

**Lower Columbia River Sturgeon Population Status
and Management Annual Review
(Briefing)**

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Summary Sheet

Meeting dates:	February 7-8, 2020
Agenda item:	Lower Columbia River Sturgeon Population Status and Management Annual Review - (Briefing)
Presenter(s):	Laura Heironimus, CRMU Sturgeon/Smelt/Lamprey Unit Lead, and Bill Tweit, Special Assistant to the Director (Fish Program)

Background summary:

The purpose of the Lower Columbia Sturgeon Management Policy (C-3001) “is to provide guidelines for management of the Lower Columbia River white sturgeon population and fisheries” and the intent “to provide consistent management guidelines that promote a healthy population and provide sustainable fisheries.”

The Commission has adopted a precautionary approach to management based on uncertainties around several factors affecting the population. The policy calls for an annual review for the Commission, as an essential component of this precautionary approach, to include updated information on:

- stock status;
- available information on pinniped predation;
- review of in-season management actions;
- summary of catch data, including handling of sturgeon in non-target fisheries, when available;
- recommended management changes; and
- other pertinent information.

Detailed information regarding stock status, predation, harvest, and by-catch is summarized in Attachment 1: “Lower Columbia River White Sturgeon – Stock Assessment and Fishery Management – 2019 Update”

Stock Status

Since 2010, setlines have been used to capture and tag sturgeon and, based on the number of recaptured tagged sturgeon, population estimates were calculated using the Petersen mark-recapture model. The Petersen model estimates the abundance of fish 20–200 inches fork length based on the setline catch rates and gear vulnerability, both of which vary with fork length. Based on this approach, abundance of legal-size fish declined from 2006 through 2012, but increased annually from a low of 72,200 fish in 2012 to 223,960 fish in 2016. The projected abundance for 2019 was 164,120 legal-size fish, based on data collected through 2018. The harvest guidance in 2018 was determined using the lowest available projection.

The mark-recapture estimate using the whole-population approach for 2019 is 168,200 legal-size fish. CPUE for legal-sized fish was consistent with mark-recapture estimates and produced an estimate of 170,200 legal-size fish for 2019.

The estimated number of adult White Sturgeon, fish larger than 65 inches FL, has generally trended upwards from 3,040 fish (95% CI: 1,810-4,268) in 2016 to approximately 11,900 fish (95% CI: 7,097-16,754) in 2017. This is a particularly difficult metric to monitor since sturgeon over 65 inch FL are not easily caught with stock assessment gear. This means that only a few fish are handled annually and a single fish can make a large difference in the point estimate for a given year. The three-year average adult abundance is used to better assess increases or

decreases in abundance trends through time. The three-year average adult abundance continued to increase from 6,470 in 2017 to 9,480 in 2019. In 2016, this estimate moved the adult status above the conservation threshold specified in Oregon's Lower Columbia River and Oregon Coast White Sturgeon Conservation Plan. In 2019, that estimate moved the adult abundance status above the desired level.

The continued low relative abundance of juvenile sturgeon indicates that there may still be prolonged productivity issues within the system. The annual sub-yearling production index in the mainstem Columbia River (0.33 catch-per-net) was down from the 2018 catch but higher than the 2015 and 2016 catch. Catch within the Willamette River (1.42 catch-per-net) was down from 2018, but still the third highest ever recorded in that area.

Pinniped Predation

Steller sea lion predation of White Sturgeon began around the mid-2000's in the gorge below Bonneville Dam. Numbers of Steller sea lions present in the tailrace immediately below the dam remain at high levels. Observed consumption of White Sturgeon at Bonneville Dam during the past five years has decreased annually, to less than 5% of the peak level reached 2011, indicating few sturgeon remain in the area when sea lions are present. The predation estimates are provided by the Corps of Engineers, who observe the mile-long stretch of river below Bonneville Dam. Predation throughout the remaining 145 miles of the lower Columbia River and in tributaries of the river are unknown at this time.

Although observed predation at Bonneville Dam has decreased, White Sturgeon recruitment in the lower mainstem Columbia river still appears to be negatively impacted by the abundance of pinnipeds in the Bonneville Dam tailrace in the spring. A significant negative correlation exists between White Sturgeon catch-per-net and observed Stellar Sea Lion abundance in the Bonneville Dam tailrace. This indicates that abundance of Stellar Sea Lions is a significant predictor of weak White Sturgeon recruitment. This may indicate that the observations of predation at Bonneville are incomplete (unknown levels of predation elsewhere in the river), that the presence of adult sturgeon by pinnipeds is affecting spawning success (increased stress has been shown to induce resorption of eggs), or that adult sturgeon are selecting less optimal spawning habitat to avoid pinniped predation.

In-season Management/Harvest

Sport Fisheries

In 2019, a short-duration retention sturgeon fishery opened for the third time since 2013. This fishery and harvest guidelines were set similarly to the 2017 and 2018 fisheries, targeting a 3.5-4.5% harvest rate. There were positive responses from anglers that participated in the fishery. While participation was still lower than pre-closure levels, overall angler trips (both retention and catch-and-release) increased when compared to the catch-and-release only seasons.

In the Estuary (below Wauna), the fishery was open for 11 retention days (May 13-June 5) with a 2pm closure, 2,960 fish guideline, and size limit of 44-50" fork length. Sport anglers harvested 2,838 fish from approximately 22,000 angler trips, accounting for 96% of the estuary sport fishing guideline. Upstream of Wauna to Bonneville Dam, the fishery was open for five retention days (September 21-October 24) with a 1,230 fish guideline and the same size limit. Sport anglers harvested 685 fish from approximately 12,000 angler trips, accounting for 56% of the Wauna-to-Bonneville sport fishing guideline.

The 2019 white sturgeon sport fisheries had a total guideline of 4,930 fish and a total catch of 3,523 fish. This catch accounts for 71% of the overall sport fishing guideline (including the Willamette River, which did not open for retention) and 84% of the Lower Columbia sport fishing guideline.

Commercial Fisheries

The retention of sturgeon in commercial fisheries was opened again in 2019, for the third time since 2013. In the mainstem, commercial fisheries were only opened for sturgeon retention in Late-August and harvested a reported 509 White Sturgeon. In the select area, commercial fisheries were opened for winter, spring/summer, and fall fisheries. Winter fisheries harvested 20 White Sturgeon, spring/summer fisheries harvested 459 fish, and Fall fisheries harvested 212 fish. In total, the commercial fisheries brought 1,200 White Sturgeon to markets in 2019, accounting for 98% of the 1230 fish commercial guideline.

Sturgeon harvest in areas outside of the lower Columbia River

Since 2014, retention of White Sturgeon has been prohibited in recreational and non-Indian commercial fisheries on the Oregon and Washington coasts, Puget Sound, and their tributaries. This continued through 2019.

By-Catch

The 2019 commercial fisheries were monitored at a minimal level by WDFW staff. Total sturgeon bycatch in 2019 is unknown.

During the recreational sturgeon fishery, an estimated 10,428 white sturgeon (5,388 sublegal-size, 25 legal-size, and 5,015 over legal-size) and 20 green sturgeon were caught and released. This represents 2.2% of the estimated 465,500 fish greater than 40 cm FL.

Recommended Management Changes

Staff will work with Oregon Department of Fish and Wildlife to develop another short-duration sport retention fishery, similar to the fisheries of 2017-2019. Legal-size fish are still up from pre-closure levels, though estimates have declined from the high in 2016. Adult sturgeon, those spawning and contributing most to the population growth, has seen a positive increase in both the annual abundance estimate and three-year average abundance estimate. Additionally, the sub-yearling production index for the lower Columbia River continued to indicate some reproduction, though the estimate was lower than 2017, and the lower Willamette River was the third highest ever recorded. However, the current status of the overall population, which includes both the adult and juvenile segments, is not as robust as in the early 2000's. Uncertainty exists regarding future trends in legal and adult abundance, production of juvenile fish, and recruitment of juvenile fish to the legal-size segment (see Table 1 in Attachment 1).

Policy issue(s) you are bringing to the Commission for consideration:

Briefing only. The current policy, C-3001 (Attachment 2), was adopted January 25, 2018.

Fiscal impacts of agency implementation:

A 2020 sport retention fishery, similar to 2019, would require WDFW to sample the fishery and impacts to the agency would include employee time and salary for fish management staff and enforcement officers. The amount of fiscal impact would be affected by the length of time a fishery is open, the time-period in which it is open (i.e., weekday or weekend), and the intensity of the fishery (how many anglers are present).

Public involvement process used and what you learned:

Staff met with the Columbia River Recreational and Commercial advisor groups on January 14, 2020, and provided updates on the status of the LCR White Sturgeon population. Both groups expressed some concern over the conservation status of the juvenile proportion of the population. Both groups also generally supported another retention fishery in 2020.

