

# FINAL DRAFT RESTORATION PLAN SOUTHEAST WASHINGTON COALITION SHORELINE MASTER PROGRAM UPDATE

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## **Prepared for**

Columbia, Garfield, and Asotin Counties and the  
City of Clarkston and Town of Starbuck

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*This report was funded through a grant from the Washington State Department of Ecology*

**September 2016**



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## LIST OF ACRONYMS AND ABBREVIATIONS

ALEA	Aquatic Lands Enhancement Account
ACCD	Asotin County Conservation District
BLM	U.S. Bureau of Land Management
BMP	best management practice
BPA	Bonneville Power Administration
CCCD	Columbia County Conservation District
CMZ	channel migration zone
Coalition	Counties of Asotin, Columbia, and Garfield; City of Clarkston; and Town of Starbuck
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
DNR	Washington State Department of Natural Resources
Ecology	Washington State Department of Ecology
ESA	Endangered Species Act
Guidelines	2003 Shoreline Management Act Guidelines
FCRPS	Federal Columbia River Power System
IAC	Inventory, Analysis, and Characterization
IMW	Intensively Monitored Watershed
NOAA	National Oceanic and Atmospheric Administration
OHWL	ordinary high water mark
PCD	Pomeroy Conservation District
Plan	Restoration Plan
RCO	Recreation and Conservation Office
RFEG	Regional Fisheries Enhancement Group
RMP	Resource Management Plan
SE WA Region	Southeast Washington Region
SMA	Shoreline Management Act

SMP	Shoreline Master Program
SRFB	Salmon Recovery Funding Board
SRSRB	Snake River Salmon Recovery Board
TMDL	total maximum daily load
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WDFW	Washington State Department of Fish and Wildlife
WRIA	Water Resource Inventory Area



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## 1 INTRODUCTION

The counties of Asotin, Columbia, and Garfield, along with the City of Clarkston and the Town of Starbuck, have formed the Southeast Washington Region (SE WA Region) Coalition<sup>1</sup> (Coalition) to develop a regional Shoreline Master Program (SMP). The Washington State Department of Ecology (Ecology) adopted the 2003 Shoreline Management Act (SMA) Guidelines (Guidelines; Chapter 173-26 Washington Administrative Code [WAC]), which require local government review and updates of SMPs. The updated version of the Southeast Washington Coalition SMP provides shoreline goals, policies, and regulations.

This Restoration Plan (Plan) has been prepared in support of the Coalition's SMP. Restoration and enhancement elements discussed in this Plan, in addition to the environmental protection and mitigation measures set forth in the SMP, are intended to work together to achieve the SMA goal of no net loss of shoreline ecological function. The Plan was formulated based on a detailed inventory and characterization of the shoreline ecosystem and impaired functions in the Shoreline Inventory, Analysis, and Characterization (IAC) Report for the Coalition (Anchor QEA 2015). A Cumulative Impacts Analysis Report has been developed to demonstrate how future development in accordance with the proposed SMP will result in no net loss of shoreline ecological function.

The scope of this document, definition of restoration, and key elements in restoration planning in the SMP process are described in this Introduction section.

### 1.1 Purpose and Scope of Plan

The purpose of this Plan is to describe how and where shoreline ecological functions can be restored within the Coalition's SMP jurisdiction. This Plan identifies protection, restoration, and enhancement actions within the SMP restoration context. The Guidelines

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<sup>1</sup> In this Plan, the phrase "SE WA Region" refers to the area covered by this SMP. The term "Coalition" refers to the counties of Asotin, Columbia, and Garfield, the City of Clarkston, and the Town of Starbuck. The cities of Asotin (Asotin County) and Dayton (Columbia County) are updating their respective SMPs through separate planning processes.

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(WAC 173-26-201(2)(f)) articulate that the Plan is to include specific elements, along with the section in which the element occurs in this Plan, summarized as follows:

- Section 3 – This section identifies existing and ongoing projects and programs currently being implemented that are designed to contribute to local restoration goals (such as capital improvement programs and watershed planning efforts).
- Section 4 – This section identifies degraded areas, impaired ecological functions, and sites with potential for ecological restoration within the SE WA Region.
- Section 4 – This section establishes overall goals and priorities for restoration of degraded areas and impaired ecological functions.
- Sections 4 and 5 – These sections identify additional projects and programs needed to achieve local restoration goals and implementation strategies, including identifying prospective funding sources for those projects and programs.
- Section 5 – This section identifies timelines and benchmarks for implementing restoration projects and programs and achieving local restoration goals.
- Section 5 – This section provides provisions for mechanisms or strategies to ensure restoration projects and programs will be implemented according to plans to appropriately review the effectiveness of the projects and programs in meeting the overall restoration goals.

Although this Plan incorporates elements of other shoreline restoration planning documents that involve the shorelines under the Coalition’s SMP jurisdiction, the scope of this Plan under the SMA guidance does not extend to that of a master document combining and aligning priorities of other shoreline restoration documents, plans, or efforts. It is expected that alignment or conflict between this Plan and the goals of other plans (such as Comprehensive Plans) that occur during implementation will be addressed within the context of the applicable regulations. This Plan does not provide or constitute any regulatory approval of the projects identified within the document. All applicable federal, state, and local regulatory requirements will need to be met, and all associated approvals will need to be obtained prior to implementation of any project.

It is important to clarify that restoration as it is discussed here is distinct from the concept of protection or no net loss. The WAC defines “restoration” or “ecological restoration” as follows:

*“...the reestablishment or upgrading of impaired ecological shoreline processes or functions. This may be accomplished through measures including, but not limited to, revegetation, removal of intrusive shoreline structures and removal or treatment of toxic materials. Restoration does not imply a requirement for returning the shoreline area to aboriginal or pre-European settlement conditions.”*

The state’s SMP policies include a standard of maintaining no net loss of ecological functions necessary to sustain shoreline natural resources, which must be adhered to by new SMPs. Ecology has clarified that no net loss means that “establishing uses or conducting development are identified and mitigated with a final result that is no worse than maintaining the current level of environmental resource productivity,” and “no uses or development supersede the requirement for environmental protection” (Ecology 2004). The current level of environmental productivity is the baseline level of function of the system. For the purposes of this Plan and the SMP, the environmental baseline is established as part of the IAC Report, or other reports prepared by the Coalition referenced therein, as well as the other maps and data developed by the Coalition as part of the SMP update process. Thus, mitigation activities are the methods by which no net loss is compensated. The distinction between no net loss and SMP restoration is that restoration goes beyond no net loss by establishing an increase in the amount, size, and function of an ecosystem or components of an ecosystem compared to a baseline condition. Therefore, mitigation activities, including redevelopment and new development that include mitigation activities, could not be considered as part of restoration under this Plan unless there was a “beyond no net loss” component to the work.

## **1.2 Key Elements of Restoration Planning in Shoreline Master Program Process**

The state’s Guidelines indicate preferred actions for certain shoreline uses in the following order:

1. Reserve appropriate areas for protecting and restoring ecological functions to control pollution and prevent damage to the natural environment and public health.
2. Reserve shoreline areas for water-dependent and associated water-related uses.

3. Reserve shoreline areas for other water-related and water-enjoyment uses that are compatible with ecological protection and restoration objectives.
4. Identify single-family residential uses where they are appropriate and can be developed without significant impact to ecological functions or displacement of water-dependent uses.
5. Limit non-water-oriented uses to those locations where the previously described uses are inappropriate or where non-water-oriented uses demonstrably contribute to the objectives of the SMA (WAC 173-26-201(2)(d)).

The Guidelines also state SMPs are to “include goals, policies and actions for restoration of impaired shoreline ecological functions” (WAC 173-26-186). The impaired functions are to be identified based on a detailed inventory and characterization of the shoreline ecosystem, and a Restoration Plan is to be formulated based on that information (WAC 137-26-201). The results of the inventory assessment were presented in the IAC Report (Anchor QEA 2015). This Plan uses the information from the IAC Report to address the Restoration Plan requirements discussed in the Guidelines. This Plan is not a regulatory document or a set of regulatory requirements. However, the SMP points to this Plan as a guide outlining opportunities for improving ecological function within the jurisdiction of the Coalition members’ shorelines.

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## **2 BACKGROUND**

The SE WA Region is located in the southeast corner of Washington state and encompasses an area of 2,232 square miles (5,782 square kilometers), of which 2,213 square miles (5,731 square kilometers) are land and 19 square miles (50 square kilometers) are water. The SE WA Region borders the state of Oregon to the south and the state of Idaho to the east. Walla Walla County lies to the west (adjacent to Columbia County), and Whitman County is north of all three SE WA Region counties. A small length of the northwestern portion of Columbia County (0.7 mile) is bordered by Franklin County. The Snake River forms the northern border with Whitman County as well as the eastern boundary with Idaho. The Town of Starbuck is located in the northwest portion of Columbia County along the Tucannon River, approximately 2 miles south of the Snake River. The City of Clarkston is located in the northeast corner of Asotin County at a bend in the Snake River where it converges with the Clearwater River.

