

Appendix C

Grande Ronde Basin Report

1 Basin Description

The Grande Ronde River drains an area of approximately 5,300 square miles in north-eastern Oregon, southeastern Washington and eastern Idaho. It flows 183 miles from its headwaters in the Blue and Wallowa Mountains, across the Columbia Plateau through the Grande Ronde Valley and into a series of steep, deep canyons before discharging into the Snake River near Rogersburg, WA. The Grande Ronde Basin is divided into two subbasins: Upper Grande Ronde and Lower Grande Ronde. The upper subbasin includes all of the lands that drain to Grande Ronde River upstream of the confluence with the Wallowa River at Rondowa. The lower subbasin is divided into three large watersheds: the Wallowa River, Imnaha River, and Lower Grande Ronde River. The Wallowa River flows to the Lower Grande Ronde River, which along with the Imnaha River, flows into the Snake River. The Lower Grande Ronde Subbasin extends over the state boundary into Washington and Idaho. The Basin incorporates portions of seven counties: Garfield (OR), Wallowa (OR), Umatilla (OR), Union (OR), Asotin (WA), Columbia (WA), and Nez Perce (ID). The Grande Ronde River supports populations of spring chinook salmon, summer steelhead, bull trout, mountain whitefish, as well as other species. The river has a sport steelhead fishery and has some tribal fishing for spring chinook.

Elevations within the Basin range from nearly 10,000 feet in the Elkhorn Mountain Range to 830 feet at the mouth where the Grande Ronde flows into the Snake River. Lower elevations generally receive 8 to 12 inches of precipitation annually. Higher elevations commonly receive between 50 to 80 inches of precipitation, most of which is received as snowfall. The largest rivers in the Basin are the Grande Ronde, Wallowa, Imnaha and Wenaha Rivers, and Catherine, Meadow and Joseph Creeks. Lands to the south of the Wallowa River are supplied with much more water than those to the north. Groundwater is relatively high in the Wallowa River Valley, with the southern slopes receiving a continual charge from the mountains. The lands to the north are drier and have no high mountains to accumulate snowpack.

Land ownership in the Grande Ronde Basin is almost equally divided between private and federal land, with small tracts of land owned/managed by the State of Oregon and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). The Nez Perce Tribe has treaty rights to much of the public lands within the Basin. The federally managed land is largely within the Wallowa-Whitman National Forest, Hell's Canyon National Recreation Area, and Umatilla National Forest. There are several incorporated cities (La Grande, Elgin, Enterprise, Joseph, Wallowa, and Lostine) in the Basin and several smaller communities (Troy, Imnaha, and Minam). Total population within the Basin is less than 7,000 residents.

Land use in the Basin is dominated by forest lands, grasslands and scrub/shrub, with significant acreage of agricultural land and some rural residential development. Much of the high elevation forest lands are managed as wilderness areas and as National Recreation Areas by US Forest Service. Agriculture, crops and livestock, plays an important economic role in the area, as does forestry.

In the early 19th century, the Basin was inhabited by Nez Perce, Umatilla, Walla Walla, and Cayuse tribes of Native Americans. Numerous archaeological sites have been identified throughout the Basin. The Grande Ronde River was named around 1821 by French Canadian trappers. Grande Ronde is a French name meaning "great round". A portion Grande Ronde and its valley were part of the Oregon Trail.

In 1988, the United States Congress designated about 44 miles of the river, from its confluence with the Wallowa River to the Oregon-Washington border, as the Grande Ronde Wild and Scenic River. The river today is a popular destination for hunting, especially for game animals such as mule deer, elk, black bear, cougar, and bighorn sheep. Fishing, rafting and hiking are also popular along the designated Wild and Scenic portion of the river. Most of the middle reaches of the river are inaccessible to motor vehicles.

Table C-1: 2011 Land use and land cover for each subbasin in the Grande Ronde.

