Appendix Q
Umpqua Basin Report

1 Basin Description

The Umpqua Basin is in Southwestern Oregon and is one of only two Oregon rivers that extend from the Cascades to the Pacific Ocean, draining a varied landscape from steep-sloped uplands to low-gradient broad floodplain. The watershed basin boundary closely aligns with Douglas County's political boundary. The Umpqua Basin itself is comprised of three subbasins: North Umpqua, South Umpqua, and the mainstem Umpqua. Within these three subbasins are 13 watersheds in the South Umpqua subbasin, 12 watersheds in the North Umpqua subbasin, and eight watersheds in the Umpqua subbasin. Watershed divides that delineate the basin are found at the crest of the High Cascade range to the east, in the Coast Range to the northwest and the Klamath Mountains to the south.

The headwaters of the North Umpqua River and the South Umpqua River are located in the Umpqua National Forest. The North Umpqua River flows generally west until it meets the South Umpqua downstream from Roseburg. The South Umpqua River flows west then north after its confluence with Cow Creek, a major tributary. After it flows through the Umpqua Valley, the South Umpqua meets the North Umpqua downstream of Roseburg. The mainstem Umpqua flows generally north then west where it enters the shellfish growing areas of Winchester Bay and then enters the Pacific Ocean.

Table Q-1: 2011 Land use and land cover for each subbasin in the Umpqua.

Subbasin	Watershed Area (km2)	% Urban/Roads	% Forest	% Cultivated	% Range/Forest Disturbance	%Other
North Umpqua	3558417	1.1	77.6	2.9	17.3	1.2
South Umpqua	4665559	3.1	67.7	5.9	22.6	0.7
Umpqua	3885266	4.5	63.0	6.7	24.1	1.7

