SHORELINE ASSESSMENT SUMMARY
AND
SHORELINE RESTORATION PLAN

FOR
YAKIMA COUNTY, WASHINGTON

TABLE OF CONTENTS

PART 1
SHORELINE ASSESSMENT SUMMARY

Shoreline Areas
Table 1. - Jurisdictional Shoreline Areas
Key Yakima Subbasin Documents
Summary of Detailed and General Assessments for Shorelines Areas
Detailed Yakima County Shoreline Characterization
General Yakima County Shoreline Characterization
Table 2. Shoreline Habitat Conditions / Problems

PART 2
SHORELINE RESTORATION PLAN

Introduction
Regulatory Setting
Use of this Restoration Plan
Restoration Planning Approach
Goals, Policies and Prioritization for Restoration
Restoration Activities
Table 1. Yakima County Activities and Implementation Strategies
Non-County Activities

APPENDIX A
Existing and Proposed Restoration Programs
APPENDIX B
Existing and Proposed Projects for Habitat Restoration
APPENDIX C
Prioritization For Restoration

PART 1
SHORELINE ASSESSMENT SUMMARY

Shoreline Areas

The Department of Ecology (DOE), which is the state agency responsible for overseeing the regulation of the shorelines of the state, has identified the rivers, streams and lakes and portions thereof, which constitute shorelines of the state (see below). The criteria set forth for identifying these rivers and streams is defined in WAC 173-18-040 and states;

> *The streams have been identified from the point at which the stream reaches a mean annual flow of twenty cubic feet per second down to the mouth of said stream or river. Rivers which constitute shorelines of statewide significance are identified by the point at which the mean annual flow exceeds two hundred cubic feet per second.*

The criteria set forth for identifying Lakes and "Lakes of Statewide Significance" is defined in WAC 173-20-030 and states;

> *"Lakes" means all the surface water areas of the state, including reservoirs; except lakes less than twenty acres in size; and the Lakes of statewide significance means those lakes, whether natural, artificial or a combination thereof, with a surface acreage of one thousand acres or more measured at the ordinary high-water mark.*

Table 1 below identifies all the shoreline areas that meet the statutory requirements of the Shoreline Management Act. A large number of Shorelines listed in the table were not identified as Shorelines in the Yakima County Shoreline Master Program or the Shoreline Administrative Code (WAC 173-18, WAC 173-20), but were identified in the 2003 report titled, "Determination of Upstream Boundary Points on Southeastern Washington Streams and Rivers Under Requirements of the Shoreline Management Act of 1971". Water-Resources Investigations Report 03-4042. US Geological Survey prepared in Cooperation with the Washington Department of Ecology, and "Lakes of Washington Volume II Eastern Washington". 1973. Water Supply Bulletin No. 14. Washington Department of Ecology. Due to the date of Water Supply Bulletin No. 14, all of the lakes that were determined to meet the size criteria were analyze through GIS to determine areal extent. Some of the lakes identified in the report were part of irrigation systems that are no longer functioning; a few no longer exist, or were reduced in size below the criteria to qualify as a Shoreline. A large number of identified Shorelines are located in the Yakama Nation Closed Area, where Yakima County and the State of Washington have no jurisdiction. In addition, a large number of identified Shorelines are within Federal ownership, where Yakima County and the State of Washington have limited jurisdiction.

Much of the available shoreline assessment information focuses on a basin-wide analysis and fails to mention some of the smaller jurisdictional streams or lakes. Therefore many of the tables in the Restoration Plan are designed to associate the smaller shoreline tributaries, lakes, and ponds with the larger basins that have assessment documentation. In most cases the larger basin assessments provide information about their tributaries, though it is a lower level of detail than

the basin information. At a minimum, general statements of a basins' condition can be extrapolated to the tributaries to some extent.

(TABLE FOLLOWS)

Table 1. - Jurisdictional Shoreline Areas

Shoreline River Basin	Associated Shoreline Tributaries	Associated Shoreline Lakes or Ponds
Ahtanum Creek	North Fork Ahtanum South Fork Ahtanum	
American River*	Rainier Fork Creek* Union Creek*	Dewey Lake*
Bumping River*	Deep Creek Cougar Creek	Bumping Lake* Twin Sister Lake*
Columbia River		Priest Rapid Pool
Cowiche Creek	South Fork Cowiche Creek	Cowiche Reservoir
Cispus River #	Muddy Fork Creek*	
Klickitat River*	Big Muddy Creek* Bird Creek* Brush Creek* Butte Meadows* Clearwater Creek* Crawford Creek* Diamond Fork* Dry Creek* Fish Lake Stream* Hellroaring Creek* Huckleberry Creek* Little Muddy Creek* Piscoe Creek* Rusk Creek (Avalanche Valley)* Summit Creek* Surveyors Creek* Swamp Creek* TeePee Creek* Trappers Creek* Trout Creek* West Fork Klickitat River* White Creek*	Cougar Lake* Fish Lake* Howard Lake* Mt. Adams Lake* Swamp Lake* Two Lakes – Lower* Two Lakes – Upper*
Little Naches River	South Fork Little Naches River* Little Naches Middle Fork, Crow Creek*	
Naches River		Willow Lake, Lake Aspen
Rattlesnake Creek*		
Satus Creek*	Logy Creek*, North Fork Dry Creek*	Unnamed Lake Sec. 9 & 10, T9N, R22E
Tieton River	North Fork Tieton River* South Fork Tieton River* Indian Creek*, Conrad Creek* Clear Creek*	Clear Lake*, Rimrock Lake*, Pear Lake* Leech Lake*, Dog Lake*
Toppenish Creek*	Simcoe Creek*	Mud Lake
(Grandview WWTP) 3 - Unnamed Lake Sec. 3, T8N, R23E		
(Graham & Morris Pits) Unnamed Lake Sec. 32, T11N, R20E		

Note: An asterisk (*) denotes that the stream or river or a portion thereof is located in an area with little to no Yakima County jurisdiction – i.e. closed area of the Yakama Nation or wilderness areas. Note: The number sign (#) denotes that the majority of the River Basin is not in Yakima County's shoreline jurisdiction only its tributaries.

Table 1 (Cont.) - Jurisdictional Shoreline Areas

Rivers	Associated Tributaries	Associated Lakes or Ponds
Wenas Lake		
White Salmon Creek#*	Gotchen Creek* Hole in the Ground Creek* Morrison Creek* Unnamed Creek (Sec 29 & 31, T7N, R10E)*	
Yakima River		Byron Ponds Big Elton Pond Buchanan Lake Freeway Lake Giffen Lake Horseshoe Lake Horseshoe Pond Morgan Pond Slaughterhouse Lake Unnamed Lake Sec. 7 & 8,T9N,R22E Unnamed Lake Sec.20, T9N, R22E Unnamed Lake Sec. 18, T9N, R22E Unnamed Lake Sec. 20, T9N, R21E Unnamed Lake Sec. 21, T11N, R20E Unnamed Lake Sec.17&20,T11N,R20E Unnamed Lake Sec. 35, T12N, R19E Unnamed Lake Sec. 7, 8, 17 & 18, T9N, R22E Unnamed Lake Sec. 31, T14N, R19E Unnamed Lake Sec. 31, T14N, R19E & Sec. 6, T13N, R19E Unnamed Lake Sec. 31, T14N, R19E (Selah Pits) Unnamed Lake Sec. 30&31, T14N, R19E (Parker Pits) Unnamed Lake Sec. 20, T12N, R19E Unnamed Lake Sec. 20&21, T12N, R19E

Note: An asterisk (*) denotes that the stream or river or a portion thereof is located in an area with little to no Yakima County jurisdiction – i.e. closed area of the Yakama Nation or wilderness areas. Note: The number sign (#) denotes that the majority of the River Basin is not in Yakima County's shoreline jurisdiction only its tributaries.

Key Yakima Subbasin Documents

Over the years the Yakima River basin has been extensively studied resulting in the development of a number of comprehensive basin-wide reports, such as; the Watershed Management Plan[1], the Yakima Subbasin Plan[2], the Yakima Subbasin Salmon Recovery Plan[3], the Salmonid Habitat Limiting Factors Analysis[4] and the Yakima County Shoreline Characterization study[5]. The information that these reports provided was crucial in the development of this Restoration Plan. Brief excerpts from the introduction sections of each report are provided below to summarize the different documents.

> *The Yakima Subbasin Plan* *The purpose of the Yakima Subbasin Plan (YSP) is to provide the Council with a coherent and measurable plan for allocating Bonneville Power Administration (BPA) fish and wildlife mitigation and restoration funds within the Yakima Basin. The plan is intended to provide guidance to BPA and the Council on the general locations and types of projects that would mitigate the impacts of the Federal Columbia River Power System (FCRPS) on basin fish and wildlife resources, and also to aid the Council in development of strategies for compliance with the Endangered Species Act (ESA)[6] in tributaries such as the Yakima River. The plan identifies short and long term non-regulatory strategies for restoring species habitat, and prioritizes those strategies relative to type and location within the basin. An objective of the prioritization is to identify early funding opportunities that provide basin-wide and species-wide restoration results. The primary revenue source to implement plan strategies is BPA electric utility ratepayer funds which fund restoration actions through the enactment by Congress of the 1980 Pacific Northwest Electric Power Planning and Conservation Act (Power Act [P.L. 96-501]). Once adopted by the Council, the Yakima Subbasin Plan, along with the plans from the other subbasins within the Columbia system will become an amendment to the Columbia Basin 2000 Fish and Wildlife Program.*
>
> *The Salmon Recovery Plan* *A recovery plan is a template for the recovery of a threatened or endangered species and its habitats. The recovery plan describes a process to remove the threats to the long-term survival and reverse the decline of a listed species. In this plan, recovery is generally defined as the restoration of listed species such that they become viable and harvestable components of their ecosystem. A recovery plan is a*

---

[1] Watershed Management Plan – Yakima River Basin, Yakima River Basin Watershed Planning Unit and Tri-County Water Resources Agency.

[2] Yakima Subbasin Plan – November 26, 2004.

[3] Yakima Subbasin Salmon Recovery Plan – 2005, Yakima Subbasin Fish and Wildlife Planning Board.

[4] Salmonid Habitat Limiting Factors – Yakima River Watershed, Water Resource Inventory Areas 37-39, Washington State Conservation Commission, December 2001 and Salmonid Habitat Limiting Factors - Water Resource Inventory Area 30, Klickitat December 2001.

[5] *Yakima County Shoreline Characterization study*, Central Washington University, 2005.

[6] The Endangered Species Act of 1973 was passed to provide for the conservation of species which are in danger of endangerment or extinction throughout all or a significant portion of their range and the conservation of the ecosystems on which they depend. "Species" is defined by the Act to mean a species, a subspecies, or, for vertebrates only, a distinct population.

guidance document, intended to provide information to Federal Agencies (NOAA Fisheries and the U.S. Fish and Wildlife Service) that will lead to recovery of listed species and their associated habitats. The plan provides information necessary to describe the current status of the listed species as well as ongoing or proposed actions designed to aid in the recovery of the species.

The Yakima Salmon Recovery Plan will describe a process to remove or minimize the threats to steelhead and bull trout long-term survival and reverse their decline within the Yakima Basin. This plan should also benefit other sensitive or at-risk species.

