



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER


**Department of
Fish and Game**


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MEMORANDUM

TO: Members, Alaska Board of Fisheries DATE: September 28, 2018

FROM: Forrest R. Bowers, Acting Director 
Division of Commercial Fisheries

Thomas Brookover, Director 
Division of Sport Fish

SUBJECT: Alaska
Peninsula/Aleutian
Islands and Chignik
Stock of Concern
Recommendations

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) 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 *Policy for the Management of Sustainable Salmon Fisheries* (SSFP). This memorandum summarizes the results of the stock of concern evaluation for the Area L and Area M salmon stocks for the 2018–2019 board regulatory cycle.

All king, sockeye, pink, coho, and chum salmon stocks with escapement goals in Area L (Table 1) and Area M (Table 2) were examined for potential stock of concern status. Only Swanson Lagoon sockeye salmon stock was identified for review, as it is an existing stock of management concern.

Swanson Lagoon sockeye salmon

Background

Swanson Lagoon is located on the northeast portion of Unimak Island within the Northwestern District of Area M (Figure 1). The system is low gradient, and in 2009 and 2014 was completely blocked off from the ocean by shifting beach substrate. Aerial surveys of the system in 2009

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indicated that the berm limited sockeye salmon escapement. In 2014 and 2016, aerial surveys in the lagoon indicated that while the system had been blocked in June and July, the blockage had opened by August and some salmon escapement did occur. Surveys in 2015 were difficult due to heavy algal blooms, though the channel remained open throughout the survey season (June to August). In 2017, the lagoon was open in June and July and then became blocked at the mouth by sand in August. The lagoon was again open in 2018 throughout the survey season. The department has noted that the system has shown some cyclical changes in production and is vulnerable to natural habitat degradation; however, stock abundance has been difficult to assess due to the visibility constraints with frequent algae blooms during aerial surveys. Effects of these blockages on downstream migrating smolt is unknown.

The department has conducted aerial surveys of Swanson Lagoon to estimate escapement since 1970. Swanson Lagoon aerial survey effort usually coincides with that of Christianson Lagoon which at times precluded surveys during the peak of the Swanson Lagoon run, and there have been years when algal blooms in the lagoon impede survey counting conditions (Schaberg et al. 2015) (Table 3). Peak aerial survey (PAS) counts of Swanson Lagoon sockeye salmon since 1970 ranged from 50 to 32,900 fish. The average PAS from 2005–2017 was 2,895 fish. With the exception of 2007, escapements have failed to meet the current SEG since it was adopted (Figure 2).

A sustainable escapement goal (SEG) of 8,000–16,000 fish was established for Swanson Lagoon sockeye salmon in 1990 (Nelson and Lloyd 2001). During the 2005–2006 board meeting cycle, the escapement goal was changed to an SEG of 6,000 to 16,000 sockeye salmon (Honnold et al. 2007). Subsequent reviews of this SEG have corroborated this goal (Witteveen et al. 2009; Sagalkin and Erickson 2013; Schaberg et al. 2015).

No biological samples of the escapement or harvest have been collected. Reported commercial harvest from the Swanson Lagoon Section is assumed to be from Swanson Lagoon, but there are no data to corroborate the stock of origin. Harvest has been low in the last 13 years, and has been restricted by regulation since 2012, with complete closures and no harvest (Table 3). Even with these restrictions, escapement has remained below the current SEG (Figure 2).

Management Measures

Since 2002 there has been little effort and minimal harvest in the Swanson Lagoon Section and effort outside of this section is localized such that harvest of Swanson Lagoon sockeye salmon is believed unlikely. As a result of this fishing behavior, no management actions were taken prior to 2012 in the Swanson Lagoon Section to address low escapement of sockeye salmon. During 2012, the section was closed starting on July 10 for the entire fishing season to protect the Swanson Lagoon stock. During the 2012-2013 board cycle, Swanson Lagoon sockeye salmon were designated as a stock of management concern (Sagalkin and Erickson 2013), and a specific management strategy was developed and adopted into regulation that established commercial fishing periods through emergency order authority. This management strategy was maintained with the continuation of the designation in 2015. The fishery has not been opened for sockeye salmon fishing since this regulation was adopted.

