

# **Appendix J**

## **North Coast Basin Report**

# 1. Basin Description

The North Coast Basin extends from the Columbia River to the southern Tillamook County line and consists of eight watersheds. Six watersheds drain to the Pacific Ocean: Necanicum, Nehalem, Tillamook Bay, Nestucca, Netarts/Sand Lake and Neskowin and two drain to the lower Columbia River: Lower Columbia and Lower Columbia-Clatskanie. The North Coast Basin includes most of Clatsop, Columbia and Tillamook counties and the major cities of Tillamook, Vernonia, Cannon Beach, Astoria and Rockaway Beach. The three largest bays of Tillamook, Nehalem and Netarts provide for economic and recreational opportunities in the region. Chief among them is commercial and recreational shellfishing with over 2.3 million pounds of oysters and clams harvested annually in Oregon. Other important aquatic resources include the freshwater streams that provide critical habitat for native salmon and drinking water for area residents. Finally, the beaches, lakes, streams and estuaries all provide numerous recreational (swimming, fishing, boating, etc.) opportunities throughout the region.

Forestry is the predominant land use in the subbasin covering nearly 95 percent of the landscape, with the Tillamook State Forest being the largest portion. Agricultural land use is a small portion of the basin with most of it occurring in the lower portions of the rivers and near the bays. The dairy industry makes up much of this use with dairies located in the lower Tillamook, Nestucca and Nehalem watersheds. Cities are generally located in the coastal plains, adjacent to rivers, bays or the ocean.

**Table J-1: 2011 Land use and land cover for each subbasin in the North Coast.**

Subbasin	Watershed Area (km <sup>2</sup> )	% Urban/Roads	% Forest	% Cultivated	% Range/Forest Disturbance	%Other
Lower Columbia	847.291	9.2	55.2	0.8	27.9	6.9
Lower Columbia-Clatskanie	771.314	8.0	58.3	5.7	23.6	4.4
Necanicum	354.954	13.0	52.1	0.0	31.4	3.6
Nehalem	2204.689	5.3	61.2	1.1	31.3	1.0
Wilson-Trask-Nestucca	2448.221	6.9	72.5	2.5	15.6	2.5