Action requested:

Briefing only.

Draft motion language:

N/A

Justification for Commission action:

N/A

Post decision communications plan:

N/A

Form revised 9/13/17






Lower Columbia River White Sturgeon Stock Assessment and Fishery Management 2019 Update

Summary Prepared by

**Joint Columbia River Management Staff
Washington Department of Fish and Wildlife
*Oregon Department of Fish and Wildlife***

January 14, 2019

Table 1. Dashboard of key status indicators for lower Columbia River white sturgeon, 2019. Colored circles indicate status relative to Conservation Plan metrics and/or recent trend.

Metric	N	Interpretation	Brief Summary
Abundance Trends			
38" – 54" FL	168,204		Stable since 2018 but down from 2016 and 2017. However, trend in CPUE setline tagging fisheries is still upward overall.
Adult(>65" FL)	2019: 11,926 3-yr avg.: 9,484		2019 3-yr adult abundance average is above desired status level (threshold = 9,250 adults).
Population Structure	~52% juvenile		Low relative abundance of juvenile and sub-legal sized fish indicates population productivity issues; Below conservation status level (threshold = 60%)
Recruitment Index (CPN)	LCR: 0.33 WR: 1.42		Mixed results. Return to CPNs of <1 after strong 2017 in LCR; but 3 rd highest in LWR since monitoring began in 2010.
Fisheries	Estuary: 22,012 angler trips Total: 37,703 angler trips		Participation still down from pre-closure levels, but >10x higher than average effort when catch-and-release only. Overall participation increasing.

Abundance and CPUE Trends

Table 2. Estimated and projected abundance of 38–54 inch FL (96–137 cm) white sturgeon in the LCR from 2008–2019 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	--	168,200 (100,100-236,300)	<i>164,100</i>	6,160
2020	--		<i>148,800</i>	TBD

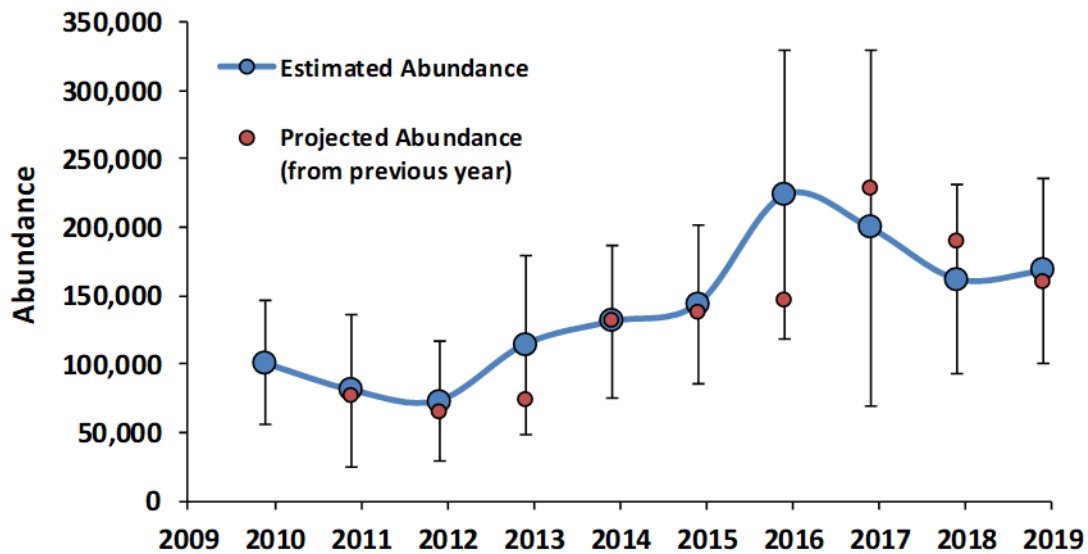


Figure 1. Estimated and projected abundance for 38'' - 54'' FL white sturgeon from the LCR, 2010 - 2019. Error bars represent 95% CI's for the estimated abundance.

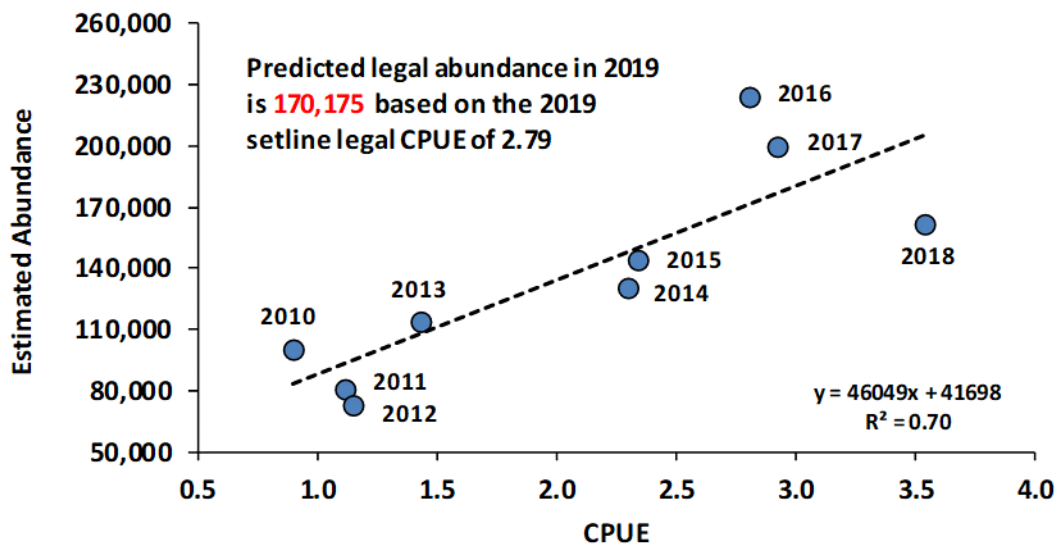


Figure 2. Relationship between annual estimated abundance and setline catch-per-set (CPUE) for 96-137 cm FL white sturgeon in the LCR, 2010-2018.

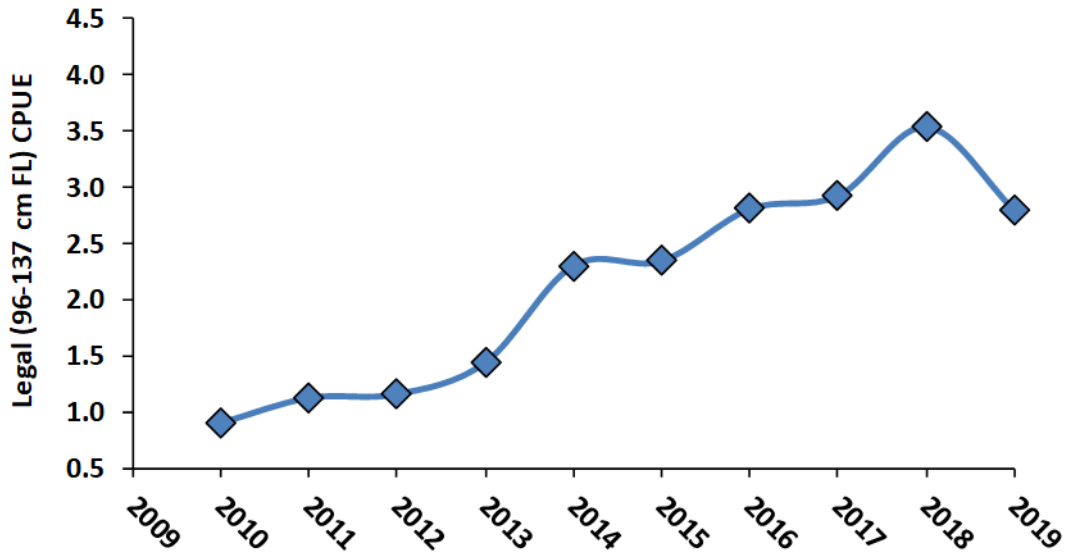


Figure 3. CPUE of 96–137 cm FL white sturgeon caught with setlines in the LCR, 2010–2019.

