

Joint-State Columbia River Fishery Policy Review Committee

August 29, 2019

10 a.m. to 5 p.m.

Location: WDFW Region 5 Office, Ridgefield WA

Meeting Summary Notes and Decisions

Attendance:

Bruce Buckmaster – ODFW Commissioner	David Graybill – WDFW Commissioner
Jill Zarnowitz – ODFW Commissioner	Bob Kehoe – WDFW Commissioner
Michael Finley – ODFW Commissioner	Don McIsaac – WDFW Commissioner
Mark Labhart – ODFW Commissioner	Kelly Susewind – WDFW Director
Holly Akenson – Previous ODFW Commissioner	Ron Warren – WDFW Director of Fish Policy
Curt Melcher – ODFW Director	Ryan Lothrop – WDFW Staff
Ed Bowles – ODFW Staff	Chris Donley – WDFW Staff
Tucker Jones – ODFW Staff	
Chris Kern – ODFW Staff	
John North – ODFW Staff	

ODFW Support Staff

April Mack – ODFW Staff

WDFW Support Staff

Matt Davidson – WDFW Staff
Ben Anderson – WDFW Staff
Nikki Kloepfer – WDFW Staff
Tami Lininger – WDFW Staff
Myrtice Dobler – WDFW Staff

Opening Remarks and Adoption of Agenda

Commission and staff introductions.

The Committee adopted the agenda with the removal of Range of Alternatives (RoA) Spring Chinook Issue 5, allocation of unused commercial impacts, from discussion at this meeting,.

Public Comment

Public testimony was set to five minutes each and public were encouraged to focus testimony on items on the agenda.

Public testimony was received from: Irene Martin, John Foltz, Greg King, Robert Sudar, Liz Hamilton, Heath Heikkila, Steve Fick, and Greg Johnson.

Policies and Regulations in 2020 and Beyond

Review and Refinement of the Range of Alternatives (RoA) for Analysis

Chris Donley presented an overview of the Snake River spring Chinook sport fishery.

Staff presented analysis results of RoA Spring Chinook Issue 3, Alternative 3 and the three remaining sub-options from Spring Chinook Issue 4. There was discussion on how the analysis was performed, and considerations for how these options affect fish management.

Decisions Under Spring Chinook Policy Issue 3: Allocation of Upriver Spring Chinook Within Recreational Fisheries

- Alternative 1 (65%/35%) – Topic discussed and designated as deprioritized/inactive.
 - Rationale: In addition to staff member’s analysis, this alternative is out of the range of what was originally proposed by SE Washington stakeholders. To date, the PRC has not identified an increased allocation to mid-Columbia River as an objective. The allocation of 65% to the lower river is lower than the resulting allocation from subtracting 500 fish to be transferred upriver, which the Committee viewed as beyond the level of change desired.
- Alternative 2 (85%/15%) – Topic discussed and designated as deprioritized/inactive.
 - Rationale: In addition to staff member’s analysis, this alternative is out of the range of what was originally proposed by SE Washington stakeholders.
- Alternative 3 (+500) – Topic discussed and designated as deprioritized/inactive.
 - Rationale: This was done in favor of adding an alternative of 70%/30% due to the difficulty of annually managing a static 500 upriver fish transfer and associated impacts across various run sizes. Further, the analysis showed that within recent run sizes, the net effect of this alternative was very similar to a simple 70%/30% allocation.
- NEW Alternative 4 (70%/30%) – Commissioners requested analysis of a new alternative with sub-options of ‘4a’ and ‘4b.’
 - This allocation appears less complex than adding 500 upriver fish from the lower river’s allocation to the Snake River fisheries’ allocation but achieves a similar result.
 - Sub-option 4a: 70%/12.5%/17.5% (below Bonneville/mid-Columbia/Snake)
 - Sub-option 4b: 70%/10%/20% (below Bonneville/mid-Columbia/Snake)

Decisions Under Spring Chinook Policy Issue 4: Provide Improved Season Stability for Upriver Spring Chinook Recreational Fisheries

- Option 3 (lower river buffer only) - Topic discussed and designated as deprioritized/inactive.
 - Rationale: This option would reduce the lower river fishery, and would not add to the Snake River fishery. It would increase the risk of exceeding allocations in the Bonneville to State Line fisheries.
- Option 4 (Upriver season set) - Topic discussed and designated as deprioritized/inactive.
 - Rationale: Fixed seasons would increase the likelihood of exceeding allocation and impacts of the non-treaty share. A set season works well when you have limited entry or no allocation issues. In this situation, set seasons are not practical due to variations in annual run sizes and other issues. This option would likely not result in meaningful opportunity.

- Option 8 (No lower river extension) - Topic discussed and designated as deprioritized/inactive.
 - Rationale: Under this option, the lower river may not be able to achieve its sub-allocation. While this would provide additional assurance of not exceeding, it also contains the biggest risk of leaving non-treaty fish unused. It might also lead to longer lower river seasons adopted initially, with in-season curtailments, which is less precautionary, than the current approach.

Spring Chinook Policy Issue 1: Spring Recreational/Commercial Allocation

The Committee postponed this agenda item due to lack of time. Commissioners requested a new alternative of 65%/35% for future discussions.

Spring Chinook Policy Issue 2: Allowable Spring Mainstem Commercial Gear

Reviewed description.

- Alternative 1- Non-tangle net alternative gear. Topic discussed and designated as deprioritized/inactive.
 - Rationale: There are not currently any non-tangle net alternative gears available and feasible for use in this fishery. Eliminating tangle net and gill net gear would eliminate the only gears that could be used in spring mainstem seasons.

Other Measures in the RoA: General Policy Discussions

The PRC discussed the following four matters as possible policy inclusions in a final recommendation.

Increased Alternative Commercial Gear Development and Implementation

Topic discussion included a review of prior PRC discussions and new ideas about cataloguing areas and information.

- The Committee continued to support moving forward with this for further discussion at future meetings.
- It would be useful for a workgroup to catalog
 - The current state of analysis of what gears might work, in a “fact based review”
 - A catalog of river environments below Bonneville Dam and where different alternative gears might be most effective, area-by-area
 - A reexamination of what else is available, including new studies or improved study designs
- The Committee recognized the need to have support from the commercial fishery, and financial and fishery impact funding for a successful program to proceed.

Commercial License Buyback Programs – Other Measures: Issue 2

Based on PRC discussion at the January and February PRC meetings, the PRC previously marked this topic inactive. It was suggested by the Chair to bring back the topic for re-examination, since the focus on 2019 concurrency and season setting has passed. At the next meeting, the PRC would like to consider a few paragraphs for the final recommendation policy document. The subgroup/committee continue to work on a report that identifies the potential objectives of a buyback program.