Subbasin	Watershed Area (km2)	% Urban/Roads	% Forest	% Cultivated	% Range/Forest Disturbance	%Other
Hells Canyon	499496	0.1	29.8	0.4	69.7	0.1
Imnaha	2203096	0.4	49.1	0.1	48.8	1.7
Lower Grande Ronde	3048836	0.1	53.1	1.9	44.7	0.2
Lower Snake-Asotin	182003	0.0	36.4	0.1	63.5	0.0
Upper Grande Ronde	4238057	1.7	57.8	14.6	25.6	0.3
Wallowa	2471343	1.0	51.3	8.0	34.1	5.5

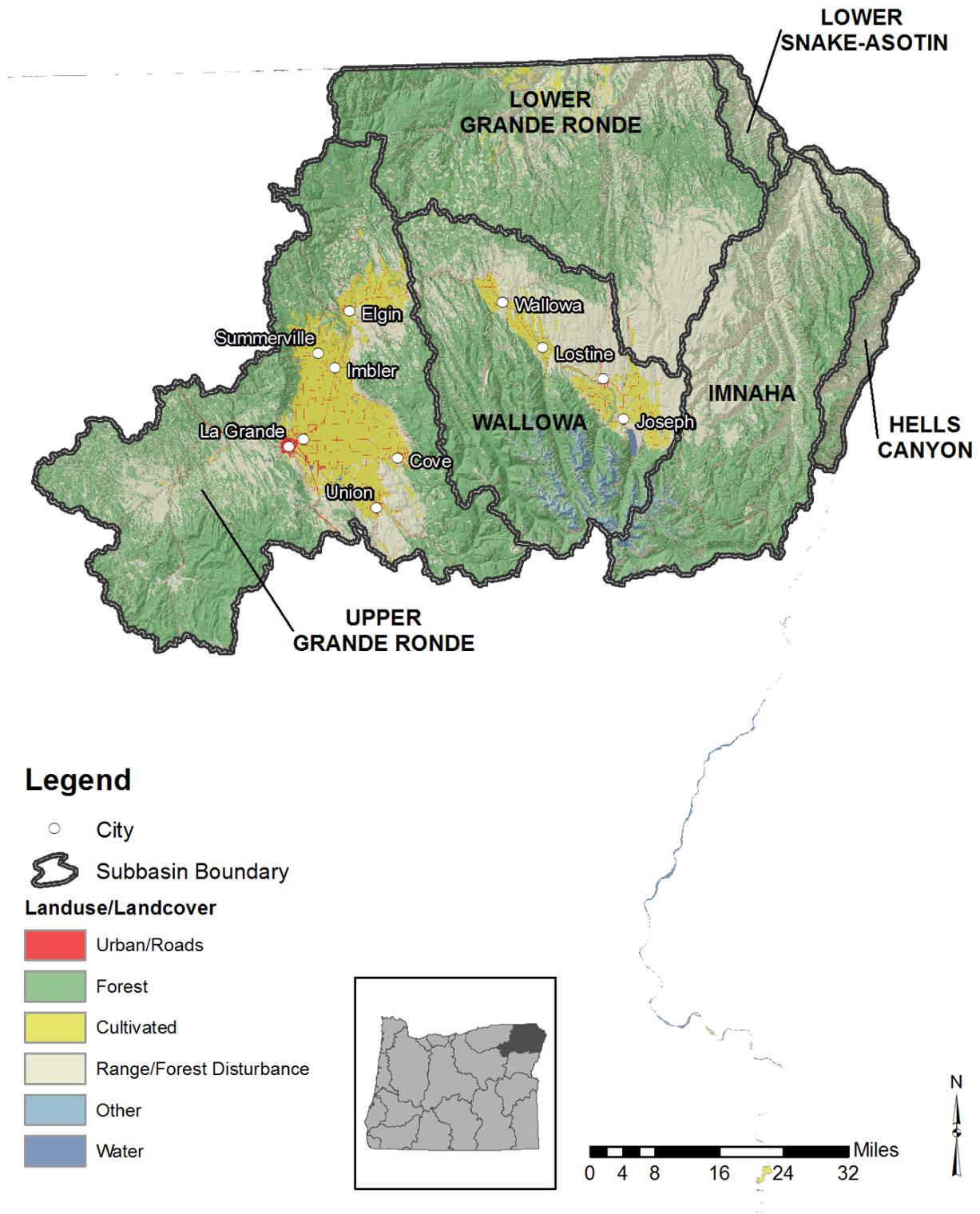


Figure C-1: Landuse in the the Grande Ronde administrative basin.

