

Lower Columbia River White Sturgeon Stock Assessment and Fishery Management 2018 Update

Summary Prepared by

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*Washington Department of Fish and Wildlife
Oregon Department of Fish and Wildlife***

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Table 1. Dashboard of key status indicators for lower Columbia River White Sturgeon in 2018. Arrow color indicates status relative to Conservation Plan metrics; direction indicates current trend.

Metric	N	Interpretation	Brief Summary
Abundance Trends 38" – 54" FL	162,182		Decrease of 19% from 2017, and 28% less than peak in 2016. However, increasing trend in CPUE setline tagging fisheries continues.
Adult (>65" FL)	2018: 6,108 3-yr avg.: 7,493		2018 3-yr adult abundance average is above conservation status level, but not at desired status (threshold = 9,250 adults); Trend has leveled-out.
Population Structure	~63% juvenile		Low relative abundance of juvenile and sub-legal sized fish indicates population productivity issues;
Recruitment Index (CPN)	LCR: 0.43 WR: 3.96		Mixed results. Return to CPNs of <1 after strong 2017 in LCR; but highest (by far) in LWR since monitoring began in 2010).
Fisheries	Estuary: 18,735 angler trips Total: 31,923 angler trips		Participation still down from pre-closure levels, but much higher (>7x) Catch-and-release only fisheries.

Abundance and CPUE Trends

Table 2. Estimated and projected abundance of 38–54 inch FL (96–137 cm) white sturgeon in the LCR from 2008–2018 based on mark-recapture surveys. Historic method is the number of fish present at the start of July (2008–2009) or May (2010–2012), while the setline method is the number of fish present at the start of the year. Preliminary estimates are italicized.

Year	Historic method estimate	Setline method		Harvest guideline
		Estimate (95% C.I.)	Projection	
2008	101,200	--	--	40,000
2009	95,000	--	--	40,000
2010	65,300	100,200	--	24,000
2011	72,800	80,500	77,000	17,000
2012	83,400	72,700	65,000	10,400
2013	--	114,200	74,300	10,105
2014	--	130,990 (75,500 – 186,480)	131,700	--
2015	--	143,890 (85,700 – 202,100)	138,200	--
2016	--	223,960 (118,300 – 329,600)	147,100	--
2017	--	199,830 (69,900 – 329,700)	237,900	6,235
2018	--	162,180 (93,400 – 230,950)	198,300	6,160
2019	--		<i>164,100</i>	TBD

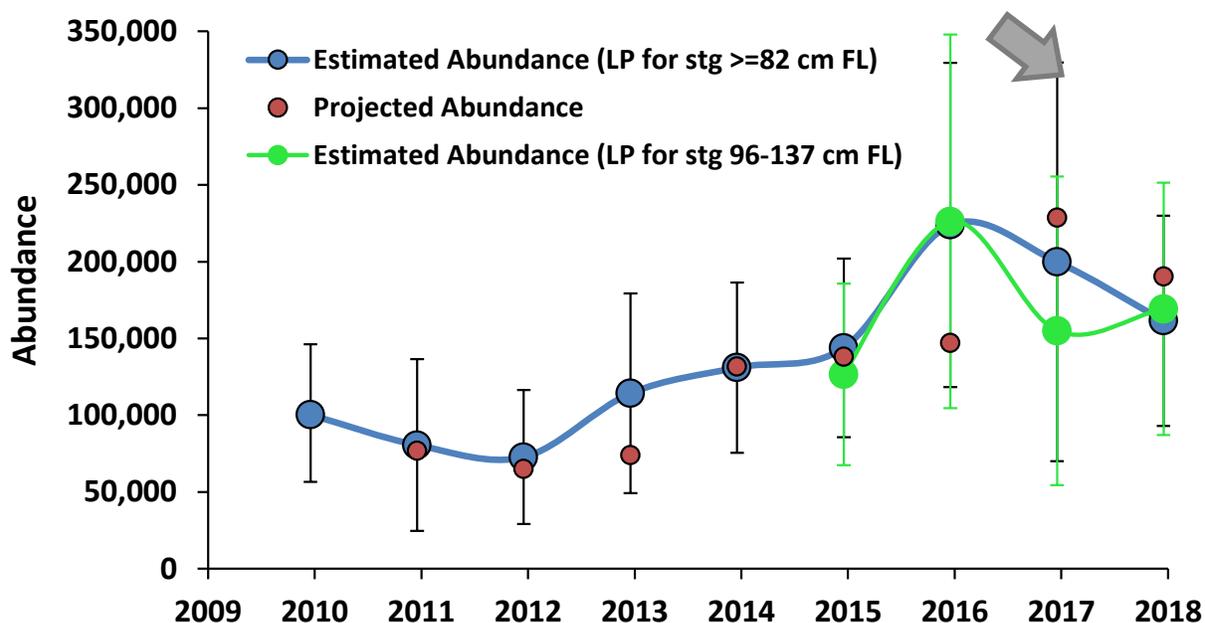


Figure 1. Estimated and projected abundance for 96–137 cm FL white sturgeon from the LCR, 2010–2018 (based on the proportion 96–137 cm FL fish within the total abundance estimate for fish ≥40 cm FL). Error bars represent 95% C.I.'s for the estimated abundance. Green data points represent the Petersen estimate for 96–137 cm FL white sturgeon only.

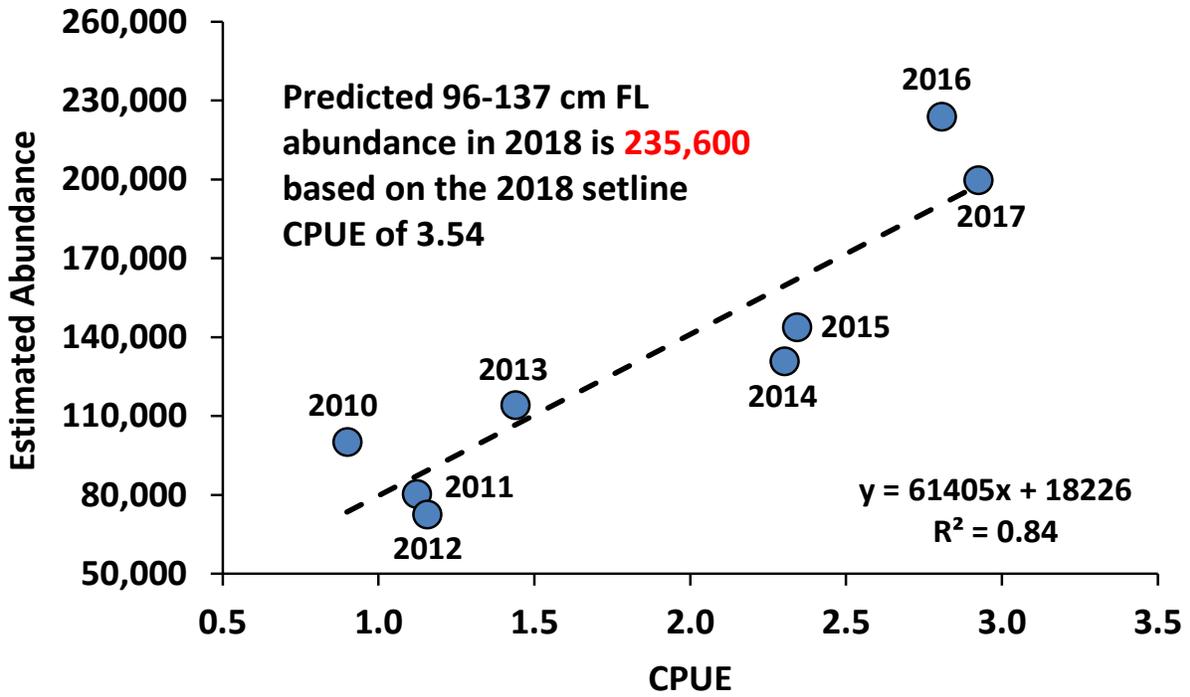


Figure 2. Relationship between estimated abundance and catch-per-set (CPUE) for 96–137 cm FL white sturgeon in the LCR, 2010–2017.

