Year 2023 Report on Activities to Implement Washington State's Water Quality Plan to Control Nonpoint Source Pollution

For the

Water Quality Program

Washington State Department of Ecology
Olympia, Washington

July 2024, Publication 24-10-029

Publication Information

This document is available on the Department of Ecology's website at:
https://apps.ecology.wa.gov/publications/summarypages/2410029.html

Contact Information

Water Quality Program

Dept. of Ecology Headquarters
P.O. Box 47600
Olympia, WA 98504-7600
Phone: 360-407-6000
Website[1]: Washington State Department of Ecology

ADA Accessibility

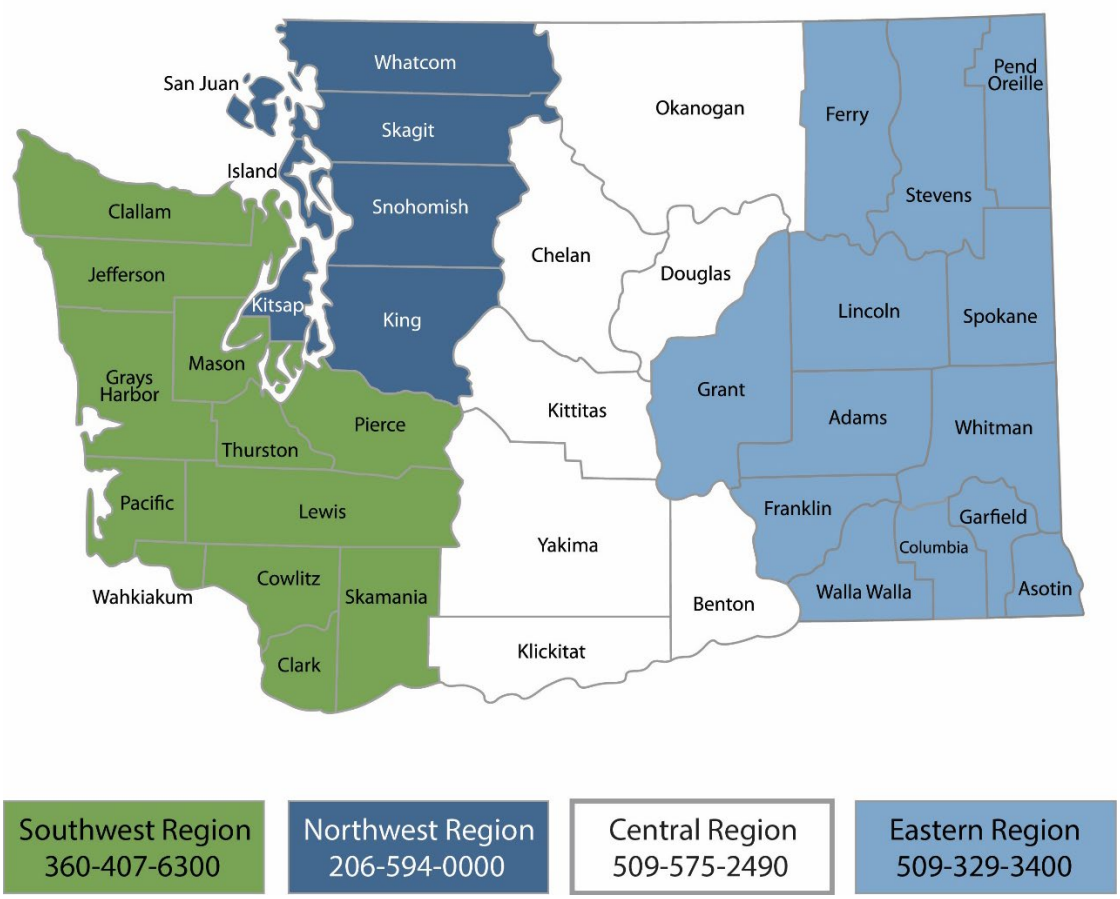
The Department of Ecology is committed to providing people with disabilities access to information and services by meeting or exceeding the requirements of the Americans with Disabilities Act (ADA), Section 504 and 508 of the Rehabilitation Act, and Washington State Policy #188.

To request an ADA accommodation, contact Ecology by phone at 360-407-6000 or email at hannah.coe@ecy.wa.gov. For Washington Relay Service or TTY call 711 or 877-833-6341. Visit Ecology's website for more information.

[1] www.ecology.wa.gov/contact

Department of Ecology's Regional Offices

Map of Counties Served



Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	P.O. Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	P.O. Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 West Alder Street Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 North Monroe Spokane, WA 99205	509-329-3400
Headquarters	Statewide	P.O. Box 46700 Olympia, WA 98504	360-407-6000

Year 2023 Report on Activities to Implement *Washington State's Water Quality Plan to Control Nonpoint Source Pollution*

Water Quality Program
Washington State Department of Ecology
Olympia, WA

June 2024 | Publication 24-10-029

Table of Contents

List of Figures, Tables, and Images

Figures

Tables

Images

Purpose of Document

This Year 2023 Report on Activities to Implement Washington State's Water Quality Plan to Control Nonpoint Source Pollution is intended to meet the requirements of section 319 (h) (8) and (11) of the Federal Clean Water Act (CWA) (33 USC 1329). The report documents the activities and accomplishments of the State of Washington in achieving clean water, and the Department of Ecology's (Ecology) administration of the State's Nonpoint Source (NPS) Pollution Program. As described herein, Washington is making significant progress toward meeting the substantial on-the-ground and policy challenges presented by nonpoint water pollution.

Chapter 1: The Path Towards Clean Water

Nonpoint source (NPS) pollution in our waterways is the greatest water quality challenge facing Washington State today. Ecology's NPS strategy focuses on multiple implementation paths to achieve clean water. However, no matter the approach, we continually strive for greater regulatory clarity and a comprehensive strategy that uses all available tools to control and prevent nonpoint sources of pollution and achieve compliance with water quality standards. In 2023 we made significant progress towards our goal of preventing nonpoint pollution and improving water quality across Washington. Some of our bigger successes include:

- Submitted to EPA one additional chapter of the Voluntary Clean Water Guidance for Agriculture[2]- five chapters have now been completed.
- Two TMDLs were approved by EPA.
- Updated funding guidelines for Ecology's Water Quality Combined Funding Program, to incorporate the BMPs included in the approved chapters of the Voluntary Clean Water Guidance for Agriculture and added incentives for implementing full Site Potential Tree Height (SPTH) buffers.
- Supported the Forest Practices Board in approving the Timber, Fish and Wildlife majority policy proposal to update buffers on Type Np waters in preparation for Board action to initiate rulemaking.
- Hangman Riparian Buffer Pilot program-This successful incentive program is providing yearly ecosystem payments to dryland wheat farmers who install riparian buffers with native woody vegetation in the Hangman Creek Watershed. The payments are structured to match the amount of income they would receive by farming those areas (commodity buffers).

Ecology's efforts to manage NPS pollution are underlain by a foundation of strategic policies intended to foster and guide water quality protection efforts. Accordingly, this report highlights some of the policy level advances in our continual effort to map out the nonpoint source regulatory landscape, and subsequently navigate toward a more effective statewide nonpoint source program.

Ecology's nonpoint strategy focuses on promoting the implementation of effective best management practices (BMPs) that support compliance with the water quality standards and prevent pollution discharge. The primary tools Ecology uses to facilitate and guide on-the-ground implementation are:

- Total Maximum Daily Loads (TMDLs) and associated implementation plans
- Advanced Restoration Projects (i.e., a Watershed-based implementation effort in advance of a TMDL)
- Straight to Implementation (STI) projects-a type of Advanced Restoration Project
- Ecology's Grant and Loan program and associated funding guidelines

[2] https://apps.ecology.wa.gov/publications/SummaryPages/2010008.html

- Regional nonpoint staff who provide on-the-ground technical assistance, and, when appropriate, provide a regulatory backstop.

Additionally, when harmonizing social, financial, and technical resource conditions arise in a Watershed, Ecology takes advantage of other opportunities to achieve on-the-ground implementation. The Hood Canal Regional Pollution Identification and Correction Program, Clean Samish Initiative, and the Whatcom County Clean Water Program are all examples where we are building on the momentum of concern over shellfish bed closures to promote clean water BMPs. Likewise, Ecology continues to support local Pollution Identification and Correction (PIC) programs. This work targets Watersheds in the Puget Sound area where a local entity has taken a key role in identifying pollution concerns and addressing pathogen and nutrient pollution from a variety of nonpoint sources. These sources include on-site sewage systems, farm animals, pets, sewage from boats, and stormwater runoff.

This report also details the significant federal and state water quality protection investments made through our combined funding program. The grants and loans administered by this program are essential for advancing efforts to control NPS pollution. By facilitating the widespread implementation of effective BMPs, such as improved agricultural practices and riparian area restoration, this program is helping to create a paradigm shift in which NPS pollution control is viewed as important and customary by all contributing sectors.

Chapter 2: EPA's 2023 319 Grant Distribution

The federal fiscal year (FFY) 2023 Section 319 allocation of $3,233,000 was supplemented with $4,443 of recertified funds for a total award of $3,237,443. These funds were applied towards state fiscal year (SFY) 2024 and, as they were in SFY2023, were again distributed among three major work plan elements within Ecology: Ecology's Nonpoint Program, Direct Implementation Fund, and Water Quality Combined Funding Program. Recertified funds were applied to Program Support for early expenditure.

2.1 Ecology's Water Quality's Nonpoint Program Support

Ecology funded 9.75 staff FTEs in SFY2024 that support the state's nonpoint program with policy development, technical assistance, and project implementation oversight.

Total EPA SFY 24 Allocation: $3,237,443

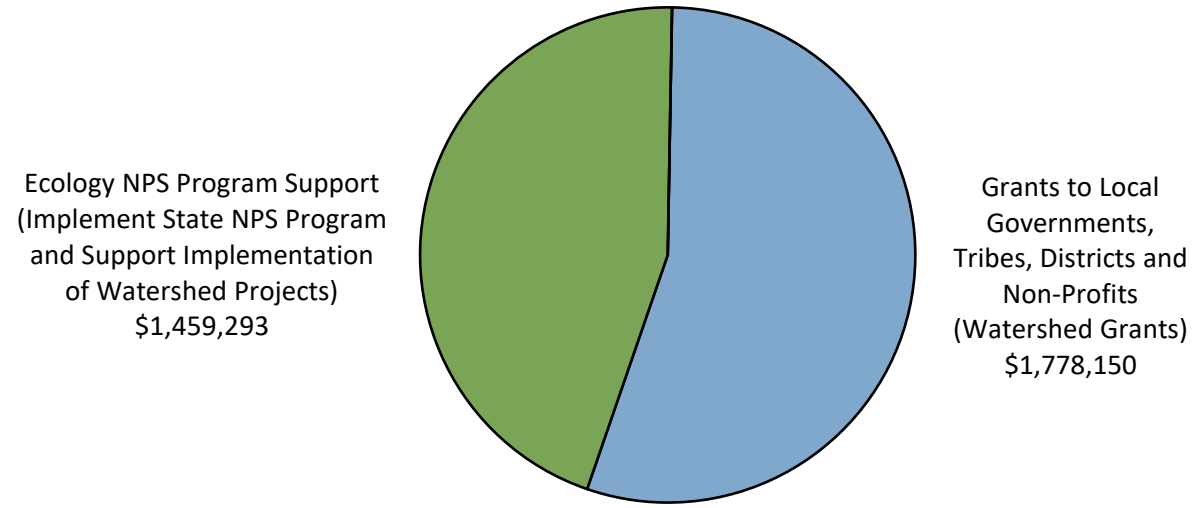


Figure 1. 319 Federal Allocations SFY 2023.

The above figure shows the distribution of the federal allocation in SFY2024 (FFY23). Ecology applied 40 percent state matching funds of $2,535,460 using State Clean Water Fund dollars. See section 2.3.1 for details.

2.1.1 SFY 2023 Nonpoint 319 Program Support Projects - 9.75 FTE @ $1,459,293

Table 1.Staff that are funded with 319 dollars.

319 Funded WQ Support Projects	FTEs	319 Cost
Nonpoint Policy and Plan Coordination	1.85	$314,359
Financial and Data Administration	1.0	$139,244
TMDL Nonpoint Education and Outreach	0.5	$70,888
TMDL Development and Implementation	1.10	$155,954
Nonpoint Technical Assistance and Compliance	2.30	$348,356
TMDL and BMP Effectiveness Monitoring	3.00	$430,492
Total	9.75	$1,459,293

1. **Nonpoint Policy and Plan Coordination (1.85 FTE)**

   Ecology is responsible for overseeing and coordinating overall nonpoint plan implementation activities and policy. Part of that role entails management, monitoring overall status, compiling progress reports, and reporting back to EPA, taking the lead in coordinating with other Ecology programs, facilitating inter-state agency work, implementing activities that have statewide applicability, and performing technical outreach about the plan with local governments, Tribes, forest practices, and special purpose districts. In addition, Ecology is responsible for statewide nonpoint policy and planning.

   Estimated cost of this work plan component – **$314,359.**

2. **Financial Administration (1.0 FTE)**

   Staff of the Water Quality Program's Financial Management Section administer and manage all Section 319 grant funds and match funds passed through to local government entities, Tribes, and public not-for-profit groups. Staff ensures that funds are ranked and allocated to highest priority projects and are spent in a fiscally responsible manner. Staff also closely tracks projects tasks, results, and data from initiation to completion.

   Estimated cost of this work plan component – **$139,244.**

3. **TMDL Nonpoint Education and Outreach (0.50 FTE)**
   Ecology initiates an education and outreach effort as part of every TMDL. The purpose is to ensure that people understand why we are doing a TMDL, what their responsibilities are likely to be, and how they can participate. A successful public process makes TMDL implementation more likely and more effective.

   Estimated cost of this work plan component – **$70,888.**

4. **TMDL Development and Implementation (1.10 FTEs)**
   The primary job of a TMDL lead is managing the development of the TMDL and supporting documents for successful submission to and approval by EPA. This element includes knowledge of TMDL concepts and procedures, and the ability to work effectively with diverse groups within and outside Ecology. Other products required from this work element include development of an implementation strategy (IS) to go along with the TMDL, a summary of public involvement, and a water quality (detailed) implementation plan (WQIP). Once these procedures are documented, the TMDL lead coordinates and initiates implementation activities to meet the allocations set in the TMDL. In some cases, the TMDL lead also manages local implementation grants.

   Estimated cost of this work plan component – **$155,954.**

5. **Nonpoint Technical Assistance and Compliance (2.30 FTEs)**
   The purpose of this work plan element is to provide technical assistance to landowners, as well as federal, state, and local agencies, Tribes, forests, and special purpose districts to ensure their activities, projects, and programs meet state water quality laws, regulations, and standards. Areas of technical assistance include forest practices, agricultural activities, riparian restoration, complaint management, inspections, and nonpoint source enforcement. This work plan element will apply in Watersheds that implement nonpoint TMDLs, or in Watersheds with plans that focus on protection of threatened waters or implementation activities to clean up waters.

   Estimated cost of this work plan component – **$348,356.**

6. **TMDL and Effectiveness Monitoring (3.00 FTEs)**
   This part of the plan designs and conducts monitoring studies to determine the effectiveness of nonpoint source management programs. Effectiveness monitoring and ground water monitoring capture the success or failure of various voluntary and regulatory efforts. In addition, we will measure the effectiveness of specific implementation activities. Post TMDL monitoring is also conducted to verify that the pollutant controls result in the water body improving or meeting water quality standards. It tests the effectiveness of the implementation management programs/plans.

   Estimated cost of this work plan component – **$430,492.**

2.2 Direct Implementation Fund

The Direct Implementation Fund (DIF) is designed to assist Ecology's regional offices to directly address priority nonpoint problems. The DIF program uses unspent/de-obligated dollars from competitive projects, or other sources, to implement on-the-ground practices that will provide a direct and demonstrable water quality benefit by addressing an acute pollution problem at a specific site. Examples include planting riparian buffers, installing livestock exclusion fencing, and use of waste storage facilities to remove livestock (and associated pollution) from surface waters.

Projects may be proposed for DIF by an Ecology regional office at any time. The project goes through a review process and, if approved, will be placed in a queue for when funds are available. If funds become available without projects in the queue, the Nonpoint Funding coordinator may notify all regional offices to solicit proposals. To qualify, the project must address:

1. Identified sources of nonpoint pollution causing the most significant harm to water quality.
2. Water bodies that are identified as not meeting water quality standards and/or have a strategic implementation plan (such as a completed TMDL, straight to implementation (STI) or other alternative Watershed plan).
3. An actual ability to fix the problem (i.e. can implement the desired change and are ready to proceed and reach completion).
4. Criteria established in the DIF funding guidelines (updated SFY2023).

Ecology works closely with local partner organizations to facilitate implementation, leveraging both DIF and competitive grant programs. In 2023, one 319 funded DIF project began, and all deliverables were completed and closed in 2024; additional information on this project can be found in Appendix A. No additional DIF projects were funded by Section 319 in 2023.

2.3 Ecology's Integrated Grant and Loan Program

Ecology's Water Quality Combined Funding Program (WQC) administers four major funding sources that provide grants and low-interest loans for projects to protect and improve water quality in Washington State. Ecology acts in partnership with local governments, special purpose districts, Tribes (Federally recognized), and nonprofits (Section 319 only), by providing financial and administrative support for their water quality efforts. Eligible project types include wastewater, stormwater, nonpoint, and on-site sewage systems (OSS). Ecology manages the four fund sources as one with common guidelines, one funding cycle, application form, and offer list.

The WQC offers funding packages to the highest ranked projects through an annual application process. Funding becomes available and agreement negotiations begin on July 1st every year. The full offer list is available as an interactive map, spreadsheet, and document on the WQC Funding Cycles webpage[3].

Funding packages may include dollars from:

- **Centennial Clean Water Fund** (Centennial) grants for all project types
- **Clean Water Act Section 319** (319) grants for nonpoint
- **Clean Water State Revolving Fund** (SRF) loans for wastewater, nonpoint, and OSS.
    - Low interest loans and the Green Project Reserves (GPR), with the possibility of forgivable principal normally boosts the number of SRF applications for nonpoint source projects.
- **Stormwater Financial Assistance Program** (SFAP) grants
    - The SFAP is designed to fund stormwater projects and activities that have been proven effective at reducing environmental degradation from stormwater and go above-and-beyond permit requirements. Stormwater facilities and a limited suite of stormwater activities may be funded through SFAP. SFAP-eligible facility projects must reduce stormwater pollution from existing development and will be reviewed by Ecology to ensure compliance with Ecology's design standards.

2.3.1 Nonpoint Grant and Loan Investments (SFY2024)

Nonpoint projects are evaluated and ranked based on feasibility criteria and water quality benefit, in support of the Washington State Nonpoint Plan and Watershed plans. Nonpoint projects may receive a combination of grants and/or loans from 319, Centennial, and/or CWSRF as one funding package.

[3] https://ecology.wa.gov/About-us/Payments-contracts-grants/Grants-loans/Find-a-grant-or-loan/Water-Quality-Combined-Funding-Program/WQC-funding-cycle

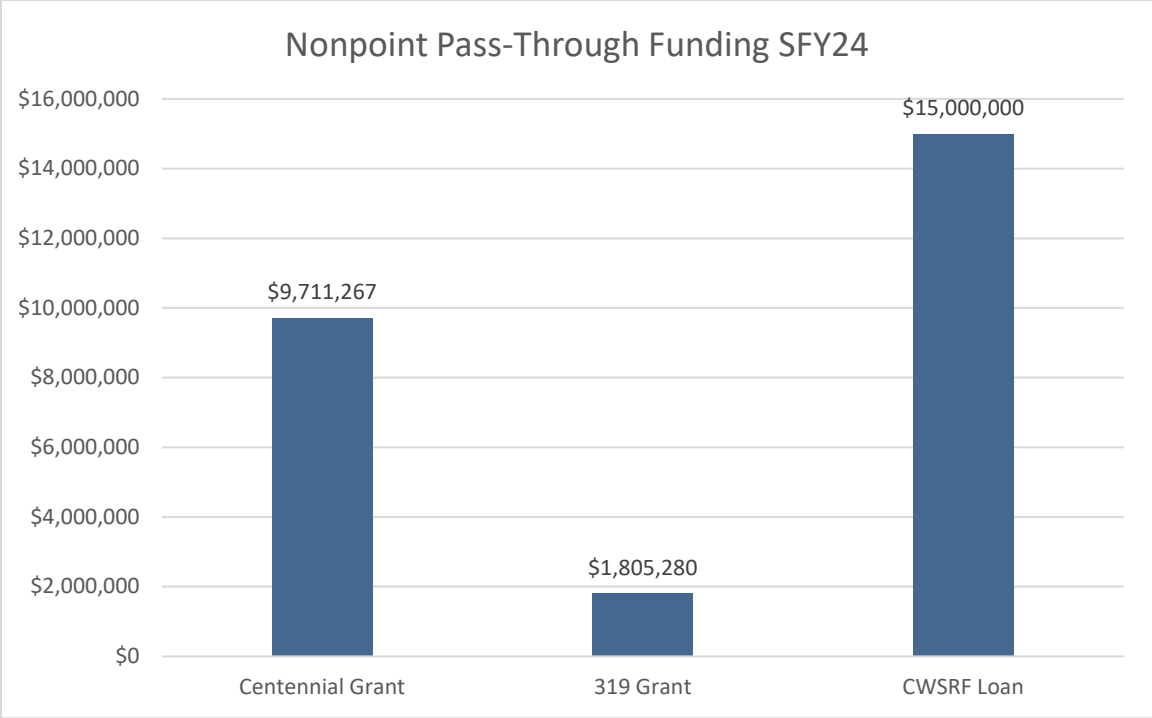


Figure 2. Nonpoint Funding distributed by grant type.

- $26,516,547 total Ecology investment in nonpoint projects in SFY 2024.
- 5 projects received 319 funding through the WQC program, and 1 received funding through the DIF program.
- 20 projects received state funding, in addition to the projects that were identified to satisfy the match requirement for EPA funds.

7 projects received matching state funding:

Table 2.compilation of all the state funding match amounts

Fund Source	Offer Amount	Number of Projects
Centennial	$7,175,807	20
Centennial Match	$2,535,460	7
Section 319	$1,805,280	5
CWSRF	$15,000,000	2
Grand Total	**$26,516,547**	**34**

319 Pass-through Funding Summary

- $1,778,150 allocated from EPA for pass-through.
- $1,805,280 awarded through the WQC program.

- $2,535,460 identified for state match in SFY 2024. The total two-year projected match amount will be determined after funding offers are made for the SFY25 funding round in 2024. These figures represent an over-match from the required annual match of $2,155,333 and biannually $4,310,666 but guarantees that Ecology will meet the end of grant required match amount.
- The $1,805,280 accounts to an over-obligation of $27,130. This facilitates early project development and implementation and is a safe investment because it falls within the historical sub project de-obligation amounts within five-year 319 Grants. The state Centennial fund provides backing to fulfill the over-obligation if de-obligations are less than anticipated.

Project descriptions can be found in Appendix A.

2.3.3 Load Reduction Estimates by Project in 2023

Load reduction estimates (for some best management practices) are provided by recipients every January for the previous calendar year. Ecology compiles and enters this data into the GRTs database annually. EPA has inquired about yearly fluctuations in the total load reduction estimates found in this section. Load reduction estimates may differ from year to year based on several factors. Significantly, Washington State implements many BMP projects that may not result in nitrogen, phosphorus, or sediment load reductions because they are intended to reduce temperature and/or fecal coliform— which STEPL and PLET cannot currently calculate. Temperature and fecal coliform impairments are of particular concern because of their impacts on shellfish and salmon. Ecology has therefore placed a high priority on implementing BMPs that address these pollutants. Further, implementation of BMPs that target temperature and fecal coliform help address tribal treaty rights at risk. While these efforts may not be adequately captured in the below tables, we believe that they are good investments. We have also included a list of BMP implementation this year (see section 2.3.4). These tables, taken together, provide a more accurate picture of the environmental benefits of our investments. Pass through grant project agreements have 3-4 years to complete the scope of work. Load reduction estimates resulting from active projects in 2023 are provided in Appendix A.

2.3.4 Best Management Practices (BMPs) Implemented in 2023

Pass through grant project agreements have 3-4 years to complete the scope of work. BMPs implemented through active projects in 2023 are provided in Appendix A.

2.4 Unliquidated Obligation (ULO)

Table 3. CWA 319 Grant Balance (Unliquidated Obligations) as of March 31, 2022.

Project	Grant Number	FY	Start	End	Award Amount (Fed)	Total Expenditures	Unspent Balance (ULO)	% ULO
FA12	C9-00044911	19	7/1/2019	6/30/2024	6,169,000	6,033,547.00	135,453.00	2.20%
FA13	C9-00044912	20	7/1/2021	6/30/2026	6,466,000.00	4,518,251.00	1,947,749.00	30.12%
FA14	C9-02J42201	22	7/1/2023	6/30/2028	3,237,443	1,171,573.00	2,065,870.00	63.81%

Numbers are based on Grant amount awarded minus expenditures.

Chapter 3: Implementation in Action

In 2023, Ecology continued our internal and external efforts to achieve nonpoint pollution reduction goals in accordance with the state Nonpoint Pollution Management Plan. In addition to providing on-going guidance to our own staff, we have continued to build on external partnerships and use our nonpoint authority to make progress in cleaning up the state's waters.

In 2020, we reached a settlement agreement with Northwest Environmental Advocates, which included several commitments. Ecology is dedicating resources to implementing this settlement agreement in upcoming years and has included some of the progress in this annual report.

In 2023, we achieved several key milestones in implementing the settlement agreement:

- Received EPA approval for the 2022 update to the Washington State Nonpoint Plan.
- Completed and submitted to EPA an additional chapter of the Voluntary Clean Water Guidance for Agriculture: Livestock Management- Animal Confinement, Manure Handling, and Storage.
- Incorporated chapters of the Voluntary Clean Water Guidance for Agriculture, including the riparian buffer chapter, into our SFY2025 Water Quality Combined funding program guidelines.[4]
- Reporting requirements: Annually Ecology will identify the priority Watersheds in which Ecology will focus its non-grant implementation efforts (e.g., TMDL implementation, other nonpoint source control implementation) and will include a description of priority actions to be conducted in each priority Watershed. In the annual report Ecology will include the following information: Update about the status and progress of BMP guidance development; Description of updates to Washington funding guidelines based on BMP guidance development; Use of BMP guidance for technical assistance; Use of BMP guidance in new TMDLs and TMDL implementation plans, TMDL implementation, and TMDL alternatives; BMP outreach materials developed and training provided to field staff; Number of watershed evaluations conducted per Watershed; and Number of complaints received and summary of complaint types.

Chapter 3 is divided into five sections that align with goals identified in the 2022 Nonpoint Pollution Management Plan (we will continue to use the same structure with the 2025 updated Nonpoint Plan):

- Clean up impaired waters and meet water quality standards.
- Ensure clear standards.
- Develop and strengthen partnerships.
- Monitor waters for nonpoint sources impairments and program effectiveness.

[4] https://apps.ecology.wa.gov/publications/UIPages/documents/2310020.pdf

- Administer the Nonpoint Source Program as effectively and efficiently as possible.

The summaries within each section include activities that supported the Nonpoint Management Plan goals during calendar year 2023. Within these goals, significant progress has been made statewide to reduce nonpoint source pollution, including:

- Submitted to EPA and received approval for multiple Total Maximum Daily Loads (TMDLs).
- Implemented the nonpoint portions of TMDLs and other advanced water quality restoration efforts through a combination of grants/loans, technical assistance, and enforcement tools.
- Updated eligibility and funding guidance for Ecology-funded nonpoint grant and loan projects[5], to reflect the approved chapters of the Voluntary Clean Water Guidance for Agriculture, including the riparian buffer chapter.
- Ongoing coordination with important partners such as the WA Department of Agriculture, the Agriculture and Water Quality Advisory Committee, and the WA Forest Practices Board.
- Continued working with conservation districts, local governments, and nonprofit organizations on nonpoint education and outreach efforts.
- Completed an additional chapter of the Voluntary Clean Water Guidance for Agriculture, continuing work to identify BMPs that prevent water pollution and support the achievement of water quality standards in surface waters flowing through agricultural lands. Made progress on additional chapters.

Many sections of this chapter are divided into progress at the regional scale due to how regional staff work in and with different counties, Watersheds, and regional partners. The below map shows the areas where regional staff dedicate their time. Our regional offices are divided into the Southwest Regional Office (SWRO), including the Vancouver Field Office, Northwest Region Office, including the Bellingham Field Office (NWRO), the Central Regional Office (CRO), and the Eastern Regional Office (ERO).

[5] More information on Ecology's funding programs and guidelines can be found on the Ecology Water Quality Combined Funding Program webpage (https://ecology.wa.gov/About-us/How-we-operate/Grants-loans/Find-a-grant-or-loan/Water-Quality-Combined-Funding-Program).

Image 1. Map of Ecology Regional Offices' boundaries.

3.1 Goal 1: Clean-up impaired waters and meet water quality standards.

3.1.1 Development of Watershed Clean-up plans: Total Maximum Daily Loads (TMDL), Advanced Restoration Projects (ARP) and Straight to Implementation (STI) projects

In 2023 Ecology received approval from EPA for two Watershed TMDLs (covering 13 individual TMDLs):

- Lower White River pH TMDL (covers 3 individual TMDLs)—submitted to EPA on December 21, 2022, and approved by EPA on January 13, 2023.
- Whatcom Creek Bacteria TMDL (covers 10 individual TMDLs)- submitted to EPA on July 27, 2023, and approved by EPA on September 14, 2023.

The table below lists the status of each Bridge Metric priority project (Federal Fiscal Year 22-24). Additional information about these projects is provided in the remaining portion of this section. As chapters of the Voluntary Clean Water Guidance for Agriculture (CWG) are approved by EPA, the implementation plans associated with Watershed cleanup plans will incorporate the BMPs included in the CWG.

Table 4. List of bridge metric projects.

Bridge Metric Projects in 2023	Status
Alakali Flat STI	Early action implementation underway. Outline developed; strategy planned to be completed in 2024.
Almota and Little Almota STI	Outline and timeline under development.
Budd Inlet DO TMDL	Approved by EPA December 2022.
Burnt Bridge Creek ARP	Technical report from Environmental Assessment Program complete and is informing the ARP report.
Drayton Harbor Bacteria TMDL	TMDL planned to be completed late 2024.
French Creek ARP	Modeling by the Environmental Assessment Program was completed in 2023 and work on the technical report is ongoing.
Hangman DO/pH ARP	Field work completed. Sediment study draft completed. On track to begin drafting plan in 2024.
Hawk Creek STI	Early action implementation and planning in 2022. Initial strategy to be developed in 2024.
Lacamas Creek ARP	Currently waiting on source assessment to inform plan writing.

Lower White River pH TMDL	Approved by EPA January 2023.
Pataha Creek Multiparameter TMDL	Extended project scoping occurred in 2023. Field work to begin in 2024.
Pend Oreille Tributaries Multiparameter TMDL	Extended project scoping scheduled for 2024.
Soos Creek DO/Temperature/Bacteria TMDL	Data collection quality assurance project plan (QAPP) completed in 2023. Data collection begun.
Soos Creek Fine Sediment TMDL	Report writing ongoing-calculating allocations.
Spring Flat STI	Initial draft completed in 2022. Strategy developed in 2023.
Upper Colville STI	Early action implementation and planning in 2022 and 2023. Strategy to be developed in 2024.
Whatcom Creek Bacteria TMDL	EPA approved September 14, 2023.
White Salmon Bacteria ARP	Data collection underway, in progress beyond 2024.
Wide Hollow Multiparameter TMDL	Allocations being developed, report writing in progress.

Southwest Regional Office

TMDLs

The Lower White River pH TMDL was submitted to EPA in December 2022 and received approval in January 2023. This approval was on the heels of the Budd Inlet TMDL, completed and approved in 2022; completing these two long running TMDLs is a milestone that required

significant staff time from both the Water Quality Program and Ecology's Environmental Assessment Program. SWRO's TMDL resources and allocated EAP resources are currently focused on development of Advanced Restoration Projects and scoping appropriate Watersheds for future Watershed cleanup plans.

Advanced Restoration Projects

In 2023, progress was made towards drafting the Burnt Bridge Creek Advanced Restoration Plan. A completed draft and public comment period are anticipated to occur in 2024. The Burnt Bridge Creek Partnership was formed in February 2021 to develop and implement the Water Cleanup Plan. This Water Cleanup Plan will focus on best management practices and implementation actions to improve water quality. The Burnt Bridge Partnership webpage[6] will be updated in 2024 to reflect activities taken in recent years and next steps for the Partnership.

Ecology also continued work on the Lacamas Creek Watershed Source Assessment. During 2023, the Environmental Assessment Program continued to draft the source assessment report for the Lacamas Creek Watershed and recently published it in March 2024. The Lacamas Creek Partnership for Clean Water webpage[7] will be updated in 2024 to reflect activities taken in recent years and next steps for the Lacamas Creek Partnership.

Northwest Regional Office

TMDLs

Ecology is in the process of developing a fine sediment TMDL in Soos Creek to address impairments to benthic invertebrates, an indicator of stream health. This is the first TMDL of its kind in the state. Fine sediments from upland sources and those produced through instream erosion will have to be controlled to improve stream habitat and meet water quality standards. In 2023 Ecology continued work on the TMDL study. Stakeholder outreach and draft report writing was ongoing throughout 2023, as well as modeling work to develop the TMDL allocations. We anticipate finalizing the draft TMDL and implementation plan in late 2024. Following the draft completion, we will hold a 30-day public comment period and will hold informational workshops on the draft TMDL. In addition to efforts to control turbidity, the restoration of degraded habitat by improving riparian buffers and increasing channel complexity will also be part of the accompanying implementation plan.

The second TMDL Ecology is developing in Soos Creek will address temperature and dissolved oxygen impairments that indicate a failure to meet the aquatic life designated use, and bacteria impairments that indicate a failure to meet recreational uses. Data collection efforts began in 2023 and were underway throughout the year to support the technical analyses for this project.

[6] https://www.ezview.wa.gov/site/alias__1962/37697/burnt_bridge_creek_partnership.aspx
[7] https://www.ezview.wa.gov/site/alias__1962/37698/lacamas_creek_partnership_for_clean_water.aspx

Ecology also continued work on the Drayton Harbor Bacteria TMDL in 2023. The draft report and implementation plan is expected to be complete in late 2024.

Finally, we continued work on the French Creek Watershed clean-up plan. In 2022 and 2023, we continued technical work. Modeling by the Environmental Assessment Program was completed in 2023 and work on the technical report is ongoing and expected to be complete in Spring 2024. Progress on this TMDL has been slowed by possible natural conditions issues.

Central Regional Office

TMDLS

In 2023, work on the Wide Hollow Creek Temperature TMDL continued, with a focus on developing allocations.

Advanced Restoration Projects

Work on the White Salmon Advanced Restoration Project continued in 2023; after losing the project lead, the new lead connected with the Environmental Assessment Program to review the data collected during sampling and to prepare for drafting the cleanup plan. Staff also began exploring the potential for a future STI project in the Bonaparte Creek Watershed, a tributary to the Okanogan River.

Eastern Regional Office

TMDLs

Ecology's Eastern Regional Office continues to focus on TMDL and STI implementation-prioritizing resources toward achieving on-the-ground actions that get to clean water. In 2023, scoping for the Pataha Creek Multiparameter TMDL was completed. Planning and data collection for this new TMDL will begin in 2024.

Straight to Implementation Projects

ERO is expanding STI work to several Watersheds: Alkali Flat Creek, Almota Creek, Spring Flat Creek, Hawk Creek, and the Upper Colville Watershed. In 2023 we continued our watershed evaluations in these Watersheds to collect information on problem sites and connect with local partners. We continued to gather information, and in 2023 many of these plans were still being drafted; because of staffing changes and associated vacancies, the plans were not completed in 2023. A draft of the Spring Flat Creek STI was completed in early 2024. Upper Colville, Hawk Creek, and Almota Creek STI projects remain on our Bridge Metric priories list to be in development through when the Bridge Metric performance measure period ends (September 30, 2024).

Statewide Projects

Puget Sound Nutrient Source Reduction Project

- **Modeling work (Year 2 Optimization Scenarios):** This year focused on running the modeling scenarios developed in 2022 (year two optimization scenarios).
- **Stakeholder engagement:** We continue to engage with the Nutrient Forum, our stakeholder engagement group, comprised of the regulated community, Tribes, and all levels of government, industry, environmental groups, academics, and local implementers. We organized one virtual Nutrient Forum meeting this year in July 2023, covering an overview of Ecology's strategy for reducing nutrients and overview of Ecology's Puget Sound Nutrient Credit Trading Legislative Report. We plan to host multiple Forum meetings in 2024, which will focus on discussing strategies for addressing nutrients in Watersheds, presenting the next round of Salish Sea modeling results, and discussing potential WWTP and Watershed inflow nutrient load targets for the final NRP.

3.1.2 Implementation of TMDLs, STIs, Nonpoint Enforcement Efforts

Ecology continues to promote water cleanup activities across Washington State with an emphasis on our TMDL, STI and Advance Restoration Project Watersheds. Each of our regional offices have chosen selected areas where we are attempting to increase the pace of BMP implementation to address nonpoint pollution. The following are focus Watersheds for our regional staff's implementation efforts and are part of continuing multi-year efforts (focal issues in parentheses):

Southwest Regional Office:

- Ohop Creek (Nisqually bacteria TMDL)
- Puyallup River- Boise, Pussyfoot and Second Creeks (bacteria TMDLs)
- Key Peninsula (nonpoint enforcement- bacteria)
- Henderson and Eld Inlets (bacteria TMDLs)
- North Oakland Bay (bacteria, temperature, dissolved oxygen TMDL)
- Skokomish River (nonpoint enforcement - bacteria, pH, dissolved oxygen, ammonia)
- Lacamas River (bacteria, pH, temperature, dissolved oxygen ARP)
- East Fork Lewis River (bacteria, temperature ARP)

Northwest Regional Office:

- Green River Watershed (temperature TMDL implementation)
- Snohomish Watershed (temperature, DO TMDL)
- Samish River (bacteria TMDLs implementation)
- Lower Skagit Basin (temperature and bacteria TMDL implementation)
- South Skagit Bay: Stillaguamish multiparameter TMDL
- Padilla Bay Tributaries (fecal coliform TMDL implementation)

- Nooksack River (bacteria TMDL Implementation)
- Whatcom Creek (bacteria TMDL completion)
- Lake Whatcom multiparameter (TMDL implementation)
- Soos Creek Multiparameter (temp/DO/bacteria) TMDL & Soos Creek Fine Sediment TMDL (in development)

Central Regional Office:

- Lower Yakima River Watersheds (sediment, bacteria, temperature TMDLs)
- Wilson Creek Watershed (bacteria TMDL implementation)
- Granger Drain (bacteria TMDL implementation)
- Bonaparte Creek (nonpoint enforcement, STI development- bacteria and temperature)
- White Salmon River (nonpoint enforcement, ARP development- bacteria)

Eastern Regional Office:

- Hangman Creek (bacteria, dissolved oxygen, nutrients, pH, temperature, turbidity TMDLs)
- North Fork and South Fork Palouse River (bacteria, temperature TMDLs)
- Little Spokane River (TMDLs for bacteria, temperature, dissolved oxygen, total phosphorus, and pH)
- Moses Lake (locally led partnership- harmful algal blooms)
- Lower Snake River tributaries: Alpowa Creek, Deadman/Meadow Creek**,** Tenmile Creek, and Couse Creek 4b projects (bacteria, dissolved oxygen, pH, temperature STI)
- Upper Snake River tributaries: Steptoe, Alkali Flat, Almota Creeks (bacteria, dissolved oxygen, pH, temperature STI)
- Lower Snake River tributary: Asotin Creek (Temperature STI)
- Walla Walla River Watershed Multiparameter TMDLs (Bacteria, Temperature, pH, DO, Toxics)

Ecology's nonpoint compliance staff work out of four regional offices- Southwest, Northwest, Central, and Eastern. By working out of regional offices, staff are able to be locally engaged with partner organizations, active on the ground, and have an increased awareness and involvement in local water quality issues. As stated in Chapter 2, 319 funding from EPA provides 2.30 FTEs focused on technical assistance and compliance activities; when combined with positions supported via state funding allocated from both the legislature and National Estuary Program funding, the nonpoint technical and compliance positions total 13 FTEs focused solely on TA and compliance and 9 FTE who conduct both TA/compliance and TMDL writing. Additionally, there are 6 positions focused on implementation of the forest practice rules.

Nonpoint staff frequently coordinate with local partners, including municipal and county government agencies, interagency workgroups, Pollution Identification and Correction (PIC) groups, local Tribes, conservation districts (CD), and local Watershed groups. Across the regions, information is shared between nonpoint staff and our partners through a variety of

methods, often tailored to the needs and preferences of the community and partners. This may include workgroup meetings, attendance at monthly conservation district board meetings, and one-on-one conversations between Ecology staff and staff of local partner organizations. In the Southwest Regional Office, a monthly newsletter is utilized to spread information among active partners. Whatever the method, there is an emphasis on continuing to develop cooperative relationships with local restoration practitioners. Because these organizations are often local technical assistance resources for landowners needing to make improvements, these relationships consistently prove to be invaluable for implementing water quality improvement BMPs.

Due to the often high costs of BMP implementation for landowners, nonpoint field staff work to support grant applications from CDs and other local partners. Nonpoint staff work with grants staff to provide grant information, application assistance, and feedback to potential applicants prior to the grant submission deadline. In our Eastern region, nonpoint staff worked with landowners and local CDs to develop an innovative new grant structure that utilizes incentive payments for riparian buffer implementation, to compensate producers for loss in income due to the change in land use. This program has been hugely successful and instrumental in achieving change on the ground.

Through technical assistance letters, outreach mailers, phone calls, and in-person site visits, nonpoint staff provide landowners with resource-specific water quality education materials (e.g. information on the impacts of land use practices on water quality and agricultural BMPs for water quality protection, utilizing the recommendations of the Voluntary Clean Water Guidance for Agriculture chapters). In the Northwest Regional Office, staff have embraced the virtual world and utilized Storymaps to communicate water quality information to the community in a new and engaging way. Staff work with landowners to contextualize the impacts of local actions on water quality, explain water quality data, provide recommendations to address nonpoint source pollution, and provide referrals to local partners for financial assistance through cost-share programs and grants. Staff strive to work with landowners to implement the necessary changes, but, when necessary, rely on the regulatory authority granted by RCW 90.48 to achieve compliance with state water quality law.

In general, there are two main methods by which staff identify and respond to nonpoint pollution- reactively to environmental complaints submitted by the public, and proactively via watershed evaluations in priority areas. Evaluations help to prioritize efforts and focus resources throughout the region. Staff may also use water quality sampling to identify focal reaches and track progress. Regardless of the method of identification, sites with verified nonpoint concerns are recorded in the Nonpoint Implementation (NPI) database, and staff follow internal guidance documents and a graduated compliance flowchart to address pollution concerns.

2023 was a challenging transitional year, with vacancies in every region. Despite staff turnover, and lingering vacancies that continue into 2024, each region strived to remain engaged in Watersheds and continue forward with planned Watershed work.

For each region's focal Watersheds, priority actions taken in 2023 are highlighted below.

Southwest Regional Office Priority Watersheds

Priority Watershed Name: Nisqually River & Ohop Creek

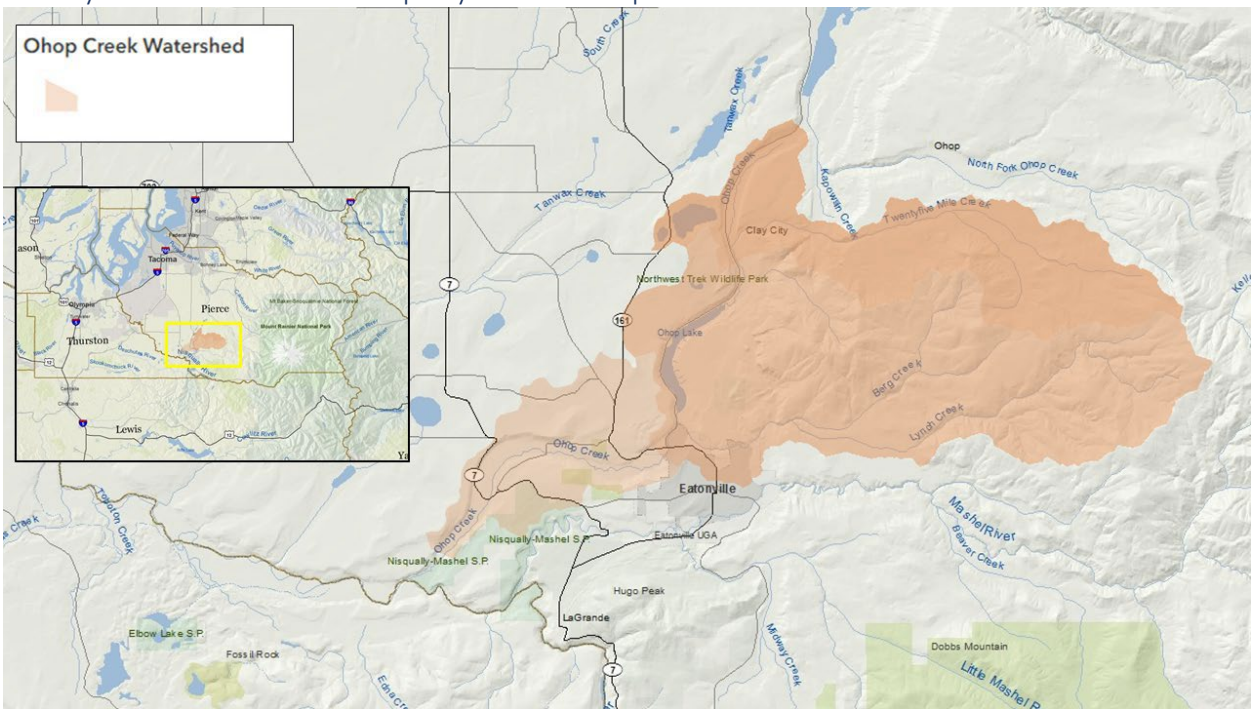


Figure 3. Map of Nisqually and Ohop Creek Watershed

Implementing: Nisqually River Bacteria & Dissolved Oxygen TMDL

Summary/Context Info:

As one of the least degraded major Watersheds in the Puget Sound, the Nisqually River and its tributaries continue to be critically important spawning and rearing habitat for ESA listed salmonid species. In 2005, the EPA approved a TMDL in the Nisqually River Watershed and the Henderson Inlet basin. In this study, Ohop Creek was identified by Ecology to be a primary area of interest for fecal bacteria reduction. Partners: Nisqually Land Trust, Nisqually River Council, Nisqually Indian Tribe, Pierce Conservation District, and Pierce County Public Works.

Priority Actions Completed in 2023:

Education and Outreach

- Ecology staff handed out educational materials (and included some, such as the Landowner Self-Assessment Tool, in mailed letters) and talked with landowners about water quality issues in the Ohop Creek Watershed.

Financial Assistance

- **Provided partners with front-end feedback on grant proposals:** In an effort to encourage and assist our partners to draft successful grant proposals, we provided grantees with the option to submit a Notice of Intent to apply for grant funds, to receive feedback prior to the fall submittal deadline.
- **Information sharing**: Staff provided information to landowners regarding financial assistance opportunities through local partners (i.e., conservation district cost share programs) and Ecology funding opportunities. Ecology staff worked with Pierce Conservation District staff to explore the option of a riparian knotweed treatment grant program throughout the county.

Partner Coordination

• **Continued to attend monthly partner meetings:** Ecology attended Nisqually River Council, Pierce Conservation District, and Nisqually Habitat Workgroup meetings to provide guidance and support water cleanup efforts.

• **Addressed water quality concerns:** Continued to work with area partners to address ERTS complaints.

• **Enforcement updates:** Continued to communicate with partners about the status of landowner BMP implementation and enforcement actions.

Pollution Identification/Watershed Evaluation:

- **Watershed evaluations:** Multiple watershed evaluations were completed in 2022; in 2023, staff focused on addressing the issues that had been brought to light by the 2022 evaluations, including revisiting sites when necessary to check on conditions during the compliance pathway. No new issues were identified.

Compliance/Technical Assistance Activities

- **Provided technical assistance to area livestock owners:** Area property owners continued to work with local partners to address previously identified pollution concerns.
- **Compliance follow-up:** Followed-up and continued technical assistance efforts with landowners that have received letters to address identified water pollution concerns.
    - **Outreach letters:** 5 outreach letters were sent to landowners in the Ohop Creek Watershed and other Nisqually tributary Watersheds where staff have observed water quality concerns.

- **Site visits:** Several in-person site visits were completed on parcels that were identified as sites of concern. Site visits led to landowners taking recommended steps or Ecology taking further enforcement actions.
- **Inspections/Requests for Technical Assistance:** One agribusiness owner proactively requested an inspection by Ecology staff to assess their manure management practices. Ecology staff performed the inspection and confirmed that this business has appropriate manure management.
- **Compliance steps:** One property received an administrative order and a penalty in 2022. In 2023, failure to comply with the Order and failure to pay (or to appeal) the penalty led to a lien being placed on the property.

- **Evaluated and responded to incoming ERTS complaints:** Responded directly or worked with area partners to respond to livestock or OSS-related complaints. Staff addressed 1 ERTS complaint within this priority Watershed.

Monitoring Activities

- **Work with partners to identify water quality issues:** No new water quality issues were identified in 2023; although there remain actions to be taken to fully address pollution concerns, Ecology staff have referred sites of concern to local partners or are engaged in enforcement actions. The Nisqually Land Trust now owns a significant portion of the Watershed and plans to acquire and restore more land. There are limited actions remaining for nonpoint staff, who will, moving forward, continue to respond to ERTS in the area and communicate with partners, but will take a less active role, to focus limited staff resources in Watersheds with more opportunity for nonpoint solutions.

Priority Watershed Name: Boise, Pussyfoot, and Second Creeks—Enumclaw Plateau

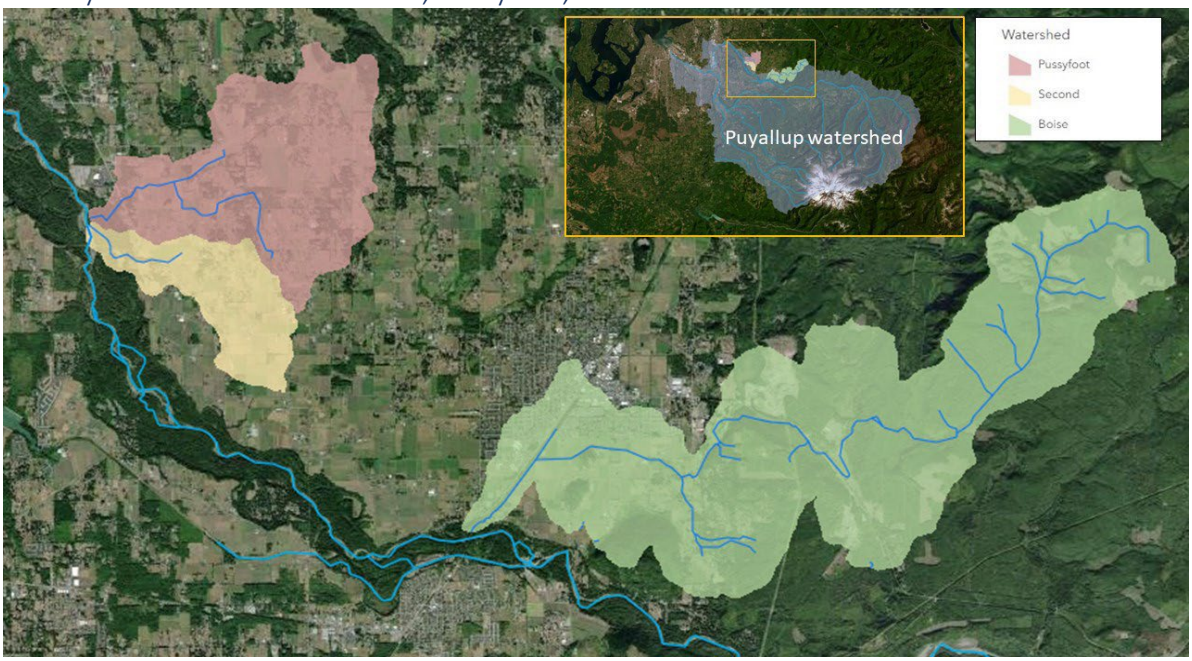


Figure 4. Map of White River TMDL priority Watersheds - Boise, Pussyfoot and Second Creeks.

Implementing: Puyallup Watershed Fecal Coliform TMDL; Lower White River pH TMDL

Summary/Context Info:

Since 2014, Ecology nonpoint staff have been collaborating with other state and local partners to monitor, identify, and address pollution issues within the Enumclaw MS4 and the surrounding areas. Ecology identified three tributaries within the Enumclaw plateau as priority Watersheds: Boise Creek, Pussyfoot Creek, and Second Creek. Nonpoint pollution inputs within these Watersheds significantly increase during the wet season due to the poor drainage throughout the plateau. External partners include the Muckleshoot Tribe, U.S. Natural Resources Conservation Service, Washington State Department of Agriculture, King County Livestock, King County Public Health, King County Department of Water and Land Resources, King County Public Health, King Conservation District, City of Enumclaw, Enumclaw Community Association.

Priority Actions Completed in 2023:

Education and Outreach

- **Distributed outreach materials at the King County Fair:** Ecology staff worked to interact with the community and distributed educational materials to livestock owners at the King County Fair in July.
- **Provided partners with input and educational materials:** Ecology staff worked with our partners involved in the Peer-to-Peer program to review and develop educational material. This group is drafting a survey to distribute to Enumclaw area landowners. In 2023, the group obtained grant funding to hire a consultant to work on this community based social marketing effort.
- **Create Enumclaw Storymap:** To complement other education and outreach by our partners, Ecology staff created a rough draft Storymap to highlight water quality issues in the area and connect landowners to resources.
- **Sites of concern mailer:** In 2022, staff created a mailer to inform the community about water quality issues on the Enumclaw Plateau. This mailer highlights how landowners can help improve their local waterways and outlines available resources. In February 2023, the mailer was sent to 75 identified sites of concern. A sample of part of the mailer is included below:

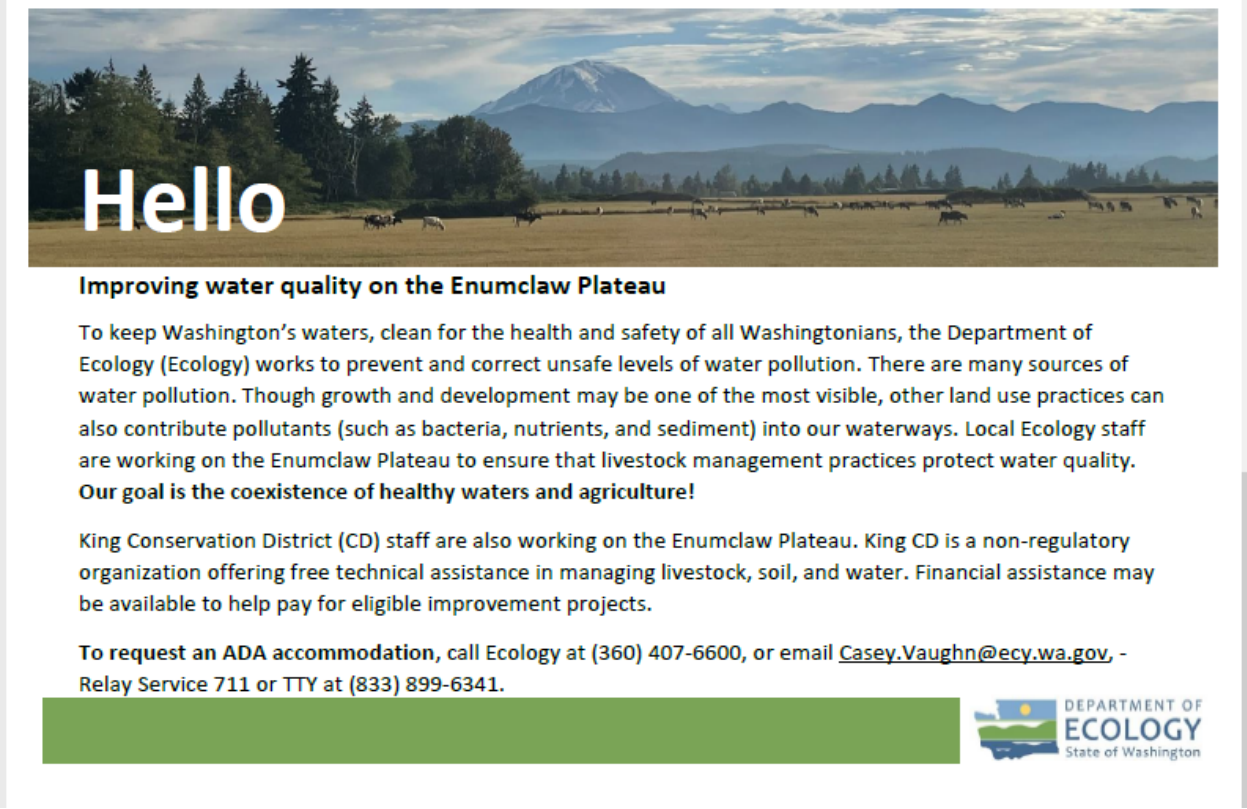


Image 2. Ecology mailer sent out to Enumclaw Plateau community.

Financial Assistance

- **Provided partners with front-end feedback on grant proposals:** In an effort to encourage and assist our partners to draft successful grant proposals, we coordinated with grants staff to provide grantees with the option to submit a notice of intent and receive feedback prior to the fall submittal deadline.
- **Provided information to landowners**: We continued to provide information about technical and financial assistance available to landowners as they moved forward with BMP implementation.

Partner Coordination

- **Continued to hold sites of concern prioritization meetings with state and local partners and stakeholders:** Coordinate and facilitate meetings with partners directly involved with BMP implementation on the Plateau to discuss and receive feedback about future and ongoing enforcement activities. This included 1:1 meetings with Muckleshoot Tribe natural resources staff, 1:1 meetings with WSDA staff to coordinate on dairy properties and those undergoing CAFO permitting, small group meetings with King Conservation District staff, and frequent communication with King County Stormwater Services staff (including trips into the field).
- **Held quarterly meetings to facilitate sharing of water quality monitoring data:** Continued to hold quarterly meetings with tribal, federal, state, and local water quality

monitoring staff to share data, facilitating the coordination and prioritization of field efforts.

- **Continued to participate in monthly King County Peer-to-Peer engagement meetings:** Provided feedback and direction to the peer-to-peer engagement group that is working to identify homeowners and entities to serve as peer educators on the plateau, distribute surveys to understand successful engagement strategies, and create a plan for plateau-wide education and outreach.

Pollution Identification/Watershed Evaluation:

- **Continued to identify sites of concern:** Continued to work in the field and within the community to identify additional sites of concern that have not yet been prioritized. Concurrent with this effort, staff systematically documented sites of concern in the NPI database.

Compliance/Technical Assistance Activities

- **Provided technical assistance to area livestock owners:** Ecology worked to connect with area livestock owners to provide technical assistance.
- **Compliance follow-up:** Followed-up and continued technical assistance efforts with landowners that have received letters to address identified water pollution concerns.
    - **Follow-up letters**: Four follow-up letters were sent to landowners who had received technical assistance or warning letters in 2022, and who had subsequently had Ecology staff on their properties for site visits or had otherwise been in conversation with Ecology staff over the phone or email.
    - **Site visits:** Several in-person site visits—sometimes joint site visits with King Conservation District staff—were completed on parcels that have been identified as sites of concern. Site visits have led to landowners taking recommended steps or Ecology taking further enforcement actions.
    - **Change in Regulator notices:** Two dairies closed in 2023 and Ecology sent a letter to notify the owners that their regulator was now Ecology, rather than WSDA (all licensed milking dairies are regulated by WSDA).
    - **Compliance steps:** Nonpoint staff wrote an administrative order for a dairy to apply for coverage under the CAFO permit in late 2022. When the dairy failed to meet the conditions of the administrative order, nonpoint staff sought a penalty from the dairy in 2023.
    - **Evaluate and respond to incoming ERTS complaints:** Continued to respond directly or coordinate with WSDA, King County, and City of Enumclaw staff to address livestock or OSS related pollution sources. No new ERTS were received for the Lower
      White River area in 2023; however, staff continued to work on ERTS properties that had come to our attention in previous years and had transitioned to the compliance pathway.

Monitoring Activities

- **Utilize monitoring data to refine nonpoint efforts:** Staff from SWRO Water Quality's Water Clean-up and Technical Assistance Unit conducted effectiveness monitoring around the Plateau. Nonpoint staff used this data to help prioritize work efforts.

Priority Watershed Name: Greater Key Peninsula

Figure 5. Map of the five focal sub-Watersheds of the Key Peninsula.

Implementing: Puget Sound Partnership Action Agenda; Puget Sound Nutrient Source Reduction Project (in development)

Nonpoint work within these five sub-Watersheds is funded by a National Estuary Program (NEP) grant that is overseen and administered through the Washington Department of Health. Nonpoint staff work with local partners including Tacoma-Pierce County Health Department, Pierce County Planning and Public Works Department, Pierce Conservation District, Pierce County Code Enforcement, and landowners to reduce nonpoint sources of bacterial pollution originating from agricultural activities.

Summary/Context Info:

The entire Key Peninsula is 16 miles long and extends southward from the Kitsap Peninsula into the South Puget Sound, flanked by Case and Carr Inlets. The Greater Key Peninsula project area includes Pierce County drainages from Rocky Bay, Vaughn Bay, Filucy Bay, Burley Lagoon, and

Minter Bay. These shallow, tidally influenced bays are known for low flushing rates, abundant shellfish, and continual shellfish closures due to elevated levels of fecal bacteria. A growing number of shellfish areas in these five sub-Watersheds have been closed periodically for decades and the local PIC program has been coordinating responses.

Land use patterns on the Key Peninsula range from small-scale agriculture and forest lands to residential and vacation homes, presenting a variety of sources of nonpoint pollution. Nonpoint staff work with local partners to identify the nature of pollution sources (e.g. livestock or on-site septic systems) and respond where our partners' jurisdiction does not extend. This often includes addressing agricultural sources. Staff also function as a regulatory backstop when local partners' authority is unable to bring about changes that adequately protect water quality.

Priority Actions Completed in 2023:

Education and Outreach

- **Communicating education information:** Staff presented educational information through a technical assistance letter, phone calls, in-person meetings, and outreach letters. A total of one technical assistance letter was sent out, two phone calls were completed, and a joint mailer with Tacoma-Pierce County Health consisting of 47 recipients were sent.

Financial Assistance

- **Offers of financial assistance resources:** Staff gave information regarding opportunities for landowners to access financial assistance resources through one correspondence.

Partner Coordination

- **Partner meetings:** Staff participated in 4 PIC meetings and 1 additional multi-partner meetings to coordinate efforts to address specific pollution concerns. Staff attended Pierce CD board meetings to provide updates and serve as a bridge between the two agencies.

Pollution Identification/Watershed Evaluating

- **Watershed evaluations:** One watershed evaluation was completed in 2023, during which 3 agricultural sites of concern were identified and prioritized for follow-up actions.
- **Complaint/Referral response:** Staff coordinated with local partners to respond to complaints in the area. Sites where water quality concerns were identified were referred to the local Conservation District and Tacoma-Pierce County Health. A total of four sites were referred to partners.

Compliance Activities

- **Technical assistance and compliance follow-through:** Staff issued 1 technical assistance letters, delivered 0 door hanger, and conducted 3 evaluations of sites of concern from the public right-of-way.

Monitoring Activities

- **Investigatory collection:** Staff continue to survey the area through watershed evaluations and follow-up on historic cases in the area.
- **Partner PIC monitoring –** Staff utilized data collected by the local health department or the WA State Department of Health to respond to elevated bacteria detected in assigned focus Watersheds.