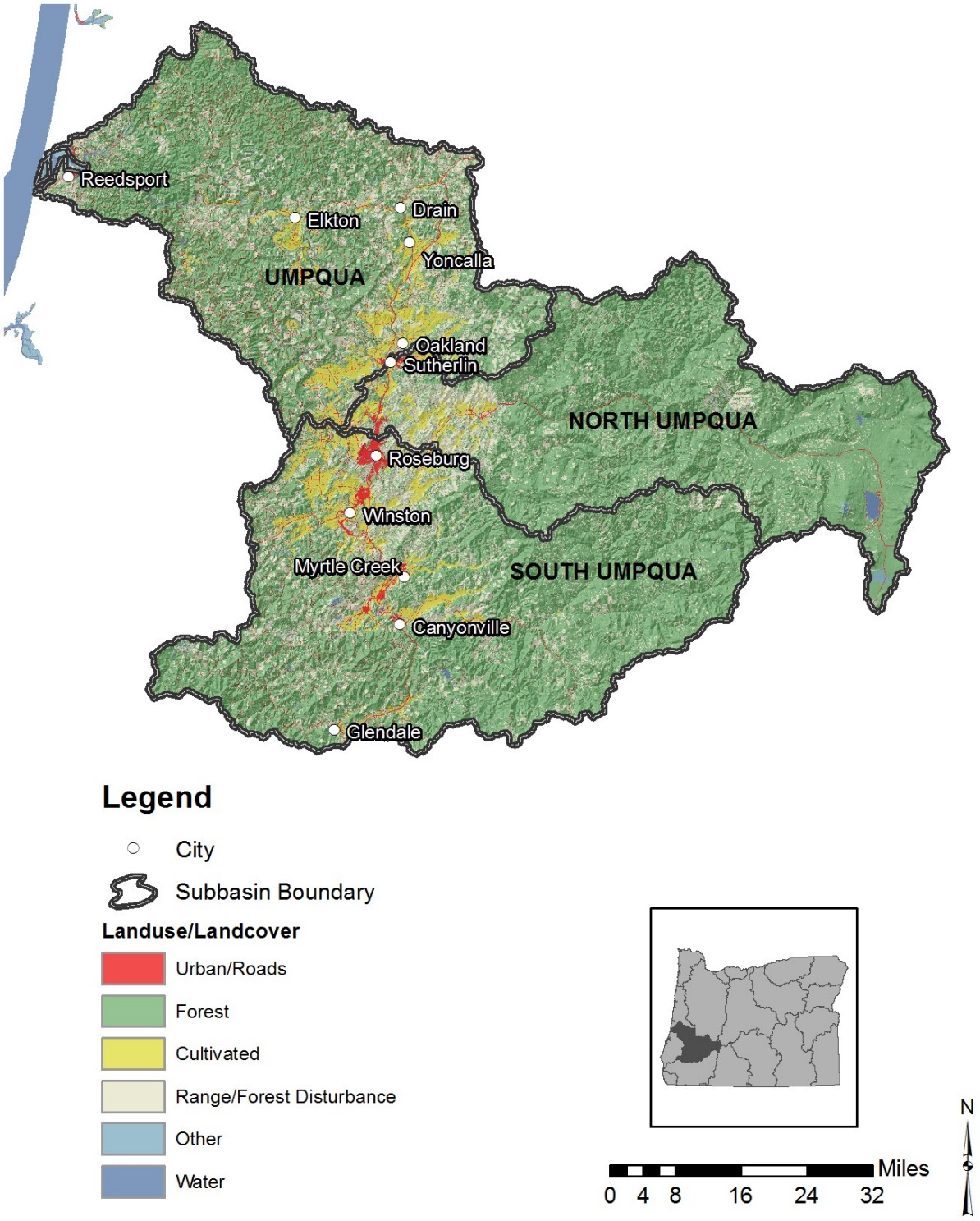

Figure Q-1: Landuse in the the Umpqua administrative basin.

1.1 Basin Contacts

Table Q-2: Oregon DEQ basin contact.

Administrative Area	DEQ Basin Coordinator
Umpqua	David Waltz: 541-687-7345: waltz.david@deq.state.or.us

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 Q-3 identifies the number of Umpqua Basin waterbody segments impaired by parameter from the 2012 Integrated Report and and the number of segments with approved TMDLs. Sources: ODEQ, USEPA

Table Q-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
Ammonia	0	1
Aquatic Weeds Or Algae	7	4
Arsenic	5	0
Biological Criteria	53	4
Cadmium	3	0
Chlorine	0	2
Chlorophyll a	0	1
Copper	4	0
Dissolved Oxygen	11	7
E. Coli	7	12
Fecal Coliform	0	9
Iron	6	0
Lead	2	0
Mercury	7	0
Nickel	1	0
pH	2	23
Phosphorus	0	1
Sedimentation	5	4

Parameter	Segments without a TMDL	Segments with a TMDL
Temperature	3	174
Total Dissolved Gas	0	1
Zinc	2	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(l)). The TMDL and WQMP serve as a multi-sector plan and provides the blueprint for TMDL related implementation activities. Table Q-4 lists the TMDLs that have been approved in the Umpqua Basin.

Table Q-4: Approved TMDLs in the Umpqua Basin and the impairments addressed by those TMDLs.

TMDL Document Name	Impairments Addressed
Little River Watershed TMDL and WQMP	pH, Sedimentation, Temperature
Umpqua Basin TMDL and WQMP	Algae, Bacteria (water contact recreation and shellfish harvesting), Dissolved Oxygen, pH, 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 2017. Note this section does not identify or include projects proposed and awarded a grant in 2017. 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 2017 see Section 3.6.2 of the main report.

In 2017 there were no 319 projects with reported outputs in the Umpqua.

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 2017.

In 2017 there were no nonpoint source related Clean Water State Revolving Fund projects with reported outputs in the Umpqua.

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 2017.