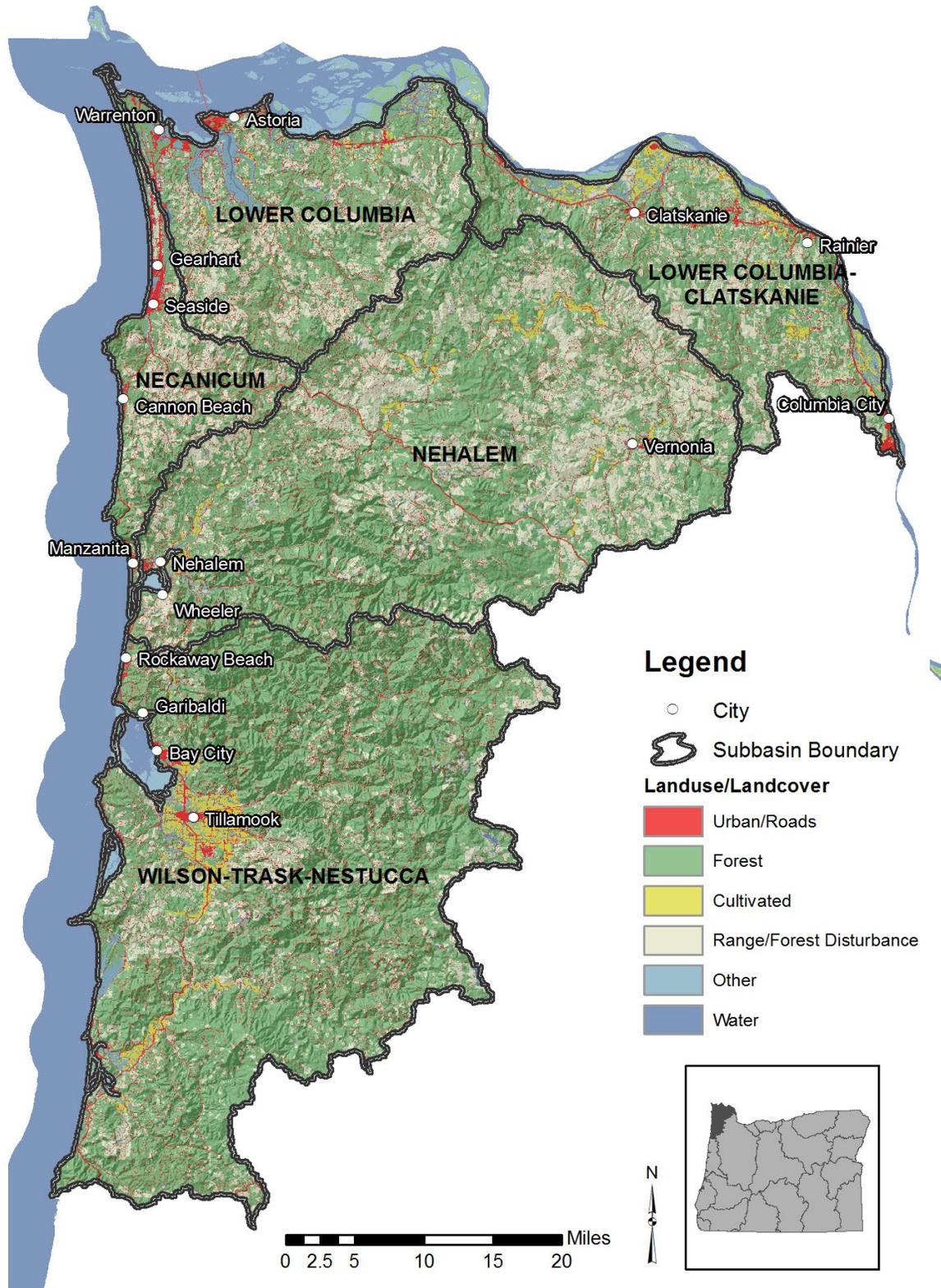


Figure J-1: Land use in the North Coast administrative basin.

## 1.1 Basin Contacts

Table J-2: Oregon DEQ basin contact.

Administrative Area	DEQ Basin Coordinator
North Coast - Lower Columbia Basin	York Johnson: 503-801-5092: <a href="mailto:johnson.york@deq.state.or.us">johnson.york@deq.state.or.us</a>

# 2. Water Quality Impairments and TMDLs

## 2.1 Water Quality Impaired Stream Segments

Under Section 303(d) of the Clean Water Act, states, territories and authorized tribes must submit lists of impaired waters. Impaired waters are those that do not attain water quality standards or support all designated uses. The law requires that states establish priority rankings for waters on the lists and develop Total Maximum Daily Loads (TMDLs) for these waters. Table J-3 identifies the number of North Coast Basin waterbody segments impaired by parameter from the 2012 Integrated Report and the number of segments with approved TMDLs. Sources: [ODEQ](#), [USEPA](#)

Table J-3: Number of impaired stream segments with and without a TMDL as identified in Oregon's 2012 Integrated Report and Assessment database.

Parameter	Segments without a TMDL	Segments with a TMDL
4,4'-DDE	3	0
Aquatic Weeds Or Algae	4	0
Arsenic	6	0
Biocriteria	2	0
Biological Criteria	36	0
Chlorine	0	1
Chromium	1	0
Copper	1	0
Dioxin (2,3,7,8-TCDD)	0	6
Dissolved Oxygen	34	0
E. Coli	1	21
Enterococcus	4	0
Fecal Coliform	7	56
Iron	3	0
pH	2	0
Polychlorinated Biphenyls (PCBs)	3	0
Sedimentation	0	2

Parameter	Segments without a TMDL	Segments with a TMDL
Temperature	2	66
Tissue - soft shell clam - arsenic	3	0
Total Dissolved Gas	0	3
Turbidity	2	0
Zinc	1	0

## 2.2 Total Maximum Daily Load Watershed Plans

The federal Clean Water Act requires that water pollutant reduction plans, called Total Maximum Daily Loads (TMDLs), be developed for water bodies that are listed in Category 5 of the Integrated Report (303(d) List). TMDLs describe the maximum amount of pollutants that can enter the river or stream and still meet water quality standards.

TMDLs take into account the pollution from major sources including discharges from industry and sewage treatment facilities, runoff from farms, forests and urban areas, and natural sources. TMDLs include a margin of safety to account for uncertainty, and may include a reserve capacity that allows for future discharges to a river or stream. DEQ typically develops TMDLs on a watershed, subbasin, or basin level and occasionally at the reach level depending on the type and extent of impairments.

The Water Quality Management Plan (WQMP) is the framework for TMDL implementation that is issued by Oregon along with the TMDL (Oregon Administrative Rules 340-042-0040(1)). The TMDL and WQMP serve as a multi-sector plan and provides the blueprint for TMDL related implementation activities. Table J-4 lists the TMDLs that have been approved in the North Coast Basin.

