

Joint-State Columbia River Fishery Policy Review Committee

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

November 18, 2019

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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 approach using a combination of Upriver and Willamette spring Chinook abundances to the Columbia River. Any of several alternative values could be used in such a matrix if desired. 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 reflect the different tiers within the *U.S. v Oregon* Management Agreement and associated range of allocations currently under review in Issue 1 (80%/20%, 70%/30%, and 60%/40%). The frequency of run sizes from 2005 through 2019 was also reviewed when determining the appropriate tiers for consideration. The average Upriver spring Chinook run size was 170,600 fish and Willamette spring Chinook run size was 56,000. Reviewing the frequencies as they align with the *U.S. v Oregon* Management Agreement impact rate schedule was taken under 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 constraining stock 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. Under abundant Upriver spring Chinook run size scenarios (>217,000), increased impacts are provided to the non-treaty fisheries, of which 40% are provided to the commercial fishery. The remaining middle tiers of the abundance-based matrix (65%-70% sport/35%-30% commercial) are determined by the Willamette spring Chinook run size of greater or less than 50,000 fish. Table 1 provides the frequency each of the allocation percentages would have occurred from 2005 through 2019, with the average sport/commercial allocation being 66.7%/33.3%.

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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 run size | Willamette spring Chinook run size | Allocation % (sport/commercial) | Frequency ¹ | Non-Treaty Upriver spring Chinook Impact Rate ² |
|---------------------------------|------------------------------------|---------------------------------|------------------------|--|
| <82,000 | na | 80/20 | 7% | 0.5-1.5% |
| 82,001-217,000 | <50,000 | 70/30 | 40% | 1.6-1.9% |
| 82,001-217,000 | >50,000 | 65/35 | 27% | 1.6-1.9% |
| >217,000 | na | 60/40 | 27% | 2.0-2.7% |

¹ 2005-2019 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.

Table 2 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), 66.7%/33.3% (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 all fisheries upstream of Bonneville Dam until 2017.

Table 2. 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 | 66.7/33.3 ⁶ | Pre TN/Post TN/GN ⁵ | 113,569 | \$376,483 |
| 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.