Stock of Concern Recommendation

Escapements were below the lower bound of the SEG four out of five years during the 2009 escapement goal review. Swanson Lagoon was not considered a stock of concern at that time because one of those years (2008) was very close to the lower goal, and one year the system was blocked from the ocean (2009). As of the current review, sockeye salmon escapement into Swanson Lagoon has not reached the lower end of the escapement goal range during 12 of the last 13 years (since the current goal was adopted), despite little to no effort and harvest (no harvest since 2011). The lagoon has been observed to be blocked to fish passage in several years.

The SSFP states that “management concern means a concern arising from a chronic inability, despite use of specific management measures, to maintain escapements for a salmon stock within the bounds of the SEG, BEG, OEG, or other specific management objectives for the fishery...”. Specific management actions resulted in no openings in the Swanson Lagoon Section in 2012 through 2017, and escapement remained below the current SEG. The department recommends that the board *discontinue Swanson Lagoon sockeye salmon as a stock of management concern*. The primary reason for this recommendation is because we are unable to predict or manage the sand berm that obstructs salmon passage into the lagoon. In this cycle, the department is also recommending discontinuing the escapement goal for Swanson Lagoon sockeye salmon, as recent escapements are reflective of a natural phenomenon, and not fishery management, system productivity or anthropomorphic effects to the habitat.

No other systems in Area L or Area M are recommended for stocks of concern.

Literature Cited

- Honnold, S. G., M. J. Witteveen, I. Vining, H. Finkle, M. B. Foster, and J. J. Hasbrouck. 2007. Review of salmon escapement goals in the Alaska Peninsula Aleutian Islands Management Areas, 2006. Alaska Department of Fish and Game, Fishery Manuscript No. 07-02, Anchorage.
- Nelson, P. A., and D. S. Lloyd. 2001. Escapement goals for Pacific salmon in the Kodiak, Chignik, and Alaska Peninsula / Aleutian Islands Areas of Alaska. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K01-66, Kodiak.
- Sagalkin, N. H., and J. W. Erickson. 2013. Review of salmon escapement goals in the Alaska Peninsula and Aleutian Islands Management Areas, 2012. Alaska Department of Fish and Game, Fishery Manuscript No. 13-01, Anchorage.
- Schaberg, K. L., H. Finkle, M. B. Foster, D. A. Tracy, and M. L. Wattum. 2015. Review of salmon escapement goals in the Alaska Peninsula and Aleutian Islands Management Areas, 2015. Alaska Department of Fish and Game, Fishery Manuscript No. 15-03, Anchorage.
- Witteveen, M. J., H. Finkle, M. Loewen, M. B. Foster, and J. W. Erickson. 2009. Review of salmon escapement goals in the Alaska Peninsula and Aleutian Islands Management Areas; A Report to the Alaska Board of Fisheries, 2010. Alaska Department of Fish and Game, Fishery Manuscript No. 09-09, Anchorage.

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Table 1. Escapements from 2008 to 2017, escapement goals, and 2018 recommendations for salmon stocks in the Chignik Management Area (CMA).

System	2017 Goal Range		Escapement										Escapement goal recommendation for 2018
	Lower	Upper	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
King SALMON													
Chignik River	1,300	2,700	1,620	1,590	3,845	2,490	1,404	1,185	2,765	1,958	1,743	1,137	No Change
CHUM SALMON													
Entire Chignik Area	45,000	110,000	197,259	218,159	177,220	278,145	210,973	335,907	101,378	238,214	69,900	96,900	No Change
COHO SALMON													
There are no coho salmon stocks with escapement goals in Chignik Area													No Change
PINK SALMON													
Entire Chignik Area (odd year)	260,000	450,000		869,063		986,248		863,991		1,132,529		586,300	No Change
Entire Chignik Area (even year)	170,000	280,000	863,031		330,570		302,699		235,159		68,100		No Change
SOCKEYE SALMON													
Chignik River Early Run	350,000	450,000	377,579	391,476	432,535	488,930	353,441	386,782	360,381	534,088	418,290	453,257	No Change
Chignik River Late Run ^a	200,000	400,000	328,479	328,586	311,291	264,887	358,948	369,319	291,228	589,809	348,023	339,303	No Change

^a The Chignik River late-run sockeye escapement objective includes the late-run sockeye salmon SEG (200,000 – 400,000) plus an additional 25,000 fish in August and 50,000 fish in September to ensure inriver harvest opportunities above the weir.

