

Joint-State Columbia River Fishery Policy Review Committee
Narrative Descriptions and Analysis of Policy Issues, Alternatives and Options
FALL CHINOOK
October 1, 2019

Description of Issues

Following is a listing of possible policy changes related to non-treaty fisheries as part of the review of Columbia River salmon and steelhead fishery management under consideration by the Joint-State Columbia River Fishery Policy Review Committee (PRC) process. Most policy issues that have been introduced for active consideration during the process are listed below, together with a narrative description of identified potential alternatives from current status quo associated with that particular issue. The current status of PRC discussion and/or recommendation on each alternative is also shown, including rationale for any action taken to date to eliminate or de-prioritize an alternative from further consideration at this time. The recommendations made by the PRC on February 26 were focused primarily on allocation, allowable commercial fishing gear, and SAFE production levels. There are other sub-issues that were not addressed by the PRC at that time, some of which are shown below.

Fall Chinook

Issue 1: Allocation of fall Chinook impacts between non-treaty fisheries

This issue involves the allocation of ESA impacts for two Chinook stocks (lower Columbia River tule and Snake River wild/Upriver Bright (SRW/URB)) between non-treaty recreational and commercial fisheries. Allocation applies to fisheries occurring in concurrent Columbia River waters downstream of Highway 395 near Pasco, WA, mainstem tributaries, and Select Areas. In a given year, either of these listed stocks can be the primary constraint for fisheries downstream of Bonneville Dam. Fisheries upstream of Bonneville Dam may be constrained by SRW/URB, but not by the lower river tule stock. The presence of multiple harvestable stocks, multiple ESA stocks (including steelhead and Coho), and area, gear, and time-specific differences in how impacts to various stocks accrue are challenges in actively managing the Columbia River fall season. The majority of fishery modifications occur during the fall using the Compact/Joint State Hearings.

- February PRC Recommendation/Current WA Policy/Current OR Policy (full concurrence)
 - ESA impact sharing between the recreational and commercial fisheries is based upon the available non-treaty ESA impacts for tule (lower river hatchery/wild) and Snake River wild (Upriver Bright) fall Chinook (whichever is more constraining in a given year). For both Chinook stocks above, the commercial fishery receives $\geq 30\%$, and the recreational fishery receives $\leq 70\%$ of the available in-river ESA impact of the most constraining Chinook stock.
- Alternative 1/Original long-term Harvest Reform intent
 - Change the allocation of recreational/commercial fisheries to $\leq 80\%/ \geq 20\%$.
- Alternative 2
 - Change the allocation of recreational/commercial fisheries to $\leq 65\%/ \geq 35\%$.
- *Status of Consideration: Active for further analysis.*

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Issue 2: Allowable mainstem commercial gear/zones

This issue involves establishing allowable commercial gear types for non-treaty commercial fisheries targeting fall Chinook in the mainstem Columbia River. Commercial gill netting is currently permitted during the fall season in the mainstem Columbia, as are alternative gears. To date, gears used in non-treaty fall Chinook-directed fisheries include gill nets and seines (purse and beach). In recent years, Chinook-directed gill net fisheries have been restricted to commercial Zones 4-5; initially to maximize harvest per tulle fall Chinook ESA-impact and later by policy changes. Fall seine (beach and purse) fisheries occurred in all Zones during 2014-2016 but low natural-origin B-Index summer steelhead returns have limited their use since then. Nonetheless, it is assumed that alternative gears for the fall Chinook fishery would consist of purse and beach seines as they are currently the only alternative gears with mortality rates approved by the *U.S. v. Oregon* Technical Advisory Committee (TAC) for use in fall season Chinook-directed commercial fisheries. Another gear, pound nets, have been tested in the lower river; however, due to logistical issues associated with implementation such as permitting, construction costs, in-water work period, etc., they have not yet been evaluated in a full-scale fishery at a level similar to seines. The TAC has not yet approved any release mortality rates for pound nets. Fall Chinook gill net fisheries are non-mark-selective, operated in times and areas to reduce impacts on stocks of concern, and focus on healthy and harvestable stocks (hatchery and wild). The 2014-2016 seine fisheries were primarily mark-selective for Chinook and Coho.

