

## Appendix A

### Defining Management Objectives for Recreational Fisheries Downstream from Bonneville Dam

*Analysis of Management Guidelines and Available Recreational Fishing Days Under the Current Management Policy and the Alternative Management Framework Being Considered by the Columbia River Fishery Management Workgroup.*

### Spring Chinook

In 2008, the Fish and Wildlife Commissions in Oregon and Washington adopted the current fisheries management policy for Columbia River spring Chinook in the area downstream from Bonneville Dam. This policy defines the objective for recreational spring Chinook fisheries downstream of Bonneville Dam as:

- Before the run-size update: A high likelihood that the fishery will remain open for at least 45 days in March and April.
- After the run-size update: If impacts remain, harvest opportunity through May.

This objective was based on a “base-case” sharing formula for upriver spring Chinook ESA-impacts. Under the base case, recreational fisheries downstream from Priest Rapids and Lower Granite dams are collectively allocated 63% of the available impact. This percentage reflects the differences between Oregon and Washington in the recreational fisheries’ share. Washington allocated 65% to recreational fisheries under the base case, while Oregon allocated 60%. In addition, the recreational fisheries’ share is further divided between fisheries downstream and upstream from Bonneville Dam. Currently, the fishery downstream from Bonneville Dam is allocated 75% of the ESA-impact available for recreational fishing.

Spring Chinook fisheries are not only managed based on the ESA-impact for upriver stocks, but also for “catch-balancing” under the 2008-2017 *US v. Oregon* Management Agreement. The management guideline is defined under the Agreement based on the ESA-impact allowed for tribal fisheries after the forecasted run size is reduced by a 30% conservation buffer. Under the base case, the management guideline defined under the catch-balance provisions of the Agreement is less than what it would be under the policies adopted by Oregon’s and Washington’s Fish and Wildlife Commissions.

The management guideline and corresponding number of fishing days for the recreational fishery downstream from Bonneville Dam was modeled for a base-case run size of 225,000 upriver spring Chinook and 65,000 Willamette spring Chinook. Under the current policy, the base case is defined as a forecasted run-size for upriver spring Chinook ranging from 55,000 to 271,000 and for Willamette spring Chinook greater than 50,000. The management guideline and number of fishing days were modeled under the current management policy and under the alternative management framework being considered by the Columbia River Fishery Management Workgroup. Under the alternative management framework, the percentage of the available ESA-impact for upriver spring Chinook allocated to recreational fisheries downstream from Priest Rapids and Lower Granite dams would increase to 70% during the transition period

(2013-2016) and 80% in the long term (2017 and beyond). Results of the modeling are summarized in Table A.1.

Table A.1. Comparisons of key characteristics of the spring Chinook recreational fishery downstream from Bonneville Dam, under the current management policy and under the alternative management framework being considered by the Columbia River Fishery Management Workgroup. Analyses assume forecasted run sizes of 225,000 for upriver spring Chinook and 65,000 for Willamette spring Chinook, a mark rate of 75%, and that the run-size forecast would be updated on May 10.

Management period	Time frame	Management guideline before May 10 (number landed + release mortality)	Catch of upriver spring Chinook before May 10 (number landed + release mortality)	Number of consecutive fishing days (beginning March 1)
Before the run-size update	Current	9,324	9,447	42
	Transition	10,387	10,600	44
	Long term	11,170	11,189	45
		Management guideline after May 10 (number landed + release mortality)	Estimated catch of upriver spring Chinook after May 10 (number landed + release mortality)	Number of consecutive fishing days (beginning May 10)
After the run-size update (May 10)	Current	3,950	3,450	37
	Transition	4,492	3,450	37
	Long term	6,219	3,450	37

### Before the run-size update

The management guideline and number of fishing days for the recreational fishery downstream from Bonneville Dam under the policy proposed for the transition period is two more than under the current policy. The impact shares assigned to the recreational fishery downstream from Bonneville Dam translate into a 65% share of the overall management guideline for upriver spring Chinook under the current policy and a 72% share during the transition period.

The differences between the management guideline and number of fishing days for the recreational fishery downstream from Bonneville Dam under the current policy and the policy proposed for the long term are greater than during the transition period. The share of the overall management guideline for upriver spring Chinook in the long term would be 78% (vs. 65% under the current policy). Under the base case, this additional share translates to 3 more days of fishing.

## After the run-size update

Although the management guideline for the recreational fishery downstream from Bonneville Dam is substantially different under the current policy and the policies proposed for the transition period and the long-term, the number of fishing days is the same. This is because, under the base case, the recreational fishery would be open from the date the run-size is updated (May 10) through the remainder of the season (June 15). Under this scenario, the recreational fishery downstream from Bonneville Dam would use 87% of its management guideline under the current policy, 77% during the transition period, and 55% in the long term. However, the fishery may have the capacity to increase catch rates in the May-June period in a given year if river conditions are good for fishing and/or effort increases. If catch rates improve, there would be expected differences in the number of fishing days between current, transition, and long-term periods.

