

DRAFT

**KITTITAS COUNTY REGIONAL SHORELINE MASTER
PROGRAM UPDATE - SHORELINE RESTORATION
PLAN**

Ecology Grant No. 1200054

Kittitas County,
City of Cle Elum,
Town of South Cle Elum,
and City of Ellensburg
Shoreline Master Program Updates

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Kittitas County Community Development Services,
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CHAPTER 1. INTRODUCTION

1.1 Plan Purpose and State Requirements

Kittitas County and its municipalities are undergoing comprehensive updates of their Shoreline Master Programs (SMPs) to improve protection of shoreline environments and ensure their continued use and enjoyment. The update is also required by the Shoreline Management Act (SMA) of 1971 and the implementing rules known as the shoreline guidelines¹. In order to obtain the best value for limited State grant funds, Kittitas County and three of its municipalities (the Cities of Cle Elum and Ellensburg and the Town of South Cle Elum) are jointly updating their SMPs. As part of the update process, the County and its municipalities are required to develop a shoreline restoration plan.

The State has directed local governments to develop SMP provisions “...to achieve overall improvements in shoreline ecological functions over time when compared to the status upon adoption of the master program.” This overarching goal is accomplished primarily through two distinct objectives:

- **Protection** of existing shoreline functions through regulations and mitigation requirements to ensure “no net loss” of ecological functions from baseline environmental conditions; and
- **Restoration** of shoreline ecological functions that have been impaired from past development practices or alterations.

The concept of no net loss of shoreline ecological function is embedded in the SMA and in the goals, policies and governing principles of the shoreline guidelines. The State’s general policy goals for shorelines of the state include the “protection and restoration of ecological functions of shoreline natural resources.” This goal derives from the SMA, which states, “permitted uses in the shoreline shall be designed and conducted in a manner that minimizes insofar as practical, any resultant damage to the ecology and environment of the shoreline area.” The governing principles of the guidelines further clarify that protection of shoreline ecological functions is accomplished through the following (WAC 173-26-186):

- Meaningful understanding of the current shoreline ecological conditions;
- Regulations and mitigation standards that ensure that permitted developments do not cause a net loss of ecological functions;
- Regulations that ensure exempt developments in the aggregate do not result in net loss of ecological functions;
- Goals and policies for restoring ecologically impaired shorelines;

¹ Revised Code of Washington (RCW) 90.58 and Washington Administrative Code (WAC) 173-26, Part III.

- Regulations and programs that fairly allocate the burden of mitigating cumulative impacts among development opportunities; and
- Incentives or voluntary measures designed to restore and protect ecological functions.

The no net loss requirement also applies to critical areas (e.g., wetlands) within SMA jurisdiction, pursuant to the Growth Management Act (RCW 36.70A.480).

The restoration planning component of the SMP process is voluntary; there is no statutory requirement for specifically implementing a restoration plan. However, the restoration framework developed for these non-compensatory mitigation projects can also be applied to compensatory mitigation projects. In this way, all efforts to improve ecosystem functioning are coordinated, and will be designed to work together.

1.2 Defining Restoration

There are numerous definitions for “restoration” in scientific and regulatory publications. Specific elements of these definitions often differ, but the core element of repairing damage to an existing, degraded ecosystem remains consistent. In the SMP context, the WAC defines “restoration” or “ecological restoration” as:

“...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” (WAC 173-26-020(27)).

The emphasis in the WAC is to achieve overall improvement in existing shoreline processes or functions, if these functions are impaired. Therefore, the goal is not to restore historic conditions, but rather to improve on existing, degraded conditions. In this context, restoration can be implemented through a combination of programmatic measures (such as surface water management; water quality improvement; public education) and site-specific projects (such as culvert removal and/or riparian plantings). This restoration plan focuses on the County and its municipalities as a whole rather than parcel by parcel, or permit by permit.

1.3 Key Elements of Restoration Planning in the SMP Update Process

The State guidelines provide six key elements for shoreline restoration planning as part of a local jurisdiction’s master program, as outlined in WAC 173-26-201(2)(f). These elements are summarized below in Table 1-1, and provide the organization and content for this report.

Table 1-1. WAC Requirements for Restoration Plans

Key elements for the shoreline restoration planning process WAC 173-26-201(2)(f)	Where addressed in this report
Identify degraded areas, impaired ecological functions, and sites with potential for ecological restoration.	Chapter 2 – Summary of Current Shoreline Conditions and Impairments
Establish overall goals and priorities for restoration of degraded areas and impaired ecological functions.	Chapter 3 – Restoration Goals, Priorities, and Opportunities
Identify existing and ongoing projects and programs that are currently being implemented which are designed to contribute to local restoration goals.	Chapter 3 – Restoration Goals, Priorities, and Opportunities Chapter 4 – Implementing Restoration
Identify timelines and benchmarks for implementing restoration projects and programs and achieving local restoration goals.	Chapter 4 – Implementing Restoration
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 (e.g., monitoring of restoration project sites).	Chapter 4 – Implementing Restoration
Identify additional projects and programs needed to achieve local restoration goals, and implementation strategies including identifying prospective funding sources for those projects and programs.	Chapter 3 – Restoration Goals, Priorities, and Opportunities Chapter 4 – Implementing Restoration

1.4 Relationship to the Shoreline Inventory and Characterization Report

One of the first phases of the SMP update process for the County and its municipalities was the development of a Shoreline Inventory and Characterization Report (ICR) (ESA, 2013). The ICR was developed in collaboration with Central Washington University’s Center for Spatial Information and Research, and was reviewed by Ecology and the SMP Technical Advisory Committee, which included representatives from the Yakama Nation and the Kittitas County Conservation District (KCCD). The ICR serves multiple purposes for the SMP update efforts, including the identification of degraded shoreline areas that may be suitable for restoration. The portions of the report that are relevant to restoration planning are summarized in the following sections.

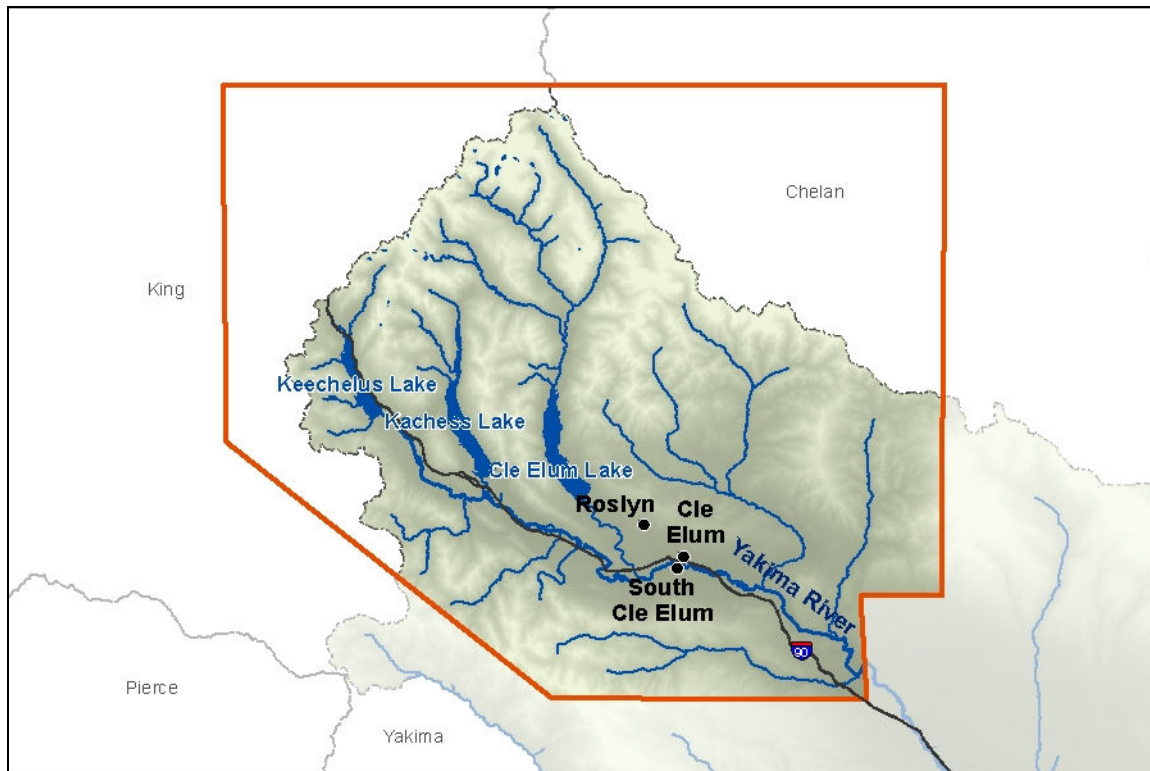
CHAPTER 2. SUMMARY OF CURRENT SHORELINE CONDITIONS AND IMPAIRMENTS

The following sections are summarized from the ICR (ESA, 2013), and describe the current ecological conditions and ecological impairments within the two major river basins that are located within Kittitas County (the upper Yakima and Little Naches rivers) and the portion of the Columbia River within County shoreline jurisdiction. Due to its size and heterogeneity, the Yakima River Basin is separated into three geographic areas: Upper County, Kittitas Valley, and Yakima Canyon. Additional detailed information on shoreline conditions is found in the ICR.

2.1 Yakima River Basin—Upper County

Shorelines in Upper County include the upper Yakima River and its tributaries from the Yakima River headwaters to the Taneum Creek confluence (Figure 2-1). There are 35 streams and 29 lakes and ponds within the Upper County area that are considered shorelines of the state. Land cover is a mix of forest, shrub-steppe, agriculture, and developed land.

Figure 2-1. Yakima River Basin “Upper County” shorelines.



The majority of the area is characterized by undeveloped forest and three large glacially-formed lakes, Keechelus Lake, Lake Kachess, and Lake Cle Elum that have been converted to reservoirs to regulate the flow of the Yakima River and part of the Cle Elum River as part

of the Bureau of Reclamation's project to supply irrigation water to the Yakima basin. The three reservoirs are situated on mostly National Forest or private lands that are primarily used for recreation and timber harvest. The reservoirs provide habitat for several priority fish species, but are managed as irrigation reservoirs and have documented water quality impairments such as elevated temperature. The dams associated with each reservoir are barriers to fish passage to upstream tributaries, although a temporary fish passage structure has recently been constructed at Lake Cle Elum Dam. The reservoirs are set among large, unfragmented blocks of habitat for spotted owl, elk, mountain goat, gray wolf, and other wildlife species. The shoreline of the reservoirs contains roads and a limited amount of residential development, both of which encroach on existing riparian vegetation.

Each reservoir is fed by numerous tributaries within the Cascade Mountains. The tributary streams and lakes are located primarily on commercial forest-zoned lands (including the Alpine Lakes Wilderness and other National Forest lands) that are mostly undeveloped. Exceptions to this include lower Coal Creek, which is constrained by I-90 along much of its length, and a residential subdivision adjacent to the downstream end of Gold Creek.