### **2.1 Planning Area Characteristics**

The SE WA Region shorelines have unique ownership. The lower Snake River has four hydropower dams: 1) Ice Harbor; 2) Lower Monumental; 3) Little Goose; and 4) Lower Granite dams. Two of these dams—Little Goose and Lower Granite dams—are located within the SE WA Region. Additionally, the Umatilla National Forest areas are located within the SE WA Region. The shoreline areas are under significant federal ownership, especially in Columbia and Garfield counties.

For more information on land ownership percentages for specific waterways and counties within the SE WA Region, the City of Clarkston, and the Town of Starbuck, please refer to Section 4.1 of the IAC Report (Anchor QEA 2014).

### **2.2 Southeast Washington Region Existing Land Cover and Land Use**

In the SE WA Region, the predominant land cover type within the shoreline jurisdiction is identified as forest and grassland land cover, with developed and shrubland making up the other primary land cover groups. Agricultural land use within the SE WA Region shoreline jurisdiction comprises only 208 acres.

For more information on land cover types for specific waterways and counties within the SE WA Region, the City of Clarkston, and the Town of Starbuck, please refer to Section 4.2 of the IAC Report (Anchor QEA 2014).

The SE WA Region includes a variety of uses along shorelines, including recreational uses, hydroelectric dams, farming, irrigation, barging, tourism, industrial facilities, and port uses. Table 1 summarizes zoning for the Coalition.

**Table 1**  
**Summary of Southeast Washington Coalition Zoning**

<b>Waterbody and Associated Tributary</b>	<b>Land Use/Zoning Asotin County</b>	<b>Land Use/Zoning Garfield County</b>	<b>Land Use/Zoning Columbia County</b>
Asotin Creek	Rural Residential, Agricultural/Transition	NA	NA
Grande Ronde River	Rural Residential, Agricultural	NA	NA
Snake River	Agricultural, Agricultural/Transition, Rural Residential Urban (Clarkston)	Agricultural, Industrial	Agricultural (A-1), Heavy Industrial (H-1)
Forest Service Creek Group	NA	NA	Watershed (W-1)
Touchet River	NA	NA	Agricultural (A-1), Agricultural (A-2), Agricultural-Residential (AR-1), Agricultural-Residential (AR-2)
Tucannon River	NA	NA	Agricultural (A-1), Agricultural (A-2), Recreational (R-1), Heavy Industrial (HI-1)

Note:  
NA = not applicable

For more information on zoning within the SE WA Region, please refer to the IAC Report (Anchor QEA 2014).

### **2.2.1 Water Resources**

The SE WA Region is located in three Water Resource Inventory Areas (WRIAs):

1) WRIA 35 – Middle Snake; 2) WRIA 32 – Walla Walla; and 3) WRIA 33 – Lower Snake.

The major surface water resources located in the planning area include the Grande Ronde River, Asotin Creek, Snake River, Tucannon River, and Touchet River. Less than 1% of the SE WA Region (19 of 2,232 square miles) is water. Although some small lakes are located within the region, none are large enough to reach shoreline jurisdiction threshold.

The Snake River is a prominent landscape feature and drains the majority of the region. Along each county's northern boundary, the Snake River runs through a series of run-of-the-river dams used to facilitate navigation and produce hydroelectricity. The Grande Ronde River and Asotin Creek generally drain northeast, toward the eastern boundary of Asotin County, where they drain into the Snake River. The Tucannon River generally drains northwest, toward the northwestern corner of Columbia County, where it also drains into the Snake River. The Touchet River and Mill Creek, as well as their tributaries, are located in the Walla Walla River Basin. They generally flow westward toward the Walla Walla River located outside of the planning area.

Surface water quality in the SE WA Region is affected by climate, dam and hydropower operations, past and current industrial use, and agricultural runoff. These impacts have caused several waterbodies to be impaired by temperature, dissolved oxygen, pH, bacteria, and other pollutants. The Snake River, Pataha Creek, and Tucannon River are on the 303(d) list of impaired waterbodies requiring a total maximum daily load (TMDL), and several other waterbodies are waters of concern on Ecology's 305(b) rating system.

Surface water flows in the region are characterized by lower flows in the late summer and fall and high flows in the spring. The highest flows are typically generated from snowmelt runoff after temperatures are warm enough to melt snowpack accumulated from winter precipitation events. However, the northwest region of the United States has observed regional warming resulting in changes to timing and availability of water-to-stream flow in basins with significant contributions from snowmelt (Melillo et al. 2014). Administrative restrictions known as Surface Water Source Limitations have been imposed on the middle Snake River, which requires new water uses to stop during low-flow periods (Ecology 2012).

Floodplains, floodways, and channel migration zones (CMZs) have been identified within the SE WA Region. For waterbodies classified as shorelines, the presence of a floodplain or floodway may cause the jurisdiction area to increase. CMZs may require implementation of regulations that are unique to these areas due to the migration potential of a given stream throughout its extents. Groundwater in the region is generally limited by climate and geology. Additionally, groundwater aquifers within the SE WA Region are in decline (Ecology 2012). For more information regarding water resources in the SE WA Region, please refer to the IAC Report (Anchor QEA 2015).

### **2.2.2 Climate**

The SE WA Region falls within the Palouse Blue Mountains region of Washington state (NOAA 2015a, 2015b). Annual precipitation is between 10 to 20 inches across most of the agricultural section and increases to 40 inches or more in the higher elevations of the Blue Mountains. The average winter season snowfall varies from 20 to 40 inches. Snow can be expected in November and remain on the ground from periods ranging from a few days to 2 months between the first of December and March. Snowfall and the depth on the ground increase along the slopes of the mountains.

High temperatures in January can range from 34°F in the Palouse Hills and 38°F in the Snake and Walla Walla River valleys. The average minimum temperature varies from 20 to 25°F. Summer high temperatures are usually in the high 80s °F with low temperatures in the middle 50s °F (WRCC 2015).

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### 3 EXISTING RESTORATION PLANNING, PROGRAMS, AND PARTNERS

This section describes the range of restoration planning, programs, and partners at work in the Coalition area.

There are a number of documents with information on recent habitat and environmental planning efforts that pertain to shoreline ecosystems, flora, and fauna in the region, as well as a few that specifically address shoreline conditions within the SE WA Region. The following documents collectively describe a number of plans, projects, and status of the science:

- Spokane Resource Management Plan Record of Decision (BLM 1987)
- Tucannon River Geomorphic Assessment and Habitat Restoration Study (Anchor QEA 2011)
- 2014 Columbia River Basin Fish and Wildlife Program (NWPC 2014)
- Columbia Plateau Ecoregional Assessment (TNC 1999)
- Updated Interior Columbia Basin Strategy (ICBEMP 2014)
- Washington Connected Landscapes Project: Analysis of the Columbia Plateau Ecoregion (WHCWG 2012) and Statewide Analysis (WHCWG 2010)
- Coordinated Implementation Plan for Bird Conservation in Eastern Washington prepared by the Washington Steering Committee Intermountain West Joint Venture (2005)
- Snake River Salmon Recovery Plan for Southeast Washington (SRSRB 2011)<sup>2</sup>.
- Proposed Endangered Species Act (ESA) Recovery Plan for Snake River Sockeye Salmon (*Oncorhynchus nerka*). Prepared by the National Marine Fisheries Service (NOAA 2015c)
- Conservation district planning documents (PCD 2014; ACCD 2015; CCCD 2015)

Many groups are involved in shoreline restoration and protection in the SE WA Region, including federal and state government agencies, the Asotin County Conservation District (ACCD), Pomeroy Conservation District (PCD), Columbia County Conservation District (CCCD), Nez Perce Tribe, regional nonprofit groups, and local cities and towns. The following sections list the key groups and their contributions. This list may not name all

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<sup>2</sup> Includes numerous subbasin plans and reports that have been developed based on the overall guidance of the Snake River Salmon Recovery Plan.

groups that have contributed to shoreline restoration or protection in the past or that may contribute in the future.

### **3.1 Asotin County Conservation District**

ACCD provides technical and financial assistance to landowners to encourage proper use and treatment of renewable natural resources. This includes identifying conservation problems and potential solutions to these problems. ACCD covers all of Asotin County and the Grouse Flat area of Garfield County except areas within incorporated cities and town.

### **3.2 Pomeroy Conservation District**

PCD works to conserve natural resources by providing information, education, funding, and other resources to farmers and ranchers within Garfield County. This includes assisting with implementation of best management practices (BMPs) that reduce soil erosion and improve water quality. PCD assists with the Conservation Reserve Enhancement Program (CREP), a partnership between the State of Washington and U.S. Department of Agriculture (USDA) that provides incentives for landowners to restore and improve salmon and steelhead habitat on private land (WSCC 2015).

### **3.3 Columbia County Conservation District**

According to the CCCD, the district provides the needed support to Columbia County residents who own, manage, or utilize the natural resources to ensure their activities will enhance the region's natural resources while maintaining the quality of life and culture these resources provide. The CCCD works with residents to implement voluntary stewardship of natural resources without compromising the economic viability or social standards of the region (CCCD 2015). The CCCD uses available technical, financial, and educational resources to meet the needs of local land managers to improve conservation of soil, water, and related natural resources.

