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Summary of Pacific Salmon Escapement Goals in Alaska with a Review of Escapements from 2010 to 2018

by

Andrew R. Munro

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Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

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Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat or long
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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ABSTRACT

This report summarizes statewide Pacific salmon escapement goals in effect in 2018 and documents escapements for all species and stocks with goals from 2010 through 2018. Annual escapements are compared against escapement goals in place at the time to assess outcomes, with summaries by the Division of Commercial Fisheries regions. We list methods used to enumerate escapements and to develop current escapement goals (with brief descriptions) for each monitored stock. Escapement goals were reviewed for the Southeast Region and Prince William Sound Management Area leading up to the 2017–2018 Board of Fisheries meeting cycle. As a result of these reviews, there were 34 escapement goal changes in 2018, including the elimination of 5 goals and the establishment of 1 new goal to replace another goal. The remaining changes were a result of updates to escapement indices and/or goal development methods. In 2018, 67% of the escapement goals were met or exceeded and 33% of the stocks did not meet minimum escapement goals.

Key words: escapement, escapement goals, Chinook salmon, sockeye salmon, coho salmon, pink salmon, chum salmon, Alaska Board of Fisheries, BOF, statewide, Alaska

INTRODUCTION

Scientifically defensible Pacific salmon escapement goals are a central tenet of fisheries management in Alaska. Escapement goals are founded in the sustained yield principle highlighted in the State of Alaska Constitution (Article VIII, section 4) and in state statute (AS 16.05.020). Several policies in Alaska Administrative Code also provide guidance for establishing escapement goals including the policy for the management of sustainable salmon fisheries (5 AAC 39.222), the policy for statewide salmon escapement goals (5 AAC 39.223), and the policy for the management of mixed stock fisheries (5 AAC 39.220). These policies provide detailed definitions of specific escapement goal types, outline the responsibilities of the Alaska Department of Fish and Game (ADF&G) and the Alaska Board of Fisheries (BOF) in establishing goals, and provide general direction for development and application of escapement goals in Alaska. Currently, there are 282 active salmon stock escapement goals throughout the state of Alaska (Figure 1).

It is the responsibility of ADF&G to document, establish, and review escapement goals; prepare scientific analyses in support of escapement goals; notify the public when escapement goals are established or modified; and notify the BOF of allocative implications associated with escapement goals. The foundation for this effort is the regional or area escapement goal review teams that are assembled every 3 years to review goals, recommend changes, establish new goals, or eliminate goals. The teams have broad expertise in biological characteristics of salmon stocks and technical approaches for establishing goals. Scientific staff from headquarters may assist regional teams to address issues of general importance for escapement goal development and application in Alaska. A detailed regional report of escapement goal recommendations is presented to the BOF and the public at triennial BOF meetings for that region or area. Following the BOF meeting, recommended goals are presented to the directors of the Divisions of Commercial Fisheries and Sport Fish for approval.

Although development of escapement goals is exhaustively detailed in regional and area reports and supporting documents (e.g., stock-specific reports), this statewide summary report allows readers to examine the goals and escapements for salmon stocks in a single document. It provides an overview of salmon stocks with escapement goals, a numerical description of the escapement goal, type of escapement goal, year the current escapement goal was first implemented, and recent years' escapement data for each stock. In addition, statistics documenting work done to achieve escapement goals is summarized and presented, and a

statewide summary of stocks with yield or management concerns is included, as recommended by ADF&G and established by the BOF. Data presented in this document are the most recently available at the time of publication and supersede data in previous annual statewide escapement reports. This report is intended to be a resource for ADF&G staff, stakeholders, and the public.

METHODS

ADF&G escapement goal reports and supporting documents were reviewed to catalog current escapement goals in each region for all 5 species of Pacific salmon, including information on stock name, type of goal, numerical description of the goal, and the year it was implemented (i.e., the first season that the goal was used to manage escapements). Regional and area staff from the Divisions of Commercial Fisheries and Sport Fish provided the most current escapement estimates from 2010 through 2018 for each stock with an established escapement goal. The escapement goals listed are those in effect during the 2018 spawning season, including escapement goals that were established or updated during the 2017–2018 BOF meeting cycle (Appendix A1).

Escapements from 2010 through 2018 were compared against escapement goals in place at the time of enumeration to assess outcomes in achieving goals. Escapements for a particular stock were classed as *Under* if escapement for a given year was less than the lower bound of the escapement goal. If escapement fell within the escapement goal range or was greater than a lower-bound goal, we considered the goal *Met*. Where escapement exceeded the upper bound of an escapement goal range, it was classed as *Over*. Where escapement goals or enumeration methods changed between 2010 and 2018 for a stock, we assessed outcomes by comparing escapement estimates with the goals and methods in place at the time of the fishery. Information on previous escapement goals and methods came from a detailed review of regional escapement goal reports, supporting documents, and conversations with regional and area biologists.

A variety of methods are used to develop escapement goals in Alaska and brief descriptions of each are summarized below. The most commonly used methods are listed first, followed by the less common methods.

Percentile Method: A method for establishing sustainable escapement goals (SEG) was originally developed by Bue and Hasbrouck[1] and refined by Clark et al. (2014). Contrast of the observed annual escapements (largest escapement divided by smallest escapement), measurement error in escapements, and estimated exploitation rate of the stock are used to select percentiles of observed escapements that are used to establish lower and upper bounds of the escapement goal.

Spawner–Recruit Analysis (SRA): Analysis of the relationship between escapement (number of spawners) and subsequent production of recruits (i.e., adult returns) in the next generation. There are several SRA models, but the Ricker production model (Ricker 1954) is almost exclusively used for salmon populations in Alaska.

Risk Analysis: Risks of management error, an unneeded management action, or mistaken inaction in future years are estimated based on a precautionary reference point established using

[1] Bue, B. G., and J. J. Hasbrouck. *Unpublished*. Escapement goal review of salmon stocks of Upper Cook Inlet. Report to the Alaska Board of Fisheries November 2001 (and February 2002). Alaska Department of Fish and Game, Anchorage.

past observations of escapement (Bernard et al. 2009). This method is primarily used to guide establishment of a lower-bound SEG for nontargeted stocks of salmon.

Yield Analysis: Graphical or tabular examination of yields produced from observed escapement indices from which the escapement range with the greatest yields is identified (Hilborn and Walters 1992).

Theoretical Spawner–Recruit Analysis (Theoretical SRA): Used in situations where there are few or no stock-specific harvest estimates and/or age data. Information from nearby stocks, or generalizations about the species, are used in a spawner–recruit production model to estimate the number of spawners needed to achieve maximum sustained yield (see Clark 2005).

Empirical Observation: Goal development methods classified as *Empirical Observation* are generally *ad hoc* methods for stocks with limited or sparse data. Goals are based on observed escapements over time and may be calculated as the average escapement or the value of a low escapement for which there is evidence that the stock is able to recover, e.g., Norton Sound pink salmon *Oncorhynchus gorbuscha* escapement goals (ADF&G 2004).

Zooplankton Model: This model estimates the number of sockeye salmon *O. nerka* smolts of a threshold or optimal size that a lake can support based upon measures of zooplankton biomass and surface area of the lake (Koenings and Kyle 1997). Adult production is then estimated from predicted smolt production by applying marine survival rates for a range of smolt sizes.

Spawning Habitat Model: Estimates of spawning capacity or number of spawners that produce maximum sustained yield are based on the relationship with the watershed area, available spawning habitat in a drainage, or stream length. Spawning habitat models have been developed for sockeye salmon (Burgner et al. 1969), coho salmon *O. kisutch* (Bradford et al. 1999; Bradford et al. 1997), and Chinook salmon *O. tshawytscha* (Parken et al. 2004).

Euphotic Volume (EV) Model: Measurement of the volume of a lake where enough light penetrates to support primary production (i.e., euphotic volume) is used to estimate sockeye salmon smolt biomass (Koenings and Burkett 1987) from which adult escapement is then estimated using marine survival rates.

Lake Surface Area: Similar to spawning habitat models, the relationship between the lake surface area and escapement are used to estimate adult sockeye salmon production (Honnold et al. 1996; Nelson et al. 2006).

Brood Interaction Simulation Model: This model simulates production using a spawner–recruit relationship that modifies the simulated production for the year of return using an age-structured submodel, and estimates resulting catches and escapements under user-specified harvest strategies (Carlson et al. 1999). This is a hybrid of a theoretical SRA and yield analysis that has only been used to develop the escapement goal for Kenai River sockeye salmon.

Conditional Sustained Yield Analysis: Observed escapement indices and harvest are used to estimate if, on average, surplus production (yield) results from a particular goal range (Nelson et al. 2005). Estimated expected yields are conditioned on extreme values of measurement error in the escapement indices. Currently, there are no escapement goals in Alaska based on this method.

RESULTS AND DISCUSSION

Summaries of estimated escapements and escapement goals for each monitored salmon stock from 2010 to 2018 are presented by region and species in Tables 1–4. Although most information was available through regional, area, and stock-specific escapement goal reports, 2018 data were primarily obtained directly from area and regional biologists. Data for 2018 are often preliminary estimates because complete data regarding subsistence and sport harvests are frequently not available immediately following the season.

During the 2017–2018 BOF meeting cycle, the Southeast Region and Prince William Sound Management Area reviewed their escapement goals (Haught et al. 2017; Heinl et al. 2017). There were 34 escapement goal changes implemented in 2018 (Table 5). In the Southeast Region, 5 escapement goals were eliminated, the East Alsek-Doame River sockeye salmon goal was replaced with a new goal specific to the East Alsek River, 3 Chinook salmon goals were revised to account for expansion of the escapement indices, and 2 coho salmon goals were revised. In Prince William Sound, all chum and pink salmon escapement goals were revised to account for the reduced number of index streams used to assess escapement for both species.

A summary of escapement goal types for all salmon species by region indicate that the majority of goals in Central, Arctic–Yukon–Kuskokwim, and Westward regions are SEGs, including lower-bound SEGs, with biological escapement goals (BEGs) making up a smaller proportion of goals (Figure 1a). The reverse is true for Southeast Region, where a little over half of the goals are BEGs. Escapement goals for sockeye and Chinook salmon make up about 50% of all escapement goals statewide, with the majority of goals for each species being SEGs (Figure 1b). Optimal escapement goals (OEG) and inriver goals established by the BOF, along with goals based upon international agreements, collectively represent a small proportion of escapement goals in Alaska.

Use of different escapement goal types for each salmon species is summarized by Division of Commercial Fisheries regions (Figures 2–5). Among the 4 regions, there are some distinct differences in the distribution of goal types by salmon species. In Southeast Region, the majority of goals are BEGs, which include all pink salmon goals, all but 1 Chinook salmon goal, 61% of the coho salmon goals, and 33% of the sockeye salmon goals (Figure 2). This is sharply contrasted with Central Region, where the majority of goals are SEGs, with 2 sockeye salmon stocks representing the only BEGs (Figure 3). Arctic–Yukon–Kuskokwim Region has the only BEG for chum salmon *O. keta* in the state, with additional BEGs for 3 Chinook and 1 sockeye salmon stock (Figure 4). All Chinook salmon stocks in Westward Region are BEGs, but compared to Southeast, a much smaller proportion of coho salmon goals are BEGs (Figure 5). These are broad generalizations that are immediately apparent, but there are many reasons why the distribution of goal types would be different between regions, including fishery structure, stock assessment capacity (e.g., stock-specific data), and technical approaches.

Summary comparisons of estimated escapements with escapement goals in place at the time are shown in Tables 6–9, highlighting whether the goal was exceeded, met, or not met. Numerous footnotes in Tables 1–4 and Tables 6–9 contain important information about changes in stock assessment methods or goal ranges during the specified years and are essential for a thorough understanding of the escapement estimates and evaluations of outcomes in comparison to goals. Summaries of outcomes in achieving goals are presented by species (Tables 10–13) and region (Tables 14–17; Figures 6–9). Patterns in achieving escapement goals from year to year have

varied within each region (Tables 14–17; Figures 6–9). In 2018, 42% of the stocks assessed had escapements that were within the goal range (or above the lower bound if a lower-bound SEG), which is below the observed range for recent years (48–59%; Figure 10a). The percentage of goals for which minimum escapement was not achieved in 2018 was 33%—an increase from 17% in 2017—and above the range of recent years (11–31%; Figure 10b). The remaining 25% of the goals were exceeded in 2018, which was a decrease from 34% in 2017 and within the recent range (13–40%; Figure 10c).

It is important to document outcomes for meeting these escapement goals, which are fundamental to ADF&G efforts to manage for sustainable salmon stock productivity. Where escapements chronically (4–5 years) fail to meet expectations for harvestable yield or spawning escapements, ADF&G may recommend—and the BOF may adopt—a *stock of concern* designation for those underperforming salmon stocks. The policy for the management of sustainable salmon fisheries (5 AAC 39.222) provides specific definitions for stocks of concern. *Yield concerns* arise from a chronic inability to maintain expected yields or harvestable surpluses above escapement needs. *Management concerns* are precipitated by a chronic failure to maintain escapements within the bounds, or above the lower bound of the established goal. A *conservation concern* may arise from a failure to maintain escapements above a sustained escapement threshold. Methods to develop stock-specific sustained escapement thresholds, as defined in the sustainable salmon fisheries policy, are not well developed for Pacific salmon, and no sustained escapement thresholds or stocks of conservation concern exist in Alaska. In 2018, there were 16 stocks of concern in the state. During the 2017–2018 BOF cycle, 3 Southeast Alaska Chinook salmon stocks were listed as management concerns and McDonald Lake sockeye salmon was relisted as a stock of management concern after being delisted in 2012 (Table 18). Two stocks were delisted by the BOF during the 2018–2019 meeting cycle: Swanson Lagoon sockeye salmon in Westward Region and Norton Sound Subdistrict 2 and 3 chum salmon in the Alaska-Yukon-Kuskokwim Region.

The array of methods used to enumerate salmon for each of the stocks with escapement goals, as well as methods used to assist ADF&G staff in developing the escapement goal for a given stock, are summarized by region in Tables 19–22.

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REFERENCES CITED

ADF&G (Alaska Department of Fish and Game). 2004. Escapement goal review of select AYK Region salmon stocks. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A04-01, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/RIR.3A.2004.01.pdf

Baker, T. T., L. F. Fair, R. A. Clark, and J. J. Hasbrouck. 2006. Review of salmon escapement goals in Bristol Bay, Alaska, 2006. Alaska Department of Fish and Game, Fishery Manuscript Series No. 06-05, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/fms06-05.pdf

Baker, T. T., L. F. Fair, F. W. West, G. B. Buck, X. Zhang, S. Fleischman, and J. Erickson. 2009. Review of salmon escapement goals in Bristol Bay, Alaska, 2009. Alaska Department of Fish and Game, Fishery Manuscript Series No. 09-05, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS09-05.pdf

Bernard, D. R., J. J. Hasbrouck, B. G. Bue, and R. A. Clark. 2009. Estimating risk of management error from precautionary reference points (PRPs) for non-targeted salmon stocks. Alaska Department of Fish and Game, Special Publication No. 09-09, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/SP09-09.pdf

Bernard, D. R., and E. L. Jones III. 2010. Optimum escapement goals for Chinook salmon in the transboundary Alsek River. Alaska Department of Fish and Game, Fishery Manuscript Series No. 10-02, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS10-02.pdf

Bernard, D. R., S. A. McPherson, K. A. Pahlke, and P. Etherton. 2000. Optimal production of Chinook salmon from the Stikine River. Alaska Department of Fish and Game, Fishery Manuscript Series No. 00-01, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/fms00-01.pdf

Bradford, M. J., R. A. Myers, and J. R. Irvine. 1999. Reference points for coho salmon (*Oncorhynchus kisutch*) harvest rates and escapement goals based on freshwater production. Canadian Journal of Fish and Aquatic Science 57:677–686.

Bradford, M. J., G. C. Taylor, and J. A. Allan. 1997. Empirical review of coho salmon smolt abundance and the prediction of smolt production at the region level. Transactions of the American Fisheries Society 126:49–64.

Brannian, L. K., M. J. Evenson, and J. R. Hilsinger. 2006. Escapement goal recommendations for select Arctic–Yukon–Kuskokwim region salmon stocks, 2007. Alaska Department of Fish and Game, Fishery Manuscript Series No. 06-07, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/fms06-07.pdf

Bue, B. G., J. J. Hasbrouck, and M. J. Evenson. 2002. Escapement goal review of Copper River and Bering Rivers, and Prince William Sound Pacific salmon stocks. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A02-35, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/RIR.2A.2002.35.pdf

Bue, B. G., K. L. Schaberg, Z. W. Liller, and D. B. Molyneaux. 2012. Estimates of the historic run and escapement for the Chinook salmon stock returning to the Kuskokwim River, 1976-2011. Alaska Department of Fish and Game, Fishery Data Series No. 12-49, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FDS12-49.pdf

Burgner, R. L., C. J. D. Costanzo, R. J. Ellis, G. Y. Harry, Jr., W. L. Hartman, O. E. Kerns, Jr., O. A. Mathison, and W. F. Royce. 1969. Biological studies and estimates of optimum escapements of sockeye salmon in the major river systems of Southwestern Alaska. Fishery Bulletin 67:405–459.

Carlson, S. R., K. E. Tarbox, and B. G. Bue. 1999. The Kenai sockeye salmon simulation model: A tool for evaluating escapement and harvest levels. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A99-08, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/RIR.2A.1999.08.pdf

Clark, J. E., J. H. Clark, and L. D. Shaul. 1994. Escapement goals for coho salmon stocks returning to Berners River, Auke Creek, Ford Arm Lake, and Hugh Smith Lake in Southeast Alaska. Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Regional Information Report 1J94-26, Douglas. http://www.adfg.alaska.gov/FedAidPDFs/RIR.1J.1994.26.pdf

REFERENCES CITED (Continued)

Clark, J. H. 2001a. Biological escapement goals for chum salmon in Subdistrict One of Norton Sound. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A01-09, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/RIR.3A.2001.09.pdf

Clark, J. H. 2001b. Biological escapement goals for Kwiniuk and Tubutulik chum salmon. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A01-08, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/RIR.3A.2001.08.pdf

Clark, J. H., and J. E. Clark. 1994. Escapement goals for Yakutat area coho salmon stocks. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 1J94-14, Douglas. http://www.adfg.alaska.gov/FedAidPDFs/RIR.1J.1994.14.pdf

Clark, J. H., D. M. Eggers, and J. A. Edmundson. 2007. Escapement goal review for Kenai River late-run sockeye salmon: Report to the Alaska Board of Fisheries, January 2005. Alaska Department of Fish and Game, Special Publication No. 07-12, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/sp07-12.pdf

Clark, J. H., S. A. McPherson, and D. M. Gaudet. 1998. Biological escapement goal for Andrew Creek Chinook salmon. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 5J98-08, Juneau. http://www.adfg.alaska.gov/FedAidPDFs/RIR.5J.1998.08.pdf

Clark, J. H., S. A. McPherson, and G. F. Woods. 2002. Biological escapement goal for sockeye salmon in the Situk River, Yakutat, Alaska. Alaska Department of Fish and Game, Special Publication No. 02-03, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/sp02-03.pdf

Clark, R. A. 2005. Stock status and recommended escapement goals for coho salmon in selected waters along the Juneau road system, 1981-2004. Alaska Department of Fish and Game, Special Publication No. 05-21, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/sp05-21.pdf

Clark, R. A., D. M. Eggers, A. R. Munro, S. J. Fleischman, B. G. Bue, and J. J. Hasbrouck. 2014. An evaluation of the percentile approach for establishing sustainable escapement goals in lieu of stock productivity information. Alaska Department of Fish and Game, Fishery Manuscript Series No. 14-06, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS14-06.pdf

Conitz, J. M., K. G. Howard, and M. J. Evenson. 2015. Escapement goal recommendations for select Arctic–Yukon–Kuskokwim Region salmon stocks, 2016. Alaska Department of Fish and Game, Fishery Manuscript Series No. 15-08, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS15-08.pdf

Der Hovanisian, J. 2013. Escapement goal for Klawock River coho salmon. Alaska Department of Fish and Game, Fishery Manuscript Series No. 13-09, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS13-09.pdf

Eggers, D. M. 2001. Biological escapement goals for Yukon River Fall chum salmon. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A01-10, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/RIR.3A.2001.10.pdf

Eggers, D. M., R. L. Bachman, and J. Stahl. 2010. Stock status and escapement goals for Chilkat Lake sockeye salmon in Southeast Alaska. Alaska Department of Fish and Game, Fishery Manuscript Series No. 10-05, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/Fms10-05.pdf

Eggers, D. M., and D. R. Bernard. 2011. Run reconstruction and escapement goals for Alsek River sockeye salmon. Alaska Department of Fish and Game, Fishery Manuscript Series No. 11-01, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS11-01.pdf

Eggers, D. M., and J. H. Clark. 2006. Assessment of historical runs and escapement goals for Kotzebue area chum salmon. Alaska Department of Fish and Game, Fishery Manuscript Series No. 06-01, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/fms06-01.pdf

Eggers, D. M., and S. C. Heinl. 2008. Chum salmon stock status and escapement goals in Southeast Alaska. Alaska Department of Fish and Game, Special Publication No. 08-19, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/sp08-19.pdf

REFERENCES CITED (Continued)

Eggers, D. M., S. C. Heinl, and A. W. Piston. 2009a. McDonald Lake sockeye salmon stock status and escapement goal recommendations, 2008. Alaska Department of Fish and Game, Fishery Data Series No. 09-31, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FDS09-31.pdf

Eggers, D. M., X. Zhang, R. L. Bachman, and M. M. Sogge. 2009b. Sockeye salmon stock status and escapement goals for Chilkoot Lake in Southeast Alaska. Alaska Department of Fish and Game, Fishery Data Series No. 09-63, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FDS09-63.pdf

Ericksen, R. P., and S. J. Fleischman. 2006. Optimal production of coho salmon from the Chilkat River. Alaska Department of Fish and Game, Fishery Manuscript Series No. 06-06, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/fms06-06.pdf

Ericksen, R. P., and S. A. McPherson. 2004. Optimal production of Chinook salmon from the Chilkat River. Alaska Department of Fish and Game, Fishery Manuscript Series No. 04-01, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/fms04-01.pdf

Erickson, J. W., C. E. Brazil, X. Zhang, T. R. McKinley, and R. A. Clark. 2015. Review of salmon escapement goals in Bristol Bay, Alaska, 2015. Alaska Department of Fish and Game, Fishery Manuscript Series No. 15-06, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS15-06.pdf

Erickson, J. W., T. M. Willette, and T. McKinley. 2017. Review of salmon escapement goals in Upper Cook Inlet, Alaska, 2016. Alaska Department of Fish and Game, Fishery Manuscript No. 17-03, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS17-03.pdf

Evenson, M. J. 2002. Optimal production of Chinook salmon from the Chena and Salcha rivers. Alaska Department of Fish and Game, Fishery Manuscript Series No. 02-01, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/fms02-01.pdf

Fair, L. F., C. E. Brazil, X. Zhang, R. A. Clark, and J. W. Erickson. 2012. Review of salmon escapement goals in Bristol Bay, Alaska, 2012. Alaska Department of Fish and Game, Fishery Manuscript Series No. 12-04, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS12-04.pdf

Fair, L. F., B. G. Bue, R. A. Clark, and J. J. Hasbrouck. 2004. Spawning escapement goal review of Bristol Bay salmon stocks. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A04-17, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/RIR.2A.2004.17.pdf

Fair, L. F., R. A. Clark, and J. J. Hasbrouck. 2007. Review of salmon escapement goals in Upper Cook Inlet, Alaska, 2007. Alaska Department of Fish and Game, Fishery Manuscript Series No. 07-06, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/fms07-06.pdf

Fair, L. F., S. D. Moffitt, M. J. Evenson, and J. Erickson. 2008. Escapement goal review of Copper and Bering rivers, and Prince William Sound Pacific salmon stocks, 2008. Alaska Department of Fish and Game, Fishery Manuscript Series No. 08–02, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/fms08-02.pdf

Fair, L. F., S. D. Moffitt, M. J. Evenson, and J. W. Erickson. 2011. Escapement goal review of Copper and Bering rivers, and Prince William Sound Pacific salmon stocks, 2011. Alaska Department of Fish and Game, Fishery Manuscript Series No. 11–07, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS11-07.pdf

Fair, L. F., T. M. Willette, and J. W. Erickson. 2013. Review of salmon escapement goals in Upper Cook Inlet, Alaska, 2013. Alaska Department of Fish and Game, Fishery Manuscript Series No. 13-13, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS13-13.pdf

Fair, L. F., T. M. Willette, J. W. Erickson, R. J. Yanusz, and T. R. McKinley. 2010. Review of salmon escapement goals in Upper Cook Inlet, Alaska, 2011. Alaska Department of Fish and Game, Fishery Manuscript Series No. 10-06, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/FMS10-06.pdf

Fleischman, S. J., and B. M. Borba. 2009. Escapement estimation, spawner-recruit analysis, and escapement goal recommendation for fall chum salmon in the Yukon River drainage. Alaska Department of Fish and Game, Fishery Manuscript Series No. 09-08, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/FMS09-08.pdf

REFERENCES CITED (Continued)

Fleischman, S. J., J. A. Der Hovanisian, and S. A. McPherson. 2011. Escapement goals for Chinook salmon in the Blossom and Keta rivers. Alaska Department of Fish and Game, Fishery Manuscript Series No. 11-05, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/FMS11-05.pdf

Fleischman, S. J., and D. Evenson. 2010. Run reconstruction, spawner-recruit analysis, and escapement goal recommendation for summer chum salmon in the East Fork of the Andreafsky River. Alaska Department of Fish and Game, Fishery Manuscript Series No. 10-04, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/FMS10-04.pdf

Fleischman S. J., and A. M. Reimer. 2017. Spawner-recruit analyses and escapement goal recommendations for Kenai River Chinook Salmon. Alaska Department of Fish and Game, Fishery Manuscript No. 17-02, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS17-02.pdf

Geiger, H. J. 2003. Sockeye salmon stock status and escapement goal for Redoubt Lake in Southeast Alaska. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 1J03-01, Juneau. http://www.adfg.alaska.gov/FedAidPDFs/RIR.1J.2003.01.pdf

Geiger, H. J., T. P. Zadina, and S. C. Heinl. 2003. Sockeye salmon stock status and escapement goal for Hugh Smith Lake in Southeast Alaska. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 1J03-05, Juneau. http://www.adfg.alaska.gov/FedAidPDFs/RIR.1J.2003.05.pdf

Hamazaki, T., and J. M. Conitz. 2015. Yukon River summer chum salmon run reconstruction, spawner-recruitment analysis, and escapement goal recommendation. Alaska Department of Fish and Game, Fishery Manuscript Series No. 15-07, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS15-07.pdf

Hamazaki, T., M. J. Evenson, S. J. Fleischman, and K. L. Schaberg. 2012. Spawner-recruit analysis and escapement goal recommendation for Chinook salmon in the Kuskokwim River Drainage. Alaska Department of Fish and Game, Fishery Manuscript Series No. 12-08, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS12-08.pdf

Hasbrouck, J. J., and J. A. Edmundson. 2007. Escapement goals for salmon stocks in Upper Cook Inlet, Alaska: report to the Alaska Board of Fisheries, January 2005. Alaska Department of Fish and Game, Special Publication No. 07-10, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/sp07-10.pdf

Haught, S. B., R. E. Brenner, J. W. Erickson, J. W. Savereide, and T. R. McKinley. 2017. Escapement goal review of Copper and Bering rivers, and Prince William Sound Pacific salmon stocks, 2017. Alaska Department of Fish and Game, Fishery Manuscript No. 17-10, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS17-10.pdf

Heinl, S. C., D. M. Eggers, and A. W. Piston. 2008. Pink salmon stock status and escapement goals in Southeast Alaska and Yakutat. Alaska Department of Fish and Game, Special Publication No. 08-16, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/sp08-16.pdf

Heinl, S. C., E. L. Jones III, A. W. Piston, P. J. Richards, and L. D. Shaul. 2014a. Review of salmon escapement goals in Southeast Alaska, 2014. Alaska Department of Fish and Game, Fishery Manuscript Series No. 14-07, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS14-07.pdf

Heinl, S. C., S. Miller, and J. A. Bednarski. 2014b. Speel Lake sockeye salmon stock status and escapement goal review. Alaska Department of Fish and Game, Fishery Manuscript Series No. 14-04, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS14-04.pdf

Heinl, S. C., E. L. Jones III, A. W. Piston, P. J. Richards, L. D. Shaul, B. W. Elliott, S. E. Miller, R. E. Brenner, and J. V. Nichols. 2017. Review of salmon escapement goals in Southeast Alaska, 2017. Alaskas Department of Fish and Game, Fishery Manuscript Series No. 17-11, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS17-11.pdf

Hendrich, C. F., J. L. Weller, S. A. McPherson, and D. R. Bernard. 2008. Optimal production of Chinook salmon from the Unuk River. Alaska Department of Fish and Game, Fishery Manuscript Series No. 08-03, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/fms08-03.pdf

REFERENCES CITED (Continued)

Hilborn, R., and C. J. Walters. 1992. Quantitative fisheries stock assessment: Choice, dynamics and uncertainty. Chapman and Hall, New York.