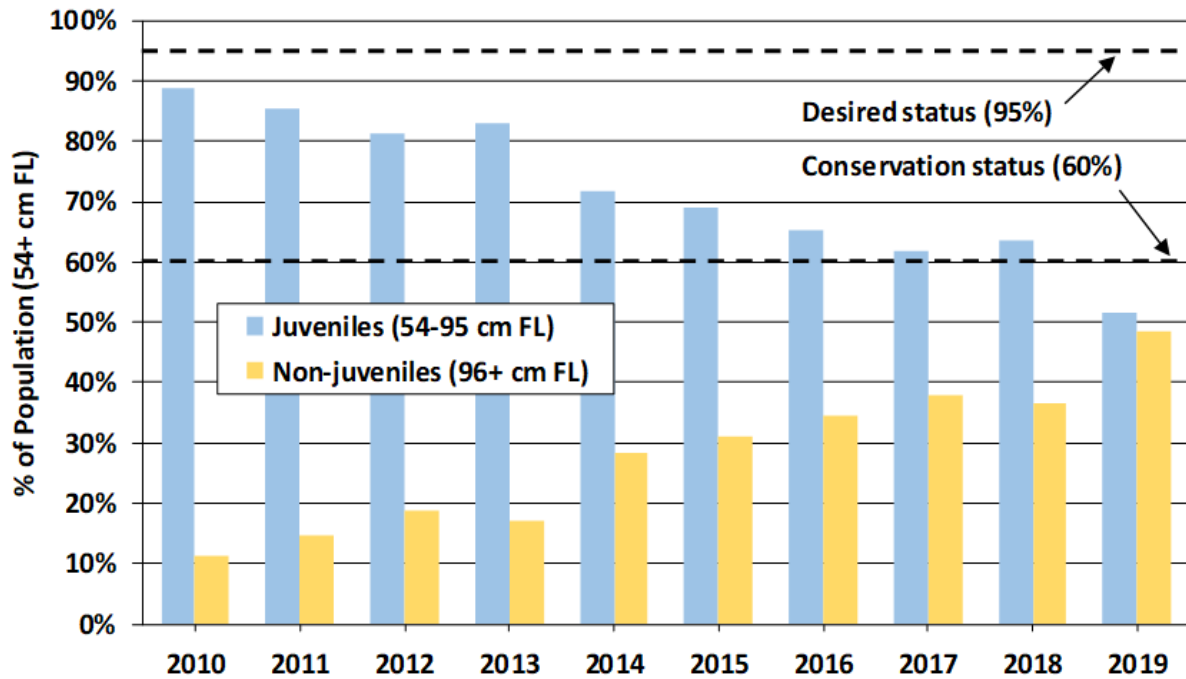


Figure 4. Annual proportion of juvenile and non-juvenile (sub-adults + adults) white sturgeon in the lower Columbia River, 2010–2019. Dashed horizontal line represents conservation status and desired status for juvenile white sturgeon.

Adult Abundance and CPUE Trends

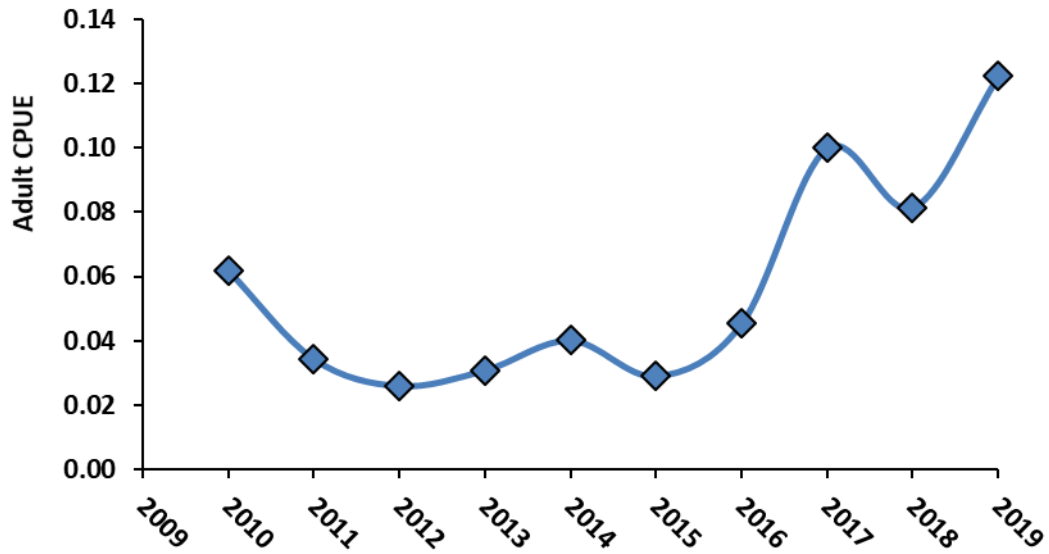


Figure 5. CPUE of adult (≥ 167 cm FL) white sturgeon in the LCR, 2010-2019.

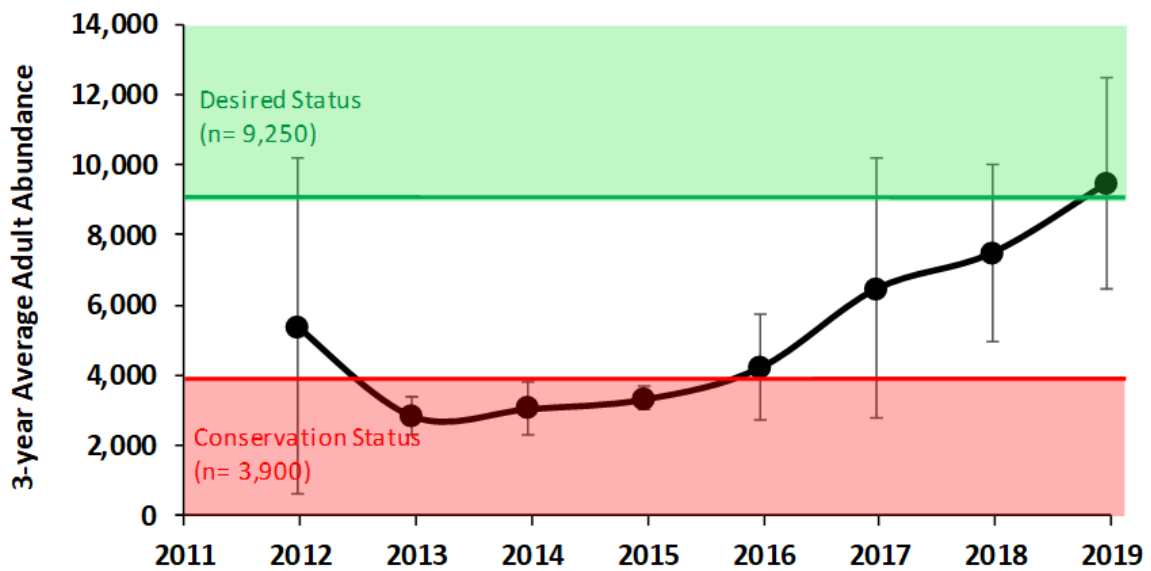


Figure 6. Three-year average estimated abundance for adult (≥ 167 cm FL) white sturgeon from the LCR, 2012–2019. Less than 3 years of data were available for 2010 and 2011 so no averages were calculated. Error bars represent 95% CI's for the estimated abundance.