1.1 Basin Contacts

Table C-2: Oregon DEQ basin contact.

Administrative Area	DEQ Basin Coordinator
Grand Ronde	John Dadoly: 541-278-4616: dadoly.john@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 C-3 identifies the number of Grande Ronde Basin waterbody segments impaired by parameter from the 2012 Integrated Report and the number of segments with approved TMDLs. Sources: [ODEQ](#), [USEPA](#)

Table C-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
Aquatic Weeds Or Algae	0	3
Biological Criteria	9	0
Copper	1	0
Dissolved Oxygen	4	5
E. Coli	3	3
Fecal Coliform	0	3
Mercury	2	0
pH	1	5
Phosphorus	0	3
Sedimentation	9	22
Temperature	0	79
Total Dissolved Gas	0	1

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 C-4 lists the TMDLs that have been approved in the Grande Ronde Basin.

Table C-4: Approved TMDLs in the Grande Ronde Basin and the impairments addressed by those TMDLs.

TMDL Document Name	Impairments Addressed
Lower Grande Ronde Subbasins TMDL and WQMP	Bacteria (water contact recreation), Temperature
Upper Grande Ronde Subbasins TMDL and WQMP	Dissolved Oxygen, pH, Sedimentation, 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 was one 319 project active that reported project outputs and accomplishments to DEQ. Combined the projects have a total grant budget of \$8,000. Table C-5 describes the project and the reported outputs.

Table C-5: Project outputs reported in 2017 for Section 319 pass through grants.

Project Name	Grantee	Project Description	Reported Outputs
Tri-County Yellow Flag Iris Containment and Control Program	Tri-County Coooperative Weed Management Area	This goal of this project is to control and contain Yellow Flag Iris (invasive) in Baker, Union and Wallowa Counties using both manual removal and herbicide controls. GIS data is being collected on plant populations and treatment efficacy.	None reported

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 Grande Ronde.

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 no nonpoint source related Safe Drinking Water State Revolving Fund projects with reported outputs in the Grande Ronde.

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 no active Drinking Water Providers Partnership projects with reported outputs in the Grande Ronde.

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.

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Based on the most recent data available in OWEB's Oregon Watershed Restoration Inventory (OWRI) database, there were 13 OWEB funded projects completed in 2016 with a total cash and inkind budget of \$3,432,225. The bar graph in Figure C-2 shows the total cash and inkind budget for the different project types in each Grande Ronde subbasin. Table C-6 describes the projects and the reported outputs.