Priority Watershed Name: Eld Inlet, Henderson Inlet, & Nisqually Reach

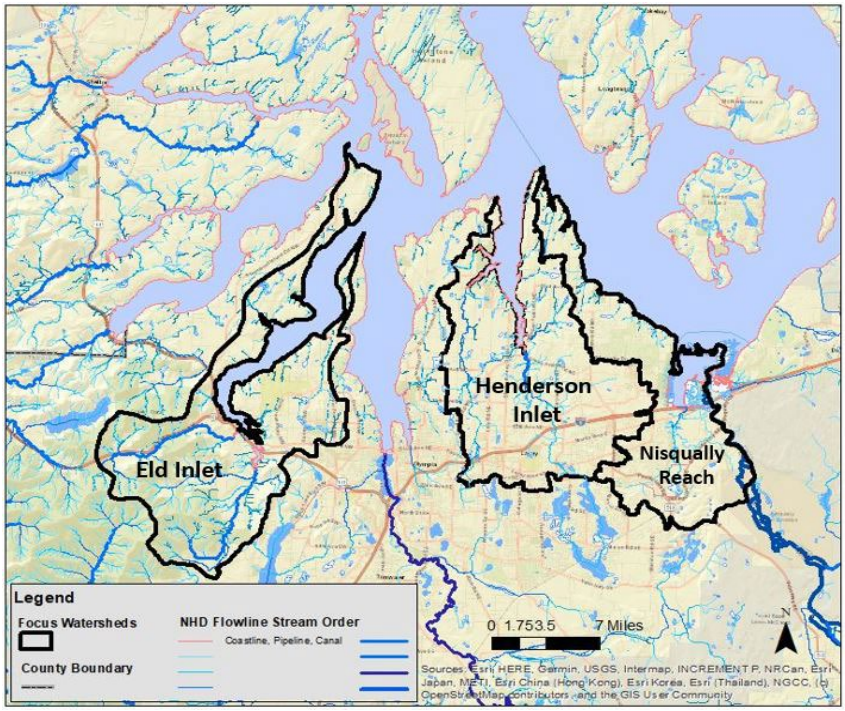


Figure 6. Map of locations of the three priority Watersheds in South Puget Sound.

Implementing: Puget Sound Partnership Action Agenda; Puget Sound Nutrient Source Reduction Project (in development), Henderson Inlet Watershed Multiparameter TMDL

Nonpoint work within these three sub-Watersheds is funded by a National Estuary Program (NEP) grant that is overseen and administered by the Washington Department of Health (DOH). Nonpoint staff work with local partners such as Thurston County Public Health and Social Services, Thurston Conservation District, Thurston County Code Enforcement, Henderson Inlet/Nisqually Reach Shellfish Protection District, and landowners to reduce nonpoint sources of bacteria pollution originating from domestic and agricultural activities.

Summary/Context Info:

The Eld and Henderson Inlets and the Nisqually Reach drainage areas are located within the South Puget Sound, known for low flushing rates and abundant shellfish habitat. These Watersheds have shellfish growing areas identified by DOH as at risk of closure due to elevated

marine fecal coliform levels. These Watersheds also support salmon habitat in rural, suburban, and urban areas and the majority of land use is residential with a low density of small agricultural sites. SWRO staff have been coordinating nonpoint efforts in these Watersheds in concert with local partners' outreach and PIC work.

Priority Actions Completed in 2023:

Education and Outreach

- **Partner coordination to provide educational materials and accurate information to landowners:** Staff coordinated with Thurston Conservation District, Thurston County Public Health, and Nisqually Reach/Henderson Inlet Shellfish Protection District to continue to follow up on complaints in this area.

Financial Assistance

- **Offers of financial assistance resources:** Staff provided information regarding grant opportunities to local partners during two partner meetings.

Partner Coordination

- **Quarterly partner meetings:** Staff facilitated and participated in two Pollution, Identification and Correction (PIC) meetings with local partners to coordinate efforts, provide updates, and address specific pollution concerns.
- **Monthly partner meetings:** Staff participated in Thurston Conservation District board meetings to provide guidance and support to local partners.

Pollution Identification/Watershed Evaluating

- **Complaint/Referral response:** Staff coordinated with local partners to respond to concerns. County code enforcement was referred, and local residents began looking into improvements to their private infrastructure that would be protective of water quality and local salmon populations.

Compliance Activities

- **Site of concern resolution and follow-up:** Staff coordinated with local partners to resolve nonpoint water quality concerns at one identified site of concern.

Monitoring Activities

- **Pollution Identification and Correction (PIC) coordination:** Staff coordinated and participated in two PIC meetings, as well as regular informal staff-to-staff meetings, during which partners discussed ambient monitoring efforts and results.

Priority Watershed Name: Oakland Bay & Johns Creek

Figure 7. Map of Oakland Bay and Johns Creek Watersheds.

Implementing: Puget Sound Partnership Action Agenda; Oakland Bay, Hammersley Inlet Tributaries Bacteria TMDL

Nonpoint work within these sub-Watersheds is funded by a National Estuary Program (NEP) grant that is overseen and administered through the Washington Department of Health. Nonpoint staff work with local partners, Mason County Environmental Health Department, Mason Code Enforcement, Mason Conservation District, Squaxin Island Tribe, as well as landowners to reduce nonpoint sources of bacteria pollution originating from agricultural activities.

Summary/Context Info:

Oakland Bay is a shallow, poorly flushed embayment connected to the South Puget Sound, with a history of poor water quality and an extremely productive shellfish industry. Because of its poorly flushed nature, shallow waters, and increasing population, Oakland Bay continues to experience declining water quality. Johns Creek enters Oakland Bay at its northwestern shore. Multiple water quality parameters in Johns Creek have impairments, including bacteria, temperature, and dissolved oxygen. Nonpoint staff have identified agricultural operations and residential onsite septic systems that are impacting the water of both Oakland Bay and Johns Creek.

Priority Actions Completed in 2023:

Education and Outreach

- **Education information communicated:** Staff presented educational information through two communications to landowners. Communications included a technical assistance letter and door hangers.

Financial Assistance

- **Offers of financial assistance resources:** Staff gave information regarding opportunities for landowners to access financial assistance resources through two correspondences. Staff also regularly provided information regarding grant opportunities to local partners.

Partner Coordination

- **Partner meetings:** Staff participated in 1 PIC meeting and 2 additional multi-partner meetings to coordinate efforts to address specific pollution concerns. Staff attended Mason CD board meetings to provide updates and serve as a bridge between the two agencies.

Pollution Identification/Watershed Evaluating

- **Complaint/Referral response:** Staff coordinated with local partners while conducting on-site visit to identify sources of pollution.

Compliance Activities

- **Technical assistance and compliance follow-through:** Staff issued one Technical Assistance letter, delivered one door hanger, and completed one site inspection. Staff performed several inspections on a property that had previously received an Administrative Order. In October 2023, the property operator completed all requirements of the Order and is now considered to be in compliance with state water quality law. No animals remain on the property and routine sampling has revealed no abnormally high bacteria hits in the surrounding waters.

Monitoring Activities

- **Investigatory sample collection:** Staff collected no samples during this time period but continued to utilize data collected by the local health department and the WA State Department of Health.

Priority Watershed Name: Skokomish Valley & Annas Bay

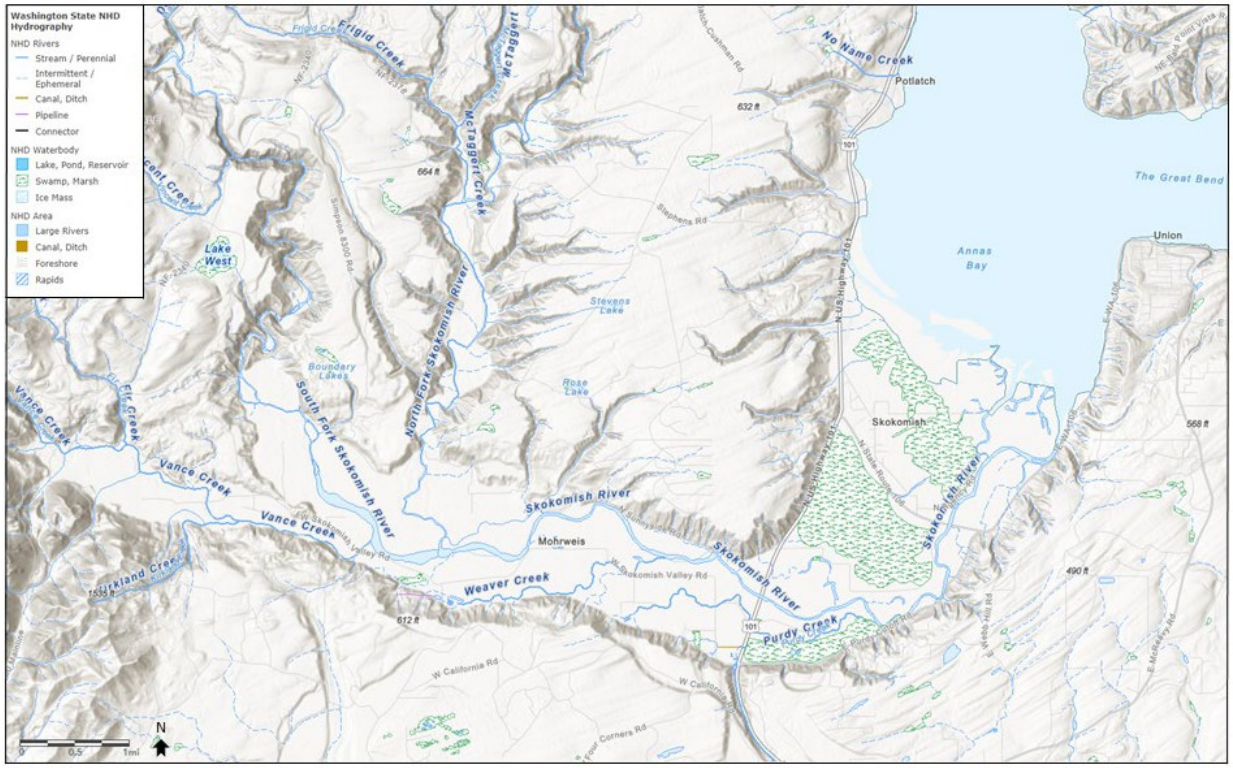


Figure 8. Map of Skokomish River Watershed and Annas Bay.

Implementing: Puget Sound Partnership Action Agenda; Skokomish River Basin Fecal Coliform TMDL

Nonpoint work within this Watershed is funded by a National Estuary Program (NEP) grant that is overseen and administered through the Washington Department of Health. Nonpoint staff work with local partners, Mason County Environmental Health Department, Mason County Code Enforcement, Mason Conservation District, Skokomish Tribe, and landowners to reduce nonpoint sources of bacteria pollution originating from agricultural activities. After responding to multiple ERTS and partner referrals within these Watersheds/sub-Watersheds, staff observed multiple parcels where livestock operations have had the potential to contribute to bacteria pollution. Furthermore, risk to shellfish growing areas downstream from bacteria pollution continued to increase, increasing the risk of growing area closures.

Summary/Context Info:

The Skokomish River and the Delta, known as Annas Bay, boasts hundreds of acres of tidal flats used for shellfish harvest, and are home to numerous species of fish and wildlife including ESA-listed Coho and threatened stocks of Chinook. Flooding events in the Valley magnify the water quality impacts of livestock operations and Ecology is working to address the pollution inputs of this small community.

Priority Actions Completed in 2023:

Education and Outreach

- **Education information communicated:** Staff presented educational information through 9 communications to landowners. Communications included technical assistance letters, door hangers, site visits, and in-person conversations.

Financial Assistance

- **Offers of financial assistance resources:** Staff gave information regarding opportunities for landowners to access financial assistance resources through 6 correspondences. Staff also regularly provided information regarding grant opportunities to local partners.

Partner Coordination

- **Reported concerns:** Nonpoint staff communicated and coordinated with area partners to identify appropriate responses to three ERTS complaints.
- **Partner Meetings:** Staff participated in one PIC meeting to address specific pollution concerns. Staff attended Mason CD board meetings to provide updates and serve as a bridge between the two agencies.

Pollution Identification/Watershed Evaluation:

- **Complaint/Referral Response:** Staff coordinated with local partners while conducting three watershed evaluations and three site visits to identify sources of pollution.

Compliance/Technical Assistance Activities

- **Technical Assistance:** Ecology staff sent six technical assistance letters to Skokomish Valley agricultural property landowners adjacent to impaired waters.
- **Site visits:** Ecology staff made over two dozen observations in the field and conducted one site visit in the Valley.
- **Follow-up letters:** Ecology sent one follow-up letter to a landowner in the Valley.
- **Warning letters:** Ecology sent two warning letters to landowners in the Valley.

Monitoring Activities

- **Pollution Identification and Correction (PIC) coordination:** Staff participated in two Clean Water District meetings, as well as regular informal staff-to-staff meetings, during which partners discussed ambient monitoring efforts and results.

Priority Watershed Name: Lacamas Creek Watershed

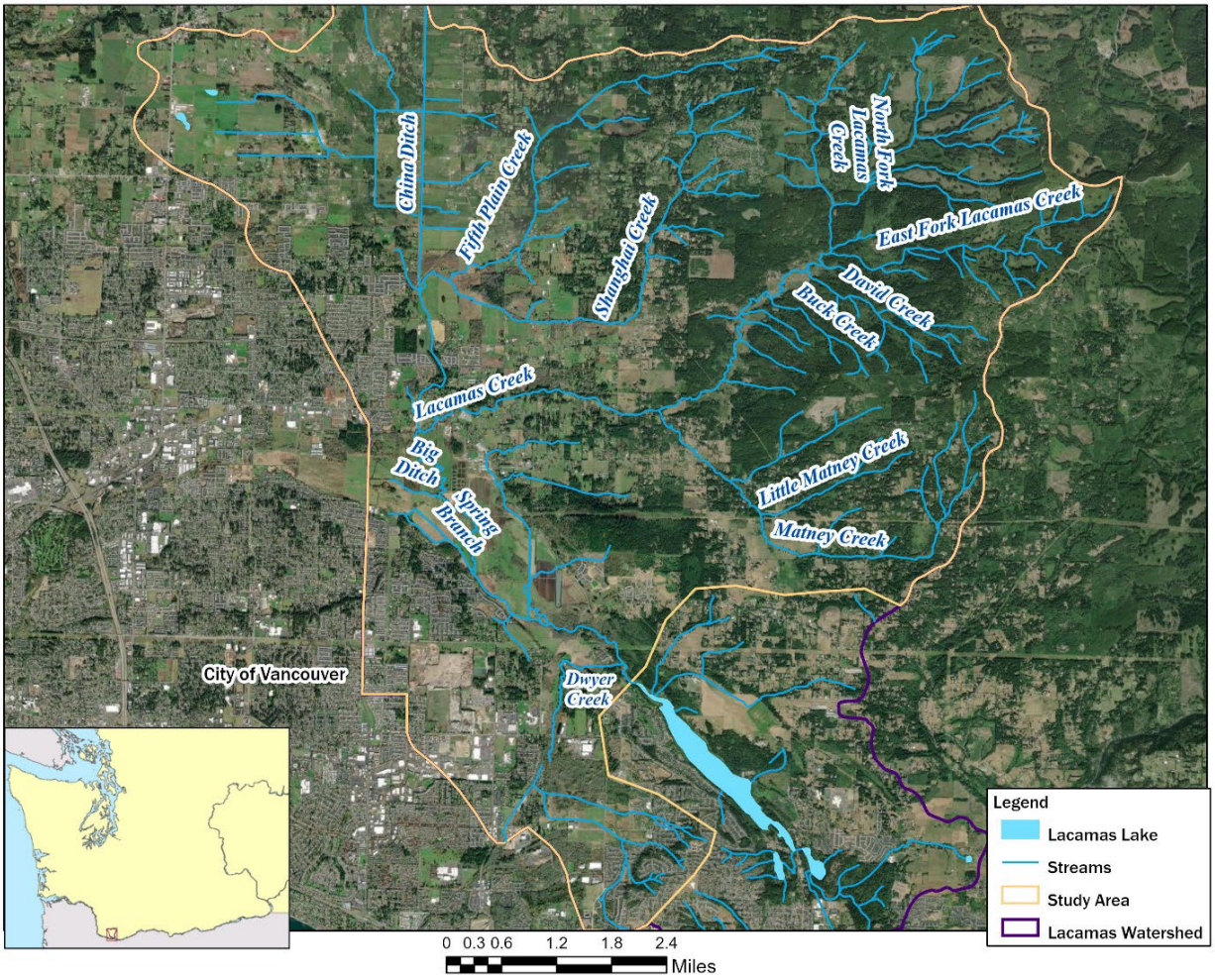


Figure 9.Map of the Lacamas Watershed.

Implementing: Lacamas Creek Partnership for Clean Water Action Agenda

The Washington State Department of Ecology (Ecology) is the lead for the Lacamas Creek Partnership for Clean Water. Supporting partners are Clark County, City of Camas, Washington State Department of Agriculture, Clark Conservation District, and the United State Department of Agriculture's Natural Resource Conservation Service (USDA NRCS).

Summary/ Context Info:

The Lacamas Creek Watershed is home to one of the fastest growing cities in Washington State, and on Washington State's polluted waters list for warm water temperatures, bacteria, dissolved oxygen, and pH impairments. The Lacamas Creek Partnership has been established to improve the waterbody. Lacamas Lake eutrophication was first recognized in the 1970's and the Lacamas Creek Watershed TMDL was first published January 1996. The focal waterbodies and impairments of the Watershed include China Ditch (Phosphorus, Nitrogen), Shanghai Creek (Bacteria), Fifth Plain Creek (Temperature, Nitrogen), Big Ditch (Temperature), Spring Branch

Creek (Phosphorus, Nitrogen), Lower Lacamas Creek (Nitrogen, Bacteria), Dwyer Creek (Phosphorus, Temperature).

Priority Actions Completed in 2023:

Education and Outreach

- **Public Events:** Ecology staff coordinated with the Clark County Conservation District, Clark County Public Health, and Clark Public Utilities on water quality workshops and participated in public outreach events, when appropriate.
- **Landowners:** Ecology provided water quality related educational materials to landowners within the Watershed. Financial Assistance
- **Provide partners with front-end feedback on grant proposals:** In an effort to encourage and assist our partners to draft successful grant proposals, we will provide grantees with the option to submit a Notice of Intent to apply for grant funds, to receive feedback prior to the fall submittal deadline.

Partner Coordination

- **Lacamas Creek Partnership:** SWRO staff collaborated and attended annual meetings with Clark County, City of Camas, Washington State Department of Agriculture, Clark Conservation District, and the United State Department of Agriculture's Natural Resource Conservation Service.
- **Conservation District:** SWRO staff attended monthly Clark Conservation District Board Meetings and coordinated with CD staff on addressing pollution concerns.
- **PIC:** SWRO staff participated in monthly PIC "Poop Smart" meetings and provided updates on compliance activities.

Pollution Identification/Watershed Evaluation:

- **Watershed Evaluation:** SWRO staff identified five new NPI sites during watershed evaluations.

Compliance/Technical Assistance Activities:

- **Complaint Response:** Staff verified and responded to five nonpoint concerns submitted through Ecology's reporting system (ERTS).
- **Technical Assistance:** Staff provided five Technical Assistant letters to landowners identified as having nonpoint concerns identified during watershed evaluations and through ERTS reports. Five site visits were conducted to assess potential pollution sources, provide technical assistance to residents, and refer landowners to Clark Conservation District when appropriate.

Monitoring Activities:

- **Investigatory collection:** Staff conducted three watershed evaluations and took water quality samples at one site.

Priority Watershed Name: East Fork Lewis River Watershed

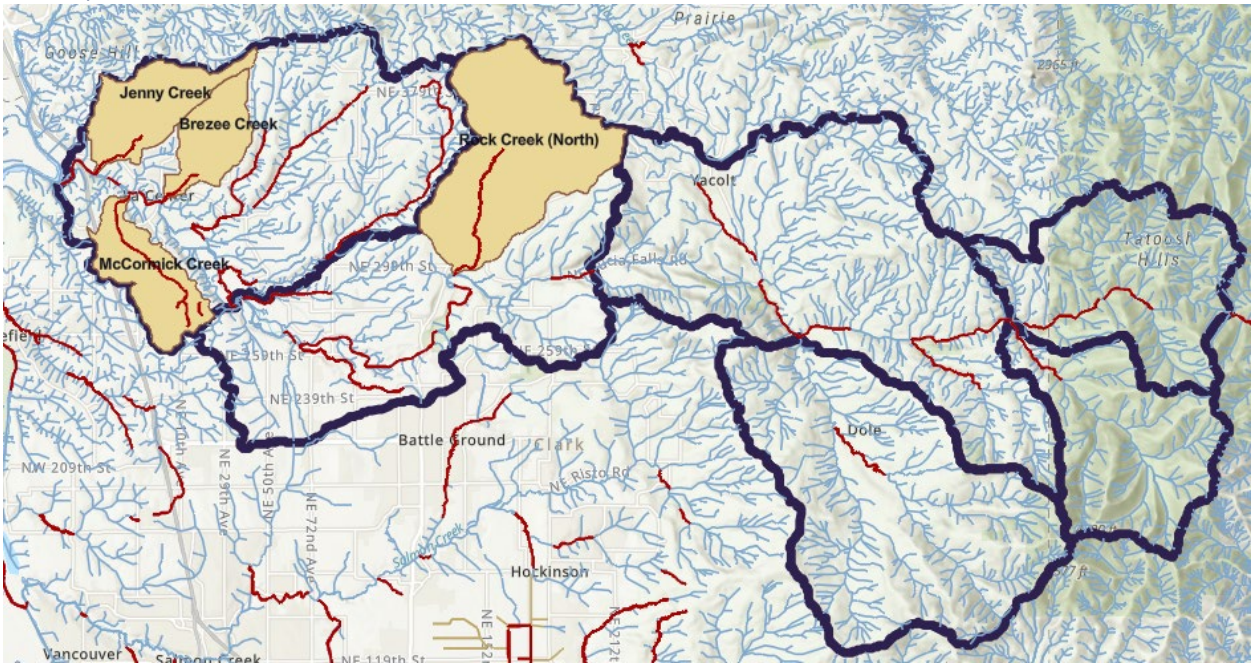


Figure 10. Map of the East Fork Lewis River and surrounding areas.

Implementing: East Fork River Alternative Restoration Plan[8]

Summary/Context Info:

The East Fork Lewis River (EFLR) Alternative Restoration Plan was approved by EPA in 2021 to address temperature and bacteria impairments. The EFLR Watershed is home to both one of the fastest growing cities in Washington State, and five high priority populations of Endangered Species Act (ESA) listed salmon and steelhead. The Watershed provides recreation, timber, agriculture, and water resources for this rapidly growing region of the State. At the same time, the Watershed is key to the recovery of ESA-listed salmon and steelhead that rely on the mainstem and tributaries for critical spawning and rearing habitat. The Poop Smart Clark Pollution Identification and Correction (PIC) group is working collaboratively to identify bacteria sources and to direct resources to problem areas. Stream and habitat restoration projects have been initiated by local non-profit Watershed groups including the reclamation project of nine abandoned pit mines along the East Fork Lewis River. External partners include Clark County Conservation District, Clark Public Utilities, Washington State University Extension, Clark County Public Health, Clark County Clean Water, The Watershed Alliance, and the Lower Columbia Estuary Partnership.

[8] https://apps.ecology.wa.gov/publications/documents/2110051.pdf

Priority Actions Completed in 2023:

Education and Outreach

- **Public Events:** Ecology coordinated with WSU Extension, Clark County Conservation District, Clark County Public Health, and Clark Public Utilities on water quality workshops and participate in public outreach events.
- **Landowners:** Ecology provided water quality related educational materials to landowners within the Watershed with five site visits by Ecology staff, in addition to site visits conducted by the Clark County Conservation District's Working Lands Program Manager.

Financial Assistance

- **Funding:** In 2022, Ecology funded the initiation of Poop Smart Clark Pollution Identification and Correction (PIC) program in four selected sub-Watersheds addressing livestock and onsite nonpoint pollution concerns. Ecology awarded $666,666.67 to the program. The funding for this initiative is secured through the year 2025.

Partner Coordination

- **East Fork Lewis River Partnership** SWRO staff collaborated and attended annual meetings with Clark County, City of Camas, Washington State Department of Agriculture, Clark Conservation District, and the United State Department of Agriculture's Natural Resource Conservation Service.
- **Conservation District:** SWRO staff attended monthly Clark Conservation District Board Meetings and coordinated with CD staff on addressing pollution concerns.
- **PIC:** SWRO staff participated in monthly PIC "Poop Smart" meetings and provided updates on compliance activities.

Pollution Identification/Watershed Evaluation:

- **Watershed Evaluation:** SWRO staff identified eight NPI sites via watershed evaluations.

Compliance/Technical Assistance Activities

- **Technical Assistance:** Staff provided eight Technical Assistance letters to landowners identified as having nonpoint concerns identified during watershed evaluations and through ERTS. Staff conducted five site visits to assess potential pollution sources, provided technical assistance to residents, and referred landowners to Clark Conservation District when appropriate.

Monitoring Activities

- **Investigatory collection:** Staff did not conduct investigatory monitoring during this time period.

Northwest Regional Office

Priority Watershed Name: Green River Watershed

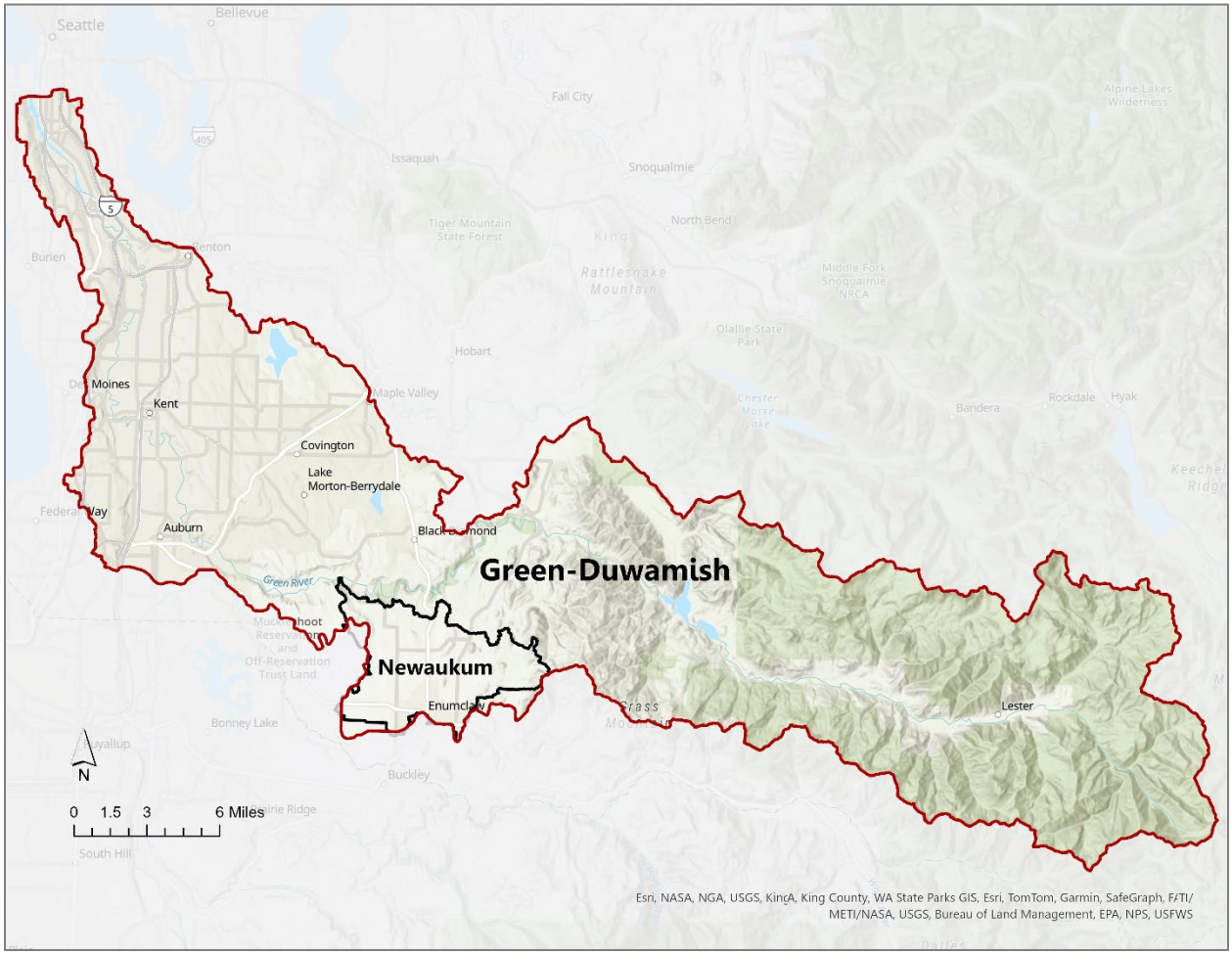


Figure 11. Green River Watershed and tributary Newaukum Creek, where nonpoint implementation to improve temperature is a priority.

Implementing: The Green River Temperature TMDL and the Newaukum Creek Temperature TMDL

Summary/Context Info:

Ecology is actively implementing two TMDLs in the Green River Watershed: the Green River Temperature TMDL (2011) and the Newaukum Creek Temperature TMDL[9] (2011). TMDL studies found that lack of adequate riparian vegetation contributes to temperature impairments in these water bodies. Implementation in this Watershed has focused on supporting implementation partners with riparian restoration by removing invasive species and planting native vegetation.

[9] Newaukum Creek is a tributary of the Green River. The two TMDLs were developed concurrently.

Priority Actions Completed in 2023:

Education and Outreach

- Educational outreach in this Watershed was limited due to staff availability.

Financial Assistance

- Currently, Ecology is funding two nonpoint riparian restoration projects along the Green River that are implemented by King County basin stewards:
    - Horsehead site in the Lower Green – project will restore 8.5 acres of riparian buffer by planting native vegetation along 2,400 linear feet of river within a 165-foot buffer.
    - Flaming Geyser site in the Middle Green – project will restore 14 acres of riparian buffer.
- In addition to Ecology funding, every year the King County Flood Control District funds riparian restoration projects that have been prioritized in King County's implementation plan for the Green River TMDL, Regreen the Green[10]. Currently the Flood Control District and WRIA 9 Salmon Recovery Group allocate $500,000 annually towards riparian restoration projects along the Green-Duwamish River and its tributaries.
- In the Newaukum Creek Watershed, Ecology is funding one grant that King County is using to plant native riparian vegetation on seven properties, encompassing 36 acres of restored riparian habitat. Additionally, Ecology has awarded funding to King Conservation District to restore 13.2 acres of riparian buffer and to install 3,300-ft. livestock exclusion fencing, a water facility, and a heavy use protection area along Newaukum Creek.

Partner Coordination

- Ecology TMDL staff participate in "Our Green Duwamish" (OGD) stakeholder meetings that are coordinated through King County. The OGD meetings are intended to bring together restoration implementation partners to discuss water quality issues and opportunities to improve water quality.

Pollution Identification/Watershed Evaluation

- Pollution identification and correction work was done by our local government partners (King County and the Conservation District).

Compliance/Technical Assistance Activities

- Technical assistance efforts in this Watershed were less of a priority due to limited staff and less complaint response required.

[10] https://www.govlink.org/Watersheds/9/pdf/GreenRevegStrategyPlan-Oct2016-Final.pdf

Monitoring Activities

- Sampling efforts were conducted for source identification when the source of pollutant was not visually obvious.

Priority Watershed Name: Snohomish Watershed TMDLs

Figure 12.Map of Snohomish River Watershed with Pilchuck River Watershed highlighted.

Implementing: Pilchuck River Temp/DO TMDL

Summary/Context Info:

The Pilchuck River Temp/DO TMDL (tributary to Snohomish River) was published in December 2020. Ecology staff participate in several different work groups directing and supporting water quality and salmon recovery efforts in the Snohomish Watershed where we are implementing five EPA approved TMDLs. Ecology nonpoint implementation and TMDL lead staff work closely with local stakeholders and implementation experts to address nonpoint contributions to temperature and dissolved oxygen (DO) impairments in the Pilchuck Watershed. Our implementation efforts also include our nonpoint grant specialists managing dozens of grants in this large Watershed comprised of rural, residential, and urban areas.

In addition to implementation work supporting the existing TMDLs, Ecology is moving forward with developing implementation recommendations and strategy for nearby French Creek temperature and dissolved oxygen impairments resulting from loss of riparian vegetation, nutrient inputs and in-stream infrastructure in the lower Watershed. French Creek is a tributary to the Snohomish River, which has an EPA approved TMDL for bacteria impairments. Early efforts for the lower Watershed have prioritized collaboration with EAP technical assessment staff, stakeholder outreach, and nonpoint specialist support of local implementation efforts in 2023.

Priority Actions Completed in 2023:

Education and Outreach

- Outreach to Snohomish County, Snohomish Conservation District, Tulalip Tribes, and French Slough Flood Control District to establish working relationships and identify stakeholder priorities for development of French Creek implementation plan.

Financial Assistance

- Ecology awarded a $500,000 grant to Snohomish County's Savvy Septic program, which provides OSS maintenance rebates, OSS replacement grants, and public education and outreach across Snohomish County.
- Ecology staff connected a non-profit organization with local implementers to quickly identify shovel-ready water quality improvement projects for fund distribution.

Partner Coordination

- Participation in Snohomish Basin Salmon Recovery meetings and Sustainable Land Strategy meetings with regional partners, including county staff, the Snohomish Conservation District, Tulalip Tribes, Snoqualmie Tribe, WSDA, WDFW, DOH, and local nonprofit organizations.
- Supported local implementation organizations by attending Snohomish Basin Salmon Recovery Technical Committee meetings and reviewing project rankings for fund distribution, as well as reviewing funding letters of support when requested.
- Provided input on implementation priorities and strategies, funding needs, and action items to address challenges at the Lead Entity Riparian Implementers workshop.
- Worked closely with Snohomish Conservation District and Snohomish County to connect private landowners with local implementation experts to address ERTS.

Pollution Identification/Watershed Evaluation:

- Watersheds are visually evaluated for conditions known to cause water pollution whenever nonpoint field staff are out driving to and from site visits. Site conditions that are likely causing or contributing to water pollution are then followed up with technical assistance letters and/or site visits and consultation with local conservation districts and local code enforcement staff.

Compliance/Technical Assistance Activities

- Technical assistance letters sent to seven properties.
- Three properties changed or implemented new practices to protect water quality in response to our letters.

Monitoring Activities

- Sampling efforts were conducted for source identification when the source of pollutant was not visually obvious.

Priority Watershed Name: Skagit River and Samish Watersheds

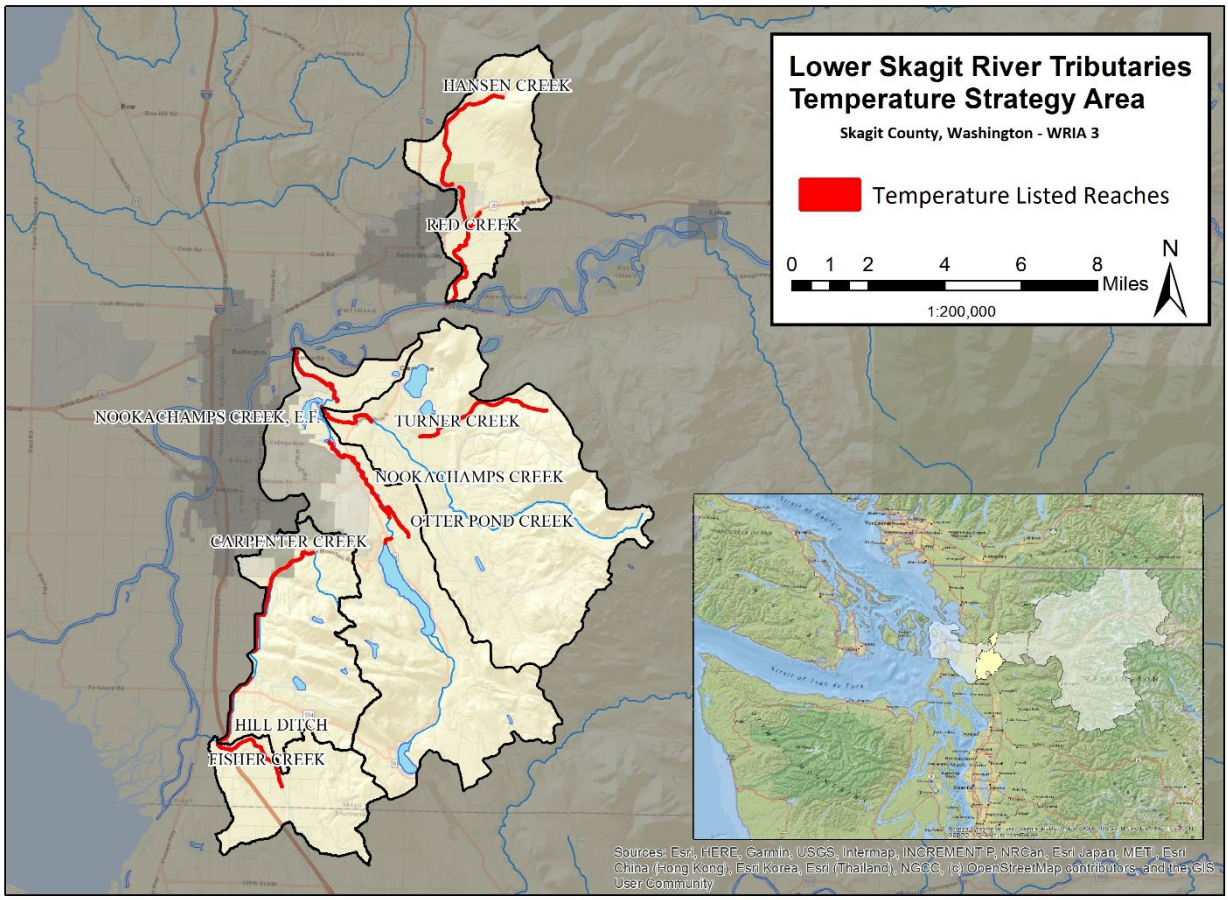


Figure 13. Map of the lower Skagit River Tributaries included in the Temperature TMDL.

Implementing: Lower Skagit River Tributaries Temperature TMDL, Lower Skagit Fecal Coliform TMDL, and Samish Bay Watershed Bacteria TMDL

Summary/Context Info:

In 2019, Ecology's Water Quality Program in the Northwest Region office (NWRO) began a targeted effort to revitalize implementation of the Lower Skagit River Tributaries Temperature TMDL (approved by EPA in 2008). Ecology completed the Lower Skagit Tributaries Temperature

Implementation Strategy in early 2020, which describes broad, high-level goals to inform future work and discussions, and identifies specific actions that Ecology will take in the near term.

Ecology adapted to the circumstances and limitations presented by the pandemic and continued to raise awareness of the temperature problem by performing an online public survey and providing online education resources. Guided by the information from the survey and with the support and participation from regional partners, Ecology created the Skagit Valley's Warming Waters Storymap[11] in 2021, which provides context and resources for community members interested in taking action to reduce stream water temperatures. The following year, Ecology distributed a series of four educational videos titled Keeping Skagit Valley Wild and Cool[12], focused on telling the stories of local farmers and landowners that took action on their lands to protect water quality and salmon. The Storymap and video series are enduring educational products that Ecology and Skagit partners will continue to distribute annually during the summer months to raise general awareness in the Skagit community of the warm water temperature problem. Local partners hand out flyers provided by Ecology at their public tabling events with QR codes on them that guide viewers to the Ecology Storymap and videos. During the summer months, they also share links to the products on their social media accounts to guide viewers to the resources.

Priority Actions Completed in 2023:

Education and Outreach

- Ecology nonpoint staff developed a kids activity sheet for local partners to share at kid-oriented public outreach events that includes interesting facts about the Skagit River, salmon, orcas, and water temperature. A QR code on the activity sheet guides viewers to the educational Storymap and video series.

Financial Assistance

- Ecology awarded $220,096 to the Skagit Conservation District, working in partnership with the Skagit Fisheries Enhancement Group, to address water quality impairments on four sites in the Lower Skagit tributaries, including: temperature, bacteria, and dissolved oxygen, through expansion and maintenance of riparian buffers.
- Ecology awarded $250,000 to the Skagit Fisheries Enhancement Group in partnership with Forterra to restore a 13-acre wetland with a 125-foot buffer along 1,500 feet of Little Carey's Creek in Hamilton, WA.
- Ecology awarded $460,852.00 to Skagit County for the Barrel Springs restoration project, which will improve water quality and aquatic function to Barrel Springs and Dry Creek, both contributing waterbodies to the Samish River basin.

[11] https://storymaps.arcgis.com/stories/33b9d4bb77a84fa9b3c9445d9f03c97c
[12] https://ecology.wa.gov/blog/august-2022/new-videos-explain-how-to-keep-the-skagit-river-wi

Partner Coordination

- Participated in regularly scheduled Skagit County water quality coordination meetings with regional partners, including county staff, the Skagit Conservation District, WSDA, DOH and Ecology.
- Attended Skagit Watershed Council partnership meetings.

Pollution Identification/Watershed Evaluation:

- Opportunistic windshield surveys were conducted within the TMDL footprint to follow-up on existing properties with concerning land use conditions and identify additional opportunities for improvements.

Compliance/Technical Assistance Activities

- Technical assistance letters sent to 11 properties.
- In-person site visits completed on three properties, with additional site visits performed from the public right-of-way.
- Four properties changed or implemented new practices to protect water quality in response to our letters, including: installing livestock exclusion fences, relocating livestock away from surface water, and installing filter strips.

Monitoring Activities

- Sampling efforts were conducted for source identification when the source of pollutant was not visually obvious.

Priority Watershed Name: South Skagit Bay

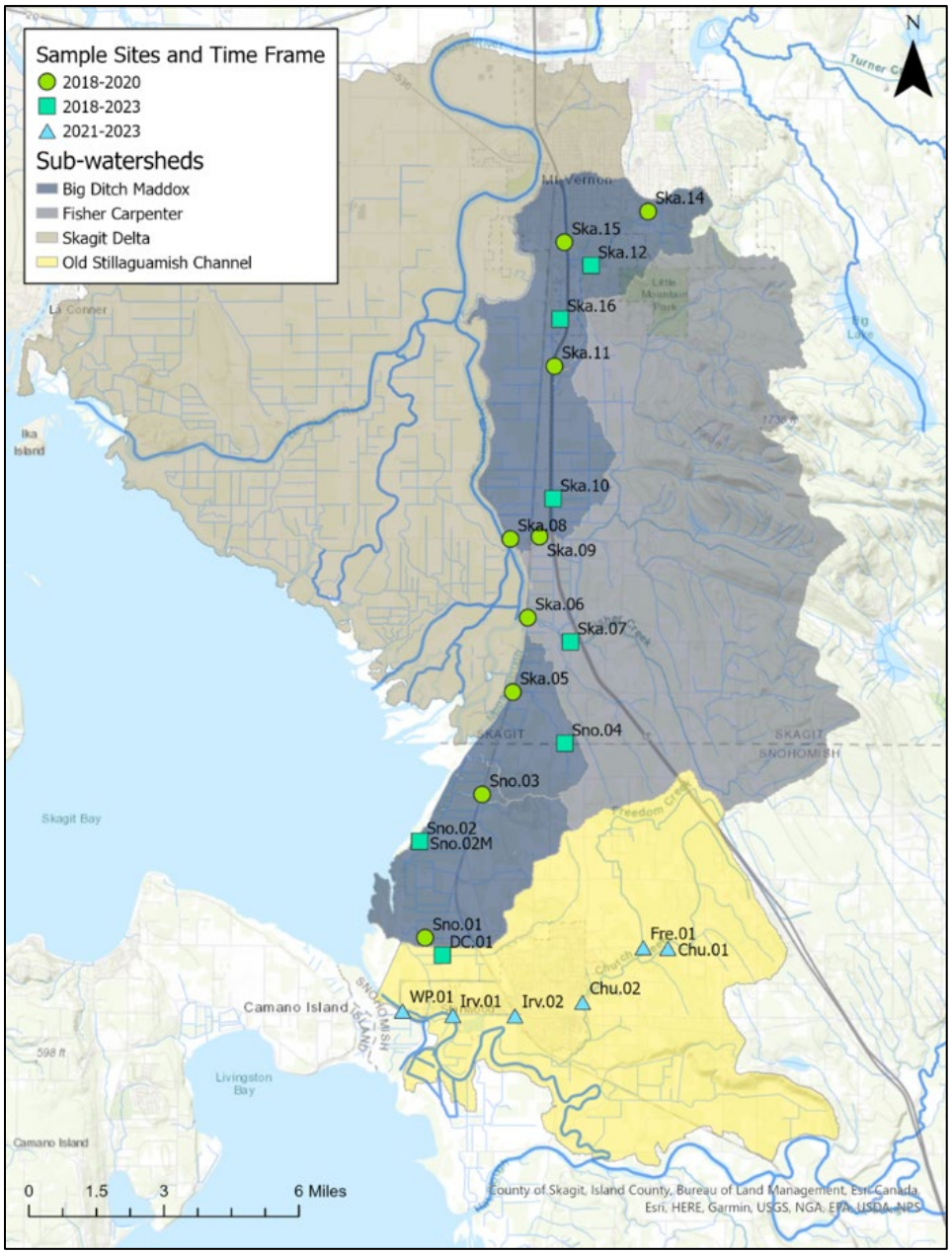


Figure 14. Map of the lower Skagit River sub-Watershed included in bacteria assessment.

Implementing: Stillaguamish River Watershed Multiparameter TMDL, Lower Skagit Basin Bacteria TMDL

Summary/Context Info:

Shellfish beds in South Skagit Bay (SSB) were downgraded to “threatened” in 2017 by the Washington Department of Health (Health). To improve water quality in SSB, both Ecology and Health's Shellfish Division identified tributaries to SSB as a priority area for outreach and technical assistance to reduce loading of bacteria to the bay. In response to this downgrade, in

2017 Ecology developed and then implemented an assessment aimed to identify potential sources of fecal coliform bacteria from SSB's sub-Watersheds, in support of the Washington Shellfish Initiative.

Priority Actions Completed in 2023:

Education and Outreach

- Ecology announced completion of the monitoring effort to the local stakeholders and plans to present the assessment findings.

Financial Assistance

- In 2023, Ecology did not provide financial assistance as part of this effort.

Partner Coordination

- Ecology coordinated with the City of Mount Vernon, Skagit County Public Works and EPA to address a pollution concern identified by the assessment's source tracing efforts. The source was determined to be human by Microbial Source Tracing analysis, and through follow-up bracket sampling, the local partners were able to pinpoint a neighborhood with failing septic systems to be repaired.

Pollution Identification/Watershed Evaluation:

- One windshield survey was conducted within the assessment from public access points to identify potential pollution sources and identify additional opportunities for improvements.
- Ecology performed monthly fecal coliform and *E. coli* ambient sampling and storm sampling as needed until the monitoring effort was completed in June 2023. Data from the assessment was included in Ecology's EIM database.

Compliance/Technical Assistance Activities

- Technical assistance letters sent to six properties.
- In-person site visits completed on one property, with additional site visits performed from the public right-of-way.
- Two properties changed or implemented new practices to protect water quality in response to our technical assistance, including: installing livestock exclusion fences, relocating livestock away from surface water, and installing filter strips.

Monitoring Activities

- Sampling efforts were conducted for source identification when the source of pollutant was not visually obvious.

Priority Watershed: Padilla Bay Tributaries Fecal Coliform TMDL

The priority focus area for this Watershed is within the area in the commercial/industrial area located at the headwaters of the Little Indian Slough where high concentrations have been documented during the development; this area and the enforcement process is being handled

by Industrial Stormwater General Permit managers; not nonpoint specialists. Because of this, this Watershed will be removed from nonpoint reporting moving forward. If, in the future, this Watershed becomes a nonpoint focal Watershed, it will be added to this report.

Priority Watershed: Whatcom County Watersheds

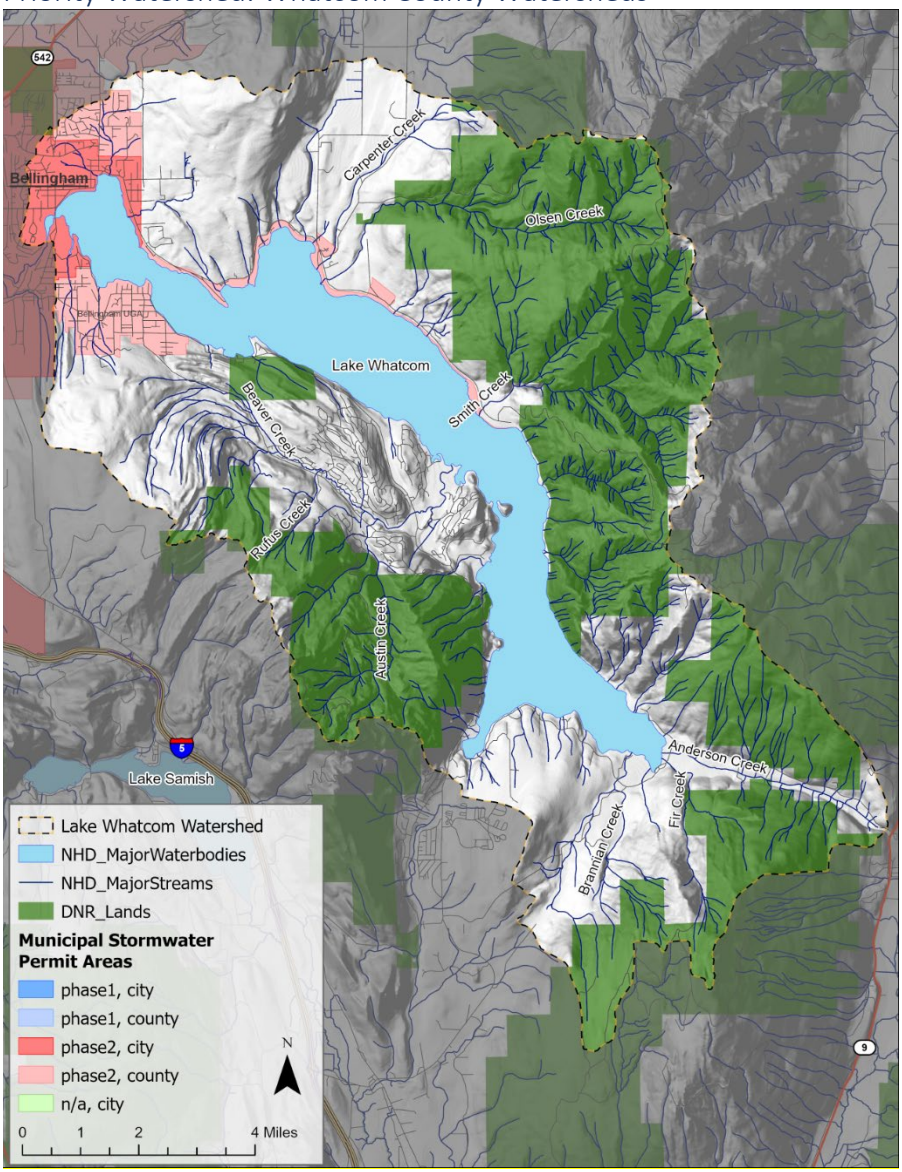


Figure 15. Map of the Lake Whatcom with NPDES permit boundaries.

Implementing: Lake Whatcom Multi-parameter TMDL; Nooksack River Bacteria TMDL; Whatcom Creek Bacteria TMDL

Summary/Context Info:

The Lake Whatcom TMDL highlights collaboration is needed with Whatcom County and the City of Bellingham to control nonpoint sources in Whatcom County (Figure 15). Jurisdictional

nonpoint work is coordinated through the Lake Whatcom Management Program and includes a prescriptive work plan updated on a five-year cycle.

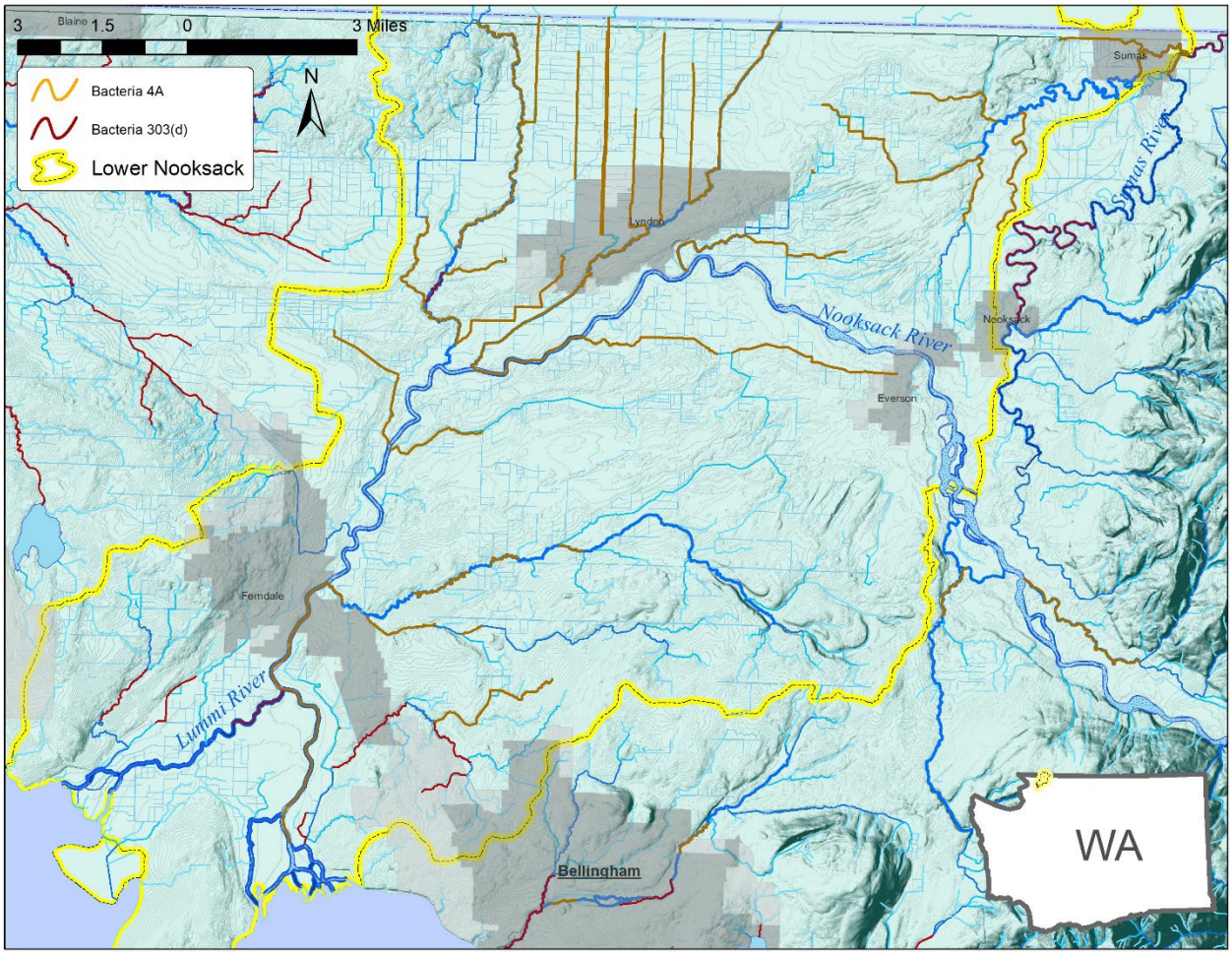


Figure 16. Map of the Nooksack River TMDL boundaries.

Implementation of the Nooksack River bacteria TMDL continues through our Ecology staff involvement with local project partners, primarily conducted through the Whatcom Clean Water Program (WCWP). The Transboundary Partnership between BC and WA reinitiated group meetings to address extremely high levels of fecal bacteria pollution coming from Canada.

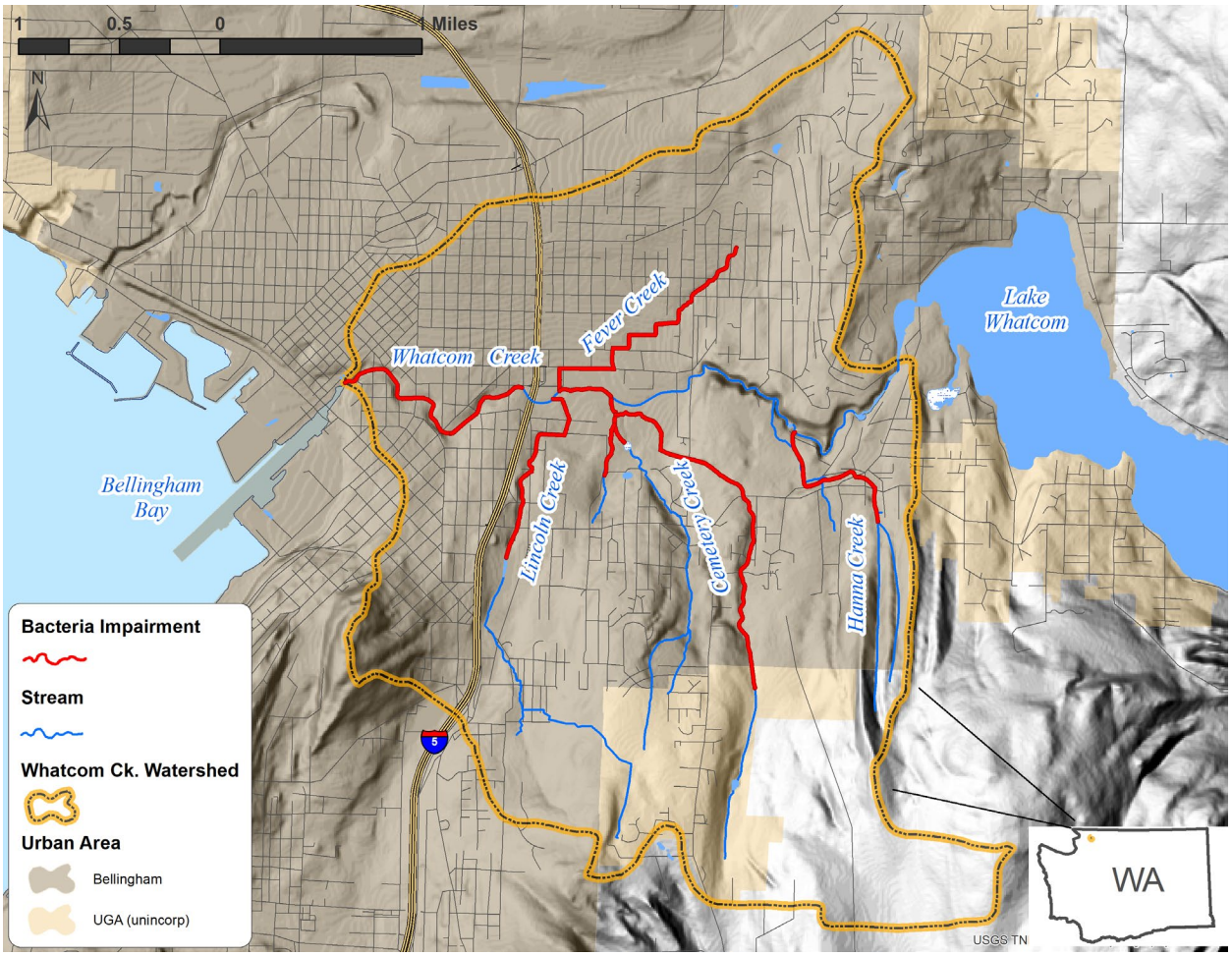


Figure 17. Map of the Whatcom Creek Bacteria TMDL boundaries.

In 2023, Ecology completed the Whatcom Creek Bacteria TMDL and Implementation Plan, which was approved by the EPA in September of 2023. The TMDL is established to address both fecal coliform and *E. coli* to address marine and freshwater designated uses. Ecology works with local stakeholders to implement nonpoint pollution control activities in the upper reaches of the Watershed that is not covered by an NPDES permit. Approximately ten percent of the Watershed and TMDL is not covered by an NPDES permit and received load allocations. Some pollution prevention activities are conducted outside of permit requirements to address these sources of nonpoint pollution.

Priority Actions Completed in 2023 for TMDLs in Whatcom County:

Implementing: Lake Whatcom Multi-parameter TMDL (2016); Nooksack River Bacteria TMDL (2000); Whatcom Creek Bacteria TMDL (2023)

Education and Outreach

- Ecology shared a table with local stakeholders during the two-day Lynden Raspberry Festival to raise awareness about Watersheds, beneficial agricultural practices, and pet waste.
- Ecology presented the Whatcom Creek TMDL for the public comment period. Ecology routinely discussed the Lake Whatcom TMDL Reassessment with the public.
- Ecology gave media interviews discussing a variety of pollutants.

Financial Assistance

- Encouraged landowners and operators to seek funding for best management practices. Each technical letter sent provides an invitation for Ecology nonpoint staff to meet with them and discuss options, and we highlight the Whatcom CDs non-government technical assistance services and small grants options.
- Ecology received the Shellfish Strategic Initiative Sub-Award grant for the purpose of increasing harvestable shellfish acres in Puget Sound. The project is funded through EPA's National Estuary Program (NEP). The sub-awards are necessary to fund two Nonpoint Shellfish Specialists, continuing and enhancing our work to reduce fecal coliform bacteria pollution in collaboration with our Whatcom Clean Water Program (2023-2025).

Partner Coordination

- Whatcom Clean Water Program (WCWP) partners coordinate with Ecology nonpoint staff to identify areas with elevated bacteria levels in surface waters and follow up pollution control. Water quality data collected in partnership are available through an interactive online map administered by the Whatcom Conservation District (WCD). Sampling efforts incorporate ambient and targeted events, and experimental studies. Data updates include:
    - Detail effective and continued water quality improvement actions,
    - Assess and discuss water quality trends,
    - Identify catchments with high pollutant loading,
    - Identify and seek funding sources for project partners,
    - Describe pollution controls and how they will achieve water quality standards,
    - Estimate the time when water quality standards will be met,
    - Schedule the continued implementation of pollution controls,

    - Endorse continued monitoring to track effectiveness of pollution controls, and
    - Commit to revised pollution controls, as necessary.
- BFO TMDL and Nonpoint staff participated in the Portage Shellfish Protection District meetings. Project partners engage local landowners to identify and prevent bacterial pollution.
- Lake Whatcom Data Team meetings occur monthly to discuss data needs and analysis, and activities. The data team includes the City of Bellingham, Whatcom County, the Lake Whatcom Water and Sewer District, Western Washington University Institute for Watershed Studies, and Ecology.
- Ecology attended the joint council meeting in March and three Lake Whatcom Policy Group meetings along with local council members.

Pollution Identification/Watershed Evaluation

- Ecology collected approximately 120 water quality samples in the Lower Nooksack basin in coordination with local stakeholders. Approximately five storm events were sampled to identify runoff contributions and characterize the association between rain fall and bacteria pollution.
- Ecology, along with local stakeholders coordinated with Canadian partners in BC to identify pollution sources that are causing high levels of bacteria pollution to enter the tributaries of the Nooksack River. The Whatcom CD notifies BC when elevated bacteria is observed, and BC conducts follow up investigations and watershed evaluations.

Compliance/Technical Assistance Activities

- Ecology staff conducted Watershed assessments in 2023 to identify high priority sites for possible compliance action. Results will be shared with partners. BFO staff received complaints by citizens and through referrals from our partners that require follow up from field staff.
- As part of the WCWP fall strategy, staff contacted non-dairy livestock operators in the Nooksack River Watershed from the previous winter, reminding them to take action to avoid discharge violations, and followed up on those contacts as needed.

Monitoring Activities

- Sampling efforts were conducted for source identification when the source of pollutant was not visually obvious.

