

**Additional Information for the Washington Fish and Wildlife Commission on
Columbia River Basin Salmon Management Policy (C-3620)
October 26, 2018**

This document provides additional information requested by the commission at the October 15, 2018 commission meeting. The information presented here will be included in the final version of the Comprehensive Evaluation of the “Columbia River Basin Salmon Management Policy C-3620, 2013-2017”, and presented at the November 3, 2018 commission meeting. The document includes:

1. Total fishery harvest
2. Bycatch/non-target release information
3. Updated price per pound table
4. Update on on-going implementation plans

The commission also requested that staff summarize the ideas and suggestions for the Policy that were received from the public and the commission. That list will be sent separately and also discussed on November 3, 2018.

Total Harvest

In this analysis, staff present salmon and steelhead harvest (retained catch) for the non-treaty recreational and commercial fisheries within the Columbia River basin from the mouth (Buoy 10) upstream to Chief Joseph Dam on the mainstem and includes the tributaries within Washington, Oregon, and Idaho. The commercial fishery, including Select Area fisheries and mainstem alternative, tangle net, and gillnet fisheries operate below Bonneville Dam and must release all steelhead. Recreational fishery estimates are primarily obtained from creel estimates, but also include catch record card/harvest card estimates. Commercial fishery estimates are primarily obtained from landing estimates. 2017 recreational harvest numbers are considered preliminary at this time due to estimates not being completed for all fisheries at this time (e.g. winter steelhead and Washington’s catch record card data).

Recreational Fisheries

Recreational fisheries harvested an average of 363,067 Chinook, coho and steelhead (range 228,703 to 475,025) during the Policy and averaged 411,274 prior to the policy (Table A). Spring Chinook harvested by recreational fisheries within the Columbia basin accounted for 78% during the policy (range 69% to 88%) and 80% prior to the policy (Table C); differences in percentages are not attributable only to the Policy, they are also a result of annual variations in abundance of salmon returns particularly to the SAFE areas. Summer Chinook harvested by recreational fisheries within the Columbia basin accounted for 78% during the Policy (range 65% to 99%) and 76% prior to the Policy. Fall Chinook harvested by recreational fisheries within the Columbia basin accounted for 58% during the policy (range 48% to 73%) and 53% prior to the policy. Coho harvested by commercial fisheries within the Columbia basin accounted for 47% during the policy (range 37% to 61%) and 40% prior to the Policy.

Commercial Fisheries

Commercial fisheries landed an average of 184,238 Chinook and coho (range 87,930 to 376,467) during the policy and averaged 140,841 prior to the Policy (Table B). Spring Chinook harvested by commercial fisheries within the Columbia basin accounted for 22% during the Policy (range 12% to 24%) and 20% prior to the Policy (Table C). Summer Chinook harvested by commercial fisheries within the Columbia basin accounted for 24% during the Policy (range 1% to 35%) and 24% prior to the policy. Fall Chinook harvested by commercial fisheries within the Columbia basin accounted for 42% during the Policy (range 27% to 52%) and 47% prior to the Policy. Coho harvested by commercial fisheries within the Columbia basin accounted for 53% during the Policy (range 39% to 63%) and 60% prior to the Policy.

Table A. Harvest of Chinook, coho and steelhead by Sport and Commercial fisheries in the Columbia River basin.¹

Year	Sport Total				Commercial Total			
	Mainstem	Tributaries	Total	Percent	Mainstem	Select Areas	Total	Percent
2010	113,558	360,085	473,643	74%	63,786	104,317	168,103	26%
2011	113,354	291,509	404,863	72%	74,450	83,543	157,993	28%
2012	112,420	242,897	355,317	79%	47,296	49,131	96,427	21%
2013	137,031	194,194	331,225	66%	98,753	74,509	173,262	34%
2014	203,371	271,654	475,025	56%	179,110	197,257	376,367	44%
2015	207,011	255,249	462,260	74%	99,892	59,155	159,047	26%
2016	109,145	208,978	318,123	72%	66,927	57,650	124,577	28%
2017	112,599	116,104	228,703	72%	20,329	67,609	87,938	28%
Average 2010-2012	113,111	298,164	411,274	75%	61,844	78,997	140,841	25%
Average 2013-2017	153,831	209,236	363,067	68%	93,002	91,236	184,238	32%

¹ Non-treaty harvest for mainstem, tributaries, and select areas from Buoy 10 to Chief Joseph Dam, including WA, OR, and ID tributaries.

