

12. COWLITZ RIVER FISHERIES MANAGEMENT – BRIEFING:

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“GREEN SHEET”

Meeting dates: September 11-12, 2009 Meeting

Agenda item #12 Cowlitz River Fisheries Management – Briefing

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Presenter(s): Pat Frazier, Region 5 Fish Program Manager (Fish Program)

Background:

Historically, the Cowlitz River was one of the most productive basins in the lower Columbia River, and in the State of Washington as a whole, supporting abundant runs of coho, spring and fall Chinook salmon along with winter steelhead and sea-run cutthroat trout. Even with the development of dams and the habitat degradation that has occurred over the last half a century, the Cowlitz Basin continues to have potential to be one of the more productive basins in the lower Columbia River, both in terms of natural production and providing sustainable sport fishing opportunities. With a well balanced management approach, the Cowlitz Basin can make a significant contribution to recovery of listed stocks and still provide important, viable sport fisheries for the citizens of the state of Washington.

Major hydropower impacts to the Cowlitz Basin began in the 1960's with the construction of Mayfield and Mossyrock Dams on the mainstem Cowlitz River. Both facilities were constructed as hydropower facilities to provide electricity to residents of the State of Washington. Construction of Mayfield Dam began in 1956 and Mossyrock Dam was completed in 1968. Mayfield Dam, located at river mile 52, is the smaller of the two dams and upstream and downstream passage is feasible at this facility. Currently no upstream passage occurs but downstream passage at Mayfield Dam is generally effective with a high survival rate. Mossyrock Dam, located 15.5 miles upstream of Mayfield Dam, creates a 23 mile reservoir and is a complete blockage to both upstream passage and a near complete blockage to downstream passage of anadromous salmonids that essential extirpated naturally producing salmon and steelhead populations from the upper Cowlitz Basin.

Both facilities were combined to create the Cowlitz River Hydroelectric Project that initially received a 50 year license through the Federal Energy Regulatory Commission (FERC). This initial license required the City of Tacoma, Washington, Department of Public Utilities, Light Division (Tacoma), the entity that constructed these facilities, to provide mitigation in the form of adult hatchery fish returning to the Cowlitz Basin. To accomplish this task Tacoma constructed two hatcheries, Cowlitz Salmon Hatchery and Cowlitz Trout Hatchery, on the mainstem Cowlitz River to produce salmon and steelhead as mitigation to replace the production lost due to the construction of hydroelectric facilities on the Cowlitz River, primarily Mossyrock Dam.

The Lewis County Public Utility District (LCPUD) constructed the Cowlitz Falls Dam (CFD), located at the head of Riffe Lake (river mile 88.5) created by Mossyrock Dam, in 1994. Construction and operation of CFD was funded through a power purchase agreement with the Bonneville Power Administration (BPA). Anadromous fish were previously extirpated from the upper Cowlitz Basin; therefore, CFD was only required to be designed such that smolt collection capabilities could be retrofitted if outside entities choose to initiate and fund an anadromous fish reintroduction program. Subsequently, the Friends of the Cowlitz (FOC) sued BPA over the inadequacy of BPA's Environmental Impact Statement. The FOC and BPA reached an out of court settlement agreement where BPA agreed to construct a smolt collection facility at the CFD. The Cowlitz Falls Fish Facility (CFFF) was completed in 1996

and is owned by BPA. BPA has funded the WDFW to operate the CFFF since 1996 and this project has allowed anadromous fish access to over 240 linear miles of historically productive habitat in the upper Cowlitz Basin.

The completion of CFD provided the impetus to initiate a reintroduction program for salmon and steelhead into the upper Cowlitz Basin. Reintroduction efforts began as a BPA program in 1994 with the Washington Department of Fish and Wildlife (WDFW) assuming the role of lead agency for implementation of this reintroduction program. The collection of out-migrating smolts emigrating from the Upper Cowlitz Basin and the safe transportation, via truck, of these smolts around the large reservoirs of the Cowlitz River Hydroelectric Project has been determined to be the primary factor for the success or failure of the reintroduction effort, and the efficiency of smolt collection and passage will determine the success of this effort. Habitat in the Upper Cowlitz Basin remains capable of sustaining significant populations of naturally reproducing salmon and steelhead.

The operational license for the Cowlitz Hydroelectric Project was expiring, which lead Tacoma and FERC to initiate relicensing proceedings. The proceedings were completed in the early 2000's and the effective date of the new license agreement was July 18, 2003. The previous license required Tacoma to provide mitigation in the form of adult returns to the Cowlitz Basin. During the late 1990's winter steelhead (1998) plus spring and fall Chinook (1999) in the Cowlitz Basin were listed as threatened under the federal Endangered Species Act (ESA). These listings included separate populations from both the lower and upper Cowlitz Basin. In response to these listings the most recent Cowlitz River Hydroelectric Project Settlement Agreement (Settlement Agreement) placed a higher priority on conservation issues and had less of a focus on hatchery production for mitigation purposes. While the current Settlement Agreement prioritizes conservation it recognizes the importance of sustainable fisheries. The key articles of the Settlement Agreement with fish management implications address Downstream Passage (Articles 1 & 2), Fish Production (Article 5), Fisheries and Hatchery Management Plan (Article 6) and Flow Criteria (Articles 13, 14 & 16).