In 2017 there were three nonpoint source related Safe Drinking Water State Revolving Fund projects active that reported project outputs and accomplishments to DEQ. Combined the projects have a total budget of $75,000. Table Q-5 describes the projects and the reported outputs.

Table Q-5: Nonpoint source Safe Drinking Water State Revolving Fund projects and outputs for 2017.

Project Name	Grantee	Project Description	Reported Outputs
Prioritize Steamboat Creek forest roads for turbidity reduction repair work. Sediment Analysis and Inventory using GRAIP	Glide Water Association / Umpqua National Forest	Prioritize forest roads for turbidity reduction repair work. The Umpqua National Forest is systematically identifying roads that are at an elevated risk of mass wasting or are actively contributing sediment to streams in Steamboat Creek. By pinpointing the highest risk areas, the partners can prioritize their road maintenance, stream crossing, and decommissioning activities to have the greatest benefit to fish habitat and water quality for Glide Water Association and other downstream towns. Project includes $30000 DW SPF funding to Glide and $23,000 in DWPP funding to USFS.	Project is on hold due to extensive fires in the watershed in 2017.

Project Name	Grantee	Project Description	Reported Outputs
West Fork Canyon Creek lnstream Restoration	City of Canyonville / Partnership for the Umpqua Rivers	This project is part of a multi-phase whole-watershed restoration plan for West Fork Canyon Creek (WFCC). Over 5 years, a total of 4.7 miles of stream and riparian habitat will be targeted for restoration to improve fish habitat and restore hydrologic function of the stream. The project will focus on road improvements such as culvert replacement and other drainage improvements. Project end date is November 2018. Includes $30000 DW SPF funding to Canyonville and $20000 DWPP funding to PUR	In 2017 City contracted with IFA to begin project planning and signed contract with Partnership for Umpqua Rivers in 2018. Project is part of larger effort with other funding (DWPP) as noted below. Project tasks on hold temporarily due to land ownership transfer in watershed.
Glide Water Association and USFS Sediment Reduction Partnership	Glide Water Association / Umpqua National Forest	Implementation project: At-risk forest road decommissioning and improving storm water resilience. Project includes $15000 DW SPF funding to Glide and $35000 DWPP funding to Umpqua NF	City of Glide contributed to project with USFS to remove stream crossing culverts and fill material; recontour streambanks; remove cross-drain culverts; address roadway compaction to reduce runoff; seed disturbed areas and monitor vegetation restoration areas.

Figure Q-2: Channel scouring and sedimentation upstream of Glide drinking water intake caused by a landslide resulting from failed forest road culverts (12/21/2014).

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 2017.

In 2017 there were two Drinking Water Providers Partnership projects active that reported project outputs and accomplishments to te DWPP. Combined the projects have a total budget of $72,000. Table Q-6 describes the projects and the reported outputs.

Table Q-6: Drinking Water Providers Partnership projects and outputs for 2017

Project Name	Grantee	Project Description	Reported Outputs
Stouts Fire Salmon/Watershed Restoration	South Umpqua Rural Community Partnership	The intent of this project is to protect the water quality of the Milo Adventist Academy through the addition of large wood to Hatchet Creek stream channel and its floodplain, dissipating erosive forces of the stream while benefitting salmonid habitat.	In 2016 Partners hauled logs to site locations for placement; designed instream structures; contracted with helicopter operator for placement. In 2017 the Partners completed the project including log placement and field reconnaissance with contractor and partners.
Upper South Umpqua Aquatic Habitat Improvement Project Phase V – Emerson Bridge Replacement	South Umpqua Rural Community Partnership	The water quality of the Tiller Ranger Station will be protected with the replacement of Emerson Bridge. It currently leaches wood preservatives into the South Umpqua River and creates a nick point in the river, also affecting aquatic habitat.	Prior to 2017 the Partners secured appropriate permits/approvals; solicited and reviewed bids; contract administration an inspection; began construction of replacement bridge. In 2017 the Partners completed contract administration and inspection and the old Emerson Bridge was completely removed and disposed of appropriately. New bridge installation is complete. There is old road decommissioning that needs to be completed but all instream work has been finished.

