

Appendix B

Enhancement of Hatchery Production for Harvest by Non-tribal Commercial Fisheries in Off-Channel Areas of the Columbia River Downstream from Bonneville Dam

Current Program

Production: Currently production targets in existing off-channel sites in the Columbia River downstream from Bonneville Dam for spring Chinook, tule fall Chinook, Select Area Bright fall Chinook and coho total 13.57 million. This total includes 250,000 spring Chinook and 120,000 coho transferred from other facilities for release in off-channel sites beginning in 2010. This total also includes 350,000 spring Chinook released at the Deep River site, which will be discontinued effective in 2013. The specific release targets for the current program by species and stock are shown in Table B.1.

Table B.1. Current production targets for juvenile salmon released for harvest in off-channel areas in the Columbia River downstream from Bonneville Dam. The totals by species and stock are 1.55 million spring Chinook, 6.4 million tule fall Chinook, 1.45 million Select Area Bright fall Chinook, and 4.17 million coho.

Off-Channel Area	Release Site	Production Target	Off-Channel Area	Release Site	Production Target
Youngs Bay	Klaskanine Hatchery	600,000 Coho 2.1 million Tule Fall Chinook	Blind Slough & Knappa Slough	Net Pens	420,000 Coho 300,000 Spring Chinook
	South Fork Klaskanine Hatchery	350,000 Coho 700,000 Select Area Bright Fall Chinook		Big Creek Hatchery	3.6 million Tule Fall Chinook 535,000 Coho
	Net Pens	825,000 Coho 750,000 Select Area Bright Fall Chinook 650,000 Spring Chinook	Deep River	Net Pens	750,000 Coho 700,000 Tule Fall Chinook 350,000 Spring Chinook
Tongue Point	Net Pens	540,000 Coho 250,000 Spring Chinook		Grays River Hatchery	150,000 Late Stock Coho

Harvest: For the years 2007 through 2011, average harvest levels from off-channel areas has been highest during the fall fisheries, driven primarily by coho (Table B.2.). Also, harvest during the spring fisheries in recent years has rivaled levels in the mainstem. However, the recent average includes 2010, in which harvest was more than twice the previous peak catch (~24,000).

Fisheries in the off-channel areas are highly selective for local, targeted stocks. In recent years, almost 90% of the harvest in the winter, spring, and summer fisheries has been local stocks. In the fall fisheries, recent harvests have been comprised of 90% local stocks for fall Chinook and about 98% for coho.

Table B.2. Average harvest levels and fishing seasons for commercial fisheries in off-channel areas in the Columbia River downstream from Bonneville Dam for 2007 through 2011.

Season and Harvest (5-year average, 2007-2011)					
	Winter (mid-Feb. – mid-March ¹)	Spring (mid-April – mid-June)	Summer (mid-June – July)	Fall (September – October ²)	Sum
Youngs Bay	477 Chinook	6,719 Chinook	1,010 Chinook	8,305 Chinook	16,511 Chinook
				26,787 Coho	26,787 Coho
Tongue Point/ South Channel		444 Chinook (2008-2011)		1,249 Chinook	1,693 Chinook
				7,990 Coho	7,990 Coho
Blind Slough/ Knappa Slough	134 Chinook	1,455 Chinook		4,411 Chinook	6,000 Chinook
				4,899 Coho	4,899 Coho
Deep River	60 Chinook	79 Chinook		858 Chinook	997 Chinook
				11,301 Coho	11,301 Coho
Totals	671 Chinook	8,697 Chinook	1,010 Chinook	14,823 Chinook	25,201 Chinook
				50,978 Coho	50,978 Coho
¹ Youngs Bay and Blind Slough winter seasons typically extend into early April ² Youngs Bay fall season starts in early August					

Total Releases of Hatchery Fish in Off-Channel Sites Under the Alternative Management Framework

Total releases of hatchery fish in off-channel sites under the alternative management framework and the corresponding contribution of those fish to commercial fisheries in the off-channel areas are shown in Table B.3. The number of additional fish proposed for release during the transition period and in the long term is described by salmon stock below.

Transition Period

Spring Chinook: As stated above, proposed enhancements of hatchery production in existing off-channel areas include 250,000 spring Chinook transferred from other facilities for release in off-channel sites beginning in 2010. In addition to these fish, Oregon proposes to acclimate an additional 500,000 juvenile spring Chinook annually for release beginning in 2013 (Table B.3.). Washington will pursue funding to acclimate an additional 200,000 to 250,000 juvenile spring Chinook annually (Table B.3).

Coho: As stated above, proposed enhancements of hatchery production in existing off-channel areas include 120,000 coho transferred from other facilities for release in off-channel sites beginning in 2010. In addition, Oregon proposes to acclimate an additional 600,000 juvenile coho and Washington an additional 200,000 annually for release beginning in 2013 (Table B.3).

Select Area Bright Fall Chinook: To offset reductions in mainstem commercial harvest of summer Chinook, Oregon proposes to rear an additional 500,000 juvenile Select Area

Bright fall Chinook annually for release at off-channel sites (Table B.3.). These releases would begin in 2013, if broodstock can be collected during fall 2012.

Long Term

Spring Chinook: In addition to the 950,000 to 1 million additional juvenile spring Chinook proposed for release in off-channel sites during the transition period, Oregon proposes to acclimate an additional 250,000 juvenile spring Chinook annually for release beginning in 2017 (Table B.3.).

