Washington's Water Quality Management Plan to Control Nonpoint Sources of Pollution – DRAFT

Water Quality Program

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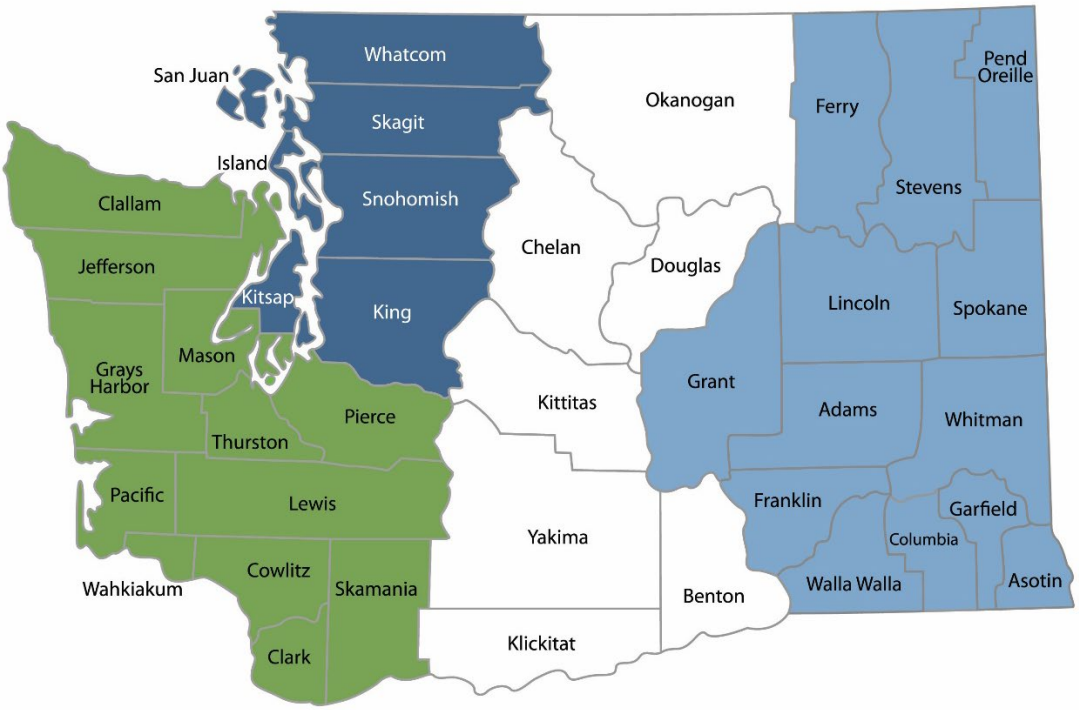

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Acronym List

AKART- all known, available, and reasonable methods of prevention, control, and treatment
AMP- Adaptive Management Program
ANS- Aquatic Nuisance Species
ARP- Advanced Restoration Plan
BEACH- Beach Environmental Assessment, Communication, and Health Program
BMPs- Best Management Practices
BOR- Bureau of Reclamation
BLM- Bureau of Land Management
BPA- Bonneville Power Administration
CAFO – Concentrated Animal Feeding Operation
CAFO GP- Concentrated Animal Feeding Operation General Permit
CAP- Chemical Action Plans
CD- Conservation District
CMER- Cooperative Monitoring, Evaluation, and Research Committee
CMP- Compliance Monitoring Program
COE- Army Corps of Engineers
CREP- Conservation Reserve Enhancement Program
CRP- Conservation Reserve Program
CSWGP- Construction Stormwater General Permit
CWA- Clean Water Act
CWG- Voluntary Clean Water Guidance for Agriculture
CWSRF- Clean Water State Revolving Fund
CZARA- Coastal Zone Act Reauthorization Amendments
CZMA- Coastal Zone Management Act
C2RSL- Climate Resilient Riparian Systems Lead
DIF- Direct Implementation Funding
DNMA- Dairy Nutrient Management Act
DNMP- Dairy Nutrient Management Plan
DNR- Department of Natural Resources
DOH- Department of Health
EAGL- Ecology Grants and Loans database
EAP- Environmental Assessment Program
EIM- Environmental Information Management system
EJ- Environmental Justice
ERTS- Environmental Report Tracking System
ESA- Endangered Species Act
EPA- Environmental Protection Agency
FAC- Financial Assistance Council
FERC- Federal Energy Regulatory Commission
FFCMP- Freshwater Fish Contaminant Monitoring Program
FFFPP- Family Forest Fish Passage Program

FFR- Forests and Fish Report
FSA- Farm Service Agency
GMA- Growth Management Act
HAB- Harmful Algal Bloom
HEAL Act- Healthy Environment for All Act
HCP- Habitat Conservation Plan
HPA- Hydraulic Project Approval
HRCD- High Resolution Change Detection
LA- Load allocation
LHJ- Local Health Jurisdiction
LIMS- Laboratory Information Management System
LOSS- Large On-site Sewage Systems
MBR- Membrane bioreactor
MOA- Memoranda of Agreement
MOU- Memoranda of Understanding
MRA- Marine Recovery Area
MSMP- Marine Sediment Monitoring Program
MS4- Municipal Separate Stormwater Systems
NAWQA- National Water Quality Assessment program
NDZ- No Discharge Zone
NEP- National Estuary Program
NMP- Nutrient Management Plan
NMTS- Nutrient Management Technical Services
NOAA- National Oceanic and Atmospheric Administration
NGWMN- National Groundwater Monitoring Network
NPDES- National Pollutant Discharge Elimination System
NP- Nonpoint
NPI- Nonpoint Implementation (mapping and tracking application)
NPS- Nonpoint Source
NPSMP- Nonpoint Source Management Program
NRCS- Natural Resources Conservation Service
O&M- Operation and maintenance
ORW- Outstanding Resource Water
OSS- On-site sewage system
PCBs- Polychlorinated biphenyls
PBT- Persistent, bioaccumulative, toxic
PSP- Puget Sound Partnership
QAPP- Quality Assurance Project Plan
RCW- Revised Code of Washington
RFEG- Regional Fisheries Enhancement Groups
RMAP- Road Maintenance and Abandonment Plan
SAM- Stormwater Action Monitoring
SBA- Sumas-Blaine Aquifer

SDWA- Safe Drinking Water Act
SEPA- State Environmental Policy Act
SMA- Shoreline Management Act
SMP- Shoreline Master Program
SPD- Shellfish Protection District
SSA- Sole Source Aquifer
STI- Straight to Implementation
SWG- Stormwater Work Group
SWMM- Stormwater Management Manual
SWMP- Stormwater Management Program
TFW- Timber, Fish, and Wildlife
TMDL- Total Maximum Daily Load
USDA- United States Department of Agriculture
USFS- United States Forest Service
USGS- United States Geological Survey
VSP- Voluntary Stewardship Program
WAC- Washington Administrative Code
WDFW- Washington Department of Fish and Wildlife
WHPZ- Wellhead Protection Zone
WLA- Wasteload Allocation
WPCA- Water Pollution Control Act
WQ- Water Quality
WQA- Water Quality Assessment
WQI- Water Quality Index
WSCC- Washington State Conservation Commission
WSDA- Washington State Department of Agriculture
WSDOT- Washington State Department of Transportation
401 WQC- Section §401 Water Quality Certification

Executive Summary

This document outlines Washington State's approach to addressing water quality impacts from nonpoint sources (NPS) of pollution. This statewide management plan meets U.S. Environmental Protection Agency (EPA) Clean Water Act requirements, and ensures Washington State's eligibility for Section 319 (federal NPS Program) funding.

The Washington State Department of Ecology (Ecology) is the regulatory agency charged with protecting the quality of Washington State's water. Ecology acts as the lead agency in restoring, maintaining, and enhancing water quality, in collaboration with individuals, interested groups, Tribes, local governments, state agencies, and federal agencies. Ecology's NPS program uses a combination of technical assistance, financial assistance, and regulatory tools to help individuals understand and comply with state and federal water quality laws and regulations.

The passage of the state Water Pollution Control Act and federal Clean Water Act helped Washington State make important progress in cleaning up our rivers, lakes, and coastal waters, largely by controlling pollution from factories, sewage plants, and other "point" sources of pollution. Yet, based on the available water quality data, there remain a significant number of waterways that are not meeting the state Water Quality Standards which protect all beneficial uses. Both point and NP sources of pollution must be addressed to reverse the trend of impairment and achieve the goals outlined in state and federal law.

Runoff from streets, farms, forest lands, and other sources continue to pollute our waters. These are considered NPS of pollution, and they represent the largest remaining challenge in achieving compliance with state Water Quality Standards.

Although there exists a variety of nonpoint source pollutants, each with its sources and impacts, temperature pollution has rapidly become among the highest priority pollutants in Washington State. Temperatures that exceed state water quality standards can quickly have catastrophic consequences for aquatic communities. While recognizing the widespread impacts of increasing water temperature, the state must take a holistic approach towards addressing nonpoint source water quality pollution. In many situations, the solution to address temperature pollution- healthy riparian areas- is also the solution to preventing many other pollutants, such as fecal bacteria and nitrogen, from reaching our waterways. In addition to providing cooling shade and filtering out pollutants, healthy riparian areas also support healthy aquatic habitats vital to protecting not only Washington's salmon but all aquatic organisms. The multiple benefits of riparian areas provide support for a strong focus on implementing effective riparian buffers, from all agencies and organizations interested in improving water quality and supporting salmon survival in Washington State.

This plan aims to protect public health and restore our state's waters by setting clearer goals and standards, and emphasizing the implementation of proven suites of best management practices to prevent pollution.

Chapter 1: Nonpoint Source Pollution in Washington State

1.1 Land use and Nonpoint Source Pollution

Nonpoint source pollutants are introduced into water through:

- Runoff (typically rainfall and snow melt washing pollutants from the land into rivers, streams, lakes, oceans, and underground aquifers).
- Direct deposition of pollutants into state waters.
- Habitat alteration and hydromodification (the alteration of the natural flow of water across a landscape, including channel modification or channelization).
- Atmospheric deposition.

Land use is strongly correlated to nonpoint pollution. Therefore, to manage nonpoint source (NPS) pollution, we must focus on land use activities. The major sources of nonpoint pollution can be divided into the following categories.

Categories	Associated Land Uses
Agriculture	Livestock keeping, crop production, grazing, non-commercial agriculture.
Atmospheric Deposition	Emissions from various sources, windborne erosion.
Forest Practices	Road construction and maintenance, harvesting, chemical applications.
Habitat Alteration/ Hydromodification	Filling of wetlands and alteration of riparian areas, shoreline development, stream channelization, dikes, dredging, riprap, and dams.
Recreation	Marinas and boats, off-road vehicles.
Urban/Suburban Areas	Stormwater runoff, on-site sewage systems, hazardous materials, construction and maintenance of roads and bridges, residential use of fertilizers and pesticides.

1.2 What is the quality of Washington State's water?

1.2.1 Water quality assessment

Ecology's primary means of reporting on the status of water quality is through the development of the Water Quality Assessment (WQA). Washington State's WQA satisfies the requirements of the federal Clean Water Act (CWA) Section 303(d) and Section 305(b). The 303(d) list identifies polluted and impaired waterbodies. The 305(b) report is a general report on Washington's

water quality. The 303(d) list and 305(b) report are submitted as an Integrated Report to EPA on a periodic basis through the Water Quality Assessment.

Water Quality Policy 1-11, Chapter 1[2] describes the components, process and methodologies for how Ecology evaluates ambient water quality conditions through the WQA. The policy includes parameter-specific methodologies that outline how Ecology evaluates data for each parameter; the WQA then places waterbodies into one of five categories. All assessed waterbodies in Washington (except water on Tribal lands) falls into one of five categories that describes the status of water, from clean to polluted (see Chapter 7, section 7.2.5 for more information on the five categories). More information on the WQA, including links to view category determinations and the 303(d) list can be found on the Water Quality Assessment webpage[3].

The Water Quality Assessment helps us prioritize the use of state resources more efficiently by focusing on water bodies that need the most work, and to address the problem pollutants that show up most often. It should be noted, however, that the Water Quality Assessment is not a full accounting of the water quality problems in Washington. There are still many water bodies with very little water quality data or that have not yet been monitored.

1.2.2 Nonpoint pollution in Washington State

To support development of the NPS Plan, Ecology conducted a study of existing information regarding nonpoint source pollution in Washington.[4] The objective of this study was to research and document the current known extent of NPS pollution, evaluate the land uses and human activities that can generate NPS pollution, and look at the linkage between land uses, human activities, and NPS pollution in Washington.

To accomplish this, Ecology evaluated technical reports and other information sources produced from 2005-2014. The study employed several distinct areas of research:

- A review of existing U.S. Environmental Protection Agency (EPA) guidance.
- A review and summary of recent research on NPS pollution relevant to Washington State.
- Compilation of calculated NPS load reduction targets in 49 Total Maximum Daily Load (TMDL) studies conducted in Washington from 2005-2014.
- An exploratory analysis of TMDL load allocations and associated land uses, using Geographic Information Systems.
- An evaluation of Section 319 grants used for NPS pollution control.

[2] https://apps.ecology.wa.gov/publications/SummaryPages/1810035.html
[3] https://ecology.wa.gov/water-shorelines/water-quality/water-improvement/assessment-of-state-waters-303d
[4] To access the full report see Appendix A.

- Four case studies in data-rich watersheds: Walla Walla River, Lower Yakima River, Dungeness River and Bay, and Samish Bay.

Results of these areas of analysis were synthesized to draw conclusions for different categories of nonpoint pollution sources, including agriculture, urban and residential areas, hydromodification, marinas and boating, forests, atmospheric deposition, and natural sources. The study found that nonpoint pollution sources are widespread in Washington and cause a variety of water pollution problems. The application of best management practices will help reduce and prevent these pollution impacts.

Nonpoint pollution loading, stemming from a large variety of sources, can often be difficult to visualize on the landscape. The SPARROW (SPAtially Referenced Regressions On Watershed attributes)[5] watershed modeling technique strives to address this by relating water quality data to watershed attributes, such as contaminant sources and environmental factors. Current SPARROW models assign total nitrogen (TN), total phosphorus (TP), and suspended sediment loads to various pollution sources, such as: wastewater treatment discharge, urban land, fertilizer and livestock manure applied to crop land, weathering of upland geologic material, springs, grazing cattle manure applied to agricultural lands, and channel sources. The allocation for each source is displayed in a bar chart and can be visualized at various spatial scales. To further identify changes in pollutant loading temporally, Ecology and the U.S. Geological Survey (USGS) have developed watershed models of seasonal load estimates of total nitrogen and total phosphorus discharging into the Washington waters of the Salish Sea. These models and outputs can be informative when comparing nutrient loading and sources among watersheds for purposes of prioritizing watersheds for pollution reduction activities.

In addition to striving to address the known sources and impacts of nonpoint source pollution, we must also consider the changing conditions within Washington State. Recent climate projections for Washington State predict a patchwork of impacts across the state for the key climate stressors of reduced water availability and drought, marine and coastal changes, flooding, wildfire and smoke, and extreme heat. Though the magnitude and regionality of the impacts of these stressors may vary (see Appendix A of the Washington State Climate Resilience Strategy[6] for more details), each of these stressors have the potential to exacerbate the threat of nonpoint pollution on Washington's waters. In the following section we describe the impacts of land use practices that contribute nonpoint pollution and in Chapter 3 we discuss the strategies and tools for addressing nonpoint pollution; through implementation of the strategy to address nonpoint pollution shared in this plan we will continue to work to provide resources and tools to help reduce the impacts of climate change on water quality.

[5] https://sparrow.wim.usgs.gov/sparrow-pacific-2012/
[6] https://apps.ecology.wa.gov/publications/SummaryPages/2401006.html

1.2.3 The impacts of land use practices – a summary

Agricultural

Agricultural areas have consistently been cited as a significant source of impairment in freshwater nationwide. Documented water quality impacts from agricultural areas include elevated levels of fecal coliform bacteria, suspended sediment, turbidity, pesticides, PCBs, nutrients, and pH, as well as decreased levels of dissolved oxygen, and elevated water temperatures through loss of riparian shade.

Table 1. Pollutant categories associated with nonpoint pollution from agricultural areas.

Pollutant Category	Typical Sources	Impacts
Fecal coliform bacteria	Direct animal access to streams, manure overspray or runoff, runoff from pastures, grazing areas, application areas, manure piles, or heavy use areas. Lack of riparian protection.	Human health, shellfish harvest
Suspended sediment/ Turbidity	Erosion from animal access to stream banks, runoff from heavy use areas or cultivated fields, runoff from irrigated farm fields. Lack of riparian protection.	Aquatic life uses, aesthetics
Pesticides	Direct overspray, runoff from fields.	Human health, aquatic life uses
Nutrients/ Dissolved oxygen/pH	Direct animal access to streams, manure or fertilizer overspray or runoff, runoff from pastures, grazing areas, heavy use areas or cultivated fields. Lack of riparian protection.	Aquatic life uses, aesthetics
Shade/Temperature	Loss of riparian shade due to clearing, suppression of riparian vegetation by grazing animals, degradation of riparian condition from animal access or cultivation in riparian areas.	Aquatic life uses

Atmospheric Deposition

Atmospheric deposition of nitrogen, sulfur, mercury, and other toxic compounds such as polychlorinated biphenyls (PCBs) and dioxins enter surface waters via direct fallout or when soils contaminated via atmospheric deposition erode and enter surface waters. Fallout may occur as wet deposition, in which emissions react with water vapor in the air and fall as precipitation (e.g., nitric and sulfuric acids—*acid rain*), or as dry deposition, in which emissions fall in gaseous or particulate form. Emission sources include industrial facilities, vehicle exhaust, and agriculture-related activities, as well as volatilization, or open burning of PCB/dioxin-laden materials. Forest fires can also be a source of pollutants entering the water from atmospheric deposition. Surface water deposition from atmospheric emissions have been found to occur at local, regional, and global scales.

Table 2. Pollutant categories associated with nonpoint pollution from atmospheric deposition.

Pollutant Category	Typical Sources	Impacts
Nitrogen (ammonia, nitrate), Phosphorus, Sulfur dioxide	Vehicle, agricultural, and industrial emissions, wind-borne erosion	Aquatic life uses
Mercury	Mining, coal burning, atmospheric deposition	Human health, aquatic life uses
PCBs, Dioxin, Furans	Backyard burning of pollutant-laden trash, volatilization from soils or water	Human health, aquatic life uses

Forest Practices

The main pollutants associated with activities in forested areas include temperature, sediment, and nutrients. Nonpoint pollution from toxic chemicals, including heavy metals and pesticides, have also been associated with forestry activities.

Table 3. Pollutant categories associated with nonpoint pollution from forested areas.

Pollutant Category	Typical Sources	Impacts
Suspended sediment/ turbidity	Loss of riparian vegetation, concentration of flow from roads, road failures	Aquatic life uses
Temperature	Loss of riparian vegetation	Aquatic life uses
Nutrients/dissolved oxygen	Loss of riparian vegetation, forest fertilization	Aquatic life uses
Toxic chemicals (heavy metals, pesticides)	Sedimentation, aerial forest pesticide applications	Human health, aquatic life uses

The primary means by which timber harvest impacts water quality is through: 1) removal of the trees which provide shade, wood, and leaf litter inputs into waterways, 2) removal of trees and vegetation in sufficient amounts to change the flow of water and nutrients, and 3) compacting and disturbing soils such that excess sediment is delivered to streams with precipitation events.

Poorly located roads, outdated construction practices, and lack of maintenance of forest roads can have a large impact on water quality. Road activities can increase sedimentation through poor water management, degraded road surfaces, and increased runoff from these poorly maintained surfaces.

The loss of shade through the removal of streamside canopy is a well-established mechanism leading to elevated stream temperatures. Elevated stream temperatures can contribute to lowered dissolved oxygen levels and can directly or indirectly impact in-stream biota. Other riparian functions and watershed characteristics, including streambank stability, filtration, and surface water-groundwater connectivity, are affected by forestry activities and can affect stream temperatures.

Timber harvesting and road construction activities also have the potential to negatively impact wetland functions. Compaction of wetland soils by harvesting equipment can alter wetland hydrology and affect the distribution of wetland-dependent plant species. Excessive road construction through wetlands can also affect the water storage capacity and filtration ability of wetlands.

The mechanisms and specific risks of water quality impacts from forestry may change with the location in the watershed. Areas in the upper portions of watersheds tend to have steeper, more unstable slopes relative to lower-gradient areas further downstream and are thus more prone to sediment erosion and debris flows affecting water quality, both locally and downstream. Throughout the watershed, forest harvest activities and their associated roads can impact water quality with higher sediment loads when those activities directly discharge to streams or are located too near to streams.

Habitat Alteration/Hydromodification

Hydromodification or habitat alteration, a category found widely in EPA NPS guidance, is comprised of a variety of impacts ranging from large dams to development in riparian zones. Typical forms of hydromodification include:

- Dams and weirs forming reservoirs or ponded areas
- Channelized streams
- Bank armoring and levees
- Bank excavation and removal of riparian vegetation
- Streambank and shoreline erosion
- Removing vegetation and/or large woody debris

- Drain or fill of wetlands
- Irrigation diversions
- Culverts

This category overlaps with many of the other categories since agriculture, urban and residential development, and forestry can affect riparian zones. However, many hydromodification impacts occur directly from channel modification, or from activities on vacant or open space lands. In general, the term "hydromodification" used in this context refers to modifications to the geomorphological channel structure that impair water quality or aquatic habitat. Restoration activities may involve a channel "remodification" to restore ecological function.

The critical aspects of hydromodification are that:

- It can affect any kind of water body – marine, river, stream, lake, or wetland.
- It can be associated with almost any kind of land use or human activity.
- It impacts the aquatic ecosystem physically through loss of habitat and ecosystem function.
- It also impacts the aquatic ecosystem through the discharge of contaminants from construction, building materials, erosion, and the lack of a riparian vegetated buffer to prevent the transport of contaminants from overland flow.

Table 4. Pollutant categories associated with nonpoint pollution from hydromodification.

Pollutant Category	Typical sources	Impacts
Temperature	Loss of riparian canopy, changes in channel morphology, changes in surface water-groundwater interactions.	Aquatic life uses
Suspended sediment/ turbidity	Erosion, alteration of transport and deposition dynamics.	Aquatic life uses
Bacteria, nutrients/ dissolved oxygen/pH, pesticides	Loss of the riparian buffer.	Aquatic life uses, human health, aesthetics

Recreation

Although generally a less pervasive nonpoint issue compared to agriculture and urban/residential areas, the impacts of NPS pollution from marinas and recreational boating can be present in our coastal areas and lakes. This is especially true in Puget Sound waters that are poorly flushed and mixed. At the same time, Puget Sound waters contain economically important fish and shellfish areas, marine protected areas, aquatic reserves, and public

beaches. Recreational vehicles can also leak harmful chemicals which can then enter surface and groundwater.

Table 5. Pollutant categories associated with nonpoint pollution from recreation and marine/boating areas.

Pollutant Category	Typical sources	Impacts
Fecal coliform bacteria	Direct sewage discharge	Contact recreation, shellfish harvest
Toxic chemicals (heavy metals, organic toxics)	Anti-fouling paint, solvents, sealers, lubricants	Human health, aquatic life uses
Nutrients from soaps and detergents	Direct sewage discharge, boat cleaning	Aquatic life uses, aesthetics
Petroleum hydrocarbons	Engine fueling and operation, bilge water	Human health, aquatic life uses, aesthetics

Urban and Residential Areas

Urban (including commercial, industrial, and residential) areas and non-urban residential areas have long been recognized as one of the top sources of nonpoint pollution across the United States. A mix of land use and human activities typically contribute to overall nonpoint pollution issues in urbanized watersheds.

The key transport mechanism involved is stormwater runoff from impervious surfaces, although direct dumping and hydromodification also contribute. The most common pollutants associated with nonpoint pollution in urban areas are fecal coliform, toxic chemicals, suspended sediment and turbidity, and nutrients.

Table 6 Pollutant categories associated with nonpoint pollution from urban areas.

Pollutant Category	Typical Sources	Impacts
Fecal coliform bacteria	Onsite sewage systems, pet waste, urban wildlife	Contact recreation, shellfish harvest
Suspended sediment/ turbidity	Erosion from construction or landscaping, road runoff, road maintenance, bank erosion from increased peak flows	Aquatic life uses, aesthetics
Toxic chemicals (heavy metals, pesticides)	Landscaping chemicals, road runoff, commercial or industrial spills, leaking storage tanks	Human health, aquatic life uses
Nutrients/dissolved oxygen/pH	Landscaping chemicals, road runoff, commercial or industrial spills, pets, and urban wildlife	Aquatic life uses, aesthetics

Pollutant Category	Typical Sources	Impacts
Petroleum hydrocarbons	Road runoff, commercial or industrial spills, leaking storage tanks	Aquatic life uses
Temperature	Loss of riparian canopy, changes in channel morphology, changes in surface water-groundwater interactions	Aquatic life uses

Chapter 2: Washington State's Regulatory Framework

This chapter describes Washington State's statutory and regulatory framework for implementing the Nonpoint Source (NPS) program. The authority to implement the Nonpoint Source program is based primarily on the State Water Pollution Control Act and two federal laws—the Clean Water Act (CWA) and Coastal Zone Act Reauthorization Amendments of 1990. Further, three additional state laws provide enforceable mechanisms that address NPS pollution from forest practices, dairies, and on-site-sewage systems. Finally, other relevant state and local laws are also included to provide a full picture of the legal framework in Washington State.[7]

2.1 State water quality laws-regulatory

In Washington State, the Water Pollution Control Act (Chapter 90.48 RCW) is the principal state law governing water quality. It provides the primary authority to regulate NPS pollution, achieve compliance with the state WQ Standards, and require the implementation of best management practices (BMPs) to address NPS pollution. Other state and local authorities can also provide authority to address NPS pollution. In addition to the Water Pollution Control Act, this section describes three other state laws and associated regulations (the Forest Practices Rules, the Dairy Nutrient Management Act, and On-Site Sewage Systems Regulations) that provide enforcement authority to address nonpoint sources of pollution.

2.1.1 Washington State Water Pollution Control Act

The Washington State Water Pollution Control Act (Chapter 90.48 RCW) is the principal law governing water quality in Washington State. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The goal of the Water Pollution Control Act is to "…maintain the highest possible standards to insure the purity of all waters of the state...."[8] Further, to achieve this goal the state will "…require the use of all known available and reasonable methods by industries and others to prevent and control the pollution of the waters of the state…."[9] The Water Pollution Control Act (WPCA) applies to surface waters, wetlands, and groundwater.

Under the Washington State Water Pollution Control Act (WPCA), Ecology is given the jurisdiction "to control and prevent the pollution of…waters of the state of Washington."[10] Pollution is broadly defined in RCW 90.48.020, and includes the contamination or other

[7] While this chapter discusses most of the relevant authorities in Washington State, it is not intended to be comprehensive of all possible legal authorities that can be used to address nonpoint sources of pollution. In some cases, other legal authorities may be better suited to address a specific nonpoint pollution problem.
[8] See RCW 90.48.010.
[9] See RCW 90.48.010.
[10] See RCW 90.48.030.

alteration of the physical, chemical, or biological properties of any waters of the state. Under state law, it does not matter whether the pollution comes from a point or nonpoint sources, all pollution of state waters is subject to Ecology's authority to control and prevent pollution.

The Water Pollution Control Act makes it unlawful for any person to "…cause, permit or suffer to be thrown, run, drained, allowed to seep or otherwise discharged…any organic or inorganic matter that shall cause or tend to cause pollution of…" waters of the state.[11] Any person who violates or creates a substantial potential to violate the provisions of Chapter 90.48 RCW is subject to an enforcement order from Ecology pursuant to RCW 90.48.120. Ecology is authorized to "…issue such order or directive as it deems appropriate under the circumstances[.]"[12]

In addition to administrative orders, violating Chapter 90.48 RCW may result in injunctions, civil penalties, and notices of violations.[13] Finally, any "…person who conducts a commercial or industrial operation of any type which results in the disposal of solid or liquid waste material into the waters of the state" must obtain a state waste discharge permit before discharging to state waters.[14] Ecology issues three types of wastewater discharge permits: (1) State Waste Discharge Permit; (2) National Pollutant Discharge Elimination System (NPDES)/State Waste Discharge Permits; and (3) General Permit (may be issued under combined NPDES/State or State-only authority).

It is worth noting that while RCW 90.48.120 gives Ecology the authority to take action in response to NPS pollution, the statute also gives Ecology the authority to take action based on a "substantial potential" to pollute state waters via either a point or nonpoint pollution source. Consequently, Ecology not only has the authority to take action following a NPS pollution occurrence (i.e. there was a discharge), but has specific statutory authority to act proactively to prevent NPS pollution from occurring in the first place. The Nonpoint program utilizes this authority to identify nonpoint pollution based upon site conditions.

Finally, Ecology's authority includes the ability to require a nonpoint source polluter to implement specific best management practices (BMPs). Ecology's authority can be used to prevent nonpoint pollution and require BMPs, as necessary.[15]

The Washington State Supreme Court affirmed Ecology's authority to regulate nonpoint source pollution in Lemire v. Dept. of Ecology, 178 Wn.2d 227, 309 P.3d 395 (2013). In that case, Ecology identified Joseph Lemire's ranch as having conditions detrimental to water quality during a watershed evaluation. Livestock at the property had uncontrolled access to Pataha Creek; because of that direct access, Ecology observed overgrazing, bare ground, manure, erosion, riparian vegetation damage, cattle trails, and bank trampling in the stream corridor.

[11] See RCW 90.48.080.
[12] See RCW 90.48.120.
[13] See RCW 90.48.037, RCW 90.48.144, RCW 90.48.120, and RCW 90.48.240.
[14] See RCW 90.48.160.
[15] See Appendix B.

Ecology made multiple offers of financial and technical assistance to support management changes to help curb pollution and protect water quality at the property. After these repeated offers were rejected by Mr. Lemire, Ecology issued an Administrative Order. The Order prescribed a number of corrective actions, including requiring Mr. Lemire to construct riparian livestock fencing to exclude cattle from surface water and develop off-stream water for livestock. The order also required Mr. Lemire to set back a confinement area from the stream.

In upholding the Order, the Court recognized that the plain language of RCW 90.48.080 gives Ecology "the authority to regulate nonpoint source pollutant discharge." In its decision the Court observed that "Ecology is authorized to issue orders remedying not only actual violations of the State WPCA, but also those activities that have a substantial potential to violate the WPCA." The Court's decision also supported Ecology's authority to require the implementation of prescribed BMPs to curb pollution.

Subsequent to the Lemire decision, the Pollution Control Hearings Board, as well as the Court of Appeals of the State of Washington Division Three, have reaffirmed Ecology's authority and upheld enforcement actions. The plain language of RCW 90.48 and the abovementioned court case support the work of Ecology's nonpoint field staff, who utilize visual observations of conditions known to contribute to pollution to identify and prioritize sites of concern, provide technical assistance to landowners and operators, and pursue enforcement actions when necessary. See Chapter 3 for an in-depth discussion of how Ecology's nonpoint field staff carry out this work.

2.1.2 Forest Practices Rules

The Forest Practices Rules establish protection standards for forest practices activities such as timber harvest, pre-commercial thinning, road construction and maintenance, fertilization, forest chemical application, required reforestation, and specific riparian and wetland protection measures.[16] They give direction on how to implement the Forest Practices Act[17] and the Stewardship of Non-industrial Forests and Woodlands.[18] The rules are designed to protect public resources, such as water quality and fish habitat, while maintaining a viable timber industry. They are under constant review through an adaptive management program.

The Forest Practices Board, an independent state agency, adopts Forest Practices Rules. The Department of Ecology needs to concur with proposed rules involving water quality protection prior to adoption by the Forest Practices Board.

The Forest Practices Rules requires trees to be left within streamside areas to shade streams (which keeps them cool), to protect stream bank integrity, to capture surface run-off sediment, and to provide the woody debris that builds in-stream salmon habitat. They also establish road construction standards and require road maintenance, provide protection for wetlands, and set

[16] See Title 222 WAC.
[17] See Chapter 76.09 RCW.
[18] See Chapter 73.13 RCW.

restrictions on pesticide use. An approved Forest Practices Application from the state Department of Natural Resources (DNR) is required for any forest practices activities on forestlands in the state meeting certain criteria. DNR is authorized to inspect operations and enforce all rules related to forest practices. Ecology is also authorized to take enforcement action if needed to prevent damage to water quality.

2.1.3 Dairy Nutrient Management Act

The Dairy Nutrient Management Act[19] (DNMA) is administered by the Washington State Department of Agriculture's (WSDA) Nutrient Management Technical Services (NMTS) program, with key roles for the State Conservation Commission and conservation districts. This act was passed by the legislature due to the finding that "…there is a need to establish a clear and understandable process that provides for the proper and effective management of dairy nutrients that affect the quality of surface or groundwaters in Washington."

Chapter 90.64 RCW requires all grade "A" licensed cow dairies under Chapter 15.36 RCW to:

- Register with WSDA's program and provide basic farm and contact information.
- Develop a dairy nutrient management plan (DNMP) that describes how manure and process wastewater will be managed, including production, collection, storage, and agronomic use, along with stormwater diversion and management.
- Obtain approval of the DNMP within six months of licensing. The DNMP is to be approved by the dairy producer and local conservation district board, and certified by both parties. Certification means that the conservation district board attests that the elements necessary to implement the DNMP have been constructed or otherwise put into place and the operator attests to managing dairy nutrients as specified in the DNMP.
- Consent to inspections performed by WSDA to survey for evidence of violations, identify corrective actions for actual or imminent discharges, monitor the implementation of practices outlined in the DNMP, and provide technical assistance as needed.
- Maintain records demonstrating agronomic use of all nutrients.

While WSDA administers the program, the DNMA duties to the State Conservation Commission and conservation districts are outside direct oversite from WSDA. The Dairy Nutrient Management Act required the Washington State Conservation Commission (WSCC), by November 1, 1998, to develop a document that describes the minimum elements of a DNMP required to be approved by the local conservation district board (RCW 90.64.026). In addition, WSCC may authorize other methods and technologies than those of the Natural Resources

[19] Chapter 90.64 RCW.

Conservation Service (NRCS), if they meet specific standards (see RCW 90.64.026(3)). The WSCC has not updated the minimum required elements of a DNMP since 1998.[20]

The DNMP development process is completed by the dairy producer in consultation with a local conservation district farm planner, NRCS, or a private farm planner.[21] The DNMP development process includes evaluation of animal and nutrient inventory, surface and groundwater risk(s), manure and process wastewater collection, conveyance and storage needs, crop production history, and land application acreage needs. The DNMP process identifies the producer's goals, resource risk(s), and BMPs to protect water resources.

16-611 WAC specifies requirements for recordkeeping and the penalty matrixes for both recordkeeping and water quality violations.

Chapter 90.64 RCW requires WSDA to implement an inspection program to monitor dairy operations for DNMP implementation, recordkeeping violations, and conditions that create a risk of discharge to waters of the state. If a discharge to surface water or groundwater is documented, WSDA has the authority to issue civil penalties.[22]

In addition, Chapter 43.05 RCW (Technical Assistance) requires WSDA to identify dairies that could benefit from additional technical assistance. Under Chapter 43.05 RCW, WSDA may provide technical assistance that includes evaluating applicable BMPs outlined in the DNMP, an evaluation of BMP implementation status and effectiveness, identification of potential additional BMPs or management changes that need to occur to protect water quality, consultation on applicable state laws and rules, and use of informal enforcement to incentivize compliance. Alternatively, WSDA may refer dairy producers for technical assistance to non-regulatory partners like local conservation districts, NRCS, or private consultants and engineers when their programs are a better fit for the resource concern. Often the local conservation districts are the first resource used by dairies, as they provide free-of-charge planning and technical assistance services, and access to local, state, or federal cost-share funding for certain projects.

[20] In the event that WSCC updates the minimum elements of a DNMP there is no requirement for existing plans to be updated.

[21] WSDA does not review and approve plans. Instead, there is an is an appeals process outlined in RCW 90.64.028 that can include an informal appeal to the WSCC or a direct appeal to the Pollution Control Hearings Board.

[22] The state has limited enforcement authority and penalties for dairies that do not keep plans updated and/or do not properly implement their plans. The statute does not require dairies to update a plan when there are changes to dairy operations and there is no requirement to follow an approved and certified plan. Additional background information on WSDA's enforcement authority is found in Appendix C.

Chapter 90.64 RCW requires WSDA to prepare an "annual report" for water quality and conservation partners, published on the WSDA website and available by request. The most recent report is included in Appendix D.

DNMA and Concentrated Animal Feeding Operations

NMTS' dairy compliance program is managed in conformance with a Memorandum of Understanding (MOU) established between WSDA and Ecology, last updated in 2011. Ecology is responsible to EPA for Clean Water Act compliance for animal feeding operations and concentrated animal feeding operations and retains the authority under Chapter 90.48 RCW to take compliance actions on any livestock operation where human health or environmental damage has or may occur due to potential or actual discharges. However, in accordance with the MOU, Ecology recognizes WSDA as the lead on water quality investigations, technical assistance, preparing recommendations for enforcement as necessary, and all compliance actions, including enforcement, for violations at non-permitted dairies. WSDA and Ecology coordinate on preparing recommendations for enforcement actions for permitted dairy farms where Ecology maintains responsibility to enforce permit violations.

2.1.4 On-Site Sewage Systems

On-site sewage systems (OSS) treat wastewater from private residences and restaurants and are used throughout Washington state. OSS that are properly designed, installed, and maintained can effectively treat residential wastewater for a long time. Failures can occur due to bad system design, improper or lack of maintenance, or when the system has reached the end of its life expectancy, and there are many instances of failing OSS polluting surrounding areas. To support the proper functioning of OSS to protect water quality, aquatic life, and human health, Washington state has enacted laws and regulations, many of which are discussed below.

Small On-Site Sewage Systems

Small on-site sewage systems, also known as septic systems, treat domestic sewage from private residences, restaurants, and other small-scale developments. They are used extensively statewide in rural and suburban infill settings.[23] In Washington State, small OSS are regulated by Chapter 246-272A WAC (state OSS rule), Chapter 70A.110 RCW (marine recovery area statute), Chapter 43.20 RCW, and Chapter 70.05 RCW. The state OSS rule is adopted by the

[23] Small on-site sewage systems (OSS) are those sewage systems that have flows of less than 3,500 gallons per day. See Chapter 246-272A WAC. There are about 950,000 OSS in Washington. See https://doh.wa.gov/community-and-environment/wastewater-management/site-sewage-systems-oss

State Board of Health[24] and administered by the State Department of Health. Local codes must be consistent with, and at least as stringent as, the state laws.[25]

Chapter 246-272A WAC provides minimum requirements for the location, design, and performance of OSS. Anyone proposing the installation, repair, modification, connection to, or expansion of an OSS is required to obtain a permit from the local health officer prior to construction.

Local Health Jurisdictions (LHJs) work with local boards of health to adopt and administer the local codes. The LHJs are responsible for permitting all OSS and implementing other significant aspects of the state OSS rule. This includes developing and overseeing management plans (see next section), approving OSS designs, inspecting installations, certifying industry professionals, maintaining system records, and educating homeowners on program requirements and the proper use and care of systems.

OSS owners are responsible for operating, monitoring, and maintaining OSS to minimize the risk of failure. Owners are required to get regular system inspections to determine whether their system is properly functioning, identify any maintenance needs, and to evaluate compliance with regulations and any permits. Additionally, system owners must have systems pumped when necessary, to avoid damage or improper use of the system, and to ensure the flow of sewage does not exceed the approved design in both quantity and waste strength.

The State Department of Health may take enforcement action if an LHJ fails to regulate OSS in compliance with state law. The Department of Ecology also has authority to take enforcement actions under the Water Pollution Control Act if there is a discharge to state waters.

On-Site Sewage System-Management Areas

The state OSS and marine recovery area (MRA) laws require LHJs to designate areas where OSSs present added risk to public health or water quality. Areas adjacent to Puget Sound that have pollution problems linked to OSS may be designated as MRAs. Consistent with the state OSS rule, Chapter 70A.110 RCW requires LHJs to adopt management plans, and implement enhanced programs in these areas to protect public health and Puget Sound water quality. As part of the enhanced programs in MRAs, LHJs are required to:

- Inventory and inspect all OSS.
- Identify failing systems and ensure they are either repaired or replaced.

[24] RCW 43.20.050 authorizes the State Board of Health to "adopt rules for the design, construction, installation, operation, and maintenance" of small on-site sewage systems.
[25] The State Department of Health's On-site Sewage Program reviews local health jurisdiction codes to ensure they are consistent with state regulations.

- Develop and maintain electronic data systems capable of sharing OSS information with other regulators.

The state OSS rule complements this with the following management plan requirements from WAC 246-272A-0015 for Puget Sound counties:

- Progressively inventory all systems.
- Identify high-risk areas and designate MRAs.
- Develop and tailor operation and maintenance (O&M) requirements to these areas.
- Facilitate education of owners on their O&M responsibilities for all types of systems.
- Remind and encourage system owners to inspect their systems.
- Maintain records of O&M activities.
- Find failing systems and enforce system owner requirements.
- Assure coordination with local comprehensive plans.
- Assess the capacity of the LHJ to adequately fund the program.

For most Puget Sound counties, requirements are higher and tracked more closely inside designated areas than in other parts of the county. Efforts continue at the State Department of Health and LHJs to strengthen and standardize both baseline and enhanced program requirements.

To see a map that shows counties with management plans, please see DOH's On-site Sewage System Management Areas webpage[26].

Large On-Site Sewage Systems

Large On-site Sewage Systems (LOSS) convey, store, and provide subsurface soil treatment and disposal of domestic sewage. Their design flow is between 3,500 and 100,000 gallons per day.

LOSS offer an alternative to centralized municipal sewage treatment plants. They can serve about 10 to 370 individual residences, or equivalent flows from schools, churches, campgrounds, recreation vehicle parks, resorts or state park sites, or smaller cities or towns.

The state Department of Health reviews and approves all LOSS project applications. The state LOSS rule is Chapter 246-272B WAC, developed under authority of Chapter 70A.115 RCW. The rule took effect July 1, 2011. Among other significant policy changes captured in the rule, it consolidated previously piecemeal regulatory and permitting authority for LOSS at the

[26] https://doh.wa.gov/community-and-environment/wastewater-management/site-sewage-systems-oss/management-strategy/management-areas

Department of Health, and assigned responsibility for public health and environmental protection to the agency. The rule is not a State Board of Health rule.

All existing LOSS are required to obtain and renew annual operating permits from the Department of Health. There are approximately 570 LOSS statewide, and about 290 in the Puget Sound region.

2.1.5 Permits

In Washington State, anyone discharging wastewater (including contaminated stormwater) must have a wastewater discharge permit. There are three types of wastewater discharge permits: 1) State Waste Discharge Permit; 2) NPDES/State Waste Discharge Permit; and 3) General Permit.

A State Waste Discharge Permit is required for a discharge of wastewater to waters of the state, which includes groundwater. A State Waste Discharge Permit is also required for any industrial or commercial operators discharging solid or liquid waste material into sewerage systems operated by municipalities or public entities which in turn discharge to waters of the state. This permit is issued under authority of Chapter 90.48 RCW.

A NPDES Permit is required for a discharge of wastewater to waters of the U.S (surface waters). This permit is issued by Ecology by delegated authority of the Clean Water Act. Since waters of the U.S. are also waters of the state, NPDES permits are actually combined NPDES/State Waste Discharge permits issued under dual authorities.

General permits are wastewater discharge permits that are developed for a category of discharger instead of an individual facility. General permits may be issued under federal (actually combined NPDES/State) or State-only authority. The Waste Discharge General Permit Program rule, Chapter 173-226 WAC, clarifies the intent in its purpose statement, “Permits issued under this chapter are designed to satisfy the requirements for discharge permits under 307 and 402(b) of the federal Water Pollution Control Act (33 U.S.C. § 1251) and the state law governing water pollution control (Chapter 90.48 RCW)”.

Even though NPDES permits are used to control point sources that, by definition, are not within the scope of the Clean Water Act 319 nonpoint program, this Plan does discuss and include information on these permits for several reasons. First, EPA’s 319 guidance recognizes the benefits of integrating Section 319 funds and NPDES activities to achieve CWA goals (to the extent that it is legally allowable). In general, Section 319 funds can be used to advance water quality protection or restoration beyond the requirements or measures required by the NPDES program (i.e., implementation projects, performance measures, and outreach and education efforts not required by the NPDES program). EPA guidance highlights several areas where this intersection may occur, including projects and actions related to construction stormwater, Animal Feeding Operations, and urban stormwater runoff.

Second, from a strict Federal CWA perspective, State Waste Discharge Permits are under the umbrella of nonpoint. While as a state we consider both State Waste Discharge Permits and

NPDES permits as addressing point sources, 319 funding may be used to help implement state-only permit requirements because they are not NPDES permits.

While we do discuss NPDES permits in the plan it is important to note that Section 319 funding cannot be used to support activities associated with implementing NPDES permit requirements because these requirements are considered federally required point source controls.

See Ecology's Water Quality Permits webpage[27] for more information on permits.

2.2 Additional State Authorities (Regulatory and Non-regulatory)

2.2.1 State Environmental Policy Act

Washington's State Environmental Policy Act (SEPA)[28] requires that all state and local agencies consider the likely consequences of agency actions before making decisions that affect the natural and built environment. Among other things, the law requires all state and local governments within the state to:

- "Utilize a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man's environment;" and
- Ensure that "...environmental amenities and values will be given appropriate consideration in decision making along with economic and technical considerations...."[29]

The policies and goals in SEPA supplement those in existing authorizations of all branches of government of this state, including state agencies, counties, cities, districts, and public corporations. Any governmental action may be conditioned or denied pursuant to SEPA.[30]

The SEPA review process can be used to modify or deny a project proposal, in order to avoid, reduce, or mitigate for probable impacts to natural resources, including water quality. SEPA is intended to ensure that environmental values are considered during decision-making by state and local agencies.

[27] https://ecology.wa.gov/water-shorelines/water-quality/water-quality-permits
[28] Chapter 43.21C RCW
[29] RCW 43.21C. 030(2)(a) and (2)(b)
[30] RCW 43.21C.060

2.2.2 Land Use Planning: Growth Management Act, and Shoreline Management Act

The Shoreline Management Act (SMA)[31] and Growth Management Act (GMA)[32] are the two primary state statutes related to land use planning. They share some commonalities, but are separate statutes with different purposes, jurisdictions, and requirements. These state laws are implemented primarily by local governments and create a regulatory framework for siting new development and uses as well as critical area protection standards. These policies and regulations foster appropriate uses while prohibiting incompatible uses. Rather than correcting or restoring impacted waters, the Shoreline Master Programs developed under the Shoreline Management Act and the critical areas ordinances developed under the Growth Management Act are focused on protecting the existing functions within the state's marine waters, streams, rivers, wetlands, and floodplains, and their adjacent riparian areas or buffers. This is a mechanism to reduce nonpoint source pollution by reducing or mitigating the impacts of new land use activities that can contribute to nonpoint source pollution.

Shoreline Management Act

The overarching goal of the SMA is, "to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines." There are three basic SMA policy areas: shoreline use, environmental protection, and public access. The SMA applies to all 39 Washington counties and about 220 towns and cities with stream, river, lake, or marine shorelines.

Under the SMA, shorelines of the state are defined as:

- All marine waters.
- Streams and rivers with greater than 20 cubic feet per second mean annual flow.
- Lakes 20 acres or larger.
- Upland areas, called shorelands, that extend 200 feet landward from the edge of these waters.
- Biological wetlands and river deltas connected to these water bodies.
- Some or all of the 100-year floodplain, including all wetlands.

[31] Chapter 90.58 RCW, and more information at: http://www.ecy.wa.gov/programs/sea/shorelines/smp/handbook/index.html.
[32] Chapters 36.70A and 36.70B RCW.

The SMA states that the interests of all the people "shall be paramount in the management of shorelines of statewide significance[33]." These special shorelines of statewide significance include:

- Pacific Coast, Hood Canal, and certain Puget Sound shorelines.
- All of Puget Sound and Strait of Juan de Fuca.
- Lakes or reservoirs covering at least 1,000 surface acres.
- Larger rivers: Those flowing 1,000 cubic feet per second or more in Western Washington and 200 cubic feet per second and greater in Eastern Washington.
- Wetlands associated with all the above.

Under the SMA, each city and county with "shorelines of the state" must prepare and adopt a Shoreline Master Program (SMP) that is based on state laws and rules, but is tailored to the specific geographic, economic, and environmental needs of the community. The local SMP is essentially a shoreline-specific combined comprehensive plan, zoning ordinance, and development permit system. SMPs apply to both public and private uses for Washington's more than 28,000 miles of lake, stream, and marine shorelines. They protect natural resources for future generations, provide public access to public waters and shores, and plan for water-dependent uses. They are a valuable tool for the management of these important areas. Managing the use and development of state shorelines is crucial. It helps preserve what people in Washington value while protecting life and property.

The SMA was recently amended to require Ecology to update our guidelines to direct local governments to address the impacts of sea level rise within their SMPs. Ecology is starting the rulemaking process to amend Chapters 173-18, -20, -22, -26, and -27 under the Shoreline Management Act. Visit the rulemaking page[34] for more information.
SMPs are both state and local planning and regulatory documents that represent a unique partnership between Ecology and local governments. SMPs are adopted by local governments and reviewed for consistency with the state Shoreline Management Act[35] and state Shoreline Master Program Guidelines[36] before being approved by Ecology. Ecology provides guidance and technical assistance to help governments develop and implement their SMPs.

[33] https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Shoreline-coastal-planning/Shoreline-Management-Act-SMA/Shoreline-Management-Act-jurisdiction/Shorelines-of-statewide-significance
[34] https://ecology.wa.gov/Regulations-Permits/Laws-rules-rulemaking/Rulemaking/WAC-173-26-27-Shoreline-Management-Act
[35] https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Shoreline-coastal-planning/Shoreline-Management-Act-SMA
[36] WAC 173-26, Part III. https://app.leg.wa.gov/wac/default.aspx?cite=173-26

Each SMP contains elements that are required by statute and rule, such as:

- Shoreline environment designations with customized management policies, regulations, and use allowances/prohibitions.
- Policies and regulations for shoreline uses, modifications, and development.
- Vegetation conservation standards.
- Public access requirements.
- Shoreline buffers and/or setbacks.
- Critical areas protection standards.

Local governments review and issue a decision on all shoreline permits before filing them with Ecology. Ecology files all permits and makes final decisions on locally approved conditional use and variance permits.

Growth Management Act

The state GMA requires local governments to prepare comprehensive land use plans and implement them through capital investments and development regulations. The GMA requires all jurisdictions in the state to designate and protect critical areas; designate farm lands, forest lands, and other natural resource areas; and determine that there are appropriate public services and facilities for new residential subdivisions. In addition, 29 of the state's 39 counties, and the 218 cities within them, are planning for growth. These jurisdictions develop comprehensive land use plans.

All cities and counties in Washington are required to adopt critical areas regulations by the GMA.[37] As defined by the GMA, "critical areas" include the following areas and ecosystems: (a) wetlands; (b) areas with a critical recharging effect on aquifers used for potable water; (c) fish and wildlife habitat conservation areas; (d) frequently flooded areas; and (e) geologically hazardous areas.[38] Counties and cities are required to include the best available science in developing policies and development regulations to protect the functions and values of critical areas.[39]

The GMA was recently amended to add a climate planning goal and related climate element requirements for climate resilience and mitigation. The Washington State Department of Commerce has created guidance for local governments on this topic.[40]

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[37] RCW 36.70A.060. More information on the GMA and CAO can be found at: https://www.commerce.wa.gov/growth-management/.
[38] RCW 36.70A.030(5).
[39] RCW 36.70A.172.
[40] https://www.commerce.wa.gov/growth-management/climate-planning/

The Voluntary Stewardship Program (VSP) was passed in 2011 as an amendment to the GMA. Its goals are to protect and enhance critical areas, maintain and improve the long-term viability of agriculture, and reduce the conversion of farmland to other uses. To accomplish these goals the VSP relies primarily on incentives and voluntary stewardship practices.

Counties that opt into the VSP are responsible for designating a local watershed group that will develop a watershed plan that describes how critical areas on agricultural lands will be protected and enhanced. More information on VSP and the role it can play in supporting nonpoint pollution prevention can be found in Chapter 4.

2.2.3 Shellfish Protection Districts

Chapter 90.72 RCW encourages, and in some cases, requires counties to establish shellfish protection districts and programs to curb the loss of productive shellfish beds caused by nonpoint sources of pollution, such as stormwater runoff, failing on-site sewage systems, and runoff from farm animal wastes. More information on Shellfish Protection Districts and the role they play in supporting nonpoint pollution prevention can be found in Chapter 4**.**

2.2.4 Salmon Recovery Act and Salmon Enhancement Program

In response to Endangered Species Act listings, Washington State passed the Salmon Recovery Act, Chapter 77.85 RCW. The Salmon Recovery Act provides for a planning and implementation process that is focused on fish habitat. The Salmon Recovery Funding Board provides grants to local organizations in watersheds to restore and protect salmon habitat. Because salmon recovery requires water of a sufficient quality, the goals of salmon recovery and the nonpoint program are inextricably linked. Many of the projects funded by the Salmon Recovery Funding Board to restore salmon habitat also act to address water quality concerns, particularly water temperature.

Regional Fisheries Enhancement Groups (RFEGs) are a statewide network of non-profit, community-based, salmon enhancement organizations. In 1990, RCW 77.95 created the RFEG program, which involves public volunteers and landowners in the state's salmon recovery efforts.[41] The RFEG program consists of 14 sanctioned non-profit community-based organizations, with program support provided by the Washington Department of Fish and Wildlife. The intent of the RFEG program is to optimize the efficient use of funding to support salmon and restore habitat. The long-term vision of the RFEG program is that Washington State communities actively care for, and become stewards of, abundant salmon populations for future generations.

[41] Chapter 77.95 RCW and Chapter 220-140 WAC.

2.2.5 Oil and Hazardous Substance Spill Prevention and Response Act

Oil and hazardous materials spills present a danger to human health and the environment. Ecology is responsible for rapidly responding to and overseeing the cleanup of oil spills and hazardous material incidents. The law also includes prevention and preparedness requirements, and authorizes Ecology to assess and collect damages and fines for spills.[42]

2.2.6 Toxics Cleanup, Hazardous Waste, Solid Waste, and Air Quality

Various other laws administered by Ecology can have a nexus with nonpoint pollution. Examples include the Model Toxics Control Act,[43] Hazardous Waste Management Act,[44] Solid Waste Management-Reduction and Recycle Act,[45] and Washington Clean Air Act.[46] For additional information on laws and regulations administered by Ecology visit our Rulemaking webpage[47]:

2.2.7 Hydraulic Project Approval (HPA)

Washington State law (RCW 77.55) requires that anyone planning any construction activity or other work that uses, diverts, obstructs, or changes the natural flow or bed of state waters is required to obtain an environmental permit, commonly known as an HPA, from the Washington Department of Fish and Wildlife (WDFW). Thousands of HPAs are issued each year for activities ranging from work on bulkheads, piers, and docks, to culvert replacement.

The WDFW administers the HPA program under the state Hydraulic Code.[48] The purpose of the HPA is to ensure that design, construction, or performance of work is done in a manner that protects fish life and their aquatic habitats. WDFW maintains staff available to provide technical assistance at the planning stage; this may include discussion on applying the best available science or providing examples of engineering drawings for common projects. In addition to providing technical assistance before and during the application process, WDFW staff also conduct site inspections to ensure that activities follow the requirements of the issued HPA.

All hydraulic projects associated with forest practices activities are administered by the DNR. These projects require an approved Forest Practices Application containing a request for approval of Forest Practices Hydraulic Projects.

[42] Chapter 90.56 RCW and Chapter 88.46 RCW & Chapter 173-182 WAC, and Chapter 173-183 WAC.
[43] Chapter 70.105 D RCW.
[44] Chapter 70.105 RCW.
[45] Chapter 70.95 RCW.
[46] Chapter 70.94 RCW.
[47] https://ecology.wa.gov/regulations-permits/laws-rules-rulemaking/rulemaking
[48] Chapter 77.55 RCW and Chapter 220-660 WAC.

Although the primary purpose of the HPA process is to protect fish health and habitat, because cool, clean water are important for fish, these permits can also act to protect water quality. For example, included in the resources provided by WDFW to assist with project planning is the Integrated Streambank Protection Guidelines[49], which promotes the protection and restoration of fully functioning riparian habitat.

2.2.8 Aquatic Invasive Species Program

Aquatic invasive species pose an ongoing threat to Washington's environment and economy. The WDFW administers the Aquatic Invasive Species program.[50] Penalties for transporting aquatic invasive species in Washington include up to one year in jail and a maximum fine of $5,000. Additionally, WDFW administers the state's ballast water management laws under Chapter 77.120 RCW. Ballast water management regulations are found at Chapter 220-150 WAC.

2.2.9 Secondary Containment Rules (Fertilizer and Pesticide)

The Secondary Containment Rules[51] are administered WSDA. Fertilizer and pesticide secondary containment rules were implemented to protect ground and surface water. Secondary containment rules are not intended to prevent spills in the event of a catastrophic incident occurring to the primary container. The rules are intended to contain the spill of bulk pesticides or fertilizers in the event the primary bulk container should fail.

2.2.10 Chemigation and Fertigation

WSDA has regulatory authority involving the application of pesticides[52] and fertilizers[53] through irrigation systems. The Chemigation and Fertigation Rules apply to any irrigation system that is used to apply a pesticide or plant nutrient in a greenhouse or to a plant nursery, farm, residential, or commercial property.

These rules require that chemigation and fertigation systems must have the appropriate safety devices in place and must be properly installed, maintained, and operating to protect human health and the environment. Additionally, equipment performance standards, operational procedures, and applicator competencies must be protective of existing and future uses of surface water and groundwater quality.

Individuals who chemigate must also adhere to provisions of the:

[49] https://wdfw.wa.gov/publications/00046
[50] Chapter 77.135 RCW.
[51] Chapter 16-201 WAC (Fertilizers) and Chapter 16-229 WAC (Pesticides).
[52] WAC 16-202-1000.
[53] WAC 16-202-2000.

- Washington Pesticide Control Act[54] concerning the formulation, distribution, storage, transportation, and disposal of any pesticide.
- Washington Pesticide Application Act,[55] involving the use of various pesticides, application recordkeeping, and applicator licensing.
- General Pesticide Rules[56] and the Worker Protection Standards,[57] which are co-enforced with the Washington State Department of Labor and Industries.

Inspections of chemigation and fertigation systems are conducted by Pesticide Compliance field staff.

2.2.11 Toxics Reduction and Contaminants of Emerging Concern

Ecology works with the WA State Department of Health, along with industry and environmental groups, to identify and take action against chemicals that pose the highest risks to human health and the environment. Working with partners, we develop chemical action plans to reduce or eliminate the use of these chemicals. Together with the Department of Health, we are committed to identifying the most dangerous toxic chemicals and finding ways to reduce or eliminate them; many of these priority chemicals are persistent, bioaccumulative, and toxic (PBTs).

Washington's PBT rule (Chapter 173-333 WAC) establishes criteria for identifying priority PBTs and a process for preparing and implementing a chemical action plan for each PBT or group of PBTs. Chemical action plans (CAPs) are comprehensive plans that identify, characterize, and evaluate all uses and releases of a specific chemical of concern, and provide recommendations for actions to protect human health and the environment. CAPs themselves do not ban or regulate chemicals, but the recommendations in the plans can lead to legislative or regulatory action, and could be incorporated into TMDLs to clean-up impaired waters. See Ecology's website[58] for more information on addressing priority toxic chemicals.

2.3 Federal Laws (Regulatory and Non-Regulatory)

2.3.1 Clean Water Act

The Federal Clean Water Act (CWA)[59] is the principal federal statute for water quality protection. The CWA's goal is "to restore and maintain the chemical, physical and biological integrity of the Nation's waters."[60]

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[54] Chapter 15.58 RCW.
[55] Chapter 17.21 RCW.
[56] Chapter 16-228 WAC.
[57] Chapter 16-233 WAC.
[58] https://ecology.wa.gov/waste-toxics/reducing-toxic-chemicals/addressing-priority-toxic-chemicals
[59] 33 U.S.C. §§1251 et seq.
[60] 33 U.S.C. § 1251(a).

In Washington State, the Department of Ecology is designated "as the state water pollution control agency for all purposes of the federal clean water act…" and is "authorized to participate fully in the programs of the act as well as to take all action necessary to secure to the state the benefits and to meet the requirements of the act."[61]

Historically, efforts to protect water quality under the CWA focused on the establishment of technology-based limitations on individual discharges into navigable waters from point sources. Point sources are "any discernible, confined and discreet conveyance . . . from which pollutants are or may be discharged," such as any pipe, ditch, channel, or tunnel.[62] This technology-based approach to addressing point source discharges has had demonstrated success.

Much of the improvement in our waters is attributable to the control of traditional point sources through permits. A majority of the remaining water quality impairments are largely caused by NP sources. While the CWA does not authorize EPA to control NP sources of pollution through a permit system, several sections of the CWA provide a basis for addressing NP sources. In general, the federal CWA addresses nonpoint sources by:

(1) Supporting the development of state NPS plans and programs.

(2) Requiring the development of WQ Standards, the identification of impaired waters (including waters impaired by nonpoint sources) and the development of clean-up plans (Total Maximum Daily Loads) for those waters.

(3) Providing financial incentives to states to accomplish those tasks.

This section will cover the key sections of the CWA that address nonpoint pollution.

Section 319-Nonpoint Source Management Programs

In the 1987 CWA Amendments, Congress added Section 319[63] to the act. Section 319 required states to develop Assessment Reports that described the states' NPS problems and establish Management Programs to address these problems. The required elements of state management programs are outlined at 33 USC §1329(b)(2). EPA supports implementation of NPS programs by providing funding to states[64]. Ecology is designated as the Section 319 lead agency for Washington State's nonpoint program. As the lead agency, Ecology is responsible for the administration of Section 319 pass-through and internal grant funds, the identification and establishment of priorities for NPS-related water quality problems, and the development of the state's NPS pollution control plan.

[61] RCW 90.48.260.
[62] 33 U.S.C. § 1362(14).
[63] 33 USC §1329
[64] Federal funds are only used for activities that that are federally allowable under applicable 319 Program requirements.

According to EPA guidance,[65] under section 319(b) of the CWA, Washington State's NPS management program must include all of the following components:

i. The state program identifies water restoration and protection goals and program strategies (regulatory, nonregulatory, financial and technical assistance, as needed) to achieve and maintain water quality standards. It includes relevant, current, and trackable annual milestones that best support program implementation.

ii. The state program identifies the primary categories and subcategories of NPS pollution and a process for prioritizing impaired and unimpaired waters and identify how national and state priorities may align.

iii. The state program identifies management measures (i.e., systems of practices) that will be undertaken to reduce pollutant loadings resulting from each category, subcategory, or particular nonpoint source identified in component 2 above. The measures should also consider the impact of the BMPs on groundwater quality.

iv. The state uses both watershed projects and well-integrated regional or statewide programs to restore and protect waters, achieve water quality benefits, and advance any relevant climate resiliency goals.

v. The state identifies and enhances its collaboration with appropriate federal, state, interstate, Tribal, and regional agencies as well as local entities (including conservation districts, private sector groups, utilities, and public groups) that will be utilized to implement the state program. Furthermore, the state supports capacity-building in disadvantaged, underserved, or overburdened communities.

vi. The state manages and implements its NPSMP efficiently and effectively, including necessary financial management.

vii. The state evaluates its NPSMP using environmental and functional measures of success and revises its NPSMP plan at least every five years.

EPA expects all states to review and, as appropriate, revise their NPS program at least every five years. An updated program allows EPA and states to ensure that resources are efficiently and effectively directed in a manner that will support state's efforts to address water quality issues.

In 2017 a lawsuit was filed against EPA and the National Oceanic and Atmospheric Administration (NOAA) related to Washington's CWA Section 319 program. Washington participated in settlement negotiations with Northwest Environmental Advocates and EPA to resolve the case. The Washington Cattlemen's Association and the Washington Farm Bureau intervened in the case. The lawsuit was filed in 2017, and we negotiated the commitments in 2018 - 2019. Many of the commitments aligned with actions we already planned on

[65] https://www.epa.gov/system/files/documents/2024-06/2024_section_319_guidelines_final_1.pdf.

completing. The actions from that settlement agreement are located in Appendix E and are part of our annual reporting.

The Department of Ecology is required to report annually to EPA on our nonpoint pollution program. That annual report is lengthy and includes specific information on the projects we fund, the best management practices that have been implemented, the site-specific water cleanup plans being developed, the focused implementation work we are doing across the state, our technical assistance and enforcement work, and all of the requirements from the above referenced litigation agreement. These annual reports have good information and data and they inform our nonpoint plan updates, in addition to reporting on all aspects of our program to EPA. As of 2025, these reports are posted to our webpage, following EPA's determination of satisfactory progress.

Section 303(d) and 303(c)-Water Quality Standards and Water Cleanup Plans (TMDLs)

Water Quality (WQ) Standards are regulations comprised of: 1) a description of the designated use or uses of a water body; 2) the criteria necessary to protect the use or uses; and 3) a statement by the applicable state that the standard will maintain and protect the existing use and the water quality of the water body (antidegradation requirements). Additionally, CWA Section 303(d) requires states to list surface waters not attaining (or not expected to attain) WQ Standards after the application of technology-based effluent limits. States must complete a total maximum daily load (TMDL, water clean-up plan) for all waters on the Section 303(d) list.

In Washington State, the WQ Standards (Chapter 173-201A WAC) are the basis for protecting and regulating the quality of surface waters. The WQ Standards are established to sustain public health and public enjoyment of state waters, and for the propagation and protection of fish, shellfish, and wildlife. A three-part approach was designed to set limits on pollution in Washington State's lakes, rivers, and marine waters in order to protect beneficial uses such as aquatic life, swimming, and fishing. The three-part approach covers:

- Designated uses, such as fishing, swimming, and aquatic life habitat.
- Numeric and narrative water quality criteria limits to protect the uses.
- Policies, such as antidegradation, to protect higher quality waters from being further degraded.

Washington's antidegradation policy is designed to protect waters of a quality that is higher than the state standards. The policy has three tiers.

- **Tier I**. WAC 173-201A-310
  Tier I is used to ensure existing and designated uses are maintained and protected. It does this by focusing on fully applying the water quality criteria and correcting problems using our existing regulatory and TMDL processes. Tier I applies to all waters and all sources of pollution.

- **Tier II**. WAC 173-201A-320
  Tier II is used to ensure that waters of a higher quality than the criteria assigned in the standards are not degraded unless such lowering of water quality is necessary and in the overriding public interest. Tier II applies only to new or expanded sources of pollution from specific types of activities directly regulated by Ecology (e.g., NPDES, 401 permits, 404 permits, Forest Practices rules). Any new or expanding dischargers that would cause a measurable degradation of water quality:
    a. Must go through a technology review to identify and apply any feasible alternatives to that degradation.
    b. Must show that overriding public benefits would occur from allowing the lowering of water quality.
- **Tier III**. WAC 173-201A-330
  Tier III is used when a high-quality water is designated as an "outstanding resource water." The water quality and uses of these waters must be maintained and protected against all sources of pollution.

  A request for designation of Tier III may be made by the Department of Ecology. A Tier III designation may also be requested through public nominations that are submitted to Ecology in writing. Public nominations must include sufficient information to show how the water body meets the appropriate conditions of an outstanding resource water. If the information proposed demonstrates that the waterbody meets the eligibility requirements, Ecology will schedule a review of the nominated water for designation. The review will include a public process and consultation with recognized Tribes in the geographic vicinity of the water. The rules allow two levels of Tier III protection. A qualifying water body may be designated as:
    - Tier III(A), which prohibits any and all future degradation [WAC 173-201A-330(5)(A)].
    - Tier III(B), which allows for de minimis (below measurable amounts) degradation from well-controlled activities [WAC 173-201A-330(5)(B)].

To fully achieve and maintain compliance with the WQ Standards in Washington, the standards state that the intent of Ecology is to "apply the various implementation and enforcement authorities at its disposal."[66] The primary means to be used for "controlling municipal, commercial, and industrial waste discharges shall be through the issuance of waste discharge permits, as provided for in RCW 90.48.16, 90.48.162, and 90.48.260."[67] Further, "[w]aste

[66] WAC 173-201A-500
[67] WAC 173-201A- 510(1) states that "[a]ctivities which generate nonpoint source pollution shall be conducted so as to comply with the water quality standards. The primary means to be used for requiring compliance with the standards shall be through best management practices required in waste discharge permits, rules, orders, and directives issued by the department for activities which generate nonpoint source pollution."

discharge permits, whether issued pursuant to the National Pollutant Discharge Elimination System or otherwise, must be conditioned so the discharges authorized will meet the WQ Standards."[68]

The water quality standards require activities which contribute nonpoint source pollution to use best management practices to prevent exceedances of water quality criteria.[69] The WQ Standards define BMPs as "physical, structural, and/or managerial practices approved by the department that, when used singularly or in combination, prevent or reduce pollutant discharges."[70] Given that much of nonpoint pollution cannot easily be measured, the WQ Standards express compliance with the law by implementing Ecology-approved BMPs.[71]

Washington's WQ Standards, along with the Washington Water Pollution Control Act, provide Ecology with the tools to fully implement TMDLs, including the requirement that the state provide reasonable assurance that nonpoint sources can be required to meet TMDL load allocations if the wasteload allocations established for point sources depend on those nonpoint reductions being made in the TMDL area.

Section 312-No Discharge Zone

Under Section 312 of the CWA[72], vessel sewage may be controlled through the establishment of areas in which discharges of sewage from vessels are not allowed. These areas are also known as "no discharge zones." A No Discharge Zone (NDZ) is a designated body of water where the discharge of sewage (blackwater/toilet waste) from boats, whether treated or not, is prohibited. Under Section 312 of the CWA, the U.S. Coast Guard and the state in which the NDZ has been designated may enforce the NDZ requirements. Without a no discharge zone, federal regulations would allow "treated" sewage to be discharged anywhere in Puget Sound, and untreated sewage could be discharged as long as the boat is more than three miles from shore.

