



## MEMORANDUM

TO: Members, Alaska Board of Fisheries      DATE: September 26, 2022

FROM: Samuel Rabung, Director *SR*      SUBJECT: Alaska  
Division of Commercial Fisheries      Peninsula/Aleutian  
Islands and Chignik  
David Rutz, Director *DSR*      Stock of Concern  
Division of Sport Fish      Recommendations

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The *Policy for the Management of Sustainable Salmon Fisheries* (SSFP; 5 AAC 39.222) directs the Alaska Department of Fish and Game (department) to report to the Alaska Board of Fisheries (board) on the status of salmon stocks and identify any stocks that present a concern related to yield, management, or conservation during regular board meetings. An interdivisional review team, consisting of staff from the divisions of Commercial Fisheries and Sport Fish, was formed to review existing Pacific salmon *Oncorhynchus* spp. escapement goals for Area L (Chignik Management Area; CMA) and Area M (Alaska Peninsula and Aleutian Islands Management Area) as part of the current board meeting cycle. In conjunction with the escapement goal review, the team examined potential stocks of yield, management, or conservation concern, as defined in the SSFP. This memorandum summarizes the results of the stock of concern evaluation for the Area L and Area M salmon stocks for the 2022–2023 board regulatory cycle.

Currently there are 6 escapement goals in Area L (1 king, 2 sockeye, 2 pink, 1 chum salmon; Table 1; Schaberg et al. 2019 (a)) and 22 escapement goals in Area M (1 king, 5 chum, 2 coho, 1 pink, 13 sockeye salmon; Table 2; Schaberg et al. 2019 (b)). Escapement is monitored using weirs or aerial surveys in these areas, and in general escapement goals have been achieved during the recent cycle. Only Chignik River king salmon, Chignik Management Area even-year pink salmon, and Chignik River early-run, Mortensen Lagoon, Thin Point Lake, and Orzinski Lake sockeye salmon have had escapements consistently below the goals and were thus reviewed for Stock of Concern designation during this cycle.

### **Chignik River King Salmon**

The Chignik River king salmon run has not met the Biological Escapement Goal (BEG; 1,300–2,700 fish) in five of the last six years and has seen fishery restrictions and closures aimed at conserving king salmon in 2017 and 2019–2022 (Table 1). While declines of Chignik River king salmon have occurred more recently than other king salmon stocks in the state, it has seen a

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marked downward trend in escapement recently with 2022 being the lowest king salmon weir count in recent history. Chignik River king salmon must travel through the Chignik Lagoon where significant commercial, subsistence and sport fisheries occur and given the relatively confined area of the Chignik Lagoon and proximity to the river mouth, it can be assumed that the majority of king salmon harvested are of Chignik River origin. The department recommends Chignik River king salmon be designated a Stock of Management Concern.

### **Chignik River Early-run Sockeye Salmon**

Chignik River early-run sockeye salmon have not met the BEG (350,000–450,000 fish) in four of the past five years, with the BEG having been achieved in 2022 (Table 1). At the March 2022 Board of Fisheries Statewide Shellfish meeting, the board designated Chignik River early-run sockeye salmon a stock of management concern. Because this Stock of Concern designation was made outside the normal cycle for the Chignik Management Area, no action plan was available when the designation was made. Instead, a discussion around management measures to be implemented in 2022 if early-run sockeye salmon returns were poor was held at the board meeting.

### **Chignik Management Area Even-year Pink Salmon**

Chignik Management Area pink salmon have not met the aggregate aerial survey based SEG (170,000–280,000) in two out of the past four even years (2016 and 2020). The SEG was revised as an aggregate index goal in 2016, with a reduced number of index streams (Schaberg et al. 2015), and it was exceeded in 2022 (Table 1). Achievement of the index goal is measured across 8 streams distributed throughout the CMA. Indexed escapement can only be assessed if all the CMA index streams are successfully surveyed with “fair” or better conditions. In 2016 and 2018 peak counts occurred when conditions were poor in surveyed index streams. In 2018 one of the most significant index streams (Aniakchak River) was not successfully counted, and surveyors noted that conditions were poor throughout the season (Wilburn and Renick 2018). While the escapement in these years was perceived to be low, it is uncertain if conditions in the index streams allowed accurate assessment.

Survey conditions often impair consistent and accurate counts of pink salmon in many CMA streams. Whether it is survey conditions, or lack of complete index coverage, it is most important to recognize that the increase in the population size in 2022 shows that the low escapement from previous years resulted in escapement over the upper end of the SEG, and a commercial harvest of over 1 million pink salmon in 2022.