Coho: In addition to the 920,000 additional juvenile coho proposed for release in off-channel sites during the transition period, Oregon proposes to acclimate an additional 3,780,000 juvenile coho annually for release beginning in 2017 (Table B.3.).

Select Area Bright Fall Chinook: In addition to the additional 500,000 juvenile Select Area Bright fall Chinook proposed for release annually at off-channel sites during the transition period, Oregon proposes to rear an additional 250,000 juvenile Select Area Bright fall Chinook annually for release beginning in 2017 (Table B.3.).

Table B.3. Total number of spring Chinook, coho and Select Area bright fall Chinook slated for acclimation and release in off-channel sites in the Columbia River downstream from Bonneville Dam and the contribution of those fish as kept catch to commercial fisheries. Assumed survival of smolts to adults harvested at each site was 0.5% for spring Chinook, 1.4% for coho, and 0.3% for Select Area Bright fall Chinook. Catch estimates do not include incidental harvest of non-local stocks.

Time frame	Stock	State	Release numbers	Kept catch (number landed)
Transition (2013-2016)	Spring Chinook	Oregon	1,700,000	7,251
		Washington	200,000 -250,000	
	Coho	Oregon	3,870,000	68,460
		Washington	1,100,000	
	Select Area Bright Fall Chinook	Oregon	1,950,000	4,995
	Long term (2017 & beyond)	Spring Chinook	Oregon	1,950,000
Washington			200,000 -250,000	
Coho		Oregon	7,650,000	110,950 - 124,180
		Washington	1,100,000	
Select Area Bright Fall Chinook		Oregon	2,200,000	6,090 - 6,600

Evaluations of Opportunities to Expand Existing Off-Channel Sites and Establish New Ones

In response to an inquiry from the Oregon's Governor's Office, the Oregon Department of Fish and Wildlife estimated costs associated with evaluations of opportunities to expand existing off-channel sites and establish new ones (Table B.4 and Table B.5). The estimates are based on personnel costs for agency staff in Oregon and would likely differ if Oregon and Washington shared work associated with each evaluation.

Table B.4. Tasks and biennial costs associated with evaluations of opportunities to expand commercial fisheries in exiting off-channel sites in the Columbia River downstream from Bonneville Dam

Task	Approach	Needs	Effort	Cost per Unit Effort	Total Cost
Evaluate the feasibility of providing more fishing time to commercially harvest salmon at existing off-channel sites.	Use the existing fleet to collect data that will inform assessment of risk of increased impacts associated with expansion into currently closed timeframes, target-stock harvest potential, and overall stock composition.	Test fishery (full fleet)			no cost
		On-board observers (EBA)	24 months	\$3,966	\$95,185
		S&S for test fishing			\$11,815
		Additional fishery samplers (EBA) needed to maintain sample rates (assuming greater harvest level from increased production)	54 months	\$3,966	\$214,166
		S&S for fishery sampling			\$28,835
		TOTAL			\$350,000
Evaluate the feasibility of expanding the fishable area of existing off-channel sites	Option A. Use the existing fleet to collect data that will inform assessment of risk of increased impacts associated with expansion into currently closed areas, target-stock harvest potential, and overall stock composition.	Test fishery (full fleet)			no cost
		On-board observers (EBA)	54 months	\$3,966	\$214,166
		S&S for test fishing			\$30,835
		Additional fishery samplers (EBA) needed to maintain sample rates (assuming greater harvest level from increased production)	54 months	\$3,966	\$214,166
		S&S for fishery sampling			\$30,834
		TOTAL			\$490,000
	Option B. Use a test fishery with contracted fishers to collect data that will inform assessment of risk of increased impacts associated with expansion into currently closed areas, target-stock harvest potential, and overall stock composition.	Asst. Project Lead (NRS2)	24 months	\$5,693	\$136,621
		Test fishery (contracted)	420 days	\$1,200	\$504,000
		On-board observers (EBA)	54 months	\$3,966	\$214,166
		S&S for test fishing			\$35,524
		Additional fishery samplers (EBA) needed to maintain sample rates (assuming greater harvest level from increased production)	54 months	\$3,966	\$214,166
		S&S for fishery sampling			\$35,524
		TOTAL			\$1,140,000

Table B.5. Tasks and biennial costs associated with evaluations of opportunities to establish three new off-channel commercial fisheries sites in the Columbia River downstream from Bonneville Dam

Task	Approach	Needs	Effort	Cost per Unit Effort	Total Cost
Evaluate three new off-channel sites to determine their potential to produce meaningful numbers of fish for commercial harvest (evaluations to be completed in spring 2015).	Evaluate commercial harvest opportunity in new fishing sites.	Project Leader (SFWB or NRS3)	24 months	\$6,801	\$163,235
		Project Assistant (NRS1)	24months	\$5,124	\$122,970
		Determine potential new fishing sites proximate to new rearing sites			--
		Test fishery (contracted)	630 days	\$1,200	\$756,000
		On-board observers (EBA)	54 months	\$3,966	\$214,166
		S&S for test fishing			\$51,982
		Sub total			\$1,308,352
	Evaluate suitability for acclimation and release at new sites.	Determine potential new rearing sites			No cost
		DEQ consultation for new net pen complexes			No cost
		Water quality technicians (Technician)	8 months	\$4,512	\$36,094
		Juvenile salmonid assessment fieldworkers (EBA)	72 months	\$3,966	\$285,554
		Input from ODFW Fish Propagation Program and hatchery managers on logistical potential			
		Sub total			\$321,648
		Grand total			