**Table J-4: Approved TMDLs in the North Coast Basin and the impairments addressed by those TMDLs.**

TMDL Document Name	Impairments Addressed
<a href="#">Modifications to North Coast Basin Temperature Waste and Load Allocations (Nestucca Bay)</a>	Bacteria (shellfish harvesting), Bacteria (water contact recreation), Sedimentation, Temperature
<a href="#">Modifications to North Coast Basin Temperature Waste and Load Allocations (North Coast)</a>	Bacteria (shellfish harvesting), Bacteria (water contact recreation), Temperature
<a href="#">Modifications to North Coast Basin Temperature Waste and Load Allocations (Tillamook Bay)</a>	Bacteria (shellfish harvesting), Bacteria (water contact recreation), Temperature
<a href="#">Nestucca Bay Watershed TMDL and WQMP</a>	Bacteria (shellfish harvesting), Bacteria (water contact recreation), Sedimentation, Temperature
<a href="#">North Coast Subbasins TMDL and WQMP</a>	Bacteria (shellfish harvesting), Bacteria (water contact recreation), Temperature
<a href="#">Tillamook Bay TMDL</a>	Bacteria (shellfish harvesting), Bacteria (water contact recreation), Temperature

# 3. Implementation Highlights

## 3.1 Section 319 Grants

Federal Section 319(h) funds are provided annually through the EPA to states for the development and implementation of each state’s Nonpoint Source Management Program. In Oregon a portion of 319 grant funding is “passed through” to support community or partner projects that address Oregon’s nonpoint source program priorities. Generally, DEQ requires grantees to report annually on the progress made implementing their grant project. This section highlights those outputs and accomplishments reported to DEQ in 2019. Note this section does not identify or include projects proposed and awarded a grant in 2019. Outputs and accomplishments for those projects will be reported to DEQ in future years once they have been implemented. For a listing of projects proposed and awarded a grant in 2019 see Section 3.6.2 of the main report.

In 2019, there were 16 319 projects active that reported project outputs and accomplishments to DEQ. Combined the projects have a total grant budget of \$234,145. Table J-5 describes the projects and the reported outputs.

**Table J-5: Project outputs reported in 2019 for Section 319 pass through grants.**

Project Name	Grantee	Project Description	Reported Outputs
Riparian Restoration	Nestucca-Neskowin Sandlake WC	Riparian Restoration	Open not reporting
Nestucca/Neskowin/Sandlake Riparian Improvement	Nestucca-Neskowin Sandlake WC	Riparian Restoration	Open not reporting
Nestucca, Neskowin and Sand Lake Basin Riparian Improvement Project	Nestucca-Neskowin Sandlake WC	Riparian Restoration	Open not reporting
Arch Cape Drinking Water Protection, Phase 2	Sustainable Northwest	Continuation of ongoing project. Arch Cape WD is pursuing purchase of formerly industrial forestland (through both fee title and conservation easements) within their drinking water source area. The goal of the project is purchase and management of a community forest with a governing board,	Community engagement and fund raising for purchase ongoing. Forest stands inventoried for structure, age, and future growth and management. Road conditions assessed for pollution risk and maintenance needs. Forest Legacy grant (USFS) applied for and process begun for securing CWSRF loan to partially fund purchase of land.

Appendix J: North Coast Basin Report  
 2019 Oregon Nonpoint Source Pollution Program Annual Report

Project Name	Grantee	Project Description	Reported Outputs
		community involvement and engagement, and management directed towards water quality protection and pollution prevention.	
2016 Stream Enhancement	Tillamook County SWCD	Riparian Restoration	Open not reporting
Tillamook SWCD 2017 Stream Enhancement	Tillamook County SWCD	Riparian Restoration	Open not reporting
Tillamook SWCD 2018 Stream Enhancement & Restoration	Tillamook County SWCD	Riparian Restoration	Open not reporting
Backyard Planting Program 2019	Tillamook Estuaries Partnership	Riparian Restoration	The BYPP implemented 3 new planting projects in 2019 which encompassed 0.5 miles and 3 acres and included the planting of approximately 1500 trees and shrubs and 1800 willow cuttings. The Schultz project encompassed over 2 acres and 0.3 miles along the north side of the Wilson River. The planting included 450 trees, 160 shrubs, and 1500 willow cuttings. The Baxter-Bandy planting project encompassed 0.6 acres along 500 ft. of the North fork Nehalem River. The planting included 125 trees, 150 shrubs, and 300 willow cuttings. The White Clover Grange planting encompassed 0.2 acres along 300 ft of the north side of a small unnamed tributary to the North fork Nehalem River. DEQ 319 funds were used to support the project and were pair with primary funding from

