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MEMORANDUM

TO: Forrest Bowers, Acting Director
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Date: March 6, 2025

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Subject: Chignik and Alaska Peninsula/Aleutian Islands Management Areas Escapement Goal Review

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The purpose of this memorandum is to inform you of the results from the escapement goal analyses for the Chignik Management Area (Area L) and Alaska Peninsula and Aleutian Islands Management Area (Area M). The *Policy for Statewide Salmon Escapement Goals* (5 AAC 39.223) recognizes the establishment of salmon escapement goals as a joint responsibility of the Alaska Department of Fish and Game (department) and the Alaska Board of Fisheries (board) and describes the concepts, criteria, and procedures for establishing and modifying salmon escapement goals. Under the policy, the board recognizes and describes the department's responsibility for establishing and modifying biological escapement goals (BEG) and sustainable escapement goals (SEG).

Starting in February 2025, an interdivisional team from the Commercial Fisheries and Sport Fish divisions met to review existing Pacific salmon *Oncorhynchus* spp. escapement goals for Area L and Area M. The team met in February 2025 to discuss analyses revisited with the addition of new data for both management areas. The team has reached consensus on all decisions outlined below.

Three important terms defined in the *Policy for the Management of Sustainable Salmon Fisheries* are

- *biological escapement goal* (BEG): the escapement that provides the greatest potential for maximum sustained yield (MSY); and
- *sustainable escapement goal* (SEG): a level of escapement, indicated by an index or an escapement estimate, that is known to provide for sustained yield over a 5 to 10-year period, used in situations where a BEG cannot be estimated or managed for; and
- *inriver run goal* (IRRG): a specific management objective for salmon stocks that are subject to harvest upstream of the point where escapement is estimated; the inriver run goal will be set in regulation by the board and is comprised of the SEG, or BEG, plus specific allocations to inriver fisheries.
- *optimal escapement goal* (OEG): a specific management objective for salmon escapement that considers biological and allocative factors and may differ from the SEG or BEG; the OEG will be sustainable and will be set by the board.

The previous escapement goal review for Area L and Area M occurred in 2020 (Finkle et al. 2022a and 2022b). For the 2025 review, 4 additional years (2021–2024) of data (Tables 1 and 2) were considered. The team determined, with the addition of new information, if there was justification to revise existing escapement goals, create new goals for systems without goals, or eliminate goals. The team did not identify any systems suitable for creating new goals, and only systems with goals currently in place were further considered.

For all stocks where the escapement goal was evaluated, the review team determined the appropriate goal type based on the quality and quantity of available data and then determined the most appropriate methods to evaluate the escapement goal. If sufficient time series of escapement and total return estimates were available and the data contained sufficient information to provide a scientifically defensible, accurate estimate of the spawning escapement with the greatest potential to produce maximum sustained yield (S_{MSY}), then the data were considered sufficient to attempt to develop a BEG. Methods used to develop BEGs included spawner-recruit, yield, zooplankton biomass and euphotic volume analyses. If return estimates were not available or the data were not sufficient to estimate S_{MSY}, the data were used to establish an SEG using the percentile approach (Clark et al. 2014).

Following these analyses, the team estimated escapement goals for each stock, compared these estimates with the current goal, and agreed to either keep, change, or eliminate the goal.

AREA L (CHIGNIK MANAGEMENT AREA)

King Salmon

The Chignik River king salmon goal was last revised in 2002 and last reanalyzed with a spawner-recruit model in 2018. Updated analysis using the percentile approach (Clark et al. 2014) corroborated the current goal and indicated that no change was warranted to the current BEG of 1,300 to 2,700 fish (Table 1).

Sockeye Salmon

Escapement goals for Chignik sockeye salmon were last revised in 2023, which resulted in a

total-run BEG for the 2 stocks of sockeye salmon managed in the CMA. The team reanalyzed the goal using spawner recruit, euphotic volume, and zooplankton biomass models on the Chignik early-, late-, and total-run goals and concluded that the current goal is still appropriate and no change to the escapement goal was warranted.

Pink and Chum Salmon

Aggregate escapement goals for chum and even- and odd-year pink salmon were last revised in 2018. Escapement data (Table 1) were reviewed and reanalyzed using the percentile approach (Clark et al. 2014) for the areawide aggregate escapement goals for chum and even- and odd-year pink salmon. The team determined that results of analyses corroborated the existing SEGs and no changes to the escapement goals were warranted.

Coho Salmon

There are no coho salmon escapement goals in Area L as survey conditions often preclude accurate assessment.

AREA M (ALASKA PENINSULA AND ALEUTIAN ISLANDS MANAGEMENT AREA)

King Salmon

The only king salmon escapement goal in Area M is for Nelson River (Table 2). The goal was last revised in 2019 (Schaberg et al. 2019). Updated analysis using the percentile approach (Clark et al. 2014) corroborated the existing goal and indicated to the team that no change was warranted to the current BEG of 2,400 to 5,000 fish (Table 2).