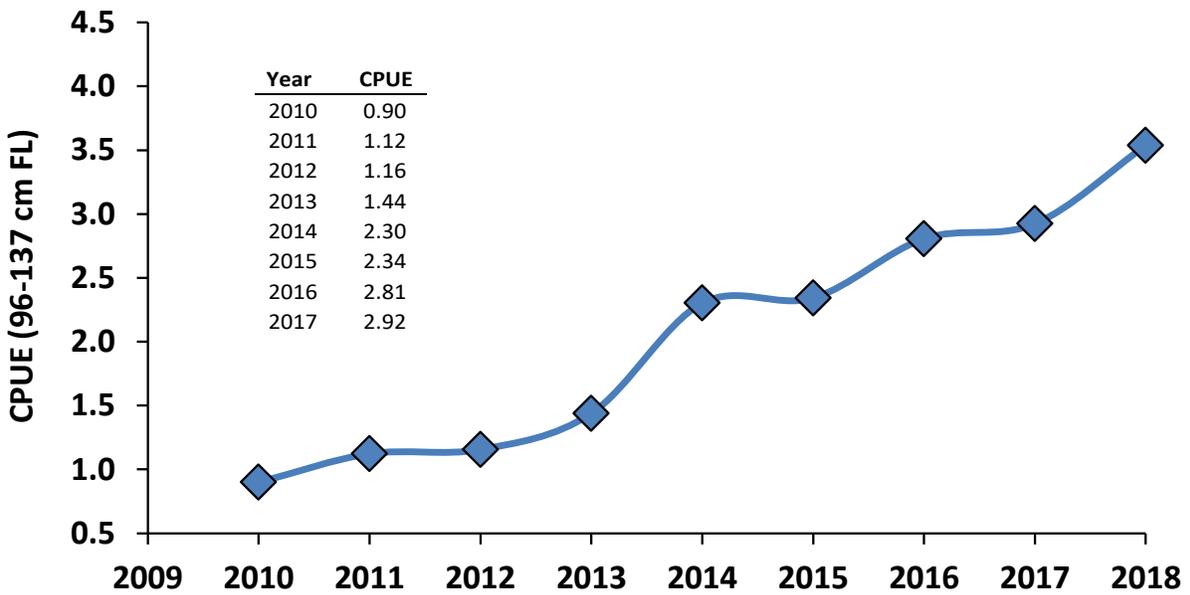


Figure 3. CPUE of 96–137 cm FL white sturgeon caught with setlines in the LCR, 2010–2018.

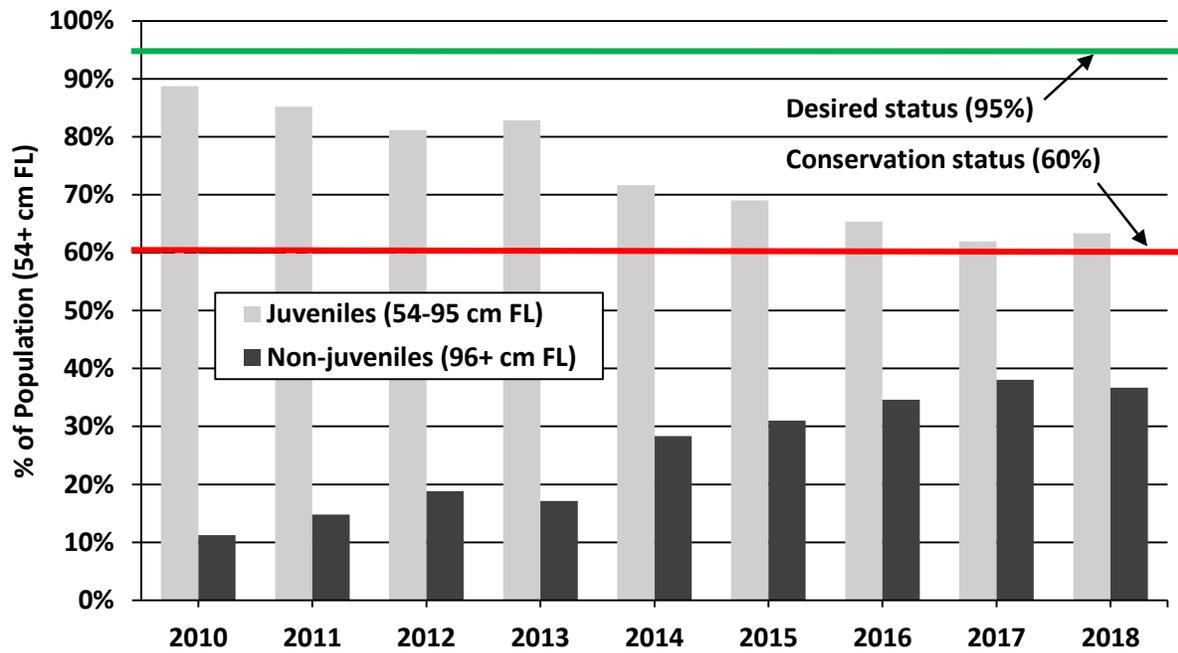


Figure 4. Annual proportion of juvenile and non-juvenile (sub-adults + adults) white sturgeon in the lower Columbia River, 2010–2018. Red horizontal line represents conservation status green horizontal line represents desired status.

Adult Abundance and CPUE Trends

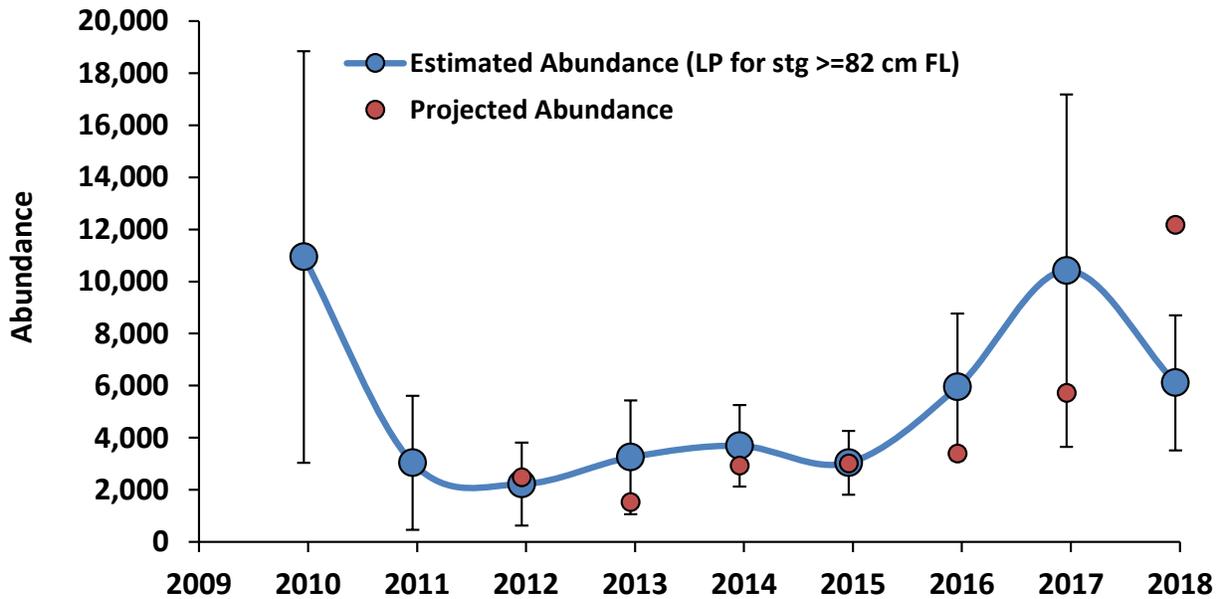


Figure 5. 2010–2018 estimated adult white sturgeon abundance (fish ≥ 167 cm FL) during LCR sturgeon stock assessments.

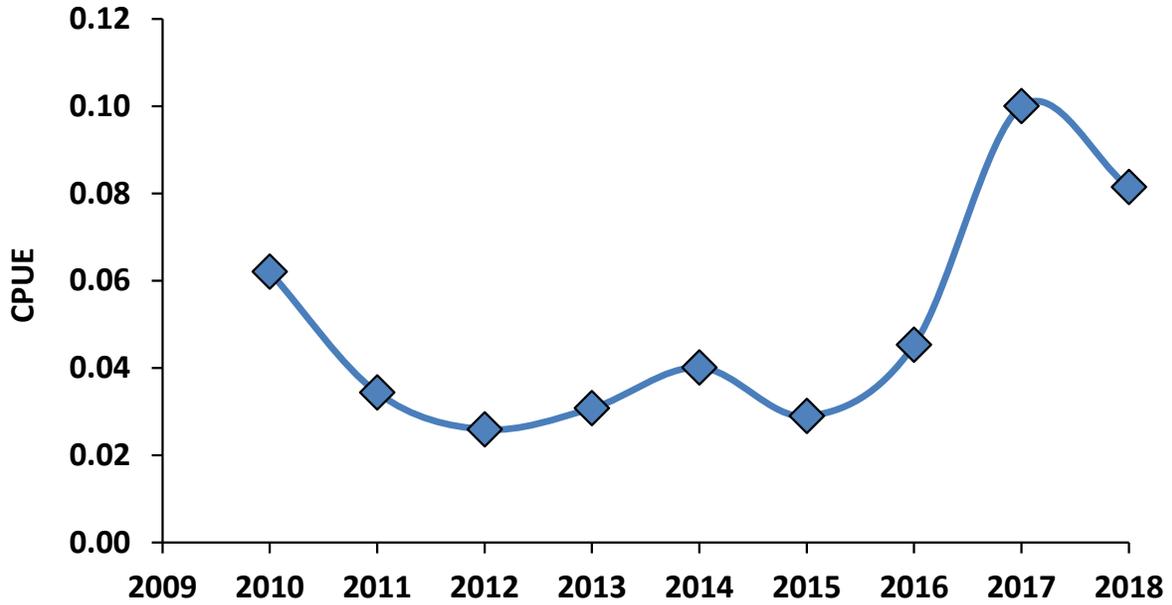


Figure 6. 2010–2018 estimated adult white sturgeon CPUE (fish ≥ 167 cm FL) during LCR sturgeon stock assessments.

