops are being held, and a handbook for designing and engineering manure storage sheds has been developed and provided to each soil and water conservation district in the state, allowing them to use the engineered designs without need for further engineering expense. A total of \$107,939 was invested in water quality improvements in the Willamette through this effort.

H. Memorandum of Agreement between the Bureau of Land Management and DEQ and Memorandum of Understanding between the U.S. Forest Service and DEQ.

During the years 2002 - 2003, DEQ initiated discussion with the United States Bureau of Land Management (BLM) and the United States Forest Service (USFS) to update existing water quality joint efforts (Memorandum of Agreement and Memorandum of Understanding). The agreement with the USFS was signed in 2002 and the agreement with the BLM was signed in 2003. The purpose of the agreements with our federal forest and range land managers is aimed at strengthening working relations and establishing closer coordination, particularly regarding TMDL development and implementation.

The MOAs focus on protection, restoration and maintenance of physical, chemical and biological conditions of water that support beneficial uses (defined in Oregon Administrative Rules, Division 41) by working in a proactive and collaborative manner. The purpose of the MOA is to:

Collaborate on priorities, strategies and funding using a watershed approach to protect and restore water quality on BLM and USFS lands.

- ✓ *Foster and enhance communication, coordination and working relationships between DEQ and the BLM and USFS.*
- ✓ *Identify BLM, USFS and State of Oregon policy, programs, and practices that ensure attainment of Federal and State water quality laws and regulations that collectively support the assignment of the BLM and USFS as a Designated Management Agency (DMA) for meeting Clean Water Act (CWA) requirements on BLM and USFS lands.*
- ✓ *Recognize, clarify and support DEQ, BLM and USFS roles and responsibilities specific to water quality.*
- ✓ *Establish a process for joint review of ongoing watershed protection, restoration, and compliance activities, including a plan for short and long-term work.*
- ✓ *Create an annual evaluation process to improve methods and approaches for meeting water quality goals and standards.*

The MOA create a framework in which the DEQ, BLM and USFS can effectively cooperate on programs and projects of mutual concern to protect, restore and maintain water quality Statewide. The agreements also minimize duplication of efforts.

Efforts to date:

1. **DEQ provided comments on BLM's Western Oregon Plan Revisions (WOPR).**
2. Began to survey DEQ, BLM and USFS staff on the work accomplished to-date, recommendations for improvement and needed changes to agreements.
3. Extended the DEQ/USFS MOU for another year and began revisions to MOU for signature by June, 2008.
4. Began revisions to DEQ/BLM MOA with signature prior expiration date of June, 2008.
5. Began organizing a meeting of all applicable DEQ, BLM and USFS staff to evaluate agreement accomplishments, needed revisions to agreements and to establish priorities for next 5-year agreement.

I. Forest Conversion

The Oregon Department of Forestry (ODF), Oregon Department of Agriculture (ODA), Oregon Division of State Lands (DSL), Oregon Department of Land Conservation and Development (DLCD), Oregon Department of Fish and Wildlife (ODFW), Oregon Parks and Recreation Department (OPRD), and Oregon Department of Environmental Quality (DEQ) have common interests and responsibilities in protecting waters of the state and other natural resources during the conversion of forestland to non-forest uses. The Memorandum of Understanding, signed in 2006 calls for closely coordinate efforts, insure agency coordination and minimize duplication, and to work towards common goals in regulating the conversion process.

The purpose of this agreement is to clarify the roles and responsibilities of the state agencies involved during the conversion of forestland to other nonforest uses on publicly or privately owned lands, to ensure that state water quality standards and other resources

are protected throughout the process, and to ensure a smooth transition in jurisdiction between the agencies.

Efforts to date:

1. Began organizing four (4) Spring 2008 training sessions for all state agency staff who are a party to the Forestlands Conversion Memorandum of Agreement at the following locations: Portland area at the City of Auroa, North Coast area at the City of Tillamook; Eugene at the City of Springfield; and the South Coast area at the City of Coos Bay.
2. Decided to cover the rest of the state with three (3) training sessions planned for the fall of 2008 at the following locations: Southern Oregon at the City of Medford; Prineville area at the City of Prineville; and the LaGrande area at the City of LaGrande.
3. Will follow state agency training sessions with training sessions for city and county planning staff and the development community in 2009.
4. After holding all training sessions will conduct an analysis of the MOA for any possible changes.