### **3.4 Nez Perce**

The Nez Perce Tribe Department of Fisheries Resource Management's Watershed Division is involved in restoration actions within the SE WA Region, as it overlaps the Tribe's Treaty Territory.

The Nez Perce Tribe is addressing fish passage barriers in the region and has identified a project to restore 100% passage to Alpowa Creek at the bridge at milepost 1.3 on Alpowa Creek Road. The Nez Perce Tribe intends to complete a design for this project in 2014 with funding from Bonneville Power Administration (BPA). The implementation portion of the project will be funded by this grant and may be implemented in the summer of 2015 in partnership with Garfield County.

### **3.5 National Oceanic and Atmospheric Administration Fisheries**

The National Oceanic and Atmospheric Administration (NOAA) Fisheries leads recovery efforts for populations of salmon and steelhead in Washington and other states, which often includes consideration, protection, and restoration of shoreline habitat that supports various life stages of these fish. NOAA Fisheries also administers the Watershed Program, which evaluates the effectiveness of habitat and watershed restoration strategies or techniques. NOAA Fisheries also oversees the recovery of the ESA-listed Snake River sockeye salmon and recently published the *ESA Recovery Plan for Snake River Sockeye Salmon (Oncorhynchus nerka)* (NOAA 2015c). The plan outlines the biological background and geological setting that affect this species, assesses the status of the species, sets recovery goals, and develops a recovery strategy. The plan outlines actions to be taken in the mainstem Snake River, including the portion running through the SE WA Region; however, it focuses mainly on critical spawning habitat in the Sawtooth Valley Lakes region of Idaho.

### **3.6 Nonprofit Groups**

Numerous nonprofit groups operate within the SE WA Region that work to address conservation and restoration of fish and wildlife habitat. Some of the local organizations

currently or previously completing restoration work in the SE WA Region include the following:

- The Wild Fish Conservancy (formerly Washington Trout) is a nonprofit conservation ecology organization that seeks to preserve, protect, and restore Washington's wild fish and their habitats.
- Pheasants Forever contributes to the restoration of grasslands to benefit upland game birds.
- The Tri-State Steelheaders Fisheries Enhancement Group focuses on enhancement projects across the lower Snake River and works with conservation organizations to support habitat for sustainable salmonid populations.
- The Inland Northwest Land Trust is a nonprofit organization that seeks to protect natural lands, waters, working farms, and forests for the benefit of wildlife, the community, and future generations.

Larger national organizations have supported work in the SE WA Region, as well. The National Fish and Wildlife Foundation has supported Confederated Tribes of the Umatilla Indian Reservation-led restoration projects via BPA within Columbia County, which are focused on the Walla Walla watershed with the goal of improving habitat for ESA-listed species of salmon and steelhead.

The Nature Conservancy restores and protects land in the SE WA Region for the benefit of shrub-steppe habitat and wildlife, also allowing educational, research, and permitted recreational uses on its properties. Many shrub-steppe habitats are within the shoreline jurisdiction of the SMP. The Columbia Plateau Ecoregional Assessment (TNC 1999) identified a group of sites that could maintain biota and community viability and provided an assessment of risks and strategies to conserve biodiversity in the area.

### **3.7 Government Agencies**

#### **3.7.1 Bonneville Power Administration**

BPA is a federal nonprofit agency based in the Pacific Northwest. Although BPA is part of the U.S. Department of Energy, it is operationally independent. BPA funds and works with partners to identify restoration actions for improvement of salmonid habitat as a requirement

of the operations of the Federal Columbia River Power System (FCRPS) for which it is responsible. FCRPS encompasses the hydroelectric dams constructed and operated by the U.S. Army Corps of Engineers (USACE) and U.S. Bureau of Reclamation in the Pacific Northwest.

### **3.7.2 U.S. Army Corps of Engineers**

USACE is the largest public landowner in the SE WA Region, owning approximately 37% of the shoreline. It works to provide “vital public and military engineering services” to develop “engineering solutions for our Nation’s toughest challenges” (USACE 2016). In addition, USACE oversees the regulation of the Clean Water Act for dredging and filling activities in “Waters of the United States,” which includes wetlands.

### **3.7.3 U.S. Bureau of Land Management**

The U.S. Bureau of Land Management (BLM) administers federal lands comprising approximately 2.3% of shorelines in the SE WA Region. In its land acquisitions, the BLM targets shrub-steppe and associated riparian zones, and BLM policy gives priority to habitat for sensitive species and riparian areas. The BLM implements the Interior Columbia Basin Strategy aimed at managing eastside forests in a scientifically sound and ecosystem-based manner. It also implements integrated weed management, including shoreline areas.

The Spokane District’s Resource Management Plan (RMP) identifies protection and enhancement of water quality as a Management Objective (BLM 1987). Additionally, the RMP identifies restoration of natural functions and general habitat improvement as goals for riparian habitat areas, wetlands, and floodplains (BLM 1987).

### **3.7.4 U.S. Department of Agriculture**

USDA administers several programs through its Natural Resource Conservation Service (NRCS) that protect and restore shorelines, including the Wetlands Protection Program, Resource Conservation and Development Program, Wildlife Habitat Incentives Program, and Conservation Reserve Program (CRP), among several others. Asotin County, in particular through ACCD, plays an active role in encouraging local landowner participation in the CRP.

### **3.7.5 U.S. Fish and Wildlife Service**

The U.S. Fish and Wildlife Service (USFWS) administers a number of programs that restore and protect shoreline and other aquatic habitats. The Partners for Fish and Wildlife Program helps private landowners restore wetlands and other habitats on their properties through voluntary cooperative agreements. The Water Management and Evaluation Program coordinates and manages issues that affect instream flows and shorelines.

### **3.7.6 U.S. Forest Service**

The U.S. Forest Service (USFS) manages an extensive area in the southern portions of Asotin, Columbia, and Garfield counties within the Umatilla National Forest. The mission of USFS is to “sustain the health, diversity, and productivity of the Nation’s forests and grasslands to meet the needs of present and future generations.” This includes using sustainable multi-use management, providing technical and financial assistance to promote stewardship, and educating the public (USFS 2016). Several shoreline jurisdictional streams or creeks are within USFS lands, and management and restoration activities affect ecological functions along these waterbodies. Forest plans and other USFS programs govern activities that occur on USFS lands.

## **3.8 Washington State**

The State of Washington’s Office of the Governor coordinates restoration efforts with state agencies under the legislation of the Salmon Recovery Planning and Salmon Recovery Funding acts. In addition, Washington State administers the Recreation and Conservation Office (RCO; see Section 3.8.5).

### **3.8.1 Washington State Conservation Commission**

The Washington State Conservation Commission provides incentives to restore and improve salmon and steelhead habitat on private land according to its CREP.

### **3.8.2 Washington State Department of Ecology**

Ecology works with local jurisdictions, agricultural interests, and others to develop clean-up plans, or TMDLs for waterbodies, which contain pollutants that exceed state water quality criteria.

Surface water quality in the SE WA Region is generally affected by climate, dam and hydropower operations, past industrial use, and agricultural runoff. These impacts have caused certain waterbodies to be impaired by temperature, dissolved oxygen, total dissolved gas, polychlorinated biphenyls, pH, and other pollutants.

Ecology provides water quality monitoring grants and administers the Watershed Planning Act, which supplies grants to local groups to produce watershed plans. To date, Ecology has funded just more than \$1.4 million in watershed management grants to the Middle Snake Watershed (WRIA 35), which covers most of Asotin, Garfield, and Columbia counties. In 2008, the Middle Snake Watershed Planning Group published an Implementation Plan and updated the plan in 2011. Several projects that have been completed include increasing irrigation efficiency and conducting streambed and instream habitat assessments (Ecology 2015a). Ecology has also funded watershed management in the Walla Walla Watershed (WRIA 32), which includes a portion of Columbia County (Ecology 2015b). Ecology also participates in the local planning unit representing the State of Washington.

### **3.8.3 Washington State Department of Fish and Wildlife**

The Washington State Department of Fish and Wildlife (WDFW) has close involvement in the technical and policy aspects of fisheries and wildlife research and conservation as well as habitat restoration in the region. In addition, WDFW oversees the Regional Fisheries Enhancement Groups (RFEs) Program. Currently 14 regional groups work to restore salmonid populations through community involvement, including engaging with citizen volunteers and landowners. The regional group that covers the SE WA Region is the Tri-State Steelheaders that has completed restoration projects on George Creek and the Touchet River (WDFW 2015; Steelheaders 2015).

### **3.8.4 Washington State Department of Natural Resources**

The Washington State Department of Natural Resources (DNR) manages state trust lands in the SE WA Region as natural area preserves, which are areas earmarked for protection, research, and education. DNR restores freshwater and marine habitat according to its Aquatic Lands Enhancement Account (ALEA) Grant Program. ALEA grants may be used for the acquisition, improvement, or protection of aquatic lands for public purposes. They also may be used to provide or improve public access to the waterfront.

