

# **Appendix N**

# **Sandy Basin Report**



# 1 Basin Description

The Sandy River Basin drains approximately 508 square miles (330,000 acres) in northwestern Oregon. The Sandy River originates from glaciers on the western slopes of Mt. Hood at an approximate elevation of 6200 feet above sea level and travels 56 miles before flowing into the Columbia River near the City of Troutdale. The Sandy River is the only major glacial river draining the western Cascades in Oregon. Glacially-derived fine particulate matter, known as “glacial flour”, gives the Sandy its distinctive milky-grey color during the summer. Major tributaries to the Sandy River include the Zigzag, Salmon, and Bull Run Rivers. The Little Sandy River is the largest tributary to the lower Bull Run River. Political jurisdictions include portions of Multnomah and Clackamas counties and several small, incorporated cities, including Rhododendron, Zigzag and Government Camp. Portions of the cities of Gresham, Troutdale and Sandy also lie within lower portion of the basin.

Approximately 70% of the basin is owned and managed by the U.S. Forest Service (USFS) – Mt Hood National Forest, 22% is in private ownership, 4% is owned by the Bureau of Land Management (BLM), 2% is owned by City of Portland and the remainder owned by State, local government or Portland General Electric (PGE). 19.5% is designated as Wilderness.

The Sandy is home to 19 native and 14 introduced fish species (PGE 1998). The following fish species are listed by NOAA Fisheries: Chinook salmon (Threatened), Steelhead trout (Threatened) and Coho salmon (Candidate species).

Three river segments within the basin were given various National Wild and Scenic River designations by Congress in 1988:

- Sandy River from Dodge Park (RM 18.5) to Dabney State Park (RM 6).
- Sandy River from the headwaters to the National Forest boundary (12.5 miles).
- Salmon River from the headwaters to the confluence with the Sandy River (33.5 miles).

The Bull Run watershed is approximately 25% of the Sandy Basin (90,000 acres). Much of it is in the Bull Run Reserve, which was created by presidential proclamation in 1892 to protect Portland’s Water Supply. The Bull Run supply consists of two storage reservoirs (Dam Numbers 1 and 2) along with an outlet structure on Bull Run Lake, a natural water body near the headwaters. The water supply is an unfiltered water source that serves over 950,000 people in the Portland Metropolitan area.

**Table N-1: 2011 Land use and land cover for each subbasin in the Sandy.**

Subbasin	Watershed Area (km2)	% Urban/Roads	% Forest	% Cultivated	% Range/Forest Disturbance	%Other
Lower Columbia-Sandy	1475494	3.3	78.3	4	12.1	2.4