After thorough scientific evaluation, a lengthy public process, and approval from the U.S. EPA, the Puget Sound Vessel Sewage NDZ (Chapter 173-228 WAC) was adopted on April 9, 2018. The rule became effective May 10, 2018. With the NDZ in place, it is illegal for any vessel sewage to be discharged in the designated area, which means vessels must hold their sewage onboard until they are able to pump it out at a proper facility (stationary pumpout, mobile pumpout, pumping service) or discharge outside the NDZ. The designated area of the Puget Sound NDZ

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[68] Id. See also, 40 C.F.R. § 130.2(i).
[69] WAC 173-201A- 510(3)(c)
[70] WAC 173-201A-020
[71] WAC 173-201A- 510(3)(a) states that the "primary means to be used for requiring compliance with the standards shall be through best management practices required in waste discharge permits, rules, orders, and directives issued by the department for activities which generate nonpoint source pollution." Additionally, WAC 173-201A-020 defines best management practices as "physical, structural, and/or managerial practices approved by [Ecology] that, when used singularly or in combination, prevent or reduce pollutant discharges."
[72] 33 U.S.C. 1322

includes all Washington marine waters east of New Dungeness Lighthouse, at the east end of the Strait of Juan de Fuca, plus Lake Washington, Lake Union, and the waters that connect them to Puget Sound. Due to the cost and effort to retrofit some systems, four types of vessels had additional time, until May 10, 2023, to comply with the NDZ, including tug boats, commercial fishing vessels, small commercial passenger vessels (<249 overnight passengers), and National Oceanic and Atmospheric Administration (NOAA) research and survey vessels.

Ecology is the lead agency for implementing the Puget Sound NDZ. Under WAC 173-228-060, Ecology may enforce the NDZ rule by using any of the enforcement provisions in chapter 90.48 RCW. In addition, other federal, state and local agencies may provide enforcement, as authorized; in other words, other agencies do not require Ecology's permission to enforce the Puget Sound NDZ.

Section 126- Puget Sound Recovery National Program Office and Puget Sound Federal Leadership Task Force

On December 23, 2022, the Clean Water Act was amended, adding a Puget Sound Coordinated Recovery Section[73], which established a Puget Sound Recovery National Program Office within EPA and a Puget Sound Federal Leadership Task Force.

The Puget Sound Recovery National Program Office coordinates and manages the Puget Sound Federal Leadership Task Force, as well as Puget Sound restoration and protection activities across EPA. Additionally, the Program Office is to:

> "Provide or procure such other advice, technical assistance, research, assessments, monitoring, or other support…to most efficiently and effectively fulfill the objectives and priorities of the [Puget Sound] Action Agenda, the Salmon Recovery Plans, the Treaty Rights at Risk Initiative, and the Coastal Nonpoint Pollution Control Program, consistent with the best available science, to ensure the health of the Puget Sound ecosystem."

The Puget Sound Federal Leadership Task Force shares similar objectives, including supporting the objectives and priorities of Washington state's Coastal Nonpoint Pollution Control Program. Furthermore, Section 126 states that all Federal agencies represented on the Puget Sound Federal Task Force shall "act consistently with the objectives and priorities of the Action Agenda, the Salmon Recovery Plans, the Treaty Rights at Risk Initiatives, and the Coastal Nonpoint Pollution Control Program, when-

A. conducting Federal agency activities within or outside the Puget Sound that affect any land or water use or natural resources of the Puget Sound region…;
B. interpreting and enforcing regulations that impact the restoration and protection of the Puget Sound;

[73] https://www.epa.gov/system/files/documents/2023-02/Puget-Sound-FY23-NDAA-CWA-Section126.pdf

C. issuing Federal licenses or permits that impact the restoration and protection of the Puget Sound; and

D. granting federal assistance to State, local, and Tribal governments for activities related to the restoration and protection of the Puget Sound."

Section 320-National Estuary Program

The National Estuary Program (NEP) was established under the 1987 CWA amendments as a program to "restore and maintain the chemical, physical, and biological integrity of the estuary, including restoration and maintenance of water quality, a balanced indigenous population of shellfish, fish, and wildlife, and recreational activities in the estuary, and assure that the designated uses of the estuary are protected."

The NEP is designed to encourage local communities to take responsibility for managing their own estuaries. Each NEP is made up of representatives from federal, state, and local government agencies responsible for managing the estuary's resources, as well as members of the community such as private individuals, business leaders, educators, and researchers. These groups work together to identify problems in the estuary, develop specific actions to address those problems, and create and implement a formal management plan to restore and protect the estuary.

In Washington State there are two NEP programs: the Lower Columbia Estuary and the Puget Sound. In accordance with CWA Section 126 (detailed above), Puget Sound NEP activities must be consistent with the objectives and priorities of the state's Coastal Nonpoint Pollution Control Program.

Section 1383- State Revolving Fund Program

The United States Congress established the Clean Water State Revolving Fund (CWSRF) as part of the Clean Water Act Amendments of 1987. The EPA offers states capitalization grants each year according to a formula established in the CWA. The capitalization grants are required to be matched with 20 percent state funds and are added to payments of principal and interest from previous loans. The combined funds are loaned out to eligible public bodies and repaid to the CWSRF with interest. This means that the CWSRF continues to revolve and grow, and more money becomes available to fund water quality projects. Today, the majority of the fund consists of repaid principal and interest.

The CWSRF must be managed in accordance with federal regulations associated with timely use of funds, adherence to specific accounting principles, fund perpetuity, project eligibility, financial capacity assessments of borrowers, implementation of state rules, extensive public outreach and public accountability, and strong coordination of multiple environmental cross-cutters required under the State Environmental Review Process, such as the Endangered Species Act, and state and federal regulations for archeological and cultural resources.

The CWSRF supports a variety of water quality projects, including NPS BMP implementation projects, on-site septic system projects, stormwater projects, and wastewater facility projects. More information on CWSRF can be found in Chapters 3 and 5.

Additionally, CWSRF has the potential to address a wide range of additional projects. For example, within urbanized areas where sewer service is available, service connections from individual homes and businesses can be a source of NPS pollution. Once the wastewater from homes and businesses reaches the sewer pipes in the public right-of-way, it is collected and treated at the local wastewater treatment facility. However, sewage leaking from the pipe that connects buildings to the public sewer can be a problem. These side sewers, or service laterals, are very near the surface (compared to sewer lines buried in the street) and are susceptible to damage. Tree roots, landscaping, digging, and heavy vehicles can all damage side sewer laterals. Maintenance, repair, and inspection of these privately-owned service laterals is generally the responsibility of the individual property owners. CWSRF could support projects that address problems from side sewers or service laterals.

Section 1251- National Pollutant Discharge Elimination System

The CWA made it unlawful to discharge pollutants from point sources into navigable waters unless a National Pollutant Discharge Elimination System (NPDES) permit is obtained. In contrast to Washington's State Waste Discharge Permit (discussed in section 2.1.5), NPDES permits only cover surface water. These permits primarily address point sources, such as wastewater treatment plants, however, there are several examples of nonpoint source pollution sources that must, under certain circumstances, receive coverage under a NPDES permit; this transfers regulation of these operations away from the nonpoint program and to a permit. Examples of NPDES permits include animal feeding operations, aquaculture, and stormwater.

2.3.2 Coastal Zone Act Reauthorization Amendments of 1990

The Coastal Zone Management Act (CZMA) of 1972[74] established a national framework for effective management, protection, development, and beneficial use of the coastal zone. Recognizing that the CZMA did not specifically mention water quality, in 1990 Congress amended CZMA Section 306(d)(16)[75] and added Section 6217[76] to focus on NPS pollution problems and the protection of coastal waters. Coastal Zone Act Reauthorization Amendments (CZARA) Section 6217 requires state water quality agencies to develop and implement management measures to restore and protect coastal waters from adverse impacts of NPS pollution. CZMA Section 306(d)(16)[77] requires that state nonpoint and CZM programs contain enforceable policies and mechanisms to implement applicable requirements of CZARA Section 6217. To achieve these goals, states were directed to coordinate and integrate their existing

[74] 16 USC §§1451 et seq.
[75] 16 USC §1455(d)(16)
[76] 16 USC §1455b
[77] 16 USC §1455(d)(16)

CZM and water quality plans and programs, including the states' NPS plans. Once approved, coastal nonpoint programs will be implemented through changes to the state nonpoint source pollution program approved by EPA under section 319 of the Clean Water Act and through changes to the state coastal zone management program approved by NOAA under section 306 of the Coastal Zone Management Act.

On February 9, 2024, NOAA and EPA issued their decision that Washington state has satisfied all conditions of approval on the state's Coastal Nonpoint Pollution Control Program under Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA)[78] (see Appendix F for approval letter).

Washington state first received conditional approval for our Coastal Nonpoint Program in 1998, when NOAA and EPA approved the program, subject to conditions[79]. Since then, WA has undertaken many actions to address each of the identified conditions and to reflect our commitment to improve water quality and protect both salmon and habitat, which has led EPA and NOAA to approve Washington's coastal nonpoint program.

The goal of the Coastal Nonpoint Pollution Control Program is to control sources of nonpoint pollution which impact coastal water quality. In Washington State, this includes WRIAS 1-25; the 15 coastal counties of Clallam, Grays Harbor, Island, Jefferson, King, Kitsap, Mason, Pacific, Pierce, San Juan, Skagit, Snohomish, Thurston, Wahkiakum, and Whatcom, as well as small portions of Cowlitz and Lewis. Focus areas of the program include controlling nonpoint pollution from five main sources: agriculture, forestry, urban areas, marinas, and hydromodification (shoreline and stream channel modification).

This Nonpoint Source Management Plan is a key part of the state's Coastal Nonpoint Program, as it outlines the state's strategy, tools, and regulatory authorities for addressing nonpoint sources of pollution, with an emphasis on non-permitted agriculture. Ecology has programs and/or permits to address nonpoint pollution from each of the five sources identified by the Coastal Nonpoint Pollution Control Program, which are discussed throughout this document.

2.3.3 Safe Drinking Water Act

The Safe Drinking Water Act (SDWA)[80] is the main federal law that ensures the quality of Americans' drinking water. Under the SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards.

The SDWA includes drinking water standards, sampling, treatment, and public notification requirements. The 1996 amendments added new requirements related to annual water quality reports, operator certification requirements, system capacity, and source water assessment,

[78] https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217wa_fnl.pdf
[79] https://coast.noaa.gov/data/czm/pollutioncontrol/media/findwa.txt
[80] 42 U.S.C. 300 et seq.

and protection. The Washington State Department of Health, through an agreement with EPA, is authorized and responsible for implementing the SDWA in Washington.

Generally, the SDWA applies to water systems with 15 or more connections, or those regularly serving 25 or more people daily, 60 or more days per year. Approximately 4,200 public water systems in Washington are subject to the SDWA.

Additionally, the SDWA authorizes the state's Underground Injection Control (UIC) program, administered by Ecology. UIC wells are used to manage stormwater, remediate groundwater contamination, and replenish aquifers, among other uses. By regulating UIC wells, we minimize the potential for groundwater contamination, supporting safe drinking water sources.

Sole Source Aquifer (SSA) Protection Program

The Sole Source Aquifer (SSA) Protection Program is authorized by Section 1424(e) of the Safe Drinking Water Act, which states:

> "If the Administrator determines, on his own initiative or upon petition, that an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health, he shall publish notice of that determination in the Federal Register. After the publication of any such notice, no commitment for federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health, but a commitment for federal assistance may, if authorized under another provision of law, be entered into to plan or design the project to assure that it will not so contaminate the aquifer."

EPA defines a sole or principal source aquifer as one which supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. EPA guidelines also stipulate that these areas can have no alternative drinking water source(s) which could physically, legally, and economically supply all those who depend upon the aquifer for drinking water. For convenience, all designated sole or principal source aquifers are usually referred to simply as "sole source aquifers."

If an SSA designation is approved, proposed federal financially-assisted projects which have the potential to contaminate the aquifer are subject to EPA review.[81] Proposed projects that are funded entirely by state, local, or private concerns are not subject to EPA review. Examples of

[81] Information on sole source aquifers in Washington State can be found at: https://www.epa.gov/dwssa. A map of sole source aquifers in Washington State can be found here: https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b

federally funded projects which have been reviewed by EPA under the SSA protection program include:

- Highway improvements and new road construction.
- Public water supply wells and transmission lines.
- Wastewater treatment facilities.
- Construction projects that involve disposal of storm water.
- Agricultural projects that involve management of animal waste.
- Projects funded through Community Development Block Grants.

2.3.4 Endangered Species Act

The Endangered Species Act (ESA) provides for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend. The ESA:

- Authorizes the designation and listing of species as endangered and threatened.
- Prohibits unauthorized taking, possession, sale, and transport of endangered species.
- Provides authority to acquire land for the conservation of listed species, using land and water conservation funds.
- Authorizes establishment of cooperative agreements and grants-in-aid to states that establish and maintain active and adequate programs for endangered and threatened wildlife and plants.
- Authorizes the assessment of civil and criminal penalties for violating the ESA or regulations.
- Authorizes the payment of rewards to anyone furnishing information leading to arrest and conviction for any violation of the ESA or any regulation issued thereunder.

Section 7 of the Endangered Species Act requires federal agencies to consult with the Fish and Wildlife Service and/or the National Marine Fisheries Service to ensure that actions the agencies authorize, fund, or carry out are not likely to jeopardize threatened or endangered species or destroy or adversely modify their critical habitat.

Due to the presence of ESA listed aquatic species in Washington, particularly salmonids, our water quality standards must be evaluated under the Endangered Species Act, in addition to the CWA, to ensure that the complementary goals of the CWA and ESA will be met. Ecology's nonpoint program works to implement solutions that address nonpoint pollution such that individual sites and waterbodies comply with the water quality standards, and support the conservation of ecosystems upon which ESA-listed species depend.

2.3.5 Federal Farm Bill Programs

Federal agricultural conservation assistance programs date back to the 1930s, with a focus on soil erosion and water issues associated with agricultural production. During the 1980s, agricultural conservation policies were broadened to include environmental issues beyond soil and water concerns, and many of the current agricultural conservation programs were enacted as part of the Food Security Act of 1985. Since 1985, conservation programs have been reauthorized, modified, and expanded, and several new programs have been created. While programs and techniques to address natural resource concerns and production challenges continue to evolve, the basic federal approach continues to rely on voluntary farmer participation in conservation programs designed to help agricultural producers make and maintain improvements on their land. Participation in these conservation programs is primarily encouraged through technical and financial assistance.

The 2018 Farm Bill was enacted on December 20, 2018, and has been extended into 2025. The Farm Bill continues to fund many conservation programs that can benefit agricultural producers and forest landowners along with the environment[82]. The U.S. Department of Agriculture administers the suite of agricultural conservation programs through two primary agencies—the Natural Resources Conservation Service (NRCS) and the Farm Service Agency .

In 2010 Ecology, the Natural Resource Conservation Service, The Washington State Conservation Commission, Northwest Indian Fisheries Commission, Washington State Department of Agriculture, and the Environmental Protection Agency met for a year to better understand the federal NRCS programs, how they are implemented and whether they are designed to meet Washington's water quality standards. These are important and valuable programs to get conservation activities on the ground. While these federal funding programs and their associated practices are important for getting conservation on the ground, we found that they are not designed to achieve each of our state's Clean Water Act approved water quality standards. This gap between the federal programs and Washington's need to ensure BMPs are designed to meet our state's water quality standards emphasized the need for Ecology to develop BMPs that will fully meet state water quality standards. The Voluntary Clean Water Guidance for Agriculture chapters included in this Nonpoint Plan begin to address this gap. A copy of Ecology's memo sent to participants that worked on this effort in 2010 can be found in Appendix G.

Since 2010, Ecology has continued to engage with NRCS and encourage NRCS to better align their program requirements to support practices that will achieve water quality standards. We will continue to work to improve alignment, through meetings to discuss funding programs, participation in the State Technical Advisory Committee, and ongoing conversations around on-the-ground field work across the state.

[82] More information on the 2014 Farm Bill can be found at: https://www.usda.gov/farmbill.

See Chapter 5 for more information on some of the Farm Bill's financial incentive programs.

2.4 Local Ordinances and Regulations

Local ordinances can supplement federal and state law. While a comprehensive review of local authorities is outside the scope of this section, the most common sources of authority that can be used to address nonpoint pollution sources at the local level are found in local solid waste regulations, illicit discharge ordinances, and animal or pet waste disposal ordinances. Additionally, planning and development codes and regulations can provide authority to address NPS pollution. For example, critical area ordinances can provide protection to critical areas that have a nexus with water quality.

Following are two examples of local regulatory tools that can be used to address nonpoint pollution: Kitsap County Board of Health's Onsite Sewage System and General Sewage Sanitation Regulations and Solid Waste Regulations, and Kitsap County's illicit discharge code.

Example - Kitsap County Public Health:

Kitsap Public Health Board Ordinance 2025-01, *Onsite Sewage System and General Sewage Sanitation Regulations*, March 15, 2025. Regulatory authority includes nonpoint discharges from failing onsite sewage systems, recreational vehicle dumping, and broken sanitary side sewers.

> Section 6. B. Sewage Discharged to Approved or Health Officer-Accepted Systems, Only.
>
> 1. All plumbing fixtures in residences, places of business, or other buildings, structures, etc., where sewage is created shall be connected to, and discharge to, an approved public sewer system, large onsite sewage system, onsite sewage system, or other Health Officer-accepted system, only (e.g., temporary holding tanks, portable toilets, RV sewage dumpsites, certified septic tank pumping trucks or facilities, etc.).
>
> 2. Sewage shall not be discharged to the surface of the ground, surface water, ground water, cesspools, un-permitted sewage systems, or allowed to backup.

Kitsap County Board of Health Ordinance Number 2010-1, *Solid Waste Regulations*, July 6, 2010. Regulatory authority includes nonpoint sources from animal manure as related to pollution of water. Other typical solid wastes, such as vehicle fluids, paint, and construction are included in other sections.

> Section 305 1.(c)
>
> (c) Animal Manure. Animal manure shall not be deposited, or allowed to accumulate, in any ditch, gulch, ravine, river, stream, lake, pond, marine water, or upon the surface of the ground, or on any highway or road right of way, where it may become a nuisance or menace to health, as determined by the Health Officer, through the breeding of flies, harboring of rodents, or pollution of water. Manure shall not be allowed to accumulate in any place where it can pollute any source of drinking water.

Example - Kitsap County:

Kitsap County has an illicit discharge code, as required for the Phase II National Pollutant Discharge Elimination Permit, which specifies the prohibition of non-stormwater discharges into or from the municipal storm sewer system, including pipes and ditches.

Kitsap County Code Title 12.30

> 12.30.020 *Illicit Discharges*
>
> *Illicit discharges to storm water drainage systems are prohibited*.
>
> 12.30.030 *Illicit Connections and Uses*.
>
> *The storm water system of Kitsap County, natural and artificial, may only be used to convey storm water runoff. Violation of this chapter can result in enforcement action being taken as prescribed in Chapter 12.32.*
>
> *No person shall use this system, directly or indirectly, to dispose of any solid or liquid matter other than storm water. No person shall make or allow any connection to the storm water system which could result in the discharge of polluting matter. Connections to the storm water system from the interiors of structures are prohibited. Connections to the storm water system for any purpose other than to convey storm water or ground water are prohibited and shall be eliminated.*

Domestic Animal Waste Rule, WAC 246-203-130 (formally named Keeping of Animals)

Among other powers and duties, RCW 43.20.050 authorizes the State Board of Health to adopt rules and standards to prevent, control, and abate health hazards and nuisance related to the disposal of human and animal excreta and animal remains. The Keeping of Animals rule was a longstanding rule codified in 1960 meant to addresses health, sanitation, and nuisance associated with animal keeping as it relates to manure handling and disposal.

In September 2022, the State Board of Health updated its Keeping of Animal rule to modernize its language, standards, and structure to better reflect current animal waste handling concerns and outline clearer expectations for proper handing handling and disposal of pet and domestic animal waste to prevent and correct nuisance condition. Updates included a revised purpose and definitions, clearer roles and responsibilities, and specific standards for the prevention, control and abatement of health and nuisance hazards. Local health officers are responsible enforcing the rule.

In summary, regulatory authority and enforcement for nonpoint sources can be a combination of efforts by Washington State and local jurisdictions.

2.5 Tribal Treaty Rights

There are currently 29 federally recognized Tribes in Washington State[83], each a unique sovereign nation with inherent connections to traditional lands, with 21 Tribes maintaining reserved rights to fish and other natural resources through treaties. Additionally, several Tribes outside the state of Washington have treaty rights or traditional territories within the state.

Within reservations and other lands reserved or held in trust by the United States for federally recognized Tribes, Tribal governments may adopt regulations for the protection of water quality. There are many considerations which may influence these regulations, such as whether a Tribe has CWA authority delegation from EPA, as well as a Tribe's natural resource codes and management structure, among many other factors. In Washington State, there are 12 Tribes that have federally approved CWA water quality standards, and 23 Tribes are approved for Treatment as a State (TAS) under CWA section 319. Once approved for TAS, Tribes receive a limited amount of 319 funds for staffing, and are eligible to receive grant funds to support NPS projects. As with Washington State's 319 program, Tribal 319 programs are eligible for funding for activities including, but not limited to: NPS training for Tribal staff, development of watershed cleanup plans, riparian plantings, and other BMPs to address NPS pollution, outreach and education activities, and more. See EPA's website[84] for more information on Tribal Nonpoint Source Programs. Within a reservation or on other Tribal lands, the public or potential project proponents should contact the Tribal department(s) responsible for administering water quality protection.

In Washington State, Yakama Nation and western Washington Tribal treaty rights were upheld in Judge Boldt's 1974 landmark decision which included the following determinations:

- Tribes are entitled to half of the harvestable salmon returning or passing through the Tribe's usual and accustomed fishing places.
- Established Tribes as co-managers of the salmon resource with the state.
- Established conservation standards which restricted the ability of the state to regulate treaty fishing.

Under the U.S. Constitution, treaties are defined as the "supreme law of the land." Under eight treaties negotiated by Territorial Governor Stevens on behalf of the United States, involved Tribes have specifically retained the right to take fish in their 'usual and accustomed' areas, along with hunting on 'open and unclaimed lands.' Additionally, each Tribal reservation in the state constitutes a bordering jurisdiction. Under the 1989 State/Tribal Centennial Accord and the 2012 State/Tribal Relations Act, Ecology maintains a government-to-government relationship with Tribes.

[83] https://goia.wa.gov/tribal-directory/federally-recognized-indian-tribes-washington-state
[84] https://www.epa.gov/nps/tribal-nonpoint-source-program

Additional information on treaties, treaty rights, and Tribal coordination:

- The Northwest Indian Fisheries Commission's document "Tribal Treaty Rights in Western Washington.[85]"
- The Columbia River Inter-Tribal Fish Commissions' Treaties: Promises between governments[86].

[85] https://nwifc.org/w/wp-content/uploads/downloads/2014/10/understanding-treaty-rights-final.pdf
[86] https://critfc.org/member-tribes-overview/treaty-q-a/

Chapter 3: Strategies and Tools for Addressing Nonpoint Source Pollution

The Washington State Department of Ecology (Ecology) is the regulatory agency charged with protecting the quality of Washington State's water. Ecology acts as the lead agency in restoring, maintaining, and enhancing water quality collaboratively with individuals, Tribes, local governments, local governmental entities, state agencies, and federal agencies. Since Section 319 (Nonpoint Source Management Programs) was added to the Clean Water Act in 1987, the state's nonpoint program has grown and improved. Over the last two decades Ecology has increased the number of staff working to address nonpoint issues, better aligned our TMDL and nonpoint programs, and improved BMP guidance for several sources of nonpoint pollution. Ecology has moved from a program that was largely limited to responding to complaints and providing grants to one that proactively works to identify sources of pollution and implement on-the-ground fixes. Further, Ecology has increased the use of enforcement tools as a backstop to support our technical assistance and financial assistance tools, increased the amount of grant dollars we provide to support implementation of BMPs, and improved our funding guidelines to better support addressing temperature impairments and support salmon recovery.

Ecology's strategy to address NPS pollution focuses on cleaning up impaired watersheds, completing watershed evaluations to identify NPS pollution issues, and implementing suites of best management practices (BMPs) to address identified pollution sources and ensure compliance with the WQ Standards. We use a combination of public education, technical assistance, financial assistance, and regulatory tools to help the public understand and comply with state and federal water quality laws and regulations. In tandem with efforts to correct sources of nonpoint pollution, we will utilize protection strategies to preserve existing high quality waters from degradation from nonpoint source pollution.

This NPS plan aims to protect public health and restore our state's waters by setting clear goals and objectives. Ecology will apply the following key principles in the implementation of this nonpoint strategy:

- Communicate clear standards and compliance expectations.
- Implement BMPs that ensure compliance with state WQ Standards and state law.
- Implement watershed-based plans/strategies designed to meet WQ Standards.
- Identify and correct nonpoint pollution sources in impaired watersheds.
- Be proactive in addressing pollution problems through both restoration (i.e. incentives/education and outreach) and protection.
- Escalate to enforcement when education, outreach, technical assistance, and financial assistance fail.

- Be accountable by collecting data on watershed evaluations and tracking BMP implementation.
- Target effectiveness monitoring where implementation of BMPs has occurred.
- Promote adaptive management.
- Develop and/or strengthen partnerships to achieve water quality goals.

The primary tools that Ecology will use to guide and promote the implementation of this strategy are:

1. Watershed Cleanup Plans –
    - Total Maximum Daily Loads (TMDL), which are plans for restoring impaired waters, as required by the federal Clean Water Act.
    - Other water cleanup projects in advance of a TMDL, such as Advance Restoration Plans (ARP) and Straight to Implementation (STI) projects, which implement BMPs to achieve compliance with state water quality law using Ecology's state nonpoint authority.
2. Education, outreach, and voluntary programs-
    - Tools and resources to effectively communicate water quality law, pollution problems, and recommended BMPs.
    - Grants, loans, and incentive programs to support implementation of recommended BMPs.
3. Compliance field staff, complaint response, and enforcement authority-
    - Watershed evaluations and complaint response to identify and prioritize sites contributing nonpoint pollution to state waters.
    - Use of technical assistance, financial assistance, and graduated compliance actions to address nonpoint pollution.
4. Partnerships and support of locally-led programs designed to identify and clean up nonpoint pollution sources-
    - Continue to support and collaborate with local, state, Tribal, and Federal partners.

When an opportunity exists, we will support the development and use of other tools to address NPS pollution; examples include:

- Water Quality Trading.
- Certification/Certainty Programs.
- Incentives programs to support implementation of riparian buffers.
- New regulatory approaches to support the implementation of riparian buffers.

- Protection of Outstanding Resource Waters.

Ecology will continue to support the implementation of the following key regulatory programs:

- Washington State's Forest Practices Rules.
- Dairy Nutrient Management Act.
- Local regulation of on-site sewage systems.
- National Pollutant Discharge Elimination System/State Waste Discharge Permit program.
- Growth Management Act and Shoreline Management Act rules and regulations.

Finally, Ecology will coordinate our nonpoint program with key state initiatives connected to water quality:

- Puget Sound Action Agenda.
- Puget Sound Vessel Sewage No Discharge Zone.
- Washington's Climate Change initiatives.
- Washington's efforts to recover salmon species.
- Washington's riparian restoration initiatives.

Washington's strategy to address nonpoint pollution encourages the use of all available tools and recognizes the important role that both regulatory and non-regulatory approaches play. The state has many programs designed to address some segment of the nonpoint problem. However, these efforts would benefit from improved coordination. Better integration and coordination of regulatory and non-regulatory programs as well as a broader commitment to support achieving compliance with state water quality law would lead to faster improvements and cleaner water.

As the agency responsible for establishing clean water standards and determining the best management practices that will support achieving those standards, Ecology hopes that other entities within Washington will support the state's clean water goals by incorporating Ecology's science and recommendations into the workplans, regulations, education and outreach initiatives, and technical and financial assistance opportunities they provide to the public. The ideal is to have all of the agencies managing these disparate programs working together to create a more unified state nonpoint program that links all of these efforts into a more cost-effective program to address nonpoint pollution and achieve compliance with the water quality standards. While we have a long way to go to achieve that ideal, Ecology will continue to work with partner agencies to better align programs (especially incentive/grant programs) and coordinate activities to address nonpoint problems in support of achieving compliance with the water quality standards.

This plan outlines the strategy and actions Ecology intends to engage in to address nonpoint pollution. Additionally, this statewide plan highlights the important role of other agencies and organizations in Washington; input from the Washington State Conservation Commission and the state Departments of Health, Agriculture, and Fish and Wildlife, was received in the development of this plan. Engagement and coordination from partnering agencies and organizations is vital to implementing the outlined strategy and meaningfully addressing nonpoint source pollution in Washington state.

Considering Climate Change

Washington state is on the forefront of incorporating climate resiliency into governmental frameworks and considering the climate impacts of new and ongoing initiatives. The impacts of climate change in Washington include increases in heavy winter rainfall and reductions in mountain snowpack, paired with hotter, drier summers. These changes will cause additional stress to our shared water resources and exacerbate the warmer waters we are already experiencing as a result of decreased riparian shade. The impacts of climate change on water quality makes critical the nonpoint work that is identified in this plan.

Riparian shade is critical for all of our waters, especially smaller streams where trees provide vital shade and habitat for all aquatic life. Temperature-impaired listings continue to increase with each water quality assessment. The work that is included in this plan that relates to protecting and establishing riparian areas is essential to addressing temperature impairments in Washington. Nonpoint work, with its focus on establishing and protecting robust riparian areas, is attempting to address and mitigate the impacts of warming waters that we are already experiencing, with an eye to the future and anticipating warming conditions.

Washington state and Ecology are not only focused on mitigating impacts, but are also focused on addressing the drivers of climate change. Through the Climate Commitment Act, Washington is working to cap and reduce greenhouse gas emissions from the state's largest emitting sources and industries. In tandem with other climate policies, Washington is working to achieve its commitment to reducing greenhouse gas emissions by 95% by 2050. This work is essential for protecting the beneficial uses of "fishable" that is a core foundation of the Clean Water Act. Washington state remains committed to a forward-looking strategy, utilizing all tools available to address the anticipated impacts of climate change. More information on Washington state's climate initiatives can be found in section 3.6 of this chapter.

Balancing Restoration and Protection

Solving the state's water quality problems requires fixing existing problems as well as preventing future degradation. Although much of the work of the nonpoint program is reactionary, responding to pollution issues and supporting the implementation of on-the-ground solutions, the anticipated impacts of climate change (as discussed above) highlight the need to utilize our proactive tool of protection in tandem with restoration.

With limited resources, Ecology's first priority is to correct known water quality impairments from nonpoint source pollution. Our second priority is to support projects that protect threatened and high quality waters from present and future nonpoint source pollution impacts. For example, while restoration of temperature impaired waters through planting robust riparian buffers is a large focus of our grant funding and the work of our nonpoint field staff, we recognize the value in preserving lands with intact riparian buffers and will continue to support the acquisition of lands to protect water quality in perpetuity.

Although many of our staff resources are allocated to restoring water quality by addressing agricultural nonpoint pollution sources, our Forestry program, which supports the implementation of the Forest Practices Rules, requires the preservation of established riparian forest buffers. Through the active support and implementation of the Forest Practices Rules to promote protection and the use of the State Water Pollution Control Act to correct nonpoint sources of pollution, we can utilize our available regulatory tools to support both protection and restoration.

The Shoreline Management Act (SMA) and Growth Management Act (GMA) are the two primary state statutes related to land use planning and create a regulatory framework for siting new development and uses as well as critical area protection standards. The Shoreline Master Programs and critical areas ordinances required under the GMA are focused on protecting the existing functions within the state's marine waters, streams, rivers, wetlands, and floodplains, and their adjacent riparian areas or buffers.

Finally, Ecology implements the water quality standards' antidegradation policy to protect existing water quality conditions and high quality waters. One tool that is discussed in further detail in section 3.6 of this chapter is the Outstanding Resource Waters designation, which we have recently utilized to afford greater protections to high quality waters.

Protection of high quality waters and the preservation of existing riparian buffers requires support and action from our state and local partners. The protection of existing high quality waters and riparian buffers are vital to achieving our water quality goals in Washington State.

Incorporating Environmental Justice

Environmental justice (EJ) is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

<u>Our Environmental Justice Vision</u>

> The public, landowners, and producers have access to the resources and support they need to prevent nonpoint source pollution. These resources include education on land management practices that prevent nonpoint source pollution; access to financial tools and grants to make and maintain necessary site adaptations; and access to technical assistance that is linguistically inclusive and non-discriminatory.

Ecology, and the nonpoint program, are committed to supporting a coordinated and collaborative approach to improve environmental and health outcomes for everyone and to address environmental and health disparities for communities who bear a disproprotionately high burden from environmental degradation. To further this mission, Ecology's Water Quality Program recently created an Environmental Justice Planner position, which was filled in 2024 and has launched an internal environmental justice action planning process.

The Nonpoint Program will continue to work closely with the EJ Planner and Ecology's Office of Equity and Environmental Justice[87] to further our efforts to reduce pollution and health disparities in communities most at risk. Priorities for the Nonpoint Program in support of our environmental justice mission include:

- Policy Development and Input: Work to provide opportunities to inform Washington's Nonpoint Plan updates to those who are impacted by our policies but not professionally connected to this work. This engagement can drive policy implementation solutions that address the unique challenges faced by people who have been historically underrepresented.
- Project Funding: Increase knowledge of Ecology's Combined Water Quality Funding Program throughout the state and provide technical assistance for new and returning applicants. Continue to work with other funding programs to improve alignment and coordination between funding sources for nonpoint source pollution, to improve access and streamline the application and management processes. In 2022 Ecology removed a historic requirement for applicants to provide matching funds to access state grants and loans, making our grants more accessible for all organizations.
- Technical Assistance: Strive to communicate with landowners, land managers, and other partners in a linguistically inclusive manner, through the development of translated materials and the use of Ecology's translation phone services for phone and in-person conversations.
- Watershed Work: Watershed prioritization will consider the impacts to communities from nonpoint source pollution. Staff will provide technical assistance, and, as available, financial assistance, to alleviate the financial burden to landowners who must implement BMPs to address nonpoint pollution sources.

3.1 Watershed Cleanup Programs/319 Watershed Based Plans

Ecology's primary strategy for addressing nonpoint pollution is implementing watershed clean-up projects. There are three related approaches that Ecology uses to clean up impaired water bodies: Total Maximum Daily Load (TMDL), Advance Restoration Plan (ARP), and Straight to Implementation (STI) projects. Additionally, Ecology supports locally led programs to clean-up

[87] https://ecology.wa.gov/About-us/Who-we-are/Our-Programs/Equity-Environmental-Justice

impaired water bodies, such as Pollution Identification and Correction programs, and Shellfish Protection District efforts, discussed later in this chapter.

All three of Ecology's approaches to cleaning up waterbodies (TMDLs, ARPs, and STI projects) utilize a combination of education and outreach, technical assistance, financial incentives, and enforcement to meet the requirements of the WQ Standards, and promote compliance with water quality laws. TMDLs and other restoration plans in advance of a TMDL provide the framework for cleaning up waterbodies to meet water quality standards and may be implemented by both nonpoint staff and permit managers. Further, TMDLs, ARPs and STIs are the primary planning tools that Washington State uses to develop nine-element watershed based plans which are required by EPA for any watershed implementation projects funded under CWA Section 319.

3.1.1 Total Maximum Daily Loads (TMDLs)

As required by Section 303 of the federal Clean Water Act, Ecology develops TMDLs for water bodies on the state's list of impaired waters. TMDLs are a regulatory tool that set the maximum quantity (or "load") of a pollutant that may be added to a water body from all sources, including natural background sources, at levels necessary to attain and maintain the applicable narrative and numerical water quality standards. It must take into consideration seasonal variations in water quality conditions, and must include a margin of safety to account for any lack of knowledge concerning the relationship between effluent limitations and water quality.

The TMDL Process in Washington State

Washington State's TMDL process starts by choosing where TMDLs will be developed. In general, Ecology develops TMDLs using a watershed-based approach that addresses impairments (and often multiple types of pollutants) concurrently. Ecology's criteria to prioritize impaired waterbodies for TMDL development is outlined in Policy 1-11[88]. The criteria Ecology uses to prioritize TMDLs include:

- Severity of the pollution problem.
- Risks to public health.
- Risks to threatened and endangered species.
- Vulnerability of waterbodies to degradation.
- Waterbodies where a new or more stringent permit limit is needed for point sources.
- Local support and interest in a watershed.
- Environmental justice considerations.

[88] https://apps.ecology.wa.gov/publications/SummaryPages/1810035.html

Prioritization of TMDLs is led by Ecology's regional offices. Each regional office looks at the category 5 listings in their region, groups them into potential projects, and identifies priorities. Ecology holds an annual "prioritization webinar" to provide an opportunity for regions to share their draft priorities to the public and receive feedback. Once a TMDL area is finalized, Ecology typically conducts field monitoring and computer modeling of watershed conditions. A TMDL study identifies pollution sources within a watershed and determines what needs to change so that pollution is reduced to an amount needed to meet water quality standards.

Pollution sources are broken down into two categories. The first is nonpoint pollution, where the source runs directly off the land into the water. The allowable discharge from all the nonpoint sources is called the load allocation. The second category is point source pollution, which typically flows out of a pipe and is regulated by a National Pollutant Discharge Elimination System (NPDES) permit. The allowable discharge from a permitted point source is called a wasteload allocation. The TMDL then sets out the actions required for each point source and land use in the project area to ensure TMDL allocations are met.

In short, our TMDL approach:

- Assigns load allocations to specified nonpoint pollution sources.
- Assigns wasteload allocations to point sources which may require more protective NPDES permit limits.
- Designates suites of BMPs for various landuse categories. For agricultural landuses, TMDLs and their Implementation Plans will use the Voluntary Clean Water Guidance for Agriculture (Clean Water Guidance/CWG) to develop recommended suites of BMPs to meet load allocations. If watershed specific information requires more protective BMPs or suites of BMPs than the guidance, TMDLs and their Implementation Plans will include modified BMPs to reflect the load allocations in the TMDL.
- Details the technical data, analyses, and actions needed to attain standards and return waters to good health.

Each TMDL project is unique, but there are essential elements common to all. As long as these elements are included, the TMDL project should result in a water quality improvement plan that is complete, acceptable to the public, and approvable by EPA. These elements include:

- *An initial study of water quality problems*. This includes a monitoring study identifying the sources and amounts of pollutants causing the water quality problem, and a technical analysis to determine how much pollution sources must be reduced to protect the water.
- *Public involvement*. Public involvement, along with coordination with Tribal governments and consideration of environmental justice issues (as appropriate), is important at all key decision steps of the process.

- *Loading capacity for the pollutant*. This is the sum total of all of the pollutant loading the waterbody can absorb without violating WQ Standards.
- *Load allocations (LAs) for nonpoint sources*. The LA quantifies how much of the pollutant(s) can be discharged from nonpoint sources, along with the other sources, and have the water body still meet WQ Standards.
- *Wasteload allocations (WLAs) for point sources*. The WLA quantifies how much of the pollutant(s) can be discharged from point sources, along with other sources, and have the water body still meet WQ Standards.
- *A margin of safety*. An allowance so that surface WQ Standards will be met under the worst conditions likely to be experienced.
- *A reserve capacity*. This factor estimates the effect of population growth and future land uses on pollutant WLAs and LAs so they will continue to be adequate in the future.
- *Consideration of seasonal variation of flows and contaminant concentrations*. This ensures that WQ Standards are met during all seasons of the year.
- *An Implementation Plan.* A detailed plan to prevent, reduce, or clean up excess pollution. For addressing nonpoint pollution, our implementation plans utilize the recommendations of the Clean Water Guidance.
- *A follow-up monitoring plan*. To demonstrate the success of pollution controls contained in the implementation plan or the need for additional action.
- *Reasonable assurance*. For TMDLs that allocate pollutant loads to both point and nonpoint sources, the state must demonstrate reasonable assurance that the LAs will be achieved and WQ Standards will be attained. The purpose of reasonable assurance is to ensure that the WLAs and LAs established in the TMDL are not based on overly generous assumptions regarding the amount of nonpoint source pollutant reductions that will occur.
- An *estimate* of when the waterbody will meet WQ Standards.

Implementing load allocations is critical to the success of TMDLS. However, addressing nonpoint sources remains challenging, even though compared to the technology and investments required of point source industries to meet wasteload allocations, the remedial measures necessary to meet load allocations are usually simple, straightforward, practical, low-tech and inexpensive.

TMDLs provide helpful information on sources of pollution, the actions and BMPs needed to address those sources, and resources (e.g. technical and financial assistance, local implementation partners and programs, and education and outreach tools) but they are not self-implementing. Ecology's nonpoint staff are critical to making on-the-ground progress in implementing TMDLs.

Slow-paced implementation of the load allocation component in TMDLs puts at risk the state's ability to provide reasonable assurance that load allocations will be met. This would have

serious consequences for point sources- if Ecology is unable to require nonpoint sources to meet the load allocations in TMDLs, then the load reductions assigned to nonpoint sources must be shifted to the point sources instead. The NPDES-permitted dischargers would then be required to make additional reductions to meet smaller WLAs; essentially taking on the reduction responsibility that should fall to nonpoint sources. This is not Ecology's preferred option. We would rather assign pollutant loads to the sources discharging them and then use collaborative approaches backed by our nonpoint authority to require the nonpoint sources to meet their load allocations. We will continue to implement the strategy laid out in this chapter to address nonpoint source pollution and demonstrate progress in achieving reductions to ensure we can provide reasonable assurances that load allocations will be met.

3.1.2 Other Water Clean-up Projects in Advance of a TMDL

Advance Restoration Plans

TMDLs, as discussed above, are best suited for watersheds and parameters where NPDES permitted point sources are the primary source of pollution. In watersheds that are less complicated, but still contain a mix of point and nonpoint sources, Ecology is exploring Advance Restoration Plans in advance of a TMDL.

Like TMDLs, the goal of these other water cleanup approaches is meeting water quality standards. To reach that goal, the focus is on doing, not planning. While there is still a planning step, these water cleanup projects move to implementation actions quicker than the traditional TMDL process. These projects focus on implementing corrective actions and working with local parties. They generally do not assign formal load allocations nor wasteload allocations. When waters are clean enough to meet water quality standards, they are delisted. In cases where these other water clean-up projects use modeling, the goal is to move faster to on-the-ground implementation actions than if a TMDL was pursued.

Some form of planning is necessary to guide implementation actions for these projects. For projects with nonpoint sources of pollution, plans at a minimum include EPA's '9 Minimum Elements of Successful Watershed Plans'[89]. ARPs are a tool best suited to watersheds that may have a mix of point and nonpoint sources, but where the point source impact is minimal, dominated by general permittees, and where wasteload allocations would contribute little to an implementation plan. In contrast to TMDLs, ARPs can require very little or no modeling.

As with implementing TMDLs, Ecology's emphasis is on a collaborative approach to addressing pollution problems. Once Ecology has identified the specific suites of BMPS that will achieve compliance, it will use education programs and outreach to landowners and potential implementation partners to inform the public about the necessary BMPs. Ecology will first use technical assistance and incentives to secure the proactive implementation of BMPs to address nonpoint sources of pollution. However, Ecology also identifies and utilizes all available federal, state, and local enforceable authorities to secure implementation, if the technical and financial

[89] See Appendix H for more information on EPA's '9 Minimum Elements of Successful Watershed Plans.'

assistance fails to address nonpoint sources of pollution. This is a similar approach to that used by local Pollution Identification and Correction programs outlined later in this plan.

While an ARP project is being implemented, Ecology monitors the rate of implementation and, when possible, performs water quality monitoring to ensure that the water body is actually getting cleaner.

If the ARP is successful, the impaired water bodies will be cleaned up and move from Category 5 (impaired water body) to Category 1 (clean water body) of the Water Quality Assessment without the need to develop a TMDL. When an ARP is started it remains in Category 5. If an ARP project demonstrates progress in being implemented, the affected water bodies may be moved to category 4b if they meet the criteria outlined in Policy 1-11.

While a TMDL is ultimately required if standards are not achieved, Ecology sees value in exploring other approaches to getting BMPs and other actions implemented more quickly. See Ecology's Annual 319 Report to EPA, now posted on the nonpoint webpage, for information on current and future ARPs being developed within Washington State.

Straight to Implementation

Straight to Implementation (STI) is a type of Advance Restoration Plan that uses Ecology's nonpoint authority and state resources to clean up watersheds with minimal or no point source impacts and where the water quality pollution problem is simple and well understood. In these watersheds in which the sources of nonpoint pollution are known and the suites of BMPs necessary to control those sources have been identified by Ecology, we simply begin working directly with landowners to implement those BMPs.

In general, Ecology identifies watersheds that are good candidates for STI using the following criteria:

- Are the pollution problems in the watershed caused primarily by nonpoint sources?
- Are there a limited number of land uses in the watershed?
- Do we understand which land uses are causing pollution problems?
- Do we have suites of known effective BMPs that will solve the pollution problems caused by land uses in the watershed?

If the answer these questions are yes, then an STI is most likely a better tool to achieve water quality standards quicker.

STI projects are intended to implement nonpoint source controls as quickly as possible, and follow the same collaborative approach strategy as ARPs. When we use STI, compliance with the WQ Standards is to be achieved in no more than 10 years after the start of STI work in the watershed. The only exception to this time requirement is for parameters such as temperature, which might take longer because of the time it takes for trees to grow and achieve site

potential shade. However, even in this case, all implementation actions necessary to achieve compliance must be completed within 10 years.

STI is more appropriate for watersheds with few pollution inputs, and rural watersheds with few contributors tend to make the best candidates for this methodology. STI projects are guided by an internal staff work plan that includes EPA's required elements of a watershed based plan, which makes projects implemented in support of STIs eligible for Section 319 grants.

See Ecology's Annual 319 Report to EPA, posted on the nonpoint webpage, for more information on current and future STI projects (see section 3.2.1 below for more information and a link to the nonpoint webpage).

3.1.3 Aligning Ecology's Nonpoint and TMDL Programs

Recognizing the vital role the nonpoint program plays in supporting the TMDL program, Ecology will continue to prioritize deploying our nonpoint resources to support TMDL, ARP, and STI implementation. Additionally, we will continue to look for ways to better align our TMDL and NPS programs. Ecology has already taken several important steps to more closely align our TMDL and NPS programs to better leverage an array of staff expertise and to orient programmatic efforts toward cleaning up impaired watersheds. For example, all TMDLs include an implementation plan that contains the required elements of a watershed based plan. Moving forward, we intend to continue improving implementation plans by utilizing the Clean Water Guidance to designate the specific actions necessary to comply with TMDL load allocations.

Additionally, while Ecology will continue to work with and rely on partners to implement load allocation requirements, Ecology will utilize watershed evaluations to identify sites with nonpoint pollution issues and secure the implementation of BMPs that ensure compliance with the WQ Standards and state law. The watershed evaluation process is used most often in agricultural lands, and it has been vetted through the Ecology director's Agriculture and Water Quality Committee as an approach that the group understands and supports. Once problem sites are identified, Ecology will first work with partners in the watershed to implement those suites of BMPs that will address the identified pollution problems. If implementation stalls, for instance because of recalcitrant landowners, Ecology will utilize enforcement tools as necessary and appropriate. The process of working with agricultural landowners and partners to implement necessary BMPs is discussed in more depth in subsequent sections.

3.2 Education, Outreach, and Incentive Programs

Public outreach, education, and voluntary programs are an important part of the state's NPS program. Developing education and outreach programs that increase the public's understanding of nonpoint source pollution, the technical and financial assistance resources available to address nonpoint pollution, and how the public can be involved in preventing

pollution before it happens, are fundamental to the success of our nonpoint strategy. Our education and outreach efforts take advantage of a variety of delivery mechanisms.

Ecology will continue to work with partners, including producer groups, Tribes, state and federal agencies, local governments, conservation districts, environmental organizations, and other parties in a collaborative effort to maximize participation in voluntary programs to increase adoption of practices that protect and enhance water quality. These collaborative efforts take advantage of the skills and knowledge of partner organizations to complement education and outreach expertise at Ecology.

Ecology will also support locally led voluntary programs that address nonpoint sources of pollution and promote compliance with the WQ Standards. This includes programs designed specifically to address nonpoint pollution, as well as programs that focus on broader natural resource goals that have a nexus with water quality, including salmon recovery programs, voluntary stewardship programs, irrigation efficiencies, and floodplains by design projects.

3.2.1 Education and Outreach

Because Ecology's nonpoint program strives for voluntary compliance with state water quality law, education and outreach efforts are a vital component of our nonpoint strategy. With the goal of providing accessible information and guidance to a broad public, Ecology's nonpoint program has recently added capacity in this area, with the addition of three positions that focus on communication and outreach. A selection of resources that Ecology's nonpoint program is developing includes:

- Clean Water Guidance outreach materials: To support the work of our staff, on-the-ground partners, and landowners/operators, we will develop outreach materials for each chapter of the CWG. The first outreach resource we are developing is for the chapter on Riparian Areas and Surface Water Protection. The guide is intended to help landowners understand Ecology's BMP recommendations and assess for themselves what management strategies best fit their land's needs while still being compliant with state water quality laws.
- Ecology's Nonpoint Program webpages[90]: in 2025 we published an update to our webpages, which included:
    - Information about nonpoint pollution sources and solutions, with a page dedicated to temperature pollution in Washington state.
    - Information on how our regional field staff work in watersheds and the state's Water Pollution Control Act.
    - Resources for landowners, operators, and partners to learn more about BMPs that will support compliance with state water quality law.

[90] https://ecology.wa.gov/water-shorelines/water-quality/nonpoint-pollution

    - Links to the Nonpoint Program's Annual Reports to EPA, which provide information on the past year of work, such as discussion of grants awarded, BMPs implemented, and which watersheds nonpoint staff are focusing work and what has been accomplished in the past year, as well as what is planned for the upcoming year.

- Landowner self-assessment tool: this handout allows producers to evaluate their agricultural operation for practices that are known to contribute nonpoint pollution.
- Clean Water and Livestock Operations: Assessing Risks to Water Quality: this document provides information on livestock-related water quality impacts, to help landowners and operators make informed decisions to protect water quality. This guide can be especially informative when used in tandem with the landowner self-assessment tool, to provide greater context around pollution sources and the potential severity of impact.
- Grant application resources: to ensure equitable access to grant application materials, we have regional staff who specialize in grant management and who are available to provide feedback to applicants through the process.

Ecology's Nonpoint Program is dedicated to fostering accessible and equitable processes. We are committed to creating and utilizing resources and strategies that promote diversity and inclusion in our work. We strive to provide language access by producing letters and outreach materials in multiple languages, and providing translation services during meetings with landowners or community partners.

When feasible, nonpoint staff will coordinate and collaborate with other entities that engage in outreach and education. We recognize that other organizations may have strong connections to their community and can help to strengthen the delivery of our water quality messaging. In addition to providing funding to local organizations to conduct water quality education activities, we support coordinated outreach and education efforts, and welcome new opportunities for collaboration.

3.2.2 Ecology's Water Quality Incentive Programs

Ecology Grant and Loan Programs

Water Quality Combined Funding Program

Ecology's Water Quality Funding Program is vital to supporting on-the-ground water quality cleanup work and administers four major funding programs that provide grants and low-interest loans: the Centennial Clean Water Fund, the State Revolving Fund, Section 319 grants, and Stormwater Financial Assistance Program. These funding programs are for projects to protect and improve water quality in Washington State. Applicants use one integrated financial assistance application to apply for funds to address both point and nonpoint source water pollution. Ecology reviews, rates, and ranks applications and then distributes funds to the highest priority projects.

Each of the funding programs, based on fund source, has different eligibility requirements and limitations and may have specific set-asides or funding priorities. All projects are rated and ranked on a standard set of criteria. Scoring criteria cover:

- Scope of work - The scope of work represents a complete and concise description of the project tasks and outcomes, including deliverables and timelines, and how the project directly and measurably addresses a water quality problem.
- Task and project budget - The cost estimate process is reasonable, and the project budget represents a good value for the work and water quality benefits achieved.
- Water quality and public health improvements - Consideration of the severity of the water quality problem, whether the project will achieve substantial water quality and public health benefits, how project success can be measured, and how the project will provide long-term water quality benefits.
- Coordination with state and federal priorities – TMDL, ARP, or STI implementation, other state or federal water quality priorities, the Puget Sound Partnership Action Agenda or current approved plan or program specifically designed to address water quality problems such as a watershed-based plan containing EPA's required elements. Also, consideration is given to how well the applicant and the project address greenhouse emission reductions in accordance with RCW 70.235.070.
- Project team - Applicant defines team members' roles and responsibilities. Additionally, scoring considers team members' past experiences, and whether the staffing commitment is well described.
- Project development, local support, and past performance—A comprehensive decision-making process was used to arrive at the proposed project, and plans for long-term project success and sustainability were considered during project development. Additionally, scoring considers the level of local support and commitment for the project, and the applicant's past performance on other water quality projects, including Ecology funded projects.
- Readiness to proceed - Project elements are in place for the project to proceed and documentation is provided.

Successful proposals will demonstrate how the project solves or addresses a water quality problem and how the applicant will document that benefit. Projects must have a well-defined scope of work that has goals, objectives, timelines, and measurable outcomes in addition to an accurate and reasonable budget. Proposals are also prioritized based on their readiness to proceed through documentation that items are in place to begin as soon as funds may be offered.

The funds for BMPs to address nonpoint source pollution help to provide an incentive to support the achievement of clean water objectives and meet the WQ Standards. Eligible activities covered by these nonpoint source funds include implementation of one or more of a limited set of effective BMPs, education and stewardship programs, pollution identification and

correction, water quality monitoring, and watershed planning. Ecology prioritizes nonpoint projects that implement eligible BMPs such as livestock exclusion fencing, agricultural waste management, restoring riparian vegetation, irrigation system improvements, stream habitat restoration, control of invasive species, bank stabilization projects, and promoting practices that decrease soil erosion, such as conservation tillage.

To ensure that effective BMPs are implemented, Ecology funds only a small set of BMPs that we have determined will achieve compliance with state law if implemented, operated, and maintained correctly. The program funding guidelines are reviewed and updated annually to ensure that funded projects meet WQ Standards and to decide whether additional known effective BMPs should be made eligible for funding. Ecology will update the funding guidelines based on the Clean Water Guidance, to reflect the recommendations of the guidance. In December 2022, Ecology published updates to several chapters of the Clean Water Guidance, including chapters related to riparian buffers and agricultural BMPs. Recent funding guideline updates have incorporated the BMP recommendations of the Clean Water Guidance, including riparian buffers that contain recommendations from WDFW promoting site potential tree height buffer widths. Alternative buffer width options are available to grant recipients where site potential tree height buffer widths are not achievable. These buffer alternatives are still protective of water quality and are supported by the Clean Water Guidance. Eligibility requirements apply statewide to all proposed projects. The guidelines for the most recent state fiscal year can be found on the Water Quality Combined Funding Program webpage[91]. The funding guidelines also include statutory requirements, the administrative rule defining uses and limitations of funds, and program and agency policy that guide our programs.

To incentivize the establishment of riparian buffers, Ecology recently launched an incentive payment program. Starting in state fiscal year 2025, landowners who install the preferred buffer option, a riparian buffer one full site potential tree height in width, are eligible to receive a one-time payment of $2,000/acre upon execution of an ecosystem service contract. These projects are also eligible to receive maintenance funding for 10 years at the project location to ensure successful establishment of the riparian buffer. All riparian buffers that meet Ecology's minimum buffer width are eligible for five years of maintenance post-planting. Typical maintenance actions include invasive weed control, mulching, watering, wildlife herbivory deterrents, monitoring for survival and cover, and other activities that promote successful riparian forests.

Additionally, Ecology recognizes the need to measure outputs and outcomes, as well as BMP costs to improve accountability and better target future clean water investments. To better track BMP implementation, Ecology started collecting more specific implementation data through a BMP approval form. The form includes specific BMP metrics that must be reported by the grantee, and the requirement to submit a site plan that clearly identifies the location of

[91] https://ecology.wa.gov/about-us/payments-contracts-grants/grants-loans/find-a-grant-or-loan/water-quality-combined

BMPs that will be implemented by the project. If a riparian buffer is planned, a riparian planting and maintenance plan accompanies the BMP approval form. This plan describes how each step of implementing and maintaining the buffer will be completed to improve the likelihood of success and ensure the project improves water quality.

Ecology uses an online grant and loan management system called Ecology Administration of Grants and Loans (EAGL). Applicants apply for and manage their funded projects in EAGL throughout the grant and loan life cycle. The EAGL system can be a challenge to learn for first time applicants. Ecology grants staff provide technical assistance and trainings on using EAGL as part of Ecology's efforts to make access to funding more available to applicants and communities with limited resources for seeking funding. Additionally, as of SFY2024, WQP removed the 25% match requirement for nonpoint applications after reviewing feedback that match was a significant barrier to seeking funding.

In addition to our combined funding program, other grant programs can help with implementation. More detailed information on other funding programs is provided in Chapter 5. Important sources of financial assistance come from local conservation districts, NRCS, WSCC, Salmon Recovery Funding Board, and EPA. Ecology will look to support our partners' grant programs and pursue opportunities for coordinated investment.

Clean Water State Revolving Fund

Provided by the federal Clean Water Act and managed by the Department of Ecology, the Clean Water State Revolving Fund (CWSRF) program is funded through an annual EPA capitalization grant, state matching funds, and principal and interest repayments on past program loans. The CWSRF program provides low-interest and forgivable principal loan funding for stormwater, wastewater, nonpoint source pollution control BMPs, and onsite sewage projects.

On-Site Sewage Regional Loan Program

To address the financial burden of repair and replacement of on-site sewage systems (OSS) while reducing the impact of failing systems to our public health and ecosystems, Washington State's Departments of Ecology and Health partnered with local non-profit lender Craft3 and local health agencies to create an affordable loan program[92]. Traditional financing, like bank or credit union home equity loans, have credit, equity, and/or income thresholds that, even with credit enhancements, leave out many potential customers. Systemic inequities in conventional credit and financing underwriting, as well as in public infrastructure, put greater burden on already under-resourced communities; the OSS Regional Loan Program strives to remove these barriers.

Ecology provides funding for the program through Washington State's Centennial Clean Water Program and the EPA's Clean Water State Revolving Fund. Department of Health (DOH)

[92] https://www.craft3.org/homeowner-loans/clean-water/washington

provides technical assistance as the state agency responsible for administering OSS rules. Program partners collaborate to support homeowners and small businesses with flexible, affordable financing to address the financial gap that exists for many to deal with a failing system.

The program launched in 2016 with local partners in Puget Sound. Since then, it has expanded to serve the entire state. Through May 2024, more than 1,830 systems have been replaced, representing a nearly $50 million investment in local communities. Addressing a failing septic system goes beyond the environmental benefits - it's about building community resilience. More than 40% of program borrowers are at 80% or less of their county's median household income. Many of our most vulnerable residents rely on septic systems to provide safe wastewater disposal.

We work to protect the quality of Washington's marine and fresh waters for the benefit of people and wildlife. We evaluate whether state water quality standards are being met. We also partner with local entities to improve water quality where problems are identified. When a septic system fails, it can impact water quality, with bacteria, phosphorous, and nitrogen being the primary parameters of concern. Many of our TMDLs and other water quality improvement projects call for prioritization of addressing failing septic systems to meet water quality standards.

Watershed Conservation Fund Pilot Project

Land acquisition has immense value and can be a cost-effective means to protecting water quality. The impact is both immediate and is maintained in perpetuity through the Water Quality Deed of Right. However, opportunities for land acquisition purchases do not always line up with available funding. Once a parcel has been identified as an option to purchase, funding must be acquired, a process which may take up to a year or more, in which time, the land may be sold.

Recognizing the challenge this model presents for entities engaging in land protection via acquisition, Ecology worked with partners to develop the Watershed Conservation Fund pilot project. The fund is modeled after Ecology’s OSS Revolving Loan Program, a partnership between Ecology, the Department of Health, and Craft3, a Community Development Financial Institution, discussed above. For this acquisition loan program, the Community Development Financial Institution applies for funding and is contracted with Ecology, receiving our funds and being responsible for repayment. The financial institution then originates loans to project proponents. Ecology oversees the contract, ensures compliance with funding guidelines, and evaluates water quality and public health benefits.

> Pilot project- Jefferson County Public Health, a Local Health Jurisdiction who has been involved in numerous acquisition projects, partnered with Columbia Land Trust to submit an application for a $10.5 million project. $500,000 in grant funds for program development and the remainder of the $10.5 million going to pilot acquisitions in the Grays River watershed, the areas that been selected for the pilot program. This

watershed sustains a number of different salmon stocks, including Fall Chinook and ESU Lower Columbia chum. The watershed also has a temperature impairment and sediment issues. Columbia Land Trust has been actively purchasing lands for conservation in this watershed and is currently looking to purchase over 3200 acres of prime habitat for the pilot. The hope with the application is that between extensive engagement and pilot work, a program can be developed and scaled to be available to all entities statewide moving forward.

Project goals- Design and pilot a scalable loan fund for acquisition of land for water quality protection. Accelerate the deployment of funds and improve efficiency in acquisition by partnering with a Community Development Financial Institution to disburse funds as needed, rather than over a one-year cycle. Explore alternative repayment sources that make using State Revolving Funds for nonpoint more feasible for partners. Finally, develop an inclusive program that makes sense for Tribes, land trusts, counties, conservation districts, lenders, and more.

Direct Implementation Funding (DIF)

The DIF program reallocates returned funding from the Water Quality Combined Funding grant program, to support implementation of water quality improvement projects. This funding is applied to projects that accomplish direct implementation activities on sites that have been identified as a site of concern by regional Ecology nonpoint staff or to implement a specific high priority action from a TMDL or other watershed cleanup plan. The program is not meant to circumvent the competitive grant process, and funding guidelines are updated whenever DIF is available.

DIF projects must meet the same eligibility requirements of all projects funded via the Water Quality Combined Funding Program, and must therefore adhere to the standards and practices outlined in the Clean Water Guidance. Because DIF is composed of returned funding, the active period for these projects is much shorter than the 3-4 year timeline that applies to standard WQCF projects; this requires DIF projects to be 'shovel-ready,' and often requires close coordination between Ecology staff (nonpoint, TMDL, and grants) and the recipient.

Recently, Ecology has used DIF to support implementation of the Hangman Creek TMDL by funding two pilot projects that offer annual payments to agricultural producers for acres removed from production and planted as riparian buffers. The Hangman Creek Pilot Project, awarded to the Spokane Conservation District, has provided ~$3 million since 2022 to plant over 9 miles of Hangman Creek (170 acres). Ecology has committed another $2.9 million to the Hangman watershed for additional riparian buffer projects to be implemented in the coming years.

3.2.3 Water Quality Trading Framework

Ecology's Water Quality Program developed a water quality trading framework to guide the development of trading programs in watersheds in which the point sources determine that they will need trading to meet TMDL wasteload allocations and the subsequent NPDES permit limits.

Water quality trading has the specific goal of helping point source dischargers meet permit limits through the purchase of pollution reduction credits from a source of the same pollutant that is able to reduce pollution at a lower cost than the point source.

EPA's trading policy recommends:

- Timely public access to information on trades.
- Public participation during program development and implementation.
- Mechanisms to monitor progress, evaluate program effectiveness, and revise the program as necessary.
- Legal mechanisms to facilitate trading.
- Clearly defined units of trade.
- Methods to quantify credits and address uncertainty.
- Compliance and enforcement provisions.
- Accountability for all trades and assurance that NPDES permit holders meet their permit limits.
- Implementation at the watershed scale.
- Utilizing adaptive management strategies.
- Simplicity and flexibility in baseline concepts.

Ecology supports the concept of pollution trading markets that:

- Meet the requirements and objectives of Washington's Water Quality Standards and the federal Clean Water Act.
- Promote cost-effective water quality protection and restoration.
- Result in water quality trades that are verifiable and fully enforceable.
- Ensure credits generated by a nonpoint source from the installation of best management practices must be beyond those required to meet the most stringent load allocation applicable to that nonpoint source.
- Measure or calculate nonpoint source credits and trading ratios from the same baseline used in the TMDL and consistent with the assumptions used to develop the load allocation.

Ecology considers the most logical pollutants for trading are phosphorus, nitrogen, other oxygen-related pollutants, and sediment. We will consider trades involving temperature, although the lengthy time lag to produce shade may prohibit temperature trades in many watersheds.

Ecology has started to evaluate the potential for a trading program to support nutrient reduction work in the Puget Sound. The first step was the development of the Puget Sound Nutrient Credit Trading Recommendations for Program Implementation Report.[93] The report summarizes Ecology's recommendations for designing and implementing a nutrient credit trading program in Puget Sound for facilities covered under the Puget Sound Nutrient General Permit to achieve faster and more efficient nutrient reductions. The recommendations in the report are organized by trading program structure, statutory and regulatory considerations, Tribal consultation and engagement, partner engagement, and funding recommendations. Ecology drafted and submitted to the Washington State Legislature in 2023 under the requirements of a budget proviso in 2022. While the report recommends limiting initial trading only to waste water treatment plants covered under the Puget Sound Nutrient General Permit, it does recognize that Ecology could consider expanding trading eligibility to other point or nonpoint nitrogen sources in the future if modeling or other sound science can support it.

3.2.4 Certification and Certainty Programs

Certification programs take a market-based approach to address environmental problems. They can verify to retailers and consumers that a product has been produced using environmentally sustainable management practices. Ecology supports the concept of certification programs that include a focus on protecting water quality from nonpoint sources of pollution and support the key principles of Ecology's nonpoint source pollution strategy. Additionally, when organizations develop certification programs in consultation with Ecology, we can provide regulatory certainty to landowners, businesses, and agricultural producers who participate in the program. Agriculture-related certification and certainty programs should be consistent with the Clean Water Guidance.

We will continue to support certification programs that promote practices in support of clean water and welcome coordination and collaboration to adapt existing certification programs for compliance with state water quality standards.

Farmed Smart

A current example is the Farmed Smart Certification. The Farmed Smart Certification is a sustainable farm certification program developed by the Pacific Northwest Direct Seed Association and a conservation farming technical committee, comprised of conservation producers, managers from conservation districts, Ecology, and researchers with NRCS and Washington State University. The certification criteria were developed using best management practices from multiple environmental and conservation entities including NRCS and Ecology. The certification program was vetted by SureHarvest, a third party certification company and several regional commodity marketing companies with positive feedback that this is a market-ready program.

[93] https://apps.ecology.wa.gov/publications/SummaryPages/2310007.html

The Farmed Smart certification objectives include:

- Defining a set of conservation standards that will provide a clear understanding of economic and environmental benefits of direct seeding.
- Certifying producers that are utilizing sustainable practices.
- Educating and developing environmental markets for certified sustainable products and producers.

Further, the Farmed Smart certification has six initiatives that will be evaluated at each site, and that must be achieved in order to become certified:

- *Improving water quality* – through less soil disturbance, less soil erosion, precision placement of fertilizers and implementing buffer strips along water sources.
- *Improving air quality* – by keeping crop residue on the field to avoid wind erosion, and reducing fuel emissions from equipment.
- *Improving soil quality* – by reducing the amount of tillage, which increases organic matter, earthworm activity, and yield potential.
- *Improving wildlife habitat* – by providing food and cover for wildlife and fish habitats.
- *Conserving energy and reducing carbon footprint* – through planting in 1 – 2 passes, allowing a significant reduction in fossil fuel usage and sequestering carbon in the soil.
- *Improving economic viability and sustainability* – Reducing input costs of fuel, labor, and chemicals through precision agriculture and direct seeding practices ensures the family farm can continue to produce a safe food supply for the growing population.

Since its initial development, Spokane CD has purchased the program from Pacific Northwest Direct Seed Association and continues to provide Farmed Smart certification[94] for producers in Spokane County.

Salmon Safe

The Salmon Safe certification program has been promoting sustainable land management practices to improve water quality and support habitat conservation across the west coast since 1996. The Salmon Safe program has worked collaboratively with farmers in Oregon, Washington, and California to develop fish-friendly farm guidelines to support keeping streams healthy enough for salmon. Recognizing the challenges of limited time and resource availability that farmers face, Salmon Safe strives to reward producers who protect natural resources. Some of the benefits Salmon Safe certification may provide farmers include stewardship

[94] See Spokane CD's webpage for more information on the Farmed Smart program: https://spokanecd.org/pages/farmed-smart

recognition, the Salmon Safe brand, on-farm biodiversity, climate resiliency, and potential access to additional financial resources.

The Salmon Safe certification standards are focused on salmonid species and their habitat requirements. Salmon Safe farm evaluations focus on addressing the following key areas of salmon habitat vulnerability: instream habitat, riparian habitat, fish passage, water quantity, biodiversity, water quality, and climate resiliency. See the Salmon Safe website[95] for more information.

As stated above, Ecology is supportive of certification programs that promote practices that contribute to clean water. We see shared goals between Ecology's nonpoint program and the Salmon Safe certification, and we support programs that provide benefits to producers who utilize practices that will help achieve clean water. In support of these shared fundamental goals, we look forward to further collaboration with the Salmon Safe certification program to promote on-farm practices that support reaching the state's water quality goals.

3.3 Nonpoint Field Staff, Complaint Response, and the Graduated Compliance Pathway

Ecology nonpoint field staff are located throughout the state and work to identify nonpoint pollution sources and get fixes implemented to address those sources. Field staff concentrate their work in "focus areas" where there are water quality impairments. Most focus areas are selected because they support the implementation of watershed cleanup plans (TMDLs, ARPs and STIs). Additionally, nonpoint field staff respond to water quality concerns submitted by members of the public.

For many private landowners, nonpoint staff may be the first source of information about environmental regulations, presenting field staff with the challenge of being both the educator and the regulator. RCW 90.48 gives staff the authority to use enforcement actions to address pollution, however, the majority of small-scale pollution concerns are resolved by providing and coordinating technical assistance and financial resources to landowners. When the voluntary incentives and programs discussed in section 3.2 are unsuccessful, staff utilize enforcement authority to achieve implementation of BMPs to resolve nonpoint pollution.