### **3.8.5 Washington State Recreation and Conservation Office**

The Washington State RCO, formerly the Interagency Committee for Outdoor Recreation, administers the Salmon Recovery Funding Board (SRFB) for funding habitat protection and restoration projects and associated activities to benefit salmon (see Washington State or Section 3.8).

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## 4 RESTORATION CONTEXT, GOALS, AND PRIORITIES

Shoreline restoration is a response to habitat impairment that has occurred as a result of alterations to the hydrology and physical structure of the shore. To plan restoration, there must be an understanding of the major existing impairments, an overarching set of goals to guide the work, a prioritization context to organize the efforts, and a list of the available opportunities.

### 4.1 Shoreline Impairments

The ecosystem-wide processes and structure of Coalition shorelines were described in detail in Section 5 of the IAC Report (Anchor QEA 2015). In addition, the alterations to these processes were discussed in terms of how the processes are interrupted or curtailed and the physical and biological functions of habitat are affected. Tables 2a through 2e provide a summary of the shoreline reaches within each jurisdiction, level of existing function, key stressors, and restoration and protection opportunities, most of which are reflected in the reach descriptions provided in Appendices A through E of the IAC Report.

As shown in Tables 2a through 2e and 3a through 3e, alterations have occurred and impacted shoreline processes involving hydrology, sediment, water quality, and habitat. These alterations include water storage and conveyance, impervious surface effects, vegetation alterations, water quality impacts, structural effects on habitat, shoreline hardening or stabilization, channel realignment, channel-floodplain disconnection, and other alterations such as lighting, noise, recreation, crop production, livestock grazing, and species competition. Basins affected by these alterations include the Snake River, Tucannon River, Touchet River, Asotin Creek, and other creeks within the SE WA Region shoreline jurisdiction.



**Table 2a**  
**Key Stressors and General Restoration and Protection Opportunities – Asotin, Columbia, and Garfield Counties**

Reach	Reach Description	Shoreline Jurisdiction	Subreach	Level of Existing Function	Key Stressors								Restoration/Protection Opportunities														
					Agriculture	Hydrologic Management Regimes	Shoreline, In-water, or Over-water Development	Recreation	Shoreline Stabilization and Habitat Features (i.e., LWD, flow turbidity)	Upland Development	Vegetation (i.e., invasive or non-native species)	Consolidate Water Access Trails	Protect Existing/Replant Degraded Riparian and Wetland Habitat	Protect Existing/Replant Degraded Shrub-Steppe Habitat	Implement Aquatic Habitat Protection Plans	Incorporate Aquatic Habitat Complexity	Incorporate Soft Bank Stabilization Techniques	Incentivize Creating Vegetated Filters Adjacent to Agricultural Fields	Incentivize Replacing Residential Lawns with Native Vegetation	Invasive Species Management	Implement or Retrofit Stormwater Controls for Development	Improve Connection to Municipal Sewer	Manage Livestock Through Use of BMPs	Improve Irrigation Efficiencies	Address Fish Barriers	Reduce Erosion, Run-off, and Sedimentation	
Snake River Reach 1	Reach 1 of the Snake River begins at the Washington/Oregon state line and runs north to the Asotin city limits. (RM 176.2 to RM 147).	1,718 acres	SR 1a	Functioning				•		•		•	•	•							•				•		
			SR 1b	Functioning				•		•		•	•	•								•				•	
			SR 1c	Functioning				•		•		•	•	•									•				•
			SR 1d	Functioning				•		•		•	•	•									•				•
			SR 1e	Impaired				•		•		•	•	•				•					•				•
			SR 1f	Partially functioning				•		•		•	•	•							•		•				•
			SR 1g	Partially functioning				•		•		•	•	•									•				•
Snake River Reach 2	Snake River Reach 2 begins at the north end of the Asotin city limits and ends at the Clarkston Pond at RM 136.4.	511 acres	SR 2a	Impaired				•		•		•	•	•							•				•		
			SR 2b	Impaired					•		•	•	•									•				•	
			SR 2c	Impaired				•		•												•				•	
Snake River Reach 3	Snake River runs from Clarkston Pond (RM 136.4) to the Asotin/Garfield County line.	1,492 acres	SR 3a	Impaired						•		•	•	•							•				•		
			SR 3b	Partially functioning				•		•		•	•	•								•				•	
			SR 3c	Functioning				•		•		•	•	•								•				•	
Grande Ronde River Reach 1	Reach 1 of the Grande Ronde River runs from the Washington/Oregon state line to Northeast 1/4 of T7N_R46E_S31.	1,852 acres	SR 1a	Partially functioning			•		•	•				•							•			•			
			SR 1b	Partially functioning	•		•		•	•			•		•							•		•		•	
			SR 1c	Partially functioning			•	•	•	•				•								•			•		•
			SR 1d	Partially functioning	•		•		•	•			•		•							•		•		•	

Reach	Reach Description	Shoreline Jurisdiction	Subreach	Level of Existing Function	Key Stressors								Restoration/Protection Opportunities														
					Agriculture	Hydrologic Management Regimes	Shoreline, In-water, or Over-water Development	Recreation	Shoreline Stabilization and Habitat Features (i.e., LWD, flow turbidity)	Upland Development	Vegetation (i.e., invasive or non-native species)	Consolidate Water Access Trails	Protect Existing/Replant Degraded Riparian and Wetland Habitat	Protect Existing/Replant Degraded Shrub-Steppe Habitat	Implement Aquatic Habitat Protection Plans	Incorporate Aquatic Habitat Complexity	Incorporate Soft Bank Stabilization Techniques	Incentivize Creating Vegetated Filters Adjacent to Agricultural Fields	Incentivize Replacing Residential Lawns with Native Vegetation	Invasive Species Management	Implement or Retrofit Stormwater Controls for Development	Improve Connection to Municipal Sewer	Manage Livestock Through Use of BMPs	Improve Irrigation Efficiencies	Address Fish Barriers	Reduce Erosion, Run-off, and Sedimentation	
Grande Ronde River Reach 2	Reach 2 of the Grande Ronde begins at Northeast 1/4 of T17N_R46E_S31 and ends at the mouth of the Snake River.	981 acres	SR 2a	Partially functioning	•				•				•		•					•		•		•			
			SR 2b	Partially functioning	•				•	•			•	•	•						•		•		•		
			SR 2c	Partially functioning					•	•			•	•	•							•		•		•	
			SR 2d	Partially functioning	•				•	•			•	•	•							•		•		•	
			SR 2e	Partially functioning	•		•		•	•			•		•							•		•		•	
Joseph Creek	Joseph Creek runs from the Washington/Oregon state border to the Grande Ronde River	424 acres	SR 1a	Partially functioning	•				•				•	•						•		•		•	•		
			SR 1b	Partially functioning	•				•				•	•	•						•		•		•	•	
			SR 1c	Partially functioning	•				•	•			•	•	•						•		•		•	•	
Asotin Creek Reach 1	Asotin Creek Reach 1 runs from the Northeast 1/4 of T9N_R43E_S35 to the mouth on the Snake River.	802 acres	SR 1a	Partially functioning						•			•	•	•						•		•	•			
			SR 1b	Partially functioning				•		•			•	•	•							•		•	•		
			SR 1c	Partially functioning	•						•			•								•		•	•		
			SR 1d	Impaired	•						•	•		•	•		•				IAC	•	•	•			
			SR 1e	Impaired							•			•				•			IAC	•	•	•			
South Fork Asotin Creek	The South Fork Asotin Creek begins at Southeast 1/4 of T9N_R44E_S27 and ends near the northeast corner of the Asotin Creek Wildlife Area.	188 acres	N/A	Partially functioning								•		•						•		•					



**Table 2b**  
**Key Stressors and General Restoration and Protection Opportunities – City of Clarkston**

Reach	Reach Description	Shoreline Jurisdiction	Subreach	Level of Existing Function	Key Stressors							Restoration/Protection Opportunities														
					Agriculture	Hydrologic Management Regimes	Shoreline, In-Water, or Over-water Development	Recreation	Shoreline Stabilization and Habitat Features (i.e., LWD, flow turbidity)	Upland Development	Vegetation (i.e., invasive or non-native species)	Consolidate Water Access Trails	Protect Existing/Replant Degraded Riparian and Wetland Habitat	Protect Existing/Replant Degraded Shrub-Steppe Habitat	Implement Aquatic Habitat Protection Plans	Incorporate Aquatic Habitat Complexity	Incorporate Soft Bank Stabilization Techniques	Incentivize Creating Vegetated Filters Adjacent to Agricultural Fields	Incentivize Replacing Residential Lawns with Native Vegetation	Invasive Species Management	Implement or Retrofit Stormwater Controls for Development	Improve Connection to Municipal Sewer	Manage Livestock Through Use of BMPs	Improve Irrigation Efficiencies	Address Fish Barriers	Reduce Erosion, Run-off, and Sedimentation
Snake River Reach 1	Reach 1 begins at the Clarkston City limits RM 140.5 and ends at the west city limits RM 137.4.	259.8 acres	SR 1a	Partially functioning				•		•		•	•			•			•	•					•	
			SR 1b	Partially functioning				•		•		•	•				•			•	•					•
			SR 1c	Partially functioning				•		•		•	•				•			•	•					•