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

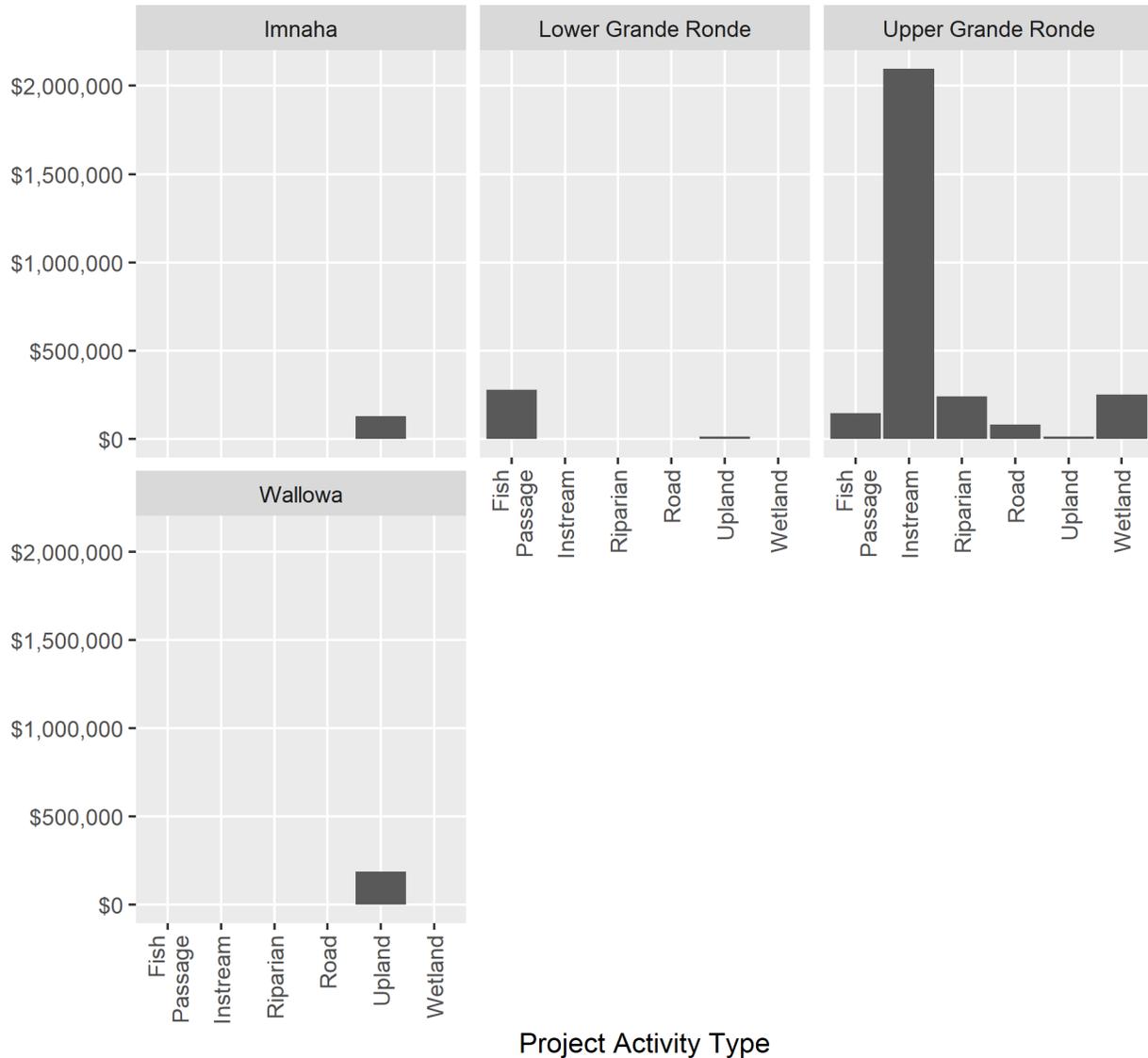


Figure C-2: Cash and inkind dollars spent in each subbasin for different project types completed in 2016, the most recent year data is available in OWEB's OWRI database.

Table C-6: 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
Imnaha	Zumwalt Prairie and Imnaha Medusahead Rye	Upland	Upland shrubs or herbaceous vegetation planted/reseeded; Upland treated for non-native or noxious plant species	Chesnimnus Creek Ranch, Fence Creek Ranch, Krebs Wind Ranch, McClaran Ranch, OWEB, Probert Ranch, The Nature Conservancy, USFS, Wallowa Resources	997.1 acres treated (upland activities)
Lower Grande Ronde	Lostine River/Sheep Ridge Fish Passage Improvement	Fish Passage	Fish ladders improved; Diversion dams removed or modified	BPA, Grande Ronde Model Watershed, Nez Perce Tribe, OWEB, Sheep Ridge Ditch Company, The Freshwater Trust	20 miles of fish habitat made accessible by the removal of barriers other than at road/stream crossings, 20 miles of habitat previously accessible for adults and juveniles- access improved, 2 non-road crossing barriers improved for fish passage
Lower Grande Ronde	Edison Forest Health Improvement	Upland	Other upland vegetation management	ODF, OWEB, Private Landowners, Wallowa SWCD	20 acres treated (upland activities)