[95] https://salmonsafe.org/

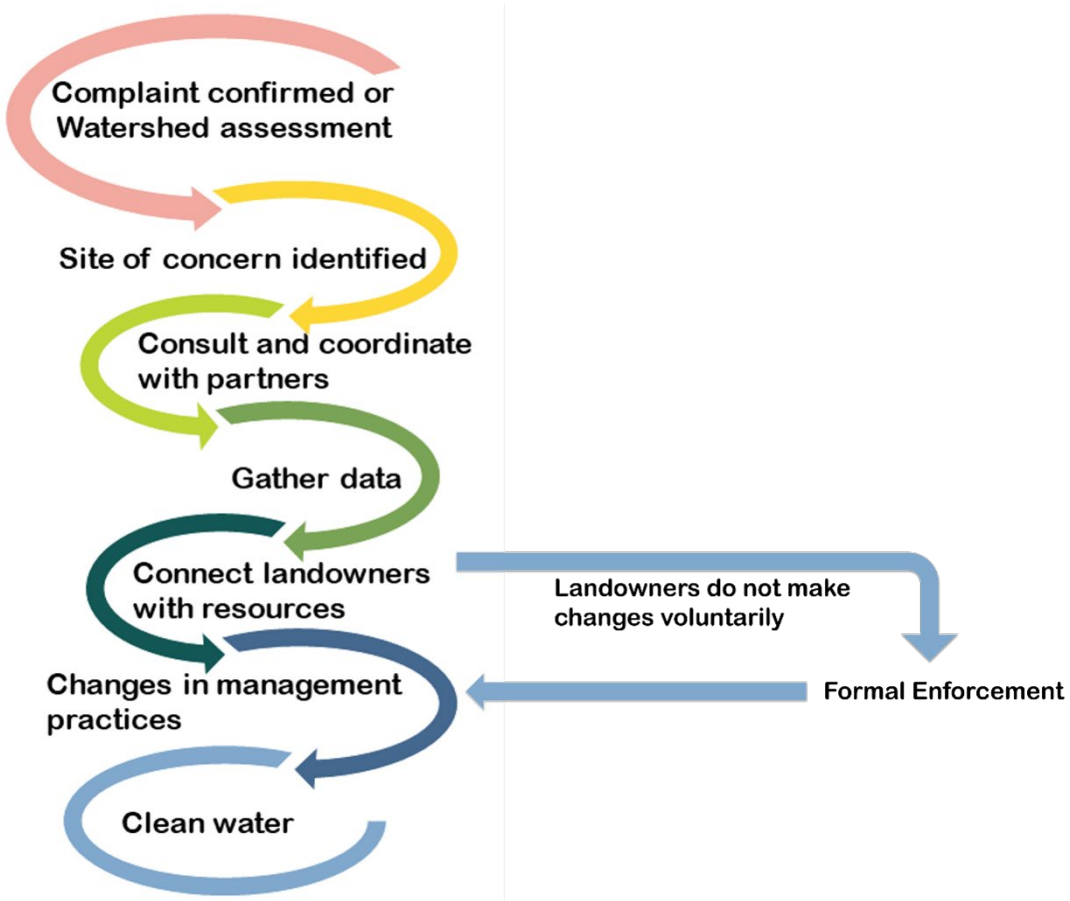

Figure 1. Generalized workflow of Ecology's nonpoint field staff includes working with local partners and striving for voluntary compliance, utilizing regulatory authorities as needed.

3.3.1 Focus on Implementation – Nonpoint field staff work in support of TMDLs, STIs and other water cleanup efforts

There are two primary methods employed by nonpoint field staff to identify sites of concern: 1) proactively, utilizing watershed evaluations in focus areas, and 2) reactively, via the receipt of environmental concerns reported by the public. Regardless of the method by which a site is identified, staff utilize the process of graduated compliance to engage with property owners and operators, beginning with offers of technical and financial assistance, and progressing to formal enforcement when voluntary compliance is unsuccessful.

Nonpoint staff use watershed evaluations to support implementation efforts by identifying specific nonpoint pollution problems and prioritizing sites to be contacted for technical and financial assistance. Watershed evaluations are a vital tool for identifying and prioritizing sites of concern in support of TMDLs and other watershed cleanup plan implementation. While watershed evaluations can be used to identify and address multiple types of nonpoint source pollution, Ecology primarily uses them to address agricultural nonpoint pollution sources

because there is no specific statewide regulatory oversight/permit program designed to meet WQ Standards for this sector.[96]

Watershed Evaluations

During watershed evaluations, Ecology assesses site-specific conditions to determine if water quality problems exist. While water quality monitoring may be used to help document pollution in the water body and/or stormwater flowing into surface water,[97] Ecology relies on visual site conditions as the primary evidence for identifying nonpoint source pollution problems. An evaluation of site conditions is supported by numerous scientific studies that clearly link site conditions to pollutant discharges. It is also important to use site conditions because unlike many point sources, nonpoint pollution does not discharge continuously. Instead, nonpoint source pollution discharges are intermittent; pollution is moved to state waters through run-off events, atmospheric deposition, direct deposition, and irrigation. It is not possible to be on a site every time there is a discharge. Evaluating site conditions provides a more constant and reliable tool for identifying most nonpoint source pollution issues.

In general, when evaluating a site for nonpoint pollution problems Ecology considers the following questions:

- Are there sources of nonpoint pollution present?
- Is surface water present at the site or in proximity to the site? Are there groundwater concerns?
- Are there pathways for pollution to get to state waters? Are polluting activities occurring near or on the banks of rivers or streams?
- Is there evidence that pollutants have left the site and entered state waters?
- Are management practices in place for identified sources of nonpoint pollution to prevent the delivery of pollution to state waters?

The focused watershed work of nonpoint field staff includes:

- Coordination with partners (conservation districts, local government, health districts, producer groups, Tribes, environmental groups, etc.).

[96] As covered in other sections of this chapter, the other major sources of nonpoint source pollution are addressed through permits or other regulatory programs: urban/suburban development and stormwater is addressed through permits and requirements in TMDLs, forestry is addressed through the state Forest Practices Rules, and on-site sewage systems are regulated through local ordinances and regulations. Additionally, dairies are regulated through WSDA's Nutrient Management Technical Services program and are also not addressed by Ecology through watershed evaluations.
[97] See Chapter 7 for more information on Ecology's monitoring efforts.

- Securing resources, including technical and financial assistance, to support landowners and operators to make necessary management changes and/or implement pollution correction BMPs.
- Completing watershed outreach- this may be in coordination with local partners.
- Completing watershed surveys to identify sites of concern and prioritize sites for contact.
- Contacting landowners/operators to inform them of the landuse practices on their property that are known to contribute to water quality pollution.
- Completing site visits to communicate the impacts of polluting activities to landowners/operators and discuss options for correction, as well as potential financial assistance that might be available.
- Working cooperatively to implement recommended BMPs to address identified problems.
- Completing follow-up outreach; the process of working with landowners/operators to implement solutions can be a lengthy one and nonpoint staff strive to work *with* landowners to address pollution sources.
- Using enforcement tools if technical and financial assistance tools fail.

The watershed evaluation process provides accurate and specific information about pollution problems in a watershed. By driving the entire watershed of concern, staff are able to evaluate the landuse practices in the watershed that are contributing nonpoint pollution, in order to prioritize sites for engagement. Watershed evaluations are typically conducted at least annually, with identified sites recorded via the Nonpoint Implementation (NPI) mapping application (more information on NPI is in section 3.3.4). This allows staff to keep an ongoing record of identified sites of concern that can be used to compare site conditions from year to year.

3.3.2 Complaint Response

Ecology's complaint response system provides a tool for the public to identify pollution problems. The Environmental Report Tracking System (ERTS)[98] allows submission of environmental concerns, related to any medium. Ecology's ERTS coordinators assign those reports related to nonpoint pollution to Ecology nonpoint staff, as well as to external partners (other state agencies, federal agencies, and local governments), as appropriate.

When a report is not referred to other entities and/or Ecology is the lead responder, Ecology's nonpoint field staff are the first line of Ecology employees that a nonpoint discharger will interact with after a concern is reported. These staff are responsible for verifying whether there is a problem, conducting field visits or inspections, providing technical assistance, highlighting

[98] https://ecology.wa.gov/footer-pages/report-an-environmental-issue/statewide-reporting-form-erts

financial assistance opportunities, referring landowners (if needed) to local conservation districts or other resources for additional support, and utilizing enforcement when necessary. All of Ecology's regional offices have staff to respond to nonpoint source pollution complaints. When responding to agriculture-related complaints, Ecology will discuss and recommend BMPs consistent with the Clean Water Guidance.

3.3.3 Graduated Compliance Pathway

Regardless of the manner in which a priority site of concern is identified, nonpoint field staff follow the same process for contacting and working with sites to achieve compliance with state water quality law. Ultimately, Ecology is responsible for ensuring that individuals comply with state law, and that the BMPs implemented at a site are sufficient to address the identified water quality problem. Ecology's nonpoint program utilizes a strategy of escalating compliance when engaging with landowners and land managers to implement pollution-prevention BMPs. Except in rare cases of egregious pollution discharges, nonpoint staff make several attempts to work with landowners to address pollution problems.

Staff have a variety of outreach tools available to support successful engagement with landowners. First contact is typically attempted via a Technical Assistance letter (TA1), with a follow-up letter (TA2) sent if no response is received. Both letters include a discussion of the site conditions that led to the site being identified as a nonpoint pollution concern, an offer of technical assistance, discussion of financial assistance that may be available, and often a referral to the local conservation district, with the second letter utilizing a firmer tone and citation of potential violation of the Water Pollution Control Act (RCW 90.48).

Following contact with the site, staff will typically utilize a site visit to further evaluate site conditions and communicate to the landowner the land use practices that are contributing pollution to waters of the state. In this visit, staff will utilize the recommendations of the Clean Water Guidance to discuss implementable solutions with the landowner. In addition to this technical assistance from Ecology, staff will discuss potential financial assistance opportunities that may be available, as well as discuss the potential assistance available to them via a local non-regulatory partner, such as a conservation district. This first conversation is often the beginning of several conversations, as it often takes several visits to craft a plan and see action being taken. At times, this process of working to persuade change can take months, and even up to a year or more. Although each site is different, in general the process of acquiring funding for a project can be lengthy (a year or more), if a local organization does not already have a grant in place, and convincing landowners/operators to make changes may require a series of conversations and site visits. In some cases, the site owner or operator may not have been previously aware they were regulated by the state for impacts to water quality; because of this, staff place a heavy emphasis on the graduated compliance pathway, with a focus on education and engagement, financial assistance, and finding solutions together with landowners.

Only after informal compliance tools have been exhausted or a landowner indicates a refusal to comply with state water quality law will efforts shift to formal enforcement actions. The last informal compliance tool available to staff is the Warning Letter, which informs the landowner

that this is their final opportunity to take action to voluntarily comply with state water quality law. In many cases, this is the last opportunity for landowners to take advantage of financial assistance opportunities, as most grant resources require voluntary action and may not be available when the situation has escalated to formal enforcement.

When voluntary compliance efforts are unsuccessful, staff progress to formal enforcement, often in the form of an Administrative Order. Staff follow an established procedure for advancing to formal enforcement actions, which requires approval from the Water Quality Program's leadership. Administrative Orders describe the violation or potential violation of RCW 90.48 and outline options and a timeline for addressing the conditions on site that are causing pollution.[99] Failure to implement the Administrative Order can result in penalties. Although Ecology staff utilize formal enforcement action when necessary, the goal is to achieve water quality improvements through technical assistance and working with partners to provide financial assistance to landowners, in order to achieve voluntary compliance with state water quality law.

[99] In some cases, Ecology may issue both an administrative order and a penalty.

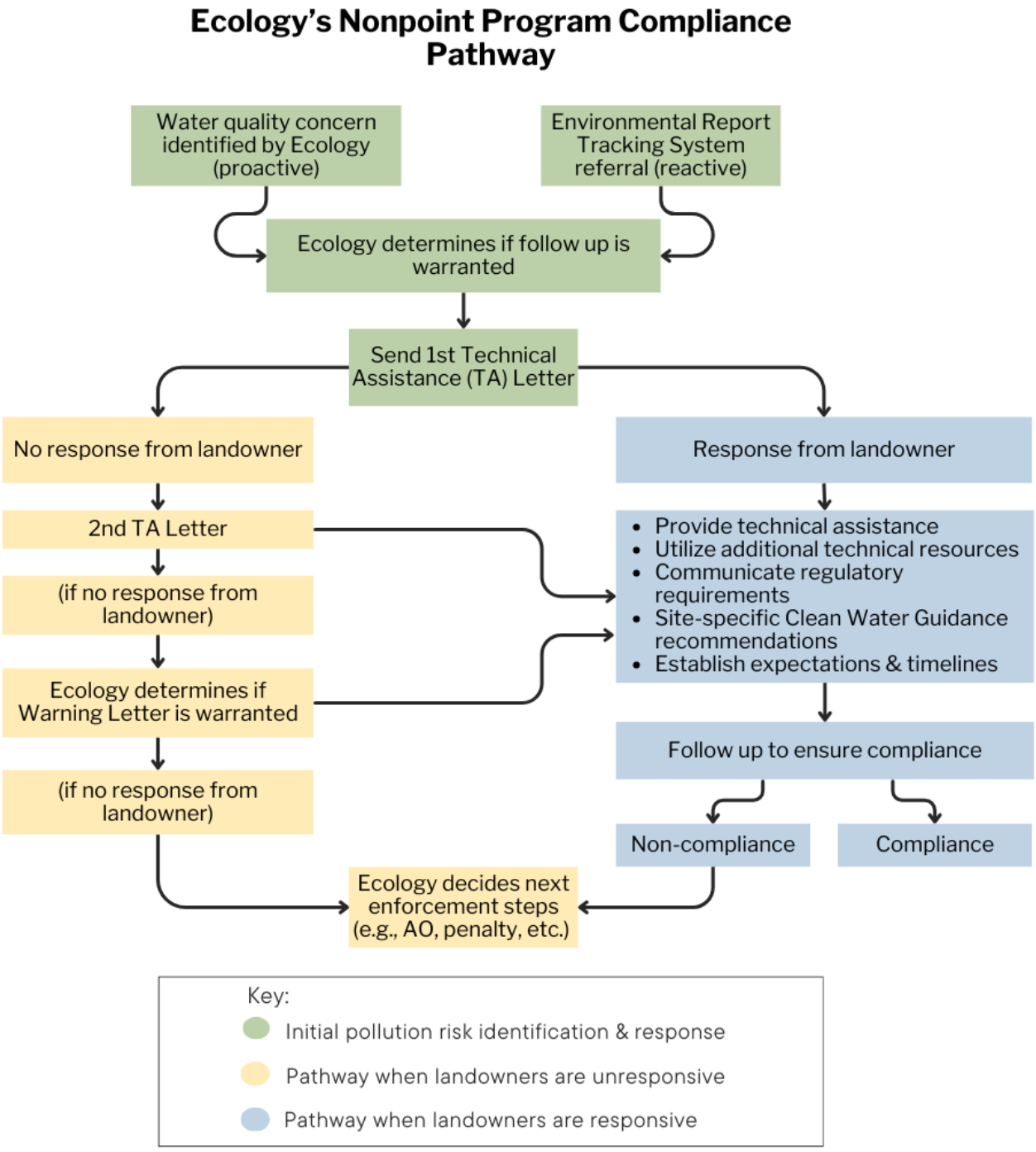

Figure 2. Generalized graduated compliance pathway utilized by Ecology field staff.

3.3.4 Nonpoint Implementation Data Tracking

When evaluating watersheds for the presence of nonpoint pollution, Ecology staff collect and manage a variety of important information that facilitates working with landowners to correct identified pollution concerns. Tracking this data supports long-term efforts to improve water quality at the watershed scale and is important for accountability, transparency, and continuity,

as well as supporting adaptive management and effectiveness monitoring. At a minimum, Ecology tracks the following information when conducting nonpoint field activities:

- The location of nonpoint source sites of concern identified during watershed evaluations and through complaint response.
- Observations of site conditions that cause pollution or are likely to negatively impact water quality.
- Communication records for sites that Ecology contacted after conducting watershed evaluations or in response to a reported environmental concern.
- BMPs installed to correct identified pollution sources at sites of concern.

Nonpoint Implementation Tracking System

As discussed above, Ecology nonpoint field staff routinely conduct watershed evaluations in priority watersheds to assess conditions that may be negatively affecting water quality. When field staff conduct watershed evaluations or respond to ERTS concerns, they collect a variety of information such as field notes and photographs to document site conditions. Staff also manage information such as records of communications with property owners and related documents, along with best management practice implementation. 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 integrated with other water quality efforts such as TMDLs, the Water Quality Program developed a nonpoint data management system.

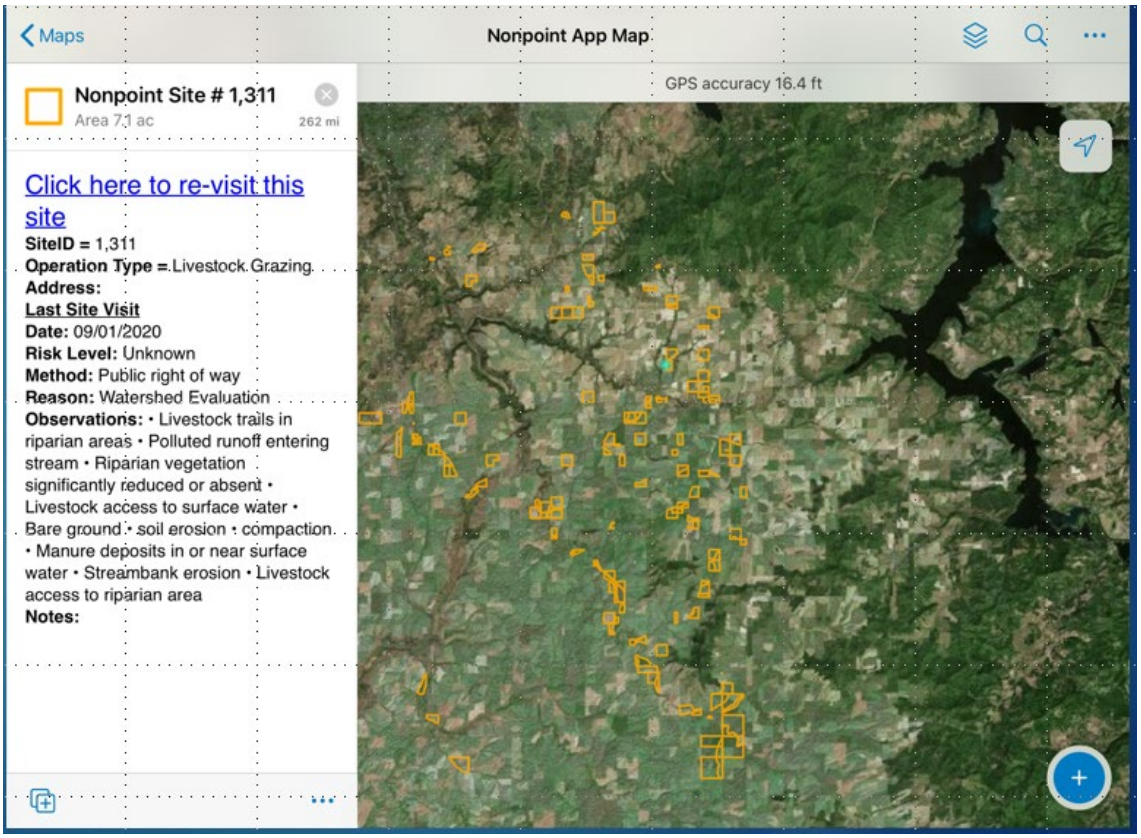

Figure 3. Screen view of the mobile application used to view data in the field.

The statewide system includes:

- Mobile applications to view, collect, and submit data in the field via cloud-based services.
- A web application to view, manage, track, and report data.
- An internal database to store all records/data.

Key nonpoint data collected and managed within the system includes:

- Location of pollution sources.
- Field observations and notes.
- Photographs of site conditions.
- Communications with property owners.
- Best management practices implemented.

Benefits of this system includes:

- Streamlined data collection in the field.
- Increased data quality and consistency.
- 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.

- Improved ability to track efforts, produce reports, and evaluate progress.
- Incorporation of geographic information systems allows users to better integrate and synthesize information.

The nonpoint data management system is the Water Quality Program's tool for collecting and managing nonpoint data and is the repository for all records associated with our watershed evaluations and complaint response efforts. Field staff receive routine training, and the system is designed to help ensure data quality and consistency.

Having a single statewide single system used by all nonpoint staff 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 provides better continuity and reduces knowledge gaps when staff turnover occurs. Most importantly, this information allows users to better assess changes over time at the site and watershed levels to 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 nonpoint system is continually evaluated and enhanced to meet field staff and programmatic needs.

Best Management Practice Data and Gaps

When BMPs are implemented using funds from an Ecology grant, specific information, such as its location, must be reported using our BMP approval form. Tracking this information supports our need to understand efforts to improve water quality, promotes accountability and transparency, and can be used to assist other efforts such as effectiveness monitoring.

BMPs that are implemented without Ecology funding are, at times, more difficult to track and gather accurate information on implementation metrics. In some cases, the collection of implementation data from other funding organizations or local restoration practitioners doing the work on the ground can be difficult, though the Recreation and Conservation Office (RCO) does maintain a public-facing database, PRISM (Project Information System). PRISM provides the public with the ability to see details on all grants submitted to and funded by RCO. Current PRISM reports allow for easy display of riparian acres treated. Although additional insight into acres of restoration versus maintenance and the likely effectiveness of buffers (informed by buffer width) would be advantageous for effectiveness monitoring, transparency around project locations and implementation goals helps inform the restoration landscape within watersheds and whether actions are being taken to address water quality concerns.

Recognizing the importance of transparency with regards to the use of public funds and the need to evaluate progress towards achieving water quality improvements, we will continue to work with partners to promote the collection of consistent implementation data and share that data with partners and the public.

3.4 Continued Implementation of Key Regulatory Programs

In addition to the Water Pollution Control Act, which grants the regulatory authorities under which Ecology's nonpoint source program operates, there are many additional state and federal regulatory programs which act to address nonpoint sources of pollution. For example, over the last four decades Washington State has created regulatory programs that have a nexus to nonpoint pollution, including the Growth Management Act (a series of state statutes first adopted in 1990), the Dairy Nutrient Management Act (adopted in 1998), and the Forests and Fish Law (adopted in 1999). The Salmon Recovery Act was also passed in 1999. While a more comprehensive list of these programs is included in Chapter 2, we discuss below several programs which are closely integrated with the strategy and work of Ecology's nonpoint efforts, described in the preceding sections of Chapter 3.

3.4.1 Forest Practices

Washington's streams benefit from a well-regulated Forest Practices Program. In Washington, forest practices are mandated under law to meet the state WQ Standards, implemented using forestry prescriptions developed and refined through a science-based adaptive management program. In response to the strength and focus of the current regulatory system, the Department of Ecology, in cooperation with the United States Environmental Protection Agency, established the Clean Water Act Assurances. To the extent that the current rules continue to be tested and refined as appropriate by a well-funded adaptive management program, the rules will be relied upon to ensure streams in the forested environment meet the state WQ Standards.

History of the Current Forest Practices Rules

The Forests & Fish Report

Leading up to the current Forest Practices Rules was the Forests and Fish Report[100] (FFR). This document, issued in 1999, was the result of the collaboration of partners including Tribes, forest landowners, local governments, environmental groups, and state and federal resource agencies. This diverse group outlined ways to protect water quality and aquatic and riparian-dependent species on non-Federal and non-Tribal forestlands in Washington.

The FFR identified four goals:

1. Provide compliance with the federal Endangered Species Act for aquatic and riparian-dependent species on state and private forestlands.
2. Restore and maintain riparian habitat to support a harvestable supply of fish.
3. Meet the requirements of the Clean Water Act for water quality.
4. Keep the Washington timber industry economically viable.

[100] https://www.dnr.wa.gov/Publications/fp_rules_forestsandfish.pdf

The Salmon Recovery Act of 1999

Following the release of the Forests and Fish Report was passage and enactment of the state's Salmon Recovery Act of 1999[101] (sometimes called the 'Forests and Fish Law'). This act directed the adoption of the goals of the Forests and Fish Report into the State Forest Practices Rules. Those rules are guided by the state's Forest Practices Board, and set standards for timber harvests, pre-commercial thinning, road construction, and other forest practices on over 10 million acres of state and private forestland.

The Forest Practices Habitat Conservation Plan

The Forest Practices Habitat Conservation Plan[102] (HCP) is a direct result of the Forests and Fish Report, a key goal of which is to meet the requirements of the CWA for water quality. The HCP was approved in 2006 by the U.S. Fish and Wildlife Service and NOAA's National Marine Fisheries Service. Covering 60,000 miles of stream habitat across 9.3 million acres of private and state forestlands, this 50-year agreement protects the habitat of aquatic species, supports economically viable and healthy forests, and creates regulatory stability for landowners.[103]

The Forest Practices Act

The Washington State Legislature found that the 1999 Salmon Recovery Act and the resulting Forests and Fish Rules "...taken as a whole, constitute a comprehensive and coordinated program to provide substantial and sufficient contributions to salmon recovery and water quality enhancement in areas impacted by forest practices…" (RCW 77.85.180(2)). It also recognized that federal and state agencies, Tribes, county representatives, and private timberland owners have spent considerable effort and time to develop the Forests and Fish Report (FFR) (RCW 76.09.055), and authorized the development of Forest Practices Rules based on the analyses and conclusions of the Forests and Fish Report. The rules include the development of an adaptive management program to:

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[101] https://app.leg.wa.gov/RCW/default.aspx?cite=77.85

[102] https://www.dnr.wa.gov/programs-and-services/forest-practices/forest-practices-habitat-conservation-plan

[103] The Forest Practices HCP is based on Washington's Forest Practices program and consists of two parts: 1) an administrative framework and 2) protection measures. It relies, in part, on an effective Adaptive Management Program. The purpose of the Adaptive Management Program is to produce technical information and science-based recommendations to assist the Forest Practices Board (the Board) in determining if and when it is necessary or advisable to adjust forest practices rules and guidance in order to achieve program goals, resource objectives, and performance targets (see below). As a result, a successful Adaptive Management Program is essential to ensuring the ongoing development and implementation of measures that effectively conserve the habitats of species covered under the Forest Practices HCP. The Forest Practices HCP relies on the performance goals of the FFR, including to "Meet or exceed water quality standards (protection of beneficial uses, narrative and numeric criteria, and antidegradation)."

. . . make adjustments as quickly as possible to forest practices that are not achieving the resource objectives . . . (and) shall incorporate the best available science and information, include protocols and standards, regular monitoring, a scientific and peer review process, and provide recommendations to the board on proposed changes to forest practices rules to meet timber industry viability and salmon recovery. (RCW 76.09.370(7))

These provisions for the WA Forest Practices Adaptive Management Program are designed to meet the goals and objectives for water quality and habitat for fish and other covered species within the jurisdiction of the Forest Practices Program.

The state Forest Practices Act (Chapter 76.09 RCW) and the Stewardship of Non-industrial Forests and Woodlands (Chapter 76.13 RCW) set up the foundation for management by the state and private landowners in Washington. Landowners must either follow the prescriptions established in the state Forest Practices Rules (see Chapter 222-30 WAC Timber Harvest regulations), or follow prescriptions established in federal Habitat Conservations Plans established for their specific lands. There are currently eight other HCPs that cover some of the state and private forest lands.

The Forest Practices Rules

The Forest Practices Rules in Washington are detailed and comprehensive. The rules cover a wide range of issues associated with forest harvesting, roads, and unstable slopes. The specific prescriptions are dependent on site factors such as the size of streams and the type and size of wetlands, as well as the productivity of the soils and the method of harvest (e.g. ~~clear cutting~~ vs. ~~thinning~~, ground based vs. cable yarding). As such, the rules are too complicated to restate here.

However, some generalized elements related to water quality protection are worth noting. These include leaving streamside forested buffers that range from 90-200 feet wide along each side of fish-bearing streams west of the Cascade Mountains and 75-130 feet wide buffers on the east side of the mountains. Fifty-foot wide buffers typically protect most of the perennially flowing reaches of non-fish-bearing waters on the westside, with an allowance for more variable width buffers on the eastside to mimic historic forest fire cycles.

All new forest roads must be constructed to the rule standards, and Road Maintenance and Abandonment Plans (RMAP) exist statewide to replace barriers to fish passage and bring roads into compliance with current road standards. As of December 31st, 2022, approximately 95% of all identified fish passage barriers on land owned by large industrial landowners have been corrected through the RMAP program. The remaining fish passage barriers are either recent discoveries or were issued deferrals due to transfer of ownership, change in water typing, or life of pipe determination.

The enhancements made to the Forest Practices Rules in response to the 1999 Forests and Fish Report targeted the protection five key riparian functions: 1) shade, 2) stream bank stability, 3) wood availability and recruitment, 4) sediment filtering, and 5) nutrients and leaf litter fall. This

~~occurs~~ through the combined results of: maintaining mature forested stands along streams, rivers, and wetland impoundments; disconnecting road runoff from natural drainages to the fullest extent feasible; and identifying and protecting potentially unstable slopes which, if allowed to fail, could contribute deleterious amounts of sediment to waterways.

It is important to note that the Forest Practices Board may not adopt or amend any rule that would affect water quality without agreement from the Director of Ecology (RCW 90.48.420(1)).

Framework for Administering the Forest Practices Rules

Overview of the Adaptive Management Program

The Adaptive Management Program was created to provide science-based recommendations and technical information to assist the Forest Practices Board[104] in determining if and when it is necessary or advisable to adjust rules and guidance for aquatic resources to achieve the resource goals and objectives of the Forests and Fish Report.

The Forest Practices Adaptive Management Program is a multi-caucus program that includes representatives from state departments (including Fish and Wildlife, Ecology, and Natural Resources), forest landowners, county governments, the environmental community, and Tribal governments. Representatives of these caucuses participate on two key Adaptive Management Program committees established by the Forest Practices Board: the Timber, Fish and Wildlife Policy Committee[105] (Policy) and the Cooperative Monitoring, Evaluation, and Research Committee[106] (CMER).

The TFW Policy Committee makes recommendations to the Board for a decision. CMER reviews existing science and contributes original research to the program. This science function is designed to produce unbiased technical information for consideration by the TFW Policy Committee and the Forest Practices Board, as illustrated by the interactive structure of the Adaptive Management Program in the following diagram. ~~The~~ DNR operationally implements the Forest Practices ~~Program~~. The Department of Ecology, the Department of Fish and Wildlife, and many of the state's Tribes are active cooperators with DNR in implementing key provisions of the state's Forest Practices Rules in the field.

[104] https://www.dnr.wa.gov/about/boards-and-councils/forest-practices-board
[105] https://www.dnr.wa.gov/about/boards-and-councils/forest-practices-board/tfw-policy-committee
[106] https://www.dnr.wa.gov/about/boards-and-councils/forest-practices-board/cooperative-monitoring-evaluation-and-research

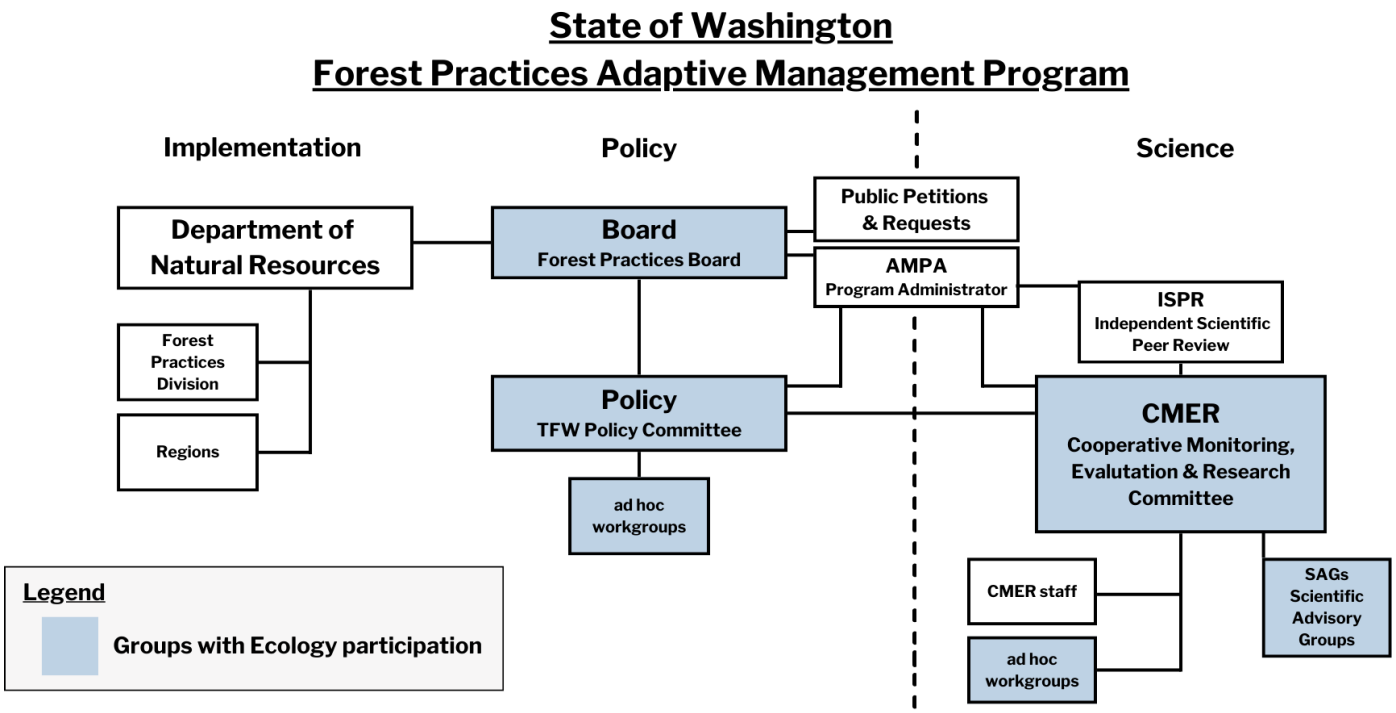

Figure 4. Forest Practices Adaptive Management Program.

Regional Ecology Forest Practices Specialist Staff

~~The~~ DNR is the lead agency for ensuring compliance with Forest Practices Rules on state and private forestlands in Washington. Ecology partners with Washington Department of Fish and Wildlife and Tribal biologists to support the implementation of the Forest Practices Rules. Each Ecology regional office includes specialized forest practices field staff who focus on water quality protection on forestlands. Forestry staff review and comment on ~~active~~ Forest Practices Application proposals, Water Type Modification Forms, and participate on interdisciplinary field teams to ensure adequate BMPs are planned and implemented for proposed forestry activities. When Forest Practices Application proposals are submitted that deviate from standard rules due to site-specific circumstances, the proponent is still required to protect resources in a manner that is at least equal in overall effectiveness as provided by the standard rules; in these situations, Ecology staff provide detailed review of alternate plan proposals. Ecology forestry staff review of alternate plans includes a recommendation to DNR as to whether the proposed activity should be modified, approved, or disapproved.

Forestry staff provide technical assistance to landowners, local governmental entities, and other agencies regarding the appropriate implementation of rules and BMPs intended to protect water quality. Similar to our nonpoint field staff, forestry staff also routinely respond to ERTS. In this case, forestry staff respond to reports of environmental harm allegedly caused by forestry activities or occurring on forestlands. If staff confirm rule violations have occurred or are occurring, immediate coordination with DNR and other jurisdictions on appropriate follow-up measures takes place. For example, if Ecology discovers that a forest road under State Forest

Practices jurisdiction is delivering sediment to water resources, our field staff will work with DNR to thoroughly review the site, assess impacts to water resources and habitats, and provide recommendations on follow-up mitigation, erosion control measures and/or other necessary enforcement action required to stabilize the site.

Forestry staff also actively participate in DNR's Forest Practices Compliance Monitoring Program[107] (CMP). The objective of the CMP is "…to monitor whether timber harvest and road construction across Washington State are being conducted in compliance with the Forest Practices Rules, and to explore areas that may require improvement via education, training, or updates to rules and guidance. The CMP publishes a statistical study of post-harvest evaluations every two years and reports results directly to the public and the Forest Practices Board." Compliance Monitoring site visits involve detailed field review of completed forestry activities near water resources to determine if the appropriate rules and conditions of forest practices applications were followed. Ecology staff adhere to CMP field protocols[108] and assist in field data collection to make compliance determinations.

Forest Practices Board (Board)

The Board has approval authority over proposed CMER projects, annual work plans, and expenditures. It establishes resource objectives to inform and guide the activities of the program and sets priorities for action. If consensus or an otherwise acceptable conclusion is not reached in TFW Policy, the Board makes the final determination. The Board also:

- Directs the program to complete work according to the CMER master project schedule.
- Determines whether the program is in substantial compliance with the CMER master project schedule.
- Notifies the National Marine Fisheries Service and the US Fish and Wildlife Service if the program is not in substantial compliance with the CMER master project schedule.
- Approves nominations for CMER committee members.
- Ensures that fiscal and performance audits of the Adaptive Management Program are conducted.
- Forwards to the Adaptive Management Program all proposals affecting aquatic resources for new rules and board manual content.
- Approves proposed updates to Schedules L-1 and L-2 of the Forests and Fish Report, "Key Questions, Resource Objectives, and Performance Targets for Adaptive Management."

[107] https://www.dnr.wa.gov/programs-and-services/forest-practices/rule-implementation
[108] https://www.dnr.wa.gov/publications/fp_field_protocols_2024.pdf

Timber, Fish, and Wildlife Policy Committee (TFW Policy Committee)

The TFW Policy Committee is a consensus- based policy forum to support the Adaptive Management Program. The TFW Policy Committee consists of members selected by and representing the following State of Washington TFW caucuses:

- Industrial private timber owners.
- Nonindustrial (small) private timber owners.
- Environmental community.
- Western Washington Tribal governments.
- Eastern Washington Tribal governments.
- County governments.
- Department of Natural Resources.
- Department of Fish and Wildlife.
- Department of Ecology.

The function of the TFW Policy Committee is to develop solutions to issues that arise in the Forest Practices Program. These issues may be raised by science reports on rule or program effectiveness, or policy questions on implementation of forest practices. Solutions may include the preparation of rule amendments and/or guidance recommendations.

The TFW Policy Committee also assists the Board by providing guidance to CMER and recommendations on adaptive management issues. TFW Policy Committee reviews and makes recommendations on the key questions, resource objectives, and performance targets, and recommends CMER program priorities for CMER work plans containing specific research projects to the Board. In cooperation with CMER, the Policy Committee reports to the Board the status of the CMER master project schedule prioritizing CMER research and monitoring projects, and provides an update of the CMER master project schedule at least every four years.

The Cooperative Monitoring Evaluation and Research Committee (CMER)

The purpose of CMER is to advance the science needed to support adaptive management. For the Adaptive Management Program, best available science is considered to be relevant science from all credible sources including peer-reviewed government and university research, other published studies, and CMER research products. Applicable historic information, privately produced technical reports, and unpublished data may have value and are considered as long as they can be assessed for accuracy and credibility. CMER is responsible for understanding the available scientific information that is applicable to the questions at hand, selecting the best and most relevant information, and synthesizing it into reports for the TFW Policy Committee and the Board.

CMER is composed of scientific representatives of TFW participating caucuses who are expected to maintain an objective scientific perspective. CMER operates on the basis of consensus. Because CMER is charged with producing credible, peer-reviewed technical reports based on best available science, participating caucuses are encouraged to nominate research scientists with research and publication experience.

The CMER work plan provides a long-term integrated strategy for how CMER supports the Adaptive Management Program. The work plan identifies six objectives towards this goal:

1. State critical research and monitoring questions that are pertinent to evaluating rule, guidance, and DNR products (i.e., rule tools) effectiveness.
2. Organize these questions into coherent program groupings.
3. Assess feasibility, resource risk, and scientific uncertainty addressed by each program grouping.
4. Develop an integrated strategy for accomplishing the work.
5. Rank programs/projects for implementation.
6. Develop budget estimates and timelines.

During 2020, the Washington State Auditor's Office conducted a performance audit of the Adaptive Management Program. This review resulted in a report, Adaptive Management Program: Improving Decision-Making and Accountability - Office of the Washington State Auditor[109]. The Audit contains recommendations for improvement. DNR and the Adaptive Management Program have committed to implementing many of these recommendations.

The Clean Water Act Assurances

Overview

Under Washington State law (Chapters 90.48 RCW & 76.09 RCW) Forest Practices Rules are to be developed so as to achieve compliance with the state WQ Standards and the federal Clean Water Act (CWA). Ecology has been designated as the state water pollution control agency for all purposes of the CWA, and has been directed to take all action necessary to meet the requirements of that Act. The original Clean Water Act Assurances (CWA Assurances) granted by Ecology in 1999 as part of the Forests and Fish Report were reviewed after June 30, 2009. 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 WQ Standards.

[109] https://sao.wa.gov/reports-data/audit-reports/adaptive-management-program-improving-decision-making-and-accountability

The foundation for granting the CWA Assurances was the belief that the Forest Practices Rules were a substantial step forward in environmental protection, and when implemented would provide the quickest and most efficient means for achieving environmental goals and compliance with the state's WQ Standards. Developing CWA mandated TMDLs to serve as regulatory water cleanup tools for forested watersheds was therefore viewed as a low priority, and the CWA Assurances established that Ecology would rely on the FFR-based Forest Practices Program for an initial ten-year period. It was assumed in 1999 that research and monitoring would occur to demonstrate that implementing the Forest Practices Rules would improve water quality and eventually bring forested waters into full compliance with the state's surface WQ Standards and thereby also satisfy the conditions under Section 303 of the federal CWA. The value of offering formal CWA Assurances is that they provide landowners and agencies with a predictable and consistent regulatory system, and in doing so provide an additional motivation for interested parties to participate in the Adaptive Management Program.

In July of 2009, Ecology completed a re-examination on progress in meeting the conditions for providing the CWA Assurances (2009 Clean Water Act Assurances Review of Washington's Forest Practices Program[110]). At that time, Ecology determined the Forest Practices Program had not achieved the level of information needed to verify that water quality in the forested environment will meet WQ Standards, or to verify that the conditions for offering the CWA Assurances in 1999 had been satisfied. In spite of these shortcomings, Ecology believed the Forest Practices Program still offered a viable and compelling management strategy for achieving water quality goals in the forested environment. As such, Ecology concluded that continuation of CWA Assurances would be warranted if specific actions were taken to improve the program's performance.

Taken ~~in total~~, the Forest Practices Program provides a substantial framework for bringing the Forest Practices Rules and activities into full compliance with the WQ Standards. Ecology concluded it remained in the best interests of water quality, and was most consistent with legislative intent, to work with the other participants to make needed improvements to the existing program. Ecology therefore conditionally extended the CWA Assurances with the intent to stimulate needed improvements to the forest practices and Adaptive Management Programs. Ecology, in consultation with key partners, established specific corrective milestones. The extension of the CWA Assurances remains conditioned on meeting these research and administrative milestones by the specific target dates described. These milestones serve as a corrective action plan necessary to retain the CWA Assurances into the foreseeable future.

The key result of the corrective milestones was to more directly prioritize water quality-based operational and science issues and concerns. But even before the CWA Assurances review had been completed, steps were already being taken to proactively address some of the corrective

[110] https://apps.ecology.wa.gov/publications/documents/0910101.pdf

milestones associated with operational issues, compliance monitoring, and assessing progress under Road Maintenance, Abandonment, and Planning (RMAP) rules.

Compliance with the corrective milestones is intended to demonstrate sufficient progress to satisfy the CWA Assurances and the adaptive management provisions of the state WQ Standards (WAC 173-201A-510(3)). Because extending the CWA Assurances was based on meeting the specific research and administrative milestones by the specific dates listed, failure to meet any milestone would be considered a basis for potentially withdrawing the CWA Assurances at that time.

The 2009 corrective milestones included 21 operational or administrative milestones, and phase-specific milestones covering 20 research projects examining prescription effectiveness questions. Between 2009 and 2019 Ecology made changes in the milestones in response to new information, natural disasters, and the global economic recession. While the initial list in 2009 is different from the list today, neither the number nor the complexity of the milestones has been reduced in scale, and the priority research remains focused on water quality protection issues. By the end of 2024, only a few operational and administrative milestones remain incomplete, and most of the priority water quality research is either in field implementation or in the study design phase.

In 2018 one of these studies, *Effectiveness of Experimental Riparian Buffers on Perennial Non-fish-bearing Streams on Competent Lithologies in Western Washington*[111] (Type Np Hardrock), was completed, with a follow-up consensus recommendation from TFW Policy to the Forest Practices Board stating action should be taken to address findings which identified that existing prescriptions were impacting water quality.

TFW Policy recommended the formation of a technical workgroup to address these findings that came from the Adaptive Management Program. A charter for a technical workgroup was formed to develop buffer prescription recommendations. The purpose of these recommendations was to have the technical committee identify a set of prescriptions to place in rule that would meet Washington State Water Quality Standards while minimizing economic impact to landowners. The Forest Practices Board unanimously accepted the recommendations and directed the formation of the Type Np Technical Workgroup.

In a letter dated December 9, 2019, then Director Bellon extended the Assurances, despite ongoing performance concerns, for a two-year period citing "Ecology views this (the formation of the workgroup to make recommendations to update the rules) as a positive step and looks forward to the establishment of a clear timeline for such rulemaking." The two-year extension referenced alignment with the workgroup charter timeline of developing a CR101 (Pre-notice Statement of Inquiry for rulemaking) by the summer of 2021, and a draft CR102 (Proposed Rule-Making) by December of 2021. The Technical Workgroup timeline also took into account completion of two companion studies out of the Adaptive Management Program to the Type

[111] https://www.dnr.wa.gov/publications/fp_cmer_hard_rock_phase1_2018.pdf

Np Hardrock study, *Effectiveness of Experimental Riparian Buffers on Perennial Non-fish-bearing Streams on Competent Lithologies in Western Washington– Phase 2 (Nine Years after Harvest)* (Type Np Hardrock, Phase 2) and *Effectiveness of Forest Practices Buffer Prescriptions on Perennial Non-fish-bearing Streams on Marine Sedimentary Lithologies in Western Washington* (Type Np Soft Rock). Due to issues in forming the workgroup and difficulties in conducting meetings of the workgroup because of the COVID-19 pandemic, the timeline was not met.

Despite the delays, the workgroup report was completed in June of 2021. TFW Policy began reviewing the report and preparing recommendations to the Forest Practices Board. It was clear that the timeline set in Director Bellon's letter would not be met. Director Watson allowed for one additional year the TFW Policy to develop rule recommendations to take to the Forest Practices Board and for the Board to direct staff to start the rule making process to put updated forest practices prescriptions for Type Np waters in place that meet Washington's Water Quality Standards. Director Watson and Director Bellon's letters are in Appendix I.

On November 9, 2022, the Forest Practices Board voted to move forward with a rule that was the majority recommendation for updated prescriptions on Type Np waters. The majority recommendation was developed by: Department of Fish and Wildlife, Conservation Caucus, Eastside Tribal Caucus, Westside Tribal Caucus and Department of Ecology.

This recommendation was designed to meet the Washington State Water Quality Standards. The November 9, 2022 Forest Practices Board decision is reflective of the Forest and Fish Agreement, the Adaptive Management Program, and the stated objective to meet Water Quality Standards. This demonstrative action was called for in Ecology's December 2021 letter to the Forest Practices Board as necessary for retaining the Clean Water Act Assurances.

On November 30, 2022, Director Watson extended the Assurances indefinitely to allow for rulemaking work associated with Type Np waters to proceed. The rulemaking work includes a cost-benefit analysis and small business economic impact statement. Ecology is also required to do a Tier II antidegradation analysis. In this latest extension of the Assurances, Director Watson expressed, "…expedient progress on the draft and final rules remains an important outcome to ensure water quality protections. If progress stalls or the parties abandon a continued commitment to the AMP, Ecology will consider withdrawing the Assurances and pursuing alternatives to achieve water quality protection under the CWA."

The Department of Ecology remains committed to the Assurances and will continue to report on the DNR rule effort in the Clean Water Act Assurances updates that we provide to the Forest Practices Board each year and in our annual Nonpoint Plan report to the Environmental Protection Agency.

Currently the AMP research program invests about six million dollars per year in examination of the effectiveness of the Forest Practices Rules. To be successful in meeting these milestones and consequently retaining the CWA Assurances, the caucus principals will need to continue to work together to ensure continued funding and support for the actions needed to meet the

specific milestones. Based on ongoing progress and the continued commitment by key entities, Ecology fully expects these steps to be successful. More information about CMER's work may be found at the Cooperative Monitoring, Evaluation, and Research Committee webpage[112].

Small Forest Landowners - Alternate Rules

The WA state legislature enacted special rules for some landowners. Small forest landowners are defined as entities that harvest less than 2 million board feet per year on average. The vast majority of these small forest landowners own less than 20 contiguous acres. These smaller forest landowners were provided with ~~rules that allow for greater harvests near streams~~, and they are only required to correct problems on their roads at the time the associated land is harvested. The Legislature established the Small Forest Landowner Office to be housed in the Washington State Department of Natural Resources to help landowners and to proactively improve environmental conditions on their lands using targeted financial, technical, and regulatory opportunities, as well as education.

Small forest landowners are provided with limited cost share funding and technical assistance to fix road crossing fish barriers on their properties, and limited additional appropriations to help compensate them for leaving trees along streams to protect water quality and other public resources in recognition of the disproportionate impact the Forest Practices Rules were estimated to have on small forest landowners.

With the exception of those rules established directly by the legislature, all the programs provided to small forest landowners were initially designed with the intention of meeting the goals of the federal Clean Water Act and the state WQ Standards and are scheduled to be tested through science based adaptive management. While no programs exist to directly examine the effectiveness of the rules established for small forest landowners, research designed to evaluate the rules applied to larger landowners will have value in providing feedback to the state legislature and the Forest Practices Board on the effectiveness of the small forest landowner rules as well.

3.4.2 Agricultural

Ecology and Agriculture

As detailed elsewhere in this Chapter, Ecology will continue to use its nonpoint source authority to address pollution problems on agricultural lands, and to develop additional strategies that might help us accomplish the goal of achieving clean water in Washington. The Federal Clean Water Act requires Ecology to develop and maintain guidance on Best Management Practices (BMPs) to protect water quality. To fulfill that requirement, Ecology has developed the Voluntary Clean Water Guidance for Agriculture (Clean Water Guidance), a thirteen chapter technical resource for agricultural producers that describes Ecology's recommendations to

[112] https://www.dnr.wa.gov/about/boards-and-councils/forest-practices-board/cooperative-monitoring-evaluation-and-research

protect water quality, and that will assist producers in identifying the BMPs and implementation strategies that best fit their farm's needs and will provide compliance with state water quality law (more information on the Clean Water Guidance can be found in Chapter 6, section 6.2.2).

Nutrient Management Technical Services Program at the Washington State Department of Agriculture

WSDA's Nutrient Management Technical Services program (NMTS) uses regulatory and non-regulatory tools to promote water quality protection from dairies.

Through the Dairy Nutrient Management Act (DNMA) WSDA conducts the following activities:

- Routine inspections at all dairy and permitted CAFO operations approximately every 22 months, including a wet-weather inspection every five years.
- Specialized inspections to address components of nutrient management, such as fall and spring lagoon storage assessments, clean water diversion checks, record keeping and agronomy reviews, and nutrient application assessments.
- WSDA's inspection process includes a review of on-farm BMPs outlined in the farm's Dairy Nutrient Management Plan, including an evaluation of BMP implementation status and effectiveness, and identification of potential additional BMPs or recommended management changes to protect water quality.
- WSDA partners with other agencies and technical assistance providers to educate manure users and to identify and correct actual or potential violations from livestock operations in watersheds with documented water quality issues.

WSDA has an established dairy compliance pathway to provide clarity for dairy producers and encourage compliance with water quality laws through the use of technical assistance, warning letters, notices of correction, notices of violation and, when necessary, administrative orders and civil penalties.

WSDA works with state and local agencies to promote nutrient management, soil health, and water quality protection and build programs that support its mission: to protect water quality and support a healthy agricultural business climate. While the NMTS program's regulatory authority is limited to dairy farms, NMTS provides technical assistance to a broader range of agricultural producers including permitted Concentrated Animal Feeding Operations, crop growers, and non-dairy manure applicators.

More information about the program may be found at the NMTS webpage[113]. See Chapter 2, Section 2.1.3 of this Plan for more discussion of the Dairy Nutrient Management Act that

[113] https://agr.wa.gov/departments/land-and-water/livestock-nutrients

provides regulatory authority to NMTS, and Appendix C for discussion of the limitations placed on WSDA's enforcement authority by the DNMA.

3.4.3 On-Site Sewage Systems (OSS) Regulation

There are about 950,000 small on-site sewage systems (OSS) in Washington. Failing on-site sewage systems can pose a threat to shellfish resources, impact groundwater, and cause nutrient enrichment of receiving waters.

In Washington, OSS are regulated by Chapter 246-272A of the Washington Administrative Code, "On-site Sewage System." This rule is adopted by the State Board of Health, developed and administered by the state Department of Health, and primarily implemented by local health jurisdictions for small systems with flows less than 3,500 gallons per day.

The regulations prohibit the discharge of sewage to surface waters and provide a permitting system for on-site sewage systems. Conditions for permits and system design requirements are set in state and local code, including minimum land area, horizontal setback and other site characteristics, soil and treatment standards, and more. Circumstances are described which require connection to a public sewer system. On-site sewage system designers must be licensed by the Board of Professional Engineers and Land Surveyors, and installers and pumpers must be approved by local health jurisdictions. As a part of the permitting process, local health jurisdictions are authorized to inspect on-site sewage systems.

As noted previously, local health jurisdictions implement front-line provisions of Chapter 246-272A WAC and have authority to announce stricter regulations (RCW 70A.105.050). Enforcement of rules related to onsite sewage systems is authorized in Chapter 70.05 RCW and RCW 70A.105.120.

The state Department of Health has back-up enforcement authority under RCW 43.70.040, "Powers and Duties of the Secretary of Health." The Department of Ecology also has the authority to take enforcement action under the Water Pollution Control Act.

To ensure that local programs are consistent with the state rule, the state Department of Health must approve local health codes. If a local government does not follow the state rule and has not applied or been approved for a waiver, the Department of Health works with the local health officer and local board of health to bring the local code into compliance with the state rule. If necessary, the Secretary of Health may exercise enforcement authority if a local health jurisdiction fails to enforce the state public health rules.

The Department of Health uses a technical advisory group made up of government and industry representatives to provide advice on technical wastewater issues and guidelines governing the design and use of public domain and proprietary on-site sewage treatment and distribution technologies approved for use in the state.

The state recognizes that proper operation and maintenance of on-site sewage systems is essential to ensure they function properly. Chapter 246-272A WAC describes the operation, monitoring, and maintenance responsibilities of system owners and the local health jurisdictions. System owners are responsible for properly operating their systems, periodically evaluating them, and pumping when necessary to avoid problems and to ensure ongoing performance. WAC 246-272A-0430 provides information on the enforcement actions that may be initiated when an OSS is out of compliance. Additionally, the Department of Health and local health jurisdictions provide technical support, oversight services, and information on proper operation and maintenance to owners. One example of an information source provided by the Department of Health can be found on their website[114].

Shellfish restoration projects provide an important opportunity to address on-site sewage systems. When a shellfish bed is downgraded, the state works with the local government and other interests to develop and carry out a restoration strategy, which typically includes work to find and fix failing OSS. The local jurisdiction must also create a shellfish protection district to implement long-term solutions to the problems, including on-site sewage system measures such as inspections, corrections, education, and operation and maintenance. In watersheds with a TMDL or other watershed cleanup plan, that plan will include nonpoint pollution control strategies for addressing on-site sewage systems which can include voluntary, educational, and regulatory programs. When a TMDL or a ground water study indicates that further restrictions must be placed on on-site systems, Ecology may impose those restrictions. Stronger local on-site sewage management programs will help to effectively protect shellfish beds and preempt reactive work.

Additives to and loadings from on-site sewage systems have been addressed by restrictions at the retail level, for example:

- Chapter 70A.105.060 RCW prohibits the use of Chemical additives in OSS unless certified by the state Department of Health.
- Chapter 70A.410 RCW bans the retail sale of laundry and dishwashing detergents which contain 0.5 percent or more phosphorus by weight.

Complementing the management and regulation of small on-site sewage systems, the Department of Health directly regulates and permits large on-site sewage systems (LOSS) with flows between 3,500 and 100,000 gallons per day. There are approximately 570 LOSS statewide, roughly half of which are located in the Puget Sound region. The Department of Health provides oversight to approve plans and inspects newly constructed systems, issues and renews permits annually for all systems, and tracks annual operation and maintenance reports to monitor system performance and operational activities.

[114] https://doh.wa.gov/community-and-environment/wastewater-management/septic-system/caring-your-system

Financial Support for Septic System Regulation

Local health jurisdictions are responsible for developing and implementing management plans describing their methods and financial capacity to educate and remind system owners of their operation and maintenance responsibilities. The state rule and chapter 70A.110 RCW on marine recovery areas establish more rigorous requirements for the 12 Puget Sound counties. The State Department of Health has produced numerous guidance documents and administers a small amount of state grant funding (approximately $760,000 in the 2021-23 biennium and $1.085 million in the 2023-25 biennium) to support the implementation of these management plans. The local plans and programs are all uniquely designed and implemented, and involve such activities as inventorying systems, tracking system status and inspection/maintenance activities, facilitating and enforcing work on failures, and educating system owners. Funding for the local management programs is limited and uneven at the local funding level. The State Department of Health is working closely with the local health jurisdictions and other interests to establish dedicated and sustainable funding for these programs.

In implementing the plans, local health jurisdictions generally focus their oversight on more complex systems that require regular maintenance and in locations where site risks are greatest, such as marine recovery areas and other sensitive areas.

To supplement this regulatory framework, the Washington Department of Ecology has loaned significant money from the Clean Water State Revolving Fund (CWSRF) to local governments to set up low-interest loan programs to repair or replace failing OSS. More information about this funding source is provided in section 3.2.2 of this chapter. The following is an overview of the funding program:

- Clean Water State Revolving Fund loans can be used by counties and cities to, in turn, loan money to landowners to repair or replace their failing systems.
- Centennial Clean Water Program grant funds can help defray some of the operating costs and lending risks for these programs. Counties and cities can use the grant funds to cover operating costs for the program, provide small grants to property owners, and establish a loan loss reserve account to cover their obligations if a property owner defaults on a loan.

In addition to funds administered by Ecology, the Department of Health has administered funds that directly support work to effectively manage and control fecal pollution and disease-causing bacteria and viruses from onsite sewage systems. Since 2011, these funds have been used to support operation and maintenance programs, rebates for homeowners to inspect, add risers and/or pump their systems and grant funds to repair and replace failing systems focused in the watersheds impacting shellfish harvest in Puget Sound.

State and local coordination

The importance of effective working partnerships is exemplified by work on Newman Lake in Spokane County. In 2008, Ecology developed a TMDL that identified septic systems as a source

of phosphorous to the lake. The Newman Lake Flood Control Zone District has long been treating the lake with alum, in an effort to control the phosphorus. However, residents around the lake continue to express concerns about water quality, particularly failing and/or improperly managed septic systems and cesspools. Aside from phosphorous issues, many properties around Newman Lake have geologic and lot size constraints that limit a homeowner's ability to install a drainfield.

In May 2018, Ecology funded the Spokane Conservation District to explore a cost-effective wastewater treatment alternative that tests the efficacy of treatment without a soil component to effectively keep pollution from entering the lake. In 2020, Spokane CD started a pilot study to install and test small scale membrane bioreactor (MBR) treatment systems on two parcels without the use of a drainfield. The results showed that these systems were effective in removing more than 97% of nitrogen and phosphorus from the effluent.

The pilot study showed these MBR systems to be effective at treating residential wastewater, however, due to a regulatory gap in permitting, neither Ecology, Department of Health, nor local health jurisdictions cover MBR as a sole treatment. This permitting gap may cause a roadblock to get more of these systems installed, limiting improvements to water quality. Ecology will continue to collaborate with interested partners to develop solutions; a scalable model for permitting MBR systems that could be applied statewide would have positive and far-reaching implications for improving water quality.

3.4.4 Water Quality Permits

Ecology will work to ensure that the nonpoint program is well-integrated with our regulation of point source pollution. Specifically, Ecology will focus on connections between the nonpoint and TMDL programs,[115] and the regulation of stormwater and concentrated animal feeding operations. We are also researching trading structures for the Puget Sound Nutrient General Permit that would encourage timelier implementation of nutrient control technologies.

[115] Where there is a legal requirement to obtain a permit the NPS program does not address or cover that source. Most of the time there is a clear line between nonpoint sources and permitted sources, but sometimes there may be questions. For example, stormwater from new and existing development, roads and construction; over time the coverage of permitted stormwater has expanded, however, those permits do not cover all stormwater. Stormwater sources that are not required to obtain a permit remain a nonpoint source of pollution and remain addressed by the nonpoint and TMDL programs. Likewise, animal feeding operations can be considered nonpoint sources up to the point that they have a discharge. At that point they may be required to be obtain a permit and are then considered a point source.

Current National Pollution Discharge Elimination System permits include:

- Aquatic Pesticide Applications
- Boatyards
- Bridge and Ferry Terminal Washing
- Concentrated Animal Feeding Operation (CAFO) - Facilities that have a discharge
- EPA Vessel General Permit
- Fresh Fruit Packing
- Sand and Gravel mining operations
- Stormwater:
    - Construction Stormwater
    - Industrial Stormwater
    - Municipal Phase I and Phase II Permits
    - WSDOT Municipal Stormwater
- Upland Fin-Fish Hatching and Rearing
- Vessel Deconstruction

Although all of the above permits are vital to the control of pollution into the state's waterways, there are certain permits that have a closer connection to the work of the nonpoint program. We will discuss these permits in more detail below.

Concentrated Animal Feeding Operation (CAFO) General Permit

The Concentrated Animal Feeding Operation General Permit[116] (CAFO GP) is for industrial animal feeding operations, including, but not limited to: dairies, beef feedlots, and poultry operations. These types of facilities confine livestock for 45 days or more in pens or barns and may discharge waste to surface and/or groundwater. The permit focuses on two areas of a CAFO facility: the production area (where animals are housed and fed) and the land application fields (where crops are grown, and manure nutrients are applied). Permit coverage is available to any operation, and is required for those which have discharged to waters of the state. In many watersheds where nonpoint staff are active, dairies are the largest operators with the largest number of livestock at an individual site. It is vital that our CAFO permit program works efficiently and effectively to regulate discharging facilities and prevent further pollution from entering state waters.

[116] https://ecology.wa.gov/regulations-permits/permits-certifications/concentrated-animal-feeding-operation

Currently, dairy operations are the most common facility type to obtain a CAFO Permit in Washington. Responsibility for regulation of dairy facilities is shared between the Washington State Department of Agriculture (WSDA) and the Department of Ecology; within Ecology, regulation of these facilities is the responsibility of CAFO permit staff, though nonpoint staff provide support, as needed. Due to this shared responsibility, the regulatory success of these facilities requires open communication, engagement, and full implementation of each party's regulatory authority. When each is working in harmony, WSDA regulates and provides technical assistance to licensed dairy facilities, requiring improvements to operations that will prevent discharges and protect water quality, while Ecology CAFO permit staff require permit coverage and monitor compliance with permit requirements, and nonpoint staff prioritize and address all other agricultural nonpoint pollution in the watershed.

Requiring discharging facilities to obtain permit coverage and adhere to the requirements of the permit is critical for our program to successfully address these sources. Recognizing the nexus between our nonpoint program and CAFO permit, and the need for dedicated resources to support getting discharging facilities permit coverage, Ecology's Water Quality Program has allocated an additional FTE that was previously focused exclusively on nonpoint field work to support the CAFO permit team, with a focus on getting facilities covered when there is a discharge. We will continue to coordinate with our water quality counterparts who manage the CAFO permit, to provide support to work towards the goal of full permit implementation.

The current permit expires January 6, 2028. Permit development is an iterative process; during each permit cycle, areas of improvement are identified, and each iteration of the permit strives to make those updates.

We value the close coordination between our nonpoint program and the CAFO permit team in developing the permit. From the nonpoint perspective, aligning BMP recommendations is our primary area of focus.

Construction Stormwater General Permit (CSWGP)

The General Permit for Construction Stormwater[117] establishes regulatory requirements appropriate for a broad range of construction activities and allows Ecology to efficiently handle the large number of CSWGP applications within the state. However, there are instances where the general permit is not appropriate for a specific construction project, in which case Ecology may require a discharger under the general permit to apply for and obtain an individual permit.

The CSWGP is required for construction activities (clearing, grading, and/or excavation) that result in the disturbance of one or more acres and discharge to surface waters of the state, as well as any size construction activity discharging stormwater to waters of the state that Ecology determines to be a significant contributor of pollutants and that Ecology reasonably expects to

[117] https://ecology.wa.gov/regulations-permits/permits-certifications/stormwater-general-permits/construction-stormwater-permit

cause a violation of any water quality standard. For example, significant contributors may include sites with known, potential, remediated, or historical contamination.

The CSWGP primarily addresses sediment, pH, phosphorus, and petroleum products. When activities are covered by the CSWGP, for regulatory purposes they are converted from nonpoint to point source pollution. As the population of Washington state continues to grow, the need for new housing and associated development increases as well- with this ongoing growth, regulation of construction activities is imperative to controlling pollution inputs to waters of the state.

The "significant contributor" determination for smaller construction activities requires communication and coordination between regional nonpoint and construction stormwater staff, as a site may begin as an unpermitted nonpoint site, and then become regulated as a point source polluter, transitioning between regulatory programs. The current CSWGP expires December 31, 2025.

Construction activities that do not require a permit are still encouraged to utilize the Ecology stormwater manuals. These activities would be considered nonpoint pollution sources and still have the responsibility to prevent the discharge of pollution to state waters.

Municipal Phase I and Phase II Permits

Municipal Stormwater General Permits[118] regulate discharges from Municipal Separate Storm Sewer Systems (MS4s). These drainage systems are separated from sanitary sewer systems and are owned and/or operated by cities, counties, or other public entities. The Municipal Stormwater Permits require permittees to manage and control stormwater runoff so that it does not pollute downstream waters.

The Phase I permit regulates stormwater discharges in the most highly populated areas in the state. Permittees under the Phase I permit include Clark, King, Pierce, and Snohomish Counties, and the cities of Seattle and Tacoma. The Phase II permits regulate discharges from certain "small" MS4s in Washington state, defined as those cities and counties with a population of less than 100,000 and located in urban areas. There are two Phase II permits, one for western Washington and one for eastern Washinton.

The Municipal stormwater permits require permittees to develop and implement a Stormwater Management Program (SWMP). A SWMP is a set of actions and activities designed to reduce the discharge of pollutants from regulated MS4s, meet state AKART requirements (all known, available, and reasonable methods of prevention, control, and treatment), and protect water quality, as outlined by the permit. To guide the selection of activities and BMPs to protect

[118] https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits

water quality, Ecology provides permittees with two Stormwater Management Manuals[119] (SWMMs): one for the west side and one for the east side of the state. The SWMMs are utilized by permittees to meet permit requirements. Updates to the SWMMs were completed on July 1, 2024. Significant updates included:

- Updates to the thresholds for when new development and redevelopment projects must provide stormwater BMPs.
- Edits to identify light rail guideways as a pollution-generating surface, and new BMPs for use on light rail projects.
- New content describing impacts to stormwater from climate change, nutrients, and toxic organics.
- Updates to Source Control BMPs, highlighting how to provide source control for PCBs.
- Inclusion of the option to use the new "High-Performance Bioretention Soil Mix" when designing bioretention BMPs.

The current municipal stormwater permit expires July 31, 2029. Permit development is an iterative process; during each permit cycle, areas of improvement are identified, and each iteration of the permit strives to make those updates.

Non-permitted jurisdictions are still encouraged to utilize Ecology's Stormwater Management Manuals. These systems are considered nonpoint pollution sources and can help prevent pollution by implementing BMPs from the Stormwater Management Manuals.

Biosolids General Permit

Biosolids are the nutrient-rich organic materials resulting from the treatment of sewage sludge (the name for the solid, semisolid or liquid untreated residue generated during the treatment of domestic sewage in a treatment facility). Facilities in Washington that manage biosolids operate under a statewide General Permit for Biosolids Management issued by Ecology.[120] This permit is the main document that guides our implementation of Washington's biosolids rules for facilities that manage biosolids. These state rules meet or exceed federal rules in 40 CFR 503, as authorized by the Clean Water Act.

The permit covers the treatment, handling and land application of biosolids and other processes and aspects of operations related to biosolids.[121] The state biosolids program regulates biosolids (including septage) applied to the land, biosolids sold or given away in a bag

[119] https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals
[120] Chapter 70.95J RCW and Chapter 173-308 WAC.
[121] More information on biosolids can be found here: https://ecology.wa.gov/Learn-about-Biosolids; More information on the permit system can be found here: https://ecology.wa.gov/Biosolids-permit-system; More information about the current permit can be found here: https://ecology.wa.gov/Biosolids-permit-actions

or other container, biosolids being stored, biosolids transferred from one facility to another, and sewage sludge disposed in a municipal solid waste landfill.

The flexible nature of the General Permit enables Ecology to include additional or more stringent requirements to each individual facility and land application site as necessary, if requirements in rule or permit are not stringent enough to effectively protect human health and the environment. These additional requirements can be described as further efforts to mitigate impacts to human health or the environment. They are prescribed based on site characteristics; guidance, like the Biosolids Management Guidelines[122], derived from research and real-world application; and experience from universities and regulatory entities. Some examples of such mitigation efforts include:

- Assessing site characteristics like slope, crop type, soil type, and public or livestock access to determine if it's appropriate to receive biosolids.
- Prescribing appropriate buffer zones between biosolids application sites and neighboring properties or waters of the state depending on slope, soil type, and method of application, etc.
- Restrictions on land application during rain and snowfall or based on depth to groundwater. Seasonality of application may also be restricted to avoid high rainfall or flood events, and some sites require checking for the presence of shallow groundwater prior to beginning application.

More information on the biosolids program and general permit can be found at this website - Biosolids permit system - Washington State Department of Ecology[123].

3.4.5 401 Certification for Hydropower

Washington State maintains authority under Section §401 of the Clean Water Act to certify any federal permit or license that may result in a discharge to waters within state jurisdiction. Hydropower dams that receive a license to operate from the Federal Energy Regulatory Commission (FERC) are required to obtain this certification from the state. Federal hydropower dams on the Snake & Columbia rivers must also receive a §401 Water Quality Certification (401 WQC) for EPA-issued NPDES permits. Ecology receives technical assistance from WDFW on issues related to fish and habitat to develop and implement 401 WQC conditions.