Appendix J: North Coast Basin Report  
 2019 Oregon Nonpoint Source Pollution Program Annual Report

Project Name	Grantee	Project Description	Reported Outputs
			Oregon Watershed Enhancement Board and Tillamook County Creamery Association.
Northwest Oregon Restoration 2018	Tillamook Estuary Partnership	Riparian Plant Propagation	Open not reporting
Backyard Planting Program 2018	Tillamook Estuary Partnership	Riparian Restoration	Open not reporting
Backyard Planting Program	Tillamook Estuary Partnership	Riparian Restoration	Pending
Northwest Oregon Regional Partnershi (NORP)	Tillamook Estuary Partnership	Riparian Plant Propagation	Pending
Stream Enhancement and Restoration	Tillamook SWCD	Riparian Restoration	Pending
Riparian Restoration	Upper Nehalem Watershed Council	Riparian Restoration	In 2019, the Upper Nehalem Watershed Council (UNWC) completed three riparian planting projects with 319 funds. Two projects were coordinated with Oregon Department of Agriculture and took place in the Nehalem Strategic Implementation Area on Fishhawk Creek and Nehalem Rivers. UNWC installed native plants and conducted plant establishment to convert riparian areas from invasive vegetation. The three project supported the implementation and plant establishment on a 27 acre riparian restoration project also on the Nehalem River. Oregon Watershed Enhancement Board and Oregon Department of Agriculture provided

Appendix J: North Coast Basin Report  
 2019 Oregon Nonpoint Source Pollution Program Annual Report

Project Name	Grantee	Project Description	Reported Outputs
			additional funding for these projects.
UNWC Restoration	Upper Nehalem Watershed Council	Riparian Restoration	In 2019, the Upper Nehalem Watershed Council (UNWC) completed Phase II of the Younger riparian planting projects with 319 funds. The project was also funded by an Oregon Watershed Enhancement Board small grant and included plant establishment work on Fishhawk Creek, the Nehalem River and Beaver Creek, which all run through the property.
Upper Nehalem Riparian Restoration	Upper Nehalem Watershed Council	Riparian Restoration	Pending



Figure J-2: Post Planting at the Baxter Site 2019

### 3.2 Clean Water State Revolving Fund (CWSRF)

The Clean Water State Revolving Fund loan program provides below market rate loans to public agencies for the planning, design and construction of various projects that prevent or mitigate water pollution. Eligible agencies include federally recognized Indian tribal governments, cities, counties, sanitary districts, soil and water conservation districts, irrigation districts, various special districts and intergovernmental entities. DEQ partners with Oregon communities to implement projects that attain and maintain water quality standards, and are necessary to protect beneficial uses. This section highlights the ongoing projects and the outputs and accomplishments reported to DEQ in 2019.

In 2019 there were no nonpoint source related Clean Water State Revolving Fund projects with reported outputs in the North Coast.

### 3.3 Source Water Protection Grants

The Oregon Health Authority regulates drinking water under state law and the Safe Drinking Water Act and works cooperatively with DEQ on source water protection efforts. Using the Drinking Water Revolving Loan Fund, OHA funds Source Water Protection Grants (up to \$30,000 per public water system) for source water protection activities, monitoring, and planning in Drinking Water Source Areas. In addition, loans are available for improving drinking water treatment, source water protection activities, or land acquisition in source areas. Oregon’s Infrastructure Finance Authority is responsible for administering these projects. The loan fund set-asides also fund five Drinking Water Protection positions at DEQ that provide technical assistance to public water systems and communities while they develop and implement strategies that reduce the risk within the delineated source water areas. This section highlights the ongoing projects and the outputs and accomplishments reported to DEQ in 2019.

In 2019 there were five nonpoint source related Drinking Water Source Protection program projects active that reported project outputs and accomplishments to DEQ. Combined the projects have a total budget of \$131,500. Table J-6 describes the projects and the reported outputs.

