# Review of Salmon Escapement Goals in the Alaska Peninsula and Aleutian Islands Management Areas, 2025

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# Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

**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, $\chi^2$, 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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## REVIEW OF SALMON ESCAPEMENT GOALS IN THE ALASKA PENINSULA AND ALEUTIAN ISLANDS MANAGEMENT AREAS, 2025

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# ABSTRACT

In February 2025, an interdivisional team, including staff from the Divisions of Commercial Fisheries and Sport Fish, was formed to review Pacific salmon *Oncorhynchus* spp. escapement goals of Alaska Peninsula and Aleutian Islands Management areas (Area M). Of the 22 existing Area M salmon escapement goals evaluated, the team recommended leaving all 22 goals unchanged.

Keywords:    Pacific salmon, *Oncorhynchus*, escapement goal, Area M, Alaska Peninsula, stock status

# INTRODUCTION

Fisheries for Pacific salmon (*Oncorhynchus* spp.) in Alaska are managed by the Alaska Department of Fish and Game (ADF&G) to achieve sustainable spawning escapement levels. Returning salmon that are surplus to a targeted level of escapement are thus available for harvest in subsistence, commercial, and sport fisheries. The desired escapement levels are referred to as escapement goals and are scientifically determined with the goal of creating management targets that meet constitutional, statutory, and regulatory obligations.

This report documents the 2025 review of salmon escapement goals in the Alaska Peninsula and Aleutian Islands Management Areas (APAIMA; Area M) based on the Alaska Board of Fisheries (BOF) *Policy for the Management of Sustainable Salmon Fisheries* (SSFP; 5 AAC 39.222) and the *Policy for Statewide Salmon Escapement Goals* (EGP; 5 AAC 39.223). Directors of ADF&G's Divisions of Commercial Fisheries and Sport Fish  receive the findings of this review that are intended to take effect for salmon stocks returning in 2026. Salmon escapement goals in Area M were last reviewed in 2022 (Finkle et al. 2022). An important facet of the EGP is that the establishment of escapement goals is a collaboration between the BOF and ADF&G, with the BOF recognizing ADF&G's responsibility to establish biological escapement goals, sustainable escapement goals, and sustained escapement thresholds as singular or aggregate goals.

The different types of goals are defined in the SSFP as follows:

- biological escapement goal (BEG): the escapement that provides the greatest potential for maximum sustained yield
- sustainable escapement goal (SEG): a level of escapement, indicated by an index or an escapement estimate, that is known to provide for sustained yield over a 5- to 10-year period, used in situations where a BEG cannot be estimated or managed for
- sustained escapement thresholds (SET): a threshold level of escapement, below which the ability of the salmon stock to sustain itself is jeopardized
- aggregate goals: escapement goals for aggregates of individual spawning populations with similar productivity and vulnerability to fisheries and for salmon stocks managed as units

Since the implementation of the SSFP and EGP in 2001, escapement goals for Area M have gone through review 7 times (Nelson et al. 2006; Honnold et al. 2007; Witteveen et al. 2009; Sagalkin and Erickson 2013; Schaberg et al. 2015, 2019; Finkle et al. 2022). These reviews correspond with area BOF meetings, which have historically been on a 3-year cycle; however, the APAIMA cycle was altered in 2014 and the review in 2015 only reflected 2 additional years of data (2013–2014). The 2018 escapement goal review proceeded as planned, but the 2020 review cycle was delayed by the COVID-19 global pandemic, with the BOF meeting delayed until 2023.

## STUDY AREA

Area M is composed of 2 separate management areas: (1) the Alaska Peninsula Management Area and (2) the Aleutian Islands Management Area (Figure 1).

Alaska Peninsula Management Area includes all waters of Alaska from Cape Menshikof to Cape Sarichef and from a line extending from Scotch Cap through the easternmost tip of Ugamak Island to a line extending 135° southeast from Kupreanof Point (55°33.98′ N lat, 159°35.88′ W long; 5 AAC 09.100). The area is divided into 6 commercial fishing districts: the Southeastern (including the Southeastern District Mainland and the Shumagin Islands), South Central, Southwestern, Unimak, Northwestern, and Northern Districts (5 AAC 09.200). Commonly, aggregates of these districts are referred to as the South Peninsula and North Peninsula (Figure 2). These districts are further subdivided into sections and smaller statistical areas.

The Aleutian Islands Management Area includes the waters of Alaska surrounding the Aleutian Islands west of Cape Sarichef and west of a line extending from Scotch Cap through the easternmost tip of Ugamak Island, including waters surrounding the Pribilof Islands (5 AAC 12.100), except the Atka-Amlia Islands Area described in 5 AAC 11.101 (Figure 1). The Aleutian Islands area is separated into 4 commercial fishing districts: the Akutan, Unalaska, Umnak, and Adak Districts. There is little commercial salmon fishing in the area and very few of the 458 known salmon streams are consistently monitored for escapement (Holmes 1997).