Within the Upper County area, the upper Yakima River flows approximately 44 miles from the Keechelus Lake to the Taneum Creek confluence. There are several large tributaries along this section of the Yakima, including: Kachess River, Cle Elum River, Teanaway River, Swauk Creek, Cabin Creek, Big Creek, and Little Creek. In addition, the Yakima River flows through the cities of Cle Elum and South Cle Elum. The upper Yakima River and several of its tributaries are designated as critical habitat for Endangered Species Act-listed Mid-Columbia Summer Steelhead.

The upper Yakima River originates at the Keechelus Lake outlet and flows from forested slopes and foothills of the eastern Cascades down to arid shrub-steppe habitats. Between Keechelus and Easton Dam, river floodplain functions are excellent with a braided, meandering channel and numerous side channels. Below Easton Dam, the river becomes one large main channel and is largely separated from its natural floodplain by transportation infrastructure, including I-90, BNSF railroad, and the John Wayne Heritage Trail. Some high-density residential subdivisions and urban areas (Cle Elum and South Cle Elum) also border the river.

The dam at Lake Easton has a fish ladder that allows passage in winter and spring, although upper Yakima basin fish populations have declined due to historic damming, irrigation operations and diversions, and land development. High summer flows and low winter flows, as a result of the "flip-flop" irrigation operation, affect both juvenile salmonid rearing and overwintering habitats. The flip-flop irrigation operation refers to release of water from the Upper Yakima reservoirs to supply irrigation during summer months while water is held back in the Naches basin reservoirs. In September, when the Upper Yakima reservoirs are low, the operation flips to the Naches basin and water is released from Rimrock and Bumping reservoirs. The purpose of flip-flop is to encourage returning Chinook salmon to spawn at lower river stages in the fall, ensuring that the flows needed to keep redds watered are upheld, while still low enough to protect them during their incubation period (November through March). Anadromous fisheries populations have

improved in recent years as a result of better fisheries management, habitat and facility improvements, hatchery supplementation, and reintroduction efforts.

The Kachess River flows from Kachess Lake and into Lake Easton, which also receives flow from the Yakima River. The shoreline is primarily forested with a small residential community located on the right bank of the Kachess River north of I-90 and recreational parkland around Lake Easton. The riparian zone of the lake is constricted on three sides by roadways.

Cabin Creek is a right-bank tributary to the Yakima River, entering upstream of Lake Easton. Its watershed is largely undeveloped, but timber harvest is a common land use. The creek experiences flashy flows, largely because of widespread clearcuts in the upper watershed, couple with periodic rain-on-snow events. A small residential development has altered a portion of the riparian corridor along the lower creek, but much of the lower creek is protected in a conservation easement.

Big and Little Creeks are right-bank tributaries of the Yakima River. Both streams originate in dense forest and flow through narrow valleys with steep slopes before reaching the valley bottom where agricultural and rural residential development have altered much of the riparian corridor. Irrigation diversions are present which contribute to elevated temperatures and a low instream flow during the summer months, but work is ongoing to secure water rights for improving stream flows.

The Lower Cle Elum River is a left-bank tributary to the Yakima River and flows between Cle Elum Lake and just south of I-90. The river is a large channel with multiple large side-channel complexes. It is considered a high-density salmon spawning area; in most years half of the Chinook salmon redds in the upper Yakima River watershed are found immediately upstream and downstream of the confluence of the Cle Elum and Yakima Rivers. Wetland habitat is extensive throughout the reach and elk wintering habitat is present. Some areas of vegetation alteration exist, but the majority of the shoreline consists of dense riparian forest and shrub habitat. Most of the riparian area within shoreline jurisdiction is protected within conservation easements.

The Teanaway River is a left-bank tributary of the Yakima River that contains three major tributaries: the North, Middle, and West Forks. The tributaries traverse among steep slopes of the eastern Cascades before joining the mainstem of the river. The upper watershed is mapped as critical habitat for northern spotted owl and contains habitat for other priority bird species. The mainstem, Middle and West Forks experience low flows and associated high water temperatures during the summer and fall, partially the result of multiple stream diversions for agricultural use. The mainstem has been largely disconnected from its floodplain since the late 1800s. Human alterations have impacted river system processes: ponds and wetlands have been drained and side channels filled; the river has been straightened and levees have been constructed to protect adjacent lands. Beaver populations have been reduced so there are fewer dams to retain and disperse flows. Downstream of the confluence of the three forks, the river has been moved to the edge of the valley, channelized, and armored to facilitate agricultural activities. Habitat for priority

fish species is present although the river was historically used to transport timber which caused the removal of large woody debris and scoured the streambed reducing the number of pools and other in-channel rearing habitats. Today, riparian vegetation is hampered by reinforcement of streambanks to protect roads and property.

Swauk Creek is a left-bank tributary of the Yakima River that originates in dense forest and flows through an arid canyon at its downstream end. It has a naturally defined stream corridor that has been significantly affected by road construction and mining. Priority fish species are present although past activities have reduced stream complexity, summer flows are low to intermittent, and multiple passage barriers are present. Limited residential development is present in the lower portion of Swauk Creek.

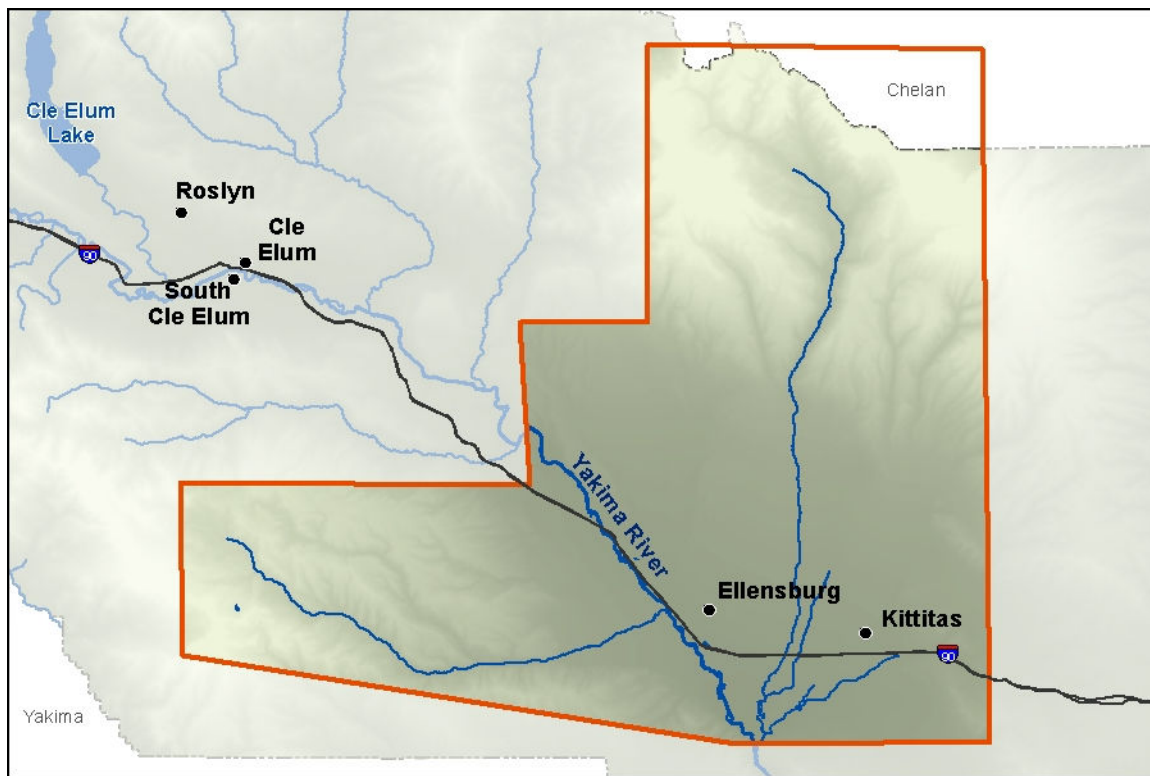
2.2 Yakima River Basin—Kittitas Valley

Shorelines in the Kittitas Valley portion of the Yakima River Basin include the Yakima River and its tributaries between the Taneum Creek confluence and the Wilson Creek confluence (Figure 2-2). In this region, there are 10 streams and 7 lakes and ponds that are considered shorelines of the state. In addition to the Yakima River, the major streams include Taneum, Manastash and Wilson Creeks. This portion of the County is characterized by less precipitation and higher temperature extremes. In general, coniferous forest with open stands of ponderosa pine and some lodgepole pine surround the upstream portions of the major streams. The lower reaches are characterized by semi-arid shrub-steppe and grasslands that have been converted to agricultural uses.

The Yakima River within the Kittitas Valley is bordered primarily by undeveloped land zoned for forest and range, agricultural land and low-density rural residential. Land use intensifies near the City of Ellensburg, although the majority of low-lying land adjacent to the river is mostly irrigated agriculture. Most of the native shrub-steppe habitat has been converted to agricultural land, which has resulted in considerable alteration and hydrologic change to the landscape. The river is disconnected from its natural floodplain in several areas by roads (including I-90 and Highway 10) and linear hydromodifications. In addition, historic gravel mining has impacted both the structure and function of the Yakima River floodplain. Several unnamed waterbodies are found adjacent to the river that are former gravel pits excavated in the floodplain. These have altered seasonal overbank storage and riparian habitat.

Priority fish species are present in the river and some of the waterbodies despite the lack of riparian vegetation, large wood, altered hydrologic regime and isolation of side channel habitats. Water quality is negatively affected by irrigation return water and untreated stormwater runoff from urban areas. However, anadromous fisheries have improved in recent years as a result of better fisheries management, habitat and facility improvements, hatchery supplementation, and reintroduction efforts. The “Kittitas Valley” portion of the Yakima River and several of its tributaries are designated as critical habitat for Endangered Species Act-listed Mid-Columbia Summer Steelhead.

Figure 2-2. Yakima River Basin “Kittitas Valley” shorelines.



Taneum Creek is a right-bank tributary to the Yakima River that is mostly undeveloped and flanked by heavily forested areas along its North and South Forks. The lower portion of the stream traverses agricultural lands and some limited residential development. Taneum Creek provides priority fish habitat but is impaired by past logging and road construction in the upper reaches and by low instream flows and limited channel complexity downstream of I-90. Work is ongoing to secure water rights for instream flows.

Taneum Creek experiences elevated temperatures, turbidity, and suspended sediments throughout. Wetlands are present along the mainstem and riparian cover is narrow and intermittent in lower reaches. The upper reach of the mainstem and the North and South Forks is mapped as spotted owl critical habitat and elk and deer wintering and calving habitat. The mainstem has the potential for channel migration and the stream has been characterized as having a large and unpredictable floodplain and flood capacity.