- The resulting buyback program policy would need to be conducted in a coordinated manner in both states
- It would need to identify a common objective(s)
- It would need a process for input from affected parties

Hatchery Production Enhancement and Limitation on Sport Fishery Guide/Charter Licenses- Other Measures: Issue 1

These topics were added to the list of assignments (above) for the subgroup to draft possible policy language for PRC discussion at the next meeting.

Action Item: A subgroup (WDFW Commissioner McIsaac, ODFW Commissioner Akenson, Chris Kern and Ron Warren) was tasked to develop some brief policy language for review by the PRC and potential inclusion in a policy document on the following four topics: a) alternative commercial fishing gear, b) commercial license buyback program, c) hatchery production goals, and d) limitations on recreational guide/charter licenses.

Other Matters in Achieving Concurrency in 2020 and Beyond

Voluntary Barbless Hooks

There was a review of what happened at the August 2, 2019 Oregon Commission meeting. Oregon did not set voluntary barbless into permanent rule for 2020. This was done with the understanding that the topic would be revisited in future PRC meetings, and by the full Oregon Commission who would receive a full briefing from staff and provide time for public comment.

Commercial fishing advisory committee for Emerging Fisheries

Seines and other alternative gears are not currently legal under Washington statute. Therefore Washington must pursue alternative gears under statutes for emerging fisheries and is required to establish an advisory group. The recruitment for the group has started, and the intention is to ensure that it is fully compatible with the work of PRC.

Oregon Senate Bill 830 (2013) removed prohibitions on these commercial fishing gears in Oregon, so there is not a similar emerging fishery process requirement in Oregon.

Future Process and Schedule

The next meeting is scheduled for October 1, 2019 with a start time of 8 a.m.

Public testimony will be accepted. Staff was requested to provide a method of accepting written public comment expanding the public comment opportunity for consideration by PRC members.

Conclusionary Matters

Staff Assignments for next meeting

- Provide all remaining analysis on alternatives in the RoA that the PRC has not discussed for 2020 and beyond.
- Direction was given on analysis of spring Chinook Issue 5, and summer Chinook Issue 2 - it would be useful for staff to provide the following information to aid in a decision for either of the options under consideration:
 - What the picture of increased escapement looks like, and how important these impacts are
 - What the open fisheries on unused impacts have been, and how important are those fishery opportunities
- The policy language subgroup is to draft policy language for the four topics listed above.
- Staff is to determine if an 'electronic portal' method can be provided for acceptance of public comment, and if available, notify the public of this option. Information received would be forwarded to PRC members in advance of the next meeting.

Columbia River Policy Review

Possible Policy Changes for 2020 and Beyond: Range of Alternatives (per Policy Issue or Option) for Analysis

10/1/2019

Policy Issue (or Option)	Alternatives						Status
	PRC Feb 26, 2019 Recommendation	Current Status Quo ¹	Alternative 1	Alternative 2	Alternative 3	Alternative 4	
Spring Chinook							
1	Recreational/Commercial allocation	70%/30%	80%/20% (OR); 70%/30% (WA)	60%/40%	Abundance based matrix	65%/35%	Active
2	Allowable mainstem commercial gear	Tangle nets and alternative gear (any period), gill nets (post update)	Tangle nets (post update) (OR); Tangle nets and alternative gear (any period), gill nets (post update) (WA)				Active
3	Allocation of Upriver spring Chinook within recreational fisheries (Bonneville to OR-WA state line/ Snake River)	75%/25% (10%/15%)	75%/25% (10%/15%) (OR; WA)			Alt 4a. 70%/12.5%/17.5%	Active
						Alt 4b. 70%/10%/20%	
5	Allocation of unused commercial impacts	Not addressed	To escapement (OR); No restrictions (WA)	To escapement	No restrictions		Active
Summer Chinook							
1	Recreational/Commercial allocation downstream of Priest Rapids Dam	70%/30%	80%/20% (OR); 70%/30% (WA)	50%/50%	Abundance based matrix		Active
2	Allocation of unused commercial impacts	Not addressed	To spawning escapement (OR); to upriver recreational fisheries or spawning escapement (WA)	Unused impacts allocated to spawning escapement	Unused impacts allocated to upriver recreational fisheries or spawning escapement		Active
3	Allowable mainstem commercial gear	Gill net and alternative gear	Alternative gear (OR); Gill net and alternative gear (WA)				Active
Fall Chinook							
1	Recreational/Commercial allocation of most constraining fall Chinook impacts	≤70%/≥30%	≤70%/≥30% (OR; WA)	≤80%/≥20% Alternative gear only	≤65%/≥35% Gillnets in Z45		Active
2	Allowable mainstem commercial gear	Gill net (any Zone) and alternative gear	Gill net (Zone 4/5) and alternative gear (OR); Gill net (any Zone) and alternative gear (WA)	Alternative gear only			Active
Coho							
2	Allowable mainstem commercial gear	Gill net, tangle net and alternative gear	Tangle net and alternative gear (OR); Gill net, tangle net and alternative gear (WA)	Non-tangle net alternative gear			Active
Other Measures							
1	Limitation on recreational fishing guide/charter licenses	Not addressed	No limitations (OR); No guides below Longview Bridge (WA)	Pursue guiding limitations			Active
2	Commercial license buyback program	Not addressed	Not addressed (OR); Pursued (WA)	Pursue gill net license buyback program			Active
3	Hatchery production goals	Not addressed	Not addressed				Active
4	Increase alternative gear development/implementation	Not addressed	Pound net testing and rule making to legalize pound net and seines (WA)				Active

¹ Current Status Quo reflects each state's corresponding policy/rules as of August 1, 2019.

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Narrative Descriptions and Analysis of Policy Issues, Alternatives and Options
SUMMER 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 consideration during the process are listed below, together with a narrative description of identified potential alternatives from the current status 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.

Summer Chinook

This issue 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), the application of unused non-treaty commercial allocation, and allowable non-treaty commercial gears. It does not address the definition of harvestable surplus above/below PRD, as that is defined in the *U.S. v Oregon* Management Agreement. 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).

- Based on the February PRC recommendation/Current WA Policy, recreational fisheries below PRD are allocated 70% of the harvestable surplus and commercial fisheries 30% with gill nets allowed in the mainstem.
 - Mainstem gill net is not permitted under current Oregon rules but was recommended by the PRC and adopted by WDFW.
- The two states have different policies/rules regarding the use of unused non-treaty commercial summer Chinook allocation. Oregon applies the unused share to spawning escapement. Washington applies the unused non-treaty commercial share

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to recreational fisheries above Bonneville Dam (if it can be used) or to spawning escapement.