Honnold, S. G., J. A. Edmundson, and S. Schrof. 1996. Limnological and fishery assessment of 23 Alaska Peninsula and Aleutian area lakes, 1993–1995: An evaluation of potential sockeye and coho salmon production. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Regional Information Report 4K96-52, Kodiak. http://www.adfg.alaska.gov/FedAidPDFs/rir.4k.1996.52.pdf

Honnold, S. G., M. J. Witteveen, M. B. Foster, I. Vining, and J. J. Hasbrouck. 2007a. Review of escapement goals for salmon stocks in the Kodiak Management Area, Alaska. Alaska Department of Fish and Game, Fishery Manuscript Series No. 07-10, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/fms07-10.pdf

Honnold, S. G., M. J. Witteveen, I. Vining, H. Finkle, M. B. Foster, and J. J. Hasbrouck. 2007b. Review of salmon escapement goals in the Alaska Peninsula Aleutian Islands Management Areas, 2006. Alaska Department of Fish and Game, Fishery Manuscript Series No. 07-02, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/fms07-02.pdf

Humphreys, R. D., S. M. McKinnel, D. Welch, M. Stocker, B. Turris, F. Dickson, and D. Ware, editors. 1994. Pacific Stock Assessment Review Committee (PSARC) Annual Report for 1993. Canadian Manuscript, Report of Fisheries and Aquatic Sciences, No. 2227.

JTC (Joint Technical Committee of the Yukon River US/Canada Panel). 2008. Yukon River salmon 2007 season summary and 2008 season outlook. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A08-01, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/RIR.3A.2008.01.pdf

JTC. 2010. Yukon River salmon 2009 season summary and 2010 season outlook. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A10-01, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/RIR.3A.2010.01

JTC. 2013. Yukon River salmon 2012 season summary and 2013 season outlook. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A13-02, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/RIR.3A.2013.02.pdf

JTC. 2015. Yukon River salmon 2014 season summary and 2015 season outlook. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A15-01, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/RIR.3A.2015.01.pdf

Koenings, J. P., and R. D. Burkett. 1987. Population characteristics of sockeye salmon (*Oncorhynchus nerka*) smolts relative to temperature regimes, euphotic volume, fry density, and forage base within Alaskan lakes. Pages 216–234 [*In*] H. D. Smith, L. Margolis, and C. C. Wood, editors. Sockeye salmon (*Oncorhynchus nerka*) population biology and future management. Canadian Journal of Fisheries and Aquatic Sciences Special Publication No. 96, Canada.

Koenings, J. P., and G. B. Kyle. 1997. Consequences to juvenile sockeye salmon and the zooplankton community resulting from intense predation. Alaska Fishery Research Bulletin 4(2):120–135.

Liller, Z. W., H. Hamazaki, G. Decossas, W. Bechtol, M. Catalano, and N. J. Smith. 2018. Kuskokwim River Chinook salmon run reconstruction model revision executive summary. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A.18-04, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/RIR.3A.2018.04.pdf

Liller, Z. W., and J. W. Savereide. 2018. Escapement goal recommendations for select Arctic–Yukon–Kuskokwim Region salmon stocks, 2019. Alaska Department of Fish and Game, Fishery Manuscript No. 18-08, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS18-08.pdf

McPherson, S. A., and J. Carlile. 1997. Spawner-recruit analysis of Behm Canal Chinook salmon stocks. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 1J97-06, Juneau. http://www.adfg.alaska.gov/FedAidpdfs/RIR.1J.1997.06.pdf

REFERENCES CITED (Continued)

McPherson, S., and J. H. Clark. 2001. Biologcial escapement goal for King Salmon River Chinook salmon. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 1J01-40, Juneau. http://www.adfg.alaska.gov/FedAidPDFs/RIR.1J.2001.40.pdf

McPherson, S. A., R. E. Johnson, and G. F. Woods. 2005. Optimal production of Chinook salmon from the Situk River. Alaska Department of Fish and Game, Fishery Manuscript Series No. 05-04, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/Fms05-04.pdf

McPherson, S. A., E. L. Jones III, S. J. Fleischman, and I. M. Boyce. 2010. Optimal production of Chinook salmon from the Taku River through the 2001 year class. Alaska Department of Fish and Game, Fishery Manuscript Series No. 10-03, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/Fms10-03.pdf

Molyneaux, D. B., and L. K. Brannian. 2006. Review of escapement and abundance information for Kuskokwim area salmon stocks. Alaska Department of Fish and Game, Fishery Manuscript Series No. 06-08, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/fms06-08.pdf

Nelson, P. A., J. J. Hasbrouck, M. J. Witteveen, K. A. Bouwens, and I. Vining. 2006. Review of salmon escapement goals in the Alaska Peninsula and Aleutian Islands Management Areas. Report to the Alaska Board of Fisheries, 2004. Alaska Department of Fish and Game, Fishery Manuscript Series No. 06-03, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/fms06-03.pdf

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. http://www.adfg.alaska.gov/FedAidPDFs/RIR.4K.2001.66.pdf

Nelson, P. A., M. J. Witteveen, S. G. Honnold, I. Vining, and J. J. Hasbrouck. 2005. Review of salmon escapement goals in the Kodiak Management Area. Alaska Department of Fish and Game, Fishery Manuscript Series No. 05-05, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/fms05-05.pdf

Nemeth, M. J., M. J. Witteveen, M. B. Foster, H. Finkle, J. W. Erickson, J. S. Schmidt, S. J. Fleischman, and D. Tracy. 2010. Review of escapement goals in 2010 for salmon stocks in the Kodiak Management Area, Alaska. Alaska Department of Fish and Game, Fishery Manuscript Series No. 10-09, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/FMS10-09.pdf

Otis, E. O., J. W. Erickson, C. Kerkvliet, and T. McKinley. 2016. A review of escapement goals for salmon stocks in Lower Cook Inlet, Alaska, 2016. Alaska Department of Fish and Game, Fishery Manuscript Series No. 16-08, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS16-08.pdf

Otis, E. O., and N. J. Szarzi. 2007. A review of escapement goals for salmon stocks in Lower Cook Inlet, Alaska, 2007. Alaska Department of Fish and Game, Fishery Manuscript Series No. 07-04, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/fms07-04.pdf

Otis, T. 2001. Report to the Alaska Board of Fisheries on sustainable escapement goals for chum, pink, and sockeye salmon in lower Cook Inlet. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A01-21, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/RIR.2A.2001.21.pdf

Parken, C., R. E. McNicol, and J. R. Irvine. 2004. Habitat-based methods to estimate escapement goals for Chinook salmon stocks in British Columbia. Pacific Scientific Advice Review Committee Working Papers, British Columbia, Canada.

Pestal, G., and S. Johnston. 2015. Estimates of a biologically-based spawning goal and biological benchmarks for the Canadian-origin Taku River coho stock aggregate. Department of Fisheries and Oceans Canadian Science Advisory Secretariat Research Document 2015/048. http://www.dfo-mpo.gc.ca/csas-sccs/publications/resdocs-docrech/2015/2015_048-eng.html

Piston, A. W., and S. C. Heinl. 2014. Chum salmon stock status and escapement goals in Southeast Alaska. Alaska Department of Fish and Game, Special Publication No. 14-13. http://www.adfg.alaska.gov/FedAidPDFs/SP14-13.pdf

REFERENCES CITED (Continued)

Ricker, W. E. 1954. Stock and recruitment. Journal of Fisheries and Research Board of Canada 11:559–623.

Sagalkin, N. H., B. Foster, M. B. Loewen, and J. W. Erickson. 2013a. Review of salmon escapement goals in the Kodiak Management Area, 2013. Alaska Department of Fish and Game, Fishery Manuscript Series No. 13-11, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS13-11.pdf

Sagalkin, N. H., A. St. Saviour, J. W. Erickson, and H. Finkle. 2013b. Review of salmon escapement goals in the Chignik Management Area, 2013. Alaska Department of Fish and Game, Fishery Manuscript Series No. 13-06, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS13-06.pdf

Savereide, J. W. 2001. An age structured model for assessment and management of Copper River Chinook salmon. Master's thesis, University of Alaska Fairbanks.

Schaberg, K. L., H. Finkle, M. B. Foster, D. L. Tracy, and M. L. Wattum. 2015a. Review of salmon escapement goals in the Alaska Peninsula and Aleutian Islands Management Areas, 2015. Alaska Department of Fish and Game, Fishery Manuscript Series No. 15-03, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS15-03.pdf

Schaberg, K. L., D. A. Tracy, M. B. Foster, and M. Loewen. 2015b. Review of salmon escapement goals in the Chignik Management Area, 2015. Alaska Department of Fish and Game, Fishery Manuscript Series No. 15-02, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS15-02.pdf

Schaberg, K. L., M. B. Foster, M. Wattum, and T. R. McKinley. 2016. Review of salmon escapement goals in the Kodiak Management Area, 2016. Alaska Department of Fish and Game, Fishery Manuscript Series No. 16-09, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS16-09.pdf

Schmidt, J., T. Polum, and D. Evans. 2014. Stock assessment of Buskin River coho salmon, 2008-2010. Alaska Department of Fish and Game, Fishery Data Series No. 14-41, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FDS14-41.pdf

Shaul, L. D., K. F. Crabtree, and M. Kemp. 2017. Berners River coho salmon studies, 1972–2014. Alaska Department of Fish and Game, Fishery Manuscript No. 17-08, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS17-08.pdf

Shaul, L. D., K. F. Crabtree, M. Kemp, and N. Olmsted. 2009. Coho salmon studies at Hugh Smith Lake, 1982–2007. Alaska Department of Fish and Game, Fishery Manuscript Series No. 09-04, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMS09-04.pdf

Shaul, L. D., and T. A. Tydingco. 2006. Escapement goals for coho salmon counted in aggregate surveys in the Ketchikan and Sitka areas. Alaska Department of Fish and Game, Special Publication No. 06-11, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/sp06-11.pdf

TTC (Transboundary Technical Committee). 1986. Report of the Canada/United States Transboundary Technical Committee, Final Report. TCTR (86)-1. https://www.psc.org/download/43/transboundary-technical-committee/2278/tctr86-1.pdf

TTC. 1987. Stikine River sockeye salmon management plan, 1987. Pacific Salmon Commission Report TCTR (87)-1, Vancouver. https://www.psc.org/download/43/transboundary-technical-committee/2279/tctr87-1.pdf

TTC. 1990. Long-term research plans for the transboundary rivers. Pacific Salmon Commission Report TCTR (90)-3. https://www.psc.org/download/43/transboundary-technical-committee/2291/tctr90-3.pdf

TTC. 1993. Salmon management and enhancement plans for the Stikine, Taku, and Alsek rivers, 1993. Pacific Salmon Commission Report TCTR (93)-2, Vancouver. https://www.psc.org/download/43/transboundary-technical-committee/2299/tctr93-2.pdf

TTC. 2014. Salmon management and enhancement plans for the Stikine, Taku and Alsek rivers, 2013. Pacific Salmon Commission Report TCTR 14-1. https://www.psc.org/download/43/transboundary-technical-committee/2270/tctr14-1.pdf

REFERENCES CITED (Continued)

Volk, E., M. J. Evenson, and R. A. Clark. 2009. Escapement goal recommendations for select Arctic–Yukon–Kuskokwim Region salmon stocks, 2010. Alaska Department of Fish and Game, Fishery Manuscript Series No. 09-07, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/FMS09-07.pdf

Witteveen, M. J., H. Finkle, J. J. Hasbrouck, and I. Vining. 2007. Review of salmon escapement goals in the Chignik Management Area, 2007. Alaska Department of Fish and Game, Fishery Manuscript Series No. 07-09, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/fms07-09.pdf

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 Series No. 09-09, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/FMS09-09.pdf

Witteveen, M. J., H. Finkle, P. A. Nelson, J. J. Hasbrouck, and I. Vining. 2005. Review of salmon escapement goals in the Chignik Management Area. Alaska Department of Fish and Game, Fishery Manuscript Series No. 05-06, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/fms05-06.pdf

TABLES

Table 1.–Southeast Region Chinook, chum, coho, pink, and sockeye salmon escapement goals and escapements, 2010 to 2018.

System	2018 Goal Range		Type	Initial	Escapement								
	Lower	Upper		Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
CHINOOK SALMON[a]													
Blossom River	500	1,400	BEG	2018	1,405	569	793	987	840	642	522	341	1,087[b]
Keta River	550	1,300	BEG	2018	1,430	671	725	1,484	1,321	915	1,342	903	1,662[b]
Unuk River	1,800	3,800	BEG	2009	3,835	3,195	956	1,135	1,691	2,623	1,463	1,203	1,971[b]
Chickamin River	2,150	4,300	BEG	2018	5,491	4,052	2,109	2,223	3,097	2,760	964	722	2,052[b]
Andrew Creek	650	1,500	BEG	1998	1,205	936	587	920	1,261	796	402	349	482[b]
Stikine River	14,000	28,000	BEG	2000	15,116[b]	14,482[b]	22,327[b]	16,783	24,366[b]	21,597[b]	10,554[b]	7,206[b]	8,344[b]
King Salmon River	120	240	BEG	1997	158	192	155	94	68	50	149	85	30[b]
Taku River	19,000	36,000	BEG	2009	28,769[b]	27,523[b]	19,538[b]	18,002	23,532[b]	28,827[b]	12,381[b]	8,214[b]	7,271[b]
Chilkat River	1,850	3,600	inriver[c]	2003	1,815	2,688	1,744[b]	1,730	1,534[b]	2,453[b]	1,373[b]	1,173[b]	873[b]
	1,750	3,500	BEG	2003	1,797	2,674	1,723[b]	1719	1,529[b]	2,452[b]	1,380[b]	1,173[b]	873[b]
Klukshu (Alsek) River[d]	eliminated			2018	2,259	1,613	693	1,227	832	1,388	646	443[b]	
Alsek River[d]	3,500	5,300	BEG	2013	9,526	6,850	3,027	4,992	3,357	5,697	2,514	1,762	4,312[b]
Situk River	450	1,050	BEG	2003	197	240	322	912	475	174	329	1,187[b]	420[b]
CHUM SALMON													
Southern Southeast Summer	62,000		LB SEG	2015	51,000	179,000	155,000	86,000	47,000	115,000	90,000	84,000	127,000
Northern Southeast Inside Summer	107,000		LB SEG	2018	77,000	125,000	177,000	278,000	93,000	166,000	66,000	277,000	109,000
Northern Southeast Outside Summer	25,000		LB SEG	2015	28,000	25,000	38,000	23,000	28,000	26,000	26,000	25,000	19,000
Cholmondeley Sound Fall	30,000	48,000	SEG	2009	76,000	93,000	54,000	13,000	48,000	73,000	30,000	52,000	70,000
Port Camden Fall	2,000	7,000	SEG	2009	5,400	1,800	3,800	2,400	4,300	7,300	4,700	4,200	1,000
Security Bay Fall	5,000	15,000	SEG	2009	6,500	5,100	9,800	2,800	6,300	21,500	14,300	15,500	5,600
Excursion River Fall	4,000	18,000	SEG	2009	6,100	3,000	2,000	7,600	10,800	12,000	1,400	14,500	6,200
Chilkat River Fall	75,000	250,000	SEG	2015	89,000	360,000	287,000	166,000	142,000	207,000	218,000	130,000	NA
COHO SALMON													
Hugh Smith Lake	500	1,600	BEG	2009	2,878	2,137	1,908	3,048	4,110	956	948	1,266	619
Klawock River	4,000	9,000	SEG	2013[e]	9,707	5,572	7,507	8,323	7,698	12,780	24,242	7,412	13,643
Taku River	50,000	90,000	BEG	2015	126,830[b]	70,871[b]	70,775[b]	68,117	124,171[b]	60,178[b]	87,704[b]	57,868[b]	50,935[b]
Auke Creek	200	500	BEG	1994	417	517	837	736	1,533	517	204	283	146
Montana Creek	400	1,200	SEG	2006	630	709	394	367	911	1,204	717	634	1,161
Peterson Creek	100	250	SEG	2006	467	138	190	126	284	202	52	20	172
Ketchikan Survey Index	4,250	8,500	BEG	2006	4,563	5,098	11,960	11,295	16,675	10,128	13,420	11,557	13,764
Sitka Survey Index	400	800	BEG	2006	1,273	2,222	1,157	1,414	2,161	2,244	2,943	1,280	1,502
Ford Arm Creek	eliminated			2018	1,610	1,908	2,282	1,573	3,025	3,281	NA	NA	
Berners River	3,600	8,100	BEG	2018	7,520	6,050	5,480	6,280	15,480	9,940	6,733	7,040	3,550

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Table 1.–Page 2 of 3.

System	2018 Goal Range Lower	2018 Goal Range Upper	Type	Initial Year	Escapement 2010	2011	2012	2013	2014	2015	2016	2017	2018
COHO SALMON (cont.)													
Chilkat River	30,000	70,000	BEG	2006	84,909	61,099	36,961	51,324	130,200	47,342	26,280	34,742	66,085
Lost River	eliminated			2015	2,393	1,221	2,200	2,593	3,555				
Tawah Creek (Lost River)	1,400	4,200	SEG	2015	2,393	1,221	NA	2,593	3,555	2,015	746	1,455	2,211
Situk River	3,300	9,800	BEG	1994	11,195	3,652	3,007	14,853	8,226	7,062	6,177	4,122	6,198
Tsiu/Tsivat Rivers	10,000	29,000	SEG	2018	11,000	21,000	10,500	47,000	27,000	19,500	31,000	38,000	48,600
PINK SALMON													
Southern Southeast	3,000,000	8,000,000	BEG	2009	5,940,000	5,500,000	6,470,000	14,450,000	9,650,000	4,300,000	6,600,000	6,390,000	4,870,000
Northern Southeast Inside	2,500,000	6,000,000	BEG	2009	3,210,000	6,030,000	2,110,000	5,400,000	1,380,000	5,250,000	1,780,000	4,650,000	1,370,000
Northern Southeast Outside	750,000	2,500,000	BEG	2009	2,010,000	2,730,000	2,470,000	5,340,000	2,750,000	2,840,000	1,700,000	2,840,000	1,900,000
Situk River (even-year)	eliminated			2012	89,301[f]								
Situk River (odd-year)	eliminated			2012		169,908							
Situk River	eliminated			2018			30,577	150,500	28,238	69,635	24,949	263,830	
SOCKEYE SALMON													
Hugh Smith Lake	8,000	18,000	OEG[g]	2003	15,646	22,029	13,353	5,946	10,397	21,296	12,865	14,748	2,039
	8,000	18,000	BEG	2003									
McDonald Lake	55,000	120,000	SEG	2009	72,500	113,000	57,000	15,400	43,400	70,200	15,600	24,000	11,000
Mainstem Stikine River	20,000	40,000	SEG	1987	24,831	29,393	33,812	27,091	16,197	26,432	28,646	11,678[b]	10,231[b]
Tahltan Lake[h]	18,000	30,000	BEG	1993	22,702	34,248	13,463	15,828	39,745	33,159	38,461	19,241[b]	19,208[b]
Speel Lake	4,000	9,000	SEG	2015	5,640	4,777	5,681	6,426	5,059	4,888	5,538	3,435	4,244
Taku River	71,000	80,000	SEG	1986	88,367	115,383	126,764	81,177	92,189	132,523	176,417	108,416[b]	98,479[b]
Redoubt Lake	7,000	25,000	OEG	2003	17,156	22,720	40,944	49,124	19,936	13,983	22,774	55,144	73,810
	10,000	25,000	BEG	2003									
Chilkat Lake	70,000	150,000	BEG	2009	61,906	63,628	121,810	116,300	70,470	175,874	88,513	89,514	108,092
Chilkoot Lake	38,000	86,000	SEG	2009	71,657	65,915	118,166	46,329	105,713	71,515	86,721	43,098	85,453
East Alsek-Doame River	eliminated			2018	20,000	33,000	21,500	26,500	15,300	15,000	19,200	22,500	
East Alsek River	9,000	24,000	SEG	2018	12,500	26,000	16,000	24,000	9,800	12,000	19,200	20,500	10,500
Klukshu River	7,500	11,000	BEG	2013	18,546	20,728	17,176	3,792	12,148	11,363	7,391[b]	3,711	7,035
Alsek River[i]	eliminated			2018	NA	83,899	76,598	83,771	87,093	63,709	58,836	NA	
Lost River	eliminated			2018	1,525	1,006	453	587	NA	373	449	NA	
Situk River	30,000	70,000	BEG	2003	47,865[f]	89,943	62,500	118,635	102,318	95,093	57,693	92,168	26,704

Note: LB SEG = lower-bound SEG; NA = data not available; MEF = mid eye to tail fork.

[a] Goals are for large (≥660 mm MEF, or fish age 1.3 and older) Chinook salmon, except the goals for the Klukshu and Alsek rivers, which are germane to fish age 1.2 and older and can include fish <660 mm MEF.

[b] Preliminary data.

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[c] Chilkat River Chinook salmon inriver goal accounts for inriver subsistence harvest that average <100 fish.

[d] Alsek and Klukshu river Chinook salmon escapement goals were bilaterally agreed upon in 2013 (TTC 2014). Escapement to the Alsek River is calculated through expansion of the Klukshu River inriver run by a factor of 4.0 and subtraction of any inriver harvests above Dry Bay in the lower Alsek River.

[e] Klawock coho salmon escapement goal was officially adopted in 2013, but escapement was managed for this goal beginning in 2007.

[f] Situk River weir was removed well before peak of pink salmon run so adequate assessment was not possible.

[g] Hugh Smith Lake sockeye salmon OEG includes wild and hatchery fish.

[h] Tahltan sockeye salmon escapement count includes fish collected for broodstock.

[i] Alsek River sockeye salmon run is not regularly assessed, so escapement numbers for every year are not available. Since 2013, Alsek River sockeye salmon have been managed to meet Klukshu River escapement goal as per the 2013 management plan (TTC 2014).

Table 2.–Central Region (Bristol Bay, Cook Inlet, and Prince William Sound/Copper River) Chinook, chum, coho, pink, and sockeye salmon escapement goals and escapements, 2010 to 2018.

System	2018 Goal Range		Type	Initial	Escapement								
	Lower	Upper		Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
CHINOOK SALMON													
Bristol Bay													
Nushagak River	55,000	120,000	SEG	2013	56,092	101,995	167,618	104,746	62,535	90,974	122,637	53,819	97,239
Togiak River	eliminated			2013	NS	NS	NS						
Naknek River	eliminated			2016	NS	NS	NS	NS	NS	3,060			
Alagnak River	2,700		LB SEG	2007	NS	NS	NS	NS	NS	917	1,283	435	998
Egegik River	eliminated			2013	NS	NS	NS						
Upper Cook Inlet													
Alexander Creek	2,100	6,000	SEG	2002	177	343	181	588	911	1,117	754	170	296
Campbell Creek	380		LB SEG	2011	290	260	NS	NS	274	654	544	475	287
Chuitna River	1,200	2,900	SEG	2002	735	719	502	1,690	1,398	1,965	1,372	235	939
Chulitna River	1,800	5,100	SEG	2002	1,052	1,875	667	1,262	1,011	3,137	1,151	NC	1,125
Clear (Chunilna) Creek	950	3,400	SEG	2002	903	512	1,177	1,471	1,390	1,205	NS	780	940
Crooked Creek	650	1,700	SEG	2002	1,088	654	631	1,103	1,411	1,459	1,747	911	714
Deshka River	13,000	28,000	SEG	2011	18,594	19,026	14,010	18,531	16,335	24,316	22,874	11,383	8,548
Goose Creek	250	650	SEG	2002	76	80	57	62	232	NC	NC	148	90
Kenai River - Early Run (all fish)	eliminated[a]			2017	6,393	8,448	5,044	2,148	5,311	6,190	9,177		
Kenai River - Early Run (large fish)	3,900	6,600	OEG	2017								6,702	2,909
	2,800	5,600	SEG	2017									
Kenai River - Late Run (all fish)	eliminated			2017	16,210	19,680	27,710	15,395	16,263	22,626	18,790		
Kenai River - Late Run (large fish)	13,500	27,000	SEG	2017								19,948	16,813
Lake Creek	2,500	7,100	SEG	2002	1,617	2,563	2,366	3,655	3,506	4,686	3,588	1,601	1,767
Lewis River	250	800	SEG	2002	56	92	107	61	61	5[b]	0	0[b]	0
Little Susitna River (Aerial)[c]	900	1,800	SEG	2002	589	887	1,154	1,651	1,759	1,507	1,622	1,192	530
Little Susitna River (Weir)	2,300	3,900	SEG	2017								2,531	549
Little Willow Creek	450	1,800	SEG	2002	468	713	494	858	684	788	675	840	280
Montana Creek	1,100	3,100	SEG	2002	755	494	416	1,304	953	1,416	692	603	473
Peters Creek	1,000	2,600	SEG	2002	NC	1,103	459	1,643	1,443	1,514	1,122	307	1,674
Prairie Creek	3,100	9,200	SEG	2002	3,022	2,038	1,185	3,304	2,812	3,290	1,853	1,930	1,194
Sheep Creek	600	1,200	SEG	2002	NC	350	363	NC	262	NC	NC	NC	334
Talachulitna River	2,200	5,000	SEG	2002	1,499	1,368	847	2,285	2,256	2,582	4,295	1,087	1,483
Theodore River	500	1,700	SEG	2002	202	327	179	476	312	426	68	21	18
Willow Creek	1,600	2,800	SEG	2002	1,173	1,061	756	1,752	1,335	2,046	1,814	1,329	411
Lower Cook Inlet													
Anchor River	3,800	7,600	SEG	2017	4,449	3,545	4,509	4,388	2,497	10,049	7,146	5,796	3162
Deep Creek	350		LB SEG	2017	387	696	447	475	601	535	NS	753	182
Ninilchik River	750	1,300	SEG	2017	605	668	555	571	891	874	572	855	979

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Table 2.–Page 2 of 6.