<u>Habitat Limiting Factors – Yakima River Watershed</u> Section 10 of Engrossed Substitute House Bill 2496 (Salmon Recovery Act of 1998), directs the Washington State Conservation Commission, in consultation with local government and treaty tribes to invite private, federal, state, tribal, and local government personnel with appropriate expertise to convene as a Technical Advisory Group (TAG). The purpose of the TAG is to identify limiting factors for salmonids. Limiting factors are defined as "conditions that limit the ability of habitat to fully sustain populations of salmon, including all species of the family Salmonidae." Although the report is titled as a habitat limiting factors analysis (per the legislation), it is important to note that the charge to the Conservation Commission in ESHB 2496 does not constitute a full limiting factors analysis in the true scientific sense. A full habitat limiting factors analysis would require extensive additional scientific studies for each of the subwatersheds in the Yakima Basin (Water Resource Inventory Areas (WRIA) 37-39 (see location in Figure 1)). Analysis of hatchery, hydro, and harvest impacts would also be part of a comprehensive limiting factors analysis; these elements are not addressed in this report, but are being considered in other forums.

<u>Watershed Management Plan – Yakima River Basin</u> The Yakima River Basin Watershed Planning Unit was formed in 1998 to develop a comprehensive watershed management plan for the Yakima River Basin. The Planning Unit represents local governments, citizens and landowners, irrigation districts, conservation districts, State agencies and others.. The Watershed Plan provides a "road map" for maintaining and improving the Basin's economic base, planning responsibly for expected growth in population, managing water resources for the long-term, and protecting the Basin's natural resources and fish runs. This Watershed Plan was developed under local leadership, using a grant from the State of Washington under the provisions of the Watershed Management Act (Chapter 90.82 RCW). During the four year period for Plan development, landowners, local governments, the Yakama Nation and state and federal agencies have continued to work on improving watershed conditions throughout the Yakima Basin. This planning process provides additional support and focus for many of these ongoing activities.

<u>Watershed Assessment - Yakima River Basin</u> In 1998, the Tri-County Water Resources Agency (TCWRA) initiated development of a water-resource management program for the Yakima Basin, under the State of Washington's Watershed Management Act (WMA). TCWRA invited interested persons and agencies to join the Yakima River Basin Watershed Planning Unit. During Phase I of the planning process, the Planning Unit was organized. During Phase II (documented in this report), a Watershed Assessment was

conducted to compile technical information. During the upcoming Phase III, key issues for planning are further outlined and a set of water-resource management strategies will be developed for the Watershed Plan.

The Watershed Assessment summarizes technical information only. It does not include decisions or development of water-resource management strategies. It provides information for a work product that is expected to evolve further during the Planning Phase.

Summary of Detailed and General Assessments for Shorelines Areas

In addition to the above documents, an inventory and assessment of the Yakima County Shorelines has been conducted by Central Washington University. Unfortunately, the Shoreline Inventory and Characterization was completed with out the information from the 2003 USGS/Department of Ecology report that identified a substantial number of new Shorelines in Yakima County. This is a detailed inventory and assessment concentrated on the Shorelines identified in the existing SMP and the Shoreline WACs. The Shoreline reaches covered are the ones primarily affected by development. The remaining Shorelines not covered by the CWU analysis are addressed in this report. Generally, these Shorelines are in federal or tribal jurisdiction, or have extremely limited development pressure.

***Detailed Yakima County Shoreline Characterization*.**

Parts of section 1 (Introduction) is provided below to summarize the detailed assessment of Shorelines in Yakima County.

> "The purpose of this study is to conduct a baseline inventory of abiotic, biological and cultural conditions in Yakima County's shoreline jurisdiction to provide the basis for the County's Shoreline Master Program update as defined by the state's Shoreline Management Act (RCW 90.58). This characterization will help the County identify existing conditions, determine functions and values of shoreline resources, and explore opportunities for conservation and restoration of ecological functions within the shoreline jurisdiction. These findings will help provide a framework for future updates to the County's shoreline environment designations and shoreline management policies and regulations."

General Yakima County Shoreline Characterization To extend the shoreline characterization to the remainder of shoreline areas in the County, the documents referenced above were reviewed. As discussed above, significant efforts have been made on the management and restoration of aquatic wildlife and habitat in the Yakima River basin, which have resulted in many assessment documents that cover the entire basin. Table 2, below, provides a brief assessment description of the jurisdictional shoreline areas of Yakima County. This is only a brief description of the general condition of each shoreline area that focuses on the descriptions of problems or degraded areas. For detailed assessment information on these shoreline areas, a "Referenced Sources" column is provided that lists additional resources of information. The form and much content of the table itself is derived from Tables 2-7 and 2-8 (Habitat Conditions and Problems Matrix) from the Watershed Management Plan. Other additional assessment information was used to fill any data gaps or data clarification.

Table 2. Shoreline Habitat Conditions / Problems

Shoreline River Basin & Associated Shoreline Tributaries, Lakes, Ponds	**Habitat Condition**	**Referenced Sources**
Yakima River (Wilson Creek - Parker Dam) *(4) Unnamed Lakes, Buchanan Lake, Freeway Lake*	Reach highly channelized in Yakima Canyon where complexity is low and flow velocities from reservoir release higher than optimal for rearing juveniles which need side channel refuge. Water quality generally excellent although high sediments are periodically received from Wilson Creek and Teanaway River. Sediment settles behind Roza Dam and is a problem to downstream spawning areas when flushed out. Woody debris nearly absent as recruitment limited to up river sources. Levees/highways confine channels near the City of Yakima restrict floodplain function.[7]	➢ Watershed Management Plan Nov. 2002 pg. 2-20 through 2-23. ➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 100 ➢ Yakima Subbasin Plan November 26th, 2004 pg. 274 ➢ Yakima Subbasin Salmon Recovery Plan, 2005 pg. 28
Yakima River (Parker Dam - Toppenish Crk) *(2) Unnamed Lakes, (3) Unnamed Lake*	Reach important as a migratory corridor and of secondary importance for spawning; instream flow significantly lower than upstream reaches, serious water quality problems, including fecal coliform, sediment loads from agricultural drains and associated pesticide residues. Portions of reach channelized with deficient riparian cover, off channel habitats exist with potential for more connectivity to local sloughs and oxbow lakes.[7]	➢ Watershed Management Plan Nov. 2002 pg. 2-20 through 2-23. ➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 100. ➢ Yakima Subbasin Plan November 26th, 2004 pg. 274 ➢ Yakima Subbasin Salmon Recovery Plan, 2005 pg. 28
Yakima River (Toppenish Crk – Mouth) *(4) Unnamed Lakes Slaughterhouse Lake, Morgan Lake, Giffen Lake Horseshoe Lake & Pond, Byron Ponds*	Reach seriously degraded by toxicants (metals, PCBs, pesticides), fecal coliform, and elevated temperatures. Sediments from drains blanket slough like river bottom. Flows significantly reduced in 10 mile stretch near Prosser due to Chandler Power Plant. Localized deficiencies in riparian shade and off channel rearing. Important migratory corridor. Fall chinook spawn in this reach.	➢ Watershed Management Plan Nov. 2002 pg. 2-20 through 2-23. ➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 100. ➢ Yakima Subbasin Plan November 26th, 2004 pg. 274 ➢ Yakima Subbasin Salmon Recovery Plan, 2005 pg. 28

Note: The above information should be used as general guidance and verified by qualified biologists or engineers to ensure accuracy and exact location before starting any potential restoration program. Note: An asterisk (*) denotes that the stream or river or a portion thereof is located in an area with little to no Yakima County jurisdiction – i.e. closed area of the Yakama Nation, wilderness areas, or US Forest Service areas.

[7] Tables 2-7 and 2-8 Habitat Conditions and Problems Matrix – Mainstem River Reaches Chapter 2 – Existing Conditions, Watershed Management Plan Nov. 2002, pg. 2-20 through 2-23.

Shoreline River Basin & Associated Shoreline Tributaries, Lakes, Ponds	Habitat Condition	Referenced Sources
Ahtanum Creek North Fork Ahtanum Creek South Fork Ahtanum Creek	Fish passage barriers and dewatered reaches due to irrigation diversions (some unscreened) block access to upper forested watershed where habitat is generally good. Livestock impacts in riparian areas. Riparian areas suboptimal. Sedimentation from roads. Pesticide residues documented in water, sediment and fish tissue. [7]	➢ Watershed Management Plan Nov. 2002 ➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 174. ➢ Yakima County Shoreline Inventory and Characterization Study, Central Washington University 2005 ➢ Yakima Subbasin Plan November 26th, 2004 pg. 274. ➢ Yakima Subbasin Salmon Recovery Plan, 2005 pg. 28
American River Rainier Fork Creek*, Union Creek*, Dewey Lake*	Generally excellent habitat with good spawning gravels and abundant woody debris, fish passage problems in natural gorge during low flow. Some impassable waterfalls.	➢ Watershed Management Plan Nov. 2002 ➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 221. ➢ Yakima County Shoreline Inventory and Characterization Study, Central Washington University 2005 ➢ Yakima Subbasin Plan November 26th, 2004 pg. 362.
Bumping River Bumping Lake	Supports spawning below unladdered dam, high flows during spawning elevated water temperatures. [7] Ecological functions along Bumping Lake are principally impaired by residential development, which covers 21.5% of the jurisdiction. These land uses, in addition to the 1.6 miles of roads, account for the majority of the estimated 17% of the reach that is greater than 10% impervious. There is one impassable dam within the SMP jurisdiction. Upland vegetation has been removed and replaced with buildings and lawns, which can promote increased runoff and nonpoint source pollution. One DOE site/facility is found in the SMP jurisdiction, though the lake is not listed is a 303(d)-listed waterbody. Much of the reach is presently undeveloped (70.5%), hile 2.2% is covered by wetlands. The reach provides habitat for one species of concern, the Townsend's big-eared bat, three wildlife heritage locations, and aquatic habitat for three fish species. [8]	➢ Watershed Management Plan Nov. 2002 ➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 217. ➢ Yakima County Shoreline Inventory and Characterization Study, Central Washington University 2005 Section 4 ➢ Yakima Subbasin Plan November 26th, 2004 pg. 345.

Note: The above information should be used as general guidance and verified by qualified biologists or engineers to ensure accuracy and exact location before starting any potential restoration program. Note: An asterisk (*) denotes that the stream or river or a portion thereof is located in an area with little to no Yakima County jurisdiction – i.e. closed area of the Yakama Nation, US Forest Service areas or wilderness areas.