## BACKGROUND

Nelson River on the North Peninsula is the only Chinook salmon system in Area M with a BEG of 2,400 to 5,000 fish, established in 2019 (Tables 1 and 2, Figure 3, Appendix A). Chinook salmon escapement at this system is primarily monitored by weir counts. There are no spawning stocks of Chinook salmon documented along the South Peninsula or Aleutian Islands. Findings from the 2022 review indicated no change was warranted to the goal.

A total of 5 stock-aggregate SEGs are currently established for chum salmon in Area M, which are Northern District 49,000–132,000 fish, Northwestern District 49,000–133,000 fish, South Central District 68,900–99,200 fish, Southeastern District 62,500–151,900 fish, and Southwestern District 86,900–159,500 fish (Tables 1 and 2, Figures 2 and 3, Appendices B–F). Past reviews established stock-aggregate goals composed of the respective sums of aerial survey escapement objectives for 136 individual index streams (Nelson and Lloyd 2001; Honnold et al. 2007). The 2018 review, using consistently surveyed peak aerial survey data, reduced the number of index streams used for South Peninsula district aggregate escapement goals (10 South Central, 26 Southeastern, and 19 Southwestern District streams; Schaberg et al. 2019). The 2022 review established stock-aggregate goals for the North Peninsula (18 Northern and 9 Northwestern District streams) also using streams that have been consistently surveyed using peak aerial survey data. There are no chum salmon escapement goals for the Aleutian Islands, where conducting aerial surveys to monitor escapement is problematic and costly.

Coho salmon are not monitored in some Area M streams due to the difficulty and expense of conducting surveys during late fall. However, there are SEGs in place for 2 coho stocks (Nelson River 19,000–29,000 fish, Ilnik River 9,000–24,000 fish) on the North Peninsula (Table 1, Figure 3, Appendices G and H). There are no coho salmon escapement goals for the Aleutian Islands where conducting aerial surveys has proven to be infeasible.

Pink salmon are generally a high-volume commercial species in Area M and managed as aggregates of streams (Appendix I). The 2 stock-aggregate pink salmon even- and odd-year escapement goals for the South Peninsula were converted to a single annual SEG of 1.75–4.00 million fish implemented in 2016 due to similarity in even- and odd- year run sizes following spawner–recruit analysis (Table 2, Figure 3, Appendix I; Schaberg et al. 2015). Harvest taken

2

before July 15 was also excluded in the run reconstruction to avoid inclusion of nonlocal pink salmon. The single stock-aggregate SEG is composed of the respective sums of aerial survey escapement objectives for 165 individual index streams (Nelson and Lloyd 2001; Honnold et al. 2007; Schaberg et al. 2015). Subsequent reviews in 2018 and 2022 resulted in no change to the goal (Schaberg et al. 2015; Finkle et al. 2022).

A total of 13 sockeye salmon stocks in Area M have escapement goals in place (11 SEGs: Bear River early and late, Christianson Lagoon, Cinder River, Ilnik River, Meshik River, Mortensen Lagoon, North Creek, Orzinski Lake, Sandy River, Thin Point Lake; 1 lower bound SEG: McLees Lake; and 1 BEG: Nelson River; Tables 1 and 2, Figure 3, Appendices J–U). Three of these stocks are located along the South Peninsula, 9 are located along the North Peninsula, and 1 is located on Unalaska Island (Figures 3 and 4). All of these stocks directly affect the daily management of associated fisheries and 6 of these systems (Bear River, Ilnik River, McLees Lake, Nelson River, Orzinski Lake, Sandy River) have maintained weirs for direct enumeration of escapement. Escapements of the remaining stocks are monitored and assessed via aerial surveys.

There are no stocks of concern in the Alaska Peninsula and Aleutian Islands Management Areas.

# OVERVIEW OF GENERAL ESCAPEMENT GOAL REVIEW METHODS

The general framework for reviewing escapement goals proceeds as follows:

1. Compile all available escapement harvest and age information since the last review.
2. Review the methods used to establish the existing goals, consider alternatives, and determine most appropriate methods to evaluate salmon stocks with existing goals.
3. Determine the most appropriate goal type (BEG or SEG) based on quality and quantity of available data.
4. Conduct analysis or reanalysis of existing goals.
5. Consider additional stocks that may have sufficient data to develop a goal.
6. Eliminate or discontinue escapement goals for stocks in which the goal is no longer appropriate.
7. Come to a consensus on goal changes or updates if needed.
8. Present goal change findings to the directors of the Divisions of Commercial Fisheries and Sport Fish for approval.

The current escapement goal review primarily examined recent (2022–2024) data and updated previous analyses. In February 2025, an interdivisional team including staff from the Divisions of Commercial Fisheries and Sport Fish (hereafter referred to as "the team") was formed to review the existing Area M salmon escapement goals.