System	2018 Goal Range Lower	Upper	Type	Initial Year	Escapement 2010	2011	2012	2013	2014	2015	2016	2017	2018
CHINOOK SALMON (cont.)													
Prince William Sound													
Copper River	24,000		LB SEG	2003	16,771	27,993	29,965	29,012	20,709	26,764	12,485	33,684	43,056
CHUM SALMON													
Bristol Bay													
Nushagak River[d]	200,000		LB SEG	2013	273,914	248,278	395,162	628,134	525,797	288,929	419,810	415,488	811,283
Upper Cook Inlet													
Clearwater Creek	3,500	8,000	SEG	2017	13,700	11,630	5,300	9,010	3,110	10,790	5,056	7,040	1,800
Lower Cook Inlet													
Port Graham River	1,200	2,700	SEG	2017	1,395	1,764	699	1,944	3,735	4,030	2,391	5,765	3,725
Dogfish Lagoon	3,500	8,600	SEG	2017	12,703	12,936	8,842	9,300	11,205	13,312	11,260	13,191	7,615
Rocky River	1,500	4,400	SEG	2017	1,271	4,480	3,165	8,148	6,863	3,138	4,620	6,922	5,620
Port Dick Creek	1,900	4,300	SEG	2017	2,439	7,087	8,400	4,133	1,829	13,230	9,323	2,633	724
Island Creek	5,100	11,900	SEG	2017	3,408	11,755	14,863	8,772	2,699	18,479	8,210	5,522	1,368
Big Kamishak River	6,800	15,600	SEG	2017	NS	5,532	12,400	3,280	5,676	6,990	9,104	32,290	7,694
Little Kamishak River	8,000	16,800	SEG	2017	18,414	19,310	30,250	6,744	15,069	14,370	11,991	19,275	14,417
McNeil River	24,000	48,000	SEG	2008	10,520	30,977	10,388	9,498	17,475	20,494	26,262	38,679	37,331
Bruin River	5,200	10,000	SEG	2017	6,200	3,486	16,795	8,942	3,583	11,006	26,598	38,536	28,497
Ursus Cove	5,900	10,100	SEG	2017	11,765	10,636	2,840	10,339	5,308	14,783	7,032	22,025	3,718
Cottonwood Creek	5,200	12,200	SEG	2017	15,848	4,730	4,111	5,206	7,079	16,962	1,850	6,150	1,326
Iniskin Bay	5,900	13,600	SEG	2017	19,252	16,522	3,049	5,928	13,020	7,513	1,089	15,591	9,149
Prince William Sound[e]													
Eastern District	79,000		LB SEG	2018	140,940	237,372	94,986	146,349	90,445	104,437	116,685	76,836	109,598
Northern District	28,000		LB SEG	2018	58,029	63,876	23,273	40,475	27,385	41,253	10,410	33,437	18,407
Coghill District	10,000		LB SEG	2018	84,752	19,614	13,896	14,086	9,491	14,929	976	13,210	13,617
Northwestern District	7,000		LB SEG	2018	34,131	11,951	9,360	4,995	5,041	7,060	3,954	7,118	15,563
Southeastern District	11,000		LB SEG	2018	80,927	107,857	28,374	33,678	29,362	44,095	13,919	26,330	10,164
COHO SALMON													
Bristol Bay													
Nushagak River	60,000	120,000	SEG	2013			329,946	207,222	478,198	NS	NS	NS	111,455
Upper Cook Inlet													
Deshka River	10,200	24,100	SEG	2017								36,869	13,072
Fish Creek (Knik)	1,200	4,400	SEG	2011	6,977	1,428[f]	1,237	7,593[f]	10,283	7,912	2,484	8,966	5,022
Jim Creek	450	1,400	SEG	2014	242	229	213	663	122	571	106	5,646	758
Little Susitna River	10,100	17,700	SEG	2002	9,214	4,826[g]	6,779	13,583	24,211[g]	12,756	10,049	17,781	7,583[g]

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Table 2.–Page 3 of 6.

System	2018 Goal Range Lower	2018 Goal Range Upper	Type	Initial Year	Escapement 2010	2011	2012	2013	2014	2015	2016	2017	2018
COHO SALMON (cont.)													
Lower Cook Inlet													
There are no coho salmon stocks with escapement goals in Lower Cook Inlet													
Prince William Sound													
Copper River Delta	32,000	67,000	SEG	2003	41,077	38,525	37,310	34,680	44,400	42,165	76,400	43,960	54,200
Bering River	13,000	33,000	SEG	2003	21,311	18,890	15,605	18,820	26,475	15,550	26,150	30,650	26,525
PINK SALMON													
Bristol Bay													
Nushagak River	165,000		LB SEG	2013			1,348,606	NA	2,281,831	NS	NS	NS	628,069
Upper Cook Inlet													
There are no pink salmon stocks with escapement goals in Upper Cook Inlet.													
Lower Cook Inlet													
Humpy Creek	17,500	51,400	SEG	2017	70,686	1,670	67,934	6,749	44,369	38,025	89,673	71,073	54,816
China Poot Creek	2,500	6,300	SEG	2017	2,220	3,462	8,392	7,119	1,409	7,366	698	2,379	2,280
Tutka Creek	6,500	17,000	SEG	2002	2,141	21,974	10,436	9,541	10,152	81,584	33,242	61,369	60,691
Barabara Creek	2,000	5,600	SEG	2017	13,935	8,186	1,412	17,377	3,558	25,203	2,813	25,002	7,236
Seldovia Creek	21,800	37,400	SEG	2017	25,886	46,231	44,722	36,824	35,895	108,793	15,694	27,025	50,827
Port Graham River	7,700	19,700	SEG	2017	16,586	20,883	34,486	11,893	32,295	82,356	14,629	20,642	33,419
Dogfish Lagoon Creeks	800	7,100	SEG	2017	6,300	3,900	11,400	26,448	8,848	50,058	2,307	13,331	8,398
Port Chatham	7,800	18,100	SEG	2017	2,992	15,830	5,430	57,447	10,290	42,613	1,140	44,291	18,122
Windy Creek Right	3,400	11,200	SEG	2017	6,408	1,722	5,823	11,704	5,710	17,009	1,400	5,053	8,925
Windy Creek Left	5,400	27,100	SEG	2017	24,241	12,210	11,691	47,849	10,147	33,640	500	17,381	14,043
Rocky River	11,700	54,800	SEG	2017	27,045	22,706	15,684	75,791	17,114	107,931	4,300	31,189	2,088
Port Dick Creek	17,900	49,800	SEG	2017	41,090	16,868	18,057	55,828	48,732	98,002	4,819	62,098	94,585
Island Creek	9,600	32,500	SEG	2017	69,525	10,181	20,079	26,004	50,402	50,387	1,735	22,579	5,558
S. Nuka Island Creek	2,800	11,200	SEG	2017	NS	NS	1,250	8,442	11,000	8,900	10	540	545
Desire Lake Creek	1,500	18,000	SEG	2017	2,978	600	2,260	56,921	443	46,290	169	4,364	2,547
Bear & Salmon Creeks	eliminated			2011	NS								
Thumb Cove	eliminated			2011	NS								
Humpy Cove	eliminated			2011	NS								
Tonsina Creek	eliminated			2011	NS								
Bruin River	17,800	103,000	SEG	2017	40,256	4,534	31,800	15,020	121,569	40,801	86,632	71,100	94,715
Sunday Creek	4,400	24,900	SEG	2017	6,607	844	1,348	6,132	7,665	60,385	2,130	22,211	3,400
Brown's Peak Creek	2,600	17,500	SEG	2017	3,092	2,035	2,800	4,061	4,048	29,141	1,378	39,197	1,341
Prince William Sound													
All Dist. Combined (even yr)	eliminated			2012	1,910,357								
All Dist. Combined (odd yr) [h]	eliminated			2012		3,826,378							

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Table 2.–Page 4 of 6.

System	2018 Goal Range Lower	Upper	Type	Initial Year	Escapement 2010	2011	2012	2013	2014	2015	2016	2017	2018
PINK SALMON (cont.)													
Prince William Sound (cont.)													
Eastern Dist. (even yr)	203,000	328,000	SEG	2018			268,432		250,381		594,778		309,325
Eastern Dist. (odd yr)	346,000	863,000	SEG	2018				1,266,630		1,440,254		557,545	
Northern Dist. (even yr)	96,000	127,000	SEG	2018			91,187		95,134		134,460		111,174
Northern Dist. (odd yr)	111,000	208,000	SEG	2018				299,054		708,920		395,437	
Coghill Dist. (even yr)	37,000	110,000	SEG	2018			170,752		60,921		63,986		70,881
Coghill Dist. (odd yr)	54,000	233,000	SEG	2018				625,991		775,488		181,153	
Northwestern Dist. (even yr)	52,000	93,000	SEG	2018			114,518		66,350		168,272		111,194
Northwestern Dist. (odd yr)	64,000	144,000	SEG	2018				201,836		438,944		250,989	
Eshamy Dist. (even yr)	1,000	4,000	SEG	2018			1,052		12,167		NA		16,594
Eshamy Dist. (odd yr)	5,000	31,000	SEG	2018				12,145		68,988		2,836	
Southwestern Dist. (even yr)	62,000	105,000	SEG	2018			79,774		73,104		NA		81,100
Southwestern Dist. (odd yr)	112,000	231,000	SEG	2018				337,952		644,158		172,930	
Montague Dist. (even yr)	36,000	72,000	SEG	2018			70,695		23,136		NA		135,208
Montague Dist. (odd yr)	143,000	330,000	SEG	2018				365,807		559,994		205,252	
Southeastern Dist. (even yr)	88,000	153,000	SEG	2018			213,071		141,845		107,769		293,275
Southeastern Dist. (odd yr)	286,000	515,000	SEG	2018				1,137,736		1,529,543		372,960	
SOCKEYE SALMON													
Bristol Bay													
Kvichak River	2,000,000	10,000,000	SEG	2010	4,207,410	2,264,352	4,164,444	2,088,576	4,458,540	7,348,572	4,462,728	3,163,404	4,398,708
Alagnak River (Tower)[i]	320,000		LB SEG	2007	1,187,730	883,794	861,747	1,095,950	189,452	5,452,026	1,677,769	2,041,825	1,581,426
Alagnak River (Aerial)[j]	125,000		LB SEG	2016							696,400	629,200	374,000
Naknek River	800,000	2,000,000	SEG[k]	2015	1,463,928	1,177,074	900,312	938,160	1,474,428	1,920,954	1,691,910	1,899,972	2,221,152
Egegik River	800,000	2,000,000	SEG	2015	927,054	961,200	1,233,900	1,113,630	1,382,466	2,160,792	1,837,260	2,600,982	1,608,354
Ugashik River	500,000	1,400,000	SEG	2015	830,886	1,029,853	670,578	898,110	640,158	1,564,638	1,635,270	1,186,446	1,167,792
Wood River	700,000	1,800,000	SEG	2015	1,804,344	1,098,006	764,211	1,166,508	2,764,614	1,941,474	1,309,707	4,274,224	7,507,254
Igushik River	150,000	400,000	SEG	2015	518,040	421,380	193,326	387,666	340,590	651,172	469,230	578,700	770,772
Nushagak River	260,000	760,000	OEG	2012	468,696	428,191	432,438	894,148	618,477	796,684	680,513	2,852,306	1,247,460
	370,000	900,000	SEG	2015									
Kulukak Bay	eliminated			2013	NS	NS	NS						
Togiak River	120,000	270,000	SEG	2007	188,298	190,970	203,148	128,118	151,934	218,700	200,046	195,330	511,770
Upper Cook Inlet													
Crescent River	eliminated			2014	86,333	81,952	58,838	NS					
Fish Creek (Knik)	15,000	45,000	SEG	2017	126,836	66,678	18,813	18,912	43,915	102,309	46,202	61,469	71,556
Kasilof River	160,000	390,000	OEG	2011	293,765	243,767	372,523	487,700	438,238	470,677	239,981	358,724	388,009
	160,000	340,000	BEG	2011									

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Table 2.–Page 5 of 6.

System	2018 Goal Range Lower	2018 Goal Range Upper	Type	Initial Year	Escapement 2010	2011	2012	2013	2014	2015	2016	2017	2018
SOCKEYE SALMON (cont.)													
Upper Cook Inlet (cont.)													
Kenai River[l]	OEG eliminated			2017	1,015,106	1,275,369	1,197,518	964,224	1,151,629	1,325,673	1,042,668	1,056,773	
	700,000	1,200,000	SEG	2011								NA	831,096
Packers Creek	15,000	30,000	SEG	2008	NS	NS	NS	NA	19,242	28,072	NA	17,164	16,247
Russian River - Early Run	22,000	42,000	BEG	2011	27,074	29,129	24,115	35,776	44,920	50,226	38,739	37,123	44,110
Russian River - Late Run	30,000	110,000	SEG	2005	38,848	41,529	54,911	31,364	52,277	46,223	37,837	45,012	71,052
Chelatna Lake	20,000	45,000	SEG	2017	37,784	70,353	36,577	70,555	26,212	69,750	60,792	26,986	20,434
Judd Lake	15,000	40,000	SEG	2017	18,361	39,997	18,303	14,088	22,416	47,684	NA	35,731	30,844
Larson Lake	15,000	35,000	SEG	2017	20,324	12,413	16,708	21,821	12,040	23,214	14,333	31,866	23,632
Lower Cook Inlet													
English Bay	6,000	13,500	SEG	2002	12,253	9,920	3,444	10,891	7,832	6,290	7,673	20,751	18,804
Delight Lake	5,100	10,600	SEG	2017	23,775	20,190	10,887	5,961	22,289	3,220	5,110	5,380	13,428
Desire Lake	4,800	11,900	SEG	2017	6,320	9,630	8,840	8,400	11,480	2,830	6,740	9,450	9,840
Bear Lake	700	8,300	SEG	2002	8,880	9,608	8,031	8,999	9,090	9,560	9,011	9,207	10,568
Aialik Lake	3,200	5,400	SEG	2017	5,315	3,480	2,140	3,530	450	3,182	400	4,900	2,620
Mikfik Lake	3,400	11,000	SEG	2017	5,221	395	3,131	4,042	18,062	3,502	10,180	7,495	4,966
Chenik Lake	2,900	13,700	SEG	2017	17,312	10,330	16,505	11,333	17,797	19,073	19,510	21,468	6,651
Amakdedori Creek	1,200	2,600	SEG	2017	1,210	3,412	770	1,540	4,280	2,910	2,240	1,680	1,916
Prince William Sound													
Upper Copper River	360,000	750,000	SEG	2012	502,995	607,657	953,745	860,829	864,988	930,096	513,563	461,906	473,240
Copper River Delta	55,000	130,000	SEG	2003	82,835	72,367	66,850	75,705	64,205	66,665	51,550	56,500	58,740
Bering River	15,000	33,000	SEG	2012	4,367	28,530	18,290	23,900	14,985	21,705	16,290	19,115	13,300
Coghill Lake	20,000	60,000	SEG	2012	24,312	102,359	72,678	17,231	21,836	13,684	8,708	50,462	62,295
Eshamy Lake[m]	13,000	28,000	BEG	2009	16,291	24,129	NA	4,500	7,453	4,381	5,817	NA	NA

Note: NA = data not available; NC = no count; NS = no survey; LB SEG = lower-bound SEG.

[a] Kenai River early-run Chinook salmon (all fish) SEG was eliminated and OEG was revised by BOF.

[b] Lewis River mouth naturally obstructed.

[c] Little Susitna River Chinook salmon aerial survey goal is only used to assess escapement if weir count is not available.

[d] Escapement goal for Nushagak River chum salmon is based on sonar count through July 20.

[e] No estimates for chum salmon escapements are included for the Unakwik, Eshamy, Southwestern, or Montague districts because there are no escapement goals for those districts.

[f] Incomplete counts for Fish Creek (Knik) coho salmon in 2011 and 2013 because weir was pulled before end of run.

[g] Incomplete counts for Little Susitna River coho salmon in 2011, 2014, and 2018.

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[h] The estimates for pink salmon (odd year) do not include Unakwik District escapements, due to absence of an escapement goal and an average escapement estimate of a few thousand fish.

[i] 2012 to 2016 Alagnak River sockeye salmon escapements for Alagnak River (Tower) escapement goal are expanded aerial survey estimates.

[j] Alagnek River sockeye salmon aerial survey-based escapement goal will be used in years that the Alagnak River tower is not operated.

[k] Naknek River has an OEG of 800,000–2,000,000 sockeye salmon when the Naknek River Special Harvest Area is open to fishing.

[l] Kenai River sockeye salmon uses the best estimate of sport harvest upstream of sonar.

[m] Eshamy River weir was not operated 2012–2016. A pilot project to assess the use of video for monitoring starting in 2013 has not provided a comparable total escapement estimate but did provide a minimum estimate of sockeye salmon.

Table 3.–Arctic–Yukon–Kuskokwim Region Chinook, chum, coho, pink, and sockeye salmon escapement goals and escapements, 2010 to 2018.

System	2018 Goal Range Lower	2018 Goal Range Upper	Type	Initial Year	Escapement 2010	2011	2012	2013	2014	2015	2016	2017	2018
CHINOOK SALMON													
Kuskokwim Area													
North (Main) Fork Goodnews River	640	3,300	SEG	2005	NS	853	378	NS	630	991	1,120	NS	NS
Middle Fork Goodnews River	1,500	2,900	BEG	2007	2,176	2,045	524	1,187	750	1,494	3,767	6,881	NS
Kanektok River	3,900	12,000	SEG	2016	1,208	NS	NS	2,277	1,840	4,919	5,631	NS	4,246
Kuskokwim River (entire area)[a]	65,000	120,000	SEG	2013	43,482	49,519	55,718	36,942	72,678	108,502	97,478	116,508	109,583
Kogrukluk River	4,800	8,800	SEG	2013	5,812	6,731	NA	1,819	3,732	8,081	7,056	9,992	5,770
Kwethluk River	4,100	7,500	SEG	2013	1,669	4,079	NA	845	3,187	8,162	7,619	7,429	NS
Tuluksak River	eliminated			2013	201	284	555						
George River	1,800	3,300	SEG	2013	1,498	1,547	2,201	1,292	2,993	2,282	1,663	3,685	3,306
Kisaralik River	400	1,200	SEG	2005	235	NS	588	599	622	709	622	NS	584
Aniak River	1,200	2,300	SEG	2005	NS	NS	NS	754	3,201	NS	718	1,781	1,534
Salmon River (Aniak R)	330	1,200	SEG	2005	NS	79	49	154	497	810	NS	423	442
Holitna River	970	2,100	SEG	2005	NS	NS	NS	532	NS	662	1,157	676	980
Cheeneetnuk River (Stony R)	340	1,300	SEG	2005	NS	249	229	138	340	NS	217	660	565
Gagaryah River (Stony R)	300	830	SEG	2005	62	96	178	74	359	19	135	453	438
Salmon River (Pitka Fork)	470	1,600	SEG	2005	135	767	670	469	1,865	2,016	1,578	687	1,399
Yukon River													
East Fork Andreafsky River	2,100	4,900	SEG	2010	2,413	5,213	2,517	1,998	5,949	5,474	2,676	2,970	4,114
West Fork Andreafsky River	640	1,600	SEG	2005	858	1,173	NS	1,094	1,695	NS	NS	942	455
Anvik River	1,100	1,700	SEG	2005	974	642	722	940	1,584	2,616	NS	1,101	1,109
Nulato River (forks combined)	940	1,900	SEG	2005	711	1,401	1,373	1,118	NS	1,564	NS	943	870
Chena River	2,800	5,700	BEG	2001	2,382	NS	2,200[b]	1,859	7,192[b]	6,291[b]	6,665[b]	4,949	5,947
Salcha River	3,300	6,500	BEG	2001	6,135	7,200[c]	7,165	5,465	NS	6,287	2,675[d]	4,195	5,021
Canada Mainstem	42,500	55,000	agreement	2010[e]	32,014	46,307	32,656	28,669	63,327	82,674	68,798	68,315	54,474[f]
Norton Sound													
Fish River/Boston Creek	eliminated			2016	NS	NS	NS	44	NS	669			
Kwiniuk River	250		LB SEG	2016	138	57	60	15	438	318	135	63	87
North River (Unalakleet R)	1,200	2,600	SEG	2005	1,256	841	972	580	3,454	1,950	513	1,045	2,568
Shaktoolik River	eliminated			2013	NS	106	NS						
Unalakleet/Old Woman River	eliminated			2016	NS	105	NS	NS	NS	NS			
CHUM SALMON													
Kuskokwim Area													
Middle Fork Goodnews River	12,000		LB SEG	2005	24,789	19,974	9,065	27,682	11,518	11,517	41,815	54,799	NS
Kanektok River	eliminated			2013	NS	NS	NA						
Kogrukluk River	15,000	49,000	SEG	2005	69,258	76,823	NA	65,644	30,763	33,201	45,329	94,387	54,211

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Table 3.–Page 2 of 4.

System	2018 Goal Range Lower	2018 Goal Range Upper	Type	Initial Year	Escapement 2010	2011	2012	2013	2014	2015	2016	2017	2018
CHUM SALMON (cont.)													
Kuskokwim Area (cont.)													
Aniak River	eliminated			2016	429,643	345,630	NA	NA	NA	NA			
Yukon River Summer Chum													
Yukon River Drainage	500,000	1,200,000	BEG	2016							1,930,282[f]	3,003,182[f]	1,469,002[f]
East Fork Andreafsky River	40,000		LB SEG	2010	72,839	100,473	56,680	61,234	37,793	48,809	50,362	55,532	36,330
Anvik River	350,000	700,000	BEG	2005	396,173	642,528	483,972	571,690	399,796	374,968	337,821	415,139	305,098
Yukon River Fall Chum													
Yukon River Drainage[g]	300,000	600,000	SEG	2010	527,000	883,000	573,000	884,000	753,000	562,000	828,000	1,648,000	642,600
Tanana River[h]	61,000	136,000	BEG	2001	213,000	271,000	102,000	275,000	217,000	125,000	200,000	516,000	261,000
Delta River	6,000	13,000	BEG	2001	18,000	24,000	9,000	32,000	32,480	33,401	22,000	48,800	40,000
Upper Yukon River Tributaries	eliminated			2016	196,000	409,000	333,000	392,000	297,000	172,000			
Teedriinjik (Chandalar) River	74,000	152,000	BEG	2001	168,000	298,000	206,000	253,000	226,000	164,000	295,000	509,000	170,356
Sheenjek River	eliminated			2016	22,000	98,000	105,000	113,000[i]	56,000[i]	34,000[i]			
Fishing Branch River (Canada)[j]	22,000	49,000	agreement	2008[k]	15,000	13,000	22,000	25,000	7,000	8,000	29,000	48,000	10,151
Yukon R. Mainstem (Canada)	70,000	104,000	agreement	2010[l]	118,000	206,000	138,000	200,000	156,000	109,000	145,000	401,000	154,000
Norton Sound													
Subdistrict 1 Aggregate	23,000	35,000	BEG	2001	97,798	66,122	51,459	108,120	97,234	92,030	60,749	123,794	85,390
Nome River	2,900	4,300	OEG	2001	5,877	3,578	2,028	4,811	5,589	6,111	7,093	8,340	5,240
	2,900	4,300	SEG	2005									
Snake River	1,600	2,500	OEG	2001	6,973	4,352	978	2,755	3,983	4,241	3,666	4,885	3,028
	1,600	2,500	SEG	2005									
Eldorado River	6,000	9,200	OEG	2001	21,211	16,273	13,348	26,131	27,054	25,560	18,938	73,882	42,361
	6,000	9,200	SEG	2005									
Niukluk River	eliminated			2016	48,561	23,607	19,576	NS	NS	NS			
Kwiniuk River	11,500	23,000	OEG	2001	71,403	32,239	5,577	5,625	39,759	37,812	8,526	32,551	41,658
	10,000	20,000	BEG	2001									
Tubutulik River	9,200	18,400	OEG	2001	NS	18,800	NS	NS	NS	NS	NS	NS	NS
	8,000	16,000	BEG	2001									
Unalakleet/Old Woman River	eliminated			2016	NS	NS	NS	2,496	NS	NS			
Kotzebue Sound													
Kotzebue Sound Aggregate	196,000	421,000	BEG	2007									
Noatak and Eli Rivers	42,000	91,000	SEG	2007	NS	NS	NS	NS	453,284	NS	NS	NS	NS
Upper Kobuk w/Selby River	9,700	21,000	SEG	2007	NS	NS	NS	NS	65,653	NS	NS	NS	NS
Salmon River	3,300	7,200	SEG	2007	NS	NS	NS	NS	NS	NS	NS	NS	NS
Tutuksuk River	1,400	3,000	SEG	2007	NS	NS	NS	NS	NS	NS	NS	NS	NS
Squirrel River	4,900	10,500	SEG	2007	NS	NS	NS	NS	NS	NS	NS	NS	NS

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Table 3.–Page 3 of 4.