[8] Yakima County Shoreline Inventory and Characterization Study, Central Washington University 2005,

Shoreline River Basin & Associated Shoreline Tributaries, Lakes, Ponds	Habitat Condition	Referenced Sources
Bumping River Twin Sister Lake* Deep Creek* Cougar Creek*	High quality habitat for bull trout, anadromous fish migration blocked by dam. Fine sediment problems in gravels in selected tributaries. Natural waterfall barriers in watershed. [7]	➢ Watershed Management Plan Nov. 2002 ➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 217. ➢ Yakima County Shoreline Inventory and Characterization Study, Central Washington University 2005 ➢ Yakima Subbasin Plan November 26th, 2004 pg. 362.
Columbia River Priest Rapids Pool	Species including coho, fall chinook, sockeye, spring chinook, summer chinook, summer steelhead, and winter steelhead are all present along this stretch of the Columbia River. The waters that lie below the passable dam along the Columbia River SMP jurisdiction are identified as spawning and rearing habitat for fall chinook and summer chinook (WDFW, 2004c). Adequate habitat is expected for 26 species of resident fish in this reach, including black bullhead, black crappie, bridglip sucker, brown bullhead, brown trout, burbot, carp, channel catfish, chiselmouth, crappie, lake whitefish, largemouth bass, longnose sucker, mottled sculpin, Pacific lamprey, pumpkinseed, rainbow trout, redside shiner, sculpin, smallmouth bass, sunfish, three spine stickleback, walleye pike, white crappie, yellow bullhead, and yellow perch. The American shad is the only species listed as being blocked by the Priest Rapids Dam. Ecological functions along Reach 1 are principally impaired by government and industrial-transportation development, which covers 49.8% of the jurisdiction. These land uses, in addition to the 0.6 miles of roads and 8.4 miles of abandoned railroad, account for the majority of the estimated 3.8% of the reach that is greater than 10% impervious. In addition, one dam occurs along the reach (Priest Rapids Dam). Much of the reach is presently undeveloped (41.5%), while 2.3% is covered by wetlands. The reach provides habitat for six species of concern, as well as five priority habitats and aquatic habitat for 33 fish species, including anadromous fish.	➢ Yakima County Shoreline Inventory and Characterization Study, Central Washington University 2005
Cowiche Creek South Fork Cowiche Creek Cowiche Reservoir	Numerous barriers and diversions (some unscreened), degraded riparian areas and low flows in North Fork, sediment problems (e.g. bank sloughing) and water temperature exceedances. [7]	➢ Watershed Management Plan Nov. 2002 ➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 194.

		➢ Yakima County Shoreline Inventory and Characterization Study, Central Washington University 2005 ➢ Yakima Subbasin Plan November 26th, 2004 pg. 345.
Cispus River# Muddy Fork Creek*	**Cispus River Watershed** The Cispus River watershed is located in the eastern half of WRIA 26, in the northeast portion of the region. The Cispus River originates on the flanks of Mt. Adams and the higher peaks along the Cascade Crest. The watershed is comprised of 37 subwatersheds covering a total of approximately 278,800 acres (436 sq mi)… *Current Conditions*.— Hydrologic conditions across the Cispus River watershed range from functional to moderately impaired, with functional subwatersheds located in most headwaters areas and along the mainstem of the Cispus River. Subwatersheds rated moderately impaired include the upper NF Cispus (40902-40904), Iron Creek (50501-50503), and Muddy Creek (40401, 40402), upper Adams Creek (40502) and Goat Creek (40101). The Muddy Fork, Adams Creek and Goat Creek subwatersheds are all located in Wilderness Areas, and originate in high elevation areas above the tree line. Therefore, hydrologic conditions within these subwatersheds are expected to be functional as opposed to moderately impaired. Hydrologic conditions in the Cispus and its smaller tributaries subwatersheds, including Yellowjacket Creek, are in good condition. As shown in Figure 31, the relatively intact hydrologic conditions in the Cispus headwaters appear to buffer hydrologic conditions in the mainstem subwatersheds and the lower areas of the NF. *Predicted Future Trends*.— Nearly all of the land area in the Cispus River watershed lies within GPNF, and is managed by the USFS. Wetland area in the uplands of the Cispus River is limited. Hydrologically mature forest cover in these subwatersheds is generally higher than in other areas of the region (averaging 60%) and road densities are low to moderate (28 subwatersheds <3 mi/sq mi). Due to the high percentage of public land ownership, forest cover within these subwatersheds is predicted to generally mature and improve. Based on this information, hydrologic conditions are predicted to trend stable or improve gradually over the next 20 years. Other streams referred to in the LFA include Greenhorn Creek (50401), Iron Creek (50501-50503), Orr Creek (40702), and Woods Creek (50601) (Wade 2000). Orr and Greenhorn Creeks are headwaters tributaries, and are characterized	➢ **Lower Columbia Salmon Recovery And Fish & Wildlife Subbasin Plan Volume II – Subbasin Plan Chapter E – Cowlitz, Coweeman and Toutle - Grays-Elochoman and Cowlitz Rivers (WRIAS 25-26) Watershed Management Plan**

	by functional hydrologic conditions. The subwatersheds in the Iron Creek drainage and the Woods Creek subwatershed are characterized by moderately impaired hydrologic conditions. All of these subwatersheds have moderate to high road densities (3.0-4.4 mi/sq mi), and three out of four of these subwatersheds have moderately high stream crossing densities. Given the high road densities and the public land ownership, hydrologic conditions in these subwatersheds will probably remain constant or improve gradually over the next 20 years. .	
Shoreline River Basin & Associated Shoreline Tributaries, Lakes, Ponds	**Habitat Condition**	**Referenced Sources**
Klickitat River Big Muddy Creek* Bird Creek* Brush Creek* Butte Meadows* Clearwater Creek* Crawford Creek* Diamond Fork* Dry Creek* Fish Lake Stream* Hellroaring Creek* Huckleberry Creek* Little Muddy Creek* Piscoe Creek* Rusk Creek (Avalanche Valley)* Summit Creek* Surveyors Creek* Swamp Creek* TeePee Creek* Trappers Creek* Trout Creek* West Fork Klickitat River* White Creek*	Streams in the forested portion of the subbasin, both on and off the Reservation, have suffered from past and current forest practices, including timber harvest and road construction in riparian areas, poor design and maintenance of roads and crossings, skidding on steep slopes and upstream channels, off-season use of wet roads with resulting erosion, and facilitation of overgrazing by providing cattle access over logging roads to riparian areas. Most of these problems are continuing. [9] Development of floodplains and wetlands is limited over a large portion of the watershed by the geology and topography of the basin. Deeply incised canyons with narrow valley floors comprise most of the mainstem, as well as substantial portion of most fish bearing tributaries.[10] On the plateau, relatively low valley gradients have allowed for alluvial floodplain development along the mainstem above Castile Falls (RM 64.5), The portion of the river around *Castile Falls (RM 64.0).* This is a series of 11 falls with a net elevation change of approximately 80 feet over one-half mile. This is considered the historic upper limit of anadramous fish use on the mainstem.. Quality of potential habitat above the falls is very good for Steelhead, spring Chinook, and Coho, perhaps the best in the watershed. Its location far above the hatchery greatly reduces the potential for interaction	➢ Klickitat Subbasin Plan May 28th, 2004 pgs. 126-179 ➢ Salmonid Habitat Limiting Factors Water Resource Inventory Areas 30 Klickitat Watershed 2001 pg. 29.

Cougar Lake* Fish Lake* Howard Lake* Mt. Adams Lake* Swamp Lake* Two Lakes – Lower* Two Lakes – Upper*	with hatchery fish, increasing the likelihood of eventual development of true wild stocks.[11] *W. Fork Klickitat River Falls (RM 4.6).* This 12-foot falls is regarded as a barrier to all species. Habitat quality above the falls is considered fair to poor due to high gradients and high sediment loads from alpine glaciers, and cold (<6oC) water temperatures year round. No flow regulation occurs within the watershed; all flows in the watershed occur within a natural flow regimen, with the exception of portions of Outlet Creek, Hellroaring Creek, Swale Creek, and the Little Klickitat River, where diversions for water supply and irrigation occur.[12] In the upper subbasin, an unpaved major haul road follows the upper Klickitat River from RM 66 to RM 78. Within this section, the road is directly in the floodplain for 40 percent of its length, cutting off side channels and river meanders. Notable tributaries include Diamond Fork (RM 76.8) and McCreedy creek. Low egg survival for fall chinook is believed to be the result of glacial sediment from Big Muddy Creek in the Klickitat River. In addition, culverts on White Creek and Trout Creek traversed by logging roads within the reservation have been identified as potential barriers.	
Shoreline River Basin & Associated Shoreline Tributaries, Lakes, Ponds	**Habitat Condition**	**Referenced Sources**
Little Naches River South Fork Little Naches River, Crow Creek*	Extensively logged watershed with sediment erosion problems (e.g. embedded gravels, riparian zone damage), deficient large woody debris. High water temperatures. Natural waterfall barriers.[7]	➢ Watershed Management Plan Nov. 2002 ➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 224. ➢ Yakima County Shoreline Inventory and Characterization Study, Central Washington University 2005 ➢ Yakima Subbasin Plan

[9] Klickitat Subbasin Plan, May 28th 2004, pg. 126

[10] Klickitat Subbasin Plan, May 28th 2004, pg. 12

[11] Salmonid Habitat Limiting Factors – Water Resource Area 30, Klickitat Watershed, 2001 pg. 29

[12] Klickitat Subbasin Plan, May 28th

		November 26th, 2004 pg. 345. ➢ Yakima Subbasin Salmon Recovery Plan, 2005 pg. 27.
Naches River Willow Lake, Lake Aspen	Reach highly productive for spawning, second best in basin. Problems include lack of off channel rearing habitat; channel confinement by levees/road limiting riparian function (e.g. LWD recruitment), numerous diversions resulting in low flow problems mainly associated with Wapatox Power Canal which significantly impact flow in a 7 mile reach and cause water temperature increases.[6] Most of these braided, alluvial floodplain reaches have been simplified by artificial confinement and profound alterations of the flow and sediment transport regime, with the most severe effects on the lower Naches below the Tieton confluence. Highways, gravel pits, levees, local roads, agriculture, irrigation diversions, rural and urban development have become permanent fixtures on the landscape. These floodplain activities and structures have degraded, removed, or altered the functional condition of the river-floodplain ecosystem.[13]	➢ Yakima Subbasin Salmon Recovery Plan – 2005 ➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 184. ➢ Yakima County Shoreline Inventory and Characterization Study, Central Washington University 2005 ➢ Yakima Subbasin Plan November 26th, 2004 pg. 274 & 345. ➢ Yakima Subbasin Salmon Recovery Plan, 2005 pg. 27.
Shoreline River Basin & Associated Shoreline Tributaries, Lakes, Ponds	**Habitat Condition**	**Referenced Sources**
Rattlesnake Creek	Accessible high quality habitat. Peak flows scour channel. Some waterfall barriers and culvert passage problems.[7] Rattlesnake Creek provides good to excellent habitats in its middle and upper reaches. In the lower reaches of Rattlesnake Creek, irrigation diversions and low flow, floodplain loss, and accumulation of coarse sediments limit habitat availability and diversity, and can present significant in-migration barriers for steelhead and bull trout.	➢ Watershed Management Plan Nov. 2002 ➢ Salmon Recovery Plan ➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 208. ➢ Yakima County Shoreline Inventory and Characterization Study, Central Washington University 2005 ➢ Yakima Subbasin Plan November 26th, 2004 pg. 345.
Toppenish Creek* Simcoe Creek* Mud Lake	This watershed is quite large, and has the potential to be a major producer of steelhead and perhaps Coho. It is currently one of the two largest tributary producers of steelhead in the Yakima River watershed (Evenson/Lind). However, the watershed is heavily impacted by the Wapato Irrigation Project.	➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 154. ➢ Yakima Subbasin Plan