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Table 2.— Escapements from 2008 to 2017, current escapement goals, and 2018 recommendations for salmon stocks of Area M (Alaska Peninsula and Aleutian Islands Management Area).

System	2017 Goal Range		Escapement										Escapement goal recommendation for 2018
	Lower	Upper	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
CHINOOK SALMON													
Nelson River	2,400	4,400	5,012	2,048	2,769	1,704	1,092	1,221	3,801	2,890	4,618	1,852	BEG: 2,400–5,000
SOCKEYE SALMON													
Cinder River	36,000	94,000	121,800	131,000	106,000	105,500	73,000	90,000	96,000	118,000	200,500	222,600	No Change
Ilnik River	40,000	60,000	44,300	66,000	59,000	43,000	61,000	51,000	59,000	26,000	124,000	238,000	No Change
Meshik River	48,000	86,000	95,750	125,000	110,700	101,900	50,900	123,600	114,700	171,700	131,800	191,525	No Change
Sandy River	34,000	74,000	32,200	36,000	37,000	37,500	27,100	42,000	59,000	116,000	170,000	145,000	No Change
Bear River Early Run	176,000	293,000	125,526	216,237	226,534	207,451	173,158	219,074	259,046	304,356	293,280	570,840	No Change
Bear River Late Run	117,000	195,000	195,474	133,263	142,966	132,549	116,442	196,926	206,954	210,644	139,720	229,160	No Change
Nelson River	97,000	219,000	141,600	157,000	108,000	89,000	103,300	248,000	250,000	257,000	300,000	381,000	No Change
Christianson Lagoon	25,000	50,000	114,000	48,100	27,900	35,200	40,000	16,500	32,600	6,700	111,700	290,600	No Change
Swanson Lagoon	6,000	16,000	5,500	1,000	1,700	1,000	3,500	3,000	1,500	3,500	3,000	860	Discontinue
North Creek	4,400	8,800	38,000	8,000	18,500	10,200	18,000	8,500	7,500	18,000	21,000	5,800	SEG: 7,500–10,000
Orzinski Lake	15,000	20,000	36,839	21,457	18,039	16,764	17,243	17,386	13,600	26,534	21,019	20,989	No Change
Mortensen Lagoon	3,200	6,400	5,600	25,000	6,600	500	5,000	4,000	500	NA	13,000	15,500	No Change
Thin Point Lake	14,000	28,000	18,900	33,500	12,400	14,500	19,000	5,700	8,600	19,900	36,400	44,300	No Change
McLees Lake	10,000	60,000	8,661	10,120	32,842	36,602	15,111	15,687	12,424	20,284	39,892	13,195	LB SEG: >10,000
COHO SALMON													
Nelson River	18,000		24,000	22,000	15,000	21,000	19,160	22,000	25,000	45,000	45,000	19,000	No Change
Ilnik River	9,000		27,000	24,000	19,600	18,000	11,800	17,000	33,000	14,000	28,000	6,000	No Change
PINK SALMON													
South Peninsula Total	1,750,000	4,000,000	3,338,370	3,067,000	742,912	2,494,950	478,910	2,320,790	1,340,380	7,820,800	1,038,160	5,663,637	No Change
CHUM SALMON													
Northern District	119,600	239,200	228,537	154,131	145,310	96,952	140,418	137,251	191,586	189,194	277,674	234,440	No Change
Northwestern District	100,000	215,000	241,750	84,460	144,100	151,400	140,000	92,800	54,525	89,800	113,250	195,700	No Change
Southeastern District	106,400	212,800	277,450	106,500	62,612	145,300	31,072	184,350	82,300	250,370	150,456	592,460	^a SEG: 62,500–151,800
Southcentral District	89,800	179,600	140,450	18,600	85,600	169,000	86,190	155,050	95,000	298,800	248,360	810,053	^a SEG: 68,900–99,200
Southwestern District	133,400	266,800	171,250	385,730	142,650	176,425	87,230	163,200	130,745	351,150	220,060	363,000	^a SEG: 86,900–159,500