Article 1 of the Settlement Agreement referred specifically to downstream fish collection and passage from the upper Cowlitz, above CFD to below Mayfield Dam. Article 1 specifically sets a goal of 95% Fish Passage Survival (FPS), which is defined as the percentage of smolts entering the upstream end of Scanewa reservoir (created by CFD), and adjusted for natural mortality, that are transported downstream to the stress relief ponds (located below Mayfield Dam), and subsequently leave the stress relief ponds as healthy migrants. Article 1 requires *“proposed facilities and measures most likely to achieve the goal of 95% Fish Passage Survival (“FPS”), as defined in the August 2000 Settlement Agreement, to be funded by the Licensee to contribute to effective downstream passage and collection at or near Cowlitz Falls and/or to be constructed by the Licensee downstream of Cowlitz Falls Dam at Riffe Lake”*. Article 1 also requires the Licensee to *implement, or support implementation of, additional downstream passage facility improvements until the Licensee has employed best available technology and achieved at least 75% FPS for all species”*.

Upon implementation of the Settlement Agreement in 2003, Tacoma chose to use CFD as their location to achieve the 95% FPS goal articulated in Article 1 of the Settlement Agreement. In 2006 Tacoma implemented a large fish screen at the face of CFD, attempting to improve fish collection rates and achieve the 95% FPS goal. The screen has been modified annually, but has not produced the results that were hoped for. To date FPS rates remained well below goal and actually decreased in recent years.

Table 1. Mark-recapture estimates of Fish Collection Efficiency at Cowlitz Falls Dam from 2000 to 2009. In this case, Fish Collection Efficiency closely approximates Fish Passage Survival.

Year	Chinook	Coho	Steelhead
1996	NA	15.0%	50.0%
1997	17.0%	21.0%	45.0%
1998	18.0%	32.0%	50.0%
1999	24.0%	17.0%	41.0%
2000	24.0%	45.0%	65.0%
2001	23.0%	42.0%	58.0%
2002	22.0%	33.0%	56.0%
2003	13.0%	43.0%	68.0%
2004	14.0%	42.0%	48.0%
2005	12.0%	36.0%	42.0%
2006	30.5%	19.9%	46.8%
2007	20.1%	33.4%	42.0%
2008	22.6%	16.0%	22.5%
2009	39.0%	20.6%	37.4%
<i>1996-1999</i>	<i>20%</i>	<i>21%</i>	<i>47%</i>
<i>2000-2005</i>	<i>18%</i>	<i>40%</i>	<i>56%</i>
<i>2006-2009</i>	<i>28%</i>	<i>22%</i>	<i>37%</i>

As part of the relicensing process the Settlement Agreement also established the Cowlitz Fisheries Technical Committee (FTC), and required the development of a Fisheries and Hatchery Management Plan (FHMP). The Cowlitz FTC is comprised of seven signatories to the Settlement Agreement, including Washington Department of Fish and Wildlife (WDFW). The FTC was established for the purpose of providing “*recommendations regarding actions to maximize the effectiveness of fisheries mitigation, protection and enhancement measures*”. The Settlement Agreement also required the development of a FHMP that shall identify: a) production levels and size at release; b) rearing and release strategies; c) credit mechanisms for production of high quality natural stocks; d) monitoring and evaluation plans; and e) fishery management strategies. The FHMP is to be updated every six years, beginning with year 7 of the license, which means that the current FHMP is due to be updated by March 2010.

The development of the initial FHMP considered ESA listings of spring Chinook, fall Chinook and winter steelhead. Since that time a variety of actions have occurred, including the listing of coho under the ESA. The Lower Columbia River Salmon Recovery Plan (LCSRP) has also been completed once and is currently in the process of being updated. The LCSRP classifies populations as to their importance for recovery, with most Cowlitz populations being classified as either Primary or Contributing for recovery purposes. The Hatchery Scientific Review Group has also provided recommendations regarding individual hatchery programs and operational guidelines for hatcheries.

Table 2. Proposed Population Priorities for the Cowlitz River. Primary (P), contributing (C), and stabilizing (S) population designations for the recovery scenario.