- Large-mesh (8" minimum mesh) gill net gear was the typical gear used in the commercial fishery since target harvest seasons were re-established in 2005. Oregon rules require the use of alternative gear types for any summer mainstem commercial fishing, but none have been identified for this fishery. The PRC recommendation and subsequent WDFW policy allow the use of large-mesh gill net gear and alternative gear. Tangle nets have not been used in the summer management timeframe and are not an appropriate gear type for this timeframe due to the abundance of sockeye, shad, and steelhead.

Issue 1: Recreational/Commercial allocation downstream of Priest Rapids Dam

- February PRC Recommendation/Current WA Policy
 - Recreational fisheries below PRD are allocated 70% of the harvestable surplus and commercial fisheries 30%.
- Current Oregon Policy
 - Allocation between recreational/commercial fisheries is 80%/20%.
- Alternative 1 (pre-2012 sharing)
 - Change the allocation between recreational/commercial fisheries to 50%/50%.
- Alternative 2
 - Use an abundance-based matrix for recreational/commercial allocation.
- *Status of Consideration: Active for further analysis.*

Issue 2: Allocation of unused commercial impacts

- Status Quo
 - The two states have different policies/rules regarding the use of unused non-treaty commercial summer Chinook allocation, as described in the summer Chinook Issue 1. This has not yet been addressed by the PRC.
- Alternative 1
 - OR Policy: apply unused non-treaty commercial allocation to escapement.
- Alternative 2
 - WA policy: apply unused non-treaty commercial allocation to recreational fisheries upstream of Bonneville Dam (if they can be used) or to aid in escapement.
- *Status of Consideration: Active for further analysis.*

Issue 3: Allowable mainstem commercial gear

- February PRC Recommendation/Current WA Policy
 - Gill net and alternative gear allowed.
- Current Oregon Policy

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- OR Policy: Limit commercial fisheries to gear types other than gill nets.
- *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.

Summer Chinook

Issue 1: Recreational/Commercial allocation downstream of Priest Rapids Dam

Analysis Results- PRC/Current Status Quo/Alternative 1:

Table 1 compares the expected average annual angler trips (below Bonneville only) and commercial ex-vessel value for three different non-treaty summer Chinook allocation shares and commercial gear types; OR Status Quo (80%/20%), PRC/WA Status Quo (70%/30%), 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.

Modelling results indicated a significant gain in ex-vessel commercial value as the commercial share increases and gill net gear is allowed. Angler trips increased with an allocation change from 70% to 80% but not from 50% to 70%. The analysis indicated that gains in angler trips due to allocation increases during 2013-2018 did not occur in every season and year, and when gains did occur, they were not linearly proportional to the increase in allocation. Often, factors outside of the Policy (run size changes, fishing conditions, in-season management actions, etc.) had a far greater effect on the season structure than the allocation change.

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Table 1. 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/Issue 3 OR Status Quo	80/20	Alternative Gear ⁴	25,147	\$0
Issue 1 PRC-WA Status Quo/Issue 3 PRC-WA Status	70/30	Large-Mesh GN	22,350	\$153,809
Issue 1 Alt 1/Issue 3 PRC WA Status Quo	50/50	Large-Mesh GN	22,350	\$256,349
Issue 1 Alt 2	Abundance Based Matrix	NA	NA	NA

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 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.

For example, in the 2014-2016 summer Chinook recreational fisheries, relatively modest catch rates (and run upgrades in 2014 and 2015) held the Chinook catch well below both the pre-and post-Reform guidelines. Therefore, in-season management decisions made during these years were not affected by the allocation increase. However, catch rates and mark rates in 2017 were higher than expected, resulting in the Chinook catch exceeding the pre-Reform guideline (70%), but the higher post reform guideline (80%) allowed the recreational fishery to be re-opened in mid-July. Therefore, the allocation increase in 2017 did affect in-season management decisions for the recreational summer Chinook fishery below Bonneville Dam.

Analysis Results- Alternative 2 – Abundance-based harvest matrix:

An abundance-based harvest rate schedule would have differing recreational/commercial allocations based upon the run size. In past examples, this type of allocation schedule would provide a higher allocation to recreational fisheries at lower abundances with increasing allocation to the non-treaty commercial fishery as abundances increased. Part of the rationale for this approach is that when abundance is high, the recreational fishery is less likely to use all of the harvestable fish while the non-treaty commercial fishery has the ability to catch their share. The *U.S. v. Oregon* Management Agreement includes several abundance-based harvest allocation

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matrices, including one for summer Chinook. The Washington/Colville summer Chinook sharing agreement includes a matrix for upriver/downriver sharing as well. The non-treaty share includes harvest in ocean fisheries, and recreational, commercial, and Colville fisheries in the Columbia River. Examples from the current *U.S. v. OR* schedule (Table 2) and the WDFW/Colville harvest rate schedule (Table 3) are provided below. No analytical results for Alternative 2 are provided at this time.

Table 2. <i>U.S. v. Oregon</i> Harvest Rate Schedule	
Run Size	Non-Treaty HR
36,250	10.0%
50,000	21.0%
70,000	25.7%
100,000	29.3%

Table 3. WDFW/Colville Harvest Rate Schedule	
Run Size	Allocation below PRD
<50,000	10% below PRD
50,001 -60,000	90% -70%
60,001 -75,000	70 - 65%
75,001 -100,000	65% - 60%
100,000	60%

Issue 2: Allocation of unused commercial impacts

The two states have different policies/rules regarding the use of unused non-treaty commercial summer Chinook allocation. Results will be provided in a separate document.

Issue 3: Allowable mainstem commercial gear

The modelling results in Table 1 indicate that the use of large-mesh gill nets in non-tribal commercial summer Chinook fisheries can generate increasing ex-vessel value at increasing commercial allocations. To date, no alternative gear has been identified as viable for use in commercial summer Chinook fisheries below Bonneville Dam. Based on a 4-year evaluation of summer beach and purse seines, use of these gears for a mark-selective commercial summer Chinook fishery in the lower Columbia River is not feasible (Tables 4 and 5). Catch rates of hatchery adult Chinook were relatively low, particularly in relation to catch rates of non-target sockeye and steelhead. In addition, analysis of hook and line data for recreational summer Chinook fisheries below Bonneville Dam indicated that catch rates, even for professional fishing guides, and mark rates were too low to harvest an economically viable number of fin-clipped hatchery summer Chinook in a mark-selective commercial hook and line fishery. The daily ex-vessel value per boat in a modelled mark-selective fishery ranged

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from \$20 to \$59, depending on whether the catch rate for an average angler or guide was used. Operating expenses would need to be subtracted from the daily value to estimate net daily income for the fishers.

Table 4. Summer beach seine evaluation test fishing summary, 2011-2014.