The team compiled escapement, harvest, and age data associated with each stock or combination of stocks to be examined from research reports, management reports, and unpublished historical databases. Salmon escapement estimates were calculated through weir counts or aerial surveys in the APAIMA. Commercial fishery fish ticket receipts primarily provided salmon harvest estimates but also incorporated personal use (commercial harvest retained but not sold) and subsistence fishery estimates in addition to sport fishery estimates from the annual Statewide Harvest Survey, creel surveys, and guide logbooks. Limnological and spawning habitat data were compiled for each system when available. The team analyzed all escapement goals for Area M, evaluating the

type, quality (Table 3), and amount of data for each stock according to the SSFP and EGP. This evaluation assisted in determining the appropriate type of escapement goal to apply to each stock.

The team evaluated escapement goals for each stock differently depending on the type of goal and type and quality of data available. Typically, those systems with estimates of escapement, age composition, and stock-specific harvest are analyzed using spawner–recruit models and result in BEGs (excellent to good quality data; Table 3). Those systems with available escapement estimates but lacking both estimates of harvest and age composition are suited for SEGs and primarily accommodate the percentile approach (fair to poor quality data; Table 3; Clark et al. 2014). A detailed review of general methods used for those different types of goal is listed below.

The team assessed the initial analysis results to indicate if further review is needed. Following the team's recommendation for further review, a comprehensive analysis was conducted to indicate that changing a goal was warranted for systems with goals that have not been reviewed with the updated methodology, that did not have escapement within the escapement goal range over the previous 3 years and are not yet listed as a stock of concern, systems that have changed escapement monitoring methodology (e.g. weir vs. aerial survey), or systems that have had other significant changes in habitat quality or availability. Additional considerations for modifying an escapement goal for a system include analysis indicating that an increase in yield could result from changing the goal, the current goal has become unmanageable, or there is no directed fishery on the stock.

## ANALYSIS METHODS

### Spawner–Recruit Analysis

ADF&G develops most salmon BEGs using Ricker (1954) spawner–recruit models (Munro and Gatt 2025). Spawner–recruit model calculations are done within the framework of a Bayesian spawner–recruit ADF&G web-based software application.[1] As defined in the SSFP, BEGs are estimates of the number of spawners that provide the greatest potential for maximum sustained yield ($S_{MSY}$). For this review, most ranges surrounding $S_{MSY}$ were calculated as the escapement estimates that produced yields of at least 90% of MSY (Hilborn and Walters 1992; CTC 1999). The carrying capacity, defined as $S_{EQ}$, was estimated by the Ricker model as the escapement level (abundance of spawners) that provides an equivalent level of return or replacement when the stock has not been exploited (Quinn and Deriso 1999). Estimates of $S_{MSY}$ and $S_{EQ}$ were not used if the model fit the data poorly or if critical model assumptions were violated. Hilborn and Walters (1992), Quinn and Deriso (1999), and the Chinook Technical Committee (CTC 1999) provide good descriptions of the Ricker model and diagnostics to assess model fit. All Ricker models assumed a multiplicative error structure and were tested for residual autocorrelation, which was not corrected for if present based on the recommendations of Korman et al. (1995) for Alaskan sockeye salmon stocks. When auxiliary data were available (e.g., limnology or smolt abundance, age, and size), they were summarized, and biological trends were compared to estimates of adult production.

### Percentile Approach

The team developed SEGs mostly using the Percentile Approach, although other methods were employed depending on the system, species, and type of data available and will be described below. Recently, ADF&G reviewed and updated all goals based on the Percentile Approach with

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[1] Hamazaki, T. 2026. Pacific Salmon Escapement Goal Analyses (source: https://hamachan.shinyapps.io/Spawner_Recruit_Bayes/).

the updated Percentile Approach (Clark et al. 2014; Finkle et al. 2022; Schaberg et al. 2019). The Percentile Approach is based on the principle that a range of observed or indexed escapements that have been sustained over a period of time represents an SEG for a stock that has been fished and has probably sustained some unknown level of yields over the same time period. Thus, maintaining escapements of a stock within some range of percentiles observed over the time series of escapements represents a proxy for maintaining escapements within a range that encompasses $S_{MSY}$ (Clark et al. 2014). This method takes into account the measurement error of the data collection method (i.e., weirs and towers have lower measurement error than aerial or foot surveys), the contrast of the escapement data (i.e., the ratio of highest observed escapement to the lowest observed escapement), and the exploitation rate of the stock. Based on these criteria, a tier system designates what percentiles should define the SEG range.

| Tier | Escapement contrast | Measurement error | Harvest rate | SEG range |
|---|---|---|---|---|
| 1 | >8 | High (aerial and foot surveys) | Low to moderate (<0.40) | 20th–60th percentile |
| 2 | >8 | Low (weirs and towers) | Low to moderate (<0.40) | 15th–65th percentile |
| 3 | 4–8 | – | Low to moderate (<0.40) | 5th–65th percentile |

*Note*: Measurement error is not defined for Tier 3 in Clark et al. (2014); en dash = parameter not defined.

## Other Methodologies

For this review, as noted previously noted, the team used the updated Percentile Approach (Clark et al. 2014) or the spawner–recruit model (Ricker 1954; described previously) to develop most SEGs. Some historical methods used to corroborate salmon escapement goals have been previously reported. These methods include the euphotic volume model (Koenings and Kyle 1997) and the zooplankton biomass model (Koenings and Kyle 1997). For systems with current limnological data, these methods were updated, whereas for systems that lack current limnological data, these methods are referenced in the individual stock appendices.