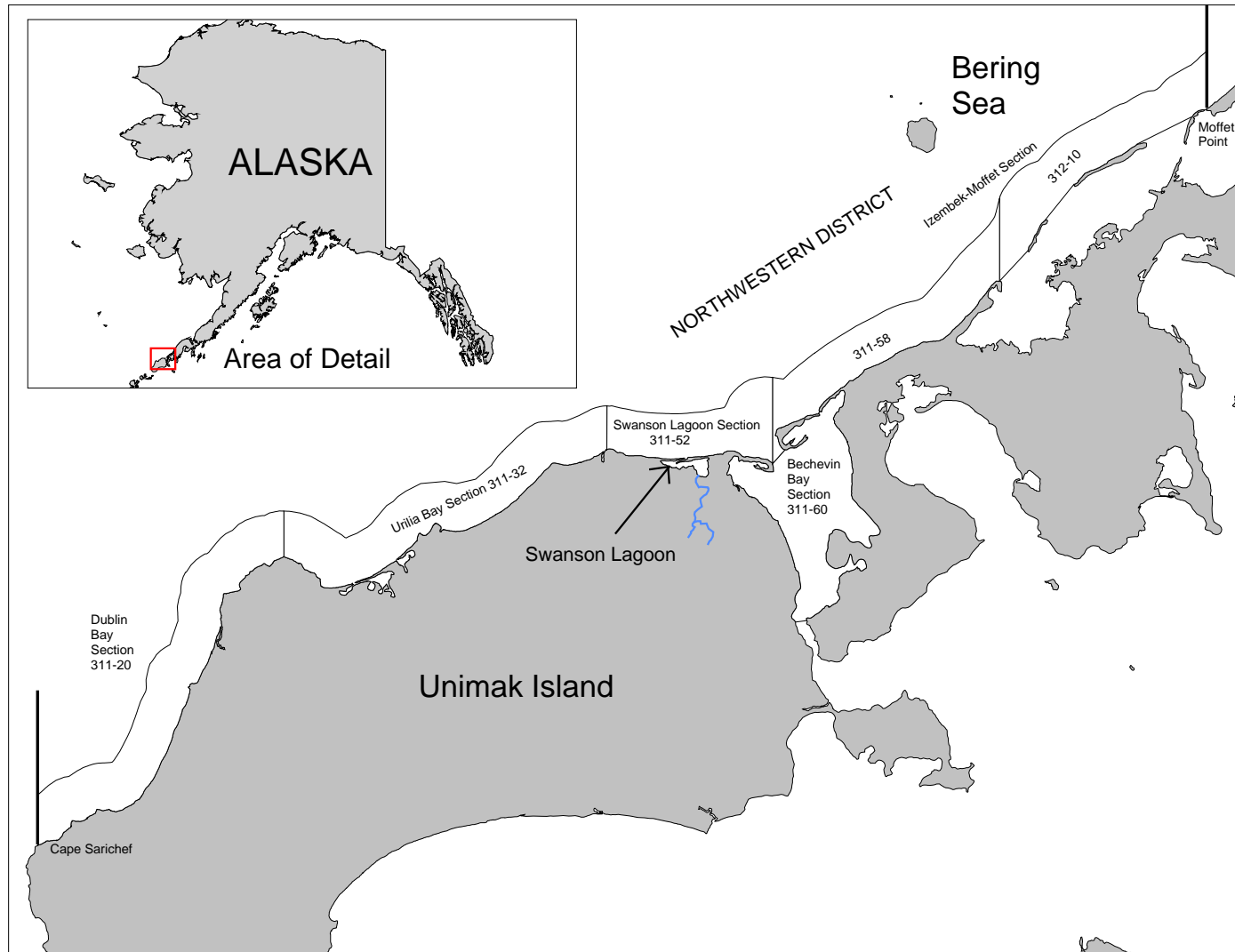
^a The recommended goals were calculated with a reduced number of index streams. Escapement values in this table are from the prior escapement enumeration method for comparison with the current escapement goals, not the 2018 recommendations.

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Table 3.—Swanson Lagoon sockeye salmon escapement and harvest in Swanson Lagoon Section (311-52), 1970–2017.