System	2018 Goal Range Lower	Upper	Type	Initial Year	Escapement 2010	2011	2012	2013	2014	2015	2016	2017	2018
COHO SALMON													
Kuskokwim Area													
Middle Fork Goodnews River	12,000		LB SEG	2005	26,287	24,668	NA	NA	NA	15,084[m]	NS	NS	NS
Kogrukluk River	13,000	28,000	SEG	2005	14,689	21,800	13,421	21,207	52,975	32,493	NS	NS	8,174
Kwethluk River	19,000		LB SEG	2010	NA	NA	20,895	NA	43,945	24,367	28,852	46,594	NS
Yukon River													
Delta Clearwater River	5,200	17,000	SEG	2005	5,867[n]	8,772	5,230	6,222	4,285	19,553	6,767	9,617	2,884
Norton Sound													
Kwiniuk River	650	1,300	SEG	2005	2,925	1,331	NS	NS	NS	NS	1,987	NS	NS
Niukluk River[o]	eliminated			2016	9,042	2,405	1,729	NS	NS	NS			
Niukluk River/Ophir Creek	750	1,600	SEG	2016							976	NS	NS
North River (Unalakleet R.)	550	1,100	SEG	2005	NS	898	NS	867	NS	NS	NS	NS	NS
PINK SALMON													
Kuskokwim Area													
There are no escapement goals for pink salmon in the Kuskokwim Management Area.													
Yukon River													
There are no escapement goals for pink salmon in the Yukon River drainage.													
Norton Sound													
Nome River (odd year)	3,200		LB SEG	2005		14,384		4,811		75,603		717,770	
Nome River (even year)	13,000		LB SEG	2005	165,934		151,791		96,397		1,175,723		3,246,072
Kwiniuk River	8,400		LB SEG	2005	634,169	30,913	393,030	13,212	322,830	67,295	1,909,949	506,593	1,804,752
Niukluk River	eliminated			2016	434,205	15,425	249,412	NS	NS	NS			
North River	25,000		LB SEG	2005	150,688	138,542	137,012	48,097	246,075	465,681	1,045,410	1,530,582	477,429
SOCKEYE SALMON													
Kuskokwim Area													
North (Main) Fork Goodnews River	9,600	18,000	SEG	2016	NS	14,140	16,710	NS	NS	38,390	90,060	NS	NS
Middle Fork Goodnews River	18,000	40,000	BEG	2007	36,574	19,643	29,531	23,545	41,473	57,809	170,574	179,897	NS
Kanektok River	15,300	41,000	SEG	2016	16,180	NS	NA	51,517	136,400	39,970	80,160	NS	326,200
Kogrukluk River	4,440	17,000	SEG	2010	17,139	7,974	NA	7,808	6,413	6,411	20,087	27,315	21,768
Yukon River													
There are no escapement goals for Sockeye in the Yukon River drainage.													
Norton Sound													
Salmon Lake/Grand Central River	4,000	8,000	SEG	2005	762	5,144	5,830	6,781	5,303	15,250	8,558	25,004	26,527
Glacial Lake	800	1,600	SEG	2005	154	NS	NS	1,366	2,330	1,819	1,582	4,250	1,570

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Table 3.–Page 4 of 4.

Note: NA = data not available; NS = no survey; LB SEG = lower-bound SEG.

[a] The statistical model used to estimate total run and escapement was updated in spring 2018. All historical escapement estimates are updated annually based on the most recent model run.

[b] 2012, 2014–2016 Chena River Chinook salmon escapement estimates include an expansion for missed counting days based on 2 DIDSON sonars used to assess Chinook salmon passage.

[c] 2011 Salcha River Chinook salmon escapement is based on an aerial survey because high water prevented tower counting most of the season; therefore, aerial survey represents best estimate of escapement for the year.

[d] 2016 Salcha River sonar pulled early due to flooding. Bayesian hierarchical model was used to estimate fish passage for days when the sonar was not running.

[e] Canadian Yukon River Mainstem Chinook salmon Interim Management Escapement Goal of 42,500–55,000 was implemented for 2010–2018 seasons by the United States and Canada Yukon River Panel. Estimates represent escapement after subtraction of Canadian harvest.

[f] Preliminary data.

[g] Bayesian estimate of drainagewide escapement for Yukon River fall chum salmon. 2014 was the first year of reporting the Bayesian estimate. Bayesian estimates are higher than estimates using the former method because the Kantishna River component is included in the Bayesian analysis.

[h] Tanana River fall chum salmon escapement estimated using mark–recapture 1995–2007, then based on relationship to either the Delta River or Mainstem Yukon River escapements from 2008 to present.

[i] Sheenjek River sonar project was discontinued in 2013; estimate is based on a linear regression between earlier Sheenjek 2 bank counts and Fishing Branch River weir counts.

[j] Fishing Branch River fall chum salmon weir assessment project was not operated after 2012. Estimates are based on border sonar estimate minus community harvest with additional information from mark–recapture studies assuming most fish migrate to Fishing Branch River.

[k] Fishing Branch River fall chum salmon Interim Management Escapement Goal of 22,000–49,000 was implemented for 2008–2018 seasons by Yukon River Panel.

[l] Yukon River Mainstem fall chum salmon Interim Management Escapement Goal of 70,000–104,000 was implemented for 2010–2018 seasons by Yukon River Panel.

[m] Middle Fork Goodnews River coho salmon escapement for 2015 is minimum escapement because weir operations ended early.

[n] Delta Clearwater River coho salmon 2010 escapement index is not a peak count.

[o] Niukluk River coho salmon numbers (all years) are actual tower counts, and do not take into consideration upstream harvest.

Table 4.–Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) Chinook, chum, coho, pink, and sockeye salmon escapement goals and escapements, 2010 to 2018.

System	2018 Goal Range		Type	Initial	Escapement								
	Lower	Upper		Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
CHINOOK SALMON													
AK Peninsula													
Nelson River[a]	2,400	4,400	BEG	2004	2,769	1,704	1,092	1,221	3,801	2,890	4618	1,852	5,022
Chignik													
Chignik River[b]	1,300	2,700	BEG	2002	3,579	2,628	1,349	1,153	2,795	1,954	1,743	1,137	725
Kodiak													
Karluk River	3,000	6,000	BEG	2011	2,917	3,420	3,197	1,824	1,182	2,777	3,434	2,600	3,155
Ayakulik River[c]	4,800	8,400	BEG	2017	5,281	4,296	4,740	2,349	897	2,392	4,574	3,712	2,149
CHUM SALMON													
AK Peninsula													
Northern District	119,600	239,200	SEG	2007	145,310	96,952	140,418	137,251	191,586	189,194	277,674	234,440	236,109
Northwestern District	100,000	215,000	SEG	2007	144,100	151,400	140,000	92,800	54,525	89,800	113,250	195,700	90,705
Southeastern District[d]	106,400	212,800	SEG	1992	62,612	145,300	31,072	184,350	82,300	250,370	150,456	592,460	71,323
South Central District	89,800	179,600	SEG	1992	85,600	169,000	86,190	155,050	95,000	298,800	248,360	810,053	238,720
Southwestern District	133,400	266,800	SEG	1992	142,650	176,425	87,230	163,200	130,745	351,150	220,060	363,000	32,900
Unimak District	eliminated			2013	1,050	7,000	750						
Chignik													
Entire Chignik Area	45,000	110,000	SEG	2016	102,625	119,000	93,800	109,900	46,720	123,400	69,900	96,900	33,400
Kodiak													
Mainland District	eliminated			2017	124,500	128,700	127,850	107,400	80,961	126,200	68,700		
Kodiak Archipelago Aggregate	101,000		LB SEG	2017	119,000	143,550	94,900	NA	84,700	171,800	89,700	184,500	115,100
COHO SALMON													
AK Peninsula													
Nelson River	18,000		LB SEG	2004	15,000	21,000	19,160	22,000	25,000	45,000	45,000	19,000	44,000
Thin Point Lake	eliminated			2013	NA	200	1,500						
Ilnik River	9,000		LB SEG	2010	19,600	18,000	11,800	17,000	33,000	14,000	28,000	6,000	122,000
Chignik													
There are no coho salmon stocks with escapement goals in Chignik Area													
Kodiak													
Pasagshak River	1,200		LB SEG	2011	1,971	1,083	3,132	1,648	4,934	1,790	737	701	3,186
Buskin River[e]	4,700	9,600	BEG	2014	6,239	5,342	4,906	4,401	6,730	3,363	2,134	5,091	4,523[f]
Olds River	1,000		LB SEG	2011	NA	1,003	624	2,145	1,320	1,357	1,634	1,054	878
American River	400		LB SEG	2011	NA	1,061	427	841	1,595	530	500	410	8

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System	2018 Goal Range Lower	2018 Goal Range Upper	Type	Initial Year	Escapement 2010	2011	2012	2013	2014	2015	2016	2017	2018
PINK SALMON													
AK Peninsula													
Bechevin Bay Section (odd yr)	eliminated			2013		2,400							
Bechevin Bay Section (even yr)	eliminated			2013	13,600		7,603						
South Peninsula Total (odd yr)	eliminated			2016		2,494,950		2,320,790		7,820,800			
South Peninsula Total (even yr)	eliminated			2016	742,912		478,910		1,340,380				
South Peninsula Total	1,750,000	4,000,000	SEG	2016	742,912	2,494,950	478,910	2,320,790	1,340,380	7,820,800	1,038,160	5,663,637	732,422
Chignik													
Entire Chignik Area (odd yr)	260,000	450,000	SEG	2016		272,000		231,800		404,000		586,000	
Entire Chignik Area (even yr)	170,000	280,000	SEG	2016	98,400		111,000		87,240		68,100		41,900
Kodiak													
Mainland District	250,000	1,000,000	SEG	2011	265,650	273,500	413,325	620,680	254,650	754,600	65,305	1,010,100	280,400
Kodiak Archipelago (odd yr)	2,000,000	5,000,000	SEG	2011		2,506,714		4,450,711		5,151,731		5,079,016	
Kodiak Archipelago (even yr)	3,000,000	7,000,000	SEG	2011	3,378,483		5,111,049		2,733,282		1,699,281		4,874,342
SOCKEYE SALMON													
AK Peninsula													
Cinder River[g]	36,000	94,000	SEG	2016	106,000	105,500	73,000	90,000	96,000	118,000	200,500	222,600	189,000
Ilnik River[h]	40,000	60,000	SEG	1991	59,000	43,000	61,000	51,000	59,000	26,000	124,000	238,000	81,000
Meshik River[i]	48,000	86,000	SEG	2016	110,700	101,900	50,900	123,600	114,700	171,700	131,800	191,525	133,700
Sandy River	34,000	74,000	SEG	2007	37,000	37,500	27,100	42,000	59,000	116,000	170,000	145,000	35,000
Bear River Early Run	176,000	293,000	SEG	2004	226,534	207,451	173,158	219,074	259,046	304,356	293,280	570,840	324,093
Bear River Late Run	117,000	195,000	SEG	2004	142,966	132,549	116,442	196,926	206,954	210,644	139,720	229,160	232,907
Nelson River	97,000	219,000	BEG	2004	108,000	89,000	103,300	248,000	250,000	257,000	300,000	381,000	221,000
Christianson Lagoon	25,000	50,000	SEG	1980s	27,900	35,200	40,000	16,500	32,600	6,700	111,700	290,600	26,100
Swanson Lagoon	6,000	16,000	SEG	2007	1,700	1,000	3,500	3,000	1,500	3,500	3,000	860	400
North Creek	4,400	8,800	SEG	late 1980s	18,500	10,200	18,000	8,500	7,500	18,000	21,000	5,800	8,300
Orzinski Lake	15,000	20,000	SEG	1992	18,039	16,764	17,243	17,386	13,600	26,534	21,019	20,989	2,817
Mortensen Lagoon	3,200	6,400	SEG	late 1980s	6,600	500	5,000	4,000	500	NA	13,000	15,500	1,200
Thin Point Lake	14,000	28,000	SEG	late 1980s	12,400	14,500	19,000	5,700	8,600	19,900	36,400	44,300	1,000
McLees Lake[j]	10,000	60,000	SEG	2010	32,842	36,602	15,111	15,687	12,424	20,284	39,892	13,195	No Weir
Chignik													
Chignik River Early Run	350,000	450,000	BEG	2014	432,535	488,930	353,441	386,782	360,381	534,088	418,290	453,257	263,979
Chignik River Late Run[k]	200,000	400,000	SEG	2008	311,291	264,887	358,948	369,319	291,228	589,809	348,023	339,303	275,718
Kodiak													
Malina Creek	1,000	10,000	SEG	2005	4,000	3,800	4,100	3,800	4,900	1,000	2,000	1,000	500

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Table 4.–Page 3 of 3.

System	2018 Goal Range Lower	Upper	Type	Initial Year	Escapement 2010	2011	2012	2013	2014	2015	2016	2017	2018
SOCKEYE SALMON (cont.)													
Kodiak (cont.)													
Afognak (Litnik) River[l]	20,000	50,000	BEG	2005	52,255	49,193	41,553	42,153	36,345	38,151	33,167	22,151	17,601
Little River	eliminated			2014	3,200	3,900	6,300	17,600					
Uganik Lake	eliminated			2017	30,700	37,900	22,200	26,000	14,000	9,000	34,100		
Karluk River Early Run	150,000	250,000	BEG	2017	71,453	87,049	188,085	234,880	252,097	260,758	164,760	242,599	205,054
Karluk River Late Run	200,000	450,000	BEG	2017	276,649	230,273	314,605	336,479	543,469	396,618	324,049	385,896	428,225
Ayakulik River	eliminated			2011	262,327								
Ayakulik River Early Run	140,000	280,000	SEG	2011	201,933	177,480	213,501	214,969	210,040	218,178	182,589	204,497	189,008
Ayakulik River Late Run	60,000	120,000	SEG	2011	60,394	83,661	114,753	67,195	87,671	108,257	71,978	120,361	77,325
Upper Station River Early Run	OEG eliminated[m]			2017	34,585	42,060	28,759	25,487	27,712	36,823	54,473	48,047	
	43,000	93,000	BEG	2011								83,614	61,732
Upper Station River Late Run	120,000	265,000	BEG	2005	141,139	101,893	149,325	125,573	181,411	132,864	145,013	209,298	235,669
Frazer Lake	75,000	170,000	BEG	2008	94,680	134,642	148,884	136,059	200,296	219,093	122,585	129,227	201,161
Saltery Lake[n]	15,000	35,000	BEG	2011	24,102	27,803	25,155	35,939	29,047	44,796	57,867	35,218	19,299
Pasagshak River	3,000		LB SEG	2011	4,800	8,100	2,600	9,750	350	600	3,200	4,800	1,100
Buskin Lake	5,000	8,000	BEG	2011	9,800	11,982	8,565	16,189	13,976	8,719	11,584	7,222	4,284

Note: NA = data not available; LB SEG = lower-bound SEG.

[a] Chinook salmon sport harvest is assumed to be zero as the fishery was closed to retention.

[b] Chinook salmon escapement estimated for Chignik include an estimated 100 kings harvested above the weir as harvest estimates are typically not available for Chignik sport harvest.

[c] Final escapements include estimated weir counts due to flooding at weir during Chinook run. Chinook salmon escapement estimated for Ayakulik includes an estimated 20 kings harvested above the weir when a fishery has occurred as harvest estimates are typically not available for Ayakulik sport harvest.

[d] Southeastern District chum salmon escapement goal includes Shumagin Islands Section and Southeastern District Mainland.

[e] Buskin River coho salmon escapements include estimated weir counts due to flooding.

[f] Preliminary data.

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

[h] Ilnik River sockeye salmon counts in 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.

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

[j] 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.

[k] 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 25,000 fish from September 1–15 to ensure inriver harvest opportunities above the weir.

[l] Afognak (Litnik) River sockeye salmon escapement does not incorporate egg-take removals.

[m] OEG for Upper Station River early run sockeye salmon was 25,000 from 1999–2013, the OEG was increased to 30,000 from 2014–2016 and managed for only if the department determined that the upper end of the Frazer escapement goal would be exceeded, and the OEG was eliminated in 2017.

[n] Saltery Lake sockeye salmon escapements are weir counts minus fish removed for egg takes.

Table 5.–Summary of salmon escapement goal changes in Upper Cook Inlet, Lower Cook Inlet, and Kodiak management areas, 2018.

Management Area	Species	System	Previous Esc. Goal			Initial Year	New Esc. Goal			Enum. Method	Goal Development Method	Action
			Lower	Upper	Type		Lower	Upper	Type			
SOUTHEAST REGION												
	Chinook	Blossom River	150	300	BEG	2012	500	1400	BEG	PAS	SRA	expanded escapement index and revised goal
		Keta River	175	400	BEG	2012	550	1,300	BEG	PAS	SRA	expanded escapement index and revised goal
		Chickamin River	450	900	BEG	1997	2,150	43,000	BEG	PAS	SRA	expanded escapement index and revised goal
		Klukshu (Alsek) River	800	1,200	BEG	2013	–	–	–	–	–	eliminated
	Chum	Northern Southeast Inside Summer	119,000		LB SEG	2012	107,000		LB SEG	PAS	Percentile	revised goal
	Coho	Ford Arm Creek	1,300	2,900	BEG	1994	–	–	–	–	–	eliminated
		Berners River	4,000	9,200	BEG	1994	3,600	8,100	BEG	PAS/FS	SRA	revised goal range
		Tsiu/Tsivat Rivers	10,000	29,000	BEG	1994	10,000	29,000	SEG	PAS	Percentile	goal development method and goal type changed
	Pink	Situk River	33,000		LB SEG	2012	–	–	–	–	–	eliminated
	Sockeye	East Alsek-Doame River	13,000	26,000	BEG	2003	–	–	–	–	–	eliminated
		East Alsek River	–	–	–	–	9,000	24,000	SEG	PAS	Percentile	new goal
		Alsek	24,000	33,500	BEG	2013	–	–	–	–	–	eliminated
		Lost River	1,000		LB SEG	2009	–	–	–	–	–	eliminated
CENTRAL REGION												
Prince William Sound	Chum	Eastern District	50,000		LB SEG	2006	79,000		LB SEG	MAS	Percentile	revised goal
		Northern District	20,000		LB SEG	2006	28000		LB SEG	MAS	Percentile	revised goal
		Coghill District	8,000		LB SEG	2006	10,000		LB SEG	MAS	Percentile	revised goal
		Northwestern District	5,000		LB SEG	2006	7000		LB SEG	MAS	Percentile	revised goal
		Southeastern District	8,000		LB SEG	2006	11,000		LB SEG	MAS	Percentile	revised goal

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Table 5.–Page 2 of 3.

Management Area	Species	System	Previous Esc. Goal Lower	Previous Esc. Goal Upper	Previous Esc. Goal Type	Initial Year	New Esc. Goal Lower	New Esc. Goal Upper	New Esc. Goal Type	Enum. Method	Goal Development Method	Action
CENTRAL REGION (cont.)												
Prince William Sound (cont.)	Pink	Eastern District (even year)	250,000	580,000	SEG	2012	203,000	328,000	SEG	MAS	Percentile	revised goal range
		Eastern District (odd year)	310,000	640,000	SEG	2012	346,000	863,000	SEG	MAS	Percentile	revised goal range
		Northern District (even year)	140,000	210,000	SEG	2012	96,000	127,000	SEG	MAS	Percentile	revised goal range
		Northern District (odd year)	90,000	180,000	SEG	2012	111,000	208,000	SEG	MAS	Percentile	revised goal range
		Coghill District (even year)	60,000	150,000	SEG	2012	37,000	110,000	SEG	MAS	Percentile	revised goal range
		Coghill District (odd year)	60,000	250,000	SEG	2012	54,000	233,000	SEG	MAS	Percentile	revised goal range
		Northwestern District (even year)	70,000	140,000	SEG	2012	52,000	93,000	SEG	MAS	Percentile	revised goal range
		Northwestern District (odd year)	50,000	110,000	SEG	2012	64,000	144,000	SEG	MAS	Percentile	revised goal range
		Eshamy District (even year)	3,000	11,000	SEG	2012	1,000	4,000	SEG	MAS	Percentile	revised goal range
		Eshamy District (odd year)	4,000	11,000	SEG	2012	5,000	31,000	SEG	MAS	Percentile	revised goal range
		Southwestern District (even year)	70,000	160,000	SEG	2012	62,000	105,000	SEG	MAS	Percentile	revised goal range
		Southwestern District (odd year)	70,000	190,000	SEG	2012	112,000	231,000	SEG	MAS	Percentile	revised goal range
		Montague District (even year)	50,000	140,000	SEG	2012	36,000	72,000	SEG	MAS	Percentile	revised goal range
		Montague District (odd year)	140,000	280,000	SEG	2012	143,000	330,000	SEG	MAS	Percentile	revised goal range
		Southeastern District (even year)	150,000	310,000	SEG	2012	88,000	153,000	SEG	MAS	Percentile	revised goal range
		Southeastern District (odd year)	270,000	620,000	SEG	2012	286,000	515,000	SEG	MAS	Percentile	revised goal range
	Sockeye	Delight Lake	7,550	17,650	SEG	2011	5,100	10,600	SEG	PAS	Percentile	revised goal range
		Desire Lake	8,800	15,200	SEG	2002	4,800	11,900	SEG	PAS	Percentile	revised goal range
		Aialik Lake	3,700	8,000	SEG	2002	3,200	5,400	SEG	PAS	Percentile	revised goal range
		Mikfik Lake	3,400	13,000	SEG	2014	3,400	11,000	SEG	Video	Percentile	revised goal range
		Chenik Lake	3,500	14,000	SEG	2011	2,900	13,700	SEG	Video, Weir Count	Percentile	revised goal range
		Amakdedori Creek	1,250	2,600	SEG	2002	1,200	2,600	SEG	PAS	Percentile	revised goal range

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Table 5.–Page 3 of 3.

Management Area	Species	System	Previous Esc. Goal Lower	Previous Esc. Goal Upper	Previous Esc. Goal Type	Initial Year	New Esc. Goal Lower	New Esc. Goal Upper	New Esc. Goal Type	Enum. Method	Goal Development Method	Action
WESTWARD REGION												
Kodiak	Chinook	Ayakulik River	4,000	7,000	BEG	2011	4,800	8,400	BEG	Weir Count	SRA	revised goal range
	Chum	Mainland District	104,000		LB SEG	2008	–	–	–	–	–	eliminated
		Kodiak Archipelago Aggregate	151,000		LB SEG	2008	101,000		LB SEG	PAS	Percentile	revised goal based on reduced number of index streams
	Sockeye	Uganik Lake	24,000		LB SEG	2008	–	–	–	–	–	eliminated
		Karluk River Early Run	110,000	250,000	BEG	2008	150,000	250,000	BEG	Weir Count	SRA	revised goal range
		Karluk River Late Run	170,000	380,000	BEG	2005	200,000	450,000	BEG	Weir Count	SRA	revised goal range
		Upper Station River Early Run	25,000		OEG	1999	–	–	–	–	–	removed from management plan

Note: LB SEG = lower-bound SEG; SAS = single aerial survey; SRA = spawner–recruit analysis; PAS = peak aerial survey; MAS = multiple aerial surveys.

Table 6.–Assessment of whether escapements met (Met), exceeded (Over), or did not meet (Under) the escapement goal in place at the time of enumeration for salmon stocks in Southeast Region.

Species	System	2010	2011	2012	2013	2014	2015	2016	2017	2018
Chinook Salmon	Blossom River	Met	Under	Met[a]	Met	Met	Met	Under	Under	Met[b]
	Keta River	Met	Under	Met[a]	Over	Over	Met	Over	Met	Over[b]
	Unuk River	Over	Met	Under	Under	Under	Met	Under	Under	Met
	Chickamin River	Over	Met	Under	Met	Met	Met	Under	Under	Under[b]
	Andrew Creek	Met	Met	Under	Met	Met	Met	Under	Under	Under
	Stikine River	Met	Met	Met	Met	Met	Met	Under	Under	Under
	King Salmon River	Met	Met	Met	Under	Under	Under	Met	Under	Under
	Taku River	Met	Met	Met	Under	Met	Met	Under	Under	Under
	Chilkat River	Met	Met	Under	Under	Under	Met	Under	Under	Under
	Klukshu (Alsek) River	Met	Met	Under	Over[a]	Met	Over	Under	Under	eliminated
	Alsek River				Met	Under	Over	Under	Under	Met
	Situk River	NA	Under	Under	Met	Met	Under	Under	Over	Under
Chum Salmon	Southern Southeast Summer	Under	Met	Met[c]	Met	Under	Met[c]	Met	Met	Met
	Northern Southeast Inside Summer	Under	Under	Met[c]	Met	Under	Met	Under	Met	Met[c]
	Northern Southeast Outside Summer	Met	Met	Met	Under	Met	Met[c]	Met	Met	Under
	Cholmondeley Sound Fall	Over	Over	Over	Under	Met	Over	Met	Over	Over
	Port Camden Fall	Met	Under	Met	Met	Met	Over	Met	Met	Under
	Security Bay Fall	Met	Met	Met	Under	Met	Over	Met	Over	Met
	Excursion River Fall	Met	Under	Under	Met	Met	Met	Under	Met	Met
	Chilkat River Fall	Met	Over	Over	Met	Met	Met[d]	Met	Met	NA
Coho Salmon	Hugh Smith Lake	Over	Over	Over	Over	Over	Met	Met	Met	Met
	Klawock				Met	Met	Over	Over	Met	Over
	Taku River	Met	Met	Met	Under[e]	Met	Met[f]	Met	Met	Met
	Auke Creek	Met	Over	Over	Over	Over	Over	Met	Met	Under
	Montana Creek	Met	Met	Under	Under	Met	Over	Met	Met	Met
	Peterson Creek	Over	Met	Met	Met	Over	Met	Under	Under	Met
	Ketchikan Survey Index	Met	Met	Over	Over	Over	Over	Over	Over	Over
	Sitka Survey Index	Over	Over	Over	Over	Over	Over	Over	Over	Over
	Ford Arm Creek	Met	Met	Met	Met	Over	Over	NA	NA	eliminated
	Berners River	Met	Met	Met	Met	Over	Over	Met	Met	Under[a]
	Chilkat River	Over	Met	Met	Met	Over	Met	Under	Met	Met
	Lost River	Met	Under	Met	Met	Met	eliminated			
	Tawah Creek (Lost River)						Met	Under	Met	Met
	Situk River	Over	Met	Under	Over	Met	Met	Met	Met	Met
	Tsiu/Tsivat Rivers	Met	Met	Met	Over	Met	Met	Over	Over	Over[g]

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Table 6.–Page 2 of 2.

Species	System	2010	2011	2012	2013	2014	2015	2016	2017	2018
Pink Salmon	Southern Southeast	Met	Met	Met	Over	Over	Met	Met	Met	Met
	Northern Southeast Inside	Met	Over	Under	Met	Under	Met	Under	Met	Under
	Northern Southeast Outside	Met	Over	Met	Over	Over	Over	Met	Over	Met
	Situk River (even year)	NA[h]								
	Situk River (odd year)		Met							
	Situk River			Under[i]	Met	Under	Met	Under	Met	eliminated
Sockeye Salmon	Hugh Smith Lake	Met	Over	Met	Under	Met	Over	Met	Met	Under
	McDonald Lake	Met	Met	Met	Under	Under	Met	Under	Under	Under
	Mainstem Stikine River	Met	Met	Met	Met	Under	Met	Met	Under	Under
	Tahltan Lake	Met	Over	Under	Under	Over	Over	Over	Met	Met
	Speel Lake	Met	Met	Met	Met	Met	Met[j]	Met	Under	Met
	Taku River	Over	Over	Over	Met	Over	Over	Over	Over	Over
	Redoubt Lake	Met	Met	Over	Over	Met	Met	Met	Over	Over
	Chilkat Lake	Under	Under	Met	Met	Met	Met	Met	Met	Met
	Chilkoot Lake	Met	Met	Over	Met	Over	Met	Over	Met	Met
	East Alsek-Doame River	Met	Over	Met	Over	Met	Met	Met	Met	eliminated
	East Alsek River									Met
	Klukshu River	Over	Over	Over	Under[d]	Over	Over	Under	Under	Under
	Lost River	Met	Met	Under	Under	NA	Under	Under	NA	eliminated
	Situk River	Met	Over	Met	Over	Over	Over	Met	Over	Under

Note: NA = data not available. Blank cells indicate that there was no official escapement goal for the stock in that particular year.