² Commercial fishery must release all steelhead. 2017 winter sport steelhead catch incomplete.

Table B. Harvest of Chinook and coho by Sport and Commercial fisheries in the Columbia River basin.¹

Year	Sport Total				Commercial Total			
	Mainstem	Tributaries	Total	Percent	Mainstem	Select Areas	Total	Percent
2010	91,684	114,364	206,048	55%	63,786	104,317	168,103	45%
2011	91,961	111,717	203,678	56%	74,450	83,543	157,993	44%
2012	92,702	80,164	172,866	64%	47,296	49,131	96,427	36%
2013	125,658	79,226	204,884	54%	98,753	74,509	173,262	46%
2014	186,983	129,770	316,753	46%	179,110	197,257	376,367	54%
2015	195,174	99,965	295,139	65%	99,892	59,155	159,047	35%
2016	100,924	74,354	175,278	58%	66,927	57,650	124,577	42%
2017	111,444	58,827	170,271	66%	20,329	67,609	87,938	34%
Average 2010-2012	92,116	102,082	194,197	59%	61,844	78,997	140,841	41%
Average 2013-2017	144,037	88,428	232,465	58%	93,002	91,236	184,238	42%

¹ Non-treaty harvest for mainstem, tributaries, and select areas from Buoy 10 to Chief Joseph Dam, including WA, OR, and ID tributaries.

Table C. Percent of total harvest by species for Sport and Commercial fisheries in the Columbia River basin.¹

Year	Spring Chinook		Summer Chinook		Fall Chinook		Coho	
	Sport	Commercial	Sport	Commercial	Sport	Commercial	Sport	Commercial
2010	75%	25%	70%	30%	52%	48%	34%	66%
2011	84%	16%	71%	29%	51%	49%	37%	63%
2012	80%	20%	86%	14%	57%	43%	50%	50%
2013	76%	24%	77%	23%	56%	44%	38%	62%
2014	88%	12%	65%	35%	48%	52%	37%	63%
2015	80%	20%	74%	26%	60%	40%	61%	39%
2016	79%	21%	73%	27%	54%	46%	47%	53%
2017	69%	31%	99%	1%	73%	27%	50%	50%
Average 2010-2012	80%	20%	76%	24%	53%	47%	40%	60%
Average 2013-2017	78%	22%	78%	22%	58%	42%	47%	53%

² Commercial fishery must release all steelhead. 2017 winter sport steelhead catch incomplete.

Bycatch

NOAA Fisheries definition:

“Fishermen sometimes catch and discard animals they do not want, cannot sell, or are not allowed to keep, creating what we know as bycatch.” NOAA Fisheries does not consider fish released in a recreational catch and release fishery as bycatch.

In this analysis, staff present information from several commercial (including test fisheries and recreational fisheries in the lower Columbia River); providing the percentages of fish that are released of the total fish handled. The release percentages are fish that are not allowed to be kept, or are voluntarily released in retention fisheries.

This analysis is not completely comparable between recreational and commercial fisheries. The release percentages from recreational fisheries do not include released non-salmonid/sturgeon species such as shad, Northern Pikeminnow or suckers. The focus of the fishery sampling program is primarily to estimate salmonid handle, and information on handle of non-salmonids is not a part of the interview process. Commercial fishery information does not usually include that information either, but research test fisheries do. Shad are often caught in both types of gear and are allowed to be kept in both fisheries but are often released.

This analysis was meant to show that in the recreational and commercial fisheries in the Columbia River, fish are released that are either not allowed or not desired to be retained.