Manastash Creek is a right-bank tributary to the Yakima River located upstream of Taneum Creek. The upper portion of the stream flows through a relatively narrow valley that gives way to flat agricultural land. Residential development is adjacent to the river for over half of the mainstem while none is present along the South Fork. Manastash Creek is fully appropriated for irrigation and a portion of the lower reach lacks surface flow during the summer months of most years. Lack of flow is attributed to irrigation diversions and the porous substrate of the channel bed. Low instream flows and partial migration barriers limit fish use although priority species are present. Significant flood, erosion, and sedimentation hazard are present along the creek, due to the volume of sediment moving

through the system, development within the floodplain, lack of riparian vegetation, and confined channel reaches and roadway crossings. The KCCD, along with Kittitas County and local owners, are currently studying the lower 13 miles of the creek to determine priority actions for alleviating flooding and erosion and improving salmonid productivity.

Matoon Lake is a 26-acre lake located near Ellensburg. The lake borders I-90 and has undeveloped land that is zoned for urban residential. Matoon Lake is a former gravel pit that is characterized by shallow water, undeveloped shoreline, and a lack of riparian cover due to an unpaved road that extends the perimeter of the lakeshore. WDFW annually stocks the lake with trout, but habitat has been degraded by non-native invasive aquatic vegetation.

Wilson Creek is a left-bank tributary of the Yakima River, and three of its tributaries are shorelines of the state (Naneum, Cherry, and Parke creeks). The Wilson Creek system originates north of Ellensburg. Land use along the streams is a mix of agriculture and low-density and rural residential with private, commercial forest land in the upper portion of Naneum Creek. Wilson Creek and its tributaries have been extensively altered to provide irrigation for crop production, resulting in channels being rerouted, channelized, and diked. The entirety of Wilson, Cherry, and Parke creeks and approximately the lower half of Naneum Creek flow through actively farmed lands. Some residential and commercial development, associated with farming activities, is located along the streams. Water temperatures are elevated during the summer months and in comparison to the Yakima River, the streams contain higher nutrient levels, suspended sediment, and fecal coliform bacteria due to irrigation return flows, livestock, and failing septic systems. Riparian cover is still relatively intact within the forested canyon along the upper portion of Naneum Creek, and northern spotted owls and mule deer wintering habitat are identified.

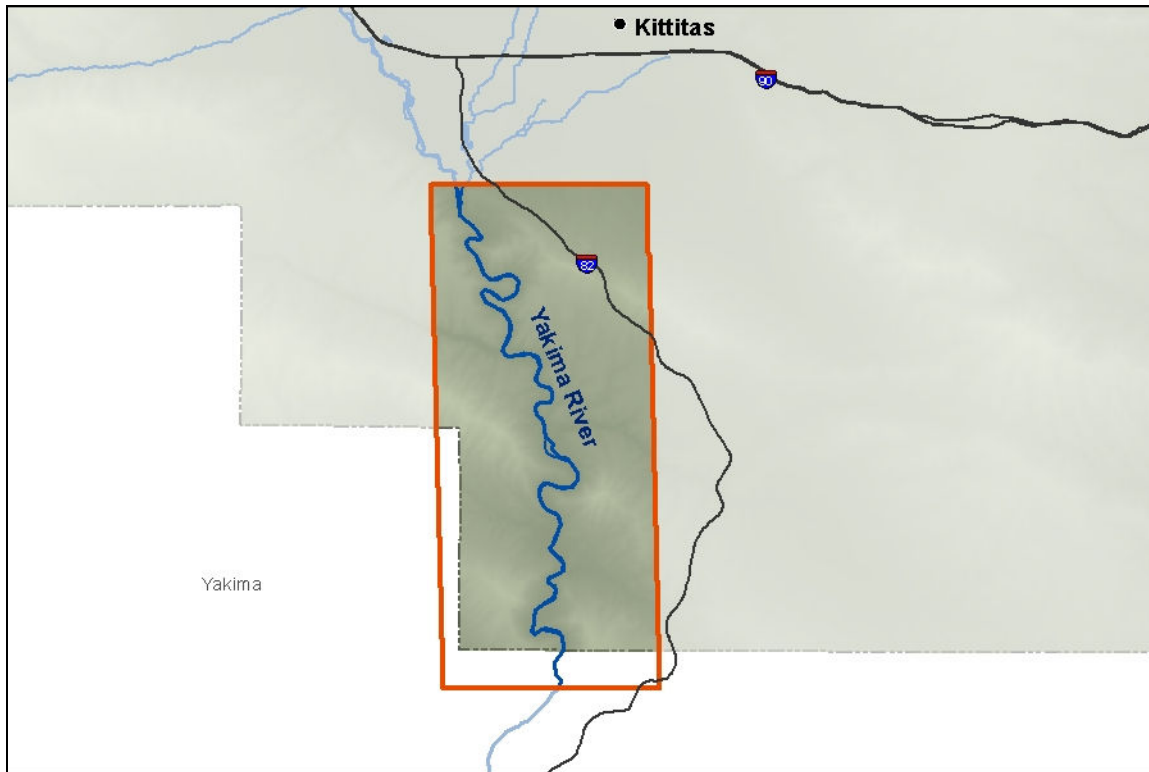
Fiorito Lake is a 54-acre lake located adjacent to I-82 and upstream of the confluence of Wilson and Cherry Creeks. The shoreline supports little riparian cover and a constructed berm splits the waterbody into two sections. Similar to Matoon Lake described above, Fiorito Lake is stocked with trout but habitat has been degraded by non-native invasive aquatic vegetation.

2.3 Yakima River Basin—Yakima Canyon

The only Kittitas County shoreline of the state within the Yakima Canyon is the Yakima River, which flows approximately 21 miles from the Wilson Creek confluence to the Kittitas-Yakima County boundary just downstream of Roza Dam (Figure 2-3). Over half of the land bordering the river is state and federal land and the remaining is zoned for agriculture and forest and range. This portion of the Yakima River is relatively sinuous compared to upstream reaches of the river and flows through a steep, deep-walled canyon. There are no side-channel complexes or large wetland areas and only a narrow riparian corridor is present. Much of the land adjacent to the river is steep and the river has experienced large debris flows due to high intensity precipitation events. Several priority fish species are present in the river despite water quality impairments and adjacent hydromodification. Priority wildlife species in the canyon include bighorn sheep, elk,

golden eagle, and mule deer and cliff/bluff habitats are mapped throughout the corridor. In addition, the “Yakima Canyon” portion of the Yakima River is designated as critical habitat for Endangered Species Act-listed Mid-Columbia Summer Steelhead.

Figure 2-3. Yakima River Basin “Yakima Canyon” shoreline.



Due to the geology and the presence of Canyon Road and a railroad, there is limited development potential in this portion of the shoreline. However, the river and its banks support highly used recreational areas for camping, fishing and hunting.

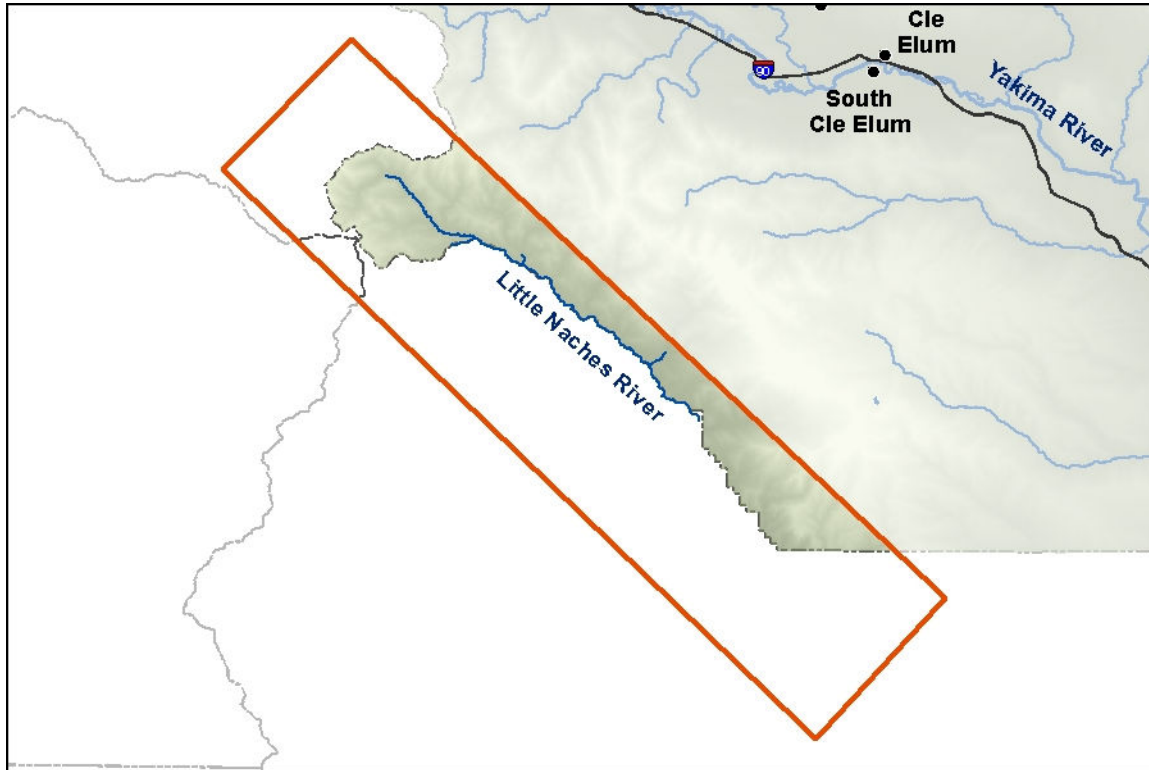
2.4 Little Naches River Basin

The Little Naches River is a right bank tributary to the Naches River (in Yakima County) and forms the border between Kittitas and Yakima counties (Figure 2-4). Approximately 14 miles of the river is a shoreline of the state within Kittitas County jurisdiction. Tributaries to the river that are shorelines of the state include the river’s Middle and North Forks, Bear Creek, and Quartz Creek. The river and its tributaries are located almost entirely on National Forest lands that are undeveloped.

Forest Service and logging roads have had negative impacts on fish habitat quality, primarily due to erosion. In addition, Forest Service Road 1900 blocks the river from its floodplain in several locations. Large wood was removed from the lower 10 miles of the river as part of “channel cleaning” efforts in the 1970s. Despite these alterations, the upper part of the Little Naches River (above Salmon Falls) is considered to provide good fish habitat with abundant spawning gravel, riparian cover, adequate summer flows, and large

wood. The Little Naches River and several of its tributaries are designated as critical habitat for Endangered Species Act-listed Mid-Columbia Summer Steelhead.

Figure 2-4. “Little Naches River” shorelines.