[a] Escapement goal reevaluated, goal range changed.

[b] Prior to 2018, goal was based on index count of escapements.

[c] Escapement goal reevaluated, lower-bound goal changed.

[d] Escapement goal reevaluated, upper-bound goal changed.

[e] Management target revised.

[f] Management target changed to a goal range.

[g] Escapement goal reevaluated, goal type changed.

[h] Situk River weir was pulled well before peak of pink salmon run; therefore, a valid assessment of whether the goal was met is not possible.

[i] Escapement goal reevaluated, odd and even-year goals replaced by single goal, goal range changed to lower-bound.

[j] Escapement goal reevaluated, goal type and goal range changed.

Table 7.–Assessment of whether escapements met (Met), exceeded (Over), or did not meet (Under) the escapement goal in place at the time of enumeration for salmon stocks in Central Region (Bristol Bay, Cook Inlet, and Prince William Sound/Copper River).

Species	System	2010	2011	2012	2013	2014	2015	2016	2017	2018
Chinook salmon	*Bristol Bay*									
	Nushagak River	Met	Met	Over	Met[a]	Met	Met	Over	Under	Met
	Togiak River	NS	NS	NS	eliminated					
	Naknek River	NS	NS	NS	NS	NS	Under	eliminated		
	Alagnak River	NS	NS	NS	NS	NS	Under	Under	Under	Under
	Egegik River	NS	NS	NS	eliminated					
	Upper Cook Inlet									
	Alexander Creek	Under	Under	Under	Under	Under	Under	Under	Under	Under
	Campbell Creek	Met	Under	NS	NS	Under	Met	Met	Met	Under
	Chuitna River	Under	Under	Under	Met	Met	Met	Met	Under	Under
	Chulitna River	Under	Met	Under	Under	Under	Met	Under	NC	Under
	Clear (Chunilna) Creek	Under	Under	Met	Met	Met	Met	NS	Under	Under
	Crooked Creek	Met	Met	Under	Met	Met	Met	Over	Met	Met
	Deshka River	Met	Met	Met	Met	Met	Met	Met	Under	Under
	Goose Creek	Under	Under	Under	Under	Under	NC	NC	Under	Under
	Kenai River - Early Run (all fish)	NA[b]	NA[b]	NA[b]	Under[c]	Met	Met	NA	eliminated	
	Kenai River - Early Run (large fish)								Over	Under
	Kenai River - Late Run (all fish)	NA[b]	NA[b]	NA[b]	Met[c]	Met	Met	NA	eliminated	
	Kenai River - Late Run (large fish)								Met	Met
	Lake Creek	Under	Met	Under	Met	Met	Met	Met	Under	Under
	Lewis River	Under	Under	Under	Under	Under	NA	Under	NA	Under
	Little Susitna River	Under	Under	Met	Met	Met	Met	Met	Met	Under
	Little Willow Creek	Met	Met	Met	Met	Met	Met	Met	Met	Under
	Montana Creek	Under	Under	Under	Met	Under	Met	Under	Under	Under
	Peters Creek	NC	Met	Under	Met	Met	Met	Met	Under	Met
	Prairie Creek	Under	Under	Under	Met	Under	Met	Under	Under	Under
	Sheep Creek	NC	Under	Under	NC	Under	NC	NC	NC	Under
	Talachulitna River	Under	Under	Under	Met	Met	Met	Met	Under	Under
	Theodore River	Under	Under	Under	Under	Under	Under	Under	Under	Under
	Willow Creek	Under	Under	Under	Met	Under	Met	Met	Under	Under
	Lower Cook Inlet									
	Anchor River	Under	Under[d]	Met	Met	Under	Over	Met	Met[e]	Under
	Deep Creek	Met	Met	Met	Met	Met	Met	NS	Met[f]	Under
	Ninilchik River	Met	Met	Met	Met	Met	Met	Met	Met[g]	Met
	Prince William Sound									
	Copper River	Under	Met	Met	Met	Under	Met	Under	Met	Met

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Table 7.–Page 2 of 5.

Species	System	2010	2011	2012	2013	2014	2015	2016	2017	2018
Chum salmon	*Bristol Bay*									
	Nushagak River	Met	Met	Met	Met[a]	Met	NS	Met	Met	Met
	Upper Cook Inlet									
	Clearwater Creek	Over	Over	Met	Over	Under	Over	Met	Met[h]	Under
	Lower Cook Inlet									
	Port Graham River	Under	Met	Under	Met	Met	Met	Met	Over[h]	Over
	Dogfish Lagoon	Over	Over	Met	Over	Over	Over	Over	Over[h]	Met
	Rocky River	Met	Met	Met	Over	Over	Met	Met	Over[h]	Over
	Port Dick Creek	Met	Over	Over	Met	Under	Over	Over	Met[e]	Under
	Island Creek	Under	Met	Met	Met	Under	Over	Met	Met[h]	Under
	Big Kamishak River	NS	Under	Met	Under	Under	Under	Under	Over[h]	Met
	Little Kamishak River	Met	Met	Over	Met	Met	Met	Met	Over[h]	Met
	McNeil River	Under	Met	Under	Under	Under	Under	Met	Met	Met
	Bruin River	Met	Under	Over	Met	Under	Over	Over	Over[h]	Over
	Ursus Cove	Over	Over	Under	Over	Under	Over	Met	Over[h]	Under
	Cottonwood Creek	Over	Under	Under	Under	Met	Over	Under	Met[h]	Under
	Iniskin Bay	Over	Under	Under	Under	Met	Under	Under	Over[h]	Met
	Prince William Sound									
	Eastern District	Met	Met	Met	Met	Met	Met	Met	Met	Met[i]
	Northern District	Met	Met	Met	Met	Met	Met	Met	Met	Under[i]
	Coghill District	Met	Met	Met	Met	Met	Met	Met	Met	Met[i]
	Northwestern District	Met	Met	Met	Under	Met	Met	Met	Met	Met[i]
	Southeastern District	Met	Met	Met	Met	Met	Met	Met	Met	Under[i]
Coho salmon	*Bristol Bay*									
	Nushagak River				Over	Over	NS	NS	NS	Met
	Upper Cook Inlet									
	Deshka River								Over	Met
	Fish Creek (Knik)		Met[j]	Met	Over	Over	Over	Met	Over	Over
	Jim Creek	Under	Under	Under	Over	Under[e]	Met	Under	Over	Met
	Little Susitna River	Under	Under	Under	Met	Over	Met	Under	Over	Under
	Prince William Sound									
	Copper River Delta	Met	Met	Met	Met	Met	Met	Over	Met	Met
	Bering River	Met	Met	Met	Met	Met	Met	Met	Met	Met
Pink salmon	*Bristol Bay*									
	Nushagak River				NA	Met	NS	NS	NS	Met

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Table 7.–Page 3 of 5.

Species	System	2010	2011	2012	2013	2014	2015	2016	2017	2018
Pink salmon (cont.)	*Lower Cook Inlet*									
	Humpy Creek	Met	Under	Met	Under	Met	Met	Over	Over[h]	Over
	China Poot Creek	Under	Met	Over	Met	Under	Met	Under	Under[h]	Under
	Tutka Creek	Under	Over	Met	Met	Met	Over	Over	Over	Over
	Barabara Creek	Over	Over	Under	Over	Met	Over	Met	Over[h]	Over
	Seldovia Creek	Met	Over	Over	Met	Met	Over	Under	Met[h]	Over
	Port Graham River	Met	Over	Over	Met	Over	Over	Met	Over[e]	Over
	Dogfish Lagoon Creeks					Over	Over	Met	Over[h]	Over
	Port Chatham	Under	Met	Under	Over	Met	Over	Under	Over[e]	Over
	Windy Creek Right	Met	Under	Met	Over	Met	Over	Under	Met[h]	Met
	Windy Creek Left	Met	Met	Met	Over	Met	Over	Under	Met[h]	Met
	Rocky River	Met	Met	Met	Over	Met	Over	Under	Met[h]	Under
	Port Dick Creek	Met	Under	Under	Met	Met	Over	Under	Over[h]	Over
	Island Creek	Over	Met	Met	Met	Over	Over	Under	Met[h]	Under
	S. Nuka Island Creek	NS	NS	Under	Met	Met	Met	Under	Under[h]	Under
	Desire Lake Creek	Met	Under	Met	Over	Under	Over	Under	Met[h]	Met
	Bear & Salmon Creeks	NS	eliminated							
	Thumb Cove	NS	eliminated							
	Humpy Cove	NS	eliminated							
	Tonsina Creek	NS	eliminated							
	Bruin River	Met	Under	Met	Under	Met	Met	Met	Met[h]	Met
	Sunday Creek	Met	Under	Under	Met	Met	Over	Under	Met[h]	Under
	Brown's Peak Creek	Met	Under	Met	Met	Met	Over	Under	Over[h]	Under
	Prince William Sound									
	All Districts Combined (even year)	Met		eliminated						
	All Districts Combined (odd year)		Over	eliminated						
	Eastern District (even year)			Met		Met		Over		Met[i]
	Eastern District (odd year)				Over		Over		Met	
	Northern District (even year)			Under		Under		Met		Met[i]
	Northern District (odd year)				Over		Over		Over	
	Coghill District (even year)			Over		Met		Met		Met[i]
	Coghill District (odd year)				Over		Over		Met	
	Northwestern District (even year)			Met		Under		Over		Over[i]
	Northwestern District (odd year)				Over		Over		Over	
	Eshamy District (even year)			Under		Over		NA		Over[i]
	Eshamy District (odd year)				Over		Over		Under	
	Southwestern District (even year)			Met		Met		NA		Met[i]
	Southwestern District (odd year)				Over		Over		Over	

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Table 7.–Page 4 of 5.

Species	System	2010	2011	2012	2013	2014	2015	2016	2017	2018
Pink salmon (cont.)	*Prince William Sound* (cont.)									
	Montague District (even year)			Met		Under		NA		Over[i]
	Montague District (odd year)				Over		Over		Met	
	Southeastern District (even year)			Met		Met		Met		Over[i]
	Southeastern District (odd year)				Over		Over		Met	
Sockeye salmon	*Bristol Bay*									
	Kvichak River	Met	Met	Met	Met	Met	Met	Met	Met	Met
	Alagnak River	Met	Met	Met	Met	Under	Met	Met	Met	Met
	Naknek River	Over	Met	Met	Met	Over	Met[e]	Met	Met	Over
	Egegik River	Met	Met	Met	Met	Met	Over[e]	Met	Over	Met
	Ugashik River	Met	Met	Met	Met	Met	Over[e]	Over	Met	Met
	Wood River	Over	Met	Met	Met	Over	Over[e]	Met	Over	Over
	Igushik River	Over	Over	Met	Over	Over	Over[e]	Over	Over	Over
	Nushagak River	Met	Met	Met	Over[a]	Met	Over	Met	Over	Over
	Kulukak Bay	NS	NS	NS	eliminated					
	Togiak River	Met[k]	Met	Met	Met	Met	Met	Met	Met	Over
	Upper Cook Inlet									
	Crescent River	Over	Over	Met	NS	eliminated				
	Fish Creek (Knik)	Over	Met	Under	Under	Met	Over	Met	Over[h]	Over
	Kasilof River	Met	Met	Met	Over	Over	Over	Met	Met	Met
	Kenai River	Met	Met	Met	Met	Met	Met	Met	NA[l]	Met
	Packers Creek	NS	NS	NS	NA	Met	Met	NA	Met	Met
	Russian River - Early Run	Met	Met	Met	Met	Over	Over	Met	Met	Over
	Russian River - Late Run	Met	Met	Met	Met	Met	Met	Met	Met	Met
	Chelatna Lake	Met	Over	Met	Over	Met	Over	Met	Met[e]	Met
	Judd Lake	Under	Met	Under	Under	Under	Met	NA	Met[h]	Met
	Larson Lake	Met	Under	Met	Met	Under	Met	Under	Met[e]	Met
	Lower Cook Inlet									
	English Bay	Met	Met	Under	Met	Met	Met	Met	Over	Over
	Delight Lake	Over	Over	Met	Under	Over	Under	Under	Met[h]	Over
	Desire Lake	Under	Met	Met	Under	Met	Under	Under	Met[h]	Met
	Bear Lake	Over	Over	Met	Over	Over	Over	Over	Over	Over
	Aialik Lake	Met	Under	Under	Under	Under	Under	Under	Met[h]	Under
	Mikfik Lake	Met	Under	Under	Under	Over[c]	Met	Met	Met[e]	Met
	Chenik Lake	Over	Met	Over	Met	Over	Over	Over	Over[h]	Met
	Amakdedori Creek	Under	Over	Under	Met	Over	Over	Met	Met[g]	Met
	Prince William Sound									
	Upper Copper River	Over	Over	Over[h]	Over	Over	NA	NA	Met	Met

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Table 7.–Page 5 of 5.

Species	System	2010	2011	2012	2013	2014	2015	2016	2017	2018
Sockeye salmon (cont.)	*Prince William Sound* (cont.)									
	Copper River Delta	Met	Met	Met	Met	Met	Met	Under	Met	Met
	Bering River	Under	Met	Met[h]	Met	Under	Met	Met	Met	Under
	Coghill Lake	Met	Over	Over[h]	Under	Met	Under	Under	Met	Over
	Eshamy Lake	Met	Met	NA	NA	NA	NA	NA	NA	NA

Note: NA = data not available; NC = no count; NS = no survey.

Note: There are no escapement goals for coho salmon in Lower Cook Inlet and there are no pink salmon escapement goals in Upper Cook Inlet.

[a] Escapement goal reevaluated, historic escapements converted from Bendix counts to DIDSON equivalents. Escapements in Table 2 are based on DIDSON counts.

[b] Target strength-based escapement estimate deemed unreliable or not available.

[c] Escapements and escapement goal reevaluated, goal range changed. Escapement estimates in Table 2 are based on new methodology.

[d] Escapement goal reevaluated, lower-bound goal changed to a range.

[e] Escapement goal reevaluated, upper bound changed, lower bound remained the same.

[f] Escapement goal reevaluated, goal range changed to a lower-bound goal.

[g] Escapement goal reevaluated, lower bound changed, upper bound remained the same.

[h] Escapement goal reevaluated, goal range changed.

[i] Escapement goal reevaluated, number of index streams used to develop escapement goal changed, and escapement goal changed. Escapements in Table 2 are adjusted for new set of index streams for all years.

[j] Previous escapement goal reinstated.

[k] Escapement goal reevaluated, goal type changed but goal range remained the same.

[l] BOF removed OEG from management plan. Stock managed to meet BEG.

Table 8.–Assessment of whether escapements met (Met), exceeded (Over), or did not meet (Under) the escapement goal in place at the time of enumeration for salmon stocks in Arctic–Yukon–Kuskokwim Region.

Species	System	2010	2011	2012	2013	2014	2015	2016	2017	2018
Chinook salmon	*Kuskokwim Area*									
	North (Main) Fork Goodnews R	NS	Met	Under	NS	Under	Met	Met	NS	NS
	Middle Fork Goodnews River	Met	Met	Under	Under	Under	Under	Over	Over	NS
	Kanektok River	Under	NS	NS	Under	Under	Met	Met[a]	NS	Met
	Kuskokwim Area (entire area)				Under	Over	Met	Over	Over	Met
	Kogrukluk River	Met	Met	NA	Under[a]	Under	Met	Met	Over	Met
	Kwethluk River	Under	Under	NA	Under[a]	Under	Over	Over	Met	NS
	Tuluksak River	Under	Under	Under	eliminated					
	George River	Under	Under	Under	Under[a]	Met	Met	Under	Over	over
	Kisaralik River	Under	NS	Met	Met	Met	Met	Met	NS	Met
	Aniak River	NS	NS	NS	Under	Over	NS	Under	Met	Met
	Salmon River (Aniak R)	NS	Under	Under	Under	Met	Met	NS	Met	Met
	Holitna River	NS	NS	NS	Under	NS	Under	Met	Under	Met
	Cheeneetnuk River (Stony R)	NS	Under	Under	Under	Met	NS	Under	Met	Met
	Gagaryah River (Stony R)	Under	Under	Under	Under	Met	Under	Under	Met	Met
	Salmon River (Pitka Fork)	Under	Met	Met	Under	Over	Over	Met	Met	Met
	Yukon River									
	East Fork Andreafsky River	Met[b]	Over	Met	Under	Over	Over	Met	Met	Met
	West Fork Andreafsky River	Met	Met	NS	Met	Over	NS	NS	Met	Under
	Anvik River	Under	Under	Under	Under	Met	Over	NS	Met	Met
	Nulato River (forks combined)	Under	Met	Met	Met	NS	Met	NS	Met	Under
	Gisasa River	Under	NS	Under	Under	Over	Over	Over	Met	Over
	Chena River	Met	Over	Over	Met	NS	Met	Under	Met	Met
	Salcha River	Under[c]	Met	Under	Under	Over	Over	Over	Over	Met
	Canada Mainstem	Met[b]	Over	Met	Under	Over	Over	Met	Met	Met
	Norton Sound									
	Fish River/Boston Creek	NS	NS	NS	Under	NS	Met	eliminated		
	Kwiniuk River	Under	Under	Under	Under	Met	Met	Under[d]	Under	Under
	North River (Unalakleet R)	Met	Under	Under	Under	Over	Met	Under	Under	Met
	Shaktoolik River	NS	Under	NS	eliminated					
	Unalakleet/Old Woman River	NS	Under	NS	NS	NS	NS	eliminated		
Chum salmon	*Kuskokwim Area*									
	Middle Fork Goodnews River	Met	Met	Under	Met	Under	Under	Met	Met	NS
	Kanektok River	NS	NS	NA	eliminated					
	Kogrukluk River	Over	Over	NA	Over	Met	Met	Met	Over	Over
	Aniak River	Met	Met	NS	NA	NA	NA	eliminated		

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Table 8.–Page 2 of 3.

Species	System	2010	2011	2012	2013	2014	2015	2016	2017	2018
Chum salmon (cont.)	*Yukon River Summer Chum*									
	Yukon River Drainage							Over	Over	Over
	East Fork Andreafsky River	Met[d]	Met	Met	Met	Under	Met	Met	Met	Under
	Anvik River	Met	Met	Met	Met	Met	Met	Under	Met	Under
	Yukon River Fall Chum									
	Yukon River Drainage	Met[e]	Over	Met	Over	Over	Met	Over	Over	Over
	Tanana River	Over	Over	Met	Over	Over	Met	Over	Over	Over
	Delta River	Over	Over	Met	Over	Over	Over	Over	Over	Over
	Toklat River	Met	Over	Over	Over	Met	Met	eliminated		
	Upper Yukon River Tributaries	Over	Over	Over	Over	Over	Over	Over	Over	Over
	Teedriinjik (Chandalar) River	Under	Met	Over	Over	Met	Under	eliminated		
	Sheenjek River	Under	Under	Met	Met	Under	Under	Met	Met	Under
	Fishing Branch River (Canada)	Over[c]	Over	Over	Over	Over	Over	Over	Over	Over
	Yukon R. Mainstem (Canada)	Met[e]	Over	Met	Over	Over	Met	Over	Over	Over
	Norton Sound									
	Subdistrict 1 Aggregate	Over	Over	Over	Over	Over	Over	Over	Over	Over
	Nome River	Over	Met	Under	Over	Over	Over	Over	Over	Over
	Snake River	Over	Over	Under	Over	Over	Over	Over	Over	Over
	Eldorado River	Over	Over	Over	Over	Over	Over	Over	Over	Over
	Niukluk River	Met[a]	Met	Under	NS	NA	NS	eliminated		
	Kwiniuk River	Over	Over	Under	Under	Over	Over	Under	Over	Over
	Tubutulik River	NS	Over	NS	NS	NS	NS	NS	NS	NS
	Unalakleet/Old Woman River	NS	NS	NS	Met	NS	NS	eliminated		
	Kotzebue Sound									
	Kotzebue Sound Aggregate									
	Noatak and Eli Rivers	NS	NS	NS	NS	Over	NS	NS	NS	NS
	Upper Kobuk w/Selby River	NS	NS	NS	NS	Over	NS	NS	NS	NS
	Salmon River	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Tutuksuk River	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Squirrel River	NS	NS	NS	NS	NS	NS	NS	NS	NS
Coho salmon	*Kuskokwim Area*									
	Middle Fork Goodnews River	Met	Met	NA	NA	NA	Met	NS	NS	NS
	Kogrukluk River	Met	Met	Met	Met	Over	Over	NS	NS	Under
	Kwethluk River	NA	NA	Met	NA	Met	Met	Met	Met	NS
	Yukon River									
	Delta Clearwater River	Met	Met	Met	Met	Under	Over	Met	Met	Under

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Table 8.–Page 3 of 3.

Species	System	2010	2011	2012	2013	2014	2015	2016	2017	2018
Coho salmon (cont.)	*Norton Sound*									
	Kwiniuk River	Over	Over	NS	NS	NS	NS	Over	NS	NS
	Niukluk River	Over[a]	Met	Under	NS	NS	NS	eliminated		
	Niukluk River/Ophir Creek							Met	NS	NS
	North River (Unalakleet R.)	NS	Met	NS	Met	NS	NS	NS	NS	NS
Pink salmon	*Norton Sound*									
	Nome River (odd year)		Met		Met		Met		Met	
	Nome River (even year)	Met		Met		Met		Met		Met
	Kwiniuk River	Met	Met	Met	Met	Met	Met	Met	Met	Met
	Niukluk River	Met	Met	Met	NS	NS	NS	eliminated		
	North River	Met	Met	Met	Met	Met	Met	Met	Met	Met
Sockeye salmon	*Kuskokwim Area*									
	North (Main) Fork Goodnews River	NS	Met	Met	NS	NS	Over	Over[a]	NS	NS
	Middle Fork Goodnews River	Met	Under	Met	Met	Over	Over	Over	Over	NS
	Kanektok River	Met	NS	NA	Over	Over	Over	Over[a]	NS	Over
	Kogrukluk River	Met	Met	NA	Met	Met	Met	Met	Over	Over
	Norton Sound									
	Salmon Lake/Grand Central River	Under	Met	Met	Met	Met	Over	Over	Over	Over
	Glacial Lake	Under	NS	NS	Met	Over	Over	Met	Over	Met

Note: NA = data not available; NS = no survey. There are no escapement goals for pink salmon in Kuskokwim Area and Yukon River and there are no escapement goals for sockeye salmon in Yukon River.

[a] Escapement goal reevaluated, goal value changed.

[b] Previous escapement goal was based on aerial surveys, replaced with escapement goal based on weir counts. Escapements in Table 3 are weir counts.

[c] Escapement goal revised by The United States and Canada Yukon River Panel.

[d] Escapement goal reevaluated, goal range changed to a lower-bound goal.

[e] Escapement goal reevaluated, goal type changed but goal value remained the same.

Table 9.–Assessment of whether escapements met (Met), exceeded (Over), or did not meet (Under) the escapement goal in place at the time of enumeration for salmon stocks in Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas).

Species	System	2010	2011	2012	2013	2014	2015	2016	2017	2018
Chinook salmon	*AK Peninsula*									
	Nelson River	Met	Under	Under	Under	Met	Met	Over	Under	Over
	Chignik									
	Chignik River	Over	Met	Met	Under	Over	Met	Met	Under	Under
	Kodiak									
	Karluk River	Under	Met[a]	Met	Under	Under	Under	Met	Under	Met
	Ayakulik River	Met	Met[a]	Met	Under	Under	Under	Met	Under[a]	Under
Chum salmon	*AK Peninsula*									
	Northern District	Met	Under	Met	Met	Met	Met	Over	Met	Met
	Northwestern District	Met	Met	Met	Under	Under	Under	Met	Met	Under
	Southeastern District	Under	Met	Under	Met	Under	Over	Met	Over	Under
	South Central District	Under	Met	Under	Met	Met	Over	Over	Over	Over
	Southwestern District	Met	Met	Under	Met	Under	Over	Met	Over	Under
	Unimak District	Met	Met	Under	eliminated					
	Chignik									
	Entire Chignik Area	Met	Met	Met	Met	Met	Met	Met[b]	Met	Under
	Kodiak									
	Mainland District	Met	Met	Met	Met	Under	Met	Under	eliminated	
	Kodiak Archipelago Aggregate	Met	Met	Met	Met	Under	Met	Under	Met[b]	Met
Coho salmon	*AK Peninsula*									
	Nelson River	Under	Met	Met	Met	Met	Met	Met	Met	Met
	Thin Point Lake	NA	Under	Under	eliminated					
	Ilnik River	Met[c]	Met	Met	Met	Met	Met	Met	Under	Met
	Kodiak									
	Pasagshak River	Met	Under[d]	Met	Met	Met	Met	Under	Under	Met
	Buskin River	Met	Met	Met	Met	Met[a]	Under	Under	Met	Under
	Olds River	NA	Met[d]	Under	Met	Met	Met	Met	Met	Under
	American River	NA	Met[d]	Met	Met	Met	Met	Met	Met	Under
Pink salmon	*AK Peninsula*									
	Bechevin Bay Section (odd year)		Met		eliminated					
	Bechevin Bay Section (even year)	Under		Under	eliminated					
	South Peninsula Total (odd year)		Met		Met		Over	eliminated		
	South Peninsula Total (even year)	Under		Under		Under		eliminated		
	South Peninsula Total							Under	Over	Under

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Table 9.–Page 2 of 3.