Length Frequency Trend

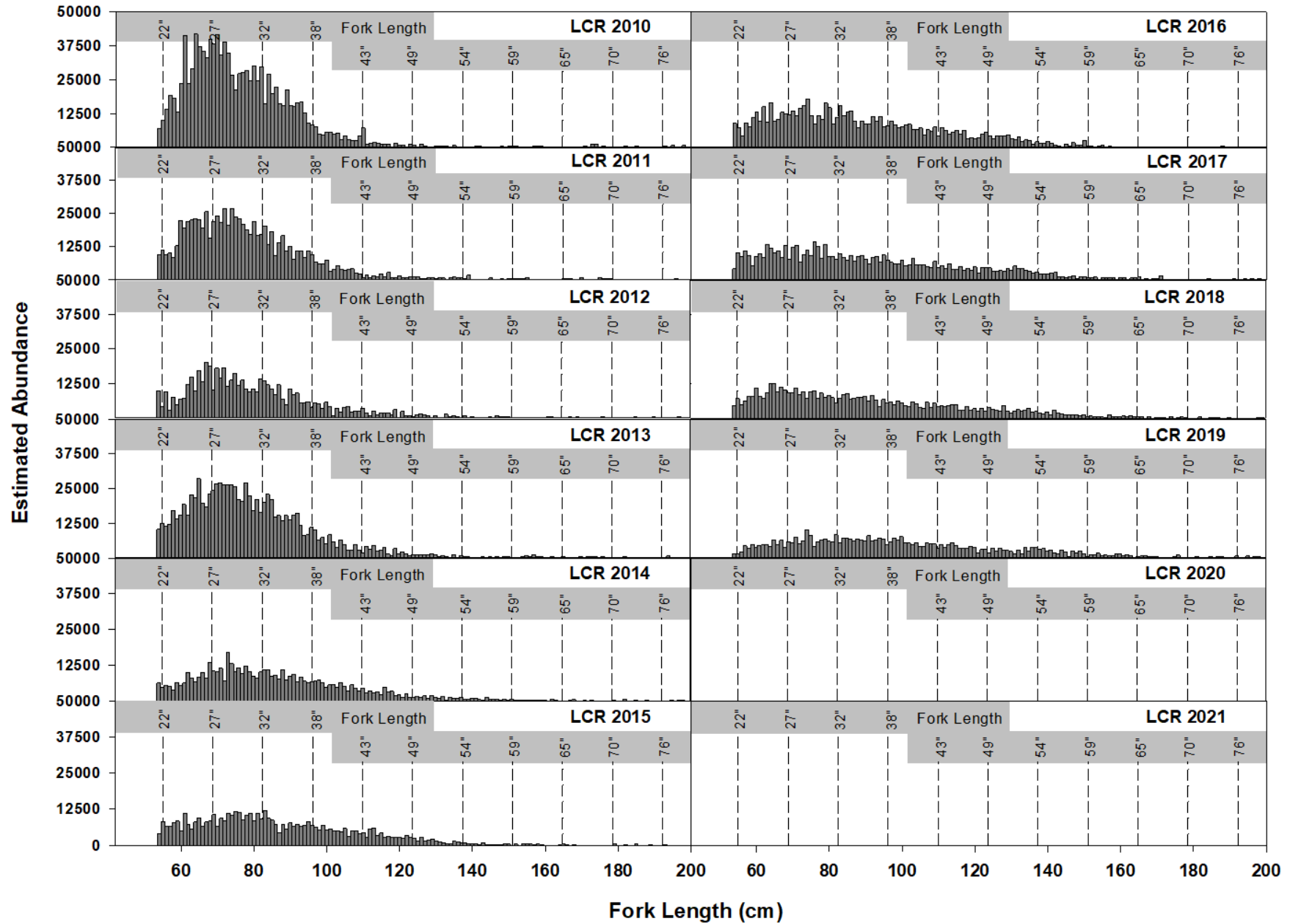
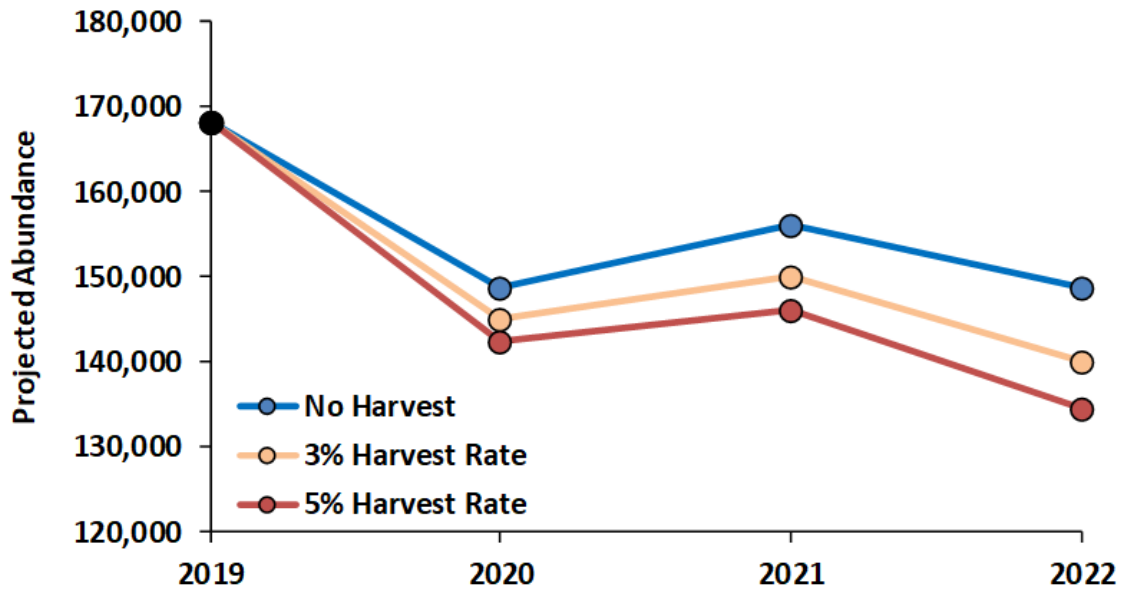


Figure 7. Estimated abundance of white sturgeon ≥ 54 cm FL in the LCR, 2010-2019.

Legal-size Abundance Forecasts

Figure 8 and Table 3. Projected abundance of 96–137cm FL white sturgeon in the LCR under various harvest rate scenarios.



Year	No Harvest	3% Harvest Rate	5% Harvest Rate
2019	168,205	168,205	168,205
2020	148,787	144,920	142,400
2021	156,063	149,992	146,131
2022	148,761	140,048	134,612

Sub-yearling (Age-0) Production

Figure 9 and Table 4. (A) catch-per-net (CPN) and (B) recruitment index (E_p) values for age-0 white sturgeon from the Willamette River and the mainstem lower Columbia River, 2005-2019.

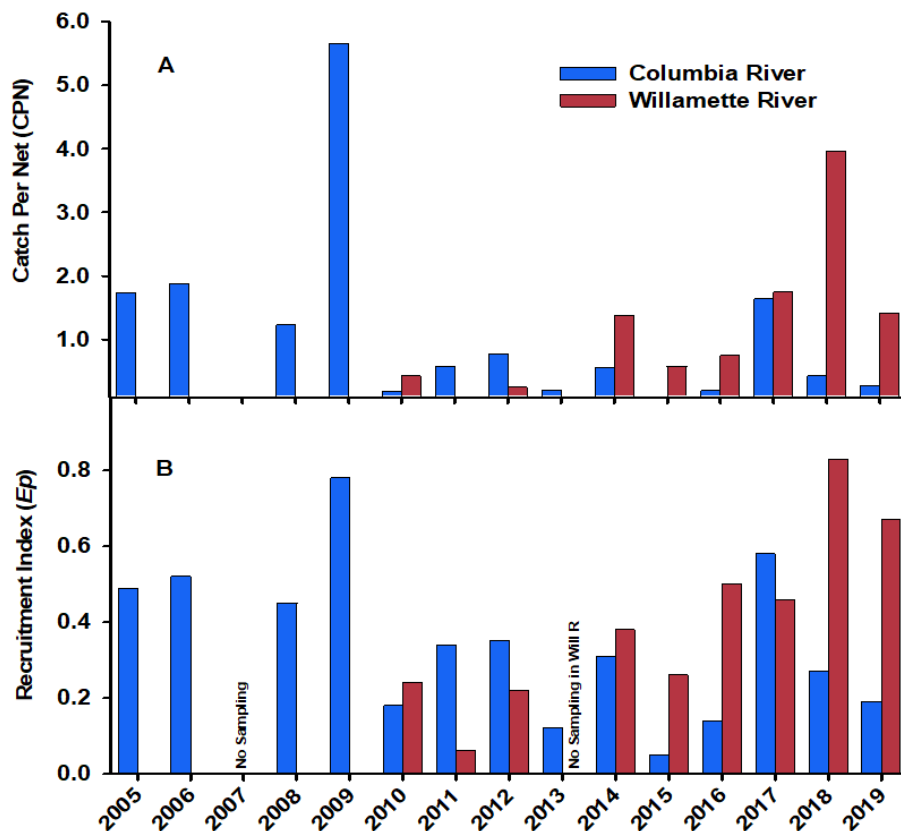


Table 4. CPN and proportion of positive sets (E_p) for YOY white sturgeon in the lower Columbia and Willamette rivers from 2004 - 2019.

Year	Lower Columbia R		Willamette R	
	CPN	E_p	CPN	E_p
2004	1.29	0.44		
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	0.25	0.22
2013 ¹	0.21	0.12	--	--
2014	0.56	0.31	1.38	0.38
2015	0.06	0.05	0.58	0.26
2016	0.20	0.14	0.75	0.50
2017	1.64	0.58	1.75	0.46
2018	0.43	0.27	3.96	0.83
2019 ²	0.33	0.21	1.42	0.67

¹ Incomplete sampling year in both LCR and Willamette R.

² Preliminary assessments based on length frequency examinations.