Coniferous forest dominates the riparian zone of Little Naches River and its tributaries, which contributes substantial woody material to the system and connects large areas of forest habitat. Forested and scrub-shrub wetlands are mapped in the shoreline of the mainstem and the North Fork tributary is mapped as providing habitat for priority species including northern spotted owl and harlequin duck. Talus slopes and elk calving areas are also priority habitats identified in the area.

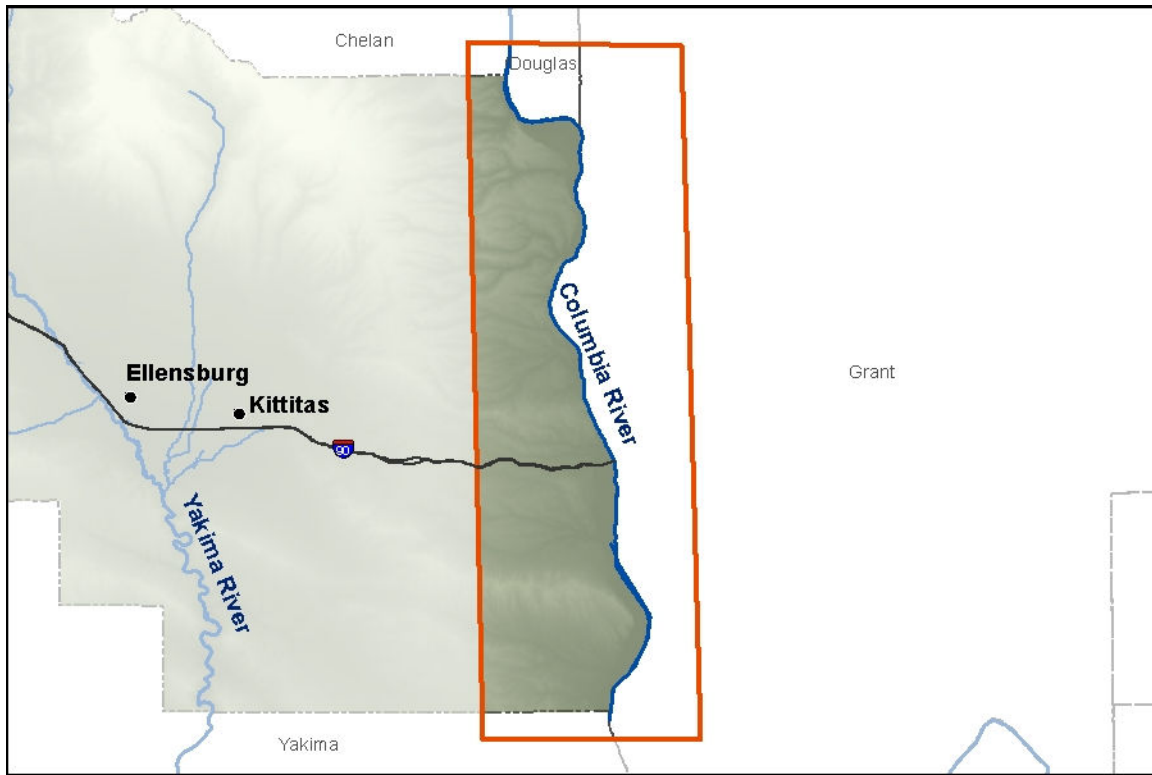
2.5 Columbia River

The Columbia River flows approximately 1,243 miles from the Rocky Mountains of British Columbia to the Pacific Ocean in Astoria, Washington. A small section of the river (43 miles) forms the eastern border of Kittitas County where it is impounded behind the Wanapum Dam, one of the 14 hydroelectric dams located on the mainstem of the Columbia River (Figure 2-5). The shoreline in this section is generally undeveloped with the exception of the portion that runs along the town of Vantage. The Yakima Training Center is located within the downstream portion of the shoreline and the shoreline is zoned for parks and open space, forest and range and agriculture.

This portion of the Columbia River is located in a canyon with moderate to steep topographic relief. Although it provides habitat for a variety of priority fish species, the

river at this location has several water quality impairments and is highly influenced by dam operations. Very limited wetland habitat is mapped along the river within the County boundaries. The Wanapum and Priest Rapids dams significantly alter the hydrology and fish habitat quality of this portion of the Columbia River shoreline. This portion of the Columbia River is designated as critical habitat for Endangered Species Act-listed Mid-Columbia Summer Steelhead.

Figure 2-5. “Columbia River” shoreline within Kittitas County.



CHAPTER 3. RESTORATION GOALS, PRIORITIES, AND OPPORTUNITIES

This chapter describes the shoreline restoration goals and priorities for the two major watersheds located within Kittitas County (the upper Yakima and Little Naches rivers), as well as the portion of the Columbia River within County shoreline jurisdiction. Matrices detailing specific, identified restoration projects are also included.

3.1 Overall Goals and Priorities

Shoreline restoration goals and priorities in Kittitas County have been established by several organizations, including government agencies and tribes, and are described in detail in the ICR (ESA, 2013). The identified restoration goals and priorities for the river systems within the County are summarized below.

3.1.1 Yakima River and Tributaries

Major restoration goals and priorities for the Yakima River and its tributaries include:

- 1) Restore riparian conditions in the lower reaches of Yakima River tributaries, and off-channel and floodplain habitats of the Yakima River
- 2) Address the negative effects of flip-flop through alteration of reservoir operations
- 3) Remove floodplain confining structures where practical, and widen bridges and replace culverts with bridges to allow channel migration
- 4) Restore floodplain ecological functioning by placing large woody debris and engineered log jams, bank reshaping, and channel reconstruction
- 5) Eliminate barriers to fish passage such as irrigation diversions dams or culverts through removal, redesign, or retrofitting
- 6) Use bridges, bottomless culverts, or other approved methods to improve fish passage when designing new or modifying existing road crossings
- 7) Increase irrigation efficiency to reduce the amount of water diverted from rivers
- 8) Install screens to block fish from entering irrigation canals
- 9) Protect floodplain and critical upland habitat through acquisition of land and conservation easements
- 10) Reduce impervious surfaces and remove unnecessary roads

- 11) Set back channel confining structures (hydromodifications) and remove bank armoring where land use is compatible with periodic flooding or channel migration
- 12) Encourage the presence of beavers in areas with compatible land uses

3.1.2 Little Naches River and Tributaries

Major restoration goals and priorities for the Little Naches River and its tributaries include:

- 1) Remove floodplain confining structures where practical, and widen bridges and replace culverts with bridges to allow channel migration
- 2) Restore floodplain ecological functioning by placing large woody debris and engineered log jams, bank reshaping, and channel reconstruction
- 3) Remove unnecessary roads
- 4) Protect floodplain and critical upland habitat through acquisition of land and conservation easements

3.1.3 Columbia River

A relatively small portion of the Columbia River and its adjacent shorelands are located within Kittitas County. The Wanapum Dam, which is the most significant alteration to this portion of the river, was recently relicensed for operation until 2052. As part of the relicensing agreement, there is ongoing mitigation work to improve fish and wildlife habitat quality in the dam and reservoir vicinity. Given the relatively small portion of the Columbia River within Kittitas County, the river is not expected to be a major restoration focus for the County. There are currently numerous federal and state agencies, as well as tribes and other organizations, working to improve habitat conditions in the river.

3.2 Matrices of Shoreline Restoration Opportunities

This section contains matrices of site-specific restoration opportunities for the two major watersheds located within the County (the upper Yakima and the Little Naches rivers) and the portion of the Columbia River located within County shoreline jurisdiction. The Yakima Valley River Basin is separated into three separate matrices: Upper County, Kittitas Valley, and Yakima Canyon.

The major components of each restoration opportunity are listed in the matrices. The identified components correspond to specific ecological functions that can be improved through restoration. The components are defined as:

- **Instream flow improvement** means actions that seek to retain or increase stream flows necessary for sustaining aquatic life, such as implementing irrigation efficiency projects or acquiring water rights.

- **Water quality improvement** means actions that would improve the water quality of streams/water bodies and downstream resources, such as decommissioning unused roads in a watershed.
- **Riparian vegetation restoration** means re-establishing a community of native riparian vegetation along a stream or waterbody through supplemental planting.
- **Habitat preservation** means the permanent protection or acquisition of lands with significant ecological value and potential for future development.
- **Fish passage** means correcting barriers to fish passage, such as replacing an undersized culvert or installing fish passage facilities at a dam.²
- **Instream habitat restoration** means improving habitat within streams, such as installing large woody debris or reconfiguring a historically channelized stream channel.
- **Aquatic habitat restoration** means improving habitat within lakes and ponds, such as controlling invasive aquatic plant species.
- **Floodplain enhancement** means re-habilitating floodplain habitat, such as removing or setting-back linear hydromodifications along a stream that block access to its historical floodplain.
- **Research/education** means actions to educate landowners, the public, and the scientific community about shoreline conservation and restoration.

The status of the each restoration opportunity is listed, based upon the following:

- **Under way** projects have been planned and funded and have proponent organization(s); actual construction of the project may be underway.
- **Proposed** projects have undergone preliminary planning and have proponent organization(s), but may not yet be fully funded. Construction of the project has not begun.
- **Potential** projects have been identified during development of the ICR (2013), but have not yet undergone any additional planning and have no project proponent.

The specific section in the ICR (ESA, 2013) that describes the individual stream/waterbody is shown in the last column.

² Repairing fish passage barriers on state-owned lands has been mandated by the U.S. District Court, per the Boldt Decision of 1974. In May 2013, the State appealed the District Court decision to the Ninth Circuit Court of Appeals.