Year	Mesh Size (in)	Fisher-		Avg Water		Adult Chinook		Chinook	Mkd	Sockeye/		Steelhead/	
		Days	Sets	Temp °F	Marked	Unmarked	Mark Rate	Adult CH/Set	Sockeye Set	Mkd Adult CH	Steelhead	Set	
2011	3.5	22	84	62	102	70	59%	1.2	141	1.7	1.4	107	1.3
2012	3.5	28	111	61	126	40	76%	1.1	921	8.3	7.3	79	0.7
2013	3.5, 2.5	12	50	--	142	110	56%	2.8	1,596	31.9	11.2	53	1.1
2014	3.5, 2.5	16	64	64	110	145	43%	1.7	4,909	76.7	44.6	143	2.2
Total		78	309	63	480	365	57%	1.6	7,567	24.5	15.8	382	1.2

**Table does not include any fish whose life stage or fin-mark status could not be determined.*

Table 5. Summer purse seine evaluation test fishing summary, 2011-2014.

Year	Mesh Size (in)	Fisher-		Avg Water		Chinook		Mkd	Sockeye/		Steelhead/		
		Days	Sets	Temp °F	Marked	Unmarked	Mark Rate	Adult CH/Set	Sockeye Set	Mkd Adult CH	Steelhead	Set	
2011	3.5, 1.0 bunt	30	120	61	202	162	55%	1.7	495	4.1	2.5	71	0.6
2012	3.5, 1.0 bunt	12	48	61	178	120	60%	3.7	3,148	65.6	17.7	63	1.3
2013	3.5, 2.0, 1.0 bun	12	49	63	230	184	56%	4.7	1,836	37.5	8.0	65	1.3
2014	3.5, 2.0, 1.0 bun	15	64	64	235	273	46%	3.7	6,264	97.9	26.7	272	4.3
Total		69	281	62	845	739	53%	3.0	11,743	41.8	13.9	471	1.7

**Table does not include any fish whose life stage or fin-mark status could not be determined.*

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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.

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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.

Coho

Issue 1: Allocation of Coho impacts between non-treaty fisheries

This issue involves the allocation of impacts for ESA-listed lower Columbia River natural Coho (LCN) between in-river recreational and non-treaty commercial fisheries. Allocation sharing applies to fisheries occurring in concurrent Columbia River waters downstream of Bonneville Dam and Select Areas. Fishery access to healthy and harvestable hatchery Coho stocks is constrained by the need to protect co-occurring ESA-listed Coho, as well as ESA-listed A- and B-index wild steelhead. Opportunity may also be constrained by ESA-listed Chinook stocks in some years. In recent years, the fisheries have primarily been constrained by performance of Coho and steelhead returns.

- February PRC Recommendation/Current WA Policy/Current OR Policy (full concurrence)
 - There is no formal allocation of Coho ESA impacts. However, fisheries are prioritized with commercial fisheries receiving sufficient impacts to implement Select Area (Coho and Chinook) and mainstem fall Chinook and hatchery Coho fisheries. The balance is provided to recreational fisheries; the large majority of recreational catch occurs in the Buoy 10 fishery. If these fisheries are expected to be unable to use all of the impacts, the remainder is assigned to mainstem commercial Coho fisheries. The current prioritization of allocations has not limited these fisheries.
- Alternative 1
 - Set a numeric allocation for recreational and commercial fisheries.
 - *Status of Consideration: This was removed from the list by the PRC at the March 14 meeting as the current prioritization guideline does not constrain either fishery.*

Issue 2: Allowable mainstem commercial gear for Coho

This issue involves establishing allowable commercial gear types for non-treaty commercial fisheries targeting Coho in the mainstem Columbia River. Recent Coho-directed fisheries have generally occurred in commercial Zones 1-3 during October. Small mesh (≤ 6 -inch mesh) gill nets were the primary gear type used in this fishery until prohibited by policy in 2017. The use of tangle nets (≤ 3.75 -

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inch mesh) were evaluated beginning in 2009 and implemented in 2013 as part of efforts to increase harvest per ESA-impact in commercial fisheries. Tangle net fisheries targeting hatchery Coho occurred in 2013-2015. Purse and beach seines were used in 2014-2016 to target hatchery fall Chinook and hatchery Coho. Due to challenges with implementation, pound nets have not been evaluated in a full-scale fishery at a level similar to seines, but the Cathlamet pound net was tested in 2013 and 2016-2018, and testing is on-going in 2019. All of these gear types are viable for Coho to varying degrees. Tangle nets can be used as a mark-selective tool to leverage ESA-impacts into larger harvests. Gill nets may be used when abundance is high and ESA impacts are available.

- February PRC Recommendation/Current WA Policy
 - Allowable commercial fishing gear for Coho-directed non-treaty commercial fisheries to include gill net, tangle net, and other alternative gear.
- Current OR Policy
 - Limit allowable gear for Coho-directed non-treaty commercial fisheries in Zones 1-3 of the mainstem Columbia River to tangle nets and other alternative gear.
- Alternative 1
 - Commercial mainstem gears restricted to alternative gear (non-tangle net) only.
- *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.

Coho

Issue 2: Allowable mainstem commercial gear

Analysis Results:

Table 1 shows the harvest of Coho, by gear type, in mainstem non-treaty commercial fisheries during 2013-2016. During 2014 and 2015 when multiple gear types were used, catch rates, mark rates, and total landings of Coho were much higher in October Coho-directed tangle net (MSF) and gill net (non-MSF) fisheries than for seines; however, effort was also much higher for these gears. Both gear types performed best in 2014 when the Coho return was large. October Coho fisheries did not occur in 2016-2018 as insufficient ESA impacts were available to implement the fisheries. A mark-selective seine fishery occurred in late August and September during 2014-2016. Coho harvest was relatively low even though Coho abundance in the lower river typically peaks in mid-September. Coho harvest in the seine fishery was limited by individual fisher quotas (IFQs) in 2014-2016 due to available impacts for wild B-Index steelhead; however, most seine fishers' catches did not approach the IFQs, so they were not a limiting factor.

Table 1. Harvest of Coho in mainstem non-treaty commercial fisheries, by gear, 2013-2016.

Year	Tangle Net ¹	Gill Net ²	Beach Seine ³	Purse Seine ³
2013	4,831	1,952	--	--
2014	18,234	43,867	509	561
2015	993	2,242	58	529
2016	--	--	39	565

¹Hatchery Coho in October mark-selective fisheries. No fishery in 2016.

²All Coho in October non-mark-selective fisheries. No fishery in 2016.

³Hatchery Coho in late August and September mark-selective fisheries. No fishery in 2013.

Participation in the Coho tangle net fishery was moderate (Table 2), likely because tangle nets can be fished from current gill net boats, with relatively low additional capital and operating costs compared to other alternative gears such as purse seines and pound nets. The mark rate for late stock Coho during the October fishery was relatively high, averaging 76%, and allowed a large proportion of the captured Coho to be harvested, while minimizing impacts to wild Coho.