The euphotic volume model, following the methods of Koenings and Kyle (1997), estimates adult escapement in part by determining the volume of lake water capable of primary production that could sustain a rearing population of juvenile sockeye salmon. The euphotic volume indicates a level of phytoplankton forage (primary production) available to zooplankton, and thus a level of zooplankton forage available for rearing juvenile fish. The model assumes that shallower light penetration would result in lower adult production compared to lakes with deeper light penetration because lakes with less photosynthetic capacity would not have the primary production necessary to sustain a larger rearing population. The euphotic volume model assumes there is no primary productivity below depths at which light has been attenuated by 99%.

The zooplankton biomass model, as described in Witteveen et al. (2009), estimates smolt production based on an available zooplankton biomass fed upon by smolt of a targeted threshold size, in a lake of known size (Koenings and Kyle 1997). The zooplankton biomass model, like the euphotic volume model, uses the premise that the availability of forage could affect survival of juvenile fish and subsequent adult production. Adult production is calculated using species fecundity and marine survival rates. The zooplankton biomass model assumes zooplankton is the only available forage.

These latter 2 habitat-based models were used only to assess the likely number of juvenile sockeye salmon that a system can support given available habitat or food. Results from these models were not generally used to determine escapement goals, but instead were used as a secondary, alternative analysis of production that was less dependent on adult fish count data. Results from the euphotic volume and zooplankton biomass models were reported as generally corroborating or not corroborating the primary analysis.

# FINDINGS

For this review, the team fully analyzed all Area M escapement goals regardless of findings from the last review cycle. This document discusses in detail only systems that had goals modified, created, or eliminated. The general overview of methods and criteria warranting modification are listed in *Overview of General Escapement Goal Review Methods*. Detailed information concerning stock status, methodology, goal history and current analysis are described in the individual appendices reported herein.

Northern and Northwestern Districts chum salmon; Ilnik and Nelson Rivers coho salmon; Christianson Lagoon, Ilnik River, Mortensen Lagoon, Orzinski Lake, Sandy River, and Thin Point Lake sockeye salmon goals were fully reviewed in 2023 (Finkle et al. 2022); and the team determined that they did not warrant change because the additional 4 years of new data presented no new findings. For goals last updated and reviewed in 2019 (Nelson Chinook salmon; South Central, Southeastern, and Southwestern Districts chum salmon; McLees Lake and North Creek sockeye salmon), the team also determined that Percentile Approach analyses using the additional years of data presented no new findings and no changes were warranted to those goals. It should be noted that for Nelson River Chinook salmon age data have not been collected since 2014; therefore, an accurate brood table could not be maintained to conduct spawner–recruit analysis, subsequently, the Percentile Approach was used.

South Peninsula pink salmon; and Bear River early- and late-run, Cinder River, Meshik River, and Nelson River sockeye salmon goals were last revised prior to 2017 (Table 1). Spawner–recruit analyses incorporating recent years of new data for South Peninsula pink salmon, and Bear River late-run and Nelson River sockeye salmon yielded estimates of $S_{MSY}$ that corroborated the existing goals (Appendices I, J, and Q), which the team agreed indicated no changes were warranted to those goals. Findings from updated Percentile Approach analyses for Cinder and Meshik Rivers sockeye salmon also corroborated the exiting goals (Table 4). Euphotic volume and zooplankton biomass models incorporating recent limnological data and percentile approach analysis supported the existing Bear River early-run sockeye salmon escapement goal (Appendix J).

The team determined that findings from this review indicated that no changes are warranted to any of the existing goals and the addition of new goals is also not warranted. Area M systems have not significantly changed since the last review and results of the current escapement goal analysis corroborated that the existing goals continue to target sustainable yields for Area M fisheries. Because of this, there are no findings to report; historical goal changes, updated analyses, and supporting information are referenced for all systems in system-specific appendices as listed in Table 1.

# SUMMARY OF STAFF FINDINGS TO DIRECTORS

In summary, this comprehensive review of the 22 existing escapement goals in the APAIMA resulted in all goals remaining unchanged.

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**TABLES AND FIGURES**

Table 1.–Alaska Peninsula and Aleutian Islands Management Areas escapement goals analyzed, species, system, year adopted, change criteria, and appendix link.