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Subbasin	Project Name	Project Type	Project Description	Participants	Reported Outputs
Upper Grande Ronde	Sheep Creek FS 5160 Rd. Culvert Replacement	Fish Passage	Culverts/structures/for ds replaced with open bottom arch culverts	BPA, Grande Ronde Model Watershed, USFS	9 miles of habitat previously accessible for adults and juveniles- access improved, 9 miles of fish habitat made accessible due to road/stream crossing improvements (e.g. improvement or removal of culverts and other structures), 1 road/stream crossing improved for fish passage
Upper Grande Ronde	CC44 Shoemaker/Kinsley	Instream , Riparian	Anchored habitat structures placed; Side channels created / excavated; Riparian fencing; Riparian trees planted: hardwood	BPA, Grande Ronde Model Watershed, Private Landowners, Union SWCD	0.58 miles of stream treated (instream activities), 15 habitat structures placed in channel, 7 pools expected to be created by channel structure placement treatments, 0.56 linear stream miles treated (riparian activities), 7.71 acres treated (riparian activities)

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Subbasin	Project Name	Project Type	Project Description	Participants	Reported Outputs
Upper Grande Ronde	CC44 Southern Cross	Instream , Riparian , Wetland	Anchored habitat structures placed; Main stream channel modified / created; Side channels created / excavated; Riparian fencing; Riparian trees planted: hardwood; Non-wetland created into grass/herb meadow wetland	BPA, Confederate Tribes of the Umatilla Indian Reservation, Grande Ronde Model Watershed, ODFW, Union SWCD	25 pools expected to be created by channel structure placement treatments, 0.78 miles of stream treated (instream activities), 478 habitat structures placed in channel, 0.78 linear stream miles treated (riparian activities), 25 acres treated (riparian activities), 10 acres treated (wetland activities)
Upper Grande Ronde	Dark Canyon Creek Exclosure and Upland Water Source	Riparian	Riparian fencing; Off-channel watering sites developed	BPA, Grande Ronde Model Watershed, USFS	2 linear stream miles treated (riparian activities), 14.54 acres treated (riparian activities)
Upper Grande Ronde	Fly Creek Riparian Fencing Project	Riparian	Riparian fencing	BPA, Grande Ronde Model Watershed, ODFW, Private Landowners	0.56 linear stream miles treated (riparian activities), 15 acres treated (riparian activities)

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Subbasin	Project Name	Project Type	Project Description	Participants	Reported Outputs
Upper Grande Ronde	Whiskey Creek Courtney Ranch Restoration	Road	Culverts added at locations other than above stream crossings; Road durable rocking or quality hard road rocking prior to haul; Road obliterated, decommissioned, or vacated	Courtney Ranches LLC, Grande Ronde Model Watershed, M & S Timber Management Services, ODF, OWEB	61.5 stations improved by rocking for surface drainage, 6 non-stream crossings improved for surface drainage
Upper Grande Ronde	East Craig Mountain Windbreak	Upland	Windbreak installed	OWEB, Private Landowners, Union SWCD	0.3 acres treated (upland activities)
Upper Grande Ronde	Gekeler Windbreak	Upland	Windbreak installed	OWEB, Private Landowners, Union SWCD	2 acres treated (upland activities)
Wallowa	Foursome Open Ditch Replacement	Upland	Irrigation system improved: converted from dirt ditch to pipeline delivery; Irrigation system improved: water measurement devices installed; Off-channel watering sites developed	NRCS, OWEB, Private Landowners, Wallowa SWCD	387.5 acres treated (upland activities)
Wallowa	Wallowa River/6-Ranch GMP	Upland	Grazing management: livestock rotation (pasture forage improvement through rotational livestock grazing); Off-channel watering sites developed; Upland fencing	6-Ranch, BPA, Grande Ronde Model Watershed, OWEB	51.5 acres treated (upland activities)

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 C-7: TMDL implementation activities reported in 2017 by Designated Management Agencies or third parties.

TMDL	DMA or Third Party	Reported Actions
Lower Grande Ronde Subbasin TMDLs	City of Enterprise	Worked to address stormwater runoff and onsite retention, cleaning catch basins, and rewriting landuse codes.