	The watershed suffers from several distinct types of habitat problems (first four are directly attributable to WIP operations), including: Dewatered reaches, Degraded water quality (i.e., temperature, suspended sediment, agricultural chemicals), Fish passage problems, altered and simplified channels in middle and lower Toppenish and Simcoe creeks, Hunting club waterfowl ponds, riparian degradation, Loss of floodplain, riparian wetlands, and multiple channels.[14]	November 26th, 2004 pg. 274 ➢ Yakima Subbasin Salmon Recovery Plan, 2005 pg. 27.
Shoreline River Basin & Associated Shoreline Tributaries, Lakes, Ponds	**Habitat Condition**	**Referenced Sources**
Satus Creek North Fork Dry Creek, Logy Creek, Unnamed Lake	Natural low stream flows in lower Dry creek impair spawner, postemergent fry, and parr movement and survival; low stream flows in the creek may be exacerbated by upslope land-use practices. The largest impacts from floodplain confinement are associated with SR 97 construction and prior presence of Lakebeds Road in upper Satus Creek (YSS 2001 DRAFT). Major floods in 1996 and 1997 extensively destabilized the channels throughout the mid-elevations of the Satus Creek watershed (G. McCoy). Substrate condition in Satus Creek is rated as good, with sedimentation rated as fair/good (CBSP 1990). Satus Creek has excessive fines throughout, but improves somewhat in the upper reaches upstream of High Bridge (RM 30.1). The presence of fines is highly variable throughout the Satus Creek watershed (YSS 2001 DRAFT). Logy Creek substrate condition is generally good, with the exception of the lower reach in the Sheep Camp area, where grazing has resulted in presence of excess fines in the gravels. Dry Creek has excessive fines in the lower portion, and improves significantly in the upper reaches. Fairly large areas of the Satus watershed have suffered riparian damage from	➢ Watershed Management Plan Nov. 2002 ➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 146. ➢ Yakima Subbasin Plan November 26th, 2004 pg. 274 ➢ Yakima Subbasin Salmon Recovery Plan, 2005 pg. 27.

[13] Yakima Subbasin Salmon Recovery Plan – 2005, Section 3.4.5 Naches River, pg. 27.

[14] Salmonid Habitat Limiting Factors Analysis – Yakima River Watershed, Water Resource Inventory Areas 37-39, Washington State Conservation Commission, December 2001, pg. 155.

[15] Salmonid Habitat Limiting Factors Analysis – Yakima River Watershed, Water Resource Inventory Areas 37-39, Washington State Conservation Commission, December 2001, pg. 146-153.

	past "unrestricted streamside grazing" (CBSP 1990), and from irrigation drains, which have lowered the water table along the creek (YSS 2001 DRAFT). Overall riparian condition is rated as fair/good in Dry Creek, fair/good in Logy Creek. Riparian damage is not uniformly distributed (G. McCoy), with much of the damage consisting primarily of bank sloughing; many impacted areas still support fair numbers of large trees that often provide adequate shading. [15]	
Shoreline River Basin & Associated Shoreline Tributaries, Lakes, Ponds	**Habitat Condition**	**Referenced Sources**
Tieton River Rimrock Lake	Tieton Dam blocks access to upper watershed, increased flow releases during September (flip-flop) suboptimal for rearing salmonids, low winter flows due to storage, deficient gravel recruitment and deficient large woody debris/ pool development below dam. [7] Ecological functions along Rimrock Lake are principally impaired by industrial-transportation, governmental, and residential development, which covers 7.3% of the jurisdiction. These land uses, in addition to the 6.1 miles of roads, account for the majority of the estimated 35.3% of the reach that is greater than 10% impervious. In addition, 1 bridge crossings and one impassable dam occur along the reach. Upland vegetation has been removed and replaced with buildings and lawns, which can promote increased runoff and nonpoint source pollution. Much of the reach is presently undeveloped (86.1%), while 16.2% is covered by wetlands. The reach provides habitat for one species of concern, the Townsend's big-eared bat, four natural heritage sites, and three priority habitats. [8]	➢ Watershed Management Plan Nov. 2002 ➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 196. ➢ Yakima County Shoreline Inventory and Characterization Study, Central Washington University 2005 ➢ Yakima Subbasin Plan November 26th, 2004 pg. 345. ➢ Yakima Subbasin Salmon Recovery Plan, 2005 pg. 27.
North & South Fork Tieton River Indian & Conrad Creeks*, Clear Creek*, Clear Lake*	Generally excellent habitat for bull trout with generally abundant woody debris and pool development. Inaccessible to anadromous fish due to unladdered dam. Sediment erosion problems attributed to logging, grazing and recreation. [7]	➢ Watershed Management Plan Nov. 2002 ➢ Habitat Limiting Factors Yakima River Watershed Water Resource Inventory Areas 37-39 Dec. 2001 pg. 196. ➢ Yakima County Shoreline Inventory and Characterization Study, Central Washington University 2005 ➢ Yakima Subbasin Plan November 26th, 2004 pg. 345.

		➢ Yakima Subbasin Salmon Recovery Plan, 2005 pg. 27.
Shoreline River Basin & Associated Shoreline Tributaries, Lakes, Ponds	**Habitat Condition**	**Referenced Sources**
White Salmon Creek# Gotchen Creek* Hole in the Ground Creek* Morrison Creek*	Water Resource Inventory Area (WRIA) 29 is a historically important source for production of anadromous fish in the Lower Columbia river basin. Two large stream systems, the Wind and White Salmon rivers historically provided abundant habitat for natural spawning salmon and steelhead. Small stocks in several small WRIA 29 tributaries provided lesser amounts of production. Hydroelectric development in the White Salmon river, construction of Bonneville Dam with its associated pool, logging in the Gifford Pinchot National Forest, poorly designed and installed culverts, especially along state highway 14, and other factors have had a serious detrimental effect on the aquatic resources in WRIA 29. The Wind River remains as a viable anadromous fish producer even though its habitat has been severely impacted. Stream cleanouts, past timber harvest, particularly in riparian areas, the presence of a dam with a poorly designed fish ladder, a lack of large woody debris, mass bedload movement, loss of floodplain capacity and increased siltation are a few of the impacts evident in the Wind River The habitat picture in WRIA 29 is not totally bleak. The United States Northwest Forest Plan coupled with an active watershed council is making significant progress in restoring habitat in the Wind River basin. One the White Salmon River negotiations are underway to remove Conduit Dam, a hydroelectric facility that has blocked anadromous fish passage at river mile 3.3 since 1919. This report lists the major habitat limiting factors in WRIA 29. Limited restoration funds should be targeted at this area. Over time, It may be possible to restore this once highly productive watershed to near its former level	➢ Habitat Limiting Factors Wind/White Salmon Watershed (WIRA 29)
Wenas Lake	Wenas Lake, at RM 14.7, was constructed in the early 1930s as an irrigation storage reservoir, and the reservoir also provides recreational fishing	➢ Salmonid Habitat Limiting Factors Analysis – Yakima River Watershed, Water Resource Inventory Areas 37-39, Washington State Conservation Commission, December 2001,

	opportunities. The dam at the outlet of the lake does not have fish passage. Water retention in the lake also results in increased water temperatures that would likely be lethal to salmonids.[16]	pg. 234

Note: The above information should be used as general guidance and verified by qualified biologists or engineers to ensure accuracy and exact location before starting any potential restoration program. Note: An asterisk denotes that the stream or river or a portion thereof is located in an area with little to no Yakima County jurisdiction – i.e. closed area of the Yakama Nation, wilderness areas, or US Forest Service areas.

[16] Salmonid Habitat Limiting Factors Analysis – Yakima River Watershed, Water Resource Inventory Areas 37-39, Washington State Conservation Commission, December 2001, pg. 234.

PART 2
SHORELINE RESTORATION PLAN

Introduction

Based on the new Shoreline Master Program Guidelines (hereafter referred to as the Guidelines), Washington Administrative Code 173-26, local governments are required to develop goals, policies and implementation strategies (a restoration plan) to address the restoration of degraded shoreline areas during the review and update of their shoreline master programs. A restoration plan is a guide to upgrade or reestablish ecological shoreline functions through measures that rehabilitate or reestablish the physical, chemical, or biological site characteristics. A restoration plan must be coordinated with all other components of the shoreline master program while encouraging the protection of shoreline areas from significant degradation resulting from development or other human activity. This Restoration Plan will follow the same update schedule as the CAO/SMP.

The Guidelines require Yakima County to assemble the most current and complete scientific and technical information available on shoreline ecosystems. This comprehensive inventory of material include all known current or planned habitat and restoration programs in the County. The development of this Restoration Plan represents an important precedent in creating an integrated, comprehensive program for the restoration of degraded shoreline areas in Yakima County. It shows a clear commitment on the part of the County to influence restoration of shoreline and habitat areas as a whole, rather being one of a number of independent programs working separately with little to no knowledge of area-wide restoration programs.

Regulatory Setting

The mandate for preparing the restoration plan is found in the WAC 173-26-186 (8) (c) and 173-26-201 (2) (f) and states:

> *WAC 173-26-186 Governing principles of the guidelines*
>
> *(8) Through numerous references to and emphasis on the maintenance, protection, restoration, and preservation of "fragile" shoreline "natural resources," "public health," "the land and its vegetation and wildlife," "the waters and their aquatic life," "ecology," and "environment," the act makes protection of the shoreline environment an essential statewide policy goal consistent with the other policy goals of the act. It is recognized that shoreline ecological functions may be impaired not only by shoreline development subject to the substantial development permit requirement of the act but also by past actions, unregulated activities, and development that is exempt from the act's permit requirements. The principle regarding protecting shoreline ecological systems is accomplished by these guidelines in several ways, and in the context of related principles. These include:*
>
> *(c) For counties and cities containing any shorelines with impaired ecological functions, master programs shall include goals and policies that provide for restoration of such impaired ecological functions. These master program provisions shall identify existing policies and programs that contribute to planned restoration goals and identify any*

additional policies and programs that local government will implement to achieve its goals. These master program elements regarding restoration should make real and meaningful use of established or funded nonregulatory policies and programs that contribute to restoration of ecological functions, and should appropriately consider the direct or indirect effects of other regulatory or nonregulatory programs under other local, state, and federal laws, as well as any restoration effects that may flow indirectly from shoreline development regulations and mitigation standards.

Shoreline Restoration Planning. Consistent with principle WAC 173-26-186 (8) (c), master programs shall include goals, policies and actions for restoration of impaired shoreline ecological functions. These master program provisions should be designed to achieve overall improvements in shoreline ecological functions over time, when compared to the status upon adoption of the master program. The approach to restoration planning may vary significantly among local jurisdictions, depending on:

(a) The size of the jurisdiction;
(b) The extent and condition of shorelines in the jurisdiction;
(c) The availability of grants, volunteer programs or other tools for restoration; and
(d) The nature of the ecological functions to be addressed by restoration planning.

Master program restoration plans shall consider and address the following subjects:

- *Identify degraded areas, impaired ecological functions, and sites with potential for ecological restoration;*
- *Establish overall goals and priorities for restoration of degraded areas and impaired ecological functions;*
- *Identify existing and ongoing projects and programs that are currently being implemented, or are reasonably assured of being implemented (based on an evaluation of funding likely in the foreseeable future), which are designed to contribute to local restoration goals;*
- *Identify additional projects and programs needed to achieve local restoration goals, and implementation strategies including identifying prospective funding sources for those projects and programs;*
- *Identify timelines and benchmarks for implementing restoration projects and programs and achieving local restoration goals;*
- *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.*

Use of this Restoration Plan

The Shoreline Assessment Summary and Shoreline Restoration Plan describes to the general public Yakima County's restoration goals and strategies, degraded shoreline areas, existing and planned restoration programs, timelines and benchmarks, incentives and tools for restoration planning. This document is intended to provide information regarding both public and private sector restoration activities.