Sea Lion Abundance and Predation

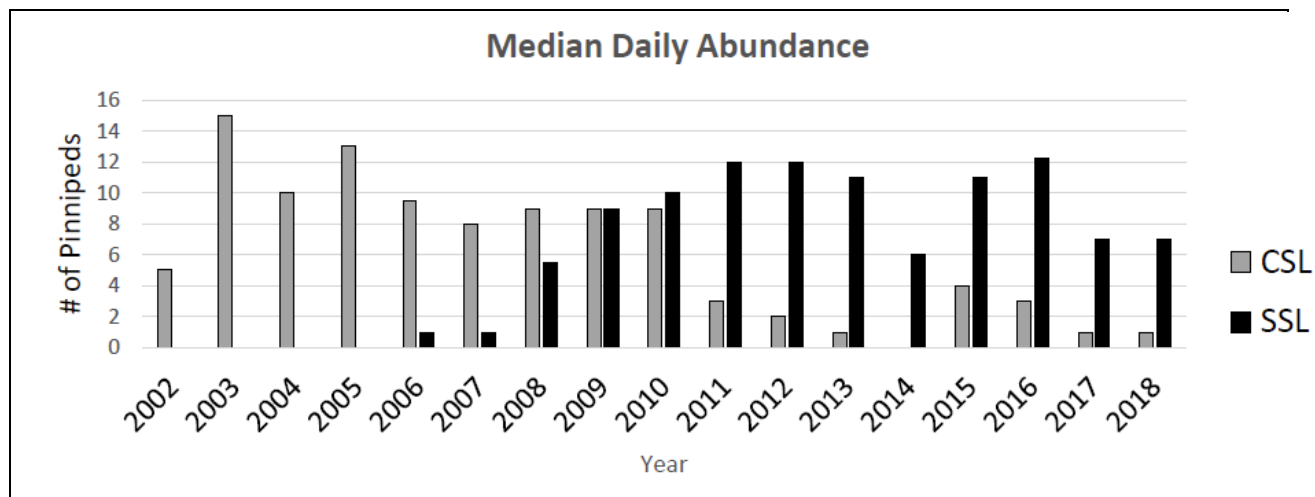


Figure 10. Abundance of California sea lions (CSL) and Steller sea lions (SSL) present at Bonneville Dam between January and the end of May 2002–2018. Figure from U.S. Army Corps of Engineers (USACE) 2018 draft report.

Table 5. Consumption of white sturgeon by CSL and SSL observed during USACE spring monitoring of the Bonneville Dam tailrace, 2005-2018. Adjusted estimates include a proportion of the total unidentified catch.

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
2018	1,410	46	0.033	148

Appendix

Historic Abundance, Harvest and Monitoring Data

Appendix Table 1. Annual recreational white sturgeon catch and harvest guidelines LCR, 1994–2019¹.

Year	Below Wauna ¹		Above Wauna ¹		Sum	Combined	
	Kept Catch	Guideline ²	Kept Catch	Guideline ³		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%
2019	2,838	2,960	685	1,230	3,523	4,190	84%

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 does not include the Willamette guideline.

Appendix Table 2. Annual recreational white sturgeon catch and harvest guidelines in the lower Willamette River, 2003–2019.

Year	Estimated annual kept catch ¹	Baseline ²	Catch in excess of baseline ³	Guideline	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	0	0	0	745	0%
2018	0	0	0	740	0%
2019	0	0	0	740	0%

¹ No sturgeon retention allowed during 2014-16. A retention fishery was considered but did not occur in 2017–2019.

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 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 and harvest guidelines in the LCR, 1995-2019.

Year	Mainstem							Select Area			Grand Total	Guideline	%
	Winter Sturgeon ¹	Winter Salmon	Summer	Early August	Late August	Late Fall	Total	Spring/Summer	Fall	Total			
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%
2019	0	0	0	0	509	0	509	479	212	691	1,200	1,230	98%

¹ Prior to 2003, values reflect all winter fisheries

FISH AND WILDLIFE COMMISSION

POLICY DECISION

POLICY TITLE: Lower Columbia
Sturgeon Management

POLICY NUMBER: C-3001

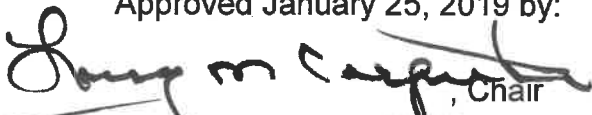
Supersedes: 2014-2018 Lower Columbia Sturgeon Management C-3001

Effective Date: January 25, 2019

Termination Date:

See Also: Policy C-3608

Approved January 25, 2019 by:


Chair
Washington Fish and Wildlife Commission

Purpose

The purpose of this policy is to provide guidelines for management of the Lower Columbia River White Sturgeon population and fisheries.

Definition and Intent

The Lower Columbia River White Sturgeon population inhabits the waters of the Columbia River and tributaries downstream of Bonneville Dam and migrates into ocean and coastal estuaries. The intent of the policy is to provide consistent management guidelines that promote a healthy population and provide sustainable fisheries.

General Policy Statement

Manage the Lower Columbia River White Sturgeon population with conservation and fishery management objectives that are consistent with a healthy population.

Policy Guidelines

Conservation Objectives:

- Provide regulatory protection to increase the abundance of the spawning population.
- Manage with a precautionary approach due to uncertainties in population parameters.
- Manage for an annual combined sport and commercial harvest of White Sturgeon to provide measurable population growth to achieve the goals of: (1) fully seeded habitats and (2) full representation of each size class within the population.
- Population Monitoring (within available resources):
 - Index young-of-the-year (YOY) to track spawning and recruitment success.
 - Estimate population abundance of all size classes.

- Evaluate methods to improve accuracy of abundance estimates.
- Monitor sea lion predation for incorporation into stock status evaluations.
- Advocate for Columbia River flow regimes that promote successful spawning, incubation, and early rearing.

Fishery Management Objectives:

- Provide sufficient sturgeon spawning sanctuaries or other protective measures where and when appropriate.
- Quantify impacts of commercial and recreational fisheries on sublegal, legal, and over-size (including spawning adult) abundances.

When Retention Fisheries are Allowed:

- Manage Lower Columbia River sturgeon fisheries through an agreement with Oregon.
- Maintain concurrent Washington and Oregon regulations in the Columbia River.
- Manage fisheries in a manner that considers projected recruitment, with the objectives of increasing abundance of the legal size segment and increasing escapement into the spawning segment of the population. Management should consider all mortality sources, including both recreational and commercial fisheries and pinniped predation.
- Manage fisheries using an 80/20 sport/commercial harvest allocation.
- Strive for viable and diverse recreational and commercial fishing opportunities.
- Develop sport fishery regulations consistent with the following objectives:
 - Stay within approved harvest guidelines.
 - Balance catch between estuary and non-estuary fisheries.
 - Maintain fishery monitoring and management capabilities.
- Develop commercial fishery regulations consistent with the following objectives:
 - Optimize economic value (adjust to market needs).
 - Spread harvest opportunity throughout the year.
- Consideration of fisheries outside the Lower Columbia River must take into account the ability to monitor and manage those fisheries and be consistent with Lower Columbia River sturgeon conservation objectives.
- Maintain prohibition of Green Sturgeon retention until delisting occurs and retention can be re-evaluated.

Annual Review

Given the degree of uncertainty about various population parameters (e.g., recruitment success, pinniped predation, and size-class structure) of the Columbia River White Sturgeon, the Commission is adopting a precautionary approach to management. The Director will provide an annual review of the population status and fisheries for the Commission, as an essential component of this precautionary approach, to include updated information on:

- stock status;
- available information on pinniped predation;

- review of in-season management actions;
- summary of catch data, including handling of sturgeon in non-target fisheries, when available;
- recommended management changes; and
- other pertinent information.

This policy may be updated as part of any Lower Columbia sturgeon stock status review. The Director will provide the Commission a review of this Policy at least every five years.

Delegation of Authority

The Commission delegates the authority to the Director to develop and negotiate Lower Columbia Sturgeon Management Accords with Oregon Department of Fish and Wildlife that are consistent with these policies and objectives. The Director will consult with appropriate recreational and commercial advisory bodies during this process. Additionally, the Commission delegates the authority to the Director, through the Columbia River Compact, to set seasons for recreational and commercial fisheries in the Columbia River, and to adopt permanent and emergency regulations to implement these fisheries. The Director shall work with the Oregon Department of Fish and Wildlife to achieve implementation of this Commission action in a manner that results in concurrent regulations between the two states. The Director shall consult with the Commission Chair if it becomes necessary to deviate from the Commission's policy to achieve concurrent regulations with Oregon.

Lower Columbia River Sturgeon Annual Review

Laura Heironimus and Bill Tweit
Columbia River Management Unit, Fish Program



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Purpose

Annual review of stock status and fisheries.

- Commission Policy C-3001 "Lower Columbia Sturgeon Management"



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Outline

- Policy Guidance
- 2019 Fisheries
- Stock Status
- Predation
- 2020 Fisheries



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Lower Columbia River White Sturgeon

Distribution:

- The Columbia River, downstream of Bonneville Dam.
- Nearshore marine areas and Washington and Oregon coastal bays and estuaries, including Puget Sound.



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Policy Guidance: C-3001

"...to provide consistent management guidelines that promote a healthy population and provide sustainable fisheries."

Conservation Objectives:

- Increase abundance of spawning population
- Manage with a precautionary approach
- Population monitoring (within available resources)

Fishery Management Objectives:

- Quantify impacts of fisheries on sturgeon abundance
- Consider projected recruitment and mortality sources
- Monitor and manage fisheries

The Commission delegates the authority to the Director to develop and negotiate Lower Columbia Sturgeon Management Accords with Oregon Department of Fish and Wildlife that are consistent with these policies and objectives.