- February PRC Recommendation/Current WA Policy
 - Gill net, tangle net, and seine gear allowed for Chinook-directed fall fisheries. No restriction on fishing Zone(s).
- Alternative 1/Current OR Policy
 - Allow the use of gill net and other alternative gears. Gill nets limited to Zones 4-5.
- Alternative 2/Original long-term Harvest Reform intent
 - Allow the use of alternative gears only. No restriction in fishing Zones but assumed focus on Zones 1-3.
- *Status of Consideration: Active for further analysis.*

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Results

Following are the results associated with possible policy changes as part of the review of Columbia River salmon and steelhead fishery management under consideration by the Joint-State Columbia River Fishery Policy Review Committee (PRC) process. Issues and options previously removed from the list are excluded.

Fall Chinook

Issue 1: Allocation of fall Chinook impacts between non-treaty fisheries

Analysis Results:

Table 1 compares the expected average annual angler trips (below Bonneville only) and mainstem commercial ex-vessel value for three different non-treaty fall Chinook allocation sharing scenarios and potential commercial gear types; Alternative 1 ($\leq 80\%/\geq 20\%$), Status Quo ($\leq 70\%/\geq 30\%$), and Alternative 2 ($\leq 65\%/\geq 35\%$). Outputs are based on 2013-2018 results adjusted to the hypothetical allocations and gears shown, except the 20% commercial/alternative gear scenario is based on 2014-2016 data when fall Chinook returns were significantly higher. Because allowable gear type greatly affects the commercial ex-vessel value, assumed gear types are paired with each allocation scenario to allow for output modelling. The ex-vessel value presented for the 20% commercial/alternative gear scenario is a mathematical expansion of results observed for seine fisheries in 2014-2016 and may not be achievable as it would require a 15-fold increase in effort or catch rate from what actually occurred. Recreational angler trips are limited to fisheries below Bonneville because that information was not available for all fisheries upstream of Bonneville Dam until 2017.

Modelling results indicated a significant gain in mainstem ex-vessel commercial value as the commercial share increases and when gill net gear is allowed. Angler trips increased with increasing allocation, but gains were not linearly proportional.

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Table 1. Modelled economic metrics for mainstem sport and commercial fall Chinook fisheries below Bonneville Dam at different combinations of allocation shares and allowable commercial gears.

Fall Chinook Issue- Alternative Combination ¹	Allocation % (sport/commercial)	Allowable Mainstem Commercial Gear	Economic Metrics ²	
			Sport Angler Trips ³	Commercial Ex-Vessel Value ⁴
Issue 1 Alt 1/Issue 2 Alt 2	≤80/≥20	Alternative Gear	215,565	\$779,838
Issue 1 PRC/Issue 2 PRC Current Status Quo	≤70/≥30	Large-Mesh GN/ Alternative Gear ⁵	211,961	\$1,612,682
Issue 1 Alt 2/Issue 2 PRC	≤65/≥35	Large-Mesh GN/ Alternative Gear ⁵	210,160	\$1,916,854

¹ Potential combinations of allocation shares and allowable commercial gears other than those presented in this table were not modelled.

² 2013-2018 averages used for calculating sport and commercial metrics, except the ex-vessel value for 20%/alternative gear is based on average seine results for 2014-2016, when fall Chinook runs were large.

³ Effort data for 2013-2018 modelling period only available for sport fisheries downstream of Bonneville Dam.

⁴ Includes the value of Coho caught in Chinook-directed fisheries.

⁵ Assumes purse and beach seines for fall alternative gears, with the gears used at 2014-2016 seine fishery levels.