Commercial Fisheries

Release percentages are shown for three types of fisheries (large-mesh gillnet, spring tangle net, and spring research) in Table D. The average percent released in the large-mesh gill net fisheries was 22% (range 11% to 50%). The average percent released in spring Chinook tangle net fisheries was 31% (range 18% to 47%). For spring research tangle net fisheries, the non-target handle percentage was 73% (range 50% to 95%) but these fisheries use the smaller tangle net to determine the abundance of various stocks in the river, which is used to inform in-season management decisions. If the abundance of non-target stocks is unfavorable, the fishery may not occur at that time, or a larger-mesh net may be required to reduce non-target handle. The spring research gill net fishery percentage of non-target fish was 36%. The research fisheries are shown here because they were referenced in public testimony, and should be viewed as research and not meant to portray actual fishery performance. Detailed information for these fisheries are shown in Tables E-G.

Table D. Summary of percentage of non-target fish (bycatch) released in mainstem Columbia River commercial and research fisheries.

Year	Fishery Type	% Released	Year	Fishery Type	% Released	Year	Fishery Type	% Non-Target Fish Handle ¹
1986	Gill Net Fishery	25%	2004	Tangle Net Fishery	47%	2001	Tangle Net Research	95%
2009	Gill Net Fishery	16%	2005	Tangle Net Fishery	35%	2001	Gill Net Research	36%
2010	Gill Net Fishery	50%	2007	Tangle Net Fishery	30%	2003	Tangle Net Research	50%
2011	Gill Net Fishery	11%	2008	Tangle Net Fishery	22%			
2012	Gill Net Fishery	15%	2009	Tangle Net Fishery	18%			
2017	Gill Net Fishery	14%	2010	Tangle Net Fishery	21%			
			2011	Tangle Net Fishery	30%			
			2012	Tangle Net Fishery	31%			
			2013	Tangle Net Fishery	28%			
			2014	Tangle Net Fishery	38%			
			2015	Tangle Net Fishery	35%			
			2016	Tangle Net Fishery	32%			
Average		22%	Average		31%	Average Tangle Net		73%
						Average Gill Net		36%

¹ % Non-Target fish handle is used in this instance because these were research fisheries and it is unknown what species would have been retained (i.e. sturgeon and shad)

Table E. Columbia River mainstem commercial fishery monitoring results.

Year	Season	Gear	Type	Observed/Expanded	Salmon/Sturgeon Kept	Steelhead Released	Sturgeon Released	Sockeye Released	Total Kept	Total Released	% Released
1986	Winter	Gill Net	Fishery	Expanded	9,000	2,956	NA	NA	9,000	2,956	25%
2009	Fall	Gill Net	Fishery	Observed	2,417	83	388	0	2,417	471	16%
2010	Summer	Gill Net	Fishery	Observed	203	11	170	20	203	201	50%
2011	Fall	Gill Net	Fishery	Observed	398	19	28	NA	398	47	11%
2012	Fall	Gill Net	Fishery	Expanded	40,800	2,095	5,336	NA	40,800	7,431	15%
2017	Fall	Gill Net	Fishery	Expanded	21,053	650	2,735	NA	21,053	3,385	14%

Table F. Monitoring results from Columbia River spring Chinook tangle net fisheries.

Year	Season	Gear	Type	Observed/ Expanded	Salmon Handle	Steelhead Handle	Sturgeon Handle	Target Fish Handle	Non-Target Fish Handle	% Released
2004	Spring	Tangle Net	Fishery	Observed	690	144	NA	440	394	47%
2005	Spring	Tangle Net	Fishery	Observed	337	51	NA	254	134	35%
2007	Spring	Tangle Net	Fishery	Observed	141	21	NA	114	48	30%
2008	Spring	Tangle Net	Fishery	Observed	673	5	NA	527	151	22%
2009	Spring	Tangle Net	Fishery	Observed	536	4	NA	444	96	18%
2010	Spring	Tangle Net	Fishery	Observed	701	43	NA	591	153	21%
2011	Spring	Tangle Net	Fishery	Observed	282	31	NA	218	95	30%
2012	Spring	Tangle Net	Fishery	Observed	538	106	NA	446	198	31%
2013	Spring	Tangle Net	Fishery	Observed	154	22	NA	127	49	28%
2014	Spring	Tangle Net	Fishery	Observed	168	49	NA	134	83	38%
2015	Spring	Tangle Net	Fishery	Observed	171	43	NA	140	74	35%
2016	Spring	Tangle Net	Fishery	Observed	291	51	NA	231	111	32%

Target Fish = Clipped spring Chinook

Non-Target Fish = Unclipped spring Chinook and Steelhead

Table G. Monitoring results from Columbia River spring Chinook research fisheries.

