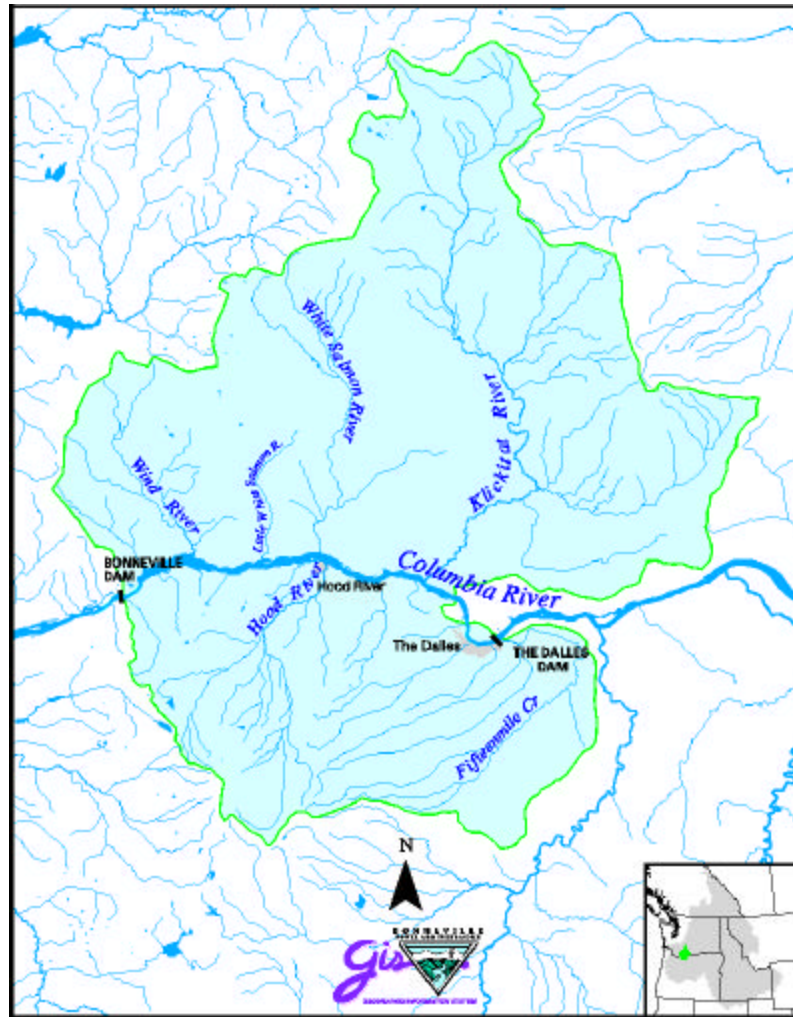


Draft FY 2001-2003 Columbia Gorge Province Work Plan



Prepared for the
Northwest Power Planning Council

by the
Columbia Basin Fish and Wildlife Authority

November 15, 2000

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Introduction

The “rolling” provincial review process was developed by the Northwest Power Planning Council (NWPPC) in February 2000 in response to recommendations by the Independent Scientific Review Panel (ISRP) and the Columbia Basin Fish and Wildlife Authority (CBFWA). Under this new province based process each individual project proposal within a province will be reviewed for technical merit and management relevance every three years. Under the previous process all project proposals for Bonneville Power Administration (BPA) funding under the Fish and Wildlife Program were reviewed annually. The purpose of the NWPPC’s new multi-year process is to reduce the burden of reviewing large numbers of proposals, most of which had been reviewed just one year before, and to provide for a more thorough review of the project proposals in the context of a subbasin summary. Additionally, the process is intended to provide the opportunity for site visits by reviewers, project presentations with a question and answer period, and provide reviewers with more detailed background and planning documents which will reduce the reviewer’s reliance strictly on the proposal form.

The subbasin summaries developed under this process are intended to be interim and will be replaced by subbasin plans developed to meet requirements of the recently amended Fish and Wildlife Program. The Columbia Gorge and Inter-Mountain provinces are the first to be reviewed under this new process. The results of this review for the Columbia Gorge Province are summarized here.

This document was developed collaboratively by the NWPPC staff, ISRP, fish and wildlife managers, other stakeholders and CBFWA staff, culminating in project and budget recommendations for FY 2001-2003. The subbasin summaries are provided only as context for the project recommendations.

The CBFWA process for providing these recommendations utilized the ISRP preliminary findings and integrated manager evaluations of the technical and management merits of the project proposals relative to anadromous fish, resident fish and wildlife management needs, and the goals and objectives identified in the subbasin summaries. A total of 32 project proposals were submitted and reviewed in the Columbia Gorge Province with four proposals receiving a “do not fund” recommendation. The recommended projects address needs identified in the subbasin summaries and include 13 new and 15 ongoing projects totaling \$14 million.

This draft work plan includes the subbasin summaries, which describe the physical and biological characteristics of each subbasin within the Columbia Gorge Province. The summaries also identify past accomplishments, limiting factors, management objectives and strategies, current needs and recommended budgets for project implementation.

Geographic Description

The Columbia Gorge Province is bounded by Bonneville Lock and Dam at river km 235 and The Dalles Dam at river km 308 on the Columbia River, located about 64 km east of Portland (Figure 1). Bonneville Reservoir is entirely within the Columbia River Gorge National Scenic Area. For this review the following subbasins have been evaluated:

1. Hood River and Oregon tributaries to the Columbia River between Bonneville Dam and the Hood River
2. Fifteenmile Creek and Oregon tributaries to the Columbia River between Hood River and The Dalles Dam
3. Wind River
4. Little White Salmon River
5. White Salmon River
6. Klickitat River
7. Bonneville Reservoir.

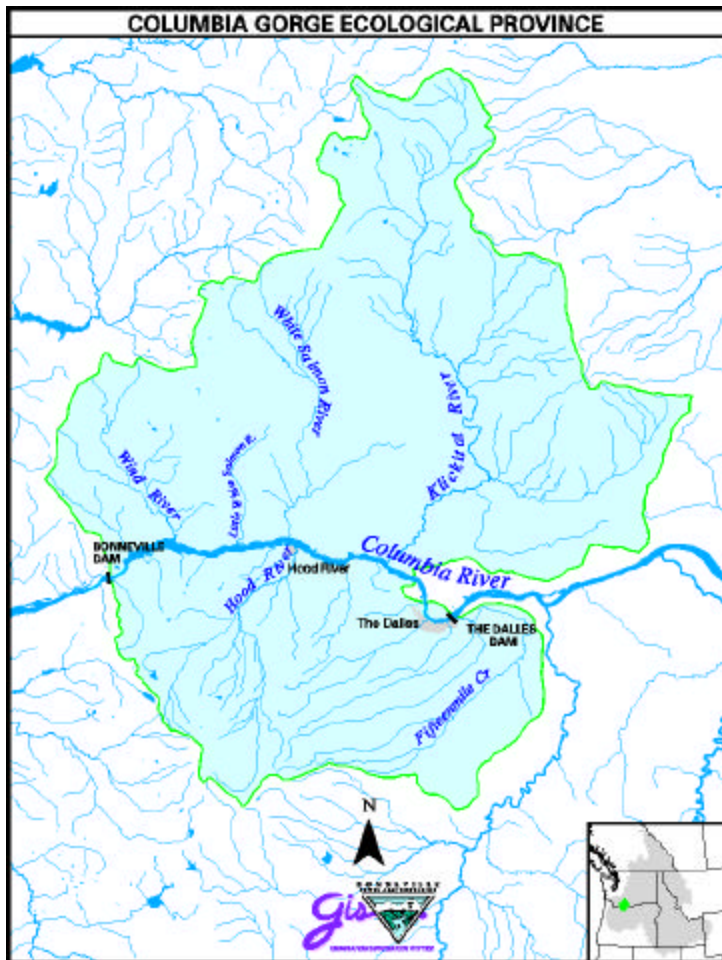


Figure 1. Columbia Gorge Province

Project Review Process

Subbasin Summaries

The Columbia Gorge province review was initiated at an April 13-14, 2000 meeting in The Dalles, Oregon. An invitation was sent to an extensive distribution list to encourage all interested parties (i.e. land and water managers, representatives of watershed councils, etc.) to attend and provide input. The purpose of this first meeting was to provide all interested parties with the opportunity to identify sources of information necessary for the development of subbasin summaries for this province (i.e. monitoring data, habitat restoration results, existing assessments, etc.). The intent was to insure that Bonneville Power Administration (BPA) expenditures for fish and wildlife projects compliment and enhance existing efforts and insure that priority needs are addressed. Subsequent meetings were held to review draft summaries and identify goals and objectives.