| Species | System | Year adopted | Stock of concern (year) | Change | Change criteria[a] | Appendix |
|---|---|---|---|---|---|---|
| Chinook | Nelson | 2019 | No | None | NA | A |
| Chum | Northern District | 2023 | No | None | NA | B |
| Chum | Northwestern District | 2023 | No | None | NA | C |
| Chum | South Central District | 2019 | No | None | NA | D |
| Chum | Southeastern District | 2019 | No | None | NA | E |
| Chum | Southwestern District | 2019 | No | None | NA | F |
| Coho | Ilnik River | 2023 | No | None | NA | G |
| Coho | Nelson River | 2023 | No | None | NA | H |
| Pink | South Peninsula total | 2016 | No | None | NA | I |
| Sockeye | Bear River early run | 2004 | No | None | NA | J |
| Sockeye | Bear River late run | 2004 | No | None | NA | J |
| Sockeye | Christianson Lagoon | 2023 | No | None | NA | K |
| Sockeye | Cinder River | 2016 | No | None | NA | L |
| Sockeye | Ilnik River | 2023 | No | None | NA | M |
| Sockeye | McLees Lake | 2019 | No | None | NA | N |
| Sockeye | Meshik River | 2016 | No | None | NA | O |
| Sockeye | Mortensen Lagoon | 2023 | No | None | NA | P |
| Sockeye | Nelson River | 2004 | No | None | NA | Q |
| Sockeye | North Creek | 2019 | No | None | NA | R |
| Sockeye | Orzinski Lake | 2023 | No | None | NA | S |
| Sockeye | Sandy River | 2023 | No | None | NA | T |
| Sockeye | Thin Point Lake | 2023 | No | None | NA | U |

[a] Change criteria codes:
   1. Analysis indicates increase in yield by changing escapement goal.
   2. Current goal is unmanageable and new escapement goal is needed.
   3. No directed fishery on stock.
   4. Changes in enumeration methods (i.e. peak aerial survey to weir).
   5. Significant revisions to datasets used to assess escapement goals.
   6. Long term or consistent changes in habitat quality/availability (i.e., Schaberg et al. 2019).

Table 2.–Alaska Peninsula and Aleutian Islands Management Areas salmon escapements (2016–2024), current escapement goals, and review recommendations for 2025.

| System | 2024 Goal range Lower | Upper | Type | Initial Year | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 Review |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CHINOOK SALMON** | | | | | | | | | | | | | | |
| Nelson River | 2,400 | 5,000 | BEG | 2019 | 4,618 | 1,852 | 5,022 | 12,163 | 2,498 | 4,839 | 5,285 | 4,078 | 3,542 | No change |
| | | | | | | | | | | | | | | |
| **CHUM SALMON** | | | | | | | | | | | | | | |
| Northern District[a] | 49,000 | 132,000 | SEG | 2023 | 277,674 | 234,440 | 236,109 | 208,397 | 118,815 | 94,856 | 163,882 | **128,000** | **41,200** | No change |
| Northwestern District[a] | 49,000 | 133,000 | SEG | 2023 | 113,250 | 195,700 | 90,705 | 173,600 | 62,100 | 68,050 | 50,900 | **74,600** | **85,275** | No change |
| South Central District[a] | 68,900 | 99,200 | SEG | 2019 | 248,360 | 810,053 | 238,720 | 226,800 | 93,500 | **51,900** | **140,600** | **151,200** | **178,480** | No change |
| Southeastern District[a] | 62,500 | 151,900 | SEG | 2019 | 150,456 | 592,460 | 71,323 | 106,100 | **108,800** | **141,550** | **130,800** | **163,600** | **56,900** | No change |
| Southwestern District[a] | 86,900 | 159,500 | SEG | 2019 | 220,060 | 363,000 | 32,900 | **88,300** | 84,550 | 114,600 | **57,250** | **133,100** | **74,560** | No change |
| | | | | | | | | | | | | | | |
| **COHO SALMON** | | | | | | | | | | | | | | |
| Ilnik River | 9,000 | 24,000 | SEG | 2023 | 28,000 | 6,000 | 122,000 | 24,000 | 45,000 | 11,000 | 36,200 | NS | NS | No change |
| Nelson River | 19,000 | 29,000 | SEG | 2023 | 45,000 | 19,000 | 44,000 | 23,000 | 23,000 | 26,000 | 21,500 | 5,000 | NS | No change |
| | | | | | | | | | | | | | | |
| **PINK SALMON** | | | | | | | | | | | | | | |
| South Peninsula total | 1,750,000 | 4,000,000 | SEG | 2016 | 1,038,160 | 5,663,637 | 732,422 | 4,236,700 | 3,209,750 | 4,388,100 | 5,177,350 | 5,914,600 | 2,486,157 | No change |
| | | | | | | | | | | | | | | |
| **SOCKEYE SALMON** | | | | | | | | | | | | | | |
| Bear River Early Run | 176,000 | 293,000 | SEG | 2004 | 293,280 | 585,840 | 324,093 | 294,727 | 299,198 | 387,240 | 368,072 | 280,626 | 208,459 | No change |
| Bear River Late Run | 117,000 | 195,000 | SEG | 2004 | 139,720 | 214,460 | 232,907 | 205,273 | 200,802 | 192,760 | 148,928 | 170,703 | 245,768 | No change |
| Christianson Lagoon | 23,000 | 50,000 | SEG | 2023 | 111,700 | 290,600 | 26,100 | 39,300 | 22,800 | 61,100 | 40,700 | 79,600 | 55,000 | No change |
| Cinder River[b] | 36,000 | 94,000 | SEG | 2016 | 200,500 | 222,600 | 189,000 | 95,025 | 115,800 | 54,500 | 102,500 | 54,700 | 35,200 | No change |
| Ilnik River[c] | 40,000 | 75,000 | SEG | 2023 | 124,000 | 238,000 | 81,000 | 75,000 | 41,000 | 70,000 | 110,500 | 109,021 | 99,694 | No change |
| McLees Lake[d] | 10,000 | | LB SEG | 2019 | 39,892 | 13,195 | NW | NW | 5,037 | 16,173 | 14,015 | 26,945 | NW | No change |
| Meshik River[e] | 48,000 | 86,000 | SEG | 2016 | 112,800 | 191,525 | 133,700 | 103,200 | 63,350 | 117,500 | 112,700 | 79,100 | 48,000 | No change |
| Mortensen Lagoon | 1,400 | 5,700 | SEG | 2023 | 13,000 | 15,500 | 1,200 | 800 | 800 | 1,500 | 3,900 | 5,100 | NS | No change |
| Nelson River | 97,000 | 219,000 | BEG | 2004 | 300,000 | 381,000 | 221,000 | 115,000 | 185,000 | 110,000 | 98,000 | 250,213 | 754,766 | No change |
| North Creek | 7,500 | 10,000 | SEG | 2019 | 21,000 | 5,800 | 8,300 | 11,000 | 8,200 | 9,100 | 9,900 | 11,200 | 500 | No change |
| Orzinski Lake | 14,000 | 28,000 | SEG | 2023 | 21,019 | 20,989 | 2,817 | 4,367 | 6,819 | 21,839 | 17,283 | 19,512 | 14,571 | No change |
| Sandy River | 37,000 | 69,000 | SEG | 2023 | 170,000 | 145,000 | 35,000 | 71,000 | 60,000 | 52,657 | 44,000 | 48,757 | 38,007 | No change |
| Thin Point Lake | 9,000 | 19,000 | SEG | 2023 | 36,400 | 39,300 | 1,000 | 9,600 | 9,900 | 18,900 | 11,900 | 6,870 | 26,920 | No change |