**Table J-6: Nonpoint source Drinking Water Source Protection program projects and outputs for 2019.**

Project Name	Grantee	Project Description	Reported Outputs
Arch Cape Forest Watershed Plan	Arch Cape Water District (00802)	Planning activities to enable acquisition of the drinking water source area including contracting a planner/facilitator, conducting due diligence and appraisal, and developing forest management recommendations to maintain water quality and quantity.	Community engagement and fund raising for purchase ongoing. Forest stands inventoried for structure, age, and future growth and management. Road conditions assessed for pollution risk and maintenance needs. Forest Legacy grant (USFS) applied for and process begun for securing CWSRF loan to partially fund purchase of land.

Appendix J: North Coast Basin Report  
 2019 Oregon Nonpoint Source Pollution Program Annual Report

<b>Project Name</b>	<b>Grantee</b>	<b>Project Description</b>	<b>Reported Outputs</b>
Shark Creek Sediment Prevention Partnership	Arch Cape Water District (00802)	Reduce sediment and improve slope stability within Arch Cape Water District's drinking water source area by removing and relocating a forest road to a less sensitive location within watershed.	Project scope changed from a road re-route to decommission without replacement. Now, due to future forest management needs, the project scope is back to re-routing the road. Therefore, no work was accomplished on-the-ground in 2019. Road re-routing and slope restoration work is scheduled for August 2020.
Neskowin Regional Water District's Watershed Acquisition Due Diligence	Neskowin Regional Water District (00970)	Planning activities to enable acquisition of ~1,600 acres within Hawk Creek drinking water source area including contracting a property assessment, conducting due diligence and appraisal, and developing forest management recommendations to maintain water quality and quantity.	PWS signed contract and initiated work internally. Hired managing consultant and contacted consulting forester. No other objectives completed in 2019. Work expected to be completed in 2020.
Three year herbicide study of Short Creek water quality following herbicide applications on forest land.	Oceanside Water District (00585)	Monitoring of drinking water source at the intake for pesticides (herbicide) following routine spraying of roadside vegetation to control growth and reduce spread of problematic weedy plants.	Delay in roadside spraying by DWSA land owner (Stimson Lumber Company) continues to delay grant execution. Landowner indicates that spraying is likely to happen during summer of 2020, depending on finances. Monitoring would occur concurrently and following roadside herbicide application.
Henry Creek Source Water Protection Planning and Conservation Easement Evaluation	Rhododendron Water Association (00702)	Develop & acquire conservation easements within sensitive portion of watershed	Project has stalled and will likely be withdrawn due to unwilling private property landowners within the watershed. Water system has made multiple attempts to contact and engage private landowners.

### 3.4 Drinking Water Provider Partnership Grants

Oregon DEQ participates in the Drinking Water Providers Partnership (DWPP) with USDA Forest Service Region 6, EPA Region 10, the U.S. Bureau of Land Management OR/WA Office, the Washington Department of Health, Geos Institute and WildEarth Guardians. Together, these partners coordinate a competitive grant solicitation and award program for environmental conservation and restoration projects in municipal watersheds across the Northwest. The Drinking Water Providers Partnership made the first of the annual awards in 2016 and most projects have a focus on nonpoint sources of pollution. The goal of the Partnership and the funding is to develop and support local partnerships to restore and protect the health of watersheds which communities depend upon for drinking water while also benefiting aquatic and riparian ecosystems, including the native fish that inhabit them. This section highlights the ongoing projects and the outputs and accomplishments reported to the DWPP in 2019.

In 2019 there were no active Drinking Water Providers Partnership projects with reported outputs in the North Coast.

### 3.5 OWEB Grant Funded Projects

The Oregon Watershed Enhancement Board (OWEB) is a state agency that provides grants to help Oregonians take care of local streams, rivers, wetlands, and natural areas. These grant projects often address nonpoint sources of pollution and are thus included in this report.

Based on the most recent data available in OWEB’s Oregon Watershed Restoration Inventory (OWRI) database, there were 15 OWEB funded projects completed in 2018 with a total cash and in-kind budget of \$1,456,117. The tables below summarize reported outputs for different project activities in each North Coast subbasin.

Learn more about OWEB grant programs at <https://www.oregon.gov/OWEB/grants/Pages/grant-programs.aspx>.