Table 3-1. Matrix of Shoreline Restoration Opportunities: Yakima River Basin—Upper County

Stream/ Waterbody	Project Name	Project Summary	Major Restoration Components	Site Location	Status of Restoration Project	Sponsor Organization(s)	Corresponding Section in the ICR (ESA, 2013)
Big Creek	N/A	Investigate securing water rights to improve instream flows.	<ul style="list-style-type: none"> • Instream flow improvement 	Lower creek	Potential	None identified	3.10
Cabin Creek	N/A	Decommission or repair logging roads to reduce erosion.	<ul style="list-style-type: none"> • Water quality improvement 	Upper watershed	Potential	None identified	3.4
Cle Elum River (upper) and tributaries	N/A	Decommission and revegetate unused roads.	<ul style="list-style-type: none"> • Water quality improvement • Riparian vegetation restoration 	Entire watershed	Potential	None identified	3.14
Gold Creek	Gold Creek Habitat Assessment and Conceptual Design	Investigate Gold Creek dewatering causes and associated impacts and produce conceptual designs for bull trout restoration.	<ul style="list-style-type: none"> • Instream flow improvement • Instream habitat restoration 	Lower creek	Proposed	Kittitas Conservation Trust	3.2
Lake Cle Elum	Cle Elum Dam Fish Passage	Construction of permanent upstream and downstream passage facilities.	<ul style="list-style-type: none"> • Fish passage 	Cle Elum Dam	Under way	U.S. Dept. of Reclamation and the Yakama Nation	3.14
Lake Cle Elum	N/A	Decommission and revegetate unused roads along the shoreline.	<ul style="list-style-type: none"> • Riparian vegetation restoration • Water quality improvement 	Entire lakeshore	Potential	None identified	3.13
Kachess Lake	Kachess Dam Fish Passage	Construction of permanent upstream and downstream passage facilities.	<ul style="list-style-type: none"> • Fish passage 	Kachess Dam	Proposed	U.S. Dept. of Reclamation and Ecology	3.6
Keechelus Lake	Keechelus Dam Fish Passage	Construction of permanent upstream and downstream passage facilities.	<ul style="list-style-type: none"> • Fish passage 	Keechelus Dam	Proposed	U.S. Dept. of Reclamation and Ecology	3.1
Little Creek	N/A	Investigate securing water rights to improve instream flows.	<ul style="list-style-type: none"> • Instream flow improvement 	Lower creek	Potential	None identified	3.11
Middle Fork Teanaway River	N/A	Investigate securing water rights to improve instream flows.	<ul style="list-style-type: none"> • Instream flow improvement 	Lower river	Potential	None identified	3.15
North Fork Teanaway River	North Fork Teanaway River Floodplain, Phase 1	Acquisition of 96 acres of high-quality, forested floodplain between Dickey Creek and Jack Creek.	<ul style="list-style-type: none"> • Habitat preservation 	North Fork Teanaway Road	Proposed	Kittitas Conservation Trust	3.15
	North Fork Teanaway River Floodplain, Phase 2	Acquisition of 2 miles of the river between Dickey Creek and Jack Creek, along with 100 acres of high-quality, forested floodplain habitat.	<ul style="list-style-type: none"> • Habitat preservation 	North Fork Teanaway Road	Proposed	Kittitas Conservation Trust	3.15
Silver Creek	N/A	Correct the fish passage barrier at Sparks Road.	<ul style="list-style-type: none"> • Fish passage 	Sparks Road	Potential	None identified	3.8

Stream/ Waterbody	Project Name	Project Summary	Major Restoration Components	Site Location	Status of Restoration Project	Sponsor Organization(s)	Corresponding Section in the ICR (ESA, 2013)
Swauk Creek	Swauk & Iron Creek Restoration Design	The project involves investigation of alternatives for improving fish habitat and enhancing floodplain water storage along a 1.5-mile reach of Swauk Creek and a 1-mile reach of Iron Creek.	<ul style="list-style-type: none"> • Instream flows • Riparian vegetation restoration • Instream habitat restoration 	RM 17.3 to 18.8 of Swauk Creek, and the first mile of Iron Creek above its mouth	Proposed	Mid-Columbia Regional Fisheries Enhancement Group	3.16
	N/A	Investigate strategies for increasing summer stream flows.	<ul style="list-style-type: none"> • Instream flow improvement 	Entire river	Potential	None identified	3.16
	N/A	Correct fish passage barriers within the watershed.	<ul style="list-style-type: none"> • Fish passage 	Entire watershed	Potential	None identified	3.16
	N/A	Revegetate disturbed riparian areas, where possible.	<ul style="list-style-type: none"> • Riparian vegetation restoration 	Entire River	Potential	None identified	3.16
Teaway River (mainstem)	Teaway 3M Ditch Project	The project involves decommissioning of a gravity irrigation diversion and conversion to a more efficient system, with the cooperation of six landowners. The project would result in improved fish passage and instream flows.	<ul style="list-style-type: none"> • Fish passage • Instream flow improvement 	Teaway Road	Under way	Kittitas County Conservation District	3.15
	Teaway Red Bridge Road Project	The project involves correction of a fish passage barrier on the mainstem Teaway River that may block fish passage into the majority of the Teaway watershed. The barrier was created as a result of damage created during the January 2009 flood event.	<ul style="list-style-type: none"> • Fish passage 	Red Bridge Road	Proposed	Kittitas County Conservation District	3.15
	Teaway Forks Large Wood Trapping	The project proposes to design large wood trapping structures within the Teaway River forks, which would increase pool frequency, retain spawning gravels, and other potential habitat improvements.	<ul style="list-style-type: none"> • Instream habitat restoration 	Lower portions of the Teaway River forks	Proposed	Mid-Columbia Regional Fisheries Enhancement Group	3.15
	N/A	Remove or setback linear hydromodification to improve floodplain functioning, where possible.	<ul style="list-style-type: none"> • Floodplain enhancement 	Entire mainstem river	Potential	None identified	3.15
	N/A	Investigate securing water rights to improve instream flows.	<ul style="list-style-type: none"> • Instream flow improvement 	Entire mainstem river	Potential	None identified	3.15
Teaway River (mainstem and forks)	Teaway Community Forest	Purchase of 50,000 acres of private forest land, to create a community forest within the Teaway Watershed.	<ul style="list-style-type: none"> • Habitat preservation 	Upper mainstem river and the lower portions of its forks	Under way	Washington Departments of Natural Resources and Fish and Wildlife	3.15
West Fork Teaway River	N/A	Investigate strategies for increasing summer stream flows.	<ul style="list-style-type: none"> • Instream flow improvement 	Lower river	Potential	None identified	3.15

Stream/ Waterbody	Project Name	Project Summary	Major Restoration Components	Site Location	Status of Restoration Project	Sponsor Organization(s)	Corresponding Section in the ICR (ESA, 2013)
Yakima River	Easton Reach Habitat Protection, Phase 2	Acquisition of the largest, most complex floodplain property (163 acres) in the upper Yakima basin. The property contains braided stream habitat, multiple spring brooks and two tributary confluences, which supports a high concentration of salmonid spawning and rearing habitat.	<ul style="list-style-type: none"> Habitat preservation 	River Shadows Road	Proposed	Yakama Nation	3.3
	Upper Yakima River, Easton Reach	Acquisition of a 24-acre forested floodplain parcel, in a reach of the river with significant spring Chinook usage.	<ul style="list-style-type: none"> Habitat preservation 	RM 187	Proposed	Kittitas Conservation Trust	3.3
	Upper Yakima Instream Habitat	The project will support the design phase of an engineered log jam project in the Easton reach of the Yakima River, near the confluence with Big Creek.	<ul style="list-style-type: none"> Instream habitat restoration 	RM 196	Proposed	Kittitas Conservation Trust	3.3
	N/A	Remove or setback linear hydromodification to improve floodplain functioning, where possible.	<ul style="list-style-type: none"> Floodplain enhancement 	Opportunities are present throughout the river	Potential	None identified	3.3
	"K to K" pipeline	Construction of a pipeline to convey water from Lake Keechelus to Lake Kachess to reduce flows and improve habitat conditions during high flow release below Lake Keechelus.	<ul style="list-style-type: none"> Instream flow improvement 	Lakes Keechelus and Kachess	Proposed	U.S. Dept. of Reclamation and Ecology	3.3

Table 3-2. Matrix of Shoreline Restoration Opportunities: Yakima River Basin—Kittitas Valley

Stream/ Waterbody	Project Name	Project Summary	Major Restoration Components	Site Location	Status of Restoration Project	Sponsor Organization(s)	Corresponding Section in the ICR (ESA, 2013)
Cherry Creek	N/A	Investigate re-establishing a natural stream channel (the creek was historically channelized) and revegetating the riparian corridor.	<ul style="list-style-type: none"> • Instream habitat restoration • Riparian vegetation restoration • Water quality improvement 	Entire creek	Potential	None identified	4.7
Fiorito Lake	N/A	Control invasive aquatic weeds within the lake.	<ul style="list-style-type: none"> • Aquatic habitat restoration 	Entire lake	Potential	None identified	4.6
Manastash Creek	N/A	Decommission and revegetate unused roads.	<ul style="list-style-type: none"> • Water quality improvement • Riparian vegetation restoration 	Upper watershed	Potential	None identified	4.3
	N/A	Investigate securing water rights to improve instream flows.	<ul style="list-style-type: none"> • Instream flow improvement 	Lower creek	Potential	None identified	4.3
	Manastash Creek Restoration Project	The project focuses on fish passage and increasing irrigation efficiencies within the watershed. Several elements of the project have already been completed.	<ul style="list-style-type: none"> • Fish passage • Instream flow improvement 	Lower creek	Under way	Kittitas County Conservation District	4.3
	Consolidated Pipeline and Manastash Water Ditch Association (MWDA) Pipeline Construction	Replace MWDA earth ditch with 4 miles of pipeline and remove three unscreened diversion on Manastash Creek. The project would also permanently put 1.9 cfs of winter stock water into trust from November to March, increasing instream flows in the lower creek.	<ul style="list-style-type: none"> • Fish passage • Instream flow improvement 	Lower creek	Proposed	Kittitas County Conservation District	4.3
	Reed Diversion Removal Design	Design a project that would remove the fish passage barrier at Reed Diversion on Manastash Creek.	<ul style="list-style-type: none"> • Fish passage 	Reed diversion dam	Proposed	Kittitas County Conservation District	4.3
	Anderson Diversion Irrigation Water Acquisition	Irrigation water rights off Anderson Diversion would be acquired by Trout Unlimited to provide instream flow in Manastash Creek and remove the unscreened Anderson diversion.	<ul style="list-style-type: none"> • Instream flow improvement 	Lower Creek	Proposed	Kittitas County Conservation District	4.3
	Manastash Creek Sprinkler Conservations	Convert 154 acres of rill irrigation to sprinkler irrigation along creek, and remove an unscreened diversion and seasonal fish passage barrier.	<ul style="list-style-type: none"> • Instream flow improvement • Fish passage 	Lower Creek	Proposed	Kittitas County Conservation District	4.3
Matoon Lake	N/A	Control invasive aquatic weeds within the lake.	<ul style="list-style-type: none"> • Aquatic habitat restoration 	Entire lake	Potential	None identified	4.4
Naneum Creek	N/A	Investigate re-establishing a natural stream channel (the creek was historically channelized) and revegetating the riparian corridor.	<ul style="list-style-type: none"> • Instream habitat restoration • Riparian vegetation restoration • Water quality improvement 	Lower creek	Potential	None identified	4.5
	N/A	Investigate installing fish screens on irrigation diversions, correcting fish passage barriers, and separating irrigation canals and the creek channel to prevent entrainment of fish.	<ul style="list-style-type: none"> • Fish passage 	Lower creek	Potential	None identified	4.5