Previously, ecosystem summaries for each subbasin were developed as a means of providing context for project proposals. Under the new process a more formal structure with subbasin teams was formed to develop the more comprehensive subbasin summaries of the newly identified provinces. Other local interested parties also provided input to and participated on the subbasin teams (i.e. other land and water managers, representatives from watershed councils, etc.).

Subbasin summaries for the Columbia Gorge Province were completed in July 2000. BPA issued the solicitation for project proposals for the Columbia Gorge Province July 13, 2000 with project proposals due August 16, 2000. The project sponsors were asked to show a direct tie between their projects and the needs identified in the subbasin summaries.

Review by the ISRP

The ISRP reviewed 32 project proposals for the Columbia Gorge Province. At least three ISRP/Peer Review Group members reviewed each proposal. To ensure a consistent and fair evaluation, standard formats and criteria were applied to all proposals to generate comments and scores prior to the proposal review workshop. These scores and comments were not made available to the project sponsors at the workshop, but were used by the ISRP to develop questions for the site visits and workshop presentations. The workshops consisted of site visits and project presentations.

Site Visits (September 11-12, 2000)

The ISRP, subbasin teams, fish and wildlife managers, the CBFWA province review team and other stakeholders toured the province to gain a better understanding of the existing ecological conditions and limiting factors as well as view some ongoing projects in each subbasin. During the tour, managers provided oral presentations for areas/projects within the province that the group was unable to visit.

Project Presentation (September 13-14, 2000)

Prior to the presentation of individual project proposals, subbasin team leaders provided a general overview for their respective summaries. Following each subbasin summary presentation, project proposals relative to that subbasin were presented to the ISRP, CBFWA province review team, fish and wildlife managers, NWPPC staff, CBFWA staff

and other stakeholders. All project sponsors were provided 15 minutes to present their proposal and answer questions. During this review, the CBFWA province review team applied Subbasin Project Review Criteria (Table 1) to each project. Every effort was made to be consistent among all project proposals reviewed.

Table 1. CBFWA Subbasin Project Review Criteria

Technical Criteria	
1. Does the proposal demonstrate that the project uses appropriate scientifically valid strategies or techniques and sound principles (best available science)?	Y or N
2. Are the objectives clearly defined with measurable outcomes and tasks that contribute toward accomplishment of the objectives?	Y or N
3. Are the resources proposed (staff, equipment, materials) appropriate to achieve the objectives and time frame milestones?	Y or N
4. Does the proposal include monitoring and evaluation to determine whether objectives are being achieved (including performance measures/methods) at the project level?	Y or N
5. Will the proposed project significantly benefit the target species/ indicator populations?	Y or N
6. Does the proposal demonstrate that project benefits are likely to persist over the long term and will not be compromised by other activities in the basin?	Y or N
7. Does the proposal demonstrate that all reasonable precautions have been taken, to not adversely affect habitat/populations of wildlife, native resident and anadromous fish?	Y or N
8. Are there explicit plans for how the information, technology etc. from this project will be disseminated or used?	Y or N
Management Criteria	
1. Does the proposed project address fish and wildlife related objectives, strategies, needs and actions as identified in the subbasin summaries?	Y or N
2. Does the project address an urgent requirement or threat to population maintenance and/or habitat protection (i.e., threatened, endangered or sensitive species)?	Y or N
3. Does the project promote/maintain sustainable and /or ecosystem processes or maintain desirable community diversity?	Y or N
4. Is there cost share for the construction/implementation and/or monitoring and evaluation of the project?	Y or N
5. Will the project complement management actions on private, public and tribal lands and does the project have demonstrable support from affected agencies, tribes and public?	Y or N
6. Will the project provide data critical for in season, annual and/or longer term management decisions?	Y or N
7. Will this project provide or protect riparian or other habitat that may benefit both fish and wildlife?	Y or N

Preliminary ISRP Report

On October 6, 2000 the ISRP released a Preliminary Review of Fiscal Year 2001 Project Proposals for the Columbia River Gorge and Inter-Mountain provinces (ISRP 2000-8 at NWPPC). This report summarized the ISRP's preliminary review of each project proposal

and identified areas of concern where they had requested a written response to questions. The due date for written responses to this report was October 27, 2000.

CBFWA Province Review Group

On October 10-11, 2000 the CBFWA province review group reviewed all project proposals within the province using criteria listed in Table 1 which resulted in a consensus Yes or No. Subbasin team members also participated in the review of the project proposals. The following elements were considered during the review:

- How well does the project relate to the criteria (Table 1)
- Validation of existing work- is the current funding level appropriate (Section 6 O&M and Section 7 M&E of existing projects)? Is it appropriate to continue implementation of existing work (Section 4 P&D and Section 5 C&I of existing projects)?
- Evaluation of proposed new work- does a new project proposal demonstrate a priority need over implementation strategies within existing projects (Sections 4 and 5 of existing projects)?

The preliminary ISRP technical review of all proposals was utilized while discussing the technical merits of each project. Project proposals were grouped by subbasin during their review. Following the technical and management review, the project proposals were prioritized within each subbasin according to the fish and wildlife needs within that subbasin. The following definitions were used for the subbasin prioritization:

- Urgent - These projects or tasks within a project are of urgent need. They will either have a direct impact on survival or protection of a key species or will protect investments made in this subbasin. These projects should be able to demonstrate an immediate cost if not funded (loss of habitat, impact on a population, etc.). An example might also include ongoing O+M costs.
- High Priority - These projects or tasks within a project are high priority within the subbasin. The project addresses a specific need within the subbasin summaries.
- Recommended Actions - These are good projects that cannot demonstrate a significant loss by not funding this year. These projects should be funded, but under a limited budget could be delayed temporarily without significant loss.
- Do not fund - These projects are either technically inadequate or do not address a need within the subbasin summaries. These projects may be inappropriate for BPA funding.

CBFWA Review and Approval of Project Recommendations and Subbasin Summaries

The final step in the project proposal review process was the consensus approval of the project recommendations by CBFWA members. The CBFWA members review and the recommendations in the subbasin summaries and province work plan demonstrate regional support by the fish and wildlife managers.

During October 30 - November 1, 2000, the province recommendations and subbasin summaries were discussed in the CBFWA Anadromous Fish, Resident Fish and Wildlife committees. The committees made some modifications to the province recommendations based on technical or regional management concerns. Some inconsistencies in approach between the Columbia Gorge and Inter-Mountain provinces

were identified and corrected. It was decided to group the Urgent and High Priority projects for the final recommendation to NWPPC since all of these projects should be funded in FY 2001.

Proposal Review Results

A total of 32 project proposals were reviewed in the Columbia Gorge Province (15 ongoing projects and 17 new proposals, Table 2). Four proposals were categorized as Do Not Fund. These proposals generally were considered inappropriate for Direct Program funding. Individual project proposal comments follow:

Project 21005, *Characterize and assess wildlife-habitat types and structural conditions for subbasins within the Columbia Gorge eco-province*, is currently being funded under the Ecosystem Diagnosis and Treatment project by the NWPPC. The need for expansion of this project to produce finer resolution within each province should be determined through the EDT assessment process. If that process determines that finer resolution is necessary for regional planning, then funding for expansion should be provided through the NWPPC subbasin assessment effort.

Project 21010, *Feeding, growth, and smoltification of juvenile steelhead infested with the ciliated protozoan, Heteropolaria lwoffii*, is a well-designed research project. However, it was unclear to the reviewers how the results of the study would be incorporated into management decisions in this subbasin. There may be other, more appropriate, funding sources for this type of work.

Project 21015, *Riparian buffers*, is a proposal to fund one full time equivalent employee at the Wasco Soil and Water Conservation District strictly to process and implement 36 new Conservation Reserve Program (CRP) and Conservation Reserve Enhancement Program (CREP) riparian buffer system agreements. The US Department of Agriculture funds these programs. There are currently 13 participants in the program signed up and at least 36 additional landowners in the Fifteenmile Subbasin that have expressed interest in entering into long term riparian buffer agreements through these programs. The fish and wildlife managers strongly support this project, however, funding through BPA would raise legitimate in-lieu funding issues. Therefore the fish and wildlife managers believe this project should be funded through another program (ie. US Department of Agriculture).