Species	System	2010	2011	2012	2013	2014	2015	2016	2017	2018
Pink salmon (cont.)	*Chignik*									
	Entire Chignik Area (odd year)		Over		Over		Over	[b]	Over	
	Entire Chignik Area (even year)	Met		Met		Met		Under[b]		Under
	Kodiak									
	Mainland District	Met	Met[e]	Met	Met	Met	Met	Under	Over	Met
	Kodiak Archipelago (odd year)		Met[f]		Met		Over		Over	
	Kodiak Archipelago (even year)	Met	[f]	Met		Under		Under		Met
Sockeye salmon	*AK Peninsula*									
	Cinder River	Over	Over	Over	Over	Over	Over	Over[b]	Over	Over
	Ilnik River	Met	Met	Over	Met	Met	Under	Over	Over	Over
	Meshik River	Met[a]	Met	Met	Met	Over	Over	Over[b]	Over	Over
	Sandy River	Met	Met	Under	Met	Met	Over	Over	Over	Met
	Bear River Early Run	Met	Met	Under	Met	Met	Over	Over	Over	Over
	Bear River Late Run	Met	Met	Under	Over	Over	Over	Met	Over	Over
	Nelson River	Met	Under	Met	Over	Over	Over	Over	Over	Over
	Christianson Lagoon	Met	Met	Met	Under	Met	Under	Over	Over	Met
	Swanson Lagoon	Under	Under	Met	Under	Under	Under	Under	Under	Under
	North Creek	Over	Over	Over	Met	Met	Over	Over	Met	Met
	Orzinski Lake	Met	Met	Met	Met	Under	Over	Over	Over	Under
	Mortensen Lagoon	Over	Under	Met	Met	Under	NA	Over	Over	Under
	Thin Point Lake	Under	Met	Met	Under	Under	Met	Over	Over	Under
	McLees Lake	Met[c]	Met	Met	Met	Met	Met	Met	Met	
	Chignik									
	Chignik River Early Run	Over	Over	Met	Met	Met[e]	Over	Met	Over	Under
	Chignik River Late Run	Met	Met	Met	Met	Met	Over	Met	Met	Met
	Kodiak									
	Malina Creek	Met	Met	Met	Met	Met	Met	Met	Met	Under
	Afognak (Litnik) River	Over	Met	Met	Met	Met	Met	Met	Met	Under
	Little River	Met	Met	Met	Met	eliminated				
	Uganik Lake	Met	Met	Under	Met	Under	Under	Met	eliminated	
	Karluk River Early Run	Under	Under	Met	Met	Over	Over	Met	Met[a]	Met
	Karluk River Late Run	Met	Met	Met	Met	Over	Over	Met	Met[a]	Met
	Ayakulik River	Met	eliminated							
	Ayakulik River Early Run		Met[g]	Met	Met	Met	Met	Met	Met	Met
	Ayakulik River Late Run		Met[g]	Met	Met	Met	Met	Met	Over	Met
	Upper Station River Early Run	Met	Met	Met	Met	Met[h]	Met	Met	Met[h]	Met
	Upper Station River Late Run	Met	Under	Met	Met	Met	Met	Met	Met	Met

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Table 9.–Page 3 of 3.

Species	System	2010	2011	2012	2013	2014	2015	2016	2017	2018
Sockeye salmon (cont.)	*Kodiak* (cont.)									
	Frazer Lake	Met	Met	Met	Met	Over	Over	Met	Met	Over
	Saltery Lake	Met	Met[e]	Met	Over	Met	Over	Over	Over	Met
	Pasagshak River	Met	Met[d]	Under	Met	Under	Under	Met	Met	Under
	Buskin Lake	Met	Over[i]	Over	Over	Over	Over	Over	Met	Under

Note: There are no coho salmon escapement goals in Chignik Area.

[a] Escapement goal reevaluated, goal range changed.

[b] Escapement goal reevaluated, number of index streams used to develop escapement goal changed, and escapement goal changed. Escapements in Table 4 are adjusted for new set of index streams for all years.

[c] Goal reestablished. New analysis.

[d] Escapement goal reevaluated, upper bound eliminated, lower goal bound remained the same.

[e] Escapement goal reevaluated, upper bound of goal changed.

[f] Single escapement goal was separated into odd- and even-year escapement goals.

[g] Single escapement goal was changed to separate early- and late-run escapement goals.

[h] OEG changed from 25,000 fish to 30,000 fish in 2014, then eliminated in 2017.

[i] Escapement goal reevaluated, goal type and range changed.

Table 10.–Southeast Region Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2010 to 2018.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
CHINOOK SALMON									
Number Below	0	3	6	4	4	2	10	10	7
Number Met	8	8	5	6	7	8	1	1	3
Number Above	2	0	0	2	1	2	1	1	1
% Below	0%	27%	55%	33%	33%	17%	83%	83%	64%
% Met	80%	73%	45%	50%	58%	67%	8%	8%	27%
% Above	20%	0%	0%	17%	8%	17%	8%	8%	9%
CHUM SALMON									
Number Below	2	3	1	3	2	0	2	0	2
Number Met	5	3	5	5	6	5	6	6	4
Number Above	1	2	2	0	0	3	0	2	1
% Below	25%	38%	13%	38%	25%	0%	25%	0%	29%
% Met	63%	38%	63%	63%	75%	63%	75%	75%	57%
% Above	13%	25%	25%	0%	0%	38%	0%	25%	14%
COHO SALMON									
Number Below	0	1	2	2	0	0	3	1	2
Number Met	8	9	7	6	6	7	6	9	7
Number Above	5	3	4	6	8	7	4	3	4
% Below	0%	8%	15%	14%	0%	0%	23%	8%	15%
% Met	62%	69%	54%	43%	43%	50%	46%	69%	54%
% Above	38%	23%	31%	43%	57%	50%	31%	23%	31%
PINK SALMON									
Number Below	0	0	2	0	2	0	2	0	1
Number Met	3	2	2	2	0	3	2	3	2
Number Above	0	2	0	2	2	1	0	1	0
% Below	0%	0%	50%	0%	50%	0%	50%	0%	33%
% Met	100%	50%	50%	50%	0%	75%	50%	75%	67%
% Above	0%	50%	0%	50%	50%	25%	0%	25%	0%
SOCKEYE SALMON									
Number Below	1	1	2	5	2	1	3	4	5
Number Met	10	6	7	5	5	7	7	5	5
Number Above	2	6	4	3	5	5	3	3	2
% Below	8%	8%	15%	38%	17%	8%	23%	33%	42%
% Met	77%	46%	54%	38%	42%	54%	54%	42%	42%
% Above	15%	46%	31%	23%	42%	38%	23%	25%	17%

Table 11.–Central Region (Bristol Bay, Cook Inlet, Prince William Sound/Copper River) Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2010 to 2018.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
CHINOOK SALMON									
Number Below	15	14	14	6	12	4	8	14	21
Number Met	7	10	8	18	14	20	11	9	6
Number Above	0	0	1	0	0	1	2	1	0
% Below	68%	58%	61%	25%	46%	16%	38%	58%	78%
% Met	32%	42%	35%	75%	54%	80%	52%	38%	22%
% Above	0%	0%	4%	0%	0%	4%	10%	4%	0%
CHUM SALMON									
Number Below	3	4	5	5	7	3	3	0	7
Number Met	10	11	11	10	10	8	13	11	9
Number Above	5	4	3	4	2	7	3	8	3
% Below	17%	21%	26%	26%	37%	17%	16%	0%	37%
% Met	56%	58%	58%	53%	53%	44%	68%	58%	47%
% Above	28%	21%	16%	21%	11%	39%	16%	42%	16%
COHO SALMON									
Number Below	2	2	2	0	1	0	2	0	1
Number Met	2	3	3	3	2	4	2	2	5
Number Above	0	0	0	3	3	1	1	4	1
% Below	50%	40%	40%	0%	17%	0%	40%	0%	14%
% Met	50%	60%	60%	50%	33%	80%	40%	33%	71%
% Above	0%	0%	0%	50%	50%	20%	20%	67%	14%
PINK SALMON									
Number Below	3	7	7	2	5	0	12	3	6
Number Met	12	5	14	9	18	4	7	12	9
Number Above	2	5	4	14	4	22	4	11	12
% Below	18%	41%	28%	8%	19%	0%	52%	12%	22%
% Met	71%	29%	56%	36%	67%	15%	30%	46%	33%
% Above	12%	29%	16%	56%	15%	85%	17%	42%	44%
SOCKEYE SALMON									
Number Below	4	3	6	7	5	4	6	0	2
Number Met	18	20	21	16	14	13	17	21	17
Number Above	9	8	3	6	11	12	4	8	11
% Below	13%	10%	20%	24%	17%	14%	22%	0%	7%
% Met	58%	65%	70%	55%	47%	45%	63%	72%	57%
% Above	29%	26%	10%	21%	37%	41%	15%	28%	37%

Table 12.–Arctic–Yukon–Kuskokwim Region Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2010 to 2018.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
CHINOOK SALMON									
Number Below	12	11	12	19	5	3	7	3	3
Number Met	6	7	4	4	7	12	7	12	15
Number Above	0	2	1	0	8	6	5	5	2
% Below	67%	55%	71%	83%	25%	14%	37%	15%	15%
% Met	33%	35%	24%	17%	35%	57%	37%	60%	75%
% Above	0%	10%	6%	0%	40%	29%	26%	25%	10%
SUMMER CHUM SALMON									
Number Below	0	0	5	1	1	1	1	0	0
Number Met	3	4	0	2	1	1	2	1	0
Number Above	6	6	2	5	7	5	4	6	6
% Below	0%	0%	71%	13%	11%	14%	14%	0%	0%
% Met	33%	40%	0%	25%	11%	14%	29%	14%	0%
% Above	67%	60%	29%	63%	78%	71%	57%	86%	100%
YUKON RIVER SUMMER CHUM SALMON									
Number Below	0	0	0	0	1	0	1	0	2
Number Met	2	2	2	2	1	2	1	2	0
Number Above	0	0	0	0	0	0	1	1	1
% Below	0%	0%	0%	0%	50%	0%	33%	0%	67%
% Met	100%	100%	100%	100%	50%	100%	33%	67%	0%
% Above	0%	0%	0%	0%	0%	0%	33%	33%	33%
YUKON RIVER FALL CHUM SALMON									
Number Below	2	1	0	0	1	2	0	0	1
Number Met	2	1	4	1	2	3	1	1	0
Number Above	4	6	4	7	5	3	5	5	5
% Below	25%	13%	0%	0%	13%	25%	0%	0%	17%
% Met	25%	13%	50%	13%	25%	38%	17%	17%	0%
% Above	50%	75%	50%	88%	63%	38%	83%	83%	83%
COHO SALMON									
Number Below	0	0	1	0	1	0	0	0	2
Number Met	3	5	3	3	1	2	3	2	0
Number Above	2	1	0	0	1	2	1	0	0
% Below	0%	0%	25%	0%	33%	0%	0%	0%	100%
% Met	60%	83%	75%	100%	33%	50%	75%	100%	0%
% Above	40%	17%	0%	0%	33%	50%	25%	0%	0%

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	2010	2011	2012	2013	2014	2015	2016	2017	2018
PINK SALMON									
Number Below	0	0	0	0	0	0	0	0	0
Number Met	4	4	4	3	3	3	3	3	3
Number Above	0	0	0	0	0	0	0	0	0
% Below	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Met	100%	100%	100%	100%	100%	100%	100%	100%	100%
% Above	0%	0%	0%	0%	0%	0%	0%	0%	0%
SOCKEYE SALMON									
Number Below	2	1	0	0	0	0	0	0	0
Number Met	3	3	3	4	2	1	2	0	1
Number Above	0	0	0	1	3	5	4	4	3
% Below	40%	25%	0%	0%	0%	0%	0%	0%	0%
% Met	60%	75%	100%	80%	40%	17%	33%	0%	25%
% Above	0%	0%	0%	20%	60%	83%	67%	100%	75%

Table 13.–Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2010 to 2018.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
CHINOOK SALMON									
Number Below	1	1	1	4	2	2	0	4	2
Number Met	2	3	3	0	1	2	3	0	1
Number Above	1	0	0	0	1	0	1	0	1
% Below	25%	25%	25%	100%	50%	50%	0%	100%	50%
% Met	50%	75%	75%	0%	25%	50%	75%	0%	25%
% Above	25%	0%	0%	0%	25%	0%	25%	0%	25%
CHUM SALMON									
Number Below	2	1	4	1	5	1	2	0	4
Number Met	7	8	5	7	3	4	4	4	2
Number Above	0	0	0	0	0	3	2	3	1
% Below	22%	11%	44%	13%	63%	13%	25%	0%	57%
% Met	78%	89%	56%	88%	38%	50%	50%	57%	29%
% Above	0%	0%	0%	0%	0%	38%	25%	43%	14%
COHO SALMON									
Number Below	1	2	2	0	0	1	2	2	3
Number Met	3	5	5	6	6	5	4	4	3
Number Above	0	0	0	0	0	0	0	0	0
% Below	25%	29%	29%	0%	0%	17%	33%	33%	50%
% Met	75%	71%	71%	100%	100%	83%	67%	67%	50%
% Above	0%	0%	0%	0%	0%	0%	0%	0%	0%
PINK SALMON									
Number Below	2	0	2	0	2	0	4	0	2
Number Met	3	4	3	3	2	1	0	0	2
Number Above	0	1	0	1	0	3	0	4	0
% Below	40%	0%	40%	0%	50%	0%	100%	0%	50%
% Met	60%	80%	60%	75%	50%	25%	0%	0%	50%
% Above	0%	20%	0%	25%	0%	75%	0%	100%	0%
SOCKEYE SALMON									
Number Below	3	5	5	3	6	5	1	1	9
Number Met	21	21	21	22	15	8	15	13	11
Number Above	5	4	4	5	8	15	13	14	7
% Below	10%	17%	17%	10%	21%	18%	3%	4%	33%
% Met	72%	70%	70%	73%	52%	29%	52%	46%	41%
% Above	17%	13%	13%	17%	28%	54%	45%	50%	26%

Table 14.–Summary of Southeast Region salmon escapements compared against escapement goals for the years 2010 to 2018.

Southeast Region		2010	2011	2012	2013	2014	2015	2016	2017	2018
Stocks with Escapement Data		47	49	49	51	50	51	50	49	46
Below Lower Goal	Number	3	8	13	14	10	3	20	15	17
	Percent	6%	16%	27%	27%	20%	6%	40%	31%	37%
Goal Met	Number	34	28	26	24	24	30	22	24	21
	Percent	72%	57%	53%	47%	48%	59%	44%	49%	46%
Above Upper Goal	Number	10	13	10	13	16	18	8	10	8
	Percent	21%	27%	20%	25%	32%	35%	16%	20%	17%

Table 15.–Summary of Central Region (Bristol Bay, Cook Inlet, Prince William Sound/Copper River) salmon escapements compared against escapement goals for the years 2010 to 2018.

Central Region		2010	2011	2012	2013	2014	2015	2016	2017	2018
Stocks with Escapement Data		92	96	102	103	108	103	95	104	110
Below Lower Goal	Number	27	30	34	20	30	11	31	17	37
	Percent	29%	31%	33%	19%	28%	11%	33%	16%	34%
Goal Met	Number	49	49	57	56	58	49	50	55	46
	Percent	53%	51%	56%	54%	54%	48%	53%	53%	42%
Above Upper Goal	Number	16	17	11	27	20	43	14	32	27
	Percent	17%	18%	11%	26%	19%	42%	15%	31%	25%

Table 16.–Summary of Arctic–Yukon–Kuskokwim Region (AYK) salmon escapements compared against escapement goals for the years 2010 to 2018.

AYK Region		2010	2011	2012	2013	2014	2015	2016	2017	2018
Stocks with Escapement Data		51	54	45	52	50	51	48	45	44
Below Lower Goal	Number	16	13	18	20	9	6	9	3	8
	Percent	31%	24%	40%	38%	18%	12%	19%	7%	18%
Goal Met	Number	23	26	20	19	17	24	19	21	19
	Percent	45%	48%	44%	37%	34%	47%	40%	47%	43%
Above Upper Goal	Number	12	15	7	13	24	21	20	21	17
	Percent	24%	28%	16%	25%	48%	41%	42%	47%	39%

Table 17.–Summary of Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) salmon escapements compared against escapement goals for the years 2010 to 2018.

Westward Region		2010	2011	2012	2013	2014	2015	2016	2017	2018
Stocks with Escapement Data		51	55	55	52	51	50	51	49	48
Below Lower Goal	Number	9	9	14	8	15	9	9	7	20
	Percent	18%	16%	25%	15%	29%	18%	18%	14%	42%
Goal Met	Number	36	41	37	38	27	20	26	21	19
	Percent	71%	75%	67%	73%	53%	40%	51%	43%	40%
Above Upper Goal	Number	6	5	4	6	9	21	16	21	9
	Percent	12%	9%	7%	12%	18%	42%	31%	43%	19%

Table 18.–Statewide summary of salmon stocks of concern in Alaska.

Region	System	Species	Year Designated[a]	Level of Concern	Year Last Reviewed[a]
Southeast	Chilkat River	Chinook	2017	Management	2017
	King Salmon River	Chinook	2017	Management	2017
	Unuk River	Chinook	2017	Management	2017
	McDonald Lake	sockeye	2017	Management	2017
Central	McNeil River	chum	2016	Management	2016
	Susitna (Yentna) River	sockeye	2007	Yield	2016
	Chuitna River	Chinook	2010	Management	2016
	Theodore River	Chinook	2010	Management	2016
	Lewis River	Chinook	2010	Management	2016
	Alexander Creek	Chinook	2010	Management	2016
	Willow Creek	Chinook	2010	Yield	2016
	Goose Creek[b]	Chinook	2010	Management	2016
	Sheep Creek	Chinook	2013	Management	2016
Westward	Karluk River	Chinook	2010	Management	2016
	Swanson Lagoon	sockeye	2012	Delisted	2018
Arctic–Yukon–Kuskokwim	Yukon River	Chinook	2000	Yield	2018
	Norton Sound Subdistrict 5 & 6	Chinook	2003	Yield	2018
	Norton Sound Subdistrict 2 & 3	chum	2000	Delisted	2018

[a] Indicates start of BOF cycle in which *stock of concern* status was designated or last reviewed (e.g., 2018–2019 BOF cycle = 2018).

[b] Goose Creek Chinook salmon was originally designated a stock of yield concern then modified to stock of management concern in 2013.

Table 19.–Methods used to enumerate and develop escapement goals for Southeast Region Chinook, chum, coho, pink, and sockeye salmon stocks.

System	Enumeration Method	Goal Development Method	References
CHINOOK SALMON			
Blossom River	Peak Aerial Survey (Expanded)[a]	SRA	Fleischman et al. 2011; Heinl et al. 2017
Keta River	Peak Aerial Survey (Expanded)	SRA	Fleischman et al. 2011; Heinl et al. 2017
Unuk River	Peak Foot/Aerial Survey (Expanded)	SRA	Hendrich et al. 2008
Chickamin River	Peak Aerial Survey (Expanded)	SRA	McPherson and Carlile 1997; Heinl et al. 2017
Andrew Creek	Peak Aerial Survey (Expanded)	SRA	Clark et al. 1998
Stikine River	Mark–Recapture	SRA	Bernard et al. 2000
King Salmon River	Peak Aerial Survey (Expanded)	SRA	McPherson and Clark 2001
Taku River	Mark–Recapture	SRA	McPherson et al. 2010
Chilkat River	Mark–Recapture	Theoretical SRA	Ericksen and McPherson 2004; inriver: 5AAC 33.384
Alsek River	Weir Count (Expanded)	SRA	Bernard and Jones III 2010
Situk River	Weir Count	SRA	McPherson et al. 2005
CHUM SALMON			
Southern Southeast Summer	Peak Aerial Survey	Percentile	Piston and Heinl 2014
Northern Southeast Inside Summer	Peak Aerial Survey	Percentile	Heinl et al. 2017
Northern Southeast Outside Summer	Peak Aerial Survey	Percentile	Piston and Heinl 2014
Cholmondeley Sound Fall	Peak Aerial Survey	Percentile	Eggers and Heinl 2008
Port Camden Fall	Peak Aerial Survey	Risk Analysis	Eggers and Heinl 2008
Security Bay Fall	Peak Aerial Survey	Percentile	Eggers and Heinl 2008
Excursion River Fall	Peak Aerial Survey	Percentile	Eggers and Heinl 2008
Chilkat River Fall	Fish Wheel (Expanded)	SRA	Piston and Heinl 2014
COHO SALMON			
Hugh Smith Lake	Weir Count	SRA	Shaul et al. 2009
Klawock River	Weir Count	Theoretical SRA	Der Hovanisian 2013
Taku River	Mark–Recapture	SRA	Pestal and Johnson 2015
Auke Creek	Weir Count	SRA	Clark et al. 1994
Montana Creek	Foot Survey	Theoretical SRA	Clark 2005
Peterson Creek	Foot Survey	Theoretical SRA	Clark 2005
Ketchikan Survey Index	Peak Aerial Survey	Theoretical SRA	Shaul and Tydingco 2006
Sitka Survey Index	Foot Survey	Theoretical SRA	Shaul and Tydingco 2006
Berners River	Peak Aerial Survey, Foot Survey	SRA	Shaul et al. 2017

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System	Enumeration Method	Goal Development Method	References
COHO SALMON (cont.)			
Chilkat River	Mark–Recapture, Foot Survey	SRA	Ericksen and Fleischman 2006
Tawah Creek (Lost River)	Boat Survey	Percentile	Heinl et al. 2014a
Situk River	Boat Survey	SRA	Clark and Clark 1994
Tsiu/Tsivat Rivers	Peak Aerial Survey	Percentile	Heinl et al. 2017
PINK SALMON			
Southern Southeast	Peak Aerial Survey	Yield Analysis	Heinl et al. 2008
Northern Southeast Inside	Peak Aerial Survey	Yield Analysis	Heinl et al. 2008
Northern Southeast Outside	Peak Aerial Survey	Yield Analysis	Heinl et al. 2008
SOCKEYE SALMON			
Hugh Smith Lake	Weir Count	Risk Analysis, Theoretical SRA	Geiger et al. 2003; OEG: 5 AAC 33.390
McDonald Lake	Expanded Foot Survey	SRA	Eggers et al. 2009a
Mainstem Stikine River	Run Reconstruction	Professional Judgement[b]	TTC 1987; TTC 1990
Tahltan Lake	Weir Count	SRA	Humphreys et al. 1994; TTC 1993
Speel Lake	Weir Count	SRA	Heinl et al. 2014b
Taku River	Mark–Recapture	Professional Judgement[b]	TTC 1986
Redoubt Lake	Weir Count	SRA	Geiger 2003; OEG: 5 AAC 01.760 (a)
Chilkat Lake	Sonar	SRA	Eggers et al. 2010
Chilkoot Lake	Weir Count	SRA	Eggers et al. 2009b
East Alsek River	Peak Aerial Survey	Percentile	Heinl et al. 2017
Klukshu River	Weir Count	SRA	Eggers and Bernard 2011
Situk River	Weir Count	SRA	Clark et al. 2002

Note: SRA = Spawner–recruit analysis.

[a] One or more aerial surveys are attempted during the peak of the run. Peak count is used to index the escapement.

[b] Transboundary Technical Committee, Pacific Salmon Commission.

Table 20.–Methods used to enumerate and develop escapement goals for Central Region (Bristol Bay, Cook Inlet, and Prince William Sound/Copper River) Chinook, chum, coho, pink, and sockeye salmon stocks.

System	Enumeration Method	Goal Development Method	References
CHINOOK SALMON			
Bristol Bay			
Nushagak River	Sonar	SRA, Yield Analysis	Fair et al. 2012
Alagnak River	Single Aerial Survey[a]	Risk Analysis	Baker et al. 2006; Fair et al. 2004
Upper Cook Inlet			
Alexander Creek	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Campbell Creek	Single Foot Survey	Risk Analysis	Fair et al. 2010
Chuitna River	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Chulitna River	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Clear (Chunilna) Creek	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Crooked Creek	Weir Count	Percentile	Bue and Hasbrouck, unpublished[b]
Deshka River	Weir Count	SRA	Bue and Hasbrouck, unpublished[b]; Fair et al. 2010
Goose Creek	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Kenai R - Early Run (large fish)	Sonar	SRA	Erickson et al. 2017; Fleischman and Reimer 2017; OEG: 5 AAC 57.160 (b)
Kenai R - Late Run (large fish)	Sonar	SRA	Erickson et al. 2017; Fleischman and Reimer 2017
Lake Creek	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Lewis River	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Little Susitna River (Aerial)	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Little Susitna River (Weir)	Weir Count	Percentile	Erickson et al. 2017
Little Willow Creek	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Montana Creek	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Peters Creek	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Prairie Creek	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Sheep Creek	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Talachulitna River	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Theodore River	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Willow Creek	Single Aerial Survey	Percentile	Bue and Hasbrouck, unpublished[b]
Lower Cook Inlet			
Anchor River	Sonar, Weir Count	SRA	Otis et al. 2016
Deep Creek	Single Aerial Survey	Percentile	Otis et al. 2016
Ninilchik River	Weir Count	Percentile	Otis et al. 2016
Prince William Sound			
Copper River	Mark–Recapture	Empirical Observation	Bue et al. 2002; Savereide 2001

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System	Enumeration Method	Goal Development Method	References
CHINOOK SALMON			
Bristol Bay			
Nushagak River	Sonar	Risk Analysis	Fair et al. 2012
Upper Cook Inlet			
Clearwater Creek	Peak Aerial Survey[c]	Percentile	Erickson et al. 2017
Lower Cook Inlet			
Port Graham River	Multiple Foot Surveys[d]	Percentile	Otis et al. 2016
Dogfish Lagoon	Multiple Foot Surveys	Percentile	Otis et al. 2016
Rocky River	Multiple Foot Surveys	Percentile	Otis et al. 2016
Port Dick Creek	Multiple Aerial or Foot Surveys	Percentile	Otis et al. 2016
Island Creek	Multiple Aerial or Foot Surveys	Percentile	Otis et al. 2016
Big Kamishak River	Multiple Aerial Surveys	Percentile	Otis et al. 2016
Little Kamishak River	Multiple Aerial Surveys	Percentile	Otis et al. 2016
McNeil River	Multiple Aerial Surveys	Percentile	Otis and Szarzi 2007
Bruin River	Multiple Aerial Surveys	Percentile	Otis et al. 2016
Ursus Cove	Multiple Aerial Surveys	Percentile	Otis et al. 2016
Cottonwood Creek	Multiple Aerial Surveys	Percentile	Otis et al. 2016
Iniskin Bay	Multiple Aerial Surveys	Percentile	Otis et al. 2016
Prince William Sound			
Eastern District	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Northern District	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Coghill District	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Northwestern District	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Southeastern District	Multiple Aerial Surveys	Percentile	Haught et al. 2017
COHO SALMON			
Bristol Bay			
Nushagak River	Sonar	SRA	Fair et al. 2012
Upper Cook Inlet			
Deshka River	Weir Count	Percentile	Erickson et al. 2017
Fish Creek (Knik)	Weir Count	Percentile	Bue and Hasbrouck, unpublished[b]; Fair et al. 2010
Jim Creek	Single Foot Survey	Percentile	Fair et al. 2013
Little Susitna River	Weir Count	Percentile	Bue and Hasbrouck, unpublished[b]
Lower Cook Inlet			
There are no coho salmon stocks with escapement goals in Lower Cook Inlet			

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System	Enumeration Method	Goal Development Method	References
COHO SALMON (cont.)			
Prince William Sound			
Copper River Delta	Peak Aerial Survey	Percentile	Bue et al. 2002
Bering River	Peak Aerial Survey	Percentile	Bue et al. 2002
PINK SALMON			
Bristol Bay			
Nushagak River	Sonar	Percentile	Fair et al. 2012
Upper Cook Inlet			
There are no pink salmon stocks with escapement goals in Upper Cook Inlet			
Lower Cook Inlet			
Humpy Creek	Multiple Foot Surveys	Percentile	Otis et al. 2016
China Poot Creek	Multiple Foot Surveys	Percentile	Otis et al. 2016
Tutka Creek	Multiple Foot Surveys	Percentile	Otis 2001
Barabara Creek	Multiple Foot Surveys	Percentile	Otis et al. 2016
Seldovia Creek	Multiple Foot Surveys	Percentile	Otis et al. 2016
Port Graham River	Multiple Foot Surveys	Percentile	Otis et al. 2016
Dogfish Lagoon Creeks	Multiple Aerial or Foot Surveys	Percentile	Otis et al. 2016
Port Chatham	Multiple Foot Surveys	Percentile	Otis et al. 2016
Windy Creek Right	Multiple Foot Surveys	Percentile	Otis et al. 2016
Windy Creek Left	Multiple Foot Surveys	Percentile	Otis et al. 2016
Rocky River	Multiple Foot Surveys	Percentile	Otis et al. 2016
Port Dick Creek	Multiple Aerial or Foot Surveys	Percentile	Otis et al. 2016
Island Creek	Multiple Aerial or Foot Surveys	Percentile	Otis et al. 2016
S. Nuka Island Creek	Multiple Aerial or Foot Surveys	Percentile	Otis et al. 2016
Desire Lake Creek	Multiple Aerial Surveys	Percentile	Otis et al. 2016
Bruin River	Multiple Aerial Surveys	Percentile	Otis et al. 2016
Sunday Creek	Multiple Aerial Surveys	Percentile	Otis et al. 2016
Brown's Peak Creek	Multiple Aerial Surveys	Percentile	Otis et al. 2016
Prince William Sound			
Eastern District (even year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Eastern District (odd year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Northern District (even year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Northern District (odd year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Coghill District (even year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017

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Table 20.–Page 4 of 5.