Figure Q-3: Instream log placement on Hatchet Creek, a tributary to the South Umpqua River

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 18 OWEB funded projects completed in 2016 with a total cash and inkind budget of $1,299,516. The bar graph in Figure Q-4 shows the total cash and inkind budget for the different project types in each Umpqua subbasin. Table Q-7 describes the projects and the reported outputs.

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

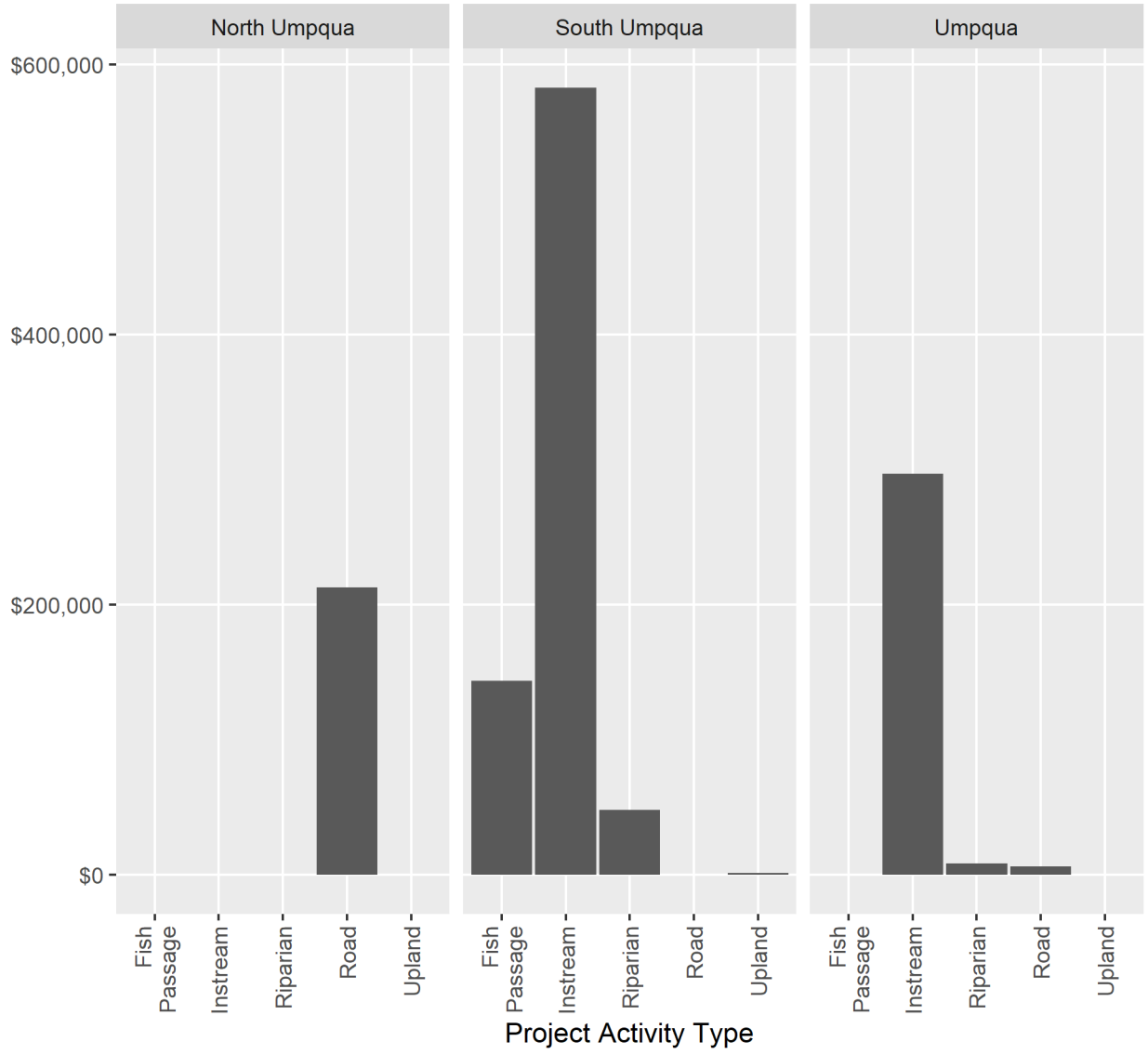

Figure Q-4: Cash and inkind dollars spent in each subbasin for different project types completed in 2016, the most recent year data is available in OWEB's OWRI database.

Table Q-7: OWEB grant funded projects completed in 2016, the most recent year data is available in the OWEB OWRI database.

Subbasin	Project Name	Project Type	Project Description	Participants	Reported Outputs
North Umpqua	Buck Peak S. Rocking	Road	Road durable rocking or quality hard road rocking prior to haul	Seneca Jones Timber Company	47.5 stations improved by rocking for surface drainage

Subbasin	Project Name	Project Type	Project Description	Participants	Reported Outputs
North Umpqua	Buckshot NE & Upshot Road Reconstruction and Rocking	Road	Culverts added at locations other than above stream crossings; Road durable rocking or quality hard road rocking prior to haul; Structures replaced to meet 50+ year flow requirements	Seneca Jones Timber Company	16 non-stream crossings improved for surface drainage, 94.95 stations improved by rocking for surface drainage, 4 stream crossings improved for peak flow passage
North Umpqua	Greenman 32 SE Reconstruction & Rocking	Road	Culverts added at locations other than above stream crossings; Road durable rocking or quality hard road rocking prior to haul; Structures replaced to meet 50+ year flow requirements	Seneca Jones Timber Company	10 non-stream crossings improved for surface drainage, 2 stream crossings improved for peak flow passage, 33 stations improved by rocking for surface drainage