Project 21016, *Accelerate the application of integrated fruit management to reduce the risk of pesticide pollution in Fifteenmile subbasin orchards*, proposes to develop a data management system that would assist farmers in applying pesticides on orchards in the Fifteenmile and Threemile subbasins. This project would purchase several weather stations on selected orchards throughout the subbasin and fund the development of centralized processing software to coordinate the data collection and analysis. The data would then be available to all farmers in the area via the Internet to assist in managing the application of pesticides. The fish and wildlife managers did not see the direct link to fish and wildlife benefits in this subbasin. Most of the orchards are not located in the riparian areas in the Fifteenmile Subbasin and the sponsors showed no tie to providing data and information to local fish and wildlife managers. Pesticides were not identified in the

Fifteenmile Creek and Oregon tributaries to the Columbia River between Hood River and The Dalles Dam Summary as a major limiting factor. No monitoring and evaluation was proposed to measure benefits to fish and wildlife.

Table 2. CBFWA project proposal review for the Columbia Gorge Province

Note: Due to space constraints, text in the criteria fields shown as “n” over “a” should be interpreted as “n/a”.

ProjectID	Title	Sponsor	Subbasin	Technical Criteria								Management Criteria							Project Review Comments	CBFWA Category	
				T 1	T 2	T 3	T 4	T 5	T 6	T 7	T 8	M 1	M 2	M 3	M 4	M 5	M 6	M 7			
21001	Fifteenmile Creek Riparian Fencing / Physical stream Survey Project	ODFW	Fifteenmile	y	y	y	n	y	y	y	y	y	y	y	y	y	y	y	y	This project is functionally tied to Project 199304000. Because this is new work and an expanded scope for the original project, the work was submitted under a new project number. The ISRP comments focus on the lack of monitoring, however, this project has been underway for 15 years and monitoring has consistently been underfunded or not funded. Therefore, pre-treatment data is not available in this area. The ISRP suggests tree planting to accelerate the recovery process. The regional managers experience on the east side streams has been a poor success rate with tree planting. Also, there is concern that with artificial planting you may have a negative affect on the natural succession process. During the site visits the project sponsors explained that the habitat protection work began at the headwaters (at USFS boundary) and have been working their way downstream. As the work progresses downstream, the steelhead habitat has been expanding. This work is continuing on the same course and is proposed to be implemented on the downstream edge of existing steelhead habitat. The Fifteenmile Creek Watershed Council is currently working on comprehensive watershed assessment. Until that plan is complete, the restoration in the Fifteenmile is prioritized according to an existing Fifteenmile Creek Habitat Implementation Plan developed by ODFW, CTWSRO and the USFW in 1987 included in the project proposal. Monitoring and evaluation should be included in future scopes of work to measure implementation of activities proposed here. To measure the direct effects on fish abundance with any scientific credibility is very difficult without an appropriate control stream for comparison.	Urgent/High Priority
21004	Determination of difficult passage areas by examining swimming activity of upriver migrating salmon implanted with EMG transmitters	PNNL	Klickitat	?	n	?	?	n	n	n	n	n	?	n	n	?	?	n	a	Although this project provides a very interesting line of research, the co-managers are not convinced that the results will lend themselves to assist decision making on the river. The fish passage areas identified in the proposal are dynamic according to flow levels and results may be difficult to interpret. This would be an interesting project, but management and other activities on the Klickitat River cannot wait on the results from this project, particularly since it is unknown if the results will be useful. This proposal has not been fully developed to permit an adequate review.	Recommended Action
21005	Characterize and	NHI	Columbia	y	n	y	y	n	n	n	n	y	y	n	y	y	y	n		This project is being funded under the EDT component of the	Do Not

ProjectID	Title	Sponsor	Subbasin	Technical Criteria								Management Criteria							Project Review Comments	CBFWA Category					
				T 1	T 2	T 3	T 4	T 5	T 6	T 7	T 8	M 1	M 2	M 3	M 4	M 5	M 6	M 7							
	Assess Wildlife-Habitat Types and Structural Conditions for Sub-Basins within the Columbia Gorge Ecoprovince		Gorge							a	a							a						NWPPC assessment effort. If expansion of the project is necessary, that expansion should be determined and funded under the EDT development process. Not appropriate to fund with wildlife funds. The Wildlife Committee also has concerns over data access based on past experience. This project provides very interesting information, however, the application of the information for management decisions is unclear. This information will be very useful for watershed assessment work. Currently accessibility to this information is not widely known.	Fund
21009	Assess current and potential salmonid production in Rattlesnake Creek associated with restoration efforts	UCD, YN, USGS	White Salmon	y	y	y	n	a	n	a	y	y	y	n	n	y	y	y	n	a				Condit Dam is slated for removal in 2006. This project provides a great opportunity to document the baseline data in this system prior to dam removal.	Urgent/High Priority
21010	Feeding, growth, and smoltification of juvenile steelhead infested with the ciliated protozoan, Heteropolaria lwoffii	USGS-CRRL, USFWS	Wind	y	y	y	y	n	n	y	n	y	n	n	n	n	?	n	a					This is an interesting project that would provide good information. It is questionable how that information would be used for management decisions.	Do Not Fund
21011	Assess the Current Status and Biotic Integrity of the Resident Fish Assemblage in Bonneville Reservoir	USGS/CRRL	Bonneville Reservoir	y	n	y	n	a	n	a	y	y	y	n	n	a	y	y	y	n	a			The Managers have some concern that this project is only looking at one measure of biotic integrity (resident fish) within the reservoir. This is good basic research but the contribution to management decisions is unclear.	Recommended Action
21012	Evaluate Status of Coastal Cutthroat Trout in the Columbia River Basin above Bonneville Dam	USGS-CRRL	Columbia Gorge	y	y	y	n	a	y	n	a	y	y	y	y	n	a	y	y	y	n	a		Many projects within the basin are finding cutthroat information. An organized accumulation of this information is needed. This project should first accumulate all available information from all fish and wildlife agencies and tribes in the basin. Field work should then focus on subbasins and areas where data is missing.	Urgent/High Priority
21013	Western Pond Turtle Recovery - Columbia River Gorge	WDFW	Columbia Gorge	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y				This project addresses a wildlife species that has been negatively affected by the hydrosystem. This species is listed as sensitive in the State of Washington.	Urgent/High Priority
21014	Mitigate Streambank Sediment Sources in Fifteenmile Watershed using Bioengineering Techniques	Wasco SWCD	Fifteenmile	?	y	y	y	?	n	y	n	y	n	n	y	y/n	n	y						This project exemplifies the patchwork criticism from the ISRP. The work is based on opportunities by cooperative landowners and not by a prioritized method of implementation. This project should wait for a comprehensive habitat assessment. The cost per mile for this type of work is very high without a major contribution to	Recommended Action

