

SALMON TECHNICAL TEAM ON MITCHELL ACT HATCHERY DRAFT
ENVIRONMENTAL IMPACT STATEMENT

The consideration of fishery impacts in the Mitchell Act Draft Environmental Impact Statement (DEIS) is described in Appendix K (pages 1063-1124 of the DEIS). This analysis was performed by Gary Morishima and Larry Lestelle. They apparently relied heavily on the Pacific Salmon Commission (PSC) Chinook and coho models and baseline data to configure and parameterize simplified models, implemented in spreadsheets, for the purpose of analyzing impacts of alternative scenarios on fisheries.

For the coho model, Fishery Regulation Assessment Model (FRAM) fisheries were used. These included troll fisheries from the southern extent of fishing in California to Northwest Alaska, sport fisheries from the southern extent of fishing through northern British Columbia, and net fisheries from the Columbia River through Alaska. This represents complete coverage of all fisheries under the jurisdiction of the Pacific Fishery Management Council, the Pacific Salmon Commission, and the State of Alaska where Columbia River coho are likely to be encountered. It is worth noting that the low contribution rates to fisheries in British Columbia is a consequence of a lack of coho fishing opportunity off the West Coast of Vancouver Island to protect critically depressed Upper Fraser coho stocks. If Canada resumes fishing to the limits allowed by the Pacific Salmon Treaty, the contribution to Canadian fisheries would no longer be negligible.

For the Chinook model, the Northern extent of fisheries included was Southeast Alaska, and the southernmost fisheries were Washington/Oregon troll, Washington ocean sport, and Columbia River net. These are fisheries from the PSC Chinook model, which has a focus on stocks and fisheries that are subject to the Pacific Salmon Treaty. In the PSC Chinook model, the Washington/Oregon troll fishery and the Washington ocean sport fishery only include impacts in Oregon that occur north of Cape Falcon, and do not include impacts to PSC stock that occur South of Cape Falcon. This is similar to the assumption in Council processes that ocean fishery impacts on Sacramento Fall Chinook are negligible north of Cape Falcon.

Using FRAM base period data, Columbia River Chinook historical contribution rates of Columbia River Chinook stocks to individual FRAM fisheries south of Cape Falcon, and the total catch south of Cape Falcon, are shown in Table 1. Under base period conditions, Columbia River Chinook contributed 9.5 percent of the Chinook impacted by Oregon troll fisheries between the Klamath management zone (KMZ) and Cape Falcon, and 13.5 percent of the Chinook impacted by Oregon recreational fisheries between the KMZ and Cape Falcon. Overall, Columbia River Chinook contributed 2.5 percent of the total Chinook impacted in ocean fisheries South of Cape Falcon. Most of these contributions are from tule stocks, and Mitchell Act hatcheries are responsible for the bulk of that production.

However, recent conditions have differed substantially from those of the base period. The depressed abundance stock from the Central Valley in California has resulted in far fewer California Chinook to dilute the contribution of Columbia River stocks. Recent GSI data from Project CROOS in Oregon from 2006, 2007, and 2010, and the ongoing non-lethal sampling in

California reflect substantially higher contributions of Columbia River stock to fisheries south of Cape Falcon (Table 2).

Table 1. Contribution rate of Columbia River stocks to Chinook ocean fisheries under FRAM base period conditions. Contribution rates are expressed as the percentage of fishery impacts accounted for by Columbia River stocks.

Fishery	Contribution of Columbia River stocks
Central OR Troll	9.5%
Central OR Sport	13.5%
KMZ Troll	3.9%
KMZ Sport	7.2%
S. Calif. Troll	0.0%
S. Calif. Sport	0.0%
Total South of Falcon Troll	2.5%
Total South of Falcon Sport	2.0%

Table 2. Proportion of Chinook salmon consisting of Columbia River stocks by catch area based on genetic stock identification (GSI) from Project CROOS. Catch areas are: NOC – Cape Falcon to Florence S jetty (except 2006 included a few samples from Reedsport), SOC – Florence S jetty to Humbug Mtn., KMZ – Humbug Mtn. to the OR/CA border.

Catch Area	NOC	SOC	KMZ
2006			
Lower River fall	1.8%		
lower river spring	0.7%		
Deschutes River fall	0.8%		
Mid river tule	1.1%		
upper river summer/fall	3.0%		
Snake River fall	0.5%		
Willamette	0.1%		
total	7.9%		
2007			
Lower River fall	6.3%	0.6%	1.2%
lower river spring	3.2%	0.0%	0.0%
Deschutes River fall	3.2%	0.9%	0.4%
Mid river tule	7.7%	0.9%	0.0%
upper river summer/fall	10.8%	5.2%	2.0%
Snake River fall	1.8%	0.9%	0.4%
Willamette			
total	33.0%	8.5%	4.0%
2010			
Lower River fall	15.1%	8.6%	2.9%
lower river spring			
Deschutes River fall	1.3%	1.4%	0.0%
Mid river tule	26.0%	14.3%	11.4%
upper river summer/fall	10.1%	9.4%	5.4%
Snake River fall	6.8%	2.3%	8.6%
Willamette	0.7%	0.6%	2.3%
total	59.9%	36.5%	30.6%

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