



## MEMORANDUM

TO: Members  
Alaska Board of Fisheries

DATE: January 27, 2020

FROM: Dave Rutz, Director *DSR*  
Division of Sport Fish

SUBJECT: Updated Susitna River sockeye  
salmon Stock of Concern  
recommendation

and

Sam Rabung, Director *SR*  
Division of Commercial Fisheries

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In a memorandum to the Board of Fisheries on 3 October 2019, the department recommended the Stock of Yield Concern designation for Susitna River sockeye salmon be discontinued. Upon being informed of an error relating to yield estimates for the Susitna-Yentna and Judd-Chelatna-Larson systems, the department corrected the error and updated the harvest estimates based on genetic stock identification. The following efforts were completed to better estimate the harvest of Susitna River sockeye salmon in Upper Cook Inlet from 2005–2019:

- Susitna-Yentna and Judd-Chelatna-Larson genetic reporting groups were combined into a single reporting group to produce annual estimates of harvest for the entire Susitna River sockeye salmon stock (Table 1).
- Unsampled and previously unrepresented harvests were estimated using median stock composition estimates from years with estimates from the same fishery.
- Additional harvest from the Kasilof River Special Harvest Area, Upper Subdistrict (Eastside set gillnet), and Susitna River sport harvest were included in the revision.
- Previously reported corridor-only estimates were combined with districtwide estimates to provide a single estimate for Central District drift gillnet harvest.
- Previously unreported 2019 harvest estimates were added to the time series.
- The most recent commercial harvest numbers from the fish ticket database were applied to the updated stock composition estimates to represent the annual commercial harvest for each year.

Based on this second review, the department continues to recommend Susitna River sockeye salmon no longer be designated a Stock of Yield Concern. This recommendation is based on: (1) escapements in the three indicator systems (Judd, Chelatna, and Larson lakes; Table 2) have been met in most of the past five years, (2) average harvest for Susitna River sockeye salmon has increased or remained stable since being designated a Stock of Yield Concern in 2008 (even with regulatory restrictions enacted to reduce harvest), and (3) reduced production can in part be attributed to invasive northern pike.

As part of the Upper Cook Inlet board meeting in February 2020, staff will provide an oral presentation that includes the status of Susitna River sockeye salmon and the department's recommendation for discontinuing the Stock of Yield Concern designation.

### References Cited

- Barclay, A. W. *In prep A*. Genetic stock composition estimates for the Upper Cook Inlet sockeye salmon commercial fishery, 2019. Alaska Department of Fish and Game. Regional Information Report, Anchorage.
- Barclay, A. W. *In prep B*. Compilation (2005–2019) of genetic stock identification estimates of sockeye salmon harvest from sampled Upper Cook Inlet commercial fisheries; Susitna River components reported both separately and combined. Alaska Department of Fish and Game. Regional Information Report, Anchorage.
- Oslund, S., S. Ivey, and D. Lescanec. *In prep*. Area management report for the sport fisheries of northern Cook Inlet, 2017–2018. Alaska Department of Fish and Game Fishery Management Report

Table 1. —Estimated harvest of Susitna River sockeye salmon based on genetic stock identification in Upper Cook Inlet fisheries, 2005–2019.

Year	Central District (drift gillnet)	Kasilof River Special Harvest Area (set and drift gillnet)	Northern District (set gillnet)	Upper Subdistrict (Eastside set gillnet)	Western-Kalgin Island-Kustatan-Subdistricts (set gillnet)	Sport	Estimated total harvest <sup>a</sup>
2005	101,163	56	7,299	12,656	2,534	3,896	127,603
2006	43,084	395	2,751	2,281	4,156	2,038	54,705
2007	192,602	12	3,880	51,954	3,104	4,647	256,199
2008	106,540	24	6,802	32,144	910	4,403	150,822
2009	85,416	-	7,033	10,811	233	9,682	113,175
2010	95,624	-	6,243	14,307	1,059	5,449	122,681
2011	192,382	-	11,901	21,800	2,109	5,872	234,065
2012	172,341	-	4,780	6,352	807	5,395	189,675
2013	128,750	38	5,269	55,007	370	9,360	198,795
2014	108,139	121	11,705	2,280	3,503	6,084	131,831
2015	117,856	75	21,715	60,829	1,963	5,411	207,849
2016	99,045	-	16,390	5,737	5,278	10,451	136,901
2017	110,132	-	10,773	66,903	2,277	5,092	195,178
2018	72,086	271	15,383	14,392	2,359	6,790	111,282
2019	54,304	-	14,605	5,724	1,828	NA	NA
<b>Average</b>							
2005-2007	112,283	154	4,643	22,297	3,265	3,527	146,169
2008-2018 <sup>b</sup>	117,119	48	10,727	26,415	1,897	6,726	162,932

Sources: Barclay (*In prep A, In prep B*) provide commercial fishery genetic stock composition estimates for sampled (represented) harvest strata; Oslund et al. (*In prep*) provides estimates of sportfishing harvest.

Notes: Unsampled and previously unrepresented harvests were estimated using the median stock composition estimate from other years with estimates for similar statistical areas using the most recent harvest numbers from the fish ticket database; therefore, the harvest estimates in the is table will deviate from numbers reported in Barclay (*In prep B*). NA - 2019 estimate of harvest from the Statewide Harvest Survey was not available. "-" Indicates years Kasilof River Special Harvest Area was not fished

<sup>a</sup> Totals may not equal the summation of harvests as a result of rounding.

<sup>b</sup> 2008–2019 averages values are not presented because 2019 estimates of sport harvest are not yet available.

Table 2.- Susitna River sockeye salmon stocks reviewed for stock of concern status, including current and recommended SOC designation, current and recommended escapement goals, and escapements, 2009-2019. Escapement shaded in grey were below the escapement goal in place that year for that stock.

Species, system, and stock	SOC estab	2008 yield	Type of		Recommended		Escapements													
			SOC	Survey	Goal	Current goal	Goal	SOC action	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
<i>Sockeye salmon</i>																				
<i>Susitna River</i>																				
Yentna R <sup>a</sup>		yield																		
Chelatna Lake	-	none	weir	SEG	20,000-45,000	no change		17,721	37,734	70,353	36,736	70,555	26,374	69,897	60,792 <sup>b</sup>	26,986	20,434 <sup>b</sup>	26,303		
Judd Lake	-	none	weir	SEG	15,000-40,000	no change		44,602	18,466	39,909	18,715	14,088	22,229	47,934	NS <sup>c</sup>	35,731	30,844	44,415		
Larson Lake	-	none	weir	SEG	15,000-35,000	no change		40,930	20,324	12,225	16,567	21,821	12,430	23,185	14,333	31,866	23,632	9,699		

<sup>a</sup> Yentna River sockeye salmon escapement goal was replaced by SEGs on Chelatna, Judd, and Larson lakes in 2009.

<sup>b</sup> Chelatna weir was flooded late in the season in 2016 and 2018. Escapements have not been expanded to account for early weir removal.

<sup>c</sup> Judd Lake weir was not operated in 2016.