The 401 WQC, and conditions therein, ensure that the federally license or permitted hydropower facilities in Washington meet state laws, meet Water Quality Standards, and protect and enhance all aspects of water quality, flow, habitat, and aquatic resources.

Washington State's 401 WQCs are issued as state administrative orders to these facilities to meet minimum requirements and where necessary, follow adaptive management procedures

[122] A list of biosolids laws, rules, and guidance documents that inform our decision making can be found here: https://ecology.wa.gov/Biosolids-laws-rules-docs
[123] https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Biosolids-permit-system

to attain and maintain all regulatory requirements. Ecology has 5 staff developing and implementing 401 WQC conditions for 64 public, private, and federal hydropower facilities.

This work includes:

- Participation in FERC license negotiations through a multi-year settlement agreement process in cooperation with the Attorney General's office and Ecology Regional Directors' offices.
- Development of 401 WQC, including dam-specific conditions and public review process.
- Reviewing and preparation of comments on natural resource study plans, Quality Assurance Project Plans, environmental summaries, and compliance reports related to water quality, habitat, and fish protections.

Most relicensed dams now have compliance schedules included in their §401 WQ certification conditions which require ongoing implementation activities to comply with WQ standards. See Ecology's 401 Water Quality Certifications for hydropower licenses webpage[124] for more information.

3.5 Partnerships

Ecology works collaboratively with other key state and local entities to coordinate the implementation of NPS control measures. In some cases, a partner agency or local government is the lead regulatory agency. In other cases, they are the on-the-ground implementers of nonpoint pollution control activities. The importance of partnerships to address nonpoint pollution sources cannot be overstated. Whether it is implementing TMDLs or other watershed cleanup projects, administering our grants and loans program, responding to complaints, or developing education and outreach programs, partners are fundamental to successfully implementing our nonpoint program and achieving the state's water quality goals.

Additionally, we recognize the importance of existing locally led efforts (both voluntary and regulatory) to reduce nonpoint pollution. We continue to look for ways to help strengthen and augment existing programs that address and prevent the harmful effects of nonpoint pollution. Further, we will look to support programs that bring together farmers, landowners, communities, and local organizations to address nonpoint pollution.

Local restoration practitioners are vital to achieving on-the-ground implementation of BMPs to address nonpoint sources of pollution. Conservation districts provide technical assistance, engineering designs for more complex BMPs, and funding assistance for landowners and operators. Ecology's funding sources require a pass-through entity, and therefore, local on-the-ground organizations such as CDs, Counties, and non-profits are key partners for the success of

[124] https://ecology.wa.gov/regulations-permits/permits-certifications/401-water-quality-certification/certifications-for-hydropower-licenses

Ecology's funding programs. More information on water quality partnerships can be found in Chapter 4.

3.6 Additional State Initiatives

Several important initiatives are underway that our nonpoint program supports. Ecology can support these statewide efforts through our TMDL, ARP, and STI implementation efforts, grant and loan programs, technical expertise and research support, and by providing a regulatory backstop.

Puget Sound Partnership Puget Sound Action Agenda

The 2022-2026 Action Agenda charts the course for Puget Sound recovery. It presents the most effective and beneficial outcomes, strategies, and actions for Puget Sound recovery and resilience, supported by science and robust partner engagement. The Action Agenda addresses the magnitude of the challenges present in Puget Sound from the pressures of human activities including climate change and population growth. It calls for bold leadership to direct and support recovery by maximizing expertise, experience, and networks. It incorporates human wellbeing, Tribal nations' treaty rights, environmental justice, and climate justice. It provides guidance for funding and policy proposals protecting Puget Sound. Finally, it fulfills the Puget Sound Partnership's statutory mandate and purpose of the Clean Water Act's National Estuary Program (NEP); under section 320 of the CWA, each NEP must develop and implement a Comprehensive Conservation and Management Plan (CCMP), a long-term plan that guides their efforts.

The 2022-2026 Puget Sound Action Agenda addresses nonpoint source pollution by addressing a number of relevant topics such as stormwater runoff, on-site sewage system runoff, runoff from timber harvest, and agricultural runoff. There are targets ranging from reducing specific types of nonpoint pollution (e.g., from on-site sewage systems) to protecting natural resources and local economies by reducing resulting harms from nonpoint pollution. For more information about the targets see the 2022-2026 Action Agenda website[125].

The current Action Agenda emphasizes three areas of priority, referred to as the Strategic Initiatives, as follows:

1. *Prevent pollution from urban stormwater runoff*. Polluted runoff from roads, roofs, parking lots, and other paved areas is the biggest threat to Puget Sound's water quality. Although many tools and technologies exist for reducing stormwater pollution, much broader use of them needs to be made for the scale of impact that is necessary for Puget Sound.
2. *Protect and restore habitat*. The rate of habitat destruction still outpaces recovery efforts, a fact that must be reversed. Restoring damaged shorelines and protecting salmon habitat

[125] https://www.psp.wa.gov/2022AAupdate.php

along the many rivers and streams that flow into Puget Sound is necessary to save salmon (as a keystone species) and honor Tribal treaty rights.

3. *Restore and re-open shellfish beds*. Shellfish harvesting is a major Puget Sound industry, and a Tribal treaty right. Both are threatened by pollution that has closed more than 7,000 acres of Puget Sound beaches. Shellfish health begins on land, through reduction of pollution from rural and agricultural lands and maintenance and repair of failing septic tanks.

The Puget Sound Partnership is currently working to update the Puget Sound Action Agenda, developing the next iteration of the plan, which will span 2026-2030. Per the 2026-2030 Action Agenda update webpage[126], this update will:

- Strengthen implementation, accountability, alignment, and tracking of the Action Agenda.
- Elevate and further human wellbeing, climate change, and environmental justice.
- Elevate and honor Tribal sovereignty and treaty rights.
- Promote meaningful engagement of diverse audiences, including vulnerable populations and overburdened communities.
- Update the online Action Agenda to improve accessibility and usability.

Ecology will continue to encourage the Action Agenda, which is a CWA Section 320 Comprehensive Conservation and Management Plan, to support, align, and be consistent with the nonpoint program.

Environmental Justice

In 2021 Washington State Legislature passed the Healthy Environment for All Act[127] (HEAL Act), Chapter 70A.02 RCW. This was Washington's first state law to define environmental justice (EJ).

The law establishes a clear definition for Washington that builds on the Environmental Protection Agency's definition of environmental justice:

> "Environmental justice means the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, rules, and policies. Environmental justice includes addressing disproportionate environmental health impacts in all laws, rules, and policies with environmental impacts by prioritizing vulnerable populations and overburdened communities, the equitable distribution of resources and benefits, and eliminating harm."

[126] https://www.psp.wa.gov/2026AAupdate.php
[127] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.02

The HEAL Act requires Ecology and six other State agencies (the Departments of Agriculture, Commerce, Health, Natural Resources, Transportation, and the Puget Sound Partnership) to infuse environmental justice into our operations, including:

- Considering environmental justice in our budget and funding practices.
- Conduct Environmental Justice Assessments for Significant Agency Actions.
- Embed environmental justice into our strategic plans.
- Adopt community engagement plans and improved Tribal consultation guidance.
- Define metrics, track, and report on our progress towards long-term environmental justice goals.

Prior to the passage of the HEAL Act, the Department of Ecology included environmental justice actions in the 2021-2023 Agency Strategic plan[128]. We have continued to center environmental justice in our Strategic Planning efforts. The most recent Agency Strategic Plan will span 2025-2030 and outlines our Agency's commitment to protecting, preserving, and enhancing Washington's environment for current and future generations. We strive to develop strategic plans that have a broad and holistic approach to what we do and how we do it. Below are several examples of initiatives identified to address environmental justice in our Agency work; see the 2025-2030 Strategic Plan[129] for additional information on goals and strategies, which include:

- Strengthening Ecology's language access practices through policy, guidance, training, technical assistance, and performance measures.
- Implementing a process for community members and organizations to submit environmentally beneficial project ideas for Ecology's review and approval. Individuals or businesses that we take enforcement actions on can then propose to implement these ideas as part of an enforcement settlement.

Climate Change

Washington State is at the forefront of combatting the environmental impacts of climate change. Water quality is affected by climate impacts and that makes the nonpoint work that is identified in this nonpoint plan critical. Riparian shade is critical for all of our waters, especially those smaller streams where riparian buffers provide vital shade and habitat for aquatic life. Temperature impaired listings continue to increase with each water quality assessment. If the nonpoint sources in a watershed are not corrected, then the burden of addressing these impacts is passed on to point source dischargers that need permits to discharge. This work is also essential for protecting the beneficial uses of "fishable" that is a core foundation of the Clean Water Act.

[128] https://ecology.wa.gov/about-us/who-we-are/strategic-plan/2021-23-strategic-plan
[129] https://ecology.wa.gov/about-us/who-we-are/strategic-plan/2023-25-strategic-plan#goalbox1

In May 2021, Washington's legislature passed the Climate Commitment Act, a sweeping bill that directs Ecology to develop and implement a statewide cap-and-invest program to reduce greenhouse gas emissions. Only the second such program in the U.S., this program works alongside other critical climate policies to help Washington achieve its commitment to reducing greenhouse gas emissions by 95% by 2050.

Under a directive from the Washington State legislature, Ecology led staff from ten agencies and the University of Washington Climate Impacts Group to develop the Washington State Climate Resilience Strategy[130], published in September 2024. The strategy addresses the greatest climate risks facing Washington state and proposes actions to help communities, infrastructure, and natural and working lands become more resilient to climate change threats facing our state, such as: drought and reduced water availability, marine and coastal changes, flooding, extreme heat, and wildfire and smoke. Through the actions laid out in the Climate Resilience Strategy we are enabling state and local agencies, public and private businesses, nongovernmental organizations, and individuals to prepare for, address, and respond to harmful greenhouse gas emissions, warmer temperatures, loss of natural water storage, more extreme weather events, and other climate change effects. Ecology's nonpoint program will continue to increase climate change resiliency by:

- Encouraging integrated watershed management.
- Facilitating holistic and cross disciplinary water management approaches.
- Prioritizing the implementation of temperature TMDLs.
- Considering potential climate change impacts to water quality during TMDL development.
- Working with our partners to increase levels of riparian protection and restoration through our Clean Water Guidance and DNR's Forest Practices Program.

Salmon Recovery

In Washington state, many organizations are working to recover salmon. The first 'Statewide Strategy to Recover Salmon: Extinction is not an option,' was written in 1999, with updates in 2006 and 2021. Many aspects of the strategy, such as investing in clean water infrastructure for salmon and people, building climate resiliency, and protecting and restoring vital salmon habitat, are in alignment with the goals of Ecology's Water Quality Program and are supported by the Nonpoint Program's efforts to address nonpoint pollution. Chapter 12 of the Clean Water Guidance provides recommendations for riparian buffers that are intended to address all pollution inputs to Washington's waters, including temperature impairments. Because Ecology nonpoint staff utilize the Clean Water Guidance to give recommendations to landowners, and the BMPs included in the CWG are a condition of receiving Ecology's Water Quality Combined Funding grants, we are in alignment with state salmon recovery initiatives and will continue to

[130] https://apps.ecology.wa.gov/publications/SummaryPages/2401006.html

promote riparian buffers that will result in restoring cool water temperatures in our salmon streams and rivers.

Riparian Restoration

In Washington State, riparian restoration is inextricably linked with salmon recovery. Protecting and restoring salmon throughout their historic range in Washington requires riparian protection and restoration. As detailed elsewhere in this Plan, riparian restoration is a key BMP that addresses a variety of nonpoint pollutants, and statewide implementation of riparian buffers is critical for meeting water quality standards. In recognition of this, Washington State continues to engage in widespread planning and implementation efforts to support riparian restoration. Many of these efforts, particularly those focused on providing funding support, are described in Chapters 3 and 5 of this Plan. Riparian restoration requires coordinated partnerships, which are woven throughout this document, and particularly highlighted in Chapter 4.

Riparian restoration efforts occur at all levels- individual landowners, community groups, CDs and other local organizations, Tribal entities, and County, State, and Federal government; we recognize the widespread and diverse efforts to restore our state's riparian habitat, to improve water quality and support salmon restoration, and will not attempt to summarize these varied and extensive efforts at all levels.

Outstanding Resource Waters

As defined by WAC 173-201A, Outstanding Resource Waters (ORWs) are high quality waters designated by the state due to their exceptional water quality, ecological or recreational significance, unique habitat, or cold water refuge. ORWs are given the highest level of protection under the state antidegradation policy. As stated in previous sections of this Plan, the majority of our nonpoint efforts are focused on restoration, however, the protection of high functioning, high quality waters is an invaluable tool for preventing degradation of water bodies, reducing the amount of restoration required in the future.

In response to nominations received in 2021, and following consideration of public comments and weighing public support for each nomination, in 2023 Ecology designated four bodies of water as outstanding resource waters (see WAC 173-201A-332 for more information on these waterbodies). These included portions of the Napeequa River and tributaries (Chelan County), the upper watershed of the Green River and tributaries (Skamania County), the upper watershed of the Cascade River and tributaries (Skagit County), and Soap Lake (Grant County). This was the first time Washington assigned the highest level of protection for a waterbody under our antidegradation section of the water quality standards.

The use of the ORW designation provides a framework for protecting water bodies that already exceed state water quality standards. By ensuring that these water bodies maintain superior water quality, we can continue to focus time and effort on improving water bodies that are degraded by nonpoint pollution.

Designation process

Anyone can nominate a waterbody for ORW designation. When Ecology receives an ORW nomination, we have 60 days to review the nomination material and determine whether the state should take the next step in considering a public rulemaking process for the ORW designation. As part of the 60-day review, Ecology:

- Determines whether the nomination material provides sufficient information supporting how the waterbody meets the eligibility criteria described under WAC 173-201A-330(1).
- Contacts Tribes, local elected officials, and other local entities in the region of the nominated waterbody to notify them of the nomination.
- Announces to the public the nomination through water quality email notices and publishing the nomination on Ecology's website.
- Meets with the proponents to discuss the nomination.

If Ecology determines the nominated waterbody meets the eligibility criteria, the next step is to schedule a review of the nomination through a public rulemaking process. During this review, we gather additional information on how a nominated waterbody may meet our eligibility criteria. A successful ORW nomination receives strong support from the local community and would not likely cause substantial negative economic impacts. As such, Ecology conducts extensive community and Tribal outreach before deciding whether to adopt an ORW designation. This outreach can include:

- Informational webinars and meetings in the region of the waterbody to discuss implementation questions and concerns before a nomination is proposed for formal comment.
- Inviting formal Tribal consultation at each major phase of the rulemaking process.
- Discussing the nominations with Tribal Water Quality staff at critical junctures of the rulemaking process.

Types of ORW protection

Ecology can designate a waterbody under Tier III(A) or Tier III(B) protection.

A Tier III(A) designation is the highest level of protection. After a waterbody has been designated as a Tier III(A) ORW, no further degradation is allowed.

A Tier III(B) designation is the second highest level of protection. Any new or expanded source of pollution to a Tier III(B) ORW cannot cause a measurable change in water quality. Nonpoint sources of pollution must use all applicable structural and nonstructural best management practices (BMPs) with the goal of reducing the degradation of water quality to non-measurable levels, if it is not feasible to completely remove the source of pollution.

Protecting ORWs after a designation

Once an ORW is designated, the quality of the water body must be maintained according to the protection level assigned (Tier III A or B). Meaning, an activity would not be permitted to discharge to the water body if it is demonstrated that the activity would cause the water quality to permanently degrade. This protection also applies to any tributaries to an ORW.

In some situations, limited degradation of an ORW-designated waterbody may occur on a short-term or temporary basis. Those situations include:

- Temporary actions necessary to protect the public interest, which can include activities to fight wildfires or to repair roads or trails.
- Treatment work bypasses for sewage, waste, and stormwater when such a bypass is unavoidable to prevent loss of life, personal injury, or severe property damage.
- Response actions taken in accordance with the Comprehensive Environmental Response Compensation and Liability Act to alleviate a release into the environment of substances which may pose an imminent and substantial danger to public health or welfare.

If an activity is proposed on or near an ORW that could affect the outstanding quality of the water, Ecology or the authorizing entity may conduct a review of that activity to ensure the water quality would continue to be protected. Proposed activities that could cause nonpoint source pollution, such as forestry activities, can be reviewed for potential impacts to an ORW. Any activity that has the potential to cause nonpoint pollution must use all available BMPs to prevent permanent lowering of water quality, or for Tier III(B) ORWs, any measurable lowering of water quality. See Ecology's webpage[131] for more information about the ORW designation process and waterbodies adopted as outstand resource waters.

Puget Sound Nutrient Source Reduction Project

The Puget Sound Nutrient Source Reduction Project is a collaborative effort with Puget Sound communities and partners to address human sources of nutrients. The project is focused on addressing low dissolved oxygen levels in Puget Sound that do not meet state water quality standards. In 2017, the Puget Sound Nutrient Forum was formed as a large public advisory group for the project to discuss, learn, and provide input on how to reduce human sources of nutrients entering Puget Sound. With partner input, Ecology is in the process of developing the Puget Sound Nutrient Reduction Plan, which will identify nutrient reduction targets for marine point sources and the watersheds in the greater Puget Sound area. During future phases of the project Ecology will develop clean-up plans to meet the watershed targets. Controlling nonpoint sources of nutrients will be critical to the overall success of this project. More

[131] https://ecology.wa.gov/water-shorelines/water-quality/water-quality-standards/antidegradation#adopted

information on the Puget Sound Nutrient Reduction plan: Puget Sound Nutrient Reduction Project - Washington State Department of Ecology[132].

Sound Vessel Sewage No Discharge Zone

A No Discharge Zone (NDZ) is a designated body of water where the discharge of sewage (blackwater/toilet waste) from boats, whether treated or not, is prohibited. There are currently more than 90 NDZs in the United States. The Puget Sound NDZ is the first NDZ established in Washington.

Prior to petitioning EPA for NDZ status under the Clean Water Act, Ecology conducted a detailed evaluation which included gathering data on Puget Sound vessels, pumpout facilities, the conditions of Puget Sound, marine sanitary device performance, boater surveys, research on other states with NDZs, an evaluation of implementation, and outreach to the public and partners. Ecology's 2014 draft petition received 26,000 public comments, with the vast majority supporting the draft petition. After Ecology submitted a final petition, EPA reviewed it, accepted it, and published information in the Federal Register for formal comment prior to a final determination by EPA. The Puget Sound NDZ was adopted on April 9, 2018, and the NDZ rule (WAC 173-228) became effective on May 10, 2018. Four types of vessels had additional time, until May 10, 2023, to comply with the NDZ, including tug boats, commercial fishing vessels, small commercial passenger vessels (<249 overnight passengers), and NOAA research and survey vessels.

The designated area of the Puget Sound NDZ includes all Washington marine waters east of New Dungeness Lighthouse, at the east end of the Strait of Juan de Fuca, plus Lake Washington, Lake Union, and the waters that connect them to Puget Sound. Any boats within that area, even if they are typically housed outside the NDZ (like in Canada, other U.S. States or elsewhere in Washington outside the NDZ), must manage their sewage in accordance with the rule when inside the NDZ boundary. The NDZ rule also applies whether a boat has an onboard toilet or not. Vessels with toilets must have the ability to hold their sewage onboard and secure their devices to prohibit the discharge of sewage. They can then use a stationary pumpout facility, mobile pumpout service, or pumping services (trucks, barges) to dispose of their sewage, or discharge outside the NDZ. Vessels without installed toilets must dispose of any collected sewage from portable toilets or other containment devices at proper facilities, which could mean at onshore restrooms or dump stations.

Ecology's NDZ team works closely with other agencies involved in promoting better boating practices, like Washington State Parks' Clean Boating Program and Clean Vessel Act Grant Program, Washington Sea Grant, and the Clean Marina Program. These partners, and others such as the Washington Department of Health and local (city and county) agencies, participate in the NDZ Education and Outreach Committee. That Committee is intended to inform Ecology's

[132] https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Helping-Puget-Sound/Reducing-Puget-Sound-nutrients/Puget-Sound-Nutrient-Reduction-Project

NDZ education/outreach approach, share information and resources, and coordinate in order to engage and educate boaters about the NDZ and vessel sewage management. In 2020, Ecology used National Estuary Program funds to conduct a Social Marketing Research Study to better understand the recreational boating community, identify barriers to NDZ compliance, and develop research-supported education and outreach recommendations. The study involved focused interviews and two online surveys that gathered about 6,000 responses. Ecology began implementing the study's recommendations in 2021, with the roll out of place-based NDZ signage at boat launch locations, a new coordinated social media campaign, webpage updates, a new logo, slogan (Pump Out, Don't Dump Out – It's the law!) and mascot (Sam the Clam[133]), infographics to explain why the NDZ matters, and the addition of the NDZ boundary to an existing pumpout-locator app (Pumpout Nav). Ecology also conducted virtual educational webinars to different groups such as counties, various Ecology programs, and the boating community. Ecology shares NDZ information at in-person boating events and presentations to boater groups. More information about the Pump Out, Don't Dump Out campaign, including free resources, can be found at www.ecy.wa.gov/pumpout[134]. Behavior change will occur over time, with frequent well-placed and well-designed reminders, so Ecology will continue rolling out these educational tools over the next few years. Ecology provided information to commercial vessel operators/agents (tug boats, commercial fishing vessels, small commercial passenger vessels, and NOAA research and survey vessels) leading up to the end of the delayed implementation (May 10, 2023).

While Ecology's approach to NDZ rule compliance has focused on education and outreach, Ecology developed its first NDZ Enforcement Strategy in 2021. The Strategy was informed by the NDZ Enforcement Committee, which is primarily composed of staff from agencies involved with marine law enforcement or other water quality or health-related regulatory Programs, such as the Washington Department of Natural Resources, Washington Department of Fish and Wildlife, County Aquatic Units, and U.S. Coast Guard. The NDZ Enforcement Strategy lays out how illegal sewage discharges should be reported, how those reports are handled, and what follow-up enforcement actions could occur. The NDZ Enforcement Committee determined that Ecology's existing Environmental Report Tracking System (ERTS) should be used to report illegal sewage discharges in the NDZ. As a result, Ecology's Northwest Region and Southwest Region ERTS Coordinators have been trained to ask vessel-specific questions and follow a "quick-guide" when they receive calls about possible sewage discharges. Continuing with education as the first response, once an ERTS report is received, Ecology staff will attempt to identify and contact the vessel owner and make sure they are aware of the NDZ rule and how to comply. If a second report is received, Ecology will follow-up with more education and resources and issue a warning letter to the vessel owner. On the third report, Ecology will issue a Notice of Violation. This "three strikes" policy is consistent with how the U.S. Coast Guard typically regulates on-water activities.

[133] https://www.youtube.com/watch?v=wIwd37N1l4s
[134] https://ecology.wa.gov/water-shorelines/puget-sound/no-discharge-zone/pump-out-dont-dump-out

Ecology continues to focus on a few key NDZ education/outreach tasks including:

- Distributing more placed-based metal signs across Puget Sound to remind boaters about the NDZ and to properly pump out sewage.
- Sharing NDZ and pumpout information to recreational boaters through signage at marine and fishing supply stores.
- Implementing a Y-valve Education Pilot Program by having marinas and yacht clubs educate boaters about their vessel sewage systems and how to prevent discharges by closing and securing Y-valves.
- Continuing to provide NDZ-related social media messaging during the annual boat season.
- Updating existing resources such as the NDZ webpage and Focus Sheets.

Ecology will continue to implement the NDZ Enforcement Strategy, and specifically will:

- Provide learning opportunities to marine law enforcement, municipalities, state and federal agencies and others who should know about NDZ requirements and enforcement processes.
- Document illegal sewage discharges in the NDZ using ERTS, and share that reporting mechanism with the community and agencies.
- Pursue the establishment of Memoranda of Understanding (MOUs) or other mechanisms with agencies to improve NDZ compliance among recreational and commercial boaters.

Visit the Puget Sound Vessel Sewage NDZ webpage[135] for more information.

Chemical Action Plan (CAP) Development

Toxic chemicals pollute stormwater, streams and lakes in Washington. Exposure to these chemicals affects people's health and the health of the environment. Ecology will continue to use our TMDL, ARP, and STI approaches to address impairments caused by toxics. In addition, Ecology will look for additional tools outside the Clean Water Act to address toxics. For example, we will continue to support the development of chemical action plans (CAP).

A CAP is a comprehensive plan to identify, characterize, and evaluate all uses and releases of a specific persistent, bioaccumulative toxic (PBT), a group of PBTs, or metals of concern. A CAP is a plan, not legislation or a rule. It recommends actions to protect human health and the environment. Some of the recommendations may lead to new legislation or rules. These would go through the normal legislative or rulemaking process. The CAPs can serve as a list of BMPs for our TMDLs in identifying actions to get a particular toxic out of the water.

[135] http://www.ecy.wa.gov/programs/wq/nonpoint/CleanBoating/nodischargezone.html

The PBT Initiative focuses on one toxic substance at a time. Ecology develops each CAP in collaboration with other agencies and experts representing various business, agricultural and advocacy sectors.

Visit Ecology's webpage[136] for more information on Chemical Action Plans and how Ecology is addressing toxic chemicals.

[136] https://ecology.wa.gov/waste-toxics/reducing-toxic-chemicals/addressing-priority-toxic-chemicals

Chapter 4: Water Quality Partnerships

It is important that Ecology's Nonpoint Source (NPS) Program take a lead role in coordinating interagency efforts related to the NPS Plan. It is the responsibility of the NPS Program to reach out to its partner organizations, support them in their efforts related to NPS pollution, and coordinate with them to ensure that mutual goals are met.

Developing and strengthening partnerships is a continuous process. Efforts to address nonpoint source pollution are most effective when local partners engage in getting implementation on the ground. Further, the scope of the nonpoint source pollution issue and the effect it has on National Pollution Discharge Elimination System (NPDES) permittees in the state necessitates multiple agencies and entities working to address pollution problems.

Ecology works collaboratively with key local and state entities to coordinate the implementation of NPS control measures in high priority watersheds. While recognizing the importance of statewide coordination, Ecology also emphasizes the need to coordinate with partners at the local level. Regional offices lead local coordination efforts through multiple avenues.

4.1 Statewide Coordination

Ecology embraces strong partnerships and values feedback from the public and partners to effectively implement the nonpoint source program. Recognizing the diversity of parties engaged in this work, we utilize a variety of engagement platforms to connect with interested parties and partners.

Agriculture and Water Quality Advisory Committee

The goal of the Ecology Director's Agriculture and Water Quality Advisory Committee is to improve working relationships and ensure both water quality protection and a healthy agricultural industry. Ecology formed the committee in 2014, and it includes a broad array of agricultural interests. Ecology's Director co-chairs the committee with a representative from one of the agricultural groups. The co-chair role rotates on a semi-regular basis.

The Committee discusses issues and provides advice and guidance associated with the work Ecology does to prevent agricultural pollution, including issues related to the implementation of our nonpoint program. The purpose is to provide an open forum for producers and interested parties to meet our staff, learn about our work, and provide guidance as we tackle the challenge of ensuring water quality protection and a healthy agricultural community.

The Committee currently meets twice a year. If possible, the meetings are held in person, with meeting locations alternating between the west and east sides of the state. The public can attend the meetings. See Ecology's Agriculture and Water Quality Advisory Committee

webpage[137] for more information on the Committee, Committee members, previous meetings, and future meetings.

Water Quality Partnership

The Water Quality Partnership is the standing collaborative group for Ecology's Water Quality Program. The goal of the Water Quality Partnership is to:

- Help the Water Quality Program maintain a dialogue with key interests about our work.
- Give key interests regular access to decision makers in the Water Quality Program.

The Water Quality Partnership meets quarterly, using a virtual meeting format. Attendees of the Water Quality Partnership meetings include representatives from agricultural producer groups, Tribes, environmental groups, state and federal agencies, businesses, and local governments. See the Water Quality Partnership's webpage[138] for more information.

Financial Assistance Council

The Water Quality Financial Assistance Council (FAC) provides Ecology with advice and guidance for the effective and efficient administration of its state and federal grant and loan programs. The FAC is not mandated in state law, but was formed by Ecology to help ensure that the process of administering state and federal grants and loans is transparent and is supported by Ecology's clients and interested parties. The FAC is comprised of representatives from cities, counties, Tribes, conservation districts, special purpose districts, environmental groups, and state and federal agencies. The FAC meets three times a year; for more information see the Financial Assistance Council's webpage[139].

Statewide Tribal Communication

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 Ecology's work on the water quality standards, 303d (Total Maximum Daily Load(TMDL)/Assessment), and nonpoint programs. These meetings are held twice a year and have recently been utilized as an opportunity to provide updates on the status of nonpoint program activities, including updates related to the development of this Nonpoint Plan. We will continue to utilize this forum as an opportunity to provide information to interested Tribal entities. In addition to this statewide coordination, we will continue to develop and maintain relationships between regional offices and local Tribes and Tribal organizations.

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[137] https://ecology.wa.gov/About-us/Accountability-transparency/Partnerships-committees/Agriculture-and-Water-Quality-Advisory-Committee
[138] https://ecology.wa.gov/about-us/accountability-transparency/partnerships-committees/water-quality-partnership
[139] https://ecology.wa.gov/about-us/accountability-transparency/partnerships-committees/water-quality-financial-assistance-council

4.2 Landowners, Businesses, and Agricultural Producers

Private landowners in both urban and rural areas, business owners, forest landowners, and agricultural producers are the most important partners in protecting water quality. Ultimately, they are the ones responsible for implementing Best Management Practices (BMPs) that address nonpoint sources of pollution. Garnering their support and participation provides one of the best ways to make direct changes to protect water quality in the watersheds where they live.

In many areas of the state, Ecology staff have created strong and productive relationships with landowners. This is usually through a person-to-person approach, in which the Ecology staff work directly with a landowner to offer technical assistance to solve a nonpoint pollution problem. When there is a conservation district willing to work with Ecology, the landowner contact may be made by Ecology and the conservation district together. This approach has resulted in the successful implementation of BMPs in many watersheds throughout the state.

In addition to this landowner-by-landowner approach, the Agriculture and Water Quality Committee proposed that Ecology do more outreach to inform the public and producer groups in the area about what is needed to address water quality problems before starting work in a watershed. Ecology recently hired three positions that focus on nonpoint communication and outreach, adding capacity to develop and update resources, such as Clean Water Guidance chapter guides and regional newsletters, as well as attending community events to educate the public and partners about our work.

Agricultural Producer Groups

Based on feedback from the Agriculture and Water Quality Advisory Committee, Ecology will consider when it may be appropriate to engage producer groups as partners in conducting education and outreach in watersheds where we are working to address nonpoint pollution problems. Producer groups can help provide a more direct line to producers, and their forums (conventions, newsletters, and meetings) may be used to communicate our nonpoint goals and strategies.

Small and Large Forest Landowners

Small forest landowners are defined as those that harvest, on average, less than 2 million board feet per year. Forest landowners, large and small, are represented on the Forest Practices Board and are therefore active participants in developing policy that relates to forest harvest activities. See Chapter 3, section 3.4.1 for more information on the partnerships between forest landowners, Ecology, and the Department of Natural Resources (DNR) in implementing regulations that protect water quality.

4.3 Grant Recipients

One of our primary strategies to implement the NPS program is our grant program. Our grant recipients are the on-the-ground organizations that implement BMPs, provide technical assistance, and work with landowners and producers to address pollution problems. One of Washington's strengths is the wide range of recipients that have received grants. Past recipients have included conservation districts, salmon enhancement groups, Tribes, cities, counties, health districts, environmental groups, land conservancies, reclamation districts, universities, and groups supporting specific watersheds.

Ecology's funding guidelines allow funds to be used only for a limited number of BMPs that Ecology has determined will achieve compliance with state water quality law. The BMPs must be implemented as suites of BMPs; for instance, we will not provide funds for off-stream watering or for a winter feeding area unless cattle exclusion from the stream is also installed. The wide range of grant recipients who have used funds for these BMPs now understand what Ecology has determined is required to achieve compliance with the water quality standards.

In order to better provide support and information sharing to grant applicants and recipients, the Water Quality Combined Funding Program webpage[140] was updated in 2024, to provide increased clarity and make it easier for site visitors to navigate to the information they are searching for. To provide assistance to both applicants and recipients, nonpoint grant managers are based out of each regional office, and are prepared to provide technical assistance to applicants to support the development of competitive applications that utilize eligible BMPs to protect water quality.

4.4 Local Governments

The three basic forms of local government in Washington are:

- Counties
- Cities
- Special purpose districts

The 39 counties of Washington were established by acts of the legislature and are considered subdivisions of state government. Basically, the county was designed to serve as an administrative unit of the state. The same holds true for cities and special purpose districts. As subdivisions of state government, all three are called upon to implement state legislative mandates.

Prior to 1960, several types of districts were formed to deal with an array of issues, which sometimes include environmental protection:

[140] ecology.wa.gov/CombinedFund

- Conservation districts
- Health districts
- Water districts
- Sewer districts
- Public utility districts
- Weed control districts

Since 1960, many new types of special purpose districts have been authorized by the legislature, especially with regard to environmental protection. These environmentally-oriented districts include:

- Groundwater protection districts
- Lake protection districts
- Shellfish protection districts
- Solid waste management districts
- Stormwater utility districts

Many state laws are implemented by local governments, with state agencies in an oversight and/or support role. With regard to the environment, local governments and special districts may have primary authority or major implementation efforts in:

- Solid waste management.
- Growth management and land use.
- Stream restoration and rehabilitation.
- Sewage systems, both on- and off-site.
- Road construction and maintenance.
- Shorelands management.
- Stormwater management.
- Drinking water protection.
- Used oil and household toxics.
- Irrigation water and return flows.

Local governments and special purpose districts are the on-the-ground implementers of many nonpoint pollution control activities. Ecology relies heavily on the continued commitment of energy and resources by these entities. Additionally, local governments can often play an important role in monitoring and correcting nonpoint source pollution. Ecology is committed to assisting local governments with monitoring and enforcement.

State agencies can also assist with financial assistance to local governments through the various funding programs they administer. Ecology supports the goals of the nonpoint program by funding local projects and programs designed to achieve the WQ Standards and support the implementation of watershed based plans.

4.4.1 Conservation Districts and State Conservation Commission

Washington State Conservation Commission

The Washington State Conservation Commission (WSCC), in collaboration with conservation districts (CDs) and other partners, works to conserve natural resources on all lands in Washington state. WSCC was established as an agency in 1939, to focus on non-regulatory actions that land stewards can take to create more conservation on working lands. WSCC is the coordinating agency providing assistance for CDs across the state, where conservation districts serve as community-based hubs of natural resource expertise and funding. WSCC also provides financial and accountability oversight to the state's 45 CDs. WSCC has no regulatory authority; the agency and the CDs work with local communities using a voluntary and incentive-based approach to conservation work.

Incentive-based and voluntary programs managed by WSCC provide funding and technical assistance to land stewards to promote the protection of water quality, soil health, shellfish and riparian habitats, and many other important resources. Programs implemented by the WSCC include the Conservation Reserve Enhancement Program (CREP), which provides rental payment to landowners to lease riparian habitat for protection from agricultural activities. The WSCC also administers programs to:

- Promote water quality and riparian area health.
- Support the implementation of practices that sequester carbon.
- Install more efficient irrigation systems.
- Facilitate the purchase of agricultural land to be placed in easements.

The Voluntary Stewardship Program (VSP)

The VSP is a program implemented by the Washington State Conservation Commission. The VSP was passed in 2011 as an amendment to the Growth Management Act (GMA). Its goals are to protect and enhance critical areas, maintain and improve the long-term viability of agriculture, and reduce the conversion of farmland to other uses. To accomplish these goals, the VSP relies primarily on incentives and voluntary stewardship practices. Counties that opt into the VSP are responsible for designating a local watershed group to develop a watershed plan that describes how critical areas on agricultural lands will be protected and enhanced.

Counties opting into this program are eligible for funding for the development of watershed work plans to set goals and benchmarks for protection and enhancement of critical areas on agricultural lands. Following its adoption, 27 of Washington's 39 counties opted into VSP in the original eligibility window and produced watershed work plans. Each of those counties receives

funding from WSCC to support operating and monitoring costs. SSB 5353 was passed in 2023 and re-opened the opt-in window for the 12 counties that have not adopted VSP. VSP counties are required to provide WSCC with five-year reports to ensure that watershed work plan goals and benchmarks are being met. When county achievements are found to be short of those goals and benchmarks, adaptive management of work plans must occur. If counties do not adequately achieve goals and benchmarks or successfully develop adaptive management procedures, they may be removed from the program and must develop regulations addressing agricultural uses and critical areas.

Improved compliance with state and federal clean water law was a critical part of the Ruckelshaus agreement that led to the creation of the VSP. While this "regulatory backstop," which was to take the form of better enforcement of clean water law *separate* from the VSP, was not included in the VSP statutory language, it was seen as a critical element by those involved with the Ruckelshaus process. The expectation that state and federal clean water laws will serve as a regulatory backstop is documented in correspondence to legislative leadership, the implementation budget for the law, and other sources.

Though they have different purposes and standards, both clean water laws and VSP should provide protection to the riparian corridor. This provides an opportunity for the two programs to take advantage of each other to achieve shared goals and intended outcomes. An effective VSP program could complement the protection and pollution reduction goals of federal and state clean water laws by helping to implement the best management practices needed to meet the water quality standards and clean water laws.

More information on the VSP can be found on the WSCC's Voluntary Stewardship Program webpage[141].

More information on the relationship between VSP and clean water laws can be found in Appendix K.

Conservation Districts

Conservation districts are community-based, non-regulatory governmental entities that assist in meeting local resource needs with technical assistance and financial resources. CDs work closely with the WSCC and help landowners with on-the-ground conservation projects that enable them to be good stewards of their land. Each conservation district is directed by a board of supervisors: three elected locally and two are appointed by the WSCC. At least two of the elected and one of the appointed supervisors must be local landowners or operators of a farm. This ensures a local perspective on projects to protect both working lands and ecological functions.

[141] https://www.scc.wa.gov/vsp

Conservation districts offer a range of voluntary services, including assistance with erosion control, habitat restoration, manure management, wildfire prevention/mitigation, stormwater management, forest plans, irrigation efficiency, noxious weed control, fish barrier removals, livestock stream crossings, and more. [142]

Beyond grant programs, conservation districts are a key partner in the delivery of technical assistance to private landowners and agricultural producers. Further, CDs play a critical role in landowner and producer outreach and engagement and help create support for water quality goals in their communities. Many CDs are active participants in the development and implementation of TMDLs. Conservation districts represent one of the major recipients of federal 319 grant funds, and many conduct monitoring projects to determine effectiveness of completed projects.

Through grants and other opportunities, Ecology partners with CDs working on soil erosion, stream protection and restoration, and livestock projects. In addition, Ecology supports CDs working on direct-seed projects and the Farmed Smart certification program, along with other efforts that support the implementation of the goals of this NPS plan. Some CDs have also expanded their services to include implementing stormwater BMPs and Ecology sees this as an emerging opportunity. Ecology will continue to look for appropriate opportunities to partner on stormwater projects, low impact development, and green infrastructure strategies/initiatives.

Statewide, conservation districts are a key partner in our watershed evaluation process. Districts have helped with education and outreach efforts, partnered on site visits, and have been a primary resource for technical and financial assistance. Ecology will continue to partner with CDs during watershed evaluations and look to tailor how Ecology will work with individual CDs to meet their local needs. Ecology will work with conservation districts to increase communication regarding these evaluations, Ecology's recommended BMPs, and how CDs can implement the needed BMPs when supporting landowners.

Although not all conservation districts work with Ecology, those that pursue Ecology grants to implement BMPs follow our funding guidelines, which allow the use of only a few specific suites of BMPs that we have determined will achieve compliance with state water quality law.

Prior to the development of the Voluntary Clean Water Guidance for Agriculture (Clean Water Guidance/CWG), Ecology received feedback from conservation districts that highlighted the need for Ecology to be clear about the BMPs needed to protect water quality, as well as interest in guidance they can share with the landowners they work with, to reduce the regulatory risk for landowners. Additionally, CDs expressed a desire for flexibility and

[142] For more information on the services provided by conservation districts as well as the financial and technical assistance programs they administer please see: https://www.scc.wa.gov/what-are-conservation-districts.

recognition that there can be multiple ways of achieving equivalent water quality results. Ecology believes that the CWG addresses these concerns in the following ways:

- The CWG outlines the BMPs that, when implemented as the necessary suites of practices and appropriately maintained, will address water quality concerns and provide assurances for landowners that they will be in compliance with state water quality law.
- Many chapters of the CWG provide options for landowners to select from, providing the flexibility to implement practices that will be the best fit for their property, to support both their operation and clean water goals.

In early 2025, Ecology utilized a survey to solicit additional feedback from CDs, which included questions about partnerships and coordination with Ecology, among other topics. With regards to coordination with Ecology, half of respondents voiced interest in regular coordination with Ecology nonpoint staff, through meetings and/or email. As is discussed in other sections of this Nonpoint Plan, partnerships with CDs are vital to achieving water quality improvements on the ground; Ecology recognizes this and strongly supports new and continued coordination between individual CDs and Nonpoint staff. To support this goal, we have updated the Goals and Milestones table (Chapter 9) to include regional staff meeting with CD staff within focal watersheds at least twice per year and annually communicating funding opportunities to CD staff. See Appendix L for further discussion of survey results.

4.4.2 Local Health Departments and Districts

Washington has 31 county health departments, three multi-county health districts, and two city-county health departments. We refer to them as local health jurisdictions (LHJs). They are local government agencies that carry out a wide variety of programs to promote health, help prevent disease, and build healthy communities. Related to nonpoint source pollution, they regulate on-site sewage systems and can fill key roles in PIC programs.

Pollution Identification and Correction Programs

Pollution Identification and Correction (PIC) programs identify and address pathogen and nutrient pollution from a variety of nonpoint sources, including on-site sewage systems, farm animals, pets, sewage from boats, and stormwater runoff. The corrective actions taken by local agencies and/or Tribes may include outreach and education, technical assistance, incentives for best management practices, and enforcement.

To promote PIC programs, the state Departments of Health and Ecology have offered federally-funded grants to county governments, local health jurisdictions, and Tribal governments adjacent to Puget Sound to establish or enhance PIC programs. The goal of these grants is to launch new, and improve existing, PIC programs that can eventually be sustainable in the long term by integrating planning across local water quality programs, interests, and concerns.

An effective program will have the following components:

- A defined process for engaging polluters to reduce or eliminate pathogen and nutrient pollution caused by on-site sewage systems, farm animal waste, pet waste, boat sewage, and stormwater. The capacity to address diverse sources may be accomplished through partnerships.
- An on-going assessment and monitoring program to identify and prioritize problem areas for correction. A monitoring program should include both targeted monitoring to identify pollution sources and monitoring to assess effectiveness of control efforts to ensure that waters stay clean. Assessments from other programs can be used to identify and prioritize water quality problems, for instance the Washington State Water Quality Assessment.
- Corrective action work which includes outreach and education, technical assistance, and incentives, such as cost share for the installation of best management practices. The program includes enforcement as a backstop when other methods don't fix the problem.
- A sustainable funding source.
- When applicable, PIC programs should use the BMPs contained within the Clean Water Guidance.

While PIC programs are administered at the local level, Ecology will continue to take an active role in supporting these programs because our nonpoint strategy shares the objectives of identifying and addressing water pollution issues. Additionally, Ecology often provides the regulatory enforcement backstop for counties to help implement the agriculture-related components of their programs.[143] Specifically, as EPA pushed for National Estuary Program (NEP) funding to be focused on local PIC programs, there was an acknowledgement that it would take some local programs time to have a complete and sustainable program similar to Kitsap County's program (described below). Ecology was asked to provide enforcement backup until those local programs developed their own comprehensive enforcement programs that address all sources of nonpoint pollution.

Example: Kitsap County's Clean Water Kitsap Program

Kitsap County's Clean Water Kitsap Program is a comprehensive, interagency partnership to address local issues related to stormwater management, nonpoint source pollution, and water quality. County leaders created the program in 1993 to protect public health and natural resources, meet state and federal requirements, minimize costs, and provide stable, ongoing funding to address nonpoint source pollution.

This partnership is led by Kitsap County Public Works Stormwater Division. Stormwater management fees fund the Stormwater Division and, through interlocal agreements, also fund

[143] See Appendix J.

selected programs at Kitsap Public Health District, Kitsap Conservation District, Washington State University Kitsap Extension, and the Kitsap Public Utility District.

Through this interagency model, the partners work collaboratively to accomplish many programs and projects for the ultimate goal of clean water. The following descriptions are some programs that are uniquely relevant to the State NPS Plan.

Water Pollution Identification & Correction (PIC) at Kitsap Public Health District

Kitsap's PIC program is nationally recognized for its innovation and effectiveness. Their mission is to protect the public from waterborne illness and other water quality related hazards. Water that is polluted with fecal bacteria is the primary concern. Kitsap defines their job as ensuring that surface waters are safe and sanitary to protect the public when swimming or eating shellfish. Their work includes:

- Collecting water samples.
- Investigating fecal bacteria sources of water pollution.
- Taking steps to correct problems.

How it Works

Kitsap uses standard procedures for doing PIC work, and staff follow protocol manuals which are frequently updated.

Looking For Trends

Kitsap starts with the big picture by monitoring long-term water quality trends for Kitsap County's lakes and streams (known as surface waters). All Kitsap streams run into the Puget Sound or Hood Canal, so if the streams are polluted, they can impact marine waters. The streams are relatively small, so signs of pollution appear early, and damage occurs more quickly.

Early Warnings

Surface water quality gives an early warning that development, land uses, and other human activities are beginning to harm the public's health, shellfish resources, and the environment.

The primary sources of human-caused pollution are:

- Failing septic and sewer systems
- Faulty storm water systems
- Pet and livestock waste
- Runoff from farms.

Correcting Pollution Problems: Strength of the Clean Water Kitsap Partnership

Each year Kitsap's PIC team uses their monitoring data to prioritize a list of the waterways that are the most polluted. Working through this list, they investigate to find the source of the pollution. When they locate the source, they work with property owners to eliminate it. When sources are from failing septic systems or other sewage issues, Kitsap Public Health spearheads the education, enforcement, and technical assistance to work through the correction process.

When the source is animal waste from a farm, the Kitsap Conservation District is available for non-regulatory technical assistance while the owner has the option of a voluntary compliance process to address the documented water quality problem. When the source is a faulty stormwater system, Kitsap Public Works will perform smoke and dye testing to find and confirm an illicit connection to the storm drain system and follow up with the established escalating enforcement strategy required in the stormwater NPDES Permit.

Water Quality Reports

Public communication about the state of the public's local water bodies is an important part of the PIC Program. Kitsap's PIC team publishes annual reports[144] about the relative fecal coliform levels in streams, bays, and lakes, their ongoing efforts to improve water quality, and the current priority list of polluted areas. The Kitsap PIC has demonstrated success at cleaning up polluted waters. On the 2015 WQ Assessment, seven polluted segments covered by the PIC program were moved into Category 1—meets WQ Standards.

Shellfish Protection Districts

Chapter 90.72 RCW authorizes counties to establish shellfish protection districts to include areas in which nonpoint pollution threatens the water quality upon which the continuation or restoration of shellfish farming or harvesting is dependent. The shellfish protection program should be designed to address the pollution sources that affect shellfish, including, but not limited to requiring the elimination or decrease of contaminants in storm water runoff, establishing monitoring, inspection, and repair elements to ensure that on-site sewage systems are adequately maintained and working properly, assuring that animal grazing and manure management practices are consistent with best management practices, and establishing educational and public involvement programs to inform the public about the causes of nonpoint pollution and what they can do to decrease the amount of such pollution.

The State Department of Health routinely samples water around commercial and recreational shellfish growing areas to make sure it meets health standards. If water quality fails to meet those standards, they restrict or close that area to shellfish harvest. This is called a classification downgrade.

When a shellfish area's classification is downgraded due to poor water quality, the county authority must create a shellfish protection district (SPD) and implement a program to find and

[144] https://www.kitsappublichealth.org/pic/waterqualityreports

correct the pollution source(s) that are causing water quality to decline (see RCW 90.72.045[145]). Shellfish protection districts have proven to be very effective in reversing pollution of Washington's saltwater beaches, preventing new pollution sources, and reopening shellfish areas to harvest.

More information on Shellfish Protection Districts can be found at DOH's Shellfish Protection Districts website[146].

4.4.3 Irrigation Districts

In Washington state, Irrigation Districts are authorized by RCW 87.03 and may be formed for the purposes of:

(1) The construction or purchase of works, or parts of same, for the irrigation of lands within the operation of the district.

(2) The reconstruction, repair or improvement of existing irrigation works.

(3) The operation or maintenance of existing irrigation works.

(4) The construction, reconstruction, repair or maintenance of a system of diverting conduits from a natural source of water supply to the point of individual distribution for irrigation purposes.

(5) The execution and performance of any contract authorized by law with any department of the federal government or of the state of Washington, for reclamation and irrigation purposes.

(6) The performance of all things necessary to enable the district to exercise the powers herein granted.

In addition to developing and maintaining irrigation works, irrigation districts are authorized to participate and expend revenue on cooperative watershed management actions for the purposes of water quantity, water quality, and habitat protection and management.

Different irrigation districts engage in different capacities with monitoring, maintaining, and improving water quality. The Roza-Sunnyside Board of Joint Control, for example, maintains policies and programs to improve water quality within their district jurisdictions, and coordinates closely with Ecology nonpoint staff as they work to address discharges of turbidity and other pollutants within their irrigation waters.

[145] https://app.leg.wa.gov/rcw/default.aspx?cite=90.72.045
[146] https://doh.wa.gov/community-and-environment/shellfish/growing-area-restoration/shellfish-protection-districts-library

4.5 Washington Tribes

Traditional fishing areas for Tribes encompass essentially all of Washington state. Tribal resources, including shellfish and salmonids, continue to be negatively impacted by nonpoint source pollution. Many rivers and streams in the state exceed temperature standards. High water temperatures threaten the health and survival of salmon. Likewise, nonpoint source pollution in the form of sediment and nutrient inputs threaten salmon survival. Pathogen pollution from a variety of nonpoint sources, including on-site sewage systems, farm animals, pets, sewage from boats, and stormwater runoff can cause shellfish bed closures. Because of this, work between Tribal, federal, state, and local governments is vital to the successful restoration of nonpoint pollution impacted waterways, as well as for the protection of unimpaired waters.

Tribal representatives participate in the development and implementation of TMDLs, and are also recipients of federal 319 grant funds. They provide technical expertise on natural resource issues and are an important partner in implementing the state's nonpoint program.

Ecology's Nonpoint Source Program will continue to work on developing and maintaining successful working relationships with Tribes. We will continue to organize bi-annual coordination meetings between Ecology's Watershed Management Section and Tribal water quality staff, to provide a forum for sharing updates on the state of Ecology's 303(d) and nonpoint programs. Recognizing the importance of watershed-level partnerships and information-sharing, we will also prioritize relationship-building between regional nonpoint staff and Tribal water quality staff. The importance of Ecology-Tribal relationships was echoed in the responses from Tribal participants in a survey Ecology sent to Tribal water quality staff in early 2025, in which the most common response when asked about future coordination with Ecology was regular coordination, either through meetings or emails. To support this, we have updated the Goals and Milestones table (Chapter 9) to include at least once-a-year meetings between regions and local Tribes. See Appendix L for further discussion of survey responses.

4.6 State Agencies

State agencies play a key role in implementing authorities that help to prevent and control NPS pollution. No single state agency has all the tools to solve nonpoint source pollution problems. The state natural resource agencies in the following outline have some type of program or resources that can support the implementation of the NPS plan. The primary authorities of state agencies are outlined in Chapter 2. Ecology recognizes the need to share resources, coordinate efforts and programs, and send consistent messages on what is needed to meet WQ Standards and the goals of the NPS plan.

State agencies include:

- Puget Sound Partnership (PSP) - PSP serves as the backbone agency for Puget Sound recovery. The PSP coordinates the efforts of Tribes, scientists, businesses, and non-profit groups to set priorities, implement a regional recovery plan, and ensure

accountability for results. PSP works to align the work of partners around the Puget Sound Action Agenda, the Comprehensive Conservation and Management Plan for the Puget Sound under the National Estuary Program, Section 320 of the CWA.

- University of Washington Sea Grant - Washington Sea Grant identifies, addresses, and funds important marine issues, shares its expertise with coastal businesses and communities, provides tools for the management of ocean and coastal resources, and engages the public in protecting and sustainably using those resources.
- Washington State Conservation Commission (WSCC) - The WSCC is the coordinating state agency for all 45 conservation districts in Washington State. Together, the WSCC and conservation districts provide incentive-based programs that make it easier and more affordable for private landowners to implement conservation on their property (see section 4.4 of this chapter for more information on these entities).
- Washington State Department of Agriculture (WSDA) - Is headquartered in Olympia, with employees in every county in the state. Their staff carry out a broad spectrum of activities that support the producers, distributors, and consumers of Washington's food and agricultural products. WSDA manages the Dairy Nutrient Management program.
- Washington State Department of Commerce (Commerce) – Focuses on growing and improving jobs in Washington State by championing thriving communities, a prosperous economy, and sustainable infrastructure. Commerce oversees the state Growth Management Act.
- Washington State Department of Fish and Wildlife (WFDW) - The mission of WDFW is to preserve, protect and perpetuate fish, wildlife and ecosystems while providing sustainable fish and wildlife recreational and commercial opportunities. WDFW implements the state Hydraulic Project Approval Program.
- Washington State Department of Health (DOH) – The mission of the DOH is to protect and improve the health of people in Washington State. Its programs and services help prevent illness and injury, promote healthy places to live and work, provide education to help people make good health decisions and ensure the state is prepared for emergencies. DOH and local health districts regulate on-site sewage systems.
- Washington State Department of Natural Resources (DNR) - In partnership with public individuals and governments, the Washington State DNR provides innovative leadership and expertise to ensure environmental protection, public safety, perpetual funding for schools and communities, and a rich quality of life. DNR is the primary implementer of the state Forest Practices Rules, and assign staff to the Forest Practices Board and the adaptive Management Program for the Forest Practices rules.
- Washington State Department of Transportation (DOT)--The Washington State Department of Transportation is the steward of a multimodal transportation system and responsible for ensuring that people and goods move safely and efficiently. Many of the roads, highways and bridges managed by DOT are covered by stormwater permits.

- Washington State Parks and Recreation Commission - The Washington State Parks and Recreation Commission cares for Washington's most treasured lands, waters, and historic places. State parks connect all Washingtonians to their diverse natural and cultural heritage and provide memorable recreational and educational experiences that enhance their lives.
- Washington State Recreation and Conservation Office (RCO) - RCO is a state agency that manages grant programs to create outdoor recreation opportunities, protect the best of the state's wildlife habitat and farmland, and help return salmon from near extinction. The Salmon Recovery Fund managed by RCO provides financial assistance to a wide variety of projects that address nonpoint sources of pollution. The Governor's Salmon Recovery Office is housed out of RCO, and works to coordinate salmon and orca recovery for the state.
- Washington State University (WSU) - WSU Extension is the front door to the University. Extension builds the capacity of individual, organization, businesses and communities, empowering them to find solutions for local issues and to improve their quality of life. The WSU Puyallup Research and Extension Center is the home of the Stormwater Center, which serves as a clearinghouse for stormwater technology, information, and permittee assistance.

4.7 Federal Agencies

There are many federal agencies in Washington that operate with different mandates and responsibilities. This is, in large part, due to the diversity and complexity of Washington's natural environment. For example, the strategic location of the Puget Sound region makes it an ideal home for several military installations such as Joint Base Lewis-McChord, Puget Sound Naval Shipyard, Bangor submarine base, and Whidbey Island Naval Air Station.

The Puget Sound region is surrounded by U.S. Forest Service (USFS) lands and the Olympic National Park. The Palouse region of eastern Washington is the home of some of the most productive non-irrigated agricultural lands found anywhere in the United States. These lands are in close proximity to the Snake River and Columbia River. Interested federal agencies are the Natural Resource Conservation Service (NRCS), Farm Service Agency (FSA), The Bureau of Reclamation (BOR), Bonneville Power Administration (BPA), and the Army Corps of Engineers (COE).

The Yakima Valley is another good example of federal agency presence. Not only are NRCS and FSA actively engaged with agricultural activities, the BOR, the COE, and the BPA all have responsible roles and mandates. In addition, the US Army's Yakima Firing Range is one of the largest military bases in the United States.

These are a few examples of the roles federal agencies play in using and managing land in the state. Federal agencies are the second largest group of landowners in the state (next to private individuals), and a major source of funding for cost share and restoration efforts.

If Ecology identifies federal lands and activities that are not managed consistently with state nonpoint program objectives, we will work with EPA and those federal agencies to resolve issues at the federal agency level.

4.7.1 List of Federal Agencies and Responsibilities

Many federal agencies in Washington either contribute to nonpoint source pollution, or help control nonpoint source pollution through their water quality programs – or both.

- Army Corps of Engineers (COE) - is responsible for maintenance of harbors and navigable waterways and wetlands management. COE operates and maintains many large dams along the Columbia and Snake Rivers.
- Bonneville Power Administration (BPA)-controls numerous dams along the Columbia and Snake Rivers.
- Bureau of Land Management (BLM) - has relatively small holdings within the state on which grazing and forestry activities occur.
- Bureau of Reclamation (BOR) - owns and manages hundreds of miles of irrigation canals in eastern Washington, and some hydroelectric dams.
- Department of Defense (DOD) - has several bases in Washington, due to the strategic location of the state and its access to the Pacific Rim.
- Department of Energy (DOE) - manages the Hanford Reservation.
- Environmental Protection Agency (EPA) administers the Clean Water Act. It also partners with NOAA's National Ocean Service to administer the Coastal Nonpoint Program under CZARA.
- Farm Service Agency (FSA) administers a variety of programs for agricultural producers, including grant funding and loans.
- Federal Highway Administration (FHA) - has hundreds of miles of highways in Washington.
- National Oceanic and Atmospheric Administration (NOAA) - The National Marine Fisheries Service oversees the status of endangered species and the National Ocean Service partners with EPA to administer the Coastal Nonpoint Program under CZARA.
- National Park Service (NPS) - owns thousands of acres of parkland, including Mount Rainer National Park, Olympic National Park, and North Cascades National Park.
- Natural Resources Conservation Service (NRCS) - develops conservation practices for its *Field Office Technical Guides* and provides financial and technical assistance to landowners to implement the practices that a landowner chooses.
- U.S. Fish and Wildlife Service (USFWS) - is responsible for habitat conditions related to the health and well-being of fish and wildlife. USFWS works to protect ESA-listed resident fish such as bull trout and cutthroat trout.

- U.S. Forest Service (USFS) - manages about 20% of the land area in the state.
- U.S. Geological Survey (USGS) - routinely monitors both surface and ground water through its National Water Quality Assessment Program.

4.7.2 Federal Lands - Forestry

When considering water quality, federal agencies are required to conduct their activities to be at least as protective as the complementary state programs. In Washington, federal agencies must design their programs in a manner that will comply with the state WQ Standards. They need not use the same forestry prescriptions as those required by the state Forest Practices Rules, but the results need to achieve the same regulatory objective of meeting the state WQ Standards. Ecology will continue to work with federal agencies to ensure their actions are designed to be as protective as what is required by state rules, and that they comply with the WQ Standards.

Although there are numerous federal agencies that affect forest management in Washington, it is primarily the USDA Forest Service that affects water quality attainment through forest management activities.

United States Department of Agriculture-Forest Service

The US Department of Agriculture (USDA) Forest Service manages its lands under federal land and resource conservation plans and strategies such as those established under the Northwest Forest Plan. Ecology entered into a Memorandum of Agreement (MOA) with the USDA Forest Service, Region 6 in 2000. Since 2000 the MOA has been updated several times, with its most recent update in 2018. The purpose of the MOA is to clarify roles and Ecology's expectations so that the Forest Service would achieve compliance with state WQ Standards. Ecology hopes to continue to strengthen its formal working relationship with the US Forest Service to ensure the WQ Standards are met on these key federal lands.

The 2000 MOA contained a specific requirement that roads on Forest Service lands would be brought up to current state standards by 2015. Approximately five years into the MOA however, the Forest Service recognized it would not be able to comply with the road requirements at current funding levels. The 2018 update to the MOA moved the focus to implementing and evaluating the performance of Best Management Practices (BMPs). BMPs are recognized as the primary mechanism to control nonpoint source pollution on National Forest Service lands. Under the MOA, the Forest Service and Ecology will conduct joint reviews of project implementation areas to determine if BMPs are being implemented and if management efforts are effective in protecting water quality. In 2024, Ecology and the Forest Service worked to draft an update of this MOA. As of March 2025, this update has been signed by Ecology and is awaiting signature from the US Forest Service.

There are an estimated 22,000 miles of USDA Forest Service roads in Washington. Deteriorating, unmaintained, and poorly located forest roads add sediment-laden runoff into streams, changing stream flow dynamics and harming dwindling runs of threatened and

endangered salmon that need cold, clear water to thrive and reproduce. Sediment decreases drinking water quality and increases the need for expensive community water filtration systems. Unlike private and state forests, there has been no program designed to aggressively identify and correct road problems on federal forest lands. In the past, Ecology has worked in partnership with other key partners in Washington and has helped the Forest Service receive congressional funding to address its growing backlog of road projects as part of the Legacy Roads and Trails program. This funding, while helpful, did not keep pace with the growing backlog of needed road repairs. Ecology is interested in helping the Forest Service find additional sources of funding to bring more roads into compliance.

Other Federal Landowners

Bonneville Power Administration (BPA) and Bureau of Land Management (BLM) (only about 10,000 acres) are the two federal agencies besides the USDA Forest Service with noteworthy presence in Washington's forested watersheds. Like the USDA Forest Service, the BLM may establish roads and harvest timber so long as the prescriptions applied result in compliance with the state WQ Standards.

The BPA primarily harvests timber within and adjacent to power transmission line rights of way. BPA rights of way situated adjacent to streams are often targeted for heavy use by recreational off-road vehicle users. This can result in significant localized damage to stream beds and excessive sedimentation. The responsibility of federal agencies to manage their lands in compliance with state regulations is unfortunately not always matched with the necessary commitment of resources to accomplish that objective. Ecology currently has no written agreement with either of these agencies on managing their lands for water quality.

Chapter 5: Financial Incentive Programs

Both state and federal funding programs are available to landowners, businesses, and agricultural producers, which can support the goals of the nonpoint program. Ecology will work with partners to coordinate funding and promote consistency with the goals of the state Nonpoint Source (NPS) plan. Additionally, Ecology will work to coordinate the collection of consistent and detailed implementation data to better understand the effectiveness of financial incentive programs.

5.1 Coordinated Investment Strategy

Ecology will look to support coordinated investment strategies that help meet the goals of the NPS plan. Specifically, Ecology will look to support coordinated investments that target projects that implement Total Maximum Daily Loads (TDMLs), Advance Restoration Plans (ARPs), and Straight to Implementation project (STIs), while also solving multiple environmental problems in a more efficient way. Where possible, we will work to leverage multiple sources of funding and fund projects that meet water quality, salmon, and shellfish goals. Further, we will look to support efforts that include multiple parcels in a watershed and maximize opportunities to secure continuous Best Management Practice (BMP) implementation over longer stretches of streams and rivers.

Key coordinated investment principles include:

- Focusing on the implementation of BMPs and projects that ensure compliance with state law and meeting water quality (WQ) WQ Standards at the parcel level.
- Supporting projects by communicating clear standards and compliance expectations.
- Supporting the implementation of TMDLs, ARPs, and STIs.
- Supporting projects that provide multiple environmental benefits—water quality, salmon and shellfish goals.
- Focusing on outcomes and accountability through collecting specific BMP implementation data.
- Maximizing opportunities to secure continuous BMP implementation over longer stretches of streams and rivers.

In 2015, Ecology and the Washington Recreation and Conservation Office convened a workgroup to explore improving the efficiency and effectiveness of natural resources grants programs in the state. In 2023, that group was reauthorized with increased inclusion of state agencies, and it now also includes Puget Sound Partnership, the Department of Fish and Wildlife, and the State Conservation Commission. These agencies each administer funding programs to support at least one of the following: salmon protection and restoration, watershed and ecosystem recovery, and water quality protection and restoration. Participation

in this Align Partnership is for the purpose of identifying and implementing administrative improvements within their respective voluntary funding programs.

The availability of a diverse variety of funding sources provides support for landowners who want to voluntarily make improvements to their property to achieve compliance with state water quality law. Diverse funding sources allow project proponents to secure match funding, when necessary to meet funding requirements, supporting the successful implementation of on-the-ground projects. Different funding sources may have different motivations for providing funding, for example, Ecology's Floodplains by Design program is intended to help communities reduce flood risks and restore habitat along major river corridors, while Salmon Recovery Funding Board grants are focused on protecting and supporting salmon stocks, and Ecology's WQ funding is focused on implementing BMPs that will support achieving water quality standards. Although the priority resource concern may differ for different funding groups, these sources all share a similar goal of restoring and protecting our shared resources. However, because these funding sources do not all share a common set of practices, and do not necessarily require BMPs that support compliance with state water quality law, we are not making as much forward progress towards protecting water quality, salmon, and human health as we could be if more water quality and salmon habitat-focused funding required BMP minimums that are designed to support meeting clean water standards.

5.2 Financial Assistance Sources

Below is a summary of key sources of financial assistance available in Washington State. EPA provides a relatively small amount of grant funding to support implementation of the Nonpoint Plan (more information on Ecology's Water Quality Combined Funding grant and loan program, which includes the Section 319 grant, and the role it plays in achieving compliance on the ground can be found in Chapter 3). Additionally, state grant dollars specifically for riparian buffers are administered by the Department of Natural Resources, Washington State Conservation Commission, and the Recreation and Conservation Office. Therefore, to support implementation of BMPs (particularly riparian buffers), financial assistance sources from partner entities is critical.

Bonneville Power Administration (BPA)

BPA funds salmon recovery projects. The funding is appropriated through a process developed by the Northwest Power and Conservation Council. Over 60 subbasins exist within the Columbia basin and each has developed a subbasin plan to help guide salmon recovery and wildlife habitat protection. Millions of dollars are made available every year to address priority projects throughout the Columbia Basin.

CLEAR 30

The 2018 farm bill created a new pilot program referred to as CLEAR 30 which allows agricultural producers to re-enroll expiring CRP contracts into new 30-year contracts. CLEAR refers to the Clean Lakes, Estuaries, And Rivers initiative which authorized the ability to re-

enroll lands into long-term CRP contracts. These long-term contracts will help ensure that conservation impacts and benefits remain in place for 30 years. Traditional CRP contracts expire after 10 to 15 years. Annual rental payments for landowners who enroll in CLEAR 30 are equal to the current Continuous CRP annual payment rate plus a 20% water quality incentive. Technical assistance is required for each contract and agreement. USDA must create the CRP plan for a contract.

Climate Resilient Riparian Systems Lead

Ecology's Shoreline and Environmental Assistance Program has developed a grant program to support improving the climate resiliency of riparian systems in Puget Sound. Awarded by the Environmental Protection Agency through the Bipartisan Infrastructure Law and the Puget Sound Recovery National Program Office, the Climate Resilient Riparian Systems Lead (CR2SL) grant program[147] is a partnership coalition between Ecology, Washington State Conservation Commission, and Bonneville Environmental Foundation to promote innovative, sustainable, reach-scale approaches to riparian management. Funding will be directed into activities and programs that increase the amount of riparian acreage protected, restored, or maintained for climate resiliency.

In the spring and summer of 2024, an advisory group (the program's "Core Team") identified investment priorities for riparian restoration and/or protection in Puget Sound. Their careful review of information derived from riparian workshops, Tribal listening sessions, and local engagement led to recommendations on the investment priorities for the CR2SL program, as outlined in the program's investment plan[148]. The following six CR2SL investment priorities were identified as priorities for the Fall 2024 solicitation and are not listed in prioritized order:

- Reach-Scale Planning and Outreach
- Native Plant Materials
- Landowner Incentives
- Riparian Restoration Implementation
- Maintenance, Monitoring, and Adaptive Management
- Permanent Protection of Riparian Habitat

The funding program launched on November 5, 2024, with the announcement of its first solicitation for proposals for a total of $9 million to be distributed as subawards in this round. Proposals may request up to $2.75 million, with a minimum award limit of $500,000. Funded proposals may include any or all of the investment priorities to develop new riparian programs or further work that local partners are already engaged in to improve riparian conditions in

[147] https://ecology.wa.gov/water-shorelines/puget-sound/helping-puget-sound/riparian-restoration/riparian-systems
[148] https://apps.ecology.wa.gov/publications/documents/2406015.pdf

Puget Sound. The program encourages collaboration, creativity, and innovation to tackle some of the large and common issues impeding successful riparian restoration, such as incentivizing landowner participation.

All riparian restoration completed and BMPs implemented by the CR2SL program will follow the requirements lined out in the program's funding guidelines[149], which were written to be in compliance with the Voluntary Clean Water Guidance for Agriculture (Clean Water Guidance/CWG) and the requirements of the Water Quality Combined Funding Program, to be protective of water quality. The CR2SL program will work with EPA, other funding programs, and Washington's Climate Resilience Strategy to collect consistent data to measure the effectiveness of funded projects.

The CR2SL workplan includes initial pathways to gain an improved understanding of potential opportunities, limiting factors and pilot approaches to riparian incentives and long-term stewardship needs. Although the C2RSL program is geographically limited to the Puget Sound, many of the challenges this program seeks to address exist statewide and the findings may be beneficial to watersheds across the state.

Conservation Reserve Enhancement Program (CREP)

CREP is similar to the Conservation Reserve Program (described below). It provides funding to farmers and ranchers to help protect stream corridors and conserve priority salmon stocks. Landowners enroll land located along water bodies to create buffer zones. These buffers are planted with native trees and shrubs to cool stream temperatures and filter polluted runoff. Participants are reimbursed for 100% of the costs to establish the buffer. They also receive an annual rental payment per acre enrolled, based on NRCS soil rental rates. The main difference between CREP and Continuous CRP is that CREP is primarily available on streams where threatened runs of salmon or steelhead are currently present or part of their historic range. CREP is funded by the USDA Farm Service Agency and the state of Washington. The state portion is managed by the Conservation Commission.