-continued-

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Table 1.–Page 2 of 2.

*Note*: NS = No survey flown; NW = No weir installed, LB SEG = lower-bound SEG. Escapement values are based on the method used to evaluate the escapement goal in that year; shaded escapements did not meet the goal established for that year. Bold text represents aggregate escapements lacking the full suite of index streams.

[a]  AK peninsula chum salmon escapement goals are determined from an escapement index of consistently surveyed streams that contribute more than 5% to the overall district escapement as described in Schaberg et al. (2019) for southern district stocks and in Finkle et al. (2022) for northern district stocks. Prior to using index streams, total indexed escapements were used for determining the escapement goals and are presented for those years.

[b]  Cinder River sockeye salmon escapement includes Mud Creek. Counts are from streams that were consistently sampled ≥10 years and that contributed ≥5% to the total historical aggregate peak aerial survey escapement.

[c]  Ilnik River sockeye salmon counts in 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.

[d]  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.

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

Table 3.–General criteria used to assess data quality in developing Area M salmon escapement goals.

| Data quality | Criteria |
| --- | --- |
| Excellent | Escapement, harvest, and age all estimated with relatively good accuracy and precision (i.e., escapement estimated by a weir or hydroacoustics; harvest estimated by Statewide Harvest Survey or fish tickets); escapement and return estimates can be derived for a sufficient time series to construct a brood table and estimate $S_{MSY}$. |
| Good | Escapement, harvest, and age estimated with reasonably good accuracy and/or precision (i.e., escapement estimated by capture-recapture experiment or multiple foot/aerial surveys); no age data or data of questionable accuracy and/or precision; data may allow construction of brood table; data time series relatively short to accurately estimate $S_{MSY}$. |
| Fair | Escapement estimated or indexed, and harvest estimated with reasonably good accuracy, but precision lacking for one, if not both; no age data; data insufficient to estimate total return and construct brood table. |
| Poor | Escapement indexed (i.e., single foot/aerial survey) such that the index provides a fairly reliable measure of escapement; no harvest and age data. |

Table 4.–Percentile Approach analysis results for M stocks.