Because of the recent increase in abundance, and the uncertainty around complete and accurate assessment of the SEG, the department does not recommend Chignik Management Area even-year pink salmon be designated a Stock of Concern.

### **Mortensen Lagoon Sockeye Salmon**

The Mortensen Lagoon sockeye salmon Sustainable Escapement Goal (SEG; 3,200–6,400 fish) was not met in four of the past five years (Table 2). From 2018 to 2021 escapement index counts were well below the goal, but the abundance has slowly increased since 2019 and the aerial survey based goal was achieved in 2022. Mortensen Lagoon is a short system with a deep, narrow river channel feeding into the lagoon and a small tannic lake north of the river. The river

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is approximately 1.5 miles long and the lake is 1.25 miles across at its widest point. Fish are typically only visible in the system when schooled in the lake and are difficult to see during aerial surveys unless the weather conditions are very good. Historical timing of peak aerial surveys for Mortensen Lagoon is between August 29 and September 7. Recently, due to staff and budget constraints, the field stations at Cold Bay and Sand Point close during the last week of August, sometimes missing the peak of the return to Mortensen Lagoon. In 2018, the last survey, and highest escapement count, was on August 18, in 2019 the last survey, and highest escapement count, was on August 26, and in 2020 the last survey, and highest escapement count, was on August 21. Prior to 2005, aerial surveys occurred much later in the season and captured the peak of the run more accurately. For instance, in 2004, a survey was flown on September 12 and again on September 24, with the peak count of the escapement on September 12.

Additionally, weather conditions for surveys are often poor for counting shoaled salmon in the tannic lake. In Mortensen Lagoon between 2018 and 2020, three of the six surveys conducted had poor conditions, thus the estimates of escapement during those years were likely low. Based on the increasing pattern of abundance and escapement, the early timing of surveys likely missing the peak, and poor survey conditions experienced, the department does not recommend Mortensen Lagoon sockeye salmon be designated a Stock of Concern.

### **Thin Point Lake Sockeye Salmon**

The Thin Point Lake sockeye salmon SEG (14,000–28,000 fish) has not been met for three of the past five years, meeting the goal in 2021 and 2022 (Table 2). The escapement increased each year from 2018 to 2021, so the increasing abundance of sockeye salmon across the area holds here as well.

Thin Point Lake is connected to Thin Point Cove by a wide, braided, murky stream that is less than 2 miles long and roughly 0.5 mile wide. The lake is shallow and is often muddy or algal if winds mix the lake. There are several tributaries that feed into Thin Point Lake and sockeye salmon can best be observed aerially late in the season when the fish are in spawning colors and aggregated around the mouths of tributaries or paired for spawning on the lake beaches. Conducting aerial surveys is challenging and often poor visibility prevents good escapement estimates.

There is no directed commercial fishery on Thin Point Lake sockeye salmon, and there are significant closed waters around the stream terminus. Because the escapement goal is based on aerial surveys late in the run, there are no inseason management actions that are derived from the escapement in Thin Point Lake. Directed harvest of these fish is mostly from subsistence fishermen, and the harvest is minimal with an average of 465 fish from 2015 to 2019. Based on the increasing pattern of abundance, the lack of a directed commercial fishery, the closed waters around the stream terminus, and poor survey conditions experienced, the department does not recommend Thin Point Lake sockeye salmon be designate a Stock of Concern.

It should be noted that the department has recommended a new SEG at Thin Point Lake (9,000–19,000) that will take effect starting in 2023. This supports the concept that the escapements we have observed since 2019 are all sustainable, with a high likelihood of achieving sustainable yield.

### **Orzinski Lake Sockeye Salmon**

The Orzinski Lake sockeye salmon SEG (15,000–20,000 fish) was not met in three out of the past five years (Table 2). Between 2018 and 2020, the escapement was well below the aerial survey based goal, and the commercial fishery was restricted to maximize escapement into the system. However, in 2021 and 2022, the SEG was achieved and there was commercial fishing allowed in the associated sections. The increase in abundance of sockeye salmon runs in 2021 and 2022 seen at Orzinski was similar to other systems on the South Alaska Peninsula, and there are no other indications that Orzinski Lake sockeye salmon will return to depressed numbers. The department does not recommend Orzinski Lake sockeye salmon be designated a Stock of Concern.

In summary, the department recommends listing Chignik River king salmon as a Stock of Management Concern. We also acknowledge the Stock of Management Concern designation of the Chignik River early-run sockeye salmon stock by the board during the previous out of cycle meeting. We reviewed all other stocks, and no other systems in Area L or Area M are recommended for stocks of concern.