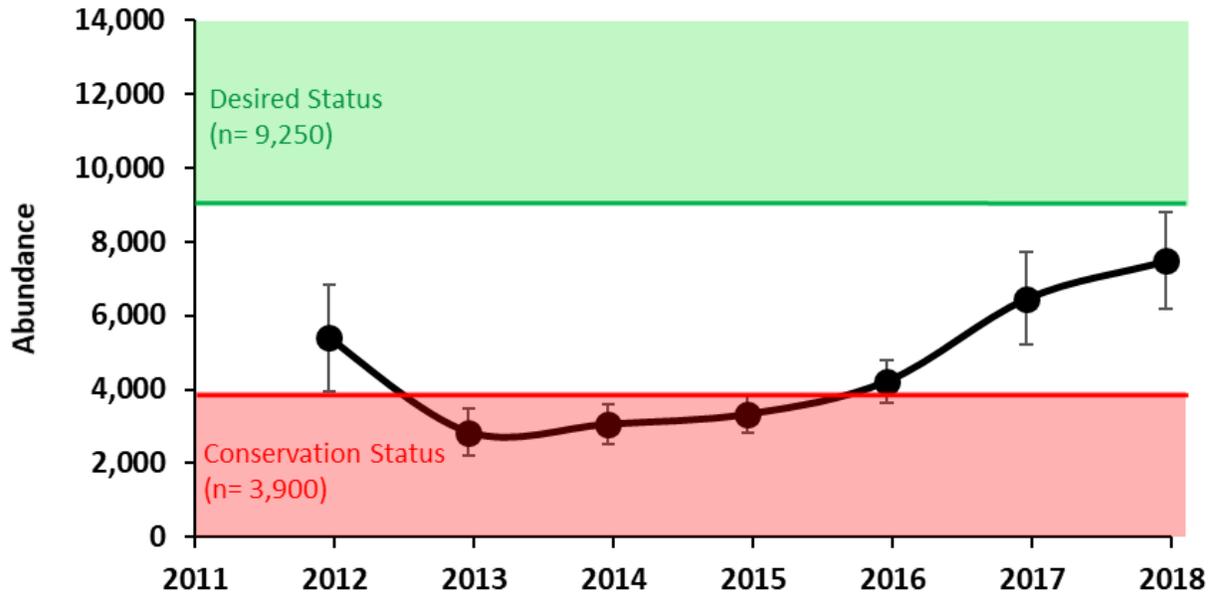


Figure 7. Three-year average estimated abundance for adult (≥ 167 cm FL) white sturgeon from the LCR, 2012–2018. Less than 3 years of data were available for 2010 and 2011 so no averages were calculated. Error bars represent 95% CI's for the estimated abundance.

Length Frequency Trend

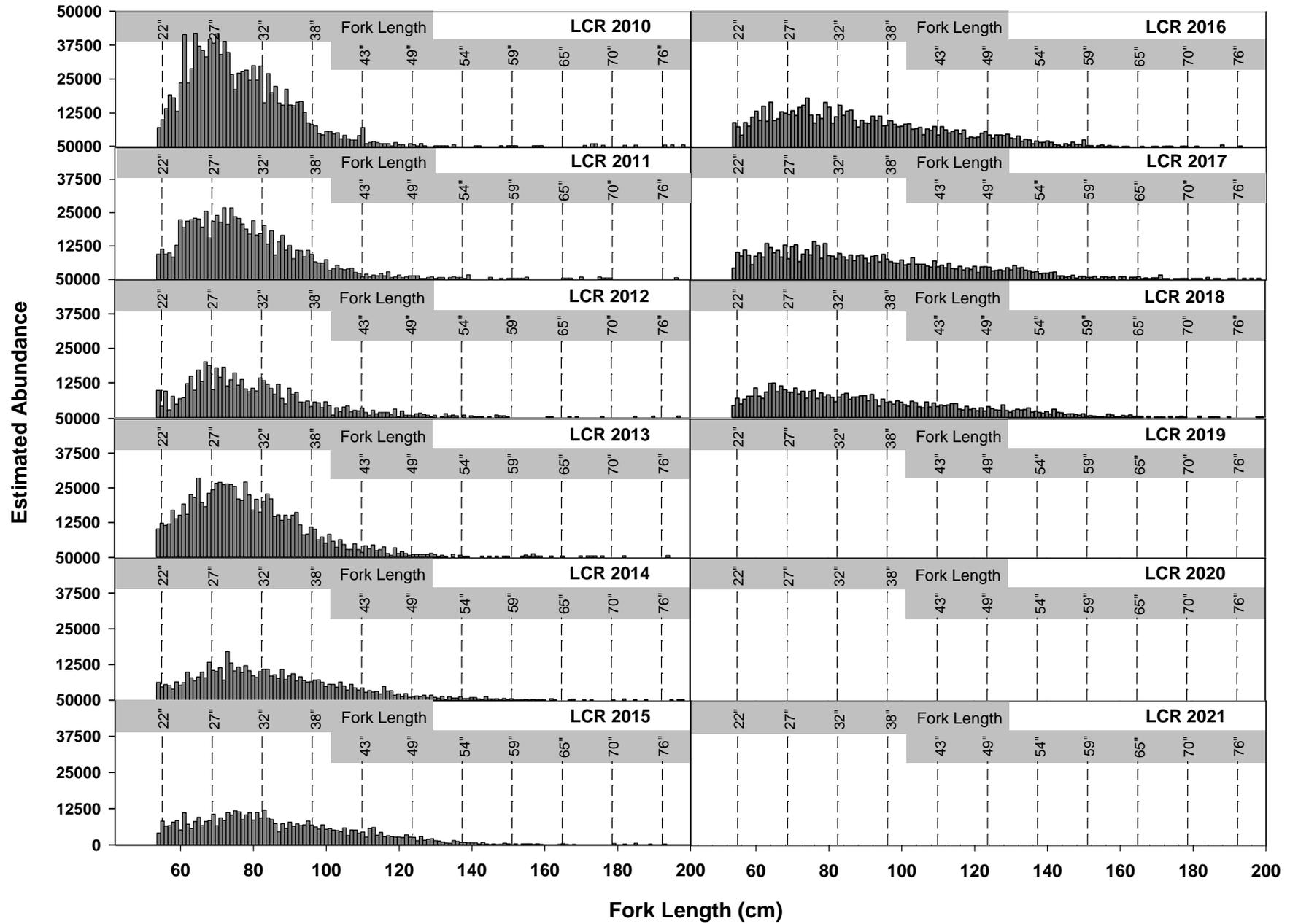
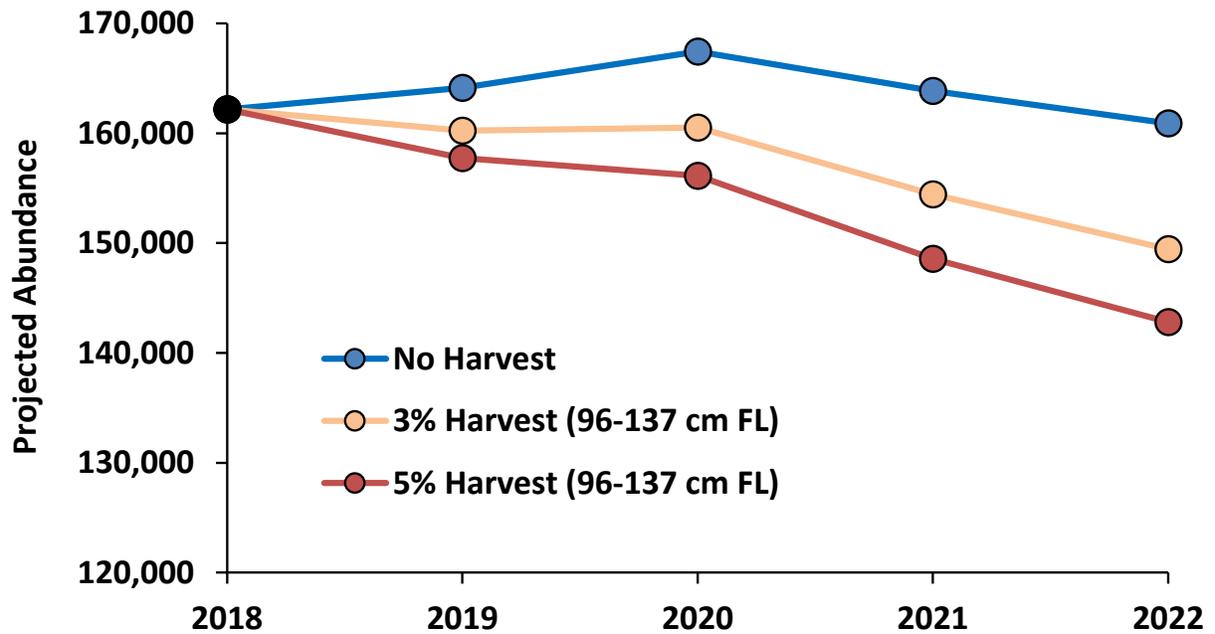


Figure 8. Frequency (percent) by 1 cm size intervals of white sturgeon captured in the LCR using research setlines, 2010–2018. Preliminary data for 2018.