Year	Escapement goal	Escapement	Harvest
1970		700	306
1971		300	2,167
1972		200	135
1973		100	0
1974		50	735
1975		1,400	1,451
1976		2,600	1,020
1977		12,000	31,509
1978		8,100	24,168
1979		8,400	48,970
1980		9,700	3,852
1981		600	2,067
1982		1,800	586
1983		300	746
1984		5,500	27,734
1985		3,400	22,310
1986		7,400	9,517
1987		9,600	31,957
1988		5,700	24,766
1989		5,500	13,324
1990	8,000 – 16,000	32,900	13,518
1991	8,000 – 16,000	11,200	9,549
1992	8,000 – 16,000	15,400	16,274
1993	8,000 – 16,000	7,600	13,870
1994	8,000 – 16,000	9,700	6,521
1995	8,000 – 16,000	10,300	5,134
1996	8,000 – 16,000	9,300	2,109
1997	8,000 – 16,000	7,800	33,636
1998	8,000 – 16,000	5,000	8,663
1999	8,000 – 16,000	7,900	22,111
2000	8,000 – 16,000	5,700	2,197
2001	8,000 – 16,000	10,600	5,113
2002	8,000 – 16,000	10,000	207
2003	8,000 – 16,000	16,100	3,881
2004	8,000 – 16,000	24,300	2,980
2005	8,000 – 16,000	3,500	929
2006	6,000 – 16,000	376	270
2007	6,000 – 16,000	9,200	4,795
2008	6,000 – 16,000	5,500	565
2009	6,000 – 16,000	1,000	622
2010	6,000 – 16,000	1,700	327
2011	6,000 – 16,000	1,000	324
2012	6,000 – 16,000	3,500	0
2013	6,000 – 16,000	3,000	0
2014	6,000 – 16,000	1,500	0
2015	6,000 – 16,000	3,500	0
2016	6,000 – 16,000	3,000	0
2017	6,000 – 16,000	860	0

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Figure 1.-Map of Swanson Lagoon, the Northwestern District, and commercial fishery sections.

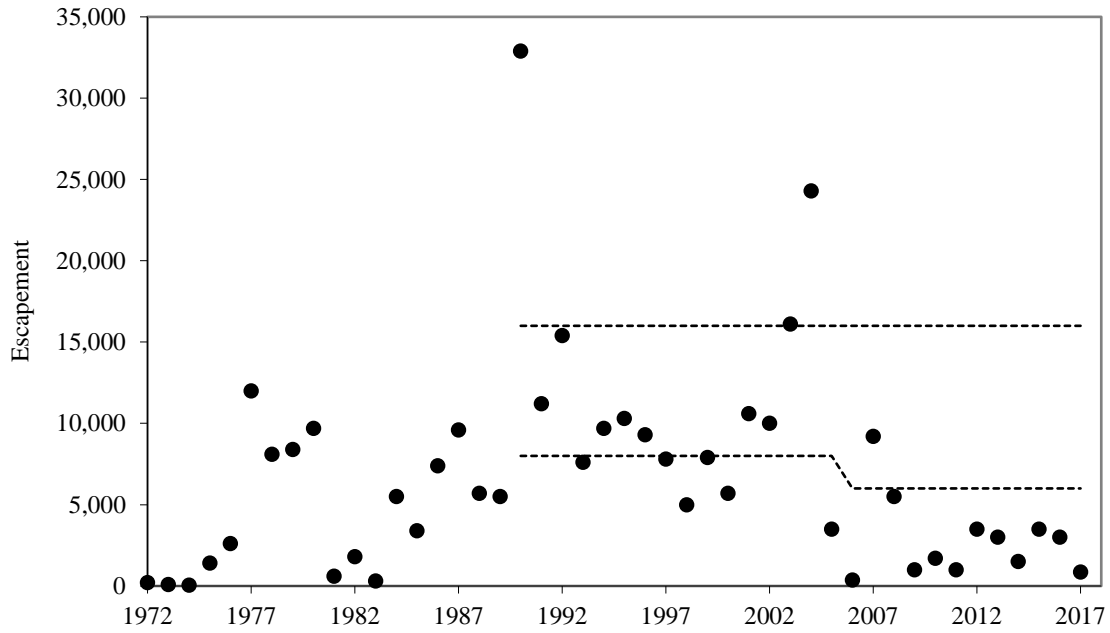


Figure 2.—Swanson Lagoon sockeye salmon escapement and escapement goal ranges, 1972–2017.