South Umpqua	Tallow Creek Coho and Steelhead Passage	Fish Passage	Culverts/structures/fords replaced with open bottom arch culverts	Ecotrust, OWEB, South Umpqua Rural Community Partnership, USFS	1.2 miles of habitat opened-previously inaccessible for juveniles, accessible for adults, 2.4 miles of fish habitat made accessible due to road/stream crossing improvements (e.g. improvement or removal of culverts and other structures), 1.2 miles of habitat opened-previously inaccessible for both adults and juveniles, 1 road/stream crossing improved for fish passage

Subbasin	Project Name	Project Type	Project Description	Participants	Reported Outputs
South Umpqua	Jackson Tributaries Salmon Restoration Project (Black Canyon Site)	Instream	Large wood placed	Ecotrust, OWEB, USFS	6 pools expected to be created by channel structure placement treatments, 6 habitat structures placed in channel, 1 mile of stream treated (instream activities)
South Umpqua	Jackson Tributaries Salmon Restoration Project (Ralph Creek Site)	Instream	Large wood placed	Ecotrust, OWEB, USFS	7 habitat structures placed in channel, 0.5 miles of stream treated (instream activities), 7 pools expected to be created by channel structure placement treatments
South Umpqua	Jackson Tributaries Salmon Restoration Project (Squaw Creek Site)	Instream	Large wood placed	Ecotrust, ODFW, OWEB, South Umpqua Rural Community Partnership, USFS	91 habitat structures placed in channel, 5 miles of stream treated (instream activities), 100 pools expected to be created by channel structure placement treatments
South Umpqua	Jackson Tributaries Salmon Restoration Project (Tallow Creek Site)	Instream	Large wood placed	Ecotrust, OWEB, USFS	1.5 miles of stream treated (instream activities), 17 pools expected to be created by channel structure placement treatments, 17 habitat structures placed in channel