	Chinook			Chum		Steelhead		Coho
	Fall	Late Fall	Spr.	Fall	Sum.	Win.	Sum.	
Lower Cowlitz	C	--	--			C	--	P
SF Toutle	P		C	C	C	P	--	P
NF Toutle						P	--	P
Upper Cowlitz		--	P			P	--	P
Cispus	S	--	P		--	P	--	P
Tilton		--	S		--	C	--	S

Over time the hatchery production levels have declined, but that is consistent with our collective recognition of the impact of hatchery fish on wild populations. Current production levels being considered are prioritizing the need for conservation and providing viable fishing opportunities wherever possible. Through the FHMP, updated hatchery programs are being scaled to be consistent with the LCSRP goals and HSRG recommendations; therefore, they will be consistent with the Hatchery and Fishery Reform Policy currently under consideration by the Commission.

Table 3. Number of smolts released by species during 1996-2005.

Brood Year	Spring Chinook	Fall Chinook	Coho	Summer Steel head	Early Winter Steel head	Late Winter Steel head	Sea Run Cutthroat
1995	1,429,400	7,294,900	3,642,400	410,161	760,051	100,192	180,584
1996	1,356,714	6,344,100	4,468,827	461,025	688,611	153,712	153,825
1997	1,136,219	7,174,543	4,105,406	423,717	752,270	205,445	171,743
1998	1,118,154	5,945,600	3,699,868	457,218	642,857	258,197	149,308
1999	1,080,962	4,002,900	3,966,721	516,715	542,286	195,873	174,464
2000	948,987	5,585,066	4,052,752	636,659	607,103	220,078	294,563
2001	898,662	5,975,811	4,195,758	614,239	554,642	525,552	228,780
2002	894,835	5,303,871	2,967,544	554,087	293,095	446,009	277,662
2003	866,486	5,215,558	2,874,425	158,679	210,849	367,102	154,005
2004	920,587	5,016,495	3,138,932	378,602	218,577	253,093	96,940
2005	860,989	4,610,461	3,429,570	184,764	147,153	288,638	85,978

It is a requirement of the Settlement Agreement that flow levels in the mainstem Cowlitz River are actively managed consistent with the criteria set forth in the Settlement Agreement. Flow criteria set forth in the Settlement Agreement were developed, in consultation with WDFW and NOAA. Restrictions include minimum flow levels and ramping rate restrictions. WDFW monitors flows to ensure that Settlement Agreement requirements are being met.

CURRENT ACTIVITIES:

The initial FHMP was completed by Tacoma with input from members of the FTC. For the FHMP update, currently in progress, WDFW is working collaboratively with the FTC to ensure that all FTC members input is fully considered prior to completion of the updated FHMP. This FHMP update is considering results of the HSRG review, expectations from the LCSRP and results of WDFW's recent work on the Conservation and Sustainable Fisheries Plan in

completing this update. The FTC established a technical team that has reviewed all hatchery programs in the Cowlitz Basin and provided input to the FTC for their use. The results of the technical team were presented to the FTC at their meeting on August 4, 2009. The FTC will now deliberate on these results and attempt to reach consensus on program size (numbers of smolts released) and type (segregated or integrated). The FTC is currently in the process of modifying the FHMP completion schedule to allow for public participation in this process. This is the first step in the FHMP update process. Additional items described earlier in this document will also be addressed through this FHMP update.

Efforts to achieve the 95% FPS goal to date have been unsatisfactory, and have in fact negated progress towards achieving this goal, which prompted concern from the FTC. In the spring of 2009 the FTC worked with Tacoma to host a workshop concerning juvenile (out-migrating smolts) fish collection in the upper Cowlitz Basin. Participants in the workshop included 39 fisheries or engineering professionals from throughout the Pacific Northwest. The workshop provided a large number of alternatives for improving the current fish collection efforts in the upper Cowlitz Basin. Subsequently, the FTC established a technical work group to evaluate these alternatives and determine which alternatives show the most promise for producing significant improvements in fish collection rates to achieve the FPS goal. To date the work group has developed a total of five options for improving fish collection rates and have presented these options to the FTC for their consideration. Additional analyses are currently underway to further evaluate these options, including implementation plans and feasibility assessments. Results of these analyses are expected to be presented to the FTC later this year for their consideration. It is expected that the FTC will provide recommendations to Tacoma on how many and which options to implement with the intent of achieving the goal of 95% FPS.

Policy issue(s) you are bringing to the Commission for consideration:

N/A

Public involvement process used and what you learned:

- Input from the public suggests that development of the previous FHMP did not fully incorporate public input. Region 5 staff has been working with constituents to provide information regarding the progress of the FHMP update.
- WDFW has been also working with the FTC to ensure that there is an adequate opportunity for the general public to understand what is being proposed in the updated FHMP and to provide input that will assist in completion of the FHMP update.

Action requested:

None. Briefing Only.

Draft motion language:

N/A

Justification for Commission action:

N/A

Form revised 10/25/07