System	Enumeration Method	Goal Development Method	References
PINK SALMON (cont.)			
Prince William Sound (cont.)			
Coghill District (odd year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Northwestern District (even year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Northwestern District (odd year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Eshamy District (even year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Eshamy District (odd year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Southwestern District (even year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Southwestern District (odd year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Montague District (even year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Montague District (odd year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Southeastern District (even year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
Southeastern District (odd year)	Multiple Aerial Surveys	Percentile	Haught et al. 2017
SOCKEYE SALMON			
Bristol Bay			
Kvichak River	Tower Count	SRA, Yield Analysis	Baker et al. 2009
Alagnak River	Tower Count	Risk Analysis	Baker et al. 2006
	Single Aerial Survey	Risk Analysis	Erickson et al. 2015
Naknek River	Tower Count	SRA, Yield Analysis	Fair et al. 2012; Erickson et al. 2015, Appendices F2 and F3; OEG: 5 AAC 06.360 (f)
Egegik River	Tower Count	SRA, Yield Analysis	Fair et al. 2012; Erickson et al. 2015, Appendices F2 and F3
Ugashik River	Tower Count	SRA, Yield Analysis	Fair et al. 2012; Erickson et al. 2015, Appendices F2 and F3
Wood River	Tower Count	SRA, Yield Analysis	Fair et al. 2012; Erickson et al. 2015, Appendices F2 and F3
Igushik River	Tower Count	SRA, Yield Analysis	Fair et al. 2012; Erickson et al. 2015, Appendices F2 and F3
Nushagak River	Sonar	SRA, Yield Analysis	Fair et al. 2012; OEG: 5 AAC 06.358 (c) (1) (B)
Togiak River	Tower Count	SRA, Yield Analysis	Baker et al. 2009; Fair et al. 2004
Upper Cook Inlet			
Fish Creek (Knik)	Weir Count	Percentile	Erickson et al. 2017
Kasilof River	Sonar	SRA	Fair et al. 2010; OEG: 5 AAC 21.365 (b)
Kenai River	Sonar	Brood Interaction Simulation Model	Carlson et al. 1999; Clark et al. 2007; Fair et al. 2010 OEG: 5 AAC 21.360 (b) (1)
Packers Creek	Weir Count	Percentile	Bue and Hasbrouck, unpublished[b]; Fair et al. 2007; Hasbrouck and Edmundson 2007
Russian River - Early Run	Weir Count	SRA	Fair et al. 2010
Russian River - Late Run	Weir Count	Percentile	Hasbrouck and Edmundson 2007
Chelatna Lake	Weir Count	Percentile	Erickson et al. 2017

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Table 20.–Page 5 of 5.

System	Enumeration Method	Goal Development Method	References
SOCKEYE SALMON (cont.)			
Upper Cook Inlet (cont.)			
Judd Lake	Weir Count	Percentile	Erickson et al. 2017
Larson Lake	Weir Count	Percentile	Erickson et al. 2017
Lower Cook Inlet			
English Bay	Peak Aerial Survey, Weir Count	Percentile	Otis 2001
Delight Lake	Peak Aerial Survey	Percentile	Otis et al. 2016
Desire Lake	Peak Aerial Survey	Percentile	Otis et al. 2016
Bear Lake	Weir Count	Percentile	Otis 2001
Aialik Lake	Peak Aerial Survey	Percentile	Otis et al. 2016
Mikfik Lake	Video	Percentile	Otis et al. 2016
Chenik Lake	Video, Weir Count	Percentile	Otis et al. 2016
Amakdedori Creek	Peak Aerial Survey	Percentile	Otis et al. 2016
Prince William Sound			
Upper Copper River	Sonar	Percentile	Fair et al. 2011
Copper River Delta	Peak Aerial Survey	Percentile	Bue et al. 2002
Bering River	Peak Aerial Survey	Percentile	Fair et al. 2011
Coghill Lake	Weir Count	SRA	Fair et al. 2011
Eshamy Lake	Weir Count	SRA	Fair et al. 2008

Note: SRA = Spawner–recruit analysis.

[a] Single survey done around time of presumed peak of the run with no expansion of counts.

[b] Bue, B. G., and J. J. Hasbrouck. *Unpublished*. Escapement goal review of salmon stocks of Upper Cook Inlet. Report to the Alaska Board of Fisheries November 2001 (and February 2002). Alaska Department of Fish and Game, Anchorage.

[c] Multiple aerial surveys are attempted throughout the run. Peak count is used to index the escapement.

[d] Multiple surveys throughout run (at least 1 per week). Area under the curve method used to estimate annual escapement.

Table 21.–Methods used to enumerate and develop escapement goals for Arctic–Yukon–Kuskokwim Region Chinook, chum, coho, pink, and sockeye salmon stocks.

System	Enumeration Method	Goal Development Method	References
CHINOOK SALMON			
Kuskokwim Area			
North (Main) Fork Goodnews River	Single Aerial Survey[a]	Percentile	ADF&G 2004
Middle Fork Goodnews River	Weir Count	SRA	Brannian et al. 2006; Molyneaux and Brannian 2006
Kanektok River	Single Aerial Survey	Percentile	Conitz et al. 2015
Kuskokwim River (entire area)	Run Reconstruction[b]	SRA	Hamazaki et al. 2012; Liller et al. 2018; Liller and Savereide 2018
Kogrukluk River	Weir Count	Proportion of Kuskokwim River goal	Hamazaki et al. 2012
Kwethluk River	Weir Count	Proportion of Kuskokwim River goal	Hamazaki et al. 2012
George River	Weir Count	Proportion of Kuskokwim River goal	Hamazaki et al. 2012
Kisaralik River	Single Aerial Survey	Percentile	ADF&G 2004
Aniak River	Single Aerial Survey	Percentile	ADF&G 2004
Salmon River (Aniak R)	Single Aerial Survey	Percentile	ADF&G 2004
Holitna River	Single Aerial Survey	Percentile	ADF&G 2004
Cheeneetnuk River (Stony R)	Single Aerial Survey	Percentile	ADF&G 2004
Gagarayah River (Stony R)	Single Aerial Survey	Percentile	ADF&G 2004
Salmon River (Pitka Fork)	Single Aerial Survey	Percentile	ADF&G 2004
Yukon River			
East Fork Andreafsky River	Weir Count	Percentile	Volk et al. 2009
West Fork Andreafsky River	Peak Aerial Survey[c]	Percentile	ADF&G 2004
Anvik River	Peak Aerial Survey	Percentile	ADF&G 2004
Nulato River (forks combined)	Peak Aerial Survey	Percentile	ADF&G 2004
Chena River	Tower, Mark–Recapture	SRA	Evenson 2002
Salcha River	Tower, Mark–Recapture	SRA	Evenson 2002
Canada Mainstem	Sonar	Agreement (U.S./Canada Joint Technical Committee)	JTC 2010; JTC 2013
Norton Sound			
Kwiniuk River	Tower Count	Percentile	Conitz et al. 2015
North River (Unalakleet R)	Tower Count	Percentile	ADF&G 2004

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Table 21.–Page 2 of 4.

System	Enumeration Method	Goal Development Method	References
CHUM SALMON			
Kuskokwim Area			
Middle Fork Goodnews River	Weir Count	Percentile	ADF&G 2004
Kogrukluk River	Weir Count	Percentile	ADF&G 2004
Yukon River Drainage	Sonar, Weir Count, Tower Count, Aerial Survey	SRA	Conitz et al. 2015; Hamazaki and Conitz 2015
East Fork Andreafsky River	Weir Count	SRA	Fleischman and Evenson 2010; Volk et al. 2009
Anvik River	Sonar	SRA	ADF&G 2004
Yukon River Fall Chum			
Yukon River Drainage	Calculated - Multiple Surveys	SRA	Fleischman and Borba 2009; Volk et al. 2009
Tanana River	Mark–Recapture	SRA	ADF&G 2004; Eggers 2001
Delta River	Multiple Foot Surveys	Proportion of Tanana River Goal	ADF&G 2004; Eggers 2001
Chandalar River	Sonar	Proportion of Upper Yukon River Tributaries Goal	ADF&G 2004; Eggers 2001
Fishing Branch River (Canada)	Weir Count	Agreement (U.S./Canada Joint Technical Committee) Interim Management Escapement Goal Percentile	JTC 2008; JTC 2013[e]
Yukon R. Mainstem (Canada)	Mark–Recapture	Agreement (U.S./Canada Joint Technical Committee) Interim Management Escapement Goal SRA	JTC 2010; JTC 2015
Norton Sound			
Subdistrict 1 Aggregate	Calculated - Multiple Surveys	SRA	Clark 2001a
Nome River	Weir Count	Proportion of Aggregate Goal	ADF&G 2004; Clark 2001a; OEG: 5 AAC 04.358 (a) (2)
Snake River	Tower/Weir Count	Proportion of Aggregate Goal	ADF&G 2004; Clark 2001a; OEG: 5 AAC 04.358 (a) (1)
Eldorado River	Peak Aerial Survey (Expanded)	Proportion of Aggregate Goal	ADF&G 2004; Clark 2001a; OEG: 5 AAC 04.358 (a) (3)
Kwiniuk River	Tower Count	SRA	ADF&G 2004; Clark 2001b; OEG: 5 AAC 04.390 (b) (1) (A) (i)
Tubutulik River	Peak Aerial Survey (Expanded)	SRA	ADF&G 2004; Clark 2001b OEG: 5 AAC 04.390 (b) (1) (A) (ii)
Kotzebue Sound			
Kotzebue Sound Aggregate	Peak Aerial Survey (Expanded)	SRA	Brannian et al. 2006; Eggers and Clark 2006
Noatak and Eli Rivers	Peak Aerial Survey	Proportion of Aggregate Goal	Brannian et al. 2006; Eggers and Clark 2006
Upper Kobuk w/Selby River	Peak Aerial Survey	Proportion of Aggregate Goal	Brannian et al. 2006; Eggers and Clark 2006
Salmon River	Peak Aerial Survey	Proportion of Aggregate Goal	Brannian et al. 2006; Eggers and Clark 2006
Tutuksuk River	Peak Aerial Survey	Proportion of Aggregate Goal	Brannian et al. 2006; Eggers and Clark 2006
Squirrel River	Peak Aerial Survey	Proportion of Aggregate Goal	Brannian et al. 2006; Eggers and Clark 2006

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Table 21.–Page 3 of 4.

System	Enumeration Method	Goal Development Method	References
COHO SALMON			
Kuskokwim Area			
Middle Fork Goodnews River	Weir Count	Percentile	ADF&G 2004
Kogrukluk River	Weir Count	Percentile	ADF&G 2004
Kwethluk River	Weir Count	Empirical Observation	Volk et al. 2009
Yukon River			
Delta Clearwater River	Boat Survey	Percentile	ADF&G 2004
Norton Sound			
Kwiniuk River	Peak Aerial Survey	Theoretical SRA	ADF&G 2004; Fair et al. 1999, memorandum[d]
Niukluk River/Ophir Creek	Peak Aerial Survey	Percentile	Conitz et al. 2015
North River (Unalakleet R.)	Peak Aerial Survey	Theoretical SRA	ADF&G 2004; Fair et al. 1999, memorandum[d]
PINK SALMON			
Kuskokwim Area			
There are no escapement goals for pink salmon in the Kuskokwim Management Area.			
Yukon River			
There are no escapement goals for pink salmon in the Yukon River drainage.			
Norton Sound			
Nome River (odd year)	Weir Count	Empirical Observation	ADF&G 2004
Nome River (even year)	Weir Count	Empirical Observation	ADF&G 2004; Fair et al. 1999, memorandum[d]
Kwiniuk River	Tower Count	Empirical Observation	ADF&G 2004
North River	Tower Count	Empirical Observation	ADF&G 2004
SOCKEYE SALMON			
Kuskokwim Area			
North (Main) Fork Goodnews River	Single Aerial Survey	Percentile	Conitz et al. 2015
Middle Fork Goodnews River	Weir Count	SRA	Brannian et al. 2006; Molyneaux and Brannian 2006
Kanektok River	Single Aerial Survey	Percentile	Conitz et al. 2015
Kogrukluk River	Weir Count	Percentile	Volk et al. 2009
Yukon River			
There are no escapement goals for Sockeye in the Yukon River drainage.			

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Table 21.–Page 4 of 4.

System	Enumeration Method	Goal Development Method	References
SOCKEYE SALMON (cont.)			
Norton Sound			
Salmon Lake/Grand Central River	Peak Aerial Survey	Empirical Observation	ADF&G 2004; Fair et al. 1999, memorandum[d]
Glacial Lake	Peak Aerial Survey	Empirical Observation	ADF&G 2004; Fair et al. 1999, memorandum[d]

Note: SRA = Spawner–recruit analysis.

[a] Typically single survey done around time of presumed peak of the run with no expansion of counts.

[b] Bue et al. (2012).

[c] One or more aerial surveys are attempted during the peak of the run. Peak count is used to index the escapement.

[d] Fair, L., C. Lean, F. DeCicco, J. Magdanz, and R. McLean. Proposed Salmon BEGs for Norton Sound and Kotzebue Sound. ADF&G Memorandum, March 24, 1999.

[e] Assessment project at Fishing Branch weir no longer operated, and JTC has not reached consensus on future of this goal. Will remain same as 2013 by default (JTC 2015).

Table 22.–Methods used to enumerate and develop escapement goals for Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) Chinook, chum, coho, pink, and sockeye salmon stocks.

System	Enumeration Method	Goal Development Method	References
CHINOOK SALMON			
AK Peninsula			
Nelson River	Weir, Peak Aerial Survey[a]	Spawning Habitat Model, SRA	Nelson et al. 2006
Chignik			
Chignik River	Weir Count	SRA	Hasbrouck and Clark, unpublished[b]; Witteveen et al. 2005
Kodiak			
Karluk River	Weir Count	SRA	Nemeth et al. 2010
Ayakulik River	Weir Count	SRA	Schaberg et al. 2016
CHUM SALMON			
AK Peninsula			
Northern District	Peak Aerial Survey	SRA	Honnold et al. 2007b; Nelson and Lloyd 2001; Nelson et al. 2006
Northwestern District	Peak Aerial Survey	SRA	Honnold et al. 2007b; Nelson et al. 2006
Southeastern District	Peak Aerial Survey	Percentile	Nelson and Lloyd 2001; Nelson et al. 2006
South Central District	Peak Aerial Survey	Percentile	Nelson and Lloyd 2001; Nelson et al. 2006
Southwestern District	Peak Aerial Survey	Percentile	Nelson and Lloyd 2001; Nelson et al. 2006
Chignik			
Entire Chignik Area	Peak Aerial Survey	Percentile	Schaberg et al. 2015b
Kodiak			
Kodiak Archipelago Aggregate	Peak Aerial Survey	Percentile	Schaberg et al. 2016
COHO SALMON			
AK Peninsula			
Nelson River	Peak Aerial Survey	Risk Analysis	Nelson et al. 2006
Ilnik River	Peak Aerial Survey	Risk Analysis	Witteveen et al. 2009
Chignik			
There are no coho salmon stocks with escapement goals in Chignik Area			
Kodiak			
Pasagshak River	Foot Survey	Theoretical SRA	Nemeth et al. 2010
Buskin River	Weir Count	SRA	Sagalkin et al. 2013a; Schmidt et al. 2014
Olds River	Foot Survey	Theoretical SRA	Nemeth et al. 2010
American River	Foot Survey	Theoretical SRA	Nemeth et al. 2010

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Table 22.–Page 2 of 3.

System	Enumeration Method	Goal Development Method	References
PINK SALMON			
AK Peninsula			
South Peninsula Total	Peak Aerial Survey	SRA	Schaberg et al. 2015a
Chignik			
Entire Chignik Area (odd year)	Peak Aerial Survey	Percentile	Schaberg et al. 2015b
Entire Chignik Area (even year)	Peak Aerial Survey	Percentile	Schaberg et al. 2015b
Kodiak			
Mainland District	Peak Aerial Survey	SRA	Nemeth et al. 2010
Kodiak Archipelago (odd year)	Peak Aerial Survey	SRA	Nemeth et al. 2010
Kodiak Archipelago (even year)	Peak Aerial Survey	SRA	Nemeth et al. 2010
SOCKEYE SALMON			
AK Peninsula			
Cinder River	Peak Aerial Survey	Percentile	Schaberg et al. 2015a
Ilnik River	Weir Count	Percentile, Euphotic Volume Model, Zooplankton Model	Nelson and Lloyd 2001; Nelson et al. 2006
Meshik River	Peak Aerial Survey	Percentile	Schaberg et al. 2015a
Sandy River	Weir Count	Percentile	Honnold et al. 2007b
Bear River Early Run	Weir Count	Spawning Habitat Model, Percentile, Euphotic Volume Model, Zooplankton Model, Lake Surface Area	Nelson et al. 2006
Bear River Late Run	Weir Count	Spawning Habitat Model, Percentile, Euphotic Volume Model, Zooplankton Model, Lake Surface Area	Nelson et al. 2006
Nelson River	Weir Count	SRA	Nelson et al. 2006
Christianson Lagoon	Peak Aerial Survey	Spawning Habitat Model	Nelson and Lloyd 2001; Nelson et al. 2006
Swanson Lagoon	Peak Aerial Survey	Percentile	Honnold et al. 2007b
North Creek	Peak Aerial Survey	Percentile	Nelson and Lloyd 2001; Nelson et al. 2006
Orzinski Lake	Weir Count	Percentile	Nelson and Lloyd 2001; Nelson et al. 2006
Mortensen Lagoon	Peak Aerial Survey	Spawning Habitat Model, Percentile, Euphotic Volume Model, Zooplankton Model, Lake Surface Area	Nelson and Lloyd 2001; Nelson et al. 2006
Thin Point Lake	Peak Aerial Survey	Spawning Habitat Model, Percentile, Euphotic Volume Model, Zooplankton Model, Lake Surface Area	Nelson and Lloyd 2001; Nelson et al. 2006
McLees Lake	Weir Count	Percentile	Witteveen et al. 2009
Chignik			
Chignik River Early Run	Weir Count	Yield Analysis, Euphotic Volume Model, Zooplankton Model	Sagalkin et al. 2013b
Chignik River Late Run	Weir Count	SRA, Euphotic Volume Model, Zooplankton Model	Witteveen et al. 2007

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System	Enumeration Method	Goal Development Method	References
SOCKEYE SALMON (cont.)			
Kodiak			
Malina Creek	Peak Aerial Survey	Percentile, Zooplankton Model	Nelson et al. 2005
Afognak (Litnik) River	Weir Count	SRA	Nelson et al. 2005
Karluk River Early Run	Weir Count	SRA	Schaberg et al. 2016
Karluk River Late Run	Weir Count	SRA	Schaberg et al. 2016
Ayakulik River Early Run	Weir Count	Zooplankton Model, Empirical Observation	Nemeth et al. 2010
Ayakulik River Late Run	Weir Count	Zooplankton Model, Empirical Observation	Nemeth et al. 2010
Upper Station River Early Run	Weir Count	SRA	Nemeth et al. 2010
Upper Station River Late Run	Weir Count	SRA	Nelson et al. 2005
Frazer Lake	Weir Count	SRA	Honnold et al. 2007a
Saltery Lake	Weir Count	SRA, Zooplankton Model	Nemeth et al. 2010
Pasagshak River	Peak Aerial Survey	Percentile	Nemeth et al. 2010
Buskin Lake	Weir Count	SRA	Nemeth et al. 2010

Note: SRA = Spawner–recruit analysis.

[a] One or more aerial surveys are attempted during the peak of the run. Peak count is used to index the escapement.

[b] Hasbrouck, J. J., and R. A. Clark. *Unpublished*. Escapement goal review of Chinook salmon in the Ayakulik, Chignik, and Karluk rivers. Alaska Department of Fish and Game, Report to the Alaska Board of Fisheries, December 2001, Anchorage.

FIGURES

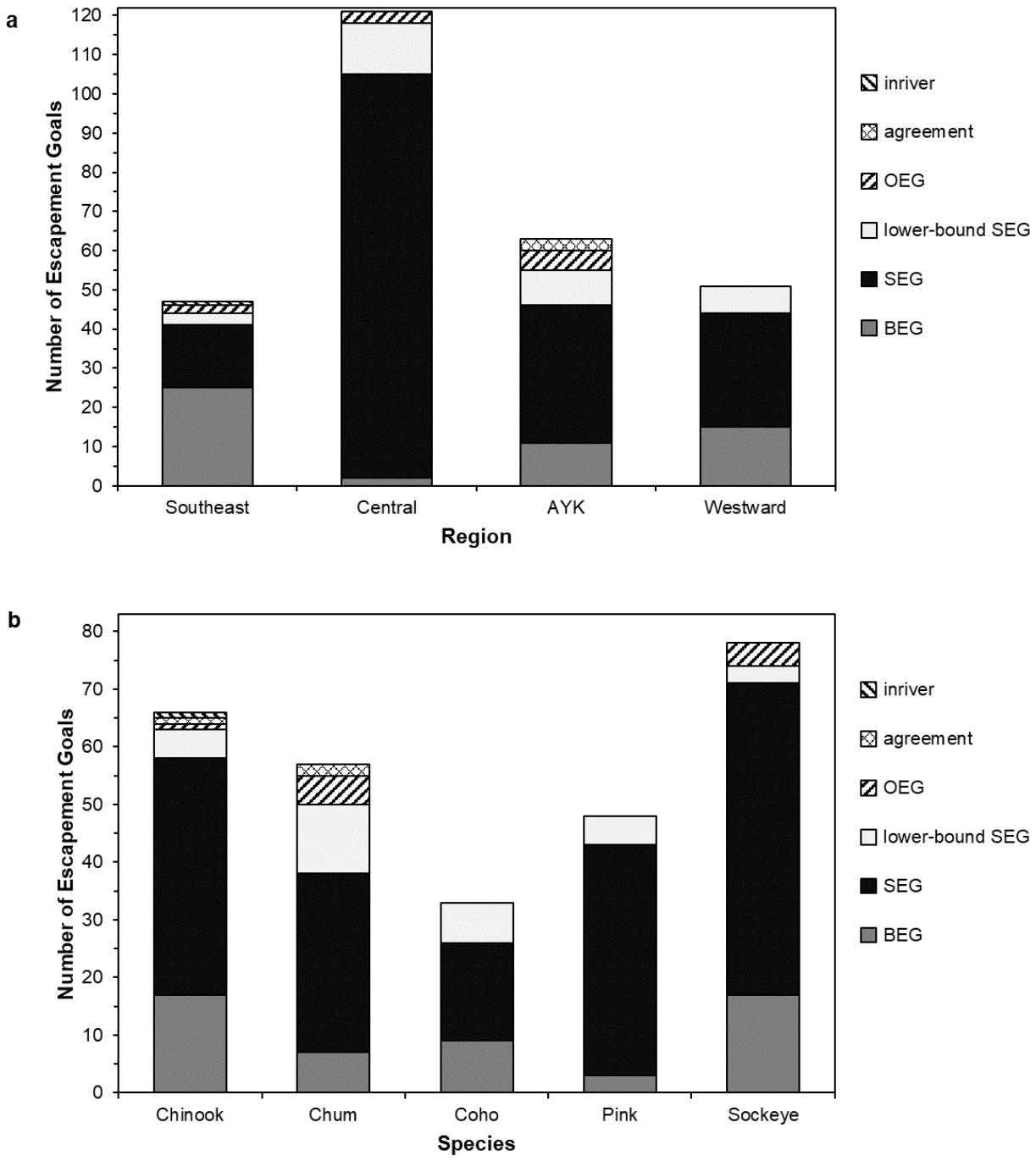

Figure 1.–Statewide summary of the 282 escapement goals in effect during the 2018 spawning season for the 4 Division of Commercial Fisheries by region (a) and by species (b).

Note: BEG is biological escapement goal, SEG is sustainable escapement goal, OEG is optimal escapement goal (set by the Alaska Board of Fisheries), agreement goals are established through international treaties, and inriver is inriver escapement goal (set by the Alaska Board of Fisheries).