Stream/ Waterbody	Project Name	Project Summary	Major Restoration Components	Site Location	Status of Restoration Project	Sponsor Organization(s)	Corresponding Section in the ICR (ESA, 2013)
Parke Creek	N/A	Investigate re-establishing a natural stream channel (the creek was historically channelized) and revegetating the riparian corridor.	<ul style="list-style-type: none"> • Instream habitat restoration • Riparian vegetation restoration • Water quality improvement 	Entire creek	Potential	None identified	4.7
Taneum Creek	N/A	Investigate securing water rights to improve instream flows.	<ul style="list-style-type: none"> • Instream flow improvement 	Lower creek	Potential	None identified	4.2
	N/A	Decommission and revegetate unused roads.	<ul style="list-style-type: none"> • Water quality improvement • Riparian vegetation restoration 	Entire watershed	Potential	None identified	4.2
	Taneum Creek Fish Passage	Replacement of two ineffective and outdated fish passage structures at diversion dams in the lower creek by constructing roughened channel approaches.	<ul style="list-style-type: none"> • Fish passage 	Taneum Road, Burton and Taneum diversion dams	Proposed	Kittitas Conservation Trust	4.2
	Large Wood Replenishment	Improve in-channel habitat through the addition of large wood to the creek.	<ul style="list-style-type: none"> • Instream habitat restoration 	Lower Taneum Creek	Under way	Mid-Columbia Regional Fisheries Enhancement Group	4.2
Wilson Creek	N/A	Investigate re-establishing a natural stream channel (the creek was historically channelized) and revegetating the riparian corridor.	<ul style="list-style-type: none"> • Instream habitat restoration • Riparian vegetation restoration • Water quality improvement 	Entire creek	Potential	None identified	4.5
	N/A	Investigate the feasibility of stormwater treatment retrofits to improve runoff water quality from urban areas.	<ul style="list-style-type: none"> • Water quality improvement 	Areas of Ellensburg that drain to Wilson Creek	Potential	None identified	4.5
Yakima River	N/A	Revegetate disturbed riparian areas, where practical.	<ul style="list-style-type: none"> • Riparian vegetation restoration 	Entire Kittitas Valley-portion of the Yakima River	Potential	None identified	4.1
	N/A	Investigate opportunities for floodplain reconnection and setting-back of hydromodifications.	<ul style="list-style-type: none"> • Floodplain enhancement 	Entire Kittitas Valley-portion of the Yakima River	Potential	None identified	4.1
	N/A	Explore restoration of former gravel pits to create more natural floodplain and riverine habitat.	<ul style="list-style-type: none"> • Floodplain enhancement • Instream habitat restoration • Riparian vegetation restoration 	Historic gravel pits along river	Potential	None identified	4.1
	Wade Road Farm	Acquisition of 13 acres of high-quality forested floodplain habitat along an approximately half-mile reach of the river.	<ul style="list-style-type: none"> • Habitat preservation 	Wade Road	Under way	Forterra	4.1
	Gladmar Pond	Central Washington University manages Gladmar Pond and the surrounding County-owned shorelines for use as an outdoor research facility for university students.	<ul style="list-style-type: none"> • Research/education 	Gladmar Road	Under way	Central Washington University	4.1

Stream/ Waterbody	Project Name	Project Summary	Major Restoration Components	Site Location	Status of Restoration Project	Sponsor Organization(s)	Corresponding Section in the ICR (ESA, 2013)
	Hanson Pits	Habitat restoration along the Hansen pits, which is a former County gravel and borrow pit area.	<ul style="list-style-type: none"> Riparian vegetation restoration 	Canyon Road, south of Ellensburg	Proposed	City of Ellensburg and Kittitas County	4.1
	N/A	Revegetate the disturbed floodplain area northwest of Irene Rinehart Park.	<ul style="list-style-type: none"> Riparian vegetation restoration 	Irene Rinehart Riverfront Park	Potential	None identified	4.1

Table 3-3. Matrix of Shoreline Restoration Opportunities: Yakima River Basin—Yakima Canyon

Stream/ Waterbody	Project Name	Project Summary	Major Restoration Components	Site Location	Status of Restoration Project	Sponsor Organization(s)	Corresponding Section in the ICR (ESA, 2013)
Yakima River	Roza Dam removal	The Integrated Plan for the Yakima Basin proposes to construct a water storage facility within Lmuma Creek Canyon (the 'Wymer Project'), approximately 8 miles upstream of the Roza Diversion Dam. As part of the Project, the feasibility of removing Roza Dam will be evaluated.	<ul style="list-style-type: none"> • Fish passage • Instream habitat restoration 	Roza Dam	Potential	None identified	5.1
	Yakima River Canyon Land Acquisition	The Integrated Plan for the Yakima Basin proposed acquisition of 15,000 acres in the Yakima River Canyon. The area includes a wildlife corridor and contains shrub-steppe habitat.	<ul style="list-style-type: none"> • Habitat preservation 	Yakima River Canyon	Proposed	Washington Wildlife and Recreation Coalition	5.1

Table 3-4. Matrix of Shoreline Restoration Opportunities: Little Naches River Basin

Stream/ Waterbody	Project Name	Project Summary	Major Restoration Components	Site Location	Status of Restoration Project	Sponsor Organization(s)	Corresponding Section in the ICR (ESA, 2013)
Little Naches River	Road 1900 Relocation	Re-route a portion of Forest Service Road 1900 out of the river's floodplain.	<ul style="list-style-type: none"> • Floodplain enhancement 	Forest Service Road 1900	Proposed	U.S. Forest Service and Yakima Klickitat Fisheries Project	5.2
	N/A	Decommission and revegetate unused roads.	<ul style="list-style-type: none"> • Water quality improvement • Riparian vegetation restoration 	Entire watershed	Potential	None identified	5.2

3-5. Matrix of Shoreline Restoration Opportunities: Yakima River Basin—Columbia River

Stream/ Waterbody	Project Name	Project Summary	Major Restoration Components	Site Location	Status of Restoration Project	Sponsor Organization(s)	Corresponding Section in the ICR (ESA, 2013)
Columbia River	N/A	Prevent and control invasive species infestation at boat launches.	<ul style="list-style-type: none"> • Instream habitat restoration 	Boat launch locations	Potential	N/A	6.1

3.3 SMP Restoration Policies

[Note: For final draft, need to verify that these policies are the same in all 4 SMPs, after the draft municipal SMPs have been completed]

The draft SMPs identify policies and regulations for shoreline restoration as required by the shoreline guidelines. Restoration is an allowed use in all shoreline environment designations. The regulations governing restoration activities are intended to promote and facilitate implementation, monitoring, and tracking of restoration action in accordance with the following specific policies:

- 1) Protect all shorelines of the state so that there is no net loss of ecological functions from both individual permitted use and development and individual exempt use and development.
- 2) Restoration actions should improve shoreline ecological functions and processes as well as shoreline features and should promote sustainability of sensitive and/or regionally important plant, fish, and/or wildlife species and their habitats.
- 3) Restoration and enhancement of shorelines should be designed using principles of landscape and conservation ecology and should restore or enhance chemical, physical, and biological watershed processes that create and sustain shoreline habitat structures and functions.
- 4) In development of the Shoreline Master Program, evaluate and consider cumulative impacts of reasonably foreseeable future use and development on shoreline ecological functions and other shoreline functions to ensure no net loss of ecological function. Develop a means to allocate the burden of addressing cumulative effects.
- 5) Provide, where feasible and desirable, restoration of degraded areas along the shorelines of [Kittitas County, City of Ellensburg, City of Cle Elum, Town of South Cle Elum].
- 6) Restoration should be used to complement and not take the place of the shoreline protection strategies required by this Program to achieve the greatest overall ecological benefit.
- 7) [Kittitas County, City of Ellensburg, City of Cle Elum, Town of South Cle Elum] should seek funding from state, federal, private and other sources to implement restoration, enhancement, and acquisition projects.
- 8) Develop processing guidelines that will streamline the review of restoration only projects.
- 9) Encourage public and private shoreline owners to promote the proliferation of native, noninvasive wildlife, fish and plants.

- 10) Ensure that long-term maintenance and monitoring of restoration sites is included in the original permitting of the project.
- 11) [Kittitas County, City of Ellensburg, City of Cle Elum, Town of South Cle Elum] should support voluntary and cooperative restoration efforts between local, state, and federal public agencies, Tribes, non-profit organizations, and landowners to improve shorelines with impaired ecological functions and/or processes.
- 12) Restoration projects should be coordinated with local public utility and conservation districts.
- 13) [Kittitas County, City of Ellensburg, City of Cle Elum, Town of South Cle Elum] should coordinate with state resource agencies to develop educational materials which promote the maintenance and restoration of shoreline functions. Educational materials shall provide resources for a variety of scenarios and trends occurring within the shoreline that is reflected in the inventory and analysis, such as: the conversion of agricultural land to non-agricultural use, existing and ongoing agricultural uses, and existing or planned residential and commercial development.
- 14) Restoration should be integrated with and should support other natural resource management efforts in [Kittitas County, City of Ellensburg, City of Cle Elum, Town of South Cle Elum].
- 15) Encourage the agricultural industry to continue to work closely with agencies, such as the Natural Resource Conservation Service and Conservation Districts, with expertise in agricultural practices and restoration to improve degraded shoreline functions.
- 16) Allow for the use of tax incentive programs, mitigation banking, restoration grants, land swaps, or other programs, as they are developed, to encourage restoration of shoreline ecological functions and to protect habitat for fish, wildlife and plants.
- 17) [Kittitas County, City of Ellensburg, City of Cle Elum, Town of South Cle Elum] should pursue the development of a public benefit rating system that provides incentives for the restoration of the shoreline.

CHAPTER 4. IMPLEMENTING RESTORATION

As a long-range planning effort without dedicated funding, it is difficult to articulate a detailed strategy for accomplishing the goals of this restoration plan. Under the Shoreline Management Act, the County and its municipalities are required to review, and amend if necessary, their SMPs once every eight years. At the time of the next update, these jurisdictions are required to report progress towards meeting their restoration goals. However, there is no requirement or timeframe for specifically *implementing* the Restoration Plan.

There are a number of challenges when it comes to implementing this plan. Some of the key challenges are:

- **Lack of funding:** Designing, carrying out, and monitoring the success of restoration efforts can be an expensive, particularly at larger (e.g., watershed or reach) scales. In general, funding for restoration is limited and competition for funds can be extensive.
- **Landowner participation:** Landowners in areas identified as priorities for restoration efforts may be unwilling or unable to participate in those efforts. Building support and trust among landowners takes time and requires resources.
- **Project permitting:** Obtaining necessary permits from local, state, and federal regulatory agencies can require substantial time and effort, especially for projects that involve in-water construction. Although encouraged and allowed by the draft SMP, many restoration projects may take a year or more to permit.

One way the County and its municipalities can leverage its resources for restoration projects is to include measures such as vegetation enhancement or the addition of in-water habitat features with recreation improvements and/or public works projects. Another key strategy is to partner with other agencies and organizations on large or complex projects that have regional benefits. A description of existing restoration programs, potential project partners, and funding sources is included below.