Notes:  
 Sources for Restoration/Protection Opportunities include documents and plans identified in Section 3 of this report and addressing ecological functions as described in Section 5 of the IAC.  
 BMP = best management practice  
 IAC = Inventory, Analysis, and Characterization Report (Anchor QEA 2014)  
 LWD = large woody debris  
 RM = river mile  
 SR = subreach

**Table 2c**  
**Key Stressors and General Restoration and Protection Opportunities – Garfield County**

Reach	Reach Description	Shoreline Jurisdiction	Subreach	Level of Existing Function	Key Stressors								Restoration/Protection Opportunities													
					Agriculture	Hydrologic Management Regimes	Shoreline, In-Water, or Over-water Development	Recreation	Shoreline Stabilization and Habitat Features (i.e., LWD, flow turbidity)	Upland Development	Vegetation (i.e., invasive or non-native species)	Consolidate Water Access Trails	Protect Existing/Replant Degraded Riparian and Wetland Habitat	Protect Existing/Replant Degraded Shrub-Steppe Habitat	Implement Aquatic Habitat Protection Plans	Incorporate Aquatic Habitat Complexity	Incorporate Soft Bank Stabilization Techniques	Incentivize Creating Vegetated Filters Adjacent to Agricultural Fields	Incentivize Replacing Residential Lawns with Native Vegetation	Invasive Species Management	Implement or Retrofit Stormwater Controls for Development	Improve Connection to Municipal Sewer	Manage Livestock Through Use of BMPs	Improve Irrigation Efficiencies	Address Fish Barriers	Reduce Erosion, Run-off, and Sedimentation
Snake River Reach 4	Reach 4 of the Snake River runs from Lower Granite Lake from (RM 126.9) to the Garfield/Asotin County line (RM 107.5).	2,422 acres	N/A	Functioning				•				•	•	•					•	•						•
Snake River Reach 5	Reach 5 of the Snake River runs from Lake Bryan (Lower Granite Dam; RM 107.5) to the Garfield/Columbia County line (RM 80.5).	3,649 acres	N/A	Partially functioning	•			•			•	•	•			•				•						•
Crooked Creek (see also Table 2d)	Crooked Creek runs from the top center of T7N_R41E_S30/ Third Creek to the Oregon state Border.	319 acres	N/A	Functioning				•					•							•						





Reach	Reach Description	Shoreline Jurisdiction	Subreach	Level of Existing Function	Key Stressors							Restoration/Protection Opportunities																
					Agriculture	Hydrologic Management Regimes	Shoreline, In-Water, or Over-water Development	Recreation	Shoreline Stabilization and Habitat Features (i.e., LWD, flow turbidity)	Upland Development	Vegetation (i.e., invasive or non-native species)	Consolidate Water Access Trails	Protect Existing/Replant Degraded Riparian and Wetland Habitat	Protect Existing/Replant Degraded Shrub-Steppe Habitat	Implement Aquatic Habitat Protection Plans	Incorporate Aquatic Habitat Complexity	Incorporate Soft Bank Stabilization Techniques	Incentivize Creating Vegetated Filters Adjacent to Agricultural Fields	Incentivize Replacing Residential Lawns with Native Vegetation	Invasive Species Management	Implement or Retrofit Stormwater Controls for Development	Improve Connection to Municipal Sewer	Manage Livestock Through Use of BMPs	Improve Irrigation Efficiencies	Address Fish Barriers	Reduce Erosion, Run-off, and Sedimentation	Agriculture	
	1/4 of T10N_R41E_S27) and ends at the confluence of the Tucannon and Snake Rivers.		SR 2c	Partially functioning	•		•				•			•							•							
			SR 2d	Partially functioning	•		•				•				•							•						
			SR 2e	Partially functioning	•		•				•				•								•					
			SR 2f	Partially functioning	•		•				•				•								•					
			SR 2g	Partially functioning	•		•				•				•								•					
			SR 2h	Partially functioning							•				•								•	•				
Punjab Creek	Panjab Creek begins at the Northeast 1/4 of T8N_R41E_S18 and ends at the confluence with the Tucannon River Reach.	111 acres	N/A	Functioning									•													•		
Touchet River Reach 1	Touchet River runs from Northwest 1/4 of T9N_R39E_S11 to the Columbia/Walla Walla County line.	850 acres	SR 1a	Impaired to partially functioning			•	•					•		•	•									•	•		
			SR 1b	Impaired	•		•							•		•	•									•	•	
			SR 1c	Partially functioning	•		•								•		•	•									•	•
			SR 1d	Partially functioning	•		•								•		•	•									•	•
South Fork	South Fork Touchet River runs from Southwest 1/4 of T7N_R39E_S06	855 acres	SR 1a	Partially functioning			•	•					•		•	•	•								•	•		
			SR 1b	Partially functioning							•				•		•	•	•							•	•	









## 4.2 Restoration Goals and Objectives

As described in Section 3, a number of organizations are involved in habitat management and restoration planning within the SE WA Region. In addition, much work has been done with regard to setting the direction for habitat management and restoration planning in the region. The general management goals identified in plans for county conservation districts, as well as the Snake River Basin and other planning areas, are applicable to the region due to similar habitat conditions across the region and because they were used to formulate a list of goals and example objectives for this Plan. The following goals and objectives will guide the restoration actions described herein and can be used to formulate metrics to monitor progress in implementing the Plan:

- Protect and restore endangered Snake River sockeye salmon (*Oncorhynchus nerka*). The objective is removal of Snake River Sockeye from the endangered species list. This involves proving adults are able to spawn in the wild and continue to do so in the long term, typically 100 years. The species must also be resilient to catastrophic changes in environment, such as floods or changes in ocean productivity (NOAA 2015c).
- Protect, maintain, and where feasible, enhance or restore riparian, shrub-steppe, wetland, and floodplain areas within SMP jurisdiction. Example objectives could include removing or managing invasive vegetation and replanting natives, terracing stream banks, managing runoff from crop production and livestock operations, and consolidating recreation access away from sensitive habitats.
- Promote and enhance habitat diversity and connectivity, especially for sensitive or rare habitats (e.g., shrub-steppe, wetland, and riparian zones). Example objectives could include incorporating habitat complexity and reconnecting streams with their floodplains and off-channel habitats.
- Protect and maintain water quality, which contributes to the recovery of sensitive species and improves impaired temperatures and contaminant conditions. Example objectives could include implementing BMPs for soil erosion and for applying pesticides, herbicides, and fertilizers in irrigated areas and reducing unnecessary impervious surface area.

### **4.3 Restoration Opportunities**

Restoration opportunities exist for restoration of SE WA Region shorelines, presented subsequently by reach and specific projects or sites.

#### **4.3.1 General Restoration Opportunities**

Various ecological benefits can be realized if shoreline impairments are addressed by restoration in the Coalition shorelines. Opportunities can be identified and compared against various criteria to prioritize implementation. The habitat plans and programs described in Section 3 of this document describe direction and recommendations for actions to address many of the impairments that occur within the Coalition. Tables 2a through 2e show key development and ecological stressors and potential restoration and protection opportunities that various plans and programs have identified, including the reasons for the habitat impairment and a summary of the ecological benefits to be realized from the actions. The IAC Report (Anchor QEA 2015) also included recommended actions for specific areas within Coalition SMP boundaries (see the IAC Report for reach extents).

Major opportunities identified include establishing or protecting sensitive habitats, such as riparian, wetland, and shrub-steppe habitats, and habitat for other upland species. This could be accomplished by consolidating or restricting access to these areas for recreation purposes, livestock grazing and crop production, and development in general. WDFW has recommended specific measures for shrub-steppe habitat restoration (WDFW 2011a) and given direction for managing these habitats in developed areas (WDFW 2011b). Protecting or improving water quality is also a key element of habitat management in the SE WA Region, particularly controlling sediment contributions within watersheds and improving water temperature (i.e., cooling warmer waters). Examples of measures that could be used to improve or protect water quality include implementing the most recent state stormwater controls, increasing riparian vegetation cover, and livestock exclusion, as well as using BMPs for soil erosion and control of pesticides, herbicides, and fertilizers to irrigated areas within the SE WA Region. In addition, the two dams along the Snake River within the SE WA Region pose threats to recovery of Snake River sockeye salmon. General actions to mitigate this were outlined in the recovery plan, including changes in dam operations to mitigate for temperature barriers and prevent predation from birds and other fish (NOAA 2015c).