For example, during the 2013-2015 fall Chinook seasons, high effort and catch in the Buoy 10 and Tongue Point-Warrior Rock recreational fisheries led to increased pressure on impacts for lower Columbia River tule fall Chinook, the most constraining stock during these years. The higher allocations for the recreational fishery from Harvest Reform allowed these fisheries to operate with fewer mark-selective fishing days than they would have at pre-Reform allocations. However, the difference in angler trips between a mark-selective fishing day and a non-mark-selective fishing day is not as great as it is between a closed and open day. Also, in other years such as 2016 and 2017, unused ESA tule impacts from ocean fisheries were available for in-river fisheries, allowing the recreational fishery to reach their season objective dates even if they had been operating with a lower pre-Reform allocation. Therefore, in 2016 and 2017, the allocation increases from Harvest Reform did not affect any in-season management decisions regarding season objective dates, and did not contribute to a gain in angler trips for the fall recreational fishery.

Issue 2: Allowable mainstem commercial gear

Analysis Results:

Table 2 provides harvest, ex-vessel value, value per fisher day, value per fish landed, and value per natural-origin B-Index steelhead mortality for fall Zone 4-5 gill net and purse/beach seine fisheries that occurred during 2014-2018. Seine fisheries did not occur in 2017 and 2018 due to limitations on natural-origin B-Index steelhead. During 2014-2016, landings and value for

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mainstem gill net fisheries were much higher than seines in all years due to greater participation and higher value per landed fish. The gillnet fishery in these years also yielded more value per fisher-day and value per natural-origin B-Index steelhead mortality. As described above, pound nets have not been evaluated in a full-scale fishery similar to seines, but the Cathlamet pound net was tested in 2013 and 2016-2018, and is on-going for 2019. Table 1 also shows some comparisons of different gear types and allocations.

Table 2. Salmon harvest, ex-vessel value, value per fisher-day, value per salmon landed, and value per natural-origin (NO) B-Index steelhead in fall commercial large-mesh gill net and seine fisheries in the mainstem lower Columbia River, 2014-2018.

Year	Fishery	Days Fished	Fishers ¹	Harvest ²		Total Ex-Vessel Value ²	Value/Fisher-Day	Value/Salmon ³	Value/Natural-Origin B-Index Steelhead Mortality ⁴
				Chinook	Coho				
2014	Zone 4-5 Gillnet ⁵	18	70	89,747	6,152	\$2,426,031	\$1,936	\$25	\$109,024
	Purse Seine	21	17	1,457	561	\$33,488	\$94	\$17	\$30,444
	Beach Seine	22	25	1,337	509	\$31,511	\$57	\$17	\$8,292
2015	Zone 4-5 Gillnet	14	83	74,603	597	\$2,441,263	\$2,101	\$32	\$266,697
	Purse Seine	23	14	2,312	529	\$45,698	\$142	\$16	\$39,395
	Beach Seine	6	7	681	58	\$10,951	\$261	\$15	\$18,251
2016	Zone 4-5 Gillnet	13	87	57,940	665	\$2,799,595	\$2,469	\$48	\$397,263
	Purse Seine	21	8	821	565	\$26,033	\$155	\$19	\$107,776
	Beach Seine	6	8	1	39	\$187	\$4	\$5	--
2017	Zone 4-5 Gillnet	7	93	19,398	931	\$922,305	\$1,412	\$45	\$216,932
2018	Zone 4-5 Gillnet	4	64	8,320	380	\$378,454	\$1,478	\$44	\$225,787

¹ Average number of fishers participating in Zone 4-5 fishery based on average deliveries per fishing period, adjusted for multiple deliveries during a period by individual vessels. Assumes one fisher per gillnet vessel. Number of fishers participating in seine fisheries based on post-season

² Includes adults and jacks. Does not include 292 unmarked Chinook harvested by purse seines and 1 unmarked Chinook harvested by a beach seine (total value of \$7,067) in a limited trial non-mark-selective fishery during 2016.

³ Includes Chinook and Coho.

⁴ No natural-origin B-Index steelhead mortalities in 2016 beach seine fishery.

⁵ Does not include large-mesh gillnet fishing periods in October to maintain comparability to August-September seine fisheries.

Staff Recommendation: Remove tangle nets from the list of gear types, as they are not a viable gear for targeting fall Chinook.