ProjectID	Title	Sponsor	Subbasin	Technical Criteria								Management Criteria							Project Review Comments	CBFWA Category	
				T 1	T 2	T 3	T 4	T 5	T 6	T 7	T 8	M 1	M 2	M 3	M 4	M 5	M 6	M 7			
																				the stream for fish and wildlife. There are other techniques that could be used at this site that would cost less and provide greater benefits to the fish. We would like to see a more explicit plan for disseminating the information to other farmers and ranchers to encourage more landowner participation in projects like this. Some of the sites identified in the proposal do address current fish and wildlife management priorities. Other sites within the proposal would not rank as high priorities within the Fifteenmile subbasin. It would be interesting for the project sponsors to provide alternate techniques that may focus on benefits for fish, with a monitoring plan to measure benefits of the various restoration techniques. Better coordination with local fish and wildlife managers is needed.	
21015	Riparian Buffers	Wasco SWCD	Fifteenmile	n	y	y	y	n	a	y	y	n	y	y	y	y	y	n	y	The benefits that could be realized for fish and wildlife by funding this project could potentially be very high. The question, however, is whether on federal agency should be funding a staff position to implement another federal program's implementation. This is a major policy decision to be made by CBFWA Members, BPA and NWPPC. Is there any other process to fund this position?	Do Not Fund
21016	Accelerate the Application of Integrated Fruit Management to Reduce the Risk of Pesticide Pollution in Fifteenmile Sub-basin Orchards	Wy'East RC&D	Fifteenmile	n	n	n	n	n	n	y	n	n	n	?	y	n	n	n	n	In the CBFWA technical review, the Managers focused on the benefits to fish and wildlife. If a technical review were provided in the context of benefits to orchard production, the review would probably exhibit different results. Pesticides in the Fifteenmile Subbasin have not been identified as a major limiting factor for fish and wildlife in the subbasin summary. The proposal does not show a direct link to fish and wildlife. The orchards in this subbasin are not generally located in the riparian zone and the sponsors showed no tie to providing data and information to the local fish and wildlife managers. No monitoring and evaluation is presented to measure benefits to fish and wildlife.	Do Not Fund
21019	Fifteenmile Subbasin Water Right Acquisition Program	OWT	Fifteenmile	y	y	y	n	a	y	y	y	n	y	y	y	y	y	n	y	The ISRP suggests a monitoring and evaluation plan for the water right purchases. Once the purchases are made, the water master has the responsibility to insure the water is provided in-stream. The M+E is being performed through other instream work being done by the co-managers working in the area. The co-managers will assist OWT to specifically address this concern.	Urgent/High Priority
21024	Evaluate Hatchery Reform Principles	NMFS	Wind	n	y	n	y	n	n	y	y	y	n	n	y	n	y	n	a	More definitive results from NATUREs studies should be available prior to initiating a large scale production investigation. Fund after a rigorous summary of all applied NATUREs studies has been presented to CBFWA AFC to	Recommended Action

ProjectID	Title	Sponsor	Subbasin	Technical Criteria								Management Criteria							Project Review Comments	CBFWA Category				
				T 1	T 2	T 3	T 4	T 5	T 6	T 7	T 8	M 1	M 2	M 3	M 4	M 5	M 6	M 7						
																				provide a better justification for work. This project potentially meets a RPA of the 2000 Draft Biological Opinion (9.6.4.3 Actions to Implement Recommendations in the NWPPC's Artificial Production Review).				
21026	Inventory and Restore Beaver and Beaver Habitats	YN	Klickitat	y	n	y	y	?	n	n	n	?	n	y	n	y	n	y		Recommended Action				
21027	Inventory and Assess Amphibian Populations in the Klickitat Subbasin	YN	Klickitat	y	y	y	y	y	n	a	y	y	y	n	y	n	y	n	n	a	This project provides the opportunity to monitor an independent species as an indicator for habitat quality. With the reduced population levels in most of these subbasins, we need a measure to determine the quality and effectiveness of our habitat work.	Recommended Action		
21028	Klickitat Watershed and Habitat Enhancement Project	YN	Klickitat	n	a	n	n	a	n	y	y	n	a	n	y	n	a	y	y	y	n	y	The approach proposed here is currently being developed on a regional basis. In the Amended Fish and Wildlife Program a Land and Water Acquisition Fund has been proposed. This project raises the question whether trusts should be created for each subbasin or maintained on a province or regional scale. The approach proposed here is laudable in the method and approach for securing acquisitions, but guidelines for purchases are unclear. Land trust issues should be resolved in a regional forum before being established within individual subbasins or for individual projects.	Recommended Action
21033	White Salmon River Watershed Enhancement Project	UCD	White Salmon	y	y	y	y	y	y	y	y	y	y	n	y	y	y	y	y	y	y	Categorizing this project as a "Recommended Action" is a prioritization issue within the subbasin. Highest priority was given to evaluating the removal of Condit Dam. In the future as dam removal gets nearer, this project will become a "High Priority".	Recommended Action	
198805303	Hood River Production Program - CTWSRO M&E	CTWSRO	Hood	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y		Urgent/High Priority	
198805304	Hood River Production Program - ODFW M&E	ODFW	Hood	y	y	y	y	y	y	y	y	y	y	n	a	y	y	y	n	a			Urgent/High Priority	
198805307	Hood River Production Program: Powerdale, Parkdale, Oak Springs O&M (88-053-07 & 88-053-08)	CTWS and ODFW	Hood	y	y	y	n	y	y	y	y	y	y	y	n	a	y	y	n	a	M+E is provided under a separate project.		Urgent/High Priority	
198811525	Yakima/Klickitat Fisheries Project Design and	YN	Klickitat	y	y	y	n	a	y	y	y	y	y	y	n	y	y	n	a		M+E component is provided in another proposal.		Urgent/High Priority	

ProjectID	Title	Sponsor	Subbasin	Technical Criteria								Management Criteria							Project Review Comments	CBFWA Category		
				T 1	T 2	T 3	T 4	T 5	T 6	T 7	T 8	M 1	M 2	M 3	M 4	M 5	M 6	M 7				
	Construction																					
198812025	Yakima/Klickitat Fisheries Project (YKFP) Management, Data and Habitat (Klickitat Only)	YN	Klickitat	n	y	y	n	n	y	n	y	n	n	n	y	y	n	a			M+E component is provided in another proposal.	Urgent/High Priority
198902900	Hood River Production Program - Pelton Ladder - Hatchery	ODFW	Hood	y	y	y	n	y	y	y	y	y	y	y	y	y	n	a			M+E is provided under a separate project.	Urgent/High Priority
199304000	Fifteenmile Creek Habitat Restoration Project (Request For Multi-Year Funding)	ODFW	Fifteenmile	y	y	y	y	y	y	y	y	y	y	y	y	y	y				This project was repeatedly denied funding for monitoring and evaluation in it's earlier years. Due to this, data for the earlier years of this project are limited. Future work should include additional M+E to provide the measures that the ISRP are looking for. The co-managers believe that due to this project, the populations are significantly stronger at this time.	Urgent/High Priority
199304001	15-Mile Creek Steelhead Smolt Production	ODFW	Fifteenmile	y	y	y	y	n	n	y	y	n	n	n	y	y	n				Demographic information is being collected through this program on the steelhead smolts. Due to the limited number of outmigrants, PIT tags are not being used due to low probability of recovery. The ISRP recommends modifying the scope of this project which would exceed the needs for the Fifteenmile subbasin at this time. The project provides the foundation of all fish monitoring in the Fifteenmile subbasin for all activities and therefore is considered urgent at this time. If this data were lost, the ability to measure the success of any project in this subbasin would be lost.	Urgent/High Priority
199405400	Bull trout population assessment in the Columbia River Gorge, WA.	WDFW	Klickitat	y	y	y	y	y	y	y	y	y	y	n	y	y	n	a			The project number for this project should be 199902400.	Urgent/High Priority
199500700	Hood River Production - PGE: O&M	PGE	Hood	y	y	y	n	y	y	y	y	y	y	y	y	y	n	a			M+E is provided under a separate project.	Urgent/High Priority
199506325	Yakima/Klickitat Fisheries Project Monitoring And Evaluation (Klickitat Only)	YN	Klickitat	y	y	y	y	y	y	y	y	y	n	n	y	y	n	a				Urgent/High Priority
199701725	Yakima Klickitat Fisheries Project Operation and	YN	Klickitat	y	y	y	n	a	y	y	y	y	y	n	y	y	n	a				Urgent/High Priority

ProjectID	Title	Sponsor	Subbasin	Technical Criteria								Management Criteria							Project Review Comments	CBFWA Category	
				T 1	T 2	T 3	T 4	T 5	T 6	T 7	T 8	M 1	M 2	M 3	M 4	M 5	M 6	M 7			
	Maintenance (Klickitat Only)																				
199705600	Lower Klickitat Riparian and In-Channel Habitat Enhancement Project	YN	Klickitat	y	n	n	?	y	y	y	y	y	y	y	y	y	?	y			Urgent/High Priority
199801900	Wind River Watershed Restoration	UCD,USFS, USGS-CRRL, WDFW	Wind	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y		CBFWA supports this project, however, the removal or modification of Hemlock Dam should be the USFS responsibility. At least a significant cost share should be provided by USFS. CBFWA supports complete removal of the dam rather than modification, although, means of continuing the adult monitoring work at this location should continue.	Urgent/High Priority
199802100	Hood River Fish Habitat Project	CTWSRO	Hood	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y			Urgent/High Priority

Three-year Budget Recommendations

The primary goal for the Columbia Gorge Province is to restore the health and function of the ecosystem to ensure continued viability of these important populations. A secondary goal is to enhance the fisheries resources for increased natural production and harvest through supplementation of native stocks. Table 3 provides a three-year funding recommendation for this province that strives to meet those goals. All of the projects recommended here should be initiated within the next three years. A total of 28 projects that address needs identified in the subbasin summaries are recommended for funding and include new and ongoing projects totaling \$14 million.

