

GRANT # G1400528

SHORELINE RESTORATION PLAN

City of Bingen Shoreline Master Program

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TABLE OF CONTENTS

	Page #
1 Introduction.....	1
1.1 Background & Purpose.....	1
1.2 Uses.....	2
2 Goals & Objectives	2
3 Shoreline Impairments & Restoration Opportunities.....	3
3.1 Context.....	3
3.2 Actions.....	4
4 Implementation	6
4.1 Potential Restoration Partners	6
4.1.1 Regional Agencies & Quasi-Governmental Organizations.....	6
4.1.2 State Agencies	7
4.1.3 Federal Agencies	8
4.1.4 Tribal Organizations	9
4.1.5 Non-Governmental Organizations.....	9
4.2 Funding Mechanisms.....	10
4.3 Design & Permitting	11
4.4 Outreach & Education	11
4.5 Tracking	12
5 References	13

SHORELINE RESTORATION PLAN

CITY OF BINGEN SHORELINE MASTER PROGRAM

1 INTRODUCTION

1.1 Background & Purpose

As part of a comprehensive Shoreline Master Program (SMP) update, as elaborated on in the SMP Guidelines (Washington Administrative Code [WAC] 173-26), local jurisdictions are required to plan for the restoration of impaired shoreline functions. Such planning “should be designed to achieve overall improvements in shoreline ecological function over time, when compared to the status upon adoption of the master program” (WAC 173-26-201(2)(f)). The purpose of this Shoreline Restoration Plan is to plan for the restoration of impaired shorelines for the City of Bingen (City or Bingen). Some of the potential restoration actions described in this document may not be specifically applicable within Bingen; however, such potential restoration actions may apply to areas upstream or downstream within the surrounding area and result in improvements to shoreline ecological functions within the City.

As defined in the SMP Guidelines, “restoration” means the reestablishment or upgrading of impaired ecological shoreline processes or functions. The SMP Guidelines indicate that restoration may be accomplished through measures including, but not limited to, revegetation, removal of intrusive shoreline structures, and removal or treatment of toxic materials. However, restoration does not imply a requirement for returning the shoreline area to aboriginal or pre-European settlement conditions (WAC 173-26-020(31)).

Importantly, this Shoreline Restoration Plan is a **non-regulatory** component of the City’s SMP update. This Shoreline Restoration Plan represents a vision for **voluntary** restoration to be implemented over time and result in ongoing improvements to shoreline ecological functions within Bingen. While some of the opportunities identified in this Shoreline Restoration Plan may concern private property, the City does not intend to require restoration on private property or to commit private property for restoration purposes without the willing cooperation and participation of affected landowners.

Presently, the restoration opportunities identified in this Shoreline Restoration Plan are conceptual. However, with City support and potential collaboration with one or more restoration partners, the conceptual restoration opportunities identified in this Shoreline Restoration Plan could be funded and implemented.

1.2 Uses

This Shoreline Restoration Plan could be used by agencies, interest groups, and property owners in the following ways:

- *Grant applications* – If grant applications require or recommend inclusion in a publicly vetted and approved plan, the identification of programs and projects in this Shoreline Restoration Plan may facilitate obtaining grant funding.
- *Information resource* – Subsections 4.1 and 4.2 identify several agencies and organizations that are actively involved in shoreline restoration, conservation, and protection in the Bingen area. These organizations could be consulted by property owners or other parties considering undertaking a restoration action.
- *Mitigation* – In situations that require off-site mitigation, this Shoreline Restoration Plan could provide ideas to maximize the regional impact of the mitigation.

2 GOALS & OBJECTIVES

The goal of this Shoreline Restoration Plan is to achieve overall improvements in shoreline ecological function over time, when compared to existing conditions.

The following objectives provide more detail of how the City and potential restoration partners might work to achieve a net improvement in shoreline ecological functions:

- *Objective 1* – Protect natural shoreline ecological processes and functions, and restore those processes and functions that have been altered.
- *Objective 2* – Maintain biodiversity and conserve unique, fragile, and valuable species and habitats.