| Species and system | Current goal | | | Year last revised | 2025 analysis results | | Tier | Percentiles |
|---|---|---|---|---|---|---|---|---|
| | Lower | Upper | Type | | Lower | Upper | | |
| **CHINOOK SALMON** | | | | | | | | |
| Nelson River | 2,400 | 5,000 | BEG | 2019 | 1,983 | 4,842 | 2 | 15th and 65th |
| | | | | | | | | |
| **CHUM SALMON** | | | | | | | | |
| Northern District | 49,000 | 132,000 | SEG | 2023 | 49,000 | 134,500 | 3 | 5th and 65th |
| Northwestern District | 49,000 | 133,000 | SEG | 2023 | 49,000 | 135,500 | 3 | 5th and 65th |
| South Central District | 68,900 | 99,200 | SEG | 2019 | 69,000 | 100,000 | 1 | 20th and 60th |
| Southeastern District | 62,500 | 151,900 | SEG | 2019 | 60,000 | 151,000 | 1 | 20th and 60th |
| Southwestern District | 86,900 | 159,500 | SEG | 2019 | 85,000 | 155,000 | 3 | 5th and 65th |
| | | | | | | | | |
| **COHO SALMON** | | | | | | | | |
| Ilnik River | 9,000 | 24,000 | SEG | 2023 | 9,400 | 25,000 | 1 | 20th and 60th |
| Nelson River | 19,000 | 29,000 | SEG | 2023 | 17,900 | 24,000 | 2 | 15th and 65th |
| | | | | | | | | |
| **SOCKEYE SALMON** | | | | | | | | |
| Christianson Lagoon | 23,000 | 50,000 | SEG | 2023 | 22,000 | 43,000 | 1 | 20th and 60th |
| Cinder River | 36,000 | 94,000 | SEG | 2016 | 46,000 | 104,000 | 1 | 20th and 60th |
| Ilnik River | 40,000 | 75,000 | SEG | 2023 | 44,000 | 81,450 | 2 | 15th and 65th |
| McLees Lake | 10,000 | | LB SEG | 2019 | 12,000 | 27,000 | 2 | 15th and 65th |
| Meshik River | 48,000 | 86,000 | SEG | 2016 | 49,300 | 112,800 | 1 | 20th and 60th |
| Mortensen Lagoon | 1,400 | 5,700 | SEG | 2023 | 1,270 | 4,000 | 1 | 20th and 60th |
| North Creek | 7,500 | 10,000 | SEG | 2019 | 7,500 | 10,000 | 1 | 20th and 60th |
| Orzinski Lake | 14,000 | 28,000 | SEG | 2023 | 15,000 | 25,000 | 2 | 15th and 65th |
| Sandy River | 37,000 | 69,000 | SEG | 2023 | 31,000 | 59,000 | 3 | 5th and 65th |
| Thin Point Lake | 9,000 | 19,000 | SEG | 2023 | 8,000 | 17,000 | 1 | 20th and 60th |