J. Sufficiency analysis

The Department of Forestry and Department of Environmental Quality agreed through an April 1998 Memorandum of Understanding to jointly evaluate the effectiveness of the Forest Practices Act to protect water quality. The analysis focused on temperature, sedimentation, aquatic habitat modification, and bio-criteria. The Sufficiency Analysis: A Statewide Evaluation of Forest Practices Act Effectiveness in Protecting Water Quality was signed by the State Forester and the Director of DEQ in October, 2002.

There were 12 recommendations in the sufficiency analysis, and the purpose of those recommendations was to ensure that the FPA goals and objectives, and thus water quality standards were being met. ODF developed series of rule changes concepts based on the sufficiency analysis as well as the recommendations made by the IMST (Independent Multidisciplinary Science Team) FPAC (Forest Practices Advisory Committee) and ERFAC. (Eastside Riparian Functions Advisory Committee)

Recommendations addressing issues associated with roads and land slides have resulted in

FPA rule changes in 2002.

Recommendations addressing large wood and temperature and fish passage issues are currently being proposed to and considered by the Board of Forestry. Due to lack of specific scientific data required by ORS 527.714, some recommendations are being proposed as voluntary measures, whereas recommendations with sufficient research evidence are proposed to be rule changes. The adoption date for the voluntary measures and the proposed rule changes is not certain. ODF was scheduled to propose all of its recommendations to the Board of Forestry by April 2004; however, ODF will need to conduct ORS 527.714 analysis before the board makes its final decision.

K. Coastal Zone NPS Program

Oregon's Coastal Nonpoint Pollution Control Program (CNPCP) is being developed in compliance with requirements adopted as part of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA). The new requirements were designed to restore and protect coastal waters from nonpoint source pollution and require coastal states to implement a set of *management measures* based on guidance published by EPA. The guidance contains 56 management measures separated into six groups. There are measures for the following areas: agricultural activities, forestry activities, urban areas, marinas, hydro modification activities, and protecting wetlands.

In July of 1995, Oregon completed its Program Submittal for the CNPCP. Oregon's CNPCP Submittal described existing programs and proposed work tasks that would meet the **terms of CZARA and EPA's guidance and work to improve water quality in Oregon's coastal management area. In January 1998, after reviewing the state's program submittal, EPA and NOAA returned their findings to the state that granted a conditional approval to Oregon's program. The findings included 13 conditions of approval.**

To better respond to the conditions of approval, Department of Environmental Quality (DEQ) and Department of Land Conservation and Development (DLCD) divided them into 40 discrete tasks. Of these tasks, approximately 25% have been addressed to the satisfaction of EPA and NOAA, although documentation of these resolutions has not yet been formalized. With the help of partner agencies, (such as the Oregon Department of Transportation (ODOT) and the Department of Agriculture (ODA)), who participated in

development of the original submittal, the remaining 75% were prioritized within the **framework of the state's larger water quality and salmon recovery efforts.**

By January 2003 all CNPCP management measures program submittals were sent to NOAA and EPA for review and program plan approval. Specifically the following tasks were completed:

NOAA and EPA Region 10 in an interim decision memo dated January 10, 2003 have preliminarily approved Measures for Marinas and Recreational Boating.

NOAA and EPA Region 10 in an interim decision memo dated January 10, 2003 have preliminarily approved the following Measures for Hydro modification: Dams.

NOAA and EPA Region 10 in an interim decision memo dated January 10, 2003 have preliminarily approved Measures for Critical Coastal Areas.

NOAA and EPA Region 10 in an interim decision memo dated January 10, 2003 have preliminarily approved Measures for Technical Assistance.

Obtained federal funding (through EPA's Section 319 and NOAA) for DEQ and DLCD's CNPCP Coordinator positions.

Developed educational, presentation materials, and a technical assistance program for local governments in the CNPCP to facilitate the adoption of local development codes protective of water quality and aquatic habitat as recommended in the DLCD/DEQ Water Quality Model Code and Guidebook and the development and implementation of Urban and Rural Areas TMDL Implementation Plans.

Began implementing remaining management measures prioritized as commitments under The Oregon Plan.

Continued to prepare CNPCP yearly progress reports to NOAA and EPA on meeting program requirements and implementation of CNPCP Management Measures.