Priority Watershed Name: Soos Creek Watershed

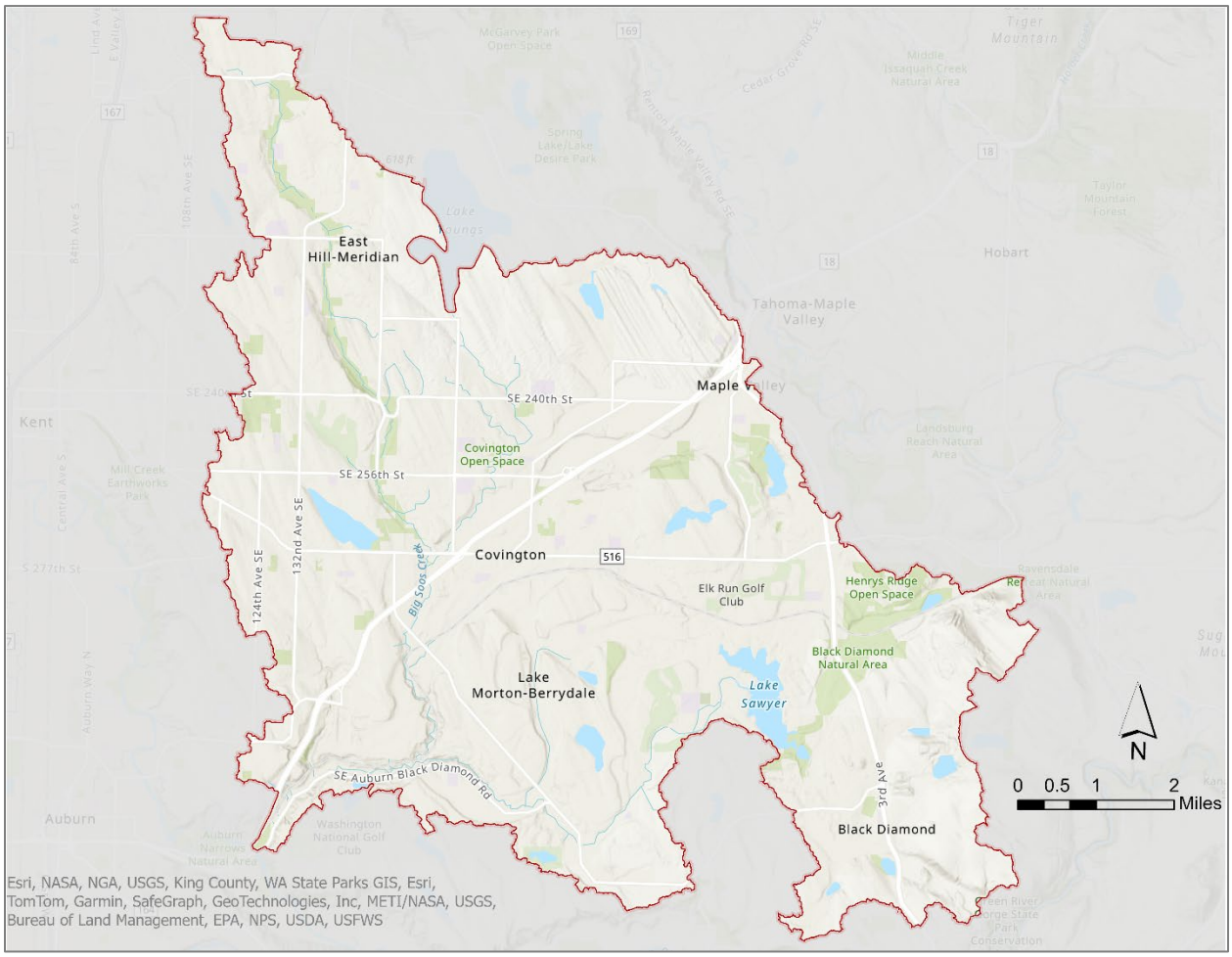


Figure 18. Map of Soos Watershed.

Developing: Soos Creek Multiparameter (temp/DO/bacteria) TMDL & Soos Creek Fine Sediment TMDL

Summary/Context Info:

The two TMDLs we are developing in Soos Creek will address water quality issues that stem, at least in part, from nonpoint sources. The multiparameter TMDL will address the impact of lack of riparian vegetation on stream temperatures, the impact of nutrients on dissolved oxygen, and that of disbursed sources on instream bacteria concentrations. Bacteria sources are likely from developed areas, though some hobby farms may be a contributing factor as well. The fine sediment TMDL will discuss how the reversal of habitat degradation, including the restoration of riparian habitat, can be an important control of fine sediment loadings. This Watershed was identified as a priority in last year's report, and while this TMDL continues to be a priority for development, we are not at a place to identify and implement nonpoint BMPs that will address water quality impairments and will therefore be removed as a nonpoint priority. This Watershed may be a focal Watershed for nonpoint efforts in the future.

Central Regional Office

Priority Watershed Name: Wilson Creek Watershed

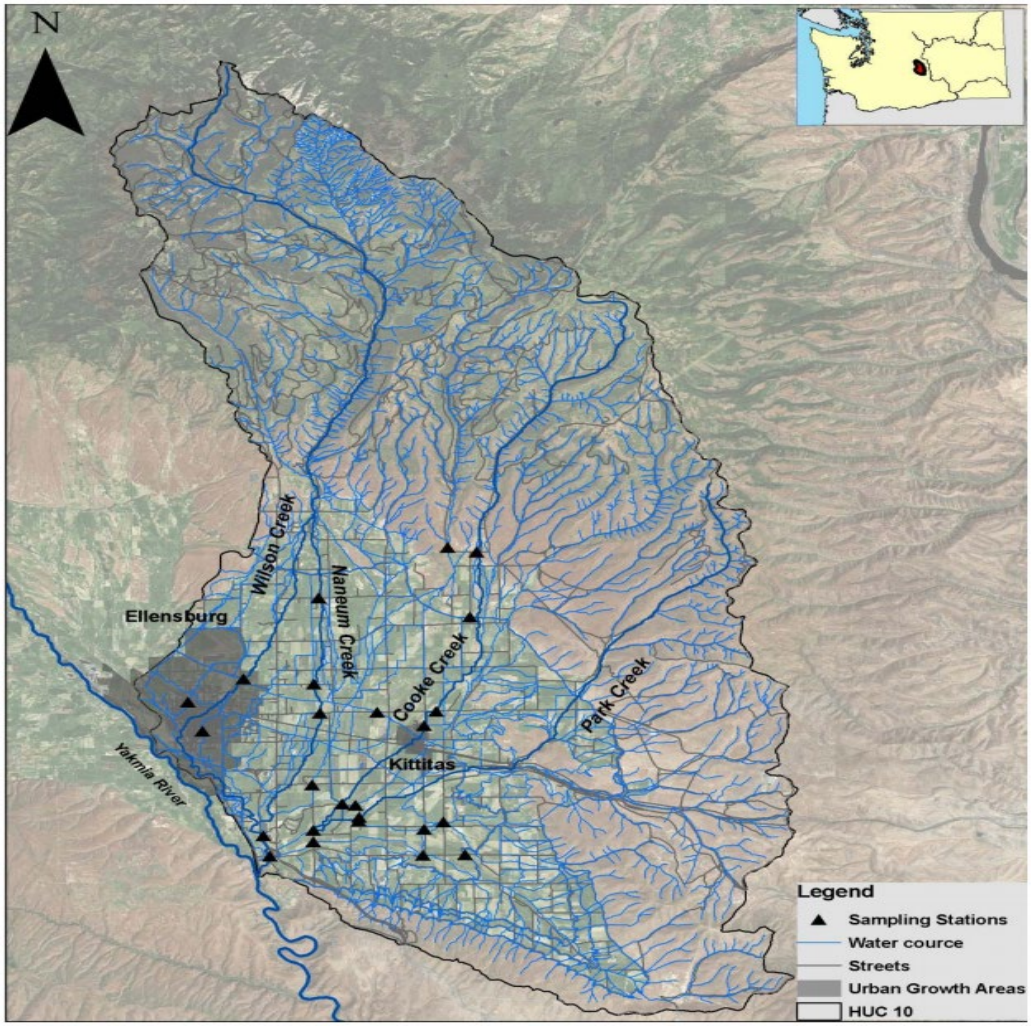


Figure 19. Map of the Wilson Creek Watershed.

Implementing: Upper Yakima Basin Suspended Sediment, Turbidity and Organochlorine Pesticide Total Maximum Daily Load and the Wilson Creek Sub-basin Bacteria Total Maximum Daily Load.

Summary/Context Info:

Water quality improvements in the Wilson Creek Watershed have been significant but have not yet met the goals set by the TMDL. Turbidity goals for the waterway is the indicator for reductions in both TMDLs that address the Watershed. CRO staff continue to work with the area stakeholders and landowners to attain water quality goals.

Priority Actions Completed in 2023:

Education and Outreach

- Ecology staff continue to conduct outreach to irrigation district(s) and Kittitas County Water Purveyors (KCWP), Spring 2023 and quarterly through 2024. KCWP has agreed to share water sampling information with Ecology for Wilson Creek.
- Outreach to Kittitas County Conservation District.

Financial Assistance

- Financial assistance opportunities were coordinated through the Watershed partners including the conservation district and grant eligible NGOs. Currently there are no WQ funded projects in the Watershed.

Partner Coordination

- Communication with the irrigation water purveyors has been on an as needed basis, with coordinated field schedules and pollution reports. Contact in 2023 was monthly or more frequently as needed.
- Communication with the Kittitas County Conservation District was monthly or more frequently as needed to address pollution sources.

Pollution Identification/Watershed Evaluation:

- Ecology staff visited the Watershed during the 2023 irrigation season and monitored turbidity in the field to isolate stream segments that receive pollution run off.
- Coordination with Watershed partners, including irrigation purveyors and the Conservation District, who are active in the Watershed monitoring and identifying pollution sources, with a focus on the summer irrigation season.
- Coordination with Ecology EAP Program to analyze Ecology's data for Wilson Creek and the upper Yakima basin. Also coordinating with EAP to obtain advice to expand sampling network.

Compliance/Technical Assistance Activities

- In the 2023 irrigation season, one location was identified having an elevated turbidity discharge and the information was provided to the water purveyor who followed up on the information. Subsequent site visits did not identify elevated discharges.

Monitoring Activities

- Ecology staff visited the Watershed every other week to conduct visual observations and turbidity sampling with turbidity meter.

- Ecology did not receive any reports of elevated turbidity from our Watershed partners or from the public. Ecology conducted turbidity sampling the upper Watershed tributaries (Wilson Cr., Cherry Creek, and Badger Creek) bimonthly. The Ecology monitoring showed turbidities mostly below TMDL targets. On one occasion a sampling point on Cherry Creek was measurably higher than the other tributaries and referred for follow up.

Priority Watershed Name: Granger Drain

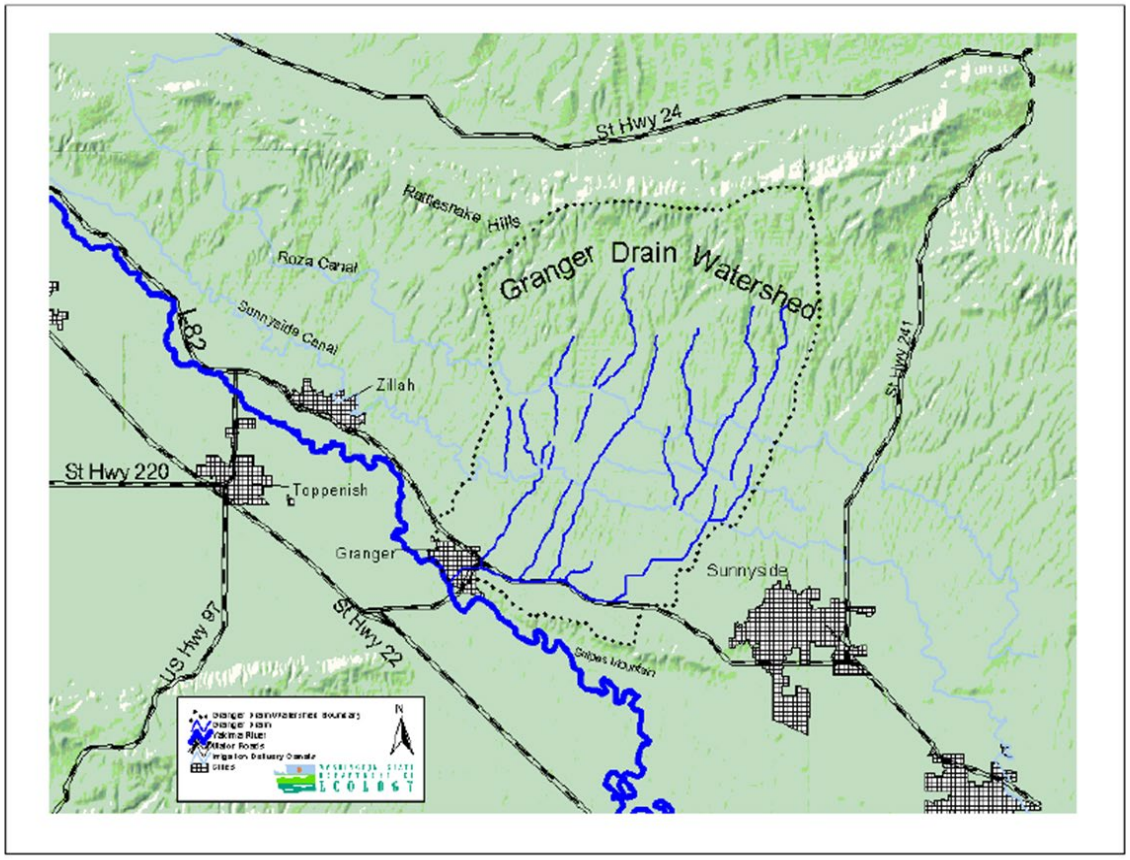


Figure 20. Map of the Granger Drain Watershed.

Implementing: Granger Drain Fecal Coliform Bacteria Total Maximum Daily Load and the Lower Yakima River Suspended Sediment TMDL.

Summary/Context Info:

The Granger Drain Fecal Coliform Bacteria Total Maximum Daily Load set final fecal coliform (FC) targets for the Watershed based on the *Water Quality Standards for Surface Waters of the State of Washington* (Chapter 173-201A WAC). At the time there were two Class A criteria for FC bacteria. The first criterion sets a maximum density of bacteria measured in colony forming units (CFU) for the geometric mean criteria not to exceed 100 cfu/100 mL. The second criterion sets a maximum density of bacteria at the 90th percentile not to exceed 200 cfu/100 mL. Of the

two criteria, the 90th percentile criterion is typically the most difficult to comply with, as it represents infrequent high bacterial densities. Based on FC reductions obtained since 1992, the *Granger Drain TMDL* is nearing the interim 90th percentile target of 510 cfu/100 mL and a final 90th percentile target of 200 cfu/100 mL (water quality standards). It is against these interim and final TMDL targets and the current water quality criteria for *E. coli* that future TMDL compliance will be measured for both the mainstem Granger Drain and the Sunnyside Valley Irrigation District (SVID) irrigation supply canal.

Priority Actions Completed in 2023:

Education and Outreach

- Ecology staff meet routinely with Rosa Sunnyside Board of Joint Control (RSBOJC) staff. RSBOJC staff work with the irrigated agriculture owners and managers in the district.

Financial Assistance

- Financial assistance opportunities are coordinated through the Watershed partners including the conservation district and grant eligible NGOs. Currently there are no WQ funded projects in the Watershed.

Partner Coordination

- Ecology coordinated regularly with the RSBOJC on WQ sampling and visits to the accredited laboratory run by RSBOJC.

Pollution Identification/Watershed Evaluation:

- In coordination with Ecology nonpoint staff, RSBOJC staff work within the Watershed to identify and reduce pollution sources.

Compliance/Technical Assistance Activities

- RSBOJC has collected FC and *E. coli* (EC) samples to compare to the goals of the TMDL and the updated WQ standards. RSBOJC has also worked at identifying and eliminating illicit connections to the Granger Drain.

Monitoring Activities

- Monitoring activities are conducted by RSBOJC on FC/EC.

Priority Watershed Name: Lower Yakima River (WRIA 37)

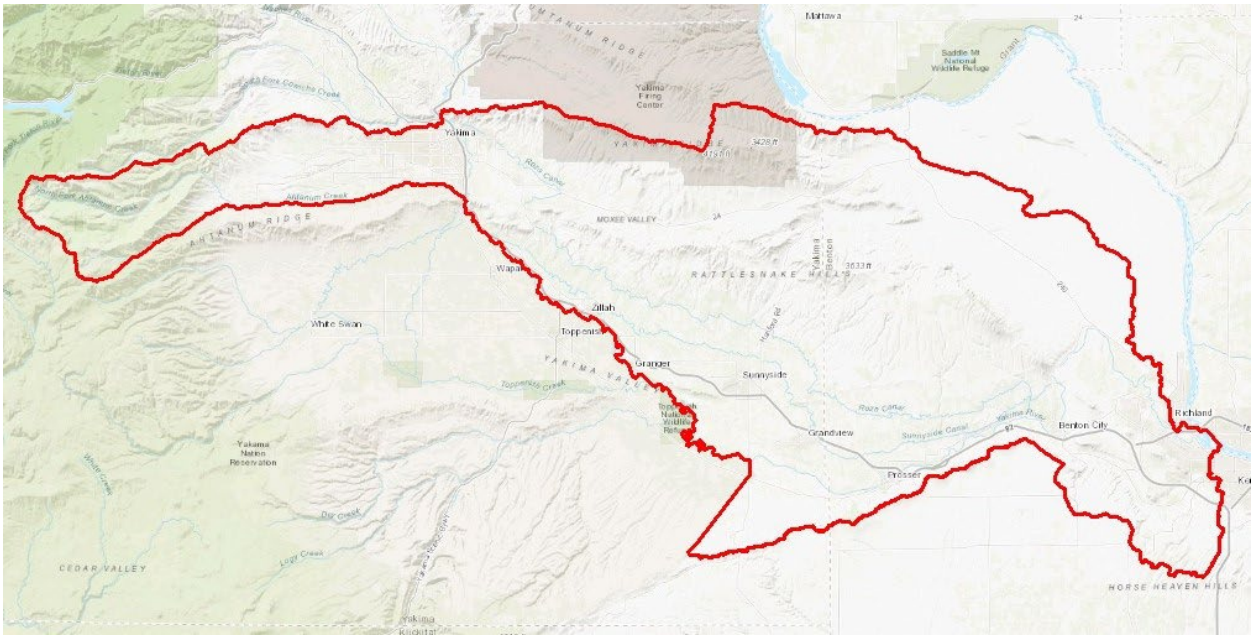


Figure 21. Map of the Lower Yakima River Watershed.

Implementing: Lower Yakima Suspended Sediment TMDL

Summary/Context Info:

The ongoing implementation of the Lower Yakima Suspended Sediment TMDL has greatly improved the water quality discharged to the Lower Yakima River. Meeting and maintaining the water quality goals of the TMDL remain as the project goals. The existing strong partnerships with Roza and Sunnyside Valley Irrigation Districts is instrumental in the current and future successes seen in this Watershed. Ecology WQ staff continue to coordinate closely with staff of the irrigation districts to identify opportunities for additional water quality improvement.

Priority Actions Completed in 2023:

Education and Outreach

- Ecology's partners in the lower Yakima Watershed include Roza/Sunnyside Board of Joint Control (RSBOJC), South Yakima Conservation District, and the Benton Conservation District. These partners conduct outreach with landowners on the need to reduce suspended sediment discharges.

Financial Assistance

- Financial assistance opportunities are coordinated through the Watershed partners including the conservation districts and grant eligible NGOs.

Partner Coordination

- In 2023 communication with the Roza/Sunnyside Board of Joint Control (RSBOJC), representing the irrigation districts, was on an as needed basis. Scheduling depended on field schedules and pollution reports.
- Communications with the North Yakima, South Yakima, and Benton County conservation districts were conducted as needed to address potential pollution sources.

Pollution Identification/Watershed Evaluation:

- Ecology staff visited the Lower Yakima Watershed periodically with an emphasis during the irrigation season and, through field monitoring of turbidity, sought to identify waterway segments with elevated turbidity loading to be addressed through TMDL implementation.

Compliance/Technical Assistance Activities:

- In 2023, due to position vacancies, no compliance actions were undertaken by Ecology staff.

Monitoring Activities

- Ecology staff typically visited the Watershed every other week in 2023, focusing on the irrigation season, to conduct visual observations and turbidity sampling with turbidity meter.
- Ecology partners also watch for, and report, elevated turbidity, and suspected sources in the Lower Yakima River area.

Priority Watershed Name: White Salmon River (WRIA 29)

Figure 22. Map of the White Salmon River Watershed.

Developing and implementing: Watershed Cleanup Plan

Summary/Context Info:

Ecology is working on a water cleanup project for the White Salmon Watershed to address identified water quality impairments for bacteria. Stakeholders in the Watershed greeted Ecology's entrance into the Watershed with interest and support. Some of the local water quality interest extends beyond the bacteria pollution problems.

CRO hired a new lead for this project in July 2023. Ecology's Environmental Assessment Program began a two-year sampling project in January of 2023, which will continue until December 2024. The project consists of bacteria samples collected twice a month from sites throughout the White Salmon Watershed.

Priority Actions Completed in 2022:

Education and Outreach

- Ecology staff worked with the US Forest Service (USFS) on outreach to the recreational boaters. Ecology staff work with the USFS staff to have water quality information

included in the 2023 USFS recreational boating permit (USFS) annual recreational boater permit for the Wild and Scenic River segment.

- Ecology staff are working with Underwood Conservation District, Mid-Columbia Fisheries Enhancement Group, and the Yakama Nation on an educational project for the local school district addressing stream health for streams on school property.

Financial Assistance

- Underwood Conservation District is using grant funding from Ecology's Water Quality Program to implement water quality improvement projects in the White Salmon Watershed. This included a bank stabilization project, three riparian restoration plantings and bacteria sampling projects. The bacteria data collected, along with Ecology-gathered data, will be used to inform future focus areas and priority projects.

Partner Coordination

- In 2023 Ecology Water Quality staff coordinated with the U.S. Forest Service, Underwood Conservation District (UCD), Columbia Land Trust, Yakama Nation, Klickitat County Health District, Friends of the White Salmon, Adventure Scientists, Mid-Columbia Fisheries, USGS, Xerces Society and Trout Lake city council.

Pollution Identification/Watershed Evaluation:

- Ecology is coordinating with UCD on bacteria sampling and filling in data gaps, while preparing the White Salmon Bacteria cleanup plan.
- Data collected by Ecology's Environmental Assessment Program (EAP) in 2023 will be used to identify reaches within the Watershed where additional sampling and source tracking may be helpful in identifying polluting inputs.
- Ecology conducts complaint responses as needed and made monthly field visits to the White Salmon Watershed for pollution identification work.

Compliance/Technical Assistance Activities

- Due to staff vacancies, no compliance actions were taken in 2023.
- Community reports of water quality concerns were entered into the ERTS and followed up on by CRO nonpoint staff, as capacity allowed.

Monitoring Activities

- Ecology's Environmental Assessment Program (EAP) is conducting a bacteria loading study in the White Salmon Watershed spanning 2023-2024. This study will reference the current WQ bacteria standard for *E. coli*.
- Underwood Conservation District is conducting monitoring for bacteria and other WQ parameters in the White Salmon Watershed.

Priority Watershed Name: Bonaparte Creek

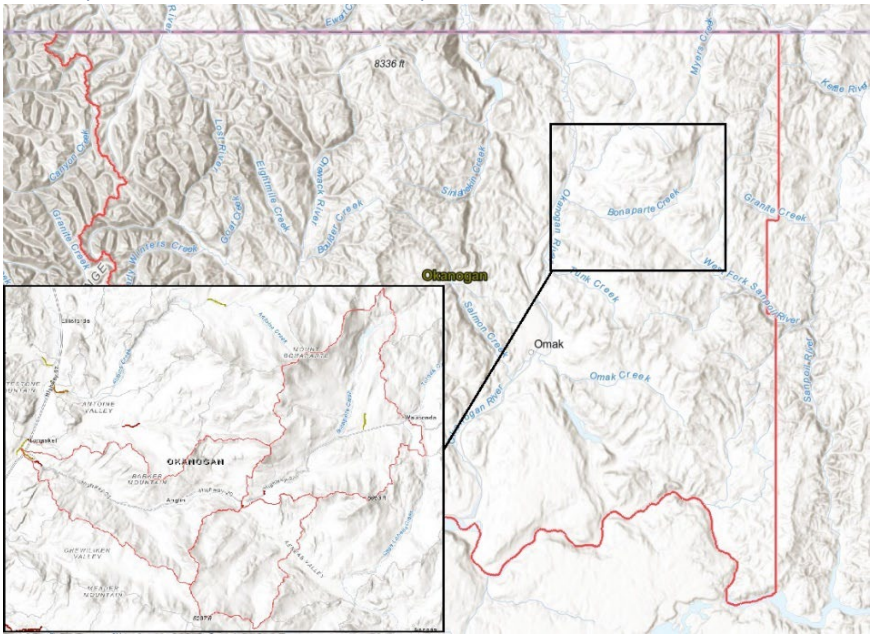


Figure 23. Map view of Bonaparte Creek Watershed

Implementing: Bonaparte Creek Proposed improvements to address bacteria impairments.

Summary/Context Info:

Bonaparte Creek is a tributary to the Okanogan River in WRIA 49. It enters the Okanogan at the south end of the town of Tonasket. Documented impairments are bacteria, temperature, and pH. A new WQ lead for WRIA 49 was hired in September 2023. They have begun outreach to local stakeholders including the Okanogan Health Dept., City of Tonasket, and Okanogan Conservation District in late 2023.

Priority Actions Completed in 2023:

Education and Outreach

- Conservation district staff offered assistance with K-12 educational programming.

Financial Assistance:

- Local entities were made aware of 319 and Terry Husseman grants, no applications were made this cycle.

Partner Coordination:

- Personal meetings and email communications:
    - Okanogan County environmental health lead
    - Conservation district staff
    - Conservation Commission regional lead

- Confederated Tribes of the Colville Indian Reservation – Environmental Trust Lead
- WDFW officers

Pollution Identification/Watershed Evaluation:

- Watershed assessments:
  - Drove the Watershed looking for any new activities that may cause or decrease impairments.
  - Examined burn area and major erosion on national forest land from Lightening Creek, which feeds to Bonaparte creek.

Compliance/Technical Assistance Activities

- Followed up on ERTS complaints:
  - Visited site regarding illegal berm construction and referred to county and water resources staff.
  - Visited local business (twice) to inspect for alleged dumping of waste oil – no evidence to support claim. Closed report.

Monitoring Activities:

- No monitoring activities occurred in 2023.

Eastern Regional Office

Dryland Tillage in Eastern Washington

As many as five million acres in eastern Washington are currently in dryland crop production. Wheat, barley, peas, garbanzos, lentils, and canola are produced (depending on rainfall) within the rolling hills of the Palouse prairie, portions of the Columbia Basin, and the slopes of the Blue Mountains south of the Snake River. Field erosion and sediment discharges to surface water are a major problem throughout these dryland production areas. It is not uncommon for erosion rates in fields to exceed 20-30 tons per acre. It is estimated that more than a million tons of sediment erode from fields annually, much of that reaches streams and rivers in the region. In 2023 Ecology continued to work with our key partners on several actions designed to tackle the problem. These actions include:

Cost Share for Direct Seed: Ecology provides $30 dollars an acre for farmers to have their fields (up to 250 acres) seeded with a direct seed drill. Direct seeding is a system where fields are seed into the standing stubble of previous fields with a single equipment pass over the field.

Low Interest Loans for Direct Seed Equipment: Ecology continued to partner with the Spokane Conservation District to provide low interest loans to farmers to purchase Direct Seed equipment. This program has been extremely successful at making conservation tillage equipment available to farmers.

Tillage Watershed Evaluations: Ecology performs evaluations in priority Watersheds where soil erosion from dryland crop production is a water quality problem. Staff identify fields where sheet, rill, and gully erosion are occurring. We contact those landowners and offer help to fully protect water quality. Staff may use our enforcement tools if the offer for help doesn't achieve desired outcomes.

Regional Conservation Partnership Program (RCPP): Ecology continued in 2023 to partner with the Palouse Conversation District on the Palouse RCPP. We provide both grants and staff resources that can be used as match with federal funds to implement a multi-million-dollar effort to promote conservation tillage practices that reduce erosion and sedimentation throughout the Palouse Watershed.

Farmed Smart Certification: Farmed Smart is a certification program that recognizes farms that implement multiple water quality protection practices. This program was developed in partnership with the Pacific Northwest Direct Seed Association and Ecology. Dozens of farms have implemented the required practices and have been certified. Due to vacancies, Ecology and partners did not invest heavily in the certification program in 2023 but will look to make it a priority in future years. Ecology did support a small group of Farmed Smart certified farmers working to improve soil health in a way that could significantly reduce or eliminate the need for both artificial fertilizers and the use of herbicides.

Image 3. Low disturbance direct seed drill seeding into the residue of a previous crop.

STI/TMDL Development and Nonpoint Planning in ERO

One of the important planning tools used in the Eastern Region is Straight to Implementation (STI). Straight to Implementation is a type of an Advanced Restoration Plan that provides the opportunity to achieve "Cleaner Water Faster." We have found that Straight to Implementation is a way to make immediate progress toward achieving water quality standards. Straight to Implementation is most appropriate for small, nonpoint pollution dominated Watersheds that meet specific criteria:

- A Watershed where we are ready to "do" – little planning is needed.
- A Watershed where we understand pollution problems and fixes.
- We can characterize the problems/fixes at the parcel scale.

- Significant implementation can be achieved in 10 years.
- We and partners are already making some progress addressing pollution problems.
- A Watershed where funding resources are available.

The Eastern Region focused resources on STI and existing TMDL implementation in 2023, looking to make significant improvements in overall water quality where existing cleanup plans are in place. At the same time, progress was made in TMDL and STI plan development. The following are planning efforts undertaken in the Eastern Region in 2023.

Table 5. Eastern Region STI and TMDL plan development.

Watershed	Parameters	Plan Type	Status
Pend Oreille River	Temperature	TMDL Implementation Plan	In Progress – Draft Complete
Upper Colville River	Temperature, Bacteria, Dissolved Oxygen, pH	Straight to Implementation	In Progress – Watershed Characterization
Spring Flat Creek	Temperature, Dissolved Oxygen, pH	Straight to Implementation	In Progress – Final Draft Complete
Alkali Flat Creek	Temperature, Bacteria, Dissolved Oxygen, pH	Straight to Implementation	In Progress – Watershed Characterization
Pataha Creek	Bacteria, Dissolved Oxygen, pH	Total Maximum Daily Load	In Progress – Extended Scoping Complete

Priority Watershed Name: Hangman Creek Watershed

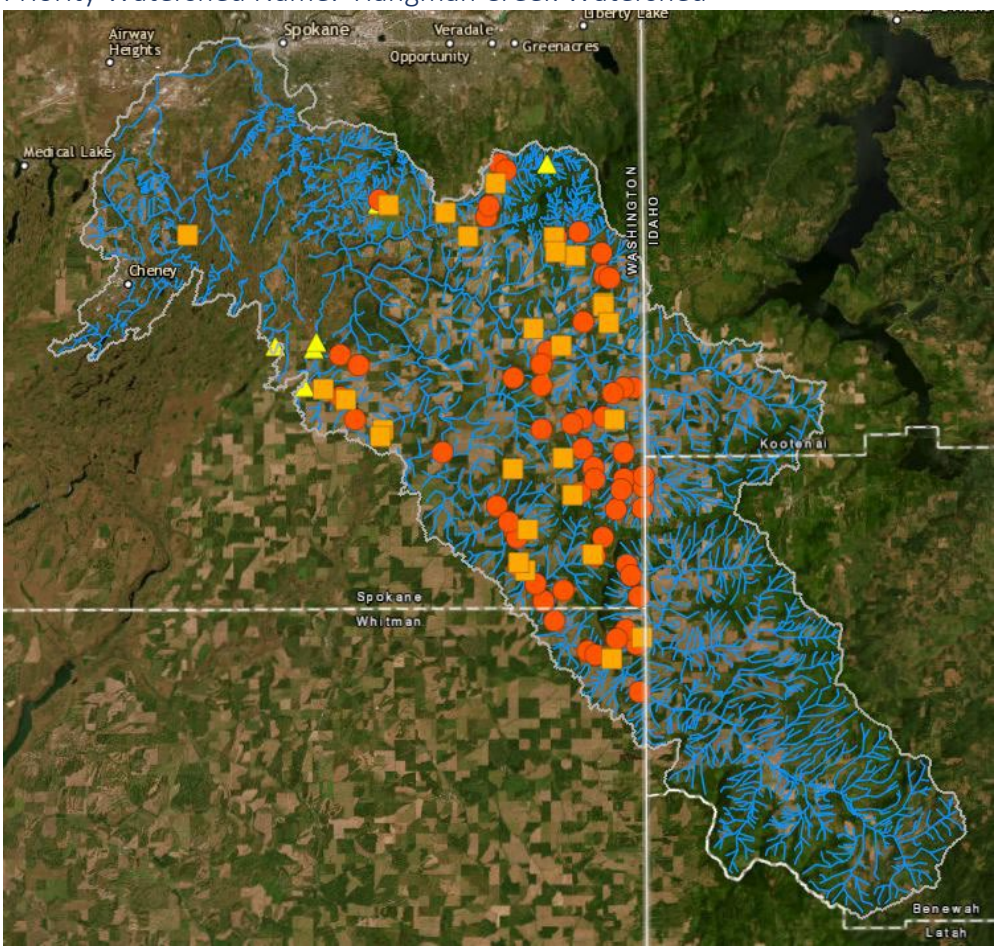


Figure 24. Map of Hangman Watershed of locations of prioritized sites ERO staff have contacted since 2018 and are actively working with on water quality improvement projects.

Implementing: Hangman Creek Fecal Coliform, Temperature, and Turbidity TMDL and the Associated Spokane Riverkeeper Settlement Agreement

Summary/Context Info:

Streams in the Hangman Creek Watershed are impaired by excess bacteria, turbidity, elevated water temperatures, pH, and DO. The Watershed is dominated by agricultural nonpoint sources. The Watershed was studied to develop a TMDL report and ultimately a TMDL implementation plan. The implementation plan was completed in 2011. The Spokane Riverkeeper challenged the EPA approval of the TMDL. EPA, Ecology, and Riverkeeper negotiated a 10-year agreement that identifies and prioritizes specific actions to reduce pollution and ultimately make progress towards water quality improvements within the Hangman Watershed. The agreement was signed in 2018 and Ecology is actively implementing.

Watershed stakeholder engagement has been a critical component to implementation efforts. Since 2018 Ecology has been working on building relationships and capacity among Watershed

stakeholders including but not limited to: Spokane Conservation District, Natural Resources Conservation Services, Pine Creek Conservation District, Spokane Tribe of Indians, Coeur d'Alene Tribe of Indians, Trout Unlimited, Inland NW Land Conservancy, and the Lands Council. Since 2018 significant resources have been leveraged and focused in the Hangman Watershed, as can be shown below in the actions completed.

Priority Actions Completed in 2023:

Education and Outreach

- **One on One Discussions:** Ecology staff conducted dozens of individual site visits with landowners and producers that were contacted for having water quality concerns. Staff have now prioritized 94 different sites in the Watershed for water quality improvements. These sites require frequent contact, including site visits, to achieve water quality protection. These site visits typically last over an hour and contain meaningful and often difficult conversations on water quality issues. Although often challenging, these outreach activities can be incredibly fruitful for water quality education and implementation efforts. Many projects in the financial assistance section below are the direct result of these discussions.
- **Direct Mailing to Watershed Residents:** Ecology developed and mailed the first in a series of mailers to over 2,500 Watershed addresses in 2023. The mailer content covered common best management practices for agriculture, funding, and salmon recovery efforts.

Financial Assistance

- **Implemented the *Hangman Riparian Restoration and Conservation Program* ($3,500,000):** This program provides rental rates with long-term contracts for agricultural riparian land taken out of production and planted with native trees and shrubs. Ecology partnered with Spokane Conservation District on this project. This first phase of the program contracted 169 acres of riparian restoration along nearly 8 miles of perennial streams in the Hangman Watershed, which were previously in dryland agricultural production. This program was created to facilitate compliance for sites contacted by Ecology as having water quality concerns, which is an eligibility criterion for enrollment in the program.
- **Implemented the Pine Creek Conservation Districts, *Little Hangman Creek Riparian Forest Planting* ($50,000):** This project implemented a mile of restoration on both sides of the creek within approximately 8.1 acres riparian area of Little Hangman Creek, located approximately 2 river miles downstream from the Idaho border. This project supplements a larger bioengineered streambank stabilization project, and the site was previously identified and contacted by Ecology for severe water quality concerns with dryland agricultural operations within the riparian area.
- **Implemented the Spokane Tribe of Indians, *DIF Project Maintenance, Riparian Restoration, and Livestock BMPs* Project ($257,868):** This project includes project maintenance across five previously installed riparian restoration projects in the

Hangman Watershed. All five projects were identified during past regional watershed evaluations by Ecology staff as having significant water quality concerns, which were addressed by a previous implementation grant. This three-year grant is well under underway for ensuring successful riparian establishment along these sites.

- **Implemented the Spokane Riverkeeper, *Rock and Hangman Creeks Riparian Restoration and Water Quality Improvement* Project ($256,892):** This project will continue to improve nonpoint pollution issues throughout the Watershed by installing 50 acres of riparian plantings, establishing three water quality monitoring locations, 10 water temperature loggers, and provide education and outreach programs to maximize restoration efforts within the Watershed. This three-year grant is well underway with 40 acres of riparian installation completed.
- **Implemented the Spokane Conservation District, *Spokane Riparian Establishment* Project ($283,500):** This project implements three projects, two of which are in the Hangman Watershed. These projects include livestock BMPs and riparian restoration. Issues with matching funds from a partner federal agency have delayed two of these projects, but at the end of 2023 Ecology and Spokane Conservation District have successfully acquired enough project match to move forward with implementation.
- **Implemented the Spokane CD, *Making Conservation Pay* Project ($3,000,000):** This loan from State Revolving Funds allowed Spokane County Conservation District to expand their Direct Seed Equipment Loan program to 13 counties in Eastern Washington. This program allows producers to purchase the necessary direct seed equipment to practice low disturbance, direct seed conservation tillage. This loan helps to convert acres in the Hangman Creek farmed with conventional tillage techniques to direct seed. This three-year program is well underway and currently providing equipment loans to multiple producers in Eastern WA.
- **Implemented the Spokane CD, *Hangman Creek Streambank Stabilization RM-17 Phase II* Project ($333,333):** This project builds upon and continues work along Hangman Creek at river mile 17 to stabilize banks, plant riparian buffers and install irrigation systems to improve plant survival. The second phase of the project prevented an estimated 16,000 tons of sediment from eroding along a nearly a mile of Hangman Creek and kept this sediment reaching the Spokane River. Designs, materials, and permits were obtained in 2021, and the project was constructed in 2022. Riparian planting maintenance and general monitoring was completed in 2023. The grant agreement was closed out in 2023, but the SCD will continue to monitor and maintain as needed.
- **Implemented the Spokane CD, *Hangman Creek Agricultural BMP Assistance* Project ($1,500,000):** This project increases community awareness, addresses agricultural sediment pathways, inventories bank erosion contributions, implements 3,000 feet of stream restoration and reduces sediment delivery through producer incentives, cost-share programs, and loans. The funding allows the Spokane CD to support producers by focusing implementation at high priority sites identified during Ecology watershed evaluations. This three-year project is well underway, providing financial assistance to

implement multiple projects throughout the Watershed; one of the most significant projects within this grant was constructed in 2023 – a nearly one-mile stream restoration project on Little Hangman creek consisting of floodplain reconnection, bank stabilization, and a 31-acre riparian planting.

- **Implemented the Lands Council, *Hangman Creek Watershed Riparian and Wetland Restoration* Project ($294,600):** This FY22 grant project continues The Land Council's work in the Hangman Watershed by installing Beaver Dam Analogs, planting riparian buffers, and educating agricultural producers and local youth in the Watershed.

Partner Coordination

- **Stakeholder Engagement:** Ecology continued to work on increasing the number of stakeholders engaged in the Hangman Creek Watershed, as well as continued building and maintaining positive relationships with existing stakeholders. Engaged Watershed stakeholders and positive partnerships are vital to cultivating a synergistic environment for achieving significant water quality improvements. Additionally, Ecology is committed to engage with the Spokane and Coeur d'Alene Tribes and local municipalities on water quality protection measures.
- **Meetings with the Spokane Riverkeeper:** Ecology staff continued to meet with the Spokane Riverkeeper every other month to provide updates on work in the Hangman Creek Watershed, talk through issues, and plan for future work.
- **Meetings with Watershed Partners and Building Funding Capacity:** Ecology staff met regularly with Watershed partners to plan and coordinate on implementing best management practices that improve and protect water quality. Ecology will continue to work on maintaining existing funding opportunities as well as support and encourage new funding opportunities for water quality improvement work.

Pollution Identification/Watershed Evaluation:

- **Performed Comprehensive Watershed Evaluation:** Ecology staff documented 68 nonpoint pollution problems in the Watershed using the ERO watershed evaluation process. 10 tillage sites and 5 livestock sites were prioritized from those sites using site specific criteria, such as the length of stream impacted and the severity of riparian damage.

Compliance/Technical Assistance Activities

- **Complaint Response:** Ecology staff followed up on three valid water quality complaints in the Hangman Watershed. Ecology staff met with the landowners of all three sites and are actively working on plans with them to implement practices that will protect water quality.
- **TA Letters:** Ecology staff mailed out fifteen certified letters to sites prioritized during the watershed evaluation process. Dozens of phone conversations, site visits, and partnership meetings took place as a result of this effort. Much of the project

implementation grant funding in the Hangman Watershed is a direct result of this process.

- **Enforcement –Administrative Order:** The Pollution Control Hearing Board (PCHB) ruled in favor of Ecology on this Administrative Order. Ecology issued the Order to one dryland agricultural operation for two separate properties in fall 2022. The Order was appealed, and the PCHB upheld the Order in early 2023. The two properties cumulatively include approximately 11,500 feet of the mainstem Rock Creek and its tributaries which are within the Hangman Watershed, which were actively being farmed up to water's edge. Implementation of the Order components began in 2023, which includes approximately eight acres of native grass buffers and 22 acres of riparian forest buffers along 2 miles of stream.
- **Enforcement – Warning Letters:** Ecology issued three warning letters in 2023 in the Hangman Watershed. All three warning letters were livestock related. Two of the three sites came into compliance in 2023, and the third site actively working with Ecology on plans.

Monitoring Activities

- **Began Implementing Riverkeeper's Monitoring Project:** Three water quality monitoring locations were established, and 10 water temperature loggers were installed as part of the Spokane Riverkeeper's Rock and Hangman Creeks Riparian Restoration and Water Quality Improvement Project. At the end of 2023, the Riverkeeper was working on a website to provide the data to the public in real time.
- **Began Spokane Salmon Restoration Collaborative Data Collection:** The Spokane Salmon Restoration Collaborative, established in 2022, is the recognized Lead Entity for Salmon Recovery Efforts in the Spokane River Subbasin, which includes Hangman Watershed. The Collaborative is tasked with collecting a multitude of data for EDT modeling in order to generate a limiting factor analysis. Watershed partners compiled existing data and worked with a contract to compile a data gaps analysis to guide data collection efforts.
- **Rock Creek Basin Station Monitoring:** Ecology began monitoring Rock Creek (Hangman Creek) at Chatcolet Road as part of the region's basin station monitoring network. This multiparameter monitoring will continue through the 2024 water year.

Priority Watershed Name: Palouse Watershed

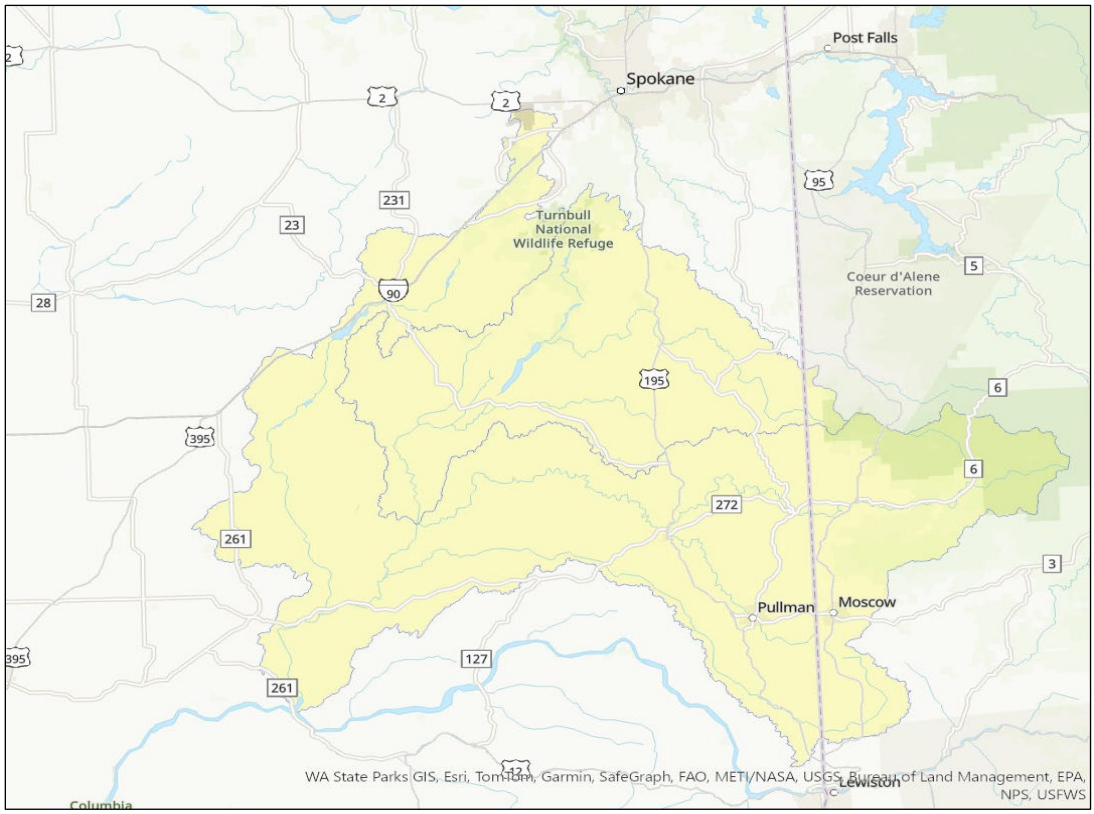


Figure 25. Map of the Palouse River Watershed.

Implementing: Spring Flat Creek STI; North Fork Palouse Fecal Coliform Bacteria, DO, and pH TMDL; Palouse River Fecal Coliform Bacteria TMDL; Palouse River Temperature TMDL; Palouse River Toxics TMDL; South Fork Palouse Ammonia TMDL; South Fork Palouse DO, pH, and temperature TMDL; and South Fork Fecal Coliform TMDL.

Summary/Context Info:

Streams in the Palouse Watershed are impaired by excess bacteria, DO, pH, toxics, and elevated water temperatures. The Watershed is dominated by agricultural nonpoint sources. The Watershed and its sub basins have been studied several times and multiple TMDL reports, and subsequent implementation plans have been developed. A Straight to Implementation (STI) Plan for the Spring Flat Creek subbasin of the Palouse was completed in 2023 and significant efforts to implement that STI are taking place with partnerships between Ecology, Palouse Conservation District, and Whitman Conservation District.

Priority Actions Completed in 2023:

Education and Outreach

- **Attended Conservation District Board Meetings:** The CD boards are made up of area farmers and ranchers. Staff attended board meetings to inform the CD board of on-

going water quality work in the Palouse River Watershed, collaborate on project implementation, and answer questions on efforts to implement projects.

- **One on One Discussions:** Ecology staff conducted four individual site visits with landowners and producers that were contacted for having water quality concerns in Spring Flat Creek Watershed of the Palouse. These site visits typically last over an hour and contain meaningful and often difficult conversations on water quality issues. Although often challenging, these outreach activities can be incredibly fruitful for water quality education and implementation efforts.
- **Conservation District Education and Outreach Actions:** As provided in the following section, Ecology funds several projects that have an education and outreach component. Several education and outreach workshops and events took place because of this funding in the Palouse in 2023.

Financial Assistance

- **Developed the Palouse Conservation District Spring Flat Creek Buffer Incentive Program ($722,500):** High stream temperatures, low dissolved oxygen levels, and high pH values have recently been identified as problems in Spring Flat Creek (SFC), a tributary of the South Fork Palouse River. Similar to the Hangman Riparian Restoration and Conservation Program, this program will provide rental rates with long-term contracts for agricultural riparian land taken out of production and planted with native trees and shrubs. Ecology partnered with Palouse Conservation District and Whitman Conservation District on this project. This program was created to support the Spring Flat Creek STI. Implementation of several miles of buffer along Spring Flat Creek will begin program implementation in 2024.
- **Implemented the Palouse Conservation District Direct Paradise Creek Riparian Restoration Project ($333,333):** This project continued to improve nonpoint pollution issues throughout the creek by installing riparian buffers, monitoring water quality, and providing education and outreach programs to maximize restoration efforts along this Palouse Watershed subbasin.
- **Implemented the Palouse Conservation District Direct Seed Partnership Implementation and Monitoring Project ($625,000):** This project implemented four miles of riparian buffers and 13,500 acres of direct seeding to improve water quality in the Palouse River Watershed. The project also monitored the effects of riparian restoration and converting from conventional tillage to direct seeding to determine effects on stream water quality.
- **Implemented the Palouse Conservation District Cart Before the Horse – Restoring the North Fork Palouse River Watershed Project ($333,333):** Conservation programs in the North Fork Palouse River Watershed have had only moderate success at meeting needs of landowners while improving water quality. This project has been addressing shortfalls by engaging landowners, community organizations, and local schools in the Cedar Creek, Silver Creek, and Clear Creek sub-Watersheds by developing and implementing

conservation outreach and educational programs, restoring a minimum of 7 acres of riparian areas, and monitoring water quality improvement efforts.

- **Implemented the Palouse Conservation District the Water Quality Saga: A Cost-Share-nary Tale Project ($666,666):** This three-year project continues to improve water quality in Whitman County streams by implementing a minimum of ten acres of riparian buffer and 6,750 acres of direct seeding. The project conducts monitoring efforts on changes in crop residue cover with conservation farming practices and implement an outreach and education program to further improve water quality awareness throughout Whitman County.
- **Implemented the Palouse Conservation District Do the Residue! Promoting Direct Seed Operations on the Palouse Project ($666,666):** The PCD will lead the implementation of five acres of riparian buffers and 9,000 acres of direct seeding to improve water quality in Whitman County streams. A survey of producers will assess direct seed adoption by conservation program participants. Crop residue monitoring and outreach and education programs, including the Alternative Cropping Symposium and Direct Seed Breakfasts, will lead to further water quality improvements in the Palouse River Watershed.
- **Implemented the Palouse Conservation District Supporting Sustainable Ranching on Snake River Tributaries Project ($666,666):** The Palouse Conservation District (PCD) works with livestock producers along Steptoe and Wawawai Creek, and in the Palouse Watershed to install livestock Best Management Practices (BMPs) and riparian projects. Additionally, water quality monitoring and education and outreach are included in this project.
- **Implemented the Palouse Conservation District Full Stream Ahead! Riparian Restoration Innovations on the Palouse River Project ($666,666):** Riparian buffers improve water quality, yet in artificially drained agricultural regions, water can bypass riparian soils and plant roots, reducing their capacity to remove nutrients. This multi-approach project will restore 15 ac (1.5 miles), install four beaver dam analogs (BDAs), and construct three saturated riparian buffers, a new conservation practice that facilitates riparian nitrogen removal, to improve water quality in the South Fork Palouse River Watershed.
- **Implemented the Palouse Conservation District Partnership to Restore Riparian Areas in the Lower Fourmile Creek Watershed Project ($661,541):** Riparian buffers improve water quality and ecological functions of streams. This project will restore 30 acres of riparian areas (23,000 streambank feet) in the lower Fourmile Creek Watershed, including installing up to 600 feet of streambank protection and 10 to 12 beaver dam analogues, providing technical assistance, assessing revegetation methods, installing interpretive signs, and developing place-based curriculum on riparian restoration and conservation agriculture.
- **Implemented the Palouse Conservation District Operation Residue: (Under) cover Crops & Direct Seeding on the Palouse Project ($590,716):** Palouse Conservation

District (PCD) will lead implementation of one stream mile of riparian forest buffer and 6,000 acres of direct seeding to improve water quality in Whitman County streams. A cover crop demonstration project will assist producers in improving soil health on their farms. Soil health assessment of direct seed and cover crop projects will demonstrate project effectiveness, and outreach and education programs will lead to further community investment in water quality improvements.

- **Implemented the Palouse Rock Lake Conservation District Improving Water Quality on Rebel Flat Creek Project ($468,764.00):** This project will address nonpoint pollution throughout the Rebel Flat Creek Watershed by installing 1 mile of riparian plantings; implementing 6,750 acres of conservation tillage; installing livestock best management practices; and providing education and outreach.
- **Implemented the Palouse Rock Lake Conservation District One Pass at a Time-Conservation of Pine Creek Watershed ($491,156):** This project will address nonpoint pollution throughout the Pine Creek Watershed by installing 1 mile of riparian plantings; implementing 6,750 acres of conservation tillage; and providing education and outreach to members of the community.
- **Implemented the Whitman Conservation District Palouse River Water Quality Enhancement Project ($270,000):** This project will restore and enhance approximately 25 acres of riparian area along 2,566 feet of stream on the mainstem Palouse River. This project site also contains approximately 650 linear feet of old vehicle bank stabilization, which will be removed.
- **Implemented the Whitman Conservation District North Fork of the Palouse Restoration ($240,000):** This project will restore approximately 34.1 acres of riparian area in the North Fork Palouse Watershed. In addition to riparian plantings, 30 post assisted log structures and beaver dam analogues will be installed. This project will include a 3500-foot reach of North Fork Palouse River, 3266-foot reach of Silver Creek (a tributary to North Fork Palouse River), and a 1728-foot ephemeral channel connected to Silver Creek.
- **Implemented the Whitman Conservation District South Fork Palouse River Property Protection ($490,000):** This project will acquire approximately 125 acres in the South Fork Palouse River Watershed including 3,800 feet of the South Fork Palouse River. The land acquisition will provide Watershed protection which allows the district to implement riparian planting and provide education and outreach in the community.

Partner Coordination

- **Met Regularly with the Whitman Conservation District:** Ecology worked closely with the staff of Whitman CD to identify issues, coordinate plans/projects, and provide technical assistance to the public in the region.
- **Met Regularly with the Palouse Rock Lake Conservation District:** Ecology worked closely with the staff of PRLCD to identify issues, coordinate plans/projects, and provide technical assistance to the public in the region.

- **Met Regularly with the Palouse Conservation District:** Ecology worked closely with the staff at Palouse CD to identify issues, coordinate on plans/projects, and provide technical assistance to the public in Whitman County.
- **Continued Building Partnership with the Pine Creek Conservation District:** Ecology continued developing a working relationship with the new Pine Creek CD manager to identify issues, coordinate plans/projects, and provide technical assistance to the public in Whitman County.
- **Participated on the Palouse Regional Conservation Partnership Program (RCPP):** Ecology was an active participant in the first Palouse RCPP (2016-2021), and the approved renewal of that RCPP has (2021-2027). In 2023, the Palouse CD held a successful enrollment for projects with the new funding. Combined, the two RCPPs will have contributed over $14 million towards conservation practices in the Palouse Watershed.

Pollution Identification/Watershed Evaluation:

- **Performed Comprehensive Watershed Evaluation of Spring Flat Creek:** Annual surveys were conducted during the early spring season to identify livestock and dryland agricultural water pollution issues. Work was focused primarily on the Spring Flat Creek subbasin of the Palouse.

Compliance/Technical Assistance Activities

- **Contacted Five Priority Pollution Sites:** Five new landowners with livestock or dryland agricultural water quality issues were contacted via technical and financial assistance letters. All letters were followed up with multiple phone calls (if contact number is available) throughout the year to ensure continued communication with the landowner.
- **Developed Water Quality Protection Plans for Priority Sites:** Staff set up site visits with contacted landowners and worked to develop BMP plans for these sites. The plans included riparian buffers designed to fully protect water quality.
- **Followed-up on Nonpoint WQ Complaints:** Staff continued to respond to any water quality complaints received from the public. Phone calls and/or letters may follow after staff have confirmed a water quality issue exists.

Monitoring Activities

- **Monitor Existing Sites:** Staff continued to monitor and document existing sites where water quality concerns persist.
- **Continued to partner with Palouse CD on Monitoring Work:** Palouse CD has taken the lead on a large monitoring effort in the Palouse Watershed. Ecology will continue to partner with Palouse CD on that effort.

Priority Watershed Name: Little Spokane River Watershed

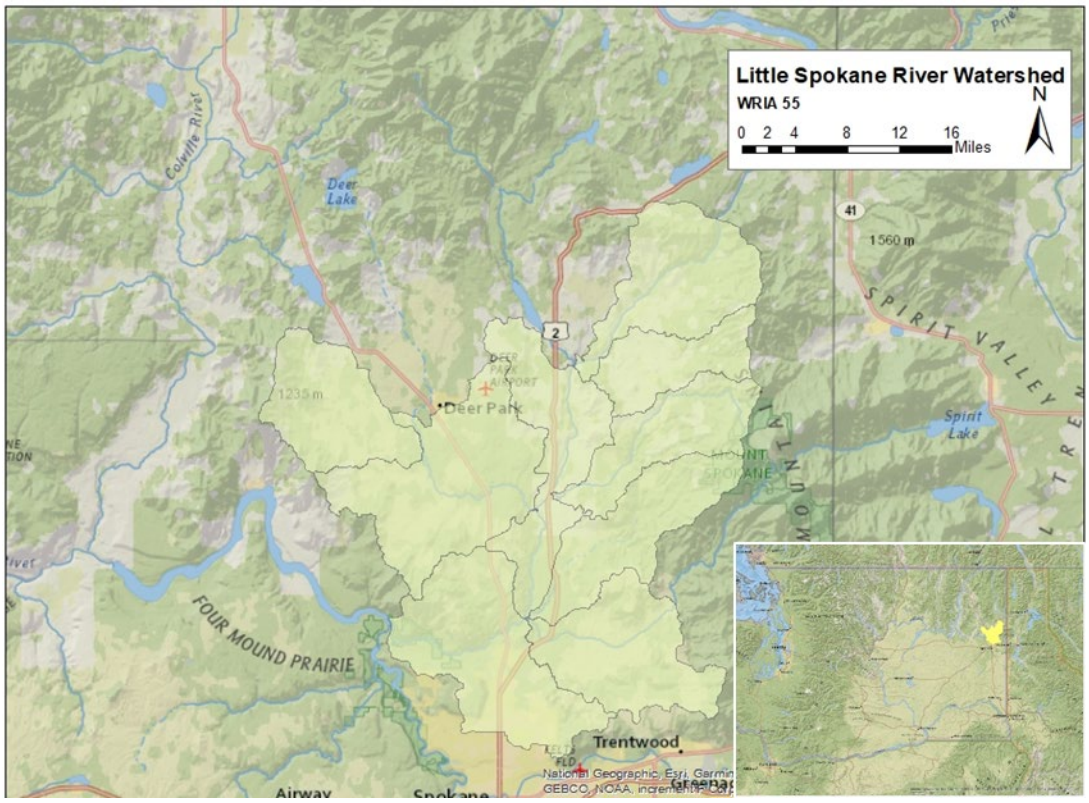


Figure 26. Map of Little Spokane River Watershed.

Implementing: Little Spokane River TMDLs for bacteria, temperature, dissolved oxygen, total phosphorus, and pH

Summary/Context Info:

Ecology finalized the Little Spokane River DO, TP, and pH TMDL and submitted it to EPA in December 2020. The TMDL was approved by EPA in January 2021. Ecology is now focused on implementing this TMDL and the 2012 fecal coliform, temperature, and turbidity TMDL. The water quality impairments in the Little Spokane are primarily due to nonpoint pollution problems. The TMDL identifies riparian health as a key to meeting water quality standards. Implementation work is focused on protecting and restoring riparian areas and upland farming practices that deliver sediment to surface water.

Priority Actions Completed in 2023:

Education and Outreach

- **Performed Comprehensive GIS Evaluation of Riparian Health**: Using aerial imagery, staff analyzed current riparian condition for each parcel adjacent to a stream in the Watershed. As improvements are made, staff can update the map and track improving

riparian health. Map can be shared with partners and other interested parties and used for a variety of different outreach exercises.

- **Performed Outreach with Friends of Little Spokane:** Ecology staff partnered with the non-profit to share information with their organization members on water quality goals and stream restoration funding opportunities.
- **Performed Outreach with The Lands Council & Gonzaga University:** Ecology staff partnered with the non-profit to better understand the efficacy of BMPs to reduce phosphorus levels.
- **Little Spokane Website Update**: Transition website information from TMDL development information to TMDL implementation tracking and reporting. Ensure website is regularly updated with information on implementation progress.

Financial Assistance

- **Implemented The Inland Northwest Land Trust, Glen Tana Land Acquisition.** Ecology used $500,000 to protect 50 acres of property in the Spokane Watershed adjacent to the Glen Tana reach of the Little Spokane River. This property acquisition is part of a larger acquisition of 1,066 acres along the Little Spokane River. This effort permanently protects a mile of the Lower Little Spokane River.
- **Implemented the Spokane Conservation District, *Spokane Riparian Establishment* Project ($283,500):** This project reestablishes flood plain function, sinuosity, and bank stability in Deadman Creek in the Little Spokane River Watershed. Issues with matching funds from a partner federal agency have delayed this project, but at the end of 2023 Ecology and Spokane Conservation District have successfully acquired enough project match to move forward with implementation.

Partner Coordination

- **Stakeholder Engagement:** Ecology continued building and maintaining positive relationships with existing stakeholders, such as working with our sister agency WDFW to develop a compliance schedule for development of a new fish hatchery facility. Engaged Watershed stakeholders and positive partnerships are vital to cultivating a synergistic environment for achieving significant water quality improvements. Additionally, Ecology is committed to engage with the Spokane Tribe of Indians and local municipalities on water quality protection measures.
- **Participating in the Voluntary Stewardship Program:** Ecology continues to meet bi-monthly with stakeholders, such as the Spokane Tribe of Indians, local agricultural producers, Spokane Municipalities, conservation districts and interest groups to find solutions to meet water quality standards.
- **Meetings with Watershed Partners and Building Funding Capacity:** Ecology staff met regularly with Watershed partners to plan and coordinate implementing best management practices that improve and protect water quality. Ecology will continue to

work on maintaining existing funding opportunities as well as support and encourage new funding opportunities for water quality improvement work.

Pollution Identification/Watershed Evaluation:

- **Performed Watershed Evaluation of Little Spokane River:** Staff conducted annual surveys in March 2023 to identify livestock and dryland agricultural water pollution issues. More than 25 sites were identified as sources of pollution.
- **Prioritized Sites for Technical Assistance:** Five new nonpoint pollution sites were prioritized and contacted for technical and financial assistance in 2023. Staff offered help to the landowner to proactively achieve compliance through riparian protection and restoration.
- **Priority Site Field Visits:** Staff made approximately five site visits and recommended specific actions to protect water quality. The meetings took place at properties with nonpoint pollution problems in the Watershed to explain water quality problems and steps needed to achieve compliance.
- **Follow up on nonpoint complaint sites:** Staff followed up by contacting valid complaint sites and scheduling site visits to provide technical and financial assistance. Ecology continued to follow-up to ensure water quality was protected at these sites.

Compliance/Technical Assistance Activities

- **Complaint Problems Resolved:** One complaint was resolved in the Little Spokane Watershed, ensuring water quality was protected.
- **Existing Priority Pollution Sites Contacted:** Some sites in the Little Spokane Watershed have been previously contacted but have yet to make the needed changes to protect water quality. Ecology contacted at least three of those landowners and again offered technical and financial assistance.

Monitoring Activities

- **Tracking Nonpoint BMP Implementation:** Ecology staff partnered with Gonzaga University students and The Lands Council to monitor the efficacy of BMPs to reduce total Phosphorus, increase sinuosity and bank stability. The project is looking at the application of Beaver Dam Analogs and has a robust QAPP and adaptive management plan.
- **Establish Photo Monitoring Points**: Staff established photo monitoring points at pollution problem sites and will document riparian condition improvements over time.

