

Columbia River Fishery Policy Review Workgroup Meeting

Narrative Descriptions and Analysis of Policy Issues, Alternatives and Options

SPRING CHINOOK – Issue 1, Alternative 2: Allocation of upriver spring Chinook impacts between non-treaty fisheries, abundance-based matrix

June 10, 2020

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Description

This issue specifically involves the allocation of Upriver spring Chinook impacts between recreational and non-treaty commercial fisheries using an abundance-based matrix approach (Alternative 2). Allocation sharing applies to the fisheries occurring in concurrent Columbia River waters downstream of Highway 395 near Pasco, WA, the Snake River downstream of Lower Granite Dam, and Select Areas. The allocations (% share) of Upriver spring Chinook are of the available ESA impact allowance for non-treaty fisheries, not total harvest.

The *U.S. v Oregon* Management Agreement specifies that fisheries occurring prior to an in-season run size update will be buffered by assuming a run size of no more than 70% of the pre-season forecast. The buffer is intended to ensure that fisheries occurring prior to an in-season run size update do not exceed allowable ESA impacts in the event the run comes in below the pre-season forecast.

The *U.S. v Oregon* Management Agreement also specifies that non-treaty fisheries are to be managed to not catch more total Upriver spring Chinook than treaty fisheries are allowed to catch. This requirement for 'Catch-Balancing' applies to all fishery-related mortality in non-treaty fisheries (harvested fish plus released fish that subsequently die). This requirement is intended to ensure that non-treaty fisheries using mark-selective techniques do not harvest more Upriver spring Chinook than treaty fisheries are allowed to harvest. Staff accounts for these factors, as well as Commission allocation policies, in developing and implementing non-treaty fisheries.

- February PRC recommendation/Current WA policy
 - Recreational fisheries are allocated 70%
 - Commercial fisheries are allocated 30%.
- Current Oregon Policy
 - Recreational fisheries are allocated 80%
 - Commercial fisheries are allocated 20%.
- Alternative 1
 - Recreational fisheries are allocated 60%
 - Commercial fisheries are allocated 40%.
- Alternative 2
 - Use an abundance-based matrix for recreational/commercial allocation.
- Alternative 3
 - Recreational fisheries are allocated 65%
 - Commercial fisheries are allocated 35%.
- *Status of Consideration: All alternatives are active for further analysis.*

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Results

This issue lays out one possible abundance-based matrix using Upriver spring Chinook abundances to the Columbia River. An abundance-based matrix approach was used as recently as 2012 with four tiers of Upriver spring Chinook abundances, and two tiers of Willamette spring Chinook abundances. The general concept is that as abundance increases, additional allocation is provided to the commercial fishery, and alternatively under low abundance scenarios, additional allocation is provided to the recreational fishery. One concern in applying an abundance-based approach for management of the allocations is because fisheries are planned using pre-season forecasts, the allocation may decrease if the run size comes in at the next tier down, potentially resulting in exceeding that fishery’s allocation.

A similar approach was taken with this analysis and was modified to generally reflect the different tiers within the *U.S. v Oregon* Management Agreement and similar to the associated range of allocations currently under review in Issue 1 (80%/20%, 70%/30%, and 60%/40%). This abundance-based matrix approach uses 1) only Upriver spring Chinook abundances to the Columbia River, 2) 80%/20%, 70%/30%, and 65.0% (+2.5% Snake)/32.5% allocation for low, medium, and high run sizes, respectively. Under a high run size abundance scenario, 2.5% of the total non-treaty available impacts are additionally provided to the Snake River recreational fishery after the run size update in addition to their status quo recreational allocation (Table 1).

Table 1. Abundance-based matrix metrics for mainstem sport and commercial spring Chinook fisheries below Bonneville Dam at different combinations of allocation shares.

Upriver Spring Chinook Adult Run	Allocation of Allowable Upriver Run ESA Impacts	
	Recreational Fisheries	Commercial Fisheries
< 82,000	80%	20%
82,001 – 217,000	70%	30%
> 217,000	65.0%	32.5%
	2.5% allocation provided to Snake River recreational fisheries after run size update verifies highest tier of abundance	

Within the recreational fishery allocation, 75% are allocated to lower river recreational fisheries and 25% are allocated to recreational fisheries above Bonneville Dam (status quo); within the 25% allocation to recreational fisheries above Bonneville Dam, 10% is allocated to OR/WA fisheries from Bonneville Dam up to the state line and 15% is allocated to the WA fisheries in the Snake River and Upper Columbia River areas. Under a high abundance scenario, as described in the matrix (Table 1), the resulting recreational allocation would be 72.2% for below Bonneville Dam and 27.8% above Bonneville Dam; within the 27.8% allocation to recreational fisheries above Bonneville Dam, 9.6% is allocated to OR/WA fisheries from Bonneville Dam up to the state line and 18.2% is allocated to the WA fisheries in the Snake River and Upper Columbia River areas.