Conservation Reserve Program (CRP)

CRP is a land conservation program administered by the Farm Service Agency (FSA). In exchange for a yearly rental payment, farmers enrolled in the program agree to remove environmentally sensitive land from agricultural production and plant species that will improve environmental health and quality. Contracts for land enrolled in CRP range from 10 to 15 years in length. The long-term goal of the program is to re-establish valuable land cover to help improve water quality, prevent soil erosion, and reduce loss of wildlife habitat. CRP operates under two types of enrollment—general and continuous. General enrollment provides an opportunity for landowners to enroll in CRP through a nationwide competition during a specific period of time. Continuous enrollment is designed to enroll the most environmentally desirable

[149] https://apps.ecology.wa.gov/publications/documents/2406020.pdf

land into CRP through specific conservation practices or resource needs. Unlike general enrollment, under continuous enrollment, land is typically enrolled at any time and is not subject to competitive bidding. CRP provides cost-share to producers to implement a variety of conservation practices on agricultural land including riparian buffers.

Ecology Direct Implementation Funds (DIF)

The Department of Ecology may identify a small amount of funding from the Water Quality Combined Funding grant program to support implementation of water quality improvement projects in direct support of a TMDL or other watershed cleanup plan. These grants focus on specific implementation actions at sites of concern that have been identified by Ecology's nonpoint staff. Often, these projects involve funding riparian protection and planting. More information on DIF can be found in Chapter 3.

Ecology Water Quality Combined Financial Assistance Program

Department of Ecology runs an annual competitive water quality funding cycle program that includes funding from the state Centennial Clean Water program, federal Section 319 nonpoint grant program, State Revolving Fund loan program, and the state Stormwater Financial Assistance grant program (additional details on this funding program can be found in Chapter 3). Centennial Grants are state funds that provide grants for water quality infrastructure and nonpoint source pollution projects. Eligible nonpoint projects include: livestock fencing, off-stream water development, stream crossings, riparian plantings, and subsidization of on-site sewage repair and replacement local loan programs. There is also limited funding available for education and outreach.

In addition, the federal EPA provides Section 319 grant funds to Washington State. The Section 319 program offers funds for nonpoint source pollution control projects similar to the state Centennial program. These two funding sources are combined with the Clean Water State Revolving Fund loan program and stormwater grant program into a single combined financial assistance funding cycle. The Revolving Fund loan program can also fund nonpoint source projects. The Stormwater Financial Assistance Program provides funds to reduce impacts of non-point source stormwater runoff from existing development. Projects may integrate green infrastructure solutions.

Environmental Quality Incentive Program

The Environmental Quality Incentives Program is designed to promote agricultural production, forest management, and environmental quality. Through this program, NRCS provides financial assistance to eligible farmers and ranchers to address soil, water, and air quality, wildlife habitat, surface and groundwater conservation, energy conservation, and related natural resource concerns. The program requires the development of lists showing practices eligible for payment, allowed payment rates, criteria used to rank applications, and a description of the program and the application process. This is a locally driven process where "local work groups"

made up of local governments, agencies, and agricultural producers identify specific annual priorities for funding.

Family Forest Fish Passage Program

The Family Forest Fish Passage Program (FFFPP) provides state cost share money to small forest landowners for replacing culverts and other stream crossing structures that keep trout, salmon, and other fish from reaching upstream habitat. Road culverts and other structures that are aging, too small, or improperly installed can block fish from reaching their spawning grounds. The same barriers then impede the movement of young rearing salmon to the ocean. FFFPP funds the replacement of eligible barriers with new structures. Since 2003, landowners have taken advantage of the program that has replaced 424 barriers and opened more than 1099 miles of stream habitat. FFFPP funding is provided by the legislature on a biennial basis. There are more than 1,250 landowner projects waiting for funding. Fish passage barrier replacement also provide for the effective movement of woody debris downstream where it contributes to the physical and chemical integrity of the stream to the benefit of water quality.

Floodplains by Design

This funding program is a public-private partnership led by Ecology's Shorelands and Environmental Assistance Program, the Bonneville Environmental Foundation, and American Rivers. Floodplains by Design (FbD) works to accelerate integrated efforts to reduce flood risks and restore habitat along Washington's major river corridors, with the goal of improving the resiliency of floodplains to protect local communities and the health of the environment. Since 2013, Washington's Legislature has appropriated $283.3 million to support large-scale, multiple-benefit projects across the state, administered through a competitive grant program. As of December 2023, FbD has funded over 11,000 acres of floodplain reconnection and over 100 miles of restored salmon habitat.

Although the primary motivation behind FbD is improving floodplain resiliency, these efforts also provide improvements to water quality. As part of a FbD project, water quality improvements might include riparian planting, removing impervious surfaces, or reducing non-point pollution from homes or farms.

Forestry Riparian Easement Program

The Forestry Riparian Easement Program compensates eligible small forest landowners in exchange for a 40-year easement on "qualifying timber." This is the timber the landowner is required to leave unharvested as a result of 2001 forest practices rules protecting Washington's forests and fish. Landowners cannot cut or remove the qualifying timber during the easement period. Since 2001, over 400 easements have been purchased. The landowner still owns the property and retains full access but has "leased" the trees and their associated riparian function to the state. The intent of this program is to reduce the economic incentive to take land out of forestry in recognition that well-managed forest lands provide significant benefits to water quality and the fish and wildlife that depend on healthy streams.

National Estuary Program Funds

The EPA provides federal funding to support efforts to protect and restore Puget Sound. Most of the funds are used for financial assistance to state, local and Tribal governments for their efforts to implement the Puget Sound Action Agenda[150]. EPA passes these grants through to state agencies and Tribes. There are three different Strategic Initiative Lead (SIL) entities:

- The Washington State Departments of Fish and Wildlife and Natural Resources (Habitat SIL): Primarily addressing habitat restoration and protection through subawards to entities pursuing actions to improve habitats. The Habitat SIL received $37,500,000 for the current 5-year grant period.
- The Washington State Department of Ecology (Stormwater SIL): primarily addressing broad-scale watershed management needs, reduction of toxics and nutrients in the environment and to better manage stormwater inputs to Puget Sound. Includes subawards to Department of Commerce, Washington State University, conservation districts, and local governments. The Stormwater SIL received $35,000,000 for the current 5-year grant period.
- The Washington State Department of Health (Shellfish SIL): primarily addressing pathogen reduction strategies and efforts to maintain shellfish health. Includes subawards to Departments of Agriculture and Ecology, conservation districts, and local government/health districts. The Shellfish SIL received $27,500,000 for the current 5-year grant period.

In addition to the SILs, EPA provides NEP grants to the Northwest Indian Fisheries Commission (NWIFC) to work with 18 Puget Sound region federally recognized Indian Tribes to support fisheries and shellfish habitat restoration and protection needs in their communities. A large proportion of these funds are administered as sub-awards to Tribes for project work. The NWIFC also manages grants to Puget Sound Tribes for a broad group of field projects and activities to implement the Action Agenda. EPA also has entered into cooperative inter-agency agreements with other federal natural resources management organizations to support Puget Sound protection and restoration goals.

Regional Conservation Partnership Program

The Regional Conservation Partnership Program (RCPP) fund is part of the 2014 Farm Bill. It promotes coordination between NRCS and its partners to deliver conservation assistance to producers and landowners. The Columbia River Basin is one of eight priority watersheds that will receive 35% of the annual funding available through the program. Projects that address multi-state issues are also prioritized. The fund is competitive and uses the rules of existing NRCS programs.

[150] https://www.psp.wa.gov/2022AAupdate.php

Salmon Recovery Funds

In 1999, the Washington State Legislature created the Salmon Recovery Funding Board[151]. The Board provides grants to protect or restore salmon habitat and assist related activities. Between 1999 and 2024, the board has awarded more than $1.37 billion in grants to more than 3,635 projects statewide. The Salmon Recovery funds are offered through an annual competitive process. The funds can be utilized for many types of fish passage and habitat improvements, including projects that can help to protect water quality.

Additionally, in the 2023-2025 biennium, RCO received Climate Commitment Act associated funding which is applied to projects which will enhance salmon recovery through the protection and restoration of fully functioning riparian systems. RCO received $23.8 million in the 2023-2025 biennium.

State Conservation Commission grants

The WSCC has historically made funds available for projects proposed by conservation districts[152] . WSCC works with NRCS and FSA to administer the CREP program, to support habitat restoration along salmon streams. In the 2023 legislative session, funds from the Climate Commitment Act were appropriated to WSCC, to create a new Riparian Grant Program; $25 million was appropriated. Additionally, the WSCC has provided salmon and shellfish grants for projects proposed by conservation districts. The Natural Resources Investment provides funding to CDs to work with private landowners and operators to implement BMPs. More information on WSCC can be found in Chapter 4.

Streamflow Restoration

This grant is managed by Ecology's Water Resources Program, directed by RCW 90.9 to "…implement a program to restore and enhance streamflow to levels necessary to support robust, healthy, and sustainable salmon populations." The funding priorities for this program may change year to year, but the focus remains on enhancing streamflow.

Eligible project types for this funding include:

- Water right acquisitions.
- Altered water management or infrastructure.
- Environmental monitoring.
- Water storage.
- Watershed function, riparian, and fish habitat improvements.

[151] https://rco.wa.gov/grant/salmon-recovery/
[152] See the WSCC's grant programs webpage for more information on the grants they provide to CDs: https://www.scc.wa.gov/grant-programs

- Feasibility studies.

Project types focused on improving instream flow will have direct positive impacts to address instream temperature impairments, as many temperature impairments may be caused or exacerbated by low flow conditions. Projects that address watershed function, riparian, and fish habitat improvements are described as involving upland, riparian, or instream changes that restore and support natural watershed functions, and may include riparian restoration, livestock exclusion fencing, reducing impervious surfaces, and land acquisition.

Terry Husseman Account grants

Funding for Terry Husseman Account (THA)[153] grants come from the Coastal Protection Fund, created by the Washington State Legislature as a non-appropriated revolving fund. The account is named after long-time Ecology deputy director Terry Husseman who died in 1998 and honors his contributions in the field of environmental management.

THA grants are funded by the penalties Ecology issues for violations of the state Water Pollution Control Act (RCW 90.48) and support locally sponsored projects that restore or enhance natural environments that are in or adjacent to Washington streams, lakes, wetlands, or near the ocean and marine waters. To be considered, projects must provide primary benefits to public resources (land or water stewardship) and affiliated infrastructure.

Through the years, THA grants have funded a variety of projects that have significantly improved water quality and the natural environment in multiple watersheds across the state, focusing on:

- Restoring and enhancing rivers, floodplains, wetlands, and salmon and wildlife habitats.
- Providing public outreach and education (when an implementation element is included).
- Removing invasive plant species and installing native vegetation to restore stream banks and control erosion.
- Building watersheds that are more resilient to climate change.
- Helping to respond to an environmental emergency.

During a funding cycle, Ecology evaluates project proposals to determine its expected environmental benefits, local support and involvement, budget and cost effectiveness, readiness to proceed, and project schedule. Environmental justice and climate change are part of the evaluation criteria.

Grants are awarded on a competitive basis. There are no match or cost-share requirements. THA grants provide 100 percent of the Total Eligible Cost for a project. However, contributing

[153] https://ecology.wa.gov/about-us/payments-contracts-grants/grants-loans/find-a-grant-or-loan/coastal-protection-fund

funds may be used to demonstrate local partner and Tribal support and may increase competitiveness of an application. Typical individual grant award amounts vary from $10,000 to $40,000, with a maximum award of $50,000. Funded project timelines typically run 12 to 18 months.

During a funding cycle, Ecology sends an application announcement to a list of interested parties signed up to receive department notices through Ecology's Gov Delivery system[154]. The application announcement will include details about how and when to apply via Ecology's Administration of Grants Loans (EAGL) online system.

[154] https://public.govdelivery.com/accounts/WAECY/subscriber/new?qsp=ecology

Chapter 6: Recommended Management Measures

Best Management Practices (BMPs) can be implemented to prevent, mitigate, or eliminate nonpoint source pollution resulting from a particular land-use activity. Under the Federal Clean Water Act and the Coastal Zone Act Reauthorization Amendments of 1990, Ecology is responsible for designating management measures and suites of BMPs that are necessary to achieve and maintain applicable water quality standards and protect designated uses. Additionally, Ecology is the agency responsible for articulating how nonpoint pollution sources can comply with the state Water Pollution Control Act and meet state WQ Standards.

Nonpoint source pollution has been documented to occur from urban and residential development, hydromodification, marinas and boating areas, agricultural activities, and forest practices. Ecology recognizes the need to have specific guidance covering all categories of nonpoint source pollution.

When identifying suites of BMPs and measures to control each category and subcategory of nonpoint sources, Ecology will meet the following objectives:

- Design suites of BMPs and other control measures to comply with the WQ Standards at the site level, contribute to the protection of beneficial uses of the receiving waters, and ensure compliance with state and federal law.
- Utilize best available science to identify BMPs and other control measures.
- Apply the concept of AKART.[155]

This chapter lays out the process that Ecology will use to identify management measures and BMPs for each category of nonpoint pollution in compliance with the CWA and CZARA.

6.1 Federal Requirements

Section 319 of the CWA requires that state nonpoint source (NPS) management programs *"identify best management practices and measures to control each category and subcategory of nonpoint sources…"* EPA guidance for NPS programs reinforces that state NPS management programs must "…identif[y] management measures (i.e., systems of practices) that will be undertaken to reduce pollutant loadings…The measures should also consider the impact of the BMPs on groundwater quality. "

[155] WAC 173-201A-020 states: "AKART" is an acronym for "all known, available, and reasonable methods of prevention, control, and treatment." AKART shall represent the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge. The concept of AKART applies to both point and nonpoint sources of pollution. The term "best management practices," typically applied to nonpoint source pollution controls is considered a subset of the AKART requirement.

CZARA requires states to develop management measures necessary to ensure attainment of the WQ Standards. Management measures are defined as "economically achievable measures" reflecting the "greatest degree of pollutant reduction achievable" through the "best available nonpoint pollution control practices, technologies, processes, siting criteria, operating methods or other alternatives." Management measures are intended to prevent and control nonpoint source pollution, and are implemented through the use of management practices.

While the management measures must be developed to ensure attainment of WQ Standards, the "management measure" approach is more akin to a technology-based rather than water-quality-based approach to addressing nonpoint pollution.

Any manuals, compendiums, or other guidance that identify BMPs and measures adopted by Ecology to fulfill the requirements of Section 319 do not have any independent regulatory authority and will not establish new environmental regulatory requirements.

6.2 Ecology Guidance

Ecology presently has manuals that identify appropriate BMPs in place for several kinds of land uses that can generate pollution. Current Ecology manuals and guidelines include:

- Stormwater Management Manual for Western Washington
- Stormwater Management Manual for Eastern Washington
- Voluntary Clean Water Guidance for Agriculture (Clean Water Guidance/CWG)

6.2.1 Existing Regulatory Programs and Permits

Where existing regulatory programs provide specific oversight and enforcement authority related to a category of NPS pollution, Ecology will generally defer to the implementation of those programs, and not develop independent guidance. Current regulatory programs include:

- Forest Practices Rules
- Onsite Sewage Systems Regulations and Ordinances
- Dairy Nutrient Management Act

Additionally, some sources that previously may have been considered nonpoint pollution sources are now regulated as point source discharges and covered under National Pollutant Discharge Elimination System (NPDES) and/or State Waste Discharge general permits. Any source that is ultimately regulated under a NPDES permit is no longer subject to the BMP guidance requirements of Section 319 and CZARA. However, as covered in Chapter 3, Ecology will work to ensure that our nonpoint pollution source, CZARA, and TMDL programs are well-integrated with our permit programs by clearly defining when an activity requires a permit versus being covered under our NPS program, and utilizing consistent guidance to inform the implementation of both programs. Further, state waste discharge permits can cover sources that may be considered nonpoint in nature.

Information on statewide regulatory programs and permits is provided in Chapters 2 and 3, and details on general permits can be found on the Water Quality Permits webpage[156].

Support for Updates

Ecology will support updates to BMP guidance as necessary to ensure compliance with the WQ Standards.

- Support updates to the Stormwater Management Manual for Western Washington.
- Support updates to the Stormwater Management Manual for Eastern Washington.
- Support the Forest Practices Rules' adaptive management process and rules to update those practices.
- Support updates to the Clean Water Guidance.
- Support adaptive management and updates to any new BMP guidance that is developed to ensure that the state WQ Standards are achieved and maintained.

Collaborative Involvement

Ecology recognizes the need for early involvement with involved or interested parties in any process that develops new management measures and BMP guidance, or updates existing guidelines or manuals. Ecology will seek involvement from local, state, Tribal, and federal agencies, as well as public interest groups, industries, academic institutions (including the Washington Stormwater Center), private landowners and producers, and concerned members of the public during all steps of this process. Further, Ecology will seek the input of Tribal governments, the Agriculture and Water Quality Advisory Committee (agriculture-related management measures), the Water Quality Partnership and the Financial Assistance Council on developing any processes necessary under this chapter.

6.2.2 Clean Water Guidance for Agriculture

The Voluntary Clean Water Guidance for Agriculture (Clean Water Guidance) is a technical resource for agricultural producers that describes Ecology's recommended Best Management Practices (BMPs) to protect water quality. It is intended to help producers meet clean water standards. The recommendations within the Clean Water Guidance are based on a robust gathering of peer-reviewed scientific research. The practices recommended in the guidance provide water quality protections such that a site that implements the necessary BMPs will be presumed to be in compliance with state water quality law. This provides assurances for landowners and removes the uncertainty around what BMPs will be adequate to address nonpoint pollution from a site. Transparently sharing the information, a landowner needs to be compliant with state law empowers landowners to take action to protect water quality and avoid potential regulatory action from Ecology.

[156] https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-quality-permits

To develop the guidance, Ecology worked with an advisory group which includes members from state and federal agencies, Tribal agencies, and environmental and agricultural interest organizations. The group supported our evaluation of BMP effectiveness, helped us to develop BMP recommendations and outline implementation considerations by reviewing materials, providing written feedback, and through discussion during workgroup meetings. Information on the advisory group process and the latest chapters can be found on our Clean Water Guidance website[157]. For the developed guidance chapters, Ecology will include numeric values for the BMPs except where it does not make sense to do so and provide approximate pollutant removal/reduction information for those BMPs in the guidance chapters that have pollutant removal/reduction information available in the existing literature.

Five chapters have been reviewed and are supported by EPA:

- Cropping Methods: Tillage & Residue Management
- Livestock Management-Pasture & Rangeland Grazing
- Sediment Control: Soil Stabilization & Sediment Capture (Structural)
- Riparian Areas & Surface Water Protection
- Livestock Management- Animal Confinement, Manure Handling, and Storage

The remaining eight chapters will be included with the final submission of this Nonpoint Plan:

- Cropping Methods: Crop System
- 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
- Runoff Control from Agricultural Facilities
- Suites of Recommended Practices

[157] https://ecology.wa.gov/regulations-permits/plans-policies/plan-to-control-nonpoint-sources-of-pollution

Ecology has committed to use the BMP guidance:

- In Ecology's CWA section 319 grant funding program.
- To develop and implement Total Maximum Daily Loads (TMDLs) and other water cleanup plans (including but not limited to Advance Restoration Plans and Straight To Implementation projects) with nonpoint components.
- For technical assistance work.

Chapter 7: Monitoring

The federal Clean Water Act (CWA) gives states the primary responsibility for implementing programs to protect and restore water quality, including monitoring and assessing the nation's waters and reporting on their quality. In Washington State, Ecology is the delegated agency primarily responsible for implementing the requirements and provisions of the CWA. Consequently, Ecology is also the agency responsible for satisfying the majority of the water quality monitoring and reporting requirements of the CWA. The purpose of this section is to describe Washington State's current water quality monitoring program.

While the monitoring program's focus is broader in scope than the nonpoint program, it supports the nonpoint program in a variety of ways. For example, the monitoring program is used to identify waters of the state that have impairments, help connect impairments to nonpoint sources of pollution, help identify unimpaired waters, help prioritize waters for implementation, and support effectiveness monitoring.

This section starts by describing the overall state monitoring strategy and Water Quality Assessment (WQA). Then key monitoring programs are briefly described to provide an overview of ongoing monitoring efforts in the state. After describing these key Ecology monitoring efforts, a brief description of other monitoring programs in the state is included to provide a more complete picture of ongoing monitoring that can support the state's nonpoint program. Finally, this section concludes with a description of effectiveness monitoring, quality assurance, and data management.

7.1 Ecology's Monitoring Strategy

Washington State adopted a tiered approach to monitoring in order to most efficiently meet its highest priority monitoring objectives at the various geographic and temporal scales needed for effective environmental management. This means that Ecology and its partner agencies will continue to conduct a variety of extensive and intensive short- and long-term monitoring programs, and employ a number of monitoring designs to meet a wide range of monitoring objectives.

At Ecology, the Environmental Assessment Program[158] (EAP) serves as the technical arm of the agency and conducts much of the water quality monitoring needed to inform regulatory actions. The mission of EAP is to "To measure, assess, and communicate environmental conditions in Washington State."

[158] https://ecology.wa.gov/about-us/who-we-are/our-programs/environmental-assessment

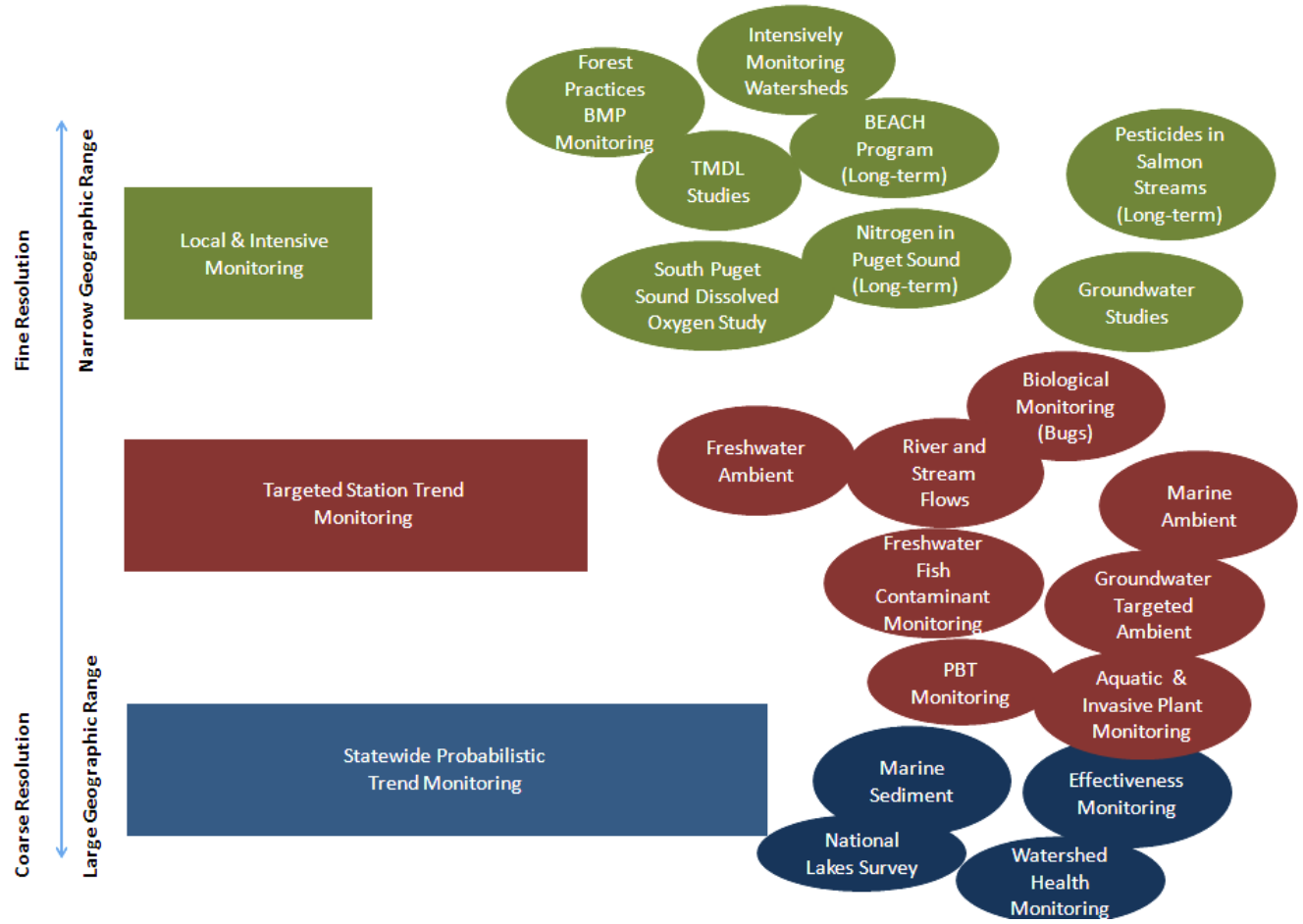

Figure 5. Ecology's tiered monitoring strategy.

7.2 Water Quality Assessment

Washington State's Water Quality Assessment (WQA) is the main tool for identifying impaired waterbodies where cleanup plans are needed. The WQA uses data from Ecology's monitoring programs and data submitted by external entities.

7.2.1 Compiling Existing Sources of Data and Information

The WQA uses data from Ecology's Environmental Information Management System (EIM) and the federal Water Quality Portal. EIM contains data collected by Ecology's monitoring programs as well as ambient data collected by grantees, permittees, and other organizations. Ecology encourages all parties interested in submitting data for use in the WQA to contact the Water Quality Program's EIM Data Coordinator. For every WQA, Ecology publicizes a "call for data" to invite data submitters to submit their data to be used in the next WQA. This includes numeric data reported to EIM and the federal Water Quality Portal as well as non-numeric submissions. Through this "call for data," Ecology attempts to collect data from external parties; however, not all organizations choose to submit data to either Ecology or the federal Water Quality Portal, and as such, the WQA is not a full accounting of water quality problems in Washington.

7.2.2 Data Quality Requirements

Ecology's Policy 1-11, Chapter 2[159], specifies the quality assurance requirements that must be met by all data used for the WQA. Sampling and analysis must be conducted under a documented Quality Assurance Project Plan (QAPP) or other quality assurance procedures that Ecology determines to be equivalent for providing high quality data. If Ecology determines there are flaws in quality assurance planning or implementation that significantly reduce confidence in any submitted data, including in data previously provided during earlier assessment cycles, and no QAPP is documented, then the data will not be used in the WQA.

7.2.3 Data Review

Following Policy 1-11, data used for the WQA are reviewed at multiple points to ensure credibility.

The QAPP provides the foundation for data review and verification by the data submitter. Prior to submitting data into EIM, the data submitter reviews data to ensure that the measurement quality objectives described in the QAPP were met. This includes reviewing data to ensure:

- Data specified in the sampling design were obtained.
- Methods and protocols specified in the QAPP were followed.
- Data are consistent, correct, and complete, with no errors or omissions.
- Quality control results indicate that acceptance criteria were met.
- Data qualifiers are properly assigned where necessary.

Ecology EIM Data Coordinators perform additional quality control checks on data before loading to the EIM database. Additionally, the EIM database relies on a multitude of business rules intended to identify poor quality and duplicative data. Any quality control issues identified by the EIM Data Coordinator or automated EIM system checks are resolved before loading the data to EIM.

Ecology's WQA automation software, which downloads and analyzes data from EIM and the federal Water Quality Portal, has numerous business rules focused on data usability. Specifically, the WQA automation software is used to identify and filter out results with inappropriate method, unit, and parameter combinations. It is also used to identify and review unusual or unrealistic result values.

When parties report errors or questionable results to Ecology, staff investigate and address the issue. Ecology staff remove any data of insufficient or unknown quality from the WQA.

[159] https://apps.ecology.wa.gov/publications/SummaryPages/2110032.html

7.2.4 Data Analysis Procedures

Ecology's Policy 1-11, Chapter 1 specifies assessment criteria and describes assessment methods for the different parameters and media that are evaluated. Specific assessment criteria are described for toxic pollutants in sediment and water, temperature, dissolved oxygen as well as for bacteria and other pollutants. In addition to assessing data using numeric standards, the assessment of water quality can also be based on narrative information. For example, listings may be based on fish and shellfish consumption advisories or swimming advisories. Impairments can also be caused by non-pollutants, as legally defined. Examples of non-pollutants are: physical habitat alterations (e.g., stream channelization, loss of spawning gravels, reduced pool/riffle ratios, loss of large woody debris), physical barriers to fish migration (e.g., dams and culverts), loss of habitat due to invasive exotic species, flow alterations (e.g., low flows and flashier systems), and impaired biologic communities.

7.2.5 Reporting

Ecology's primary means of reporting on the status of water quality is through the development of Washington State's Water Quality Assessment*,* which integrates Clean Water Act requirements for both Section 305(b) general water quality reports and the Section 303(d) impaired waters list. Ecology's Water Quality, Environmental Assessment, and Toxics Cleanup programs have jointly adopted Policy 1-11 that describes the methods used for assessing information to evaluate attainment of WQ and Sediment Management Standards. The Policy includes criteria for compiling, analyzing, and integrating data on ambient.

In preparing the assessment, Ecology evaluates data from all readily available sources that are received during the "call for data" period. Ecology's Water Quality Assessment staff also incorporate data submitted outside of the formal call for data; this often includes grantee and permittee ambient data. Data submitted during the "call for data" period includes not only data from Ecology's freshwater and marine ambient monitoring program and other Ecology studies, but also data from a wide array of entities external to Ecology who collect and submit data, including:

- Federal, state, and local government agencies.
- Tribes.
- Quasi-governmental entities, such as watershed planning councils.
- Businesses.
- Academic institutions.
- Not-for-profit groups.
- The public.

The WQA evaluates readily available data throughout the state to assign waterbodies into one of five categories that describes their level pollution. When data is available for more than one parameter on the same waterbody, Ecology will evaluate each parameter separately and a

category determination will be made for each parameter. The five categories that a waterbody will be placed into are below.

Category 1 **- Meets tested criteria**: placement in this category does not necessarily mean that a water body is free of all pollutants. Most water quality monitoring is designed to detect a specific array of pollutants, so placement in this category means that the waterbody met standards for the pollutants for which it was tested. A waterbody may be Category 1 for one parameter and in a different category for other parameters.

Category 2 **- Waters of concern**: waters where there is some evidence of a water quality problem, but not enough to demonstrate the waterbody consistently exceeds standards. Therefore, these waterbodies are not deemed to be impaired and no water quality improvement project (TMDL) is needed at this time. There are several reasons why a water body would be placed in this category. A water body might have pollution levels that are not quite high enough to violate standards, or there may not have been enough violations to categorize it as impaired according to Ecology's listing policy. Additional data collection should be prioritized on these waterbodies to determine if there are impairments.

Category 3 **- Insufficient data:** water where there is insufficient data to meet minimum requirements to place the waterbody into another category, in accordance with Policy 1-11. Waterbodies with no available water quality data are considered in Category 3.

Category 4 **- Polluted waters that do not require a TMDL**: waters that are polluted (impaired) but no cleanup plan is required. Category 4 is broken into three subcategories.

- ***Category 4A*** - has a TMDL: waterbodies that have an EPA approved TMDL in place.
- ***Category 4B*** - has an approved pollution control program: waterbodies where a pollution control program is actively being implemented to restore water quality. While pollution control programs are not TMDLs, they must have many of the same elements and there must be some legal or financial guarantee that they will be implemented.
- ***Category 4C*** - is impaired by a non-pollutant: water bodies impaired by causes that cannot be addressed through a TMDL. These impairments include low water flow, stream channelization, invasive species and dams. These problems require complex solutions to help restore streams to more natural conditions.

Category 5 - Polluted (impaired) waters that require a TMDL or other water quality improvement project: the list of impaired waterbodies is commonly known as the 303(d) list. Placement in this category means that Ecology has data showing that the standards have been violated for one or more parameters, and there is no TMDL or

pollution control program in place. The CWA requires that waterbodies in this category be prioritized for TMDLs to restore water quality.

Washington State's Water Quality Assessment can be found on Ecology's website[160].

Policy 1-11, which Ecology uses to assess water quality data and determine if water bodies are polluted can be found on the Water Quality Assessment Policy 1-11 webpage[161] .

7.2.6 2022 Water Quality Assessment

Ecology's most current Water Quality Assessment (2022)[162] will be submitted to EPA in April 2025[163]. The 2022 WQA evaluated over 85 million individual data points related to water quality, aquatic life tissue, and sediment. The 2022 WQA evaluated approximately 17% of the state's marine water, 11% of the total lakes, 88% of the Columbia and Snake Rivers, and only 4% of all rivers and streams. Table 7 below summarizes 303(d) listings in the Draft 2022 Water Quality Assessment compared to our previously approved Water Quality Assessment (2018). Temperature, dissolved oxygen, and bacteria continue to be the most prevalent water quality impairments identified through the assessment process. The number of 303(d) listed waters have continued to increase in nearly all parameter groups. However, without further analysis, it is unclear whether this increase is due to degradation of water quality over time, a by-product of an increase in water quality monitoring quantity and quality, or combination of the two factors.

Table 7. Candidate(2022) and Approved 2018 303(d) listing counts by parameter group.

Parameter	Draft 2022 303(d) Listings	2018 303(d) Listings
Bacteria	1610	1357
Dissolved Oxygen	1149	1099
Other	71	31
pH	530	454
Temperature	1673	1358
Toxics	1271	969
Total	6304	5268

[160] https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement/Assessment-of-state-waters-303d

[161] https://ecology.wa.gov/water-shorelines/water-quality/water-improvement/assessment-of-state-waters-303d/assessment-policy-1-11

[162] https://ecology.wa.gov/water-shorelines/water-quality/water-improvement/assessment-of-state-waters-303d

[163] We held a public comment period on the Draft 2022 Water Quality Assessment from November 4, 2024 to January 10, 2025; following review and response to comments, the Water Quality Assessment will be submitted to EPA for approval.

As monitoring programs continue to build capacity, both in the quantity of data collected and spatial coverage of monitoring locations, we are very likely to continue to see an increase in 303(d) listings in the future. Development of TMDLs, permitting of point-source dischargers, and implementation of nonpoint source pollution strategies will be the main drivers in reducing an inevitable increase in the number of 303(d) listings.

7.3 Ecology Monitoring Programs

7.3.1 Water Quality Improvement (WQI) Projects

Under the CWA and implementing federal regulations, Ecology is required to develop Water Quality Improvement Projects for impaired waters listed under Category 5 of the Water Quality Assessment (the 303(d) list). These projects could be Total Maximum Daily Load (TMDL) projects, or could involve simply implementing the appropriate pollution controls in watersheds impaired by nonpoint pollution. As is discussed in Chapter 3, implementing nonpoint pollution controls without a TMDL in place works well in watersheds in which the pollution problems are easy to identify and the solutions are known. Many of these projects are led by Ecology staff, but successful projects are also being implemented by counties, watershed planning groups, and the U.S. Forest Service.

When an impaired body is selected as a priority for a TMDL or an Advance Restoration Plan, Ecology conducts scientific studies to identify sources and amounts of pollutants causing the water quality problem and the magnitude and timing of reductions needed. These studies typically consist of multiple, several-day field surveys over the course of several months to a year or more, comprehensive data analysis, and may include mechanistic and/or statistical modeling. The studies may focus on conventional pollutants, or they may be conducted for a variety of toxic substances including metals and organic compounds. Projects can include multiple media, surface water, stormwater, effluents from municipal and industrial facilities, suspended particulates, bottom sediments, bottom cores, and biological media such as, microalgal, plant, and/or vertebrate or invertebrate tissues. Since many of the waters identified on the CWA Section 303(d) list have diffuse pollutant sources, water cleanup plans are usually conducted on a broad watershed scale. Implementation plans are developed to implement TMDLs. Effectiveness studies show whether the activities implemented are working.

7.3.2 River and Stream Ambient Monitoring

Ecology's river and stream monitoring program will continue to rely predominantly on a fixed station monitoring design. Ecology currently collects samples monthly from 61 long-term (core), 18 basin, and 18 sentinel monitoring stations (97 total). Core stations are generally located in a downstream reach of a mainstem river (often at bridge crossings for efficient sampling).

Data from these stations are used to assess the overall condition or status of their respective basin, and to evaluate long-term trends. A few core stations are located in upper watersheds to

reflect un-impacted conditions. Many core stations have been sampled for extended periods (some for over 40 years), allowing for site-specific trend analyses.

Basin stations are sampled monthly for (usually) one year, and new station locations are chosen each year to support Ecology's five-year watershed management process or to target specific concerns identified by Ecology's regional office staff. Ecology also records continuous temperature data at about 60 stations to determine compliance with current and proposed WQ Standards. Furthermore, Ecology conducts continuous monitoring for temperature, dissolved oxygen, pH, and conductivity at 16 stations, and two stations support effectiveness monitoring efforts. Results are delivered in near-real-time to the Internet by satellite telemetry at most continuous stations.

7.3.3 Marine Water Ambient Monitoring

Ecology's Marine Waters Monitoring Program employs multiple approaches to assess water quality status and trends across a broad range of spatial and temporal scales. Monthly water column sampling provides the backbone of Ecology's Marine Waters Monitoring program, which is conducted at 39 core monitoring stations within greater Puget Sound, Willapa Bay, and Grays Harbor. Representative monitoring of temporal and spatial trends in environmental conditions is achieved through routine monthly data collection across a spatially distributed network of long-term stations that spans Washington's diverse estuarine waters. Full water column profiles of temperature, conductivity, dissolved oxygen, fluorescence, transmissivity, turbidity, and nitrate are collected using *in-situ* sensors deployed from research vessels operated by the Department of Ecology (R/V Skookum and R/V Salish SeaCat) and Shannon Point Marine Science Center (R/V Magister). To complement continuous profiles, discrete water samples are collected at up to four depths ranging from near-bottom to near-surface, with greater vertical resolution in the upper 30m to account for the connectivity between nutrient loading from freshwater inputs and biological response in sunlit portions of the water column. Near-bottom conditions are monitored using water column particulates paired with Marine Sediment Monitoring Stations to resolve the connection between ambient water quality and long-term sediment trends. Since 2018, total alkalinity and dissolved inorganic carbon (TA/DIC) measurements have been collected at a subset of long-term discrete sample locations. Sample analyses use consistent and approved techniques to determine long-term status and trends in water quality indicators over long temporal scales.

Complex topography and a myriad of freshwater sources contribute to a dynamic environment within Puget Sound that results in a high degree of variability in physical, chemical, and biological constituents within its surface waters. Taking representative near-surface point samples is therefore challenging, and to overcome this challenge the program utilizes ferry-based measurements and aerial photography to resolve this variability and integrate observations into a spatially and temporally nested monitoring approach. Washington State Department of Transportation (WSDOT) and Victoria Clipper ferries have been instrumental in

providing high spatial and temporal coverage along regularly scheduled routes that serve critical reaches of Puget Sound. In addition to expanding near-surface coverage of water quality parameters measured throughout Ecology's monitoring program, acoustic doppler instruments integrated into WSDOT ferries provide detailed measurements of water velocity and acoustic backscatter that resolve transient exchange pathways between Puget Sound and the Strait of Juan de Fuca.

7.3.4 Marine Sediment Monitoring

Ecology's Marine Sediment Monitoring Program (MSMP) is a long-term effort that assesses the health of Puget Sound sediments. Our goal is to provide easily accessed, high-quality data and information to assist the Puget Sound Partnership, managers, and others in evaluating the overall condition of Puget Sound sediments, as well as to document change in benthic condition over time in response to inputs of carbon, nutrients, and chemicals to the system, and in response to climate-related pressures. The sample design and analyses used by the MSMP are approved and documented techniques which are detailed in the Sediment Program's Quality Assurance Monitoring Plan[164]. Ecology's MSMP employs two sampling strategies in order to assess sediment quality status and trends at various spatial and temporal scales.

1. **Puget Sound Ecosystem Monitoring Program Sediment Component Long-Term** - Annual status and trends assessments of sediment quality and the condition of benthic invertebrates Puget Sound-wide as estimated from samples collected from 50 stations, 20 of which are co-located with Ecology's Marine Waters Monitoring.
2. **Puget Sound Ecosystem Monitoring Program Urban Bays** - Periodic status and trends assessments of sediment quality and benthic invertebrate condition in six urban bays (one bay each year) as estimated from samples collected from 30 to 36 stations.

7.3.5 Stream Biological Monitoring

Traditional measurements of chemical and physical components for rivers and streams may not provide sufficient information to detect all surface water problems. Biological monitoring, the evaluation of the organisms inhabiting surface waters, provides a broader approach because degradation of sensitive ecosystem processes is more frequently identified.

The Environmental Assessment Program at Ecology has three major projects monitoring biological condition in Washington's streams and rivers. The Sentinel and Biological Monitoring Projects monitor macroinvertebrates and periphyton from 108 targeted reference or "least impacted" sites throughout the state. Seventeen Sentinel sites are sampled annually, while an additional 91 sites are sampled on a rotating basis for the Biological Monitoring Project. Since 2009, Ecology has collected samples from 537 reference site visits throughout Washington. This monitoring has provided a base of information describing biological characteristics of reference

[164] https://apps.ecology.wa.gov/publications/SummaryPages/1803109.html

or “least impacted’ condition. Additionally, since 2009 the Watershed Health Monitoring Project has sampled macroinvertebrates from over 961 randomly selected sites throughout Washington. Using a Washington master sample list and a probabilistic sampling design, 50 sites from each of seven Status and Trends Regions throughout the state are sampled on a rotating basis (i.e. 1-2 Status and Trends Regions sampled per year). Each time a Status and Trends Region is revisited, 25 new randomly selected sites are sampled, and another 25 sites visited previously are sampled again. This program provides statistically reliable estimates of the overall status, condition, and trends in freshwater quality and aquatic habitat. Physical, chemical, and biological data are collected to at a salmon recovery scale to assess watershed health and support salmon recovery efforts. Although this data is not reported in the 303(d) assessment it can be used in the 305(b) report.

One of the goals of Ecology’s stream monitoring program is to develop biocriteria using benthic macroinvertebrates, and to apply these biocriteria appropriately within the framework of the CWA. Two types of numeric biocriteria, based on biometrics and predictive modeling, are being developed for use throughout Washington State. When used alone or together, these criteria can give a statistically defensible case for determining the overall condition of a stream or waterbody. Ecology now uses macroinvertebrate samples to assess potential streams for listing on the state’s 303(d) list.

7.3.6 Stream Flow Monitoring

Ecology manages streamflow monitoring stations across the state. All stations consist of automated, telemetered capabilities providing near real time reporting. Streamflow and stage, as well as other water quality parameters depending on the configuration of individual stations, are presented on Ecology’s web site[165].

Washington’s Comprehensive Monitoring Strategy[166] recommends the installation of additional stream gages on un-monitored reaches of mainstem rivers and major tributary streams in priority (i.e., salmon-critical) watersheds first, but in all watersheds eventually.

7.3.7 Invasive Aquatic Plant Monitoring

Ecology has been monitoring the occurrence and distribution of aquatic plants (macrophytes) in lakes and rivers , concentrating on invasive species such as Eurasian watermilfoil. Other objectives are to provide technical assistance on aquatic plant identification and control of invasive species, and to conduct special projects evaluating the impacts of invasive species and their control. To date, aquatic plant data have been obtained from over 1000 lakes, reservoirs, and rivers across Washington. Monitoring locations are targeted each year based on requests

[165] https://ecology.wa.gov/research-data/monitoring-assessment/river-stream-monitoring/flow-monitoring
[166] https://apps.ecology.wa.gov/publications/documents/0503034.pdf

or problems identified by Ecology staff, county noxious week programs, other state agencies, Tribes, and local cooperators. The Washington state lakes environmental database[167] contains Ecology's aquatic plant data collected at lakes and rivers since 1994.

7.3.8 Beach Environmental Assessment, Communication and Health (BEACH) Program

EPA initiated the Beach Environmental Assessment, Communication, and Health (BEACH) Program in response to the passage in 2000 of the BEACH Act. The Act amends the Clean Water Act and authorizes EPA to appropriate funds to states for the development of monitoring and notification programs to provide a more uniform system for protecting the users of marine waters. In Washington, a BEACH Coordinator manages the development and implementation of the Program, including facilitating the inter-agency BEACH Committee. The committee includes Ecology, the state Department of Health (DOH), and nine county health jurisdictions in Grays Harbor, Tacoma-Pierce, Seattle-King, Whatcom, Clallam, Jefferson, Island, Thurston, and Kitsap. The monitoring program focuses on sampling for fecal indicator bacteria at about 60 public marine beaches in Washington State from Memorial Day to Labor Day. Ecology implements the BEACH program collaboratively with DOH and with the assistance and cooperation of local county health jurisdictions, non-profit organizations, Tribal governments, volunteers, and universities. The information is communicated to the public on Ecology's BEACH Program website[168], Ecology's social media websites, GovDelivery email notification, and by signs posted on the beaches.

7.3.9 Freshwater Fish Contaminant Monitoring Program

The Freshwater Fish Contaminant Monitoring Program (FFCMP) was developed to address continuing concerns about toxic compounds in Washington's aquatic environments. Historical monitoring efforts identified many areas where levels of contamination were high enough to harm humans and wildlife, sometimes resulting in fish consumption advisories issued by the state Department of Health. The goal of the FFCMP is to provide information to resource managers and the public about the status of toxic contamination in edible fish tissue from freshwater lakes, rivers, and streams that have not yet been monitored, or to track trends over time in areas that are undergoing cleanup activities. The FFCMP has conducted exploratory monitoring to identify occurrences of toxic contamination in fish tissue since 2003 in lakes, reservoirs, and rivers annually.

[167] https://apps.ecology.wa.gov/lakes/
[168] https://ecology.wa.gov/water-shorelines/water-quality/saltwater/beach-program

7.3.10 Lake/Reservoir Monitoring

National Lakes Assessment

Ecology participated in EPA's National Lakes Assessment in the summers of 2007, 2012, 2017, and 2022. Sites were randomly selected using a probability-based sampling design which resulted in locations throughout the state. These surveys contribute to a national assessment of lake water quality. These surveys help to assess current conditions, evaluate change over time, and monitor the impacts of key stressors on nationwide lake environments. Nonpoint nutrient sources continue to be the greatest threat to lake water quality. For more information on Ecology's participation in EPA's National Lakes Assessment, see our website[169].

Sites sampled include:

- 30 lakes in 2007
- 33 lakes in 2012
- 50 lakes in 2017
- 27 lakes in 2022

Aquatic Plants Monitoring

Aquatic plant monitoring, focused on invasive species, takes place at 40 to 60 lakes per year. Results are maintained in a publicly accessible database that can be found on our Aquatic Weed Control Technical Assistance website[170].

Freshwater Algae Control Program

Ecology's Water Quality Program hosts the Freshwater Algae Control Program[171]. In 2005, the Washington State Legislature established funding for an algae control program and asked Ecology to develop the program. Reducing nutrient input to lakes is the only long-term solution to prevent algae blooms. However, the amount of money available for this program (about $250,000 per year) is not enough to fund comprehensive lake-wide and watershed-wide nutrient reduction projects. Instead, the goal of the program is to provide local governments with funding to put towards the management of algae problems. The program targets blue-green algae (also known as cyanobacteria) which pose a health risk to humans, pets, and livestock.

[169] https://ecology.wa.gov/research-data/monitoring-assessment/lake-water-quality
[170] https://ecology.wa.gov/regulations-permits/guidance-technical-assistance/aquatic-weed-control-technical-assistance
[171] https://ecology.wa.gov/water-shorelines/water-quality/freshwater/freshwater-algae-control

Mercury in Fish

We worked with the state Department of Health to develop a Chemical Action Plan (CAP) for mercury[172] in 2003. The plan details natural and human-caused sources, identifies the way mercury moves through the environment, summarizes health effects, and discusses fish consumption advisories.

We've supported the CAP by assessing mercury in fish tissue every year since 2005. Each year, we collect 10 individual largemouth or smallmouth bass from six waterbodies to analyze total mercury accumulation. We return to each set of waterbodies every five years to assess trends.

7.3.11 Groundwater Monitoring

There is currently no state-level program to monitor ambient groundwater quality trends over time in Washington, and no long-term funding source has been identified to date to support such an effort.

In 2016, Ecology became a data provider to the U.S. Geological Survey National Groundwater Monitoring Network[173] (NGWMN). The goal of the NGWMN is to establish a national long-term groundwater quantity and quality network by using existing federal, state, and local groundwater monitoring programs. With funding provided by the NGWMN program Ecology has installed 14 monitoring wells in areas of the State not covered by Ecology's regional water level networks. All 14 wells are providing groundwater level data and 6 of the wells are providing water quality data.

Following is a summary of current groundwater monitoring activities.

Sumas-Blaine Aquifer

The Environmental Assessment Program has been collecting nitrate in groundwater data in the Sumas-Blaine Aquifer (SBA) in Whatcom County since the mid-1990's. Groundwater monitoring for nitrate in the SBA, primarily at domestic monitoring wells, has been ongoing since then. In 2021, Ecology installed six dedicated groundwater monitoring wells in Whatcom county near the U.S.-Canadian Border. In 2023, Ecology received additional funding to install an aquifer wide monitoring network consisting of 30 dedicated wells. The wells will be used collect both water level and water quality data. The SBA is an international transboundary aquifer under, managed under a joint agreement between the U.S. and Canada.

[172] https://apps.ecology.wa.gov/publications/summarypages/0303001.html
[173] https://cida.usgs.gov/ngwmn/

For more information on the efforts to monitor Sumas-Blaine aquifer groundwater, see our webpage[174].

Lower Yakima Valley Aquifer – Groundwater Management area--

The Lower Yakima Valley is a site of known groundwater nitrate contamination.

In 2008, the Yakima Herald Republic ran a series of articles entitled "Hidden Wells, Dirty Water" to highlight nitrate in drinking water used in large part by low income farm families. At the request of Yakima Valley and in cooperation with the Department of Ecology, the Lower Yakima Valley Groundwater Management Area[175] advisory committee was formed. A plan was developed with 64 recommended actions to reduce nitrate in groundwater.

Ecology is implementing the top two recommended actions by establishing an ambient groundwater monitoring network. This network samples nitrate from 170 wells across the area and assists with tracking the health of the aquifer over time. So far, we have completed two years of quarterly sampling of each well, and have now transitioned to annual sampling, which we will continue into the future, allowing us the opportunity to track nitrate trends over time.

Ecology found approximately 21% of the wells exceed the drinking water standard for nitrate (10 mg N/L). We were able to identify those areas most impacted, and we found that shallow wells had higher concentrations than deeper wells. We work closely with residents and share results of their water quality and educate them on how they can protect their drinking water.

Ecology is also working collaboratively with other local entities to identify land use practices that reduce nitrate loading to groundwater. This also entails working closely with farmers and residents to help them make positive changes that will ultimately improve groundwater quality.

Statewide Groundwater Nitrate Assessment

A Statewide review of groundwater nitrate contamination has been compiled and is available on the Ecology website[176]. On the webpage, the Sumas-Blaine Aquifer, Lower Yakima Valley, and Columbia River Basin are highlighted as critical areas of concern. A detailed assessment of nitrate in groundwater throughout Washington State is reported in "Washington Nitrate Prioritization Project;" more information on the Nitrate Prioritization Project can be found in Chapter 8.

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[174] https://ecology.wa.gov/research-data/monitoring-assessment/groundwater-quality-assessment/active-studies-index/sumas-blaine
[175] https://ecology.wa.gov/issues-and-local-projects/environmental-projects/lower-yakima-valley-groundwater-management-area
[176] https://ecology.wa.gov/water-shorelines/water-quality/groundwater/nitrate-data-assessment

7.3.12 Water Quality Grants- Monitoring Projects

Ecology grant projects capture environmental outcomes and performance measures in the grant and loan competitive application process and in funding agreements. The program does not require water quality monitoring, but where monitoring is conducted under a grant or loan, the recipient must follow an Ecology-approved Quality Assurance Project Plan and monitoring data must be entered into EIM as a funding condition. The program coordinates with the technical arm of Ecology regarding BMP effectiveness monitoring and use of this data to help quantify benefits. The grant program has integrated "post project assessment" language in agreements that ensures follow-up to review the status and capture a summary of ongoing environmental outcomes or water quality improvements after 3 years.

7.3.13 Stormwater Work Group

The Stormwater Work Group (SWG) is a statewide coalition of federal, Tribal, state, and local governments, businesses, environmental, and agricultural entities. The SWG was convened in 2008 at the request of the Puget Sound Partnership and Department of Ecology to develop a Stormwater Monitoring and Assessment Strategy for the Puget Sound Region. The strategy is intended to provide a coordinated, integrated approach to quantifying the stormwater problem in Puget Sound and to help us efficiently and effectively manage stormwater to reduce harm to ecosystems.

The SWG oversees the Stormwater Action Monitoring (SAM) collective, which is a permittee-driven stormwater monitoring and assessment program. To date, the SAM collective has supported over 30 research studies.

The SWG has numerous subgroups overseeing regional stormwater monitoring and developing recommendations. Each subgroup has its own purpose and goals. The SWG Chairs and Ecology coordinators support each subgroup in achieving its goals. Subgroups include:

- 6PPD-quinone.
- Receiving Waters Status and Trends.
- Study Solicitation.
- Charter and Work Plan.

For more information about the SWG, view the SWG Website[177].

7.4 Other Monitoring Programs

7.4.1 U.S. Geological Survey

The U.S. Geological Survey (USGS) conducts monitoring for the National Water Quality Assessment (NAWQA) Program. Data collected from NAWQA are used to summarize the status

[177] https://sites.google.com/site/pugetsoundstormwaterworkgroup/home?authuser=0

and trends of surface water and groundwater quality, describe the processes affecting water quality and aquatic ecology, and provide timely results to watershed managers, policy makers, and the public.

The USGS also operates and maintains the National Streamgaging Network collecting long-term streamflow data nationwide. Although the National Streamgage Network is operated primarily by the USGS, it is funded by a partnership of federal, state, Tribal, and local agencies.

USGS also manages the National Streamflow Information Program which was created in response to Congressional and interested parties' concerns about (1) a loss of streamgages, (2) a disproportionate loss of streamgages with a long period of record, (3) the inability of the USGS to continue operating high-priority streamgages when partners discontinue funding, and (4) the increasing demand for streamflow information due to new resource-management issues and new data-delivery capabilities.

7.4.2 U.S. Forest Service

The U.S. Forest Service conducts monitoring of aquatic resources in support of two broad scale plans: (1) the Northwest Forest Plan (i.e., Western Washington) and (2) Pacfish/Infish Biological Opinion (PIBO). Both plans require implementation and effectiveness monitoring of management activities that address issues with the Endangered Species Act. The goal of the regional monitoring program under the Northwest Forest Plan is to evaluate its effectiveness in achieving management objectives which include restoring and maintaining the ecological integrity of watersheds and aquatic ecosystems. The individual forest plans also have implementation and effectiveness monitoring of BMPs. Each national forest produces a Forest Plan Monitoring Report each year that covers all the implementation and effectiveness monitoring accomplished. Additionally, to assess the effectiveness of the Legacy Roads and Trails Program in decreasing the potential risk of forest roads impacting water quality, the US Forest Service – Rocky Mountain Research Station is monitoring 47 sites across the western United States.

7.4.3 Habitat Conservation Plans

Habitat Conservation Plans (HCPs) are administered by the National Oceanic and Atmospheric Administration (NOAA) Fisheries and the U.S. Fish & Wildlife Service. Most of the HCPs in Washington are focused on the conservation of salmonids. These include programs administered under the Endangered Species Act, the Federal Power Act, the Clean Water Act, and the Magnuson-Stevens Act, among others. The HCP program provides policy and technical expertise to non-federal entities that want to develop HCPs.

Monitoring is a mandatory element of all HCPs and is part of the permittee's implementation obligation. The scope of a monitoring plan is directly related to the significance of the HCP's biological impacts. Monitoring data are needed to ensure proper compliance with an HCP and to determine whether biological goals and objectives are being met. Monitoring serves not only to ensure compliance and gage the effect and effectiveness of HCPs, but it also informs choices

under the adaptive management provisions and assists in redefining biological goals. Applicants work with the Services to determine the level of monitoring appropriate for their specific HCP.

Four HCPs have been issued by NOAA Fisheries in Washington for the protection of anadromous salmonids.

7.4.4 Shellfish Growing Area Monitoring

The Office of Environmental Health and Safety of the Washington State Department of Health (DOH) is mandated to evaluate commercial shellfish growing areas to determine if shellfish are safe to eat. To this end, DOH operates a variety of monitoring programs that track conditions in marine waters. One program monitors the level of the marine biotoxins Paralytic Shellfish Poison, Diarrhetic Shellfish Poison, and Amnesic Shellfish Poison in mussels sampled biweekly from sentinel mussel cages or scraped off substrate from 100-110 locations throughout Puget Sound and the coastal estuaries. In addition, commercial shellfish species from active commercial harvest areas are sampled. When biotoxin levels in the mussels or commercial shellfish species from individual areas exceed the appropriate Food and Drug Administration levels, DOH informs the public and orders a halt to commercial/recreational harvest. DOH also operates a phytoplankton monitoring program that acts as an early warning system for Harmful Algal Bloom (HAB) events. This network helps the DOH to prioritize where shellfish samples are collected and to test samples more frequently during HAB events, resulting in more effective closures that better protect public health.

DOH also operates another monitoring program to support the classification of commercial shellfish areas. At present, there are 115 classified growing areas. DOH uses standards and guidelines set by the National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish to monitor and classify the growing areas. Classification is based on analysis of marine water quality, meteorology, hydrography, and an intensive survey of shoreline and uplands for fecal pollution sources. An area cannot be approved for harvest if there are significant pollution threats despite acceptable marine water quality.

Once classified, all active growing areas are regularly monitored. Marine water samples are collected throughout the year. Shoreline surveys are conducted less frequently, but each year dozens of shellfish growing areas are surveyed. During those surveys, all potential pollution sources that may impact water quality are evaluated. The purpose of continued marine water sampling and shoreline surveys is to make sure that growing areas continue to meet the standards associated with their classification, to modify classifications when needed, and to notify the responsible agencies about identified and potential pollution sources. If a commercial shellfish growing area has its classification downgraded due to nonpoint pollution, state law calls for local governments to form a shellfish protection district within 180 days. The shellfish protection district is tasked with developing a pollution control plan (shellfish closure response plan) in order to address the pollution sources and improve water quality.

7.4.5 Salmon Recovery Act

The Salmon Recovery Funding Board funds several types of monitoring related to salmon recovery. These include project effectiveness monitoring, intensively monitored watersheds for validation monitoring, and implementation monitoring of the funded projects. In the past, they funded habitat status and trends monitoring. This is now funded by the Department of Ecology.

7.4.6 Strategy to Recover Salmon

In 1999, the State of Washington Joint Natural Resources Cabinet published the statewide strategy to recover salmon. To evaluate success of the recovery strategy, the state uses the biennial State of the Salmon in Watersheds report[178]. This report is essentially the state's business plan for salmon recovery. It's a performance management system for tracking data, measuring progress, and changing course where needed. Of the indicators tracked on the scorecard, very few are related to water quality, and fewer still to nonpoint pollution sources. However, the report does include information on WRIAs that have acceptable scores according to Ecology's Water Quality Index (WQI).

The WQI is represented by numbers ranging from 1 to 100, indicating the general water quality at each station. The higher index numbers are indicative of better water quality. Multiple constituents of the water quality measured are combined, and the results are aggregated to produce a single score for each sample station. According to the 2022 report, when comparing WQI scores from 1994-2017, 48% of long-term water quality monitoring sites are improving, declines were seen at 4.6% of sites, and 47.4% show no significant trend.

7.4.7 Aquatic Nuisance Species Management Plan

The purpose of the Washington State Aquatic Nuisance Species (ANS) Management Plan is to coordinate all ANS management actions currently in progress within Washington, and to identify additional ANS management actions, especially those relating to ANS animals. The development of a state management plan is called for in Section 1204 of the National Invasive Species Act of 1996, which provides an opportunity for federal cost–share support for the implementation of state plans approved by the National Aquatic Nuisance Species Task Force. Management actions are undertaken and funded by the responsible state agencies. The Washington State Plan, published in December 1998, was developed by the Washington State Aquatic Nuisance Species Planning Committee.

Several agencies are responsible for current efforts to monitor for ANS populations already present in Washington. The Washington State Aquatic Nuisance Species Planning Committee continues to revise the monitoring program to quickly detect new ANS introductions or the spread of those already present. They are working to collect accurate information about which

[178] https://stateofsalmon.wa.gov/

ANS are present, where they are present, and an estimate of their population numbers and/or densities. The Committee established the following "Strategic Action"**:**

- Monitor waters that are vulnerable to new ANS introductions and track the distribution of existing ANS populations.
- Survey Washington lakes, rivers, estuaries, wetlands, and coastlines on a periodic basis to establish an accurate assessment of the presence of non-native species that have become, or have the potential to become, nuisance species, and make these data available statewide.

7.4.8 Surface Water Monitoring for Pesticides in Salmon-Bearing Streams

WSDA's Surface Water Monitoring Program for Pesticides in Salmon-Bearing Waters is entering its 20th year of existence. The study assesses pesticide-presence in salmon-bearing streams during a typical pesticide use period (March – September). Currently, the assessment evaluates samples for more than 150 pesticide active ingredients and their breakdown products, and compares those results with known toxicity criteria. Sampling at a few select sites continues into November to assess the persistence of pesticides that remain in the environment beyond the application season. Also, at a few select sites water samples are collected for nutrient analysis (ammonia, nitrite+nitrate, orthophosphorus, and total phosphorus) in addition to pesticide analysis to provide an interpretive benefit for determining possible pathways of pesticide movement. The data generated by the monitoring program is used by WSDA, the U.S. Environmental Protection Agency, (EPA), the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service, and the U.S. Fish and Wildlife Service (USFWS) to refine exposure assessments for pesticides registered for use in Washington State. Understanding the fate and transport of pesticides allows regulators to assess the potential effects of pesticides on endangered salmon species while minimizing the economic impacts to agriculture.

Pesticide Stewardship Partnerships

Beginning in 2020 WSDA initiated several Pesticide Stewardship Partnerships aimed at pairing education and outreach activities with water monitoring at a watershed level. This work was conducted in cooperation internally with WSDA's Technical Services and Education unit, and externally with conservation districts, Washington State University, and agricultural pesticide dealers. Ambient surface water monitoring results were used to direct education efforts to particular watersheds, as well as additional water sampling activities to refine exposure estimates from off-target pesticides. Additional sampling activities that occur depend on the location, but generally consist of one of the following: 1) composited 24-hour water samples, 2) grab samples collected in paired watersheds with varying BMP participation, or 3) grab samples collected in a stream where is data is lacking. Currently, these activities are ongoing in Chelan (Brender Creek), Whitman (Kamiach, Thorn and Dry Creek), and Okanogan (Whitestone Creek) counties.

7.4.9 Groundwater Monitoring for Pesticides

In 2023 the Washington State Legislature approved funding to establish a regional pesticides in groundwater monitoring program at WSDA. The goal of the program is to determine the presence and concentration of pesticides and nutrients in groundwater in agriculturally dense regions. Following a WSU-developed statistically based sampling design, this program aims to characterize the variability of agricultural chemicals in regional aquifers. Program staff are sampling residential wells in the first two regions, the Pasco Basin and Walla Walla Basin. WSDA partners with local conservation districts and health authorities to communicate results with voluntary study participants and identify pathways and resources available to address potential drinking water concerns. For more information, see WSDA's Regional Pesticides and Nutrient Monitoring Program webpage[179] for more information.

7.4.10 Tribal Monitoring

Most of the monitoring reported by Tribal governments has a geographic focus at the watershed level and, to a lesser degree, upon the area within the jurisdictional boundaries. Each Tribal government operates according to its own laws, regulations, and priorities; this is reflected in the diversity of Tribal monitoring programs, which we are unable to accurately reflect in this document. See individual Tribal websites for more information and contacts for Tribal monitoring programs.

7.4.11 Local Government Monitoring

Most of the monitoring conducted by local governments has a geographic focus at the watershed level and/or is dependent upon the area within the local government's jurisdictional boundaries. County monitoring programs vary by jurisdiction, priorities, and resources available. For more information on what monitoring might occur within your county, see your local governmental website.

7.5 Effectiveness Monitoring

7.5.1 Effectiveness Monitoring of Watershed Cleanup Plan Implementation

Effectiveness monitoring uses a combination of monitoring types to evaluate whether specified activities have achieved the desired effect. It is an essential component to the adaptive management process when BMPs are implemented to control human-caused pollution. It is also one of the several required components when (1) we develop Total Maximum Daily Loads (TMDLs) or other watershed-based pollution control plans, or (2) state and federal funds are used to implement nonpoint-source pollution control strategies.

[179] https://agr.wa.gov/departments/land-and-water/natural-resources/water-quality/groundwater/regional-pesticide-and-nutrient-monitoring-program

In Washington State, the Department of Ecology is the primary agency responsible for implementing the requirements and provisions of the Clean Water Act, including monitoring the effectiveness of water pollution cleanup plans. In 2013, Ecology released the guidance document Guidance for Effectiveness Monitoring for Total Maximum Daily Loads in Surface Waters[180]. This document serves as a guide for determining the effectiveness of TMDL projects and other water quality clean-up efforts, and informs adaptive management.

The goal of effectiveness monitoring is to assess whether water cleanup actions are achieving their intended outcomes. This involves collecting and analyzing data to determine if restoration projects or regulatory measures are improving conditions as planned. This means tracking indicators such as water quality, biodiversity, and/or habitat recovery to evaluate how well restoration projects meet goals over time. Effectiveness monitoring helps guide future decisions by highlighting what works, identifying areas needing adjustment, and supporting adaptive management.

Since 2002, Ecology's Environmental Assessment Program has been monitoring the effectiveness of water cleanup activities throughout the state. To date, the program has published a total of 25 publications and has assessed a total of 196 individual TMDLs (Publications & Forms[181]). The program has also developed a web site to keep track of progress and to highlight selected projects: Water quality improvement effectiveness monitoring - Washington State Department of Ecology[182].

In recent years, Ecology has included biological monitoring as a core element, particularly in regions where salmon recovery efforts are integral to water quality objectives. This includes tracking changes in macroinvertebrate communities, and other biological indicators that reflect ecosystem health in response to water quality improvements. By monitoring the success of habitat restoration and other efforts to support clean water, the program provides a clearer picture of the overall health of aquatic ecosystems.

The program also emphasizes the use of advanced technologies for real-time data collection, including remote sensing and water quality sensors, which enable more dynamic and timely adaptive management. Data from these technologies, combined with traditional before-and-after monitoring studies, provide insights into the long-term trends and immediate effects of water quality interventions. Through reporting systems and integrated data management,

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[180] https://apps.ecology.wa.gov/publications/SummaryPages/1303024.html

[181]https://apps.ecology.wa.gov/publications/UIPages/PublicationList.aspx?IndexTypeName=Topic&NameValue=Effectiveness+Monitoring+for+Water+Quality+Improvement+Projects+(TMDLs)&DocumentTypeName=Publication

[182] https://ecology.wa.gov/Research-Data/Monitoring-assessment/Water-quality-improvement-effectiveness-monitoring#:~:text=Effectiveness%20monitoring%20helps%20us%20gauge%20how%20well%20our,to%20meet%20state%20and%20federal%20clean%20water%20standards.

Ecology ensures that all monitoring information is accessible for interested parties, guiding both current and future water quality improvement efforts.

7.5.2 Effectiveness Monitoring of the Forest Practices Rules

Compliance Monitoring Program

In 2006, DNR established a Compliance Monitoring Program (CMP) that reports on riparian protection and road construction ~~and maintenance~~ activities, the two areas of forest practices most likely to affect water quality. There are ~~five~~ Forest Practices Rules categories reviewed during standard sampling: 1) riparian protection, 2) wetland protection, 3) water typing, 4) road construction, maintenance, and abandonment ~~near water~~, and 5) harvest or road construction on unstable slopes. Periodic samples ~~and emphasis samples~~ are also conducted, with the most recent being unstable slopes (2022-2023). The CMP is now in its tenth biennial measurement cycle and maintains a programmatic goal of achieving 90% or better compliance rates with rules associated with each prescription type observed. For more information on the compliance monitoring program see DNR's Compliance Monitoring webpage.[183]

Cooperative, Monitoring, Evaluation, and Research

Ecology participates in the Cooperative Monitoring, Evaluation, and Research (CMER) Committee to evaluate the performance of the Washington State Forest Practices Rules. Statutes and rules governing the Forests & Fish Program include a multi-party monitoring component that systematically evaluates the effectiveness of the Forest Practices Rules. The Adaptive Management Program (AMP) includes a full-time administrator, project managers, scientific advisory groups, and independent scientific peer review. As these research projects are completed, their findings are provided to the Timber, Fish and Wildlife (TFW) Policy committee. The TFW Policy Committee then determines what action, including changes in regulations or further clarifying research, should be recommended to the State Forest Practices Board.

To date, the program has completed 17 peer-reviewed effectiveness studies. In addition to these effectiveness studies, the program also conducts literature reviews, Rule Implementation Tools, intensive monitoring, and extensive status and trends monitoring. Final reports and associated documents for completed CMER projects can be found at the AMP webpage[184]. For the status and documents of the projects currently underway, see the AMP dashboard[185].

One of the largest effectiveness efforts were the Non-fish-bearing stream buffer effectiveness projects (the Hard Rock study)[186]. These studies examined the effectiveness of current and alternative riparian buffering strategies in protecting key water quality resources (stream

[183] https://www.dnr.wa.gov/programs-and-services/forest-practices/rule-implementation
[184] https://www.dnr.wa.gov/AdaptiveManagementResearchDocs
[185] https://dnr.wa.chariotcreative.com/
[186] Hard Rock: fp_cmer_typen_hr_20201119.pdf, fp_cmer_hr_phase_ii_2022.pdf

temperature, water chemistry, sediment), habitat/channel stability (large woody debris), and riparian (vegetation type, mortality rates, large woody debris recruitment). The Hard Rock study also looked at the potential impacts to the stream-associated amphibians that utilize this habitat and can be sensitive to increases in temperature and sediment. These were long-term Before-After Control-Impact studies with monitoring efforts starting 2 years before harvest and continuing for 6 or 10 years after harvest (2006-2020). The Hard Rock study is also currently conducting 15-year post-harvest follow-up project for the amphibians in these watersheds (2023-2024).