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Table 2. Coho landings and ex-vessel value for the commercial Coho tangle net fishery, 2013-2015.

Year	Days Fished	Deliveries	Coho Landed ¹	Mark Rate	Avg Wt (lb)	Avg \$/lb	Avg Value/Fish	Total Ex-Vessel Value
2013	8	174	4,831	77%	6.1	\$1.87	\$11.44	\$55,251
2014	9	242	18,234	83%	6.3	\$1.20	\$7.54	\$137,556
2015	3	102	993	67%	5.7	\$1.65	\$9.36	\$9,299
Avg	7	173	8,019	76%	6.0	\$1.57	\$9.45	\$67,369

¹ Includes hatchery adults and jacks.

Sufficient ESA impacts were available for the late fall commercial fishery during 2013-2015 to allow 6-inch gill net fisheries to occur in concert with the October tangle net fisheries. Effort and landings in the non-MSF gill net fishery were usually larger than in the MSF tangle net fishery, and the average size of Coho was also greater, contributing to about a 27% higher value per fish (Table 3).

Table 3. Coho landings and ex-vessel value for the commercial Coho 6-inch gillnet fishery, 2013-2015.

Year	Days Fished	Deliveries	Coho Landed ¹	Avg Wt (lb)	Avg \$/lb	Avg Value/Fish	Total Ex-Vessel Value
2013	5	144	1,952	8.1	\$1.83	\$14.87	\$29,030
2014	13	647	43,867	7.3	\$1.28	\$9.33	\$409,201
2015	2	137	2,242	6.8	\$1.73	\$11.77	\$26,391
Avg	7	309	16,020	7.4	\$1.61	\$11.99	\$154,874

¹ Includes adults and jacks.

Mark rates for Coho caught in September seine fisheries were lower than in October tangle net fisheries, averaging 46% during 2014-2016 (Table 4). Commercial beach and purse seine fisheries targeting Coho in October have not been evaluated.

Table 4. Coho landings and ex-vessel value for the commercial seine fishery, 2014-2016.

Year	Gear	Permits Fished	Days Fished	Deliveries	Coho Landed ¹	Mark Rate	Avg Wt (lb)	Avg \$/lb	Avg \$/Fish	Ex-Vessel Value
2014	Beach	6	12	20	509	35%	7.8	\$1.22	\$9.56	\$4,864
	Purse	4	15	19	561	29%	7.7	\$1.09	\$8.43	\$4,729
	Total	10	27	39	1,070	32%	7.8	\$1.15	\$8.96	\$9,593
2015	Beach	3	6	6	58	33%	6.8	\$1.50	\$10.19	\$591
	Purse	4	14	19	529	46%	5.7	\$1.52	\$8.74	\$4,624
	Total	7	20	25	587	44%	5.8	\$1.52	\$8.88	\$5,215
2016	Beach	2	6	3	39	89%	3.6	\$1.18	\$4.22	\$165
	Purse	2	13	21	565	62%	6.3	\$1.74	\$11.02	\$6,227
	Total	4	19	24	604	63%	6.2	\$1.72	\$10.58	\$6,392
2014-2016 Seine Avg		7	22	29	754	46%	6.6	\$1.46	\$9.48	\$7,067

¹ Includes hatchery adults and jacks.

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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. Policy issues that have been introduced for active consideration during the process are listed below, together with a narrative description of status quo and 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.

Spring Chinook

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

This issue involves the allocation of Upriver spring Chinook impacts between recreational and non-treaty commercial fisheries. Allocation sharing applies to the fisheries occurring in concurrent Columbia River waters downstream of Highway 395 near Pasco, WA; the Snake River, 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 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.

- Status Quo
 - February PRC recommendation/Current WA policy
 - Catch sharing of spring Chinook between the recreational and commercial fishery is based on the allocation or sharing of impacts on ESA-listed Upriver spring Chinook allowed for non-treaty fisheries, with 70% provided to recreational and 30% to commercial.
 - Oregon has yet to formally act on the PRC recommendation of February 26, thus current allocation in Oregon remains at their 2013 long term policy of 80%/20% recreational/commercial allocation.

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- Alternative 1 (similar to 2011-2013)
 - Change the allocation of recreational/commercial to 60%/40%.
- Alternative 2
 - Use an abundance-based matrix for recreational/commercial allocation.
- Alternative 3
 - Change the allocation of recreational/commercial to 65%/35%.
- *Status of Consideration: All alternatives are active for further analysis.*

Issue 2: Allowable mainstem commercial gear

This issue involves establishing allowable commercial gear types for non-treaty commercial fisheries targeting spring Chinook in the mainstem Columbia River. Prior to 2002, large -mesh gill nets were the primary gear used in this fishery. Beginning in 2002, tangle nets (combined with other live-capture regulations) were implemented as a new gear to implement a mark-selective fishery and maximize harvest of hatchery spring Chinook. Both gear types were used for mark-selective fishing during 2002-2016 with large mesh gill nets primarily used early and/or late in the season when steelhead and/or shad were more abundant. Non-treaty commercial fisheries in the mainstem have not occurred since 2016 due to policy changes.

- Status Quo
 - February PRC Recommendation/Current WA Policy
 - Allowed mainstem gear types include tangle nets prior to the Upriver spring Chinook runsize update (pre-update) and tangle nets and gill nets post-update.
 - Oregon has yet to formally act on the PRC recommendation of February 26, and current policy in Oregon restricts commercial gear in mainstem areas to tangle nets for use after a run size update only.
- *Status of Consideration: Active for further analysis.*

Issue 3: Allocation of upriver spring Chinook within recreational fisheries

This issue involves the allocation between lower river (below Bonneville Dam) and upriver (Columbia River upstream of Bonneville Dam and the Snake River) recreational fisheries, and allocation within the upriver allocation between recreational fisheries in concurrent Oregon-Washington mainstem Columbia River waters and recreational fisheries in the Snake River in Washington. As with recreational and commercial allocations, the allocation here is of ESA impacts; *U.S. v Oregon* pre-season run size buffer and Catch-Balancing provisions apply.

When there are not enough harvestable fish available to support the desired fisheries, allocation conflicts can occur. This is the case with sharing of upriver spring Chinook within the recreational fisheries above and below Bonneville Dam. Prior to 2001, mainstem Columbia River spring Chinook fisheries only occurred in the lower river downstream of the Willamette River and primarily from January through the end of March. There were no fisheries upstream of the Willamette River. Beginning in 2001, several things happened including; a) the majority of hatchery spring Chinook were mass-marked, b) a new abundance-based harvest rate schedule was adopted; and c) a recent record

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high return of hatchery upriver spring Chinook to the Columbia River. As a result, spring Chinook fisheries were extended in time and area to provide additional opportunity, including some limited opportunity above Bonneville Dam. Beginning in 2002, fisheries above Bonneville expanded to include the area from Bonneville Dam to McNary Dam and the Snake River.