3 SHORELINE IMPAIRMENTS & RESTORATION OPPORTUNITIES

3.1 Context

The Shoreline Analysis Report for Shorelines in the City of Bingen: Columbia River (Shoreline Analysis Report; The Watershed Company 2015) provides a detailed look at shoreline ecosystem conditions, including climate, geology, key species and habitats, and major land use changes. As discussed in that document, the Columbia River qualifies as the only Shoreline of the State in Bingen. The City's proposed shoreline jurisdiction covers 54.8 acres of shorelands situated adjacent to 13,087 linear feet of shoreline. Figure 3-1 displays the extent of proposed shoreline jurisdiction in the City. Most of the City's shoreline jurisdiction is located in the southwestern portion of the City, though a smaller, isolated segment is located in the southeastern most corner of the City.



Figure 3-1. Proposed shoreline jurisdiction in Bingen (in red).

Land in shoreline jurisdiction is predominantly owned by the SDS Lumber Company, one of the largest employers in Klickitat County. The facility is an integrated lumber mill that receives logs for processing into lumber, plywood and wood chips. Operations include docks for mooring and loading barges, log rafting and storage, and a water intake pump house and condenser outfall. The facility discharges to the Columbia River under a National Pollutant Discharge Elimination System permit.

The main segment of shoreline jurisdiction is located on a partially manmade spit and industrial activities occur throughout the site. Ecological function is limited due to the hardened shoreline, lack of upland connectivity, and water-dependent industrial uses. In most of the smaller, isolated segment of shoreline jurisdiction, shoreline jurisdiction does not extend to the ordinary high water mark.

Bingen’s shoreline is zoned entirely Industrial, and future land use is expected to be consistent with this designation.

Overall, ecological function in Bingen’s shorelines is impaired due to the extent and nature of the existing industrial development. The presence of such industrial uses limits the potential for restoring some types of functions, such as riparian habitat. However, efforts could focus on opportunities for redevelopment with lower impact infrastructure. For example, the SDS Lumber Company has previously constructed bioswales on its property, which would be expected to provide improved water quality.

3.2 Actions

Table 3-1 lists key restoration strategies, associated potential actions, and issues addressed for the Columbia River. This table is derived from the Columbia River Shoreline Project Identification (Inter-fluve 2013) and the ESA Recovery Plan for the White Salmon River Watershed (2013). Notes specific to Bingen are also provided. Some potential actions may not be specifically applicable within Bingen, but may apply to areas upstream or downstream within the surrounding area.

Table 3-1. Restoration strategies, associated potential actions, and issues addressed for the Columbia River in the Bingen area.

Strategy	Potential Actions	Issues Addressed
Protect existing functioning habitat and ecosystem processes	<ul style="list-style-type: none"> • Conservation easements, long-term leases, land exchanges, etc. • Public education and outreach <p><i>Notes specific to Bingen: open water at the western end of the Columbia River reach may provide habitat for waterfowl.</i></p>	All

Strategy	Potential Actions	Issues Addressed
Create shallow nearshore habitat in river mainstem	<ul style="list-style-type: none"> • Add material to extend shallow shoreline habitat out from banks where such actions would not inhibit water-dependent uses 	Key habitats
Enhance shoreline complexity and vegetation in river mainstem	<ul style="list-style-type: none"> • Establish riparian buffer and manage for native plants • Enhance shoreline complexity and structure 	Key habitats, habitat complexity, riparian function
Improve hydrologic connectivity to backwaters*	<ul style="list-style-type: none"> • Enhance connectivity to backwaters by removing obstructions • Target backwaters that are fed by tributary or spring contribution or that otherwise have suitable water quality 	Key habitats, temperature, water quality
Enhance backwater form and function	<ul style="list-style-type: none"> • Re-contour backwater bed topography to achieve a complex range of depths and plant communities • Provide habitat structure along shorelines • Establish riparian buffer and manage for native plants 	Key habitats, habitat complexity, riparian function, temperature, water quality
Improve tributary hydrologic connectivity and fish passage	<ul style="list-style-type: none"> • Improve access to tributaries where culverts or other obstructions may limit passage <p><i>Notes specific to Bingen: Coho salmon, cutthroat trout, rainbow trout, and steelhead occurrence is documented in Jewett Creek, a tributary to the Columbia in Bingen's shoreline jurisdiction. The National Marine Fisheries Service's ESA Salmon Recovery Plan for the White Salmon River Watershed (2013) indicates that the gradient of the creek becomes impassable at the bluffs, so the entire portion of Jewett Creek accessible to anadromous fish is within City limits. Fish access Jewett Creek through a 120-inch pipe that discharges into the Columbia River.</i></p>	Key habitats, fish passage, temperature, water quality, instream flow
Improve fish passage to backwaters	<ul style="list-style-type: none"> • Remove berms or other obstructions • Install or upgrade culverts and bridges • Target backwaters that are fed by tributary or spring contributions 	Fish passage

* Backwaters are coves, ponds, lakes, lagoons, and wetland areas that are protected from the mainstem current. They may be connected, disconnected, or partially connected (e.g. culverted or only connected at high flows) to the mainstem.