Priority Watershed Name: Moses Lake

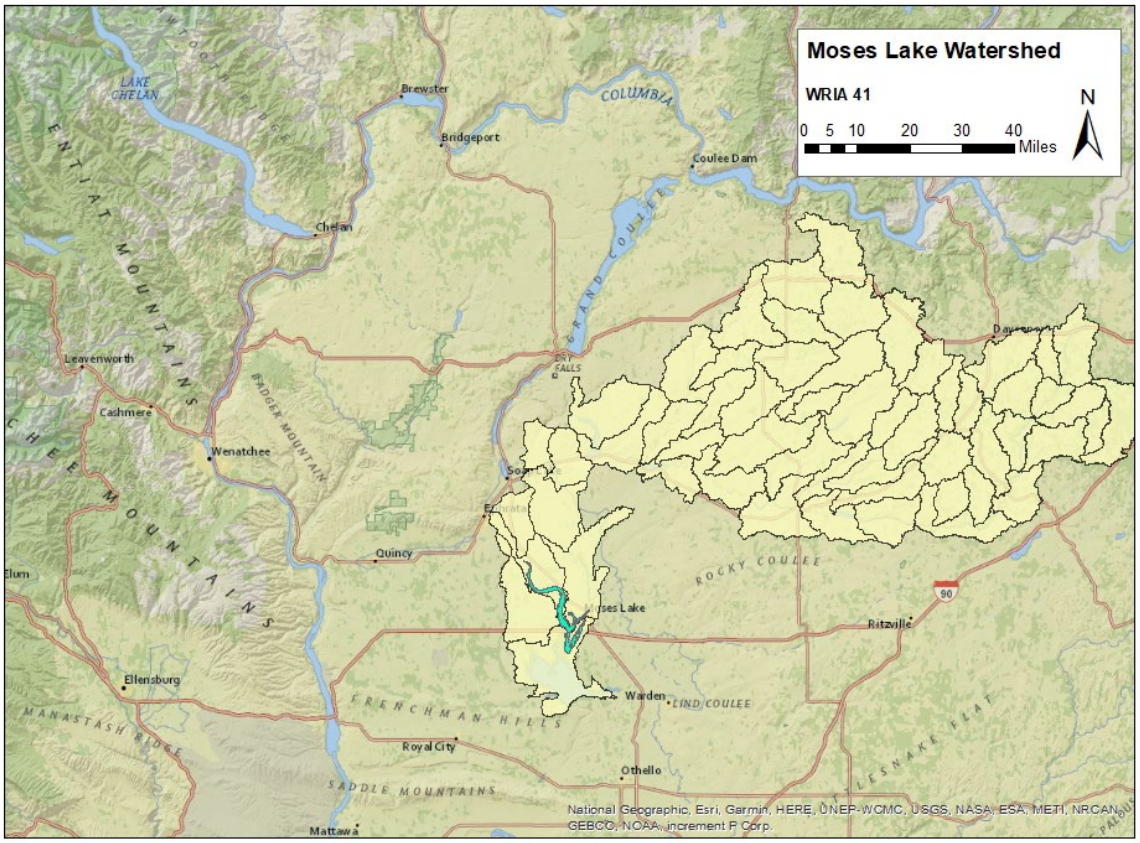


Figure 27. Map of the Moses Lake Watershed.

Implementing: Other Locally Led Partnership

Summary/Context Info:

Ecology is a member of the Moses Lake Watershed Council (MLWC). The Columbia Basin Conservation District (CBCD, formerly the Grant County Conservation District) leads the collaborative entity, formed in 2018 with the purpose of facilitating locally led water quality improvements in the Moses Lake Watershed. The MLWC has grown to include a diverse group of local, state, and federal stakeholders, including the Washington State Department of Ecology (Ecology), Moses Lake Irrigation and Rehabilitation District, Grant County Health District, City of Moses Lake, and the U.S. Bureau of Reclamation (USBR), along with representation from local tourism, businesses, and concerned citizens.

The MLWC was formed in direct response to persistent harmful algal blooms during summer months that impairs the public's use of Moses Lake and poses a great risk to public health and the health of pets and livestock. The MLWC is building on several decades of efforts studying Moses Lake's poor water quality. Work conducted by the University of Washington and the EPA Clean Lakes Project in the 1980's generated a large body of data and recommendations for improving water quality. However, long-term management plans for the lake and Watershed

were not developed or implemented. Ecology issued a draft Total Maximum Daily Load (TMDL) plan in 2002, but the TMDL process was suspended in 2004 due to a lack of political and community support. Instead of resuming the TMDL process, Ecology helped initiate a locally driven effort in 2019 to address sources of phosphorus pollution.

Priority Actions Completed in 2023:

Education and Outreach

- **Implemented Public Information and Outreach Plan:** Ecology and partners continued to implement an Information and Outreach Plan. Websites, such as Blue-Green Algae FAQs | MLWC (moseslakeWatershed.org)[13] and Blue-Green Algae | Granthealth.org[14] and Freshwater algae control - Washington State Department of Ecology[15], were developed with information on cyanobacteria and how to report an algae bloom, along with information and resources for residents to take action to protect the lake.
- **Conservation District Education and Outreach Actions:** As provided in the following section, Ecology funds projects that have an education and outreach component. Several education and outreach workshops and events took place because of this funding in the Moses Lake Watershed in 2023.

Financial Assistance

- **Implemented the Moses Lake Shoreline Restoration and Nutrient Reduction Project ($249,979.00):** This project will develop and implement a shoreline nutrient assessment technical assistance program for shoreline property owners, construct a shoreline restoration exhibit, conduct education, and outreach activities, and continue to support a USGS groundwater study of groundwater phosphorus contributions to Moses Lake and identify mitigation techniques.
- **Implemented the Community Project Funding Moses Lake Water Quality ($3,100,000):** Ecology staff helped the Watershed Council secure federal funding for improving Moses Lake's water quality to reduce occurrences of harmful algal blooms. Lanthanum-modified bentonite clay and other technologies will be used in deeper areas of the Rocky Ford Arm to prevent the release of phosphorus and mitigate approximately 10,000 pounds of internal phosphorus loading.

Partner Coordination

- **Participate in the Moses Lake Watershed Council:** The MLWC meets monthly. Subcommittees meet outside the regular meeting schedule to evaluate emerging technologies, data and monitoring, information and outreach, grants, and legislative activities. Due to a vacancy in the Eastern Regional Office, participation was limited to

[13] https://www.moseslakeWatershed.org/faq
[14] https://granthealth.org/blue-green-algae/
[15] https://ecology.wa.gov/Water-Shorelines/Water-quality/Freshwater/Freshwater-algae-control

the first half of 2023. The Council continues to work on water quality improvement efforts. The position will be rehired, and Ecology active participation will continue.

Pollution Identification/Watershed Evaluation

- We are not currently performing the site-specific watershed evaluation work for Moses Lake we perform elsewhere in the region. Instead, staff are working with the Moses Lake Watershed Council to develop and implement a lake management plan. The plan will identify lake specific actions needed to address sources of known pollutant loading to the lake. These include municipal stormwater, NPDES permitted fish hatcheries, carp bioturbation, Crab Creek nonpoint loading, and septic system issues.

Compliance/Technical Assistance Activities

- **Ensured Trout Lodge Agreed Order is Implemented:** Ecology continued to work with Troutlodge Inc. to implement a 2020 Agreed Order for their two fish hatcheries (ELM 1 and ELM 2) on Rocky Ford Creek. The Order requires Troutlodge to evaluate potential sources of nutrient loading to Rocky Ford Creek from the hatcheries. Since issuing the Order, Troutlodge has developed a Quality Assurance Project Plan and submitted annual monitoring reports based on nutrient and flow data. Under the new Finfish General Permit (reissued in October 2021), Troutlodge has now expanded their sampling to include additional nutrient parameters. Their first full year of new data collection occurred in 2023.

Monitoring Activities

- Ecology staff did not conduct monitoring within this Watershed.

Priority Watershed Name: Whitman Snake Tributaries

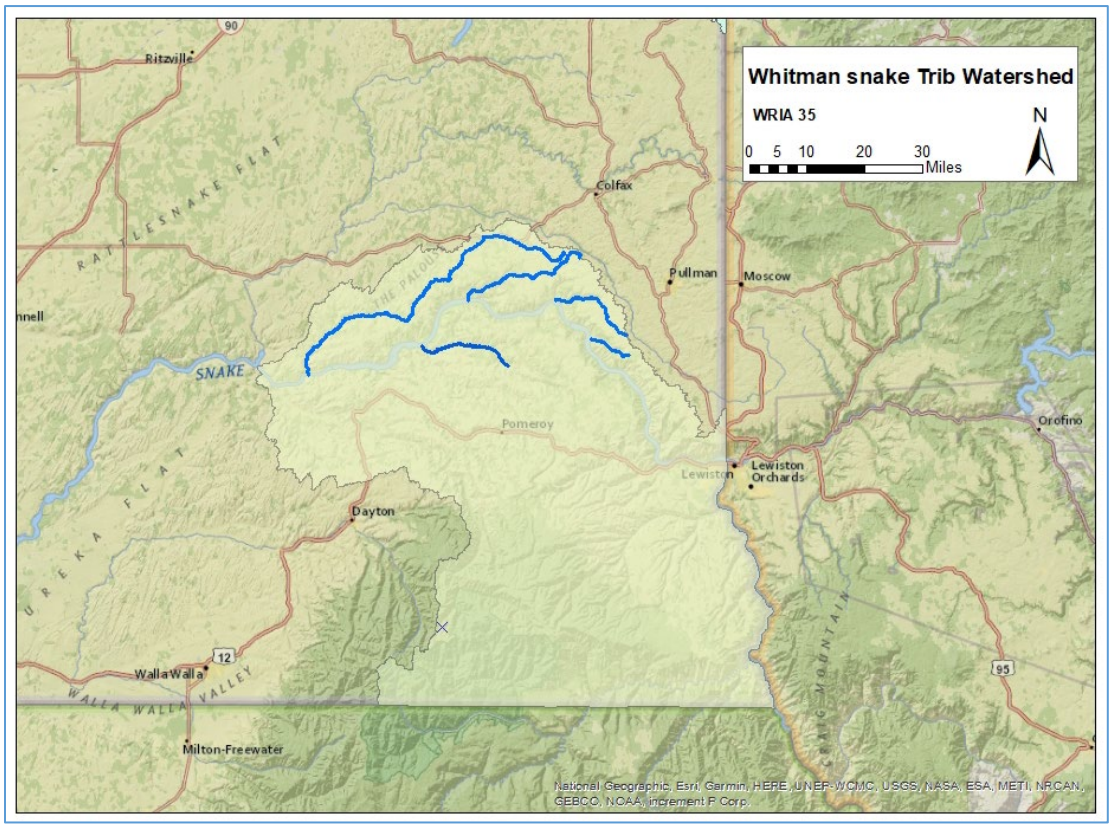


Figure 28. Map of Snake River Tributaries (Steptoe Creek, Almota Creek and Alkali Flat Creek).

Implementing: Steptoe Creek STI, Early Implementation Actions for Almota Creek and Alkali Flat Creek STIs (In development).

Summary/Context Info:

A number of northern Snake River tributaries in Whitman County have been identified as Category 5 on the Water Quality Assessment. Some Watersheds currently have established Straight to Implementation Strategies in place (Steptoe Creek) and others currently in development (Almota Creek and Alkali Flat Creek). These northern tributaries are largely dominated by agricultural land-use with livestock issues often impacting the riparian habitat. Ecology has continued to work with local stakeholders through project implementation and technical assistance to further combat these issues.

Priority Actions Completed in 2023:

Education and Outreach

- **Partnered with the Palouse Conservation District on Conservation Tillage Education**: Through grant funds PCD hosted various presentations, tours, and outreach materials for local producers on conservation tillage and riparian buffers. PCD has utilized multiple

Ecology grants to develop a conservation tillage cost-share program which is well advertised throughout the district's footprint and beyond.

- **Partnered with the Whitman Conservation on Outreach to Students**: District staff visited K-12th grade classrooms giving presentations on restoration practices while university students participated in volunteer planting events.

Financial Assistance

- **Implementing the Whitman Conservation District, *Water Quality Enhancement through Restoration of Function Project* ($210,000):** This active grant continues to build on previous efforts to exclude livestock, establish riparian buffers, and install instream structures, to improve water quality throughout the Alkali Flat Creek Watershed.
- **Implementing the Palouse Conservation District, *Supporting Sustainable Ranching on Snake River Tributaries* ($500,000):** The PCD is working with livestock producers along both Steptoe Creek and Wawawai Canyon to install livestock BMPs, increase monitoring, and provide education/outreach to local livestock producers. The grant provides funding to help install riparian buffers at livestock priority pollution sites identified by Ecology staff.
- **Implemented the Whitman Conservation District *Alkali Flat Creek Water Quality Enhancement* ($280,000):** This project will restore a minimum of 21 acres of riparian buffer and 9,250 stream feet across the Alkali Flat Creek Watershed. In addition to riparian plantings, 40 post assisted log structures will be installed and the conservation district will provide education and outreach to the community.
- **Implemented the Palouse Conservation District *Alkali Flat Creek Property Protection* ($1,000,000):** This project will protect 437 acres adjacent to Alkali Flat Creek. Preserving this property is important for showcasing conservation practices that promote soil health and reestablish and protect native prairie, riparian species, anadromous fish, and water quality. This project was enhanced with additional Ecology funds to make up for changes in property values. The project is to be implemented in 2024.
- **Implemented the Palouse Conservation District *Pioneer Stock Farms Critical Land Acquisition* ($140,565):** This project will support the existing Ecology grant, Alkali Flat Creek Property Protection. Palouse Conservation District will acquire 437 acres along Alkali Flat Creek.

Partner Coordination

- **Hosted Meetings with the Whitman Conservation District:** Ecology worked closely with the staff of Whitman CD to identify issues, coordinate plans/projects, and provide technical assistance to the public in the region.
- **Hosted Meetings with the Palouse Conservation District:** While much of the work the Palouse CD revolves around the Palouse Watershed, their district falls within the boundaries of both Steptoe Creek and Wawawai Canyon. Ecology worked extensively with PCD staff through various project implementation, technical assistance, and events.

- **Participated with the Snake River Salmon Recovery Board:** Ecology consistently worked with various stakeholders involved in salmon recovery efforts in the region, including Whitman County Snake River tributaries. As a lead entity voting member and a member of the Regional Technical Team, Ecology assists with the SRSRB annual grant round and provides technical assistance for water quality issues as they relate to salmon recovery and habitat restoration.
- **Participated with the Whitman Voluntary Stewardship Program (VSP) Work Group**: Ecology attended meetings, met local representatives and community members from Whitman County.

Pollution Identification/Watershed Evaluation:

- **Performed Comprehensive Watershed Evaluation:** Annual surveys were conducted during the early spring season that identified livestock water pollution issues. Work was focused on a majority of Snake River tributaries including Alkali Flat Creek, Penawawa Creek, Almota Creek, Wawawai Canyon, and their associated tributaries. Approximately 20 pollution sites were identified in these Watersheds.
- **Prioritize Pollution Sites for Assistance**: Two new sites were prioritized for contact in 2023. Sites were evaluated along with other Snake River Watershed tributaries to determine new technical and financial letters to be sent out to landowners with water quality pollution issues.

Compliance/Technical Assistance Activities

- **Ensure Final Steptoe Order Implementation**: An administrative order was sent to a landowner in the Steptoe Creek Watershed in 2019 addressing ongoing livestock pollution issues. Since the order was sent, Ecology, along with the partnership of the Palouse CD, have developed a plan to address the site. Most of the riparian buffer and other elements have been implemented. Additional livestock exclusion fencing, and riparian planting was conducted in 2022. Except for emergency water gaps, livestock exclusion was achieved in 2023.
- **Responded to Nonpoint Complaints:** ERO responds to all water quality related complaints in these Watersheds. If pollution site is identified to be of concern, ERO sends a follow-up technical assistance letter to further address the water quality concern.
- **Contacted New Priority Pollution Sites for Assistance:** Three new landowners with livestock water quality issues were contacted via technical and financial assistance letters. All letters are followed up with multiple phone calls (if contact number is available) throughout the year to ensure BMP plans are developed and implemented.

Monitoring Activities

- **Established Photo Monitoring Points:** Staff established photo monitoring points at pollution problem sites and document riparian condition improvements over time.

- **Continued to Partner with Palouse CD on Monitoring Work:** Palouse CD has taken the lead on a large monitoring effort on the Palouse Watershed and Steptoe Creek. Ecology will continue to partner with Palouse CD on that effort.

Priority Watershed Name: Blue Mountain Snake River Tributaries

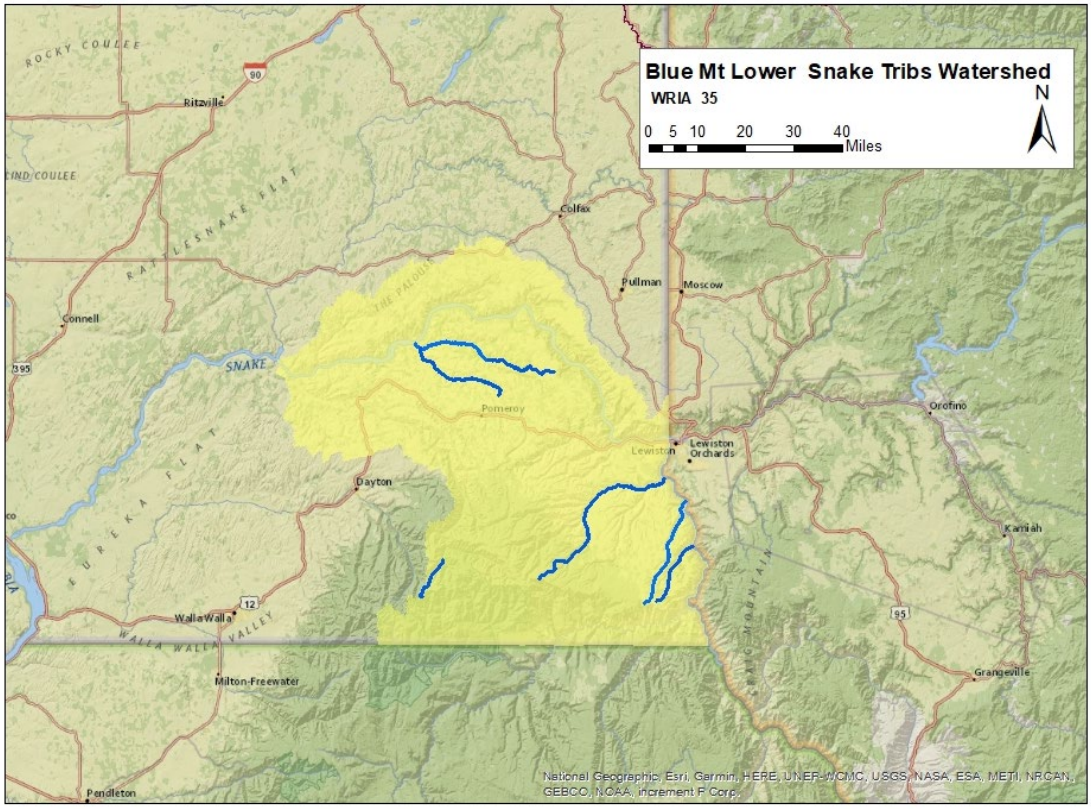


Figure 29. Map of Snake River Tributaries (Asotin Creek, Alpowa Creek, Deadman Creek, Meadow Creek, Tenmile Creek and Couse Creek).

Implementing: Asotin Creek STI and Alpowa Creek, Deadman and Meadow Creeks, Tenmile Creek, and Couse Creek 4b projects.

Summary/Context Info:

The Blue Mountain/Lower Snake tributaries comprise all the Snake River tributaries ranging across Columbia, Garfield, and Asotin Counties except for the Tucannon River. These drainages primarily originate in the Blue Mountains or foothills surrounding the region. The headwaters and upstream sections are often forested with minimal land-use and switching to agriculturally dominated lower reaches. Livestock grazing remains an ongoing concern throughout the Watershed. Ecology has initiated 4b Straight to Implementation strategies in these Watersheds, given the lack of point sources, and significant progress is being made to address well understood nonpoint pollution issues. Ecology is actively working in these Watersheds to continue to implement projects and work with stakeholders to address these issues. A monitoring effort on these 4b Straight to Implementation waterways has begun and will continue into 2024 to monitor temperature, E. coli and pH for a full water year. This monitoring

effort will help to inform where water quality impairments continue to exist and advise where continued resources are required.

Priority Actions Completed in 2023:

Education and Outreach

- **Active Participant of Snake River Salmon Recovery Board Meetings**: Ecology staff presented and assisted with local project stakeholders on salmon recovery projects that interact with water quality BMPs. Staff assisted with identifying water quality improvements for projects looking to protect and restore salmonid habitat.
- **Contributed to Asotin Conservation District's outreach publication "The Dirt"***:* Ecology staff wrote a project description for the monitoring effort on 4b classified waterways in the area (Deadman Creek, Meadow Creek, Alpowa Creek, Asotin Creek, Tenmile Creek, and Couse Creek).

Financial Assistance

- **Implement the Asotin County Conservation District *Water Quality Enhancement Project* ($333,333):** This grant implements various BMPs across 40,000 stream feet of Asotin County tributaries including a minimum of 20,000 plantings. BMPs include riparian buffers, streambank stabilization, livestock exclusion, and direct seeding. The project supports implementation at priority sites identified via watershed evaluations. This grant is active through the end of 2024.

Partner Coordination

- **Participated on the Snake River Salmon Recovery Board RTT**: Ecology consistently works with various stakeholders involved in salmon recovery efforts in the region. As a lead entity voting member and a member of the Regional Technical Team, Ecology assists with the SRSRB annual grant round and provides technical assistance for water quality issues as they relate to salmon recovery and habitat restoration.
- **Participated in Snake River Local Working Group Meeting**: Ecology staff participate in this basin-wide working group focused on challenges and solutions to the greater Snake River Watersheds.
- **Hosted Asotin County Conservation District Coordination Meetings:** Ecology works closely with the staff at Asotin CD to identify issues, coordinate plans/projects, and provide technical assistance to the public in Asotin County.
- **Hosted Pomeroy Conservation District Coordination Meetings:** Ecology works closely with the staff at Pomeroy CD to identify issues, coordinate plans/projects, and provide technical assistance to the public in Garfield County.
- **Partnered with the Columbia Conservation District:** Ecology is developing a working relationship with CD staff to identify issues, coordinate plans/projects, and provide technical assistance to the public in Columbia County.

Pollution Identification/Watershed Evaluation:

- **Perform Comprehensive Watershed Evaluation:** Annual surveys were conducted during the early spring season to identify livestock water pollution issues. Work was focused on a majority of Snake River tributaries including Deadman Creek, Meadow Creek, Alpowa Creek, Asotin Creek, Tenmile Creek, Couse Creek, and associated tributaries.
- **Perform Water Quality Monitoring**: Staff will monitor water quality parameters (E. coli, pH, temperature) in six Snake River 4b (Straight to Implementation) Watersheds. Straight to Implementation plans have been underway for these waterways and require reevaluation following implementation of best management practices. This effort will help to identify where impairments continue to exist for future focus areas.

Compliance/Technical Assistance Activities

- **Followed-up on Nonpoint WQ Complaints:** Staff continued to respond to any water quality complaints received from the public. Phone calls and/or letters may follow after staff have confirmed a water quality issue exists.
- **Contact New Priority Pollution Sites for Assistance:** Two new landowners with livestock water quality issues were contacted via technical and financial assistance letters. All letters are followed up with multiple phone calls (if contact number is available) throughout the year to ensure BMP plans are developed and implemented.

Monitoring Activities

- **Established Photo Monitoring Points:** Staff established photo monitoring points at pollution problem sites and documented riparian condition improvements over time.
- **Developed and Implemented Monitoring Program on 4b Waterways:** A monitoring effort on Deadman Creek, Meadow Creek, Alpowa Creek, Asotin Creek (sample locations at mouth of Asotin Creek, George Creek, as well as North and South Forks), Tenmile Creek, and Couse Creek the 4b listed Straight to Implementation waterways was begun following QAPP development. This monitoring effort will continue through 2024 for data collection representing a full water year. Continuous temperature loggers are deployed at each site location; and twice a month pH measurements and *E. coli* samples are taken.

Priority Watershed Name: Walla Walla Watershed

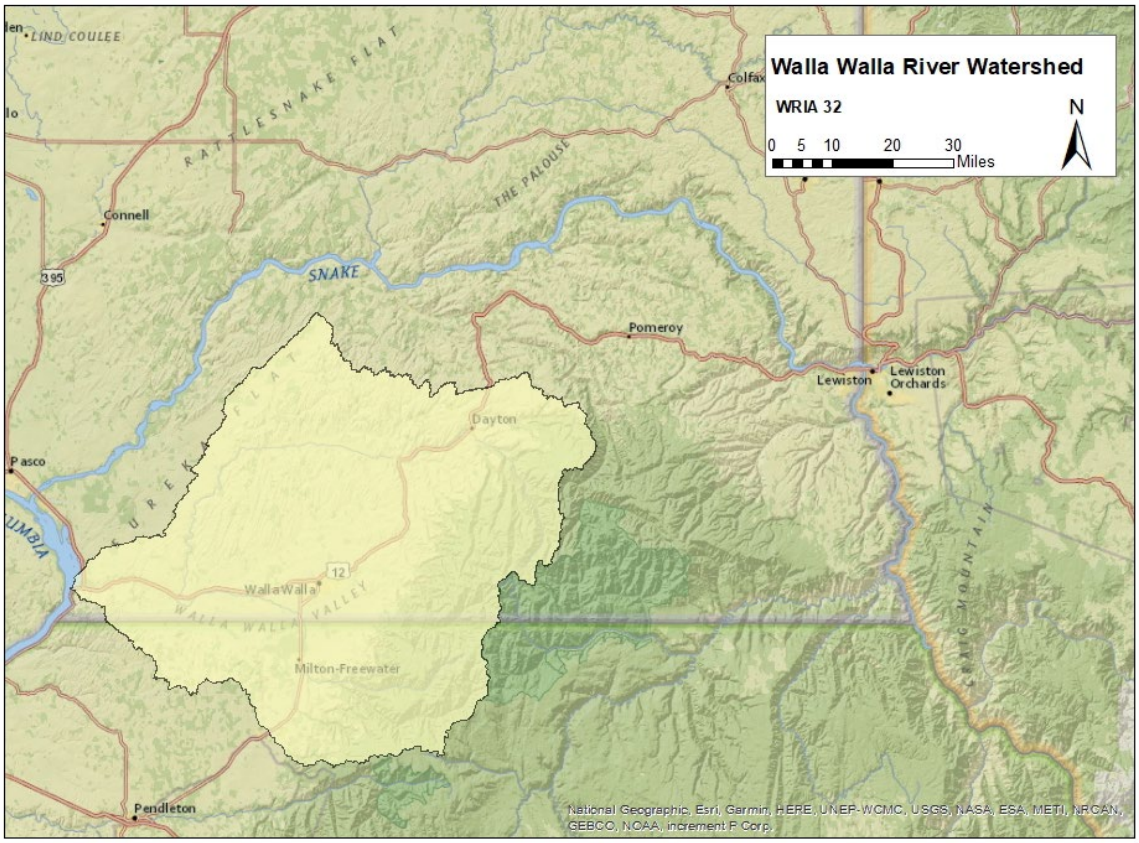


Figure 30. Map of the Walla Walla River Watershed.

Implementing: Walla Walla River Watershed Multiparameter TMDLs (Bacteria, Temperature, pH, DO, Toxics).

Summary/Context Info:

The Eastern Region is continuing to implement the Walla Walla Watershed Multiparameter TMDL Water Quality Implementation Plan. A recent effectiveness monitoring study was completed in the Watershed. Ecology has been active throughout the Watershed through collaborating with stakeholders, funding restoration projects, and identifying new and ongoing water quality concern sites through annual watershed evaluations. The evaluations identify parcels with pollution problems. Regional staff then work with landowners and local partners to implement appropriately sized riparian buffers.

Priority Actions Completed in 2023:

Education and Outreach

- **Participated in Return to the River event**: Hosted by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) and Walla Walla Community College's Water and Environmental Center, this event involved over 25 participating organizations,

institutions, and agencies. The free event included salmon releases into Mill Creek provided by the Salmon in Schools Program.

- **Presented on Water Quality in the Walla Walla Basin:** Delivered presentation to the Walla Walla 2050 Basin Advisory Committee meeting. Worked with Oregon Department of Environmental Quality to give an overview of water quality policy and science, coupled with a background on water quality concerns known in the area.
- **Participated in Policy, Funding and Outreach (PFO):** PFO is a subgroup within the Walla Walla 2050 effort. This work group is comprised of local organizations and interested community members, focused on implementing public engagement and education.
- **Installed Touchet River Riparian Signs**: Walla Walla County Conservation District and Ecology installed educational signs along the Touchet River where newly established buffers were implemented.

Financial Assistance

- **Completed the Walla Walla County Conservation District, *Canopy Cover Improvements on the Touchet River Project* ($170,604):** This grant improved riparian habitat and water quality along the Touchet River by removing invasive false indigo and planting 3 miles of stream, further improving temperature issues.
- **Completed the Kooskooskie Commons, *Improving Water Quality in Yellowhawk Creek, and W. Little Walla Walla River Project* ($159,691):** This grant implements riparian buffers along Yellowhawk Creek and the West Little Walla Walla River to address temperature and fecal coliform impairments. In addition, the funding continues to monitor water quality throughout the Watershed and performs education and outreach in the Walla Walla region.
- **Implemented the Walla Walla County Conservation District, *Last Chance Road Restoration at RM 35.5 Project* ($347,217):** This grant was identified on the FY2022 funding offer list. The project continues to restore the Walla Walla River by installing bio-engineered structures to increase pooling and planting trees to cool the water temperature in the reach.
- **Implemented the Walla Walla County Conservation District, *Canopy Cover Improvements on the Touchet River – Phase 2 Project* ($312,864):** This grant continues work to address temperature issues in the Touchet River by removing invasive false indigo and planting 2.5 miles of riparian vegetation. This grant is active through 2025.
- **Implement the Kooskooskie Commons, *Water Quality Improvements on Yellowhawk Creek Project* ($317,886):** This grant supports implementation of a riparian restoration program along Yellowhawk Creek and the Walla Walla River to address temperature and fecal coliform impairments resulting from legacy agricultural practices. Kooskooskie Commons will install native riparian buffers, monitor water quality, perform public outreach, and explore land trust easements for long-term protection of riparian areas and water trust agreements to protect flows and cold-water inputs to the stream. This grant is active through 2025.

Partner Coordination

- **Hosted Meetings with the Walla Walla County Conservation District**: Ecology staff work closely with the conservation district staff in planning and implementing Ecology grant funded projects.
- **Participated on the Snake River Salmon Recovery Board Technical Team**: Ecology works with various stakeholders involved in salmon recovery efforts in Walla Walla. As a lead entity voting member and a member of the Regional Technical Team, Ecology assists with the SRSRB annual grants and provides technical assistance to the group for water quality issues.
- **Participated in the Snake River Local Working Group**: Ecology staff participate in this basin-wide working group focused on challenges and solutions to the greater Snake River Watersheds.
- **Participated in Walla Walla 2050 Efforts**: Ecology's Office of the Columbia River is partnering with local stakeholders in the Walla Walla Watershed to develop new ways to protect water resources, water quality, and habitat. Ecology staff participated in workgroups and drafting of plans focused on water quality aspects of this effort.

Pollution Identification/Watershed Evaluation:

- **Performed Annual Watershed Evaluations**: Surveys were conducted during the early spring season of 2023 that identified livestock water pollution issues. Work was focused on the Walla Walla River main stem and various tributaries including Pine Creek, Mud Creek, West Little Walla Walla River, East Little Walla Walla River, Garrison Creek, Cottonwood Creek, Russel Creek, Dry Creek, Spring Creek, Coppei Creek, Touchet River, and Patit Creek.

Compliance/Technical Assistance Activities

- **Followed-up on Nonpoint Complaint Sites**: Contacted valid complaint sites with nonpoint pollution issues and scheduled site visits that provided technical and financial assistance. Phone calls and/or letters followed with the goal of developing a plan for water quality protection and implementing the plan.
- **Contacted Three Priority Pollution Sites**: Three new landowners with livestock water quality issues were contacted via technical and financial assistance letters. All letters were followed up with multiple phone calls (if contact number is available) throughout the year to ensure continued communication with the landowner.

Monitoring Activities

- **Partnered with Kooskooskie Commons to Collect Baseline Water Quality Data**: Yellowhawk Creek, Caldwell Creek, Russell Creek, Whitney and Lasiter Spring Creek, and the West Little Walla Walla Creek were monitored. The hope is to continue examining this unique Watershed and spring upwelling effects on temperature, DO, pH, conductivity, turbidity, and fecal coliform.

3.1.3 Complaint Response

Nonpoint specialists across the state use a similar approach to complaint response as in Watershed evaluation work. In contrast to watershed evaluation work, in which nonpoint staff have focal Watersheds they work within, staff respond to environmental complaints within all Watersheds. We first verify the complaint in the field by confirming the water quality problem. We then document the water quality problems and reach out to the owner of the site offering technical and financial assistance to implement appropriate fixes. Our regulatory tools serve as a backstop if water quality pollution problems cannot be addressed with proactive assistance.

During 2023, Ecology responded to a multitude of nonpoint source pollution related complaints received by our agency. Complaints, and follow-up to complaints, were tracked in the agency's Environmental Reporting and Tracking System (ERTS). Ecology received a variety of complaints on a wide range of activities including:

- Livestock
- Dairy/Waste
- Debris/Garbage
- Mud/silt/sediment/turbidity
- Herbicide/pesticide application
- Fertilizer
- Manure
- Tillage Pollution
- Stream Dredging

In total, Ecology nonpoint staff responded to over 45 agriculture-related ERTS complaints and received over 228 other types of complaints across the state.

3.1.4 Support No Discharge Zone Implementation for Puget Sound

In 2023, Ecology continued to implement the Puget Sound Vessel Sewage No Discharge Zone (NDZ) rule. Adopted on April 9, 2018, and effective from May 10, 2018, under Chapter 173-228 WAC). The NDZ includes marine waters of Washington State inward from the line between New Dungeness Lighthouse and the Discovery Island Lighthouse to the Canadian border, and fresh waters of Lake Washington, Lake Union, and the connecting waters between and to Puget Sound.

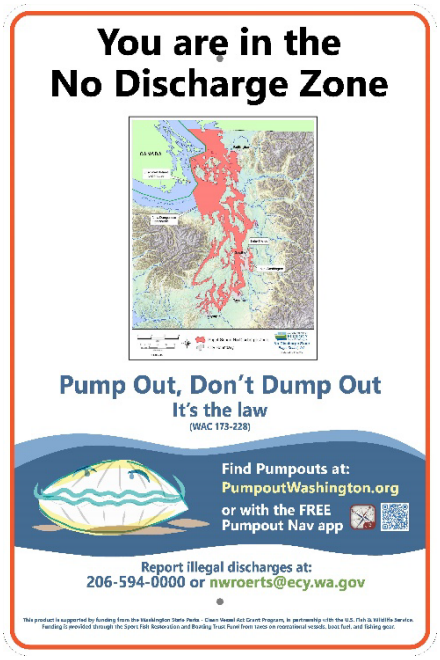


Image 4. No Discharge Zone sign used to educate boaters accessing Puget Sound.

The NDZ prohibits the discharge of sewage, treated or untreated, from vessels within the zone. All vessels must store their sewage until it can be safely disposed of at an onshore or mobile pumpout facility or until they are outside the NDZ and beyond three miles from shore. The NDZ Rule included a delayed implementation for certain commercial vessels until May 10, 2023, to comply due to the more extensive retrofits and costs. These include tugboats, commercial fishing boats, small commercial passenger vessels and NOAA research and survey vessels. As of May 10, 2023, it is illegal for all types of vessels to discharge sewage into Puget Sound. Ecology has actively reached out to the commercial vessel sector to ensure compliance with the rule and has provided detailed information on pumpout options available for these vessels.

Outreach and Education:
To ensure compliance and raise awareness about the NDZ, Ecology continues to employ multiple outreach strategies to effectively communicate NDZ messages to the boating community.

NDZ Committee Leadership: Ecology leads two committees to facilitate the implementation of the NDZ and collaborates closely with partners to disseminate information about the rule.

Pump Out, Don't Dump Out Campaign: Ecology continued to implement the Pump Out, Don't Dump Out campaign[16] over the spring and summer of 2023. This campaign used social media, magazine advertisements, infographics (visually describing why the NDZ matters), a video[17], blog post and the existing Pumpout Nav app[18] to educate boaters about the importance of the NDZ. The updated Pumpout Nav app shows the NDZ boundary and rule. The program's website

[16] https://ecology.wa.gov/Water-Shorelines/Puget-Sound/No-discharge-zone/pump-out-dont-dump-out
[17] https://youtu.be/wIwd37N1l4s
[18] https://apps.apple.com/us/app/pumpout-nav/id1148752109.

provided up-to-date information and resources. Interactive content on social media, such as quizzes and infographics helped engage visitors and reinforced key messages.

Boating Events Outreach: Ecology provided information about the NDZ and resources at various virtual boating workshops and attended numerous boating events, such as the Sea Fair Fleet Week, Seattle Boat Show, Anacortes Boat Show, Wooden boat show and many more. NDZ information booths were set up to distribute educational materials and answer boaters' questions.

Image 5. No Discharge Zone booth at the Seattle Boat Show.

Signage and Educational Materials: Ecology has printed and distributed about 600 aluminum signs of various sizes[19] to marinas and boat launch facilities free of charge thanks to the Clean Vessel Act grant funding. These signs serve as constant reminders to boaters to comply with the NDZ.

[19] https://ecology.wa.gov/Blog/Posts/September-2021/There-s-a-new-sign-for-a-healthier-Puget-Sound

Image 6. Two recipients of No Discharge Zone signage.

Additionally, thousands of educational materials, including Zip ties, placemats, rack cards, and brochures, were handed out to marinas for their tenants as well as boaters at boating events. These materials provided clear information on NDZ rule, and steps boaters could take to comply.

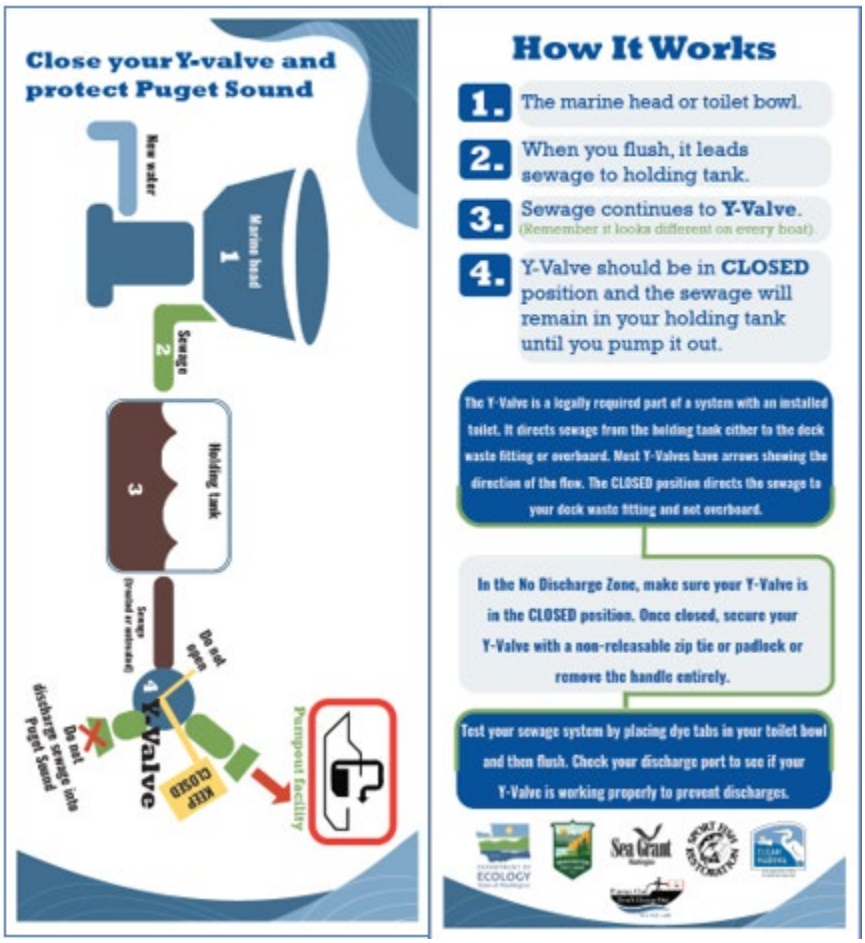


Image 7. An example double-sided No Discharge Zone brochure.

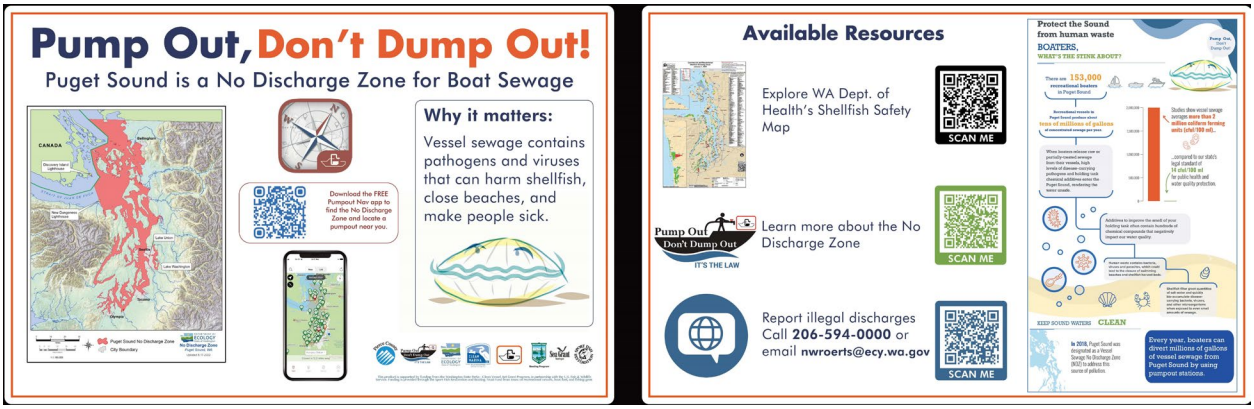


Image 8. Placemat used to educate boaters about the No Discharge Zone.

Buoy Stickers: In collaboration with State Parks and the Department of Natural Resources, Ecology printed and distributed 700 buoy stickers for posting on mooring buoys in Puget Sound.

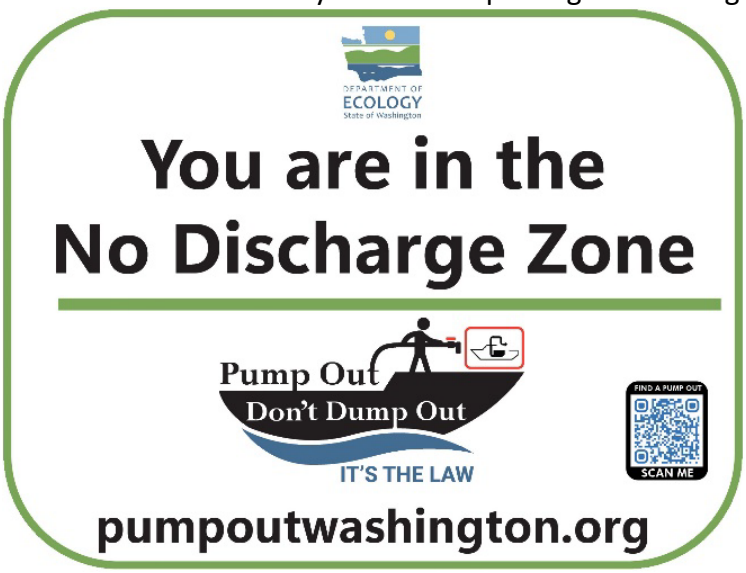


Image 9. Buoy Stickers posted at mooring buoys in Puget Sound.

Y-Valve Education Pilot Program: Ecology developed the resources needed to implement the Y-Valve Education Pilot Program[20]. The program is designed to help participating marinas and yacht clubs educate boaters about their Y-Valves, marine sanitation devices, and best practices for managing blackwater. Complimentary resources such as dye tabs, zip ties, sample NDZ lease language and signage are provided to participating marinas and yacht clubs. The program is scheduled for full implementation in the 2024 boating season, with several marinas and yacht clubs already recruited to participate.

[20] https://ecology.wa.gov/Water-Shorelines/Puget-Sound/No-discharge-zone/pump-out-dont-dump-out/Y-Valve-education-pilot

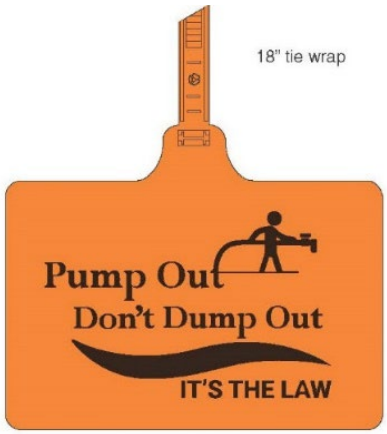


Image 10. Example of branded zip tie.

Image 11. Example of Dye tablets.

Advertisements in Boating Magazines: Ecology placed a series of engaging and informative advertisements in popular boating magazines. These ads highlighted the importance of NDZ compliance and directed boaters to resources for more information.

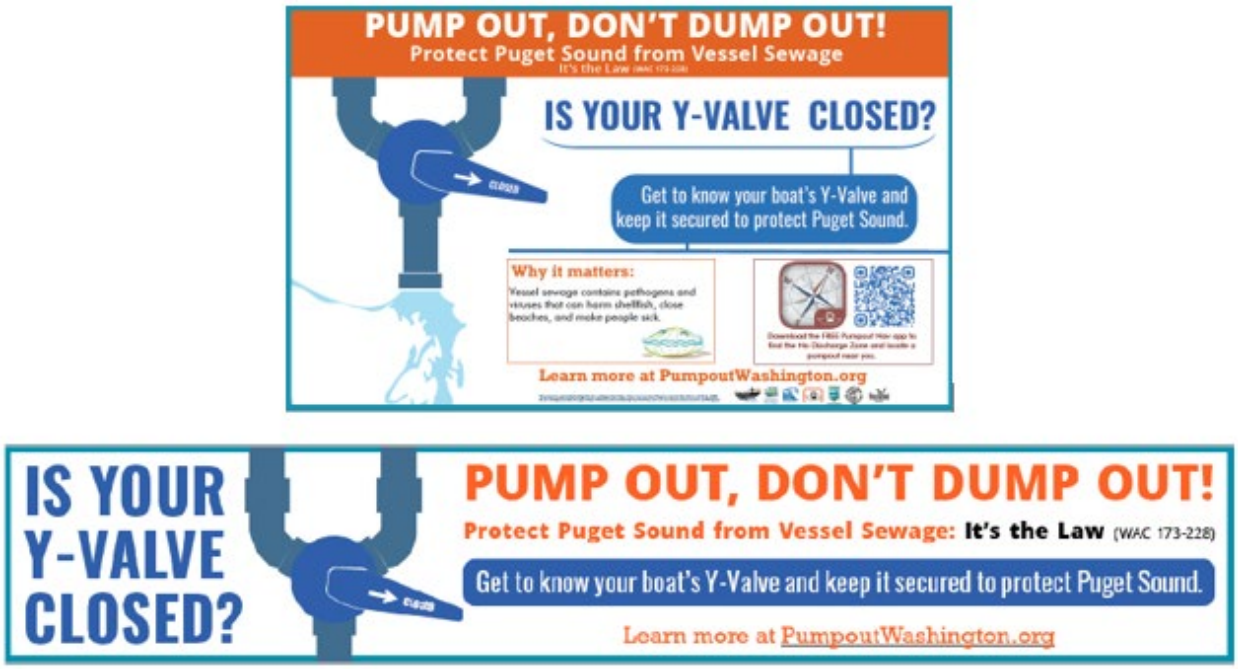


Image 12. Examples of print and web magazine advertisements.

The No Discharge Zone Education and Outreach Program successfully raised awareness and promoted compliance with NDZ rule among boaters. By using a multi-faceted outreach approach, the program effectively communicated the importance of protecting Puget Sound from vessel sewage discharge. Continued efforts and ongoing engagement with the boating community is crucial in maintaining the momentum and ensuring the long-term success of the NDZ rule.

NDZ Enforcement

In 2021, Ecology finalized the first NDZ Enforcement Strategy which includes an Enforcement Plan, supporting documents such as an example County marine sewage ordinance, and suggestions for how each partner agency could play a role. Ecology also provided training to our SWRO and NWRO ERTS Coordinators, so they are better equipped to ask vessel-specific questions when documenting a report of potential or actual vessel sewage discharge within the NDZ. In 2022, Ecology worked with municipalities to conduct education and outreach as well as monetary penalties in response to several vessel discharge reports. In 2023, Ecology continued to train Ecology staff as well as conduct education and outreach to municipalities on vessel discharge reports. Ecology receives reports of vessel sewage discharges and uses the NDZ Enforcement Strategy approach in response, focusing first on education followed by escalation for repeat violations, based on evidence.

More information about the Puget Sound NDZ, including guidance for recreational and commercial boaters, can be found on the NDZ webpage[21].

Image 13. No Discharge Zone logo created by Department of Ecology.

3.1.5 Support implementation of the Dairy Nutrient Management Program; Ecology and WSDA continue to work on the gaps identified in the Dairy Nutrient Management Act

The Department of Ecology (Ecology) and Washington State Department of Agriculture (WSDA) continued to operate under a Memorandum of Understanding (MOU) to address livestock related water quality issues. The MOU was established as a coordinating document, to address Ecology and WSDA's overlapping regulatory responsibilities for water quality compliance related to livestock activities, namely dairy operations.

In 2023, the WSDA Dairy Nutrient Management Program (DNMP) notified Ecology staff that five dairies discharged to state waters. When former dairy facilities have cancelled their milking license and notified Ecology, nonpoint staff will provide follow-up technical assistance and work to ensure management of livestock and manure on the sites is adequate to protect nearby surface water. Agency staff also continue to coordinate and collaborate on efforts to address livestock and manure related nonpoint source pollution issues. An ongoing challenge that Ecology and DNMP staff continue to coordinate on is the export of dairy manure to non-dairy agricultural fields. These applications are not regulated under DNMP, and it is a challenge to ensure that exported material is handled using responsible manure management practices that prevent discharges to waters of the state.

3.2 Goal 2: Ensure Clear Standards

3.2.1 Identify best management practices (BMPs) and measures designed to comply with the Water Quality Standards and contribute to the protection of beneficial uses of the receiving waters and ensure compliance with state and federal law. Utilize best available science.

See section 3.2.4 for updates on Ecology's progress towards using best available science to identify Best Management Practices that comply with Water Quality Standards, contribute to

[21] https://ecology.wa.gov/Water-Shorelines/Puget-Sound/No-discharge-zone

the protection of beneficial uses of the receiving waters, and ensure compliance with state and federal law.

3.2.2 Implementation of forest practices rules statewide: periodic reviews of the Forest Practices Rules adaptive management program and the Clean Water Act Assurances

Ecology helps ensure that the Forest Practices Rules are effective in protecting water quality and meet federal and state water quality standards. These rules help protect streams, wetlands, and other bodies of water in or near forest areas and in-stream fish habitat.

Ecology provides:

- Field inspectors to help the Department of Natural Resources ensure rules are followed.
- Forest practices effectiveness monitoring and policy analysts who participate in the Forest Practices Adaptive Management Program[22].

The Forest Practices Rules provide standards to:

- Preserve trees in streamside areas to keep the water cool, filter sediment from uplands, and keep streambanks stable.
- Improve in-stream fish habitat by providing woody debris and controlling pesticide use near water bodies.
- Encourage proper construction and care of forest roads to prevent silt and sediment from entering water.

Regional staff/inspectors engaged in the following activities to support the implementation and enforcement of the forest practice rules:

- Participated in field review and data collection of forest practice activities to determine compliance with rules and approved Forest Practices Applications. Inspectors worked throughout all six DNR Regions. Prior to field visits inspectors conducted in-office FPA reviews.
- Reviewed individual Forest Practices Application proposals.
- Reviewed and provided input on Compliance Monitoring Program reports and documents and participated in site-compliance inspections.
- Participated in meetings and work sessions to implement a stream typing prioritization plan and procedures for coordinating between landowners and reviewers prior to stream protocol surveys.
- Performed field inspections of selected streams, providing concurrence or recommendations for alternate points to be used to define where fish habitat exists, and where the end of perennial water occurs in order to apply different harvest prescriptions.

[22] Covered below in section 3.2.2.

- Provided staff to assist DNR in evaluating readiness of counties to assume jurisdiction for forest practices within their urban growth boundaries.
- Collaboratively participated with DNR, and WDFW staff and representatives of affected Tribes, to identify the need for and participate in interdisciplinary teams and field inspections for conducting site-specific evaluation of compliance with the forest practices rules.
- Responded to citizen reports of environmental harm related to individual forest practices activities.

3.2.3 Forest Practices

Under Washington state law (Chapter 90.48 RCW) forest practices rules are to be developed to achieve compliance with the state water quality standards and the federal Clean Water Act (CWA). Ecology established Clean Water Act assurances (CWA assurances) for the state's forest practices program in 1999 as part of the Forests and Fish Report (FFR) and subsequent legislation known as the Forests and Fish Law. This legislation amended the existing Forest Practices Act (Chapter 76.09 RCW).

The CWA assurances established that the state's forest practices rules and programs, as updated through a formal adaptive management program, would be used as the primary mechanism for bringing and maintaining forested Watersheds into compliance with the state water quality standards.

Taken in total, the forest practices Adaptive Management Program (AMP) provides a substantial framework for ensuring forest practices are complaint with the water quality standards. In 2009, as part of a review of the AMP, Ecology concluded it is in the best interests of water quality, and is consistent with legislative intent, to work together with cooperating agencies and stakeholders to make needed improvements to the existing program. Ecology therefore conditionally extended the CWA assurances with the intent to stimulate the needed improvements to the forest practices program and AMP.

Ecology, in consultation with key stakeholders, established specific corrective milestones. The extension of these assurances was conditioned on meeting these administrative and research milestones by the specific target dates described. With these corrective milestones in place, Ecology extended the CWA assurances until 2019.

Progress towards completing the remaining corrective milestones has remained slower than intended but continued to move forward. The causes of not meeting the scheduled target dates include, new and competing priorities; such as, the additional work related to ensuring forestry is not increasing the risk of mass wasting, work on a large proposal to establish separate requirements for small forest landowners, and a renewed focus on developing field methods for identifying points on streams that represent the end of fish habitat (with fish habitat receiving higher protection under the rules).

On December 2, 2019, Ecology Director Bellon sent a letter to the Forest Practices Board (available upon request) granting a second extension for two years (ending December 2021) based on the completion or near completion of several key Type N research projects providing enough information for the board to consider new rulemaking with regard to riparian buffers on non-fish bearing perennial waters. As the result of the completion and acceptance of one of the studies a technical workgroup was contracted to develop recommended harvest prescriptions to help inform rule making. The workgroup completed its work and presented the final report to TFW Policy at the June 2021 Policy meeting.

On February 23, 2021, the Washington State Auditor's Office issued a performance audit report describing issues that continue to plague the AMP. The Auditor's Office concluded that the program is not "operating as intended" and that, without needed changes, the "program would continue to languish." The Audit Report contains several recommendations designed to get the program on track so that it can perform its functions as intended. The Forest Practices Board (Board) has committed to addressing many of these recommendations and the Department of Natural Resources included a funding request in 21-23BN budget.

In consideration of the continued progress at Policy and the Boards commitment to the Auditors Report Ecology Director Watson issued in a memo to the Board (Appendix C), an additional one-year extension of the CWA Assurances. This extension was contingent on the AMP making measurable progress on implementing the 2021 Audit Report and Policy making a final recommendation on Type Np buffer prescriptions to the Board, with the Board directing staff to develop a rule package and prepare a CR102.

Despite a lengthy dispute resolution process, where a consensus recommendation to the Board was not reached, a minority and majority report were forwarded to the board for consideration at their November 2022 meeting. The board chose to move the majority recommendation forward for draft rule development and CR102. Additionally, the adaptive management program has been making steady progress on program and process improvements as recommended in the SAO Audit Report. Due to these measures of the 2021 extension by Director Watson, Ecology has extended the assurances pursuant to progress related to the Type Np CR 102 development, leading the board to approving new Type Np prescriptions that, if adopted into rule will provide greater protection to stream temperature than the current rule.

Appendix B – Appendix B shows a table of corrective milestones, and their status as was reported to the Washington Forest Practices Board at their August 2023 meeting. There have been no significant changes to the status of the corrective milestones since the last report. The 2024 milestones update to the Board will be delivered at the May 2024 Board meeting.

3.2.4 Agricultural – Voluntary Clean Water BMP Guidance

The development of clear, standalone, clean water BMP guidance for agricultural sources is a key enhancement for our nonpoint source (NPS) pollution program. The Voluntary Clean Water Guidance for Agriculture (CWG) is intended to be a technical resource for the agricultural community and to complement existing guidance on agricultural conservation practices, such

as the Natural Resources Conservation Service (NRCS) Field Office Technical Guides (FOTGs). Compared to other guidance documents, its focus is on how BMPs can protect water quality and support meeting the Washington state water quality standards.

Ecology's goal is to run a process that interested parties and stakeholders believe is fair, inclusive, and respectful, that will result in robust, scientifically based guidance which farmers will be amenable to implement, and that will meet water quality standards by preventing pollution discharge at the parcel level. We are developing the guidance in a series of chapters with ongoing collaboration from an advisory group. The advisory group include representatives from the National Resource Conservation Service (NRCS), Conservation Districts, Washington State Department of Agriculture, State Conservation Commission, Washington State University, farmers, dairies, cattle groups, US Environmental Protection Agency, the Washington State Department of Fish and Wildlife, the Northwest Indian Fisheries Commission, and other agricultural and conservation experts.

The guidance's focus is on inventorying existing BMPs, refining those BMPs (if needed), and then assembling the BMPs into combinations that adequately address all sources of pollutants for a particular land use. The guidance will cover a range of conservation practices and include topics such as nutrient management, sediment control, water management, livestock management, and riparian buffers. Each chapter will address different conservation practices and provide information on:

- Practices that best prevent water pollution and protect water quality.
- How well BMPs perform in reducing specific pollutants.
- Considerations for when implementing BMPs, such as costs and equipment requirements.

Currently, five chapters have been submitted and approved by EPA:

- Cropping Methods: Tillage and Residue Management
- Livestock Management: Pasture and Rangeland Grazing
- Sediment Control: Soil Stabilization and Sediment Capture (Structural)
- Riparian Areas and Surface Water Protection
- Livestock Management: Animal Confinement, Manure Handling, and Storage (submitted to EPA in July 2023, awaiting approval)

Remaining chapters, to be completed by December 31, 2025, include:

- Cropping Methods: Crop Systems
- Nutrient Management
- Pesticide Management
- Sediment Control: Soil Stabilization and Sediment Capture (Vegetative)

- Water Management: Irrigation Systems and Management
- Water Management: Field Drainage and Drain Tile Management
- Water Management: Stormwater Control and Diversion
- Suites of Recommended Practices

These scientifically based guidance chapters provide assurances for landowners; when landowners and operators implement practices that are consistent with the BMPs included in the CWG, it is presumed that water quality is adequately protected and the site is compliant with state and federal law. The guidance is utilized by regional field staff to inform recommendations given to agricultural landowners needing to make improvements to address nonpoint source pollution from their operations. Additionally, this guidance is used to inform the development of new TMDLs, ARPs, STIs, and associated implementation plans.

In 2023, we began working to develop an "implementation guide" to translate the riparian buffers chapter into a format that can be easily used by landowners to determine what buffer width is appropriate for waterways on their property. This implementation guide is anticipated to be completed in 2024, and the outreach materials development group, which is led by headquarters staff and includes nonpoint staff from each region, will continue to identify and develop education and outreach materials to communicate the Voluntary Clean Water Guidance to the public.

More information on the guidance[23] and the advisory groups can be found at the Voluntary Clean Water Guidance for Agriculture webpage.[24]

3.3 Goal 3: Develop and Strengthen Partnerships

3.3.1 Strengthen Relationships and Receive Input from Stakeholders

Ecology recognizes the need for strong partnerships and input from stakeholders to effectively implement our nonpoint source program. Many of those efforts are detailed in other sections of this report.

3.3.2 Agriculture and Water Quality Advisory Committee

The Agriculture and Water Quality Advisory Committee was established to provide the Ecology Director with a direct line to producers and producer groups to discuss how we can both support a healthy industry and protect clean water. The committee provides input to help guide the director's efforts to improve Ecology's relationship with the agricultural community and inform us on how we can do our work to better respond to concerns from producers. A broad array of agriculture stakeholders participate on our committee. The committee has open

[23] https://apps.ecology.wa.gov/publications/SummaryPages/2010008.html
[24] https://ecology.wa.gov/About-us/Accountability-transparency/Partnerships-committees/Voluntary-Clean-Water-Guidance-for-Agriculture-Adv

dialogue about issues affecting the industry and how they intersect with our work to prevent water pollution.

This committee provides an open forum for agriculture producers and environmental interest groups to meet our staff and learn about our work. They provide valuable feedback as we tackle the challenge of insuring that working lands keep working in an environmentally friendly way.

In 2023, the committee held hybrid meetings on May 3 and October 12. The committee has been successful at further improving our agency's relationship with agriculture and creating a more positive environment to implement our nonpoint program including increased acceptance and support for our watershed evaluation and TMDL implementation work, and support for the creation of the Voluntary Clean Water Guidance for agriculture.

During the May meeting, the agenda included:

- Field tour:
    - Direct seed operation
    - 319 funded riparian restoration sites
- Nonpoint and riparian legislation
- Nonpoint plan and Voluntary Clean Water Guidance for Agriculture
- Water adjudication
- Agricultural fuel exemptions under the Climate Commitment Act
- Columbia River Basin Restoration Funding Assistance Program
- Palouse Conservation District programs and partnerships
- Regional fieldwork

At the October meeting, the agenda included:

- Field tour
    - Burwash Farm – Eatonville School District agriculture and conservation educational program
    - Riparian conservation site
- Impacts of Sackett court decision and request legislation for dredge and fill permits
- 319 funding guidelines updated with new best management practices
- Concentrated Animal Feeding Operation (CAFO) permit
- Irrigational general permit
- Nonpoint program updates

- Restoration and protection approaches to agriculture lands in Nisqually River Valley
- Regional fieldwork

You may view more detailed information on each meeting and the committee on the Agriculture and Water Quality Advisory Committee webpage[25].

3.3.3 Financial Assistance Council (FAC) and Water Quality Partnership (WQP)

The FAC and WQP continue to be key forums for informing stakeholders on our nonpoint program. These groups continue to be successful in helping us coordinate and build relationships with key stakeholders.

We held two FAC meetings in 2023 on March 16th and August 10th.

We held four WQP meetings in 2023 in March, June, September, and December. Please visit the Water Quality Partnership webpage[26] for more information on meetings.

3.3.4 Puget Sound Nutrient Forum (Forum)

This effort focus on building and strengthening relationships with regional stakeholders, Tribes, the regulated community, industry, and the public. Nutrient management efforts in other large U.S. coastal estuaries have emphasized the importance of focused stakeholder engagement to build a common understanding of nutrient over-enrichment problems and potential solutions. We believe that a successful outcome for Puget Sound will rely in large part upon this engagement process, and the feedback we have received from attendees has been largely positive.

We held one Forum in 2023 that focused on updates and reporting out on a trading report we completed and submitted to the state legislature in June 2023. For more information on the Forum meetings, please visit the Puget Sound Nutrient Source Reduction Project EZView webpage[27].

3.3.5 Regional Conservation Partnership Program

We have continued to support the Palouse Conservation District's implementation of RCPP. In 2021, USDA's Natural Resources Conservation Service (NRCS) renewed the Palouse River Watershed (WRIA 34) Implementation Partnership and provided an additional $5.5 million to improve water quality, soil health, and habitat in the Palouse River Watershed. This builds on the $5.5 million that was awarded to the Partnership at the program's inception in 2014.