4.1 Existing Restoration Programs

This section describes recent and ongoing projects and programs to protect and restore aquatic resources in Kittitas County.

Yakima Tributary Access and Habitat Program (YTAHP)

With the cooperation of County landowners and irrigators, the KCCD is conducting fish passage and screening projects on irrigation diversions within the Kittitas Valley. In 2011,

the KCCD completed the Cherry Creek fish passage and screening project, which opened up approximately two miles of habitat in three streams.

Upcoming YTAHP projects include separating the Ellensburg Water Company canal from Coleman Creek and providing fish passage and screening at two irrigation diversions, and the Teanaway River—3M Ditch Project, which focuses on providing fish passage and improved instream flows in the river during the irrigation season.

(<http://www.scwrcd.org/ytahp.html>)

Yakima River Basin Water Exchange

Pursuant to the Upper Kittitas Ground Water Rule (WAC 173-539A), mitigation is required for new groundwater withdrawals. The purpose of the rule is to preserve water for senior water right holders, as well as maintain instream flows. To facilitate water mitigation, Ecology has established a “water bank.” The bank buys water supplies from willing sellers, and makes them available as credits to willing buyers.

Manastash Creek Project

As a result of Manastash Creek being designated as critical habitat for Endangered Species Act-listed Mid-Columbia Summer Steelhead, the KCCD has been working with landowners and irrigators along Manastash Creek to improve habitat conditions along the lower 6 miles of the creek. Past activities have included installation of fish screen at irrigation diversion, removal of fish passage barriers, and efforts to improve stream flow conditions (Herrera & WSE, 2012). There are three unscreened fish diversions and one large fish passage barrier remaining, which are slated for improvement.

Recently, the KCCD, along with Kittitas County and local landowners, developed a detailed study and analysis of the lower 13 miles of Manastash Creek (Herrera & WSE, 2012). In the next phase of the Manastash Project, potential project opportunities will be developed with the goal of preserving or improving habitat, and reducing flood and erosion risks in the Manastash Creek corridor. (<http://www.kccd.net/manastash.htm>)

Irrigation Efficiencies Program

The Irrigation Efficiencies Program is a technical and cost share assistance program approved by the State Legislature to promote on-farm water conservation activities. In Kittitas County, the program is administered by the KCCD. The program provides funding for irrigators to install more efficient irrigation systems (such as a pivot sprinkler systems), and the “saved water” is leased to the State and held in trust until the least period expires. Irrigation efficiency projects have occurred along several County streams with irrigation diversions, including Wilson Creek, Manastash Creek, and the Teanaway River.

(http://www.kccd.net/Irrigation_Efficiencies.htm)

Cle Elum Stormwater Project

The KCCD is currently working with the City of Cle Elum, through an Ecology grant, to assess stormwater sources, inventory existing facilities, educate landowners, install

streamside revegetation projects and develop a stormwater demonstration project. (<http://www.kccd.net/Stormwater.html>)

Yakima Basin Integrated Water Resource Management Plan

In 2009, the U.S. Bureau of Reclamation and Ecology brought representatives from the Yakama Nation, irrigation districts, environmental organization, and federal, state, county, and city governments together to form the Yakima River Basin Water Enhancement Working Group to help develop a consensus-based solution to the basin's water problems. The outcome was the development of the Yakima River Basin Integrated Water Resource Management Plan (Ecology and Reclamation, 2011). The plan includes the following elements:

- Fish passage
- Fish habitat enhancement
- Modifying existing structures and operations
- Surface storage
- Market-based reallocation
- Groundwater storage
- Enhanced water conservation

(<http://www.ecy.wa.gov/programs/wr/cwp/ybip.html>)

In June of 2013, the plan was approved by the Washington State Legislature. The Legislature approved over \$130 million in state funding to implement the plan.

Yakima Basin Sockeye Reintroduction

The Yakama Nation, along with the U.S. Bureau of Reclamation and other partners, are working to restore fish passage to the storage reservoirs in the upper Yakima River basin, with an initial emphasis on Lake Cle Elum. Starting in 2009, the Yakama Nation has transplanted adult sockeye into Lake Cle Elum, which were the first sockeye to spawn in the Yakima Basin in over 100 years. Design of permanent fish passage facilities is currently under way. (<http://host119.yakama.com/restore/projects/yakima-basin-sockeye-reintroduction>)

Yakima Klickitat Fisheries Project

The Yakama Nation, along with several partner organizations, is undertaking a variety of habitat restoration and supplementation/reintroduction projects in the Yakima basin, as part of the Yakima Klickitat Fisheries Project. Project elements include:

- Reintroduction of species that have been largely extirpated from the basin (coho, sockeye, summer-run Chinook, and lamprey).
- Release of spring Chinook at Cle Elum, and monitoring and evaluating the impacts of these releases.
- Monitor and evaluate passage and survival bottlenecks for juvenile salmon.

(<http://www.ykfp.org/>)

4.2 Potential Partners and Funding Sources

A number of organizations are active in restoration activities and public education in Kittitas County, which often partner with local governments for aquatic resource restoration projects. In addition, a number of government agencies and organizations provide opportunities for grant funding for restoration and preservation projects.

Potential Partners and Sources of Technical Assistance

Kittitas County Conservation District (KCCD)

Anna Lael
 District Manager
 607 East Mountain View
 Ellensburg, WA 98926
<http://www.kccd.net/>

The KCCD is one of the 45 local Conservation Districts within the State, which helps match local resource needs with technical financial resources to help landowners with conservation projects. The KCCD also works with local, state, and federal authorities to implement on-the-ground stewardship activities. The KCCD is currently partnered with Kittitas County on the Manastash Project, as described above.

Washington State Department of Ecology

Central Regional Office
 15 West Yakima Avenue
 Suite 200
 Yakima, WA 98902
http://www.ecy.wa.gov/directory_cro.html

U.S. Department of Reclamation

Columbia-Cascades Area Office
 1917 Marsh Road
 Yakima, WA 98901
<http://www.usbr.gov/pn/>

Ecology and the U.S. Department of Reclamation are currently working to improve water management in the Yakima River Basin. The Yakima Basin Integrated Water Resource Management Plan (Reclamation and Ecology, 2011) contains a variety of proposed elements to protect, mitigate, and enhance fish and wildlife habitat. In June 2013, the plan was adopted and funded by the Washington State Legislature; approximately \$32 million was allocated to begin work on specific elements of the plan.

Forterra

Central Washington Office
409 North Pine Street
Ellensburg, WA 98926
<http://www.forterra.org/>

Kittitas Conservation Trust

205 Alaska Avenue
P.O. Box 428
Roslyn, WA 98941
<http://kittitasconservationtrust.org/>

Forterra and the Kittitas Conservation Trust are land conservancy organizations that are active within the County. The primary goals of these organizations are to conserve and protect high-quality habitats and working agricultural lands.

Washington Water Trust

103 E 4th Ave
Suite 203
Ellensburg, WA 98926

The Washington Water Trust is a non-profit organization with the goal of improving and protecting stream flows and water quality throughout Washington State. The trust relies on voluntary, market-based transactions and cooperative partnerships to conserve water, such as leasing and buying water from water rights holders, and working with other organizations, such as the KCCD, to promote more efficient irrigation methods and technologies.

Mid-Columbia Fisheries Enhancement Group

Rebecca Wassell
Yakima Basin Program Manager
P.O. Box 2211
White Salmon, WA 98672
<http://midcolumbiarfeq.com/>

The Mid-Columbia Fisheries Enhancement Group works with landowners and community partners to protect and restore fish habitat. The group is one of the 14 Regional Fisheries Enhancement Groups in Washington State.

Yakama Nation Fisheries

401 Fort Road

PO Box 151

Toppenish, WA 98948

<http://host119.yakama.com/>

Yakama Nation Fisheries is dedicated to restoring culturally important fish runs in the Columbia River Basin. The Yakama Nation is active in projects to restore the historic salmon, steelhead, and lamprey runs in the Yakima River basin.

Potential Funding Sources

Environmental Protection Agency

Region 10: Pacific Northwest

Grants Administration Unit

Bob Phillips

phillips.bob@epa.gov

(206) 553-6367

<http://www.epa.gov/epahome/grants.htm>

The Environmental Protection Agency funds a variety of projects that aim to safeguard the natural environment and protect human health. Potential opportunities specific to watershed protection and restoration are listed below.

The Clean Water State Revolving Fund Program: Under this program, EPA provides grants or “seed money” to all 50 states plus Puerto Rico to capitalize state loan funds. The states, in turn, make loans to communities, individuals, and others for high-priority water-quality activities. Types of projects funded include protecting and restoring wetlands and riparian buffers.

Nonpoint Source Implementation Grant (319) Program: Clean Water Act Section 319(h) funds are provided only to designated state and tribal agencies to implement their approved nonpoint source management programs. State and tribal nonpoint source programs have a variety of components such as technical assistance, financial assistance, education, training, demonstration projects, and technology transfer. Each year, EPA awards Section 319(h) funds to states in accordance with an allocation formula that EPA has developed.

Wetland Protection, Restoration, and Stewardship Discretionary Funding: This program provides support for studies and activities related to implementation of Section 404 of the Clean Water Act for both wetlands and sediment management. Projects can support regulatory, planning, restoration or outreach issues. Typical grant awards range from \$5,000 to \$20,000.

Environmental Education Grants: This program funds a broad variety of environmental education, training, and outreach activities. Grant awards of up to \$50,000 are provided to universities, state, local, and tribal education agencies, and nonprofit organizations.

U.S. Fish & Wildlife Service (USFWS)

911 NE 11th Avenue

Portland, OR 97232-4181

(503) 231-2014

<http://www.fws.gov/grants/>

Grant programs administered by USFWS are described below.

- *Partners for Fish and Wildlife Program*: This program provides technical and financial assistance to private landowners and tribes who are willing to work with USFWS and other partners on a voluntary basis to help meet the habitat needs of Federal Trust Species. The Partners Program can assist with projects in all habitat types which conserve or restore native vegetation, hydrology, and soils associated with imperiled ecosystems such as longleaf pine, bottomland hardwoods, tropical forests, native prairies, marshes, rivers and streams, or ecosystems that otherwise provide an important habitat requisite for a rare, declining or protected species. The typical grant award is approximately \$25,000.
- *National Fish Passage Program*: Each year the Service solicits and inputs select fish passage projects into the Fisheries Operational Needs System database. Projects are prioritized and selected based upon the benefits to species and the geographical area. Typical projects include barrier culvert removal or replacement with a fish passable culvert or bridge, and re-opening oxbow and off channel habitats. Typical funding amounts range from \$30,000 to \$110,000 with a minimum 25% cost share requested.
- *Cooperative Endangered Species Conservation Fund*: Grants offered through the Cooperative Endangered Species Conservation Fund support participation in a wide array of voluntary conservation projects for candidate, proposed and listed species. These funds may in turn be awarded to private landowners and groups for conservation projects.
- *North American Wetlands Conservation Act Grants Program*: The North American Wetlands Conservation Act of 1989 provides matching grants to organizations and individuals who have developed partnerships to carry out wetlands conservation projects in the United States, Canada, and Mexico for the benefit of wetlands-associated migratory birds and other wildlife. The Standard Grants Program supports projects in Canada, the United States, and Mexico that involve long-term protection, restoration, and/or enhancement of wetlands and associated uplands habitats. The Small Grants Program operates only in the United States; it supports the same type of projects and adheres to the same selection criteria and administrative guidelines as the U.S. Standard Grants Program. However, project activities are usually smaller in scope and involve fewer project dollars. Grant requests may not exceed \$75,000, and funding priority is given to grantees or partners new to the Act's Grants Program.