Since 2002, interest in spring Chinook fisheries has increased. Trying to balance meeting ESA goals and recreational fishery allocations can be challenging for fishery managers. The timing of the Upriver run over Bonneville has tended to be later than normal in several years since 2002, making it difficult to accurately estimate the run size in-season in a timely fashion.

- Status Quo (unchanged by the PRC Recommendation of February 26)
 - Sharing of spring Chinook between lower river and upriver recreational fisheries is based on the allocation of impacts on ESA-listed Upriver spring Chinook allowed for in non-treaty recreational fisheries, with 75% of that allocation currently provided for lower river fisheries and 25% provided to upriver fisheries.
 - Catch sharing of spring Chinook impacts between recreational fisheries from Bonneville Dam to the Oregon-Washington state line area are allocated 10% (40% of 25%) and recreational fisheries in the Snake River are currently allocated 15% (60% of 25%).
- Alternative 4
 - Change the allocation of ESA impacts for lower river/upriver fisheries from 75%/25% to 70%/30%
 - Alternative 4a. Change the allocation for fisheries between Bonneville Dam to the WA/OR State line and the Snake River to 12.5% (42%) and 17.5% (58%)
 - Alternative 4b. Change the allocation for fisheries between Bonneville Dam to the WA/OR State line and the Snake River to 10% (33%) and 20% (67%)
- *Status of Consideration: Active for further analysis.*

Issue 5: Allocation of unused commercial impacts

This issue involves allocation of impacts from the commercial fishery that are not used during the season.

- Status Quo
 - The two states have different policies/rules regarding the use of unused non-treaty commercial spring Chinook allocation.
- Alternative 1
 - OR Policy: apply unused non-treaty commercial allocation to escapement.
- Alternative 2
 - WA policy: no restrictions on unused allocation (can be applied to escapement or upriver recreational fisheries).
- *Status of Consideration: Active for further analysis.*

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Results

Following are the analysis results associated with possible policy changes for spring Chinook fisheries as part of the review of Columbia River salmon and steelhead fishery management under current consideration by the Joint-State Columbia River Fishery Policy Review Committee (PRC) process. Issues and options designated as “active for further analysis” as of October 1, 2019 are shown below; issues and options previously removed from the list are excluded.

Spring Chinook

Issue 1: Allocation of Upriver spring 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 four different Upriver spring Chinook non-treaty sport/commercial allocation sharing scenarios; 70%/30% (Current PRC recommendation/WA status quo), 80%/20% (OR status quo), 60%/40% (Alternative 1), and 65%/35% (Alternative 3). An abundance-based matrix for allocation (Alternative 2) has not been analyzed at this time. 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. Recreational angler trips are limited to fisheries below Bonneville because comparable information was not available for all fisheries upstream of Bonneville Dam until 2017.

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Table 1. 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
PRC rec-WA Status Quo/Issue 2 PRC	70/30	Pre TN/Post TN/GN ⁵	115,469	\$313,257
OR Status Quo/Issue 2 Alt 1	80/20	Post TN ⁴	115,469	\$95,714
Alt 1/Issue 2 PRC	60/40	Pre TN/Post TN/GN ⁵	109,138	\$504,851
Alt 2 - Abundance Based Matrix	NA	NA	NA	NA
Alt 3/Issue 2 PRC	65/35	Pre TN/Post TN/GN ⁵	112,303	\$409,054

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 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.

Modelling results indicate a significant gain in mainstem ex-vessel commercial value as the commercial share increases and gill net gear is allowed. Because of differences among commercial gear types in how impacts can be converted to landed catch, the effects of concurrent allocation and gear changes must be estimated together. Estimated angler trips were 6% higher under an allocation change from 60% to 70%. As discussed in the ODFW draft report “Summary and Analysis of Columbia River Harvest Reform Activities 2009-2017” (section heading “Effect of Harvest Reform Allocation Changes on the Recreational Fishery”), the analysis indicates that gains in angler trips due to allocation increases did not occur in every season and year from 2013-2018, and when gains did occur, they were not linearly related to changes in allocation. Often, factors outside of the Policy (run size changes, fishing conditions, in-season management actions, etc.) had a far greater effect on the season structure than the allocation change. However, in any given year, there is a potential for larger increases in angler trips under larger allocations, if other factors do not prevent access to the increased allocation.

For example, in the 2017 spring Chinook season, poor river conditions during the pre-update recreational fishery led to catches being well below either a pre- or post-Reform guideline, resulting in a management decision to extend the fishery into late April which would have been the same whether the recreational allocation had been 60% or 80% (i.e. no effect from the allocation increase). When the run was significantly downgraded in May, a post-update fishery was not possible due to the cumulative catch exceeding the guideline, even at the higher 80% post-Reform allocation. Therefore, the allocation increase did not change the outcome of the post-update fishery either. In 2019 (not

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included in analysis but referenced for illustrative purposes), the lower Columbia spring Chinook recreational fishery was restricted to the area between Warrior Rock and Bonneville Dam due to expected low returns of Cowlitz and Lewis River spring Chinook, and this, coupled with poor river conditions and low catch rates, resulted in catches being well below either a pre- or post-Reform guideline at the conclusion of the pre-update fishery. Even after a run downgrade in May, the low cumulative catch would have allowed for a post-update fishery; however, very low returns of Upriver spring Chinook to hatchery facilities, and ensuing concerns regarding meeting broodstock needs, led managers to take a cautious approach and not implement a post-update fishery in the lower river. Thus, allocation increases from Harvest Reform did not affect the structure of the 2019 spring Chinook season.

Issue 2: Allowable mainstem commercial gear

Analysis Results:

The management measures that were employed during 2002-2016 used a combination of selective fishing tools; avoidance and live-release. While the post-release mortality rate (per fish) for gill nets is higher than that of tangle nets, gill nets were used to reduce encounters of non-target species such as steelhead and shad. Tangle nets were used less during periods of higher steelhead and shad abundance as encounter rates of these non-target species are higher with the smaller nets, and this can lead to higher total mortalities if encounters are high enough. Tangle nets have a lower post-release mortality (per fish) and were focused during periods of lower steelhead abundance to minimize encounters and total mortality of steelhead. Spring Chinook and steelhead that are caught in tangle nets are caught in the teeth or mouth and tend to tangle in the net and have a lower post-release mortality rate (14.7% for spring Chinook and 18.5% for steelhead). The regulations during the spring live-capture commercial fisheries, include the use of recovery boxes to resuscitate lethargic fish, and reduced drift times.