**Table J-7: Summary of OWEB grant funded estuarine projects completed in 2018, the most recent year data is available in the OWEB OWRI database.**

Subbasin	Estuarine invasive plant control (Acres)	Estuarine vegetation planting (Acres)
Wilson-Trask-Nestucca	50	50

**Table J-8: Summary of OWEB grant funded fish passage projects completed in 2018, the most recent year data is available in the OWEB OWRI database.**

Subbasin	New fish screens installed on diversions (where no screen had existed previously) (Number of treatments)	Fish Passage Crossing improvement (Number of treatments)	Fish Passage Non-crossing improvement (Number of treatments)
Nehalem	1	6	1
Lower Columbia	NA	NA	1

Subbasin	New fish screens installed on diversions (where no screen had existed previously) (Number of treatments)	Fish Passage Crossing improvement (Number of treatments)	Fish Passage Non-crossing improvement (Number of treatments)
Lower Columbia-Clatskanie	NA	1	NA
Wilson-Trask-Nestucca	NA	1	NA

**Table J-9: Summary of OWEB grant funded instream projects completed in 2018, the most recent year data is available in the OWEB OWRI database.**

Subbasin	Instream habitat: Large wood placement (Number of treatments)
Nehalem	28

**Table J-10: Summary of OWEB grant funded riparian projects completed in 2018, the most recent year data is available in the OWEB OWRI database.**

Subbasin	Riparian fencing (Area treated)
Wilson-Trask-Nestucca	1

**Table J-11: Summary of OWEB grant funded riparian projects completed in 2018, the most recent year data is available in the OWEB OWRI database.**

Subbasin	Riparian invasive plant control (Area treated)	Riparian invasive plant control (Stream sides treated)	Riparian vegetation planting (Length of treatment)
Nehalem	0.7	1	0.2
Wilson-Trask-Nestucca	NA	1	NA

**Table J-12: Summary of OWEB grant funded road projects completed in 2018, the most recent year data is available in the OWEB OWRI database.**

Subbasin	Road decommission (1 station or 100 Feet)	Road relocation (1 station or 100 Feet)	Surface drainage improvement (Number of treatments)
Nehalem	198	184	3

### 3.6 TMDL Implementation Highlights

TMDL implementation actions taken by Designated Management Agencies (DMAs) or third parties are described in the table below. Most of these actions were summarized from annual reports submitted by DMAs to DEQ in calendar year 2019.

**Table J-13: TMDL implementation activities reported in 2019 by Designated Management Agencies or third parties.**

TMDL	DMA	Reported Actions
Nestucca Bay	NA	The Lower Jewell Creek culvert replacement project is located on Tillamook County owned Sandlake Road north of Pacific City. This culvert was the only remaining fish passage barrier in the Jewell Creek basin with the completion of two upstream culvert replacement projects on private lands in 2017 and 2018. In addition, DEQ 319 funds have been used for riparian restoration on both sides of Jewell Creek above and below the lower culvert. The culvert replacement compliments the past 319 investments and provides improved habitat to coho, fall Chinook, chum, steelhead, cutthroat, and lamprey, which are all present. US Forest Service, in cooperation with Tillamook County and Nestucca, Neskowin and Sand Lake Watersheds Council (NNSL) developed a design to replace this crossing with a bridge, and implemented the design in the summer of 2019. The crossing was replaced with a stream spanning bridge that complies with state and federal fish passage requirements. OWEB funds were used toward contracted construction services, project management and grant administration.
Tillamook Bay	NA	The Northwest Oregon Restoration Partnership (NORP), a Tillamook Estuaries Partnership (TEP) program, is an integral part of the conservation community in northwest Oregon. Locally adapted, genetically appropriate native plant materials are critical for ensuring success in watershed scale restoration projects. NORP supports 41 organizations by propagating and distributing 75,000 – 100,000 native plants annually, which would otherwise be unavailable to restoration partners. As a result of NORP’s efforts, landscape-scale watershed restoration projects are being implemented by partners on private and public lands in eight counties (Tillamook, Clatsop, Lincoln, Columbia, Washington, Yamhill, Polk, and Benton). Due to this unique partnership, every dollar invested in NORP has an exponential benefit in terms of on-the-ground watershed restoration accomplished.
North Coast Subbasins	NA	The Northwest Oregon Restoration Partnership (NORP), a Tillamook Estuaries Partnership (TEP) program, is an integral part of the conservation community in northwest Oregon. Locally adapted, genetically appropriate native plant materials are critical for ensuring success in watershed scale restoration projects. NORP supports 41 organizations by propagating and distributing 75,000 – 100,000 native plants annually, which would otherwise be unavailable to restoration partners. As a result of NORP’s efforts, landscape-scale watershed restoration projects are being implemented by partners on private and public lands in eight counties (Tillamook, Clatsop, Lincoln, Columbia, Washington, Yamhill, Polk, and Benton). Due to this unique partnership, every dollar invested in NORP has an exponential benefit in terms of on-the-ground watershed restoration accomplished.