Hood River Subbasin

Key factors limiting anadromous and resident fish production in the Hood River subbasin identified in the Hood River Watershed Assessment, the U.S. Forest Service Watershed Analyses, and the Hood River Habitat Protection, Restoration, and Monitoring Plan are (1) artificial migration barriers including inadequately screened diversions; (2) low habitat complexity including a lack of pool habitat, in-channel large wood structure and spawning gravel and reduced stream-floodplain interactions compared to historic conditions and (3) water quality degradation and low summer flows. Other important constraints on subbasin habitat productivity are low anadromous fish survival and habitat impacts, i.e., steep stream gradients, glacial turbidity, disturbance events such as mudflows, high peak flow patterns and limited floodplain area. The abundance of some wildlife species has been affected by habitat loss and degradation due to past hydropower development, agricultural and other land use and the introduction of non-native plant species and exotic animals. Increasing residential development in the Hood River Valley and upland forest lands continues to degrade, fragment or eliminate remaining wildlife habitats and increase potential conflicts between humans and big game species. Low anadromous fish escapement results in a loss of nutrients from carcasses with a negative effect on wildlife abundance. Opportunities to restore populations and protect wildlife habitat will diminish over time as land prices and development pressures rise.

Table 3. CBFWA 3-year Project Recommendations for the Columbia Gorge Province

ProjectID	Title	Sponsor	Subbasin	FY01	CBFWA Category	FY 01 Budget Comments	FY02	FY 02 Budget Comments	FY03	FY 03 Budget Comments
21001	Fifteenmile Creek Riparian Fencing / Physical stream Survey Project	ODFW	Fifteenmile	\$151,685	Urgent/High Priority		\$157,579		\$162,579	
21004	Determination of difficult passage areas by examining swimming activity of upriver migrating salmon implanted with EMG transmitters	PNNL	Klickitat	\$212,929	Recommended Action		\$220,000		\$200,000	
21009	Assess current and potential salmonid production in Rattlesnake Creek associated with restoration efforts	UCD, YN, USGS	White Salmon	\$227,951	Urgent/High Priority	This project provides a tremendous opportunity to monitor the river before and after dam removal.	\$255,921		\$252,884	
21011	Assess the Current Status and Biotic Integrity of the Resident Fish Assemblage in Bonneville Reservoir	USGS/CRRL	Bonneville Reservoir	\$351,700	Recommended Action		\$368,000		\$380,000	
21012	Evaluate Status of Coastal Cutthroat Trout in the Columbia River Basin above Bonneville Dam	USGS-CRRL	Columbia Gorge	\$39,770	Urgent/High Priority	Funding for Objective 1 should be considered a high priority. The other objectives should be considered high priority in FY 02 and 03 if warranted based on the results from FY 01. We recommend funding only Objective 1 during FY 2001.	\$240,926		\$253,038	
21013	Western Pond Turtle Recovery - Columbia River Gorge	WDFW	Columbia Gorge	\$167,025	Urgent/High Priority		\$104,600		\$89,600	
21014	Mitigate Streambank Sediment Sources in Fifteenmile Watershed using Bioengineering Techniques	Wasco SWCD	Fifteenmile	\$159,355	Recommended Action		\$39,149		\$4,430	
21019	Fifteenmile Subbasin Water Right	OWT	Fifteenmile	\$32,000	Urgent/High Priority		\$41,775		\$54,225	

ProjectID	Title	Sponsor	Subbasin	FY01	CBFWA Category	FY 01 Budget Comments	FY02	FY 02 Budget Comments	FY03	FY 03 Budget Comments
	Acquisition Program									
21024	Evaluate Hatchery Reform Principles	NMFS	Wind	\$1,063,200	Recommended Action	More definitive results from NATUREs studies should be available prior to initiating a large scale production investigation. Fund after a rigorous summary of all applied NATUREs studies has been presented to CBFWA AFC to provide a better justification for work. This project potentially meets a RPA of the 2000 Draft Biological Opinion (9.6.4.3 Actions to Implement Recommendations in the NWPPC's Artificial Production Review).	\$1,116,150		\$1,171,957	
21026	Inventory and Restore Beaver and Beaver Habitats	YN	Klickitat	\$205,440	Recommended Action	If more than one of the three new Yakama Nation wildlife projects are funded (21026, 21027 and 21028), the projects should be combined to maximize efficiencies in implementation and insure cost effectiveness.	\$235,000		\$235,000	
21027	Inventory and Assess Amphibian Populations in the Klickitat Subbasin	YN	Klickitat	\$135,797	Recommended Action	If more than one of the three new Yakama Nation wildlife projects are funded (21026, 21027 and 21028), the projects should be combined to maximize efficiencies in implementation and insure cost effectiveness.	\$135,797		\$129,797	
21028	Klickitat Watershed and Habitat Enhancement Project	YN	Klickitat	\$2,741,360	Recommended Action	Land trust issues should be resolved in a regional forum before being established within individual subbasins or for individual projects. If more than one of the three new Yakama Nation wildlife projects are funded (21026, 21027 and 21028), the projects should be combined	\$3,000,000		\$3,260,000	

ProjectID	Title	Sponsor	Subbasin	FY01	CBFWA Category	FY 01 Budget Comments	FY02	FY 02 Budget Comments	FY03	FY 03 Budget Comments
						to maximize efficiencies in implementation and insure cost effectiveness.				
21033	White Salmon River Watershed Enhancement Project	UCD	White Salmon	\$242,221	Recommended Action	Categorizing this project as a "Recommended Action" is a prioritization issue within the subbasin. Highest priority was given to evaluating the removal of Condit Dam. In the future as dam removal gets nearer, this project will become a "High Priority".	\$266,441		\$293,086	
198805303	Hood River Production Program - CTWSRO M&E	CTWSRO	Hood	\$509,959	Urgent/High Priority	The M+E component of the Hood River Production Program is the key to measuring it's success. Therefore funding of this project is urgent.	\$540,000	The M+E component of the Hood River Production Program is the key to measuring it's success. Therefore funding of this project is urgent.	\$560,000	The M+E component of the Hood River Production Program is the key to measuring it's success. Therefore funding of this project is urgent.
198805304	Hood River Production Program - ODFW M&E	ODFW	Hood	\$431,331	Urgent/High Priority	The M+E component of the Hood River Production Program is the key to measuring it's success. Therefore funding of this project is urgent.	\$438,000	The M+E component of the Hood River Production Program is the key to measuring it's success. Therefore funding of this project is urgent.	\$452,000	The M+E component of the Hood River Production Program is the key to measuring it's success. Therefore funding of this project is urgent.

ProjectID	Title	Sponsor	Subbasin	FY01	CBFWA Category	FY 01 Budget Comments	FY02	FY 02 Budget Comments	FY03	FY 03 Budget Comments
198805307	Hood River Production Program: Powerdale, Parkdale, Oak Springs O&M (88-053-07 & 88-053-08)	CTWS and ODFW	Hood	\$1,082,983	Urgent/High Priority	The Fish and Wildlife Program has made a significant commitment to re-establishing fish runs in Hood River. The facilities and fish production in Hood River qualify as urgent activities. The expansion of the Parkdale facility should be considered a High Priority, although the co-managers strongly support this expansion. The property needed for Parkdale expansion is currently available for purchase and acquisition of this property is an urgent priority and time sensitive within this subbasin. Expansion of this facility would provide a savings of approximately \$100,000 per year in O+M costs for the Hood River Production Program beginning FY 2003.	\$3,109,198	The Fish and Wildlife Program has made a significant commitment to re-establishing fish runs in Hood River. The facilities and fish production in Hood River qualify as urgent activities. The expansion of the Parkdale facility should be considered a High Priority, although the co-managers strongly support this expansion. The property needed for Parkdale expansion is currently available for purchase and acquisition of this property is an urgent priority and time sensitive within this subbasin.	\$604,472	The Fish and Wildlife Program has made a significant commitment to re-establishing fish runs in Hood River. The facilities and fish production in Hood River qualify as urgent activities. The expansion of the Parkdale facility should be considered a High Priority, although the co-managers strongly support this expansion. The property needed for Parkdale expansion is currently available for purchase and acquisition of this property is an urgent priority and time sensitive within this subbasin.
198811525	Yakima/Klickitat Fisheries Project Design and Construction	YN	Klickitat	\$3,683,000	Urgent/High Priority	The passage projects on the Klickitat are urgent. Any office space funding should be termed High Priority. The appropriate funding level for this project in FY 2001 will be determined by the 3-Step Process.	\$234,000		\$1,950,000	