Implementation of CNPCP Management Measures is occurring through Urban and Rural Areas TMDL Implementation Plans being developed as required by the TMDL process, the

agricultural water quality plans (SB1010 Rules) and the State Forest Practices Act.

Efforts to date:

1. On October 30, 2007, Oregon Department of Land Conservation and Development (DLCD) and the Oregon Department of Environmental Quality (DEQ) submitted to **EPA and NOAA a final "Pollution Prevention and Control Program for Oregon's Coastal Waters; Supplemental information in response to federal findings of 2004"** document **to provide required information for the approval of Oregon's Coastal Nonpoint Pollution Control Program (CNPCP) management measures and demonstrate how Oregon's CNPCP is adequate to control nonpoint source pollution in coastal areas.**
2. Anticipating program approval after responding to EPA and NOAA final requests in 2008.

L. Nonpoint Source grants

There are two primary programs that provide funding for various nonpoint source pollution and watershed enhancement projects in Oregon. One is administered by DEQ, and the other is administered by OWEB. A third program is administered by the Department of Agriculture (Fertilizer Tax Fund Program), which supports research and demonstration of BMP as it pertains to groundwater quality protection.

M. DEQ 319 Nonpoint Source Grants

Section 319 funds are competitively awarded to projects consistent with the Revised Oregon Nonpoint Source (NPS) Control Program Plan (2000). This plan is available for **downloading or viewing on DEQ's web site:**

<http://www.deq.state.or.us/wq/nonpoint/plan.htm>

The criterion for evaluation of 319 proposals is in constant evolution. Due in part to the progress of the TMDL development/implementation work needs and other priority water quality work, such as groundwater management areas. We are noticing an improvement on the proposals being submitted in terms of linking restoration work over time and with each other, adapting to the same trend of adapting to fit needs.

In addition, Oregon is diligently integrating the 9-key element approach to watershed **planning, model by EPA. The emphasis of Oregon's approach has been on identifying the** key elements that might be absent or not thoroughly addressed in existing watershed restoration plans, and utilizing **319 funds to "fill in the hole"**. This approach is a work in progress. We expect that project proposal work plans will improve in their focus to reflect this approach with time. As an example, please refer to the list of 319 work plans received, as a result of the 2007 RFP. For reference the RFP for the 2007 grant year is included under Appendix B.

N. Highlights of DEQ activities supported by 319 funds

Eastern Oregon: Hood/Deschutes basin area

Provide technical support and manage 319 grant proposals/projects in the Klamath Basin; provide NPS technical support to watershed councils, Klamath Basin Ecological Restoration Office, local area natural resource management groups such as the Klamath Basin Rangeland Trust, and the Klamath Basin Ecological Foundation.

Participation in the 319 and OWEB review processes by providing input on project priorities for the Eastern Region;

Working with applicants on proposals they are submitting, and reviewing proposals in the Hood and Deschutes Basins and making recommendations for funding;

Tracking the implementation of projects in the Deschutes and Hood Basins receiving funding;

Reviewing submissions of 319 project reports;

Providing assistance to stakeholders (such as watershed councils) if they have specific questions or problems that relate to nonpoint source issues.

Work extensively with Watershed Councils and SWCDs throughout both the Deschutes and Hood Basins. 319 time working with watershed councils on water quality monitoring projects, particularly with the Upper Deschutes Watershed Council has a very successful water quality monitoring program that has expanded over the past year. Prior to 2006, they primarily focused on coordinating temperature monitoring around the subbasin and setting up a data management system and data analysis tools. In FY 2006 they expanded their monitoring capability to include multi-parameter monitoring such as pH, D.O., turbidity and conductivity. They are targeting their monitoring towards tracking the water quality improvements associated with implementation of BMPS, primarily the restoration of in-stream flows. The data collected through this project will be very helpful in TMDL development and is setting the stage for a coordinated TMDL Implementation monitoring framework.

The program is guided by an inter-organization stakeholder Technical Team and has quite a bit of local support. This program has been so successful that they are getting requests from other Watershed Councils around the state to help set up similar monitoring and analytical programs. Close to home, they have begun working with the Crooked River Watershed Council (also in the Deschutes Basin) to help them establish a similar program. The Councils are working together and with DEQ to

develop the framework for a Deschutes monitoring partnership that might possibly expand to include the entire Deschutes Basin.