---

[25] https://ecology.wa.gov/About-us/Accountability-transparency/Partnerships-committees/Agriculture-and-Water-Quality-Advisory-Committee

[26] https://www.ezview.wa.gov/site/alias__1962/view_our_committees_water_quality_partnership/37053/water_quality_partnership.aspx

[27] https://www.ezview.wa.gov/DesktopDefault.aspx?alias=1962&pageid=37106

Palouse River Watershed RCPP is a voluntary program directed through the Natural Resource Conservation Service (NRCS) designed to benefit water quality, soil health, and habitat within the Palouse River Watershed. The primary practices targeted with RCPP include conservation tillage (reduced tillage/ no till), nutrient management, integrated pest management, cover crops, and riparian forest buffers.

In the fall of 2023, the RCPP held its second signup of the renewal. PCD engaged with partners to conduct multiple outreach events across the Palouse Watershed. The signup ran concurrently with WA NRCS EQIP signup which enabled producers to compete consecutively in both funding pools. The PCD received more interest in signup than the RCPP could fund in a single year which demonstrates a need for the program. The primary practices that producers are interested included conservation tillage, nutrient management, and integrated pest management. PCD will run another RCPP signup in 2024. Ecology staff track their time spent working in the Palouse Watershed and report hours to the Palouse CD. Ecology staff time as well as our grant funding our used to meet the match requirements of the RCPP. Ecology staff also participate in periodic RCPP partner meetings.

3.3.6 Strengthen Relationships with Tribes

Coordination between tribal, state, and local governments is important to the successful management of resources, including water quality. In 2022, in an effort to better coordinate with tribal natural resource management staff we started hosting virtual meetings to highlight what projects we are working on related to our 303d program (TMDLs/WQ Standards/Assessment) and nonpoint program.

Additionally in 2023:

- An employee with the NWIFC continued to participate as a member of the Voluntary Clean Water Guidance advisory group.
- We collaboratively participated with DNR, and WDFW staff and representatives of affected Tribes, to identify the need for and participate in interdisciplinary teams and field inspections for conducting site-specific evaluation of compliance with the forest practices rules.
- Nonpoint source Watershed projects awarded grants for SFY 2024 offered to the Nooksack Indian Tribe.
- Our eastern regional office coordinated with the Spokane Tribe on the Hangman Watershed efforts and with the Kalispell Tribe on the Pend Oreille River efforts.
- Our northwest office coordinated with the Lummi Nation and Nooksack Tribe through the Whatcom Clean Water Program, are looking forward to supporting the Upper Skagit Indian Tribe in their work with Skagit County to Develop an East Fork Nookachamps Watershed plan, coordinated sampling efforts with the Stillaguamish and Tulip Tribes in the South Skagit Bay Watershed, coordinated sampling efforts with the Samish Tribe, and coordinated with Tribes through the Clean Samish Initiative.

- Our southwest regional office continued to coordinate and keep Tribes informed about our implementation efforts in several focus Watersheds including our work implementing the Puyallup Watershed Fecal Coliform TMDL (Muckleshoot Tribe), Skokomish Valley and Annas Bay (Skokomish Tribe), and Nisqually River and Ohop Creek (Nisqually Indian Tribe). We also co-wrote the Lower White River pH TMDL with the Muckleshoot Indian Tribe.
- We hosted two statewide tribal water quality staff meetings to provide updates on the state of our 303(d) and nonpoint programs. Nonpoint related agenda items included: modifications to our 319 funding guidelines, updates on the 2022 nonpoint plan, Voluntary Clean Water Guidance for Agriculture, and coming 2025 nonpoint plan. These meetings were attended by over 20 different federally recognized Tribes, tribal organizations, and representatives.
- We tabled at the Affiliated Tribes of Northwest Indians summer 2023 convention and provided information on the upcoming Nonpoint Plan update, as well as information on Ecology's Water Quality Combined Funding Grant program.

3.3.7 Communicating Nonpoint Successes

We did not complete any success stories this year due to staff vacancies. We hired a communications and outreach staff in August 2023, and will resume work on communicating nonpoint successes in 2024.

3.3.8 Looking to Better Align Grant Programs

With key sections of the Voluntary Clean Water Guidance for Agriculture completed and submitted to EPA at the end of 2022, we updated our funding guidelines in 2023 to incorporate the accepted chapters. We have designed the guidelines and our funding programs to support compliance with the state Water Quality Standards and law. Additionally, we are looking at ways to incentivize implementation of the full SPTH buffer.

However, we have limited grant dollars to dedicate to riparian buffers compared to other federal and state agencies. To try to better align funding programs and encourage other agencies to support implementation of the nonpoint program we have provided feedback and recommended changes to riparian grant programs managed by these other agencies. In 2023 we attempted to work with:

- NRCS's Riparian grant program.
- New Riparian Grant program managed by the WA State Conservation Commission (SCC) ($25 million).
- New state grant dollars to existing salmon recovery program administered by the state Recreation and Conservation Office (RCO) ($25 million).

In appendix D are our comment letters to NRCS and SCC that encouraged alignment and support of buffers that are protective of water quality. Unfortunately, neither agency made

changes to ensure protective practices are implemented through those programs. We will continue to work with those agencies and encourage them to support the state's nonpoint program.

The RCO grant program requires buffers meet the SPTH standard. They have an exemption process where grant recipients can implement smaller buffers if approved by their science panel. We will look to continue to work with RCO to ensure that buffers that do not meet the SPTH standard are still protective of water quality.

3.4 Goal 4: Monitor Waters for Nonpoint Source Impairments, and Program Effectiveness

3.4.1 Continue Monitoring Efforts/Effectiveness Monitoring

In 2023 Ecology initiated effectiveness monitoring efforts in several historically polluted tributaries to the Middle Snake River (WRIA 35). The goal of the monitoring is to evaluate effectiveness of several years of best management practices implementation under our "Straight to Implementation" (also known as 4B) clean-up approach in these Watersheds. We have deployed continuous temperature loggers and have collected bi-weekly bacteria, dissolved oxygen, and pH samples at 9 sites across the following Watersheds since May 2023:

- Asotin Creek
- Alpowa Creek
- Couse Creek
- Deadman Creek
- Meadow Creek
- Tenmile Creek

We are currently still in the data collection phase of these monitoring efforts. Data and analysis results will be included in our next statewide Water Quality Assessment (expected in late 2024) and the data itself will be made publicly available via our EIM database.

In 2023 Ecology continued effectiveness monitoring for the Puyallup River Tributaries Bacteria and Lower White River pH TMDLs on three tributaries to the White River located on the Enumclaw plateau. This monitoring data is used to evaluate and advise the implementation of best management practices under each of these TMDLs. Monthly monitoring started in July of 2019 and will continue through June of 2029. July of 2023 marked the start of the second of three "implementation" years of monitoring (2019, 2023 and 2028), where frequency and number of monitoring locations are increased. This effectiveness monitoring includes field measurements such as dissolved oxygen, pH, temperature, turbidity and conductivity, as well sampling for bacteria (*E. coli* and fecal coliform) and nutrients (Total Phosphorous, Ortho-Phosphate, Ammonia, Nitrate-Nitrite, and Total Persulfate Nitrogen). Nutrient sampling is limited to long-term downstream sites on each tributary while the other parameters are sampled at numerous locations on each subbasin. In total, 33 sites were monitored in Boise, Second and Pussyfoot creeks during 2023. More information about this monitoring effort,

including data results, can be found on the Puyallup River Watershed Improvement Project webpage[28].

In April 2023, Ecology began once-monthly ambient and continuous temperature monitoring on eleven tributaries to the lower Cowlitz River. The purpose of this effort is to 1) verify existing 303(d) listings for bacteria and temperature and 2) fill data gaps in this area where there is a lack of water quality data. Ambient monitoring takes place on one downstream location for each of the eleven tributaries, while continuous temperature monitoring covers 27 locations on these same waterbodies. Ambient monitoring includes field measurements such as dissolved oxygen, pH, temperature, turbidity, and conductivity, as well sampling for bacteria (*E. coli* and fecal coliform). Ambient monitoring is set to end in March of 2024, and continuous temperature monitoring will extend through the summer of 2024. This data will be used to inform future Watershed prioritization for the development of Watershed cleanup plans. This data is being collected on the following tributaries to the lower Cowlitz River:

- Coweeman River
- Ostrander Creek
- Arkansas Creek
- Stillwater Creek
- Olequa Creek
- Lacamas Creek
- Salmon Creek
- Bill Creek
- Skook Creek
- Blue Creek
- Mill Creek

3.5 Goal 5: Administering the Nonpoint Source Program effectively and efficiently as possible

3.5.1 Nonpoint & Implementation Tracking System

To assist Ecology's efforts to reduce nonpoint source pollution and implement TMDLs, field staff routinely conduct windshield surveys in priority Watersheds to assess conditions that may be negatively affecting water quality. These staff also respond to water quality related environmental complaints from the public.

When field staff conduct windshield surveys and complaint responses, they typically document conditions that lead to nonpoint pollution and collect a variety of site information such as field notes and photographs. These efforts also require staff to manage additional information, such as communications with property owners and related documents such as letters or other correspondences. To meet both staff and programmatic needs to better collect, store and track nonpoint data in a consistent and streamlined manner, and manage data in a way that can be

[28] https://www.ezview.wa.gov/site/alias__1962/37699/puyallup_river_Watershed_improvement_project.aspx

integrated with other water quality efforts such as TMDLs, the Program invested in the development of a state-wide system to collect and store nonpoint data.

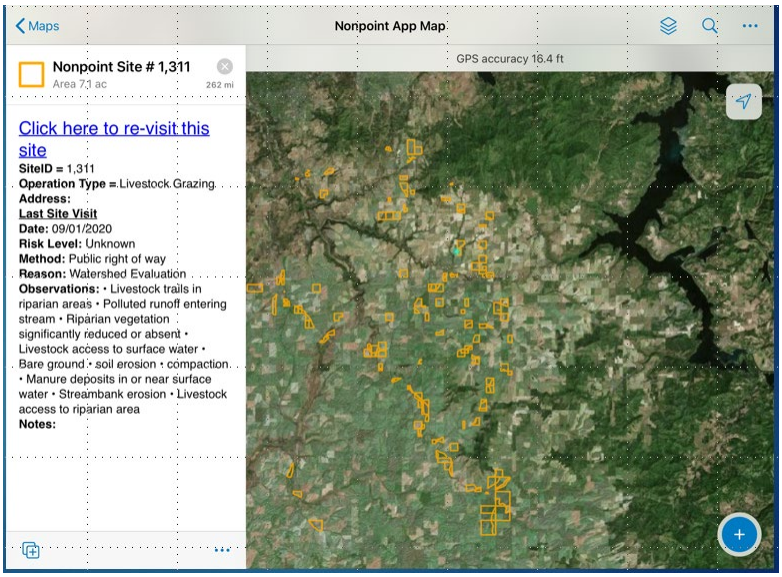


Figure 31. Screen view of the Nonpoint Collector Application shows how Ecology staff can track site visits at particular locations.

The statewide system includes the following components:

1. Mobile applications to view, collect and submit data in the field via cloud-based services.
2. Web application to view, manage, track and report data.
3. Internal database to store all records/data.

Key nonpoint data to be collected and managed includes:

- Field observations and notes.
- Photographs (geo-located).
- Communications with property owners.
- Best management practice implemented.

Benefits of this system are:

- Streamlined data collection in the field & reduction in equipment needed.
- Increased data quality and consistency (across all regional offices).
- Simplified data management, including data automation.
- Field access to important information.
- Ability to input, store and manage all nonpoint data in a single Ecology database.
- Centralized location for pulling nonpoint data and information.

- Improved ability to track efforts, produce reports and evaluate progress.
- Increased ability to utilize, integrate and synthesize data e.g., spatial information.
- Elimination of the need for long-term, cloud-based data storage.

Nonpoint staff use the system as their primary tool for data collection and management. We also continually update the system to meet staff and programmatic needs, and training and support documents are available to assist system users.

A single, statewide system for nonpoint data management has many clear advantages. It supports better data consistency and quality, creates predictability in the way nonpoint field work is conducted and significantly increases data accessibility to both staff and management. It also helps with continuity and gaps when staff turnover occurs. Equally important is the actual data that is collected and managed. This information allows users to better assess changes over time at the site and Watershed levels to help determine if water quality is improving and can easily be integrated into other Watershed level activities such as TMDLs, effectiveness monitoring, source identification monitoring and other project planning and implementation efforts. The system also helps us collect information necessary to meet our reporting requirements found in the settlement agreement.

3.5.2 Administer grants and loans

Chapter 2 of this report includes information on our program administration and identifies funded activities and BMPs related to our Section 319 Grant. Please review that chapter for more information on the progress we made on Goal 5. Additionally, information has been reported through the Grants Reporting and Tracking System (GRTS).

Chapter 4: Conclusions

In 2023, the State of Washington made considerable progress in protecting water quality from nonpoint source pollution. In Washington State one of our greatest strengths is that we have dedicated staff and partners who are committed to working collaboratively to reduce the scope and scale of NPS pollution. This cooperative, solution-oriented environment encourages innovation and adaptation in addressing both longstanding and emerging water quality challenges.

Throughout our NPS management strategy, there is a focus on implementation and clear standards. Moreover, there is an increased emphasis on greater regulatory clarity around what actions are necessary to prevent pollutants from reaching state waters and ensure compliance with the water quality standards. This year we continued to make progress in providing more clarity on agricultural BMPs, as we finalized and submitted to EPA an additional chapter of the Voluntary Clean Water Guidance for Agriculture, for a total of five chapters submitted to EPA, with the remaining eight to be submitted with the upcoming Nonpoint Plan update at the end of 2025.

As EPA is well aware, water quality protection efforts inherently face significant ongoing social, financial, and technical challenges. We are continuing to better refine the right balance of technical assistance, financial assistance, and the use of enforcement tools. Our approach of actively identifying pollution sources in Watersheds through watershed evaluations, and then contacting producers and landowners continues to be more standardized around the state. We are utilizing this proactive approach to educate the public about the role they play in protecting water quality to the benefit of their communities. Recognizing the need to provide complex information in a broadly accessible manner, we are working with our regional staff to develop outreach materials for use in the field with landowners and partners. The first product we are working to develop is a landowner's guide to riparian buffer implementation, to distill down the robust scientific research of the riparian buffer Clean Water Guidance chapter into an engaging and accessible guide to help the public understand their options for implementing buffers that are compliant with state water quality law. Providing technical assistance and promoting available financial assistance to encourage the implementation of effective BMPs represents the bulk of our work.

However, technical and financial assistance will only get us so far. It is critical to have an active and consistent regulatory presence in Watersheds in order to be successful in restoring and protecting water quality. This need for a regulatory backstop was again highlighted this year. In Watersheds where we use regulatory tools there is more proactive implementation of effective BMPs across the Watershed. We continue to utilize our regulatory backstop to support our proactive technical assistance and financial assistance efforts. In 2023, Ecology nonpoint staff issued thirteen warning letters, two administrative orders, and placed one property lien for an unpaid penalty to agricultural producers with track records of noncompliance and an unwillingness to take advantage of technical and financial assistance resources.

Utilizing the full suite of tools (technical assistance/financial assistance/enforcement) is the key to success. Again, if staff only use technical assistance and financial assistance tools, implementation is generally limited to those that are predisposed to resource protection and willing to change how they manage their land. Likewise, if we only act in an enforcement role, we sacrifice our long-term ability to effectively work in a Watershed. It is not effective to be confined to an adversarial role—being able to also wear technical assistance and financial assistance hats allows us to act in a more collaborative and problem-solving role and maintain constructive partnerships in the Watersheds where we work.

The 319 funding Washington receives is critical for helping our field staff get effective BMPs on the landscape. 2023 saw continued large investments in riparian restoration in Washington state, however, despite Ecology's efforts to work with other agencies to align their funding programs, new funding programs were developed that are not designed to meet water quality standards and with funding volumes that far outpace Ecology's funding for nonpoint projects. This means that while 319 funding continues to be an essential part of Washington's efforts to meet state water quality standards, we are unable to be financially competitive with other programs that offer higher payments for smaller buffers. It is critical to fund BMPS that are designed to protect water quality. We will continue to work to align funding programs, both inside Ecology and with external partners.

The enormity of the NPS pollution problem in Washington State requires that we continually strive to improve our programs, policies, and tools. The many advancements outlined in this report show that we are on the right track. In 2024, we look forward to continuing our nonpoint efforts through monitoring, watershed evaluations, water cleanup implementation, and grants. We will continue work on the Voluntary Clean Water Guidance and will begin the process of updating our Nonpoint Plan, due in 2025. Moving forward, this guidance will serve as an important asset in efforts to reduce NPS pollution from agricultural sources and we look forward to completing an entire set of these chapters by 2025.

Our funding program continues to be successful, responsibly managed, and a model for using public dollars to facilitate the implementation of the most effective BMPs. We will continue our efforts in aligning our funding guidelines with our new guidance and BMP recommendations.

Nevertheless, we can and will do more to advance water quality protection in Washington State. We know that opportunities exist to build on our successes, and we continue to work towards improving the following elements of our nonpoint program:

- Better communicate our strategy and goals to the public.
- Further refine the tools we use to document and track water quality problems in Watersheds.
- Improve the strategies we use to achieve clean water goals in priority Watersheds.
- Continue to develop external partnerships and facilitate coordination and alignment between funding program guidelines, to support programs that promote compliance with state water quality standards.

- Better communicate the successes achieved by our NPS management program in order to facilitate further acceptance and adoption of effective NPS pollution controls throughout the state.

In all these regards, the continued financial and technical support we receive from EPA has been and will remain critical to supporting both the staff and the actions needed to implement our Nonpoint Source Management Plan and achieve clean water goals throughout the State of Washington.

Appendix A. Ecology's Integrated Grant and Loan Program- project details

Direct Implementation Fund (DIF) Projects

Table 6. List of all the Direct Implementation Funds.

Agreement Number	Organization	Project Title	Watershed Plans	Project Short Description	Funding
OTGP-2023-InNWLT-00033	Inland Northwest Land Conservancy	Glen Tana Acquisition - Little Spokane River	Little Spokane River Dissolved Oxygen, pH, and Total Phosphorus Total Maximum Daily Load	The Little Spokane River is a major tributary to the Spokane River, approximately 35 miles long. In 2010 EPA approved TMDL for FC, T, and turbidity; and in 2021 approval for dissolved oxygen (DO) and pH. The Recipient will use multiple funding sources to acquire 1,066-acre property along the river for conservation purposes and will serve as a bridge owner until transferring ownership to the Spokane Tribe and Washington State Parks. Ecology funding will be used to purchase approximately 50 acres.	500,000 (Section 319)

Nonpoint Source Watershed Projects Awarded Grants and Loans in SFY2024

The following projects were offered funding for the SFY2024 Water Quality Combined Funding Program funding cycle. Agreement negotiations began July 1st, 2023.

Table 7. Nonpoint Source Watershed Projects Awarded Grants and Loans in SFY2024.

Application Number	Applicant	Project Title	Watershed Plans	Project Short Description	CWSRF Standard Loan	Centennial Grant	Section 319 Grant
WQC-2024-BentCD-00090	Benton Conservation District	Water Quality and Temperature Improvements in lower Yakima Tributaries	Lower Yakima River Total Suspended Sediment Total Maximum Daily Load (TMDL) 1998	This project will improve water quality and temperature dynamics within two tributaries to the lower Yakima River through implementation of local, voluntary stewardship programs. We will provide targeted community education and outreach events, coupled with water quality monitoring to inform public awareness. Spring/Snipes Creek and Amon Creek are the two largest tributaries on the lower Yakima River and their water quality directly impacts the health of the river and native salmon fisheries.	$0	$311,500	$0
WQC-2024-BentCD-00214	Benton Conservation District	Supporting Lower Yakima River TMDLs & Scientific River Management	Yakima River Temperature TMDL (In Development)	This project will support total maximum daily load (TMDL) work in the Lower Yakima River and inform river management. Continuous monitoring of temperature, dissolved oxygen, pH, suspended sediment, and specific conductance at Kiona and Van Giesen gauges will help identify trends in both developing and approved TMDLs. Discrete biomass data will inform managers on relationships between biomass, flow, and water quality, improving their ability to protect water	$0	$261,000	$0

				quality through their operations.			
WQC-2024-CaLaTr-00180	Capitol Land Trust	Hudson Cove Water Quality Protection	Puget Sound Action Agenda, Salmon Habitat Protection and Restoration Plan for WRIA 14, Kennedy-Goldsborough	This project permanently protects 227.89 acres of critical and threatened forest, salt marsh, mudflats, feeder bluffs, estuary, and over 2.5 miles of salt and freshwater shoreline on Totten Inlet in South Puget Sound, through a permanent conservation easement. As the inlet's largest contiguous undeveloped property, it is threatened by development that would likely result in degradation of marine, estuarine and riparian water quality from deforestation, stormwater runoff, and septic systems.	$0	$0	$500,000
WQC-2024-CascCD-00119	Cascadia Conservation District	Wenatchee Basin Stream Restoration and Water Quality Improvement Project	Wenatchee River Watershed Multiparameter TMDL, Wenatchee Watershed Management Plan (WRIA 45 Planning Unit 2006)	The Wenatchee Basin Stream Restoration and Water Quality Improvement Project will increase salmon habitat through stream restoration projects, landowner assistance, and multi-generational Watershed education. At least 6.1 acres of riparian buffer will be restored, a 1,000 sq. ft. livestock bridge will be installed, 10 previous restoration projects will be monitored and maintained, 36 new landowners will receive technical assistance, and Watershed education for youth and adults will continue.	$0	$349,770	$0

WQC-2024-ChCoNR-00061	Chelan County - Natural Resource Department	Addressing the Temperature TMDL in Peshastin Creek	Wenatchee River Watershed Temperature Total Maximum Daily Load Water Quality Improvement Report. 2007.	This project will include BMP implementation, monitoring, and planning to initiate a phased and integrated approach to address the 12 temperature listings from RM 0 to RM 16 of Peshastin Creek. Implementation methods will include low tech in-stream restoration designed to recharge the floodplain aquifer, and riparian planting. Thermal Refuge monitoring and planning will inform a targeted strategy for future projects in areas with the maximum potential benefit under a changing climate (Figure 1).	$0	$300,912	$0
WQC-2024-ChCoNR-00135	Chelan County - Natural Resource Department	Kahler Cr Alluvial Water Storage and Nason Cr Temperature Improvement Project	Wenatchee River Watershed Temperature Total Maximum Daily Load Water Quality Improvement Report. 2007	This project will include BMP implementation, monitoring, and planning to address 4A temperature listings in Nason Creek. Final designs and phase one construction of low-tech instream restoration, as well as riparian planting, will occur in Kahler Creek to restore ground and surface water flows and address the 4A temperature listing at the creek's mouth. Monitoring, maintenance, planning and outreach will inform a targeted strategy for future projects to improve Nason Creek as a whole.	$0	$286,281	$0
WQC-2024-ClalCD-00131	Clallam Conservation District	Improving & Protecting Water Quality on Horse & Livestock Operations	Dungeness Bay Bacteria TMDL Page 13 Lower Dungeness River Basin Bacteria TMDL	This project will provide technical assistance and outreach activities to identify and support implementation of Best Management Practices (BMPs) that protect and/or improve surface water quality within WRIA 18, with highest priority given to projects located within an active Pollution Identification and Correction (PIC) project(s) within the Sequim Bay-Dungeness Watershed	$0	$210,136	$0

				Clean Water District (CWD).			
WQC-2024-ClaPUD-00006	Clark Public Utility District	McCormick Creek Restoration II	East Fork Lewis River TMDL Alternative Lower Columbia Salmon Recovery Plan	The RECIPIENT will address multiple documented water quality impairments impacting McCormick Creek and the East Fork Lewis River. The RECIPIENT has removed the majority of non-native invasive species and will continue this effort. The RECIPIENT will stabilize the eroding stream bank, then re-establish native trees and shrubs on those banks, the riparian corridor and floodplain.	$0	$256,562	$0
WQC-2024-FoCrCD-00029	Foster Creek Conservation District	Foster Creek Watershed Restoration Program	2020 Mid-Yakima River Basin Bacteria TMDL, 1998 Lower Yakima River Suspended Sediment TMDL	In the Foster Creek Watershed, Foster Creek Conservation District (FCCD) will address 303(d) listings for temperature, pH, and dissolved oxygen through stream restoration and community education in cooperation with partner organizations. In this new stage of this program, we will implement a new stream restoration project, maintain previous project sites, continue, and expand monitoring, and provide educational programs to the community.	$0	$261,283	$0

WQC-2024-FortNW-00117	Forterra NW	Clover Creek Land Acquisition	Clover Creek Watershed Fecal Coliform Bacteria, Dissolved Oxygen, and Temperature Source Assessment Report.	Forterra will acquire 113-acres of riparian corridor, wetlands, and forest in Pierce County near the headwaters of Clover Creek. Portions of Clover Creek are listed as Category 5 on the state 303d list for Temperature and Dissolved Oxygen. Protecting this property will ensure robust riparian buffers and limit impervious surface in this critical area. Forterra is partnering with the Tacoma Sportsmen's Club Conservation Foundation who will own, protect, and steward the property in perpetuity	$0	$0	$500,000
WQC-2024-GCCD-00111	Grant County Conservation District	Restoration of Riparian Zones & Critical Areas within Moses Lake Watershed	2006- Moses Lake Phosphorus-Response Model and Recommendations to Reduce Phosphorus Loading	The Columbia Basin Conservation District (CBCD) and partners on the Moses Lake Watershed Council (MLWC) will implement a project to address external sources of phosphorus loading to Moses Lake and engage the community without programs. The goals that will be achieved are the improvement of riparian zones in Rocky Ford Creek, cattle exclusion from Rocky Ford Creek, nutrient reduction through native planting via the Heritage Garden Program, and education and outreach to the Moses Lake Watershed.	$0	$485,397	$0
WQC-2024-JeCoPH-00047	Jefferson County Public Health	Watershed Conservation Fund Feasibility and Pilot Project	Grays River Watershed and Biological Assessment,	This project will design and pilot a scalable loan fund for acquisition of land critical to improving Water Quality (WQ) in key Watersheds with documented impairments. The Watershed Conservation Fund will accelerate and reduce conservation costs by using a 3rd-party nonprofit financial institution to lend funds when land is	$10,000,000	$500,000	$0

				available instead of per the government budget cycle. Funds requested will support program feasibility, development and two pilot acquisitions.			
WQC-2024-KiCoDi-00167	King Conservation District	Newaukum Creek Revegetation 2.0	Newaukum Creek Temperature TMDL	The King Conservation District, in partnership with King County, will install 3,300-ft. of livestock exclusion fencing, a watering facility, heavy use protection area, and native trees and shrubs on 13.2 riparian acres along Newaukum Creek to reduce water temperatures and fecal inputs, at a buffer minimum width of 100-ft. to improve water quality and fish/wildlife habitat in a degraded reach. This project continues a 17-year multi-agency effort and implements recommendations of ECOLOGY's TMDL.	$0	$451,700	$0
WQC-2024-KiCPWD-00228	Kittitas County - Public Works Department	Mercer Creek Design and Stewardship	Wilson Creek Subbasin Bacteria TMDL	The Mercer Creek Design and Stewardship project will address bacteria, sediment, and water temperature impairments in Ellensburg's Mercer Creek by maintaining a recently-planted (2021) riparian buffer through weed management, fence maintenance, crack willow control and additional native tree planting along 1,200 stream feet. The project will design a water quality improvement project along another 1,400 feet downstream and will engage volunteers in stewardship work and water quality education.	$0	$206,441	$0

WQC-2024-LCEP-00181	Lower Columbia Estuary Partnership	Salmon Creek Clean Water Enhancement and Education	Salmon Creek Watershed Temperature TMDL	The Salmon Creek Clean Water Enhancement and Education Project will enhance riparian habitat within 9-acres of the Salmon Creek floodplain; provide comprehensive stormwater education to 40 classes and 1,000 students from the Salmon Creek Watershed; and engage students and community volunteers in native planting events. All project activities will increase riparian buffer size, vegetation success, habitat structural diversity, and address water quality issues to implement Salmon Creek TMDLs.	$0	$0	$249,369
WQC-2024-MSRF-00100	Methow Salmon Recovery Foundation	Methow Riparian and Cold Water Restoration Project - Phase 1	Upper Columbia Spring Chinook and Steelhead Recovery Plan Methow Subbasin Plan (2004).	The Methow Riparian and Cold Water Restoration Project addresses current 303(d) listings for water temperature in the Methow River Watershed through riparian buffer establishment and maintenance, water temperature status and trend monitoring, and water quality specific public outreach.	$0	$0	$313,834
WQC-2024-NookIT-00123	Nooksack Indian Tribe	South Fork Nooksack Temperature TMDL Implementation 2024	South Fork Nooksack River Temperature TMDL,	The Nooksack Tribe proposes a riparian restoration project along the South Fork Nooksack River (SFNR) and its tributaries. The project covers conifer planting and maintenance on 88 acres at 4 sites in the South Fork Watershed. The project is designed to set sites on the trajectory to mature mixed conifer forest. The project implements the recommendations of the SFNR temperature TMDL and the associated EPA Region 10 climate change assessments.	$0	$360,450	$0

WQC-2024-PaciCD-00224	Pacific Conservation District	Sandridge Road Horse Operation Waste Management	Willipa Bay Watershed Bacterial Evaluation and Preliminary Control Strategy	Project involves managing nutrients and waste on an existing horse operation. The project seeks to implement practices that will reduce runoff, leaching, and improve animal husbandry. This project will reduce the risks of water quality degradation to surface water and Willapa Bay.	$0	$407,716	$0
WQC-2024-PaloCD-00045	Palouse Conservation District	Spring Flat Creek	Palouse Temperature TMDL	High stream temperatures, low dissolved oxygen levels, and high pH values have recently been identified as problems in Spring Flat Creek (SFC), a tributary of the South Fork Palouse River. This project will improve water quality in the SFC Watershed by providing riparian buffer installation, technical assistance and conservation planning, direct seed cost share, environmental monitoring, and education and outreaching, including planning meetings, workshops, tours, articles, and signage.	$0	$345,445	$0
WQC-2024-PaloCD-00046	Palouse Conservation District	Restoring Watershed Function in the Palouse River Watershed	Palouse Temperature TMDL	This project aims to help restore streamflow, water quality, Watershed function, and habitat in the Palouse River Watershed by implementing instream bioengineering projects, establishing riparian buffers, establishing new flow and water quality monitoring, and building awareness and support to improve stream channels and riparian habitat. Eight of the project sites are in the Palouse Watershed, and one is on a small unnamed tributary of the Snake River upstream from the Palouse River.	$0	$485,615	$0

WQC-2024-PaloCD-00127	Palouse Conservation District	Pioneer Stock Farm Critical Lands Acquisition, Part 1	Palouse Watershed Plan	Purchasing the Pioneer Stock Farm will enable Palouse Conservation District to preserve, protect, and restore a strategic area of the Palouse Watershed for water quality, anadromous fish habitat, and ecosystem services. Preserving this property in perpetuity is important for showcasing conservation practices that promote soil health and reestablish and protect native prairie, riparian species, anadromous fish, and water quality. This site is critical to ongoing restoration work and education.	$0	$500,000	$0
WQC-2024-PaloCD-00128	Palouse Conservation District	Pioneer Stock Farm Critical Lands Acquisition, Part 2	Palouse Watershed Plan	Purchasing the Pioneer Stock Farm will enable Palouse Conservation District to preserve, protect, and restore a strategic area of the Palouse Watershed for water quality, anadromous fish habitat, and ecosystem services. Preserving this property in perpetuity is important for showcasing conservation practices that promote soil health and reestablish and protect native prairie, riparian species, anadromous fish, and water quality. This site is critical to ongoing restoration work and education.	$0	$500,000	$0
WQC-2024-SnCoCN-00065	Snohomish County Conservation Natural Resources Department	Chatham Acres Restoration	Stillaguamish Temperature TMDL	The Chatham Acres Restoration project is located in a priority restoration reach of the North Fork Stillaguamish River with cold floodplain and tributary discharge described in previous Ecology-funded reports. The project will construct wood structures, create shade, create complex edge habitat, and plant native riparian trees and shrubs to improve rearing and refuge habitat, for ESA-	$0	$500,000	$0

				listed salmonids in a cold-water refuge.			
WQC-2024-SnohCD-00074	Snohomish Conservation District	South Fork Stillaguamish Floodplain Restoration Phase 2	Stillaguamish Multiparameter TMDL	Snohomish Conservation District (District) proposes to address documented impaired water temperatures and dissolved oxygen levels on the South Fork Stillaguamish River that threaten ESA-listed Chinook salmon, other salmonids, and aquatic life through invasive species control and riparian reforestation. The District will actively control invasives and plant 4650 native trees and shrubs on 6.3 acres of floodplain forest and associated wetlands.	$0	$246,680	$0
WQC-2024-SoSaSo-00210	Sound Salmon Solutions	Segelsen Stillaguamish Riparian Restoration Phase II	Stillaguamish River Watershed Multiparameter TMDL	Sound Salmon Solutions (SSS) will restore 9.52 acres of riparian habitat on 1,600 feet of the North Fork Stillaguamish River by controlling invasive vegetation and planting native trees and shrubs on a 300-foot wide habitat buffer to improve water quality.	$0	$0	$242,077
WQC-2024-SoYaCD-00229	South Yakima Conservation District	Lower Yakima River Riparian Reforestation	2020 Mid-Yakima River Basin Bacteria TMDL,	The Lower Yakima River Riparian Reforestation project will increase shade and filtration by removing livestock access from the left bank of the Yakima River at river mile 80. The project will replant 10.8 acres of grazed land and allow for protection of a 0.3 mile spring channel. Mid-Columbia Fisheries will engage local students in restoration work, facilitate peer to peer learning with	$0	$500,000	$0

				restoration professionals, and engage with landowners to develop at least one future reforestation project.			
WQC-2024-SpoCoD-00064	Spokane Conservation District	Direct Seed Loan Program	Hangman Creek Watershed Multiparameter TMDL	The Direct Seed Loan Program will be a continuation of the existing Spokane Conservation District equipment loan program for the purchase of direct seed and no-till equipment. The program helps farmers in 19 Eastern Washington counties and 1 western Washington county, purchase direct seed and no-till equipment eliminating a financial barrier to adoption and mitigating thousands of tons of sedimentation and soil erosion from reaching regional water systems.	$5,000,000	$196,914	$0
WQC-2024-SpoCoD-00120	Spokane Conservation District	Hangman Creek Agricultural Sediment Abatement Project	Hangman (Latah) Creek Watershed Fecal Coliform Bacteria, Temperature, and Turbidity Total Maximum Daily Load	The Spokane Conservation District will continue its successful stream bank stabilization work within the Hangman Creek Watershed. The objective of this project is to reduce sediment contributions and re-establish a naturally resilient drainageway that supports the functions of flow and sediment conveyance without excessive vertical or lateral erosion. A two-stage channel will provide conveyance for regular flows in a base channel and low frequency floods in the channel and floodplain area.	$0	$424,000	$0

WQC-2024-UndeCD-00223	Underwood Conservation District	White Salmon River Watershed Water Quality Project	White Salmon River Watershed Fecal Coliform Bacteria Attainment Monitoring Study	UCD will conduct work to improve nonpoint water quality in the White Salmon River Watershed in a phase directly linked to the current work taking place under Agreement No. WQC-2020-UndeCD-00163. Work will involve riparian plantings, BMP technical assistance and planning, water quality monitoring, and education around riparian stewardship. The focus is improving riparian function and addressing water quality concerns along streams in agricultural areas.	$0	$395,215	$0
WQC-2024-WashPW-00230	Washougal city of - Public Works Department	West Fork Washougal River Forest Protection	Lower Columbia Salmon Recovery Plan, Columbia Land Trust Conservation Agenda	The RECIPIENT will acquire 307 acres of old, mature forestland in the Washougal River Watershed with 3.1 miles of shoreline along the West Fork Washougal River and tributary Jackson Creek. The Washougal recharges the source of the City of Washougal's drinking water and is a temperature and bacteria limited system. The acquisition will protect the site's important provision of cold, clean water and prevent degradation from residential development, industrial forestry, and mineral extraction.	$0	$500,000	$0
WQC-2024-WhitCD-00020	Whitman Conservation District	Palouse River Habitat Restoration and Stabilization	Palouse River Temperature TMDL	The Palouse River's Total Maximum Daily Load (TMDL) and Water Quality Assessment Category 5 and 4A listings have specifically listed the Palouse River as impaired for pH. Increased temperature, and dissolved oxygen. To address these issues, the Whitman Conservation District (WCD) has identified multiple project sites for riparian restoration in the Palouse River Watershed.	$0	$468,250	$0

	This proposal will add to several other projects to help reduce sediment, pollution and increase water quality.

Summary of pollutant and load reductions per project in 2023.

Table 8. Summary of Load Reductions in 2023.

Pollutant	Total Load Reduction Estimate
Biochemical Oxygen Demand (BOD)	7,432 LBS/YR
Nitrogen	123,813 LBS/YR
Phosphorus	45,863 LBS/YR
Sedimentation-Siltation	142,345 LBS/YR

Table 9. Load Reductions per Project in 2023.

Pollutant	State Project No.	Estimated Load Reduction	Unit of Measure
BOD	WQC-2020-PaloCD-00128	0	LBS/YR
BOD	WQC-2020-UndeCD-00163	21.53	LBS/YR
BOD	WQC-2021-MCFEG-00062	0	LBS/YR
BOD	WQC-2021-SnohCD-00048	26.93	LBS/YR
BOD	WQC-2021-SpoCoD-00198	4001	LBS/YR
BOD	WQC-2022-PaloCD-00059	1431.52	LBS/YR
BOD	WQC-2022-SnohCD-00022	0.3	LBS/YR
BOD	WQC-2023-MCFEG-00116	0	LBS/YR
BOD	WQC-2023-PaloCD-00005	0	LBS/YR
BOD	WQC-2023-PaloCD-00009	1951	LBS/YR
Nitrogen	WQC-2019-SnohCD-00063	0.0228	LBS/YR
Nitrogen	WQC-2020-NoYaCD-00003	34.94	LBS/YR
Nitrogen	WQC-2020-PaloCD-00050	149	LBS/YR
Nitrogen	WQC-2020-PaloCD-00128	7741	LBS/YR
Nitrogen	WQC-2020-SnohCD-00152	0.021	LBS/YR
Nitrogen	WQC-2020-UndeCD-00163	19.57	LBS/YR
Nitrogen	WQC-2021-Adopta-00063	12.32	LBS/YR
Nitrogen	WQC-2021-Adopta-00064	0	LBS/YR
Nitrogen	WQC-2021-MCFEG-00062	0	LBS/YR

Pollutant	State Project No.	Estimated Load Reduction	Unit of Measure
Nitrogen	WQC-2021-SnohCD-00048	13.63	LBS/YR
Nitrogen	WQC-2021-SoSaSo-00011	0.0441	LBS/YR
Nitrogen	WQC-2021-SoSaSo-00200	0.0029	LBS/YR
Nitrogen	WQC-2021-SpoCoD-00198	2084	LBS/YR
Nitrogen	WQC-2021-Waters-00002	0	LBS/YR
Nitrogen	WQC-2022-ChCoNR-00112	0	LBS/YR
Nitrogen	WQC-2022-LandCo-00049	117.97	LBS/YR
Nitrogen	WQC-2022-LandCo-00050	36.87	LBS/YR
Nitrogen	WQC-2022-OxCSAE-00062	1989	LBS/YR
Nitrogen	WQC-2022-PaloCD-00059	892	LBS/YR
Nitrogen	WQC-2022-SkRiSC-00135	57.9	LBS/YR
Nitrogen	WQC-2022-SnohCD-00022	0.44	LBS/YR
Nitrogen	WQC-2022-SnohCD-00083	5.21	LBS/YR
Nitrogen	WQC-2022-SnohCD-00101	0	LBS/YR
Nitrogen	WQC-2022-SoSaSo-00004	0.1372	LBS/YR
Nitrogen	WQC-2022-SoSaSo-00005	0.0028	LBS/YR
Nitrogen	WQC-2022-WWCoCD-00068	0	LBS/YR
Nitrogen	WQC-2023-ChCoNR-00039	0	LBS/YR
Nitrogen	WQC-2023-KCWLRD-00026	0.004	LBS/YR
Nitrogen	WQC-2023-KooCom-00055	54961	LBS/YR

Pollutant	State Project No.	Estimated Load Reduction	Unit of Measure
Nitrogen	WQC-2023-KooCom-00055	51714	LBS/YR
Nitrogen	WQC-2023-MCFEG-00116	0.001	LBS/YR
Nitrogen	WQC-2023-MCFEG-00117	0	LBS/YR
Nitrogen	WQC-2023-OkHiAl-00185	28.46	LBS/YR
Nitrogen	WQC-2023-PaloCD-00005	2822	LBS/YR
Nitrogen	WQC-2023-PaloCD-00009	1085	LBS/YR
Nitrogen	WQC-2023-SpRiKe-00137	48.96	LBS/YR
Phosphorus	WQC-2019-SnohCD-00063	0.023	LBS/YR
Phosphorus	WQC-2020-NoYaCD-00003	2.32	LBS/YR
Phosphorus	WQC-2020-PaloCD-00050	46.32	LBS/YR
Phosphorus	WQC-2020-PaloCD-00128	2985.68	LBS/YR
Phosphorus	WQC-2020-SnohCD-00152	0.019	LBS/YR
Phosphorus	WQC-2020-UndeCD-00163	4.73	LBS/YR
Phosphorus	WQC-2021-Adopta-00063	0.98	LBS/YR
Phosphorus	WQC-2021-Adopta-00064	0	LBS/YR
Phosphorus	WQC-2021-MCFEG-00062	0	LBS/YR
Phosphorus	WQC-2021-SnohCD-00048	5.26	LBS/YR
Phosphorus	WQC-2021-SoSaSo-00011	0.0472	LBS/YR
Phosphorus	WQC-2021-SoSaSo-00200	0.0028	LBS/YR
Phosphorus	WQC-2021-SpoCoD-00198	824	LBS/YR

Pollutant	State Project No.	Estimated Load Reduction	Unit of Measure
Phosphorus	WQC-2021-Waters-00002	0	LBS/YR
Phosphorus	WQC-2022-ChCoNR-00112	0	LBS/YR
Phosphorus	WQC-2022-LandCo-00049	29.98	LBS/YR
Phosphorus	WQC-2022-LandCo-00050	7.82	LBS/YR
Phosphorus	WQC-2022-OxCSAE-00062	765	LBS/YR
Phosphorus	WQC-2022-PaloCD-00059	319.96	LBS/YR
Phosphorus	WQC-2022-SkRiSC-00135	13.5	LBS/YR
Phosphorus	WQC-2022-SnohCD-00022	0.21	LBS/YR
Phosphorus	WQC-2022-SnohCD-00083	2.06	LBS/YR
Phosphorus	WQC-2022-SnohCD-00101	0	LBS/YR
Phosphorus	WQC-2022-SoSaSo-00004	0.131	LBS/YR
Phosphorus	WQC-2022-SoSaSo-00005	0.272	LBS/YR
Phosphorus	WQC-2022-WWCoCD-00068	0	LBS/YR
Phosphorus	WQC-2023-ChCoNR-00039	0	LBS/YR
Phosphorus	WQC-2023-KCWLRD-00026	0.0036	LBS/YR
Phosphorus	WQC-2023-KooCom-00055	20403	LBS/YR
Phosphorus	WQC-2023-KooCom-00055	18940	LBS/YR
Phosphorus	WQC-2023-MCFEG-00116	0	LBS/YR
Phosphorus	WQC-2023-MCFEG-00117	0	LBS/YR
Phosphorus	WQC-2023-OkHiAl-00185	10.96	LBS/YR

Pollutant	State Project No.	Estimated Load Reduction	Unit of Measure
Phosphorus	WQC-2023-PaloCD-00005	1089.7	LBS/YR
Phosphorus	WQC-2023-PaloCD-00009	392.3	LBS/YR
Phosphorus	WQC-2023-SpRiKe-00137	18.85	LBS/YR
Sediment	WQC-2019-SnohCD-00063	0.0546	LBS/YR
Sediment	WQC-2020-NoYaCD-00003	0	LBS/YR
Sediment	WQC-2020-PaloCD-00050	35.4	LBS/YR
Sediment	WQC-2020-PaloCD-00128	2387.2	LBS/YR
Sediment	WQC-2020-SnohCD-00152	0.025	LBS/YR
Sediment	WQC-2020-UndeCD-00163	3.36	LBS/YR
Sediment	WQC-2021-Adopta-00063	0.06	LBS/YR
Sediment	WQC-2021-Adopta-00064	0	LBS/YR
Sediment	WQC-2021-MCFEG-00062	0	LBS/YR
Sediment	WQC-2021-SnohCD-00048	9.9	LBS/YR
Sediment	WQC-2021-SoSaSo-00011	0.054	LBS/YR
Sediment	WQC-2021-SoSaSo-00200	0.0036	LBS/YR
Sediment	WQC-2021-SpoCoD-00198	625	LBS/YR
Sediment	WQC-2021-Waters-00002	0	LBS/YR
Sediment	WQC-2022-ChCoNR-00112	0	LBS/YR
Sediment	WQC-2022-LandCo-00049	21.08	LBS/YR
Sediment	WQC-2022-LandCo-00050	5.27	LBS/YR

Pollutant	State Project No.	Estimated Load Reduction	Unit of Measure
Sediment	WQC-2022-OxCSAE-00062	1243	LBS/YR
Sediment	WQC-2022-PaloCD-00059	270.59	LBS/YR
Sediment	WQC-2022-SkRiSC-00135	1.5	LBS/YR
Sediment	WQC-2022-SnohCD-00022	0	LBS/YR
Sediment	WQC-2022-SnohCD-00083	2.88	LBS/YR
Sediment	WQC-2022-SnohCD-00101	0	LBS/YR
Sediment	WQC-2022-SoSaSo-00004	0.168	LBS/YR
Sediment	WQC-2022-SoSaSo-00005	0.003	LBS/YR
Sediment	WQC-2022-WWCoCD-00068	4	LBS/YR
Sediment	WQC-2023-ChCoNR-00039	0	LBS/YR
Sediment	WQC-2023-KCWLRD-00026	0.0048	LBS/YR
Sediment	WQC-2023-KooCom-00055	136495	LBS/YR
Sediment	WQC-2023-MCFEG-00116	0.001	LBS/YR
Sediment	WQC-2023-MCFEG-00117	0	LBS/YR
Sediment	WQC-2023-OkHiAl-00185	20.93	LBS/YR
Sediment	WQC-2023-PaloCD-00005	879.5	LBS/YR
Sediment	WQC-2023-PaloCD-00009	304.9	LBS/YR
Sediment	WQC-2023-SpRiKe-00137	36	LBS/YR

Best Management Practices implemented in 2023

Table 10. Summary of BMPs Implemented 2023.

BMP Type	Total Acres / Linear Length
Channel Bank Vegetation	1,200 Feet 2.65 Acres
Conservation Tillage Residue Management	3,800 Feet 1,755 Acres
Fence	18,497 Feet
Heavy Use Protection	256 Sq Feet
Invasive Species/Noxious Weed Control	25,919 Feet 59.49 Acres
Riparian Forest Buffer	69,936 Feet 498.96 Acres
Stream Channel Stabilization	4,570 Feet
Stream Habitat Improvement and Management	5,285 Feet 10.96 Acres
Streambank & Shoreline Protection	200 Feet
Tree/Shrub Establishment	10,732 Feet 22.65 Acres

Table 11. BMPs Implemented per Project 2023.

BMP	State Project No.	Project Title	Installed	Unit of Measure
Channel Bank Vegetation	WQC-2023-MCFEG-00116	Upper Yakima River Riparian Reforestation	1200	FT
	WQC-2023-MCFEG-00116	Upper Yakima River Riparian Reforestation	2.65	AC
Conservation Tillage Residue Management	WQC-2020-PaloCD-00128	Direct Seed Partnership on the Palouse	620	AC
Conservation Tillage Residue Management	WQC-2020-PaloCD-00128	Direct Seed Partnership on the Palouse	3800	FT
Conservation Tillage Residue Management	WQC-2021-SpoCoD-00198	Hangman Creek Agricultural BMP Assistance Project	805	AC
Conservation Tillage Residue Management	WQC-2023-PaloCD-00005	Operation Residue: (Under)cover Crops & Direct Seeding on the Palouse	330	AC
Fence	WQC-2023-OkHiAl-00185	Triple Creek Water Quality Restoration Project, Phase 3	10427	FT
Fence	WQC-2023-OkHiAl-00185	Triple Creek Water Quality Restoration Project, Phase 4	240	AC
Fence	WQC-2020-PaloCD-00050	Cart before the horse: Restoring the North Fork Palouse River Watershed	8070	FT
Fence	WQC-2020-PaloCD-00050	Cart before the horse: Restoring the North Fork Palouse River Watershed	18	AC
Heavy Use Area Protection	WQC-2020-PaloCD-00050	Cart before the horse: Restoring the North Fork Palouse River Watershed	256	SQ FT
Invasive Species/Noxious Weed Control	WQC-2020-PaloCD-00128	Direct Seed Partnership on the Palouse	4	AC
Invasive Species/Noxious Weed Control	WQC-2020-PaloCD-00128	Direct Seed Partnership on the Palouse	4240	FT
Invasive Species/Noxious Weed Control	WQC-2021-Adopta-00063	West Fork Quilceda Creek Water Quality Partnership Tulalip Tribes and AASF	2	AC

BMP	State Project No.	Project Title	Installed	Unit of Measure
Invasive Species/Noxious Weed Control	WQC-2021-Adopta-00063	West Fork Quilceda Creek Water Quality Partnership Tulalip Tribes and AASF	1719	FT
Invasive Species/Noxious Weed Control	WQC-2021-Adopta-00064	Pilchuck River Tributary Buffer Enhancement Partnership; Coon Creek	14.3	AC
Invasive Species/Noxious Weed Control	WQC-2021-Adopta-00064	Pilchuck River Tributary Buffer Enhancement Partnership; Coon Creek	4200	FT
Invasive Species/Noxious Weed Control	WQC-2022-OxCSAE-00062	Upper Snoqualmie River Riparian Enhancement	1039	FT
Invasive Species/Noxious Weed Control	WQC-2022-OxCSAE-00062	Upper Snoqualmie River Riparian Enhancement	4	AC
Invasive Species/Noxious Weed Control	WQC-2022-PaloCD-00059	Full Stream Ahead! Riparian Restoration Innovations on the Palouse River	10.27	AC
Invasive Species/Noxious Weed Control	WQC-2022-PaloCD-00059	Full Stream Ahead! Riparian Restoration Innovations on the Palouse River	5292	FT
Invasive Species/Noxious Weed Control	WQC-2023-KCWLRD-00026	Horsehead Bend Natural Area Revegetation	7	AC
Invasive Species/Noxious Weed Control	WQC-2023-KCWLRD-00026	Horsehead Bend Natural Area Revegetation	2000	FT
Invasive Species/Noxious Weed Control	WQC-2023-OkHiAl-00185	Triple Creek Water Quality Restoration Project, Phase 4	2.12	AC
Invasive Species/Noxious Weed Control	WQC-2023-OkHiAl-00185	Triple Creek Water Quality Restoration Project, Phase 5	2385	FT
Invasive Species/Noxious Weed Control	WQC-2023-PaloCD-00009	Partnership to Restore Riparian Areas in the Lower Fourmile Creek Watershed	15.8	AC
Invasive Species/Noxious Weed Control	WQC-2023-PaloCD-00009	Partnership to Restore Riparian Areas in the Lower Fourmile Creek Watershed	5044	FT
Riparian Forest Buffer	WQC-2019-SnohCD-00063	North Creek Riparian Restoration Project	2755	FT
Riparian Forest Buffer	WQC-2020-NoYaCD-00003	Naches River Basin Water Quality Restoration Project PHASE 2	6	AC

BMP	State Project No.	Project Title	Installed	Unit of Measure
Riparian Forest Buffer	WQC-2020-NoYaCD-00003	Naches River Basin Water Quality Restoration Project PHASE 3	3700	FT
Riparian Forest Buffer	WQC-2020-PaloCD-00050	Cart before the horse: Restoring the North Fork Palouse River Watershed	7.5	AC
Riparian Forest Buffer	WQC-2020-PaloCD-00050	Cart before the horse: Restoring the North Fork Palouse River Watershed	4000	FT
Riparian Forest Buffer	WQC-2020-PaloCD-00128	Direct Seed Partnership on the Palouse	7	AC
Riparian Forest Buffer	WQC-2020-PaloCD-00128	Direct Seed Partnership on the Palouse	3800	FT
Riparian Forest Buffer	WQC-2020-SnohCD-00152	Middle Pilchuck River Riparian Restoration Project	4.7	AC
Riparian Forest Buffer	WQC-2020-SnohCD-00152	Middle Pilchuck River Riparian Restoration Project	375	FT
Riparian Forest Buffer	WQC-2020-UndeCD-00163	White Salmon River Watershed Water Quality Implementation	0.14	AC
Riparian Forest Buffer	WQC-2020-UndeCD-00163	White Salmon River Watershed Water Quality Implementation	0.36	AC
Riparian Forest Buffer	WQC-2020-UndeCD-00163	White Salmon River Watershed Water Quality Implementation	885	FT
Riparian Forest Buffer	WQC-2021-Adopta-00063	West Fork Quilceda Creek Water Quality Partnership Tulalip Tribes and AASF	8	AC
Riparian Forest Buffer	WQC-2021-Adopta-00063	West Fork Quilceda Creek Water Quality Partnership Tulalip Tribes and AASF	1719	FT
Riparian Forest Buffer	WQC-2021-Adopta-00064	Pilchuck River Tributary Buffer Enhancement Partnership; Coon Creek	5	AC
Riparian Forest Buffer	WQC-2021-Adopta-00064	Pilchuck River Tributary Buffer Enhancement Partnership; Coon Creek	1200	FT
Riparian Forest Buffer	WQC-2021-ChCoNR-00167	Chumstick Watershed Water Flow Improvement and Riparian Restoration	600	FT

BMP	State Project No.	Project Title	Installed	Unit of Measure
Riparian Forest Buffer	WQC-2021-MCFEG-00062	Upper Yakima River Riparian Habitat Restoration	1.6	AC
Riparian Forest Buffer	WQC-2021-MCFEG-00062	Upper Yakima River Riparian Habitat Restoration	200	FT
Riparian Forest Buffer	WQC-2021-SnohCD-00048	Restoring Cold Water Habitat in Lower Pilchuck Creek	8	AC
Riparian Forest Buffer	WQC-2021-SnohCD-00048	Restoring Cold Water Habitat in Lower Pilchuck Creek	1471	FT
Riparian Forest Buffer	WQC-2021-SoSaSo-00011	Grant Creek Restoration Phase II	20.21	AC
Riparian Forest Buffer	WQC-2021-SoSaSo-00011	Grant Creek Restoration Phase II	8470	FT
Riparian Forest Buffer	WQC-2021-SoSaSo-00200	Bolin Skykomish Riparian Restoration	6.48	AC
Riparian Forest Buffer	WQC-2021-SoSaSo-00200	Bolin Skykomish Riparian Restoration	750	FT
Riparian Forest Buffer	WQC-2021-Waters-00002	Improving Shade and Temperature Deficits - Middle East Fork Lewis River	0.75	AC
Riparian Forest Buffer	WQC-2021-Waters-00002	Improving Shade and Temperature Deficits - Middle East Fork Lewis River	724	FT
Riparian Forest Buffer	WQC-2022-ChCoNR-00112	Chumstick Watershed Phased Riparian and Flow Improvement Project	270	AC
Riparian Forest Buffer	WQC-2022-ChCoNR-00112	Chumstick Watershed Phased Riparian and Flow Improvement Project	90	FT
Riparian Forest Buffer	WQC-2022-LandCo-00049	WRIA 55/57 Restoration through BDAs/PALS, Buffers, and Outreach/Education	4.18	AC
Riparian Forest Buffer	WQC-2022-LandCo-00049	WRIA 55/57 Restoration through BDAs/PALS, Buffers, and Outreach/Education	2200	FT
Riparian Forest Buffer	WQC-2022-LandCo-00050	Hangman Creek Watershed Riparian and Wetland Restoration	0.8	AC

BMP	State Project No.	Project Title	Installed	Unit of Measure
Riparian Forest Buffer	WQC-2022-LandCo-00050	Hangman Creek Watershed Riparian and Wetland Restoration	500	FT
Riparian Forest Buffer	WQC-2022-OxCSAE-00062	Upper Snoqualmie River Riparian Enhancement	5.3	AC
Riparian Forest Buffer	WQC-2022-OxCSAE-00062	Upper Snoqualmie River Riparian Enhancement	1184	FT
Riparian Forest Buffer	WQC-2022-PaloCD-00059	Full Stream Ahead! Riparian Restoration Innovations on the Palouse River	4.3	AC
Riparian Forest Buffer	WQC-2022-PaloCD-00059	Full Stream Ahead! Riparian Restoration Innovations on the Palouse River	20.46	AC
Riparian Forest Buffer	WQC-2022-PaloCD-00059	Full Stream Ahead! Riparian Restoration Innovations on the Palouse River	9464	FT
Riparian Forest Buffer	WQC-2022-SkRiSC-00135	Nookachamps Riparian Restoration Phase II	16.8	AC
Riparian Forest Buffer	WQC-2022-SkRiSC-00135	Nookachamps Riparian Restoration Phase II	650	FT
Riparian Forest Buffer	WQC-2022-SnohCD-00022	French Creek Tributary Riparian and Wetland Restoration	2.2	AC
Riparian Forest Buffer	WQC-2022-SnohCD-00022	French Creek Tributary Riparian and Wetland Restoration	267	FT
Riparian Forest Buffer	WQC-2022-SnohCD-00083	North Fork Stillaguamish Floodplain Riparian Restoration	6	AC
Riparian Forest Buffer	WQC-2022-SnohCD-00083	North Fork Stillaguamish Floodplain Riparian Restoration	1000	FT
Riparian Forest Buffer	WQC-2022-SoSaSo-00004	Ladd Carpenter Creek Riparian Restoration	8.94	AC
Riparian Forest Buffer	WQC-2022-SoSaSo-00004	Ladd Carpenter Creek Riparian Restoration	1200	FT

BMP	State Project No.	Project Title	Installed	Unit of Measure
Riparian Forest Buffer	WQC-2022-SoSaSo-00005	Anderson's Bambooland Riparian Restoration Phase I	6.2	AC
Riparian Forest Buffer	WQC-2022-SoSaSo-00005	Anderson's Bambooland Riparian Restoration Phase I	1850	FT
Riparian Forest Buffer	WQC-2022-WWCoCD-00068	Last Chance Road Restoration at RM 35.5	7.7	AC
Riparian Forest Buffer	WQC-2022-WWCoCD-00068	Last Chance Road Restoration at RM 35.6	2600	FT
Riparian Forest Buffer	WQC-2023-ChCoNR-00039	The Leavenworth Watersheds Phased Water Quality Improvement Project	0.2	AC
Riparian Forest Buffer	WQC-2023-ChCoNR-00039	The Leavenworth Watersheds Phased Water Quality Improvement Project	156	FT
Riparian Forest Buffer	WQC-2023-KCWLRD-00026	Horsehead Bend Natural Area Revegetation	8.5	AC
Riparian Forest Buffer	WQC-2023-KCWLRD-00026	Horsehead Bend Natural Area Revegetation	2400	FT
Riparian Forest Buffer	WQC-2023-KooCom-00055	Water Quality Improvements on Yellowhawk Creek	3.73	AC
Riparian Forest Buffer	WQC-2023-KooCom-00055	Water Quality Improvements on Yellowhawk Creek	1627	FT
Riparian Forest Buffer	WQC-2023-MCFEG-00117	Lower Cowiche Creek Floodplain and Aquatic Restoration	1.23	AC
Riparian Forest Buffer	WQC-2023-MCFEG-00117	Lower Cowiche Creek Floodplain and Aquatic Restoration	670	FT
Riparian Forest Buffer	WQC-2023-OkHiAl-00185	Triple Creek Water Quality Restoration Project, Phase 5	0.88	AC
Riparian Forest Buffer	WQC-2023-OkHiAl-00185	Triple Creek Water Quality Restoration Project, Phase 5	2385	FT

BMP	State Project No.	Project Title	Installed	Unit of Measure
Riparian Forest Buffer	WQC-2023-PaloCD-00009	Partnership to Restore Riparian Areas in the Lower Fourmile Creek Watershed	15.8	AC
Riparian Forest Buffer	WQC-2023-PaloCD-00009	Partnership to Restore Riparian Areas in the Lower Fourmile Creek Watershed	5044	FT
Riparian Forest Buffer	WQC-2023-SpRiKe-00137	Rock and Hangman Creeks Riparian Restoration and Water Quality Improvement	40	AC
Riparian Forest Buffer	WQC-2023-SpRiKe-00137	Rock and Hangman Creeks Riparian Restoration and Water Quality Improvement	6000	FT
Stream Channel Stabilization	WQC-2021-SpoCoD-00198	Hangman Creek Agricultural BMP Assistance Project	4570	FT
Stream Habitat Improvement and Management	WQC-2022-WWCoCD-00068	Last Chance Road Restoration at RM 35.5	2900	FT
Stream Habitat Improvement and Management	WQC-2022-WWCoCD-00068	Last Chance Road Restoration at RM 35.6	10	AC
Stream Habitat Improvement and Management	WQC-2023-OkHiAl-00185	Triple Creek Water Quality Restoration Project, Phase 5	2385	FT
Stream Habitat Improvement and Management	WQC-2023-OkHiAl-00185	Triple Creek Water Quality Restoration Project, Phase 5	0.96	AC
Streambank & Shoreline Protection	WQC-2022-PaloCD-00059	Full Stream Ahead! Riparian Restoration Innovations on the Palouse River	200	FT
Tree/Shrub Establishment	WQC-2022-PaloCD-00059	Full Stream Ahead! Riparian Restoration Innovations on the Palouse River	10710	FT
Tree/Shrub Establishment	WQC-2022-PaloCD-00059	Full Stream Ahead! Riparian Restoration Innovations on the Palouse River	22.65	AC

Appendix B. Forest Practices Adaptive Management Program Results

The following tables illustrate the current status of CMER and Non-CMER Clean Water Act milestones as of April 2024. The 2024 milestones update to the Board will be delivered at the August 2024 Board meeting.

Table 12. ***Summary CMER Research Milestones and their current status.***

CMER Research Milestones		
Description of Milestone		**Status as of April 2024**
2009	Complete: Hardwood Conversion – Temperature Case Study (Completed as data report)	**Completed** June 2010
	Study Design: Wetland Mitigation Effectiveness	**Completed** October 2010
2010	Study Design: Type N Experimental in Incompetent Lithology	**Completed** August 2011
	Complete: Mass Wasting Prescription-Scale Monitoring	**Completed** June 2012
	Scope: Mass Wasting Landscape-Scale Effectiveness	**Milestone Eliminated**
	Scope: Eastside Type N Effectiveness	**Completed** November 2013
2011	Complete: Solar Radiation/Effective Shade	**Completed** June 2012
	Complete: Bull Trout Overlay Temperature	**Completed** May 2014

CMER Research Milestones		
Description of Milestone		**Status as of April 2024**
	Implement: Type N Experimental in Incompetent Lithology	**Completed** October 2017
	Study Design: Mass Wasting Landscape-Scale Effectiveness	**Milestone Eliminated**
2012	Complete: Buffer Integrity-Shade Effectiveness	**Completed** November 2018
	Literature Synthesis: Forested Wetlands Literature Synthesis	**Completed** January 2015
	Scoping: Examine the effectiveness of the RILs in representing slopes at risk of mass wasting.	**Completed** April 2017
	Study Design: Eastside Type N Effectiveness	**Completed** March 2018
2013	Scoping: Forested Wetlands Effectiveness Study	**Completed** December 2016
	Wetlands Program Research Strategy	**Completed** January 2015
	Scope: Road Prescription-Scale Effectiveness Monitoring	**Completed** March 2016
	Study Design: Examine the effectiveness of the RILs in representing slopes at risk of mass wasting.	**Completed** Study is being designed and implemented in five separate projects. Study designs completed September 2023

CMER Research Milestones		
Description of Milestone		**Status as of April 2024**
	Implement: Eastside Type N Effectiveness	**Underway** Study is in implementation through 2025. Study should be complete by 2028.
2014	Complete: Type N Experimental in Basalt Lithology	**Completed** August 2017
	Study Design: Road Prescription-Scale Effectiveness Monitoring	**Completed** February 2017
	Scope: Type F Experimental Buffer Treatment	**Completed** December 2015
	Implementation: Examine the effectiveness of the RILs in representing slopes at risk of mass wasting (Renamed: Unstable Slopes Criteria - Empirical Evaluation of Shallow Landslide Susceptibility, Frequency, and Runout by Landform	**Underway** Final report expected in 2025.
	Study Design: Forested Wetlands Effectiveness Study	**Complete** December 2019. Data Analysis underway.
2015	Complete: First Cycle of Extensive Temperature Monitoring	**Completed** April 2019.
	Scope: Watershed Scale Assess. of Cumulative Effects	**Off Track** Project intended to follow other effectiveness monitoring studies which are behind schedule. Funding to begin in 2029.