**Table 3a**  
**Site-specific Restoration Opportunities – Asotin Creek and Associated Tributaries**

<b>Location/Associated Reach</b>	<b>Project Name</b>	<b>Purpose</b>	<b>Description</b>	<b>Project Status*</b>	<b>Source</b>
Asotin Creek – Upland	Asotin Creek Upland BMPs	Fine sediment reduction	Use of BMPs on lands that may be converted to conventional tillage	Conceptual	Snake River Salmon Recovery – 3 Year Work Plan
SR 1c	Headgate Park Habitat Complexity	Habitat complexity	Form pools and interstitial spaces by creating logjams with wood or rock placement	Active (2016)	Snake River Salmon Recovery – 3 Year Work Plan
SR 1c	CREP Asotin Creek Restoration and Protection Reach	Riparian restoration	Limit agricultural activities with a prescribed riparian buffer	Active (June 30, 2010)	Snake River Salmon Recovery – 3 Year Work Plan
SR 1c	Headgate Fish Passage Final Design and Construction	Fish passage	Create notch and roughened channel to allow fish passage	Active (December 6, 2015)	Snake River Salmon Recovery – 3 Year Work Plan
NF Asotin Creek	Asotin Creek Prescribed Fire Project	Native vegetation; reintroduction of natural disturbance	Reduce ground fuel accumulations, tree densities, and ladder fuels; maintain historical vegetation and mimic disturbance regime	Proposed	Umatilla National Forest Current and Recent Projects
NF, SF, and Charley Creek (SR 1a) – Asotin/Garfield County	Asotin NF and SF and Charley Creek Channel Complexity – IMW	Channel complexity	Restore pool and gravel bar abundance through placement of IMW	Active (December 31, 2015)	Snake River Salmon Recovery – 3 Year Work Plan
NF, SF, and Charley Creek (SR 1a) – Asotin/Garfield County	Riparian Restoration on WDFW Property in Asotin Creek	Riparian restoration	Control weeds and native species planting	Active (January 15, 2019)	Snake River Salmon Recovery – 3 Year Work Plan

<b>Location/Associated Reach</b>	<b>Project Name</b>	<b>Purpose</b>	<b>Description</b>	<b>Project Status*</b>	<b>Source</b>
George Creek	CREP Asotin Creek Restoration and Protection Reach	Restoration and protection of riparian habitat	Enroll landowners in the CREP	Active (June 30, 2020)	Snake River Salmon Recovery – 3 Year Work Plan
Upstream of George Creek Reach	Ayers Gulch Sediment Retention Pilot	Reduction of fine sediment	Develop sediment retention basins to collect sediment for riparian plantings	Conceptual	Snake River Salmon Recovery – 3 Year Work Plan
Unknown	Restoration Phase of the Asotin Creek IMW – Asotin and Charley Creek Riparian Acquisition	Unknown	Not available for public access	Unknown	Snake River Salmon Recovery – 3 Year Work Plan

Notes:

\*Project Status is assigned either Conceptual, Proposed (anticipated start date), or Active (proposed completion date).

BMP = best management practice

CREP = Conservation Reserve Enhancement Program

IMW = Intensively Monitored Watershed

NF = North Fork

SF = South Fork

SR = subreach

WDFW = Washington State Department of Fish and Wildlife

**Table 3b**  
**Site-specific Restoration Opportunities – Grand Ronde River and Associated Tributaries**

<b>Location/ Associated Reach</b>	<b>Project</b>	<b>Purpose</b>	<b>Description</b>	<b>Project Status*</b>	<b>Source</b>
Multiple	CREP Grande Ronde River Restoration and Protection Reach	Restoration and protection of riparian habitat	Enroll landowners in the CREP	Active (June 30, 2020)	Snake River Salmon Recovery – 3 Year Work Plan
Joseph Creek SR 1a/1b	Riparian Restoration	Riparian restoration and reduction of fine sediment	Stabilize banks through riparian restoration	Conceptual	Snake River Salmon Recovery – 3 Year Work Plan
Joseph Creek SR 1b	Joseph Creek Irrigation Efficiency and Riparian Restoration	Instream flow and reduction of temperature	Improve irrigation and riparian planting	Conceptual	Snake River Salmon Recovery – 3 Year Work Plan
Joseph Creek SR 1b/1c	Joseph Creek Riparian Restoration	Reduction of temperature	Plant and protect riparian buffers	Active (January 1, 2025)	Snake River Salmon Recovery – 3 Year Work Plan

## Notes:

\*Project Status is assigned either Conceptual, Proposed (anticipated start date), or Active (proposed completion date).

CREP = Conservation Reserve Enhancement Program

SR = subreach

**Table 3c**  
**Site-specific Restoration Opportunities – Snake River**

<b>Location or Associated Reach</b>	<b>Project Name</b>	<b>Purpose</b>	<b>Description</b>	<b>Project Status</b>	<b>Source</b>
Above Lower Granite Dam	N/A	Reduce temperature and increase water quality	Restore habitat along mainstem	Conceptual	ESA Snake River Sockeye Recovery Plan 2014 (pages 268, 288, 289)
Lower Granite Dam	N/A	Facilitate migration	Make configuration and operation changes; short- and long-term measures to prevent temperature block in adult ladder	Conceptual	ESA Snake River Sockeye Recovery Plan 2014 (page 295)
Mainstem	N/A	Protect and conserve natural ecological processes that support population viability	Explore opportunities to protect intact riparian areas	Conceptual	ESA Snake River Sockeye Recovery Plan 2014 (page 297)
Mainstem	N/A	Protect and conserve natural ecological processes that support population viability	Explore opportunities to protect remaining high-quality, off-channel habitat and restore areas with potential	Conceptual	ESA Snake River Sockeye Recovery Plan 2014 (page 297)
Mainstem	N/A	Protect and conserve natural ecological processes that support population viability	Assess nearshore and cold-water refugia	Conceptual	ESA Snake River Sockeye Recovery Plan 2014 (page 297)
Mainstem	N/A	Increase water quality	Identify water quality sources and implement BMPs	Conceptual	ESA Snake River Sockeye Recovery Plan 2014 (page 298)

Location or Associated Reach	Project Name	Purpose	Description	Project Status	Source
Mainstem	N/A	Increase water quality	Implement Water Quality Plan for total dissolved gas and temperature	Conceptual	ESA Snake River Sockeye Recovery Plan 2014 (page 298)
At dams	N/A	Remove northern pikeminnow to reduce imbalance in predation	Evaluate effectiveness and efficiency of a hook-and-line fishery in area inaccessible to sport fishers	Conceptual	ESA Snake River Sockeye Recovery Plan 2014 (page 299)
At dams	N/A	Reduce imbalance in predation	Implement and improve deterrent devices to keep avian predators away from juvenile salmonid concentration areas	Conceptual	ESA Snake River Sockeye Recovery Plan 2014 (page 299)
At dams	N/A	Stop the spread of invasive species	Encourage educational and monitoring projects and enforce laws to stop spread of invasive species	Conceptual	ESA Snake River Sockeye Recovery Plan 2014 (page 300)
Mainstem	N/A	Reduce temperature to mitigate for climate change	Retain shade along stream channels and augment summer flows	Conceptual	ESA Snake River Sockeye Recovery Plan 2014 (page 300)

## Notes:

BMP = best management practice

ESA = Endangered Species Act

N/A = not applicable

**Table 3d**  
**Site-specific Restoration Opportunities – Touchet River and Associated Tributaries**

<b>Location/ Associated Reach</b>	<b>Project</b>	<b>Purpose</b>	<b>Description</b>	<b>Project Status*</b>	<b>Source</b>
NF – All reaches	Reduce Point Source Inputs	Water quality	Improve road maintenance to reduce fine sediment inputs that carry pollutants	Conceptual	Snake River Salmon Recovery – 3 Year Work Plan
NF – All reaches	North Touchet Levee Setback and Habitat Improvements	Floodplain restoration; riparian habitat	Complete levee setbacks and floodplain excavation; ensure placement of wood and rock structures; and complete riparian planting	Proposed (December 5,2014)	Snake River Salmon Recovery – 3 Year Work Plan
NF SR 1a/1b	North Fork Touchet Recreation in Channel Disturbances	Habitat restoration	Reduce channel disturbance	Conceptual	Snake River Salmon Recovery – 3 Year Work Plan
NF SR 1c	Upper Touchet River Fish Screen	Salmon habitat	Upgrade irrigation diversion fish screens in the Upper Touchet River	Conceptual	Snake River Salmon Recovery – 3 Year Work Plan
NF SR 1d SF SR 1c	Touchet Forks Restoration Design and Implementation	Fine sediment; flood reduction; habitat restoration	Design and implement a project that benefits salmon, reduces flood stage, and reduces sediment transport	Active (January 1, 2016)	Snake River Salmon Recovery – 3 Year Work Plan
SF – All reaches NF – All reaches Wolf Fork – All reaches	CREP Upper Touchet River Restoration and Protection Reach	Riparian habitat restoration and protection	Enroll landowners in the CREP	Active (June 30, 2020)	Snake River Salmon Recovery – 3 Year Work Plan
SF SR 1a	Floodplain Channel Connectivity	Channel complexity; floodplain restoration	Reconnect the stream to the floodplain through placement of logs and increased channel complexity	Conceptual	Snake River Salmon Recovery – 3 Year Work Plan

<b>Location/ Associated Reach</b>	<b>Project</b>	<b>Purpose</b>	<b>Description</b>	<b>Project Status*</b>	<b>Source</b>
SR 1a	Touchet Valley Golf Course Irrigation Efficiency	Water quality; instream flow	Increase irrigation efficiency at the golf course	Conceptual	Snake River Salmon Recovery – 3 Year Work Plan
SR 1a	Touchet River Riparian and Floodplain Restoration	Floodplain connection and function	Promote development of restoration projects	Conceptual	Snake River Salmon Recovery – 3 Year Work Plan
SR 1a (RM 8.5)	Rainwater Riparian/ Floodplain Restoration	Floodplain restoration; channel complexity	Remove the cobble berm, replace the bridge, and add wood structures	Active (December 15, 2016)	Snake River Salmon Recovery – 3 Year Work Plan
SR 1d (on border of Walla Walla County)	Touchet River Dike Setback Design Construct (Lindy Levee)	Floodplain restoration	Provide a larger floodplain volume to increase flood capacity and provide healthy riparian habitat	Conceptual	Snake River Salmon Recovery – 3 Year Work Plan
Unknown	West End Ditch (Columbia County)	Geomorphic process restoration	Not available for public access	Active	Snake River Salmon Recovery – 3 Year Work Plan

## Notes:

\*Project Status is assigned either Conceptual, Proposed (anticipated start date), or Active (proposed completion date).