Legal-size Abundance Forecasts

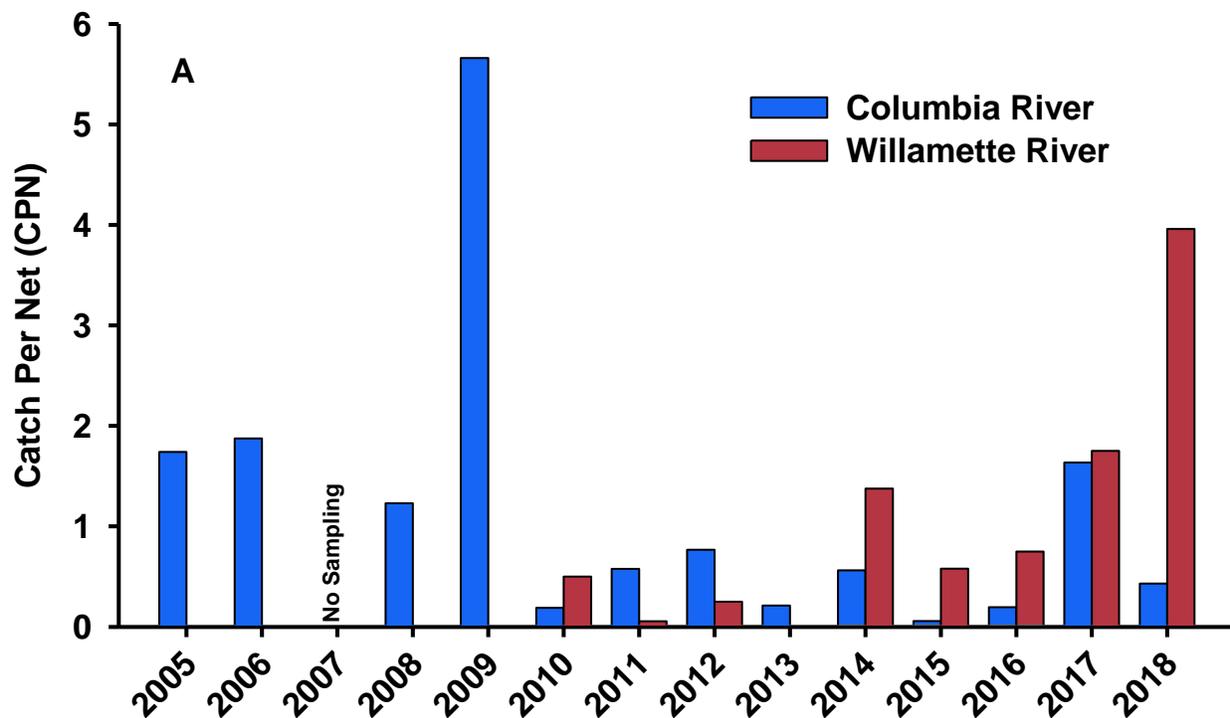
Figure 9 and Table 3. Projected abundance of 96–137cm FL white sturgeon in the LCR under various harvest rate scenarios.



Year	No Harvest	3% Harvest	5% Harvest
2018	162,182	162,182	162,182
2019	164,117	160,250	157,728
2020	167,443	160,528	156,127
2021	163,839	154,445	148,553
2022	160,884	149,464	142,816

Sub-yearling (Age-0) Production

Figure 10 and Table 4. Catch-per-net (and annual recruitment index (Ep) in Table 4) for age-0 white sturgeon from the lower Columbia and Willamette rivers, 2005–2018.



Year	Lower Columbia River		Willamette River	
	CPUE	Ep	CPUE	Ep
2005	1.74	0.49		
2006	1.88	0.52		
2007	--	--		
2008	1.23	0.45		
2009	5.66	0.78		
2010	0.19	0.18	0.43	0.24
2011	0.58	0.34	0.06	0.06
2012	0.77	0.35	0.22	0.22
2013 ¹	0.21	0.12	--	--
2014 ²	0.56	0.31	1.38	0.38
2015 ²	0.06	0.05	0.58	0.26
2016 ²	0.20	0.14	0.75	0.50
2017 ²	1.64	0.58	1.75	0.46
2018	0.43	0.27	3.96	0.83

¹ Incomplete sampling year in both LCR and Willamette rivers.

² Preliminary assessments based on length frequency examinations.

Sea Lion Abundance and Predation

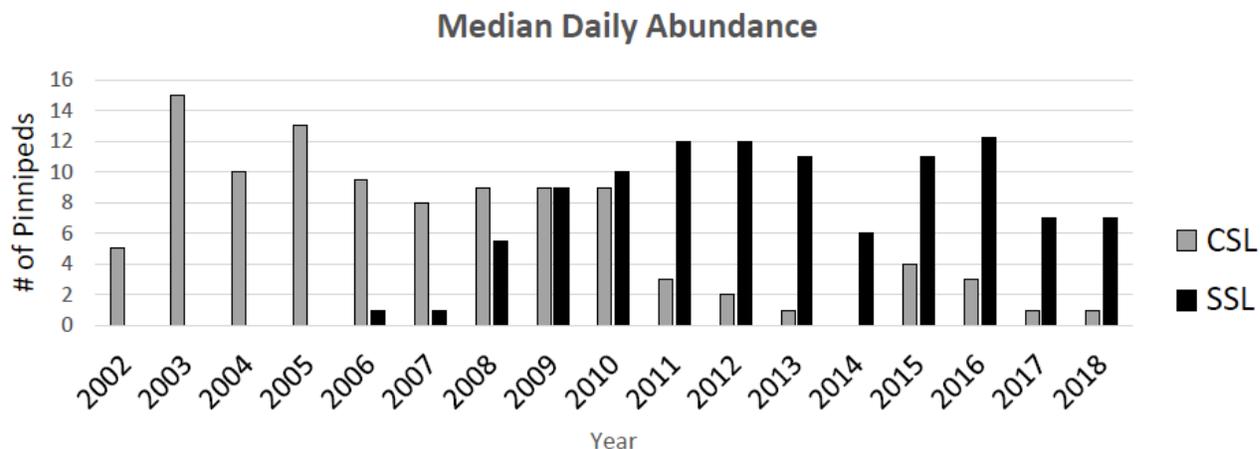


Figure 11. Abundance of California sea lions (CSL) and Steller sea lions (SSL) present at Bonneville Dam between January and the end of May 2002–2018. Figure from U.S. Army Corps of Engineers (USACE) 2018 draft report.

Table 5. Consumption of white sturgeon by CSL and SSL observed during USACE monitoring of the Bonneville Dam tailrace, 2005-2018. Monitoring is for the spring timeframe except as noted for 2017. Adjusted estimates include a proportion of the total unidentified catch. Data from USACE 2018 draft report.

Year	Total hours observed	Observed sturgeon catch	Sturgeon catch per hour observed	Adjusted sturgeon catch estimate
2005	1,109	1	0.001	--
2006	3,650	265	0.073	413
2007	4,433	360	0.081	664
2008	5,131	606	0.118	1,139
2009	3,455	758	0.219	1,710
2010	3,609	1,100	0.305	2,172
2011	3,315	1,353	0.408	3,003
2012	3,404	1,342	0.394	2,498
2013	3,247	314	0.097	635
2014	2,947	79	0.027	146
2015	2,995	24	0.008	44
2016	1,974	30	0.015	90
2017	1,142	6	0.005	24
Fall 2017 ¹	--	--	--	238
2018	1,410	46	0.033	148

¹ Fall 2017 only includes fish predation monitoring data from the Powerhouse 2 tailrace during August 15–December 31. Total predation is estimated to be higher due to predation in other tailraces.

Appendix

Historic Abundance, Harvest and Monitoring Data

Appendix Table 1. Annual recreational catch of white sturgeon in the LCR and comparisons to catch guidelines, 1994–2018¹.

Year	Below Wauna ¹		Above Wauna ¹		Combined		
	Kept Catch	Guideline ²	Kept Catch	Guideline ³	Sum	Guideline	Percent
1994	15,578	N/A	17,893	N/A	33,500	N/A	
1995	29,714	N/A	15,423	N/A	45,100	N/A	
1996	27,694	N/A	15,068	N/A	42,800	N/A	
1997	24,511	N/A	13,646	N/A	38,200	53,840	71%
1998	30,303	N/A	11,293	N/A	41,600	53,840	77%
1999	29,238	N/A	10,561	N/A	39,800	40,000	100%
2000	24,267	N/A	16,238	N/A	40,500	40,000	101%
2001	21,619	N/A	19,597	N/A	41,200	39,500	104%
2002	26,234	N/A	12,045	N/A	38,300	38,300	100%
2003	18,367	19,200	13,565	12,800	31,932	32,000	100%
2004	15,050	16,000	10,519	12,800	25,569	28,800	89%
2005	17,911	17,783	11,891	11,560	29,802	29,343	102%
2006	15,726	16,000	8,545	12,800	24,271	28,800	84%
2007	19,131	16,274	10,675	13,852	29,806	30,126	99%
2008	13,614	13,143	7,959	12,387	21,573	25,530	85%
2009	13,109	15,529	4,599	11,430	17,708	26,959	66%
2010	6,491	9,600	4,831	4,835	11,322	14,435	78%
2011	6,117	6,800	2,908	3,410	9,025	10,210	88%
2012	4,466	4,160	1,859	2,080	6,325	6,240	101%
2013	4,559	4,042	1,942	2,021	6,501	6,240	107%
2014-16	0	0	0	0	0	0	N/A
2017	3,235	3,000	430	1,245	3,665	4,245	86%
2018	2,412	2,960	1,049	1,230	3,461	4,190	81%

¹ Recreational catch estimates for 1993-2002 are above and below the western tip of Puget Island (RM 38).