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Recent Management

Lower Columbia sturgeon population closed to harvest in 2014.

Since 2017, the department has collaborated with Oregon Department of Fish and Wildlife staff to develop very limited White Sturgeon harvest fisheries in the lower Columbia River that are consistent with the reduced status of the population.



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2019 Fishery Harvest Guidelines

- Total Catch Guideline: 6,160 fish
- Commercial Fishery: 1,230 fish (20%)
- Sport Fishery: 4,930 fish (80%)
 - CR Estuary: 2,960 fish
 - CR Wauna-Bonneville: 1,230 fish
 - Willamette River: 740 fish*

*no retention fishery opened



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2019 Commercial Fishing Harvest

Select Area (SAFE):

- Winter: 20 fish
- Spring/Summer: 459 fish
- Fall: 212 fish
- **Total:** 691 fish (58%)

Mainstem:

- Early Fall: 509 fish (41%)

Total Harvest: 1,200 fish

98% of the 2019 commercial guideline



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2019 Sport Fishing Harvest

Estuary (below Wauna):

- May 13-June 5 (11 d)
- 22,012 angler trips
- **Total:** 2,838 fish (96%)

Wauna to Bonneville:

- Sept. 21-Oct. 24 (5 d)
- 12,063 angler trips
- **Total:** 685 fish (56%)

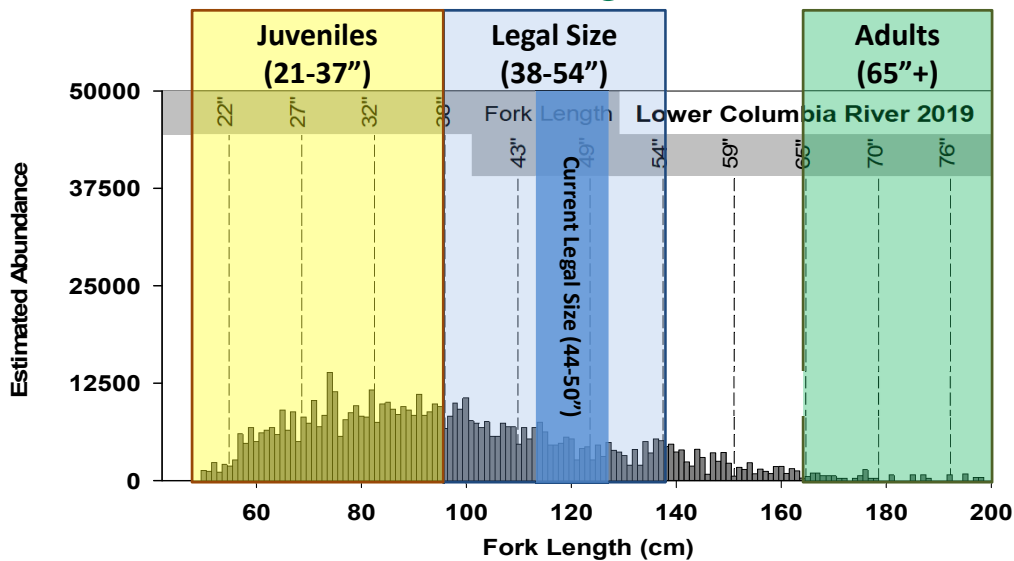
Total Harvest: 3,523 fish

- 71% of the total 2019 sport guideline
- 84% of the Lower Columbia harvest guideline
- 37,703 total trips for retention and catch-and-release fisheries



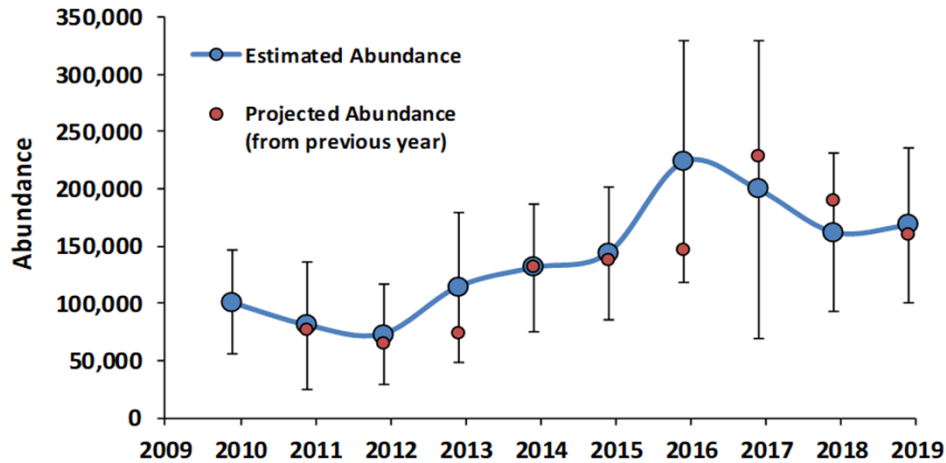
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2019 Lower Columbia Sturgeon Size Distribution



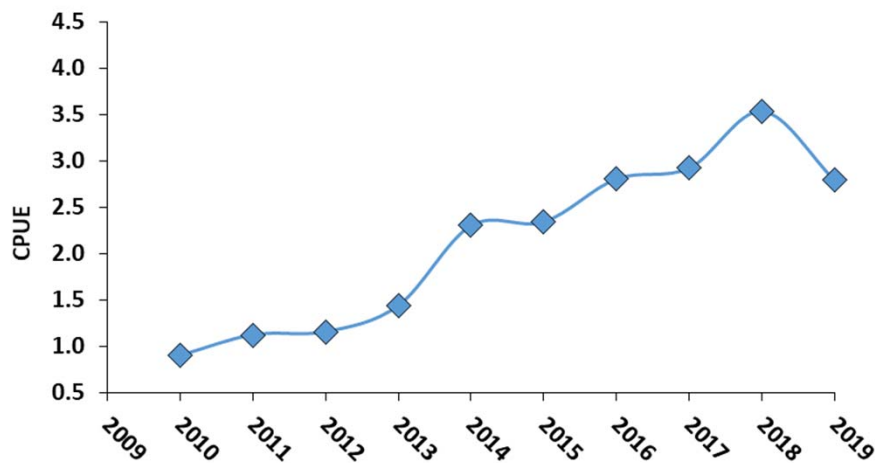
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Trends in Legal Abundance (38-54" FL)