ProjectID	Title	Sponsor	Subbasin	FY01	CBFWA Category	FY 01 Budget Comments	FY02	FY 02 Budget Comments	FY03	FY 03 Budget Comments
198812025	Yakima/Klickitat Fisheries Project (YKFP) Management, Data and Habitat (Klickitat Only)	YN	Klickitat	\$363,510	Urgent/High Priority		\$391,780		\$415,674	
198902900	Hood River Production Program - Pelton Ladder - Hatchery	ODFW	Hood	\$139,534	Urgent/High Priority	This project will be necessary until expansion of the Parkdale facility is complete (FY 2003).	\$115,011	This project will be necessary until expansion of the Parkdale facility is complete (FY 2003).	\$0	This recommendation is based on the assumption that the Parkdale facility expansion will be complete for this FY. If the Parkdale expansion is delayed or unfunded, this project will be Urgent priority for FY 2003.
199304000	Fifteenmile Creek Habitat Restoration Project (Request For Multi-Year Funding)	ODFW	Fifteenmile	\$220,040	Urgent/High Priority		\$223,371		\$226,702	
199304001	15-Mile Creek Steelhead Smolt Production	ODFW	Fifteenmile	\$33,704	Urgent/High Priority		\$28,500		\$30,000	
199405400	Bull trout population assessment in the Columbia River Gorge, WA.	WDFW	Klickitat	\$155,938	Urgent/High Priority	This project is important in evaluating the status of a threatened species. This information is not being gathered through any other process. The project number for this project should be 199902400.	\$186,000		\$159,000	

ProjectID	Title	Sponsor	Subbasin	FY01	CBFWA Category	FY 01 Budget Comments	FY02	FY 02 Budget Comments	FY03	FY 03 Budget Comments
199500700	Hood River Production - PGE: O&M	PGE	Hood	\$46,300	Urgent/High Priority	This project will be necessary until expansion of the Parkdale facility is complete (FY 2003).	\$50,000	This project will be necessary until expansion of the Parkdale facility is complete (FY 2003).	\$0	This recommendation is based on the assumption that the Parkdale facility expansion will be complete for this FY. If the Parkdale expansion is delayed or unfunded, this project will be Urgent priority for FY 2003.
199506325	Yakima/Klickitat Fisheries Project Monitoring And Evaluation (Klickitat Only)	YN	Klickitat	\$447,723	Urgent/High Priority		\$474,586		\$545,773	
199701725	Yakima Klickitat Fisheries Project Operation and Maintenance (Klickitat Only)	YN	Klickitat	0	Urgent/High Priority	Funding for these activities for FY 01 is being provided under the YKFP project funded in the Columbia Plateau Province.	\$1,300,000		\$1,230,000	
199705600	Lower Klickitat Riparian and In-Channel Habitat Enhancement Project	YN	Klickitat	\$313,318	Urgent/High Priority		\$379,727		\$397,414	
199801900	Wind River Watershed Restoration	UCD,USFS, USGS-CRRL, WDFW	Wind	\$658,532	Urgent/High Priority	The restoration activities proposed in this project deal directly with a listed stock of steelhead. Removal of Hemlock Dam would remove a significant barrier to steelhead production in Trout Creek.	\$702,237		\$1,409,452	The increase in budget is a one year cost for the removal of Hemlock Dam. Significant cost share should be sought by the USFS for this task.

ProjectID	Title	Sponsor	Subbasin	FY01	CBFWA Category	FY 01 Budget Comments	FY02	FY 02 Budget Comments	FY03	FY 03 Budget Comments
199802100	Hood River Fish Habitat Project	CTWSRO	Hood	\$299,953	Urgent/High Priority	A significant investment has been made in this project. The project is making significant contributions to existing wild population in Hood River. The projects being implemented through this project are identified in the Hood River Fish Habitat Protection, Restoration and Monitoring Plan.	\$700,000	A significant investment has been made in this project. The project is making significant contributions to existing wild population in Hood River. The projects being implemented through this project are identified in the Hood River Fish Habitat Protection, Restoration and Monitoring Plan. The increase in funding for this project is based on the completion of the habitat restoration plan that identified these projects as High Priority projects.	\$700,000	
	Total All Recommendations:			\$14,116,258			\$15,053,748		\$15,167,083	

The Hood River native spring chinook population became extinct in the late 1960's. The Deschutes River stock is being used to reestablish a self-sustaining Hood River spring chinook population. Summer and winter steelhead are currently listed as threatened under the Endangered Species Act. A number of facilities in the watershed support ongoing spring chinook and steelhead supplementation under the BPA-funded Hood River Production Program. The two main facilities are the Powerdale Adult Fish Trap operated by Oregon Department of Fish and Wildlife (ODFW) and the Parkdale Fish Facility operated by the Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO). Winter and summer steelhead and spring chinook broodstock are collected at Powerdale Adult Fish Trap (Hood River RM 4.5). The Parkdale Fish Facility (Rogers Spring, Middle Fork Hood River) is equipped for adult holding, spawning, early incubation and smolt acclimation. Round Butte and Oak Springs hatcheries in the Deschutes River Basin are used for incubation and rearing. The Pelton Ladder in the Deschutes River Basin is used for spring chinook rearing. Temporary ponds at three upriver sites, e.g., fiberglass circular tanks or rigid lined raceways are used for smolt acclimation in the Hood River. A concrete bay in the East Fork Irrigation District diversion facility is used as a raceway to acclimate winter steelhead in cooperation with the District. Hatchery and Genetics Management Plan (HGMP) information for the Hood River subbasin is included in a separate Columbia Gorge HGMP document.

Six projects are recommended for funding in the Hood River subbasin (Table 4). Five ongoing projects support the continuation of the Hood River Production Program supplementation, monitoring and evaluation to reintroduce and build a locally-adapted Hood River spring chinook run and rebuild the wild summer and winter steelhead run. The project is continuing monitoring of life history and genetic structure to prevent population change and to protect native populations. Project Number 198802100, *Hood River fish habitat project*, works closely with the Hood River Watershed Council and other local parties to implement key habitat improvements within the subbasin.

These projects address the following needs identified in the Hood River Subbasin Summary: protection and restoration of native fish populations, improvement in fish passage where affected by artificial barriers, water quality improvement and restoration of habitat structure, function and diversity. All six of these projects work very closely with one another to address needs at all life stages for anadromous and resident fish.

Table 4. Projects recommended for funding in the Hood River subbasin

Project ID	Title	Sponsor
21004	Determination of difficult passage areas by examining swimming activity of upriver migrating salmon implanted with EMG transmitters	PNNL
21026	Inventory and Restore Beaver and Beaver Habitats	YN
21027	Inventory and Assess Amphibian Populations in the Klickitat Subbasin	YN
21028	Klickitat Watershed and Habitat Enhancement Project	YN
198811525	Yakima/Klickitat Fisheries Project Design and Construction	YN
198812025	Yakima/Klickitat Fisheries Project (YKFP) Management, Data	YN

	and Habitat (Klickitat Only)	
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Fifteenmile Creek Subbasin

Water quality and quantity limit fish production in the Fifteenmile Creek Subbasin. Water quality limitations include seasonal temperature extremes, turbidity and sedimentation. Water quantity issues are directly associated with consumptive water withdrawals, watershed conditions, the reduction in the ability of the streams to interact with their floodplains and reduced recharge in the forested headwaters. Dry land farming and extensive livestock grazing of open rangeland have been responsible for the elimination and degradation of the riparian zone throughout much of the middle and lower Fifteenmile Creek Subbasin. Wildlife abundance has been affected by past hydropower development, past and current land management practices and the spread of non-native plant and wildlife species.