There is limited information regarding private restoration projects; nevertheless, private property owners planning for the future can use the information in this Restoration Plan to help guide them on restoring or protecting their shoreline areas. If a private property owner has property that needs some level of shoreline restoration, there are a number of options available: selling their property, developing their property, or restoring their property. Property owners can use the information in this document to determine what types or levels of restoration are possible on their property, and what levels of mitigation may be required if they were to develop their property and go through the permitting process. Other property owners seeking mitigation sites could find potential opportunities in this document as well.

In addition, public or private entities with potential restoration funds can use the information in this document to identify potential restoration sites. But ultimately the document provides all interested parties with a source that addresses local restoration goals, identifies the degraded shoreline areas, and identifies those existing programs or opportunities to restore degraded areas.

It is important that the information from habitat and restoration programs be made available for the general public. Therefore, having restoration programs and other pertinent information cataloged and stored in easily accessible locations for future reference provides interested individuals and agencies with the opportunity to utilize these programs. In order to increase awareness of potential restoration opportunities, the County will make this document available to property owners owning properties that have been identified as presenting restoration opportunities. It will also be referenced in pre-application materials provided to potential applicants for shoreline permits.

Agencies could list their restoration information on their websites and include links to other known restoration resources. Yakima County Public Services Department has made this plan available to the public via the county website at www.co.yakima.wa.us and copies are available at the Department of Public Services.

Restoration Planning Approach

There are few river basins in the state that have more restoration efforts under way than the Yakima River Basin. Because of this Yakima County's role in shoreline restoration is of reduced importance than in other basins with fewer independent restoration efforts. Consequently, Yakima County's method of restoration planning is a two-prong approach.

- The first approach is planning for those County activities that affect or perform restoration.
- The second approach is providing guidance to non-County restoration projects to help focus them on high priority restoration opportunities.

This two-prong approach recognizes that Yakima County cannot dictate how other independent agencies or entities in the restoration field will choose projects to undertake or how they will prioritize their activities. Yakima County can only control its own activities relating to restoration and suggest restoration actions to others.

In developing this Restoration Plan, Yakima County had discussions with key players in shoreline and habitat restoration, which provided the participating jurisdictions and organizations the opportunity to exchange information, coordinate their planning efforts, and generally share

the problems and experiences related to development and management of their individual habitat and restoration programs. There are over twenty-five non-county restoration programs currently being implemented and/or planned in Yakima County. The bulk of the programs, which are described in detail in Appendi A, support and foster habitat restoration, specifically for salmonids. Many of the non-county programs are supported and implemented by multiple agencies working together to accomplish a common goal.

To successfully gather as much information on restoration programs as possible, it was necessary to consult with a variety of federal, state and local agencies or organizations, as listed below. These entities are actively involved in shoreline and habitat restoration in Yakima County.

(1) Environmental Protection Agency (EPA),
(2) Bonneville Power Administration (BPA),
(3) Yakama Nation (YN),
(4) Natural Resources Conservation Service (NRCS),
(5) United States Forest Service (USFS),
(6) United State Fish and Wildlife (USFW),
(7) United State Department of Agriculture (USDA),
(8) Bureau of Reclamation (BOR),
(9) US Army Corps of Engineers (ACOE),
(10) Washington Stat Department of Natural Resources (WADNR),
(11) Salmon Recovery Fund Board (SRFB),
(12) Washington Department of Fish and Wildlife (WDFW),
(13) Central Washington University (CWU),
(14) Washington State Conservation Commission.
(15) City of Yakima
(16) City of Union Gap
(17) North Yakima Conservation District
(18) South Yakima Conservation District
(19) Irrigation Districts – Roza, Sunnyside, Naches Selah, Selah & Moxee
(20) Cowiche Canyon Conservancy
(21) The Nature Conservancy
(22) Yakima Greenway

Yakima County encourages future collaborative partnerships among public and private agencies that have similar restoration goals and programs. These types of partnerships often eliminate redundant policies and regulations thus streamlining the restoration process and enabling the programs to be more effective.

Goals, Policies and Prioritization for Restoration

Goals and Policies The goals and policies listed below are existing goals and policies from the Yakima County Comprehensive ***Plan 2015*** (Plan 2015), the existing shoreline master program (SMP), or are new proposed policies as part of the CAO/SMP update(un-numbered at this time).

Goal 1 – Maintain, restore and where necessary improve the shoreline terrestrial and aquatic ecosystems so that they maintain viable, reproducing populations of plants and animals while providing the maximum public benefit of limited amounts of shoreline areas. (Plan 2015 Goal NS 7)

Policy 1 - Provide, where feasible and desirable, restoration of degraded areas along the shorelines of Yakima County (SMP, Ch 3, Restoration, pg 18) (Plan 2015 NS 7.8).

Goal 2 - Protect all shorelines so that there is no net loss of ecological functions from both individual permitted development and individual exempt development (NS X.X).

Policy 2 - Assure that shoreline development in Yakima County is consistent with the character and physical limitations of the land and water. Promote a viable pattern of land and water uses while minimizing adverse effects upon environmental quality. (SMP, Ch 3, Shoreline Use, pg 17).

Priorities for Restoration It is the intent of Yakima County to implement these goals and policies through development review and permit enforcement. Many of the county-wide degraded shoreline areas have been prioritized for non-county project restoration based upon processes established by various plans, such as; the Watershed Management Plan, the Yakima Subbasin Plan, the Yakima Subbasin Salmon Recovery Plan, and Salmonid Habitat Limiting Factors Analysis. Even with the complexity and detail of the previously mentioned reports, prioritizing shoreline restoration is very difficult. With the lack of consistent methods to assess implementation success and the lack of defined benchmarks, only broad generalizations regarding the effectiveness of current activities can be given.

Each plan has identified specific restoration opportunities directly or indirectly through their assessment sections. The Watershed Management Plan's prioritization method is a good example of an approach taken by a non-County program that places a higher priority on protecting the best shorelines first. This is to avoid the loss of those valuable high-quality shoreline areas before restoration can begin on non-county degraded shoreline projects. This prioritization approach is identified in Appendix C.

It is the intent of Yakima County to continue to be a major player in the current or future development of plans, such as those listed above. However, with regards to degraded shoreline areas Yakima County has no authority to initiate, fund or prioritize restoration projects on private property. Yakima County can only review, monitor and enforce those restoration projects under permit review.

Restoration Activities

Yakima County Activities

Yakima County activities can be described as those projects being conducted by the County (public projects), or those projects within the County's regulatory jurisdiction and under project permit review (public and private property owners). Both public and private projects are required to meet all applicable federal, state and local regulations; however Yakima County can not force property owners to perform shoreline restoration unless it is specifically required for the approval of a permit.

Yakima County's strategy for achieving the restoration potential on projects needing permits is to require or encourage applicants to include activities that restore shoreline functions as a

component of new development or redevelopment, to the extent allowed by law. Therefore, the schedule and extent of restoration by private property owners is a function of timing and other decisions made by the private sector.

For County activities, this Restoration Plan can serve as guide to help identify potential areas and perform restoration where feasible. Table 1 below identifies the Yakima County activities that perform or promote shoreline and habitat restoration and the mechanism and strategy for implementation.

Table 1. Yakima County Activities and Implementation Strategies

Yakima County Activities	**Mechanisms & Strategies For Implementation**
Salmon Recovery Plan – Leadership Role	Planning and Funding (Grants)
Watershed Plan – Partnership Role	Planning and Funding (Grants)
Comprehensive Flood Hazard Management Plan	Planning and Funding
Permitting Public/Private Projects	Enforcement - Permit Review & Conditions
Enforcement of Violations and Permit Conditions	Enforcement - Permit Review & Conditions
Stormwater Permit Program	Enforcement - Permit Review & Conditions
Stormwater Retro Fit for Roads	Case by Case. Design & Implementation during construction, including Permits
Bridge Upgrade w/Replacement	Case by Case. Design & Implementation during construction, including Permits
Maintenance Practices to Benefit Fish • Chemical (salt for roads), Noxious Weed Control • Ditches and Dust Control	Coordination within County Departments
Development & Implementation of Restoration Projects	Funding (Grants) & Construction

Timelines – Timelines for on-going programs are generally also ongoing, rather than defined. Timelines for implementing County restoration projects are typically integrated within the project and describe specific goals and end conditions for completion and success of the project. Timelines for County permit approval or enforcement actions are typically included in the formal permit or action, and continued review and monitoring is often required to ensure that conditions are being met. In summary, there are not specific timelines that can be defined at this time for the Restoration Plan.

Benchmarks and Monitoring - A benchmark is a standard by which something can be measured or judged. For the purpose of identifying the effectiveness of any shoreline restoration project a benchmark must be set at the onset of the project. The intent of setting benchmarks on most projects is not necessarily to achieve pre-settlement shoreline conditions, but rather to define the existing shoreline conditions relative to conditions that existed before Euro-American settlement. Benchmarks are necessary for identifying whether the restoration projects have achieved their program specific requirements as well as local restoration goals. However, unless there is a known or hypothesized relationship between the existing conditions and the conditions that shorelines and habitat were adapted to, our ability to forecast the effects of management actions

is very low.[17] Yakima County has developed a general county-wide assessment that describes the condition of the shoreline areas at this point in time. This provides decision-makers with a benchmark, and as changes occur over time they can be compared to those benchmarks in future updates.

A monitoring and review program is necessary to assure that restoration plans and actions at all levels are accountable for the funds spent and are effective in meeting their restoration objectives. It is the intent of Yakima County to monitor the effectiveness of specific County restoration projects. The benchmark will be set for that specific project and any subsequent improvement on that site could be monitored and then ultimately measured. This would allow Yakima County to track the improvements of those shoreline areas regardless of their original condition. It is important to note that Yakima County can only monitor or measure restoration programs related to specific county projects.

Non-regulatory critical areas and natural resources program overview

Yakima County is currently working on a non-regulatory program as a component to the Critical Areas Ordinance and Shoreline Master Program update project. The purpose of this non-regulatory program is to protect and restore priority natural resources and critical areas through non-regulatory measures, utilize and revise tools/procedures for fee-simple acquisition, conservation easement, property tax reduction and donation of critical properties, establish ownership, operations, maintenance guidelines and receiving entities (trusts, etc.), and secure and maintain links between projects, landowners, receiving entities and funding sources to leverage outside dollars. This program will:

- Offer property owner's options and choices to complement, minimize or reduce reliance on regulatory measures (i.e., GMA Critical Areas, SEPA, SMA Shorelines, zoning) to meet federal and state mandates.
- Utilize non-regulatory tools to protect and enhance priority critical areas (geological hazards, wetlands, streams, shorelines, flood-prone areas) and the biological attributes (high value fish and wildlife habitats) dependent on the structure and function of those landscapes. A GIS database of physical and biological data will be used to identify and evaluate locations to pursue or implement non-regulatory protection measures.
- Collaborate with entities and agencies acquiring fee-simple and conservation easements and assist integration of monitoring and management of the properties (BOR, Nature Conservancy, Yakama Nation and any lead agency established under Salmon Recovery Act).
- Foster stewardship by private property owners to promote environmental awareness, good land stewardship, and public understanding, support and use of non-regulatory programs and tools.
- Partner with public/private/agency team to target funding sources to meet the goals of citizens, agencies and County plans, policies, programs and proprietary responsibilities.
- Develop and implement stewardship objectives: enhance forest ecosystems, restore and improve land health and water quality. Develop monitoring and benchmarks to measure success.
- Watershed restoration and maintenance and restoration, maintenance and improvement of wildlife and fish habitat, and control of noxious and exotic weeds.