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The frequency of run sizes for 2005-2019 and 2015-2019 was also reviewed when determining the appropriate tiers for consideration; the average Upriver spring Chinook run size was 170,600 fish and 156,140 fish, respectively. Reviewing the frequencies as they align with the *U.S. v Oregon* Management Agreement impact rate schedule was taken into consideration to help produce a simplified abundance-based matrix, so that the middle tiers had the highest frequency of occurrence.

Upriver spring Chinook is expected to be the most constraining stock in most years when planning fisheries. Under low run size scenarios (<82,000) within *U.S. v Oregon* Management Agreement, the recreational fishery would be provided 80% of the non-treaty allocation. Table 2 provides the frequency each of the allocation percentages that would have occurred from 2005-2019 and 2015-2019, with the average sport/commercial allocation being 70.0%/30.0% and 71.5%/28.5%, respectively. The resulting recreational allocations that would have occurred 2005-2019 and 2015-2019 average 74.3% below Bonneville and 25.7% above Bonneville (9.9% Bonneville Dam upstream to OR/WA state line/15.8% Snake River), and 74.4% below Bonneville and 25.6% above Bonneville (9.9% Bonneville Dam upstream to OR/WA state line/15.6% Snake River), respectively.

Table 2. Abundance-based matrix metrics for mainstem sport and commercial spring Chinook fisheries below Bonneville Dam at different combinations of allocation shares and frequency of run sizes.

Upriver Spring Chinook run size	Allocation % (sport/commercial)	Frequency ¹	Non-Treaty Upriver Spring Chinook Impact Rate ²
<82,000	80/20	7% (20%)	0.5-1.5%
82,001-217,000	70/30	67% (60%)	1.6-1.9%
>217,000	67.5/32.5 ³	27% (20%)	2.0-2.7%

¹ 2005-2019 (2015-2019) frequency for Upriver and Willamette Spring Chinook combination of run sizes.

² *U.S. v Oregon* Management Agreement allowable ESA impact rate for combined commercial and recreational non-treaty fisheries.

³ 2.5% allocation to Snake River recreational fisheries are included in the total sport allocation.

This analysis compares the expected average annual angler trips (below Bonneville only) and mainstem commercial ex-vessel value for five different Upriver spring Chinook non-treaty sport/commercial allocation sharing scenarios: 80%/20% (OR status quo), 70%/30% (Current PRC recommendation/WA status quo), average abundance-based matrix allocation, 65%/35% (Alternative 3), and 60%/40% (Alternative 1). Outputs are based on 2013-2018 observed fisheries adjusted to the hypothetical allocations shown, and therefore are best interpreted as an assessment of what might have occurred in those years under a different set of policies, rather than as an estimate of what would occur in the future. Recreational angler trips are only presented for fisheries below Bonneville because comparable information was not available for

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all fisheries upstream of Bonneville Dam until 2017. Table 3 has been updated with an estimate of 70.0%/30.0% (2005-2015 avg.) for the abundance-based matrix allocation, and the remaining alternatives intended for the November 18, 2019 PRC meeting remain unchanged. The abundance-based matrix reflects the estimates generated for the PRC/WA Status Quo due to the similarity in the sport/commercial allocation.

Table 3. Modelled economic metrics for mainstem sport and commercial spring Chinook fisheries below Bonneville Dam at different combinations of allocation shares and allowable commercial gears.

Spring Chinook Issue- Alternative Combination ¹	Allocation % (sport/ commercial)	Allowable Mainstem Commercial Gear	Economic Metrics ²	
			Sport Angler Trips ³	Commercial Ex- Vessel Value
Issue 1 OR Status Quo	80/20	Post TN ⁴	115,469	\$95,714
Issue 1 PRC/WA Status Quo	70/30	Pre TN/Post TN/GN ⁵	115,469	\$313,257
Issue 1 Alternative 2 - Abundance-based Matrix ⁶	70.0/30.0	Pre TN/Post TN/GN ⁵	115,469	\$313,257
Issue 1 Alternative 3	65/35	Pre TN/Post TN/GN ⁵	112,303	\$409,054
Issue 1 Alternative 1	60/40	Pre TN/Post TN/GN ⁵	109,138	\$504,851

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

² 2013-2018 averages used for sport and commercial metrics.

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

⁴ No commercial buffer applied.

⁵ Commercial buffer applied to pre-update fishery.

⁶ Allocation shown represents average expected sharing. Sport angler trip estimates for ABM are subject to change.