CMER Research Milestones		
Description of Milestone		**Status as of April 2024**
	Scope: Amphibians in Intermittent Streams (Renamed: Water Temperature and Amphibian Use in Type Np Waters with Discontinuous Surface Flow Project)	**Underway** Expected May 2024
2017	Study design: Watershed Scale Assess. of Cumulative Effects	**Off Track** Expected 2029.
2018	Complete: Roads Sub-basin Effectiveness	**Not Progressing** Project to be re-scoped in 2029 with completion in 2032.
	Implement: Watershed Scale Assess. of Cumulative Effects	**Off Track** Implementation in 2030.
	Complete: Type N Experimental in Incompetent Lithology	Complete August 2021
	Complete: Type F Experimental Buffer Treatment (Pilot study phase named: Westside Type F Riparian Prescription Effectiveness Project Pilot Study)	**Underway** Expected December 2024
2019	Complete: Eastside Type N Effectiveness	**Underway** Projected completion in 2028.

Table 13. Summary Non-CMER Project Milestones and their current status.

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of April 2024**
2009	July 2009: CMER budget and work plan will reflect CWA priorities.	**Completed** October 2010
	September 2009: Identify a strategy to secure stable, adequate, long-term funding for the AMP.	**Completed** October 2010
	October 2009: Complete Charter for the Compliance Monitoring Stakeholder Guidance Committee.	**Completed** December 2009
	December 2009: Initiate a process for flagging CMER projects that are having trouble with their design or implementation.	**Completed** November 2010
	December 2009: Compliance Monitoring Program to develop plans and timelines for assessing compliance with rule elements such as water typing, shade, wetlands, haul roads and channel migration zones.	**Completed** March 2010
	December 2009: Evaluate the existing process for resolving field disputes and identify improvements that can be made within existing statutory authorities and review times.	**Completed** November 2010
	December 2009: Complete training sessions on the AMP protocols and standards for CMER, and Policy and offer to provide this training to the Board. Identify and implement changes to improve performance or clarity at the soonest practical time.	**Completed** May 2016
2010	January 2010: Ensure opportunities during regional RMAP annual reviews to obtain input from Ecology, WDFW, and Tribes on road work priorities.	**Completed** September 2011
	February 2010: Develop a prioritization strategy for water type modification review.	**Completed** March 2013

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of April 2024**
	March 2010: Establish online guidance that clarifies existing policies and procedures pertaining to water typing.	**Completed** March 2013
	June 2010: Review existing procedures and recommended any improvements needed to effectively track compliance at the individual landowner level.	**Completed** November 2010
	June 2010: Establish a framework for certification and refresher courses for all participants responsible for regulatory or CMP assessments.	**Completed** September 2013
	July 2010: Assess primary issues associated with riparian noncompliance (using the CMP data) and formulate a program of training, guidance, and enforcement believed capable of substantially increasing the compliance rate.	**Completed** August 2012
	July 2010: Ecology in Partnership with DNR and in Consultation with the SFL advisory committee will develop a plan for evaluating the risk posed by SFL roads for the delivery of sediment to waters of the state.	**Completed** December 2018
	July 2010: Develop a strategy to examine the effectiveness of the Type N rules in protecting water quality at the soonest possible time that includes: a) Rank and fund Type N studies as highest priorities for research, b) Resolve issue with identifying the uppermost point of perennial flow by July 2012, and c) Complete a comprehensive literature review examining effect of buffering headwater streams by September 2012.	**Not Progressing** Part 'b' to be addressed after water typing system rule and Board Manual work is completed. (BM 22 part 2)
	October 2010: Conduct an initial assessment of trends in compliance and enforcement actions taken at the individual landowner level.	**Completed** November 2010
	October 2010: Design a sampling plan to gather baseline information sufficient to reasonably assess the success of alternate plan process.	**Completed** December 2014

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of April 2024**
	December 2010: Initiate process of obtaining an independent review of the Adaptive Management Program.	**Completed** February 2021
2011	December 2011: Complete an evaluation of the relative success of the water type change review strategy.	**Completed** March 2013
	December 2011: Provide more complete summary information on progress of industrial landowner RMAPs.	**Completed** September 2011
2012	October 2012: Reassess if the procedures being used to track enforcement actions at the individual landowner level provides sufficient information to potentially remove assurances or otherwise take corrective action.	**Completed** June 2012
	Initiate a program to assess compliance with the Unstable Slopes rules.	**Completed** October 2017
2013	November 2013: Prepare a summary report that assesses the progress of SFLs in bringing their roads into compliance with road best management practices, and any general risk to water quality posed by relying on the checklist RMAP process for SFLs.	**Underway** State, tribal, and Small Landowner caucus staff cooperatively developed a plan to conduct online and field surveys to inform the condition of SFL roads. Implementation began in 2019. According to DNR the field survey is about 90% complete based on the goal of 200 surveys. Additional responses from landowners have been slow.

Status terminology:

"Completed" - milestone has been satisfied (includes those both on schedule and late).

"On Track" - work is occurring that appears likely to satisfy milestone on schedule.

"Underway" - work towards milestone is actively proceeding, but likely off schedule.

"Earlier Stage Underway" – project initiated but is at an earlier stage (off schedule) then the listed milestone.

"Not Progressing" - no work has begun, or work initiated has effectively stopped.

"Off Track" - 1) No work has begun, and inadequate time remains, 2) key stakeholders are not interested in completing the milestone, or 3) attempt at solution was inadequate and no further effort at developing an acceptable solution is planned.

Appendix C. Priority Watersheds for 2023

See section 3.2.1 for an introductory overview of the work of nonpoint field staff.

In 2024, each region will be filling multiple vacancies and working to train new staff. The below planned Watershed work assumes regions receive sufficient qualified applicants to quickly fill vacancies.

SWRO Priority Watersheds

Priority Watershed Name: Boise, Pussyfoot, and Second Creeks—Enumclaw Plateau

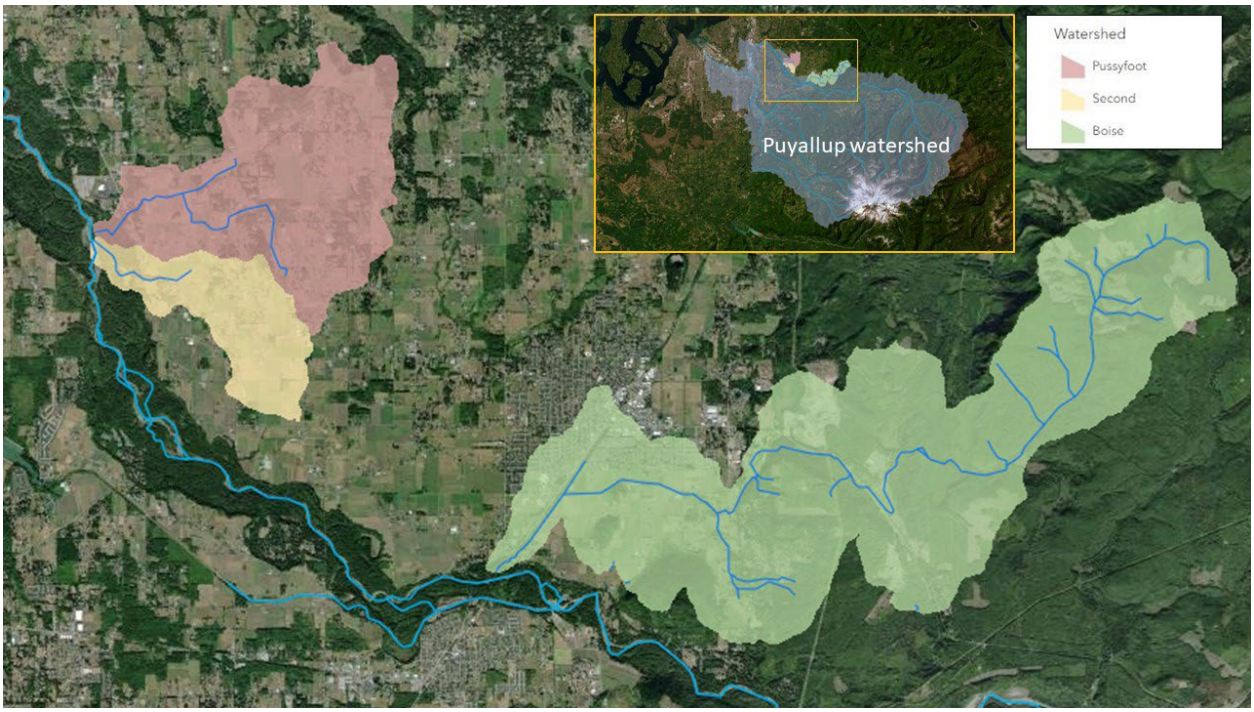


Figure 32. Map of White River TMDL priority Watersheds - Boise, Pussyfoot and Second Creeks

Implementing: Puyallup Watershed Fecal Coliform TMDL; Lower White River pH TMDL

Summary/Context Info:

Since 2014, Ecology nonpoint staff have been collaborating with other state and local partners to monitor, identify, and address pollution issues within the Enumclaw MS4 and the surrounding areas. Ecology identified three tributaries within the Enumclaw plateau as priority Watersheds: Boise Creek, Pussyfoot Creek, and Second Creek. Nonpoint pollution inputs within these Watersheds significantly increase during the wet season due to the poor drainage throughout the plateau. External partners include the Muckleshoot Tribe, U.S. Natural

Resources Conservation Service, Washington State Department of Agriculture, King County Livestock, King County Public Health, King County Department of Water and Land Resources, King County Public Health, King Conservation District, City of Enumclaw, Enumclaw Community Association.

Priority Actions Projected for 2024:

Education and Outreach

Ongoing:

- **Provide partners with input and educational materials:** Work with our partners involved in the Peer-to-Peer program to review and develop educational material. This group has drafted a survey to distribute to Enumclaw area landowners.
- **Continue to maintain and update Enumclaw Partnership webpage:** This webpage[29] compiles reports and data, as well as Partnership meeting minutes and presentation slides. The page is a resource both for Partnership members and for landowners.

Projected:

- **Staff an outreach booth at King County Fair:** In partnership with the Northwest Region Office and Water Quality Headquarters Communications staff, we will have an outreach booth at the King County Fair in July. This will include outreach activities for youth as well as informational handouts for adults.

Financial Assistance

Ongoing:

- **Provide partners with front-end feedback on grant proposals:** In an effort to encourage and assist our partners to draft successful grant proposals, we will coordinate with grants staff to provide grantees with the option to submit a notice of intent and receive feedback prior to the fall submittal deadline.
- **Provide information to landowners**: We will continue to provide information about technical and financial assistance available to landowners as they move forward with BMP implementation.

Partner Coordination

Ongoing:

- **Continue to hold sites of concern prioritization meetings with state and local partners and stakeholders:** Coordinate and facilitate meetings with partners directly involved with BMP implementation on the Plateau to discuss and receive feedback about future and ongoing enforcement activities. In particular, use effectiveness monitoring data to re-prioritize implementation

[29] https://www.ezview.wa.gov/site/alias__1962/37699/puyallup_river_Watershed_improvement_project.aspx

reaches from the TMDL Implementation Plan. Staff will work with Ecology's TMDL Lead, Ecology's Monitoring Lead, and King County Stormwater Services Monitoring Lead on this effort.

- **Hold quarterly meetings to facilitate sharing of water quality monitoring data:** Continue to hold quarterly meetings with tribal, federal, state, and local water quality monitoring staff to share data, facilitating the coordination and prioritization of implementation efforts.
- **Continue to participate in monthly King County Peer-to-Peer engagement meetings:** Provide feedback and direction to the peer-to-peer engagement group that is working to identify homeowners and entities to serve as peer educators on the plateau, distribute surveys to understand successful engagement strategies, and create a plan for plateau- wide education and outreach.

Projected:

- **Enumclaw Plateau survey:** The King County Peer-to-Peer group has been working to create a survey for distribution to landowners. Ecology has been instrumental in the design and will continue to play a major role in this community based social marketing effort.

Pollution Identification/Watershed Evaluation:

Ongoing:

- **Continue to identify sites of concern:** Continue to work in the field and within the community to identify additional sites of concern that have not yet been prioritized. Systematically identify and document sites of concern in the NPI database.
- **Utilize monitoring data to refine nonpoint efforts:** Continue to evaluate available water quality monitoring data for use in prioritization efforts and take additional opportunistic and bracketed samples when appropriate.

Compliance/Technical Assistance Activities

Ongoing:

- **Provide technical assistance to area livestock owners:** Ecology will work to connect with area livestock owners to provide technical assistance.
- **Compliance follow-up:** Follow-up and continue technical assistance efforts with landowners who have received letters from Ecology. In the Lower White River area, there are over one hundred sites of concern—about 90 of those sites occur on the King County side on the Enumclaw Plateau. Of those 90 sites, over half have previously received an outreach TA or a TA1 or TA2 letter. These dozens of sites all need to be followed up on, as some received their letters as long ago as 2020 and have not seen improvement since that time. We do not have the capacity to follow up on each

property that has previously received a letter. After using monitoring data to reprioritize implementation reaches (an effort which will be complete by April 2024), we will work to send letters to the highest priority tier of properties by the end of 2024.

- **Compliance steps:** Meanwhile, nonpoint staff will continue working on compliance steps for seven properties that have previously received TA1 and TA2 letters and have been in conversation with nonpoint staff.
- **Site visits:** Ecology staff will conduct in-person site visits—sometimes joint site visits with King Conservation District staff—on parcels that have been identified as sites of concern. When necessary, site visits will be conducted with an interpreter onsite as many landowners on the Plateau are Spanish speakers. Site visits have led to landowners taking recommended steps or Ecology taking further enforcement actions.
- **Increase language access in outreach, technical assistance, compliance, and enforcement actions**: Staff have begun to include Spanish translation taglines in letters to Enumclaw residents, as well as translated versions of handouts and translated versions of the letters themselves. Staff have utilized LanguageLink[30] to interpret conversations with Spanish-speaking landowners. Staff will continue to prioritize facilitating language access so that all landowners on the Plateau, regardless of language, can help us protect water quality in the Lower White River Watershed.
- **Evaluate and respond to incoming ERTS complaints:** Continue to respond directly or coordinate with WSDA, King County, and City of Enumclaw staff to address livestock or OSS related pollution sources.

[30] LanguageLink offers on-demand phone interpretation services

Priority Watershed Name: Deschutes River, Percival Creek, & Budd Inlet Tributaries

Figure 33. Map of the Deschutes Watershed.

Implementing: Deschutes River, Percival Creek, & Budd Inlet Tributaries Multiparameter TMDL

Summary/Context Info:

> *Note: We opted to drop Ohop as a priority Watershed for 2024 due to the fact that much of the work in this area that could be done by Nonpoint staff has already been completed—though there is some wrap-up work left to do, the Nisqually Land Trust now owns a significant portion of the Watershed and plans to acquire and restore more land over the coming years. We replaced Ohop with the Deschutes River Watershed, which has two TMDLs and has as yet never been a focus for Ecology nonpoint staff. We believe there is significant potential in the Deschutes for substantial reduction of nonpoint pollution.*

The Deschutes River, Percival Creek, & Budd Inlet Tributaries TMDL was submitted to EPA in 2018. These waterbodies are impaired for bacteria, temperature, dissolved oxygen, and nutrients. Partners involved include: Thurston County Environmental Health, Thurston County

Community Agriculture Program, Thurston Conservation District, Cities of Olympia, Lacey, and Tumwater, Squaxin Indian Tribe, WRIA 13 Lead Entity, South Puget Sound Salmon Enhancement Group, Capitol Land Trust, Deschutes Estuary Restoration Team, Washington Department of Fish and Wildlife, and others. Because this is a new priority Watershed for SWRO's Nonpoint program, there are no 'ongoing' actions—all actions are projected.

Priority Actions Projected for 2024:

Education and Outreach

- **Explore potential outreach opportunities with partners:** Work with Thurston Conservation District and Thurston County Environmental Health to identify targeted areas where a joint mailer and/or a door-knocking campaign may be warranted. Use Thurston County Environmental Health ambient monitoring and stream segmentation data along with Ecology field observations to determine areas where a mailer may have positive outcomes. Possible options include Reichel Creek and Chambers Creek. Once areas for outreach have been identified, draft a mailer to be sent.

Financial Assistance

- **Provide partners with front-end feedback on grant proposals:** In an effort to encourage and assist our partners to draft successful grant proposals, we will coordinate with grants staff to provide grantees with the option to submit a notice of intent and receive feedback prior to the fall submittal deadline.
- **Share grant information with partners and, when possible, coordinate with Ecology FMS staff to present on grant opportunities.**
- **Provide information to landowners**: We will continue to provide information about technical and financial assistance available to landowners as they move forward with BMP implementation.
- **Brainstorm grant opportunities with partners:** We will explore the possibility of a riparian buffer incentive program in partnership with Thurston Conservation District.

Partner Coordination

- **Hold sites of concern prioritization meetings with state and local partners and stakeholders:** Coordinate and facilitate meetings with partners directly involved with BMP implementation in the Watershed to discuss and receive feedback about future and ongoing enforcement activities. Every-other-month direct 1:1 meetings will be held with Thurston Conservation District's senior farm planner and with Thurston County Environmental Health staff.
- **Coordinate on complex, multi-agency sites:** Already, sites in this Watershed have cropped up where violations span a range of agency jurisdictions. These complex sites will require excellent communication and transparency with Thurston County, WSDA, and others.
- **Attend partner meetings to build relationships and knowledge about activities in the Watershed:** We will attend monthly WRIA 13 Lead Entity meetings and Thurston

Conservation District board meetings as well as quarterly Pollution Identification and Control meetings.

Pollution Identification/Watershed Evaluation:

- **Watershed evaluations:** Since the Deschutes is a new focus Watershed for SWRO, not many sites of concern had been identified as of fall 2023. Several watershed evaluations in early 2024 identified over 30 new sites. We will perform up to two additional watershed evaluations in this Watershed in 2024 to identify additional sites of concern and re-check previous sites. We will document sites of concern in the Nonpoint Inspection database.
- **Site visits:** As we make contact with landowners, we will perform site visits to inspect properties and talk with landowners about best management practices. Site visits have resulted in landowners implementing Ecology recommendations.
- **Explore the potential to float the middle Deschutes to identify additional sites from the water:** The middle Deschutes sub-Watershed is an area of concern for agricultural pollution, and it is evident from aerial photography that livestock have access to the river along much of this reach—yet much of the riparian area is not visible from public roads. However, the river is navigable and is therefore considered a public right-of-way from which observations and photos can be collected. Staff will explore the possibility of floating the Deschutes (partnered with staff from South Sound Fisheries Enhancement Group) in mid to late spring to collect observations.
- **Utilize monitoring data to refine nonpoint efforts:** Continue to evaluate available water quality monitoring data to support prioritization efforts and take additional opportunistic and bracketed samples when appropriate.

Compliance/Technical Assistance Activities

- **Provide technical assistance to area livestock owners:** Ecology will work to connect with area livestock owners to provide technical assistance.
- **Create prioritization scheme within Watershed:** Staff will use data from TCEH, along with observations from our watershed evaluations, to determine properties at highest risk for impacting water quality. We will send technical assistance letters to at least five properties we determine to be at high risk.
- **Evaluate and respond to incoming ERTS complaints:** Continue to respond directly or coordinate with Thurston County staff to address livestock or OSS related pollution sources.

Monitoring Activities

- **Investigatory Collection:** Staff will take opportunistic samples as needed when responding to complaints or referrals.

Priority Watershed Name: Greater Key Peninsula

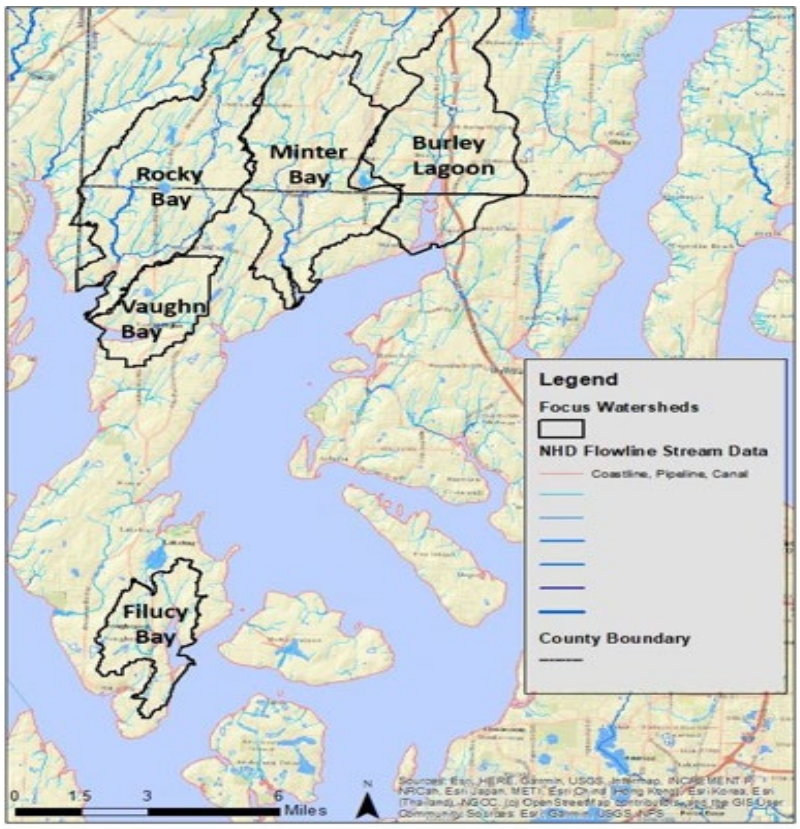


Figure 34. Map of the five focal sub-Watersheds of the Key Peninsula.

Priority Actions Projected for 2024:

Education and Outreach

- **Joint Mailer Distribution:** Staff will continue to systematically distribute mailers throughout the sub-Watershed of Vaughn Bay and coordinate with Tacoma-Pierce County Health Department. An additional 100 letters are expected to be sent during 2024.
- **Mailer Response:** In an effort to monitor mailer response, staff will track and respond to phone calls, emails, and requests for site visits from landowners who received the joint mailer. Staff will provide educational materials to residents, landowners, and operators and refer them to appropriate partner agencies when needed. Additional neighborhood canvasing with Tacoma-Pierce County Health Department will be performed as required.

Financial Assistance

- **Information Sharing:** Staff will provide information to:
    - Landowners regarding financial assistance opportunities through local partners (i.e. conservation district cost-sharing programs).

- Local partners regarding grant funding opportunities.

Partner Coordination

- **Sites of concern response:** Ecology will continue to coordinate with local partners on responses to elevated risks to water quality on parcels that have been identified as sites of concern.
- **Referrals:** Ecology staff will refer and follow-up with local partners involving livestock accessing surface water and other water quality concerns.
- **Partner Meetings:** Staff will participate in four quarterly PIC and water quality/shellfish meetings, which focus on the five Watersheds, to provide updates on compliance activities.

Pollution Identification/Watershed Evaluation:

- **Watershed Evaluations:** In an effort to identify nonpoint sources of pollution, watershed evaluations will be conducted primarily during the wet seasons. Additional watershed evaluations will also take place if monitoring data show areas of exceedance. At least five evaluations will be completed by December 2024.
- **Watershed Evaluations Follow-Up:** Staff continue to communicate with landowners of identified sites of concern through our compliance process. Necessary follow-up evaluations will be conducted, and corresponding information is shared with these landowners as well as our partners.

Compliance/Technical Assistance Activities

- **Complaint/Referral Response:** Staff respond to verified nonpoint reported concerns in the area submitted through Ecology's complaint system (ERTs).
- **Compliance Follow-up:** Staff are working with local partners to follow up on all sites identified during watershed evaluations.
- **Responding to Responsible Parties:** Ecology staff will utilize the Nonpoint Desk Book Manual and compliance flowchart timelines to respond to sites identified during Watershed assessments or via reported concerns. If local partners are not currently working with the responsible party, staff will respond by phone, email, or letter within two weeks after deeming the site a priority of concern to protect water quality.

Monitoring Activities

- **Source Identification:** Staff will sample higher in the Watershed when partner ambient sites show exceedances downstream.
- **Investigatory Collection:** Staff will take opportunistic samples when responding to complaints or referrals on a per-case basis.

Priority Watershed Name: Eld Inlet, Henderson Inlet, & Nisqually Reach

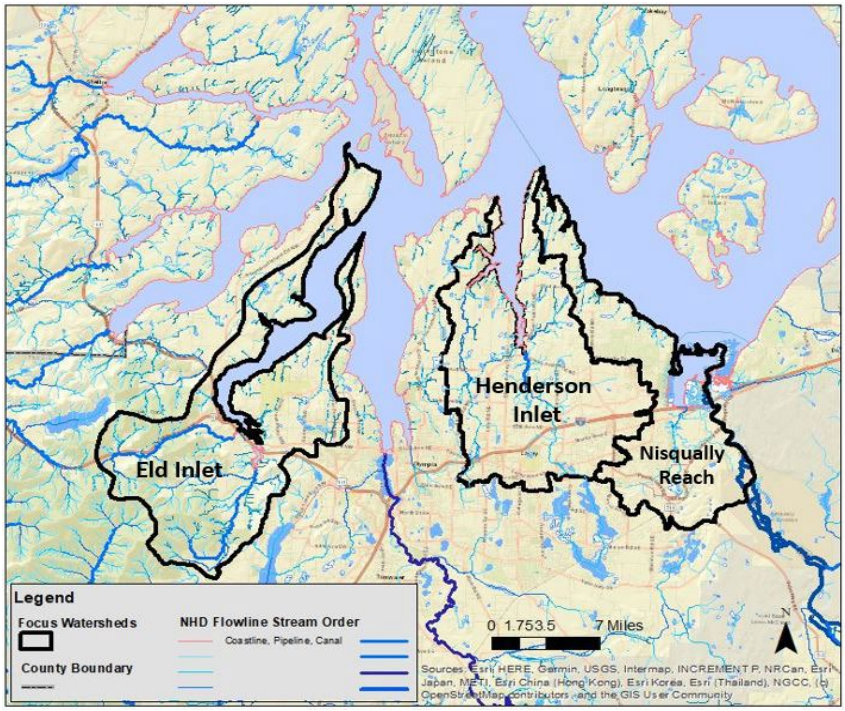


Figure 35. Map of locations of the Eld Inlet, Henderson Inlet and Nisqually Reach Watersheds

Priority Actions Projected for 2024:

Education and Outreach

- **Create and Distribute Joint Mailer:** Mailers will be distributed to the Nisqually Reach and Eld Inlet sub-Watershed residents and landowners. These mailers will reinforce local partners' PIC work within the area.
- **Mailer Response:** Staff will track and respond to phone calls, e-mails, and requests for site visits from landowners who received the mailer to provide educational materials and refer to appropriate partner agencies as appropriate.
- **Create a Horse Manure Informational Flyer:** Staff are working with partners to create a comprehensive handout for resources and locations for horse manure disposal. This will allow staff to connect hobby farms with services and bring a full understanding of risks and solutions to their manure management practices.

Financial Assistance

- **Information Sharing:** Staff will provide information to:
    - Landowners regarding financial assistance opportunities through local partners (i.e. conservation district cost-sharing programs).
    - Local partners regarding grant funding opportunities.

Partner Coordination

- **Sites of concern response:** Staff will coordinate with partners to facilitate working with parcels that have been identified as potential pollution sources.
- **In-person meeting:** Staff will participate in an in-person meeting with partners to explain compliance pathway and establish a connection with local partners.
- **Partner Meetings:** Staff will continue to participate in quarterly PIC meetings, yearly Shellfish Protection District meetings, and monthly Thurston Conservation District meetings to provide updates on compliance.

Pollution Identification/Watershed Evaluation:

- **Watershed Evaluation:** Watershed evaluations will be conducted primarily in the wet season. Additional evaluations will also take place if monitoring data show areas exceeding water quality standards and threatened shellfish growing areas. At least one Watershed assessment will be completed by December 2024.

Compliance/Technical Assistance Activities

- **Complaint/Referral Response:** Staff respond to verified nonpoint reported concerns in the area submitted through Ecology's complaint system (ERTS).
- **Responding to Responsible Parties:** Ecology staff will utilize the Nonpoint Desk Book Manual and compliance flowchart timelines to respond to sites identified during Watershed assessments or via reported concerns. If local partners are not currently working with the responsible party, staff will respond by phone email, or letter within two weeks after deeming the site of concern to protect water quality.

Monitoring Activities

- **Source Identification:** Staff will sample higher in the Watershed when partner ambient sites show exceedances downstream.
- **Investigatory Collection:** Staff will take opportunistic samples when responding to complaints or referrals on a per-case basis.
- **Partner PIC monitoring:** Staff utilize data collected by the local health department or the WA State Department of Health to respond to elevated bacteria detected in assigned focus Watersheds.

Priority Watershed Name: Oakland Bay & Johns Creek

Figure 36. Map of Oakland Bay and Johns Creek Watersheds.

Priority Actions Projected for 2024:

Education and Outreach

- **Collaborate with partners to create educational outreach mailers:** Staff will continue to work with Mason County Environmental Health Department and other partners to develop educational mailers with lists of available resources.
- **Mailer Response:** Staff will be track and respond to phone calls, e-mails, and requests for site visits from landowners who received the mailer. Staff will provide educational materials and refer landowners to the appropriate partner agency.

Financial Assistance

- **Information sharing:** Staff will provide information to:
    - Landowners regarding financial assistance opportunities through local partners (i.e., conservation district cost share programs)
    - Local partners regarding grant funding opportunities

Partner Coordination

- **Sites of concern response:** Staff will continue to coordinate with partners to facilitate working with identified parcels with potential pollution sources.
- **Partner meeting:** Staff will participate in quarterly Clean Water District meeting and provide updates on compliance activities.

Pollution Identification/Watershed Evaluation:

- **Watershed Evaluation:** Watershed evaluations will be conducted primarily in the wet season. Additional evaluations will also take place if monitoring data show areas exceeding of water quality standards and threatened shellfish growing areas. At least one Watershed assessment will be completed by December 2024.
- **Complaint/Referral response:** SWRO staff will continue to verify and respond to nonpoint concerns in the Oakland Bay/John's Creek area via partner referrals or submitted through Ecology's complaint system. Ecology staff will continue to evaluate progress on existing sites of concern as site conditions and land management practices change over time.

Compliance/Technical Assistance Activities

- **Responding to responsible parties:** Ecology staff will continue to utilize the Nonpoint Desk Book Manual and compliance flowchart timelines to respond to sites identified as sites of concerns through windshield assessments or reported from a third party. If local partners are not currently working with the responsible party, staff will respond by phone, email, or letter within two weeks after deeming the site a priority of concern to protect water quality.

Monitoring Activities

- **Source Identification:** Staff will sample higher in the Watershed when partner ambient sites show exceedances downstream.
- **Investigatory Collection:** Staff will take opportunistic samples when responding to complaints or referrals on a per-case basis.
- **Partner PIC monitoring:** Staff will continue to utilize data collected by the local health department or the WA State Department of Health to respond to elevated bacteria detected in assigned focus Watersheds.

Priority Watershed Name: Skokomish Valley & Annas Bay

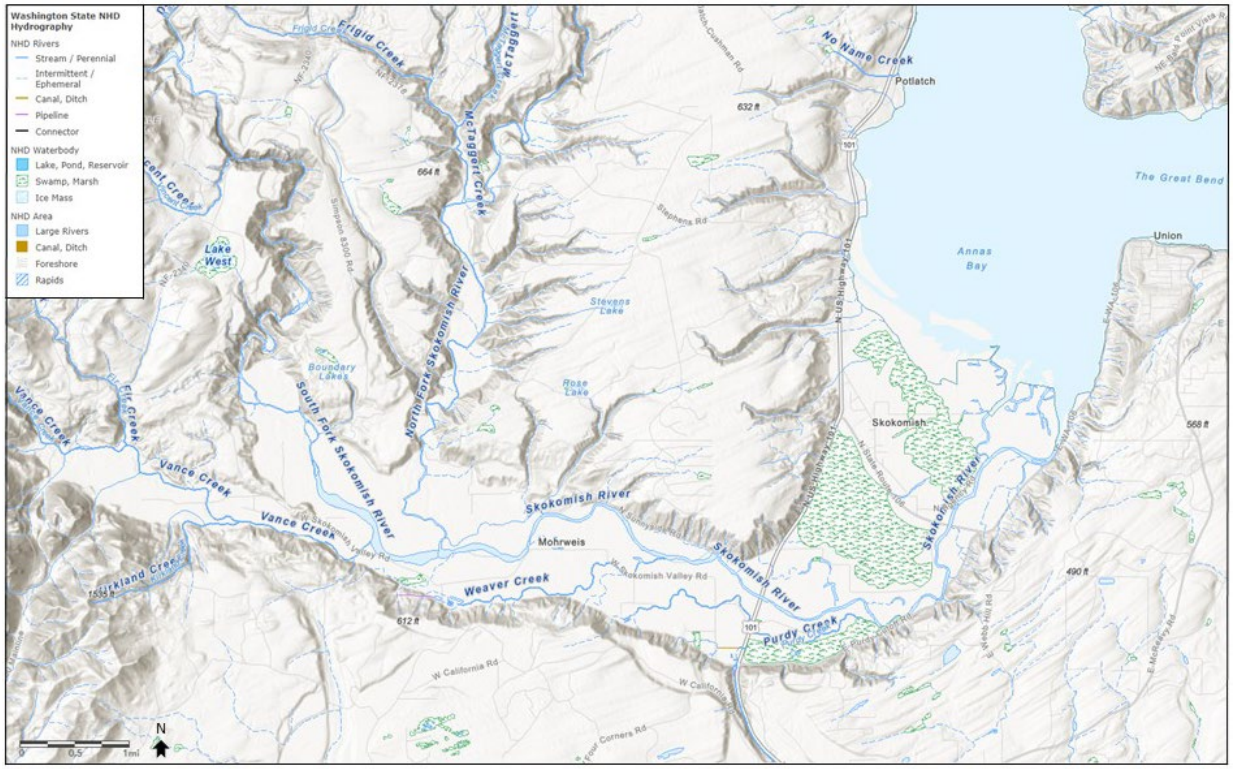


Figure 37. Map of Skokomish River Watershed and Annas Bay.

Priority Actions Projected for 2024:

Education and Outreach

- **Collaborate with partners to coordinate messaging for educational/outreach mailers:** Staff will continue working with Mason County Environmental Health Department and other area partners to develop educational mailers to provide landowner with up-to-date information regarding available technical and financial resources.

Financial Assistance

- **Information Sharing:** Staff will provide information to:
    - Landowners regarding financial assistance opportunities through local partners (i.e., conservation district cost-share programs).
    - Local partners regarding grant funding opportunities**.**

Partner Coordination

- **Continue working to maintain relationships with Mason Conservation District (MCD):** Continue to facilitate staff-to-staff meetings to keep MCD abreast of our outreach and enforcement efforts and continue to attend MCD board meetings.

- **Attend quarterly PIC meetings:** Staff will continue to attend Mason Clean Water District and Hood Canal Pollution Identification and Correction meetings to coordinate response efforts to identify water quality concerns.
- **Participate in quarterly Skokomish Watershed Action Team (SWAT) meetings:** Staff will continue to participate in SWAT partner meetings to stay informed on area restoration projects and federal/state/local habitat and water quality issues within the Skokomish River Watershed.

Pollution Identification/Watershed Evaluation:

- **Utilize monitoring data to continue nonpoint efforts:** Continue work to collect and evaluate available water quality monitoring data collected by local partners and take opportunistic and bracketed samples when appropriate.
- **Work to identify sites of concern:** Continue to conduct field observations and document properties where livestock have access to streams and riparian areas.

Compliance/Technical Assistance Activities

- **Responding to responsible parties:** Ecology staff will continue to utilize the Nonpoint Desk Book Manual and compliance flowchart timelines to respond to sites identified as sites of concern through windshield assessments or reported from a third party. If local partners are not currently working with the responsible party, staff will respond by phone, email, or letter within two weeks after deeming the site a priority of concern to protect water quality**.**
- **Escalated compliance**: Staff anticipate escalating compliance requiring the issuance of one Administrative Order to address impacts to water quality from livestock operations.

Monitoring Activities

- **Source Identification:** Staff will sample higher in the Watershed when partner's ambient sites show exceedances downstream.
- **Investigatory Collection:** Staff will take opportunistic samples when responding to complaints or referrals on a per-case basis.
- **Partner PIC monitoring:** Staff will continue to utilize data collected by the local health department or the WA State Department of Health to respond to elevated bacteria detected in the Skokomish Watershed.

Priority Watershed Name: Lacamas Creek Watershed

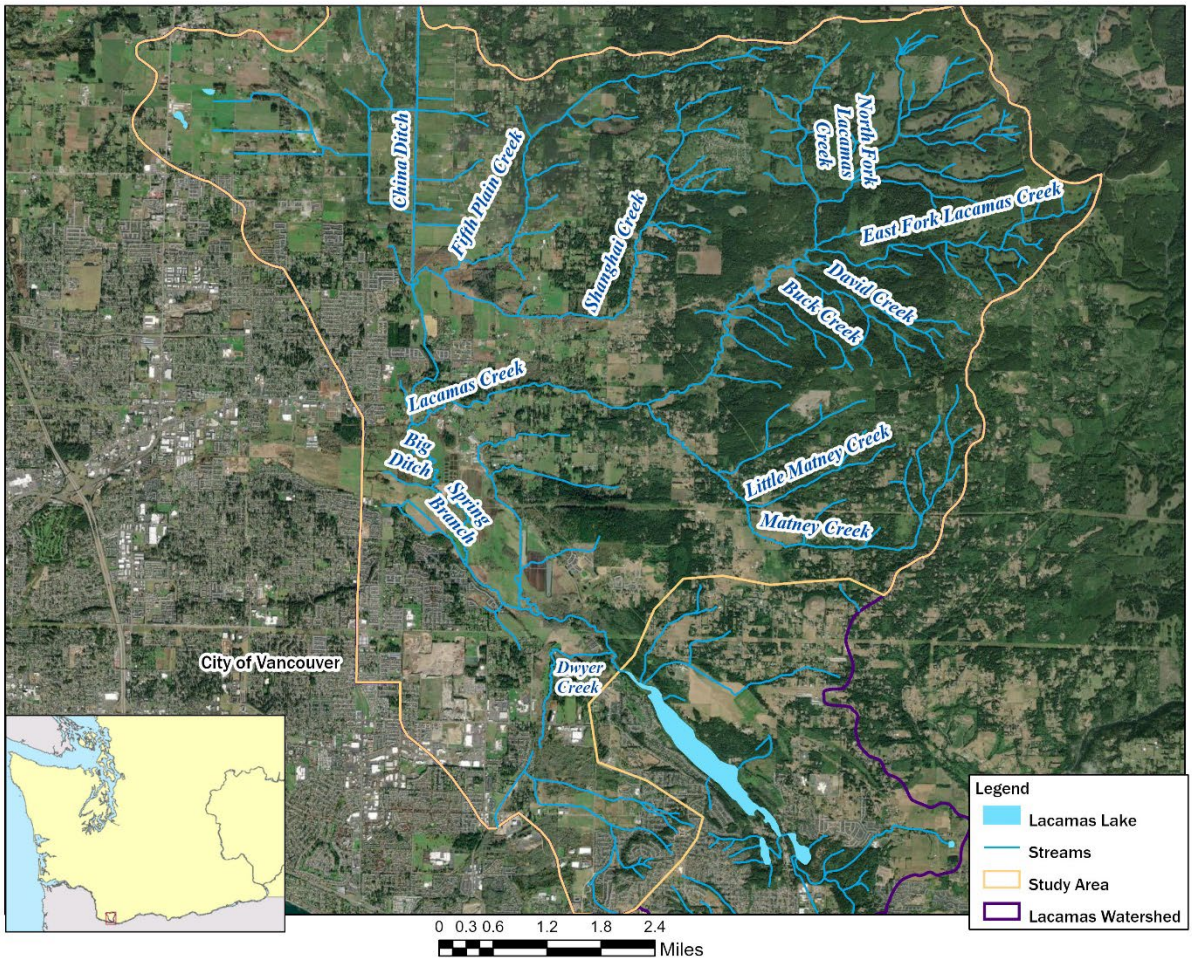


Figure 38. Map of the Lacamas Watershed.

Implementing: Lacamas Creek Partnership for Clean Water Action Agenda

The Washington State Department of Ecology (Ecology) is the lead for the Lacamas Creek Partnership for Clean Water. Supporting partners are Clark County, City of Camas, Washington State Department of Agriculture, Clark Conservation District, and the United State Department of Agriculture's Natural Resource Conservation Service (USDA NRCS).

Summary/ Context Info:

The Lacamas Creek Watershed is home to one of the fastest growing cities in Washington State, and on Washington State's polluted waters list for warm water temperatures, bacteria, dissolved oxygen, and pH impairments. The Lacamas Creek Partnership has been established to improve the waterbody. Lacamas Lake eutrophication was first recognized in the 1970's and the Lacamas Creek Watershed TMDL was first published January 1996. The focal waterbodies and impairments of the Watershed include China Ditch (Phosphorus, Nitrogen), Shanghai Creek (Bacteria), Fifth Plain Creek (Temperature, Nitrogen), Big Ditch (Temperature), Spring Branch

Creek (Phosphorus, Nitrogen), Lower Lacamas Creek (Nitrogen, Bacteria), Dwyer Creek (Phosphorus, Temperature).

Priority Actions Projected for 2024:

Education and Outreach

Ongoing:

- **Public Events:** Ecology staff will continue to coordinate with the Clark County Conservation District, Clark County Public Health, and Clark Public Utilities on water quality workshops and participate in public outreach events, when appropriate.
- **Landowners:** We will continue to provide water quality related educational materials to landowners within the Watershed with an estimated 20 site visits per year by either Ecology staff or referred to the Conservation District's Working Lands Program Manager.

Financial Assistance

Ongoing:

- **Information sharing**: Ecology staff will continue to provide landowners with financial assistance opportunities for BMP implementation on their properties and will assist local partners with grant funding opportunities.

Partner Coordination

Ongoing:

- **Lacamas Creek Partnership:** SWRO staff will continue to collaborate and attend annual meetings with Clark County, City of Camas, Washington State Department of Agriculture, Clark Conservation District, and the United State Department of Agriculture's Natural Resource Conservation Service.
- **Conservation District:** SWRO staff will continue to attend monthly Clark Conservation District Board Meetings and coordinate with CD staff to address pollution concerns.
- **PIC:** SWRO staff will continue to participate in monthly PIC "Poop Smart" meetings and provide updates on compliance activities.

Pollution Identification/Watershed Evaluation:

Ongoing:

- **Watershed Evaluation:** SWRO staff will continue to conduct watershed evaluations to assess potential pollution sources, provide technical assistance to residents, and refer landowners to Clark Conservation District when appropriate.

Compliance/Technical Assistance Activities

Ongoing:

- **Complaint Response:** Staff will continue to verify and respond to nonpoint concerns submitted through Ecology's reporting system.

- **Technical Assistance:** Staff will provide technical assistance letters to landowners identified as having nonpoint concerns identified during watershed evaluations and through ERTS reports.

Monitoring Activities

Ongoing:

- **Investigatory collection:** Staff will take opportunistic samples when responding to complaints or referrals on a per-case basis.

Priority Watershed Name: East Fork Lewis River Watershed

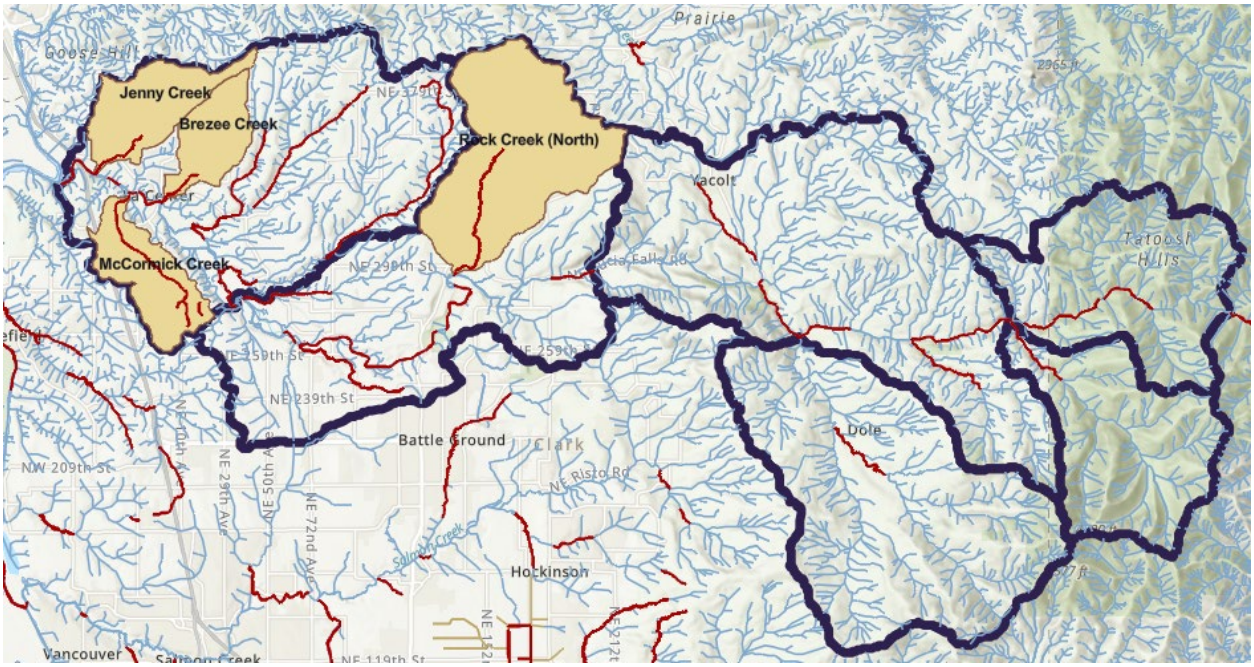


Figure 39. Map of the East Fork Lewis River and surrounding areas.

Implementing: [East Fork River Alternative Restoration Plan](#)[31]

Summary/Context Info:

The East Fork Lewis River (EFLR) Alternative Restoration Plan was approved by EPA in 2021 to address temperature and bacteria impairments. The EFLR Watershed is home to both one of the fastest growing cities in Washington State, and five high priority populations of Endangered Species Act (ESA) listed salmon and steelhead. The Watershed provides recreation, timber, agriculture, and water resources for this rapidly growing region of the State. At the same time, the Watershed is key to the recovery of ESA-listed salmon and steelhead that rely on the mainstem and tributaries for critical spawning and rearing habitat. The Poop Smart Clark Pollution Identification and Correction (PIC) group is working collaboratively to identify bacteria

[31] https://apps.ecology.wa.gov/publications/documents/2110051.pdf.

sources and to direct resources to problem areas. Stream and habitat restoration projects have been initiated by local non-profit Watershed groups including the reclamation project of nine abandoned pit mines along the East Fork Lewis River. External partners include Clark County Conservation District, Clark Public Utilities, Washington State University Extension, Clark County Public Health, Clark County Clean Water, The Watershed Alliance, and the Lower Columbia Estuary Partnership.

Priority Actions Projected for 2024:

Education and Outreach

- **Public Events:** Ecology staff will continue to coordinate with the Clark County Conservation District, Clark County Public Health, and Clark Public Utilities on water quality workshops and participate in public outreach events, when appropriate.
- **Landowners:** We will continue to provide water quality related educational materials to landowners within the Watershed with an estimated 10 site visits per year by either Ecology staff or referred to the Conservation District's Working Lands Program Manager.

Financial Assistance

- **Funding:** In 2022, Ecology funded the initiation of the Poop Smart Clark Pollution Identification and Correction (PIC) program until 2025 in four selected sub-Watersheds to address livestock and onsite nonpoint pollution concerns. Ecology award = a total of $666,666.67.
- **Information sharing**: Ecology staff will continue to provide landowners with financial assistance opportunities for BMP implementation on their properties and assist local partners with grant funding opportunities.

Partner Coordination

- **Conservation District:** SWRO staff will continue to attend monthly Clark Conservation District Board Meetings and coordinate with CD staff on addressing pollution concerns.
- **PIC:** SWRO staff will continue to participate in monthly PIC "Poop Smart" meetings and provide updates on compliance activities.

Pollution Identification/Watershed Evaluation:

- **Watershed Evaluation:** SWRO staff will continue to conduct watershed evaluations.

Compliance/Technical Assistance Activities

- **Complaint Response:** Staff will continue to verify and respond to nonpoint concerns submitted through Ecology's reporting system.
- **Technical Assistance:** Staff will provide technical assistance letters to landowners identified as having nonpoint concerns identified during watershed evaluations and through ERTS reports.

- **Investigatory collection:** Staff will take opportunistic water quality samples when responding to complaints or referrals on a per-case basis.

NWRO Priority Watersheds

Priority Watershed Name: Green River Watershed

Ecology will continue to implement two TMDLs in the Green River Watershed: the Green River Temperature TMDL (2011) and the Newaukum Creek Temperature TMDL[32] (2011). Nonpoint efforts will likely be limited to complaint response in this Watershed due to lack of staff and resources. Implementation in this Watershed has focused on supporting implementation partners with riparian restoration by removing invasive species and planting native vegetation.

Priority Watershed Name: Skagit River and Samish River Watersheds

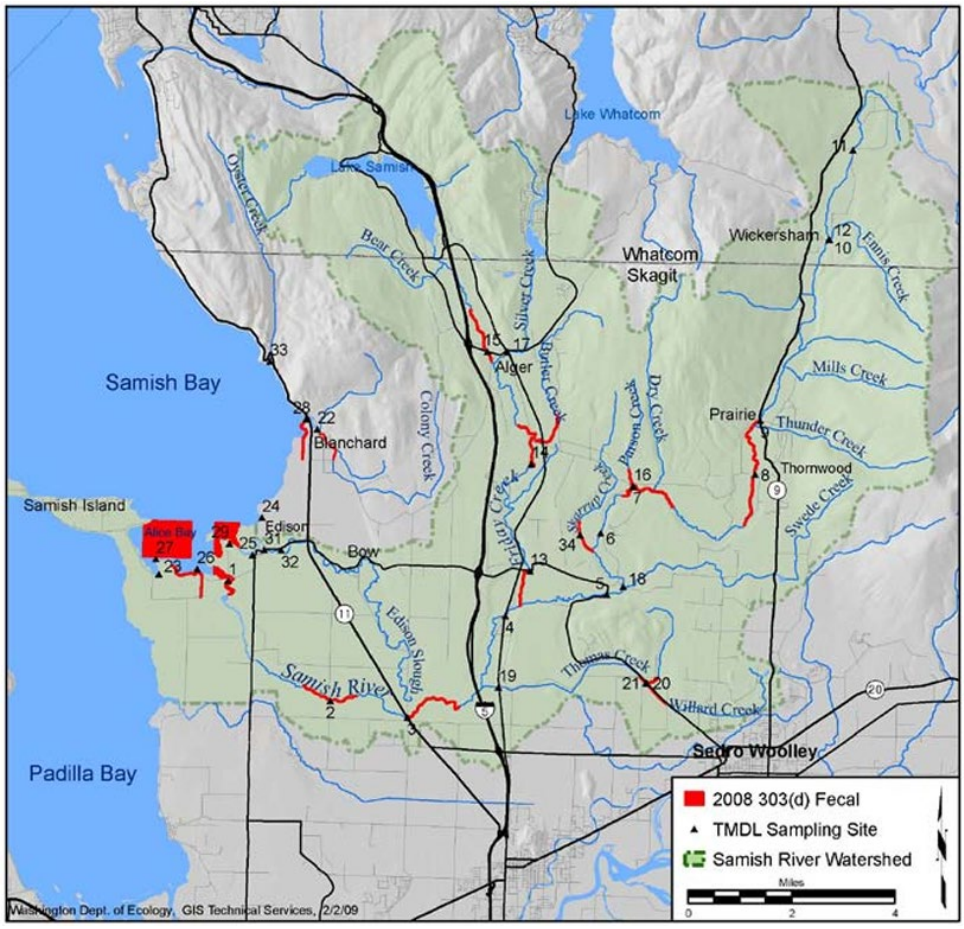


Figure 40. Samish Bay Watershed in Skagit and Whatcom counties, northwest Washington.

[32] Newaukum Creek is a tributary of the Green River. The two TMDLs were developed concurrently.

Implementing: Lower Skagit River Tributaries Temperature TMDL, Lower Skagit Fecal Coliform TMDL, and Samish Bay Watershed Bacteria TMDL

Summary/Context Info- Lower Skagit Tributaries Temperature TMDL:

Ecology continues to work with local restoration practitioners to support region-driven efforts to increase the pace of riparian restoration in the Lower Skagit Tributaries. The activities are a result of the Lower Skagit Tributaries Temperature TMDL Implementation Strategy[33] developed in coordination with stakeholders and implementation partners during 2019.

The TMDL is in its implementation phase and there are continued challenges with riparian restoration and voluntary compliance. Nonpoint staff continue to respond to individual properties when risks to water quality are visible from public road right of ways. Technical assistance is provided, and Ecology staff work with local partners (example: the Skagit CD) to provide best management practice information and funding source options for implanting recommended BMPs. When actions continue that cause impairment to water quality, Ecology staff will use enforcement as a backstop to gain compliance.

Priority Actions Projected for 2024:

Education and Outreach

- Provide general water quality education and outreach through our Ecology staff participating in public outreach events (tabling), creating outreach materials that include Spanish options about water quality, and by working with our implementation partners such as Skagit County and Skagit CD to distribute water quality outreach materials and social media posts.

Financial Assistance

- Our nonpoint specialist will work with property owners and local conservation districts to secure funding for BMPs. Our TMDL leads and nonpoint specialist will also continue to encourage our implementing partners, such as nonprofits and local governments, to apply for Ecology funding for eligible nonpoint restoration projects.

Partner Coordination

- TMDL Lead staff will participate in technical committees and Council meetings to promote awareness of the Lower Skagit Temperature TMDL, encourage grant applications to Ecology's Combined Funding Program, and prioritize Salmon Recovery Funding Board projects supporting water quality/temperature improvements.
- Nonpoint staff will continue to participate in regularly scheduled Skagit County water quality coordination meetings with regional partners, including county staff, the Skagit Conservation District, WSDA, DOH and Ecology.

[33] https://apps.ecology.wa.gov/publications/SummaryPages/2010010.html

Pollution Identification/Watershed Evaluation

- Nonpoint staff will utilize watershed evaluations to identify and prioritize sites of concern for follow-up.

Compliance/Technical Assistance Activities

- Nonpoint staff will continue to respond to ERTS complaints for potential water quality violations and follow up on efforts to restore damaged areas. Follow up can include coordination with the conservation district, local code enforcement, our SEA program and WR program, the property owner, and the funding agency.

Monitoring Activities

- Ecology nonpoint staff will perform source identification sampling as needed in the assessment area to follow-up on existing or newly discovered concerns.

Priority Watershed Name: South Skagit Bay

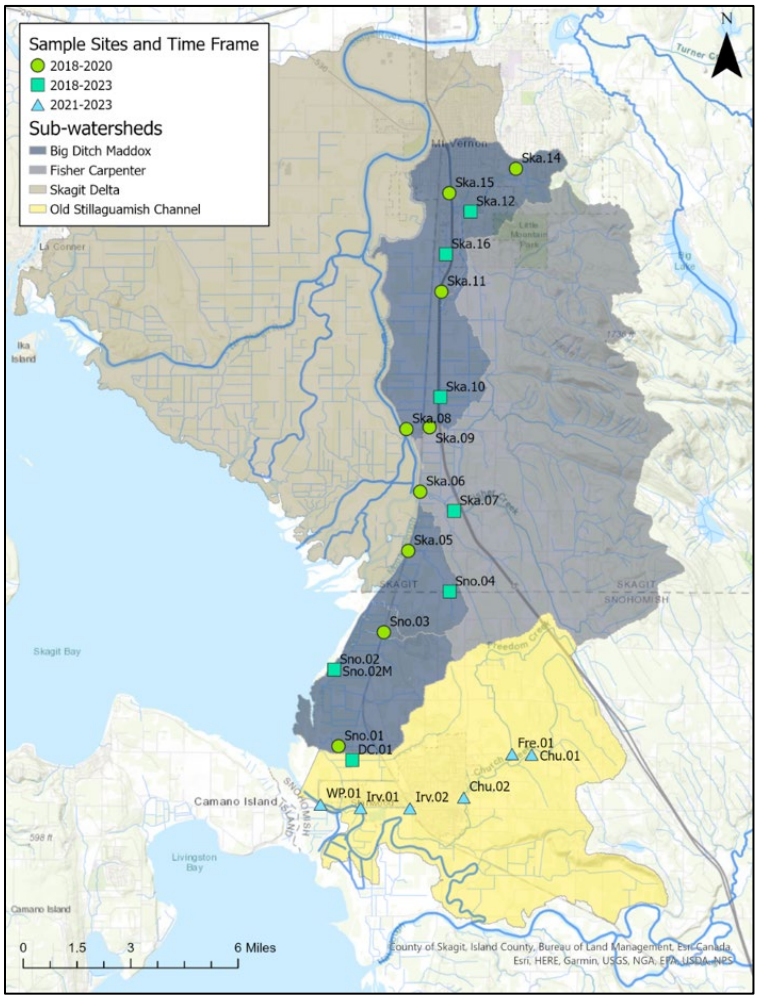


Figure 41. A map of the lower Skagit River sub-Watershed & Stillaguamish River.

Implementing: Stillaguamish River Watershed Multiparameter TMDL, Lower Skagit Basin Bacteria TMDL

Summary/Context Info:

Shellfish beds in South Skagit Bay (SSB) were downgraded to “threatened” in 2017 by the Washington Department of Health (Health). To improve water quality in SSB, both Ecology and Health's Shellfish Division identified tributaries to SSB as a priority area for outreach and technical assistance to reduce loading of bacteria to the bay. Ecology developed and performed an assessment aimed to identify potential sources of fecal coliform bacteria from SSB’s sub-Watersheds, in support of the Washington Shellfish Initiative.

Priority Actions Projected for 2024:

Education and Outreach

- Ecology will publish the South Skagit Bay assessment report and present the assessment findings to local stakeholders.
- Ecology will explore the feasibility of building an accessible online data summary and map of the assessment findings to be distributed to the public via a final postcard mailer.
- Ecology will mail a (third and final) postcard to the same subset of riparian landowners that have previously received mailers from Ecology to notify them of the SSB assessment and its goals. This postcard will announce completion of the assessment and guide readers to the online report and data summary.

Financial Assistance

- Snohomish County Health Department was awarded $500,000 to expand and sustain their Savvy Septic Program. With this funding, they will provide nine grants to eligible low-income OSS owners, 560 OSS maintenance rebates, low-interest loan resources, septic care workshops for homeowners, and informational workshops for septic contractors. Work is expected to start in summer of 2025.
- Snohomish Conservation District was awarded $290,877 to address impaired water temperatures and dissolved oxygen levels on Church Creek and Freedom Creek through invasive species control and riparian reforestation. The CD will control non-native vegetation and plant native trees and shrubs on 4.6 acres of Freedom Creek and complete 12 acres of maintenance on previously funded sites. Work is expected to start in summer of 2025.

Partner Coordination

- Ecology will follow up with the City of Mount Vernon, Skagit County Public Works, and EPA to confirm resolution of the pollution concerns identified by the assessment's source tracing efforts.

Pollution Identification/Watershed Evaluation:

- Staff permitting, Ecology will perform a minimum of one windshield survey within the assessment area from public access points to identify potential pollution sources and identify additional opportunities for improvements.

Compliance/Technical Assistance Activities

- Ecology will continue to follow up with the six properties that have already received technical assistance letters, and work with those landowners to improve conditions. This may include additional technical assistance letters, in-person site visits, and connecting landowners to financial assistance to make improvements.

Monitoring Activities

- Ecology nonpoint staff will perform source identification sampling as needed in the assessment area to follow-up on existing or newly discovered concerns.

Priority Watershed Name: Snohomish River Watershed

Nonpoint efforts will likely be limited to complaint response in this Watershed due to lack of staff and resources. Implementation in this Watershed has focused on supporting implementation partners as they address bacteria run-off from animals, and riparian restoration by removing invasive species and planting native vegetation.

Priority Watershed Name: Whatcom County

TMDL staff will continue to facilitate implementation of the Lake Whatcom Multi-parameter TMDL (2016), Nooksack River Bacteria TMDL (2000) and Whatcom Creek Bacteria TMDL (2023). Nonpoint watershed evaluations and enforcement efforts will likely be limited to complaint response in this Watershed due to lack of staff and resources.

Priority Watershed Name: Drayton Harbor Tributaries

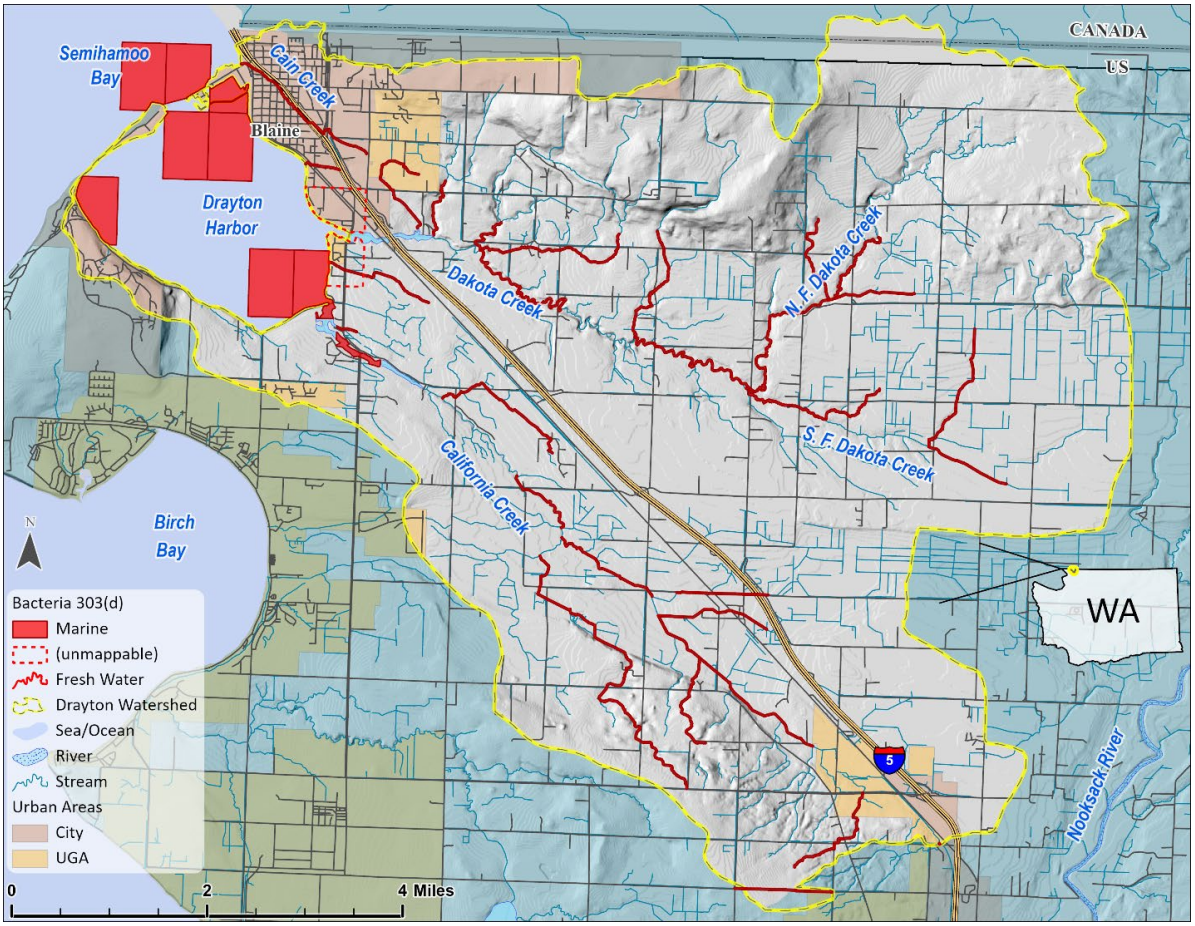


Figure 42. Map of Drayton Harbor Watershed and 303(d) listed bacteria impairments.