Sockeye Salmon

All 13 escapement goals for sockeye salmon in Area M (North Creek; Bear, Cinder, Ilnik, Meshik, Nelson and Sandy Rivers; Christianson and Mortensens Lagoons; and McLees, Orzinski and Thin Point Lakes) were reanalyzed to include the most recent available data. The team updated the analysis of these escapement goals using the percentile approach (Clark et al. 2014) for all systems except Bear River late-run and Nelson River sockeye salmon, which have data suited to spawner-recruit analyses (Hamazaki 2022). The team determined that current escapement goals for all of these systems are still appropriate and no changes to the escapement goals were warranted.

Pink Salmon

The pink salmon escapement goal in Area M was last revised in 2016 (Schaberg et al. 2015). Recent escapement data were analyzed using spawner-recruit models (Hamazaki 2022) and the review team agreed that no changes to the goal were necessary.

Chum Salmon

Aggregate chum salmon SEGs based on peak aerial survey counts from designated index streams

were established for the Southeastern, South Central, and Southwestern Districts in 2019 (Schaberg et al. 2019) and the Northern and Northwest Districts in 2023 (Finkle et al. 2022a). The team reanalyzed the existing goals using the percentile approach (Clark et al. 2014) and found no changes were warranted to the existing goals.

Coho Salmon

There are two SEGs in Area M for coho salmon, one each for the Nelson (19,000-29,000 coho salmon) and Ilnik (9,000-24,000 coho salmon) Rivers, which were revised in 2023. Between 2015 and 2022, both systems achieved the lower-bounds of their respective SEGs for coho salmon (Nelson: 19,000 fish; Ilnik: 9,000 fish) except for Ilnik River in 2017 (Table 1). Both systems failed to meet their SEGs in 2023 when survey conditions were poor, and 2024 when surveys could not be conducted. These goals were reviewed recently in 2020 (Finkle et al. 2022a) and the team reanalyzed the goals again in 2025. Updated analyses using the percentile approach (Clark et al. 2014) did not indicate that the goals should be changed.

Common to both systems, staff have been unable to consistently conduct aerial surveys for coho salmon escapement during peak run timing in mid-September over the last 5 years because of insufficient funding for aerial surveys and reduced season length for the Port Moller field office. Additionally, fall aerial survey conditions are historically poor, which has hindered the enumeration of fish.

Because of the recent difficulty conducting aerial surveys on these systems, the team considered eliminating the Nelson River and Ilnik River coho salmon SEGs. However, given that these goals were revised in 2023, the team chose to keep them in place for an additional three years as the coho salmon assessment program is reevaluated.

Summary

Following this comprehensive review, the team determined that the 5 existing salmon escapement goals in Area L and 22 existing salmon escapement goals in Area M were appropriate and no changes were warranted.

Staff are preparing separate reports for each management area that will document these escapement goal reviews in more detail with detailed descriptions of the analyses performed. These reports will be published prior to the February 2026 board meeting. In addition, an oral escapement goal report will be presented at that board meeting. A brief oral report will be given to the board at the October 2025 Work Session.

Salmon stock of concern recommendations will be finalized after the 2025 salmon season to include the most recent year's escapements. These recommendations will be formalized in a memo and presented at the board Work Session in October 2025.

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Table 1. Escapements from 2015 to 2024, escapement goals, and 2025 findings for salmon stocks in Area L.

Salmon species	2024 goal range Lower	Upper	Type	Initial year	Escapements[a] 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025 findings
Chinook															
Chignik River	1,300	2,700	BEG	2018	1,945	1,743	1,137	825	1,517	**1,278**	**1,172**	**721**	**267**	**1,166**	No change
Sockeye [b]															
Chignik River															
Early run	300,000	400,000	OEG	2023	426,817	410,922	428,350	**182,991**	379,444	**179,200**	**295,726**	412,228	431,283	372,831	
Late run	240,000	360,000	OEG	2023	697,082	362,253	364,211	356,707	302,555	**151,777**	345,216	395,858	457,071	354,749	
Total run	450,000	800,000	BEG	2023	1,123,899	773,175	792,561	539,698	681,999	330,977	640,942	808,086	888,354	727,580	No change
Pink[c,d]															
CMA aggregate even years	170,000	280,000	SEG	2018		**68,100**		*42,000*		**118,675**		303,600		262,700	No change
CMA aggregate odd years	260,000	450,000	SEG	2018	**404,000**		586,300		415,300		446,000		542,500		No change
Chum[c,e]															
CMA aggregate	45,000	110,000	SEG	2018	123,400	69,900	96,900	*28,900*	98,000	31,685	122,000	73,200	183,000	83,100	No change

[a] Emboldened escapements did not meet their goal. Cells highlighted grey did not have the listed 2024 goal applied in those years.

[b] From 2015 to 2022, the early-run BEG was 350,000-450,000 and the late-run SEG was 200,000-400,000 fish; in 2023 the board established OEGs for each run in lieu of a single run BEG of 450,000-800,000 fish. Achievement of escapement goals is relative to the goal that was established during that given year.

[c] All counts are from peak aerial survey index streams. Italicized escapements lack the full suite of index streams in the count.

[d] The pink salmon even-year SEG was 200,000-600,000 fish and the odd-year SEG was 500,000-800,000 fish prior to 2018.