## Summary

Given the fixed impact sharing approach in the alternative management framework for the transition period and the long term, the current objective for the recreational fishery downstream from Bonneville Dam in March and April (a high likelihood that the fishery will remain open for at least 45 days) may not be relevant because the number of days of fishing is driven by the run-size forecast and its buffer, catch rate and mark rate.

## **Summer Chinook**

In 2008, the Fish and Wildlife Commissions in Oregon and Washington adopted the current fisheries management policy for Columbia River summer Chinook as follows:

- Manage the upper Columbia summer Chinook populations for natural and hatchery aggregate escapement goals.
- Allocate non-Treaty harvest of summer Chinook downstream from Priest Rapids Dam equally (50% each) between recreational and commercial fisheries.
- Structure fisheries consistent with the fishery framework in the 2008-2017 *U.S. v. Oregon* Management Agreement.
- Structure fisheries consistent with the management agreement between the Washington Department of Fish and Wildlife and the Colville Tribe for salmonids originating above Priest Rapids Dam.

Currently, recreational fishers downstream from Priest Rapids Dam can only retain adipose fin-clipped summer Chinook.

The management guideline and corresponding number of fishing days for the recreational fishery downstream from Bonneville Dam was modeled for a run size of 75,000 summer Chinook. As with spring Chinook, the management guideline and number of fishing days were modeled under the current management policy and under the alternative management framework being considered by the Columbia River Fishery Management Workgroup. Under the alternative management framework, the percentage of harvestable surplus of summer Chinook allocated to recreational fisheries downstream from Priest Rapids Dam would increase to 70% during the transition period

(2013-2016) and 80% in the long term (2017 and beyond). Results of the modeling are summarized in Table A.2.

Table A.2. Comparisons of key characteristics of the upper-Columbia summer Chinook recreational fishery downstream from Bonneville Dam, under the current management policy and under the alternative management framework being considered by the Columbia River Fishery Management Workgroup. Analyses assume a forecasted run size of 75,000 summer Chinook, a mark rate of 66%, an allocation of 600 summer Chinook to recreational fisheries in the Columbia River between Bonneville and Priest Rapids dams, and no contribution from the Colville Tribes.

Time frame	Management guideline (number landed + release mortality)	Catch of upper-Columbia summer Chinook (number landed + release mortality)	Number of consecutive fishing days (beginning June 16)
Current	2,231	2,239	13
Transition	3,363	3,385	26
Long term	3,929	3,935	40

### Summary

In the analysis described above, increasing the recreational fisheries share of the harvestable surplus would double the number of fishing days during the transition period and triple it in the long term. Additional harvest opportunity may be provided in future years if, as in past years, the Colville Tribe allocates some of its share of the harvestable surplus for use in non-Treaty fisheries downstream from Priest Rapids Dam and when the Colville Tribal Hatchery comes fully on-line and its production returns as adults to the Columbia River. As with spring Chinook, it may not be necessary to define a management objective for the recreational fishery downstream from Bonneville Dam because under the fixed harvest sharing approach in the alternative management framework the number of recreational fishing days in the transition period and the long term is driven by the run-size forecast, catch rate and mark rate.

### **Fall Chinook**

The current fisheries management policy for managing fall Chinook (and coho) is:

- Optimize the non-treaty harvest of Chinook and coho and provide recreational and commercial fisheries a balanced opportunity.
- Consider fair and reasonable catch opportunity, stability and duration of fisheries, as well as sharing of the conservation responsibility when developing recreational and commercial fishing options.

Correspondingly, the current management approach is to:

- Calculate the allowable in-river ESA-impact for each ESA-listed stock encountered by the fisheries.
- Work with fisheries stakeholders and the public in the “North of Falcon” process to develop an annual “Non-Indian Columbia River Fall Fishery Chinook Allocation Agreement” that describes expected season structures for each fishery.

- Calculate catch expectations for each fishery and the shares of allowable impacts necessary to meet those expectations, based on the proposed season structures.