[17] *Yakima Subbasin Plan* section 3.3 pg. 4-31 – November 26, 2004

- Improved cooperative relationships among people and agencies that use and manage these lands.

The Yakima County Non-Regulatory Program has completed a conservation tool called the "Linked Funding Database", which is a database of 30+ GIS covers that portray the likely physical extent of grants and funding programs particular to landscapes and land uses within Yakima County. The database assists property owners, organizations, and agencies in identifying grant-funding resources for non-regulatory alternatives to the impairment of natural resources and critical areas often linked with specific types of development and land use patterns on properties.

Non-County Activities

A brief description of the existing and proposed non-County shoreline restoration programs are listed in Appendix A and categorized by managing entity. Complete detailed descriptions and contact information of restoration programs are available for reference in Table 5 in Appendix B.

Timelines - Timelines for implementing non-County restoration programs are defined by the individual program manager or the funding source. Yakima County has very limited control over specific timelines as it pertains to shoreline restoration of private property, unless in some extent it related to project specific mitigation currently under County review. Unfortunately, the future success of many of the non-County restoration programs is solely dependant on funding from outside resources. This creates a problem in meeting specific timelines, partly due to the irregularity of grant funding and bureaucracy. Within this plan the timelines for each of the individual projects have not been identified. Many of the programs have limited timeline information available, however if specific timeline information is needed each restoration program's contact information is listed in Table 5 in Appendix B.

Benchmarks and Monitoring - As mentioned earlier, a benchmark is a standard by which something can be measured or judged. For the purpose of identifying the effectiveness of any shoreline restoration project a benchmark must be set at the onset of the project. Non-County programs establish their own benchmarks and monitor them throughout the life of the specific restoration project. Non-County activities require a systematic monitoring and review program as well. Monitoring is necessary to ensure that non-County restoration plans and actions are accountable for the funds spent and are effective in meeting their restoration objectives. Within each restoration plan or program is a series of mechanisms and strategies to ensure that the project will be implemented and completed successfully. It is the responsibility of the specific program manager, whether it is local government, conservation organization, tribe or funding source, to not only implement the program but monitor its progress as well. Monitoring programs are needed to track the annual changes in shoreline conditions, and ultimately monitoring the effects of management actions will allow us to separate environmental from human impacts.

Shoreline Restoration Opportunities - The Watershed Management Plan, the Yakima Subbasin Plan, the Yakima Subbasin Salmon Recovery Plan, Salmonid Habitat Limiting Factors Analysis, and the Yakima County Shoreline Characterization study have documented a variety of shoreline restoration opportunities throughout the Yakima Subbasin. Because of this extensive collection

of restoration opportunity data this Restoration Plan will only provide references to those respective plans and the related chapters, as listed below.

- Watershed Management Plan - Nov. 2002
- Yakima Subbasin Plan - November 26, 2004 pgs. – 292, 360 and 370.
- Yakima Subbasin Salmon Recovery Plan – 2005, Chapter 5 pg. 54.
- Salmonid Habitat Limiting Factors Analysis – Yakima River Watershed, Water Resource Inventory Areas 37-39. Section Habitat Limiting Factors pg. 87 and Assessment of Limiting Factors pg. 308.
- Salmonid Habitat Limiting Factors Analysis – Klickitat River Watershed Water Inventory Area 30
- Yakima County Shoreline Inventory and Characterization Study, Central Washington University, August 2005, Sections 3-11.

APPENDIX A
Existing and Proposed Restoration Programs

A brief description of the existing and proposed shoreline restoration programs are listed below and categorized by managing entity. Complete detailed descriptions and contact information of restoration programs are available for reference in Table 5 in Appendix A.

(a) Yakima River Watershed TMDL's – Department of Ecology

The State of Washington Department of Ecology is required by the Federal Clean Water Act to determine and calculate Total Maximum Daily Loads (TMDLs) for water quality parameters in water bodies where those parameters do not meet state standards. Ecology has completed TMDLs for turbidity, pesticides, bacteria and temperature impairments in the Yakima River Watershed, and will continue to monitor water quality, develop and implement TMDLs as required by the Clean Water Act.

(b) Yakima Habitat Improvement Project (YHIP) – City of Yakima and Union Gap

The City of Yakima and Union Gap using Bonneville Power Administration (BPA) funding has started a project intended to improve the aquatic and riparian habitat in and around the Yakima Urban Growth Area. In addition, this project works in concert with past and ongoing efforts in the basin such as the Yakima River Basin Enhancement Program, the Cowiche Creek Riparian Restoration project, the Yakima/Klickitat Fisheries Project, efforts by Washington Department of Fish and Wildlife WDFW, the Yakima Spring Chinook Study, the Yakima Basin Environmental Education Teacher Training Program and a host of others.

(c) Protect Normative Structure and Function of Critical Aquatic and Terrestrial Habitat – City of Yakima

Direct purchase of lands within 25 feet of either side of existing streams, creeks, and rivers, and purchase of "development rights" for lands between 25 feet and 50 feet of either side of existing streams, creeks and rivers within the Yakima Urban Area Boundary. This project would initiate a long term commitment to the preservation, protection, and future opportunity to restore the normative structure and function to aquatic and terrestrial habitat.

This acquisition program will be directed to purchases along the Yakima River, Naches River, Wide Hollow Creek, Bachelor Creek, Hatton Creek, Ahtanum Creek, Cowiche Creek and tributaries within the Yakima Urban Area Boundary. Initial efforts will be directed to lands within the City of Yakima and within the lands designated for Urban Growth of the City. The Yakima Urban Area Boundary also includes lands under the jurisdiction of Yakima County (Terrace Heights and West Valley) and the City of Union Gap. If funding remains available following completion of the initial efforts, these resources will be utilized for purchases in these areas.

This acquisition program also includes lands at the outfall of existing storm drainage pipelines and ditches to surface waters within the Yakima Urban Area Boundary as identified in the City of Yakima *1993 DRAFT Comprehensive Stormwater Management Plan*.

Direct purchase of lands and "development rights" will provide immediate protection of the aquatic and terrestrial habitat from the pressure of growth. As resources become available, and/or as community volunteer efforts are organized and implemented, the protected riparian corridors will be enhanced and/or restored through water quantity and water quality improvements, channel and substrate improvements, removal of fish access restrictions, and restoration of ecological interactions.

This project was part of the Jim Waldo Yakima Basin packet submitted to Governor Gary Locke and was recommended for BPA funding.

(d) Yakima Tributary Access & Habitat Program (YTAHP) – Multiple Agency

The Yakima Tributary Access and Habitat Program (YTAHP, Program) was organized to restore salmonid passage to Yakima tributaries that historically supported salmonids and improve habitat in areas where access is restored. Specifically, this program is designed to a) screen unscreened diversion structures to prevent fish entrainment into artificial waterways; b) provide for fish passage at man-made barriers, such as diversion dams, culverts, siphons and bridges; and c) provide information and assistance to landowners interested in to contributing to the improvement of water quality, water reliability and stream habitat.

The YTAHP developed from a number of groups actively engaged in watershed management, and/or habitat restoration within the Yakima River Basin. These groups include the Washington State Fish and Wildlife (WDFW), Kittitas County Conservation District (KCCD), North Yakima Conservation District (NYCD), Kittitas County Water Purveyors (KCWP), and Ahtanum Irrigation District (AID). The US Bureau of Reclamation (Reclamation) and Yakama Nation (YN) both participated in the development of the objectives of YTAHP. Other entities that will be involved during permitting or project review may include the YN, the federal Natural Resources Conservation Service (NRCS), the US Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and US Army Corps of Engineers (COE).

(e) Little Naches River Riparian and In-Channel Habitat Enhancement – Yakama Nation 199705000

Enhance and restore degraded riparian and habitat conditions in the Little Naches River by revegetating eroding banks and unstable channels, restricting vehicular traffic in the floodplain, and enhancing habitat by placement of trees and boulders. Project not funded at this time.

(f) Yakima Klickitat Fisheries Program (YKFP) – Yakama Nation

The YKFP is a supplementation project designed to use artificial propagation in an attempt to maintain or increase natural production while maintaining long-term fitness of the target population and keeping ecological and genetic impacts to non-target species within specified limits. The Project is also designed to provide harvest opportunities. The framework developed by the Regional Assessment of Supplementation Project (RASP 1991) guides the planning, implementation, and evaluation of the Project.

The purposes of the YKFP are to:

- enhance existing stocks of anadromous fish in the Yakima and Klickitat river basins while maintaining genetic resources;
- reintroduce stocks formerly present in the basins; and
- apply knowledge gained about supplementation throughout the Columbia River Basin.

(g) Yakima River Basin Side Channel Survey and Rehab – Yakama Nation

Reconnect tributaries and side channels, create new side channels, construct instream deflectors along straightened reaches, and overbuild portions of levees such that riparian trees will be permitted to thrive. Focus on the Wapato Reach of the Yakima River.

(h) Yakima Basin Side Channels – Yakama Nation

Protect, restore and reestablish access to productive off-channel rearing habitats, and protect and reconnect floodplains associated with the mainstem Yakima and Naches Rivers.

(i) Yakima Habitat Enhancement Selah/Union Gap – Yakama Nation

Protect and enhance the section of Yakima River between Selah and Union Gaps through purchase and habitat enhancement.

(j) Little Naches Sediment Monitoring – Yakama Nation

Cooperative sediment sampling in the Little Naches system between the Yakama Nation, Plum Creek Timber Company and the United States Forest Service (USFS).

(k) Riparian/Wetlands Restoration – Yakima Nation

This project has been designed to restore wetlands and riparian habitats along anadromous fish-bearing streams in the agricultural portion of the Yakama Nation Reservation. Overall goals include the protection, restoration and management of 27,000 acres of floodplain lands along the Yakima River, Satus and Toppenish Creeks. Direct mitigation is being realized for losses identified in the Columbia Basin Fish and Wildlife Program relating to the construction and operation of the lower Columbia River Hydropower System. Extensive partnership and cost-share components provide savings to this project.

Land securing methods include purchase, easement, or long-term lease depending on the nature of the land ownership and the cost-effectiveness of the activity. Approximately 2,000 - 3,000 acres are secured each year. By the end of FY01 over 16,000 acres will be secured into the project. At the current rate of implementation, nearly 24,000 acres of floodplain habitats should be protected and restored by the end of FY06. Restoration activities seek to restore historic conditions. Land disturbing activities are subject to cultural and archaeological surveys, and are used only on properties which have suffered past disturbances. Native vegetation re-establishment, and a return to some semblance of historic floodplain hydrology are the goals on the restoration sites. Restoration efforts are designed to be as self-sustaining as possible to minimize the O&M needed to maintain habitat values.