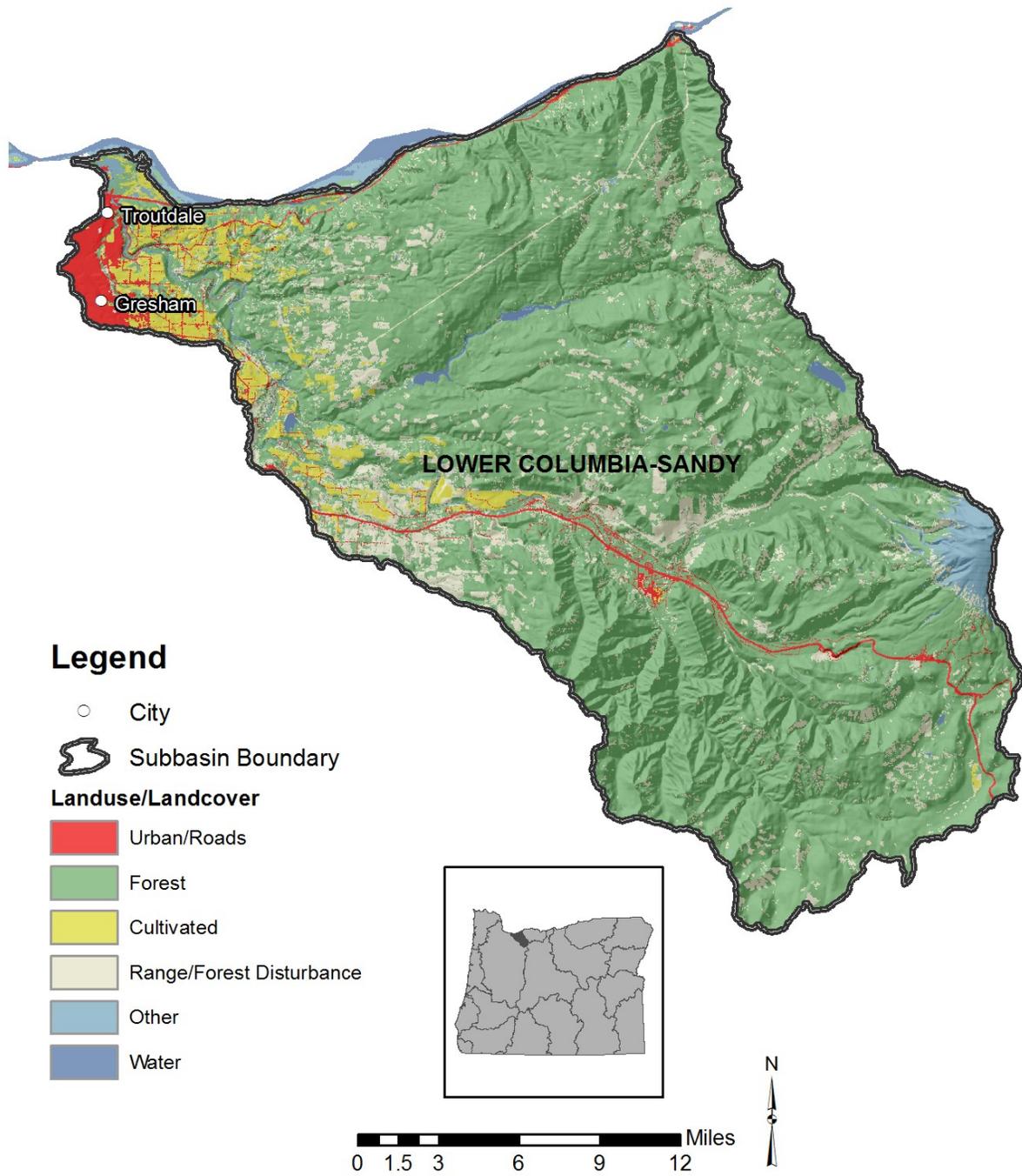


Figure N-1: Landuse in the the Sandy administrative basin.

## 1.1 Basin Contacts

**Table N-2: Oregon DEQ basin contact.**

Administrative Area	DEQ Basin Coordinator
Sandy	Kristi Asplund: 503-229-6254: <a href="mailto:asplund.kristi@deq.state.or.us">asplund.kristi@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 N-3 identifies the number of Sandy Basin waterbody segments impaired by parameter from the 2012 Integrated Report and the number of segments with approved TMDLs. Sources: [ODEQ](#), [USEPA](#)

**Table N-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
Biological Criteria	6	0
Dissolved Oxygen	1	0
E. Coli	0	4
Lead	1	0
Temperature	0	23

## 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 N-4 lists the TMDLs that have been approved in the Sandy Basin.

**Table N-4: Approved TMDLs in the Sandy Basin and the impairments addressed by those TMDLs.**

TMDL Document Name	Impairments Addressed
Sandy River Basin TMDL and WQMP	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 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 \$14,980. Table N-5 describes the project and the reported outputs.

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

Project Name	Grantee	Project Description	Reported Outputs
College Creeks Clean Water Retrofit	Sandy River Basin Watershed Council	Pavement removal	Engineering design

### 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 Sandy.

### 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 Sandy.

### **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.

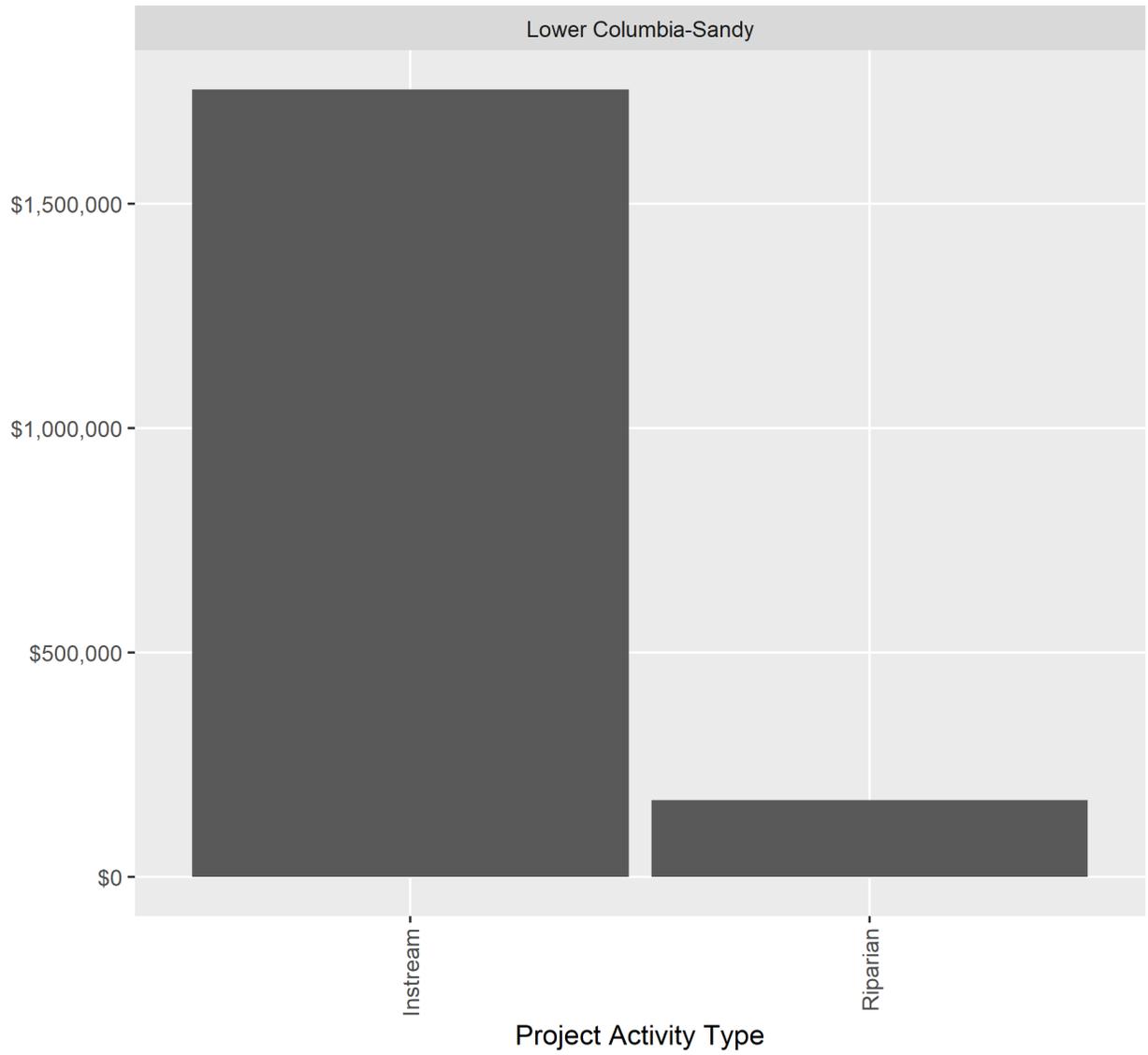
In 2017 there were no active Drinking Water Providers Partnership projects with reported outputs in the Sandy.