### **References Cited**

- Schaberg, K. L., D. A. Tracy, M. B. Foster, and M. Loewen. 2015. Review of salmon escapement goals in the Chignik Management Area, 2015. Alaska Department of Fish and Game, Fishery Manuscript Series No. 15-02, Anchorage
- Schaberg, K. L., M. B. Foster, and A. St. Saviour. 2019(a). Review of salmon escapement goals in the Chignik Management Area, 2018. Alaska Department of Fish and Game, Fishery Manuscript Series No. 19-02, Anchorage.
- Schaberg, K. L., H. Finkle, M. B. Foster, A. St. Saviour, and M. L. Wattum. 2019(b). Review of salmon escapement goals in the Alaska Peninsula and Aleutian Islands Management Areas, 2018. Alaska Department of Fish and Game, Fishery Manuscript No. 19-01, Anchorage
- Wilburn, D. M., and R. L. Renick. 2018. Chignik Management Area salmon annual management report, 2018. Alaska Department of Fish and Game, Fishery Management Report No. 18-32, Anchorage.

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Table 1. Escapements from 2013 to 2022, for salmon stocks with escapement goals in the Chignik Management Area (CMA).

System	2022 Goal Range		Type	Initial Year	Escapement									
	Lower	Upper			2013	2014	2015	2016	2017	2018	2019	2020	2021	*2022
<b>KING SALMON</b>														
Chignik River <sup>a</sup>	1,300	2,700	BEG	2002	<b>1,153</b>	2,795	1,954	1,743	<b>1,137</b>	<b>725</b>	1,417	<b>1,178</b>	<b>1,072</b>	<b>661</b>
<b>CHUM SALMON</b>														
Entire Chignik Area	45,000	110,000	SEG	2016	109,900	46,720	123,400	69,900	96,900	<b>33,400</b>	98,000	<b>39,675</b>	122,000	73,200
<b>PINK SALMON</b>														
Entire Chignik Area (odd year)	260,000	450,000	SEG	2016	231,800		404,000		586,000		415,300		495,000	
Entire Chignik Area (even year)	170,000	280,000	SEG	2016		87,240		<b>68,100</b>		NA <sup>c</sup>		<b>118,675</b>		375,600
<b>SOCKEYE SALMON</b>														
Chignik River Early Run	350,000	450,000	BEG	2014	386,782	360,381	534,088	418,290	453,257	<b>263,979</b>	<b>345,918</b>	<b>137,213</b>	<b>244,382</b>	424,480
Chignik River Late Run <sup>b</sup>	220,000	400,000	SEG	2008	369,319	291,228	589,809	348,023	339,303	275,718	336,077	<b>193,765</b>	396,559	356,314

Note: NA = data not available; LB SEG = lower-bound SEG; **Bold=Below goal**

\* 2022 escapement is preliminary

<sup>a</sup> King salmon escapement estimated for Chignik include an estimated 100 fish harvested above the weir as harvest estimates are typically not available for Chignik sport harvest.

<sup>b</sup> The Chignik River late-run sockeye escapement objective includes the late-run sockeye salmon SEG (200,000 – 400,000) plus an in river run goal of 20,000 fish in September to ensure harvest opportunities above the weir.

<sup>c</sup> Although an escapement of 42,000 pink salmon was observed in 2018, all 8 index streams could not be surveyed and are not included in the evaluation of the escapement goal.

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**Table 2.**—Escapements from 2013 to 2022 for salmon stocks with escapement goals in Area M (Alaska Peninsula and Aleutian Islands Management Area).