² The switch to a 45-inch min. (TL) size limit in 2004 required a 17% reduction in the base guideline.

³ Actual in-season guidelines were different than represented here. Beginning in 2010, the guideline for the area above Wauna excludes the separate Willamette guideline.

Appendix Table 2. Annual recreational catch of white sturgeon in the lower Willamette River and comparisons to catch guidelines, 2003–2018.

Year	Estimated annual kept catch ¹	Baseline ²	Catch in excess of baseline ³	Guideline ³	Percent of Guideline
2003	1,142	1,225	0	N/A	
2004	4,099	1,225	2,874	N/A	
2005	2,327	1,225	1,102	N/A	
2006	3,348	1,225	2,123	N/A	
2007	6,555	1,225	5,330	N/A	
2008	9,148	1,225	7,923	N/A	
2009	7,346	1,225	6,121	N/A	
2010	3,529	735	2,794	2,865	98%
2011	2,690	520	2,170	2,030	107%
2012	1,535	520	1,015	1,248	81%
2013	1,410	520	890	1,213	73%
2014-16	0	0	0	0	N/A
2017 ³	0	0	0	745	0%
2018 ³	0	0	0	740	0%

¹ Harvest estimates revised November 2011 based on updated punch card and existing creel information.

² Baseline harvest levels for the lower Willamette River were based on average harvest during 1986-1996 (1,225 fish). The lower Willamette River baseline was decreased to 735 fish in 2010 and 520 fish in 2011 consistent with reductions in the overall harvest guideline. The baseline concept was eliminated in 2017.

³ A retention fishery was considered but did not occur in the lower Willamette River in 2017–2018.

³ During 2003-2009, harvest in excess of the baseline was applied to the above Wauna recreational harvest guideline. Beginning in 2010, a separate harvest guideline was established for the lower Willamette River.

Appendix Table 3. Commercial catch of white sturgeon in the LCR by season, and comparisons to catch guidelines, 1993-2018.

Year ¹	Mainstem							Select Area			Grand Total	Guide-line	%
	Winter Sturgeon ²	Winter Salmon	Summer	Early August	Late August	Late Fall	Total	Spring/Summer	Fall	Total			
1993	990			0	0	7,010	8,000	30	20	50	8,050	6,000	134%
1994	2,990			0	0	3,380	6,370	30	0	30	6,400	6,000	107%
1995	0			0	0	5,980	5,980	110	70	180	6,160	8,000	77%
1996	800			0	330	6,580	7,710	580	110	690	8,400	8,000	105%
1997	2,710			1,740	140	7,790	12,380	350	100	450	12,830	13,460	95%
1998	2,680			2,540	90	8,060	13,370	360	170	530	13,900	13,460	103%
1999	1,780			2,770	60	4,180	8,790	520	190	710	9,500	10,000	95%
2000	2,260			2,490	300	5,130	10,180	540	160	690	10,870	10,000	109%
2001	3,060			4,720	1,020	0	8,800	490	20	510	9,310	9,100	102%
2002	2,720			1,340	380	4,200	8,640	650	330	980	9,620	9,800	98%
2003	1,490	27		2,170	410	3,430	7,527	250	170	420	7,947	8,000	99%
2004	1,696	174	9	1,550	917	3,219	7,565	184	117	301	7,866	8,000	98%
2005	473	70	1,369	1,129	965	3,793	7,799	279	74	353	8,152	8,200	99%
2006	288	1,651	544	1,548	363	3,492	7,886	317	109	426	8,312	8,000	104%
2007	1,424	47	414	2,646	91	2,734	7,356	257	148	405	7,761	7,850	99%
2008	869	17	523	2,706	103	3,170	7,388	337	134	471	7,859	7,927	99%
2009	1,697	21	624	2,213	756	2,001	7,312	311	114	425	7,737	8,000	97%
2010	518	28	289	1,578	297	1,348	4,058	211	116	327	4,385	4,800	91%
2011	50	125	504	967	353	1,187	3,186	201	0	201	3,387	3,400	100%
2012	40	14	281	592	410	344	1,681	225	0	225	1,906	2,080	92%
2013	15	274	326	0	719	324	1,658	254	100	354	2,102	2,021	100%
2014	0	0	0	0	0	0	0	0	0	0	0	0	N/A
2015	0	0	0	0	0	0	0	0	0	0	0	0	N/A
2016	0	0	0	0	0	0	0	0	0	0	0	0	N/A
2017	0	0	0	0	485	239	724	266	237	503	1,227	1,245	99%
2018	0	0	0	0	413	0	413	296	117	413	826	1,230	67%

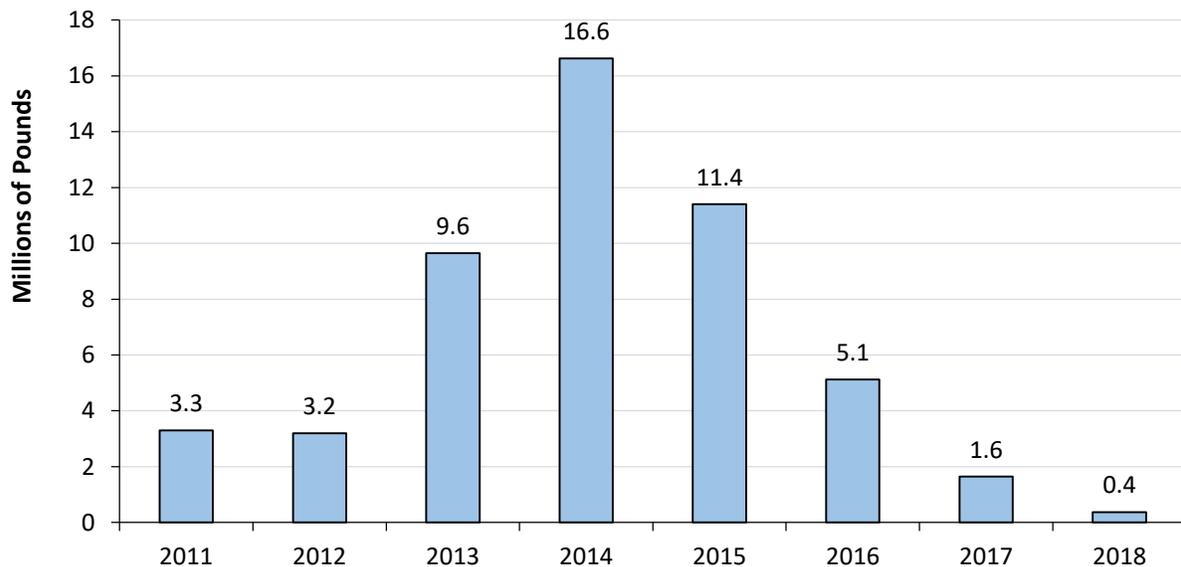
¹ Data since 2003 preliminary.

² Prior to 2003, values reflect all winter fisheries.

Columbia River Eulachon Smelt

- Numbers of spawning adult eulachon, as spawning stock biomass (SSB) in pounds, back-calculated from annual eulachon larvae production estimates, has been estimated since 2011 for the Columbia River and tributaries.
- Total run-size is estimated from combined harvest and SSB estimates.
- Eulachon abundance increased steadily from 2011 to 2014, reaching a peak of 16.6 million pounds, and has since declined:

Columbia River Smelt Abundance



- The 2019 return is expected to be smaller in magnitude than the 2018 return.
- Ocean environmental conditions were favorable for marine survival during 2012-2013, but have deteriorated since.
- Both commercial and recreational fisheries were closed to all harvest in 2011-2013.
- Very conservative reduced Level-1 fisheries were reinstated in 2014 to collect biological and catch per effort data.
- The 2014–2018 commercial fisheries each consisted of eight fishing periods over four weeks in the mainstem Columbia River.
- Recent recreational harvest opportunity has occurred in the Cowlitz River during 2014-2017 (five days in 2014, two days in 2015, and one day each in 2016 and 2017) along with an opportunity in the Sandy River during 2016 and 2017. There was no recreational fishing opportunity in 2018.

Year	Total run size (pounds)	Harvest (pounds)							
		Commercial				Sport	Tribal	Combined	
		Mainstem		Tributary					
2011	3,300,000	0	1	0	1	0	1	N/A	0
2012	3,200,000	0	1	0	1	0	1	N/A	0
2013	9,600,000	0	1	0	1	0	1	7,470	7,470
2014	16,600,000	18,560		0	1	203,880		6,970	229,410
2015	11,400,000	16,550		0	1	290,770		10,400	317,720
2016	5,100,000	4,82		0	1	141,050		8,330	154,200
2017	1,600,000	5,090		0	1	540		1,900	7,530
2018	370,000	110		0	1	0	1	0	110

^{1/} Closed to fishing.

- Preliminary plans for 2019 fisheries have been presented to NOAA Fisheries. Considering the low expected return, eulachon fisheries may not occur in 2019.