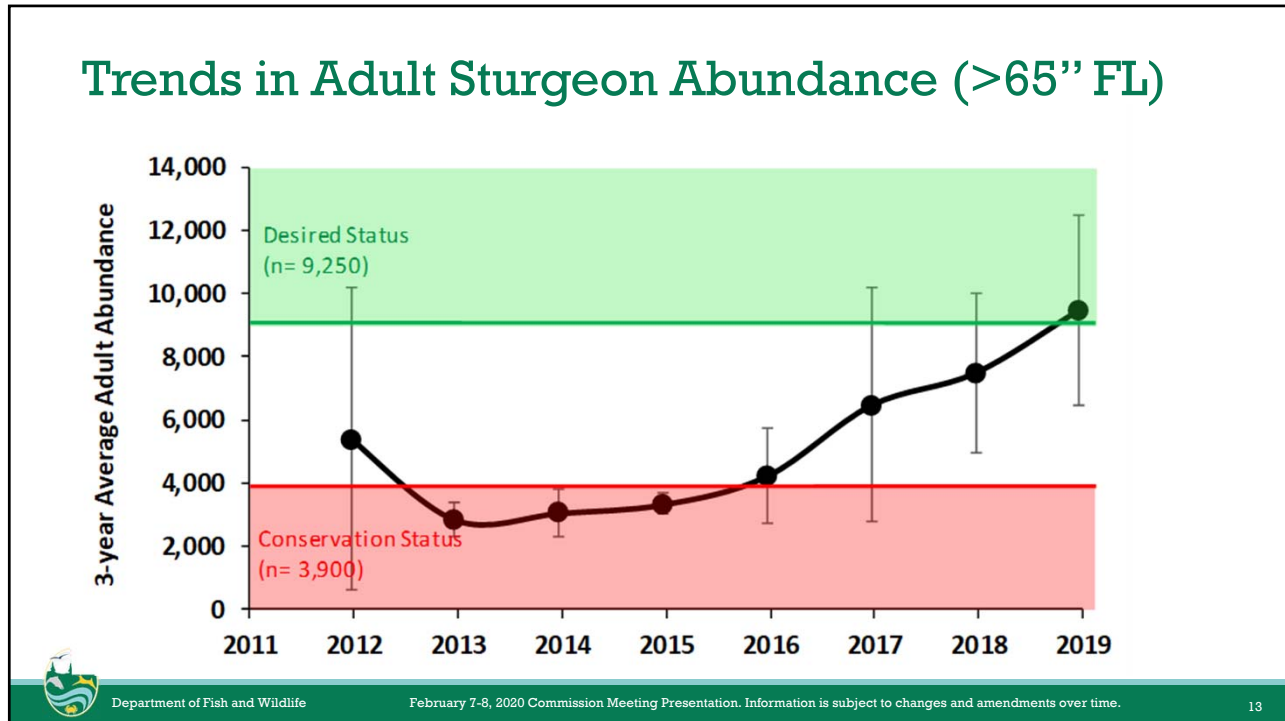


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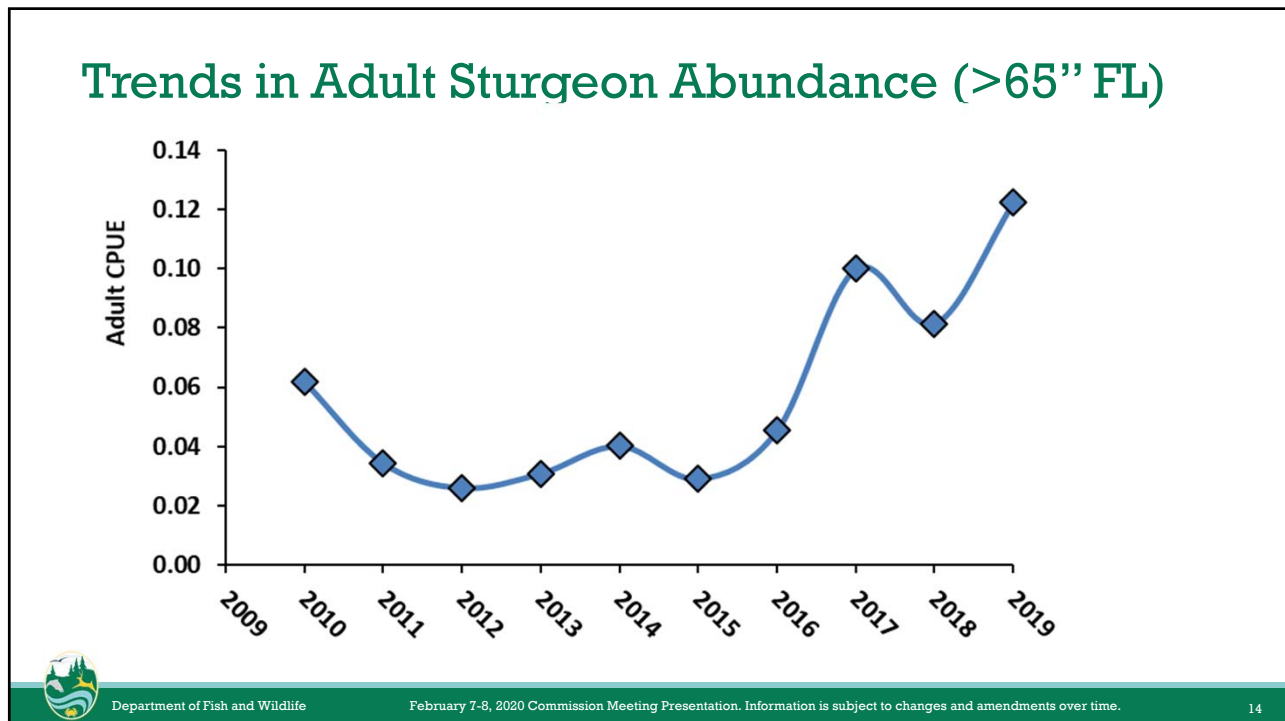
Trends in Legal CPUE (38-54" FL)



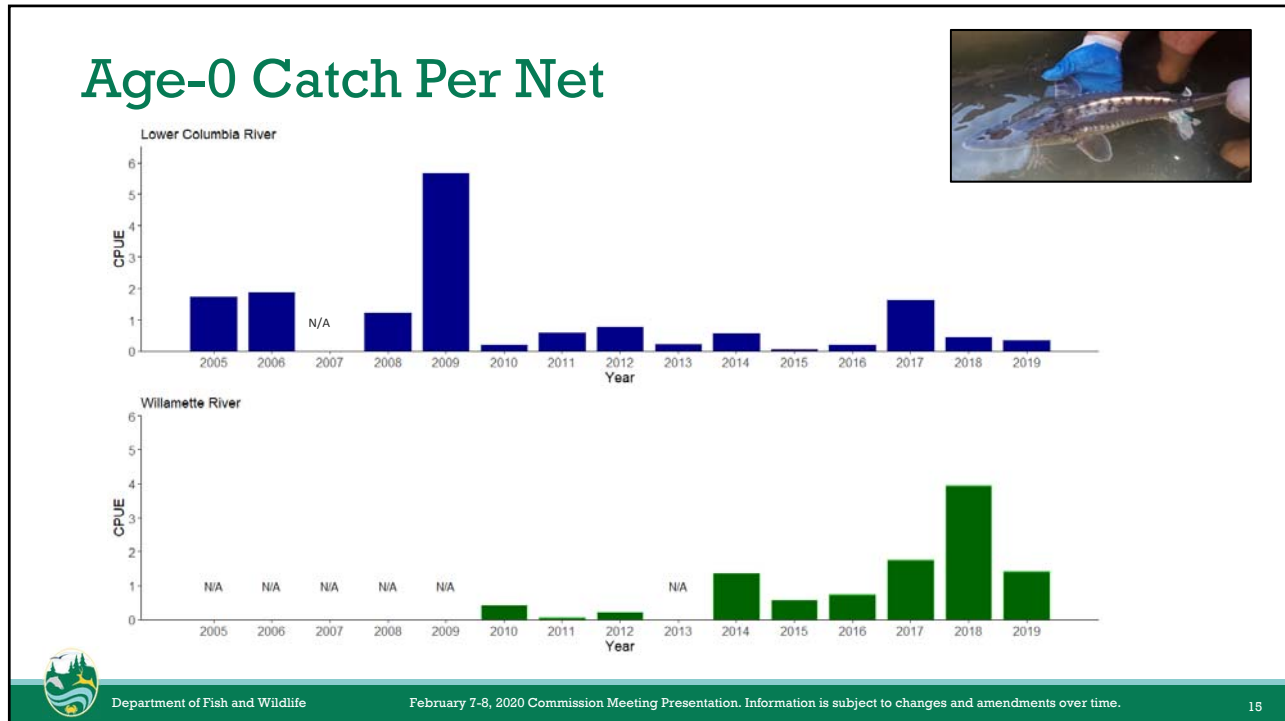
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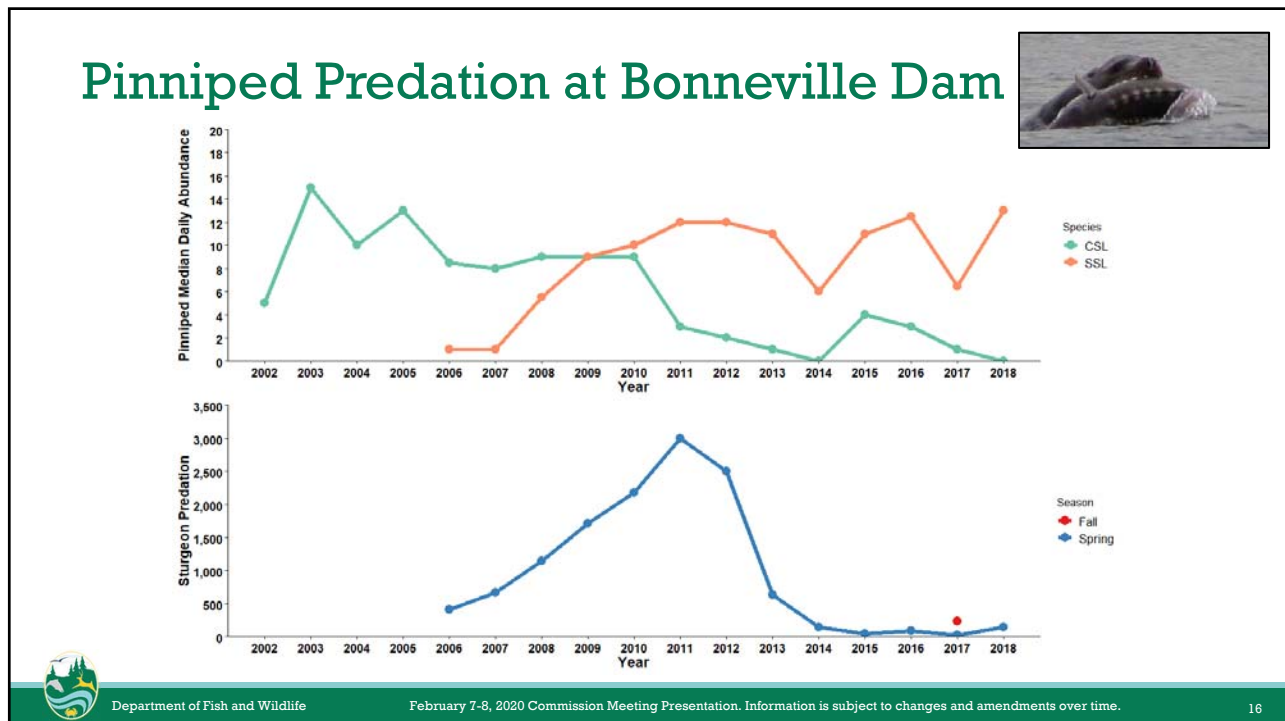
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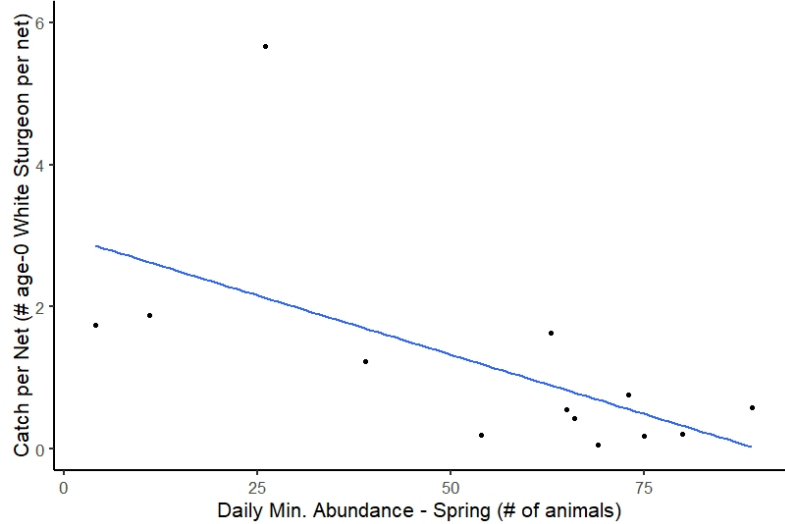
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Pinniped Abundance vs Age-0 Catch Per Net