Two management scenarios were used to model the management guideline and corresponding number of fishing days for the recreational fishery downstream from Bonneville Dam. In one scenario, the ESA-impact level was 7.28% for lower river hatchery (LRH) tule fall Chinook (38% including ocean fisheries) and 11% for Snake River wild (Bright) fall Chinook. The run sizes for all Chinook stocks encountered by fisheries under this scenario were actual numbers observed in 2006. In the other scenario, the ESA-impact level was 7.8% for lower river hatchery tule fall Chinook (41% including ocean fisheries) and 15% for Snake River wild (Bright) fall Chinook. The run sizes for all Chinook stocks encountered by fisheries under this scenario were actual numbers observed in 2011. As with spring and summer Chinook, the management guideline and number of fishing days were modeled under the current management policy and under the alternative management framework being considered by the Columbia River Fishery Management Workgroup. Under the alternative management framework, the percentage of the ESA-impact for tule fall Chinook allocated to recreational fisheries downstream from Bonneville Dam would increase up to 70% during the transition period (2013-2016) and up to 80% in the long term (2017 and beyond). The model displays the recreational opportunity based on the above allocations, but actual allocation would be driven by weighing the recreational fishery season objectives with conservation objectives and upriver bright harvest objectives. The percentage of ESA-impacts for Bright fall Chinook allocated to recreational fisheries downstream from Bonneville Dam would vary depending on the number of days the recreational fishery was open before reaching its tule fall Chinook impact limit. Results of the modeling are summarized in Table A.3.

### Summary

*Buoy 10:* In the analysis below, the recreational fishing season was defined to last through Labor Day (34 days; assuming Labor Day is September 3). However, in the long term when in-river LRH impacts equaled 7.8%, the modeled fishery lasted into the first week of October (65 days).

*Warrior Rock to Bonneville Dam:* Although the fishery is open through December 31, very little, if any fishing for Chinook occurs after October. Therefore in the analysis below, the recreational fishing season was assumed to be essentially complete by the end of October (92 days).

*Between Tongue Point and Warrior Rock:* In the analysis below, the recreational fishing season was defined based on the remaining LRH impacts available to recreational fisheries. As such the number of recreational fishing days in this area increased by 20% during the transition period (45 days) and 100% in the long term (75 days) under the lower LRH impact scenario and by 45% during the transition period (61 days) and 120% in the long term (92 days) under the higher LRH impact scenario.

Season objectives for the fall Chinook recreational fisheries are needed to ensure an appropriate balance between mainstem recreational fishing and mainstem commercial fishing using selective gear. There are two objectives for the mainstem commercial fisheries. One objective is to target Washington Lower River Hatchery tule Chinook to help reduce strays, consistent with the Washington Commission Hatchery and Fishery

Reform Policy. This objective is on par with objectives for mainstem recreational fisheries. Another objective is to harvest Upriver Bright fall Chinook in the area upstream of the Lewis River where the incidental take of lower river tule fall Chinook is reduced and in the area downstream from the Lewis River as alternative selective gear is developed. This objective would be pursued only when recreational fisheries objectives are expected to be met.

The analysis in Table A.3 sets up a discussion of how many recreational fishing days are “reasonable” in each of the fisheries (Buoy 10, Tongue Point-to-Warrior Rock, and Warrior Rock to Bonneville Dam), given the need to allocate some level of LRH impact to the mainstem commercial fishery targeting Washington Lower River Hatchery tule Chinook. Reductions in the recreational fisheries’ share of LRH impacts (shown in column 4 of Table A.3) would consequently reduce the number of fishing days in one or more of the recreational fisheries shown in columns 6-8 of Table A.3, as well as the share of Snake River wild (Bright) impacts needed by those fisheries. .

Table A.3. Comparisons of key characteristics of the fall Chinook recreational fishery downstream from Bonneville Dam, under the current management policy and under the alternative management framework being considered by the Columbia River Fishery Management Workgroup. The “current” scenario set the recreational fishery’s share of the in-river ESA impact for lower river hatchery tule equal to 57% (recent three-year pre-season average). Analyses assumed the same stock-specific harvest rates as in 2012 pre-season model, that the in-river share of available LRH impacts was 19% (recent three-year pre-season average) and that the Snake River recreational fishery used 0.5% of the Snake River wild (Bright) ESA-impact.

In-river ESA Impact Level	Time frame	Fall Chinook Stock	Management guideline (In-river ESA-Impact Level/Share)	Catch	Number of consecutive fishing days (beginning August 1 and ending no later than October 31, when fishing for fall Chinook essentially ends)		
					Buoy 10	Tongue Point to Warrior Rock	Warrior Rock to Bonneville Dam
Lower river hatchery tule fall Chinook = 7.2%  Snake River wild (Bright) fall Chinook = 11%	Current	Tule	4.12% (59%)	4,700	34	37	92
		Bright	4.42% (42%)	20,000			
	Transition	Tule	5.04% (70%)	5,600	34	45	92
		Bright	5.83% (56%)	25,200			
	Long term	Tule	5.78% (80%)	6,300	34	75	92
		Bright	6.97% (68%)	29,400			
Lower river hatchery tule fall Chinook = 7.8%  Snake River wild (Bright) fall Chinook = 15%	Current	Tule	4.44% (57%)	10,400	34	42	92
		Bright	5.15% (40%)	31,000			
	Transition	Tule	5.43% (70%)	12,300	34	61	92
		Bright	6.72% (55%)	38,300			
	Long term	Tule	6.03% (77%)	13,500	65	92	92
		Bright	7.63% (65%)	42,600			