

Appendix F

Klamath Basin Report

1. Basin Description

The Klamath River originates in southern Oregon and flows through northern California entering the Pacific Ocean at Requa in Del Norte County, California. Forty-four percent of the 12,680 square mile watershed lies within the boundaries of Oregon while the remaining lies across the state line within the boundaries of California.

The Klamath River basin is of vital economic and cultural importance to the states of Oregon and California, as well as the Klamath Tribes in Oregon; the Hoopa, Karuk, and Yurok tribes in California; the Quartz Valley Indian Reservation in California, and the Resighini Rancheria in California. It provides fertile lands for a rich agricultural economy in the upper basin. Historically, the basin once supported vast spawning and rearing fishery habitat with cultural significance to the local Indian tribes. The watershed supports an active recreational industry, including activities that are specific to the Wild and Scenic portions of the river designated by both the states and federal governments in Oregon and California. The watershed continues to support what were once historically significant mining and timber industries.

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

Subbasin	Watershed Area (km2)	% Urban/Roads	% Forest	% Cultivated	% Range/Forest Disturbance	%Other
Butte	29.020	0.0	88.0	0.0	11.2	0.8
Lost	3378.159	3.3	31.2	23.9	38.8	2.8
Lower Klamath	.092	7.8	56.7	0.0	35.2	0.0
Sprague	4170.912	0.4	53.1	2.3	39.9	4.3
Upper Klamath	1479.907	1.2	65.1	0.1	32.1	1.5
Upper Klamath Lake	1875.152	1.8	55.2	13.0	8.2	21.8
Williamson	3725.826	0.8	63.2	1.7	24.7	9.6

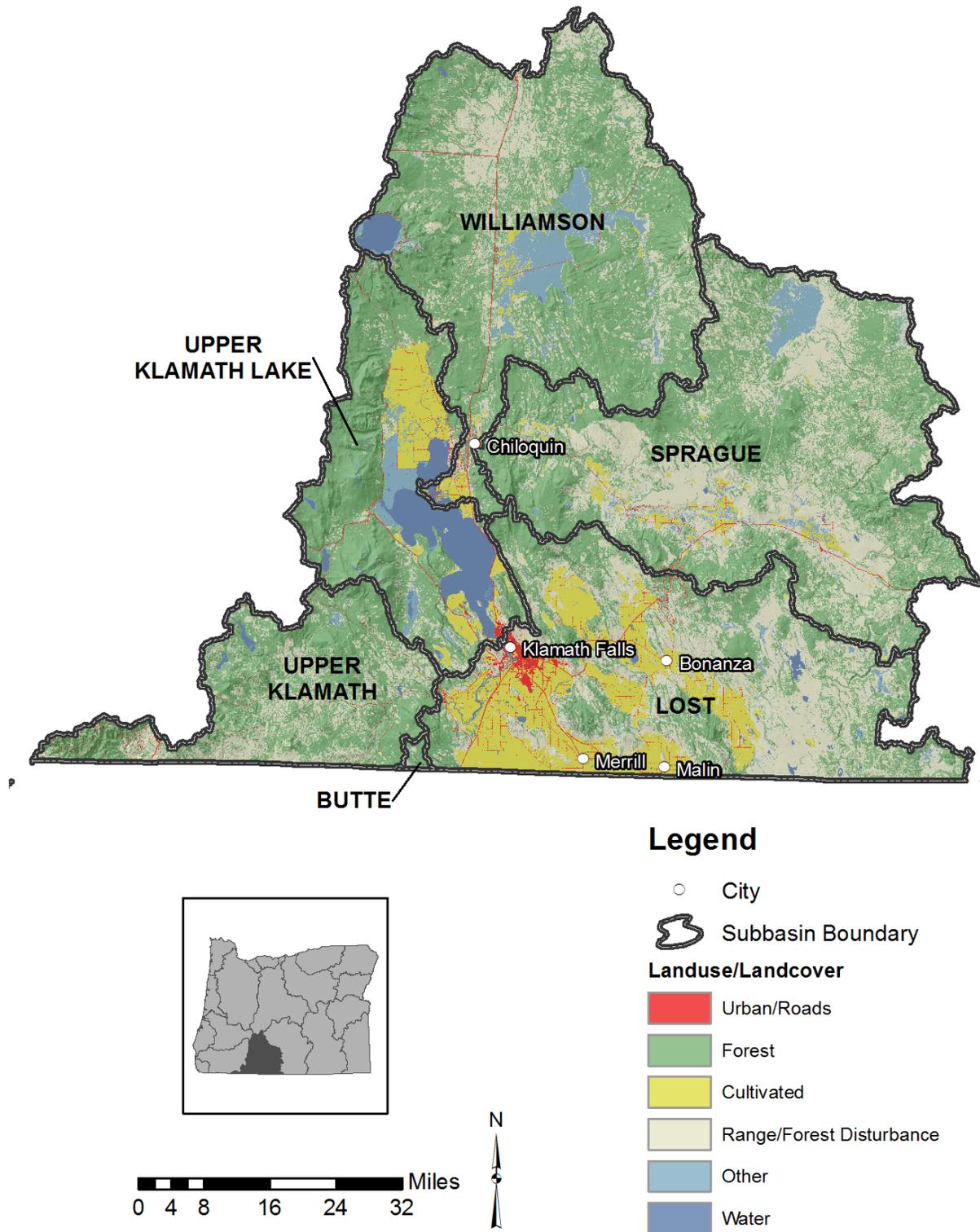


Figure F-1: Land use in the Klamath administrative basin.