Year	Season	Gear	Type	Observed/ Expanded	Salmon Handle	Steelhead Handle	Sturgeon Handle	Other Handle ¹	Target Fish Handle	Non-Target Fish Handle	% Non-Target Fish Handle
2001	Spring	Tangle Net	Research	Observed	536	20	1,608	7,822	536	9,450	95%
2001	Spring	Gill Net	Research	Observed	836	2	441	22	836	465	36%
2003	Spring	Tangle Net	Research	Observed	1,173	NA	721	470	1,173	1,191	50%

Target Fish = Clipped spring Chinook

Non-Target Fish = Unclipped spring Chinook, steelhead, shad, Northern Pikeminnow, etc.

¹ 2001 tangle net other fish = 7,022 shad, 311 Northern Pikeminnow 438 suckers, and 51 other species

2001 gill net = 10 shad, 2 Northern Pikeminnow, 1 sucker, and 9 other species

2003 tangle net = 221 shad, 48 Northern Pikeminnow, 180 suckers, and 21 other species

Recreational Fisheries

Table H shows the percent of fish released in several recreational fisheries in the mainstem Columbia River downstream of Bonneville Dam. The average percent released in the recreational fisheries was:

- Spring Chinook fisheries averaged 21% (range 9% to 30%)
- Summer Chinook fisheries averaged 42% (range 20% to 58%)
- Fall Chinook fisheries averaged 21% (range 9% to 32%)
- Coho fisheries averaged 41% (range 27% to 54%)
- Sockeye fisheries averaged 31% (range 15% to 82%)
- Summer steelhead averaged 42% (range 29% to 54%)
- White sturgeon fisheries averaged 89% (range 88% to 90%). This average and range do not include the three years where sturgeon retention was not allowed (2014-2016).

The numbers of salmon, steelhead, and sturgeon kept and released in mainstem Columbia River recreational fisheries downstream of Bonneville Dam is shown in Table I.

Table H. Percent of salmon, steelhead, and sturgeon released in mainstem Columbia River recreational fisheries downstream of Bonneville Dam.

Year	Spring Chinook	Summer Chinook	Fall Chinook	Coho	Sockeye	Summer Steelhead	White Sturgeon
2010	15%	34%	9%	27%	82%	39%	88%
2011	21%	35%	15%	53%	21%	39%	89%
2012	21%	47%	24%	54%	22%	42%	90%
2013	28%	45%	32%	44%	25%	50%	89%
2014	30%	58%	30%	40%	30%	44%	100%
2015	21%	20%	27%	39%	34%	38%	100%
2016	23%	58%	19%	34%	15%	29%	100%
2017	9%	39%	14%	39%	22%	54%	89%
Average ¹	21%	42%	21%	41%	31%	42%	89%

Note: Retention of sturgeon was prohibited in 2014-2016; white sturgeon values include the lower Willamette River. Salmon are adults only.

¹ Average for white sturgeon does not include 2014-2016.

Table I. Numbers of salmon, steelhead, and sturgeon kept and released in mainstem Columbia River recreational fisheries downstream of Bonneville Dam.

Year	Spring Chinook		Summer Chinook		Fall Chinook		Coho		Sockeye		Summer Steelhead		White Sturgeon	
	Kept	Released	Kept	Released	Kept	Released	Kept	Released	Kept	Released	Kept	Released	Kept	Released
2010	29,247	5,355	2,539	1,328	24,133	2,426	9,564	3,599	218	1,008	18,324	11,567	14,851	109,949
2011	11,694	3,154	5,160	2,771	39,088	6,984	9,281	10,566	1,427	388	24,973	16,072	11,715	95,808
2012	13,332	3,476	2,897	2,558	40,988	12,750	8,269	9,714	3,948	1,092	19,972	14,648	7,860	69,999
2013	6,950	2,666	1,832	1,508	54,473	26,016	8,571	6,840	502	163	12,749	12,645	7,911	63,925
2014	15,728	6,776	1,980	2,703	53,124	23,192	63,505	42,639	938	397	15,445	12,151	0	23,191
2015	19,586	5,052	5,928	1,491	77,060	28,224	37,937	23,759	958	492	9,495	5,865	0	32,262
2016	12,666	3,776	3,080	4,170	42,913	9,912	10,499	5,382	744	132	8,173	3,409	0	45,757
2017	9,047	943	3,516	2,248	54,536	9,045	21,948	14,286	264	73	1,679	1,988	3,665	31,138

Note: White sturgeon values include the lower Willamette River. Salmon are adults only.