Table 2 shows the harvest of spring Chinook in tangle nets and gill nets during mark-selective mainstem non-treaty commercial fisheries in 2003 through 2018. The vast majority of mainstem spring Chinook harvest since 2003 has occurred using tangle nets, with an average of 87% during the three years prior to Harvest Reform (2010-2012), and 61% since implementation of Harvest Reform. The lower percentage of tangle net harvest since 2013 is the result of lower commercial allocations of spring Chinook impacts, which reduced opportunities to implement pre-update tangle net fisheries. Overall, tangle nets have been used extensively in mark-selective mainstem commercial spring Chinook fisheries, and have made a significant contribution to the ex-vessel value and economic viability of these fisheries (Table 3).

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Table 2. Harvest of spring Chinook in mainstem non-treaty commercial fisheries, by gear, 2003-2018.			
Year	Tangle Net	Gill Net	% Tangle Net
2003	2,634	541	83%
2004	9,960	3,621	73%
2005	3,667	1,697	68%
2006	0	4,389	0%
2007	2,292	658	78%
2008	5,938	14	100%
2009	4,150	18	100%
2010	8,966	75	99%
2011	2,021	2,518	45%
2012	6,111	7	100%
2013	1,276	937	58%
2014	2,450	1,624	60%
2015	4,350	2,881	60%
2016	2,394	1,219	66%
2017 ¹	0	0	--
2018 ¹	0	0	--
2010-2012 Avg	5,699	867	87%
2013-2018 Avg	1,745	1,110	61%

¹No mainstem non-treaty commercial spring Chinook fishery took place in 2017 and 2018 because Oregon policy permitted a post-update mainstem fishery only if commercially allocated ESA impacts were not fully utilized in SAFE fisheries (no surplus impacts were available in 2017 and 2018), and Washington policy at the time did not allow a mainstem commercial spring Chinook fishery.

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Table 3. Comparison of landings and ex-vessel value to estimated harvest costs for the 2013-2016 spring mainstem commercial tangle net/gillnet fisheries.

Year	Days Fished	Avg # of Vessels ¹	Chinook Landed ²	Total Ex-Vessel Value	Costs			Net Fishery Return	Net Return/Vessel
					Annual	Daily	Total		
2013	4	75	2,213	\$202,405	\$49,692	\$44,700	\$94,392	\$108,013	\$1,450
2014	5	71	4,074	\$322,675	\$47,090	\$52,950	\$100,040	\$222,634	\$3,153
2015	8	67	7,231	\$580,660	\$44,772	\$80,550	\$125,322	\$455,338	\$6,783
2016	6	65	3,613	\$415,641	\$43,355	\$58,500	\$101,855	\$313,786	\$4,827
Avg	6	69	4,283	\$380,345	\$46,227	\$59,175	\$105,402	\$274,943	\$4,054

¹ Average number of vessels fishing during the season. Approximated using average number of deliveries per day.
² Includes adults and jacks.

Issue 3: Allocation of Upriver spring Chinook within recreational fisheries

Analysis Results:

Tables 4A-E portray the modelled change in Upriver spring Chinook mortalities (4A), open retention days (4B), angler trips (4C), kept catch (4D), and allocated ESA impacts (4E) based on various sub-allocation spring Chinook impact allocation scenarios within each of the recreational spring Chinook fisheries (below Bonneville Dam, Bonneville to the OR/WA border, and the Snake River). For simplicity, all results are based on 2018 preseason fishery planning models (below Bonneville and Bonn-OR/WA State line) and 2018 fishery data (Snake River). Allocations described in these tables refer to below Bonneville Dam/Bonneville Dam upstream to the Oregon/Washington State line/Snake River percentages. These results are based on Alternative 4a (70%/12.5%/17.5%) and Alternative 4b (70%/10%/20%).

Table 4A. Pre-season allocation of upriver spring Chinook catch balance (kept + release mortalities) for hypothetical 2018 Columbia River spring Chinook sport fisheries below Bonneville Dam, from Bonneville Dam to the OR-WA state line, and in the Snake River at different sport fishery sub-allocation shares, given an overall allocation of **70% sport** and **30% commercial** for ESA impacts. ¹

Below BON/BON-State Line/Snake Sharing (%)	<BON	BON-S/L	Snake
75/10/15 (status quo)	6,907	921	888
70/12.5/17.5	6,505	1,162	1,045
70/10/20	6,565	938	1,206

¹ Sharing of upriver spring Chinook is based on ESA impacts; catch balance shares are similar, but not exactly the same due to differential impact rates on different stocks by the various sport fisheries. Catch balances are typically the limiting factor for the spring Chinook sport fishery, and were calculated in the 2018 pre-season model based on a pre-update buffered upriver run size of 116,690. The difference in total recreational upriver mortalities between options is due to the transfer of some mortalities to the Wanapum tribal fishery.

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Table 4B. Difference in pre-update fishing days (starting March 1) compared to status quo.			
Below BON/BON-State Line/Snake Sharing (%)	<BON	BON-S/L	Snake
75/10/15 (status quo)	0	0	0
70/12.5/17.5	-1	3	2
70/10/20	-1	0	5

Table 4C. Difference in pre-update angler trips (starting March 1) compared to status quo.			
Below BON/BON-State Line/Snake Sharing (%)	<BON	BON-S/L	Snake
75/10/15 (status quo)	0	0	0
70/12.5/17.5	-5,272	615	196
70/10/20	-5,272	0	490

Table 4D. Difference in pre-update kept catch (starting March 1) compared to status quo.			
Below BON/BON-State Line/Snake Sharing (%)	<BON	BON-S/L	Snake
75/10/15 (status quo)	0	0	0
70/12.5/17.5	-873	242	122
70/10/20	-873	0	305

Table 4E. Difference in pre-update allocated ESA impacts compared to status quo.			
Below BON/BON-State Line/Snake Sharing (%)	<BON	BON-S/L	Snake
75/10/15 (status quo)	0.000%	0.000%	0.000%
70/12.5/17.5	-0.057%	0.028%	0.029%
70/10/20	-0.057%	0.000%	0.057%

Issue 5: Allocation of unused commercial impacts

Analysis Results:

This issue involves allocation of impacts from the commercial fishery that are not used during the season. The current OR and WA policies on this are different. Results will be provided in a separate document.