4 IMPLEMENTATION

4.1 Potential Restoration Partners

Several agencies and organizations are actively involved in shoreline restoration, conservation, and protection in the Bingen area, and could be potential restoration partners for the City. These potential restoration partners and their local roles in shoreline protection and/or restoration are identified below.

4.1.1 Regional Agencies & Quasi-Governmental Organizations

[Northwest Power & Conservation Council](#)

The Pacific Northwest Electric Power Planning and Conservation Act of 1980 authorized the Northwest Power and Conservation Council (NPCC) to develop and maintain a regional power plan and fish and wildlife program to balance the Northwest's energy and environment needs. The NPCC is comprised of representatives from Idaho, Montana, Oregon, and Washington. The NPCC's Columbia River Basin Fish and Wildlife Program directs investment of electricity revenues into projects that improve fish passage at hydropower dams, acquire and improve fish and wildlife habitat, boost fish production using hatcheries, and implement adaptive management of these actions. Actions developed under the Columbia River Basin Fish and Wildlife Program are implemented by the Bonneville Power Administration, the US Army Corps of Engineers, the Bureau of Reclamation, and the Federal Energy Regulatory Commission.

Key Documents:

- [Columbia River Basin Fish & Wildlife Program \(2014\)](#)
This document describes in detail the Columbia River Basin Fish and Wildlife Program as developed by the NPCC, including a vision for the Columbia River Basin; the scientific foundation of the Columbia River Basin Fish and Wildlife Program; its restoration goals, objectives, and strategies; and an implementation and adaptive management plan.

[Klickitat County Lead Entity](#)

The Klickitat County Lead Entity for Salmon Recovery (Lead Entity) is responsible for evaluating and submitting habitat project applications to the Salmon Recovery Funding Board for funding consideration. Lead entities are local, watershed-based organizations that develop local salmon habitat recovery strategies and then recruit organizations to do habitat protection and restoration projects that will implement the strategies. Lead entities consist of a lead entity coordinator, a committee of local, technical experts, a

committee of local citizens and a lead entity grant administrator. The Klickitat County Department of Natural Resources is the Lead Entity for Klickitat County salmon recovery, which includes water resource inventory areas 29b, 30 and 31.

Key Documents:

- [Klickitat Lead Entity Region Salmon Recovery Strategy \(2013\)](#)
Sets the vision for salmonid recovery including goals and other components of the strategy for salmonid habitat recovery and protection.

Underwood Conservation District

The Underwood Conservation District (UCD) is a non-regulatory, not-for-profit, community-based subdivision of state government, made up of local community members and staff that administer programs for the productive use and conservation of natural resources. The UCD works with interested landowners in implementing conservation practices. They offer technical assistance, cost-share assistance, project and water quality monitoring, community involvement and education, and support of local stakeholder groups within the district.

Key Documents:

- [Fiscal Year 2014 Annual Work Plan](#)
This plan identifies priority program areas along with goals and funding sources for each program area.

4.1.2 State Agencies

Washington State Department of Ecology

The mission of the Washington State Department of Ecology (Ecology) is to protect, preserve, and enhance Washington's environment, and to promote the wise management of our air, land, and water for the benefit of current and future generations. Ecology is an active partner in monitoring and improving water quality conditions in accordance with Total Maximum Daily Loads in Klickitat County.

Washington State Department of Fish and Wildlife

In addition to reviewing applications for in-water work and issuing Hydraulic Project Approvals, the Washington State Department of Fish and Wildlife (WDFW) develops management plans for Washington's Priority Habitats and Species. WDFW also leads the state in resolving fish passage barrier problems through the Fish Passage Program, supporting public, state, and local agencies in their efforts to prioritize and fund fish passage barrier repairs across the state.