Work in Western Region, Umpqua-Willamette-Mid Coast Basins

Umpqua Basin

Activity in the Umpqua Basin consisted of two primary activities:

TMDL Assessment and Implementation

Provided technical assistance and served as project officer on 319 grants focusing on assessment and activities to implement the then-anticipated Umpqua Basin Total Maximum Daily Loads for bacteria and stream temperature. Examples include:

The Partnership for the Umpqua Rivers (PUR, formerly Umpqua Basin Watershed Council) is close to completing an overall basin assessment that integrates the results of watershed assessments for all watersheds with substantial private ownership. Recommendations from the individual watershed assessments were incorporated into the Umpqua Basin TMDL Water Quality Management Plan, and form the basis for **DEQ's strategy to implement actions that will help meet the Total Maximum Daily Loads.**

The Douglas Soil and Water Conservation District is working with private landowners on demonstration projects to restore riparian areas heavily impacted by livestock grazing. The benefits from these projects will continue to accrue and grow over time as riparian functions are restored, and provide immediate benefits in reducing bacteria inputs to streams.

TMDL and WQMP Development

Drafted and coordinated finalization of the Umpqua Basin Water Quality Management Plan that was one of the most detailed plans developed by DEQ at that point. Assisted in interpreting DNA study results to incorporate into the final Bacteria TMDL

Mid-coast basin

319 support in this basin provided funding for a position that **acted as the basin's nonpoint** source coordinator and 319 project officer during all of FY-06. The Mid Coast Basin is scheduled to have TMDLs completed by 2008, and is of primary importance in the **state and federal governments' efforts to support coastal** Coho salmon recovery. Activity in the Mid Coast Basin during the year consisted of two primary activities:

TMDL Data Collection Using Local Monitoring Groups

A 319 grant to the Lincoln Soil and Water Conservation District for limited temperature monitoring and significant riparian restoration provided an opportunity to develop a multi-party basin partnership that is in the process of gathering all the water quality and related data necessary for TMDL development in the basin. The District was so successful in obtaining matching funds for restoration that some of the grant could be used to expand the temperature monitoring component to include the TMDL. This partnership, and the use of established volunteer monitoring group members to gather TMDL data, has brought together several watershed councils, SWCDs, the Confederated Tribes of the Siletz Indians, and local water monitoring groups in a joint project to gather and manage data for the TMDL.

A subsequent grant is currently focusing on dissolved oxygen, bacteria and sediment monitoring to provide data needed for those TMDLs. All involved in this partnership express satisfaction at the efficient use of resources to accomplish a great deal.

TMDL Implementation

Even though the TMDLs have not been completed, many landowners are interested in taking early action to protect waters from bacteria, nutrients and thermal impacts, which will support the TMDLs that are scheduled for 2008. The Lincoln Soil and Water Conservation District is using the 319 funds in cooperation with other organizations in the Mid Coast Basin to fund restoration projects that will improve water quality. This has given local groups the ability to respond rapidly to new contacts from landowners, and keep them active on their projects.

Willamette BASIN

This position was assigned to the Willamette Basin in May, 2006. At that time the Total

Maximum Daily Loads were nearly finalized, and eventually submitted to EPA in September, 2006. Activity during FY-06 consisted primarily of TMDL Implementation.

TMDL Implementation

The strategy adopted by DEQ was to use leftover 319 funds from previous years to jump-start TMDL implementation activities in the Willamette basin with grants to new partners for short-term implementation projects. Accordingly, eleven projects were developed by basin coordinators, and this position then completed work plan negotiations and 319 agreement development for each project, and served as project officer for most of these agreements.

These eleven projects have provided significant reductions in nonpoint source pollution and have provided new tools for local organizations:

A local Soil and Water Conservation District developed an Agricultural Waste Management Structures Handbook that provides four sets of professionally engineered designs applicable to every jurisdiction in Oregon for animal waste management (composting).

The District also used the designs to construct a composting facility.

A local utility sponsored a program for agricultural chemical removal from critical watersheds, collecting 17 tons of chemicals, including 9 tons of old pesticides.

The Extension Service is producing workshops for cattle and horse owners on managing mud and manure in their facilities.

A local Resource Conservation and Development group coordinated restoration of 1.2 miles of riparian area along the main stem Willamette River.

A local jurisdiction is using grassed waterways to significantly reduce turbidity in runoff from agricultural areas.

Coordination of the 319 application review process within Western Region.