CMER, with participation from Ecology, is also working on developing an Extensive Riparian Status and Trends Monitoring Program – Riparian Vegetation and Stream Temperature[187]. While this is not an effectiveness project, it will help CMER prioritize, plan, conduct, interpret, and assess the scope of inference of other CMER studies and monitoring work, including effectiveness studies. The project's charter states that "the objective is to build and maintain a status and trends monitoring program that will evaluate how aquatic conditions, riparian forest structure and functions, and the desired habitat conditions they support change on a landscape scale." The goal is to have this program up and running as soon as possible.

7.5.3 High Resolution Change Detection

WDFW has developed High Resolution Change Detection (HRCD) GIS products that can track changes in landcover and tree canopy over time and across the landscape. Due to the link between riparian shade and stream temperature (described with numerous citations in the Soft Rock report[188]), tracking changes in riparian tree canopy can be a surrogate for changes in stream temperature.

Traditional temperature monitoring (in-stream sensors) is resource-intensive, which limits the amount of monitoring that Ecology, and our partners, can accomplish. Additionally, when focusing on evaluating potential improvements to temperature-impaired waters, we must wait many years before the positive impacts of riparian buffers can be measured. There is also no way to retroactively collect stream temperature. The HRCD layer has statewide tree canopy data starting in 2017, which could allow us to establish baseline conditions and then track changes over time. This may be a powerful tool to track progress towards addressing temperature impairments, by allowing us to track riparian buffer implementation at a landscape level.

HRCD uses high resolution imagery from USDA[189], which can identify landcover changes at the parcel-level, the implementation focus of nonpoint staff work. This could include changes to the width of trees in riparian areas. This data has many potential applications to track changes in riparian acreage and condition through time, including:

[187] ExMo-Project-Charter-1709930750.pdf
[188] https://www.dnr.wa.gov/publications/bc_tfw_sr_fin_rpt_20220104.pdf
[189] https://naip-usdaonline.hub.arcgis.com/

- Evaluating riparian condition over time.
- Supporting effectiveness monitoring efforts.
- Identifying areas where riparian enhancement or restoration is needed.
- Providing additional information for prioritizing future work efforts and informing priority areas for funding programs.
- Comparing riparian buffer conditions between land uses.
- Estimating current buffer acreage on forest lands.
- Comparing buffers on private lands to state and federal lands.
- Estimating buffer acreage on Forest Practices rule identified landforms (i.e. unstable slopes).
- Estimating buffer acreage around wetlands.
- Estimating impacts of wildfire on riparian buffers following timber harvest.

We support exploring the use of HRCD to track landuse changes and riparian buffer implementation on the ground. Currently, WDFW's HRCD data for tree canopy includes most areas of the state for 2017, with more limited coverage for 2011 and 2019. Given the potentially broad-sweeping applications of this data, we support continued funding for WDFW to provide HRCD data.

See WDFW's High Resolution Change Detection webpage[190] for more information.

7.6 Quality Assurance

Most of the monitoring activities conducted by Ecology identify the primary use of the data in a Quality Assurance Project Plan (QAPP). Ecology's Executive Policy 22-01 states that "A Quality Assurance Project Plan is prepared for each environmental study/activity that acquires or uses environmental measurement data." It further states that "This policy applies to environmental data collection studies/activities conducted or funded by Ecology." The Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies describes 14 elements to be addressed in a plan and provides supporting information and examples relevant to the content of each element.

Quality assurance and quality control responsibilities for management and staff are described in the most recent *Ecology Quality Management Plan*, which can be found on our webpage[191]. EPA's approval of the *Quality Management Plan* delegates to Ecology the authority to review and approve QA Project Plans prepared in that agency.

[190] https://hrcd-wdfw.hub.arcgis.com
[191] https://ecology.wa.gov/issues-and-local-projects/investing-in-communities/scientific-services/quality-assurance

Washington State's Water Quality Assessment has specific quality assurance requirements identified in Water Quality Policy 1-11. Policy 1-11 Chapter 2[192] directs the reader to several sources for guidance on how to develop the proper QAPP.

In 2004, the Washington State Legislature passed the Credible Data Act (engrossed substitute Senate Bill 5957) with the intent to ensure that credible water quality data are used as the basis for the assessment of the status of a waterbody relative to the surface WQ Standards.

The Credible Data Act requires Ecology to use credible information for:

- Determining whether any water of the state is to be placed on or removed from any Section 303(d) list.
- Establishing a Total Maximum Daily Load (TMDL) for any surface water of the state.
- Determining whether any surface water of the state is supporting its designated use or other classification.

The Credible Data Act further states that data interpretation, statistical, and modeling shall be those methods that are generally acceptable in the scientific community as appropriate for use in assessing the condition of water.

In collecting and analyzing water quality data for any of these purposes, the Credible Data Act specifies that data will be considered credible if:

- Appropriate quality assurance and quality control procedures were followed and documented in collecting and analyzing water quality samples.
- The samples or measurements are representative of water quality conditions at the time the data were collected.
- The data consist of an adequate number of samples based on the objectives of the sampling, the nature of the water in question, and the indicators being analyzed.
- Sampling and laboratory analysis conform to methods and protocols generally acceptable in the scientific community as appropriate for use in assessing the condition of the water.

7.6.1 Data Management- Environmental Information Management System (EIM and MyEIM)

The Environmental Information Management System[193] (EIM) is the Department of Ecology's main database for environmental monitoring data. EIM is a database containing data collected by the Washington State Department of Ecology and affiliates such as local governments and

[192] https://apps.ecology.wa.gov/publications/SummaryPages/2110032.html
[193] https://ecology.wa.gov/research-data/data-resources/environmental-information-management-database

cleanup sites. EIM contains records on physical, chemical, and biological analyses and measurements. Supplementary information about the data (metadata) is also stored, including information about environmental studies, monitoring locations, and data quality. In 2013, EIM was upgraded and now includes a new search application with an improved map. Many fields were updated in the database and the ability to accept time series data from field instruments was added.

Finally, MyEIM was added to EIM. It is an advanced toolset for searching and analyzing data. MyEIM replaced SEDQUAL, the former sediments database. MyEIM allows users to customize searches, analyze chemical and biological data, and map EIM data.

EIM is Ecology's main repository of monitoring data collected by the agency and grant recipients whose monitoring work was funded by Ecology. These data are the foundation of our 303(d) and 305(b) reporting. For more information on the role of EIM in developing our water quality assessment, see section 7.2 of this chapter.

7.6.2 Water Quality Assessment Search Tool

Washington State's Water Quality Assessment uses the Water Quality Assessment Search Tool[194] to manage the five category determinations and any supporting data analysis or information for waterbody segments. Data come from a variety of Ecology sources, as well as sources outside of Ecology. The search tool can be used to query and download assessment results. The search tool also links to the Water Quality Atlas[195], which is a mapping tool where users can plot Water Quality Assessment results with other spatial data sets or create maps of assessment results.

7.6.3 Ecology Administrative Grants and Loans Database (EAGL)

EAGL[196] is an integrated web-based grant and loan management system. EAGL allows Ecology's grant and loan clients to complete grant applications, submit payment requests with progress reports, collect specific BMP implementation data, submit closeout reports, and request amendments online. The system provides a streamlined application and reporting process for both external clients and Ecology staff. EAGL is used to manage State Revolving Fund loans, Centennial Grants, and Clean Water Act Section 319 Grants.

7.6.4 Laboratory Information Management System

The Laboratory Information Management System (LIMS) is a database that contains analytical data for samples analyzed by Ecology's Manchester Environmental Laboratory. It is also a software system that provides capabilities in project management, sample scheduling, sample receiving, and sample control. The LIMS also interfaces with analytical instrumentation allowing

[194] https://apps.ecology.wa.gov/ApprovedWQA/ApprovedPages/ApprovedSearch.aspx
[195] https://apps.ecology.wa.gov/waterqualityatlas/
[196] https://ecology.wa.gov/About-us/Payments-contracts-grants/Grants-loans/Grant-loan-guidance

direct upload of data results. The LIMS provides a platform allowing for statistical analyses of data, quality assurance monitoring and data review, approval and reporting in both electronic and hardcopy formats.

7.6.5 The Pacific Northwest Water Quality Data Exchange

The Pacific Northwest Water Quality Data Exchange[197] comprises a number of related information management projects that collectively seek to facilitate the aggregation of and access to a comprehensive source of data related to water quality in the Pacific Northwest. The project is supported by funds allocated from the EPA Network Challenge Grant program, and with these projects the involved states are applying the concepts embodied in the National Environmental Information Exchange Network.

7.6.6 Coastal Atlas

The Coastal Atlas[198] contains information about Washington's marine shorelines and the land areas near Puget Sound, the outer coast, and the estuarine portion of the Columbia River, including public access and beach closures.

7.6.7 Nonpoint Source Implementation Tracking Database

As stated in Chapter 3, tracking implementation data is important for accountability, transparency, effectiveness monitoring, and adaptive management. At a minimum, Ecology will track the following implementation data for TMDLs, ARPs, and STI projects:

- The location of nonpoint source problems identified by Ecology during watershed evaluations.
- Sites that Ecology contacted after the evaluations.
- The BMPs implemented in the watershed that were funded by Ecology's Water Quality Combined Funding program.

A specific description of the BMPs that are implemented at a site is the most important information to track to support effectiveness monitoring efforts and promote accountability and transparency. For BMPs implemented with funds from an Ecology grant, specific information is collected on our BMP approval form. For other BMPs implemented in support of a TMDL or STI, Ecology will strive to collect data consistent with the BMP approval form. Additionally, we will continue to work with partners to promote the collection of consistent implementation data and share that data with partners and the public.

To support consistent information collection across Ecology regions, we have developed the Nonpoint Source Implementation Tracking System, which consists of a mobile and desktop

[197] https://exchangenetwork.net/data-exchange/pacific-northwest-water-quality-exchange/
[198] https://apps.ecology.wa.gov/coastalatlas/

application. More information on the purpose and use of the Nonpoint Source Implementation Tracking System can be found in Chapter 3.

Chapter 8: Groundwater

A majority of Washington State residents (approximately 60%) get drinking water from groundwater. Not counting Seattle, which is supplied by a surface water reservoir, the percentage of residents who rely on groundwater is even higher. In fact, most rural residents get water from groundwater wells, although some get water from springs and surface water. A significant number of wells in specific areas of the state have been shown to violate standards. Impacts to groundwater are not distributed evenly throughout the state.

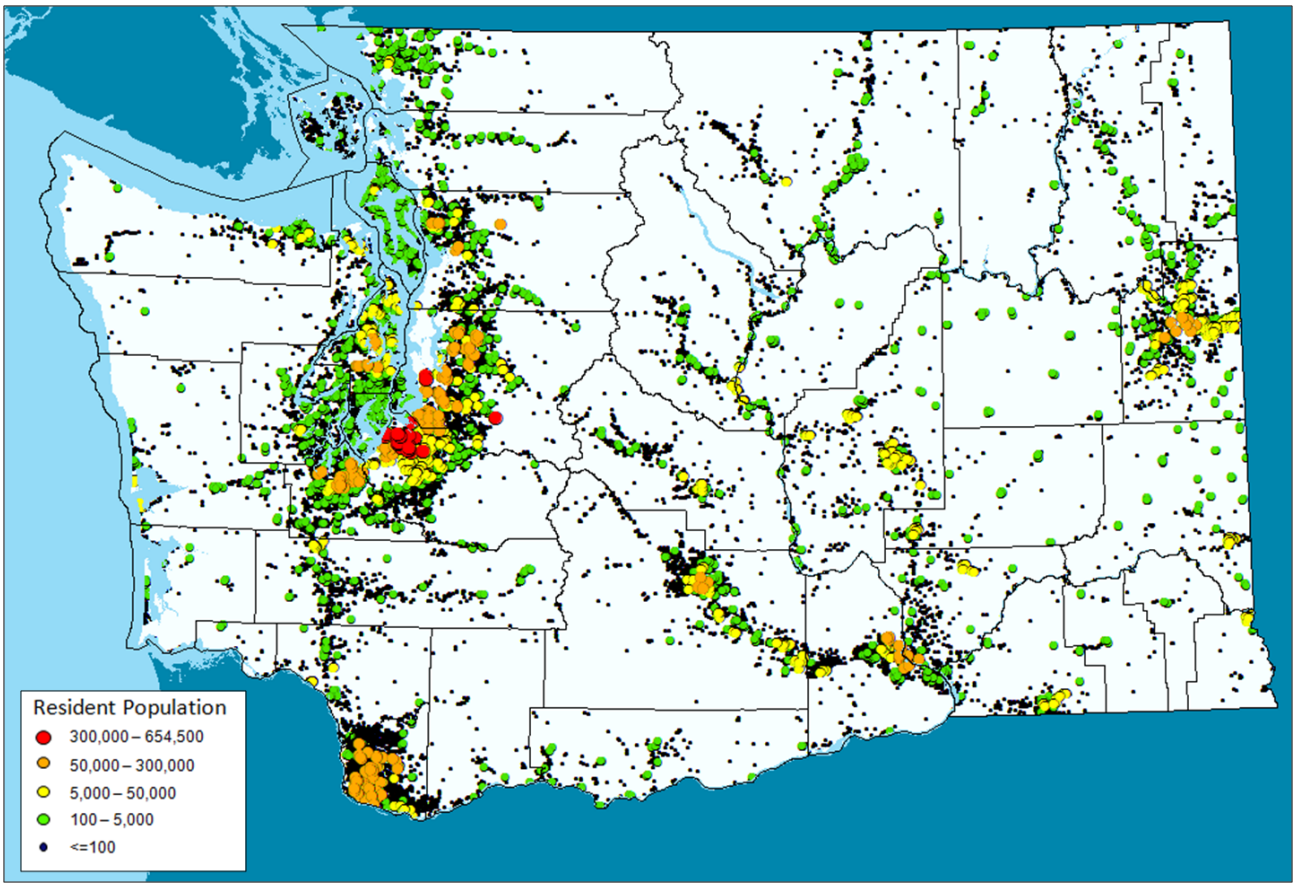

Figure 6. Public water supply systems that rely on groundwater sources.

Because groundwater is recharged from precipitation and snow melt, various chemicals and constituents of other materials used or dumped on the ground's surface can infiltrate into the ground and pollute groundwater. Once these pollutants enter groundwater, they can be difficult to detect by taste or smell, are difficult to remove, and may end up in drinking water and water used for irrigation. Because groundwater also supplies many of our rivers and streams, especially in the late summer, pollutants in groundwater can end up in surface water bodies and negatively affect surface water quality.

The most typical nonpoint pollutants associated with groundwater pollution are nitrates, pathogens, and chemical constituents of pesticides, fungicides and herbicides. Failed residential septic systems, forestry, and agriculture are common sources of these pollutants.

The effects of nonpoint source pollution of groundwater are costly. Costs are typically incurred when wells must be deepened or replaced, treatment systems must be installed and maintained, water delivery infrastructure to alternative sources are developed, and when bottled water must be supplied to affected individuals until permanent clean water sources can be secured. For example, following a June 2024 lawsuit alleging that dairies' manure management practices may be causing residential drinking water contamination, a federal judge ordered three Lower Yakima Valley dairies near Granger, Washington, to test well water and provide water treatment systems or bottled water to residents. The court ordered the dairies to test drinking water wells up to 3.5 miles downgradient of the dairies. Reverse-osmosis water treatment systems and bottled water are being provided to homes where this testing finds nitrate levels above 10 milligrams per liter.

8.1 Nonpoint Pollution in Groundwater

Cities, rural residences, agriculture, and forestry can all contribute to nonpoint pollution to groundwater (see Chapter 1, section 1.2.3 for further discussion of common nonpoint source pollution sources). Pesticides and fertilizers are used on crops, lawns, park fields, and golf courses. Animal manure is used as a fertilizer, and human waste is delivered to the ground by septic systems or land application of biosolids. Constituents of fertilizers, pesticides, and septic waste have all migrated to groundwater, causing groundwater pollution in multiple areas of the state. There are many locations in various areas of the state where nitrate has exceeded 10 mg/L in groundwater, the drinking was quality standard for nitrate.

8.1.1 Nitrate

Nitrate is a primary indicator of nonpoint groundwater pollution and is one of the most widespread known nonpoint contaminants of groundwater in Washington state. Groundwater contamination by nitrate has increased as the use of fertilizer, manure production, and the population of the state have increased.

Many studies over the years have clearly demonstrated that there are areas of the state where groundwater has been particularly susceptible to contamination from nonpoint sources. Both public water supply wells and individual residential wells have been contaminated in multiple areas of the state. The detection of excessive levels of nitrate in groundwater also indicates that chemicals used on land can reach groundwater.

The primary way nitrate pollution of groundwater is prevented and controlled is to reduce loading at the land surface. Nitrate is needed to grow crops, and this makes it especially challenging to regulate as a pollutant. Loading can be reduced by:

- Applying only what is needed by actively growing crops and lawns.
- Timing nutrient applications to coincide with the period of plant utilization.
- Placing nutrients away from surface waters.
- Eliminating late season nutrient applications.
- Managing irrigation to prevent over-watering and subsequent nitrate leaching.

Although most drinking water wells in Washington State have not been contaminated by nitrates, a significant number in specific areas have (see Figures 7 and 8 in section 8.3 below). Among others, these include the Sumas Blaine Aquifer in Whatcom County, the Lower Yakima Valley, and the Columbia Basin. Millions of dollars have been spent to cope with nitrate contamination of groundwater.

8.2 Regulatory Framework- Nonpoint Pollution Control for Groundwater

Water Pollution Control Act

Washington State has a statutory policy to protect Washington waters. RCW 90.48, discussed in more detail in Chapter 2, section 2.1.1, gives authority to regulate and protect state surface water and groundwater. Because of this, and recognizing the close connection and exchange that may exist between surface and groundwaters, many of the actions and strategies in this Nonpoint Plan are designed to address pollution to both surface and groundwater. For example, the agricultural BMPs recommended in the Clean Water Guidance (discussed in further detail in Chapters 3 and 6) are designed to be protective of both surface and groundwater quality. However, to address the complexity of groundwater systems and the unique challenges they pose, Ecology's Water Quality Program has several efforts and teams that specifically focus on groundwater protection, and this chapter highlights that work.

Under Chapter RCW 90.48 RCW, Ecology has authority for water pollution control. Under RCW 90.48.030, Ecology has the jurisdiction to "control and prevent the pollution of streams, lakes, rivers, ponds, inland waters, salt waters, water courses, and other surface and underground waters of the state of Washington."

Under RCW 90.48.080 it is illegal to pollute waters of the state including groundwater. Discharges to waters of the state, including groundwater, require a State Waste Discharge Permit.

Groundwater Quality Standards

Under the authority of the Washington Water Pollution Control Act, the Department of Ecology developed groundwater quality standards to protect Washington's groundwater. Groundwater Quality Standards (Chapter 173-200 WAC) list criteria for a variety of groundwater contaminants and are designed to protect the beneficial uses of the waters of the state. Examples of such beneficial uses are drinking water and other domestic uses, stockwatering, industrial, commercial, and agricultural uses, and fish and wildlife maintenance and enhancement. The numeric criteria values and the narrative standards represent contaminant concentrations that are not to be exceeded in groundwater.

Washington's Groundwater Quality Standards support the goal of protecting groundwater and preventing human-caused groundwater pollution. The standards apply to any activity that has the potential to contaminate groundwater quality. To achieve this, people engaging in activities that will discharge to the state's groundwater must implement "all known, available, and reasonable methods of prevention, control and treatment" (AKART) to reduce the contaminant load sufficiently to assure the criteria will not be exceeded, and AKART must be applied to all wastes prior to entry into groundwater. Additionally, the state applies the technology-based treatment requirements in 40 CFR part 125.3[199] to issue permits imposing treatment specifications.

To support meeting the Groundwater Quality Standards, the Department of Ecology developed Implementation Guidance for the Ground Water Quality Standards[200]. The guidance explains and interprets the standards, providing clear direction to promote consistent statewide implementation for activities that have a potential to degrade groundwater quality.

Additionally, antidegradation policy mandates the protection of background water quality, and prevents degradation of water quality which would harm a beneficial use or violate the Groundwater Quality Standards. Whenever groundwaters are of a higher quality than the criteria assigned for said waters, the existing water quality shall be protected. Additional treatment may be necessary to achieve the antidegradation policy.

Federal Safe Drinking Water Act

The Safe Drinking Water Act[201] (SDWA) was established to protect the quality of drinking water in the U.S. This law focuses on all waters actually or potentially designated for drinking use, whether from above ground or underground sources. The Washington State Department of Health's Office of Drinking Water[202] is responsible for implementing the SDWA in Washington state.

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[199] https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-125/subpart-A/section-125.3
[200] https://apps.ecology.wa.gov/publications/SummaryPages/9602.html
[201] https://www.epa.gov/sdwa
[202] https://doh.wa.gov/community-and-environment/drinking-water/office-drinking-water

Under the Act, EPA also establishes minimum standards for state programs to protect underground sources of drinking water from endangerment by underground injection of fluids. This is the federal Underground Injection Control (UIC) Program. Washington Department of Ecology is delegated under the Safe Drinking Water Act to implement the Underground Injection Control Program. More on this program in section 8.3.1.

8.3 Strategies and Tools for Addressing Nonpoint Pollution of Groundwater

Multiple agencies in Washington State manage programs that have a nexus to nonpoint pollution of groundwater. Some of these programs are explicitly focused on groundwater protections, while others regulate more broadly those activities which are known to be a common cause of groundwater pollution. Similar to the multi-faceted statewide strategy to address surface water pollution (described in Chapter 3), there are multiple tools that contribute to the strategy to address groundwater pollution. Many of the strategies and tools of Ecology's nonpoint program are also protective of groundwater, and similar to surface water, there are sources of groundwater contamination that are regulated by permits and their regulation shifts to point source programs. The below includes several examples of tools to address groundwater pollution and is a non-exhaustive list.

8.3.1 Washington State Department of Ecology

Ecology uses several tools to address pollution to groundwater, discussed in brief below.

General Nonpoint Strategies

As discussed previously, RCW 90.48, the regulatory authority under which Ecology's nonpoint staff operate, includes protecting all state waters, inclusive of groundwater resources. Nonpoint staff evaluate visible concerns to groundwater when evaluating sites of concern, and although the primary focus of nonpoint staff is often implementing solutions to correct surface water pollution, many of the recommended BMPs also address groundwater concerns. For example, an uncovered manure pile that may be contributing runoff to surface water may also be causing contamination of groundwater; implementation of a manure storage facility with an impermeable base and a roof will address both concerns. The broad authorities granted under RCW 90.48 allow nonpoint staff to take action to protect groundwater quality.

Ecology's Clean Water Guidance chapters related to manure storage, heavy use areas, nutrient management, livestock management, irrigation management, and cropping systems have recommendations that support protection of groundwater. Ecology's nonpoint staff provide technical assistance to agricultural producers based on the recommendations in the guidance to address pollution to both surface and groundwaters.

Additionally, Ecology's Water Quality Combined Funding Program provides funding to implement Best Management Practices that support protecting both surface and groundwater quality. This funding program is available to a diverse array of recipients, including conservation districts, counties, local health jurisdictions, Tribes, and other local community and

environmental organizations. From improved agricultural practices, riparian buffers, and on-site sewage system repairs, Ecology's funding program supports the implementation of a variety of BMPs that protect groundwater from nonpoint pollution sources.

More information on the activities of Ecology's nonpoint field staff and additional details about the Water Quality Combined Funding Program can be found in Chapter 3.

Underground Injection Control Program

Chapter 173-218 WAC establishes the Underground Injection Control (UIC) Program to protect groundwater by regulating the discharge of fluids from UIC injection wells. The EPA organizes UIC wells into six classes. The Ecology UIC Program regulates Class II, Class III, Class IV (under CERCLA), and Class V on Washington state lands, except for UIC wells located on Tribal land. UIC wells used to manage stormwater are considered Class V wells. In Washington, the majority of injection wells are Class V wells — mainly dry wells — used to manage stormwater from roads, parking areas, and roofs. "UIC well" means a well that is used to discharge nonhazardous fluids into the subsurface.

A UIC well can be one of the following: (1) a bored, drilled, or driven shaft, or dug hole whose depth is greater than the largest surface dimension, (2) an improved sinkhole, or (3) a subsurface fluid distribution system (drain fields, infiltration trenches with perforated pipe, stormwater infiltration chambers or galleries, bioretention systems infiltrating water below treatment soil). UICs are not: buried pipe and/or tile networks that serve to collect water and discharge that water to a drainage system or to a receiving surface water; surface infiltration basins and flow dispersion stormwater facilities; infiltration trenches designed without perforated pipe or a similar mechanism; or bioretention systems transporting water via a perforated pipe to a closed drainage system or to a receiving surface water.

The purpose of Chapter 173-218 WAC is to protect groundwater quality by:

- Preventing groundwater contamination by regulating the discharge of fluids into Underground Injection Control (UIC) wells.
- Satisfying the intent and requirements of Part C of the Federal Safe Drinking Water Act (SDWA) and the Washington State Water Pollution Control Act, Chapter 90.48 RCW

The UIC program provides additional groundwater protection by requiring that any industrial or municipal waste discharged into an injection well must be done under a state discharge permit[203] (more on these permits below). Chapter 173-216 WAC requires State Waste Discharge (SWD) permits for municipality or industrial discharges to groundwater through processes such as land treatment or infiltration.

[203] https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-quality-permits/Water-Quality-individual-permits

State Waste Discharge Permits

A State Waste Discharge Permit is required for a discharge of wastewater to waters of the state, which includes groundwater. Ecology currently issues individual permits to publicly owned treatment works, other treatment works treating domestic sewage, which is discharged to ground, as well as industrial facilities that discharge to groundwater. Additionally, some industries are covered by general permits for operations that discharge to groundwater (for example, concentrated animal feeding operations, fresh fruit packing, and wineries). Both individual and general permits include discharge limits for specific pollutants, monitoring and reporting requirements, and operation and maintenance requirements. More information on State Waste Discharge Permits can be found on the Water Quality Permits webpage[204].

Biosolids Permit

Ecology issues a statewide general permit for biosolids management, which implements the Biosolids Management rule (Chapter 173-308 WAC). The general permit contains minimum requirements that all biosolids facilities must meet, and allows Ecology to increase environmental protections or establish more stringent biosolids management requirements for facilities on a case-by-case basis, if necessary. More information on the Biosolids Permit can be found in section 3.4.4 of Chapter 3.

Critical Aquifer Recharge Areas and Critical Area Ordinances

In 1990, the Washington State Legislature adopted the Growth Management Act (GMA), Chapter 36.70A RCW (see Chapter 2, section 2.2.2 for more information on the GMA). This statute mandates that local jurisdictions adopt ordinances that classify, designate, and regulate land use in order to protect critical areas. One of these areas are critical aquifer recharge areas (CARA). Under the GMA, CARA are defined as "areas with a critical recharging effect on aquifers used for potable water, including areas were an aquifer that is a source of drinking water is vulnerable to contamination that would affect the potability of the water, or is susceptible to reduced recharge."

To support the protection of CARA, Ecology has developed a guidance document[205] to help local jurisdictions adopt Critical Aquifer Recharge Area ordinances to protect groundwater quality and ensure that sufficient aquifer recharge occurs to maintain the quantities necessary to support groundwater's use as a potable water source. In addition to the guidance, Ecology provides technical assistance for parties ranging from landowners and developers to local jurisdictions. Technical assistance may consist of helping builders to navigate local Critical Area Ordinances or to review jurisdictional ordinances for consistency with the GMA to help them protect groundwater.

Nitrate Prioritization Project

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[204] https://ecology.wa.gov/water-shorelines/water-quality/water-quality-permits
[205] [7]https://apps.ecology.wa.gov/publications/SummaryPages/0510028.html

This project was an outcome of a multi-agency discussion at the director level, which focused on how resource agencies could coordinate their data to produce tools to help address identified water quality concerns. This project aggregates available groundwater data throughout the state to identify areas where nitrate contamination of groundwater is of greatest concern, to examine information that will help us understand why these areas are more at risk of contamination than other areas.

The objectives of the Nitrate Prioritization Project are to:

- Identify areas of the state where groundwater has been contaminated by nitrates.
- Examine the conditions that lead to contamination.
- Prioritize these areas by the affected population and severity of contamination.
- Every two years, collect GIS data from DOH and the U.S. Geological Survey (USGS) and update the online Nitrate Prioritization Map.

Through the nitrate prioritization project, Ecology collected and aggregated nitrate sampling data collected by the USGS, DOH and Ecology. The sampling history shows where monitoring was done and where nitrates were found to be high.

Ecology also examined the conditions that lead to contamination. This information is used to understand where the nitrate contamination "hot spots" are in our state. Based on the nitrate monitoring data and examination of regional conditions, Ecology developed preliminary nitrate prioritization boundaries and risk categories. These area boundaries and categorization may change upon review.

Maps in the report show the statewide landscape-level patterns of conditions that tend toward nitrate contamination of groundwater or indicate these conditions are present. These include where soils and geologic materials drain water quickly, where loading sources are concentrated and where numerous wells that have tested for high nitrates are clustered. See Ecology's Nitrate Prioritization Project website[206] for more information and mapping tools.

[206] https://ecology.wa.gov/water-shorelines/water-quality/groundwater/nitrate-data-assessment

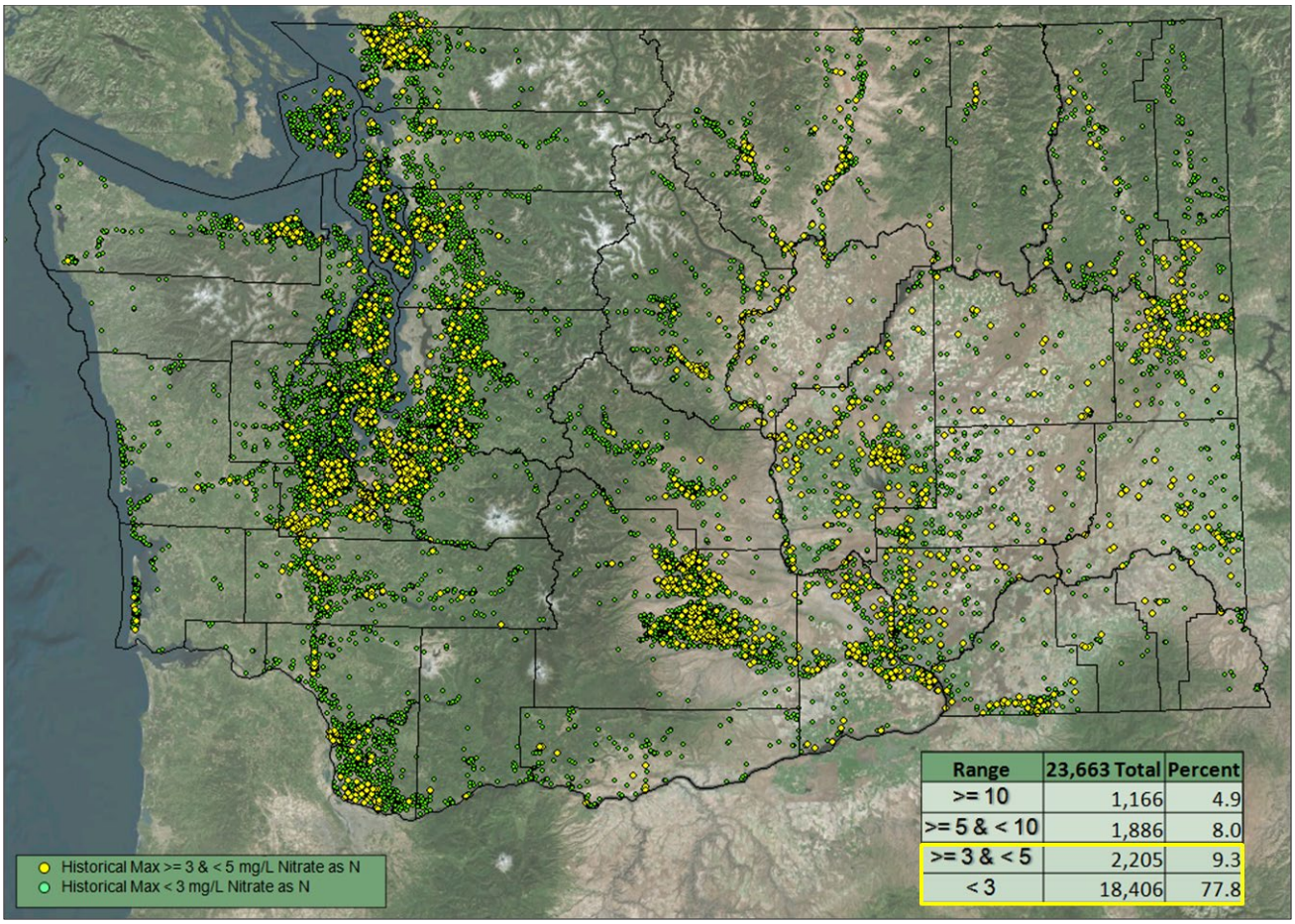

Figure 7. Map of wells sampled that have low or very low levels of nitrate in groundwater; the drinking water quality standard for nitrate is 10mg/L.

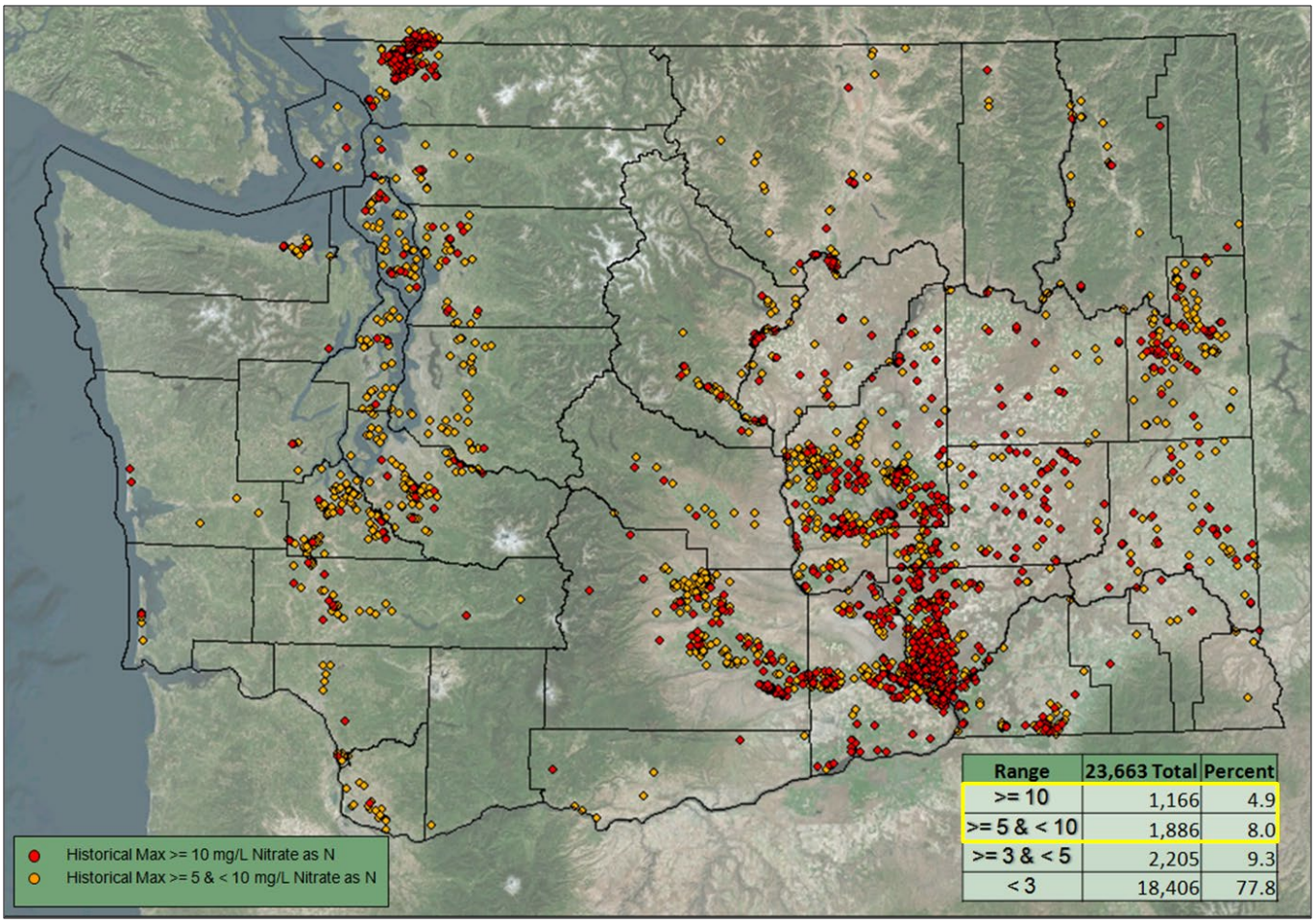

Figure 8. This map shows wells sampled that have high levels of nitrate in groundwater; the drinking water quality standard for nitrate is 10mg/L. Public water systems with nitrate levels over 10mg/L must notify people who receive water from them, while in most instances, individuals are responsible for monitoring the health and safety of their own well water.

Groundwater Management Areas

The Department of Ecology is authorized by state law (RCW 90.44.400) to identify groundwater management areas (GWMAs) to support the protection of groundwater quality and quantity. GWMAs help to ensure that groundwater quality is maintained to meet the use needs of an area. More information on GWMA's and examples of Ecology's participation can be found in section 8.3.5 of this chapter.

8.3.2 Washington State Department of Agriculture

Washington State Department of Agriculture (WSDA) administers the following programs which regulate activities that have the potential to impact groundwater quality:

- Implementation of the Dairy Nutrient Management Act to protect waters of the state, including groundwater (See chapter 2, section 2.1.3 and chapter 3, section 3.4.2 for

more information on WSDA's Nutrient Management Technical Services (NMTS) program and the implementation of the Dairy Nutrient Management Act).

- Supporting growers with nitrogen management in the Lower Yakima Valley, one of several nitrate priority areas, through the Yakima Nitrate Project. This project emphasizes outreach, technical assistance, research, and decision support tools for a wide range of agricultural producers, to promote good nutrient management and groundwater protection. More information about this project can be found on WSDA's Yakima Nitrate Project webpage[207].
- Pesticide use, which is regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (see relevant sections of chapter 2.2 for more information on pesticide regulation).

8.3.3 On-Site Sewage System Regulation

See Chapters 2 and 3 for more information on the regulation of on-site sewage systems.

8.3.4 Washington State Department of Health Drinking Water Program

The Department of Health's Drinking Water program requires that public water systems inventory potential contamination sources within their wellhead protection zones (WHPZ) and report results to the state. The report must include what the water system did to contact the identified potential contaminant sources and the federal, state, or local agency with jurisdiction over them. An initial inventory must be completed within one year following wellhead protection area delineation and must include, at a minimum, all potential sources of contamination in Zone 1 (the 1-year time-of-travel), and all high-risk potential contaminant sources in Zone 3 (the 10-year time-of-travel). The inventory must be updated at least every two years. In settings experiencing significant growth or land use changes, the inventory should be updated more frequently. Wellhead protection area designations are shared with emergency officials to enable communications with purveyors in case of spills or other situations which could contaminate specific drinking water sources.

The DOH collects mapping data for and maintains the Source Water Assessment Program (SWAP) Mapping Tool[208]. This GIS mapping tool was developed to provide a graphical representation of drinking water source areas and the UIC program uses the tool exclusively to identify WHPZs when reviewing new registrations and requires that water purveyors are notified when new UIC wells are installed in their WHPZ.

8.3.5 Ground Water Management Areas (GWMAs)

Washington State Law (RCW 90.44.400) allows the Department of Ecology to identify groundwater management areas in order to protect groundwater quality, to assure

[207] https://agr.wa.gov/departments/land-and-water/livestock-nutrients/regional-projects-directory/yakima-nitrate-project
[208] https://doh.wa.gov/community-and-environment/drinking-water/source-water/gis-mapping-tool

groundwater quantity, and to provide for efficient management of water resources for meeting future needs. The intent of GWMAs is to develop partnerships between local, state, Tribal, and federal interests to cooperatively protect the state's groundwater resources by identifying groundwater management procedures that are consistent with both local needs and state water resource policies and management objectives, including the protection of water quality, assurance of quantity, and efficient management of water resources to meet future needs.

RCW 90.44.410 refines the requirements for groundwater management programs; along with water resources management, requirements include "Identification of land use and other activities that may impact the quality and efficient use of the groundwater, including domestic, industrial, solid, and other waste disposal, underground storage facilities, or stormwater management practices."

Columbia Basin Ground Water Management Area

The Columbia Basin GWMA consists of Adams, Franklin, Grant, and Lincoln counties. Formed in 1998, the first goal was to reduce nitrate concentrations in groundwater. More than 80 percent of drinking water in the mid-Columbia Basin comes from groundwater. In Adams, Franklin, and Grant Counties, nitrate concentrations in water from about 20 percent of all drinking water wells have exceeded the USEPA maximum contaminant level for nitrate.

In the Columbia Basin GWMA, nitrate control efforts focused on voluntary incentives. Incentives included distributing cost-share funds for converting irrigation systems to conserve water. They also conducted soil tests so that producers could find out how much nitrogen was being lost below the root zone. This was an educational effort to encourage producers to use less fertilizer.

A report by the Columbia Basin Development League discusses a recent study which shows that declining groundwater levels in the area necessitated a shift for farmers to increase water efficiency to minimize water capacity losses and mitigate the effects of poor water quality. The Columbia Basin Development League highlighted the importance of preventing a collapsing aquifer and limited options for addressing future water capacity[209].

Lower Yakima Valley Groundwater Management Area

In 2011, the Lower Yakima Valley GWMA was formed to address nitrate contamination in groundwater. This GWMA is a response to the elevated nitrate levels found in the Lower Yakima Valley which often exceed the state groundwater standard of 10.0 mg/L. The goal of the Lower Yakima Valley GWMA is to reduce nitrate contamination concentrations in groundwater below state drinking water standards.

Yakima County requested that Ecology recognize the GWMA and provide assistance for helping reduce the nitrate level in the groundwater. Many partners and organizations are working

[209] https://cbdl.org/new-study-shows-groundwater-level-declining-in-the-odessa-subarea/

together to address nitrate contaminated groundwater, including: Yakima Health District, Yakima County, WA State Department of Health, South Yakima Conservation District, WSDA, and Ecology.

The Lower Yakima Valley Groundwater Management Program[210] provides recommended actions and implementation work plans to address the nitrate contamination.

Pollution prevention will be a guiding principle for all work in the Yakima GWMA. Further, the GWMA is looking to get nitrate contamination addressed by:

- Identifying the primary sources of nitrate contamination using scientific data.
- Identifying or developing practices that will minimize nitrate contamination of groundwater.
- Developing a plan that recommends strategies for implementing improved practices.
- Providing appropriate education and outreach on health risks and how to prevent exposure.

Ecology Implementation Efforts:

- The Implementation Committee meets monthly to prioritize recommended actions and track progress throughout the group.
- The implementation team completed a report describing accomplishments through 2024. This report was submitted to EPA on December 31, 2024.
- Ecology continued sampling 170 wells on an annual basis in the Lower Yakima Valley GWMA area.
- Ecology continues community education and outreach to keep the community informed on GWMA work. Ecology attended 25 community events during 2024 in this specific area.
- Ecology conducted quarterly sampling of 170 wells, for the first two years (2021 – 2023) to assess seasonal variability. Sampling continues annually every spring to track trends and monitor the health of the aquifer over time. All of our data is publicly accessible in Ecology's EIM (Environmental Information Management) system.
- Ecology developed a StoryMap[211] which reports on our results and findings, describes this research, and provides links to relevant documents and other efforts in the Lower Yakima Valley. Ecology is working collaboratively with Washington State University, South Yakima CD, and WSDA to conduct research on types of nutrient sources and the effectiveness of cover crops to reduce nitrate migration to groundwater. This study is

[210] https://fortress.wa.gov/ecy/ezshare/wq/groundwater/GWMA-VolumeI-July2019.pdf
[211] https://storymaps.arcgis.com/stories/75dbce15a4c04b0e8e54dc633efa5f99

utilizing the infrastructure of a soil health study using wine grapes. South Yakima CD is collecting deep soil samples and groundwater quality samples to evaluate these practices.

- Ecology developed an outreach plan and began outreach to identify abandoned wells in the Lower Yakima Valley.
- Ecology continued coordination with Implementation Committee partners to supply the local community with nitrate test strips and guidance pamphlets in English and Spanish for nitrate testing, as well as information on resources available for obtaining bottled water.

8.3.6 Groundwater Monitoring

As a part of the state's efforts to monitor water quality, specific projects are tailored to the collection of groundwater quality samples. See Chapter 7 for discussion of monitoring programs related to nonpoint source pollution.

Chapter 9: Goals and Strategies

This chapter addresses Element No. 1 of the *"Key Components of an Effective State Nonpoint Source Management Program"* guidance issued by the EPA in May 2024. It contains a set of goals, objectives, and strategies to restore and protect surface water and groundwater in Washington State. The table also provides measurable outputs that could be used to track progress and specific measurable milestones that will be used over the next five years.

The goals and milestones outlined in the table below reflect the strategies and tools described in the preceding chapters of this Plan. When taken together, the five goal categories of the table outline the state's path for continuing to address nonpoint source pollution. This Nonpoint Plan, inclusive of the goals table, covers a five year period from 2026 to 2030. The iterative nature of Plan updates provides an opportunity to reflect on successes, partnerships, changing conditions and emerging challenges, areas where strategies may need updating, and new opportunities for our program to learn and grow. For the next five years we will utilize our Annual Reports to EPA to track our progress towards accomplishing the goals outlined in the table below, and will continue to evaluate program strategies.

While all measurable milestones contained within the table are valuable and will contribute to successful implementation of this Plan to address nonpoint pollution in WA state, the ultimate goal is BMP implementation. The work of Ecology's Nonpoint Program is just one piece of the broad network of organizations and agencies that work to address nonpoint pollution in Washington state, and we lack full knowledge of the BMPs that are implemented statewide. As a state we would benefit from a more coordinated, comprehensive method of sharing implementation data between funding agencies and implementing organizations, which would result in less uncertainty around what improvements are being made on the ground. We will continue to work with our partner agencies and organizations to encourage sharing of implementation data, in support of developing a more complete picture of actions taken across the state to address and restore NPS polluted waters, allowing us to better assess the effectiveness and adaptively manage the state's Plan to address NPS pollution.

Table 8. Goals, Objectives, Strategies and Measurable Milestones

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

Objectives	*Strategies*	*Measurable Outputs*	*Measurable Milestones (2026-2030)*
1.1 Develop watershed clean-up plans (Total Maximum Daily Load (TMDL), Advance Restoration Plan (ARP), Straight To Implementation (STI), and other watershed cleanup projects in advance of a TMDL).	Complete TMDL and other restoration project work plans that include all elements of a watershed based plan.	Number of TMDL and other restoration project workplans completed.	○ Complete 159 TMDLs/other restoration plans by 2030 (average 53 per year)[212].
1.2 Implement watershed clean-up plans (TMDLs, STIs, ARPs, and other watershed cleanup projects in advance of a TMDL).	Utilize watershed evaluations, voluntary and regulatory tools to implement TMDLs, STIs, ARPs, and other restoration plans: ○ Complete watershed evaluations to identify sites of concern. ○ Contact priority sites and educate about nonpoint pollution and solutions	Number of watershed evaluations completed. Number of sites identified as having nonpoint source pollution problems. Number of first contact technical assistance letters sent.	○ Complete at least one watershed evaluation per focal watershed per year. ○ Of the sites identified via watershed evaluation, utilize technical assistance letters to initiate contact with at least five sites per focal watershed per year. ○ At 100% of sites, utilize the Clean Water Guidance BMPs to provide recommendations.

[212] This goal number of TMDLs produced per year reflects a Washington State Performance Measure. Note that these numbers represent individual listings.

Objectives	*Strategies*	*Measurable Outputs*	*Measurable Milestones (2026-2030)*
	(utilizing Clean Water Guidance). Work with sites to support implementation of Best Management Practices (BMPs) that ensure compliance with state water quality (WQ) standards. Utilize regulatory authority as needed to achieve necessary BMPs on the ground, following graduated compliance pathway.	Number of identified sites that have implemented BMPs to protect water quality.	○ Report annually on the use of graduated compliance.
1.3 Provide incentives to drive implementation of watershed based plans.	Provide grants and loans to applicants for projects that will support meeting water quality standards, ensure compliance with state law, and implement a watershed based plan. ○ Utilize incentive payments to promote the installation of riparian buffers that meet Clean Water Guidance recommendations; with tiered incentives that promote the installation of the preferred buffer option.	Number and types of BMPs implemented with 319/Centennial funding. Number and types of BMPs implemented with Direct Implementation Funding (DIF). Continued reporting of load reduction estimates from BMPs implemented with 319/Centennial funding. Continued support and development of incentives programs.	○ Successfully awarding all allocated 319 and Centennial funding to high-ranking projects. ○ Annually reporting on number and types of BMPs implemented with 319/Centennial and DIF funding. ○ Achieve the following estimated reductions per year from projects implemented utilizing 319 funding from Ecology's Water Quality Combined Funding (WQCF) grant program and those used to fulfill 319 match requirements: ○ 14,000 lbs. of phosphorous. ○ 8,000 tons of sediment. ○ 40,000 lbs. of nitrogen.

Objectives	*Strategies*	*Measurable Outputs*	*Measurable Milestones (2026-2030)*
			○ Achieve the following BMP implementation utilizing 319 funding from Ecology's Water Quality Combined Funding (WQCF) grant program and those used to fulfill 319 match requirements: ○ 225 acres riparian forest buffer ○ 10,560 linear feet of fence ○ 10,000 acres conservation tillage residue management ○ 200 On-site Sewage System (OSS) repair/replacement projects per year are completed by State Revolving Fund/Centennial funded local loan programs. ○ Annual report will include discussion of any updates made to the nonpoint funding guidance.
1.4 Respond to environmental complaints received via the Environmental Report Tracking System (ERTS).	Verify environmental complaints to determine whether a water quality problem exists and, as necessary, provide technical assistance and support for the implementation of BMPs.	Number of complaints received by nonpoint staff and the number of those that are agriculturally related complaints.	○ Respond to 100% of complaints received. ○ Report annually on the number of ERTS nonpoint staff receive and how many of those are agriculturally related.
1.5 Support Pollution Identification and Control (PIC) and other local water cleanup programs	Ecology and Department of Health (DOH) will provide technical and policy support to develop PIC programs as necessary.	Number of PIC groups nonpoint staff engage with. Number of sites where Ecology provides regulatory backstop assistance to PIC partners.	• Report annually on participation in PIC and other local water cleanup programs. • Ecology does not set goal numbers of enforcement actions; annual reporting will include discussion of enforcement actions as necessary.

Objectives	*Strategies*	*Measurable Outputs*	*Measurable Milestones (2026-2030)*
that help meet WQ standards and promote compliance with state water quality law.	Ecology will provide a regulatory backstop for PIC programs as necessary.		
1.6 Support market-based programs that help meet WQ standards and support compliance with state water quality law.	Support certification/certainty programs that address WQ Standards and promote compliance with state law. Work with other groups interested in similar certification, certainty, or trading programs.	As new certification/trading programs are developed, number and type of BMPs implemented to address nonpoint sources of pollution.	• Annual reporting will include discussion of any new certification and/or trading programs.
1.7 Support implementation of the Puget Sound Vessel Sewage No Discharge Zone (NDZ).	Share key NDZ messages with recreational and commercial boaters and related groups and promote compliance with the rule. ○ Continue to share information about the NDZ rule, how and where to pump out boat sewage, and why it matters. ○ Continue to share the use of ERTS as the primary tool to report illegal	Continue the use of Clean Vessel Act funded pumpouts to prevent sewage from entering Puget Sound NDZ. Share NDZ messages using a variety of tools included in the 2021 NDZ Implementation Plan.	• Number of gallons of recreational boat sewage collected at Clean Vessel Act (CVA)-funded pumpout facilities annually. • Annual reporting will include a discussion of the number of outreach actions and educational products developed and distributed to promote NDZ key messages. • An evaluation report highlighting the NDZ education and outreach program's effectiveness and efficiency in raising awareness, changing behaviors, and promoting recreational boaters' compliance with the NDZ rule will be included with the 2026 Annual Report.

Objectives	*Strategies*	*Measurable Outputs*	*Measurable Milestones (2026-2030)*
	sewage discharges within the NDZ.		
1.8 Hydropower.	Develop 401 Water Quality Certification as necessary for hydropower facilities. ○ Utilize authority under section 401 of the Clean Water Act to develop Water Quality Certifications for hydropower facilities.	Number of Water Quality Certifications for hydropower facilities, including compliance schedules and water quality attainment plans.	• Complete 401 certifications for developments for four Federal Energy Regulatory Commission (FERC) licensed projects. • Participate in settlement negotiations for five hydropower facilities seeking FERC licenses. • Assist with the development of water quality attainment plans. Complete review and approval for each parameter for which these facilities have pending compliance issues.
1.9 Support implementation of other state authorities and promote consistency with the WQ standards.	Support the implementation of the Forest Practices Rules statewide.	Periodic reviews of the Forest Practices Rules, Adaptive Management Program, and the Clean Water Act Assurances. Regional staff review and comment on Forest Practices Applications, Water Type Modification Forms and participate on interdisciplinary teams and compliance monitoring.	• Ecology continues to support implementation of the western WA Type Np buffer rule; discussion in Annual Report. • Ecology policy staff apply findings of eastern WA Type Np CMER study for consideration of rule changes if necessary and advocate for water quality protection at TFW Policy Committee. • Regional field staff participate in scheduled compliance monitoring site reviews.

Objectives	*Strategies*	*Measurable Outputs*	*Measurable Milestones (2026-2030)*
1.9 Support implementation of other state authorities and promote consistency with the WQ standards.		Regional staff respond to reports of environmental harm occurring on forestlands.	• Regional field staff maximize participation in local interdisciplinary teams to advocate for water quality protection. • Regional staff regularly follow up with landowners and other agencies in a timely manner to determine appropriate course of action when forest practices rule violations are confirmed.
	Support implementation of WA State Department of Agriculture's (WSDA) Dairy Nutrient Management Act (DNMA) Compliance Program. Continue to evaluate regulatory and technical assistance gaps.	WSDA and Ecology coordinate on compliance activities and potential enforcement when dairy facilities have discharged pollutants to waters of the state. WSDA and Ecology coordinate Concentrated Animal Feeding Operation (CAFO) compliance actions when necessary. Review and discuss Memoranda of Understanding (MOU) between Ecology and WSDA as needed. WSDA inspectors notify Ecology nonpoint staff when dairy facilities terminate their milking license.	• Annual reporting will include the number of dairy facilities that: ○ Discharged to waters of the state. ○ Obtained coverage under the CAFO permit. ○ Ended their milking licenses. ○ Ended their milking licenses and were contacted by Ecology to notify them of changes in the regulatory oversight agency.
	Support DOH and Local Health Jurisdictions implementation of OSS laws.	Continue to fund projects that will address failing OSS.	• Annual reporting will include a discussion of projects funded, including those which will address failing OSS.

Objectives	*Strategies*	*Measurable Outputs*	*Measurable Milestones (2026-2030)*
	Support the use of WAC 173-201A, Outstanding Resource Waters (ORWs) designation, to protect high quality waters of the state.	Designation of water bodies as ORW.	• Annual reporting will include a discussion of ORW designations, when applicable.
	Support implementation of WAC 173-218, which established the Underground Injection Control Program.	Ecology groundwater staff will develop and implement a UIC facility inspection plan.	• Annual reporting will include discussion of UIC inspection plan development and implementation.
1.10 Support education and outreach for voluntary programs and to communicate Ecology's BMP recommendations, as outlined in the Clean Water Guidance (CWG).	Continue work to provide information about what BMPs or suites of BMPs Ecology considers to provide presumed compliance with state water quality laws.	Develop educational materials for CWG chapters to distill the chapters into guidance that can be utilized by nonpoint field staff, partners, and landowners/operators.	• On average, complete two CWG chapter outreach guides each year, such that by 2030 all chapters have completed education/outreach materials.
	Maintain an updated nonpoint webpage that communicates program goals, nonpoint pollution causes, solutions, and impacts.	Annually review and update webpage: ○ Basics of nonpoint work. ○ Focal watersheds. ○ Funding resources. Regional contacts and resources.	• Each year review webpage for needed updates and additions; discuss changes in annual reporting.
	Use public education and outreach to build support for Ecology's nonpoint program by explaining nonpoint problems in clear and engaging language and images.	Number of workshops/outreach events attended. Number of students/attendees.	• Annual reporting will include discussion of the number of outreach events attended by staff. • Annual review of outreach materials requiring update and development; discussion included in annual report.

Objectives	*Strategies*	*Measurable Outputs*	*Measurable Milestones (2026-2030)*
	Develop and update outreach resources as needed, to educate the public about nonpoint pollution sources and BMP solutions. Support partners' education and outreach programs and voluntary programs.	Number of outreach tools created and/or updated to explain nonpoint issues and solutions.	• Complete 2 success stories per year.

Goal 2. Ensure clear standards

Objectives	*Strategies*	*Measurable Outputs*	*Measurable Milestones (2026-2030)*
2.1 Utilize best available science to identify BMPs and measures that are designed to comply with the WQ Standards and contribute to the protection of beneficial uses of the receiving waters and ensure compliance with state and federal law.	Support updates to the Forest Practices Rules based on Adaptive Management Program processes.	Ecology advocates for water quality protection at the Timber, Fish, and Wildlife (TFW) Policy Committee and helps educate TFW Policy Committee on WQ Standards.	• Ecology policy staff review findings of eastern WA Type Np study for consideration of rule changes if necessary. • Ecology policy staff reviews findings of the Adaptive Management Program's unstable slopes-related studies, expected to be completed in 2027. Policy staff consider need for any rule changes or further studies. • Ecology policy staff review findings of Forested Wetlands Effectiveness study expected to be complete in 2028. Policy staff consider need for any rule changes or further studies.

	Support updates to stormwater management manuals, as needed.	Ecology published an update to the stormwater manual in 2024 and makes updates as needed.	• Annual reporting will include discussion of efforts to update the stormwater management manuals, as needed.
	Continue to evaluate best available science to ensure that BMP guidance is accurate and up to date.	Maintain CWG BMPs that are reflective of best available science.	• By 2030 complete a review of the CWG. Report on any necessary updates in annual reports as appropriate.
	Review updates to Washington's OSS rules, if needed.	Provide feedback to DOH, as needed.	Annual reporting will include discussion of updates to OSS and Ecology's role, as needed.
	Review and update the Critical Aquifer Recharge Area (CARA) guidance	Work with the Department of Commerce to make necessary updates to the CARA guidance.	Necessary updates completed by 2026; discussed in annual reporting.

Goal 3: Develop and strengthen partnerships

Objectives	*Strategies*	*Measurable outputs*	*Measurable milestones (2026-2030)*
3.1 Strengthen relationships with federal and state agencies, local governments, and special purpose districts.	Coordinate with local governments, special purpose districts, and local health districts.	Regional staff meet with conservation districts to talk about regional priorities, sites of concern, and funding opportunities and needs. Meetings with local governments and health districts, as needed, to discuss regional priorities, sites of concern, and coordinate on ERTS response. Coordination with irrigation districts to address polluted	• Regional staff meet with CD staff within focal watersheds at least twice per year. • Annually staff will communicate funding opportunities to CD staff and other partners. • Annual reporting will include discussion of staff participation in meetings with local governments, health districts, CDs, etc. • Annual reporting will include discussion of staff coordination with irrigation districts.

Objectives	*Strategies*	*Measurable outputs*	*Measurable milestones (2026-2030)*
		discharges into and from irrigation waterways.	
3.1 Strengthen relationships with federal and state agencies, local governments, and special purpose districts.	Coordinate with other state agencies: ○ Implement the MOU with WSDA. ○ Continue to support the Department of Natural Resource's implementation of the state Forest Practices Rules. Continue to work with other agencies to better coordinate work and achieve increased consistency in BMP standards across the state (moving toward BMPS that meet WQ Standards). Examples of agencies we will coordinate with include: WA State Conservation Commission (WSCC), WA Department of Fish and Wildlife (WDFW), Recreation and Conservation Office (RCO), DOH, DNR, Puget Sound Partnership (PSP).	Meetings as needed with other resource agencies on water quality issues and better aligning programs to meet water quality standards.	• Annual report will include discussion of continued efforts to improve consistency between agencies.
	Coordinate with state and federal land managers to ensure they meet with WQ standards and	Meetings as needed with state and federal land managers on water quality issues and better	• As applicable, annual report will include discussion of efforts to improve and

Objectives	*Strategies*	*Measurable outputs*	*Measurable milestones (2026-2030)*
	prevent nonpoint pollution from reaching state waters.	aligning programs to meet water quality standards.	maintain water quality on state and federal lands.
	Coordinate with federal agencies: ○ Implement the MOA with the USDA Forest Service. ○ Strengthen coordination with other federal agencies to address water quality concerns on their managed lands.	Meetings as needed with other resource agencies on water quality issues and better aligning programs to meet water quality standards. Continued implementation of the MOA with USDA Forest Service.	• Annual report will include discussion of continued efforts to improve consistency between agencies.
3.2 Strengthen relationships with Tribes.	Coordinate with Tribes and invite Tribes to provide input on nonpoint policy development early in the process.	Continue regular meetings with Tribes on Ecology's nonpoint work.	• Hold at least two Tribal webinars a year, and, as applicable, provide updates on statewide nonpoint activities. • Hold at least one Tribal meeting within each region per year, to update and discuss regional nonpoint work with interested Tribal staff.
3.3 Strengthen relationships with agricultural producers and producer groups.	Explore opportunities to meet with producer groups and producers to explain nonpoint issues and solutions.	Continued involvement from producer groups at the Agriculture and Water Quality Committee meeting. Begin to share annual report updates with producer groups, share information on nonpoint focus areas and on the ground efforts.	• Hold two Agriculture and Water Quality Committee meetings per year. • Share 100% of annual reports on the Nonpoint Program's webpage.
3.4 Strengthen relationships with	Explore opportunities to engage with vulnerable communities and	Increase opportunities for community outreach and	• Conduct at least one listening session per region; use annual reports to discuss

Objectives	*Strategies*	*Measurable outputs*	*Measurable milestones (2026-2030)*
vulnerable communities.	place-based groups working in these communities.	engagement, utilize listening sessions to learn about the nonpoint pollution concerns and how to most effectively engage with vulnerable communities.	themes, lessons learned, and potential adaptations to the nonpoint plan and strategy.
3.5 Continue to work to improve consistency in riparian funding programs and policies across state agencies.	Explore opportunities to align riparian restoration policies across the state and between state and federal agencies.	Continued conversation with partner agencies, with the goal of understanding and decreasing inconsistencies in riparian buffer restoration programs.	• Work with WSCC, RCO, Natural Resources Conservation Service (NRCS), National Estuary Program (NEP), and others as appropriate, to develop a comparison document to highlight differences and inconsistencies between different riparian restoration programs. Include document with 2028 annual report. • One meeting with partner agencies (i.e. WSCC, RCO) to discuss riparian buffer widths and consistency across agencies and funding sources.

Goal 4: Monitor waters for nonpoint source impairments and program effectiveness

Objectives	*Strategies*	*Measurable outcomes*	*Measurable milestones (2026-2030)*
4.1 Continue monitoring efforts.	Perform monitoring in locations and using methods that help Ecology make management decisions. ○ Ensure all Ecology monitoring efforts are supported with up-to-date	All projects (both Ecology projects and external projects) are guided by QAPPs. All QAPPs are approved by Ecology's Environmental Assessment Program before data collection begins.	• 100% of Ecology-led and funded projects have an approved QAPP.

Objectives	*Strategies*	*Measurable outcomes*	*Measurable milestones (2026-2030)*
	Quality Assurance Project Plans (QAPPs). ○ Ensure all Ecology-funded monitoring efforts are supported with up-to-date QAPPs and work with partners to ensure the use of QAPPs for monitoring efforts and studies that will be used by Ecology.		
4.2 Effectiveness monitoring.	Utilize effectiveness monitoring to evaluate progress towards implementing watershed cleanup plans. ○ Prioritize effectiveness monitoring for watersheds where significant implementation has occurred.	Number of effectiveness monitoring projects performed. Results of effectiveness monitoring in watersheds where monitoring is occurring.	• Continue effectiveness monitoring efforts already in progress. • Begin effectiveness monitoring to track TMDL/other watershed cleanup plan implementation in at least two new watersheds by 2030.
4.3 Forestry Adaptive Management.	Work with the Adaptive Management Program to help design, conduct, and review Cooperative Monitoring, Evaluation, and Research (CMER) projects and associated documents: ○ Charter ○ Scoping ○ Study design ○ Final report	Documents are approved by the appropriate committees: ○ ISPR (Independent Science Peer Reviewers) ○ CMER ○ Timber, Fish, and Wildlife Policy	• Eastside Type N Riparian Effectiveness study- report expected by 2027. • Unstable Slopes Criteria- report expected by 2026. • Forested Wetlands Effectiveness Study- report expected by 2028.

Objectives	*Strategies*	*Measurable outcomes*	*Measurable milestones (2026-2030)*
	○ 6 questions		
4.4 Updates to the Nitrate Prioritization Map.	Work with DOH and USGS to gather data on nitrate levels in groundwater.	Results of groundwater sampling are uploaded to the online Nitrate Prioritization Map.	• Complete updates in 2026, 2028, and 2030

Goal 5: Ecology will administer its Nonpoint Source Program as effectively and efficiently as possible

Objectives	*Strategies*	*Measurable outcomes*	*Measurable milestones (2026-2030)*
5.1 Align the nonpoint program with other relevant Ecology programs.	Seek better alignment between the nonpoint program and the following programs: ○ TMDL/303(d) ○ Coastal Zone Act Reauthorization Amendments (CZARA) ○ Point source program ○ National Estuary Program	TMDL and other watershed cleanup plans utilize CWG BMP recommendations.	• 100% of TMDLs and other watershed cleanup plans incorporate BMPs recommended in the CWG.
		As applicable, stormwater management follows CWG and/or otherwise provides for adequate protections of water quality.	• As needed, discussion of other program alignment in annual reporting to EPA.
		Participate in the reissuance of the Concentrated Animal Feeding Operation (CAFO) Permit. Current permit is effective until January 2028.	• As applicable, annual reporting will include discussion of permit updates and alignment with the BMPs included in the Clean Water Guidance.
		Advocate for NEP funded implementation projects to incorporate CWG BMPs.	• Discussion, as applicable, of funding program alignment in annual reporting to EPA.
5.2 Promote accountability.	Continued support of Ecology's Administration of Grants and Loans (EAGL) system.	Improved functionality of EAGL system.	• Perform needed EAGL updates annually. • Upgraded EAGL system implemented for sub-recipients by the end of 2026.

Objectives	*Strategies*	*Measurable outcomes*	*Measurable milestones (2026-2030)*
	Continue using BMP approval form to track specific BMP implementation metrics.	Implementation projects must submit a BMP approval form prior to implementation.	• 100% of projects implementing BMPs with 319/Centennial funding must use BMP approval form prior to implementation.
	Information about projects funded with 319 funds entered into Grants Reporting Tracking System (GRTS).	GRTS data entered by EPA deadlines.	• 100% of projects supported with 319 funding submit information into GRTS.
	Share annual activities information via the Ecology Water Quality website.	Post annual report every year to the external facing Water Quality Program website.	• Every year post the past year's annual report to the webpage, following notification of EPA's determination of satisfactory progress.
5.3 Administer grants and loans.	Oversight of grants and loans ensures that projects proposed are completed and that public money is spent appropriately.	Project applications must receive a sufficiently high score to be eligible for 319/Centennial funding. Final project reports document that project was completed. Projects are closed out as soon as possible after completion.	• 100% of funded projects must have scored sufficiently high to be eligible for funding. • 100% of project recipients submit final project reports.
5.4 Support Ecology nonpoint staff to promote consistent and effective implementation of the nonpoint program across the state.	Provide consistent training and information sharing to nonpoint staff throughout the state.	Utilize annual trainings, tailored to the east and west side of the state, to provide training in practical skills and establish a consistent foundation, to include such topics as: ○ CWG knowledge, with emphasis on the riparian buffer chapter.	• By 2030, hold at least three trainings, tailored to training new staff in practical skills, ensuring knowledge of the CWG, and establishing a consistent foundation. • Hold at least two nonpoint program workshops by 2030. • Hold at least ten nonpoint workgroup meetings each year.

Objectives	*Strategies*	*Measurable outcomes*	*Measurable milestones (2026-2030)*
		○ Graduated compliance pathway. ○ Conducting watershed evaluations. Utilize biannual workshops with all nonpoint staff to maintain program coordination, consistency, and shared expectations. Monthly nonpoint workgroup meetings to share new resources and address challenges.	
	Continued support of the nonpoint implementation (NPI) tracking system.	Continue to train nonpoint staff in the use of the application, hold NPI workgroup meetings, and implement adaptive updates and improvements.	• Hold at least two meetings of the NPI workgroup each year. • 100% of sites identified as sites of concern by Ecology are entered into the nonpoint tracking system.

Appendices

Appendix A. Assessment of Nonpoint Pollution in Washington State

Appendix A, which includes the report titled *Assessment of Nonpoint Pollution in Washington State* is attached as a separate pdf on the web. See also:

https://apps.ecology.wa.gov/publications/SummaryPages/1403028.html

Appendix B. Letter from Ron Lavigne, Assistant Attorney General

Ecology's authority to prevent Nonpoint Source Pollution and Require Implementation of Management Measures.

Bob Ferguson
ATTORNEY GENERAL OF WASHINGTON
Ecology Division
2425 Bristol Court SW 2nd Floor • Olympia WA 98502
PO Box 40117 • Olympia WA 98504-0117 • (360) 586-6770

MEMORANDUM

DATE: July 12, 2019

TO: Ben Rau, Watershed Planning Unit Supervisor
Water Quality Program

FROM: Ronald L. Lavigne, Senior Counsel

SUBJECT: **Ecology's Authority to Prevent Non-Point Source Pollution and Require Implementation of Management Measures**

This memo is in response to your request for a legal analysis of Ecology's authority to prevent non-point source pollution and to require implementation of management measures. As discussed below, it is my opinion that ch. 90.48 RCW provides Ecology with statutory authority to both prevent non-point source pollution and require implementation of section 6217 management measures pursuant to the Coastal Zone Reauthorization Amendments of 1990 (CZARA).