The outcomes of the project are native riparian and wetland floodplain complexes along the anadromous fish-bearing streams on the Yakama Nation Reservation. Results are monitored using HEP to account for the direct mitigation earned toward the construction, operation and cumulative effect wildlife impacts of the Columbia River hydropower system. Specific vegetational, population and hydrologic results are also monitored at each property to ensure that restoration goals are being met in a cost-effective manner.

(l) Lower Yakima Valley Riparian/Wetlands – Yakama Nation

Continue implementation of YN Wetlands/Riparian Restoration Project by protecting and restoring native floodplain habitats along anadromous fish-bearing waterways in the agricultural area of the Yakama Reservation (~2,500 acres per year).

(m) Ahtanum Creek Watershed Assessment – Yakama Nation

Map irrigated lands & water delivery stems, measure water discharge & temperature. Determine efficiency of irrigation water conveyance & use. Gather data on stream channel condition, riparian function & salmonid populations in the Ahtanum Creek watershed.

Ahtanum Creek was historically important for production of salmon and steelhead. The creek and its southernmost tributaries form part of the north boundary of the Yakama Indian Reservation. Spring Chinook and Coho are found in small numbers today; there is no current information on steelhead presence. Bull trout have been found as far downstream as the lowermost major irrigation diversion. A watershed analysis for the upper, forested portion of the watershed is nearing completion. Water withdrawal, diking and channelization, grazing practices and residential development on the floodplain adversely affect the lower, largely agricultural portion of the watershed. Restoration of significant salmon and steelhead production in the watershed can be accomplished, but science-based strategies are needed for protecting stream flow, stream channels and floodplains. The Yakama Nation is currently developing techniques under the Toppenish-Simcoe Project which will be applied to the Ahtanum watershed.

(n) Upper Toppenish Creek Watershed Analysis – Yakama Nation

Analyze the key hydrologic features of the upper Toppenish Creek watershed which have a spatially disproportionate influence on runoff processes. Determine those areas with high storage capacity and implement restoration plans.

(o) Yakima Watershed Restoration – Satus Creek – Yakama Nation

Improve fish habitat in the Satus Creek watershed (Yakama Indian Reservation) by ameliorating the major land-use impacts.

(p) Protect, enhance, and maintain habitat on the Sunnyside Wildlife Area to benefit wildlife and fish assemblages. – Yakama Nation

Located in Yakima County, the Sunnyside Wildlife Area (SWA) encompasses approximately 4,265 ha (10,538 ac) along the Yakima River floodplain in the lower Yakima Valley and 2,510 ha (6,202 ac) of shrubsteppe habitat on Rattlesnake Ridge in Benton County. The Sunnyside, Byron, and I-82 management units (Units) are located on or near the Yakima River floodplain and adjacent to the Yakama Indian Reservation, while the Thornton and Rattlesnake Slope Units are located on Rattlesnake Ridge north of Benton City, Washington.

The SWA Units found within the Yakima River floodplain provide habitat for a host of wetland and riparian obligate species such as waterfowl and includes approximately 21 km (12.6 mi) of shoreline along the Yakima River, which supports ESA listed steelhead. In contrast, the Rattlesnake Ridge Units are dominated by shrub steppe habitat and are managed primarily for shrub steppe obligate wildlife species such as sage grouse.

Near term habitat enhancement, maintenance, and protection measures planned for the Sunnyside Wildlife Area include: seeding herbaceous cover, controlling introduced weedy vegetation including Russian olive trees, enhancing wetlands, increasing open water to cover ratios in lacustrine habitats, maintaining moist soil paddocks and fences, planting shrubs and trees, mowing goose pastures, and enhancing waterfowl feeding and loafing areas (WDFW 1998).

(q) Toppenish-Simcoe Instream Flow Restoration and Assessment – Yakama Nation

The Toppenish Creek basin comprises only 10% of the Yakima River subbasin, but contributes 20% of the Yakima's summer steelhead run (Mid-Columbia ESU, Threatened, March, 1999). The Toppenish Simcoe-Unit (Unit) of the Wapato Irrigation Project (WIP) diverts streamflow from Toppenish Creek and its tributaries to irrigate roughly 2,000 acres. In doing so, these and other private diversions can desiccate long reaches of streams, killing juvenile steelhead. Land status, water use and the extent of steelhead utilization within the Unit must be determined to identify parcels of land with water that can be leased or purchased to return diverted streamflow into natal streams, maintaining aquatic species assemblages. In addition, a comprehensive accounting of the Unit will allow us to identify possible sources for water substitution, leaving flows instream for aquatic species. The main objectives and approach of this Project are to monitor all steelhead life stages as to location and timing of habitat utilization, quantify and locate all sources of diversion and

augmentation, model consumptive use, and identify land status. This will lead to the development of an adaptive Management Plan and decision support system to actively pursue lands available for acquisition to return irrigation water for instream use. If land acquisition is not possible, we hope to work with landowners to restrict diversion timing to periods when surface discharge is not limiting (spring runoff), or identify alternative water sources for substitution. We expect that providing perennial flow to all stream reaches in the Project area will have a positive effect on steelhead populations, measured by yearly spawner surveys and juvenile censuses. By FY2002, we will have completed four seasons of field data collection, the Project GIS, and the Project Management Plan. Integrating Project products and those of other activities in the basin will supply us with a decision support system to begin implementing and adaptively evolving the Management Plan early in FY2002.

(r) Fish Passage Inventory and Corrective Actions on WDFW Lands in The Yakima Subbasin – Washington Department of Fish & Wildlife (WDFW)

Fish passage barriers and inadequate screening conditions at diversions and lake outlets exist on WDFW-owned and managed lands. These problems must be corrected in order to accomplish agency salmonid recover efforts and to comply with several fish passage and screening laws (RCW 77.16.210, 77.55.040, 77.55.060, 77.55.070). Problem facilities include culverts, dams, fishways, lake outlets, and water diversions.

This is a proposal to correct all fish passage and screening problems on WDFW lands within the Yakima Subbasin. WDFW's Salmonid Screening, Habitat Enhancement, and Restoration (SSHEAR) protocols will be used for all activities. Lands must be inventoried for fish passage structures. Fish passage parameters will be assessed for each structure. Structures will be prioritized for corrective actions based on fish presence, suitable habitat availability, correction costs, etc. Structure replacement, correction or removal will be scheduled and completed. Lastly, passage and screening facilities will be annually inspected and maintained to ensure long-term fish passage and protection.

(s) Wenas Wildlife Area In holdings – Washington Department of Fish & Wildlife (WDFW)

Strategic private parcels within the Wenas Wildlife area represent significant threats to fish and wildlife habitat from potential future development. This project would acquire these parcels with BPA dollars and add them to the existing wildlife area. The parcels include approximately 1.25 miles of Umtanum Creek, an anadromous fish bearing stream known to contain steelhead, Chinook and Coho salmon, and red-band rainbow trout. It would also protect the lower reaches of Roza Creek, which holds populations of resident red-band rainbow trout. Significant shrub-steppe and riparian habitats would be protected in this project, and the long term integrity of a large proportion of the Wenas Wildlife Area would be ensured.

(t) Upper Yakima Comprehensive Flood Control Management Plan (Proposed) – Yakima County

Plan that sets the policy basis for reconfiguration of the levee system and other adjacent infrastructure to improve sediment transport, lessen flood hazard, improve fish habitat and increase available floodplain on Yakima River.

(u) Removal of Automobile Wrecking Yards from Yakima and Naches River Floodplains – Yakima County

This project will evaluate the feasibility of relocation of one or more existing automobile recycling yards from their present locations to a site or sites which are more appropriate locations for such businesses from the standpoint of flood hazard, aquatic habitat, and water quality. Main project areas are habitat for threatened salmonid species, and extremely prone to flooding and flood damage. One site is on an island in the Yakima River (Donald Wapato Bridge), another site is in a flood prone area of the Naches River (Ramblers Park) that could be prime spawning and rearing habitat (hyporheic zone) if properly restored. Based on past communications with at least 2 owners, there is a high likelihood of a successful relocation effort. Multiple agencies have expressed interest in the relocation and restoration effort (Ecology, WADOT, Yakama Nation, WDFW, Yakima County Public Works Department, Yakima County Planning Department, Yakima County Flood Control Zone District, Bureau of Reclamation, and Corps of Engineers). This project will coordinate among these different parties.

Project goals: Restore properly functioning floodplain conditions. Remove potentially hazardous materials that could be released to the river during a high flow event. Remove sources of hazardous materials that could contaminate the soil and groundwater in the future. Move important businesses to more appropriate location, keeping economic benefits to Yakima County and increase compatibility with existing land uses. Reduce flood hazard and the need for emergency response, repair of existing flood control facilities, and flood damage insurance claims.

(v) Yakima Phase II Screens – Construction – Bureau of Reclamation (BOR)

The on-going Yakima Phase II screen construction program is replacing obsolete Yakima basin fish screens constructed in the 1930's, 40's, 50’s, 60's, and 70’s. The new screens comply with current regional fish screen biological protection criteria adopted by the Columbia Basin Fish and Wildlife Authority (CBFWA) in 1995. The target objectives of the program are designed to meet three criteria which will: (1) reduce delay to a degree approaching zero; (2) reduce the possibility of injury or mortality to a degree approaching zero; and (3) allow fish to pass with little additional expenditure of energy. The new screens protect all species and life stages of anadromous and resident salmonids, including bull trout and steelhead which are now listed as “threatened” under ESA.

Old screens in the Yakima basin, and in other Columbia River subbasins, may provide fair protection for large (4-6 inch long) yearling smolts, but provide poor protection for fry and fingerling life stages. Mortality of fry and fingerlings by irrigation diversions may reduce subsequent smolt production, and hamper efforts to restore depressed salmonid populations through natural production or hatchery supplementation. Battelle Pacific Northwest National

Laboratory (PNNL), under Project# 198506200, has evaluated and quantified survival and guidance rates at Phase II sites approaching 100% (ranging from 90 to 99%).

The Phase II program directly addresses measure 7.11B.1 of the 1994 Columbia Basin Fish and Wildlife Program as amended in 1995. Phase II is consistent with the High Priority Projects listed in the 2000 CBFWA program and addresses RPA 149 of the National Marine Fisheries Service (NMFS) 2000 Biological Opinion on operations of the Federal Columbia River Power System (FCRPS). The Phase II program is outlined in the Yakima Subbasin Summary (Feb 2000). This funding proposal will allow completion of the few remaining Phase II diversion screens by the year 2003. Due to delays a number of screens remain to be constructed and is anticipated to be completed by 2005.

(w) Operate & Maintain (O&M) Yakima Basin Phase II Fish Screens – Bureau of Reclamation (BOR)

The Yakima Basin Phase II O&M program provides preventive and emergency maintenance and operational adjustments on completed Yakima basin Phase II fish screening facilities. The main objective of this project is to assure that the potential benefits of BPA's capital investment in fish screens are realized by performing operations that assure optimal fish protection and long facility life through a rigorous preventative maintenance program, while helping to restore ESA listed fish stocks.