### **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 four OWEB funded projects completed in 2016 with a total cash and inkind budget of \$1,925,768. The bar graph in Figure N-2 shows the total cash and inkind budget for the different project types in each Sandy subbasin. Table N-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 N-2: Cash and in-kind 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 N-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
Lower Columbia-Sandy	Sandy River Floodplain Reconnection	Instream	Anchored habitat structures placed; Main stream channel modified / created; Rootwads placed; Side channels created / excavated	City of Portland, Clackamas SWCD, Columbia Land Trust, LKE Corporation, ODFW, OWEB, Sandy River Basin Watershed Council, Timberline Rim Homeowner's Association	1 pool expected to be created by channel structure placement treatments, 0.55 miles of stream treated (instream activities), 5 habitat structures placed in channel
Lower Columbia-Sandy	Upper Sandy River Habitat Restoration Project	Instream	Alcoves created with tributary/spring input; Boulders placed; Large wood placed; Side channels reconnected to stream or access improved	BLM, City of Portland, National Fish and Wildlife Foundation, OWEB, Pacific Power, The Freshwater Trust, USFS	29 pools expected to be created by channel structure placement treatments, 1.3 miles of stream treated (instream activities), 29 habitat structures placed in channel
Lower Columbia-Sandy	Upper Sandy River Habitat Restoration Project	Instream	Alcoves created with tributary/spring input; Alcoves created without tributary/spring input; Boulders placed; Large wood placed; Side channels reconnected to stream or access improved	BLM, City of Portland, OWEB, The Freshwater Trust, USFS	43 pools expected to be created by channel structure placement treatments, 43 habitat structures placed in channel, 2.7 miles of stream treated (instream activities)

Subbasin	Project Name	Project Type	Project Description	Participants	Reported Outputs
Lower Columbia-Sandy	Sandy River Delta Floodplain Forest Restoration - Phase 2	Riparian	Riparian trees planted: conifer and hardwood; Riparian shrubs or herbaceous vegetation planted/reseeded	Arbor Day Foundation, Ash Creek Forest Management, LLC, OWEB, USFS	40 acres treated (riparian activities), 0.35 linear stream miles treated (riparian 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 N-7: TMDL implementation activities reported in 2017 by Designated Management Agencies or third parties.**

TMDL	DMA or Third Party	Reported Actions
Sandy River Basin TMDLs	City Troutdale	Held Earth Day restoration event with 26 volunteers, one acre invasive weeds removed and 80 native trees planted; partnered with East Multnomah Soil and Water Conservation District to plant 5,425 trees and shrubs in Beaver Creek canyon to complete planting on 24.50 city-owned riparian acres; installed 150 catch basin labels; 3 employees attend stormwater training; issued 6 1200C permits as DEQ agent; nine city-wide street sweeping events with 178 cubic yards material removed; 1,153 catch basins cleaned with 18.8 cubic yards material removed.
Sandy River Basin TMDLs	Multnomah County	Improved geographic reporting on stormwater regulation, inspection and complaint response; partnered with East Multnomah Soil and Water Conservation District to plant native plants in county rights of way in Beaver Creek watershed; participated in Regional Coalition of Clean Rivers with various public outreach initiatives; convenes several agency and non-profit partners to coordinate Beaver Creek monitoring, restoration and outreach activities.
Sandy River Basin TMDLs	City Portland - Water Bureau	Annual Report - city's primary TMDL responsibilities are optimal management and monitoring of drinking water reservoirs and stream flow to meet temperature allocations in the Bull Run River.