Price Per Pound in Columbia River Commercial Fisheries

Table J shows the price per pound paid during 2010-2017 mainstem and Select Area commercial fisheries.

Table J. Price per pound in Columbia River Commercial Fisheries.

Fishery	Stock	Price Per Pound									
		2010	2011	2012	2013	2014	2015	2016	2017	2010-2012 Average	2013-2017 Average
Mainstem Gillnet	Spring Chinook	\$6.18	\$6.06	\$6.89	\$7.30	\$6.99	\$6.52	\$8.72	--	\$6.37	\$7.38
Mainstem Gillnet	Summer Chinook	\$3.29	\$3.05	\$4.56	\$4.57	\$3.52	\$3.41	\$5.35	--	\$3.63	\$4.21
Mainstem Gillnet (Zone 4-5) ¹	Fall Chinook	\$1.66	\$1.85	\$1.88	\$2.27	\$1.67	\$2.17	\$2.89	\$2.73	\$1.80	\$2.35
Mainstem Gillnet	Coho	\$1.47	\$1.59	\$1.73	\$1.83	\$1.28	\$1.73	--	--	\$1.60	\$1.61
Select Area Gillnet	Spring Chinook	\$4.87	\$5.47	\$5.58	\$6.62	\$5.39	\$6.04	\$7.17	\$7.48	\$5.31	\$6.54
Select Area Gillnet ¹	Fall Chinook	\$1.28	\$1.79	\$1.50	\$2.38	\$1.59	\$1.79	\$2.31	\$2.52	\$2.32	\$2.13
Select Area Gillnet	Coho	\$1.36	\$1.65	\$1.60	\$1.84	\$1.13	\$1.53	\$1.85	\$2.04	\$1.54	\$1.68
Mainstem Tangle-net	Coho	--	\$1.66	\$1.77	\$1.87	\$1.20	\$1.65	--	--	\$1.72	\$1.57

¹ Combined for tules and brights

Update on On-going Implementation Plans

Buyback of commercial gillnet licenses

The Department has begun a new process on buyback and have created a new stakeholder working group which includes representatives from Grays Harbor, Willapa Bay, and the Columbia River. Department staff met with commercial stakeholders beginning in 2017 and have several meetings. The most recent meeting occurred in February 2018 and staff are now working on a schedule of regular meetings and are in the process of working with the stakeholders to develop a plan moving forward including goals, objectives and options for a program. This project is also seeking ways to explore options to find funding and the appropriate process to allow a buyback program to succeed. Oregon Department of Fish and Wildlife staff have agreed to be involved in the discussions.

Pound Net Testing

Wild Fish Conservancy (WFC) obtained a research collection permit to conduct a study to determine the release mortality for Chinook and steelhead during the 2017 fall season from pound net gear. The pound net is located in Cathlamet Channel on the Washington shore. Release mortality rates developed by WFC have not been submitted to TAC (*US v. Oregon*) for review at this time. WDFW has an on-going contract with Wild Fish Conservancy to conduct a test fishery to determine the economic viability of the gear for the harvest of marked Chinook and coho during the 2018 fall season. Approximately 1500 Chinook (40% mark rate), 1,000 coho (51% mark rate), 320 steelhead (73% mark rate), and 4 sturgeon have been handled. Talks are on-going with WFC to conduct a release mortality rate study for spring Chinook, test fish for shad, and further evaluation of the gear during the 2019 fall season.

Logbooks for charters and guides

Discussion originated on the Olympic Peninsula but has expanded statewide. WDFW has authority to require the use of logbooks for guides and charters. On-going discussions are occurring with stakeholders to determine what type of information to collect to improve understanding of guide efforts/catch. Staff are exploring a variety of medias to use, including an app to help simplify reporting.