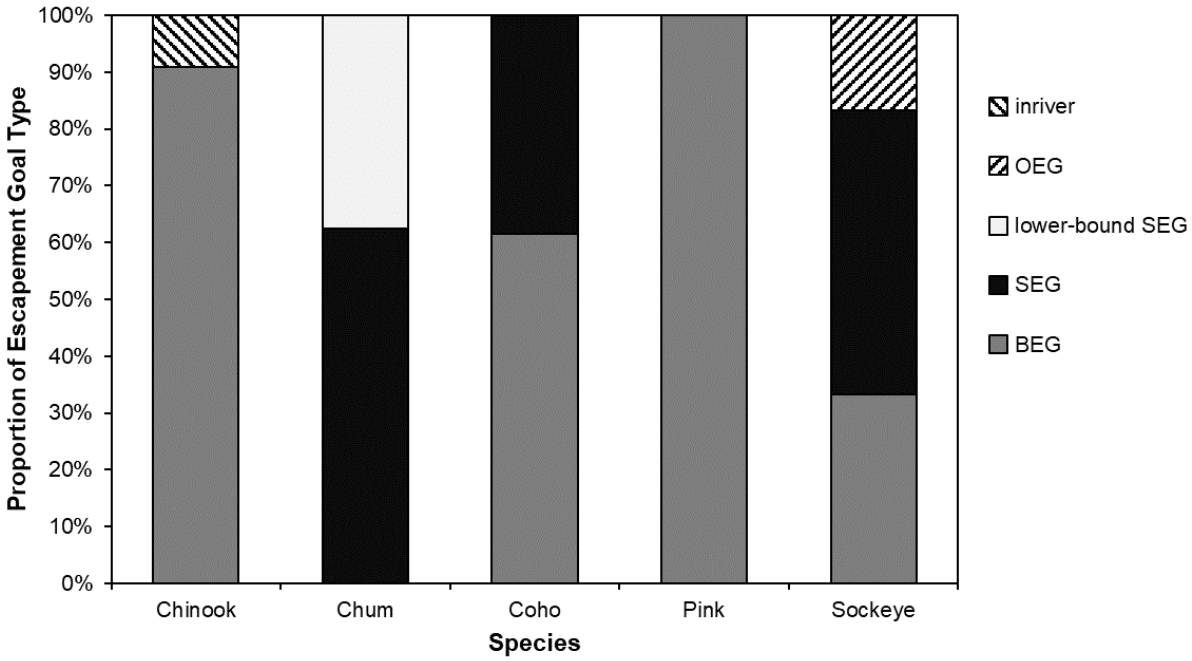

Figure 2.–Proportion of escapement goal types by species for the 47 escapement goals in Southeast Region.

Note: BEG is biological escapement goal, SEG is sustainable escapement goal, OEG is optimal escapement goal (set by the Alaska Board of Fisheries), and inriver is an inriver escapement goal (set by the Alaska Board of Fisheries).

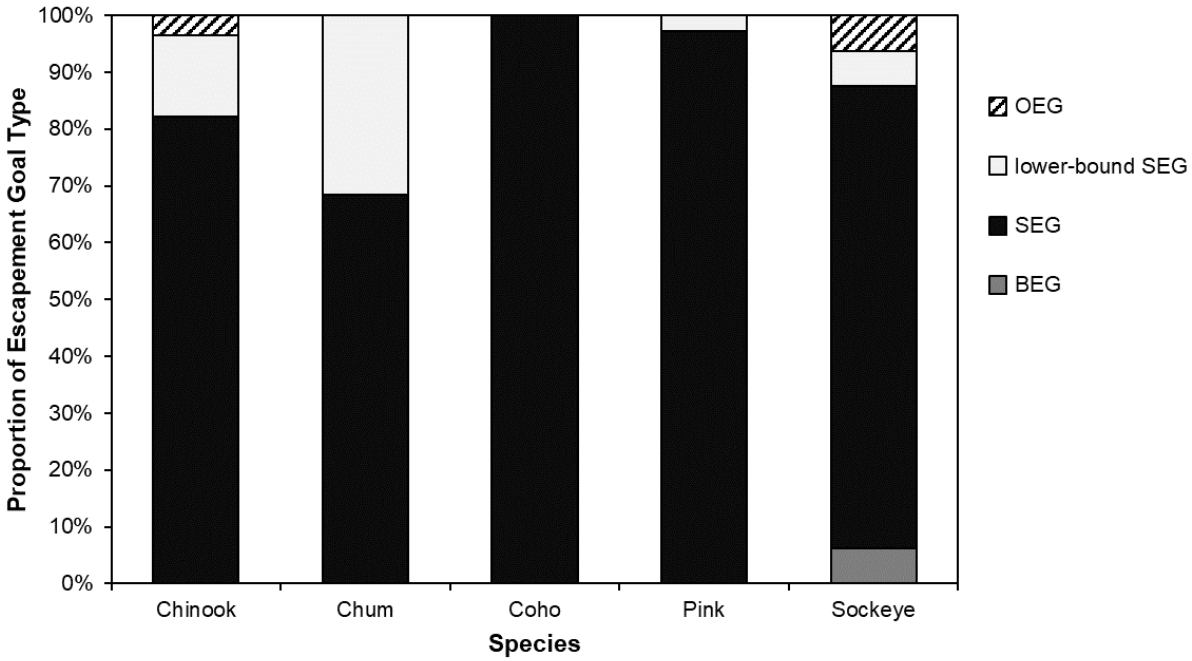

Figure 3.–Proportion of escapement goal types by species for the 121 escapement goals in Central Region (Bristol Bay, Cook Inlet, and Prince William Sound/Copper River).

Note: BEG is biological escapement goal, SEG is sustainable escapement goal, and OEG is optimal escapement goal (set by the Alaska Board of Fisheries).

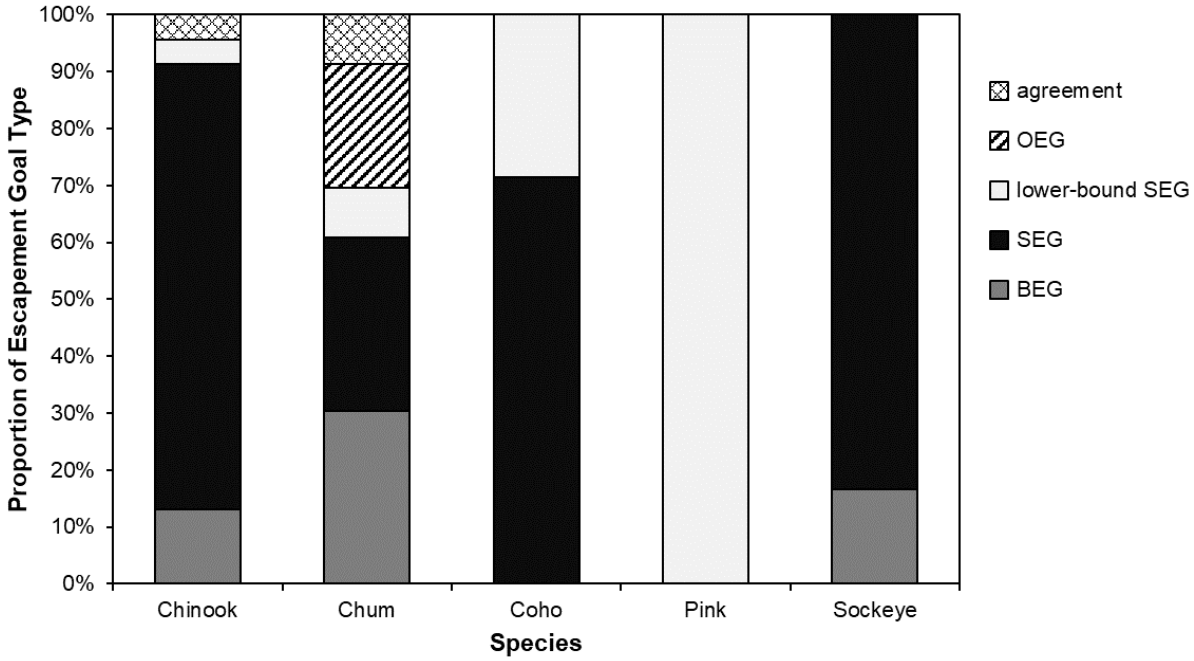

Figure 4.–Proportion of escapement goal types by species for the 63 escapement goals in Arctic–Yukon–Kuskokwim Region.

Note: BEG is biological escapement goal, SEG is sustainable escapement goal, OEG is optimal escapement goal (set by the Alaska Board of Fisheries), and agreement goals are established through international treaties.

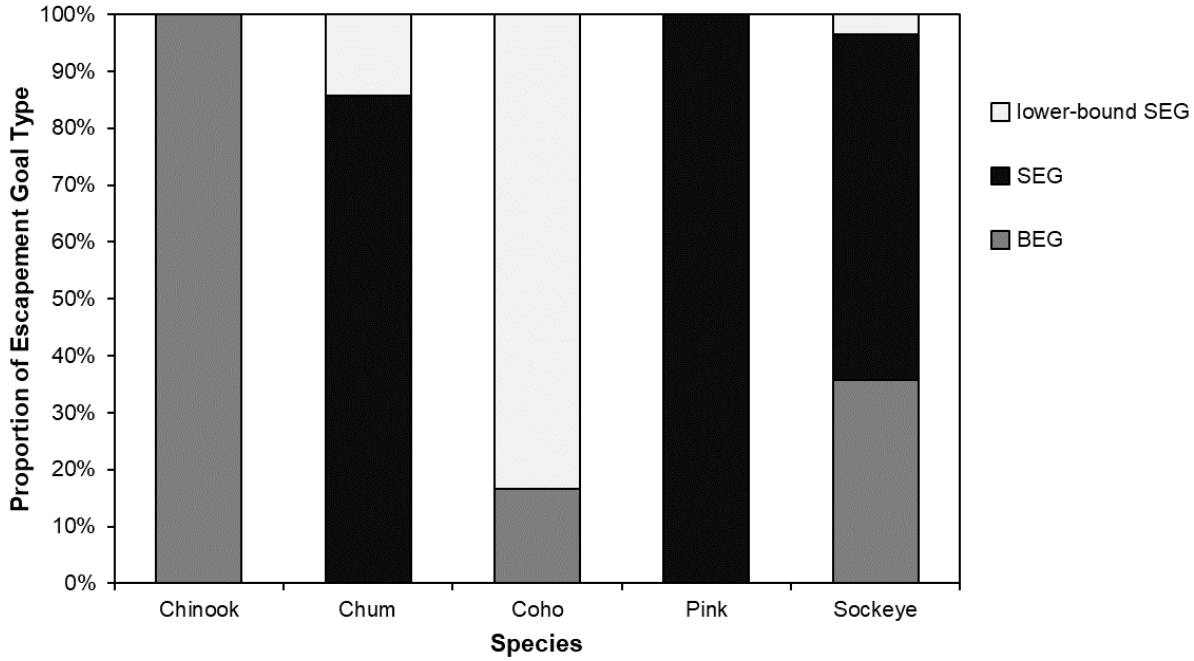

Figure 5.–Proportion of escapement goal types by species for the 51 escapement goals in Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas).

Note: BEG is biological escapement goal; SEG is sustainable escapement goal.

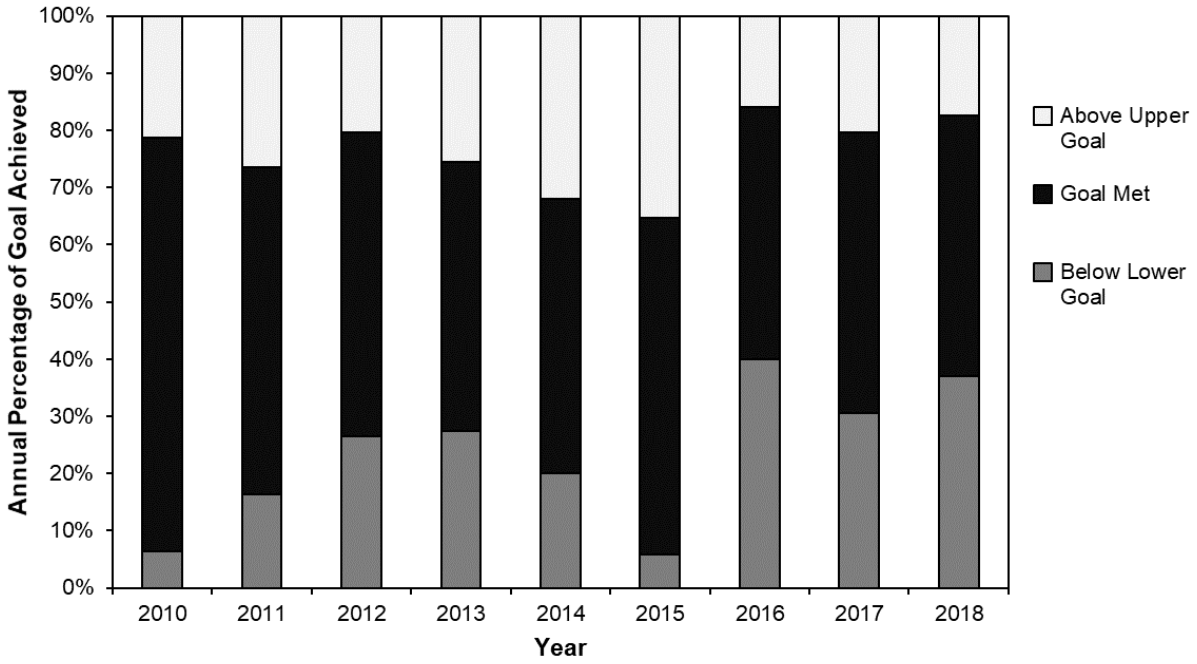

Figure 6.–Southeast Region salmon escapements compared against escapement goals for the years 2010 to 2018.

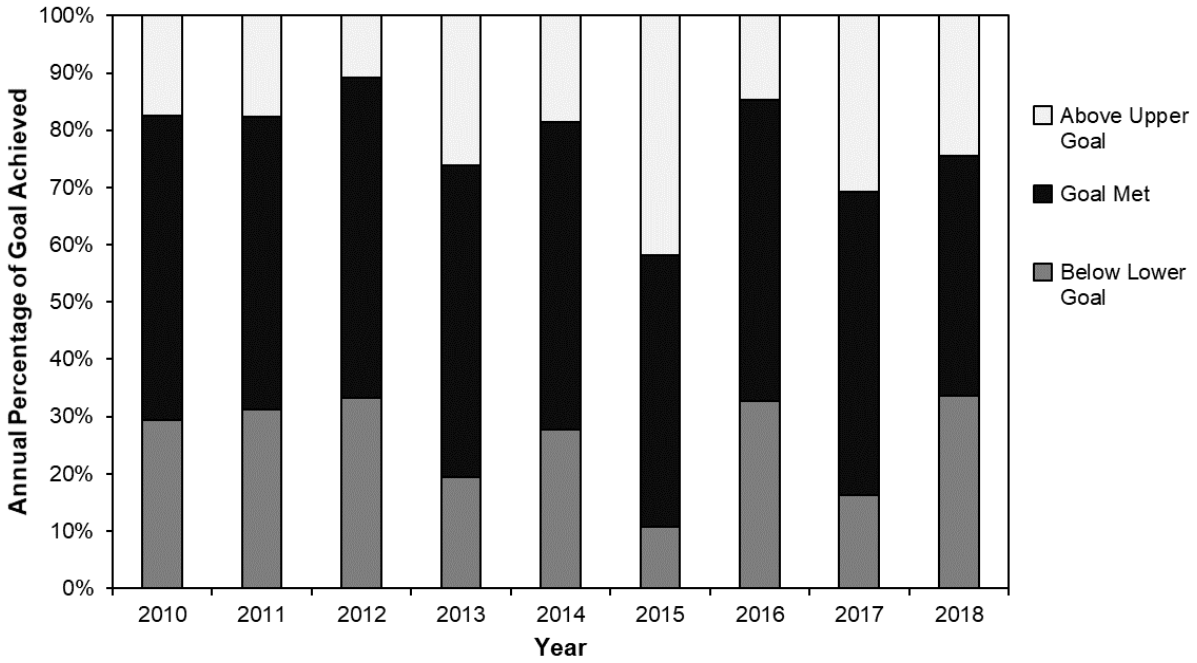

Figure 7.–Central Region (Bristol Bay, Cook Inlet, Prince William Sound/Copper River) salmon escapements compared against escapement goals for the years 2010 to 2018.

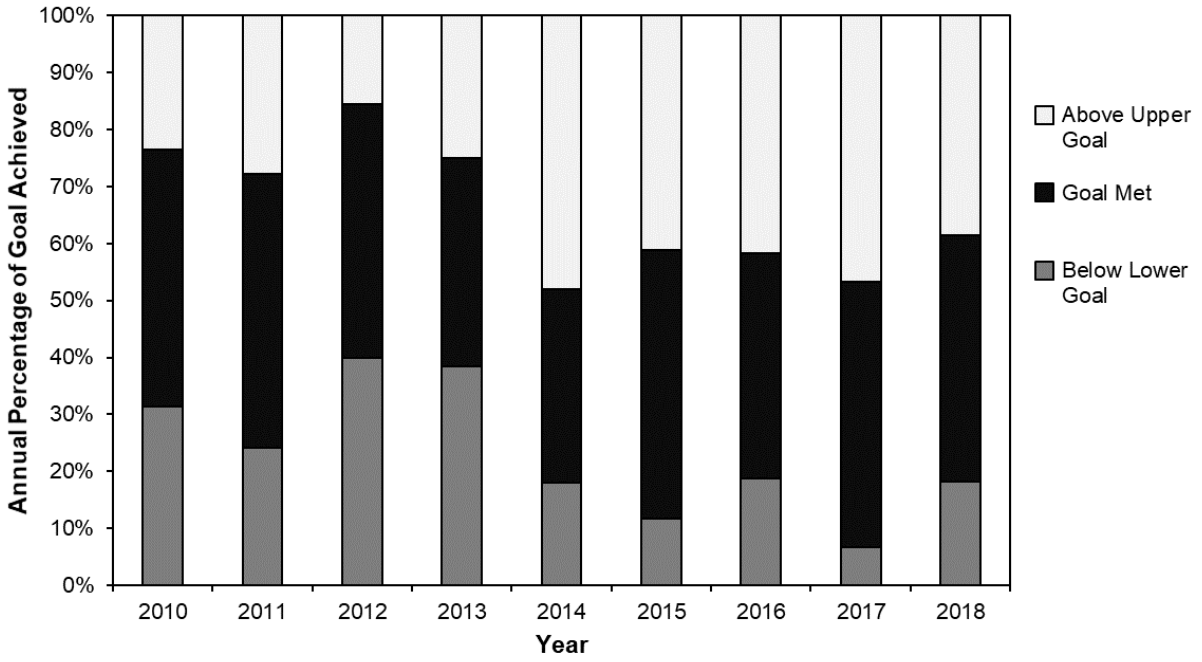

Figure 8.–Arctic–Yukon–Kuskokwim Region salmon escapements compared against escapement goals for the years 2010 to 2018.

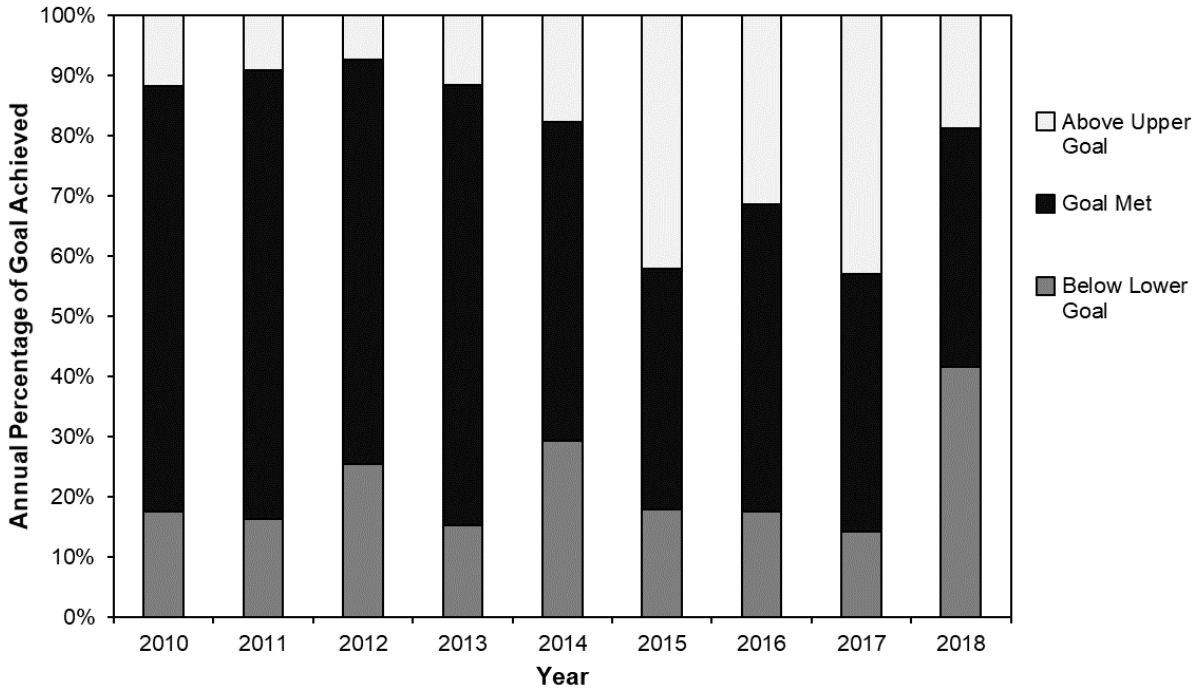

Figure 9.–Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) salmon escapements compared against escapement goals for the years 2010 to 2018.

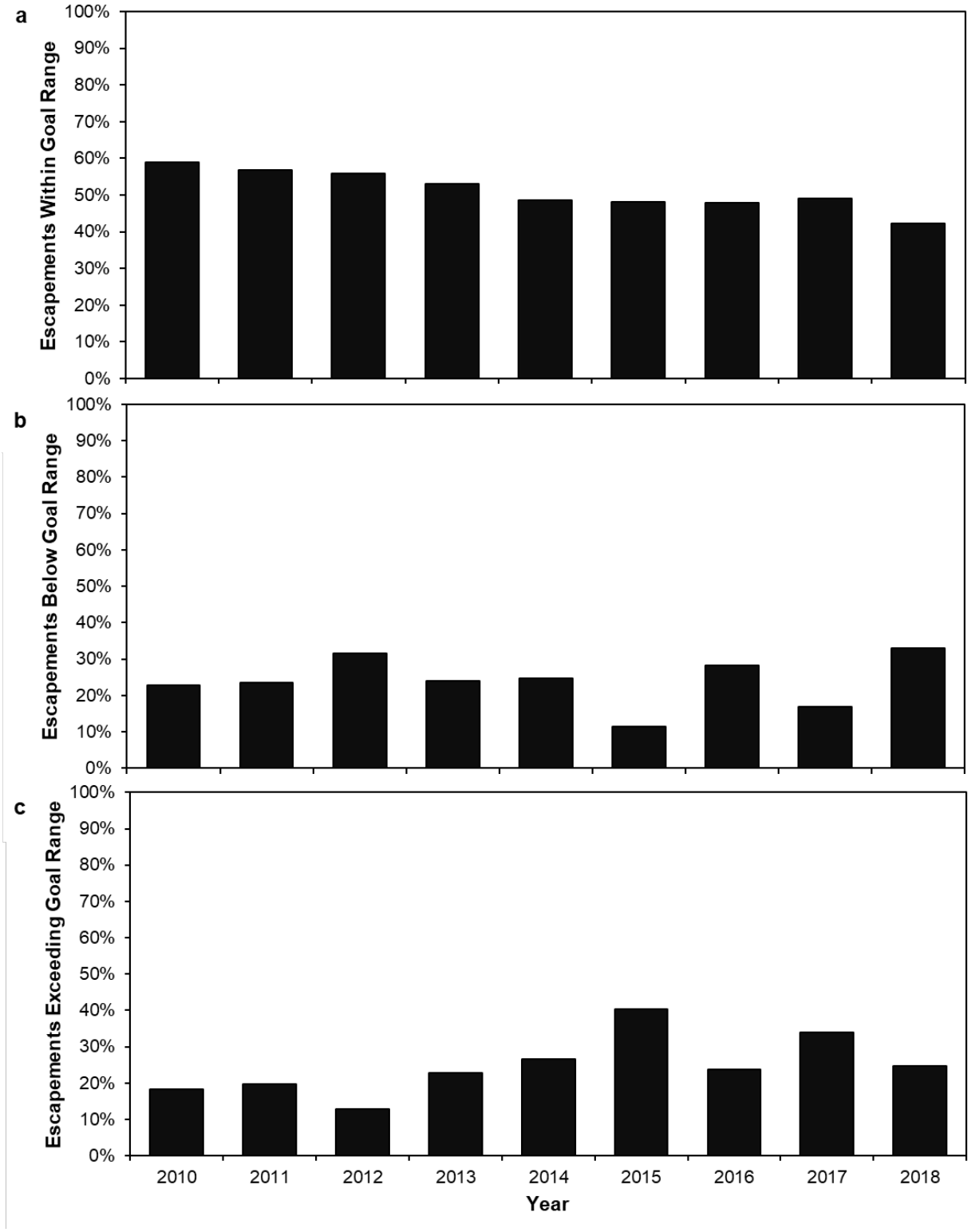

Figure 10.–Statewide summary by year of percentage of escapements that a) met the escapement goal (i.e., within goal range or above lower bound); b) were below lower bound of goal; or c) exceeded upper bound of goal range for the years 2010 to 2018.

APPENDIX A.
ESCAPEMENT GOAL MEMO FOR 2017–2018 BOARD OF FISHERIES MEETING CYCLE

MEMORANDUM

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

Division of Commercial Fisheries and Sport Fish

TO: Distribution

DATE: 3/20/2018

PHONE: 465-4210 (Kelley)
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FROM: Scott Kelley, Director
Division of Commercial Fisheries
Juneau

Tom Brookover, Director
Division of Sport Fish
Anchorage

SUBJECT: Approval of Final Escapement Goal Recommendations for Selected Prince William Sound and Southeast Alaska Salmon Stocks

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The purpose of this memo is to provide final approval to include the recommendations found in the reports listed below as Alaska Department of Fish and Game (ADF&G) salmon escapement goals for the Prince William Sound and Southeast Alaska areas with the exception of the Chinook salmon goal for the Copper River which will remain in place.

Haught, S. B., R. E. Brenner, J. W. Erickson, J. W. Savereide, and T. R. McKinley. 2017. Escapement goal review of Copper and Bering rivers, and Prince William Sound Pacific salmon stocks, 2017. Alaska Department of Fish and Game, Fishery Manuscript No. 17-10, Anchorage.

Heinl, S. C., E. L. Jones III, A. W. Piston, P. J. Richards, L. D. Shaul, B. W. Elliott, S. E. Miller, R. E. Brenner, and J. V. Nichols. 2017. Review of salmon escapement goals in Southeast Alaska, 2017. Alaska Department of Fish and Game, Fishery Manuscript Series No. 17-11, Anchorage.

The *Policy for the Management of Sustainable Salmon Fisheries* (SSFP; 5 AAC 39.222) directs the department to provide the Alaska Board of Fisheries with reports on status of salmon stocks and salmon fisheries, and identification of escapement goals, at regular meetings for each management area. Escapement goals were evaluated and recommended based on the SSFP and the *Policy for Statewide Salmon Escapement Goals* (5 AAC 39.223). These recommendations have been reviewed and accepted by the respective Regional Supervisors. Oral and written reports were presented to the Alaska Board of Fisheries regarding these escapement goal recommendations at the respective area meetings during the 2017–2018 cycle.

This memo signifies approval and acceptance of these recommendations as ADF&G established salmon escapement goals.

cc: Hasbrouck, Templin, Munro, Bowers, Olson, Taube, Fair, Lewis, Lum, Roach, Vania, Erickson, Heinl, Jones, McKinley, Nichols, Savereide