North Coast Basin Coordination

To date, four TMDLs have been developed within the North Coast Basin (NCB). These are the Nestucca, Tillamook, and Nehalem Watersheds. The major water quality problems identified were stream temperature, bacteria, and sediment. The TMDL Water Quality Management Plans identified specific best management practices

(BMPs) needed to abate the aforementioned water quality problems.

During the period 2005-2006, the NCB Coordinator in partnership with the Oregon Department of Agriculture, local Soil & Water Conservation Districts, Watershed Councils, Tillamook Estuaries Partnership, Tillamook Creamery Association, the Oregon Watershed Enhancement Board, and others, worked to exclude livestock from stream access through fencing and providing off-channel water sources, and establish riparian vegetation plantings on agriculture and rural residential lands to provide stream shading, abate runoff of bacteria and sediment, and provide bank stability. Approximately 25 miles of new riparian areas were planted and maintenance provided on 43 miles of previously planted areas. Specific Coordinator activities included providing water quality expertise for data collection and analysis, determination of BMPs needed, prioritization of project sites, specific site project planning, project funding, long term monitoring of project success, and public outreach and education.

The NCB Coordinator also worked with the Tillamook County Government and local cities and municipalities to address storm water runoff. To date, three incorporated cities have developed Storm Water Abatement Management plans and have begun implementation. Work is currently underway to develop a County-wide plan to include unincorporated cities and county owned lands.

During 2003, DEQ requested proposals to address NPS priorities. There were about 65 requests for funding, of which about 32 projects were prioritized to fit the Oregon 319 funding allocation. The projects are summarized as follows:

Table 3. Summary tables for the FY 2007 319 projects

OREGON 319 NPS projects for year 2007			
NAME	Submitted by	Basin	319 Budget Request
Little North Fork, Nehalem Riparian Enhancement	Lower Nehalem WSC	Nehalem	\$8,540
Powder River WQ Enhancement Project	Baker Valley SWCD	Powder	\$52,500
Wolfe Creek Enhancement Project	TEP	Nestucca	\$27,958
Scholfield Creek Riparian Enhancement	Umpqua SWCD	Umpqua	\$21,030
Circle Creek Enhancement Project	N. Coast Land Conservancy	Necanicum	\$27,535
2008 Tillamook Co. Children's Water Festival	TEP	Tillamook	\$5,000
Backyard Planting Program - Year 5	TEP	Tillamook	\$49,500
Cedar Island Demonstration Restoration Project	Willamette Riverkeepers	L. Willamette	\$11,730
Upper Nehalem Riparian Restoration and Basin Monitoring	Upper Nehalem WSC	Upper Nehalem	\$54,360
Multnomah Co. Central Library Eco-Roof Project	Multnomah Co.	L. Willamette	\$102,148
Applegate WS TMDL Implementation	Applegate River WSC	Applegate R.	\$112,514
Owyhee River Improvement Project	Malheur Co. SWCD	Owyhee	\$37,652
Choir Boys Construct Wetland Project	Malheur Co. SWCD	Owyhee	\$52,248
Middle Fork of the John Day River Aquatic Restoration	Nature Conservancy	MF John Day	\$174,850

Wash Rack Solution	Malheur WSC	Malheur	\$10,334
Tillamook SWCD 2007 Stream Enhancement and Restoration	Tillamook SWCD	Till. Nes. Neh.	\$47,872
2007-08 NNWC Streamside Planting and Maintenance	Nestucca Neskowin WSC	Nest/Nesk	\$60,000
Medford Sports & community Park Urban Restoration Pilot Project	Medford Parks & Rec	Bear Creek	\$49,000
Restoration effect. Monit. in priority basins of the Up Deschutes	Upper Deschutes WSC	Up/Little Desch.	\$80,823
Private well Outreach and Monitoring	OSU	Willamette	\$58,892
Calapooia & santiam Landowner Outrean and Restoration Proj.	S. Santiam WSC	Calapooia, N Sant	\$73,766
McKenzie River Septic System Assistance Program	EWEB	McKenzie	\$68,000
Integration TMDL and GW priorities into Willamette Ag. Demo Proj	Benton SWCD	Long Tom / Muddy R	\$171,000
WQ Investment: Streamside restoration and LID practices	METRO	L. Willamette	\$90,000
Malheur TMDL Planning and Implementation	DEQ	Malheur	TBD
Total request			\$1,447,252.00