[Washington State Department of Natural Resources](#)

The Washington State Department of Natural Resources (DNR) owns and manages approximately five million acres of tidelands, forestlands, rangelands, and agriculture lands in Washington. DNR manages these lands for revenue, outdoor recreation, and habitat for native fish and wildlife.

DNR is responsible for managing forest practices in Washington through the Forest Practices Program. The Forest Practices Program and rules require the maintenance and restoration of aquatic and riparian habitat.

The Aquatic Restoration Program of DNR works to restore, enhance, create, and protect healthy ecological conditions in freshwater, saltwater and estuarine aquatic systems through partnerships with agencies and organizations. DNR provides funds, permit assistance, planning, and technical assistance for project partnerships.

[Washington State Recreation & Conservation Office](#)

The Washington State Recreation and Conservation Office manages grant programs to create outdoor recreation opportunities, protect high quality wildlife habitat and farmland, and aid salmon recovery.

4.1.3 Federal Agencies

[Bureau of Indian Affairs](#)

The Bureau of Indian Affairs' Division of Natural Resources provides coordination, management, planning, oversight, and monitoring for development and protection of trust natural resources, including fish and wildlife resources. The division provides direction and guidance for all activities related to the planning, management, conservation, development, and utilization of soil, water, farmland, rangeland, fish and wildlife resources, and endangered species. The Bureau of Indian Affairs' responsibilities under the Federal Power Act in re-licensing hydropower projects that affect Indian trust resources are carried out by the Division of Natural Resources. The division is also responsible for the Bureau's Natural Resource Damage Assessment and Restoration Program.

[US Army Corps of Engineers](#)

In addition to its project permitting responsibilities, the US Army Corps is active in the area through its management of the Columbia River Dam system, including the Bonneville Dam located downstream of Bingen. The effects of dam management on the Columbia River are mitigated through the Northwest Planning and Conservation

Commission, as described in Subsection 4.1.1. Actions developed under the Columbia River Basin Fish and Wildlife Program are implemented by the US Army Corps of Engineers, among other agencies.

4.1.4 Tribal Organizations

Columbia River Inter-Tribal Fish Commission

The Columbia River Inter-Tribal Fish Commission (CRITFC) coordinates management policy and provides fisheries technical services for the Yakama, Warm Springs, Umatilla, and Nez Perce tribes. CRITFC's mission is "to ensure a unified voice in the overall management of the fishery resources, and as managers, to protect reserved treaty rights through the exercise of the inherent sovereign powers of the tribes."

A goal of CRITFC is to "put fish back in the rivers and protect watersheds where fish live." CRITFC provides its four member tribes and the region with biological research, fisheries management, hydrology, and other science to support the protection and restoration of Columbia River Basin salmon, lamprey, and sturgeon. The vision of this goal is to reverse the decline of these species and rebuild their numbers to full productivity.

4.1.5 Non-Governmental Organizations

Land Trusts & Conservancies

Land trusts and conservancy organizations play an important role in shoreline natural resource conservation in the Bingen area. These organizations continue to acquire conservation easements and in-fee holdings, and to protect and restore significant shoreline areas. In addition, these organizations are active partners in restoration, research, and lands management.

Active land trusts and conservancies in the county include the following:

- [Columbia Land Trust](#)
- [The Nature Conservancy](#)

Other Non-profit Organizations

In addition to land trusts, other non-profit organizations are active in restoration, research, and outreach in the Bingen area. Non-profit organizations involved in shoreline conservation efforts in the area include the following, among others:

- [Trout Unlimited](#)
- [Washington Waterfowl Association](#)

- [Audubon Washington](#)
- [Wild Fish Conservancy](#)
- [Columbia Riverkeeper](#)
- [Friends of the Columbia Gorge](#)

Private Landowners

Private landowners play an important role in future watershed conditions. Where private landowners are willing to voluntarily restore lands and manage them in such a way as to minimize potential impacts, these landowners help conserve ecosystem conditions in the City.

4.2 Funding Mechanisms

A variety of funding opportunities are available to support the protection and restoration of shorelines in the City and surrounding areas. Potential public funding sources are identified in Table 4-1; potential private funding sources are listed in Table 4-2. Funding sources other than those listed in these two tables may also exist. It should be noted that public funding is dependent on appropriations from state and federal governments.