2018 Fisheries Summary (Preliminary)

Time Period	Area	Species Allowed	Days for Chinook	Salmonid Anglers	Adult Chin. Kept	Adult Chin. Rel'd	Jack Chin. Kept	Jack Chin. Rel.	Sthd Kept	Sthd Rel'd	Sockeye Kept	Sockeye Rel'd	Adult Coho Kept	Adult Coho Rel'd	Jack Coho Kept	Jack Coho Rel.
Feb	Buoy 10 to I-5	ChS, StW		3,293	18	0	0	0	0	36	Closed	0	0	0	0	0
March	LCR	ChS, StW	31	38,633	1,871	278	3	0	67	85	Closed	0	0	0	0	0
April 1-7 & 14	LCR	ChS, StW	8	26,486	4,119	581	18	0	42	20	Closed	0	Closed	Closed	Closed	Closed
May 16-24	TP-Bonn.	StS	0	1,524	0	105	0	8	143	21	Closed	0	Closed	Closed	Closed	Closed
May 25-31	TP-Bonn.	ChS, StS	7	7,517	468	250	12	25	442	62	Closed	0	Closed	Closed	Closed	Closed
June 1-15	TP-Bonn.	ChS, StS	15	12,429	1,033	316	21	63	782	170	Closed	90	Closed	Closed	Closed	Closed
ChS Totals	(February 1-June 15) 1/		61	89,882	7,509	1,530	54	96	1,476	394	0	90	0	0	0	0
June 16-21	Astoria Br-Bo	StS	0	3,281	0	52	11	0	569	99	Closed	60	Closed	Closed	Closed	Closed
June 22-30	Astoria Br-Bo	StS, ChR	9	9,636	1,021	356	28	18	451	291	Closed	57	Closed	Closed	Closed	Closed
July 1-31	Astoria Br-Bo	StS, Sok	0	14,558	6	342	50	23	2,270	1,532	73	5	Closed	Closed	Closed	Closed
ChR Totals	(June 16-July 31) 2/		9	27,475	1,027	750	89	41	3,290	1,922	73	122	0	0	0	0
Spring/Summer Totals				117,357	8,536	2,280	143	137	4,766	2,316	73	212	0	0	0	0
Aug	TP-BO	ChF, Co, StS	31	41,506	4,119	232	236	185	1,097	788	Closed	0	223	149	0	16
Sep 1-12	TP-BO	ChF, Co	12	28,123	5,683	645	461	173	7	73	Closed	0	427	268	32	19
Oct	TP-BO	Closed	0	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
ChF Totals	(August 1-September 12) 3/		43	69,629	9,802	877	697	358	1,104	861	0	0	650	417	32	35
LCR Spring Summer and Fall			113	186,986	18,338	3,157	840	495	5,870	3,177	73	212	650	417	32	35
OR Buoy 10	B10-TP	ChF, Co, StS	24	44,087	8,258	3,902	0	0	50	42	0	0	4,397	3,987	0	0
WN Buoy 10	B10-TP	ChF, Co, StS	24	23,231	3,362	1,137	0	0	0	0	0	0	2,364	1,903	0	0
Buoy 10 Total	(August 1- September 12) 4/		24	67,318	11,620	5,039	0	0	50	42	0	0	6,761	5,890	0	0
B10 and Mainstem Fall Totals				136,947	21,422	5,916	697	358	1,154	903	0	0	7,411	6,307	32	35
LCR and B10 Grand Totals				254,304	29,958	8,196	840	495	5,920	3,219	73	212	7,411	6,307	32	35

2018 Recreational Fisheries Upstream of Bonneville Dam - all data preliminary

Fishery	Kept Adults	Released Adults	Season	General Area
Spring Chinook - BON - S/L	613	100	Mar 16-May 5; May 25-June 15	BON- Oregon/Washington border
Spring Chinook - Snake R.	742	308	3 sections; 2 d/week; Apr 20-June 11	IHD/ LGO/LRG/Clarkston
Summer Chinook - BON-PRD	120	92	June 22- July 6 <McN; June 16-July 16 >McN	BON - PRD
Summer Chinook - Above PRD+tribs	3,244*	938	July 1 – October 15	PRD - CJD
Fall Chinook - BON to Hwy 395	958	97	August 1 – September 12	BON- Highway 395
Fall Chinook - Hanford Reach	8,672	nya	August 16 – October 15	Hanford Reach Area

* Includes 395 unmarked fish

2018 Zone 6 (Bonneville Dam - McNary Dam) Spring and Summer Fisheries Summary.

Area	Time Period	Species Allowed	Salmonid Anglers	Adult Chin. Kept	Adult Chin. Rel'd	Jack Chin. Kept	Total Sthd Kept	Total Sthd Rel'd	Unclipped Sthd Rel'd	Clipped Sthd Rel'd	UnK Origin Sthd Rel'd	Adult Coho Kept	Adult Coho Rel.	Jack Coho Kept	Sockeye Kept	Sockeye Rel'd
Bonneville			678	148	4	6	0	0	7	0	0	0	0	0	0	0
The Dalles		ChS, Sth	1,543	276	59	36	0	0	0	0	0	0	0	0	0	0
John Day			1,741	177	35	7	0	0	1	0	0	0	0	0	0	0
ChS Totals	(March 16-June 15)		3,962	601	98	49	0	0	8	0	0	0	0	0	0	0
Bonneville			732	3	0	0	0	48	48	0	0	0	0	0	0	9
The Dalles		ChR, StS, Sok	144	0	0	0	0	0	0	0	0	0	0	0	0	0
John Day			352	9	0	0	0	0	0	0	0	0	1	0	0	0
ChR Totals	(June 16-July 31)		1,228	12	0	0	0	48	48	0	0	0	1	0	0	9
Spring/Summer Totals			5,190	613	98	49	0	48	56	0	0	0	1	0	0	9

Lower Columbia River commercial landings, 2018

<i>Winter/Spring/Summer</i>											
(FINAL — ORWA Fish Tickets — December 21, 2018)											
Season	CHINOOK		Z 1-3 Spring Chinook		SOCKEYE		SHAD		WHITE STURGEON ¹		
	Mainstem	Numbers	Pounds	Adults	Juvs	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds
Winter (no season during 2018)		0	0	—	—	0	0	0	0	No Retention	—
Spring (no season during 2018)		0	0	0	0	0	0	0	0	No Retention	—
Summer (no season during 2018)		0	0	—	—	0	0	0	0	No Retention	—
Shad (Area 25)		—	—	—	—	—	—	2,112	5,701	No Retention	—
Mainstem Totals		0	0	—	—	0	0	2,112	5,701	0	0
<i>Select Areas</i>											
Youngs Bay Winter		737	9,287			0	0	0	0	No Retention	—
Youngs Bay Spring		4,796	55,993			0	0	0	0	52	1,568
Youngs Bay Summer		1,400	16,945			6	17	0	0	14	418
Tongue Point Winter		177	2,299			0	0	0	0	No Retention	—
Tongue Point Spring		1,327	16,931			0	0	0	0	81	2,297
Tongue Point Summer		380	5,060			0	0	0	0	94	3,106
Blind & Knappa Sloughs Winter		175	2,290			0	0	0	0	No Retention	—
Blind & Knappa Sloughs Spring		1,532	19,420			0	0	0	0	43	1,269
Blind & Knappa Sloughs Summer		457	5,898			0	0	0	0	12	376
Deep River Winter (no season during 2018)		0	0			0	0	0	0	No Retention	—
Deep River Spring (no season during 2018)		0	0			0	0	0	0	No Retention	—
Select Area Totals		10,981	134,123			6	17	0	0	296	9,034
Lower Columbia River Commercial GRAND TOTALS Winter/Spring/Summer 2018	Chinook	10,981	134,123			6	17	2,112	5,701	296	9,034

<i>Fall</i>											
(FINAL — ORWA Fish Tickets — December 21, 2018)											
Season	CHINOOK		COHO		PINK		CHUM		WHITE STURGEON ¹		
	Mainstem	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds
August (Zone 4-5; 9-9 3/4 inch gillnet)		8,320	128,317	380	2,811	0	0	No Retention		413	13,927
August Subtotals		8,320	128,317	380	2,811	0	0	No Retention		413	13,927
Late-Fall (no season during 2018)		0	0	0	0	0	0	No Retention		0	0
Late-Fall Subtotals		0	0	0	0	0	0	No Retention		0	0
Fall Mainstem Totals		8,320	128,317	380	2,811	0	0	0	0	413	13,927
<i>Select Areas</i>											
Youngs Bay		2,945	31,926	4,229	33,769	0	0	No Retention		52	1,634
Tongue Point		1,035	11,970	3,682	24,679	1	4	No Retention		32	932
Blind Slough & Knappa Slough		1,401	17,609	1,477	10,422	0	0	No Retention		23	741
Deep River		1,223	13,199	2,723	20,398	1	2	No Retention		10	281
Fall Select Area Totals		6,604	74,704	12,111	89,268	2	6	0	0	117	3,588
Lower Columbia River Commercial GRAND TOTALS Fall 2018	Chinook	14,924	203,021	12,491	92,079	2	6	0	0	530	17,515

FINAL GRAND TOTALS 2018	CHINOOK		COHO		PINK		CHUM		WHITE STURGEON ¹	
	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds
	25,905	337,144	12,491	92,079	2	6	No Retention		826	26,549
for Lower Columbia R. Commercial Fisheries	SOCKEYE		SHAD		SMELT (Mainstem)		GREEN STURGEON		Numbers	Pounds
	6	17	2,112	5,701	110		No Retention			

¹ The sale of White Sturgeon was allowed during August mainstem commercial seasons below Bonneville Dam; White Sturgeon were also allowed to be sold during Select Area spring, summer, and fall seasons from April 19 through October 31.