- Stellar Sea Lions are the primary predator for White Sturgeon in the Columbia River.
- The abundance of Stellar Sea Lions is a significant predictor of weak White Sturgeon recruitment.

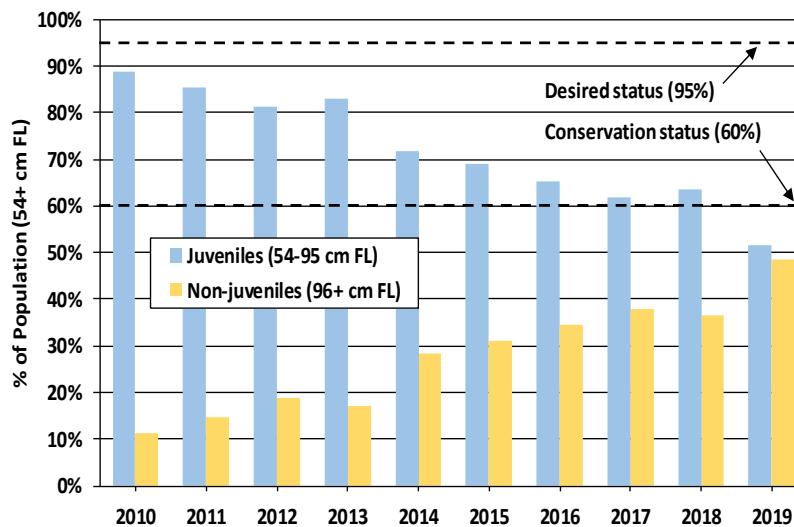


Source: Peter Stevens, ODFW 2019



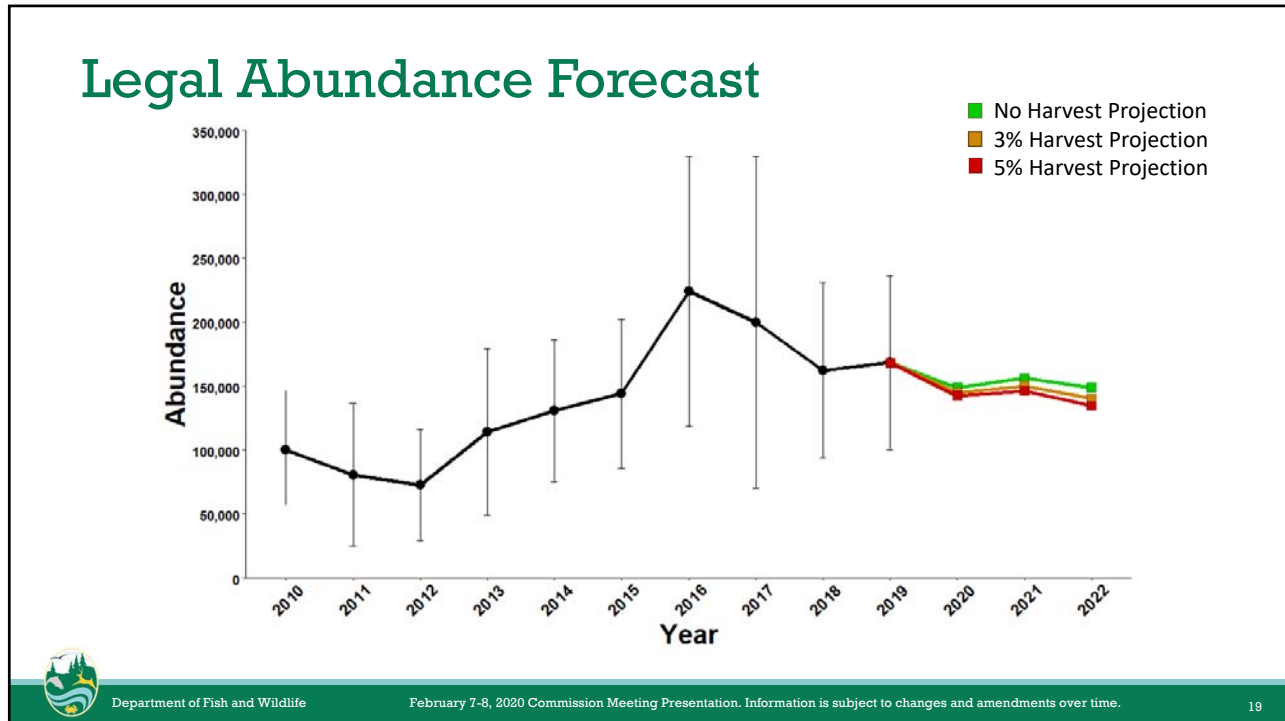
Department of Fish and Wildlife

Population Composition: 2010-2019



Department of Fish and Wildlife

February 7-8, 2020 Commission Meeting Presentation. Information is subject to changes and amendments over time.



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2019 Summary

Metric	N	Interpretation	Brief Summary
Abundance Trends 38" – 54" FL	168,204	●	<ul style="list-style-type: none"> Stable since 2018 but down from 2016 and 2017. However, trend in CPUE setline tagging fisheries is still upward overall.
	Adult (>65" FL) 2019: 11,926 3-yr avg.: 9,484	●	<ul style="list-style-type: none"> 2019 3-yr adult abundance average is above desired status level (threshold = 9,250 adults).
Population Structure	~52% juvenile	●	<ul style="list-style-type: none"> Low proportional abundance of juvenile and sub-legal sized fish indicates population productivity issues; Below conservation status level (threshold = 60%)

Department of Fish and Wildlife
February 7-8, 2020 Commission Meeting Presentation. Information is subject to changes and amendments over time.

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2019 Summary

Metric	N	Interpretation	Brief Summary
Recruitment Index (CPN)	LCR: 0.33 WR: 1.42		<ul style="list-style-type: none"> Mixed Results <1 CPN in LCR 3rd highest ever for LWR
Sea Lion Predation	Bonneville 2018 Spring: 148		<ul style="list-style-type: none"> Lower predation observed at Bonn. than 2011 (unknown levels elsewhere in LCR) Correlation with abundance and low recruitment
LCR Fisheries (retention and catch-and-release)	Estuary: 22,012 angler trips Total: 37,703 angler trips		<ul style="list-style-type: none"> Participation down from pre-closure. Higher participation than during catch-and-release only fisheries. Overall participation increasing.



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Public Input

Shared stock status update with Columbia River advisory groups in January.

- Sport advisors expressed conservation concerns but generally supported another retention fishery similar to the structure of 2017-2019.
- Commercial advisors also expressed conservation concerns but agreed with assessment and asked for a balanced approach to commercial harvest.



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Next Steps

- Work with ODFW to develop another short-duration retention fishery, similar to 2017-2019.
- Target low harvest rate to continue building population while providing sustainable fishing opportunity.



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Thank you



Questions?



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