JOINT-STATE POLICY for COLUMBIA RIVER SALMON FISHERY MANAGEMENT

WASHINGTON and OREGON FISH and WILDLIFE COMMISSIONS

Headers Outline:

Purpose

Authority Definition and Intent

General Policy Statement

Guiding Principles

General Provisions

Fishery Specific Provisions

Spring Chinook Salmon

Summer Chinook Salmon

Sockeye Salmon

Fall Chinook Salmon

Coho Salmon

Steelhead

Chum Salmon

Adaptive Management Provisions

Delegation of Authority

Signatory Page

See below for

- [Annotated headers outline](#)
- [Initial draft language for some sections](#)

Annotated Headers Outline:

Purpose

Short, simple statement, as in WA Policy C-3620

Authority Definition and Intent

Non-Treaty fisheries designation, as in OAR 635-500-6700

Joint State Agreement of Commissions

Intent to supersede 2013-18 policies

General Policy Statement

Process statement as per WA Policy C-3620; Intent to deal with/support 4 H approach

Recognition of uncertainty and need for adaptive approach; Co-manager recognition

Guiding Principles

Listing of principles, such as in OAR 635-500-6705 and WA Policy C-3620

- *Many principles retained such as U.S. vs OR and ESA compliance*
- *Some deletions, such as Gillnet Phase-out and Marine Stewardship Certification*
- *Some possible additions*

General Provisions (*Actions*)

Listing of intended target actions that are general and not fishery or species specific, such as in WA Policy C-3620 and parts of OAR 635-500-6705

(This is the primary area where the four policy areas discussed at the August 29 PRC meeting would be addressed if recommended by the PRC, although they could also be peripherally mentioned in other sections.)

Fishery Specific Provisions

Allocations, gear allowances, objectives, contingencies, etc.

Spring Chinook Salmon

Summer Chinook Salmon

Sockeye Salmon

Fall Chinook Salmon

Coho Salmon

Steelhead

Chum Salmon

Adaptive Management Provisions

As in OAR 653-500-6765 and WA Policy C-3620

Delegation of Authority

As in WA Policy C-3620; reference to Columbia River Compact

Signatory Page

**Draft Policy Language for the Four Topics Assigned
at the
August 29 PRC Meeting**

The following draft language is for consideration by the PRC at the October 1, 2019 meeting. These four topics have been identified as issues to consider as possible alternatives from status quo policy positions currently in place. The PRC will need to decide if these issues should continue for consideration in a final recommendation, and if so, consider what the policy language would be in moving forward.

General Provisions

The Departments will implement the following actions to promote the achievement of the purposes of this policy.

1. Development and Implementation of Alternative Commercial Fishing Gear.

The Commissions are committed to the goal that commercial fishing gear being used on the Columbia River optimize conservation and economic benefits. Departments shall pursue the development and, as appropriate, implementation of commercial fishing gear alternatives to the gears currently authorized in non-treaty commercial fisheries. This should be done in a manner that seeks to improve on the catches of target species and stocks in comparison to the mortality of non-target species and stocks, in an economically efficient manner across the commercial fishery infrastructure segments. The development and implementation process shall include the following actions.

- a. The Departments shall a report on results of evaluations of current and tested commercial gear types including catches, mortality, and economic measures, and a report that contains an area-by-area cataloguing of the areas below Bonneville Dam showing which commercial gear type would provide the highest degree of selectivity in each area. This report shall be a joint-staff effort and provided to both Commissions within one year of adoption of this Policy.
- b. The Departments will dedicate personnel to work closely with representatives of the commercial and recreational fishing industries to develop a range of recommendations on the development and implementation of commercial fishing gear that will increase the selectivity potential of commercial fisheries compared to current capabilities. Important objectives of this effort include gaining broad support from the commercial fishing industry, encouraging creative innovation from the commercial fishing industry, and complimenting the economic potential and stability of the commercial fishery while minimizing impacts to mainstem and tributary recreational fisheries. The Departments shall

pursue direct economic and other incentives for participants that become involved in alternative gear fisheries.

- c. The Departments shall request funding and work with partners to experiment with alternative gear, conduct any necessary studies (in such areas as release mortality, stock compositions, and economic viability), and otherwise facilitate the development of options for alternative gear use. Assessment of alternative gear types in comparison to current gear should include at least catch rates, release mortality rates and overall mortality effects on relevant stocks, economic value, and effect on the commercial fishery infrastructure as a whole; it should also be informed by perspectives from commercial and recreational fisheries.

The Departments shall provide reports to their respective Commissions annually detailing progress on the above policy actions. Both Commissions will need to authorize any successful alternative commercial fishing gears in a manner that achieves concurrent regulations.

2. Hatchery and Natural Production Goals.

An increase in salmon and steelhead run sizes in the Columbia River basin would enhance opportunity and economic benefits to recreational and commercial fisheries and move towards perpetuating salmon and steelhead in a magnitude more consistent with historic abundance.

- a. The Departments shall continue to lead in efforts to increase naturally produced salmon and steelhead from increased survival from the effects of the Columbia River hydro-power system and improvements in the quality and quantity of salmon and steelhead habitat.
- b. The Departments and Commissions recognize the importance of hatchery production in meeting Columbia Basin mitigation requirements, supporting tribal and non-tribal fisheries, supporting conservation and recovery efforts, and providing forage for dependent marine organisms. Hatchery production must be conducted in a manner consistent with the sustainability of healthy wild populations and recovery of ESA-listed wild populations. When and where increases are appropriate, the Departments shall seek increased levels of hatchery production in support of these needs. This may include increases in and stability of hatchery produced salmon and steelhead in the Columbia River basin in comparison to 2019 levels. Increases may be associated with situations where full mitigation of losses from anthropogenic uses has yet to occur, initiatives to provide additional prey to Southern Resident Killer Whales, and maintenance or enhancement of Select Area fisheries. Enhanced hatchery production of salmon and steelhead shall be done in areas and with strategies that avoid or strongly minimize negative genetic and ecological effects on wild populations.

- c. In establishing hatchery and natural population goals, the Departments shall consider the policy guidance described above, goals described in the NMFS sponsored Columbia Basin Partnership Task Force report, goals adopted by the Northwest Power and Conservation Council, and additional information, initiatives, and recommendations that evolve over the course of this Policy.
3. Commercial Fishery License Buyback Program.

The Commissions recognize that any effective program to buyback commercial fishery licenses would need to be implemented by both Oregon and Washington, that statutory changes may be required in one or both States, and that there are many difficulties in designing a concurrent and equitable program. A policy level joint-State body **could (is to)** be convened to develop a report on the necessities of an effective program that **could (is to)** be submitted to each Commission for their consideration and possible transmission to statutory authorities.
4. Limiting the Number of Recreational Guide Licenses in Jointly Managed Waters of the Columbia River.

The Commissions have heard public concerns that the lack of a limit on the number of recreational guide licenses may have negative effects on the non-guided sector of the recreational fishery. Further, it is recognized that any effective program to limit the number of recreational guide licenses on jointly managed waters of the Columbia River would need to consider the regulatory frameworks of both Oregon and Washington, that statutory changes may be required in one or both States, and that there are many difficulties in designing a concurrent and equitable program. A policy level joint-State body could (is to) be convened to develop a report assessing the effects of limiting guide licenses and, if warranted, evaluate the necessities of an effective concurrent program that could be (is) submitted to each Commission for their consideration and possible transmission to statutory authorities.