RCW 90.48.030 specifically gives Ecology the jurisdiction "to control and prevent the pollution of . . . waters of the state of Washington." Pollution is broadly defined in RCW 90.48.020 and includes the contamination or other alteration of the physical, chemical, or biological properties of any waters of the state. Under state law, it does not matter whether the pollution comes from a point or a non-point source, all pollution of state waters is subject to Ecology's authority to control and prevent pollution.

RCW 90.48.080 makes it unlawful for any person to "cause, permit or suffer to be thrown, run, drained, allowed to seep or otherwise discharged . . . any organic or inorganic matter that shall cause or tend to cause pollution of" waters of the state. Any person who violates or creates a substantial potential to violate the provisions of ch. 90.48 RCW is subject to an enforcement order from Ecology pursuant to RCW 90.48.120. Ecology is authorized to "issue such order or directive as it deems appropriate under the circumstances . . . ." RCW 90.48.120(1).

The Supreme Court has affirmed Ecology's authority to regulate non-point source pollution. *Lemire v. Dep't of Ecology,* 178 Wn.2d 227, 240, 309 P.3d 395 (2013) (the plain language of RCW 90.48.080 gives Ecology "the authority to regulate nonpoint source pollutant discharge").

It is worth noting that while RCW 90.48.120 gives Ecology the authority to take action in response to non-point source pollution, the statute also given Ecology the authority to take action based on a "substantial potential" to pollute state waters via either a point or non-point source. Consequently, Ecology not only has authority to take action following non-point source pollution but also has statutory authority to act proactively to prevent non-point source pollution from occurring in the first place. Ecology's authority includes the authority to require a non-point source polluter to implement specific management measures. *See Lemire,* 178 Wn.2d at 233 (Ecology is authorized to issue orders to remedy "activities that have a substantial potential to violate the [Water Pollution Control Act]."). Ecology's authority can be used to prevent non-point pollution and require 6217 management measure implementation, as necessary.

For the reasons set out above, it is my opinion that the Department of Ecology has the statutory authority to prevent non-point source pollution and to require implementation of specific management measures to address non-point source pollution.

RLL:df

Appendix C. Dairy Nutrient Management Act enforcement authorities fact sheet

Washington State Department of Agriculture

Dairy Nutrient Management Program

Background

- **Dairy Nutrient Management Plans** In 1998 the Dairy Nutrient Management Act was amended to include the requirement that dairies develop and implement dairy nutrient management plans (Chapter 90.64 RCW)

- **Inspection Program** The Act also created an inspection program that included monitoring the development and implementation of nutrient management plans

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Challenges

Program Requirements Regulatory agency does not control specific program requirements so can't directly respond to evolving water quality or industry issues

- Conservation Commission sets minimum elements of dairy plans based on NRCS standards
  - Elements not updated since 1998, no requirement to incorporate updated standards
- Conservation Districts approve and certify plans as meeting minimum elements
- Operators not required to meet plan timelines if district does not have resources

Enforcement Authority The state lacks the enforcement authority and penalties for dairies that do not get plans updated or properly implement their plans, which limits water quality enforcement effectiveness

- **Plan Updates** Dairies have no effective requirement to update a plan when there are changes to dairy operations
  - No agency has authority to require the update
  - No penalty is established for failing to update a plan

- **Plan Implementation** Dairies have no requirement to follow an approved and certified plan
  - No penalty for failure to follow the plan except for when proper records have not been kept to show agronomic applications or discharge occurs (2010 legislation)
  - Plan development relies on practice standards that are intended as guidelines, subject to interpretation and are updated periodically

- **Water Quality Enforcement** State has limited enforcement authority except where dairy actions cause a discharge or create a potential to pollute
  - WSDA can issue a Notice of Correction based on creating a potential to pollute
  - WSDA may issue a penalty if there is a documented discharge to waters of the state or (under Chapter 43.05 RCW an NOC may be required for a first-time violation)
  - WSDA may now issue a penalty if records are not kept to show agronomic applications
    - Actual over application is not subject to penalty unless a discharge is documented

- **Violations/Penalties** The Dairy Nutrient Management Act narrowly defines what a violation is and establishes specific penalties for violations
  - Causing a discharge—civil penalty up to $10,000 per day (RCW 90.48.144)
  - Failure to obtain an approved and certified initial plan—a civil penalty of $100 per month past due date (RCW 90.64.030)
  - Records violation added in 2009—penalty established in 2010 for up to $5,000 per violation and maximum of $5,000 in one year

Appendix D. Nutrient Management Technical Services 2024 Annual Report

Washington State Department of Agriculture

Nutrient Management Technical Services
2024 Annual Impact Report

*In 2024, the Dairy Nutrient Management Program was renamed to **Nutrient Management Technical Services (NMTS)**. The program continues two decades of dairy compliance work and is expanding efforts to provide nutrient management technical guidance to farmers and manure managers. This change aligns with our goal of supporting farmers in meeting environmental standards and improving nutrient management practices, while ensuring water quality and farming viability.*

2024 PROGRAM ACHIEVEMENTS

Our work in 2024 demonstrates the impact and importance of follow-up visits and technical assistance provided by the program to support compliance with water quality laws. Compliance rates increased, as did total number of inspections.

268 inspections

Compared to 203 in 2023.

2024: 149 routine inspections,
56 follow-up inspections,
49 technical assistance visits, and
14 water quality investigations.

190 facilities visited

Through our dairy compliance program, staff inspect each dairy farm at least once every two years. **190 out of 270** dairies were visited in 2024, and **52** were visited multiple times.

88% of dairies found in compliance overall, compared to 81% in 2023

Yakima Nitrate Project

NMTS continued its partnership with state and local agencies using new legislative funding to reduce nitrate pollution from agriculture in the Lower Yakima Valley Groundwater Management Area. The program's nutrient management specialists increased dairy inspections and provided voluntary assistance to other farmers who are working to improve nitrogen management and irrigation practices. NMTS and WSDA's Natural Resource Agricultural Science Program supported Washington State University's development of a new nitrogen and fertilizer application tool for growers. NMTS partnered with South Yakima Conservation District to provide free and confidential technical service programs and incentives for nutrient management. Finally, NMTS joined other leaders at community outreach events to raise awareness of groundwater nitrate concerns.

WASHINGTON STATE DEPARTMENT OF AGRICULTURE | NUTRIENT MANAGEMENT TECHNICAL SERVICES | AGR.WA.GOV

AGR2-2501-001 (N/2/25) Do you need this publication in an alternate format? Please call the WSDA Receptionist at 360-902-1976 or TTY 800-833-6388.

Nutrient Management Field Day

In August 2024, NMTS hosted 50 dairy and livestock producers with local CD and NRCS staff for a field day in Whatcom County. The event focused on building climate resilience, and continuing education on manure management and soil health. This project is funded by a Department of Health Natural Estuary Program grant.

Building nutrient management resiliency for a changing climate in NW watersheds

NMTS is working to help manure managers in Northwest Washington to reduce risks of bacteria runoff by promoting long-term planning, adaptive management practices, and building flood preparedness in response to a changing climate. In collaboration with the Whatcom, Skagit, and Snohomish Conservation Districts, NMTS conducts water quality monitoring and educates landowners to improve nutrient management and flood resilience on livestock farms.

Key components of the project include:

- Manure management, storage, and rainwater diversion.
- Infrastructure resilience and flood readiness.
- Comprehensive long-term nutrient management planning.
- Consideration of future precipitation patterns.
- Ongoing climate resiliency discussions with producers and technical experts.

Climate and greenhouse gas mitigation

Climate and greenhouse gas mitigation remains a priority for Washington. NMTS is partnering with WSU and Washington State Conservation Commission to address barriers to climate mitigation on farms. One key project, "Pathways for Change," focuses on identifying cost-effective strategies to reduce the climate footprint of milk production, with results expected by Summer 2025.

With Climate Commitment Act (CCA) funding for dairy digesters expected in future years, NMTS staff are available to assist producers with grant applications and planning for climate-smart practices funded by the CCA.

Contact us

Visit our website to sign up for emails and stay up to date on NMTS happenings: *agr.wa.gov/manure*

Appendix E. Stipulated Order of Dismissal

THE HONORABLE JOHN C. COUGHENOUR

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

NORTHWEST ENVIRONMENTAL ADVOCATES, Plaintiff, v. THE U.S. DEPARTMENT OF COMMERCE, *et al.*, Defendants.	CASE NO. C16-1866-JCC STIPULATED ORDER OF DISMISSAL

Plaintiff Northwest Environmental Advocates ("Plaintiff"), Defendants the U.S. Department of Commerce, the National Oceanic and Atmospheric Administration, and the United States Environmental Protection Agency ("EPA") (collectively, "Defendants"), and Defendant-Intervenor the State of Washington ("Washington") (collectively "Parties" or individually a "Party") state as follows:

WHEREAS, on January 23, 2018, Plaintiff filed its Second Amended and Supplemental Complaint (Dkt. No. 74) against Defendants alleging violations of the Administrative Procedure Act ("APA"), the Coastal Zone Act Reauthorization Amendments of 1990 ("CZARA"), the Clean Water Act ("CWA"), and Endangered Species Act ("ESA");

WHEREAS, CWA section 319(b), 33 U.S.C. § 1329(b), requires each state, after notice and opportunity for public comment, to prepare and submit to EPA for approval a management program for control of nonpoint sources of pollution that the state proposes to implement in the first four years beginning after the date of the submission;

WHEREAS, CWA section 319(b)(2), 33 U.S.C. § 1329(b)(2), provides that each management program proposed for implementation include, among other things, an identification of the best management practices ("BMPs") and measures to be undertaken to reduce pollutant loadings resulting from categories of nonpoint sources that the state identifies as adding significant pollution in amounts contributing to not meeting water quality standards; an identification of programs to achieve implementation of the BMPs; and a schedule containing annual milestones for utilization of the program implementation methods and implementation of the BMPs identified in the management program. The section further specifies that the schedule provide for utilization of the BMPs at the earliest practicable date;

WHEREAS, CWA section 319(d)(1), 33 U.S.C. § 1329(d)(1), provides that EPA shall either approve or disapprove a nonpoint source management program, including a portion of a nonpoint source management program, submitted by a state and that, if EPA does not disapprove a management program or portion of a management program within 180 days, such management program or portion shall be deemed approved for purposes of CWA section 319;

WHEREAS, CWA section 319(h), 33 U.S.C. § 1329(h), provides that a state that has submitted a management program approved pursuant to CWA section 319(d), 33 U.S.C. § 1329(d), may apply for a federal grant in any fiscal year for the purpose of assisting the state with implementation of such management program;

WHEREAS, CWA section 319(h)(8), 33 U.S.C. § 1329(h)(8), provides that no grant to a state may be made under CWA section 319 in any fiscal year unless the EPA determines that such state made "satisfactory progress" in the preceding fiscal year in meeting the schedule specified by such state under subsection (b)(2) ("satisfactory progress determination");

WHEREAS, on April 12, 2013, EPA issued *Nonpoint Source Program and Grant Guidelines for States and Territories* that emphasizes the importance of states maintaining current and relevant nonpoint source management programs to guide the use of CWA section 319 grant funds and urging states to review and update such programs every five years or risk a determination of unsatisfactory progress under CWA section 319(h)(8), 33 U.S.C. § 1328(h)(8);

WHEREAS, on September 14, 1988, Washington submitted its *Nonpoint Source Water Quality Assessment and Management Program* under CWA section 319, 33 U.S.C. § 1329, to EPA for review and approval;

WHEREAS, on October 13, 1989, EPA approved Washington's *Nonpoint Source Water Quality Assessment and Management Program* pursuant to CWA section 319(d), 33 U.S.C. § 1329(d);

WHEREAS, Washington also transmitted and EPA approved Nonpoint Source Program submissions in 2000 and 2005;

WHEREAS, on July 20, 2015, Washington submitted its *Water Quality Management Plan to Control Nonpoint Sources of Pollution* to EPA for review and approval ("Washington's 2015 Submission");

WHEREAS, on August 21, 2015, EPA approved Washington's 2015 Submission ("EPA's 2015 Approval");

WHEREAS, for the fiscal years 2014, 2015, 2016, 2017, and 2018, EPA determined under CWA section 319(h)(8), 33 U.S.C. § 1329(h)(8), that Washington had made "satisfactory progress" in meeting the schedule specified by Washington under CWA section 319(b)(2), 33 U.S.C. § 1329(b)(2);

WHEREAS, upon application by Washington and based on available appropriations, EPA has made annual grants under CWA section 319(h) to assist with implementation of Washington's nonpoint source management program;

WHEREAS, ESA section 7(a)(2), 16 U.S.C. § 1536(a)(2), requires each federal agency to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species;

WHEREAS, by letter dated September 22, 2016, Plaintiff provided Defendants with 60-days' notice of Plaintiff's intent to sue under the ESA, alleging, among other things, that EPA had failed to initiate or complete consultation under ESA section 7(a)(2) for EPA's approval of Washington's 2015 Submission, and for EPA's findings and funding decisions associated with CWA section 319 grants for Washington; and

WHEREAS, Plaintiff, EPA, and Washington, through their authorized representatives and without any admission or final adjudication of any issues of fact or law or waiver of any factual or legal claim or defense with respect to Plaintiff's Second Amended and Supplemental Complaint, have stipulated to terms that they consider to be a fair, adequate, and equitable resolution of Plaintiff's claims and to be in the public interest;

NOW, THEREFORE, the Parties agree and stipulate as follows:

1. Effective upon the date of entry of this Stipulated Order of Dismissal, EPA's 2015 Approval of Washington's 2015 Submission is remanded without vacatur to EPA, for reconsideration as provided for in Paragraphs 3, 4, and 7;

2. Washington shall complete agricultural BMP guidance to control nonpoint source pollution, known as the Clean Water Guidance for Agriculture ("guidance"), implement Washington's nonpoint source management program as set forth below, and submit to EPA updates to Washington's nonpoint source management program ("319 Plan Updates"), as follows:

a. Washington shall complete the development of five chapters of the agricultural BMP guidance, consistent with 33 U.S.C. § 1329(b)(2)(A)–(B), including the chapter that addresses riparian areas on agricultural lands, on or before December 31, 2022 but in any event in time to be included in the 319 Plan Update identified in subsection (i) below;

i. On or before December 31, 2022, Washington shall submit to EPA a 319 Plan Update that includes the agricultural BMPs identified to date, and a commitment: to use the BMPs for Washington's CWA section 319 grant funding program; to develop and implement Total Maximum Daily Loads ("TMDLs") and TMDL alternatives, including but not limited to Straight To Implementation projects, with nonpoint components; and for technical assistance work;

ii. Washington shall complete the development of the remaining eight planned chapters of agricultural BMP guidance, consistent with 33 U.S.C. § 1329(b)(2)(A)–(B), on or before December 31,

2025 but in any event in time to be included in a 2025 319 Plan Update;

iii. Agricultural BMP guidance chapters shall be made available to the public in draft form on an ongoing basis not later than December 31, 2020;

iv. In the agricultural BMP guidance chapters, Washington shall include numeric values for the BMPs except where it does not make sense to do so. For the BMPs involving riparian areas, Washington shall establish necessary widths, and base riparian buffer plant composition guidance on mature vegetation communities composed of native species and consistent with ecological site potential, to meet water quality standards to the extent possible;

v. Washington shall provide approximate pollutant removal/reduction information for those BMPs in the guidance chapters that have pollutant removal/reduction information available in the existing literature;

vi. Washington's future 319 Plan Updates shall specify that the BMPs in the guidance chapters shall be used in Washington's CWA section 319 grant funding program; to develop and implement TMDLs with nonpoint components; and for technical assistance work;

vii. Washington shall include Plaintiff, the Washington Farm Bureau Federation, and the Washington Cattlemen's Association on the

emails for all of the BMP guidance committees' correspondence;

b. Update Funding Guidelines.

i. As agricultural BMP guidance chapters are developed for each practice category, Washington shall update its grant funding guidelines (for BMP project eligibility) to reflect the recommendations of the guidance;

c. New TMDLs - Incorporate Recommended BMPs.

i. Washington shall include recommended suites of BMPs in TMDLs or TMDL implementation plans to meet load allocations;

ii. If watershed specific information requires more protective BMPs or suites of BMPs than the guidance, TMDLs or TMDL implementation plans shall include modified BMPs to reflect the load allocations in the TMDL;

d. Watershed Evaluations, Complaint Response and Technical Assistance.

i. When pollution sources are identified and property operators are contacted, Washington shall discuss and recommend BMPs consistent with the agricultural BMP guidance;

ii. Washington shall track what BMPs are implemented at those sites.

iii. Washington shall provide training to its field staff on how to use the BMP guidance;

iv. Washington shall develop outreach materials for each set of BMPs that can be used by field staff to assist in Washington's communication and recommendation of BMPs;

e. CWA section 319(h) Annual Work Plans.

i. Washington shall identify the priority watersheds in which Washington will focus its non-grant implementation efforts (*e.g.*, TMDL implementation, other nonpoint source control implementation);

ii. Washington shall include a description of priority actions to be conducted in each priority watershed;

f. CWA section 319(h) Annual Reports.

i. Washington shall submit annual reports to EPA that address each component in Washington's nonpoint source management plan that addresses the elements of 33 U.S.C. § 1329(b)(2);

ii. Washington shall add a section that pertains to non-grant related BMP adoption and efforts pertaining to the annual work plans; and

iii. Washington shall also include the following information in each annual report to EPA:

A. Update about the status and progress of BMP guidance development;

B. Description of updates to Washington funding guidelines based on BMP guidance development;

C. Use of BMP guidance for technical assistance;

D. Use of BMP guidance in new TMDLs and TMDL implementation plans, TMDL implementation, and

TMDL alternatives;

E. BMP outreach materials developed and training provided to field staff;

F. Number of watershed evaluations conducted per watershed; and

G. Number of complaints received and summary of complaint types.

3. EPA's reconsideration of Washington's 2015 Submission shall be stayed until January 2, 2023 (or the next business day after Washington submits the December 2022 319 Plan Update required by Paragraph 2(a)(i) if that submission date is extended under Paragraphs 10 or 11), and such reconsideration shall not be required in the event that Washington transmits to EPA Washington's December 2022 319 Plan Update in a timely manner under Paragraph 2(a)(i);

4. If Washington does not transmit a 319 Plan Update in a timely manner under Paragraph 2(a)(i), or as extended by Paragraphs 10 or 11, then EPA shall take final action on its reconsideration of EPA's 2015 Approval of Washington's 2015 Submission within 180 days of the date by which Washington was required to transmit its 319 Plan Update under Paragraph 2(a)(i) or as extended by Paragraphs 10 or 11;

5. If Washington transmits a 319 Plan Update in a timely manner under Paragraph 2(a)(i), or as extended by Paragraphs 10 or 11, then within 180 days of EPA's receipt of that 319 Plan Update, EPA shall review it and take final agency action either approving or disapproving it. In conducting its review EPA shall consider EPA's *Nonpoint Source Program and Grants Guidelines* (April 2013), including Appendix A. Plaintiff, EPA, and Washington agree that EPA's discretion shall not be constrained as to the substance of that review;

6. If Washington transmits a 319 Plan Update that is timely under Paragraph 2(a)(i), or as extended under Paragraphs 10 or 11, then within 150 days of EPA's receipt of that 319 Plan Update, EPA shall make an effects determination, pursuant to 50 C.F.R. § 402.14(a), on EPA's approval, if any, of that 319 Plan Update and, as appropriate, request initiation of ESA section 7 consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service;

7. If Washington does not transmit a 319 Plan Update that is timely under Paragraph 2(a)(i), or as extended by Paragraphs 10 or 11, then by the next business day that is 150 days after the deadline for submitting the 319 Plan Update established by Paragraphs 2(a)(i), 10, or 11, EPA shall make an effects determination pursuant to 50 C.F.R. § 402.14(a), on EPA's action upon reconsideration of Washington's 2015 Program Submission and, as appropriate, request initiation of ESA section 7 consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service;

8. EPA shall make an effects determination pursuant to 50 C.F.R. § 402.14(a), on the satisfactory progress determination for Washington that EPA makes after the deadline set forth in Paragraph 2(a)(i), or as extended by Paragraphs 10 or 11, and, as appropriate, request initiation of ESA section 7 consultation with the U.S. Fish Wildlife Service and/or National Marine Fisheries Service. If EPA determines that Washington made satisfactory progress in the preceding fiscal year, then EPA shall make an effects determination pursuant to 50 C.F.R. § 402.14(a), on Washington's next CWA section 319 grant award after the date in Paragraph 2(a)(i), or as extended by Paragraphs 10 or 11, and, as appropriate, request ESA section 7 consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service;

9. Notwithstanding the commitments in Paragraphs 6–8, EPA does not concede that CWA section 319(b) program submissions, CWA section 319(h)(8) satisfactory progress determinations, or CWA section 319(h) grant awards are "actions" within the meaning of 50 C.F.R. § 402.02 and EPA reserves all available defenses to Plaintiff's ESA claims. EPA's commitments under Paragraphs 6–8 shall not be admissible in any proceeding except one to resolve Plaintiff's motion for costs and attorneys' fees in this case, or one to enforce this Stipulated Order of Dismissal;

10. If, due to unforeseen circumstances, EPA or Washington are unable to meet the deadlines in this Stipulated Order of Dismissal, EPA and Washington may seek reasonable modifications of the deadlines. In such a circumstance, EPA or Washington will notify Plaintiff of the requested modification and the reasons therefor, as set forth in Paragraph 11 below. By signing below, the Parties specifically acknowledge that Washington is using a multi-agency effort to address riparian buffers and anticipates that it will be able to meet the 2022 deadline for completing the riparian buffer BMP. If it appears that the 2022 deadline may be in jeopardy, Washington will give Plaintiff the earliest possible notice and Plaintiff agrees to take into account the multi-agency effort in considering a request by Washington to extend the deadline;

11. This Stipulated Order of Dismissal may be modified by the Court upon good cause shown, consistent with the Federal Rules of Civil Procedure, by written stipulation between the Parties filed with and approved by the Court, or upon written motion filed by one of the Parties and granted by the Court. In the event that any Party seeks to modify the terms of this Stipulated Order of Dismissal, or in the event of a dispute arising out of or relating to this Stipulated Order of Dismissal, or in the event that any Party believes that another of the Parties has failed to comply with any term or condition of this Stipulated Order of Dismissal, then the

Party seeking the modification, raising the dispute, or seeking enforcement shall provide the other Parties with notice of the claim. The Party raising the dispute shall commence an informal dispute resolution period to be no shorter than 30 days or other reasonable time under the circumstances, by giving written notice to the other Parties stating the nature of the matter to be resolved and the position of the Party asserting the controversy. The Parties agree that they will meet and confer (either telephonically or in-person) at the earliest possible time during the informal dispute resolution period in a good faith effort to resolve the claim before seeking relief from the Court. If the Parties are unable to resolve the claim themselves, any Party may seek relief from the Court;

12. In the event that either EPA or Washington or both fail to meet a deadline or fail to perform an obligation established by this Stipulated Order of Dismissal, and have not sought to modify it pursuant to the procedures set forth in Paragraphs 10 and 11, Plaintiff shall not move for contempt; rather, Plaintiff's sole remedy shall be to enforce the terms of this Stipulated Order of Dismissal, which may include having the Court establish a new deadline for any action required by this Stipulated Order of Dismissal. Additionally, Plaintiff shall not challenge the content of EPA's effects determinations under Paragraphs 6–8 in a motion to enforce this Stipulated Order of Dismissal;

13. *Force Majeure*—The possibility exists that circumstances outside the reasonable control of EPA or Washington could delay compliance with the deadlines contained in this Stipulated Order of Dismissal. Such situations include, but are not limited to, sufficient funds not being appropriated as requested, appropriated funds not being available for expenditure, a federal government shutdown, or a catastrophic environmental event requiring an immediate and/or time-consuming response by EPA or Washington. Should a delay occur due to such

circumstances, any resulting failure to meet the timetables set forth herein shall not constitute a failure to comply with the terms of this Stipulated Order of Dismissal, and any deadlines so affected shall be extended one day for each day of the delay. EPA or Washington (whichever is affected by *Force Majeure*) will provide Plaintiff and the Court with reasonable notice in the event that EPA or Washington invokes the terms of this Paragraph, at which point the Parties will meet and confer on extending the deadline and modifying this Stipulated Order of Dismissal under Paragraphs 10 and 11 herein;

14. Plaintiff hereby forever covenants not to assert against EPA (by way of the commencement of an action, the joinder of EPA in an existing action or in any other fashion) any and all claims, causes of action, suits or demands of any kind whatsoever in law or in equity, that Plaintiff may have had, or may now have, against EPA based upon the same transactions or occurrences that are at issue in the Complaint, Amended Complaint, and Second Amended and Supplemental Complaint in this case. The Parties agree not to appeal any earlier Order of the District Court in this case;

15. Upon entry of this Stipulated Order of Dismissal, this action is dismissed with prejudice under Federal Rule of Civil Procedure 41(a)(2). Except as provided in Paragraph 14 herein, nothing in this Stipulated Order of Dismissal shall preclude Plaintiff from challenging, in a separate suit, any final agency action taken pursuant to the obligations set forth herein or any final decisions under CWA section 319, ESA section 7(a)(2), or 16 U.S.C. § 1455b;

16. Plaintiff reserves the right to seek recovery of its attorneys' fees and costs incurred in connection with this action. Pursuant to 28 U.S.C. § 2412 and Federal Rule of Civil Procedure 54(d), Plaintiff shall file its petition for fees and costs for all of its claims within 30 days of entry of this Stipulated Order of Dismissal. By entering into this Stipulated Order of

Dismissal, EPA does not waive any right to contest attorneys' fees or costs sought by Plaintiff in this action;

17. Plaintiff reserves the right to seek additional fees and costs incurred subsequent to this Stipulated Order of Dismissal arising from a need to enforce this Order with respect to any EPA deadline or action;

18. This Court shall retain jurisdiction over this matter to construe, carry out, enforce, modify, or resolve any dispute regarding the terms and conditions of this Stipulated Order of Dismissal;

19. This Stipulated Order of Dismissal shall become effective upon the date of its entry by the Court. If for any reason the Court does not enter this Stipulated Order of Dismissal, the obligations set forth in this Stipulated Order of Dismissal are null and void;

20. This Stipulated Order of Dismissal is not to be construed as a concession by any Party as to the validity of any fact or legal position concerning the claims or defenses in this action;

21. Nothing in this Stipulated Order of Dismissal shall be interpreted as, or shall constitute, a commitment or requirement that EPA is obligated to pay any funds exceeding those available, or take any action in contravention of the Anti-Deficiency Act, 31 U.S.C. § 1341, or any other appropriations law; and

22. No provision of this Stipulated Order of Dismissal shall be interpreted as or constitute a commitment or requirement that EPA take action in contravention of the CWA, ESA, the APA, or any other law or regulation, either substantive or procedural. Nothing in this Stipulated Order of Dismissal shall be construed to limit or modify the discretion accorded to

EPA by law with respect to the procedures to be followed in completing the actions set forth above or the substance of any EPA decision under CWA section 319.

Each undersigned representative of the Parties certifies that he or she is fully authorized to enter into and execute the terms and conditions of this Stipulated Order of Dismissal.

IT IS SO STIPULATED. Dated this 15th day of December, 2020.

For the State of Washington and the Washington State Department of Ecology:

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Attorneys for Plaintiff Northwest Environmental Advocates

IT IS SO ORDERED.

DATED this 8th day of January 2021.

John C. Coughenour
UNITED STATES DISTRICT JUDGE

Appendix F. Approval Letter- Washington State's Coastal Nonpoint Pollution Control Program

U.S. Department of Commerce
National Oceanic and Atmospheric Administration

Director Laura Watson
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Dear Director Watson:

The National Oceanic and Atmospheric Administration (NOAA) and the U.S. Environmental Protection Agency (EPA) are pleased to inform you that we find that Washington has satisfied all conditions the agencies established in 1998 as part of our approval of the state's coastal nonpoint pollution control program (coastal nonpoint program). Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA) directs states and territories with coastal zone management programs previously approved under Section 306 of the Coastal Zone Management Act to develop and implement coastal nonpoint programs, which must be submitted to NOAA and EPA for approval.

NOAA and EPA originally approved Washington's coastal nonpoint program subject to certain conditions set forth in the *Findings for the Washington Coastal Nonpoint Program*, transmitted to the state on June 30, 1998. Since then, Washington has worked closely with NOAA and EPA to address those conditions, as described in the enclosed decision document. On June 15, 2020, NOAA and EPA announced our proposed decision that Washington had satisfied all conditions of approvability on its coastal nonpoint program in the Federal Register for a 60-day public comment period (85 FR 36186). The public comment period was extended to September 14, 2020 (85 FR 48674). After reviewing public comments and consulting and engaging with Washington tribes, we conclude that Washington has fully satisfied the 1998 conditions of approval the federal agencies placed on the State's coastal nonpoint program. This letter transmits a copy of the decision document that provides rationales for how the State has addressed each condition. You can find a summary of the comments received on our proposed decision as well as our response to those comments at *https://coast.noaa.gov/czm/pollutioncontrol/#Washington.*

NOAA and EPA appreciate the effort and commitment that you and your staff have shown in completing development of Washington's coastal nonpoint program and congratulate you on the state's accomplishment. We look forward to working with you to implement your program to further protect and restore the coastal waters of Washington. We also look forward to working with you to further integrate this program into your other ongoing nonpoint source efforts, including Washington's nonpoint source management program developed under Section 319 of the Clean Water Act and coastal zone management program developed under Section 306 of the Coastal Zone Management Act.

If you have any questions regarding the enclosed decisions, please have your staff contact Allison Castellan with NOAA at *allison.castellan@noaa.gov* or 202-596-5039 or Jon Kenning with EPA Region 10 at *kenning.jon@epa.gov* or 360-753-9079.

Sincerely,

PAYNE.JEFFREY.LYNN.1365833881 Digitally signed by PAYNE.JEFFREY.LYNN.1365833881 Date: 2024.01.30 15:01:52 -05'00'

Jeffrey L. Payne, Ph.D.
Director
Office for Coastal Management
National Oceanic and Atmospheric Administration

CASEY SIXKILLER Digitally signed by CASEY SIXKILLER Date: 2024.01.31 11:47:23 -08'00'

Casey Sixkiller
Regional Administrator
U.S. EPA Region 10

Enclosure: Washington Coastal Nonpoint Program NOAA/EPA Decisions on Conditions of Approval

cc: Heather Bartlett, Deputy Director, Washington Department of Ecology
Vincent McGowan, Water Quality Program Manager, Washington Department of Ecology
Joenne McGerr, Shorelands and Environmental Assistance Program Manager, Washington Department of Ecology

Appendix G. 2010 Ecology memo

Memorandum

To: Water Quality BMP Work Group

From: Melissa Gildersleeve, Water Quality Section Manager, Department of Ecology

Date: 8/16/10

Re: NRCS standards and Washington's Water Quality Standards

Dear participating members,

As you are likely aware, NWIFC presented a series of questions concerning the farm planning process to several state and federal agencies. The Department of Ecology, Washington State Conservation Commission, and NRCS all provided responses to those questions. A copy of WSCC and NRCS responses to NWIFC questions was sent to the Water Quality Program.

The following memorandum serves to reiterate points made in Ecology's presentation at the July 7, 2010 work group meeting and the August 3, 2010 meeting, and to reply to several assertions made in the WSCC responses to NWIFC questions. The purpose of this memo is to make it clear that we disagree with the information provided in some of the responses (numbered 2, 16 and 23) because Ecology finds them inconsistent with the Ag and Water Quality talks and our interpretation of Washington's water quality standards. Specifically, the responses clearly stated that "in Washington, NRCS practices standards are designed to meet state water quality standards[1]." Based on information from the water quality BMP talks, Ecology's review of the NRCS technical guidance, and Ecology's experiences in working with this issue, we find that NRCS performance standards are not designed to ensure that a producer will comply with Washington state water regulations.

As we discussed at these last two meetings, for a performance standard to ensure compliance with state water quality law it needs to address the following:

1. Meet the technology based standards established by the WAC 173-201A and RCW 90.48. (1) be approved by Ecology as all known available and reasonable methods of treatment, so that when employed in correct combinations the BMPs will (2) prevent violation of water quality criteria, including the antidegradation standards of Washington State's Water Quality Standards, and the pollution prohibitions of Washington's Water Pollution Control Act. When Ecology undertakes this analysis and subsequently approves suites of practices, the implementation of the approved BMPs serve as the expression of compliance.

2. Use adaptive management to meet the numeric and narrative criteria established by WAC 173-201A and RCW 90.48; upon showing that technology based standards do not achieve compliance with

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[1] Responses to Questions from NWIFC, question 23,l pages 7 & 8

the water quality criteria. If a practice has been approved by the department as meeting the thresholds established in 1, but a violation is documented, then sources which generate nonpoint pollution need to undertake adaptive management. Adaptive management operates such that if a violation of water quality criteria occurs, the discharger shall modify existing practices or apply further water pollution control measures, selected or approved by the department, to achieve compliance with water quality criteria.

NRCS performance standards are not designed to meet these requirements. Therefore, they cannot serve as a water quality BMP performance standard for state law compliance, because they cannot ensure that each and every landowner who undertakes the NRCS planning process will achieve compliance with state water quality regulations as defined above.

The following provides further explanation as to why NRCS performance standards are not designed to ensure landowner compliance with state water quality regulations. This analysis does not negate that fact that we think the NRCS process could be helpful in Washington and that it may have achieved improvements in water quality at locations where operators have been willing to implement adequate practices.

A. NRCS technical guidance has not been determined to meet the technology- based standards established by Washington's water quality regulations.

Ecology has not made any formal determination that NRCS technical guidance constitutes AKART in Washington State. Nor does NRCS claim to have developed or verified that its technical guidance constitutes AKART in Washington State. Moreover, the nature of a voluntary and discretionary planning process precludes Ecology from making a blanket determination that the process will ensure the implementation of appropriate combinations of BMPs that will prevent violations of all water quality criteria, including the antidegradation provisions.

B. Ecology needs a clearly indentified process that has or will incorporate compliance with state water quality regulations into NRCS performance standards.

Per the conversations at the BMP and water quality work group, NRCS technical guidance is largely a nationally developed standard. Ecology recognizes that the production of technical notes and the modification of practice standards does occur by some localized process, and therefore local information is brought into the development process. However, it is clear that there is no defined state process to consistently incorporate important state regulations into all pertinent NRCS written documents in a manner consistent with the policies of the respective implementing state agencies. Notably, Washington's NRCS standards have not undergone a Water Quality Standards consultation with the appropriate implementing agency.

C. NRCS technical guidance needs to establish performance standards with levels of protection that comply with state water quality regulation.

NRCS technical guidance is designed to address a "resource concern." NRCS has also made it clear that the practice standards treat the resource concern to levels laid out in the quality criteria found in section III of the Field Office Technical Guide. While water quality in the general sense is often identified as a resource concern, the quality criteria do not necessarily provide a level of protection equal to that of Washington state's water quality standards or of the state's Water Pollution Control Act. Our review of section III confirms this. Additionally, the practice standards found in section IV of the Field Office Technical Guide do not provide a level of protection needed to ensure that a producer will comply with state water quality regulations, because the FOTG standards are either silent or not detailed enough. In fact, section IV practice standards often contain broad statements to merely consider applicable local, state and federal regulations. Therefore, an individual planner, not a water quality specialist employed by Ecology, is left with the responsibility of interpreting the technical guidance materials to dictate levels of protection required by the state water quality regulations. Because there has been no process for adjusting NRCS practices and standards to comply with Washington water quality standards, NRCS (and Conservation District) planners lack the necessary information and guidance to adequately address compliance with state water quality standards. This is the gap that we are trying to fill with the Water Quality BMP Manual.

D. Planner or Landowner discretion is not a performance standard that ensures Washington's water quality regulations will be met.

Understandably, the nationally developed standards cannot anticipate every possible permutation of state and local compliance. Absent clear guidance about compliance with state water quality regulations, the current NRCS technical guidance and planning process leaves the consideration of compliance with most regulations (including state water quality regulations) up to either the planner or the landowner. Generally, performance standards are defined as benchmarks against which actual performance is measured. In the absence of clear guidance, neither the planner nor the landowner are in a position to make an informed decision as to whether the proposed suite of practices will meet the requirements of the applicable performance standards -- state water quality standards. While there may be situations where a planner's discretion and a landowner's choices have resulted in water quality improvements, given the discretionary nature of the process, outcomes equivalent to state law compliance cannot reasonably be assured.

E. NRCS's technical guidance needs to provide an adaptive management process consistent with what is required by Washington State's Water Quality standards.

As noted above, and according to the Water Quality Standards, adaptive management operates such that if a violation of water quality criteria occurs, point and nonpoint source dischargers shall modify existing practices or apply further water pollution control measures, selected or approved by the department, to achieve compliance with water quality criteria. However, NRCS technical guidance does not incorporate water quality monitoring, or sufficient input from state water quality authorities, such that consistent water quality based adaptive management occurs. Lacking a water quality based adaptive management system consistent with the water quality standards, the NRCS technical guidance

cannot serve as a water quality BMP performance standard designed to achieve landowner compliance with state water quality regulations.

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In summary, this does not mean that NRCS technical guidance cannot serve an important function in the planning and development of Best Management Practices to protect water quality in Washington State. Instead, it merely demonstrates that current NRCS technical guidance cannot serve as a water quality BMP performance standard that ensures that landowners seeking to resolve water pollution problems will be in compliance with all relevant state water quality regulations. Therefore, articulating a point of compliance has been, and remains the task of the state agencies implementing their respective state and federal statutory obligations.

Appendix H. Minimum Elements of a Watershed-based Plan

The information below is provided by EPA in the 2024 update to the Nonpoint Source Program and Grants Guidelines for States and Territories[213].

Although many different elements may be included in a watershed plan, the EPA has identified nine minimum elements that are critical for improving water quality. In general, the EPA requires that nine-element WBPs be developed before implementing project(s) using Section 319 watershed project funding. In many cases, state and local groups have already developed watershed plans and strategies for their rivers, lakes, streams, wetlands, estuaries, and coastal waters that address some or all the nine elements. If these existing plans contain all nine elements listed below, they can be used to fulfill the WBP requirement for watershed projects. If the existing plans do not address all nine elements or do not include the entire watershed planning area, they can still provide valuable components to inform, develop, and update WBPs. See Chapter 4.5 for more details on leveraging existing plans. For more detailed information on developing WBPs, please see the EPA's Resources for Watershed Planning[214], including the Handbook for Developing Watershed Plans to Restore and Protect Our Waters[215].

Note: The EPA recognizes that in select cases (see Chapter 4.6 in the Guidelines document linked above), alternatives to WBPs can provide an effective roadmap to achieve the water quality goals of a Section 319-funded watershed project.

The Nine Elements of Watershed-based Plans

The nine elements of WBPs and short explanations of how each element fits in the context of the broader WBP are provided below. Although listed as A through I, they do not necessarily occur sequentially.

The level of detail needed to address the nine elements of WBPs will vary in proportion to the homogeneity of land use types and the variety and complexity of pollution sources. For example, densely developed urban and suburban watersheds often have multiple sources of pollution from historical and current activities (Superfund sites, point sources, solid waste disposal, leakage from road salt storage, oil handling, stormwater-caused erosion, road maintenance, etc.) in addition to some agricultural activities. WBPs will be more complex in these cases than in predominantly rural settings. Therefore, plans for urban and suburban watersheds might need to be developed and implemented at a smaller scale than watersheds with agricultural lands of a similar character.

Element A. The identification of causes of impairment and pollution sources

[213] https://www.epa.gov/system/files/documents/2024-06/2024_section_319_guidelines_final_1.pdf
[214] https://www.epa.gov/nps/resources-watershed-planning
[215] EPA 841-B-08-002, March 2008: https://www.epa.gov/nps/handbook-developing-watershed-plans-restore-and-protect-our-waters

What does this mean?

This element includes the identification of the causes of impairment and pollutant sources or groups of similar sources that need to be controlled to achieve the desired load reductions and any other goals identified in the watershed plan. Sources that need to be controlled should be identified at the significant subcategory level along with estimates of the extent to which they are present in the watershed (e.g., X number of dairy cattle feedlots needing upgrading, including a rough estimate of the number of cattle per facility; Y acres of row crops needing improved nutrient management or sediment control; or Z linear miles of eroded streambank needing remediation).

Your WBP source assessment should encompass the watershed of the impaired waterbody(ies) and include a map(s) of the watershed that locates the major causes and source(s) of impairment in the planning area. To address these impairments, you will set goals to meet (or exceed) the appropriate water quality standards for pollutant(s) that threaten or impair the physical, chemical, or biological integrity of the watershed covered in the plan.

This element usually includes an accounting of significant point and nonpoint sources in addition to the natural background levels that make up the pollutant loads causing problems in the watershed. If a TMDL(s) exists for the waters under consideration, this element may be adequately addressed in those documents. If not, you will need to conduct a similar analysis (which may involve mapping, modeling, monitoring, and field assessments) to link the sources of pollution and the extent to which they cause the water to exceed relevant water quality standards.

Element B. An estimate of the load reductions expected from management measures.

What does this mean?

Using the existing source loads estimated for element *a*, you will determine the reductions needed to meet water quality standards. After identifying the various management measures that will help to reduce the pollutant loads (see element *c* below), you will estimate the load reductions expected as a result of implementing these management measures while recognizing the difficulty in precisely predicting the performance of management measures over time.

Estimates should be provided at the same scale and scope as described in element *a* (e.g., the total load reduction expected for dairy cattle feedlots, row crops, eroded streambanks, or implementation of a specific stormwater management practice). For waters in which TMDLs have been approved or are being developed, the plan should identify and incorporate the TMDLs; the plan needs to be designed to achieve the applicable load allocations in the TMDLs. Applicable loads for downstream waters should be included so that the water delivered to a downstream or adjacent segment does not exceed the water quality standards for the pollutant of concern at the water segment boundary. The estimate should account for reductions in

pollutant loads from point and nonpoint sources identified in the TMDL as necessary to attain the applicable water quality standards.

Element C. A description of the NPS management measures needed to be implemented to achieve load reductions in element *b* and a description of the critical areas in which those measures will be needed to implement this plan.

What does this mean?

The plan should describe the management measures needed to achieve the load reductions estimated under element *b* and any additional pollution prevention goals outlined in the watershed plan (e.g., habitat conservation and protection). Pollutant loads will vary even within land use types, so the plan should also identify the critical areas[216] in which those measures will be needed to implement the plan. This description should be detailed enough to guide needed implementation activities throughout the watershed and can be greatly enhanced by developing an accompanying map with priority areas and BMPs. Thought should also be given to the possible use of measures that protect important habitats (e.g., wetlands, vegetated buffers, forest corridors) and other nonpolluting watershed areas. In this way, waterbodies would not continue degrading in some watershed areas while being restored in others.

Element D. Estimate the amounts of technical and financial assistance needed, associated costs, and/or the sources and authorities that will be relied upon to implement this plan.

What does this mean?

You should estimate the financial and technical assistance needed to implement the entire plan, including implementation and long-term operation and maintenance of management measures, information/education activities, monitoring, and evaluation activities. You should also document which relevant authorities might play a role in implementing the plan. The plan's sponsors should consider the use of federal, state, local, and private funds or other resources that might be available to assist in implementing the plan. Shortfalls between the needs and the available resources should be identified and addressed in the plan.

Element E. An information and education component that is used to enhance public understanding of the plan and encourage early and continued participation in selecting, designing, and implementing the NPS management measures.

What does this mean?

[216] Critical areas are those producing disproportionately high pollutant loads. For more information, see the *Critical Source Area Identification and BMP Selection: Supplement to the Watershed Planning Handbook*, July 2018: https://www.epa.gov/sites/default/files/2018-08/documents/critical_source_area_identification_and_bmp_selection_final_5-11-18cover.pdf.

The plan should include an information/education component that identifies the education and outreach activities or actions that will support implementing the plan. These activities may support partner involvement efforts and the adoption and long-term operation and maintenance of BMPs.

Element F. A schedule for implementing the NPS management measures identified in this plan that is reasonably expeditious.

What does this mean?

You should include a schedule for implementing the management measures outlined in your watershed plan. The schedule should reflect the milestones you develop in element g, and you should begin implementation as soon as possible. Examples of activities that can start right away include conducting baseline monitoring and outreach for implementing water quality projects. It is important that schedules not be "shelved" for lack of funds or program authorities; instead, they should identify steps towards obtaining the needed funds as feasible.

Element G. A description of interim measurable milestones for determining whether NPS management measures or other control actions are being implemented.

What does this mean?

These milestones will be used to track the implementation of the management measures, such as whether they are being implemented according to the schedule outlined in element f. In contrast, element h (see below) will develop criteria to measure the management measures' effectiveness (e.g., via documenting improvements in water quality). For example, a watershed plan may include milestones for a problem pesticide found at high levels in a stream. An initial milestone may be a 30% reduction in the measured stream concentrations of that pesticide after five years and 50% of the users in the watershed have implemented integrated pest management. The next milestone could be a 40% reduction in the measured stream concentrations after seven years and 80% of pesticide users are implementing integrated pest management. The final goal, which achieves the water quality standard for that stream, may require a 50% reduction in 10 years. These waypoints let the watershed managers document incremental progress and know if they are on track to meet their goals or need to re-evaluate the treatment levels or timelines.

Element H. A set of criteria that can be used to determine whether loading reductions are being achieved over time and substantial progress is being made toward attaining water quality standards.

What does this mean?

As projects are implemented in the watershed, you will need water quality benchmarks to track progress toward attaining water quality standards. The criteria in element h (not to be confused with the water quality criteria in state regulations) are the benchmarks or waypoints to

measure against through monitoring. These interim targets can be direct measurements (e.g., fecal coliform concentrations, nutrient loads) or indirect indicators of load reduction (e.g., number of beach closings, shellfish bed openings). These criteria should reflect the time it takes to implement pollution control measures and for water quality indicators to respond, including lag times (e.g., water quality response influenced by groundwater sources that move slowly; the extra time it takes for sediment-bound pollutants to break down, degrade, or otherwise be isolated from the water column). You should also indicate how you will determine whether the WBP needs to be revised if interim targets are not met. These revisions could involve changing BMPs, updating the loading analyses, and reassessing the time it takes for pollution concentrations to respond to treatment.

Element I. A monitoring component to evaluate the effectiveness of the implementation efforts over time, measured against the criteria established under element h.

What does this mean?

The WBP should include a monitoring component to determine whether progress is being made toward attaining or maintaining the applicable water quality standards for the waterbody(ies) addressed in the plan. The monitoring program should be fully integrated with the established schedule and interim milestone criteria identified above. The monitoring component should be designed to assess progress in achieving loading reductions and meeting water quality standards. Watershed-scale monitoring can be used to measure the effects of multiple programs, projects, and trends over time. Instream monitoring does not have to be conducted for individual BMPs unless that type of monitoring is particularly relevant to the project.

Appendix I. Director Manning, Director Bellon and Director Watson Letters to the Forest Practices Board

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

October 9, 2009

Forest Practices Board Members
PO Box 47012
Olympia, WA 98504-7012

RE: Forests and Fish Program – Completion of Clean Water Act Review

Ladies and Gentlemen:

The Washington State Department of Ecology has completed the 2009 Clean Water Act (CWA) review of the state's forest practices and adaptive management programs. We are now releasing the enclosed findings paper broadly to stakeholders and the public. Although the paper was completed in early July 2009, I wanted to have a chance to evaluate the commitment forests and fish participants have in taking the steps needed to strengthen the existing program. Such a commitment is crucial to ensuring the state's forest practices program can be depended upon to bring or maintain forested waters in full compliance with the state water quality standards and the federal CWA.

In September, I had a chance to meet with the key stakeholders as part of the Forest Ecosystem Collaborative sponsored by Commissioner Goldmark. While the group grappled with many thorny and complicated issues, and its work is not done, it is clear that we all share a goal of finding ways to strengthen the existing programs and to look for innovative approaches to resolve many of the broader problems facing the timber industry in Washington.

After carefully weighing the level of stakeholder commitment and the benefit of providing a clear path to maintaining CWA coverage, I have decided to conditionally extend the CWA assurances. This extension is based on meeting a scheduled set of milestones for program improvements and research development. It is vital to maintaining the assurances into the future that the list of CWA milestones is incorporated into the planning process of the state's forest practices and adaptive management programs. My hope is that by releasing the CWA findings now, and thereby formalizing the milestones, partners in the forest practices and adaptive management programs will move swiftly to take the required action necessary to accomplish the needed improvements and research milestones.

Sincerely,

Jay J. Manning,
Director

Enclosure

cc: EPA
Forests and Fish Policy
Forest Practices Board Liaisons
NMFS
USFWS

2009 Clean Water Act Assurances Review of Washington's Forest Practices Program

Examining the effectiveness of Washington's forest practices program in bringing waters into compliance with state water quality standards and the federal Clean Water Act

Washington State Department of Ecology

July 15, 2009

For information on this review contact:
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Introduction

Under Washington state law (Chapter 90.48 RCW) forest practices rules are to be developed so as to achieve compliance with the state water quality standards and the federal Clean Water Act (CWA). The Department of Ecology (Ecology) has been designated as the state water pollution control agency for all purposes of the CWA, and has been directed to take all action necessary to meet the requirements of that Act. The Clean Water Act assurances (CWA assurances) granted by Ecology in 1999 as part of the Forests and Fish Report (FFR) expired June 30, 2009. The 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.

This paper summarizes the findings of a review by Ecology on the progress the state's forest practices program is making in bringing waters into compliance with state surface water quality standards (Chapter 173-201A WAC) and the federal Clean Water Act. This review is being used as the basis for determining whether or not to extend the CWA assurances into the future.

As detailed below, Ecology finds that the Forests and Fish program has not achieved the level of information needed to verify that water quality in the forested environment will meet water quality standards, or to verify that the conditions for offering the assurances in 1999 have been satisfied. In spite of these shortcomings, Ecology believes the Forests and Fish program still offers a viable and compelling management strategy for achieving water quality goals in the forested environment. Ecology has concluded, therefore, that continuation of CWA assurances is warranted if specific actions are taken to improve the program's performance.

Summary of Findings

In 1999 as part of the FFR (http://www.dnr.wa.gov/Publications/fp_rules_forestsandfish.pdf), Ecology in consultation with the United State Environmental Protection Agency established the CWA assurances. In 1999, Ecology assumed ten years would be sufficient time to test the forest practices rules and to identify trends in water quality improvement. That expectation has not been met. After ten years, no studies have been completed or data collected that provide an indication of whether or not the forest practices rules are improving water quality or maintaining forested waters in compliance with the water quality standards. Similarly, data is lacking with which to conduct a thorough analysis of how effective operational and enforcement programs are in applying the forest practices rules.

The foundation for granting the CWA assurances was the belief that the FFR was a substantial step forward in environmental protection, and when implemented would provide the quickest and most efficient means for achieving environmental goals and compliance with the state's water quality standards. Developing CWA mandated total maximum daily loads (TMDLs) to serve as regulatory water cleanup tools for forested watersheds was therefore viewed as a low priority, and the CWA assurances established that Ecology would rely on the FFR-based forest practices program for an initial ten-year period. It was assumed in 1999 that research and

monitoring would occur to demonstrate that implementing the FFR would improve water quality and eventually bring forested waters into full compliance with the state's surface water quality standards and thereby also satisfy the conditions under Section 303 of the federal CWA.

The original FFR language is not clear on whether or not it was intended that the assurances could be extended beyond the 2009 deadline, but nothing in the report fundamentally alters Ecology's authority to continue to rank conducting TMDLs on forest lands subject to the FFR rules as a low priority with or without the existence of formal assurances. The value of offering formal assurances is that they provide landowners and agencies with a predictable and consistent regulatory system; and in doing so provide an additional motivation for stakeholders to participate in the adaptive management program.

As part of this 2009 review, Ecology has examined all of the written conditions for maintaining the assurances established in Schedule M-2 of the 1999 Forests and Fish Report. Ecology has also examined all of the issues highlighted in a supplemental 2006 Ecology White Paper. The 2006 paper was written to let stakeholders to the FFR process know some of the specific information Ecology would need for this 2009 review.

Ecology has concluded the forest practices and adaptive management programs have not fully met the expectations of research and program performance that underlie the basis for providing the CWA assurances. The adaptive management program has not provided the information needed to validate the effectiveness of the rules in protecting water quality. In fact, no field studies or assessments have been completed that test the ability of the rules to meet state water quality standards. Moreover, these studies are still many years away from completion, and the budget for the science program is set to be significantly reduced. Staffing cuts are expected over the next year or two that may further impact the ability of the various elements of the forest practices and adaptive management programs to operate at past levels. Added to the direct effect of reduced staffing, several key stakeholder groups openly express a growing lack of support for continuing with the current adaptive management program.

The lack of information to evaluate the effectiveness of the rules can in part be attributed to the initial priorities established in the FFR that placed validating operational aspects of the rules ahead of water quality studies. However, the adaptive management program (AMP) has also had significant trouble developing and using the research results developed as part of these initial prioritization agreements (i.e., last fish habitat model, uppermost point of perennial flow, desired future conditions basal area target).

Improvements in the system are necessary to create a program that participants can rely on to provide a more efficient and confident program for testing the effectiveness of the rules in protecting water quality and modifying the rules as appropriate.

State laws establish that the forest practices rules must be designed to achieve compliance with the state water quality standards and placed Ecology in the lead for making this determination. However, the Legislature also formally established the adaptive management program as the primary mechanism for bringing the rules into alignment with the state standards. The current program, even with its challenges, creates a well established foundation for moving ahead.

Policy and procedure manuals guide the process; full time professional project managers and Cooperative Monitoring, Evaluation, and Research (CMER) program staff are available to assist CMER volunteer scientists in carrying out their projects; and Forest and Fish Policy (Policy) representatives of the various stakeholder caucuses remain engaged at present and have advanced strategic plans to improve their own performance as well as the performance of the overall program. On the operational side, the compliance monitoring program has been established and is constantly expanding as time goes on, guidance documents and training continue to improve, and experienced agency staff stand ready across the state to implement the rules.

Taken in total, the forest practices program provides a substantial framework for bringing the forest practices rules and activities into full compliance with the water quality standards. Ecology has concluded it is in the best interests of water quality, and is consistent with legislative intent, to work with the other participants to make needed improvements to the existing program. Ecology is therefore conditionally extending the CWA assurances with the intent to stimulate the needed improvements to the forest practices and adaptive management programs. Ecology, in consultation with key stakeholders, has established specific corrective milestones (shown in the next section). The extension of the assurances is conditioned on meeting these research and administrative milestones by the specific target dates described. These milestones serve as a corrective action plan necessary to retain the assurances into the foreseeable future.

Steps are already being taken to address many of the corrective milestones associated with operational issues, compliance monitoring, and assessing progress under Road Maintenance, Abandonment, and Planning (RMAP) rules. Based on this ongoing progress, Ecology fully expects these steps to be successful in the short-term. Ecology's highest concern going forward is with the adaptive management program. These concerns are greatest regarding the ability to fund the needed studies and assessments at a rate that creates a viable science-based program. Scientific studies and assessments need to be designed to provide Policy and the Forest Practices Board (Board) with information sufficient to enable these policy makers to make informed science-based policy decisions. Just as importantly, policy makers must be committed to using science to fairly and efficiently revise the forest practices rules and programs as needed.

Compliance with the milestones described herein will demonstrate sufficient progress to satisfy the CWA assurances and the adaptive management provisions of the state water quality standards (WAC 173-201A-510(3)). Because extending the assurances is based on meeting the specific research and administrative milestones identified above by the specific dates listed, failure to meet any milestone would be considered a basis for potentially withdrawing the assurances at that time. In evaluating compliance with the milestones established herein, Ecology will consider the cause for missing any milestones and be considerate of the fact that:

- The state and nation are both experiencing a severe economic recession and it may take a couple of years before funding to fully support the AMP is available.
- Unexpected and uncontrollable circumstances may cause deviations from this schedule, such as catastrophic events causing the loss of study sites.
- Until a project has a study design developed, it is not possible to identify an accurate time frame for its completion (or in some cases to determine if the project remains a CWA priority).

To be successful in meeting these milestones and consequently the CWA assurances, the caucus principals will need to work together to find funding and to support the actions needed to meet the specific milestones. Ecology is working therefore to support the strategic goal to bring together the principals as soon as practical to renew and maintain a spirit of cooperation and collaboration among the six caucuses.

Considerations and Corrective Milestones

The following lists the conditions[1] that are the basis for continuing to provide the CWA assurances to the state's forest practices program (shown in bold font). Similar conditions have been grouped together into categories. Following the list of conditions is a summary of the key findings (shown in italics) and the corrective remedies identified as "milestones". These milestones are intended to create a corrective action plan that ensures steady incremental improvement and provides a basis to continue the assurances. Failure to meet any milestone by the deadline established would be cause for Ecology to revoke the assurances at that point in time.

Many of the remedies identified necessarily focus on the state Department of Natural Resources (DNR). This focus recognizes DNR has primary responsibility for implementing the Forest Practices Act and rules and supporting the adaptive management program. DNR has been working cooperatively with Ecology and others to enact solutions to many of the issues noted below both prior to and independent of this CWA review.

I. Establish Rules and Funding to Implement the Forests and Fish Report

Conditions for retaining the assurances include:

1. **Having final regulations consistent with the Report.***
2. **No significant loss of funding or staffing to the state regulatory agencies dedicated to forest practice regulation or monitoring.***
3. **Court orders, changes to the CWA, state or federal regulatory changes that cannot be otherwise addressed.***
4. **No weakening of enabling State statutes or regulations which affect the Report and its implementation.***

[1] Conditions in this context refers to the "Reopeners, Modifications, and Causes of Withdrawal of Assurances" noted in Schedule M-2 of the Forests and Fish Report as well as to those described as necessary in Ecology's January 11, 2006, Clean Water Act Assurances White Paper provided to the Forests and Fish Policy Committee and the Forest Practices Board to help provide a more detailed description of some of the information Ecology would need for this 2009 review. Items directly called out in Schedule M-2 are shown followed by an asterisk.

Discussion: The CWA Assurances were provided based on establishing and maintaining an adequately funded and operationally effective forest practices program that implements the FFR. Meeting this requires that DNR and the other resource agencies and cooperators provide and maintain adequate staffing and funding to keep the field operations and adaptive management programs running effectively. It also requires that no significant changes to laws and regulations take place that undermine the foundation of water quality protection established in the FFR.

These conditions for retaining the assurances have not been fully met. Rules were initially adopted to implement the FFR, and substantial resources were put into action to implement a formal adaptive management program. Countering these successes, however, staffing has not been adequate to fully implement the rules and programs, changes have been made to the laws that weaken some of the original protections established in the FFR, and significant reductions in staffing and funding have recently occurred that are likely to remain over the next two to three years as the state's economy recovers from the current recession.

Remedies identified to support continuation of the assurances include:

(a) Federal pass-through funding has diminished since the inception of the FFR and is predicted to be depleted in the second half of the 10-11 biennium. In addition, the state and nation are both suffering through the worst economic period on record since the great depression. Continued CMER funding is based partially on general fund state revenue in DNR's budget and partially on timber tax revenue. At this time the state is experiencing cuts to the general fund, and harvesting with its associated revenue stream has declined by approximately fifty percent. Recognizing the likelihood of budget shortfalls in the adaptive management program, it is important that water quality studies be designated as high priority, and efforts made to ensure their timely completion. The adaptive management program should also develop strategies to make better use of partnerships (e.g., monitoring consortium, Puget Sound Partnership, USFS) and to prepare to compete for grant monies. This may in part necessitate developing study plans with the intention of having them ready to compete for outside funding as sources emerge. In addition, it is imperative that new dedicated long term funding sufficient to carry out the requirements of the FFR be secured as soon as possible, as a reliance on grants is unlikely to be either workable or sufficient to maintain an adequate program.

Milestones:

1) **By July 2009, and in subsequent budget and planning years, the AMP Administrator with the assistance from the Policy and CMER committees will send to the Forest Practices Board a revised CMER work plan and budget that places key water quality studies as high priorities as described in section II(c) regarding the adaptive management program.**
2) **By September 2009, the Forest and Fish Policy Budget Committee will identify a strategy that will be implemented with caucus principal support to secure stable, adequate, long-term funding for the AMP.**

(b) Ecology recognizes some procedures can have the practical effect of creating shortfalls in staffing where those same staff resources would otherwise be adequate. Problems with the water type modification (WTM) requests are an example of this. WTM requests often do not receive field reviews due to the inadequacy of resource agency staffing. This situation occurs predominately when the water type modification request forms are passed along to the tribal and state resource agency personnel in large batches for the DNR-mandated 30-day review period. This makes it problematic for existing staff in the resource agencies and tribes to review all of the requests. As a consequence, many are approved without an appropriate level of review. Efforts are needed to ensure water type modification requests are adequately evaluated by resource agency staff. Compounding the workload issues associated with reviewing WTM forms, concerns continue to persist about how protocol surveys are conducted and the conditions established for multidisciplinary teams to conduct their reviews in the field. The practical effect is that resource agency staff must invest substantial time to re-affirm what is established in formal protocols and guidance. Most of these problems relate to the improper recognition of what constitutes barriers to fish migration and can likely be remedied by the use of more training and guidance and adherence to the Board Manual Section 13 and WAC 222-16-30 and -31. Problems also occur related to placing unreasonable expectations on multidisciplinary review teams - such as scheduling the site visit during periods of heavy snow cover or at the same time interdisciplinary teams have been called elsewhere in the region. These types of issues interfere with the effective use of available staff resources and generally impair the overall integrity of the program.

Milestones:

(1) By February 2010, DNR in consultation with WDFW, Ecology, and the tribes will develop a prioritization strategy for water type modification. The intent of this strategy will be to manage the number of change requests sent to cooperating agencies for 30-day review so it is within the capacity of those cooperators to respond to effectively. The strategy should consider standardizing the current ad hoc process of holding monthly coordination meetings with agency and tribal staff in all the DNR regions. This should allow group knowledge and resources to be more efficiently used to evaluate change requests.

(2) By March 2010, DNR Forest Practices will establish online guidance that clarifies existing policies and procedures pertaining to water typing. The intention is to ensure regional staff and cooperators remain fully aware of the most current requirements and review processes for changing water type and coordinating the review of multidisciplinary teams.

(3) By February 2011, DNR in consultation with WDFW, Ecology, and the Tribes will complete an evaluation of the relative success of the water type change review strategy. Results of this review would be used to further refine the strategy.

(c) Approximately fifty percent of the state's private forests are owned by small forest landowners (SFL). Subsequent to the FFR, the Legislature modified the inventory, planning, and reporting requirements for SFL roads (RCW 76.09.410 and 76.09.420).

Rather than requiring Road Maintenance and Abandonment Plans (RMAPs) for all their roads, SFLs must submit a checklist RMAP in association with any forest practice application (FPA). This checklist RMAP process requires that roads used in association with that FPA be brought up to current road standards, but it does not address any of the landowner's roads that would not be used for that harvest. To understand if SFL roads are posing a threat to water quality, DNR should work with Ecology to find innovative ways to follow through with its current proposal to assess the condition and rate of compliance of SFL roads. Ecology believes this is an important survey and intends to work with DNR to develop a means that could be used to get this work done with existing staff and funding, if additional resources are not made available by the Legislature. Ecology's focus is on assessing the potential delivery of sediment to waters of the state. In developing a survey plan, DNR should consider opportunities to add this task to site visits associated with funding fish passage projects on SFL parcels, to use cooperative assistance similar to that used to evaluate the success of hardwood conversions on SFL properties, and other cost effective means to accomplish this work.

Milestone:

(1) By 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.

(2) By November 2013 Ecology in partnership with DNR, and in consultation with the SFL advisory committee will 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. If a significant portion of SFL roads are estimated to pose a risk of damage to public resources, then a report will be prepared in time to brief the Legislature in December 2013.

II. An Adaptive Management Program to Update Rules and Guidance

Conditions for retaining the assurances include:

1. **No new water quality standards not anticipated in this (Forests and Fish) Report unless those new standards can be accommodated with adaptive management.***

2. **No general failure to upgrade regulations or guidance called for in adaptive management. This includes failure to develop agreed upon resource objectives, research priorities, and compliance monitoring programs.***

3. **Development of an approved Adaptive Management Program (AMP) section in the Forest Practices Board Manual that will provide formal procedures for participants to successfully link science questions to policy decisions.**

4. **Establishment of a Cooperative Monitoring, Evaluation, and Research Committee (CMER) Work Plan that includes water quality-related projects that have been prioritized for funding and includes program integration across spatial scales.**

5. **Easy access to reports and data from the AMP on the Internet so the information can be used in existing public processes associated with the Clean Water Act.**

6. **Specific resolution by CMER of the following issues:**
   - **Develop a protocol for identifying perennial stream initiation points.**
   - **Estimate the current status of stream temperature and riparian stand conditions on forest lands.**
   - **Evaluate the reach-scale effectiveness of riparian buffer prescriptions at providing adequate shading post-harvest to protect stream temperatures.**
   - **Evaluate the cumulative effects of harvest on stream temperature.**
   - **Evaluate the cumulative effects of forest practices on sediment input and stream habitat.**

Discussion: The CWA assurances were established on the condition that an effective adaptive management program (AMP) would be established and maintained. A healthy and effective AMP is central to the ability of Ecology to offer the CWA assurances. The AMP needs to provide a scientific framework for testing whether the forest practices rules are effective in protecting water quality, and for identifying any changes needed to rules not found effective. Substantial progress has been made through establishing the structure and formal operational procedures of the AMP. An AMP board manual was developed to further outline how the program should operate, and significant funding and effort has occurred to get scientific studies underway to test various portions of the rules and guidelines governing forest practices.

In spite of these substantial efforts, the AMP has not completed any studies that directly test the effectiveness of the rules in protecting water quality. The science arm of the AMP has also been largely unsuccessful in providing research findings the Forest and Fish Policy Committee (Policy) and the Forest Practices Board (Board) will reliably use to validate or to revise the forest practices regulations and guidance. There are significant problems with the ability of the policy and science arms of the AMP to work together to test and revise the rules in a timely and effective manner. Part of the problem is simply inherent in a program that seeks to develop consensus among stakeholders with competing interests. But the problems also seem rooted in the foundation of the AMP itself. AMP participants frequently disagree about the appropriate roles of science and policy, as well as what role the initial negotiated forests and fish rules should play in evaluating the acceptability of future changes. These disagreements appear in part to stem from a lack of clarity in the underlying rules and guidance. Combined with poor communication between the science and policy arms of the program, this is compromising the AMP's effectiveness. To the credit of its participants, strategic planning efforts are underway with the intention of identifying and correcting the shortcomings of the program. The Policy committee has developed a strategic plan (see Appendix) with five broad goals supported by multiple objectives and specific tasks designed to revitalize the adaptive management program. There is also general understanding that

testing the effectiveness of the rules for protecting water quality must be a top priority if Ecology is to continue the assurances.

The state legislature (RCW 76.09.370) directed that forest practices rules covering aquatic resources only be adopted or changed by the Board where those changes are consistent with recommendations resulting from a scientifically based adaptive management process. The stated purpose of having the adaptive management process is to make adjustments as quickly as possible to portions of the forest practices rules that are not achieving resource objectives. Both as a participant and reviewer, Ecology has concluded that fundamental improvements are needed to ensure the rules and associated programs will be tested and revised in a timely manner based on scientific inquiry, as intended by the legislature and consistent with CWA assurances.

Remedies identified to support continuation of the assurances include:

(a) Much of the recent conflict among participants of the adaptive management program is centered on disagreements about what constitutes the proper roles of the Board, Policy, and CMER in revising rules and guidelines; and what the role of science and economics should be in the decision making process. The roles of CMER and Policy should be clarified, and revisions should be made to the decision-making process as needed to ensure science remains the foundation for changing the forest practices rules. Improved communication between CMER and Policy is needed with the aim of ensuring that CMER studies have the greatest potential to provide answers that Policy will use to validate or suggest revisions to the forest practices regulations and guidance. The adaptive management program (CMER, Policy, and Board) would benefit from an outside audit on its performance, structure, and decision-making framework. Such outside audits should occur periodically (perhaps every five years) and be used to actively improve the program. This remedy is consistent with the first goal of the Strategic Goals, Objectives, and Tasks document recently completed by the Policy Committee (see Appendix). To ensure the AMP's operations are transparent to the public, the results of these audits should be discussed at the Forest Practices Board.

Milestones:

(1) By December 2009, the AMP program administrator, with the assistance of CMER and Policy, will complete the ongoing training sessions on the AMP protocols and standards for CMER, and Policy. This is intended to remind participants of the agreed upon protocols. Opportunity should also be provided to identify portions of the protocols and associated rules that need revision to improve performance or clarity. Any identified improvements to the Board Manual or regulations should be implemented at the soonest practical time. Subsequent to this effort, the administrator will offer to provide this training to the Board.

(2) By December 2010, the AMP Program administrator shall initiate the process of obtaining an independent review of the Adaptive Management Program. This review shall be done by representatives of an independent, third party research organization and include:

i. **An examination of the structure and function of the program, based on its technical performance, fiscal efficiency, and overall accountability.**
ii. **An assessment of the performance and efficiency of the consensus-based decision processes.**
iii. **A review of the rigor of CMER science and whether it productively adds to the body of Pacific Northwest region science to confidently address the L-1 Questions.**
iv. **An evaluation of the interactions of science and policy within the AMP.**
v. **Identification of any different approach the AMP could employ to assure a more certain and timely outcome of projects and commensurate changes to rules and guidelines.**

Upon completion, the results of this independent review shall be taken to CMER and Policy to develop responses and recommendations for any needed corrections. Within six months of completion, the report along with the responses of the CMER and Policy committees will be provided to the Board. Ecology will be engaged in discussions with cooperators to examine ways to initiate this important task as soon as possible.