2018 Adult Returns and 2019 Expectations Columbia River Revised Draft – December 12, 2018

	2018 Results	2019 Expectations
Willamette Spring Chinook	53,820 predicted adult return to CR (20% wild) 37,441 actual adult return (70% of forecast; 20% wild) 2,219 jack return (recent 5-year average 2,484) 37,943 return to Willamette R (35,731 adult) 24,543 adult/1,999 jack count at falls 2,657 adult return to Clackamas	40,200 CR adult return 2,290 jacks 32,150 hatchery adults 10,980 harvestable 20% wild adults ~2,800 Clackamas
Sandy River	5,400 predicted adult CR return vs. 4,733 actual to CR	5,500 CR return
Cowlitz River	5,150 predicted adult CR return vs. 3,974 actual to trib	1,300 CR return
Kalama River	1,450 predicted adult CR return vs. 2,294 actual to trib	1,400 CR return
Lewis River	3,700 predicted adult CR return vs. 3,214 actual to trib	1,600 CR return
Wind River	5,300 predicted adult CR return vs. 3,109 actual to trib	NYA
Drano (LWS)	10,200 predicted adult CR return vs. 7,352 actual to trib	NYA
Klickitat	1,990 predicted adults CR return vs. 667 actual to trib	NYA
Upriver Spring Chinook	166,700 predicted adult return 115,081 actual return (69% of forecast; 115.8K in 2017) Late return; 2 nd latest 50% date since at least 1980 7,563 BON jacks (lowest since 2006; 23% of 10-yr ave)	99,300 predicted 50% of recent 10-year ave return
Upper Columbia Summer Chinook	67,300 predicted adult return 42,120 actual return (63% of forecast) 3,242 BON jacks (lowest since 1999; 22% of 10-yr ave) Adult mark rate 76% @ BON	35,900 predicted 29,000 escapement goal (at CR mouth)
Sockeye	99,000 predicted return 210,915 actual return (64% of 10-yr ave; 297 SR)	94,400 predicted 200 SR stock
Upriver Summer Steelhead	190,350 predicted return at BON 100,483 at BON (53% of forecast; 33% of 10-yr (308K))	TBD
Bright Fall Chinook	260,180 predicted adult return Preliminary return ~70% of forecast 2018 jack count at BON (27.4K) improved from 2017	Return may be similar to 2018 actual
Tule Fall Chinook	115,330 predicted adult return Prelim. return ~74% of forecast; jacks similar to 2017	Less than recent 10-year average
Coho	213,600 predicted adult return Prelim. return approaching 50% of forecast	Jack return 50% higher than 10-yr ave
Shad	6.3 million run vs. 10-yr average of 2.1 million	Strong run expected
Smelt	Poor return (0.37 M lbs based on spawning stock biomass (SSB)); 23% of 2017; 6% of 2011-17 ave	Trending downward (<2018)
White Sturgeon	Abundance down across all age classes (juvenile, sub-adult, adult) vs. 2017; YOY recruitment mixed (LCR fourth lowest; LWR slightly more than double previous high)	TBD

Recreational Fisheries

	2018 Results	2019 Expectations
Oregon Tributary Spring Chinook		
Lower Willamette River	Open 7 d/week under permanent regs 58,852 angler trips (3/5-6/30) 6,069 adults kept (1,256 rel; 83% mark rate)	Permanent regulations likely
Clackamas River	1,884 angler trips <River Mill Dam (4/30-6/30) 7 adults kept (2 rel)	Permanent regulations likely
Sandy River	300-400 adults kept	Permanent regulations likely
Washington Tributary Spring Chinook		
Cowlitz River	7 d/wk 1/1-7/2; 1 fish bag <3/17; 2 fish after 851 adults kept	Season TBD; Forecast = esc. goal
Kalama River	7 d/wk 1/1-7/31; 2 fish bag 1,000 adults kept	Season TBD
Lewis River	7 d/wk 1/1-4/30 and 5/12-6/17 bank-only >Johnson Cr. 1 fish bag 553 adults kept	Season TBD
Columbia River Fisheries		
Spring Season LCR	Spring Chinook open: B10-I-5 Bridge; Jan-Feb; 7 d/wk; 2 Chinook bag B10-BON: 3/1-4/7, 4/14, and 5/25-6/15 Bank only Beacon R to BON (thru June 6) 2 fish/1 hatchery Chinook bag (2/2 during 6/7-15) TP/RP-BON effective 5/25 89,882 angler trips 7,509 adult Chinook kept (1,530 rel) 1,476 steelhead kept (394 rel); 90 Sockeye released	Season TBD
Spring Season BON to McN	Spring Chinook open: 3/16-5/7 and 5/25-6/15 2 fish/1 hatchery Chinook bag (2/2 during 6/7-15) 3,962 angler trips; 601 adult Chinook kept (98 rel)	Season TBD
Spring Season McN-OR/WA	Spring Chinook open: 3/16-5/7 and 5/25-6/15; 2 fish/1 hatchery Chinook bag (2/2 during 6/7-15) 12 adult Chinook kept (2 rel)	Season TBD
Spring Season Snake River	Spring Chinook open: Three sections; 2d/wk; 4/20-6/11 28,205 angler hours; 742 adult Chinook kept (308 rel)	Season TBD
Summer Season LCR	Astoria Bridge to BON open 6/15-7/31 Hatchery Chinook open 6/22-30 Sockeye open 7/1-31 2 fish/ 2 hatchery Chinook bag 27,475 angler trips 1,027 adult Chinook kept (record low kept; 750 rel) 73 Sockeye kept (122 rel) 3,290 steelhead kept (1,922 rel)	Season TBD at NOF

Summer Season	BON to McN open 6/15-7/31 Hatchery Chinook open 6/22-7/6; Sockeye 7/1-31 1,228 trips; 12 Chinook adults kept (0 rel); 0 Sockeye kept and 9 released Hwy 395 to PRD: Chinook 6/16-7/16 (Sockeye 7/1-8/6) 2,642 trips 108 Chinook adults (92 H+W rel) & 1,171 Sockeye kept Upstream of PRD (includes tribs): 7/1-10/15 20,217 trips 3,244 (2,849 H+395 W) adults kept (938 rel)	Season TBD at NOF
Fall Season Buoy 10	Open 8/1-9/12 Fall Chinook open 8/1-24 (1 fish bag) Coho open 8/1-9/12 (2 fish bag 8/25-9/12) Steelhead retention closed 8/27; salmonid angling 9/13 67,300 angler trips (lowest since 2013) 11,608 Chinook kept (lowest since 2011; 4,700 rel) 6,734 Coho kept (6,242 rel) SRW/LRH impacts exceeded expectations	Season TBD at NOF
Fall Season LCR Sport TP/RP - BON	Tongue Pt.- Warrior R: Chinook open 8/1-9/2 (1 fish bag); 2 fish bag 9/3-12 Warrior R. to BON: 8/1-9/12; 1 fish bag Steelhead retention closed 8/27; salmonid angling 9/13 69,629 angler trips (lowest since 1998) 9,802 adult Chinook kept (lowest since 2007; 877 rel) 650 Coho kept (417 rel) 1,104 steelhead kept (861 rel) SRW/LRH impacts exceeded expectations	Season TBD at NOF
Fall Season BON - McNary	Open 8/1 – 9/12 2 fish/1 Chinook bag (no more than 1 STH thru 8/26) Steelhead retention closed 8/27; salmonid angling 9/13 5,752 angler trips; 958 Chinook kept (97 rel)	Season TBD at NOF
Fall Season McNary-Hwy 395	Fall Chinook open 8/1-9/12 2 fish/1 Chinook bag (no more than 1 STH thru 8/26) Steelhead retention closed 8/27; salmonid angling 9/13 <100 trips; 0 catch	Season TBD at NOF
Fall Season Hanford Reach	Fall Chinook open 8/16-10/15 (early closure lower Reach) 6 fish/2 adult Chinook thru 9/14; 6/1 thereafter 24,011 angler trips ~8,672 adults 1,074 jack Chinook kept + 13 Coho kept Steelhead open 10/1-11/9; 1 ADRV daily limit 850 angler trips; 46 STH kept, 88 rel (37 H and 51 W)	TBD
Sturgeon LCR B10-BON	Below Wauna: 2,960 fish guideline; 44-50" FL; 2 PM closure 11 retention days (5/14-6/9) 18,294 angler trips; 2,412 kept (~8,320 rel) Above Wauna: 1,230 fish guideline; 44-50" FL 2 retention days (Saturdays 9/15 and 9/22) 11,031 angler trips; 1,049 kept (~6,150 rel)	2019 season and guidelines TBD
Sturgeon BON-McNary	BO Pool: 1/1-2/3, 6/15; 448 kept (138% of guideline) TD Pool: 1/1-1/19; 6/15; 180 kept (133% of guideline) JD Pool: 1/1-2/11; 66 kept (63% of guideline)	Reopen 1/1/19 Guidelines TBD