[e] Prior to 2018, the chum salmon goal was an SEG threshold of 57,400 fish.

Table 2. Escapements from 2015 to 2024, escapement goals, and 2025 findings for salmon stocks in Area M.

System	2024 Goal Range Lower	2024 Goal Range Upper	Type	Initial Year	Escapement[a] 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025 findings
CHINOOK SALMON															
Nelson River	2,400	5,000	BEG	2019	2,890	4,618	1,852	5,708	12,172	**2,019**	4,539	3,785	4,078	3,542	No change
CHUM SALMON[b]															
Northern District	49,000	132,000	SEG	2023	189,194	277,674	234,440	236,109	208,397	**118,815**	***57,500***	***69,800***	*126,500*	***41,200***	No change
Northwestern District	49,000	133,000	SEG	2023	**89,800**	113,250	195,700	**90,705**	173,600	**62,100**	***28,850***	***31,500***	*74,600*	*85,275*	No change
Southeastern District	62,500	151,900	SEG	2019	*156,870*	*118,690*	416,845	**9,460**	106,100	*108,800*	*141,550*	*102,900*	*100,500*	***43,600***	No change
South Central District	68,900	99,200	SEG	2019	182,000	166,000	566,213	***35,000***	226,800	93,500	***51,900***	*108,600*	*149,700*	*139,480*	No change
Southwestern District	86,900	159,500	SEG	2019	***118,650***	146,200	*313,800*	***31,400***	*88,300*	**84,550**	114,600	***57,200***	*132,100*	***74,560***	No change
COHO SALMON															
Nelson River	19,000	29,000	SEG	2023	45,000	45,000	19,000	44,000	23,000	23,000	26,000	21,500	**5,000**	NA	No change
Ilnik River	9,000	24,000	SEG	2023	14,000	28,000	**6,000**	122,000	24,000	45,000	11,000	36,200	**0**	NA	No change
PINK SALMON															
South Peninsula Total	1,750,000	4,000,000	SEG	2016	7,820,800	**1,038,160**	5,663,637	**732,422**	4,236,700	3,209,750	4,388,100	5,177,350	5,914,600	2,486,157	No change
SOCKEYE SALMON															
Cinder River[c]	36,000	94,000	SEG	2016	118,000	200,500	222,600	189,000	95,025	106,800	54,500	102,500	54,700	**35,200**	No change
Ilnik River[d]	40,000	75,000	SEG	2023	**26,000**	124,000	238,000	81,000	75,000	**41,000**	70,000	110,500	109,021	99,694	No change
Meshik River[e]	48,000	86,000	SEG	2016	171,700	131,800	191,525	133,700	103,200	64,550	164,500	90,700	95,000	48,000	No change
Sandy River	37,000	69,000	SEG	2023	116,000	170,000	145,000	35,000	71,000	60,000	52,657	44,000	48,757	38,007	No change
Bear River Early Run	176,000	293,000	SEG	2004	304,356	293,280	570,840	324,093	205,273	299,198	387,240	368,072	280,626	208,459	No change
Bear River Late Run	117,000	195,000	BEG	2004	210,644	139,720	229,160	232,907	294,727	200,802	192,760	148,928	170,703	245,768	No change
Nelson River	97,000	219,000	BEG	2004	257,000	300,000	381,000	221,000	115,000	185,000	110,000	98,000	250,213	754,766	No change
Christianson Lagoon	23,000	50,000	SEG	2023	**6,700**	111,700	290,600	26,100	39,300	**22,800**	61,100	40,700	79,600	55,000	No change
North Creek	7,500	10,000	SEG	2019	18,000	21,000	5,800	8,300	11,000	8,200	9,100	9,900	11,200	**500**	No change
Orzinski Lake	14,000	28,000	SEG	2023	26,534	21,019	20,989	**2,817**	**4,367**	**6,819**	21,839	17,283	19,512	14,571	No change
Mortensen Lagoon	1,400	5,700	SEG	2023	NA	13,000	15,500	**1,200**	**800**	**800**	**1,500**	3,900	5,100	**0**	No change
Thin Point Lake	9,000	19,000	SEG	2023	19,900	36,400	44,300	**1,000**	**9,600**	**10,450**	18,900	**11,900**	**6,870**	26,920	No change
McLees Lake[f]	10,000		LB SEG	2019	20,284	39,892	13,195	No Weir	No Weir	5,037	16,173	14,015	26,945	No Weir	No change

[a] NA = data not available, no survey conducted; LB SEG = lower-bound SEG. Emboldened escapements did not meet the goal for that year. Cells highlighted grey did not have the listed 2024 goal applied in those years.

[b] AK Peninsula chum salmon escapement goals use an index approach described in Schaberg et al. (2019) and Finkle et al. (2022a). Italicized escapements lack a complete set of peak aerial survey index streams.

[c] Cinder River sockeye salmon escapement includes Mud Creek.

[d] Ilnik River sockeye salmon counts in 2009, 2010, 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.

[e] Meshik escapement includes Meshik River, Red Bluff Creek, and Yellow Bluff Creek. It does not include Highland or Charles Creeks.

[f] 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.