CREP = Conservation Reserve Enhancement Program

NF = North Fork

RM = river mile

SF = South Fork

SR = subreach

**Table 3e**  
**Site-specific Restoration Opportunities – Tucannon River and Associated Tributaries**

<b>Location/ Associated Reach</b>	<b>Project</b>	<b>Purpose</b>	<b>Description</b>	<b>Project Status*</b>	<b>Source</b>
All reaches	CREP Tucannon River Restoration and Protection Reach	Restoration and protection of riparian habitat	Enroll landowners in the CREP	Active (June 30, 2020)	Snake River Salmon Recover – 3 Year Work Plan
All reaches	Non-CREP Easements	Habitat protection	Permanently protect areas that have been restored or are functioning	Conceptual	Snake River Salmon Recover – 3 Year Work Plan
All reaches	Irrigation Efficiency Projects	Instream flow; water quality	Reduce the amount of water taken for irrigation to increase flow and reduce runoff	Active (June 28, 2024)	Snake River Salmon Recover – 3 Year Work Plan
SR 1a RM 46.4-45.95	Project No. 5 – Camp Wooten Road Relocation	Floodplain connection; channel complexity; riparian restoration	Remove the road, place the LWD, and connect the side channel	Conceptual	Snake River Salmon Recover – 3 Year Work Plan
SR 1a RM 49.1-48.65	Project No. 2 – Instream Complexity at Cow Camp	Channel complexity	Place the LWD and create a side channel	Conceptual	Snake River Salmon Recover – 3 Year Work Plan
SR 1a/1b	Impoundment Lakes Restoration	Salmonid habitat; water quality; floodplain connection	Restore impoundment lakes to reduce temperature and reconnect floodplain	Conceptual	Snake River Salmon Recover – 3 Year Work Plan

<b>Location/ Associated Reach</b>	<b>Project</b>	<b>Purpose</b>	<b>Description</b>	<b>Project Status*</b>	<b>Source</b>
SR 1a/1b	Power Line Right-of-Way	Riparian restoration	Remove overhead power lines and relocate to the outside of the riparian zone	Conceptual	Snake River Salmon Recover – 3 Year Work Plan
SR 1b RM 44.4-44	Project No. 9 – Big Four Lake Modification and LWD	Channel complexity; floodplain connection	Remove Big Four Lake, decommission parking area, and place LWD	Active (Fall 2017)	Snake River Salmon Recover – 3 Year Work Plan
SR 1b RM 44.85-44.4	Project No. 8 – Curl Lake Levee Setback	Off-channel habitat; floodplain connection	Remove levee and bank armoring, place material on Curl Lake berm, place LWD, and perform riparian planting	Active (Fall 2017)	Snake River Salmon Recover – 3 Year Work Plan
SR 1b RM 40.7-40	Project No. 12 – Deer Lake Side Channel LWD Augmentation	Channel complexity	Place LWD	Conceptual	Snake River Salmon Recover – 3 Year Work Plan
SR 1b RM 45.3-44.85	USFS Road Relocated out of Floodplain	Floodplain connection; channel complexity	Relocate road and place LWD	Conceptual	Snake River Salmon Recover – 3 Year Work Plan
SR 1a/1b RM 45.95-45.3	Project No. 6 – Camp Ground Bridge Relocation	Channel complexity	Relocate existing campground and place LWD	Active (Fall 2017)	Snake River Salmon Recover – 3 Year Work Plan
SR 1a/1b RM: 41.85-40.5	Tucannon LWD Restoration Project Area 11	Channel complexity	Install wood structure and mobile woody debris	Active (February 29, 2016)	Snake River Salmon Recover – 3 Year Work Plan

<b>Location/ Associated Reach</b>	<b>Project</b>	<b>Purpose</b>	<b>Description</b>	<b>Project Status*</b>	<b>Source</b>
SR 1b/2a RM 40-39.2	Project No. 13 – Rainbow Lake Reach Levees and LWD	Floodplain connection; channel complexity	Remove or setback levees and place LWD	Active (Fall 2017)	Snake River Salmon Recover – 3 Year Work Plan
SR 2a RM 32.1-31.8	Project No. 19 – Bridge Widening and LWD	Floodplain connection; channel complexity	Remove bridge and bank armoring and place LWD	Conceptual	Snake River Salmon Recover – 3 Year Work Plan
SR 2a RM 36.35-34.9	Project No. 16 – Last Resort Community	Channel complexity; off- channel habitat	Add LWD at low-risk areas, perform levee removal, and create off-channel habitat	Conceptual	Snake River Salmon Recover – 3 Year Work Plan
SR 2b RM 31.8-31.5	Project No. 20 – Riparian Easement	Habitat protection	Protect riparian habitat through BMPs such as fencing	Conceptual	Snake River Salmon Recover – 3 Year Work Plan
SR 2b RM 29.3-28.25	Project No. 23 – Floodplain Ramirez	Floodplain connection	Widen floodplain corridor by setting back or removing infrastructure and add complexity by placing LWD	Active (2016)	Snake River Salmon Recover – 3 Year Work Plan
SR 2b RM 31.5-30.3	Project No. 21 – LWD and Levee Setback	Channel complexity; floodplain connection	Open new flow pathways, setback levees, armoring, and spoil piles, and place LWD	Active (2016)	Snake River Salmon Recover – 3 Year Work Plan
SR 2b RM 35.15-34.3	Project No. 17 – McGovern Lane LWD, Floodplain, and Riparian Restoration	Floodplain connection; channel complexity	Place LWD, relocate road, remove levee and armoring, and create off-channel areas	Conceptual	Snake River Salmon Recover – 3 Year Work Plan

<b>Location/ Associated Reach</b>	<b>Project</b>	<b>Purpose</b>	<b>Description</b>	<b>Project Status*</b>	<b>Source</b>
SR 2b RM 28.25-27.5	Project No. 24 – Floodplain and Channel Complexity	Channel complexity	Place the LWD and breach the levee to create side channels	Active (December 31, 2016)	Snake River Salmon Recover – 3 Year Work Plan
SR 2b	Improve Fish Migration Corridor into Tualum Creek	Fish passage	Replace the culvert where Tualum Creek enters Tucannon River	Conceptual	Snake River Salmon Recover – 3 Year Work Plan
SR 2b-2h	Protection Area Identified in the Assessment of Easements	Habitat protection	Engage in involvement with landowners to provide information and determine interest in conservation easements	Conceptual	Snake River Salmon Recover – 3 Year Work Plan
SR 2c RM 23.65- 22.85	Project No. 27 – King Bridge Levee Setback	Channel complexity	Remove levees, place the LWD, and remove armoring	Conceptual	Snake River Salmon Recover – 3 Year Work Plan
SR 2c/2d RM 22.85-20	Project No. 28 – King Grade Down	Floodplain connectivity; channel complexity	Remove the levee and place the LWD	Conceptual	Snake River Salmon Recover – 3 Year Work Plan
SR 2g Town of Starbuck	Reach 2 Project 1-6	Floodplain connectivity; off-channel habitat/ complexity	Remove and set back levees, place the LWD, develop the side channel, and perform riparian restoration	Conceptual (January 1, 2012)	Snake River Salmon Recover – 3 Year Work Plan

<b>Location/ Associated Reach</b>	<b>Project</b>	<b>Purpose</b>	<b>Description</b>	<b>Project Status*</b>	<b>Source</b>
SR 2g	Noxious Weed Control	Invasive species	Perform assessment of false indigo bush control methods	Conceptual	Snake River Salmon Recover – 3 Year Work Plan
All locations	Conservation tillage	Fine sediment reduction	Maintain conservation tillage practices as applicable and upland improvements to benefit shoreline hydrology and water quality	Active	Conservation Districts

Notes:

\*Project Status is assigned either Conceptual, Proposed (anticipated start date), or Active (proposed completion date).