Shad	16,720 trips; 250,000 kept in LCR (record kept) 7,565 trips; 30,452 kept in LWR (through 6/17)	Large population No changes to fishery
Smelt	No retention seasons	TBD

Commercial Fisheries

	2018 Results	2019 Expectations
Columbia River Fisheries		
Winter/Spring	No fishery	TBD
Summer	No fishery	TBD
August (Early Fall)	Aug 21 – 30, 4 periods; 7-9 hrs each Zones 4-5; 9" min mesh 58-84 deliveries per period 8,320 CHF; 380 Coho; 413 WSTG	TBD
Late Fall	No fishery	TBD
Seine	No fishery	TBD
Shad	2S fishery open 5/20-6/20 (perm regs) 2,112 shad landed	Area 2S fishery; experimental gear permits possible
Smelt	Mainstem only; Feb 1 – 26, 2d/wk, Z 1-3 110 pounds landed	TBD
Select Area Fisheries		
Winter/Spring	Similar to 10-year average Winter – 1,089 Chinook Spring – 7,655 Chinook (176 WSTG)	8,180 Select Area-origin predicted vs ~9,900 actual in 2018 Season TBD (structure expected to be similar to 2018)
Summer	Similar to 10-year average 3 rd year for summer seasons in TP/SC/BS/KS 2,237 Chinook (120 WSTG)	Season TBD (structure expected to be similar to 2018)
Fall	Below average season 6,699 Chinook (37% of 5-year ave) 12,169 Coho (20% of 5-year ave) 117 WSTG	Season TBD (structure expected to be similar to 2018)

2019 Columbia River Process Schedule (Preliminary Draft – Dates are Tentative)

Dec 11 1-4p	NSIA Annual Meeting <ul style="list-style-type: none"> • 2018 results and 2019 expectations 	ODFW Clackamas, OR
Dec 15	Washington Fish and Wildlife Commission <ul style="list-style-type: none"> • CR Policy update C-3602 • Columbia River Sturgeon Management Policy C-3001 	WDFW Olympia, WA
Dec 20	Columbia River Commercial Advisor Group Meeting <ul style="list-style-type: none"> • Requested topics 	City Hall Rainier, OR
Jan 8 7-8p	Select Area Fisheries Public Meeting <ul style="list-style-type: none"> • 2018 results; 2019 season structure discussion 	Holiday Inn Express Astoria, OR
Jan 11-12	Washington Fish and Wildlife Commission <ul style="list-style-type: none"> • Columbia River Sturgeon Management Policy C-3001 	WDFW Olympia, WA
Jan 15 10a-12p	Columbia River Commercial Advisor Group Meeting <ul style="list-style-type: none"> • Sturgeon, smelt, forecasts, etc. 	City Hall Rainier, OR
Jan 16 4p-6p	Columbia River Recreational Advisor Group Meeting <ul style="list-style-type: none"> • Sturgeon and smelt 	WDFW Ridgefield, WA
Jan 18	Oregon Fish and Wildlife Commission <ul style="list-style-type: none"> • Permanent commercial regulations - housekeeping 	ODFW HQ Salem, OR
Jan 29 10a	CR Compact/Joint State Hearing <ul style="list-style-type: none"> • SAFE Commercial • BO sport stg • Treaty 	Teleconference
Feb 8	Oregon Fish and Wildlife Commission <ul style="list-style-type: none"> • Lower Columbia River White Sturgeon - Briefing 	Portland, OR
Feb 8-9	Washington Fish and Wildlife Commission <ul style="list-style-type: none"> • Sturgeon stock status update 	WDFW Olympia, WA
Feb 13 4-6 p	Columbia River Recreational Advisor Group Meeting <ul style="list-style-type: none"> • Spring/Summer Chinook 	ODFW Clackamas, OR
Feb 20 10a	CR Compact/Joint State Hearing <ul style="list-style-type: none"> • Recreational spring Chinook 	TBD (Oregon location)
Mar 15 (tentative)	Oregon Fish and Wildlife Commission <ul style="list-style-type: none"> • 2018 Columbia River Fisheries Update 	ODFW HQ Salem, OR
See Ocean Calendar for NoF planning process		

2019 Ocean Fishery Process Schedule (Preliminary Draft – Dates are Tentative)

Feb 28	Ocean Salmon Industry Group <ul style="list-style-type: none"> • 2019 forecasts • Initial discussions of 2019 season options 	Shilo Inn Newport, OR
Feb 27	WDFW Public Meeting <ul style="list-style-type: none"> • 2019 forecasts and fishing opportunities 	Lacey Community Center 6729 Pacific Ave SE Olympia, WA
Mar 5-12	Pacific Fishery Management Council (PFMC) <ul style="list-style-type: none"> • Adopt initial 2019 ocean salmon options for public review 	Hilton 301 W. Sixth St. Vancouver, WA
Mar 18	2019 Columbia R North of Falcon #1	WDFW Ridgefield, WA
Mar 19	North of Falcon #1 (Public Meetings) <ul style="list-style-type: none"> • Salmon season negotiations for Columbia River, Puget Sound, Willapa Bay, Grays Harbor, and ocean areas north of Cape Falcon, OR 	Olympia, WA
Mar 25	PFMC Public Options Hearings <ul style="list-style-type: none"> • Public input on 2019 season options 	Westport, WA Coos Bay, OR
March 25-29 (TBD)	East of McNary – North of Falcon	Tri-Cities, Wenatchee, Clarkston (TBD)
Apr 2	2019 Columbia R North of Falcon #2	WDFW Ridgefield, WA
Apr 3	North of Falcon #2 (Public Meetings) <ul style="list-style-type: none"> • Puget Sound 	Lynwood Embassy Suites 20610 44 th Ave W Lynwood, WA
Apr 9-16	Pacific Fishery Management Council (PFMC) <ul style="list-style-type: none"> • Adopt 2019 ocean salmon fishery regulations 	Double Tree One Doubletree Dr. Rohnert Park, CA
Apr 19	Oregon Fish and Wildlife Commission <ul style="list-style-type: none"> • Adopt state water ocean salmon fishery regulations 	Dist 1

Columbia River Adult Salmon Returns: Actual and Forecasted*

		2018 Forecast	2018 Return	2019 Forecast
Spring Chinook	Total Spring Chinook	248,520	177,043	157,500
	Willamette River	53,820	37,441	40,200
	Sandy River	5,400	4,733	5,500
	Select Areas**	12,300	9,887	8,200
	Cowlitz River	5,150	4,076	1,300
	Kalama River	1,450	2,371	1,400
	Lewis River	3,700	3,454	1,600
	Lower River Total	81,820	61,962	58,200
	Wind River**	5,300	3,109	2,800
	Drano Lake/Little White Salmon River**	10,200	7,352	5,600
	Hood River**	2,500	2,026	2,300
	<i>Hood River wild**</i>	<i>120</i>	<i>--</i>	<i>--</i>
	Klickitat River**	1,990	667	1,100
	Yakima River**	7,000	3,155	3,000
	Umatilla River**	6,300	3,257	2,400
	Mid-Columbia total (by subtraction)	39,200	34,641	40,000
	Upper Columbia (total)	20,100	12,844	11,200
	<i>Upper Columbia wild</i>	<i>3,400</i>	<i>1,977</i>	<i>2,100</i>
	Snake River Spring/Summer (total)***	107,400	67,596	48,100
	<i>Snake River wild***</i>	<i>18,500</i>	<i>11,339</i>	<i>8,200</i>
	Upriver Total	166,700	115,081	99,300
Summer Chinook	Upper Columbia	67,300	42,120	35,900
Sockeye	Total Sockeye	99,000	210,915	94,400
	Wenatchee	25,700	--	18,300
	Okanogan	72,600	--	74,500
	Yakima	50	--	1,300
	Deschutes	50	--	100
	Snake River	600	297	200

* Components may not sum to totals shown since individual forecasts are not available for all upriver spring Chinook tributaries. Wild components are included in the stock total.

** Return to tributary mouth.

*** 2018 return is based on standard TAC run reconstruction methodology.

1/7/2019

2019 Spring Chinook Preseason Management Guidelines

	2018 postseason	2019 preseason	Difference
Upriver CHS abundance (adults)	115,081	99,300	-15,781
ESA impact rate	1.70%	1.60%	-0.10%
Willamette CHS abundance (adults)	37,441	40,200	+2,759

Commission Guidance (ESA impact allocation)	2018	2019	Difference
Sport allocation*	80%	80%	0
Commercial allocation	20%	20%	0

U.S. v OR Catch Balance	2018 preseason	2019 preseason	
30% Buffered Run	116,690	69,510	-47,180
ESA Impact rate	1.70%	1.50%	-0.20%
Catch Balance Available Pre-update	9,685	4,866	-4,819
Sport Fisheries (LCR, Z6, Snake)	9,052	4,548	-4,504
Commercial Mainstem	TBD	TBD	
Commercial Select Area	≤633	≤318	-315

**Commission guidance further sub-divides the sport impact allocation 75% to fisheries <Bonneville, 10% to fisheries between Bonn-OR/WA border, and 15% to Snake River sport and Wanapum tribal fisheries.*