Implementing: Drayton Harbor Bacteria TMDL Activities and Development

Summary/Context Info:

In 1988, Washington Department of Health (DOH) began closing the shellfish growing areas in Drayton Harbor based on a trend of deteriorating water quality. The closures ultimately resulted in the entire harbor being closed for harvest by 1999. In 2004, DOH upgraded the status of 575 acres in the central harbor from Prohibited to Conditionally Approved. Two additional upgrades to Approved for commercial harvest occurred in 2016 and 2019 for a total of 1,575 acres. In 2016, 810 acres of shellfish beds were upgraded followed by the most recent in 2019, which comprised an additional 765 acres.

The work of project partners proves the efficacy of pollution control actions; however, freshwater tributaries (primarily Dakota and California creeks) currently do not meet contact recreation criteria. The annual shellfish growing area review for 2021 reclassified 695 acres from Approved to Conditionally Approved. This new Conditionally Approved area is closed annually from November 1 through January 31. An additional 450 acres were changed from unclassified to Prohibited due to poor water quality. In 2022, 42 acres were downgraded from approved to conditionally approved. Water quality issues continue to be a concern for Drayton Harbor, and our nonpoint staff continue to respond to citizen complaints and visual cues from windshield surveys and provide technical assistance to reduce FC pollution in Drayton Harbor tributaries.

Priority Actions Projected for 2024:

Education and Outreach

- Ecology staff will participate in the Whatcom County Farm Expo (WCFE) in partnership with the Whatcom CD and will provide water quality education and outreach materials. The goal of the expo is to bring farmers and industry experts together to facilitate learning, skill sharing, networking, and connecting landowners with the resources they need to be successful.
- Ecology will provide public outreach on the TMDL development and Implementation Plan as its developed; most activity (ex: public outreach meetings, public comment periods) won't take place until 2025.

Financial Assistance

- Encourage landowners and operators to seek funding through Ecology's grant and loan programs and through local funding sources. Ecology's technical assistance letters sent to landowners and operators will highlight the Whatcom CDs farm planning services and small grants. Along with the letter from Ecology, there will also be a printout from the Whatcom CD reiterating these programs.
- Ecology has been approved for a Shellfish Strategic Initiative Sub-Award, for the purpose of increasing harvestable shellfish acres in Puget Sound. The project is funded through EPA's National Estuary (NEP) funding. The sub-award will fund two Nonpoint Shellfish

Specialists, continuing and enhancing our work to reduce fecal coliform bacteria pollution, in collaboration with our Whatcom Clean Water Program and Clean Samish Initiative partners for about two years (2023-2025).

Partner Coordination

- Whatcom Clean Water Program (WCWP): WCWP partners (including Ecology nonpoint staff) coordinate to identify areas with elevated bacteria levels and where there are follow up pollution source control measures needed. Water quality data collected in partnership are available through an interactive online map administered by the Whatcom Conservation District (WCD).
- Quarterly meetings with shellfish advisory committees: TMDL Leads and Nonpoint staff will participate in Drayton Harbor Shellfish Protection District meetings and events will meet with the WCWP partnership. Project partners engage local landowners to identify and prevent bacterial pollution.

Pollution Identification/Watershed Evaluation

- Watershed Assessments: Ecology staff will conduct at least one Watershed assessment in 2024 to identify high priority sites for possible compliance action. Results will be shared with partners.
- Ecology staff will monitor bacteria concentrations, collecting samples for analysis from streams, ditches, and runoff from specific properties to identify sources of manure-contaminated runoff. Ecology staff will collect and analyze for bacteria about 60 samples from the Drayton Harbor tributaries over the next year.

Compliance/Technical Assistance Activities

- Complaints and referrals: Ecology staff receive complaints and land use concerns through our ERTS referrals systems and/or directly from our partners and will conduct follow up and technical assistance according to Ecology's nonpoint desk manual.
- Follow-up from previous years: As part of the WCWP fall strategy, Ecology staff typically contact from five to ten non-dairy livestock operators in the Drayton Harbor Watersheds from the previous winter, reminding them to take action to avoid discharge violations, and follow up on those contacts as needed.
- Enforcement: Although Ecology does not establish targets for enforcement actions, in Drayton Harbor tributaries we typically send two to four warning letters and one or two formal enforcement actions per year to operators Drayton Watersheds. (Notices of Violation, Immediate/Administrative Orders and Notices of Penalty).

Monitoring Activities

- Ecology nonpoint staff will perform source identification sampling as needed in the assessment area to follow-up on existing or newly discovered concerns.

CRO Priority Watersheds

Priority Watershed Name: Granger Drain

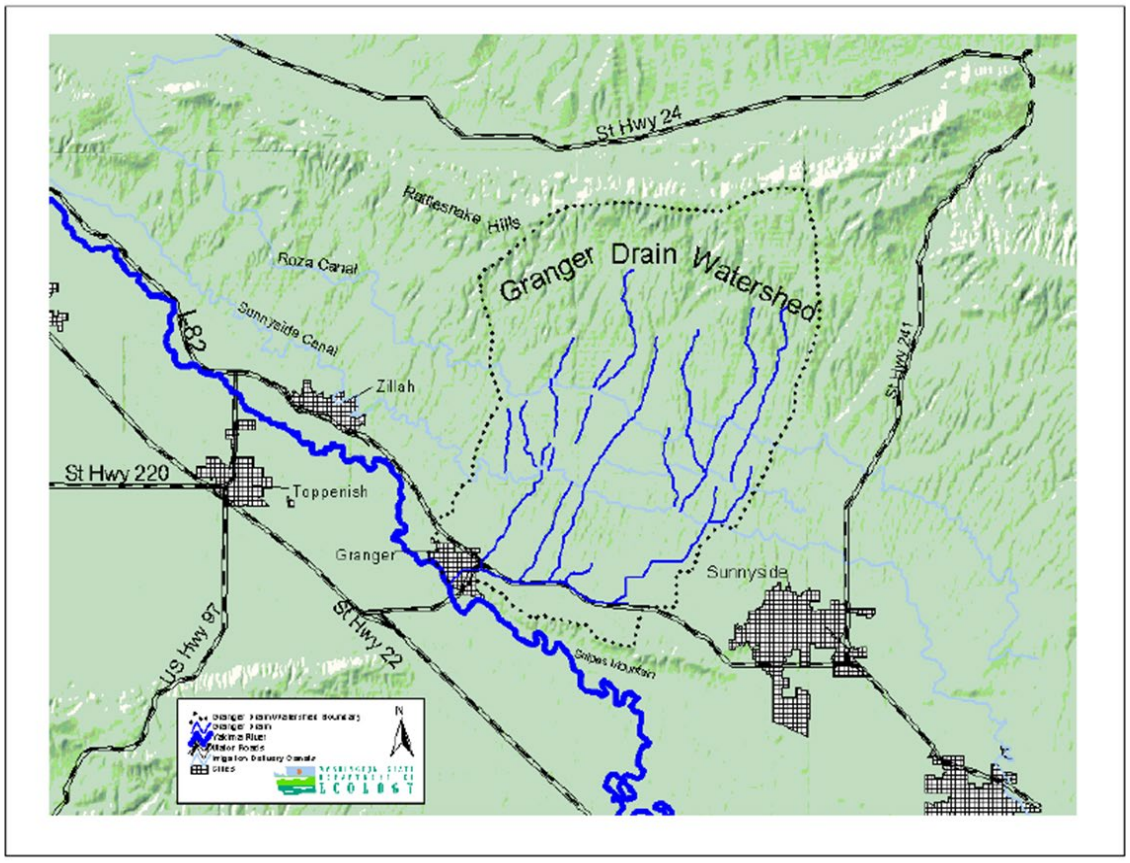


Figure 43. Map of the Granger Drain Watershed.

Implementing: Granger Drain Fecal Coliform Bacteria Total Maximum Daily Load and the Lower Yakima River Suspended Sediment TMDL.

Summary/Context Info:

The Granger Drain Fecal Coliform Bacteria Total Maximum Daily Load set final Fecal Coliform (FC) targets for the Watershed based on the *Water Quality Standards for Surface Waters of the State of Washington* (Chapter 173-201A WAC). At the time there were two Class A criteria for FC bacteria. The first criterion sets a maximum density of bacteria measured in colony forming units (cfu) for the geometric mean criteria not to exceed 100 cfu/100 mL. The second criterion sets a maximum density of bacteria at the 90th percentile not to exceed 200 cfu/100 mL. Of the two criteria, the 90th percentile criterion is typically the most difficult to comply with, as it represents the infrequent high bacterial densities. Based on FC reductions obtained since 1992, the *Granger Drain TMDL* is nearing the interim 90th percentile target of 510 cfu/100 mL and a final 90th percentile target of 200 cfu/100 mL (water quality standards). It is against these

interim and final TMDL targets and the current water quality criteria for E. Coli that future success will be measured for both the mainstem Granger Drain and the Sunnyside Valley Irrigation District (SVID) irrigation supply canal.

Priority Actions Projected in 2024:

Education and Outreach

- Roza/Sunnyside Board of Joint Control (RSBOJC) has agreed to do a presentation of their work on Granger Drain for Ecology. They are currently working on the presentation. The tentative presentation date will be May 2024.
- Ecology staff will continue to meet routinely with RSBOJC staff. RSBOJC staff work with the owners and managers in the district of irrigated agricultural lands.

Financial Assistance

- Nonpoint staff will provide information to partners about Ecology Water Quality Funding opportunities.

Partner Coordination

- Ecology continues to coordinate regularly with the RSBOJC on WQ sampling and laboratory visits.

Pollution Identification/Watershed Evaluation:

- Ecology staff will coordinate with RSBOJC staff within the Watershed to identify and reduce pollution sources.

Compliance/Technical Assistance Activities

- RSBOJC has collected turbidity, FC, and *E. coli* (EC) samples to compare to the goals of the TMDLs and the updated WQ standards. RSBOJC has continued to work at identifying and eliminating illicit connections to the Granger Drain.
- Future cases needing compliance actions will begin with technical assistance coordinated with Watershed partners and, if necessary, will follow Ecology's policies on escalating enforcement.

Monitoring Activities

- Monitoring activities are continuing to be undertaken by RSBOJC on FC/EC.

Priority Watershed Name: White Salmon River (WRIA 29)

Figure 44. Map of the White Salmon River Watershed.

Developing and implementing: Advanced Restoration Plan (bacteria impairments)

Summary/Context Info:

Ecology is working on a water cleanup project for the White Salmon Watershed to address identified water quality impairments for bacteria. Stakeholders in the Watershed greeted ecology's entrance into the Watershed with interest and support. Some of the local water quality interest extends beyond the bacteria pollution problems.

CRO hired a new Water Quality lead for this project in July 2023 and is adding two nonpoint compliance staff in 2024. Ecology's Environmental Assessment Program began a two-year sampling project in January of 2023, which will continue until December 2024. The project consists of bacteria samples collected twice a month from sites throughout the White Salmon Watershed.

Priority Actions Projected for 2024:

Education and Outreach

- In 2024 Ecology staff will continue to work with the US Forest Service (USFS) on outreach to the recreational boaters. Ecology staff work with the USFS staff to have water quality information included in the 2024 USFS recreational boating permit (USFS annual recreational boater permit for the Wild and Scenic River segment).

- Ecology staff will continue working with Underwood Conservation District, Mid-Columbia Fisheries, and the Yakama Nation on an educational project for the local school district addressing stream health for stream on school property.
- Ecology staff will continue to work with local health jurisdictions to conduct outreach and education relating to the environmental impacts of failing septic systems, how this affects the White Salmon Watershed, and outline financial assistance resources available for septic system installation, repair, or replacement.

Financial Assistance

- Underwood Conservation District is approved for fiscal year 2025 grant funding from Ecology's Water Quality Program to implement water quality improvement projects in the White Salmon Watershed. This included bacteria sampling projects, riparian restoration plantings, livestock exclusion, Best Management Practices technical assistance and planning including solids liquid separation system and solids storage pad at a dairy, water quality monitoring, and education around riparian stewardship.
- Columbia Land Trust has applied for Ecology funding to assist with a land acquisition and riparian protection project in a relatively pristine, forested portion of Rattlesnake Creek. This tributary of the White Salmon has 303(d) listings for bacteria as well as temperature.

Partner Coordination

- Ecology Water Quality staff will continue to coordinate with the U.S. Forest Service, Underwood Conservation District, Columbia Land Trust, Yakama Nation, Klickitat County Health District, Friends of the White Salmon, Adventure Scientists, Mid-Columbia Fisheries, USGS, Xerces Society and Trout Lake city council.

Pollution Identification/Watershed Evaluation:

- Ecology is coordinating with the local CD on bacteria sampling and filling in data gaps, while preparing the White Salmon Bacteria cleanup plan.
- Water Quality nonpoint staff will work on Watershed assessments in the White Salmon Watershed in 2024.
- Data collected by Ecology's Environmental Assessment Program (EAP) in 2023 will be used to identify reaches within the Watershed where additional sampling and source tracking may be helpful in identifying polluting inputs.
- Ecology conducts complaint responses as needed and will have monthly field visits to the White Salmon Watershed for pollution identification work.

Compliance/Technical Assistance Activities

- Community reports of water quality concerns will be entered into the ERTS database and followed up on by CRO nonpoint staff.

- Future cases needing compliance actions will begin with technical assistance coordinated with Watershed partners and if necessary, will follow Ecology's policies on escalating enforcement.

Monitoring Activities

- Ecology's Environmental Assessment Program (EAP) is conducting a bacteria loading study in the White Salmon Watershed spanning 2022-2024. This study will reference the current WQ bacteria standard for *E. coli*.
- Underwood Conservation District will continue conducting monitoring for bacteria and other WQ parameters in the White Salmon Watershed.

Priority Watershed Name: Bonaparte Creek

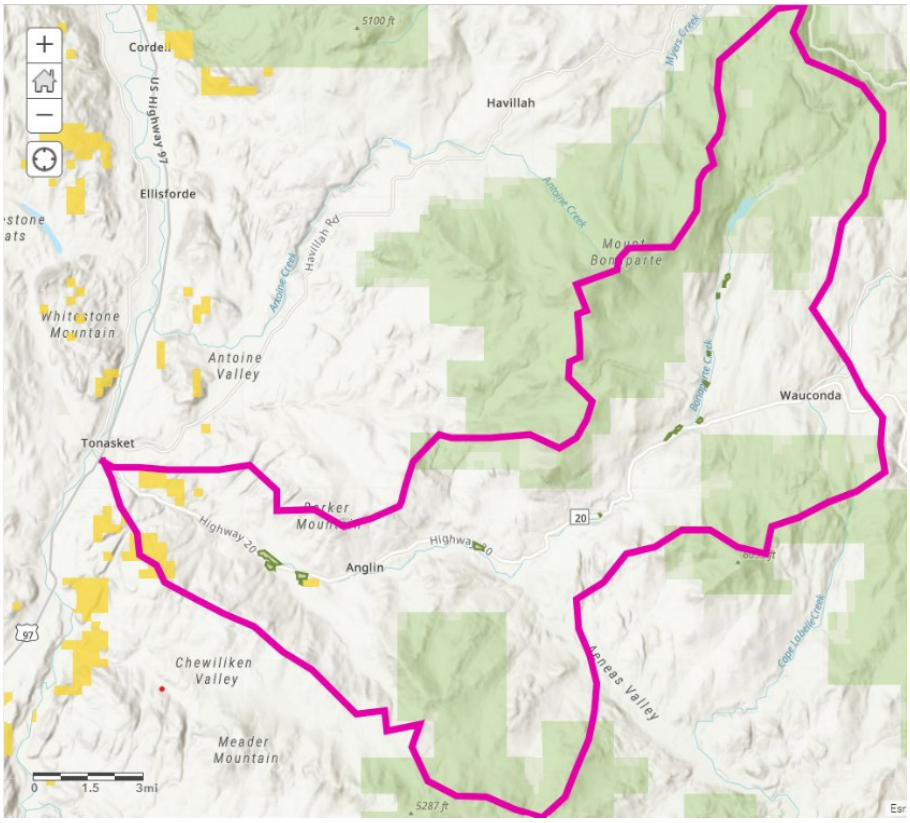


Figure 45. Map of Bonaparte Watershed outlined in pink.

Implementing: Bonaparte Creek STI

Summary/Context Info:

We are proposing a Straight to Implementation (STI) project for the Bonaparte Creek, a tributary of the Okanogan River in north central Washington. Bonaparte Creek enters the Okanogan River at the town of Tonasket, Figure 49 (WRIA 49) The Bonaparte sub-basin drains an area of about 150 square miles, or 100,000 acres.

The Bonaparte sub basin contains only nonpoint sources of pollution. No new point sources that would discharge the pollutant being addressed by the proposed STI are anticipated in the Watershed. Historic impairments are recorded for fecal coliform, temperature, and pH.

Priority Actions Projected for 2024:

Education and Outreach

- **Public events**
    - Outreach tabling at farmers markets and other local events as available.
    - Visit local clubs such as Rotary, Lions, etc.
    - Partner with conservation districts and other stakeholders for outreach to middle and high school programs.

Financial Assistance

- **Grants and loans:**
    - Encourage the Okanogan Health Department to apply for support to conduct a septic maintenance outreach program.
    - Encourage the City of Tonasket to explore financing for municipal sewer expansion.
    - Encourage city or health department to apply for pass-through funding for septic upgrades.

Partner Coordination

- **Attend meetings in person or online as time allows.**
    - Follow Conservation District activities through newsletters and meeting minutes if not in person.
    - Follow activities of Health Department.

Pollution Identification/Watershed Evaluation:

- **Evaluate sources of nonpoint pollution:**
    - Utilize Ecology's Environmental Assessment Program or determine alternative sampling regime to gather regular bacteria samples.
- **Watershed Evaluations:** Nonpoint staff will utilize watershed evaluations to identify nonpoint source pollution sources within the watershed.

Compliance/Technical Assistance Activities

- **Follow up on any ERTS reports and ensure appropriate closeout.**
    - Conduct water quality investigations as appropriate.
    - Ensure appropriate Ecology program, or other agencies are notified.

- **Compliance activities:** Future cases needing compliance actions will begin with technical assistance coordinated with Watershed partners and if necessary, will follow Ecology's policies on escalating enforcement.

Monitoring Activities

- Ecology staff will conduct source identification monitoring as needed.

Priority Watershed Name: Wilson Creek Watershed

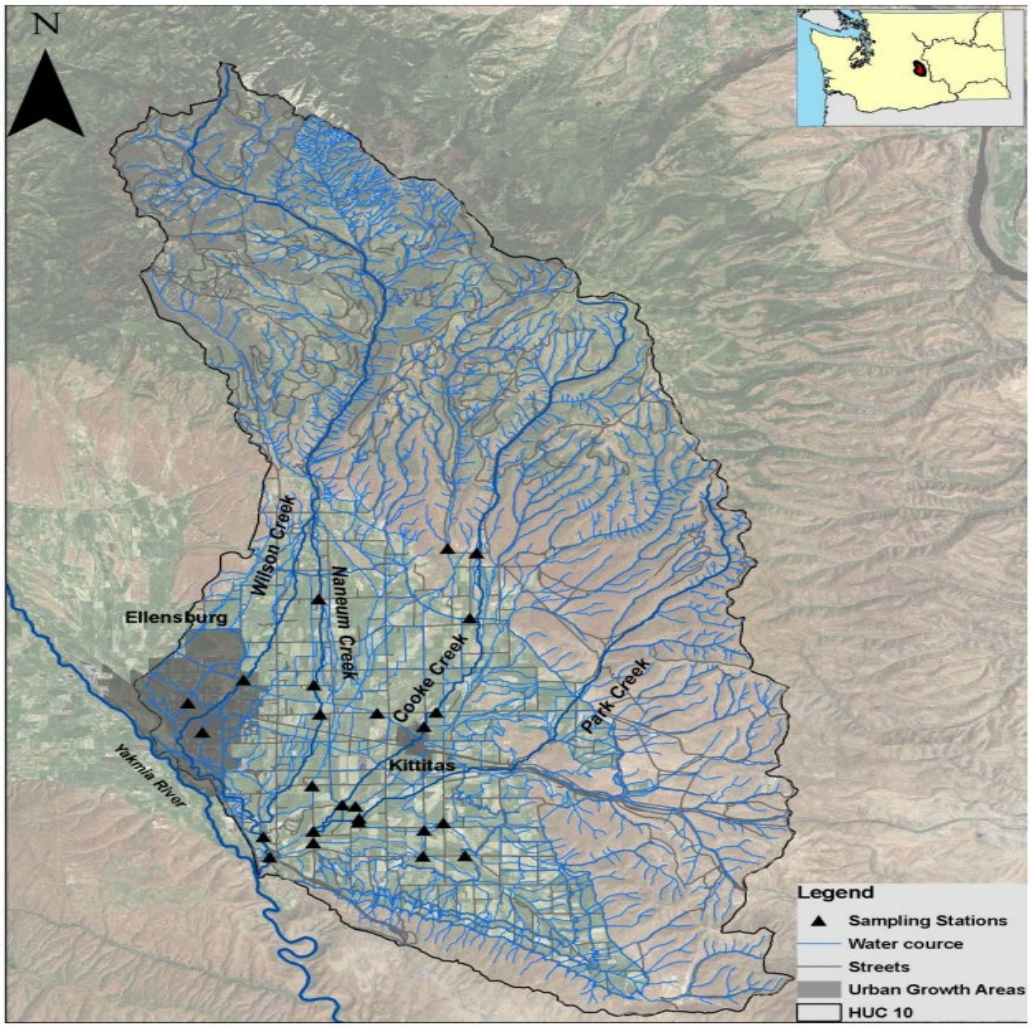


Figure 46. Map of the Wilson Creek Watershed.

Implementing: Upper Yakima Basin Suspended Sediment, Turbidity and Organochlorine Pesticide Total Maximum Daily Load and the Wilson Creek Sub-basin Bacteria Total Maximum Daily Load.

Summary/Context Info:

Water Quality improvements in the Wilson Creek Watershed have been significant but have not met the goals set by the TMDL. Turbidity goals for the waterway is indicator for reductions in both TMDLs that address the Watershed. CRO staff continue to with the area stakeholders and landowners to attain WQ Goals.

Priority Actions Projected for 2024:

Education and Outreach

- Outreach to irrigation district(s) Kittitas County Water Purveyors (KCWP), Spring 2023 and quarterly through 2024. KCWP has agreed to share water sampling information with Ecology for Wilson Creek.
- Outreach to Kittitas County Conservation District (Spring 2023 and quarterly through 2024).

Financial Assistance

- Financial assistance opportunities are coordinated through the Watershed partners including the conservation district and grant eligible NGOs. Currently there are no WQ funded projects in the Wilson Creek Watershed.

Partner Coordination

- Communication with the irrigation water purveyors has been on an as needed basis and coordinated field schedules and pollution reports. Contact in 2024 will be monthly or more frequently as needed.
- Communication with the Kittitas County Conservation District similarly will be monthly or more frequently as needed to address pollution sources.

Pollution Identification/Watershed Evaluation:

- Ecology staff will visit the Watershed during the 2024 irrigation season and will monitor turbidity in the field to identify the stream segments that are receiving pollution runoff.
- Coordination with Watershed partners, including irrigation purveyors and the conservation district, regarding Watershed monitoring and identification of pollution sources, focusing on the summer irrigation season.

Compliance/Technical Assistance Activities

- In the 2024 irrigation season, any elevated discharge identified will be shared with the water purveyors. Subsequent site visits will be used to determine if elevated discharges continue to persist and require additional follow-up.
- Future cases needing compliance actions will begin with technical assistance coordinated with Watershed partners and if necessary, will follow Ecology's policies on escalating enforcement.

Monitoring Activities

- Ecology staff will visit the Watershed every other week spanning the irrigation season to conduct visual observations and turbidity sampling with turbidity meter.

Priority Watershed Name: Lower Yakima River (WRIA 37)

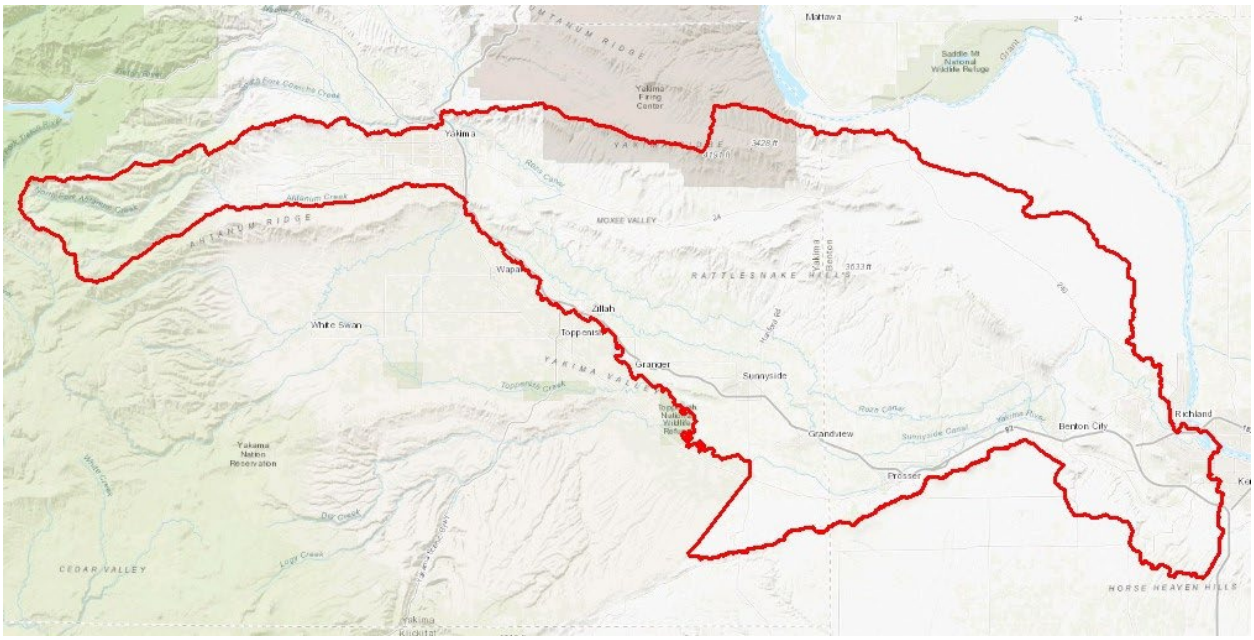


Figure 47. Map of the Lower Yakima River Watershed.

Implementing: Lower Yakima Suspended Sediment TMDL

Summary/Context Info:

The ongoing implementation of the Lower Yakima Suspended Sediment TMDL has greatly improved the water quality discharged to the Lower Yakima River. Meeting and maintaining the water quality goals of the TMDL remain as the project goals. The existing strong partnerships with Roza and Sunnyside Valley Irrigation Districts is instrumental in the current and future successes seen in this Watershed. Ecology WQ staff continue to coordinate closely with staff of the irrigation districts to identify opportunities for additional water quality improvement.

Priority Actions Projected in 2024:

Education and Outreach

- Ecology's partners in the lower Yakima Watershed include Roza/Sunnyside Board of Joint Control (RSBOJC), South Yakima Conservation District, and the Benton Conservation District. These partners conduct outreach with landowners on the need to reduce suspended sediment discharges.

Financial Assistance

- Financial assistance opportunities are coordinated through the Watershed partners including the conservation districts and grant eligible NGOs.

Partner Coordination

- Communication with the Roza/Sunnyside Board of Joint Control (RSBOJC), representing the irrigation districts, will continue to be on an as needed basis. Scheduling depended on field schedules and pollution reports.
- Communications with the North Yakima, South Yakima, and Benton County conservation districts were conducted as needed to address potential pollution sources.

Pollution Identification/Watershed Evaluation:

- Ecology staff will visit the Lower Yakima Watershed periodically with an emphasis during the irrigation season and, through observation and field monitoring of turbidity, seek to identify waterway segments with elevated turbidity loading to be addressed for TMDL implementation.
- Site visits will be coordinated with Watershed partners, including irrigation districts, conservation districts, and municipalities in the Watershed. Site visits will focus on conducting monitoring and working on identification of turbidity sources, particularly through the summer irrigation season.

Compliance/Technical Assistance Activities:

- Cases needing compliance actions will begin with technical assistance coordinated with Watershed partners and if necessary, will follow Ecology's policies on escalating enforcement.

Monitoring Activities

- Ecology staff will continue to visit the Watershed in 2024, focusing on the irrigation season, to conduct visual observations and turbidity sampling with turbidity meter.

ERO Priority Watersheds

Priority Watershed Name: Hangman Creek Watershed

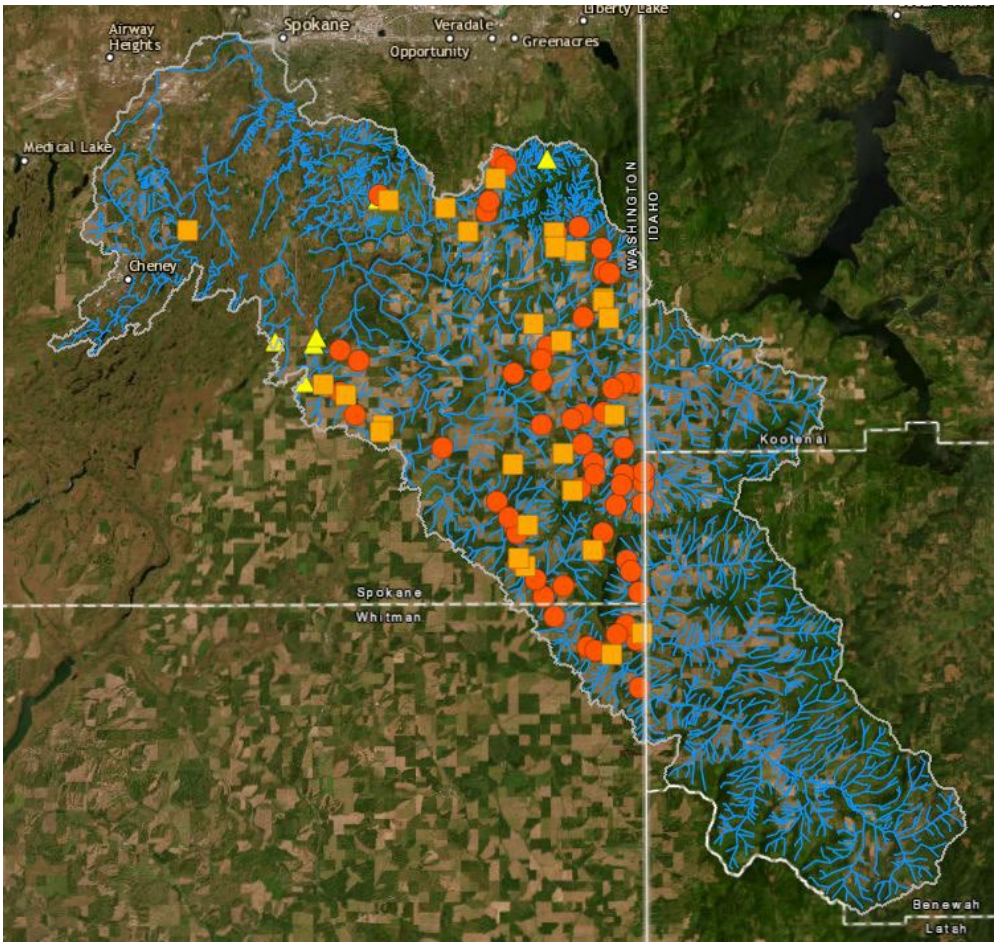


Figure 48. Hangman Watershed of locations of prioritized sites ERO staff have contacted since 2018 and are actively working withs.

Implementing: Hangman Creek Multi-Parameter TMDL/Hangman Watershed Settlement Agreement

Summary/Context Info:

Streams in the Hangman Watershed are impaired by excess bacteria, turbidity, and elevated water temperatures. The Watershed is dominated by agricultural nonpoint sources. The Watershed was studied to develop a TMDL report and ultimately a TMDL implementation plan. The implementation plan was completed in 2011. The Spokane Riverkeeper challenged the EPA approval of the TMDL. EPA, Ecology, and Riverkeeper negotiated a 10-year agreement that identifies and prioritizes specific actions to reduce pollution and ultimately make progress towards water quality improvements within the Hangman Watershed. The agreement was signed in 2018 and Ecology is actively implementing.

During the initial six years of the Hangman Settlement Agreement, 94 producers have been contacted and offered technical and financial assistance. More than 100 site visits have been performed in the Watershed, resulting in dozens of water quality improvement projects. The rate and scale of implementation work happening in the Hangman Watershed right now is unprecedented as a direct result of Ecology's focused effort. The following is a status of activity:

- Water quality problems fixed – 19 (2 of these were the result of an administrative order)
- Water quality protection plans being implemented – 19 (2 of these were the result of an administrative order)
- Plans developed, to be implemented in 2024 – 15
- Sites in communication but plans still being negotiated – 22
- Partial plan implemented/unwilling to implement fully protective plan – 19

Priority Actions Projected for 2024

Education and Outreach

- **Distribute Public Survey with Spokane Riverkeeper:** Ecology will work with Spokane Riverkeeper to develop a plan to distribute the survey.
- **Direct Mailings to Watershed Residents:** Ecology will print and mail the second in a series of mailers to over 2,500 Watershed addresses in 2024. Ecology will also draft subsequent mailings and develop a plan for future distribution.
- **Update Hangman Outreach Strategy:** Ecology will work with the Spokane Riverkeeper to update the Hangman Outreach Strategy document that guides education and outreach efforts in the Watershed. The Strategy is intended to be updated every 3 – 5 years to reflect work accomplished, lessons learned, and new priority action items.
- **Continue One on One Discussions:** Staff will conduct at least 25 of these individual site visits in the Hangman Creek that were contacted for having water quality concerns. These site visits typically last over an hour and contain meaningful and often difficult conversations on water quality issues. Although often challenging, these outreach activities can be incredibly fruitful for water quality education and implementation efforts.

Financial Assistance

- **Begin Implementing the *Hangman Riparian Restoration and Conservation Program Phase 2:* ($3,000,000):** This program provides rental rates with long-term contracts for agricultural riparian land taken out of production and planted with native trees and shrubs. Ecology partnered with Spokane Conservation District on this program. This first phase of the program contracted 169 acres for riparian restoration along perennial streams in the Hangman Watershed, which were previously in dryland agricultural production. This program was created to facilitate compliance for sites contacted by Ecology as having water quality concerns, which is an eligibility criterion for enrollment

in the program. This phase 2 consists of two separate grants which will continue to enroll an approx. 150 more acres into the program in 2024.

- **Begin Implementing the *Hangman Creek Agricultural Sediment Abatement Project* ($424,000):** This project will restore a 2,100-foot-long reach of the Hangman Creek mainstem. The project will remove historic livestock influences, reduce active erosion through bioengineered streambank stabilization practices, and restore the riparian area with restorative buffers ranging from 130–200-foot widths. This project was funded in 2023 and will begin implementation in 2024.
- **Begin Implementing the Spokane CD, *Direct Seed Loan Program*** ($5,196,914): This loan from State Revolving Funds allowed Spokane County Conservation District to expand their Direct Seed Equipment Loan program to 13 counties in Eastern Washington. This program allows producers to purchase the necessary direct seed equipment to practice low disturbance, direct seed conservation tillage. This loan helps to convert acres in the Hangman Creek farmed with conventional tillage techniques to direct seed. This program is a continuation of the expiring *Making Conservation Pay* Project. This program was funded in 2023 and will begin implementation in 2024.
- **Continue Implementing the Spokane Tribe of Indians, *DIF Project Maintenance, Riparian Restoration, and Livestock BMPs* Project ($257,868):** This project includes project maintenance across five previously installed riparian restoration projects in the Hangman Watershed. All five projects were identified during past regional watershed evaluations by Ecology staff as having significant water quality concerns, which were addressed by a previous implementation grant. This three-year grant is well under underway for ensuring successful riparian establishment along these sites.
- **Continue Implementing the Spokane Riverkeeper, *Rock and Hangman Creeks Riparian Restoration and Water Quality Improvement* Project ($256,892):** This project will continue to improve nonpoint pollution issues throughout the Watershed by installing 50 acres of riparian plantings, establishing three water quality monitoring locations, 10 water temperature loggers, and provide education and outreach programs to maximize restoration efforts within the Watershed. This three-year grant is well underway with 40 acres of riparian installation completed and monitoring equipment deployed and functioning.
- **Continue Implementing the Spokane Conservation District, *Spokane Riparian Establishment* Project ($283,500):** This project implements three projects, two of which are in the Hangman Watershed. These projects include livestock BMPs and riparian restoration. Issues with matching funds from a partner federal agency have delayed two of these projects, but at the end of 2023 Ecology and Spokane Conservation District have successfully acquired enough project match to move forward with implementation.
- **Continue Implementing the Spokane CD, *Hangman Creek Agricultural BMP Assistance* Project ($1,500,000):** This project increases community awareness, addresses agricultural sediment pathways, inventories bank erosion contributions, implements

3,000 feet of stream restoration and reduces sediment delivery through producer incentives, cost-share programs, and loans. The funding allows the Spokane CD to support producers by focusing implementation at high priority sites identified during watershed evaluations. This three-year project is well underway providing financial assistance to implement multiple projects throughout the Watershed; one of the most significant projects within this grant was constructed in 2023 – a nearly one-mile stream restoration project on Little Hangman creek consisting of floodplain reconnection, bank stabilization, and a 31-acre riparian planting.

- **Continue Implementing the Lands Council, *Hangman Creek Watershed Riparian and Wetland Restoration* Project ($294,600):** This project continues The Land Council's work in the Hangman Watershed by installing Beaver Dam Analogs, planting riparian buffers, and educating agricultural producers and local youth in the Watershed.

Partner Coordination

- **Conduct a Watershed Tour with the Spokane Riverkeeper:** In spring 2024 Ecology will tour the Watershed with the Riverkeeper and showcase some of the work completed, work planned, and document some problem sites.
- **Meet regularly with the Spokane Riverkeeper:** Ecology and Riverkeeper will meet at least five times in person to discuss Settlement Agreement progress.
- **Host Quarterly Partner Meetings with The Spokane Conservation District**: Meet with the Spokane CD to fund and implement riparian protection and restoration at priority water quality problem sites.
- **Host Coordination Meeting with the Pine Creek Conservation District**: Meet with the Pine Creek Conservation District to fund and implement riparian protection and restoration at priority water quality problem sites.
- **Participate in Coordination Meeting with the Lands Council**: Meet with the Lands Council to discuss restoration projects in the Watershed.
- **Participate in Coordination Meeting with the Coeur d'Alene Tribe of Indians**: Meet with the Tribe to discuss interest in restoration projects in the upper Watershed.
- **Participate in Coordination Meeting with the Spokane County**: Meet with Spokane County to discuss stormwater BMPs in the Watershed.

Pollution Identification/Watershed Evaluation:

- **Perform Comprehensive Watershed Evaluation:** Ecology staff will document at least 40 nonpoint pollution problems in the Watershed using the eastern Region evaluation process. Ecology will meet with Riverkeeper to determine future frequency of watershed evaluations, as that is a step on the sixth year of the Settlement Agreement.
- **Prioritize Sites for Technical and Financial Assistance:** Ecology has prioritized and contacted 94 producers in the Watershed over the last six years. Ecology will continue to provide technical and financial assistance to these sites until water quality

compliance has been achieved. Ecology will contact at least 5 new sites in the Hangman Creek Watershed.

Compliance/Technical Assistance Activities

- **Continue Communications on Existing Sites:** 56 of the 94 sites prioritized and contacted in the last six years yet to have fully protective water quality plans developed. Ecology will devote its resources to bringing these existing sites into compliance in 2024.
- **Complaint Response:** Ecology staff will continue to follow up on valid water quality complaints in the Hangman Watershed. Ecology staff will conduct site visits and actively work on plans to implement practices that will protect water quality.
- **Implement Water Quality Protection Plans/Riparian Buffers:** Using a combination of technical/financial assistance as well as compliance tools, Ecology staff will work to ensure implementation of three miles of riparian buffer in the Hangman Creek Watershed.
- **Monitor the Implementation of the Administrative Order issued to SF Rock Creek Agricultural Operation:** The Pollution Control Hearing Board (PCHB) ruled in favor of Ecology of this Administrative Order. Ecology issued the Order to one dryland agricultural operation for two separate properties in fall 2022. The Order was appealed, and the PCHB upheld the Order in early 2023. The two properties cumulatively include approximately 11,500 feet of the mainstem Rock Creek and its tributaries with the Hangman Watershed, which were actively being farmed up to water's edge. Implementation of the Order components began in 2023, which includes approx. 8 acres of native grass buffers and 22 acres of riparian forest buffers. Ecology will continue to monitor the implementation of this Order.
- **Take Additional Formal Enforcement in Hangman Creek:** Ecology staff will send approximately 5 warning letters and likely issue an additional Administrative Order in 2024. At least 56 of the 94 sites prioritized and contacted in the last six years yet to have fully protective water quality plans developed. Sites that are unwilling to work with Ecology on water quality protection will be prioritized for enforcement actions.

Monitoring Activities

- **Tracking Nonpoint BMP implementation:** Ecology staff will continue tracking a number of numeric criteria including acres of riparian area planted, linear feet of stream restored, feet or miles of exclusion fencing, acres of conservation tillage. Staff will also be tracking and reporting on the success of the Watershed evaluation efforts including number of sites contacted, number of plans developed, number of sites brought into compliance, etc.
- **Begin Spokane Salmon Restoration Collaborative Data Collection:** The Spokane Salmon Restoration Collaborative, established in 2022, is the recognized Lead Entity for Salmon Recovery Efforts in the Spokane River Subbasin, which includes Hangman Watershed. The Collaborative is tasked with collecting a multitude of data for EDT modeling in order

to generate a limiting factor analysis. Crews will begin collecting data for this effort in 2024.

Priority Watershed Name: Palouse River

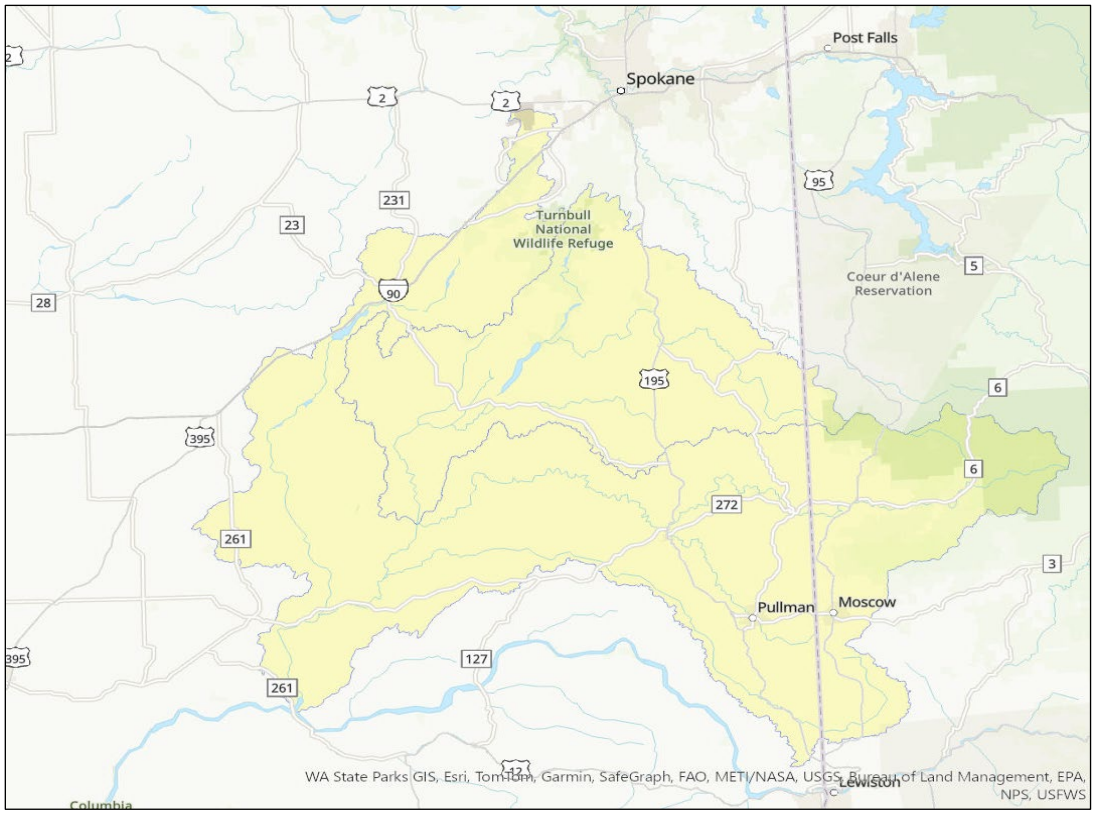


Figure 49. Map of the Palouse River Watershed.

Implementing: Multiple TMDLs for bacteria, temperature, dissolved oxygen, pH, and toxics. Straight to Implementation Plan (STI) for DO, pH, and temperature.

Summary/Context Info:

Streams in the Palouse Watershed are impaired by excess bacteria, DO, pH, toxics, and elevated water temperatures. The Watershed is dominated by agricultural nonpoint sources. The Watershed and its sub basins have been studied several times and multiple TMDL reports, and subsequent implementation plans have been developed. In addition, a Straight to Implementation strategy is being finalized for Spring Flat Creek, a tributary of the South Fork Palouse River, where a large implementation effort has begun. Staff are also currently implementing the following TMDL plans: North Fork Palouse Fecal Coliform Bacteria, DO, and pH TMDL; Palouse River Fecal Coliform Bacteria TMDL; Palouse River Temperature TMDL; Palouse River Toxics TMDL; South Fork Palouse Ammonia TMDL; South Fork Palouse DO, pH, and temperature TMDL; and South Fork Fecal Coliform TMDL.

Priority Actions Projected for 2024:

Education and Outreach

- **Attend Three Conservation District Board Meetings:** The CD boards are made up of area farmers and ranchers. Staff will attend three board meetings to inform the CD board of on-going water quality work in the Palouse River Watershed, collaborate on project implementation, and answer questions on efforts to implement projects.
- **Continue to Fund and Partner on Education and Outreach Efforts:** An education and outreach component is often a task within Ecology funded grant agreements with local partners. Ecology will continue to work with local partners on supporting education and outreach events in the Palouse Watershed through water quality grants in 2024.
- **Continue One on One Discussions:** Ecology staff conduct individual site visits with landowners and producers that were contacted for having water quality concerns. These site visits typically last over an hour and contain meaningful and often difficult conversations on water quality issues. Although often challenging, these outreach activities can be incredibly fruitful for water quality education and implementation efforts.

Financial Assistance

- **Begin to Implement the Palouse Conservation District Spring Flat Creek Buffer Incentive Program ($722,500):** High stream temperatures, low dissolved oxygen levels, and high pH values have recently been identified as problems in Spring Flat Creek (SFC), a tributary of the South Fork Palouse River. Similar to the Hangman Riparian Restoration and Conservation Program, this program will provide rental rates with long-term contracts for agricultural riparian land taken out of production and planted with native trees and shrubs. Ecology partnered with Palouse Conservation District and Whitman Conservation District on this project. This program was created to support the Spring Flat Creek STI. The program will begin implementation in 2024.
- **Begin to Implement the Palouse Conservation District Restoring Watershed Function in the Palouse River Watershed ($485,615):** This project will help restore streamflow, water quality, Watershed function, and habitat in the Palouse River Watershed by implementing instream bioengineering projects, establishing riparian buffers, establishing new flow and water quality monitoring, and building awareness and support to improve stream channels and riparian habitat. Eight of the project sites are in the Palouse Watershed, and one is on a small unnamed tributary of the Snake River upstream from the Palouse River. This project will begin implementation in 2024.
- **Begin to Implement the Palouse Conservation District Spring Flat Creek Water Quality Enhancement Project ($345,445):** This project will implement restoration activities directly identified in the Straight to Implementation (STI) Plan which has been developed to address pressing problems in Spring Flat Creek (SFC), a tributary of the South Fork Palouse River. This project will improve water quality in the SFC Watershed by providing riparian buffer installation, technical assistance and conservation planning,

direct seed cost share, environmental monitoring, outreach, and education to producers.

- **Begin to Implement the Whitman Conservation District, Palouse River Habitat Restoration and Stabilization Project ($468,250):** Assessment Category 5 and 4A listings have specifically listed the Palouse River as impaired for pH. Increased temperature, and dissolved oxygen. To address these issues, the Whitman Conservation District (WCD) has identified multiple project sites for riparian restoration in the Palouse River Watershed. This proposal will add to several other projects to help reduce sediment, pollution and increase water quality. This three-year project will begin implementation in 2024.
- **Continue to Implement the Palouse Conservation District the Water Quality Saga: A Cost-Share-nary Tale Project ($666,666):** This three year project will continue to improve water quality in Whitman County streams by implementing a minimum of ten acres of riparian buffer and 6,750 acres of direct seeding. The project will conduct monitoring efforts on changes in crop residue cover with conservation farming practices and implement an outreach and education program to further improve water quality awareness throughout Whitman County.
- **Continue to Implement the Palouse Conservation District Direct Paradise Creek Riparian Restoration Project ($333,333):** This project continued to improve nonpoint pollution issues throughout the creek by installing riparian buffers, monitoring water quality, and providing education and outreach programs to maximize restoration efforts along this Palouse Watershed subbasin.
- **Continue to Implement the Palouse Conservation District Direct Seed Partnership Implementation and Monitoring Project ($625,000):** This project implemented four miles of riparian buffers and 13,500 acres of direct seeding to improve water quality in the Palouse River Watershed. The project also monitored the effects of riparian restoration and converting from conventional tillage to direct seeding to determine effects on stream water quality.
- **Continue to Implement the Palouse Conservation District Full Stream Ahead! Riparian Restoration Innovations on the Palouse River Project ($666,666):** Riparian buffers improve water quality, yet in artificially-drained agricultural regions, water can bypass riparian soils and plant roots, reducing their capacity to remove nutrients. This multi-approach project will restore 15 ac (1.5 miles), install four beaver dam analogs (BDAs), and construct three saturated riparian buffers, a new conservation practice that facilitates riparian nitrogen removal, to improve water quality in the South Fork Palouse River Watershed. This three year project began implementation in 2022.
- **Continue to Implement the Palouse Conservation District Do the Residue! Promoting Direct Seed Operations on the Palouse Project ($666,666):** The PCD will lead the implementation of five acres of riparian buffers and 9,000 acres of direct seeding to improve water quality in Whitman County streams. A survey of producers will assess direct seed adoption by conservation program participants. Crop residue monitoring and outreach and education programs, including the Alternative Cropping Symposium

and Direct Seed Breakfasts, will lead to further water quality improvements in the Palouse River Watershed.

- **Continue to Implement the Palouse Rock Lake Conservation District Improving Water Quality on Rebel Flat Creek Project ($468,764.00):** This project will address nonpoint pollution throughout the Rebel Flat Creek Watershed by installing 1 mile of riparian plantings; implementing 6,750 acres of conservation tillage; installing livestock best management practices; and providing education and outreach.
- **Continue to Implement the Palouse Rock Lake Conservation District One Pass at a Time- Conservation of Pine Creek Watershed ($491,156):** This project will address nonpoint pollution throughout the Pine Creek Watershed by installing 1 mile of riparian plantings; implementing 6,750 acres of conservation tillage; and providing education and outreach to members of the community.
- **Continue to Implement the Palouse Conservation District Partnership to Restore Riparian Areas in the Lower Fourmile Creek Watershed Project ($661,541):** Riparian buffers improve water quality and ecological functions of streams. This project will restore 30 acres of riparian areas (23,000 streambank feet) in the lower Fourmile Creek Watershed, including installing up to 600 feet of streambank protection and 10 to 12 beaver dam analogues, providing technical assistance, assessing revegetation methods, installing interpretive signs, and developing place-based curriculum on riparian restoration and conservation agriculture.
- **Continue to Implement the Palouse Conservation District Operation Residue: (Under) cover Crops & Direct Seeding on the Palouse Project ($590,716):** Palouse Conservation District (PCD) will lead implementation of one stream mile of riparian forest buffer and 6,000 acres of direct seeding to improve water quality in Whitman County streams. A cover crop demonstration project will assist producers in improving soil health on their farms. Soil health assessment of direct seed and cover crop projects will demonstrate project effectiveness, and outreach and education programs will lead to further community investment in water quality improvements.

Partner Coordination

- **Continue Regular Meetings with Whitman County Conservation Districts:** Ecology staff will continue to meet regularly with all four Whitman County Conservation Districts: Palouse CD, Whitman CD, Pine Creek CD, and Palouse Rock Lake CD. Meetings primarily consist of project development, monitoring, education and outreach, and funding for water quality related issues in the Palouse Watershed.
- **Continue Regular Meetings on Spring Flat Creek STI Implementation:** Ecology staff will continue to meet regularly with Palouse CD and Whitman CD on the effort focused on the implementation of the Spring Flat Creek STI.
- **Meet with Washington State Department of Transportation (WSDOT):** Many of the streams in the Palouse had been historically ditched and straightened next to the State

Hwy, including Spring Flat Creek. Ecology staff will begin meeting with WSDOT in 2024 on buffer implementation along their highway infrastructure right of ways.

- **Continue to participate on the Palouse Regional Conservation Partnership Program (RCPP):** Ecology was an active participant in the first Palouse RCPP (2016-2021), and the renewal of that RCPP was approved (2021-2027). Combined, the two RCPPs will have contributed over $14 million towards conservation practices in the Palouse Watershed.

Pollution Identification/Watershed Evaluation:

- **Perform Comprehensive Watershed Evaluation**: Annual surveys will be conducted during the early spring season to identify livestock and dryland agricultural water pollution issues. Work will be focused on the Spring Flat Creek subbasin of the Palouse.

Compliance/Technical Assistance Activities

- **Contact at Least Five Priority Pollution Sites**: Approximately 5 new landowners with livestock or dryland agricultural water quality issues will be contacted via technical and financial assistance letters. All letters are followed up with multiple phone calls (if contact number is available) throughout the year to ensure continued communication with the landowner. The Spring Flat Watershed will be emphasized in watershed evaluation prioritization.
- **Follow-Up on Previous Years Priority Sites**: Landowners who have received technical assistance letters in previous years (same numbers as mentioned above), and who remain out of compliance, will be contacted through additional phone calls and follow-up technical/financial assistance letters.
- **Develop Water Quality Protection Plans for Priority Sites:** Staff will set up site visits and work to develop BMP plans for at least five sites. The plans will include riparian buffers designed to fully protect water quality.
- **Implement Water Quality Protection Plans/Riparian Buffers:** Using a combination of technical/financial assistance as well as compliance tools, Ecology staff will work to ensure implementation of three miles of riparian buffer in the Palouse River Watershed.
- **Send Warning Letters to Priority Sites**: If a landowner has received multiple letters and continues to remain out of compliance, Ecology will escalate to a warning letter with an expectation of response within 30 days. Ecology anticipates sending warning letters to approximately five sites.
- **Take Formal Enforcement Action**: The eastern region expects that one formal enforcement action will be issued in the Palouse River Watershed to address nonpoint pollution at a high priority site.
- **Follow-up on Nonpoint WQ Complaints:** Staff will continue to respond to any water quality complaints received from the public. Phone calls and/or letters may follow after staff have confirmed a water quality issue exists.

Monitoring Activities

- **Establish Photo Monitoring Points**: Staff will establish photo monitoring points at pollution problem sites and document riparian condition improvements over time.
- **Continue to partner with Palouse CD on Monitoring work**: Palouse CD has taken the lead on monitoring efforts in the Palouse Watershed. Ecology will continue to partner with Palouse CD on that effort.

Priority Watershed Name: Little Spokane River Watershed

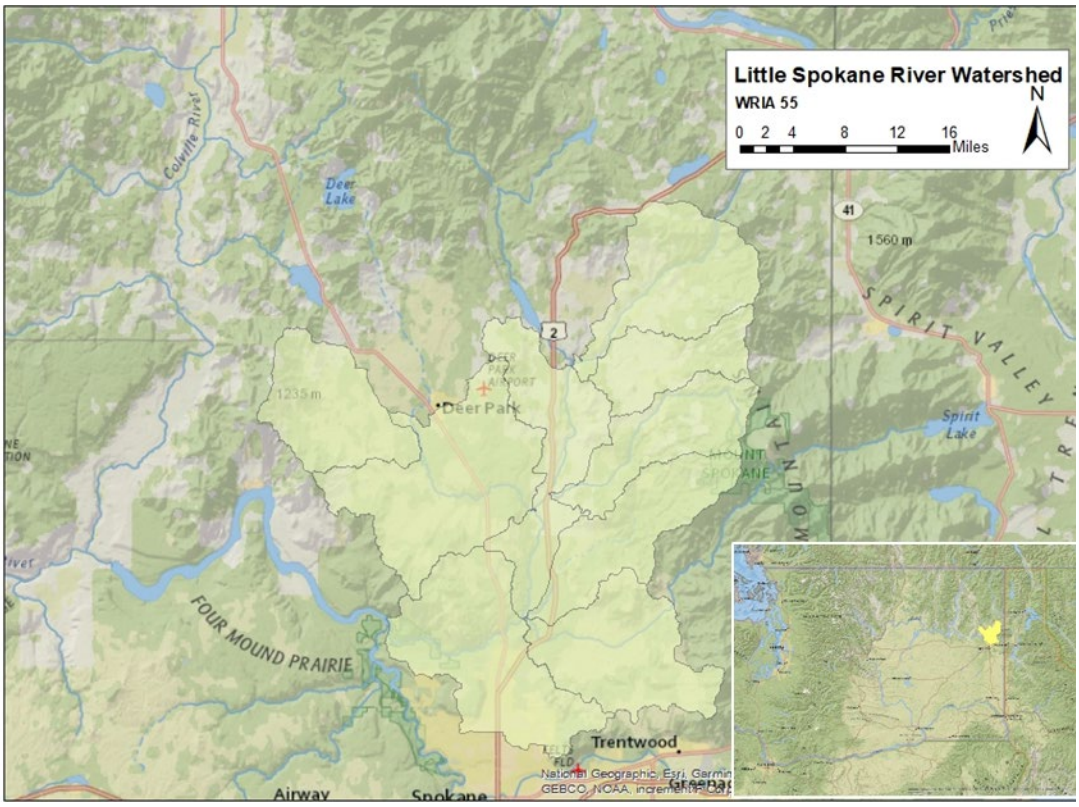


Figure 50. Map of Little Spokane River Watershed.

Implementing: Little Spokane River TMDLs for bacteria, temperature, dissolved oxygen, total phosphorus, and pH

Summary/Context Info:

Ecology finalized the Little Spokane River DO, TP, and pH TMDL and submitted it to EPA in December 2020. The TMDL was approved by EPA in January 2021. Ecology is now focused on implementing this TMDL and the 2012 fecal coliform, temperature, and turbidity TMDL. The water quality impairments in the Little Spokane are primarily due to nonpoint pollution problems. The TMDL identifies riparian health as a key to meeting water quality standards. Implementation work is focused on protecting and restoring riparian areas and upland farming practices that deliver sediment to surface water.

Priority Actions Projected for 2024

Education and Outreach

- **Continue performing Comprehensive GIS Evaluation of Riparian Health:** Using aerial imagery, staff will analyze current riparian condition for each parcel adjacent to a stream in the Watershed. As improvements are made, maps will track improving riparian health.
- **Continue performing Outreach with Friends of Little Spokane:** Ecology staff will partner with the non-profit to share information with their organization members on water quality goals and stream restoration funding opportunities.
- **Continue Outreach with The Lands Council & Gonzaga University:** Ecology staff will partner with the non-profit to better understand the efficacy of BMPs to reduce Phosphorus levels.
- **Work on developing a Little Spokane Website:** Transition website information from TMDL development information to TMDL implementation tracking and reporting. Ensure website is regularly updated with information on implementation progress.

Financial Assistance

- **Continue to Implement The Inland Northwest Land Trust, Glen Tana Land Acquisition**: Ecology used $500,000 to protect 50 acres of property in the Spokane Watershed adjacent to the Glen Tana reach of the Little Spokane River. This property acquisition is part of a larger acquisition of 1,066 acres along the Little Spokane River.
- **Continue to Implement the Spokane Conservation District, *Spokane Riparian Establishment* Project ($283,500):** This project reestablishes flood plain function, sinuosity, and bank stability in Deadman Creek in the Little Spokane River Watershed. Issues with matching funds from a partner federal agency have delayed this project, but at the end of 2023 Ecology and Spokane Conservation District have successfully acquired enough project match to move forward with implementation.
- **Implement The Lands Councils Riparian Restoration in the Greater Spokane River Watershed Project ($432,750):** This project proposes to enhance and restore riparian buffers, restore, and stabilize streambanks and educate the public about water quality issues and the activities to address them.

Partner Coordination

- **Stakeholder Engagement:** Ecology continued building and maintaining positive relationships with existing stakeholders, such as working with our sister agency WDFW to develop a compliance schedule for development of a new fish hatchery facility. Engaged Watershed stakeholders and positive partnerships are vital to cultivating a synergistic environment for achieving significant water quality improvements. Additionally, Ecology is committed to engage with the Spokane and local municipalities on water quality protection measures.

- **Participating in the Voluntary Stewardship Program:** Ecology continues to meet bi-monthly with stakeholders, such as the Spokane Tribe of Indians, local agricultural producers, Spokane Municipalities, CDs and interest groups to find solutions to meet water quality standards.
- **Meetings with Watershed Partners and Building Funding Capacity:** Ecology staff met regularly with Watershed partners to plan and coordinate on implementing best management practices that improve and protect water quality. Ecology will continue to work on maintaining existing funding opportunities as well as support and encourage new funding opportunities for water quality improvement work.

Pollution Identification/Watershed Evaluation:

- **Document Pollution Problem Sites for Assistance:** Identify at least 20 nonpoint pollution problems in the Watershed using the eastern Region evaluation process. A minimum of five of these sites will be prioritized using site specific criteria, such as the length of stream impacted and the severity of riparian damage.
- Compliance/Technical Assistance Activities

Compliance/Technical Assistance Activities

- **Contact at Least Five Priority Pollution Sites**: Approximately 5 new landowners with livestock or dryland agricultural water quality issues will be contacted via technical and financial assistance letters. All letters are followed up with multiple phone calls (if contact number is available) throughout the year to ensure continued communication with the landowner.
- **Follow-Up on Previous Years Priority Sites**: Landowners who have received technical assistance letters in previous years (same numbers as mentioned above), and who remain out of compliance, will be contacted through additional phone calls and follow-up technical/financial assistance letters.
- **Develop Water Quality Protection Plans for Priority Sites:** Staff will set up site visits and work to develop BMP plans for at least five sites. The plans will include riparian buffers designed to fully protect water quality.
- **Implement Water Quality Protection Plans/Riparian Buffers:** Using a combination of technical/financial assistance as well as compliance tools, Ecology staff will work to ensure implementation of three miles of riparian buffer in the Little Spokane River Watershed.
- **Send Warning Letters to Priority Sites**: If a landowner has received multiple letters and continues to remain out of compliance, Ecology will escalate to a warning letter with an expectation of response within 30 days. Ecology anticipates sending warning letters to approximately two sites.
- **Take Formal Enforcement Action**: The eastern region expects that a formal enforcement action may l be issued in the Palouse River Watershed to address nonpoint pollution at a high priority site.