Washington State Department of Ecology

P.O. Box 47600

Olympia, Washington 98504-7600

360-407-6300

<http://www.ecy.wa.gov/fap.html>

Ecology's Water Quality Program administers four major funding programs that provide low-interest loans and grants for projects that protect and improve water quality in Washington State. Ecology acts in partnership with state agencies, local governments, and tribes by providing financial and administrative support for their water quality efforts. As much as possible, Ecology manages the four programs as one; there is one funding cycle, application form, and offer list. The four programs are: The Centennial Clean Water Program, The Water Pollution Control Revolving Fund, The Clean Water Section 319 Program, and Stormwater Retrofit and Low Impact Development Grant Program. Local governments, tribes, conservation districts, and non-profit groups are eligible for funding. Grants and loans are available for point source and nonpoint source projects, for example, treatment facilities, stormwater control and treatment, stream restoration and protection, and on-site septic repair and replacement.

National Fish and Wildlife Foundation

1120 Connecticut Avenue, NW, #900

Washington, DC 20036

Kathleen Pickering 202-857-0166

<http://www.nfwf.org/AM/Template.cfm?Section=GrantPrograms>

Non-profit organizations, local, state or federal government agencies are eligible to apply for funds for community-based projects that improve and restore native salmon habitat, remove barriers to fish passage, or for the acquisition of land/ conservation easements on private lands where the habitat is critical to salmon species. The National Fish and Wildlife Foundation's primary grant program, The Five-Star Restoration Program, provides modest financial assistance on a competitive basis to support community-based wetland, riparian and coastal habitat restoration projects that build diverse partnerships and foster local natural resource stewardship through education, outreach and training activities.

Washington State Recreation and Conservation Office (RCO)

1111 Washington St. SE

PO Box 40917

Olympia, WA 98504

360-902-3000

<http://www.rco.wa.gov/grants/index.shtml>

The RCO (formerly Interagency for Outdoor Recreation [IAC]) supports the work of several organizations such as the *Recreation and Conservation Funding Board* and the *Salmon Recovery Funding Board*.

The Recreation and Conservation Funding Board provides funds for the acquisition and development of recreation and conservation lands. The board distributes funds through eight grant programs, for instance:

- *Land and Water Conservation Fund*: This program provides funding to preserve and develop outdoor recreation resources, such as parks, trails, and wildlife lands.
- *Washington Wildlife Recreation Program*: The Washington Wildlife Recreation Program Account involves support for critical habitat, natural areas, urban wildlife, local parks, state parks, trails, and water access categories.
- *Aquatic Lands Enhancement Account*: This program funds acquisition, restoration, and public access projects that benefit wildlife habitat and aquatic conservation in waterfront areas.

The Recreation and Conservation Funding Board's grant process is open and competitive. Applications are submitted annually for some grant programs and every two years for others. The grant applications are reviewed by board staff and citizen committees. Letters of intent are usually due March 1. Applications are usually due May 1.

The Salmon Recovery Funding Board (SRFB) supports salmon recovery by funding habitat protection and restoration projects. It also supports related programs and activities that produce sustainable and measurable benefits for fish and their habitat. *Salmon Recovery Grants* can be used for buying salmon habitat, restoring areas along streams and other waterways, replacing barriers to fish passage, and creating fish habitat. The grants from SRFB range from \$10,000 to nearly \$900,000. They have been awarded to organizations in 28 counties for work ranging from planting trees along streams to cool the water for salmon, to replacing culverts that prevent salmon from migrating to spawning habitat, to restoring entire floodplains.

Depending on the grant program, eligible applicants may include municipal subdivisions (cities, towns, counties, and special districts such as port, conservation, utility, park and recreation, and school), tribal governments, state agencies, nonprofit organizations, regional fisheries enhancement groups, and private landowners. To be considered for funding, acquisition projects must be operated and maintained in perpetuity for the purposes for which funding is sought. Restoration projects must be operated and maintained for ten years after construction is completed. All projects require lead entity approval and must address the goals and actions defined in the lead entity strategy or regional recovery plan.

Grants are awarded by the SRFB based on a public, competitive process that weighs the merits of proposed projects against established program criteria.

Trout Unlimited
Embrace-A-Stream

406-543-1192

<http://www.tu.org/conservation/watershed-restoration-home-rivers-initiative/embrace-a-stream>

Embrace-A-Stream (EAS) is the flagship grant program for funding Trout Unlimited's conservation efforts to conserve, protect, and restore coldwater fisheries and their watersheds. Trout Unlimited annually raises money from members, corporate and agency partners, and foundations to distribute as small grants to local Trout Unlimited projects. The goal of EAS is to conserve coldwater fisheries through innovative grassroots conservation projects. Successful projects are based on sound science, benefit the resource, strengthen the local Total Unlimited chapter and council, and help build the constituency for protecting trout and salmon. Trout Unlimited volunteers are actively involved in project work and are expected to provide matching funds. An Embrace-A-Stream Committee comprised of Trout Unlimited volunteer representatives and scientific advisors evaluates all proposed projects.

United States Department of Agriculture Conservation Reserve Program

<http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=crp>

The Conservation Reserve Program (CRP) provides technical and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. The program provides assistance to farmers and ranchers in complying with federal, state, and tribal environmental laws, and encourages environmental enhancement. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as grasses, wildlife plantings, trees, filterstrips, or riparian buffers. Farmers receive an annual rental payment for the term of the multi-year contract. Cost sharing is provided to establish the vegetative cover practices.

Kittitas County Flood Control Zone District (FCZD)

<http://www.co.kittitas.wa.us/public-works/flood/flood-control-zone-district.aspx>

The County recently formed the FCZD, which is funded through property taxes. The collected funds will be used to fund flood-related projects and programs within the County. While the primary intent of the FCZD is to fund projects that protect County roads and infrastructure, there may be potential for flood control projects that also enhance shoreline resources.

4.3 Timelines, Benchmarks, and Measuring Effectiveness

As a long-range policy plan, it is important to establish meaningful timelines and measureable benchmarks in the SMPs by which to evaluate the effectiveness of restoration planning or actions. But as stated above, the County and its municipalities are required to report progress towards meeting their restoration goals at the time of the next SMP update (likely to occur in approximately 2022). During this review period, the County and its municipalities could document progress towards achieving shoreline restoration goals. The reviews could include:

- Re-evaluating adopted restoration goals, objectives, and policies;

- Summarizing both planning efforts (including application for and securing grant funds) and on-the-ground actions undertaken in the interim to meet those goals; and
- Revising the SMP restoration planning policies to reflect changes in priorities or objectives.

To assess changes in shoreline conditions through time and determine if restoration actions may be needed to achieve no net loss of shoreline functions, it is likely necessary to monitor, record, and maintain key environmental indicators to allow a comparison with baseline conditions. A potential option to track changes in shoreline conditions would be to create a checklist for all use and development proposals (including permit-exempt uses and developments) within shoreline jurisdiction. The checklist could contain review questions to help identify and track changes in environmental indicators, such as area of forest canopy removed or feet of hard armoring installed. The checklist could also be used to track restoration activities for individual restoration projects. Specific restoration benchmarks that could be tracked may include, but not be limited to, the following:

- Acres of wetland restored within shoreline jurisdiction
- Acres of off-channel habitat restored within shoreline jurisdiction
- Linear feet of bank armoring removed
- Acres of native vegetation planted or restored
- Pieces of large woody debris placed in streams
- Number of culverts replaced and/or number of miles of stream open to fish migration
- Performance in meeting water quality criteria as measured in the state water quality assessment

Based upon the results of the development and restoration checklists, the County and its municipalities could reassess environmental conditions and restoration objectives. Those ecological processes and functions that demonstrate a downward trend of impairment could be elevated for priority action to prevent loss of critical shoreline resources. Alternatively, successful restoration may reduce the importance of some restoration objectives in the future.

4.3.1 Kittitas County Restoration Timelines

In Kittitas County, shoreline restoration continues to be a collaborative process. The County intends to adhere as closely as possible to the timelines described below, depending on interdepartmental coordination, partnerships, and the availability of staff and grant funding.

Within 2 years of adoption of this plan:

- Coordinate with organizations dedicated to restoration, such as the KCCD and Ecology, to schedule and explore funding options and partnerships to pursue restoration plan implementation.
- Prepare a progress report on restoration plan implementation.

Within 5 years of adoption of this plan:

- Implement at least one of the identified restoration projects.
- Update this restoration plan.

Within 7 years of adoption of this plan:

- Continue to identify and implement an additional one (or more) restoration projects.
- Continue to explore funding options and partnerships.

4.3.2 City of Cle Elum Restoration Timelines

PLACEHOLDER—waiting for CIA to be complete. There may not be enough development potential within City jurisdiction to warrant a restoration timetable

4.3.3 Town of South Cle Elum Restoration Timelines

PLACEHOLDER—waiting for CIA to be complete. There may not be enough development potential within Town jurisdiction to warrant a restoration timetable

4.3.4 City of Ellensburg Restoration Timelines

PLACEHOLDER—waiting for CIA to be complete. There may not be enough development potential within City jurisdiction to warrant a restoration timetable

CHAPTER 5. REFERENCES

ESA. 2013. Kittitas County Regional Shoreline Master Program Update—Shoreline Inventory and Characterization Report (Revised Final). Prepared for: Kittitas County Communication Development Services, City of Cle Elum Department of Community Development, Town of South Cle Elum, and City of Ellensburg Department of Community Development.

Herrera (Herrera Environmental Consultants, Inc.) and WSE (Watershed Science & Engineering, Inc.). 2012. Watershed and Reach Scale Investigation of Existing Conditions: Manastash Creek Corridor Habitat Enhancement and Flood Hazard Reduction Plan. Prepared for: Kittitas County Conservation District.

Reclamation and Ecology (U.S. Bureau of Reclamation and Washington State Department of Ecology). 2011. Yakima River Basin Study: Proposed Integrated Water Resource Management Plan (Ecology Publication #11-12-004). Yakima, WA.