Five projects are recommended for funding in this subbasin (Table 5). Project Number 21019, *Fifteenmile subbasin water right acquisition program*, will purchase instream water rights to supplement fish flows in the subbasin. Projects 21001, *Fifteenmile Creek riparian fencing/physical stream survey project*, and 199304000, *Fifteenmile Creek habitat restoration project*, are following the Fifteenmile Basin Fish Habitat Improvement Implementation Plan. This plan identified the fish species present in the watershed as well as their limiting factors. The plan identified goals, objectives and strategies for restoration of the subbasins fishery resources. The plan objectives include the “top down” habitat restoration approach, which is designed to build on restoration success by starting work near the national forest boundary and proceeding downstream. This strategy has been followed during the implementation of the Fifteenmile Creek Habitat Restoration Project (1987 to present). Project 21001 is an expansion of Project 199304000, adding physical stream surveys and additional riparian fencing. Project 21014, *Mitigate streambank sediment sources in Fifteenmile watershed using bioengineering techniques*, proposes to address several site-specific locations where the stream has cut deeply into the riverbank and is contributing large amounts of sediment into the stream. Finally, Project 199304001, *15-mile Creek steelhead smolt production*, includes the operation of a smolt trap at the mouth and the conduct of spawning fish surveys of Fifteenmile Creek to determine abundance and distribution of winter steelhead. The project provides the primary data collection, monitoring and evaluation for all restoration activities in the basin. There are not currently, nor are there future plans for artificial production facilities or releases of hatchery produced fish in the Fifteenmile Creek Subbasin.

This suite of projects addresses the key needs identified in the Fifteenmile Creek and Oregon tributaries to the Columbia River between Hood River and The Dalles Dam Summary including: 1) maintenance of all habitat treatment measures installed to date, 2) determine the status of the wild winter steelhead population in order to prioritize all future work in the subbasin aimed at restoration of this wild stock, 3) perform comprehensive stream surveys and riparian vegetation surveys in the subbasin to determine current physical and biological characteristics of the streams and riparian areas and to possibly identify locations where additional work is needed, 4) increasing stream flows during summer months to increase survival of wild winter steelhead and other resident and anadromous fish species in the subbasin, 5) reduction of sediment input to the streams of the subbasin to increase survival of wild winter steelhead and other resident and

anadromous fish species, 6) extension of riparian fencing along the lower reaches of Fifteenmile and Eightmile creeks and into the Fivemile Creek drainage to expand on riparian restoration work currently in place and 7) provide improved conditions in portions of the subbasin historically used by winter steelhead.

Table 5. Projects recommended for funding in the Fifteenmile Creek subbasin

Project ID	Title	Sponsor
21001	Fifteenmile Creek Riparian Fencing / Physical stream Survey Project	ODFW
21014	Mitigate Streambank Sediment Sources in Fifteenmile Watershed using Bioengineering Techniques	Wasco SWCD
21019	Fifteenmile Subbasin Water Right Acquisition Program	OWT
199304000	Fifteenmile Creek Habitat Restoration Project (Request For Multi-Year Funding)	ODFW
199304001	15-Mile Creek Steelhead Smolt Production	ODFW

Wind River Subbasin

Stream surveys, subbasin assessments, and watershed analyses were used to evaluate limiting factors in the Wind River. All watershed assessments indicate that fish production in the Wind River is primarily limited by habitat and water quality. Wind River and its tributaries, which contain the majority of steelhead spawning habitat, have been significantly impacted. Many of these reaches were initially disturbed over 80 years ago, yet habitat and water quality has not recovered and in some cases is getting worse. The 1996 Wind River Watershed Analysis prioritizes restoration by sub-watershed for steelhead. Since other anadromous species are found primarily below Shipherd Falls, restoration activities in the lower Wind and Little Wind rivers would provide multi-species benefits. For most species of wildlife, there is a lack of essential historical data with which to adequately evaluate the impacts of inundation by the construction of Bonneville Dam.

Carson National Fish Hatchery (CNFH) was constructed in 1938 to mitigate for the construction of Bonneville Dam and currently produces 1.4 million spring chinook smolts. This program was moved to RM 18 in 1956 after a fish ladder was constructed at Shipherd Falls to allow salmon access to the hatchery. Hatchery summer steelhead smolts were released in the basin from the 1960's until 1998. Washington Department of Fish and Wildlife (WDFW) terminated the summer steelhead releases in 1997 due to genetic and ecological risks to a severely declining wild summer steelhead population. The Wind River steelhead are listed as threatened under the Endangered Species Act. The United States Fish and Wildlife Service (USFWS) Hatchery and Genetic Management Plans for spring chinook salmon is included in the Columbia Gorge HGMP document.

Two projects are recommended for funding in this subbasin (Table 6). Project Number 199801900, *Wind River watershed restoration*, is an ongoing project that provides coordination among multiple agencies within the Wind River. The project has completed numerous habitat improvements as well as performing monitoring and evaluation that contribute to ongoing watershed assessments and planning activities. The needs addressed in the subbasin summary include: determine abundance, distribution, survival by life-stage, and status of fish and wildlife native to the watershed, determine the effectiveness of habitat restoration projects on achieving the desired physical change and measure the

response of wild steelhead populations to these changes, implement restoration actions identified in the watershed assessments that are consistent with recovery of fish and wildlife populations and their habitat, and continue watershed coordination and local stewardship programs.

Project Number 21024, *Evaluate hatchery reform principles*, may not belong specifically in this subbasin, although the Carson Hatchery is located here. This project proposes to evaluate the use of NATUREs strategies on a production scale and may be more appropriately assigned to the Systemwide category for the “rolling” provincial review. The proposed evaluation focuses on three rearing protocols (semi-natural raceway habitat, anti-predator conditioning, and growth modulation), with a statistical design that will allow partitioning the effects of each major treatment component. This project potentially meets a Reasonable and Prudent Alternative of the NMFS 2000 Draft Biological Opinion (9.6.4.3 Actions to Implement Recommendations in the NWPPC's Artificial Production Review). Results from this project will have systemwide application.

Table 6. Projects recommended for funding in the Wind River subbasin

Project ID	Title	Sponsor
21024	Evaluate Hatchery Reform Principles	NMFS
199801900	Wind River Watershed Restoration	UCD, USFS, USGS-CRRL, WDFW

Little White Salmon Subbasin

No project proposals were submitted for the Little White Salmon River Subbasin.

White Salmon Subbasin

The Confederated Tribes and Bands of the Yakama Nation, state and federal agencies, Champion Pacific Timberlands, and the Underwood Conservation District (UCD) have completed various watershed assessments in the White Salmon Subbasin. In 1990, the Columbia Basin System Planning Salmon and Steelhead Production Plan was developed to identify options and strategies for increasing steelhead and salmon production in the Columbia River Basin. These stream surveys, subbasin assessments and watershed analyses were used to evaluate limiting factors in the White Salmon Subbasin. The watershed assessments indicate that Condit Dam is the primary limiting factor for fish production. Other factors limiting both anadromous and resident fish include past riparian timber harvests, past removal of log jams, road building, grazing, agriculture and regeneration harvest within the rain on snow zone. For most species of wildlife, there is a lack of essential historical data with which to adequately evaluate the impacts of inundation by Bonneville Dam. No hatcheries are located on the White Salmon River; however, hatchery spring chinook are acclimated at the USFWS raceways at RM 1. These fish are Carson stock obtained from either the Little White Salmon National Fish Hatchery (NFH) or Carson NFH to provide harvest opportunity. These releases have been ongoing since the 1980’s. Hatchery summer and winter steelhead smolts have also been released into the basin. The USFWS Hatchery and Genetic Management Plan for Spring Creek Hatchery’s tule fall chinook salmon program is included in the Columbia Gorge HGMP document.

Two projects were proposed for the White Salmon Subbasin (Table 7). Project 21009, *Assess current and potential salmonid production in Rattlesnake Creek associated with restoration efforts*, proposes to perform stream surveys documenting existing conditions in the watershed. This data would be used to prioritize restoration efforts as well as compare pre- and post Condit Dam removal conditions in the White Salmon River. Project Number 21033, *White Salmon River watershed enhancement project*, proposes to perform habitat improvements identified in the White Salmon Watershed Enhancement Plan.