(b) The amount of forest that must be retained in buffers to protect water quality and other public resources is dependent on the type of the waterbody. Non-fish bearing perennial streams (Type Np) receive substantially less forested buffers than do fish bearing waters. Ecology contends that the prescriptions associated with the Type Np rules have the greatest potential risk of violating the water quality standards. To apply the Np rules as intended requires the identification of the point at which the flow becomes perennial (flows year round in a normal water year). Ecology needs to know at the soonest possible time if the Np rules are effective in protecting water quality. At this time, however, there is no protocol for determining the highest point of perennial flow initiation, no information for assessing how accurate the current best professional judgment-based approach is in identifying the uppermost point, and no studies completed to test the effectiveness of the Np rules in protecting water quality and other public resources. Sufficient Type N studies are contained within the CMER work plan to allow a science-based assessment of the protection and relative risks provided by the existing prescriptions. However, the first study to assess the effectiveness of the Np rules in protecting water quality will not be done until September 2012. To support sound decision-making, it is important that Policy and CMER work together to establish a strategy to expediently ensure rules associated with Type Np waters maintain those waters in compliance with the state water quality standards. This strategy needs to include at a minimum: (1) development of a protocol for identifying with reasonable accuracy the uppermost point of perennial flow - this could be a new approach or validation and documentation of the existing approach; (2) an updated review of the scientific literature pertaining to buffering streams sharing the physical characteristics of Np streams; (3) ranking and funding of the Type N studies as highest priorities for CMER research; and (4) identification of key research questions that caucus participants want answered in preparation for a review of the Type N rules -such as the effect of not-buffering dry stream segments.

Milestones:

(1) By July 2010, Policy, in consultation CMER, will develop a strategy to examine the effectiveness of the Type N rules in protecting water quality at the soonest possible time. This strategy needs to include at a minimum:

- **i. Ranking and funding of the Type N studies as highest priorities for CMER research.**
- **ii. By July 2012, developing a protocol for identifying with reasonable accuracy the uppermost point of perennial flow, or develop documentation demonstrating the spatial and temporal accuracy of the existing practice used to identify this point;**
- **iii. By September 2012, completing a comprehensive literature review examining the effect of buffers on streams physically similar to the Type Np waters in the forest practices rules prior to completion of the Type N basalt effectiveness study. This should be conducted or overseen by CMER (or conducted by an independent research entity).**

(c) After almost ten years, no CMER studies have been completed that inform whether or not the forest practices rules can be relied on to bring waters into compliance with the state water quality standards and the CWA. In addition, the state in general, and the AMP in particular, are facing an increasingly difficult budget situation and will not be able to maintain the level of research effort it has in the past without an infusion of new resources. To directly address the need to have water quality-related projects prioritized for funding, the annual CMER work plan and budget exercise should be used to formally establish and maintain water quality studies as high priorities in the adaptive management program. A prioritized list of projects and milestones is presented in Table 1 below to help focus the budget prioritization effort and to ensure water quality studies are expediently pursued. Table 1 shows the water quality priorities and general timeframes for study development needed to support continuation of the CWA assurances. Ultimately, the success of any program of studies will be determined when the studies are finished. It will be critical, therefore, that ongoing and planned studies be designed to assess compliance with the water quality standards, and that follow-up studies needed to provide finer resolution are expediently planned and implemented. Such follow-up studies are not described in this document but will need to be addressed as they arise and as the milestones listed herein are met.

Milestones:

(1) By July 2009, and in subsequent planning years, the projects identified by Ecology in Table 1 will be reflected in the CMER budget and work plan in a manner that establishes a priority schedule for study development. Failure to meet any of the milestones identified without prior consent by Ecology may be viewed as a basis to revoke the CWA assurances at that point in time.

(2) By December 2009, the AMP Manager with the assistance of the co-chairs of Policy and CMER will initiate a process for flagging projects for the attention of Policy that are having trouble with their design or implementation. This process should identify projects not proceeding on a schedule reflecting a realistic but

expedient pace (i.e., a normal amount of time to complete scoping, study design, site selection, etc.).

Table 1: List of Research Milestones to Support Continuation of CWA Assurances	
	Task Description
2009	Complete: Hardwood Conversion – Temperature Case Study
	Study Design: Wetland Mitigation Effectiveness
	Study Design: Testing the Accuracy of Unstable Landform Identif.
2010	Complete: Mass Wasting Prescription-Scale Monitoring
	Implement: Wetland Mitigation Effectiveness (Pilot)
	Study Design: Amphibians in Intermittent Streams (Phase III)
	Study Design: Type N Experimental in Incompetent Lithology
	Scope: Mass Wasting Landscape-Scale Effectiveness
	Scope: Eastside Type N Effectiveness (new study needed)
2011	Complete: Bull Trout Overlay Temperature
	Complete: Solar Radiation/Effective Shade
	Implement: Eastside Type N Effectiveness
	Implement: Amphibians in Intermittent Streams (Phase III)
	Implement: Type N Experimental in Incompetent Lithology
	Study Design: Mass Wasting Landscape-Scale Effectiveness
	Scope: Wetland Management Zone Effectiveness Monitoring
2012	Complete: Type N Experimental in Basalt Lithology
	Complete: Buffer Integrity-Shade Effectiveness
	Complete: Wetland Mitigation Effectiveness
	Complete: Amphibians in Intermittent Streams (Phase III)
	Implement: Testing the Accuracy of Unstable Landform Identif.
	Scope: Wetland/Stream Water Temperature Interactions
2013	Complete: First Cycle of Extensive Temperature Monitoring
	Scope: Effectiveness of RMAP Fixes
	Scope: Wetland Hydrologic Connectivity
2014	Study Design: Effectiveness of RMAP Fixes
	Scope: Type F Experimental Buffer Treatment
2016	Complete: Type N Experimental in Incompetent Lithology
	Scope: Watershed Scale Assess. of Cumulative Effects
2017	Complete: Eastside Type N Effectiveness (new study needed)
	Study design: Watershed Scale Assess. of Cumulative Effects
2018	Complete: Roads Sub-basin Effectiveness
	Implement: Watershed Scale Assess. of Cumulative Effects

III. Consistent Compliance and Enforcement of the Forest Practices Rules

Conditions for retaining the assurances include:

1. **No failure to implement the rules for any reason.***
2. **No lack of enforcement of forest practices on the part of state regulatory agencies.***
3. **No broad scale landowner non-compliance exists with meeting the forest practice regulations or the FFR.***
4. **If an individual landowner fails to implement forest management practices or demonstrates a pattern of non-compliance, such as repeated enforcement actions, the assurances may be withdrawn for that landowner. All available enforcement and other options under federal and state law will be considered. This will include, but not be limited to: the requirement for a TMDL; enforcement of water quality standards violations and forest practice laws and regulations.***
5. **Documentation based on compliance monitoring data demonstrating that the rules are being implemented in a reasonably consistent manner across in each DNR region.**
6. **Documentation based on compliance monitoring data demonstrating when the rules are different for small landowners than for large landowners, what level of compliance is being achieved by each landowner category.**
7. **Documentation based on compliance monitoring data demonstrating how well rules regarding water quality protection measures such as riparian buffers; road construction, maintenance and abandonment; alternate plans; and unstable slope requirements are being implemented.**
8. **Results of an analysis of alternate plan compliance with standards in the rules that evaluates whether alternate plans provide protection to public resources at least equal in overall effectiveness as default forest practices prescriptions.**

Discussion: The CWA assurances were conditioned on the ability to demonstrate the forest practices rules are being consistently and effectively applied at all scales – statewide, DNR region, and individual landowner. In the discussion and milestones that follow, the CMP is often identified as a vehicle for satisfying the formal corrective milestones; however, Ecology would support the use of alternative programs and stand alone initiatives if they would be more effective.

Statewide compliance patterns. From a statewide perspective, DNR has done an admirable job in developing a formal program to assess compliance. The compliance monitoring program (CMP) does a good job at assessing overall compliance rates with selected conditions in approved forest practices applications (FPA). The draft 2006/2007 biennial

compliance report, for example, provides sound evidence that no significant difference exists in rates of compliance with FPA conditions between large and small forest landowners. Preliminary results from the draft report found that seventy-five percent of the riparian activities evaluated were in compliance on both small and industrial landowner lands. Of the road activities evaluated, eighty-seven and eight-six percent were in compliance on small and industrial landowner lands, respectively. Ecology field staff actively participating in the forest practices program support the contention that landowner compliance is reasonably good statewide. However, the statistics demonstrate that approximately one out of every four riparian prescriptions evaluated experienced at least some level of non-compliance. This fact suggests initiatives are needed to identify the causes of non-compliance and to reduce the incidence level.

A significant concern for Ecology is that the CMP is focused on assessing compliance with only select provisions of approved FPAs. This means the CMP is not providing an adequate assessment of compliance with other important provisions of the forest practices rules related to water quality protection. Only compliance with provisions established in an approved FPA that can be readily evaluated during a short field visit are currently being assessed in the CMP. Critical areas of omission from formal compliance assessment efforts include:

1. *Water typing decisions (wetland versus lake or stream, fish-bearing versus non fish-bearing, seasonal versus perennial).*
2. *Designation of channel migration zones and inundated and associated wetlands.*
3. *Unstable slope rules.*
4. *Measurements of bankfull stream width.*
5. *Adherence to streamside shade rules.*
6. *Haul roads used to remove the harvested timber.*

In addition, no program exists to determine if approved alternate plans are equal in overall effectiveness as compared with the default forest practices rules.

Regional and landowner compliance patterns. The CMP has not provided information that allows compliance patterns to be assessed at either regional or landowner scales. Ecology staff reports that forestry staff within the DNR regions are generally doing an excellent job of applying and enforcing the rules. However, staff and other cooperators often express the belief that regional differences exist in the application of the forest practices rules and in undertaking enforcement actions. Without unbiased data on regional compliance patterns, however, these concerns can neither be confirmed nor dismissed.

General issues. There is no effective mechanism in place to resolve disagreements between members of field review teams or conflicts over enforcement decisions in a timely manner. This is particularly a problem when DNR staff is a party to the disagreement since DNR is the final arbitrator of the forest practices rules.

Remedies identified to support continuation of the assurances include:

(a) Past problems with getting concerns addressed over the content and procedures included in the CMP suggests significant value may accrue through the formation of the newly authorized CMP stakeholder guidance committee. Ecology strongly encourages DNR to continue to engage key cooperators in finalizing a charter for the committee that defines the roles and the decision-making process to be used. Many of the remedies discussed would be appropriately handled by that committee.

Milestone:

(1) By October 2009, DNR will complete the Charter for the Compliance Monitoring Stakeholder Guidance Committee and determine which issues identified herein related to compliance monitoring will be dealt with by the committee. This is intended to help move these issues forward on schedule as well as to flag the items for which an alternative process for resolution is needed.

(b) The Compliance Monitoring Program (CMP) does not currently examine compliance with numerous rule elements of importance to protecting water quality. The existing structure of the CMP may preclude an assessment of compliance with some of these rule elements. In such cases, separate studies are needed to supplement the current CMP. Separate studies or CMP assessment methodology are needed to examine the level of compliance with rule requirements for water typing, shade, wetland identification and mitigation, unstable slopes, channel migration zones, and haul roads. More detailed guidance and training should also occur to enhance consistency in defining the boundaries for measuring bankfull width and channel migration zones.

Milestone:

(1) By December 2009, DNR in partnership with Ecology and with the aid of the CMP stakeholder guidance committee, will develop general plans and timelines for exploring options and data collection methods for assessing compliance with rule elements such as water typing, shade, wetlands, haul roads and channel migration zones. The goal is to initiate these programs by December 2011.

(c) Disagreements occur at both the field and policy level regarding interpretations of regulations and guidance. These disputes are often allowed to continue unresolved and carry-over to other situations for very long periods of time. These disputes result in the unequal application of the rules and guidelines between landowners and regions, as well as wasting limited staff resources and harming professional working relationships. DNR should ensure an effective formal procedure exists to efficiently resolve field disputes. This procedure should include participation by appropriate representation of policy and technical experts from participating caucuses. The objective is to ensure timely investigations occur of the concerns of any participating cooperators regarding field determinations, but the more paramount objective should be to identify the underlying basis for the disagreement and minimize its reoccurrence in the future through revised training, guidance, or rules.

Milestone:

(1) By December 2009, DNR with assistance of Ecology and WDFW, will evaluate the existing process for resolving field disputes and identify improvements that can be made within existing statutory authorities and review times. Although resolution of the specific issue at hand should be a goal, the overarching purpose of this milestone is to establish a process that will identify the basis for the dispute and to put in place revised guidance, training, reporting pathways, other measures that will minimize the reoccurrence of similar disputes in the future. This process should consider how to best involve the appropriate mix of both policy and technical participants to thoroughly resolve the issue at hand.

(d) Training is needed to decrease conflict among cooperators engaged in compliance assessments, and to minimize noncompliance rates that may be due to a misunderstanding of the forest practices rules and guidance.

Milestone:

(1) By June 2010, DNR with consultation with Ecology and WDFW (or with the CMP stakeholder guidance committee), will establish a framework for certification and refresher courses for all participants responsible for regulatory or CMP assessments. This will be focused on aiding in the application of rules regarding bankfull width, CMZ boundaries, application of road rules, and wetlands. Consideration should be given to including a curriculum of refresher courses on assessing difficult situations.

(e) The current compliance rate of seventy-five percent for riparian prescriptions contained in approved FPAs is not sufficient to support long-term maintenance of the assurances.

Milestone:

(1) By July 2010, DNR with the assistance of Ecology, will assess the 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 – with a goal of getting greater than ninety percent compliance by 2013. Ecology will consider of the rating of noncompliance since not all infractions have the same effect on public resources (e.g., is it predominately at levels within reasonable field method limits or likely to occur even with due diligence) when determining if this compliance target rate milestone has been satisfied.

(f) The conditions established in the FFR for granting the assurances necessitate tracking compliance at both a broad scale and at the landowner level. The existing CMP has not been collecting information at a pace that allows comparisons to occur at the regional or landowner level. In addition to satisfying the CWA Assurances, there is a need to track compliance issues at the landowner level to support both voluntary (training) and regulatory (escalating enforcement) corrective mechanisms as part of DNR's existing compliance and enforcement programs. Recognizing that a random sample-based program will unlikely be capable of identifying non-compliance patterns at the landowner

scale, DNR should work with Ecology, WDFW, and the Tribes to determine the best alternative mechanism to identify problem landowners. In resolving this issue, the use of both informal and formal enforcement documents should be evaluated as an adjunct to the data collected from the CMP.

Milestone:

(1) By June 2010, DNR, Ecology, and WDFW will meet to review existing procedures and recommended improvements needed to more effectively track compliance at the individual landowner level. The goal will be to ensure the compliance pattern of individual landowners can be effectively examined by October 2010. This should consider the types and qualities of enforcement actions that occur (e.g., conference notes, notices of correction, stop work orders, penalties). These procedures and their effectiveness in identifying compliance trends at the landowner level will be reassessed by Ecology by October 2012 to ensure the program provides sufficient information to take action where appropriate to remove the CWA assurances and take any other necessary corrective action with landowners having persistent compliance problems.

(g) Alternate plans allow significant deviations from the forest practices rules and result in trading different forms of natural resource protections in space and time (such as sacrificing short-term shade to get large woody debris more quickly) so long as the resulting alternate plan "provides protection to public resources at least equal in overall effectiveness as provided by the act and rules" (WAC 222-12-040). No program exists to validate that approved plans are complying with this foundational element of the alternate plan rules. At present, the program represents the application of the best professional judgment of DNR foresters and other cooperators invited to participate as part of field advisory teams. It is important to begin collecting a sample of baseline data (a resource inventory) on alternate plans before and after the harvest. This is needed to create a foundation that will allow a general assessment of whether alternate plans are equal in overall protection to the baseline rules and whether they are meeting the state water quality standards.

Milestone:

(1) By October 2010, DNR in partnership with Ecology, and in consultation with WDFW, the Tribes, and the SFL advisory committee, will design a sampling plan to gather baseline information sufficient to reasonably assess the success of the alternate plan process. This sampling plan should include how to select sample sites, how to best document the content and assumptions contained in the alternate plan, what to monitor and how frequently to do so, and responsibilities for who will conduct the sampling. The goal of this effort is to initiate data collection in the 2011 field season.

IV. Programs to Bring Roads up to Design and Maintenance Standards

Conditions for retaining the assurances include:

1. **Road Maintenance and Abandonment Plan (RMAP) results that are readily available, including: where RMAPs are complete, a summary of all active, orphan, and abandoned roads.**
2. **Results of an analysis of small forest landowner roads not yet covered by RMAPs or checklist RMAPs. The goal of the analysis is to estimate whether these roads potentially threaten water quality, so that strategies can be developed or modified to assure they reach the 2016 goal.**

Discussion: Ecology maintains that it is very important to ensure roads are on track to comply with construction and maintenance standards by 2016 as mandated in the forest practices rules. This recognizes the high concern regarding the impact of road design and maintenance on protecting water quality. DNR reports that large landowners are predominately on schedule to meet the 2016 target date for bringing all their roads into compliance. This, coupled with successful CMER studies on the effectiveness of road prescriptions, should allow Ecology and the forest practices program to identify a level of prescriptions and ongoing maintenance and monitoring that will meet the CWA objectives into the long term. This would be a substantial success and one that Ecology, DNR, and the other cooperators should continue to focus on. One problem with the RMAP program is that it was not designed to allow an outside assessment of its progress or input into the priorities chosen for road and culvert repair. Such an assessment is made more difficult by the fact that the data is collected and stored in different formats by different landowners and regions. While Ecology is reasonably confident that DNR is correctly assessing that landowners are on track to meet the 2016 goal and are not deferring priority work, some effort is needed to help provide tools that will better illustrate the basis for that assessment.

The story is much less clear for the roads maintained by small forest landowners (SFL). These landowners occupy approximately fifty percent of the private forestlands in the state, and it is critical that they also be on a course to success. The state Legislature eliminated the planning requirements for SFL, making it very difficult to know how well their roads are being maintained in compliance with water quality standards and other resource objectives. DNR was charged by the Legislature with conducting two interim assessments on the status of roads on SFL properties. The first briefing period was in December 2008, but provided no actual direct assessment of the condition, risk, or progress of SFL roads. The second briefing date is December 2013. But if substantial problems exist that are not identified until 2013, there is little chance corrective action can be taken in time to reach the 2016 target for bringing roads into compliance with current management practices. Ecology's concurrence at the Forest Practice Board regarding the action taken to revise the SFL RMAP requirements in April 2006 was based in part on commitments by DNR to in part assess the overall compliance rate of SFL roads. This commitment remains important and is reflected below as a formal milestone.

Remedies identified to support continuation of the assurances include:

(a) It would facilitate tracking progress with RMAPs if the original plan to complete a GIS forest roads layer and getting all the RMAPs into a GIS framework could be accomplished. Alternatively, a reporting structure is needed that summarizes progress to date and activities still remaining to allow Ecology and other interested parties to gain more confidence that roads are on target to meet the 2016 deadline.

Milestones:

(1) By January 2010, as part of the regional RMAP annual meeting process, DNR should ensure opportunities are being provided in all the regions to obtain input from Ecology, WDFW, and tribes formally participating in the forests and fish process regarding road work priorities.

(2) By December 2011, DNR with the assistance of large landowners, will provide summary information for all industrial landowners having RMAPs. The summary information will include at a minimum: Date RMAP completed, total miles of road covered under the RMAP, total miles of road brought up to standards, total number of fish barriers removed, and a brief statement describing the strategy for bringing all roads into compliance by 2016 that demonstrates even-flow or otherwise provides confidence compliance will be attained by 2016. If reasonable and feasible, the summary will show the annual progress on road and barrier improvement that has occurred since the inception of the RMAP, and DNR will provide a master summary for all industrial landowners combined.

(b) To understand if the checklist RMAP process is effective in protecting waters of the state, it is critical DNR work with small forest landowners (SFLs) to assess the rate of compliance with road maintenance and abandonment requirements on road segments with the potential to deliver sediment to waters of the state prior to the 2013 legislative update.

Milestones:

(1) Milestones to address this issue were established in Part I of this paper.

V. Landowners to Share Data

Conditions for retaining the assurances include:

1. **Landowners will share water quality data collected in cooperative research, adaptive management, and TDML development. Landowners are further encouraged to share all pertinent data to assist in water quality planning efforts.**

Discussion: Within the CMER program, landowners have actively participated in conducting scientific studies and supplying environmental data associated with those studies. Some landowners have also cooperated in sharing data to assist in developing TMDLs in

mixed use watersheds (includes non-forestry activities). Landowners have not otherwise freely shared water quality data collected on their land. It is important to note, however, the specific language in the assurances encourages but does not require landowners to share water quality data outside of the listed programs.

Ecology considers this condition to currently be met and no remedies needed.

VI. Training and Technical Assistance to Improve Implementation

Conditions for retaining the assurances include:

1. **Establishing a manual with detailed guidance regarding contents and approval processes for alternate plans.**
2. **Implementing the regional unstable landform Identification project.**
3. **Identifying high landslide hazard areas.**
4. **Training to identify potentially unstable slopes.**
5. **Training programs for operators on road maintenance and construction standards.**
6. **Outreach to small forest landowners on protecting public resources.**

Discussion: The CWA assurances were conditioned on developing tools and programs that provide ongoing guidance to landowners and cooperators on the effective implementation of the forest practices rules.

- *The requisite alternate plan board manual was developed in 2007, and processes are in place to continue to revise and improve that manual over time as issues arise.*
- *An evaluation occurred to verify that no regionally unique forms of unstable slopes existed that would need supplemental guidance, and DNR provides regular training around the state for foresters and other professionals interested in enhancing their ability to identify unstable slopes. DNR also provides lists of qualified experts who are available to assist landowners in identifying potentially unstable slopes and meeting the forest practices rule requirements for those sites.*
- *Rules and a board manual have been produced that describe the requirements for constructing and maintaining roads. In addition, Ecology has assisted DNR in providing training to the DNR regional offices on road standards and, working together, have just completed an updated round of training for forestry and water quality staff. Training on road BMPs also takes place through the contract loggers' association, and some of the large landowners require loggers to have taken this before they will contract with them.*

In 1999, the Washington State Legislature authorized a Small Forest Landowner Office (SFLO) within DNR. The SFLO was directed to serve as a "resource and focal point for small forest landowner concerns and policies" with a goal to improve the economic viability and environmental quality of small forestland holdings. The Family Forest Fish Program

administered out of the SFLO has provided twelve million dollars in assistance that has opened up 439 miles of fish habitat, helping also to reduce sediment and improve water quality. The SFLO provides training on road maintenance twice a year to hundreds of small forest landowners and provides stewardship planning classes to help SFLs manage their land.

Given the generally high confidence that guidance and outreach programs will continue to be updated as needed, all of the training and outreach conditions linked to the CWA assurances are considered to have been met except where noted as a milestone elsewhere herein. One element that has not been completed satisfactorily is the identification of high landslide hazard areas. The Landslide Hazard Zonation (LHZ) project was created to provide an improved screening tool by describing and mapping all potentially unstable slopes in priority watersheds. The LHZ project also provides information useful for selecting appropriate mitigation action. GIS data created from this project (landslides and hazard zones) are available from DNR. Considerable progress has been made in completing the LHZ project. Staff vacancies were recently filled and the program was making reasonable progress in mapping landslide hazards. Against these fine accomplishments, however, there still remains a majority of the state to map and even at the current pace it will be many more years before all the commercial forest lands in the state have been completed. Of the 229 watersheds that were originally prioritized, 129 were deemed critical. DNR estimates they may be able to complete the 129 by 2013 if all goes as planned and they can retain their current workforce. Unfortunately, the recent budget cuts associated with the current economic downturn has resulted in proposed cuts to the LHZ program that may impede its progress.

Ecology considers this condition to currently be met and no remedies needed.

Supplemental Recommendations

The preceding section established milestones intended to serve as a mandatory corrective action plan for extending the CWA assurances. Some issues were identified as part of this review that do not rise to the level of a mandatory milestone, but that if addressed may benefit the forest practices and adaptive management programs. These are provided as recommendations that do not affect Ecology's decision on whether or not to continue to offer the CWA assurances.

(a) To better assess the adequacy of staffing and funding, DNR should continue to audit the forest practices program's ability to effectively and consistently implement the forests and fish rules. To the extent feasible, these audits should consider the staffing of all cooperators integral to field teams and address whether a lack of staffing is affecting the overall success of the program in effectively implementing forests and fish rules and protecting water quality. As has been noted by several cooperators in reflecting on this concern, adequacy is not just boots on the ground but includes having the right people trained correctly with the right tools and implementing the rules correctly. For just this reason, it is imperative that the issue be addressed through a broad framework of assessment, training, and audits. DNR has a process for conducting audits of regional office performance. Ecology recommends that those audits continue at regular intervals with some method provided to track changes in performance. While serving as a mechanism to assess general adherence to standard processes and to identify potential weaknesses, the audits do not directly assess adequacy of staffing or success in meeting rule elements. This gap in performance assessment information, however, can likely be filled by strengthening the compliance monitoring program. Needed improvements to the compliance monitoring program are discussed separately in this document.

(b) Ecology provides necessary water quality expertise that is at risk of loss due to a lack of dedicated, dependable, and adequate funding. Ecology should explore alternate funding opportunities for Ecology staff. A work assessment should also be conducted by Ecology with the assistance of DNR to identify where additional resources may be needed, or where they should be redirected to better protect water quality.

(c) The AMP Administrator with assistance from the Policy and CMER committees should identify a strategy to work in partnership with other research institutions and entities, and to be in the best position to apply for new monies as they become available.

(d) Past and ongoing CMER studies and their associated data are not readily available or housed in any defined location. This puts this information at risk of being lost, and makes it largely inaccessible to the public as well as to AMP participants who could otherwise use the information to improve the efficiency of ongoing and planned studies. To help ensure the availability of reports and data generated through the AMP, the current efforts by DNR to scan all CMER reports into digital formatting should be supported. The effort of CMER and the Northwest Indian Fisheries Commission to develop an archival and GIS-based data acquisition system should similarly be supported.

(e) Ecology and the Adaptive Management Program should actively encourage voluntary efforts to further expand the role of landowners and other cooperators in data collection programs. Expanding the ability of landowners, tribes, and other cooperators to provide data to assess status and trends would enable a more robust sampling program, and potentially provide an ability to separate regional from statewide trends.

(f) The potential damage to water quality and public resources from unstable slopes is significant, and completion of the LHZ mapping program provides important supplementary information to help landowners identify unstable slopes. DNR should continue to look for ways to fully fund the LHZ mapping program to ensure that all of the priority watersheds are completed in the shortest practical time.

(g) Ecology finds a need for a summary of the state of the knowledge with regards to the potential impact of the forest practices rules on amphibians. This should be done at the earliest practical opportunity and include both CMER and Policy representatives in an effort to understand whether the program is collecting the information needed to address rule effectiveness.

Appendix: Adaptive Management Program Strategic Goals, Objectives, and Tasks

Forests & Fish Report Vision for Adaptive Management: "An Adaptive Management program is necessary to monitor and assess implementation of forest practices rules and achieve desired resource objectives. Adaptive Management is a formal process for evaluating the current resource status and, over time, for evaluating the effectiveness of rules and guidance in protection, maintenance, and enhancement of habitat necessary to meet resource goals and objectives, for making adjustments to forest practices on a regional or statewide basis, and for requiring mitigation, where necessary, to achieve resource objectives." (Forests & Fish Report, p. 70)

Goal 1: Assess and improve Adaptive Management Program efficiency and effectiveness

Objective 1: On an ongoing basis, assess the efficiency and effectiveness of the program in meeting the Program's mission and vision.

Task 1: AMPA / CMER Co-Chairs - By December 2008, develop a timeline estimating when critical questions in the CMER work plan will be answered.

Task 2: Forest Practices Operations ADM/ CMP Manager - By December 2008, a steering committee or other collaborative process, shall be established to guide and make recommendations on compliance monitoring efforts. Such a steering committee will need to meet in a timely manner so delays don't occur in the training of survey crews and the collection of field data.

Task 3: AMPA / CMER Co-Chairs - By January 2009, synthesize CMER work completed since 2000, summarize knowledge gained and assess progress towards answering FFR Adaptive Management key questions.

Task 4: Policy Co-Chairs / AMPA / CMER Co-Chairs - By January 2009, clarify when and how research and monitoring results will be used to assess current rules and policies, i.e., should action be recommended in response to each project in a program, or should all projects in a program be completed before action is recommended, or something in between? Review and document decision with caucus principals as necessary.

Task 5: AMPA / CMER Co-Chairs / CMP Manager - By March 2009, determine timing and coordination between compliance monitoring and effectiveness monitoring projects, and report results to Policy. (Note - Task 5 is dependent upon the timing of task 2. The intent is to complete task 5 within three months of the compliance monitoring steering committee's (or similar collaborative process) acceptance of the revised compliance monitoring design. More will be known about the timing of task 2 by the end of this month.)

Task 6: Policy Co-Chairs / AMPA / CMER Co-Chairs - By March 2009, review the CMER Work Plan to ensure programs/projects are prioritized appropriately tightly focused on FFR resource objectives/performance targets and key deadlines/time frames are identified.

Task 7: CMER Co-Chairs - By April 2009, revise the CMER Work Plan to incorporate key components of CMER science synthesis, reflect Policy's prioritization of projects, and include project schedule estimates.

Task 8: AMPA / CMER Co-Chairs - By December 2009, synthesize applicable non-CMER research for priority topic areas identified as a result of completing Tasks 1, 2, and 6.

Objective 2: Every ten years the structure, process, and performance of the Adaptive Management Program will be independently reviewed.

Task 1: Policy Co-Chairs / AMPA / CMER Co-Chairs - By January 2010, obtain independent review of the Adaptive Management Program. This review shall be done by representatives of independent, third party research organizations and include:

- An examination of the structure and function for technical performance, fiscal efficiency and overall accountability.
- An assessment of the performance and efficiency of the consensus-based decision processes.
- A review of the rigor of CMER science and the responsiveness of CMER work to body of PNW region science that is applicable to the L-1 Key Questions.
- An evaluation of the interactions of science and policy within the AMP.

Goal 2: Reestablish and maintain productive, collaborative caucus relationships

Objective 1: In order to more productively resolve contentious forest practices issues, the Department of Natural Resources (DNR) will lead efforts to renew and maintain cooperation and collaboration among the six caucuses as an alternative to competitive lobbying and litigation.

Task 1: Commissioner of Public Lands - By January 2009, convene a meeting of caucus principals to determine their commitment to the Timber, Fish & Wildlife (TFW)/Forests & Fish Report (FFR) vision and ground rules, review caucus relationships, reinforce responsibilities and recognize capacity challenges of caucus representatives, and review how economic viability intersects with the Adaptive Management Program.

Task 2: Caucus Principals - By February 2009, write a joint letter summarizing outcomes of Task 1 and giving appropriate direction to caucus representatives.

Task 3: Policy Co-Chairs / AMPA / CMER Co-Chairs - By April 2009, develop and implement a plan to improve understanding and conformance with WAC 222-12-045, the TFW / FFR ground rules and responsiveness to Board Manual Section 22 guidance.

Goal 3: Secure adequate program funding and enhance communications

Objective 1: To ensure funding is available for caucus participation in the AMP as well as priority research and monitoring projects, the Forest Practices Division Manager, in cooperation with caucus principal support, will lead efforts to obtain stable, adequate, long-term funding.

Task 1: F&F Policy / Caucus leads - Support DNR's unstable slopes decision package, which includes a request to double the GF-S Adaptive Management fund from $1.2M per biennium to $2.4M.

Task 2: Policy Budget Committee - By June 2009, develop a plan to obtain dependable, long-term funding adequate for participation, research and monitoring projects, and program management.

Objective 2: Raise the public profile of the AMP.

Task 1: AMPA / Policy Co-Chairs / CMER Co-Chairs - By July 2009, develop and implement an AMP communication and outreach strategy.

Goal 5: Increase research capabilities and scientific knowledge

Objective 1: Strengthen and develop partnerships with other research organizations.

Task 1: AMPA / CMER Co-Chairs - On an ongoing basis, explore and develop partnerships with other natural resource research organizations. Report back to CMER and Policy biannually on progress.

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December 2, 2019

Forest Practices Board
PO Box 47012
Olympia, WA 98504

Re: Forests and Fish Program – End of 10 year Clean Water Act Extension Period

Dear Forest Practices Board Members:

Twenty years have passed since the adoption of the 1999 Forests and Fish Report. During the intervening years, the Department of Ecology (Ecology) with the support of the U.S. Environmental Protection Agency, has maintained the commitment to provide the Clean Water Act Assurances (Assurances) for forest practices in Washington State. The Assurances provided promised federal guarantees covering both the Clean Water Act, as well as the Endangered Species Act, to serve as a predictable and a consistent regulatory framework for the forest industry.

Ecology's original Assurances provided a Schedule M-2 of the 1999 Forests and Fish Report. The Assurances established a conditional, ten-year agreement to treat the development of traditional Clean Water Act water cleanup plans (Total Maximum Daily Loads) on Washington's forest lands as a low priority, while relying on the state's forestry rules to ensure water quality standards would be met on forest lands. Maintaining an effective Adaptive Management Program to test the forestry rules and revise them if found inadequate, was a critical condition for maintaining these Assurances.

The original 1999 Assurances established a 2009 milestone to verify that the state's forestry rules were on-track for bringing waterbodies into compliance with water quality standards. In 2009, Ecology's review of the Adaptive Management Program found that it could not demonstrate success in meeting water quality objectives. With commitments from key stakeholder groups, Ecology extended the Assurances for another ten years until 2019, in order to provide more time to verify the effectiveness of the rules or revise them as needed. The extension included key milestones to demonstrate steady incremental improvement in the program.

Key Adaptive Management Program achievements to date include:

- The establishment of long term funding for the Adaptive Management Program.
- The Type F (fish-bearing streams) buffers the effectiveness of monitoring studies conducted in eastern Washington and provides a measure of confidence that the riparian rules are meeting performance targets for thermal water quality protection for these fish-bearing waters.
- The priority Westside Type N (non-fish-bearing streams) hard rock study is complete and a package of Westside Type N studies are due for completion in 2020.

Establishing long term funding for the Adaptive Management Program and completing the above referenced studies is a major achievement since 2009. The challenge we now face is implementing the required adaptive management.

The first two years of the 2009 extension showed good progress in meeting key milestones identified, but the momentum was not sustained through the ten-year extension of the Assurances. A number of milestones established to ensure progress of the Adaptive Management Program to support certainty of meeting water quality objectives remain incomplete. Milestones associated with priority research projects delayed the completion dates for some of the milestones projected to be complete five years beyond their original target dates. Ecology has consistently raised concerns about these missed milestones to the Forest Practices Board during routine updates.

Looking specifically at the science, we have found that the Type N studies clearly show Type N riparian rules need strengthening to protect water quality. Revising the rules to meet water quality objectives was the precursor for the establishment of the Adaptive Management Program. The Timber Fish and Wildlife Policy Committee and the Forest Practices Board have recently agreed to a workgroup process aimed at developing new rule prescriptions. Ecology views this as a positive step and looks forward to the establishment of a clear timeline for such rulemaking.

With the Assurances expiring at the end of this calendar year, I have conducted an in-depth review of the Adaptive Management Program, weighed the many positive features of the program with the ongoing performance concerns and delayed progress. Based on my review, I have decided to extend the Assurances to December 31, 2021. This will provide ample time for Board Members to reach an agreement on the revision of the Type N rules, to protect temperature better.

This extension aligns with the existing Timber Fish and Wildlife Policy Technical Type N Prescriptions Workgroup charter (dated March 7, 2019). Evidence of adaptive management success would be the Board issuing a draft rule available for public comment before the end of 2021. This will require a CR101 filing in the summer of 2021, a draft CR102 developed, and distributed for public review by the end of November 2021.

At the end of 2021, I will consider another extension to the Assurances. If the Type N rules are effectively improved, we will be able to conclude that the Forests and Fish Report and the Adaptive Management Program are working to achieve water quality standards, in which case Ecology will be supportive of extending the Assurances for a longer period.

Ecology believes that, in addition to committing to rulemaking to protect water temperature on Type N streams, improvements to the Adaptive Management Program process are necessary to create a program that participants can rely on to test the effectiveness of the rules in protecting water quality and to timely modify those rules as the science dictates. Therefore, we urge the Board and the Adaptive Management Program Cooperators to identify and implement system improvements, over this two-year period, and to continue to prioritize the completion of the remaining uncompleted research milestones identified in the 2009 Assurances review.

Thank you very much for working with Ecology on protecting Washington State's waters.

Sincerely

Maia D. Bellon
Director

Enclosure

cc: Environmental Protection Agency
National Marine Fisheries Service
United States Fish and Wildlife Service
Forest Practices Board Liaisons
Timber Fish and Wildlife Policy

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

December 3, 2021

Forest Practices Board Members
Sent by email only: patricia.anderson@dnr.wa.gov

Dear Forest Practices Board Members:

Twenty-two years have passed since the adoption of the 1999 Forests and Fish Report. During the intervening years, the Department of Ecology (Ecology), with the support of the U.S. Environmental Protection Agency (EPA), has maintained the commitment to provide the Clean Water Act Assurances (Assurances) for forest practices in Washington State. The Assurances provided promised state and federal guarantees covering both the Clean Water Act as well as the Endangered Species Act, to serve as a predictable and a consistent regulatory framework for the forest industry.

The Assurances require Ecology's considered determination that the Adaptive Management Program (AMP) established under the Timber, Fish, and Wildlife (TFW) agreement is effective at improving water quality in the short term and meeting water quality standards in the longer term. For Ecology to continue to uphold the assurances, we must determine that the AMP is functioning as originally envisioned in order to meet these objectives.

As a result of Forests and Fish, we have seen improvements across lands covered by the Forest Practices Act. Through the Road Maintenance and Abandonment Planning (RMAP) requirement, nearly all RMAP plans were completed by the October 31, 2021, deadline, resulting in more than 8,300[1] fish passage barriers corrected, opening more than 5,100 miles of fish habitat. The Washington Department of Natural Resources (DNR) is working with landowners to make sure the few remaining obligations are completed. The Cooperative Monitoring, Evaluation, and Research Committee has completed many studies. The Policy Committee and the Board have implemented and refined the Desired Future Conditions as well as provided two template alternate plans for small forest landowners.

Washington's AMP serves as a model for others. Stakeholders in Oregon have recently committed to a similar process to address regulatory practices within the forestry industry. The Board's motion to direct staff to file a CR-101, to notify the public of their intent to amend existing rules related to non-fish bearing perennial steams (Type Np riparian buffers) in Western Washington, is an encouraging signal to me that the TFW stakeholders are committed to water quality, TFW, and the AMP.

However, there is still much work that remains to be done. The TFW parties must consider process improvements to ensure that the AMP functions effectively and efficiently into the future. It is also imperative that the parties move expeditiously to develop a proposal for Type Np buffer prescriptions. Because I believe the parties are committed to accomplishing both things, Ecology has concluded that it

[1] 2020 Forest Practices Habitat Conservation Plan Annual Report, Chapter 11

is appropriate to allow time for the adaptive management process to demonstrate measurable progress over the next year.

Documented Problems with the Adaptive Management Program

On October 9, 2009, Ecology conditionally extended the Clean Water Act Assurances for a ten-year period. The extension was conditioned on the AMP meeting a scheduled set of milestones for program improvements and research development.

A detailed set of findings accompanied the 2009 extension decision. Those findings identified a number of existing problems with the adaptive management process:

> *The CWA assurances were established on the condition that an effective adaptive management process (AMP) would be established and maintained. A healthy and effective AMP is central to the ability of Ecology to offer the CWA assurances. The AMP needs to provide a scientific framework for testing whether the forest practices rules are effective in protecting water quality, and for identifying any changes needed to rules not found effective. Substantial progress has been made through establishing the structure and formal operational procedures of the AMP. An AMP board manual was developed to further outline how the program should operate, and significant funding and effort has occurred to get scientific studies underway to test various portions of the rules and guidelines governing forest practices.*
>
> *In spite of these substantial efforts, the AMP has not completed any studies that directly test the effectiveness of the rules in protecting water quality. The science arm of the AMP has also been largely unsuccessful in providing research findings the Forest and Fish Policy Committee (Policy) and the Forest Practices Board (Board) will reliably use to validate or to revise the forest practices regulations and guidance. There are significant problems with the ability of the policy and science arms of the AMP to work together to test and revise the rules in a timely and effective manner. Part of the problem is simply inherent in a program that seeks to develop consensus among stakeholders with competing interests. But the problems also seem rooted in the foundation of the AMP itself. AMP participants frequently disagree about the appropriate roles of science and policy, as well as what role the initial negotiated forests and fish rules should play in evaluating the acceptability of future changes. These disagreements appear in part to stem from a lack of clarity in the underlying rules and guidance. Combined with poor communication between the science and policy arms of the program, this is compromising the AMP's effectiveness. To the credit of its participants, strategic planning efforts are underway with the intention of identifying and correcting the shortcomings of the program. The Policy committee has developed a strategic plan…with five broad goals supported by multiple objectives and specific tasks designed to revitalize the adaptive management program. There is also general understanding that testing the effectiveness of the rules for protecting water quality must be a top priority if Ecology is to continue the assurances.*
>
> *The state legislature (RCW 76.09.370) directed that forest practices rules covering aquatic resources only be adopted or changed by the Board where those changes are consistent with recommendations resulting from a scientifically based adaptive management process. The stated purpose of having the adaptive management process is to make adjustments as quickly as possible to portions of the forest practices rules that are not achieving resource objectives. Both as a participant and a reviewer, Ecology has concluded that fundamental improvements are needed to ensure the rules and associated programs will be tested and revised in a timely*

> *manner based on scientific inquiry, as intended by the legislature and consistent with CWA assurances.*

On February 23, 2021, the State Auditor issued a performance audit report describing the significant 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 Auditor's Office recognized that, while the program was "designed to allow nimble changes to forest practices rules," the program has in fact only resulted in two science-based rule revisions since 2006. The Audit Report contains a number of recommendations designed to get the program on track so that it can perform its functions as intended.

Ecology is aware that the Forest Practices Board has submitted a budget request to address some of the recommendations contained in the Audit Report, and Ecology commends the Board's clear commitment to doing so. In addition, Ecology is grateful that the Public Lands Commissioner is convening a meeting of TFW principals so that we can address these issues at the highest levels of accountability within our respective organizations. Of course, the TFW stakeholders themselves must also commit to program improvement. This will necessarily entail an openness to changing current aspects of the program, such as revisiting the unanimous voting requirement and/or streamlining the dispute resolution process. Because fixing problems with the AMP is so integrally tied to the Clean Water Act Assurances, making clear and measurable progress toward addressing the Auditor's recommendations is necessary to provide Assurances that the forest industry is making progress towards protecting water quality.

Rulemaking for Type Np Streams

The maintenance of forested buffers is critical to protect water quality. Under current rules, non-fish bearing perennial streams (Type Np) receive less forested buffers than fish bearing streams. As a result, the 2009 findings recognized that "the prescriptions associated with the Type Np rules have the greatest potential risk of violating the water quality standards."

On December 2, 2019, Ecology issued another conditional extension of the Clean Water Act Assurances. In doing so, Ecology concluded that the Type Np Hard Rock study[2] clearly demonstrates the need to strengthen the Type Np riparian rules to protect water quality. Ecology noted that the TFW Policy Committee and the Forest Practices Board "recently agreed to a workgroup process aimed at developing new rule prescriptions." [3] In light of this commitment to rulemaking by TFW stakeholders, Ecology extended the Assurances for an additional two years so that the Board would have ample time "to reach an agreement on the Type N rules." As evidence that the Adaptive Management Program was working, Ecology noted that there would need to be a CR101 filing in the summer of 2021 and a draft CR102 distributed for public review by the end of November 2021.

While we are pleased that the Board directed staff to issue a CR101 at its November 2021 meeting, Washington Department of Natural Resources (DNR) staff have not distributed a draft CR102, and there is no feasible pathway for them to distribute a draft by the end of this year. It is clear that the Board did not meet the conditions included in Ecology's 2019 extension of the Assurances insofar as DNR has not issued a draft CR102. Nevertheless, I have spoken with representatives of the TFW stakeholders and perceive a genuine commitment to moving this rulemaking forward. Despite this commitment, it is

[2] *"Effectiveness of Experimental Riparian Buffers on Perennial Non-fish-bearing Streams on Competent Lithologies in Western Washington", McIntyre et al, September 2018, CMER #18-100*

[3] Timber Fish and Wildlife Policy Technical Type N Prescriptions Charter – March 7, 2019

evident that we cannot make progress without meaningfully addressing the issues identified in the 2021 Audit Report. Achievement of our objectives will require a concerted effort by all TFW stakeholders in the TFW process over the next several months.

Clean Water Act Assurances

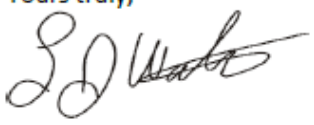
Ecology has determined that it is appropriate to allow time for the AMP to make measurable progress implementing the 2021 Audit Report recommendations and for Policy to make a final recommendation on Type Np buffer prescriptions to the Board, with the Board directing Board staff and DNR to develop a rule package and prepare the CR102. Achievement of these objectives during this extension of the assurances for an additional year will help all of us continue to meet the obligations we committed to when we signed onto the groundbreaking Forests and Fish Agreement.

By December 31, 2022, Ecology must submit to EPA and the National Marine Fisheries Service/United States Fish and Wildlife Service (Services) an updated statewide non-point source pollution management plan under Section 319 of the Clean Water Act. EPA and the Services will review the non-point plan under both the Clean Water Act and Endangered Species Act following its submittal at the end of 2022.

The performance of the Forests and Fish Agreement and associated Forest Practices Rules are key components of the non-point plan regarding the protection of water quality on forest lands. Therefore, the achievements over the next year will help us evaluate the effectiveness of the AMP as we complete the plan. In the plan, Ecology must document whether the rules are effective in protecting Washington's waters, and this determination is key to the Clean Water Act Assurances. If the rules are not achieving the resource objectives, Ecology must document the steps it will take instead to address the protection of water quality.

My sincere hope is that the TFW stakeholders will use the next year to demonstrate that we can work together to improve the Adaptive Management Program so that forest lands are managed in a way that protects water quality now and into the future. I look forward to working with all TFW stakeholders to accomplish our important shared mission of providing regulatory certainty for the industry while protecting our cherished natural resources.

Yours truly,



Laura Watson
Director

cc: Hilary Franz, Commissioner of Public Lands, DNR
Michelle Pirzadeh, Acting Regional Administrator/Deputy Regional Administrator, EPA Region 10

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

November 30, 2022

Dear Forest Practices Board Members:
Sent by email only: patricia.anderson@dnr.wa.gov

On December 3, 2021, the Department of Ecology extended the Clean Water Act Assurances for forest practices in Washington State until December 31, 2022. The letter extending the assurances underscored Ecology's commitment to the 1999 Forests and Fish Report while identifying two conditions for the Assurances to be extended beyond December 31:

1. The Policy Committee that is part of the Adaptive Management Program (AMP) was required to submit a final recommendation on non-fish bearing perennial (Type Np) stream buffers to the Board, with the Board directing Board staff and DNR to develop a rule package and prepare a CR 102.
2. The Timber Fish and Wildlife (TFW) stakeholders needed to make clear and measurable progress towards addressing recommendations in the February 23, 2021, State Auditor's Report to ensure that the forest industry is making progress towards protecting water quality.

The first condition for extension of the Assurances has been met. At your November 10 meeting, a majority of Board members elected to accept the recommendations for rulemaking contained in the October 15, 2022, Majority Recommendations Report.[1] The Majority Report includes riparian buffer recommendations that, if adopted into rule, will make meaningful progress towards meeting the water quality standards on Type Np streams. This is an important step towards achieving one of the four overarching goals of the 1999 Forests and Fish Report: "to meet the requirements of the Clean Water Act for water quality on non-federal forest lands."

It is less clear whether the second condition has been met. Although the TFW principals convened for a handful of meetings beginning in December 2021 through 2022, addressing the Auditor's report was not a key focus of those meetings. Nevertheless, the Policy Committee

[1] The Majority Report was joined by the following TFW Policy Caucuses: Westside Tribal Caucus, Eastside Tribal Caucus, Conservation Caucus, Department of Ecology, and Washington Department of Fish and Wildlife.

adhered to established process, completing dispute resolution, and exhausting all avenues for reaching consensus. Because the parties were unable to reach consensus, the Policy Committee presented majority and minority recommendations to the Board for Type Np riparian buffer rules. The Board adopted the proposal that best ensures that forest practices will advance towards achieving water quality standards on Type Np streams.

Although some TFW members are disappointed in the Board vote, the progress on Type Np buffers demonstrates that the AMP can perform its core function to study the effectiveness of the forest practices rules and update rules that are found to be inadequate. For that reason, the Department of Ecology is again extending the Assurances to allow DNR to conduct cost benefit analysis on the majority proposal and prepare a CR-102. This decision and next steps are further explained below.

History of the Clean Water Act Assurances

In 1999, Ecology and the federal Environmental Protection Agency (EPA) issued Clean Water Act Assurances for a period of ten years as a means of implementing Section 303(d) of the Clean Water Act (CWA) on non-federal forest lands. In doing so, the agencies acknowledged that "attainment of the water quality standards" was the goal of the Assurances and that there needed to be steady progress towards improving water quality, even though fully meeting the standards could take many years. When they issued the Assurances, the agencies agreed "that forest practices in the State of Washington need considerable improvement to meet CWA concerns."

On October 9, 2009, Ecology extended the Assurances for an additional ten years. In doing so, Ecology identified significant problems with the AMP's ability to "make adjustments as quickly as possible to portions of the forest practices rules that are not achieving resource objectives." Ecology specifically identified buffer prescriptions on Type Np streams as one of the top concerns, noting that "the prescriptions associated with the Type Np rules have the greatest potential risk of violating the water quality standards."

By 2019, the AMP had completed one study that looked at the effectiveness of current rules on Type Np streams and expected to complete the remaining studies in 2020. To allow for completion of the studies and development of a rule proposal, Ecology extended the Assurances for two more years. The extension was explicitly tied to the need to better protect water temperature on Type Np streams through improved buffer requirements. Specifically, Ecology "found that the Type N studies clearly show Type N riparian rules need strengthening to protect water quality" and that "[r]evising the rules to meet water quality objectives was the precursor for the establishment of the Adaptive Management Program." Ecology's 2019

extension required that a CR 101 be filed in summer 2021 and a draft CR 102 be distributed for public review by the end of November 2021.

Neither deadline was met. However, the Board did direct staff to issue a CR 101 at its November 2021 meeting, and all TFW stakeholders expressed to me a good faith commitment to moving Type Np rulemaking forward. Ecology thus extended the Assurances for one additional year subject to the two conditions described above.

As this history demonstrates, the Clean Water Act Assurances were issued with the understanding that forest practices needed to be improved so that there would be progress towards meeting water quality standards on forest lands. For the 23-year history of the Program, it has been clear that temperature increases on Type Np streams were of particular concern and that the rules would likely need to be improved to protect against temperature impairment. The Assurances were never intended to exist in perpetuity regardless of whether water quality improvements are achieved. Now that the Type Np studies have been completed, it is necessary to achieve the improvements that the TFW parties have worked towards in good faith for the past two-plus decades.

Type Np Science Studies and the Majority Recommendations

A 2001 Environmental Impact Statement for Forests and Fish Report rules found that forest practices on Type Np streams in Western Washington pose "a moderate to high risk of temperature increases." In response to this risk, the Board prioritized studies to determine the effectiveness of riparian buffers in meeting water quality standards on Type Np streams.

Through the Cooperative Monitoring, Evaluation, and Research Committee (CMER), the TFW parties reached consensus on study design and representative sites to evaluate the effectiveness of current rules. The first of these studies (Hard Rock) was completed in 2017 with a second phase of the Hard Rock study completed in 2021. The Soft Rock study was completed in 2022.

The Hard Rock Phase 1 and 2 studies demonstrated that all riparian buffer treatment options resulted in temperature increases that greatly exceeded the allowable increase of 0.3 degrees Celsius, and that increased temperatures typically persisted for ten-plus years post-harvest.[2] Four of the representative sites also exceeded the numeric water quality criteria of 16 degrees

[2] The 0.3 degree Celsius limit is based on Washington's antidegradation water quality standard. WAC 173-201A-320(3)(a). Antidegradation standards are required by the federal CWA and EPA's implementing regulations. *E.g.,* 33 U.S.C. sec. 1313(d)(4)(B); 40 C.F.R. sec. 131.12. The Hard Rock study demonstrated average temperature increases of 1.2 degrees Celsius, or four times the allowable increase under the antidegradation standard.

Celsius. The Soft Rock study likewise demonstrated temperature increases exceeding the allowable amount at all harvested sites, with one site exceeding the numeric water quality criteria.

The Policy Committee recommended and the Board approved formation of an expert panel, the Type Np Prescription Workgroup (Technical Workgroup). The Technical Workgroup consisted of experts from the timber industry and academia. The Workgroup's function was to review the studies and provide recommendations to the Policy Committee for updated Type Np riparian buffer rules.

The Technical Workgroup concluded that the Hard and Soft Rock studies were well designed and demonstrated that current rules for Type Np streams are not maintaining temperatures as required by the water quality standards. The Workgroup offered three options for improving water quality. All three options required continuous buffering along the length of Type Np streams

The TFW caucuses attempted to reach consensus on updated buffer prescriptions but were ultimately unable to do so, in large part because the caucuses were unable to agree to the continuous buffer prescriptions reflected in the Technical Workgroup's recommendations. After dispute resolution, the majority caucuses developed compromise recommendations that may not fully protect stream temperature but would create demonstrable improvement beyond existing forest practices rules. The recommendations, which were ultimately adopted by the Board, were aimed at balancing the need to make progress towards meeting water quality standards with the goal of minimizing economic impact to industry.

Next Steps

The recommendations contained in the Majority Report now go to DNR for completion of a cost-benefit analysis and small business economic impact statement. Ecology is also required to do a Tier 2 antidegradation analysis. The analyses completed by DNR and Ecology will help inform the substance of the draft rule language for the CR 102. Ecology has extended the assurances to allow this additional work to be completed, but expedient progress on the draft and final rules remains an important outcome to ensure water quality protections. If progress stalls or the parties abandon a continued commitment to the AMP, Ecology will consider withdrawing the Assurances and pursuing alternatives to achieve water quality protection under the CWA.

By the end of this year, Ecology is required to update Washington's Nonpoint Plan to document the process and outcomes of the AMP through 2022. This update will reflect Ecology's

continued support of the Assurances. Ecology's regulatory role will continue to include annual reporting to EPA on the state's nonpoint program and presentation of our Assurances Report to the Board every spring.

I appreciate the TFW parties' good faith attempts to reach consensus on buffer prescriptions for Type Np streams, and I regret that we were ultimately unable to get there. I am sensitive to the disappointment of TFW parties that did not support the recommendations in the Majority Report. Despite current mistrust among some of the parties, I sincerely hope that we can reinvigorate the spirit of TFW and work constructively together. Doing so presents the best path forward for maintaining an economically vigorous forest practices industry while protecting our shared natural resources for current and future generations.

Yours Truly,

Laura Watson
Director

cc: Hilary Franz, Commissioner of Public Lands, DNR
Casey Sixkiller, Regional Administrator, EPA Region 10

Appendix J. Letter from the Department of Health to Ecology concerning shellfish protection

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
OFFICE OF SHELLFISH AND WATER PROTECTION
PO Box 47824 • Olympia, Washington 98504-7824
(360) 236-3330 • TDD Relay Service: 1-800-833-6388

July 8, 2013

Kelly Susewind, P.E., P.G.
Water Quality Program Manager
Washington State Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Dear Mr. Susewind:

The purpose of this letter is to express our support for the Department of Ecology's (Ecology's) assistance to the Department of Health (department) in protecting shellfish resources in Washington State. It relates our experience working with Ecology on controlling pathogen pollution in Puget Sound and explains why we think this partnership is important for achieving the shellfish restoration goals.

The shellfish industry in Washington is valued at over $270 million dollars and provides jobs in rural parts of the state. Shellfish are part of the cultural and tribal heritage in Puget Sound. Protecting this resource now and for future generations is a priority for Washington State and consequently was recognized as a major initiative in the Puget Sound Action Agenda.

We are one of the Lead Organizations that received a multi-year National Estuary Program (NEP) grant for shellfish restoration and other human health related targets in the Puget Sound Action Agenda. We're currently managing NEP investments of almost $5 million dollars to support Pollution Identification and Correction (PIC) programs. These PIC programs control pollution sources through monitoring, education, technical assistance, and incentives backed up by enforcement.

For many years our staff has worked with local communities to establish shellfish protection districts. These districts improve management of pollution sources when they impact water quality in shellfish growing areas. Working with counties to correct pathogen pollution has yielded insights into the strengths and weaknesses of local PIC programs. It has also provided insight into where we need help from partners in managing PIC awards. We believe that local governments are in the best position to deal with local pollution problems. Counties can carry out most of the activities of a comprehensive PIC program because most landowners are willing to clean up pollution when provided with technical and financial assistance.

Counties are challenged when landowners deny access to property or refuse to cooperate. For example; while counties have regulatory authority to require landowners to fix failing onsite sewage systems,

addressing livestock pollution from farm owners is difficult. If one county has difficulty with an area of enforcement, it's a local problem; when many counties are stymied over the same issue, it's a systemic problem. To address this problem, we turned to Ecology's Water Quality staff to fill the regulatory gap. Specifically, when local governments cannot secure the regulatory authority or there is not the willingness to utilize the authority where it exists, we look to Ecology to use their nonpoint authority and compliance staff to support local governments' PIC programs by providing the correction support for nonpoint sources of pollution such as livestock. While local governments should still lead the identification portion of PIC programs, by recognizing clear roles around the correction portion of these programs we hope to make PIC efforts as effective and long lasting as possible while recognizing the realities of who can most consistently address different sources of nonpoint pollution.

When we make an offer for a PIC award, we require that the county provides evidence of its regulatory authority or be willing to work with Ecology as the regulatory backstop. We rely on Ecology's broad water quality experience and experience managing pollution from agriculture as we negotiate awards and manage projects. Over the past year, we've seen progress in local/state PIC collaborations. For example: Ecology and Skagit County inspectors both work in the Samish watershed and have developed an integrated inspection protocol; they meet frequently to coordinate the work and Ecology plays a significant role on the Clean Skagit Initiative steering committee. Ecology has contributed leadership as well as financial, technical and staff resources to the Whatcom Clean Water Program, which was recently launched as a multi-agency shellfish initiative in the lower Nooksack basin to reverse declining water quality.

We expect to see these state/local collaborations grow as PIC programs become established in Puget Sound. They are fueled by NEP now, but to protect water quality, they need to transition into self-supporting programs. The success of long term sustainable PIC programs in Puget Sound depends on a supportive regional infrastructure with smart leveraging of local, state and federal resources, identification and sharing of best practices, and identification of the most effective roles for local and state partners. We are working with Ecology to develop criteria to guide grant funding and which would help create self-sustaining local PIC programs designed to meet state water quality standards.

Much work remains to establish comprehensive, stable, and effective PIC programs in Puget Sound. Every week, we work with local, tribal and state partners to identify barriers and figure out solutions. We appreciate the value that Ecology adds to shellfish recovery and encourage our local and federal partners to support Ecology in this work.

Sincerely,

Jerrod Davis, P.E.
Director

cc: Tom Eaton, US Environmental Protection Agency

Appendix K. The Voluntary Stewardship Program and Clean Water

Appendix K, is the issue paper on The Voluntary Stewardship Program and Clean Water.[217]

[217] https://apps.ecology.wa.gov/publications/documents/1310030.pdf

Appendix L. Discussion of 2025 survey results

In January 2025, Ecology's nonpoint program utilized a survey to solicit feedback from conservation districts (CDs), Tribes, Lead Integrating Organizations, and Lead Entities regarding strategies to address nonpoint pollution. We received 25 responses from CDs, 10 responses from Tribes, and two responses from Lead Entities. We did not receive responses from Lead Integrating Organizations. We appreciate the time and consideration from those who participated in providing survey feedback. Due to response rates, we will only include discussion of CD and Tribal survey feedback.

Conservation District Feedback

Our survey was sent to the conservation district community via the WA State Conservation Commission's GovDelivery email list. From this survey, we received 25 responses; respondents included CD supervisors, managers, and staff. Of those that chose to identify in which Ecology region they are located, four are located in Ecology's Central region, five in the Eastern region, and six in both the Northwest and Southwest regions. Questions were not mandatory to answer, and not all respondents responded to every question.

Seventeen CDs provided information regarding key nonpoint pollutants in their areas and which BMPs they most frequently implement to address pollution sources; this feedback is summarized in Figures 9 and 10 below.

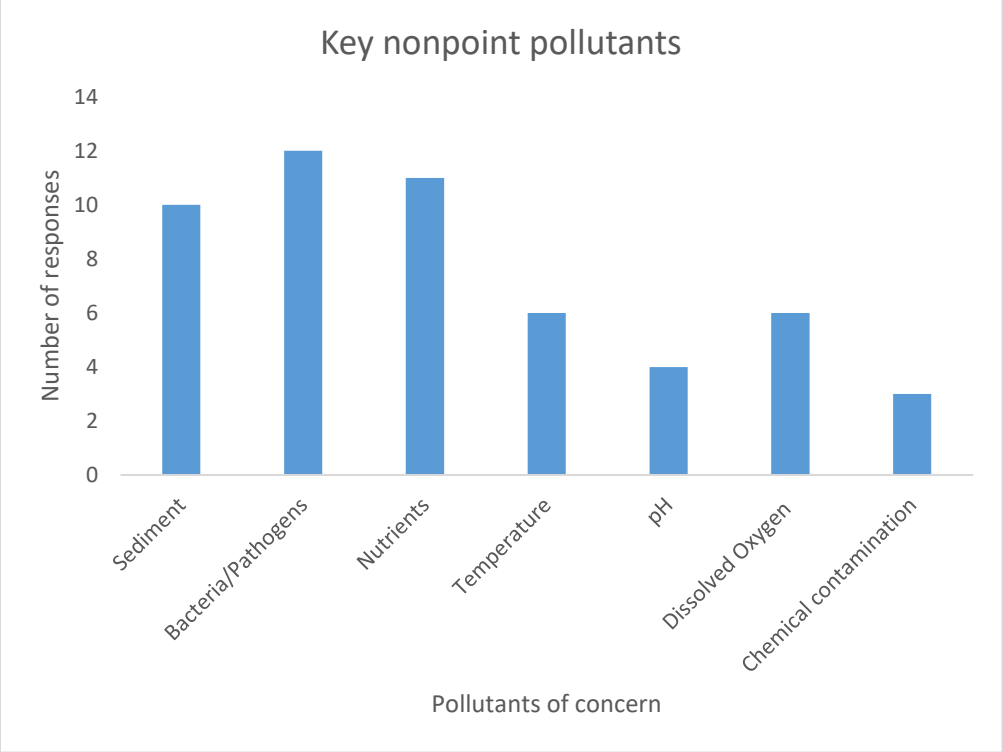


Figure 9. The most frequently reported nonpoint pollutant by CDs was bacteria/pathogens, followed by nutrients and sediment.

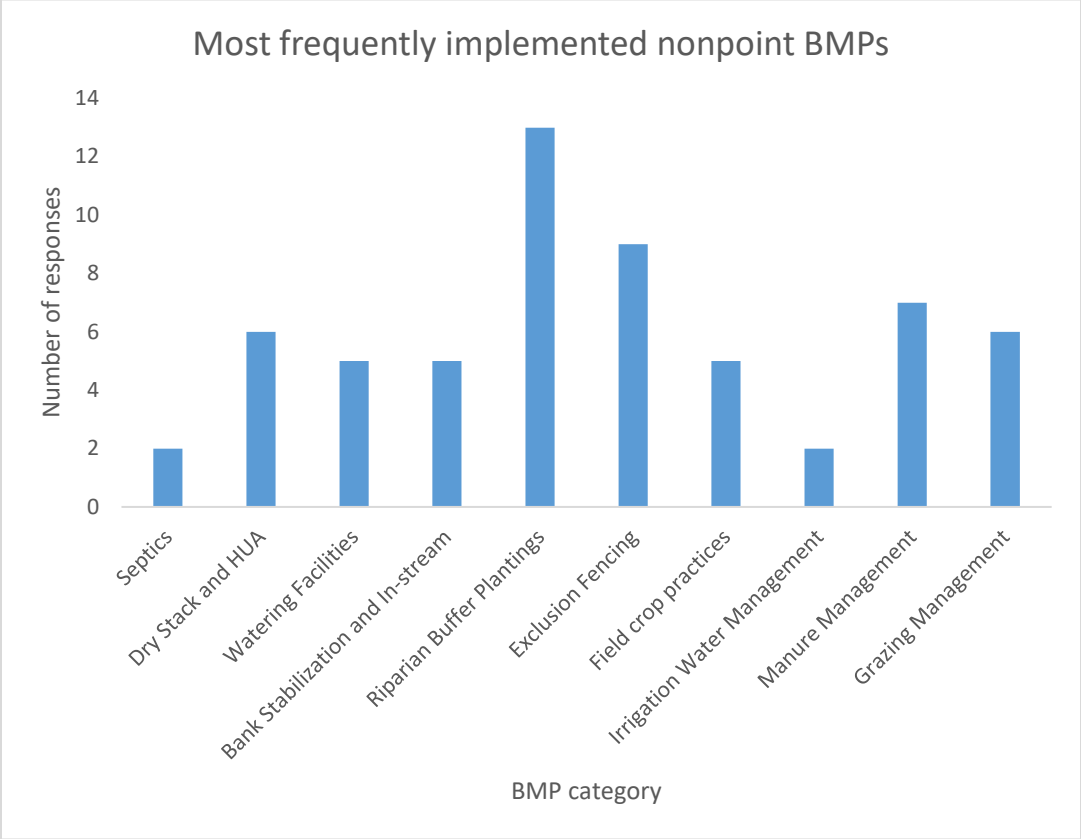


Figure 10. The most frequently implemented BMP categories to address nonpoint pollution were queried via a short answer style question. Field crop practices include direct seed, conservation tillage, and cover crops. Manure management includes waste storage facilities and self-reported 'manure management.'

CDs reported that they most frequently implement BMPs to address nonpoint impacts from livestock and other agricultural production (Figure 10) with bacteria/pathogens and nutrients the most commonly described pollutants of concern (Figure 9). Many CDs reported use of NRCS guidance in their work to provide TA to landowners and operators. Regarding Ecology's Clean Water Guidance for Agriculture, many CDs also shared a need for improved communication/education on the guidance as a whole, and its associated recommendations.

We also asked CDs about their current level or type of engagement with Ecology's NP staff as well as their interest in future collaboration opportunities. The most common current form of engagement that respondents shared was regular coordination via meetings and/or email. When asked about future coordination interests, respondents most frequently shared interest in engagement around funding and incentive programs, with a close second being interest in regular coordination with NP staff, through either email or meetings.

Tribal feedback

We received ten responses from our Tribal survey. Of the respondents, one reported the Tribal lands of the Nation they work for most intersecting with Ecology's Central region, one from Ecology's Eastern region, five from Northwest, two from Southwest, and one staff reported working for a Tribe whose lands intersect with both the Northwest and Southwest Ecology regions. The low response rate limits our ability to summarize results, however, large takeaways from the ten responses received include:

- Recommendations to better engage with Tribal staff: in addition to requests for early engagement, we heard interest in regular, coordinated meetings between Ecology nonpoint staff and Tribal staff.
- Emerging concerns and priorities for the next five years include prolonged droughts, 6PPD-q, and stormwater management. Protection and restoration of riparian areas remain a priority.
- Concern about voluntary or incentive-based approaches being insufficient to achieve the needed water quality improvements, especially for temperature-impaired waterways.

Looking ahead:

We appreciate the feedback from those who participated in our survey, and we look forward to continued opportunities for engagement with partners, Tribes, and the public as we move into the five year period (2026-2030) covered by this Nonpoint Plan. From the survey responses, we identified several key themes, including a need for increased education and outreach around the Clean Water Guidance, as well as an interest in continuing and increasing coordination and partnerships. We are supportive of both of these priorities and have reflected a commitment to these in updates to the Goals and Milestones table located in Chapter 9. Because the table in Chapter 9 is focused on metrics for Annual Reporting, and is therefore lacking in detail, we have outlined below our goals for improved communication of the Clean Water Guidance as well as commitments for furthering our partnerships with Tribes and CDs.

To support improved understanding and widespread utilization of the Clean Water Guidance, we commit to:

- Developing outreach and education resources to communicate the Clean Water Guidance, including materials designed for landowners and operators.
- Continuing to engage with CDs, WSCC, and the WA Association of District Employees to identify opportunities to provide informational training.
- Continuing to collaborate with existing and new partners to identify opportunities to share the Clean Water Guidance more broadly.
- Working to develop tools to communicate the importance of meeting water quality standards; clean water is vital for human health and salmon recovery, supporting beneficial uses, and to help mitigate the impacts of climate change.

As is discussed throughout this document, addressing nonpoint pollution requires partnerships and collaboration; and we are always striving to maintain and further develop relationships between Ecology staff and the staff from CDs, Tribes, and other partners to implement solutions on the ground. Outlined above, both CDs and Tribes responded with recommendations for ways to collaborate with Ecology NP staff. We are supportive of these recommendations and have incorporated milestones in the Goals and Milestones table of Chapter 9 to reflect our commitment to furthering relationships, including:

- Meetings with CD staff within Ecology's focal watersheds.
- Informing CDs of Ecology funding opportunities.
- Annual meetings between regions and local Tribes.
- Continued bi-annual meetings with Tribes and Ecology Headquarters staff.

In their responses, both CDs and Tribes shared a focus on riparian restoration. Feedback from CDs highlight their focus on voluntary methods, while Tribal feedback included concerns about the effectiveness of voluntary-based approaches. As discussed in Chapter 3, both voluntary and regulatory efforts are needed to achieve measurable change towards clean water. With current tools available, accomplishing restoration at the pace of regulation will not provide the necessary change at the needed pace, and, conversely, utilizing solely voluntary actions will also not result in the necessary scale of change on private property, as many landowners and operators are hesitant to voluntarily restore riparian areas or make the changes needed to be fully protective of water quality. Considered and consistent use of both voluntary and regulatory tools will continue to be Ecology's strategy to address nonpoint sources of pollution.

Finally, we were interested in learning about innovative work being explored to address water pollution. Several CDs reported innovative and/or highly successful initiatives they implemented in the past five years related to nonpoint pollution. Some of these include a saturated riparian buffer pilot project, bioengineering projects (such as BDAs), robust public outreach and education campaigns, and working together with partners to find solutions to harmful algal blooms. Another innovative project described included one CD engaging with local city partners to install filters in catch basins to address stormwater runoff. Both a CD and Tribe, on opposite sides of the state, reported use of floating treatment wetlands to help clean up water in lakes and/or stormwater ponds. We are excited by the developing and innovative work being accomplished by our partners, in addition to the more traditional restoration work occurring everyday to clean up Washington's waters, and we look forward to continued coordination and collaboration across the state.