BMP = best management practice

CREP = Conservation Reserve Enhancement Program

LWD = large woody debris

RM = river mile

SR = subreach

USFS = U.S. Forest Service

### **4.3.2 Site-specific Restoration and Protection Opportunities**

Although most plans and programs from the SMP jurisdictional area address large-scale direction and management, some plans set out specific actions for specific locations. These include publicly owned lands, existing wildlife protection areas, and privately owned lands. The Snake River Salmon Recovery Board (SRSRB) published a 3-year work plan, which outlines restoration activities that could take place for the Snake River and associated tributaries, and the county conservation districts have also addressed priority watershed actions within their jurisdictions. For example, the State of Washington and the SRSRB selected Asotin Creek and its watershed as an Intensively Monitored Watershed (IMW). These locations are selected to study whether wild steelhead numbers will increase after a large amount of stream restoration, and Asotin Creek was chosen as a location for an IMW due to its history of local landowner support for conservation and restoration practices; there is also a large amount of historical information on the steelhead population. Projects like these and other opportunities are listed in Tables 3a through 3e, with notes regarding the source document, impairment to be addressed, and key benefits to ecological function that are expected as a result of project implementation.

### **4.4 Project Evaluation and Prioritization Criteria**

Projects and opportunities in this Plan can be evaluated against various criteria to prioritize implementation. The following list includes a description of criteria that indicate a project is viewed as implementable in accordance with this Plan.

Potential projects should achieve the following:

- Meet goals and objectives for shoreline restoration (see Section 4.2 of this Plan)
- Maintain consistency with existing plans and programs (see Section 3 of this Plan)
- Have public support
- Be located on public property or property owned by a willing or compliant partner in restoration projects
- Restore ecosystem processes or provide habitat protection (those that restore function by providing only habitat structure would take a lesser priority)
- Improve a rapidly deteriorating habitat condition
- Have high benefit to ecosystem function relative to cost

- Provide riparian, shoreline, or instream habitat for spawning- and rearing-listed salmonids or improve conditions in sensitive shrub-steppe systems for state and federally listed native wildlife (e.g., Greater Sage grouse, burrowing owl, Townsend's ground squirrel; a list of wildlife are given in WDFW 2011b)

All specific projects or actions that comprise a project listed in Tables 2a through 2e exhibit some, if not all, of the previous criteria. To prioritize these actions, they were assigned to a category of Very High, High, and Moderate relative to their value in achieving the SMP goal of no net loss for shorelines within Coalition SMP jurisdiction (see Tables 2a through 2e).

Projects were categorized as follows:

- Very High – Habitat protection projects or actions
- High – Restoration of ecosystem functions (funded actions take higher priority within this category)
- Moderate – Restoration of habitat structure (funded actions take higher priority within this category)

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## 5 IMPLEMENTATION, MONITORING, AND REVIEW

Implementation of the Plan will require close coordination among the Coalition, Ecology, and other organizational partners noted in Section 3 of this Plan.

### 5.1 Potential Restoration Funding Partners

Much of the restoration opportunities described in this Plan are dependent on grant funding and the variety of outside funding sources available for restoration work. Funds are distributed through grant-making agencies at the local, state, and federal levels; opportunities subsequently described are primarily administered by state and federal agencies. It is expected that funding will be derived from various sources. Sources listed herein do not represent the exhaustive list of potential funding opportunities but are meant to provide an overview of the types of opportunities available. These sources include the following:

- American Rivers – NOAA Community-based Restoration Program
- American Sportfishing Association’s Fish America Foundation Grants
- ACCD
- Ecology
  - Aquatic Weeds Financial Assistance Program
  - Water Quality Grants, including the federal Clean Water Act Section 319 Program and Centennial Clean Water Fund
  - Coastal Protection Fund (Terry Hussman) Grant Program
- Environmental Protection Agency Region 10: Pacific Northwest
  - The Clean Water State Revolving Fund Program
  - Nonpoint Source Implementation Grant (319) Program
  - Wetland protection, restoration, and stewardship discretionary funding
- CCCD
- National Fish and Wildlife Foundation
  - Bring Back the Natives: A Public-private Partnership for Restoring Populations of Native Aquatic Species
  - Five-star Restoration Matching Grants Program

- Native Plant Conservation Initiative
- The Migratory Bird Conservancy
- PCD
- Recreation and Conservation Office of Washington
  - SRFB
  - ALEA
  - Family Forest Fish Passage Program
  - Land and Water Conservation Fund
  - Washington Wildlife Recreation Program
- USFWS
  - Partners for Fish and Wildlife Program
  - National Fish Passage Program
  - Cooperative Endangered Species Conservation Fund
  - North American Wetlands Conservation Act Grants Program
- NOAA Restoration Center
  - CRP (in partnership with American Rivers Foundation)
  - NOAA CRP 3-year partnership grants
  - NOAA CRP project grants
- WDFW
  - ALEA Volunteer Cooperative Projects Program
  - Landowner Incentive Program
  - RFEG
- Private foundations, businesses, and other groups administer grant programs that include funding for shoreline habitat and ecosystems, including the following:
  - The Russell Family Foundation
  - William C. Kenney Watershed Protection Foundation
  - Northwest Fund for the Environment
  - Kongsgaard-Goldman Foundation
  - The Bullitt Foundation
  - The Compton Foundation

- Doris Duke Charitable Foundation
- The Hugh and Jane Ferguson Foundation Wild Fish Conservancy

## 5.2 Timelines, Benchmarks, and Monitoring

The Coalition's restoration work as it relates to this Plan should be monitored and evaluated on a set timeline against a suite of benchmarks to determine consistency with the state's SMP policy standard of no net loss of ecological functions. This Plan will be implemented by the respective Coalition jurisdictions once the SMP is adopted, and the evaluation of no net loss of ecological functions will be completed by the respective Coalition jurisdictions. Projects proposed in this Plan could be implemented by each jurisdiction with the following suggested timeline, depending on the timing and number of projects that would affect shoreline ecological functions as well as restoration funding availability. Monitoring of restoration projects will be consistent with Critical Areas mitigation monitoring requirements described in SMP XX.XX.510 General Mitigation Requirements.

The following will be completed annually after adoption of this Plan:

- Prepare a summary of benchmarks associated with permitted shoreline actions.
- Continue to interact with organizations dedicated to restoration, such as SRSRB and local conservation districts, to explore funding options and partnerships to pursue Restoration Plan implementation.
- Support regular public outreach on shorelines through newsletters, public workshops on voluntary restoration measures, websites, or other forums.

The following will be completed within 5 years of adoption of this Plan:

- Each member of the Coalition will identify and support implementation of at least one of the identified restoration projects, except for Starbuck, who will support Tucannon River restoration efforts upstream of the City during this 5-year period.
- Prepare a status report on Restoration Plan implementation and update this Plan as necessary to meet goals and objectives and no net loss of ecological function.

The following will take place within 10 years of adoption of this Plan:

- The members of the Coalition will identify and implement an additional three (or more) restoration projects, which can be completed by any jurisdiction within the Coalition.
- Continue to explore and solidify funding options and partnerships.
- Update the Plan as necessary.
- Prioritize, fund, and complete a set number of restoration projects (commensurate with the number of development applications received).
- Explore and solidify regular funding opportunities for future projects.

Quantifiable benchmarks should be compiled to track changes in shoreline conditions and create documentation for no net loss of shoreline function. The review of benchmarks should consider the shoreline projects permitted and restoration activities that were implemented and whether restoration projects resulted in a net improvement of shoreline resources. Tracking progress should be done in coordination with the SRSRB and other agencies involved in restoration activities. The Coalition members can track projects implemented on shoreline waterbodies through existing programs.

Information and indicators from project applications, permits, and completion reports from those involved in restoration activities can be compiled to account for changes to shorelines and ecological functions over time. Possible data could include the following:

- Shoreline variances and reasons or nature of variance
- Linear distance of new hard armoring and hard armoring removed above the ordinary high water mark (OHWM)
- Linear distance of new soft shoreline stabilization
- Linear distance of new or enhanced native riparian vegetation and native vegetation removals
- Area of invasive plant species restored to native species
- Number of new boat launches and impact areas
- Number of new boat ramps or boat ramps removed
- Number of new piles or piles removed
- Cubic yardage and coverage area of fill removed or replaced below the OHWM
- Number of new outfalls or outfalls removed or consolidated
- Number of culverts removed and fish passage habitat miles restored

- Wetland acreage existing, restored, and lost
- Increases or decreases in impervious surface area
- Monitoring changes in 303(d) listings of Coalition waterbodies on state water quality assessments

Using the checklists and annual reports, the Coalition or individual jurisdictions within the Coalition will reassess the level of ecological functions and restoration objectives. Ecological conditions and functions that demonstrate a trend toward impairment would be corrected through priority action to prevent loss of function or important shoreline resources. Review of annual reports showing improvements in ecological function as a result of restoration implementation may reduce the level of importance of some restoration objectives moving forward.

### **5.3 Shoreline Master Program Review**

The Coalition will be required to conduct periodic SMP updates, which will include an evaluation of the efficacy of the SMP and this Plan. This review will involve comparing past conditions with existing conditions and assessing whether the actions, policies, and regulations set since the last SMP update have been valuable in ensuring no net loss. The evaluation will be an opportunity to adjust these measures as applicable for the benefit of future shoreline conditions.

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