(x) Operate & Maintain of Yakima Phase II Fish Facilities – Bureau of Reclamation (BOR)

This proposal provides for continuation of funding for the existing comprehensive operation & maintenance program by the USBR of BPA owned Yakima Phase II fish screening and trapping facilities. USBR currently operates and maintains twenty-four sites, with an estimated 3 more sites due to be added by the end of the Phase II construction program in 2003. These facilities are located at irrigation diversions throughout the Yakima River Basin, and were constructed to bring the old screensites into compliance with current regional fish screen biological protection criteria adopted by the Columbia Basin Fish and Wildlife Authority (CBFWA) in 1995. The target objectives of that program are (1) reduce fish delay to a degree approaching zero; (2) reduce the possibility of injury or mortality to a degree approaching zero; and (3) allow fish to pass with little additional expenditure of energy.

(y) Yakima Spring Chinook Supplementation and Research Program – NOAA Fisheries

This study addresses the issue of precocious male reproductive maturation in spring Chinook salmon produced by the Yakima Supplementation and Research Facility and other salmonid hatchery programs. The specific aims of the project are to quantify precocious maturation rates of wild and hatchery spring Chinook and develop hatchery rearing protocols to control unnaturally high levels in hatchery stocks.

(z) Spatial Scales of Homing and the Efficacy of Hatchery Acclimation Facilities – NOAA Fisheries

The overall goal of this project is to describe the spatial and temporal homing and spawning patterns of wild salmon vs. hatchery-reared salmon released from acclimation facilities.

(aa) Monson Project Phase 1 and 2 – North Yakima Conservation District

This Project is part of an overall effort to re-establish the "Taylor Ditch" as a side channel of the Yakima River in the east-Selah floodplain area. This Project will restore riparian habitat along 2500 ft. of the waterway. Project activities are supported as a result of findings within the "Taylor Ditch Habitat Assessment Project: phase one report". This assessment identified lack of riparian area and water quality to be the limiting factors in the use of the Taylor Ditch as a side channel habitat. The assessment also identifies the ditch as being used by spring Chinook, Coho, and rainbow trout. The Yakima Mainstem in this area also supports steelhead and has the potential for bull trout rearing and migration.

This project shares the same general description as "Monson Project phase 1". Project activities include restoration of eastside of "Taylor Ditch" 2500 ft. and re-establishment of approximately 3 acres of associated wetlands. This project is part of an overall effort to re-establish the "Taylor Ditch" as a side channel habitat to the Yakima River in the East-Selah area.

(bb) Buchanan Ranch Restoration Project – North Yakima Conservation District

This Project is located at the mouth of the Wenas Creek at the Yakima River (RM 122.4R). The project will provide funds for full restoration of the riparian/flood plane habitat (100 acres and 2 miles) of this property. This project has been done in conjunction with the Bureau of Reclamation. Riparian restoration project generally need several years to see the "high success, however this project shows high levels of plant survival and in addition two fish barrier on the property were modified and or removed. Continue to work with adjacent landowners (three underway) to implement riparian restoration, seek willing landowners/water right holders to improve instream flow and seek alternatives to address passage or removal of irrigation dam located approximately 10 miles up-stream.

(cc) Yakima Basin Environmental Education

The Environmental Education Training Program offers teachers throughout the Yakima Basin the opportunity to become involved with their students in projects to protect, enhance, analyze and provide solutions to water resource problems in their community. These projects address the needs of anadromous and resident fish as it relates to the agricultural and other water users in the Basin. This ongoing program is in its seventh year of operation. In excess of 250 teachers throughout the region have been involved and annually over 2000 students are actively involved in hands-on activities related to understanding the on-going stewardship of our watershed. Activities range from math and science investigations to language arts, journal writing, historical investigations of the watershed, civics, economics. It addresses

responsible citizenship through knowledge of water issues like water quality monitoring, salmon life cycle needs, stream hydrology, riparian habitat functions, wetlands and their role in a healthy ecosystem, as it relates to the needs of all the water users involved in these issues.

Students have developed community partnerships to monitor water quality, restore riparian corridors, raise salmon in their classrooms for release in various tributaries, monitor storm run-off and collect data annually on salmon redds in the upper Yakima River. Each year additional teachers will be trained adding additional schools and students to the ever-growing number of involved participants. An independent evaluation of the program was conducted in 1998 and will be an on-going part of the program documenting program outcomes, teacher reactions, and community involvement as well as the long term impact of the program on teaching essential learning as delineated by the Washington State Office of Education.

APPENDIX B

Existing and Proposed Projects for Habitat Restoration

(TABLE FOLLOWS)

APPENDIX C
Prioritization For Restoration

The WAC guidelines specifically require that Yakima County identify goals and priorities for restoration. Undoubtedly a large portion of Yakima County's shoreline areas have been adversely impacted by a broad collection of land uses, most of which would benefit from some form of shoreline restoration. Within this plan many of those identified degraded shoreline areas are considered a priority for restoration; however there are a number of shoreline areas that remain in relatively good condition, where existing ecological functions should be protected, or where acquisition/easement should be considered vital for future restoration success. It is those high quality shoreline areas that serve as the foundation upon which shoreline restoration efforts are most effectively built. Protection of functional shoreline areas is typically more cost effective and provides greater certainty of long-term success than restoration of degraded shoreline areas. Protection of functional shoreline areas can be provided through acquisition, conservation easement, or under critical area ordinances or other regulatory processes administered by local land use managers.

Restoration projects in general, often have to be done opportunistically and may not always follow a strict prioritization list. It is not practical to prioritize only those shoreline areas recommended for acquisition or conservation easement, because restoration opportunities often only arise as willing property owners surface, and there is typically a very limited timeframe in which to respond. Thus ranking or prioritizing degraded shoreline areas doesn't necessarily guarantee that the high priority shorelines will get restored first. Degradation of shoreline areas can vary widely along the same reach, and determining which area is worse than the other can be subjective.

Therefore, it is the intent of this section to outline a process that ranks those shoreline areas that are in relatively good condition, where existing ecological functions should be protected and prioritize those streams for restoration.

The prioritization process for this Restoration Plan was developed using information from a variety of habitat and shoreline assessments and reports, specifically: the Watershed Management Plan, the Subbasin Plan, the Yakima Subbasin Salmon Recovery Plan, Salmonid Habitat Limiting Factors Analysis, and the Yakima County Shoreline Characterization study. The prioritization process applied qualitative assessments, findings and recommendations from the Technical Advisory Groups participants and staff knowledge. However, the nature of these types of shoreline and habitat assessments makes it difficult to accurately rank or prioritize shoreline areas as compared to a standard or precise quantitative assessment. The stream assessments identified a number of key aquatic habitat factors that evaluate each shoreline area. The Watershed Management Plan's prioritization process was used as a model to help construct Yakima County's prioritization list. For the purposes of this plan the prioritization process described below is a combination of other ranking methodologies and assessment data using the referenced documents previously mentioned. A brief description of the prioritization process and tables are provided, however if specific

detailed information on the overall process and tables is needed please refer to the referenced documents.

Prioritization Process: The Watershed Management Plan prioritized streams/shoreline areas based upon a number of guiding principles and river data comparisons. The guiding principles are described below:

1) Guiding Principle 1 - stresses the protection of high quality habitats. It was determined that streams that fell in this category are best suited for protection. The best tributary habitats were identified through the watershed assessment process and ranked in further evaluations of habitat condition and water quality. In general, the best tributaries drained wilderness areas or other protected lands. These included the American River and Rattlesnake Creek in the Naches drainage.

2) Guiding Principle 2 - stresses the protection and enhancement of damaged river or shoreline areas that are still functional. Enhancement activities should concentrate on "at risk" systems and not emphasize enhancement of highly-degraded systems until such systems have reached a point where recovery is possible.

3) Guiding Principle 3 – this pertains to water quality and recognizes the need to protect beneficial uses that include in-stream and diversionary uses. Other considerations affecting prioritization of project actions include potential impacts on productivity within other reaches. For example, a project may help improve fish passage to higher quality habitats upstream or mitigate water quality problems affecting downstream habitats.

4) Guiding Principle 4 - is an anti-degradation goal to ensure that highly-degraded habitats are not further degraded. Over time, these habitats may slowly recover naturally if protected from further degradation. Future opportunities for enhancement of these lower priority areas will be identified as higher priority reaches are addressed.

The following stream reaches are identified as important to ensure continued ecological function of high quality shorelines, or areas that are critical to restoration of natural shoreline function. Each of the river or stream reaches were generally categorized into priority groups using the four guiding principles, the qualitative assessment information, and professional judgment. In developing the Restoration Plan's Prioritization table (Table 4, below) the Watershed Management Plan's Table 7.1 (see Appendix C) was used as the template.

(TABLE FOLLOWS)

Table 4. Prioritization of Shoreline Areas in Yakima County

Guiding Principal	Priority	Rationale, Strategy and Response	Stream Name
1: Protect the highest quality	1	Preserve existing high quality habitat with specific enhancements directed at fish passage and access concerns. High Priority for Preservation.	Yakima River Reaches 1 & 2 (not in Yakima County)
1: Protect the highest quality	1	Preserve existing high quality habitat with specific enhancements directed at fish access/migration concerns. High Priority for Preservation.	American River Rattlesnake Creek
2: Protect and enhance damaged but still functional habitat	2	Migration corridor should be protected enhanced because it is the only route to all spawning and rearing areas of the basin.	Yakima River Reaches 3, 4 & 5
2: Protect and enhance damaged but still functional habitat	2	Restore at risk sections in lower reaches of each tributary due to barriers, riparian degradation or flow issues. High priority for enhancement.	Bumping River Naches River Little Naches River Tieton River
2: Protect and enhance damaged but still functional habitat	3	Restore larger reaches of each tributary due to habitat problems mainly associated with compromised riparian conditions, low flows and watershed erosion impacts. Medium priority enhancement.	Cowiche Creek Ahtanum Creek
3: Improve water quality for regulatory requirements and to provide access to upstream habitats	4	Restore lower reach degraded habitat conditions mainly associated with water quality, loss of riparian function; barriers and flow. Higher quality habitat in upper reaches need connectivity for fish migration. Priority should be reviewed where projects improve connectivity.	
4: Protect significantly degraded habitat from further degradation	5	Protect seriously degraded habitat mainly associated with false attraction flows, water quality, degraded channels and riparian areas. Priority for protection to stop continued degraded.	
None: Wasteways, drains, intermittent streams, or other severly degraded systems	6	No near term enhancement potential except for possible rearing habitat near the confluence. These streams may cause high mortality and may be unsuitable habitat for certain life stages. False attraction flow problems exist. Protect from further degradation.	

Source: *Watershed Management Plan – Yakima River Basin*, Yakima River Basin Watershed Planning Unit and Tri-County Water Resources Agency, Ch 7 – Fish Habitat Enhancement. Note: In the event of data gaps with certain shoreline areas an attempt was made to prioritize them in this table using the as much information that was available for this plan.

Prioritization of river reaches conducted during the Watershed Management Plan was strongly influenced by the idea that the best tributaries drained wilderness areas or other protected lands, which stresses protection of connecting migration corridors as well as the enhancement of damaged but still functioning habitats.

Accordingly, all five mainstem Yakima River reaches and the Naches River were assigned high priority for both protection and enhancement as reflected in Table 4. Needs of the individual reaches vary as illustrated in the habitat and water quality condition qualitative assessment summaries in Tables 2-11 and 2-12 (See Appendix B). However, all mainstem river reaches and the Naches River are considered to have equal priority even though details concerning enhancement approaches will differ significantly between the lower and uppermost sections of the river.