1.1 Basin Contacts

Table F-2: Oregon DEQ basin contact.

Administrative Area	DEQ Basin Coordinator
Klamath Basin	Mike Hiatt: 541-273-7002: hiatt.mike@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 F-3 identifies the number of Klamath Basin waterbody segments impaired by parameter from the 2012 Integrated Report and the number of segments with approved TMDLs. Sources: [ODEQ](#), [USEPA](#)

Table F-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	6	0
Aquatic Weeds Or Algae	2	2
Arsenic	8	0
Biological Criteria	4	0
Chlorophyll a	5	2
Dissolved Oxygen	14	3
E. Coli	3	0
Fish tissue, Mercury	1	0
pH	13	3
Sedimentation	5	0
Temperature	27	25
Total Phosphorus	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(1)). The TMDL and WQMP serve as a multi-sector plan and provides the blueprint for TMDL related implementation activities. Table F-4 lists the TMDLs that have been approved in the Klamath Basin.

Table F-4: Approved TMDLs in the Klamath Basin and the impairments addressed by those TMDLs.

TMDL Document Name	Impairments Addressed
Upper Klamath and Lost River Subbasin Nutrient TMDL and WQMP	Ammonia, Chlorophyll a, Dissolved Oxygen, pH
Upper Klamath and Lost Subbasins Temperature TMDL and WQMP	Temperature
Upper Klamath Lake Drainage TMDL and WQMP	Chlorophyll a, 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 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 was one 319 project active that reported project outputs and accomplishments to DEQ. Combined the projects have a total grant budget of \$7,627. Table F-5 describes the project and the reported outputs.

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

Project Name	Grantee	Project Description	Reported Outputs
Upper Klamath Basin Non-point source education Project	Klamath Watershed Partnership	The project aims to enhance education and outreach with local communities. The recipient will distribute comprehensive information pamphlet describing NPS pollution targeting stormwater pollution to the doors and in the educational events; organize and coordinate community volunteers in storm drain stenciling activities; provide indoor and outdoor interactive displays and field trip to wetlands, museums and other venues. The recipient will continue NPS educations to working group members, civic organizations and local schools in media articles, one-on-one landowner meetings and other similar groups within the local communities in the Sprague, Williamson, Lost and Wood River Watersheds.	This project completed in June 2019 and achieved its project goal. In early 2019, the recipient conducted a campaign of transition from plastic bags to reusable bags with 4 local grocery stores in Klamath Falls. Additional volunteer stenciling projects were conducted with the help of youth volunteers from Youth Rising and YMCA in March 2019. The overall storm drain stenciling effort exceeded the original goal with several events completed over the course of the 2 year grant. The recipient promoted public awareness of NPS pollution prevention through various education and public outreach activities, including providing and displaying NPS pollution information flyers in many locations in Klamath County and participating meetings and events, such as Winter Wings Festival (February 2019, approximate 1000 attendees), Chamber of Commerce office display (more than 3000 attendees), Sustanapalooza 2019, Link River Festival (May 2019, 400 attendees), World Migratory Bird Day (May 2019, 500 attendees), and summer events sponsored by the Great Outdoor Alliance.

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 Klamath.

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 no nonpoint source related Drinking Water Source Protection program projects with reported outputs in the Klamath.

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 Klamath.

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 nine OWEB funded projects completed in 2018 with a total cash and in-kind budget of \$1,655,622. The tables below summarize reported outputs for different project activities in each Klamath subbasin.

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

Table F-6: 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)
Upper Klamath Lake	1	NA	1
Sprague	NA	1	NA

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

Subbasin	Spawning gravel placed (Cubic Yard)
Williamson	50

Table F-8: 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)
Williamson	275

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

Subbasin	Irrigation system improvement (Acre)	Irrigation system improvement (Feet)
Upper Klamath	2.8	2906

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

Subbasin	Upland fencing (Acre)
Upper Klamath	2

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

Subbasin	Upland vegetation management (Area treated)	Upland vegetation planting (Area treated)
Lost	35	35

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.

Appendix F: Klamath Basin Report
 2019 Oregon Nonpoint Source Pollution Program Annual Report

Table F-12: TMDL implementation activities reported in 2019 by Designated Management Agencies or third parties.

TMDL	DMA	Reported Actions
Upper Klamath Lake Drainage TMDL	ODA	ODA has partnered with DEQ, USFWS, the Klamath Tribes, the SWCD, Trout Unlimited, and the Klamath Watershed Partnership on an extensive study around the lake. The study is based on agricultural operation that flood irrigate through the winter and discharge water back into Upper Klamath Lake in the spring. This is an ongoing study and will be conducted through 2021.