- **Follow-up on Nonpoint WQ Complaints:** Staff will continue to respond to any water quality complaints received from the public. Phone calls and/or letters may follow after staff have confirmed a water quality issue exists.

Monitoring Activities

- **Tracking Nonpoint BMP Implementation:** Ecology staff has partnered with Gonzaga University students and The Lands Council to monitor the efficacy of BMPs, such as Beaver Dam Analogs (BDAs) to reduce total Phosphorus, increase sinuosity and bank stability.
- **Establish Photo Monitoring Points**: Staff established photo monitoring points at pollution problem sites and document riparian condition improvements over time.

Priority Watershed Name: Upper Colville River Watershed

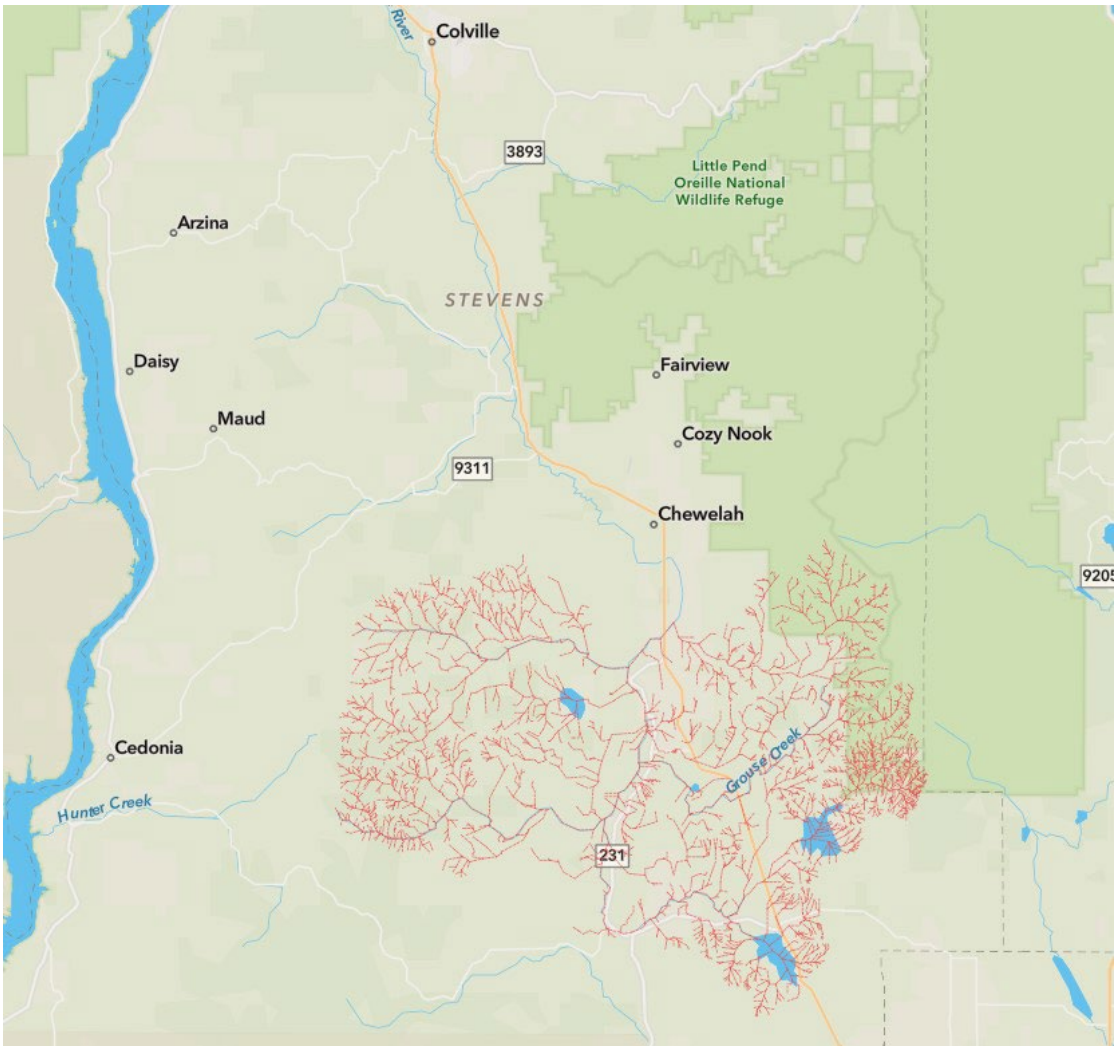


Figure 51. Map of the Upper Colville River Watershed.

Implementing: Upper Colville River STI for bacteria, temperature, dissolved oxygen, and pH

Summary/Context Info:

Ecology will finalize the Upper Colville River STI for bacteria, temperature, dissolved oxygen, and pH in July 2024. The water quality impairments in the Upper Colville River Watershed are primarily due to nonpoint pollution problems. The STI will identify riparian health as a key to meeting water quality standards. Implementation work will focus on protecting and restoring riparian areas.

Priority Actions Projected for 2024

Education and Outreach

- **Perform Comprehensive GIS Evaluation of Riparian Health:** Using aerial imagery, staff will analyze current riparian condition for each parcel adjacent to a stream in the Watershed. As improvements are made, maps will track improving riparian health.
- **Attend Three Conservation District Board Meetings:** The CD boards are made up of area farmers and ranchers. Staff will attend three board meetings to inform the CD board of on-going water quality work in the Upper Colville River Watershed, collaborate on project implementation, and answer questions on efforts to implement projects.
- **Fund and Partner on Education and Outreach Efforts:** An education and outreach component is often a task within Ecology funded grant agreements with local partners. Ecology will work with local partners and offer funding to support education and outreach events in the Upper Colville River Watershed.
- **Conduct One on One Discussions:** Ecology staff conduct individual site visits with landowners and producers that were contacted for having water quality concerns. These site visits typically last over an hour and contain meaningful and often difficult conversations on water quality issues. Staff hope to complete at least five of these site visits in the Upper Colville Watershed. Although often challenging, these outreach activities can be incredibly fruitful for water quality education and implementation efforts.

Financial Assistance

- **Partner with Stevens County CD and the Spokane Tribe to Request Funding:** Work to ensure funding is available via the state Centennial/319 program or other sources. The goal will be to support landowners to implement riparian and tillage BMPs when sites are identified and prioritized via the Upper Colville River Watershed evaluation.

Partner Coordination

- **Coordinate with the Stevens County Conservation District:** Meet with the Stevens County Conservation District to fund and implement riparian protection and restoration at priority water quality problem sites. Staff intend to engage in at least three of these meetings.

- **Participate in Coordination Meeting with the Spokane Tribe of Indians**: Meet with the Tribe to discuss interest in restoration projects in the upper Watershed.
- **Stakeholder Engagement:** Ecology will work on building and maintaining positive relationships with existing stakeholders. Engaged Watershed stakeholders and positive partnerships are vital to cultivating a synergistic environment for achieving significant water quality improvements.

Pollution Identification/Watershed Evaluation:

- **Perform Comprehensive Watershed Evaluation**: Annual surveys will be conducted during the early spring season to identify livestock and dryland agricultural water pollution issues. Work will be focused on the Spring Flat Creek subbasin of the Palouse.

Compliance/Technical Assistance Activities

- **Contact at Least Five Priority Pollution Sites**: Approximately five new landowners with agricultural water quality issues will be contacted via technical and financial assistance letters. All letters are followed up with multiple phone calls (if contact number is available) throughout the year to ensure continued communication with the landowner. The Spring Flat Watershed will be emphasized in watershed evaluation prioritization.
- **Develop Water Quality Protection Plans for Priority Sites:** Staff will set up site visits and work to develop BMP plans for at least three sites. The plans will include riparian buffers designed to fully protect water quality.
- **Implement Water Quality Protection Plans/Riparian Buffers:** Using a combination of technical/financial assistance as well as compliance tools, Ecology staff will work to ensure implementation of a mile of riparian buffer in the Upper Colville River Watershed.
- **Follow-up on Nonpoint WQ Complaints:** Staff will continue to respond to any water quality complaints received from the public. Phone calls and/or letters may follow after staff have confirmed a water quality issue exists.

Monitoring Activities

- **Tracking Nonpoint BMP Implementation:** Ecology staff will be tracking a number of numeric criteria including acres of riparian area planted, linear feet of stream restored, feet or miles of exclusion fencing, acres of conservation tillage. Staff will also be tracking and reporting on the success of the watershed evaluation efforts including number of sites contacted, number of plans developed, number of sites brought into compliance, etc.
- **Establish Photo Monitoring Points**: Staff established photo monitoring points at pollution problem sites and document riparian condition improvements over time.

Priority Watershed Name: Moses Lake

Figure 52. Map of the Moses Lake Watershed.

Implementing: Other Locally Led Partnership

Summary/Context Info:

Ecology is a member of the Moses Lake Watershed Council (MLWC). The Columbia Basin Conservation District (CBCD, formerly the Grant County Conservation District) leads the collaborative entity, formed in 2018 with the purpose of facilitating locally led water quality improvements in the Moses Lake Watershed. The MLWC has grown to include a diverse group of local, state, and federal stakeholders, including the Washington State Department of Ecology (Ecology), Moses Lake Irrigation and Rehabilitation District, Grant County Health District, City of Moses Lake, and the U.S. Bureau of Reclamation (USBR), along with representation from local tourism, businesses, and concerned citizens.

The MLWC was formed in direct response to persistent harmful algal blooms during summer months that impairs the public's use of Moses Lake and poses a great risk to public health and the health of pets and livestock. The MLWC is building on several decades of efforts studying Moses Lake's poor water quality. Work conducted by the University of Washington and the EPA Clean Lakes Project in the 1980's generated a large body of data and recommendations for

improving water quality. However, long-term management plans for the lake and Watershed were not developed or implemented. Ecology issued a draft Total Maximum Daily Load (TMDL) plan in 2002, but the TMDL process was suspended in 2004 due to a lack of political and community support. Instead of resuming the TMDL process, Ecology helped initiate a locally driven effort in 2019 to address sources of phosphorus pollution.

Priority Actions Completed in 2024:

Education and Outreach

- **Continue to Implement Public Information and Outreach Plan:** Ecology and partners developed and implemented an Information and Outreach Plan, including developing a website with information on cyanobacteria and how to report an algae bloom, along with information and resources for residents to take action to protect the lake.
- **Conservation District Education and Outreach Actions:** As provided in the following section, Ecology funds projects that have an education and outreach component. Several education and outreach workshops and events will take place because of funding in the Moses Lake Watershed in 2024.

Financial Assistance

- **Continue to Implement the Columbia Basin Conservation District Moses Lake Shoreline Restoration and Nutrient Reduction Project ($249,979.00):** This project will develop and implement a shoreline nutrient assessment technical assistance program for shoreline property owners, construct a shoreline restoration exhibit, conduct education, and outreach activities, and continue to support a USGS groundwater study of groundwater phosphorus contributions to Moses Lake and identify mitigation techniques.
- **Begin to Implement the Moses Lake Columbia Basin Conservation District Moses Lake Watershed Water Quality Assessment and Enhancement ($485,396.78):** This project will address sources nonpoint pollution in the Moses Lake Watershed by identifying sources of nutrients entering Moses Lake, riparian restoration and cattle exclusion on Rocky Ford Creek, and education and outreach.
- **Continue to Implement the Community Project Funding Moses Lake Water Quality ($3,100,000):** Ecology staff helped the Watershed Council secure federal funding for improving Moses Lake's water quality to reduce occurrences of harmful algal blooms. Lanthanum-modified bentonite clay and other technologies are being used in deeper areas of the Rocky Ford Arm to prevent the release of phosphorus and mitigate approximately 10,000 pounds of internal phosphorus loading.

Partner Coordination

- **Continue to Participate in the Moses Lake Watershed Council:** The MLWC meets monthly. Subcommittees meet outside the regular meeting schedule to evaluate emerging technologies, data and monitoring, information and outreach, grants, and

legislative activities. The vacancy for this position will be filled in 2024 and Ecology will reengage in this process.

Pollution Identification/Watershed Evaluation

- We do not plan to perform site specific watershed evaluation work for Moses Lake we perform elsewhere in the region in 2024. Instead, staff will work with the Moses Lake Watershed Council to develop and implement a lake management plan. The plan will identify lake specific actions needed to address sources of known pollutant loading to the lake. These include municipal stormwater, NPDES permitted Fish Hatcheries, carp bioturbation, and septic system issues.

Compliance/Technical Assistance Activities

- **Ensure Trout Lodge Agreed Order is Implemented:** Ecology will continue to work with Troutlodge Inc. to implement a 2020 Agreed Order for their two fish hatcheries (ELM 1 and ELM 2) on Rocky Ford Creek. The Order requires Troutlodge to evaluate potential sources of nutrient loading to Rocky Ford Creek from the hatcheries. Since issuing the Order, Troutlodge has developed a Quality Assurance Project Plan and submitted annual monitoring reports based on nutrient and flow data collected. Under the new Finfish General Permit (reissued in October 2021), Troutlodge has now expanded their sampling to include additional nutrient parameters. 2024 will be their second full year of new data collection.

Priority Watershed Name: Whitman Snake Tributaries

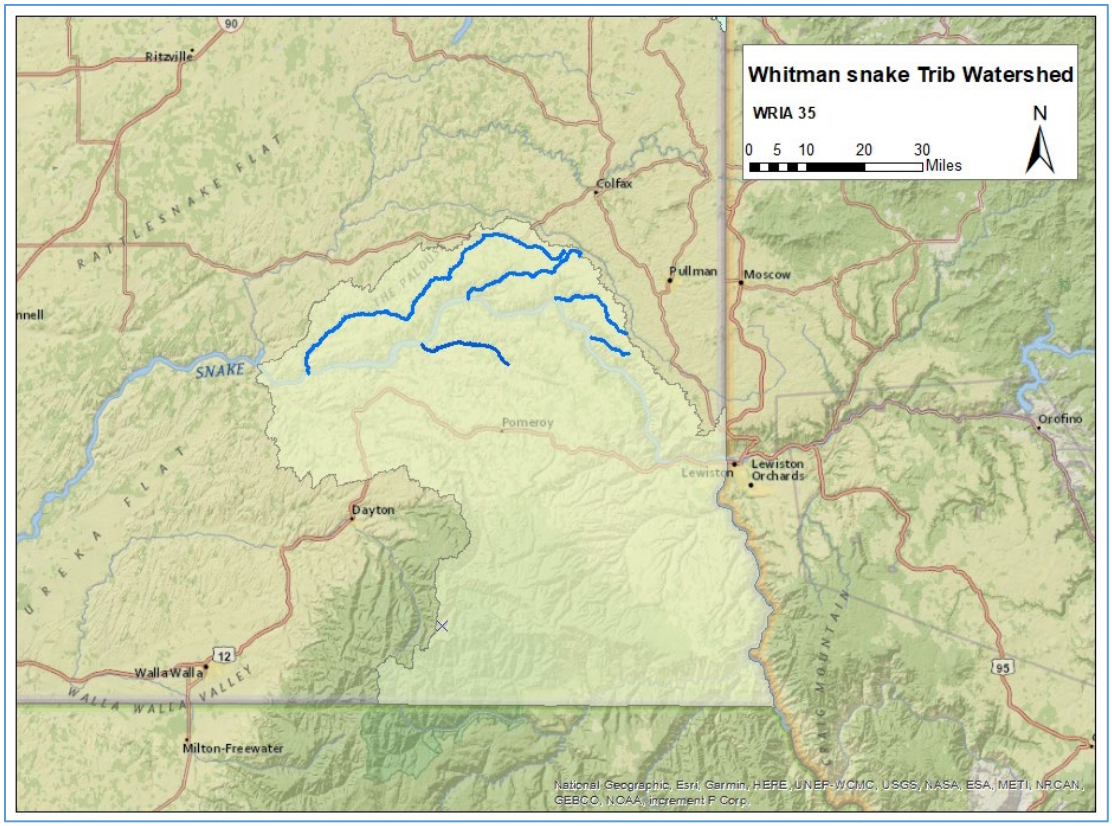


Figure 53. Map of Snake River Tributaries (Steptoe Creek, Almota Creek and Alkali Flat Creek).

Implementing: Steptoe Creek STI, Early Implementation Actions for Almota Creek and Alkali Flat Creek STIs (In development).

Summary/Context Info:

A number of northern Snake River tributaries in Whitman County have been identified as Category 5 on the Water Quality Assessment. Some Watersheds currently have established Straight to Implementation Strategies in place (Steptoe Creek) and others currently in development (Almota Creek and Alkali Flat Creek). These northern tributaries are largely dominated by agricultural land-use with livestock issues often impacting the riparian habitat. Ecology has continued to work with local stakeholders through project implementation and technical assistance to further combat these issues.

Priority Actions Projected for 2024

Education and Outreach

- **Partner with the Palouse Conservation District on Conservation Tillage Education:** Through grant funds PCD hosts various presentations, tours, and outreach materials for local producers on conservation tillage and riparian buffers. PCD has utilized multiple

Ecology grants to develop a conservation tillage cost-share program which is well advertised throughout the district's footprint and beyond.

- **Partner with the Whitman Conservation on Outreach to Students:** District staff visit K-12th grade classrooms giving presentations on restoration practices while university students participate in volunteer planting events.
- **Conduct One on One Discussions:** Ecology staff conduct individual site visits with landowners and producers that were contacted for having water quality concerns. These site visits typically last over an hour and contain meaningful and often difficult conversations on water quality issues. Staff hope to complete at least five of these site visits in the Whitman County tributaries. Although often challenging, these outreach activities can be incredibly fruitful for water quality education and implementation efforts.

Financial Assistance

- **Implement the Whitman Conservation District, *Water Quality Enhancement through Restoration of Function Project* ($210,000)**: This grant will continue to work off previous efforts to continue to exclude livestock, establish riparian buffers, and install instream structures, to improve water quality throughout the Alkali Flat Creek Watershed.
- **Implement the Palouse Conservation District, *Supporting Sustainable Ranching on Snake River Tributaries* ($500,000)**: The PCD will work with livestock producers along both Steptoe Creek and Wawawai Canyon to install livestock BMPs, increase monitoring, and provide education/outreach to local livestock producers. The grant provides funding to help install riparian buffers at livestock priority pollution sites identified by Ecology staff.
- **Continue to implement the Whitman Conservation District *Alkali Flat Creek Water Quality Enhancement* ($280,000):** This project will restore a minimum of 21 acres of riparian buffer and 9,250 stream feet across the Alkali Flat Creek Watershed. In addition to riparian plantings, 40 post assisted log structures will be installed and the conservation district will provide education and outreach to the community.
- **Continue to implement the Palouse Conservation District *Alkali Flat Creek Property Protection* ($1,000,000):** This project will protect 437 acres adjacent to Alkali Flat Creek. Preserving this property is important for showcasing conservation practices that promote soil health and reestablish and protect native prairie, riparian species, anadromous fish, and water quality.
- **Continue to implement the Palouse Conservation District *Pioneer Stock Farms Critical Land Acquisition* ($140,565):** This project will support the existing Ecology grant, Alkali Flat Creek Property Protection. Palouse Conservation District will acquire 437 acres along Alkali Flat Creek.

Partner Coordination

- **Host Quarterly Meetings with the Whitman Conservation District:** Ecology works closely with the staff of Whitman CD to identify issues, coordinate plan/projects, and provide technical assistance to the public in the region.
- **Host Quarterly Meetings with the Palouse Conservation District**: While much of the work the Palouse CD revolves around the Palouse Watershed, their district falls within the boundaries of both Steptoe Creek and Wawawai Canyon. Ecology works heavily with PCD staff through various project implementation, technical assistance, and events.
- **Participate with the Snake River Salmon Recovery Board:** Ecology consistently works with various stakeholders involved in salmon recovery efforts in the region, including Walla Walla. As a lead entity voting member and a member of the Regional Technical Team, Ecology assists with the SRSRB annual grant round and provides technical assistance for water quality issues as they relate to salmon recovery and habitat restoration.
- **Participate with the Snake River Local Working Group**: Ecology staff participate in this basin wide working group focused on challenges and solutions to the greater Snake River Watersheds.
- **Attend at least two CD board meetings:** CD boards are composed of farmers and ranchers in that district. Staff will participate in board meetings to inform them of our on-going nonpoint pollution work and answer questions.

Pollution Identification/Watershed Evaluation:

- **Perform Comprehensive Watershed Evaluation**: Annual surveys will be conducted during the early spring season to identify livestock water pollution issues. Work will be focused on a majority of Snake River tributaries including Alkali Flat Creek, Penawawa Creek, Almota Creek, Wawawai Canyon, and their associated tributaries.
- **Prioritize Sites for Technical and Financial Assistance:** Sites are evaluated along with all other Snake River and Palouse Watershed tributaries to determine roughly three new technical and financial letters.
- **Respond to Nonpoint Complaints:** ERO responds to all water quality related complaints in the Watershed. If pollution site is identified to be of concern, ERO will send a follow-up technical assistance letter to further address the water quality concern.
- **Update Nonpoint Inspection (NPI) database:** Systematically identify and document sites of concern in the NPI database.
- **Continue to identify sites of concern:** Continue to work in the field and within the community to identify additional sites of concern that have not yet been prioritized.

Compliance/Technical Assistance Activities

- **Contact at Least Three New Priority Sites:** Staff will contact landowners with livestock water quality issues via technical and financial assistance letters. All letters are followed

up with multiple phone calls (if contact number is available) throughout the year to ensure continued communication with Ecology and landowner.

- **Develop Water Quality Protection Plans for Priority Sites:** Staff will set up site visits and work to develop BMP plans for at least three sites. The plans will include riparian buffers designed to fully protect water quality.
- **Implement Water Quality Protection Plans/Riparian Buffers:** Using a combination of technical/financial assistance as well as compliance tools, Ecology staff will work to ensure implementation of a mile of riparian buffer in Whitman County tributaries.
- **Ensure Final Steptoe Order Implementation:** An administrative order was sent to a landowner in the Steptoe Creek Watershed in 2019 addressing ongoing livestock pollution issues. Since the order was sent, Ecology, along with the partnership of the Palouse CD have developed a plan to address the site. Most of the riparian buffer and Order elements have been implemented. A final step will be completed as part of an FY22 grant that extends through 2025.
- **Evaluate and respond to incoming ERTS complaints:** Continue to respond directly or coordinate with WSDA, Whitman County, and other partners to address nonpoint pollution sources.

Monitoring Activities

- **Partner with the Palouse Conservation District to monitor in Steptoe Creek**: Monitoring will help ensure livestock BMPs implemented in the Watershed work to fully protect water quality. This will help adaptive management in the Watershed.
- **Establish Photo Monitoring Points**: Staff will establish photo monitoring points at pollution problem sites and document riparian condition improvements over time.
- **Investigatory collection:** Staff will take opportunistic samples when responding to complaints or referrals on a per-case basis.

Priority Watershed Name: Blue Mountain Snake River Tributaries

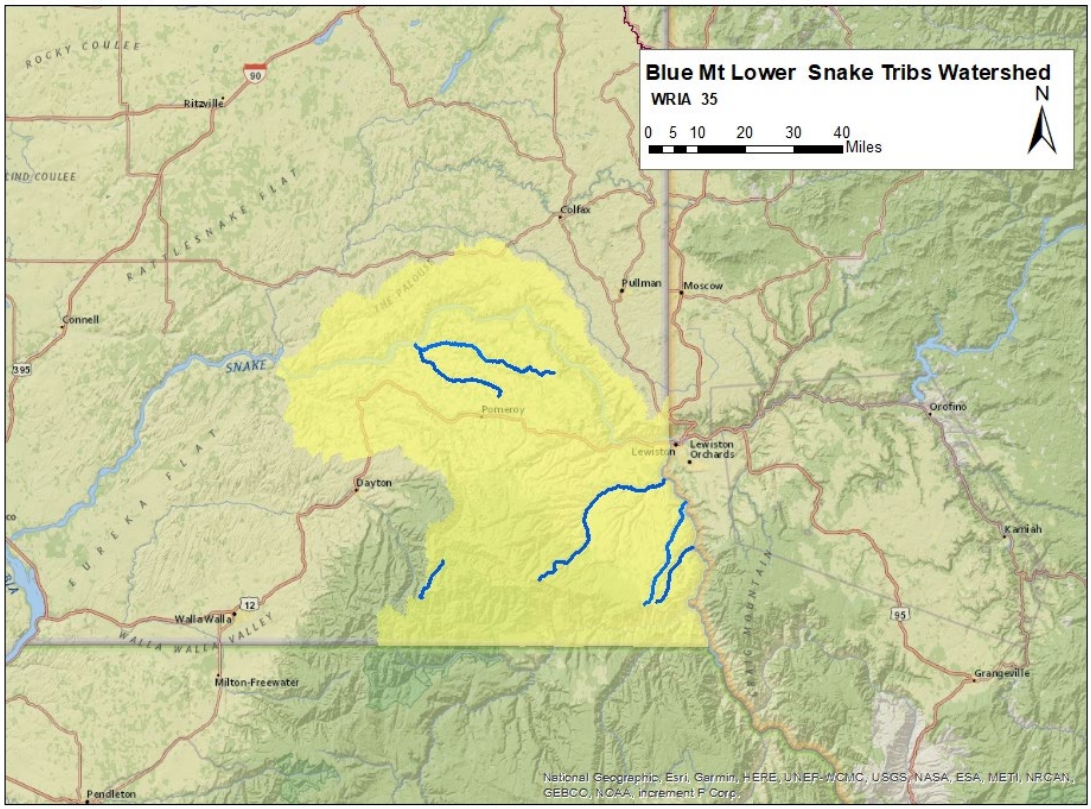


Figure 54. Map of Snake River Tributaries (Asotin Creek, Alpowa Creek, Deadman Creek, Meadow Creek, Tenmile Creek and Couse Creek).

Implementing: Asotin Creek STI and Alpowa Creek, Deadman and Meadow Creeks, Tenmile Creek, and Couse Creek 4b projects.

Summary/Context Info:

The Blue Mountain/Lower Snake tributaries comprise all the Snake River tributaries ranging across Columbia, Garfield, and Asotin Counties including the Tucannon River. These drainages primarily originate in the Blue Mountains or foothills surrounding the region. The headwaters and upstream sections are often forested with minimal land-use and switching to agriculturally dominated lower reaches. Livestock grazing remains an ongoing concern throughout the Watershed. Ecology is continuing the 4b Straight to Implementation strategies in these Watersheds, provided the lack of point sources and significant progress is being made to address well understood nonpoint pollution issues. Ecology is actively working in these Watersheds to continue to implement projects and work with stakeholders to address these issues. A monitoring effort on these 4b Straight to Implementation waterways has begun and will continue into 2024 to monitor temperature, E. coli and pH for a full water year. This monitoring effort will help to inform where water quality impairments continue to exist and advise where continued resources are required.

Priority Actions Projected for 2024

Education and Outreach

- **Attend Two Conservation District Board Meetings:** The CD boards are made up of area farmers and ranchers. Staff will attend two board meetings to inform the CD board of on-going water quality work in the Blue Mountains, collaborate on project implementation, and answer questions on efforts to implement STI and 4b projects.
- **Partner with the Asotin Conservation on Outreach Efforts:** District staff will continue to produce newsletters, flyers, and articles pertaining to water quality protection and BMP implementation for various groups throughout Asotin County. The district will continue to host public events through workshops and open houses focused on water quality education. An FY22 grant is continuing these efforts.
- **Conduct One on One Discussions:** Ecology staff conduct individual site visits with landowners and producers that were contacted for having water quality concerns. These site visits typically last over an hour and contain meaningful and often difficult conversations on water quality issues. Staff hope to complete at least five of these site visits in the Blue Mountain tributaries. Although often challenging, these outreach activities can be incredibly fruitful for water quality education and implementation efforts.

Financial Assistance

- **Implement the Asotin County Conservation District *Water Quality Enhancement Project* ($333,333):** This grant will implement various BMPs across 40,000 stream feet of Asotin County tributaries including a minimum of 20,000 plantings. BMPs will include riparian buffers, streambank stabilization, livestock exclusion, and direct seeding. The project supports implementation at priority sites identified via watershed evaluations. This grant is active through the end of 2024.

Partner Coordination

- **Host Quarterly Asotin County Conservation District Coordination Meetings:** Ecology works closely with the staff at Asotin CD to identify issues, coordinate plan/projects, and provide technical assistance to the public in Asotin County.
- **Host Pomeroy Conservation District Coordination Meetings**: Ecology works closely with the staff at Columbia CD to identify issues, coordinate plan/projects, and provide technical assistance to the public in Columbia County.
- **Partner with the Columbia Conservation District:** Ecology will continue to work to develop a closer relationship with newly hired CD staff to identify issues, coordinate plan/projects, and provide technical assistance to the public in Columbia County.
- **Participate on the Snake River Salmon Recovery Board RTT:** Ecology consistently works with various stakeholders involved in salmon recovery efforts in the region. As a lead entity voting member and a member of the Regional Technical Team, Ecology assists

with the SRSRB annual grant round and provides technical assistance for water quality issues as they relate to salmon recovery and habitat restoration.

- **Participate in Snake River Local Working Group Meeting**: Ecology staff participate in this basin wide working group focused on challenges and solutions to the greater Snake River Watersheds.

Pollution Identification/Watershed Evaluation:

- **Perform Comprehensive Watershed Evaluation**: Annual surveys will be conducted during the early spring season to identify livestock water pollution issues. Work will be focused on a majority of Snake River tributaries including the Tucannon River, Pataha Creek, Deadman Creek, Meadow Creek, Alpowa Creek, Asotin Creek, Tenmile Creek, Couse Creek, and associated tributaries.
- **Perform Water Quality Monitoring:** Water quality parameters (E. coli, pH, temperature) are being monitored on 4b waterways to evaluate current levels of impairment. Straight to Implementation plans have been underway for these waterways and require reevaluation following implementation of best management practices. This effort will help to identify where impairments continue to exist for future focus.

Compliance/Technical Assistance Activities

- **Contact New Priority Pollution Sites for Assistance:** Approximately three new landowners with livestock water quality issues will be prioritized and contacted via technical and financial assistance letters. All letters are followed up with multiple phone calls (if contact number is available) throughout the year to ensure BMP plans are developed and implemented.
- **Follow-Up with Landowners of Previous Priority Sites:** Landowners who have received technical assistance letters in previous years and who remain out of compliance will be contacted again through additional phone calls and follow-up technical/financial assistance letters. If landowner has received multiple letters and continued to remain out of compliance, ERO may send a warning letter.
- **Develop Water Quality Protection Plans for Priority Sites:** Staff will set up site visits and work to develop BMP plans for at least three sites. The plans will include riparian buffers designed to fully protect water quality.
- **Implement Water Quality Protection Plans/Riparian Buffers:** Using a combination of technical/financial assistance as well as compliance tools, Ecology staff will work to ensure implementation of a mile of riparian buffer in the Blue Mountain tributaries.
- **Follow up on nonpoint complaint sites:** Contact valid Complaint sites with nonpoint pollution issues and schedule site visits to provide technical and financial assistance. Phone calls and/or letters will follow with the goal of developing a plan for water quality protection and implementing the plan.

Monitoring Activities

- **Establish Photo Monitoring Points**: Staff will establish photo monitoring points at pollution problem sites and document riparian condition improvements over time.
- **Perform Asotin Creek Temperature Monitoring**: Partner with Asotin CD to monitor temperature at sites identified in the STI strategy. Monitoring helps evaluate effectiveness of BMP implementation.
- **Track Nonpoint BMP implementation:** Ecology staff will track a number of numeric criteria including acres of riparian area planted, linear feet of stream restored, feet or miles of exclusion fencing, acres of conservation tillage. Staff will also be tracking and reporting on the success of the watershed evaluation efforts including number of sites contacted, number of plans developed, number of sites brought into compliance, etc.
- **Continue Monitoring Program on 4b Waterways:** A monitoring effort on Deadman Creek, Meadow Creek, Alpowa Creek, Asotin Creek, Tenmile Creek, and Couse Creek (the 4b listed Straight to Implementation waterways) will continue through June 2024 for data collection representing a full water year. Continuous temperature loggers will remain at each site location; and twice a month pH measurements and E. coli samples will be taken. The data collected will be compared to previously documented impairments and analyzed with the nonpoint BMP implementation information. Comparing the tracked implementation data with the water quality data will help to evaluate the effectiveness of BMP implementation, and direct where future focus is needed.

Priority Watershed Name: Walla Walla Watershed

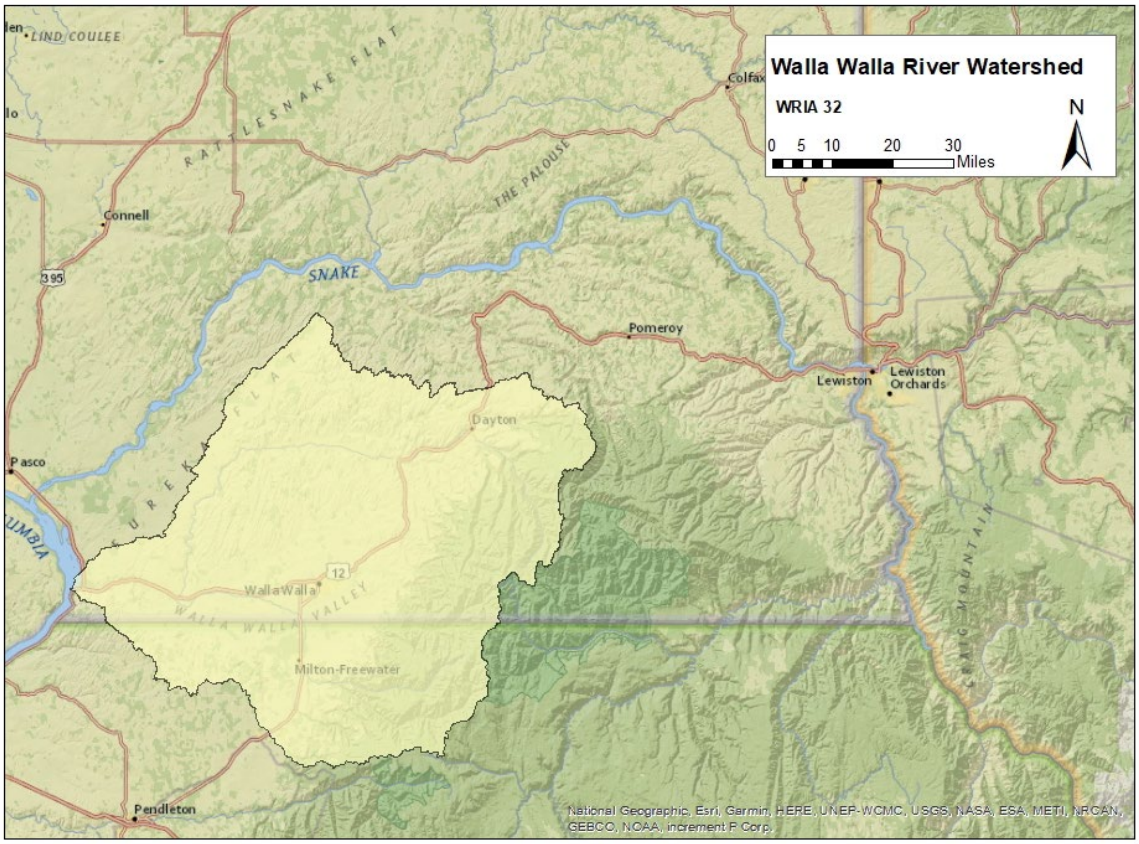


Figure 55. Map of the Walla Walla River Watershed.

Implementing: Walla Walla River Watershed Multiparameter TMDLs (Bacteria, Temperature, pH, DO, Toxics)

Summary/Context Info:

The Eastern Region is continuing to implement the Walla Walla Watershed Multiparameter TMDL Water Quality Implementation Plan. A recent effectiveness monitoring study was completed in the Watershed and published in 2021. Ecology has been active throughout the Watershed through collaborating with stakeholders, funding restoration projects, and identifying new and ongoing water quality concern sites through annual watershed evaluations. The evaluations identify parcels with pollution problems. Regional staff then work with landowners and local partners to implement appropriately sized riparian buffers.

Priority Actions Projected for 2024

Education and Outreach

- **Partner with Kooskooskie Commons on Farm BMP Outreach:** Ecology will partner on enhanced technical assistance outreach for environmental farm practices and riparian

buffer management in the Walla Walla Watershed. Kooskooskie Commons and Ecology will hold various meetings, workshops, and tours in the region.

- **Attend Conservation District Board Meetings:** The CD boards are made up of area farmers and ranchers. Staff will attend two board meetings to inform the CD board of on-going water quality work in the Walla Walla Watershed, collaborate on project implementation, and answer questions on efforts to implement TMDL projects.
- **Participate in Local Outreach Events:** Ecology staff will attend local outreach events to help educate the public about water quality, as opportunities are presented.
- **Participate in Policy, Funding and Outreach (PFO) Workgroup Meetings:** PFO is a subgroup within the larger Walla Walla 2050 effort. This work group is comprised of local organizations and interested community members, focused on implementing public engagement and education.
- **Conduct One on One Discussions:** Ecology staff conduct individual site visits with landowners and producers that were contacted for having water quality concerns. These site visits typically last over an hour and contain meaningful and often difficult conversations on water quality issues. Staff hope to complete at least three of these site visits in the Walla Walla Watershed. Although often challenging, these outreach activities can be incredibly fruitful for water quality education and implementation efforts.

Financial Assistance

- **Implement the Walla Walla County Conservation District, *Last Chance Road Restoration at RM 35.5 Project* ($347,217):** This grant supports restoration of a half-mile stretch of the Walla Walla River by installing bio-engineered structures to increase pooling and planting trees to cool the water temperature in the reach. Construction is planned to start in July 2023. The grant is active through 2024.
- **Implement the Walla Walla County Conservation District, *Canopy Cover Improvements on the Touchet River – Phase 2 Project* ($312,864):** This grant continues work to address temperature issues in the Touchet River by removing invasive false indigo and planting 2.5 miles of riparian vegetation. This grant is active through 2025.
- **Implement the Kooskooskie Commons, *Water Quality Improvements on Yellowhawk Creek Project* ($317,886):** This grant supports implementation of a riparian restoration program along Yellowhawk Creek and the Walla Walla River to address temperature and fecal coliform impairments resulting from legacy agricultural practices. Kooskooskie Commons will install native riparian buffers, monitor water quality, perform public outreach, and explore land trust easements for long-term protection of riparian areas and water trust agreements to protect flows and cold-water inputs to the stream. This grant is active through 2025.
- **Implement at least one Terry Husseman Project:** Two Terry Husseman projects are currently proposed that will improve riparian condition and water quality. Staff will look to complete and report on at least one of these projects in 2023.

Partner Coordination

- **Host Quarterly Meetings with the Walla Walla County Conservation District**: Ecology staff work closely with the conservation district staff in planning and implementing Ecology grant funded projects.
- **Participate on the Snake River Salmon Recovery Board Technical Team:** Ecology works with various stakeholders involved in salmon recovery efforts in Walla Walla. As a lead entity voting member and a member of the Regional Technical Team, Ecology assists with the SRSRB annual grants and provides technical assistance to the group for water quality issues.
- **Participate in the Mill Creek Working Group:** Ecology staff participates in the monthly working group focused on the Mill Creek Watershed and the flood control zone of Mill Creek operated by the Army Corps of Engineers.
- **Participate in the Snake River Local Working Group:** Ecology staff participate in this basin wide working group focused on challenges and solutions to the greater Snake River Watersheds.
- **Participate in the Walla Walla 2050 Planning Efforts:** Ecology's Office of the Columbia River are partnering with local stakeholders in the Walla Walla Watershed to develop new ways to protect water resources, water quality, and habitat. Ecology staff participated in workgroups and drafting of plans focused on water quality aspects of this effort.
- **Coordinate with partner agencies:** Ecology staff will hold meetings and coordinate with state and federal agencies to develop plans to protect water quality through the implantation of best management practices.

Pollution Identification/Watershed Evaluation:

- **Perform Annual Watershed Evaluations:** Surveys will be conducted during the early spring season of 2023 to identify livestock water pollution issues. Work will be focused on the Walla Walla River main stem and various tributaries including Pine Creek, Mud Creek, West Little Walla Walla River, East Little Walla Walla River, Garrison Creek, Cottonwood Creek, Russel Creek, Dry Creek, Spring Creek, Coppei Creek, Touchet River, and Patit Creek.
- **Prioritize Pollution Sites for Assistance**: Sites are evaluated along with other Snake River Watershed tributaries to determine new technical and financial letters to be sent out to landowners with water quality pollution issues.

Compliance/Technical Assistance Activities

- **Contact New Priority Pollution Sites for Assistance:** Approximately three new landowners with livestock water quality issues will be contacted via technical and financial assistance letters. All letters are followed up with multiple phone calls (if contact number is available) throughout the year to ensure BMP plans are developed and implemented.

- **Follow-Up with Landowners of Previous Priority Sites:** Landowners who have received technical assistance letters in previous years and who remain out of compliance will be contacted again through additional phone calls and follow-up technical/financial assistance letters. If landowner has received multiple letters and continued to remain out of compliance, ERO may send a warning letter.
- **Follow up on nonpoint complaint sites:** Contact valid Complaint sites with nonpoint pollution issues and schedule site visits to provide technical and financial assistance. Phone calls and/or letters will follow with the goal of developing a plan for water quality protection and implementing the plan.

Monitoring Activities

- **Continue Partnering with Kooskooskie Commons to Collect Baseline Water Quality Data.** Kooskooskie Commons will continue water quality monitoring through the FY22 grant. Data collection will occur at sites above and below active riparian restoration areas and on tributary creeks to Yellowhawk Creek (Caldwell, Lasiter, Whitney Spring Creeks and Reser, Russell and Cottonwood Creeks), as well as above and below previous restoration sites on the West Little Walla Walla River. Data collected will include temperature, pH, dissolved oxygen, conductivity and turbidity, and E. coli bacteria.

Appendix D. Maintenance of Effort (MOE) List for State Fiscal Year 2023 per CWA Section 319(h)(9)

Statement of Maintenance of Effort (MOE) related to Section 319(h)

MOE Base Level: Based on available Ecology data from 1985 and 1986, the average level of annual pass-through awards for nonpoint source control projects focused on improving water quality was $480,254. Projects were funded using state Referendum 39 funds.

MOE Maintenance: Ongoing pass-through funding for nonpoint source projects focused on restoration and protection of water quality has far exceeded the MOE Base Level, mostly through resources provided through the Washington State Centennial Clean Water Fund and the Clean Water State Revolving Fund (CWSRF).

Between 1988 and 2023 Ecology has awarded an average of more than $4 million per year in state nonpoint source project funding. These funds were not used as Section 319 or other federal match.

In State Fiscal Year 2023 Ecology offered $4,306,824 in state funds not used as Section 319 or other federal match from our Centennial Grant Program (see below).

Table 14. Final SFY23 Nonpoint Source Projects-Excluding 319 State Match Projects.

ECY Project Number	Recipient Organization	Project Name	Award Amount
WQC-2023-Edmond-00101	Edmonds city of	7313 Lake Ballinger Way Floodplain Purchase & Structure Removal	$500,000.00
WQC-2023-JeCoPH-00032	Jefferson County Public Health	Chimacum-Port Hadlock Pollution Identification and Correction Project	$305,305.50
WQC-2023-OkanCD-00044	Okanogan Conservation District	Antoine Creek Water Quality Improvements	$250,000.00
WQC-2023-PaRoCD-00011	Palouse Rock Lake Conservation District	One Pass at a Time- Conservation of Pine Creek Watershed	$368,367.00
WQC-2023-PaRoCD-00018	Palouse Rock Lake Conservation District	Improving Water Quality on Rebel Flat Creek	$351,573.00
WQC-2023-PeOrCD-00156	Pend Oreille Conservation District	Sandy Shores/Sunnyside Bank Stabilization on the Pend Oreille River	$328,226.00
WQC-2023-SkCoPW-00001	Skagit County - Public Works Department	Barrel Springs Restoration Project	$460,852.00
WQC-2023-SnCoCN-00093	Snohomish County Conservation Natural Resources Department	Jim Creek Restoration	$500,000.00
WQC-2023-Tumwat-00050	Tumwater city of	City of Tumwater's Septic to Sewer Conversion Program	$500,000.00

WQC-2023-Vancou-00186	Vancouver city of	Burnt Bridge Creek Critical Lands Acquisition	$375,000.00
WQC-2023-WhitCD-00081	Whitman Conservation District	South Fork of the Palouse River Nature Reserve and Learning Center	$367,500.00

Total award amount: $4,306,823

Appendix E. Comment letters to WSCC and NRCS

Ecology's comment letter with enclosure to the Natural Resources Conservation Service regarding the riparian buffer program offered through the Environmental Quality Inventive Program (EQIP) is below. NRCS' response letter is included below Ecology's letter.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

April 20, 2023

Nick Vira
USDA Natural Resource Conservation Service
1835 Black Lake Blvd. SW, Suite D
Olympia, WA 98512-5607
Sent via email: nick.vira@usda.gov

Re: Natural Resources Conservation Service Riparian Buffer Program for Washington State

Dear Nick Vira:

We are writing to follow-up on the January 18th State Technical Advisory Committee (STAC) meeting where NRCS presented its new Riparian Buffer Program that has the stated objective to help reduce sediment and lower water temperatures across Washington to help salmon habitat. During that meeting we expressed concerns about the structure of the program and whether it would prevent stream warming and improve salmon habitat which are two stated goals of the program. NRCS requested that we follow up in writing with our feedback and this letter is meant to outline our concerns.

We support NRCS's focus on improving riparian habitat and addressing temperature concerns. Restoring riparian habitat is critical for salmon survival and necessary to maintain clean, cool water in Washington. We also recognize the need for better incentives to significantly increase the pace of buffer implementation that is desperately needed for salmon survival and population recovery. However, as we expressed at the last State Advisory meeting, we have concerns about how NRCS's program is currently structured and the buffers it incentivizes. We believe that it is important to have science based minimum buffers that are tailored to support the attainment of Washington's water quality standards and sufficient to support salmon recovery. Unfortunately, the program as currently designed cannot ensure buffers implemented under the program will meet these goals.

The goal of our feedback is to underscore the importance of incentivizing buffers that will address water quality and salmon habitat needs and highlight the need for natural resource agencies within Washington to promote similar practices that will sufficiently address these resource concerns. We have worked successfully with your agency on a number of incentive programs over the last several years such as the National Water Quality Initiative, and your groundwater initiative. We also worked with you and local partners to support the Washington

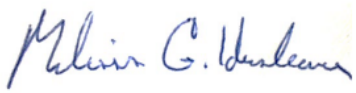
Image 14. Ecology's letter to USDA NRCS on their Riparian Buffer Program.

Farm Smart program. We are hoping that this riparian effort can be another opportunity to coordinate.

Ideally agencies would find ways to align efforts and programs to promote and incentivize riparian buffers that fully address water quality pollution sources. We believe this would help accelerate riparian restoration efforts and provide a consistent message to landowners about what is needed and help reduce confusion. As it stands now, the NRCS Buffer Program requires less than what Washington state has identified as needed to address our state temperature issues. Again, we would really like to figure out how to coordinate on this effort.

Attached are some of our specific concerns with the NRCS buffer program. We hope NRCS will consider them and adjust the program in the future to more fully address water quality and salmonid habitat resource concerns. Thank you in advance for your consideration. We are willing to meet with NRCS staff to discuss our concerns and perhaps find ways to coordinate our efforts in complimentarily ways. Please contact me at (360) 789-3610 or melissa.gildersleeve461@ecy.wa.gov if you have any questions.

Respectfully,



Melissa Gildersleeve
Watershed Management Section, Water Quality Program
Washington Department of Ecology

Enclosure

Image 15. Ecology's letter to USDA NRCS on their Riparian Buffer Program.

ENCLOSURE

The following are key aspects of program that we encourage NRCS to revisit.

- If the goal of the Program is to lower stream temperature and improve riparian habitat to support salmon recovery, trees need to be planted in the buffer. Unfortunately, tree planting is not a prerequisite to receiving funding including incentive payments under this program.

- Two of tiers (Tier 1 non-native perennial herbaceous cover and Tier 2-native perennial herbaceous cover) do not require trees to be planted in the buffer. Trees and shade are critical to reducing water temperatures and providing salmon habitat. We encourage you to limit eligibility in this program to buffers that include trees.

- Likewise, the minimum widths for Tier 3 and Tier 4 are will not support meeting water quality temperature standards and salmon recovery goals. We encourage you to set larger minimum buffer widths that better align with Washington State Department of Fish and Wildlife's (WDFW) Priority Habitat and Species Riparian Ecosystems guidance and our Voluntary Clean Water Guidance for Agriculture. Washington Department of Ecology and Washington Department of Fish and Wildlife have both spent substantial resources working on this issue including conducting literature reviews and research. In addition, NOAA Fisheries sent our agency, your agency and EPA recommendations on buffer widths that should be used to meet salmon recovery goals. It would be helpful if your agency could incentivize the buffers that these resource agencies have recommended for Washington.

- This new program provides the same incentive payment ($312.99 per year/acre) for each tier and doesn't differentiate the incentives based on the environmental benefit. This approach doesn't truly tier the incentive payments in a manner that encourages producers to implement more protective practices.

- As currently structured, there is no increased incentive that would encourage producers to select the more protective Tier 4 option. We encourage NRCS to limit incentive payments to Tier 4 (forested riparian buffers) and develop a tiered payment approach that encourages producers to implement wider buffers to better address temperature and habitat resources concerns and provide a high level of water quality protection and salmon habitat.

- Ultimately, we are concerned this program provides significant incentive payments for practices that fall short of our state salmon recovery and temperature objectives. Further, funding these practices can provide program participants with a false belief that they are fully addressing the resource concern i.e., water quality and salmon habitat. Also, the structure of this program and its incentives for lesser outcomes runs the risk of unduly competing with other funding programs that are designed to address temperature and salmon habitat.

Image 16. Ecology's letter enclosure to USDA NRCS on their Riparian Buffer Program.

USDA
United States Department of Agriculture

May 2, 2023

Melissa Gildersleeve
Watershed Management Section, Water Quality Program
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

RE: Natural Resources Conservation Service Riparian Buffer Program in Washington State

Dear Melissa,

Thank you for your April 20, 2023 letter expressing your interest and concerns associated with our riparian buffer program offered through the Environmental Quality Incentives Program (EQIP).

We appreciate your engagement and interests in improving this program and we will take your suggestions under consideration for future revisions to the program. The goal of this program is to encourage land users to adopt voluntary conservation measures that they otherwise would not. Currently, there is no state law which requires any type or width of buffer compliance. NRCS feels that we have found a balance which will encourage voluntary changes in land use and management while maintaining the viability of the agricultural operation. Voluntary conservation may be tailored to site specific needs, as opposed to a one size fits all requirement.

For the time being, if conservation partners would like to see greater buffer widths applied above and beyond what is offered in our voluntary program, they can consider providing additional funding opportunities to land users to incentivize additional conservation on their land.

Thank you again for your comments and suggestions.

Sincerely,

ROYLENE COMES AT NIGHT
State Conservationist

CC: Nick Vira, State Partnership Liaison, NRCS, Olympia, WA
Keith Griswold, ASTC-Programs, NRCS, Spokane Valley, WA
Robert Evans, State Resource Conservationist, NRCS, Spokane Valley, WA

Natural Resources Conservation Service
11707 E. Sprague Avenue, Suite 301 Spokane Valley, Washington 99206
Voice (509) 323-2900 Fax (855) 847-5492

Image 17. USDA NRCS' letter to Ecology in response to concerns on the Riparian Buffer Program.

Ecology's comment letter to the Washington State Conservation Commission, regarding program guidelines for their riparian buffer program is below.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

January 17, 2024

James Thompson, Executive Director
Washington State Conservation Commission
PO Box 47721
Olympia, WA 98504-7721

RE: Riparian Grant Program Guidelines

Dear Director Thompson:

First, I would like to welcome you into your new role. I look forward to working with you in conserving and restoring our state waters. WSCC has been a critically important partner to us over the years in protecting habitat, improving water quality, and supporting agriculture. We look forward to this partnership strengthening under your leadership.

Given the importance of riparian ecosystem restoration and the amount of funding available, we believe this is a landmark opportunity that allows us to think beyond the status quo. We can consider new approaches to incentivize broader buffers founded in best-available science and designed to be climate resilient, meet water quality standards and support salmon recovery. The $25 million in funding to your agency is a crucial next step identified in the first riparian roundtable efforts to support farmers in this important work.

We value our partnership with conservation districts across the state in supporting local agriculture and recognize the State Conservation Commission's role to implement voluntary, incentive-based programs. We also appreciate the huge undertaking involved to stand up a new riparian restoration grant program. As a state agency identified in the proviso with a coordinating role, our comments seek to identify ways to increase alignment across riparian restoration programs to leverage state dollars, provide certainty for water quality protection, and make it easier for project applicants to access multiple state funds.

We believe the draft guidelines should go further to incentivize riparian buffers that achieve the one site potential tree height (SPTH) width so that the SCC guidance aligns more closely with other state agencies funding this work. Doing so will ensure that the most protective buffers receive the best incentives. Fundamentally, we are concerned that the minimum buffer width required for incentive payment eligibility doesn't fully ensure meeting water quality standards. We recommend increasing the minimum buffer width so that conservation districts and landowners have regulatory certainty. We are confident that the minimum buffer widths in our Voluntary Clean Water Guidance for Agriculture guidance will achieve compliance with state water quality law.

Image 18. Ecology's letter to Washington State Conservation Commission on riparian buffer recommendations.

We recognize our grant programs will naturally vary, but aligning our respective riparian grant guidance for minimum buffer width and largest incentive for SPTH will provide the opportunity to combine grant funds, speed up the review of projects already deemed eligible under one program, leverage all available state dollars for riparian projects to help applicants, and ensure all of our state-funded riparian programs provide multiple habitat and water quality benefits statewide.

Attached are more specific comments to help. We hope that you will consider them as we collectively work towards our common salmon recovery, water quality, and climate resiliency goals.

Thank you in advance for your consideration. We stand ready to work with the SCC and other partners expeditiously so that the new grant funds can get out and on the ground for riparian restoration projects this spring.

Sincerely,

Vincent McGowan, PE
Water Quality Program Manager

Enclosure

Image 19. Ecology's letter to Washington State Conservation Commission on riparian buffer recommendations.

Enclosure

We appreciate SCC's effort to develop a tiered grant program that provides greater incentives for landowners to restore wider forested riparian buffers. While we support the tiered incentive concept, we have concerns with how the program is ultimately structured, the minimum widths for the program, the lack of scientific basis for minimum width requirements, the tiered buffer incentive amounts, and the likelihood these guidelines would result in funding to projects that do not meet state and federal water quality laws.

The following are key aspects of program that we support:

- Requirement for native woody vegetation and trees.
- Tiered incentive payment concept.
- Inclusion of longer-term maintenance payments.

The following are key aspects of program where we request changes:

- Minimum riparian restoration requirements. State funding programs should have science-based minimums that support compliance with the state Water Pollution Control Act and the water quality standards under the Federal Clean Water Act. The SCC's current minimum widths for perennial and intermittent streams are insufficient to protect against excessive stream warming and do not fully protect water quality from other pollutants. Under the tiered incentive payment approach, landowners can receive significant incentive payments ($300-$1000 per acre for ten to twenty years) for projects that will not fully support meeting water quality standards. The overall grant program eligibility allows for even narrower widths.

  We recommend that SCC use the Riparian Areas and Surface Water Protection chapter[1] of our recently completed Voluntary Clean Water Guidance for Agriculture to set width minimums for grant eligibility. Our guidance provides a strong scientific basis for setting minimums, and this would be a great opportunity to align our funding programs. We have used the guidance to set minimums for our grant program and as the basis for regulatory and compliance work. Having aligned minimums will help ensure we are getting buffers on the ground that protect water quality and support our state's nonpoint program. It will also avoid the situation where two Washington state resource agencies are sending different messages to landowners.

  We also recommend removing the Hedgerow Planting Practice (422) from the list of eligible practices in Appendix A.

- 200-year site potential tree height (1 SPTH) buffers. On page seven of the guidelines, a cap on the tiered incentive payments is set at the 100-year Site Potential Tree Height (a reference to the 100-year SPTH is also included in the graphic on page eight). This may be a typo, as page twelve of the guidance points to the WDFW mapping tool that uses the 200-year SPTH. We recommend using the 200-year SPTH to align with the WDFW guidance and our guidance.

[1] https://apps.ecology.wa.gov/publications/parts/2010008part6.pdf

Image 20. Ecology's letter to Washington State Conservation Commission on riparian buffer recommendations.

- Aligning incentive payment rates. To the extent possible we recommend aligning our grant program's incentive/payment rates. We cannot support creating a riparian restoration grant program that pays more for narrower buffers that don't support meeting water quality standards, and have that program compete with other state programs that require wider buffers that will support meeting standards.

  We recommend looking across all our programs and try to match levels of payment. Payments don't necessarily need to be the same, but we recommend striving to have similar payments for the same level of restoration. We recommend working with us, other natural resource agencies, and tribes, to set the payment structure in a way that is aligned and supportable by all our individual funding programs.

  This year we introduced an ecosystem service payment incentive into our Water Quality funding program which is only available to those that implement a SPTH buffer. We have also been piloting a rental payment program in the Hangman Creek watershed that has resulted in positive participation and outcomes. Under these draft guidelines, it appears SCC would pay landowners more for a smaller buffer.

  For example, Ecology's new ecosystem payment provides $2,000 per acre. To qualify, a landowner must implement a 200-year SPTH buffer (default width of 215 feet in western WA and 150 feet in eastern WA) and must have a landowner agreement that remains effective for ten years. Over that same ten-year period, a landowner could receive $10,000 per acre for implementing a 50' buffer under the proposed SCC guidelines. Given the higher per-acre incentives included in the proposed program, landowners will be eligible to receive larger incentives payments than our grant program for implementing narrower buffers that are too small to protect streams from excessive warming.

  We recommend that incentive payments are reserved for projects that will achieve compliance with the water quality standards. To do that we recommend that the SCC draw from the Riparian Areas and Surface Water Protection chapter of our recently completed Voluntary Clean Water Guidance for Agriculture to set width minimums for grant eligibility. We have piloted this approach in the Hangman Creek watershed and have been successful in getting landowner participation with a larger minimum width than the one the SCC is currently proposing.

  Last year, SCC and Ecology worked in close partnership and were successfully selected as the Climate Resilient Riparian Systems Leads for Puget Sound. This new federal funding program will also be used to fund riparian restoration and incentive payments to landowners. Ecology and SCC will begin developing joint guidelines for the new grant program in the spring and summer of 2024, with a commitment in the application materials to harmonizing our requirements with the Centennial/319 funding program. Consistency between agency guidelines will improve our ability to integrate this new funding into the state of Washington's approach to working with landowners.

Image 21. Ecology's letter to Washington State Conservation Commission on riparian buffer recommendations.

- Reconsider how incentive rates are set. Setting incentive payment rates is challenging. Balancing fiscal responsibility with creating enticing enough incentives to secure participation requires a thoughtful approach. Working with the Spokane Conservation District, we have successfully piloted an approach which connects incentive payments to commodity rates. We think an approach like the Hangman Creek watershed example, that attempts to match incentive payments to the loss of potential income or value derived from the area buffered, strikes the right balance for setting incentive payment rates. That program has successfully implemented wider buffers than the minimum proposed under the SCC guidelines while paying a lower rate – one that was better matched to the loss in income.

  Using median land value will result in more affluent areas receiving greater incentives while more rural counties/less affluent areas receive lower incentives. Also, median land value does not account for situations where land is currently used for income (e.g., agriculture). In many situations, the current payment structure will result in rural counties receiving lower incentives which may not account for income losses, while property owners in more affluent counties will receive greater incentives even if riparian restoration won't affect their property value or ability to generate income.

  We recommend that the SCC reconsider the current approach that uses median land values, and instead use a commodity buffer or similar approach that ties incentive payments to loss of income. We also recommend creating a payment structure that avoids inherently providing greater incentives to more affluent counties.

- Increase incentives for achieving the 1 SPTH buffer width. The state's goal should be to structure funding programs in a way that implements the full 1 SPTH buffer (200-year) at more sites across the state. The current tier structure does not provide a higher incentive for reaching the full SPTH width. We recommend providing a bonus payment or structuring the tiered approach in a way that provides an increased incentive to projects that achieve the full SPTH width. Further, we recommend modifying the tiered payments to provide a greater differential between tiers, to provide a more meaningful incentive for wider buffers.

  One approach would be to reduce incentive payment amounts for base payments (e.g., use a maximum of $200 dollars or less) and then provide greater percentage increases as you achieve higher tier levels, providing a larger benefit for a larger buffer.

- We recommend removing the 1-acre minimum to participate (unless project spans multiple parcels) in the program. In some watersheds, it will be important to have options for small landowners or properties that lack extensive streamside areas.

- We recommend including a requirement that livestock must be excluded from riparian areas. The draft guidelines are not clear whether livestock must be excluded from the riparian buffer to be eligible for funding. We recommend clarifying that if livestock are present at the site, they must be excluded from the buffer. That would align this program with CREP and our funding programs.

Image 22. Ecology's letter to Washington State Conservation Commission on riparian buffer recommendations

- Riparian vegetation eligible for incentive payments. The current guidelines suggest that herbaceous vegetation may be planted in riparian areas once the woody vegetation minimum is implemented. We believe the program should only provide incentives for riparian restoration that includes native, woody vegetation.
- Project prioritization. To the bulleted list of plans on page 5 of the draft guidelines, we recommend adding Shoreline Master Program Restoration Plans, to also give preference to projects included or referenced in these plans.
- The current guidance for determining the base payment is difficult to reproduce. We attempted to follow the steps outlined to calculate the median land value for several counties and struggled to achieve consistent calculations. Some areas we struggled included:
    - The guidance does not specify which features of the NHD (flowlines) dataset to use for selecting parcels, how far from an NHD feature is considered "adjacent," or how to address null land values in the parcel data.
    - The parcel data is often incomplete and/or inaccurate. For example, some counties do not have any land use codes or include erroneous land values. Given the poor data quality and its reliability, we do not recommend using the parcel data for setting final reimbursement rates.

  If the SCC decides on using median land values to establish incentive rates, we recommend the SCC calculate the base rates for all counties. This will ensure consistency across the state and limit the risk of error in applying the formula for establishing the base rate.

  If establishing a loss of income model will be too difficult in the short term, another option would be to establish three, flat-rate incentive levels for the state (high, medium, and low - per acre land values), and keep the rates relatively close to one another; this would limit the disparity between more and less affluent counties. Each county could then be placed into one of those categories.

  We also recommend including an option for landowners in low value/acre counties to increase their incentive level to medium or high based on whether the land is currently used as a source of income (e.g., crop production or livestock grazing). We believe these approaches better align with the concept of commodity buffers, reduce the disparity in incentives between more and less affluent counties, and would be simpler to administer and communicate program requirements.

Image 23. Ecology's letter to Washington State Conservation Commission on riparian buffer recommendations.

State Conservation Commission's response to Ecology's comment letter was limited to the below paragraph. See also the State Conservation Commission's February 28, 2024 meeting packet.[34]

"Buffer Widths – Flexibility is key

Minimum buffer widths rely upon and follow practice standards set by the USDA Natural Resources Conservation Service in keeping with SCC's existing policy. Maximum buffer widths follow the WDFW's 200-year site potential tree heights methodology. Ecology's comments expressed concern that the minimum buffer widths do not ensure that water quality standards are met. While water quality improvement is a benefit of riparian management zone restoration, the direction provided by the proviso states "achieve optimal restoration of functioning riparian ecosystems" rather than "ensuring water quality compliance". The program's structure of minimum and maximum buffer widths provide flexibility for the landowner and the site conditions and the greatest opportunity to voluntarily improve more riparian acres. The SCC is not a regulatory agency. It is important to note that only two practices are eligible for the additional tiered incentives – riparian forest buffer (woody trees and shrubs) and riparian herbaceous (perennial grasses) cover. The latter is conditionally eligible under certain restricted conditions."

[34] https://assets-global.website-files.com/5faf8a950cdaa224e61edad9/65d7f1935cbedc27a211a242_Meeting%20Packet-Feb%2028.pdf