System	2022 Goal Range		Type	Initial Year	Escapement									
	Lower	Upper			2013	2014	2015	2016	2017	2018	2019	2020	2021	*2022
<b>KING SALMON</b>														
Nelson River <sup>a</sup>	2,400	5,000	BEG	2019	<b>1,221</b>	3,801	2,890	4,618	<b>1,852</b>	5,022	12,163	2,498	4,539	3,785
<b>CHUM SALMON</b>														
Northern District	119,600	239,200	SEG	2007	137,251	191,586	189,194	277,674	234,440	236,109	208,397	<b>118,815</b>	<b>94,856</b>	
Northwestern District	100,000	215,000	SEG	2007	<b>92,800</b>	<b>54,525</b>	<b>89,800</b>	113,250	195,700	<b>90,705</b>	173,600	<b>62,100</b>	<b>47,550</b>	<b>47,200</b>
Southeastern District	62,500	151,900	SEG	2019	NA	74,300	NA	NA	416,845	<b>55,510</b>	111,800	107,600	138,750	155,702
South Central District	68,900	99,200	SEG	2019	101,400	91,600	182,000	166,000	566,213	NA	224,000	93,500	142,300	192,800
Southwestern District	86,900	159,500	SEG	2019	NA	NA	NA	146,200	NA	NA	<b>12,800</b>	<b>84,550</b>	202,150	<b>72,700</b>
<b>COHO SALMON</b>														
Nelson River	18,000		LB SEG	2004	22,000	25,000	45,000	45,000	19,000	44,000	23,000	23,000	26,000	
Ilnik River	9,000		LB SEG	2010	17,000	33,000	14,000	28,000	<b>6,000</b>	122,000	24,000	45,000	11,000	
<b>PINK SALMON</b>														
South Peninsula Total (odd year)	eliminated			2016	2,320,790		7,820,800							
South Peninsula Total (even year)	eliminated			2016		1,340,380								
South Peninsula Total	1,750,000	4,000,000	SEG	2016	2,320,790	1,340,380	7,820,800	<b>1,038,160</b>	5,663,637	<b>732,422</b>	4,236,700	3,209,750	4,494,900	5,177,350
<b>SOCKEYE SALMON</b>														
Cinder River <sup>b</sup>	36,000	94,000	SEG	2016	90,000	96,000	118,000	200,500	222,600	189,000	95,025	106,800	59,400	
Ilnik River <sup>c</sup>	40,000	60,000	SEG	1991	51,000	59,000	26,000	124,000	238,000	81,000	75,000	41,000	70,211	110,500
Meshik River <sup>d</sup>	48,000	86,000	SEG	2016	123,600	114,700	171,700	131,800	191,525	133,700	103,200	64,550	117,500	
Sandy River	34,000	74,000	SEG	2007	42,000	59,000	116,000	170,000	145,000	35,000	71,000	60,000	52,657	44,000
Bear River Early Run	176,000	293,000	SEG	2004	219,074	259,046	304,356	293,280	570,840	324,093	205,273	299,198	387,240	365,699
Bear River Late Run	117,000	195,000	SEG	2004	196,926	206,954	210,644	139,720	229,160	232,907	294,727	200,802	192,760	151,301

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System	2022 Goal Range		Type	Initial Year	Escapement									
	Lower	Upper			2013	2014	2015	2016	2017	2018	2019	2020	2021	*2022
<b>SOCKEYE SALMON (Cont.)</b>														
Nelson River	97,000	219,000	BEG	2004	248,000	250,000	257,000	300,000	381,000	221,000	115,000	185,000	110,163	98,000
Christianson Lagoon	25,000	50,000	SEG	1980s	<b>16,500</b>	32,600	<b>6,700</b>	111,700	290,600	26,100	39,300	<b>22,800</b>	56,800	40,300
Swanson Lagoon	eliminated			2019	3,000	1,500	3,500	3,000	860	400	-	-	-	-
North Creek	7,500	10,000	SEG	2019	8,500	7,500	18,000	21,000	5,800	8,300	11,000	8,200	9,100	
Orzinski Lake	15,000	20,000	SEG	1992	17,386	<b>13,600</b>	26,534	21,019	20,989	<b>2,817</b>	<b>4,367</b>	<b>6,819</b>	21,839	17,083
Mortensen Lagoon	3,200	6,400	SEG	late 1980s	4,000	<b>500</b>	NA	13,000	15,500	<b>1,200</b>	<b>800</b>	<b>800</b>	<b>1,500</b>	3,900
Thin Point Lake	14,000	28,000	SEG	late 1980s	<b>5,700</b>	<b>8,600</b>	19,900	36,400	44,300	<b>1,000</b>	<b>9,600</b>	<b>10,450</b>	19,100	15,300
McLees Lake <sup>e</sup>	10,000		LB SEG	2019	15,687	12,424	20,284	39,892	13,195	No Weir	No Weir	<b>5,037</b>	16,173	14,015

Note: NA = data not available; LB SEG = lower-bound SEG; **Bold = Goal not Met**

\* 2022 escapement is preliminary, if blank, surveys have not been completed or compiled.

<sup>a</sup> Chinook salmon sport harvest is assumed to be zero as the fishery was closed to retention. Escapement includes post-weir aerial survey estimates.

<sup>b</sup> Cinder River sockeye salmon escapement includes Mud Creek.

<sup>c</sup> Ilnik River sockeye salmon counts in 2012, 2013, and 2016 include Ocean River aerial surveys added as a separate component. In all other years Ocean River flows into Ilnik Lagoon and is counted at the Ilnik River weir.

<sup>d</sup> Meshik escapement includes Meshik River, Red Bluff Creek, and Yellow Bluff Creek. It does not include Highland or Charles creeks.

<sup>e</sup> McLees Lake sockeye salmon SEG will be in effect if a weir is in place; there will be no goal if a weir is not operated.