These projects would address the following needs from the White Salmon Subbasin Summary: 1) collect basin data on fish habitat quality and quantity to complete comprehensive assessment, 2) develop a comprehensive watershed assessment, 3) determine abundance, distribution, survival by life-stage, and status of fish and wildlife native to the watershed, 4) determine the effectiveness of habitat restoration projects on achieving the desired physical change and measure the response of wild steelhead populations to these changes, 5) implement restoration actions identified in the watershed assessments that are consistent with recovery of fish and wildlife populations and their habitat, 6) watershed coordination and local stewardship programs, and 7) preservation of viable fish and wildlife populations through improved habitat protection and enhancement.

Table 7. Projects recommended for funding in the White Salmon River subbasin.

Project ID	Title	Sponsor
21009	Assess current and potential salmonid production in Rattlesnake Creek associated with restoration efforts	UCD, YN, USGS
21033	White Salmon River Watershed Enhancement Project	UCD

Klickitat Subbasin

Several factors have impacted anadromous and resident fish production in the Klickitat River. Partial or complete passage barriers at Castile Falls and Lyle Falls have limited access to the upper watershed. Over 70 years of habitat degradation (livestock grazing, logging and road construction) in the upper basin have diminished the quality and quantity of the required key habitat for the incubation and rearing life stages. The loss in habitat diversity in portions of the Klickitat River mainstem through channelization, wood removal, and riparian degradation further limits the quantity and quality of spawning and rearing habitat. Fall (low-flow period) access to tributary habitat is often blocked in the lower basin by low base flows and thermal barriers, which also limits the amount of rearing habitat. Poor road culvert design and maintenance have also affected natural production by reducing habitat availability throughout the subbasin. Field and lab studies have shown that sedimentation (which in this area often comes from improperly designed logging roads) results in adverse effects on fish, including incubation losses, embedded substrate, reduced spawning habitat and lack of interstitial over-wintering and refugia habitats. Elevated stream temperatures are common among lower basin tributaries because of riparian degradation. Intensive forest harvest and loss of wetland habitat in the headwaters and agriculture development in the middle and lower basin tributaries has resulted in alteration of the historic hydrograph. Limiting factors vary for each species of wildlife. However, the degradation and loss of habitat is a common theme for all species. Degradation and loss of habitat has been the result of land use activities such as logging,

agriculture, road building, hydropower development, invasion of non-native plants and expansion of human development.

The Klickitat Hatchery, completed in 1952, is located on the Klickitat River at RM 42.4. The hatchery was constructed and is operated by WDFW for hydropower mitigation under the Mitchell Act of 1936. The *U.S. v. Oregon* Columbia River Fish Management Plan (1998) governs fish production at this facility.

Hatchery production of the wild Klickitat spring chinook stock began with broodstock collected at Lyle Falls in 1952. The hatchery currently produces spring chinook and coho salmon. Fall “upriver bright” (URB) chinook stock are delivered to the Klickitat Hatchery for final rearing from Priest Rapids and Lyons Ferry hatcheries for an on-station release into the Klickitat River. The purpose of the URB release is to provide a terminal fishery for tribal and other fishers. The late-run coho also provide for a late fall terminal fishery, as part of the *U.S. v. Oregon* Columbia River Fish Management Plan. Annually, Skamania steelhead smolts are released directly into the lower Klickitat at several locations downstream of the Klickitat Hatchery. The Hatchery and Genetics Management Plans (HGMPs) for the Klickitat Hatchery’s spring chinook, fall chinook, and coho production programs are included in the Columbia Gorge HGMP document.

Ten projects are recommended for funding in the Klickitat River subbasin (Table 8). Four projects support the Yakima Klickitat Fisheries Program implemented by the YN and the WDFW. This is a comprehensive program that supports artificial production, habitat restoration, monitoring and evaluation within the Klickitat River subbasin. Three wildlife projects have been proposed by the YN (Project Number 21026, 21027 and 21028). These projects are directly linked to one another and if more than one of these projects is funded, the projects could be combined in order to maximize efficiencies. Project Number 199405400, *Bull trout population assessment in the Columbia River Gorge, WA*, should have the Project Number 199902400. This project proposes to survey the Washington river systems in the Columbia Gorge Province for bull trout presence. Bull trout are currently listed as threatened under the Endangered Species Act. Project 21004, *Determination of difficult passage areas by examining swimming activity of upriver migrating salmon implanted with EMG transmitters*, is a research study that will quantify the amount of effort fish use to ascend difficult passage areas. The proponents believe this information can be passed on to projects that are making passage improvements in the Klickitat River and possibly elsewhere.

These projects will address the following needs identified in the Klickitat River Subbasin Summary: 1) increase information base necessary to manage fish, wildlife and habitats, 2) develop and implement alternatives for the adaptive management, monitoring and evaluation of fish and wildlife populations, 3) ensure the exercise of tribal fishing rights and non-tribal fishing opportunities, 4) institute a supplementation-based production program for spring chinook and steelhead that includes retrofitting the existing Klickitat Hatchery, 5) provide harvest opportunities for tribal and non-tribal fishers, 6) restore watershed function, water quality and habitats, and 7) conduct basin-wide assessment, prioritization, restoration, and protection of fish and wildlife habitat conditions that includes identification and mitigation of in-channel, riparian, and upland source areas for limiting habitat conditions.

Table 8. Projects recommended for funding in the Klickitat River subbasin

Project ID	Title	Sponsor
21004	Determination of difficult passage areas by examining swimming activity of upriver migrating salmon implanted with EMG transmitters	PNNL
21026	Inventory and Restore Beaver and Beaver Habitats	YN
21027	Inventory and Assess Amphibian Populations in the Klickitat Subbasin	YN
21028	Klickitat Watershed and Habitat Enhancement Project	YN
198811525	Yakima/Klickitat Fisheries Project Design and Construction	YN
198812025	Yakima/Klickitat Fisheries Project (YKFP) Management, Data and Habitat (Klickitat Only)	YN
199405400	Bull trout population assessment in the Columbia River Gorge, WA.	WDFW
199506325	Yakima/Klickitat Fisheries Project Monitoring And Evaluation (Klickitat Only)	YN
199701725	Yakima Klickitat Fisheries Project Operation and Maintenance (Klickitat Only)	YN
199705600	Lower Klickitat Riparian and In-Channel Habitat Enhancement Project	YN

Bonneville Reservoir

Two projects are recommended for funding in the Bonneville Reservoir and one project is recommended for funding that overlaps all subbasins within the Columbia Gorge Province (Table 9). Project Number 21011, *Assess the current status and biotic integrity of the resident fish assemblages in Bonneville Reservoir*, proposes to assess the status of resident fish species and the biotic integrity of the resident fish assemblage in Bonneville Reservoir. Information is generally lacking for most Bonneville Reservoir biota. With the exception of the BPA funded assessment of white sturgeon recruitment and population status, there is no program currently in place to assess changes in community structure or abundance of resident fish in these waters. Biological assessment information is needed to better understand how the resident fish community and trophic level interactions change as management of the hydropower system changes, tributary watersheds are rehabilitated, fishery regulations change, invasive organisms become established, and the reservoir ages. Project Number 21013, *Western pond turtle recovery - Columbia River Gorge*, will address the primary tasks as identified in the Washington State Recovery Plan for the Western Pond Turtle. The western pond turtle is declining throughout most of its range and is highly vulnerable to extirpation in Washington. Two populations remain in the Columbia River Gorge. The total number of western pond turtles in known Washington populations is estimated at only 250-350 individuals, approximately half of which went through the head-start program at the Woodland Park Zoo. Additional turtles may still occur in wetlands that have not been surveyed in western Washington and the Columbia Gorge. As a result, the western pond turtle has been listed as endangered by Washington State. Project Number 21012, *Evaluate status of coastal cutthroat trout in the Columbia River Basin above Bonneville Dam*, has been proposed to assess the current abundance and distribution of coastal cutthroat trout in the lower Columbia River Basin above Bonneville

Dam. The need for this survey has been identified in several of the subbasin summaries within the Columbia Gorge Province. This species is classified as "sensitive" by the State of Oregon and has been petitioned for listing under the Endangered Species Act.

Table 9. Projects recommended for funding in the Bonneville Reservoir

Project ID	Title	Sponsor
21011	Assess the Current Status and Biotic Integrity of the Resident Fish Assemblage in Bonneville Reservoir	USGS/CRRL
21012	Evaluate Status of Coastal Cutthroat Trout in the Columbia River Basin above Bonneville Dam	USGS-CRRL
21013	Western Pond Turtle Recovery - Columbia River Gorge	WDFW