Joint-State Columbia River Fishery Policy Review Committee
Narrative Descriptions and Analysis of Policy Issues, Alternatives and Options
SUMMER CHINOOK – Issue 1, Alternative 2: Recreational/Commercial allocation downstream of Priest Rapids Dam, Abundance Based Matrix
November 18, 2019

Issue 1, Alternative 2: Recreational/Commercial allocation downstream of Priest Rapids Dam, Abundance-Based Matrix
Description
This issue specifically involves the allocation of Upper Columbia summer Chinook harvestable surplus (returns in excess of spawning needs) between recreational and non-treaty commercial fisheries downstream of Priest Rapids Dam (PRD) using an abundance-based matrix approach (Alternative 2). Upper Columbia summer Chinook are defined as Chinook passing Bonneville Dam during June 16 through July 31 and are destined for areas above PRD. They are not ESA-listed, and allocations are based upon shares of harvestable surplus.

A run size-based matrix is used to allocate harvest for treaty and non-treaty fisheries under the *U.S. v Oregon* Management Agreement, and is based on the predicted ocean abundance of Upper Columbia River summer Chinook. Non-treaty harvest in the ocean is subtracted first from the total non-treaty allocation and the remaining balance is apportioned to in-river non-treaty fisheries. This in-river apportionment prioritizes non-treaty fisheries upstream of PRD that include recreational and Colville Tribe (federally recognized tribe though not a *U.S. v. Oregon* treaty tribe) fisheries. Allocations for non-treaty fisheries upstream of PRD range between 60-90% of the in-river non-treaty total. Fisheries below PRD are apportioned into recreational fisheries above/below Bonneville Dam and commercial fisheries (below Bonneville Dam only).

- February PRC Recommendation/Current WA Policy
  - Recreational fisheries below PRD are allocated 70% of the harvestable surplus
  - Commercial fisheries are allocated 30%.
- Alternative 1 (pre-2012 sharing)
  - Recreational fisheries are allocated 50%
  - Commercial fisheries are allocated 50%.
- Alternative 2
  - Use an abundance-based matrix for recreational/commercial allocation.
- *Status of Consideration: Active for further analysis*.

Results
This issue lays out a possible abundance-based matrix approach using the Upper Columbia summer Chinook ocean abundance. Any of several alternative values could be used in such a matrix if desired. The general concept is that 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.

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Both the *U.S. v Oregon* Management Agreement and WDFW/Colville Harvest Rate Schedule operate under an abundance-based approach. Similarities between the two existing abundance-based harvest rate matrices were incorporated to help simplify a sport/commercial allocation sharing for non-treaty fisheries below PRD. The allocations under review in Issue 1 (80%/20%, 70%/30%, and 50%/50%) were taken into consideration on developing the abundance-based matrix; however 60%/40% was used in place of 50%/50% to reduce the risk of exceeding allocations if the run size changes inseason. The frequency of run sizes from 2005 through 2019 was also reviewed when determining the appropriate tiers for consideration, with the average ocean abundance being 66,900 fish. Reviewing the frequencies as they align with the *U.S. v Oregon* Management Agreement and WDFW/Colville Harvest Rate Schedule was taken under consideration to help produce a simplified abundance-based matrix, so that the middle tier had the highest frequency of occurrence.

Under low run size scenarios (<50,000), harvest opportunities for the non-treaty fisheries are expected to be limited, particularly when considering that non-treaty ocean and above PRD fisheries collectively harvest the majority the available fish. The remaining fish available for harvest in the non-treaty fishery would result in an 80% allocation for sport below PRD. Under abundant return scenarios (>100,000), allocation to the commercial fishery would be 40%. The remaining middle tier would result in 70% allocated to the recreational fishery below PRD. Table 1 provides the frequency each of the allocation percentages would have occurred from 2005 through 2019, with the average recreational/commercial allocation being 71.3%/28.7%.

Table 1. Abundance-based matrix metrics for mainstem sport and commercial upper Columbia summer Chinook fisheries below Priest Rapids Dam at different combinations of allocation shares.

Run size	Allocation % (sport/commercial)	Frequency [1]	Non-treaty harvest rate schedule [2]	Allocation below Priest Rapids Dam [3]
<50,000	80/20	20%	10-21%	10%
50,001-100,000	70/30	73%	21-29.3%	10-40%
>100,000	60/40	7%	29.3%	40%

[1] *2005-2019 run size frequency.*
[2] *US v. Oregon Management Agreement allowable harvest (impact) for combined commercial and recreational non-treaty fisheries.*
[3] *WDFW/Colville Harvest Rate Schedule for combined non-treaty commercial and recreational non-treaty fisheries below Priest Rapids Dam.*

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Table 2 compares the expected average annual angler trips (below Bonneville only) and commercial ex-vessel value for four different non-treaty summer Chinook allocation shares and commercial gear types; OR Status Quo (80%/20%), PRC/WA Status Quo (70%/30%), and Alternative 2 (abundance-based matrix; 71.3%/28.7%), and Alternative 1 (50%/50%). Outputs are based on 2013-2018 results 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.

Table 2. Modelled economic metrics for mainstem sport and commercial summer Chinook fisheries below Bonneville Dam at different combinations of allocation shares and allowable commercial gears.

Summer 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	Alternative Gear [4]	25,147	$0
Issue 1 PRC/WA Status Quo	70/30 [5]	Large-Mesh GN	22,350	$126,520
Issue 1 Alternative 2 - Abundance-Based Matrix	71.3/28.7 [6]	Large-Mesh GN	22,630	$145,245
Issue 1 Alternative 1	50/50	Large-Mesh GN	22,350	$253,041

[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 summer alternative gear currently available.*

[5] *Requires 5% of commercial allocation be reserved for incidental harvest of summer Chinook in SAFE fisheries, so mainstem allocation is actually 25%.*

[6] *Allocation shown represents average expected sharing.*