Table 4-1. Potential public funding sources for restoration and protection of shoreline ecological functions.

Agency	Grant Name	Description
US Fish and Wildlife Service	Cooperative Endangered Species Conservation Fund (Section 6 of the Endangered Species Act)	Grants to states to participate in a wide array of voluntary conservation projects for candidate, proposed, and listed species.
	Partners for Fish and Wildlife Restoration	Technical assistance and cost-share incentives to private landowners to restore fish and wildlife habitats.
Washington State Department of Ecology	Clean Water State Revolving Fund	Funds water quality infrastructure and projects to control non-point source pollution.
	Coastal Protection Fund / Terry Husseman Grants	Funding to: restore or enhance environmental, recreational, archaeological, or aesthetic resources; investigate the long-term effects of oil spills; and develop and implement aquatic land geographic information systems.
	Floodplains by Design	Funding for projects that restore floodplain habitat and reduce flooding risks.
Washington State Department of Fish and Wildlife	Aquatic Lands Enhancement Account Grants	Funding to buy, protect, and restore aquatic lands habitat and to provide public access to the shoreline.
Washington State Department of Natural Resources	Family Forest Fish Passage Program	Assists private forestland owners in replacing culverts and other stream crossing structures.

Agency	Grant Name	Description
Washington State Recreation and Conservation Office	Land and Water Conservation Fund	Funding to preserve and develop outdoor recreation resources, including parks, trails, and wildlife lands.
	Salmon Recovery Funding Board Grants	Funds projects that protect and restore salmon habitat.
	Washington Wildlife and Recreation Program	Provides funding for land protection and outdoor recreation, including park acquisition and development, habitat conservation, farmland preservation, and construction of outdoor recreation facilities.
Bonneville Power Administration	Bonneville Power Administration	Funding for habitat projects to mitigate impacts of dam operations.

Table 4-2. Potential private funding sources for restoration and protection of shoreline ecological functions.

Group	Grant Focus
FishAmerica Foundation	In partnership with the National Oceanic and Atmospheric Administration Restoration Center, provides grants for community-based restoration of marine and anadromous fish species.
National Fish and Wildlife Foundation	Provides funding on a competitive basis to projects that sustain, restore and enhance the nation's fish, wildlife, plants and their habitats.
The Burning Foundation	Protection of threatened rivers, forests, and native fish populations.
The Konsgaard-Goldman Foundation	Forest protection and initiatives addressing climate change in Washington State.
The Northwest Fund for the Environment	Protection and restoration of aquatic ecosystems.

4.3 Design & Permitting

Depending on the scale and type of project, qualified professionals, such as biologists or engineers, may need to assist in project design and implementation. Additionally, permits or approvals from several government agencies may be required prior to commencing a restoration action. Permits or approvals may be required from the City, the Washington State Department of Ecology, the Washington State Department of Fish and Wildlife, the Washington State Department of Natural Resources, and/or the US Army Corps of Engineers.

4.4 Outreach & Education

Land use activities on privately owned lands outside of shoreline jurisdiction can play a significant role in hydrologic, water quality, and geomorphic functions and processes of

a watershed. As a result, private landowners play an extremely important role in the condition of shoreline ecological functions. Outreach and education measures that help inform and engage the public to take actions that limit degradation and/or improve shoreline functions are essential to effectively maintain and restore conditions in a watershed. Several agencies and non-governmental organizations (see Subsection 4.1) are actively involved in public outreach and education measures in the Bingen area.

4.5 Tracking

The SMP Guidelines require that shoreline restoration plans "...provide for mechanisms or strategies to ensure that restoration projects and programs will be implemented according to plans and to appropriately review the effectiveness of the projects and programs in meeting the overall restoration goals" (WAC 173-26-201(2)(f)(vi)).

The Habitat Work Schedule provides the primary mechanism to track development and implementation of salmon habitat conservation projects. The Lead Entities in the county continue to develop their use of the Habitat Work Schedule. The Habitat Work Schedule has the potential to track restoration actions and funding. The state's Project Information System (PRISM) database also provides a means of tracking proposed and funded projects. Finally, the Washington State Conservation Commission's Conservation Practice Data System provides a database that tracks projects and conservation practices on private lands. Together, these databases provide an overall view of proposed, active, and recently completed projects.

5 REFERENCES

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