Subbasin	Project Name	Project Type	Project Description	Participants	Reported Outputs
South Umpqua	Jordan Creek Riparian Restoration Project	Riparian	Riparian treated for non-native or noxious plant species; Riparian trees planted: conifer and hardwood; Riparian shrubs or herbaceous vegetation planted/reseeded	Cow Creek Band of Umpqua Tribe of Indians, OWEB	0.2 linear stream miles treated (riparian activities), 1.9 acres treated (riparian activities)
South Umpqua	South Umpqua Water Quality Improvement Project	Riparian	Riparian treated for non-native or noxious plant species; Riparian fencing	DEQ, Michaels Ranch, Partnership for the Umpqua Rivers, Ryan Ranch	0.85 linear stream miles treated (riparian activities), 2.1 acres treated (riparian activities)
South Umpqua	Canyon Creek Riparian Restoration Project	Riparian, Upland	Riparian treated for non-native or noxious plant species; Riparian shrubs or herbaceous vegetation planted/reseeded; Upland shrubs or herbaceous vegetation planted/reseeded; Upland treated for non-native or noxious plant species	Cow Creek Band of Umpqua Tribe of Indians, OWEB	0.2 linear stream miles treated (riparian activities), 0.37 acres treated (riparian activities), 0.15 acres treated (upland activities)
Umpqua	Fitzpatrick Creek Instream Restoration	Instream	Large wood placed	BLM, ODFW, OWEB, Partnership for the Umpqua Rivers, Roseburg Resources Company, Umpqua Fishery Enhancement Derby	9 pools expected to be created by channel structure placement treatments, 0.5 miles of stream treated (instream activities), 9 habitat structures placed in channel

Subbasin	Project Name	Project Type	Project Description	Participants	Reported Outputs
Umpqua	Lutsinger Creek Instream Restoration	Instream	Weir installed (not below culvert): log and rock/boulder; Weir installed (not below culvert): rock/boulder	BLM, National Fish and Wildlife Foundation, ODFW, OWEB, Partnership for the Umpqua Rivers, Roseburg Resources Company	23 pools expected to be created by channel structure placement treatments, 23 habitat structures placed in channel, 2 miles of stream treated (instream activities)
Umpqua	Sawyer Creek Instream Restoration	Instream	Large wood placed	BLM, ODFW, OWEB, Partnership for the Umpqua Rivers, Roseburg Resources Company, Umpqua Fishery Enhancement Derby	24 habitat structures placed in channel, 1.75 miles of stream treated (instream activities), 24 pools expected to be created by channel structure placement treatments
Umpqua	Dean Scholfield Timber Sale No. 341-15-44	Riparian	Voluntary riparian tree retention	ODF	0.72 linear stream miles treated (riparian activities), 5.71 acres treated (riparian activities)
Umpqua	Salander Ridge Timber Sale No. 341-16-12	Riparian	Voluntary riparian tree retention	ODF	0.12 acres treated (riparian activities), 0.6 linear stream miles treated (riparian activities)

Subbasin	Project Name	Project Type	Project Description	Participants	Reported Outputs
Umpqua	Zuiches Riparian Planting	Riparian	Riparian treated for non-native or noxious plant species; Riparian trees planted: conifer and hardwood; Riparian shrubs or herbaceous vegetation planted/reseeded	Elk Creek Watershed Council, OWEB, Private Landowners	0.4 linear stream miles treated (riparian activities), 2.8 acres treated (riparian activities)
Umpqua	Spring Ck Culvert Upgrade	Road	Structures replaced to meet 50+ year flow requirements	Seneca Jones Timber Company	1 stream crossing improved for peak flow passage

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 2017.

Table Q-8: TMDL implementation activities reported in 2017 by Designated Management Agencies or third parties.

TMDL	DMA or Third Party	Reported Actions
Umpqua Basin TMDL	Oregon Department of Agriculture and the Agricultural Local Area Committee	Finalized revisions to the Umpqua Agricultural Area Plan