*Note*: No goals warranted change from these Percentile Approach analyses.
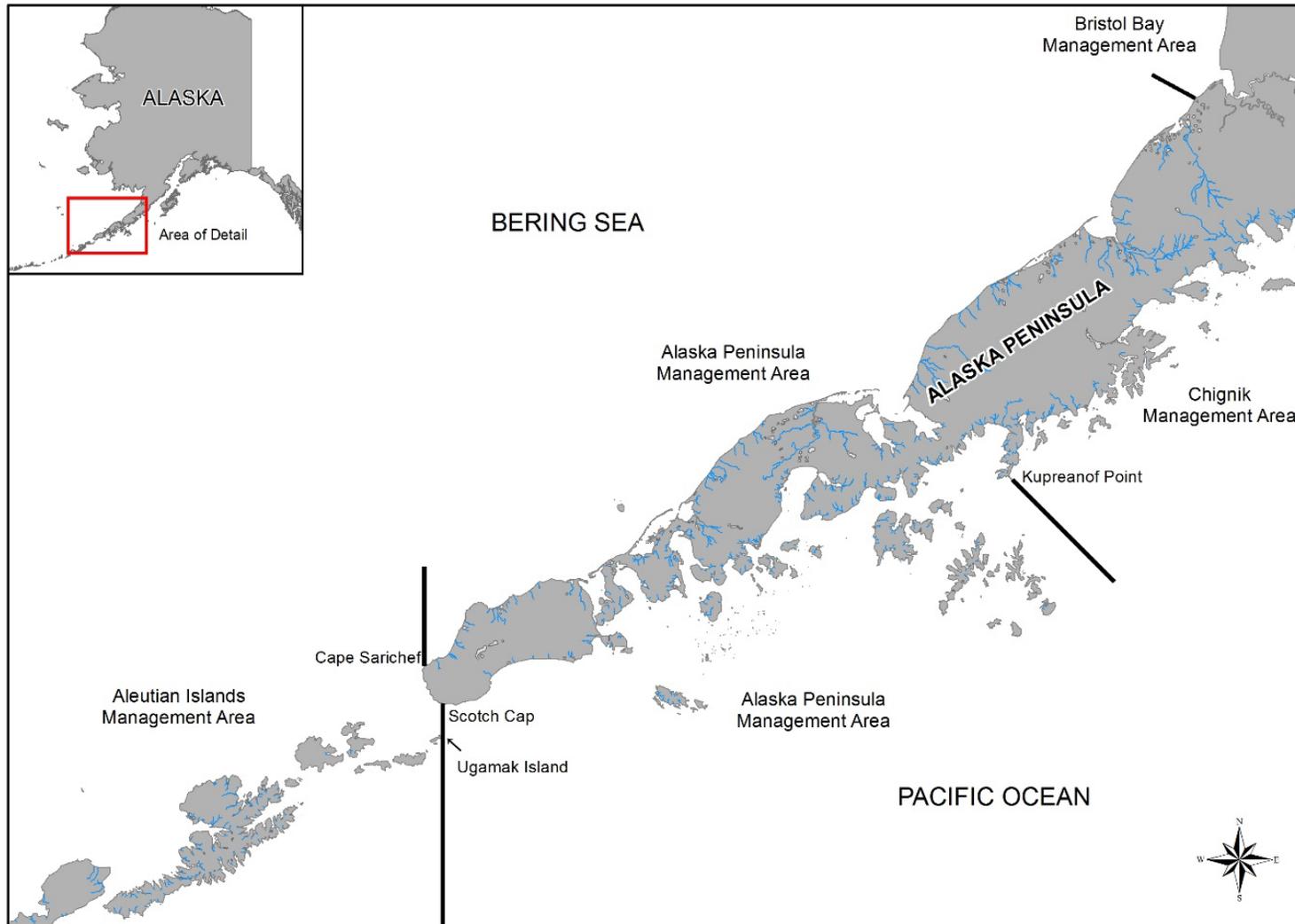
Figure 1.–Map of the Alaska Peninsula and Aleutian Islands Management areas.
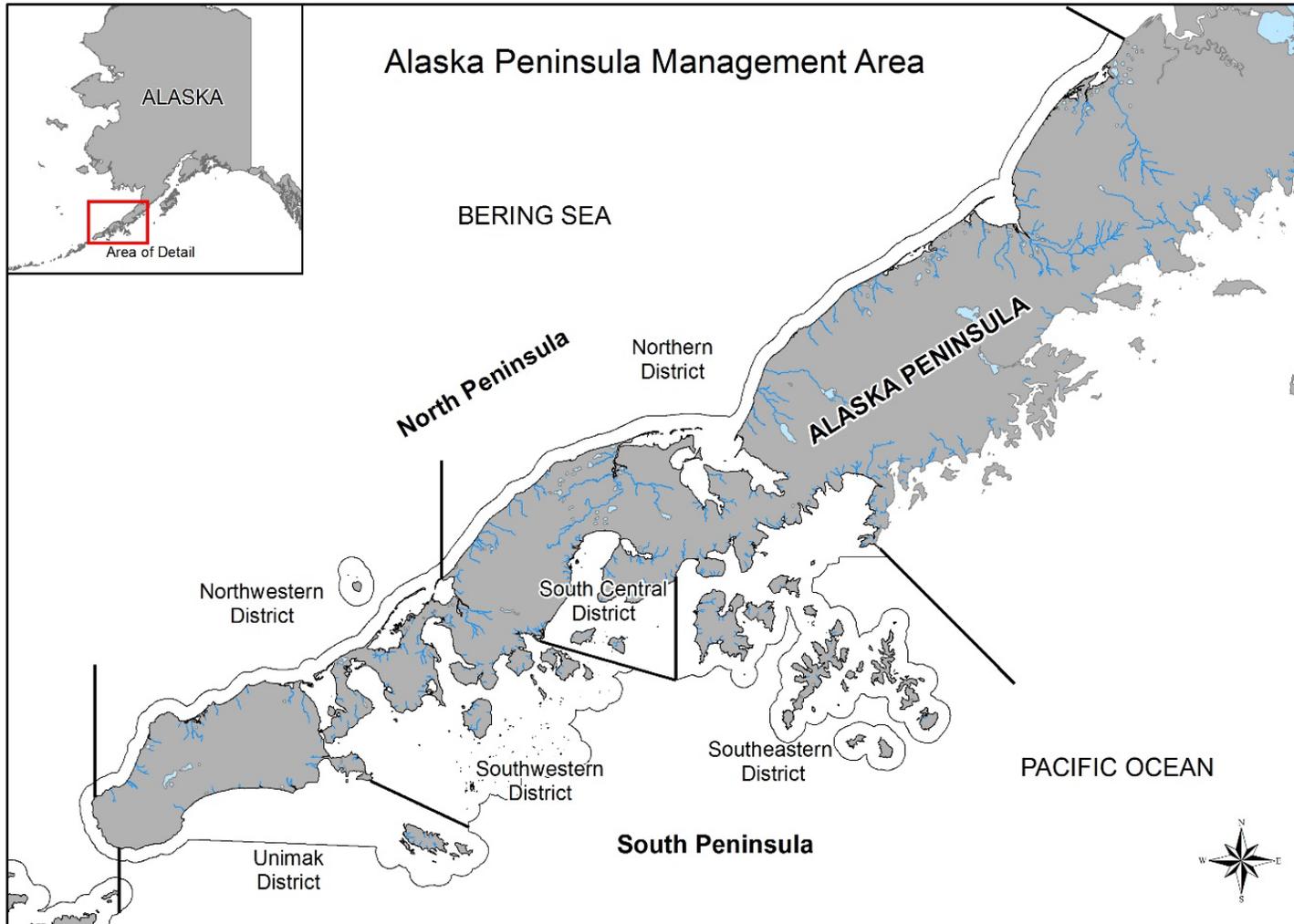
Figure 2.–Map of the Alaska Peninsula Management Area with commercial salmon fishing districts depicted.
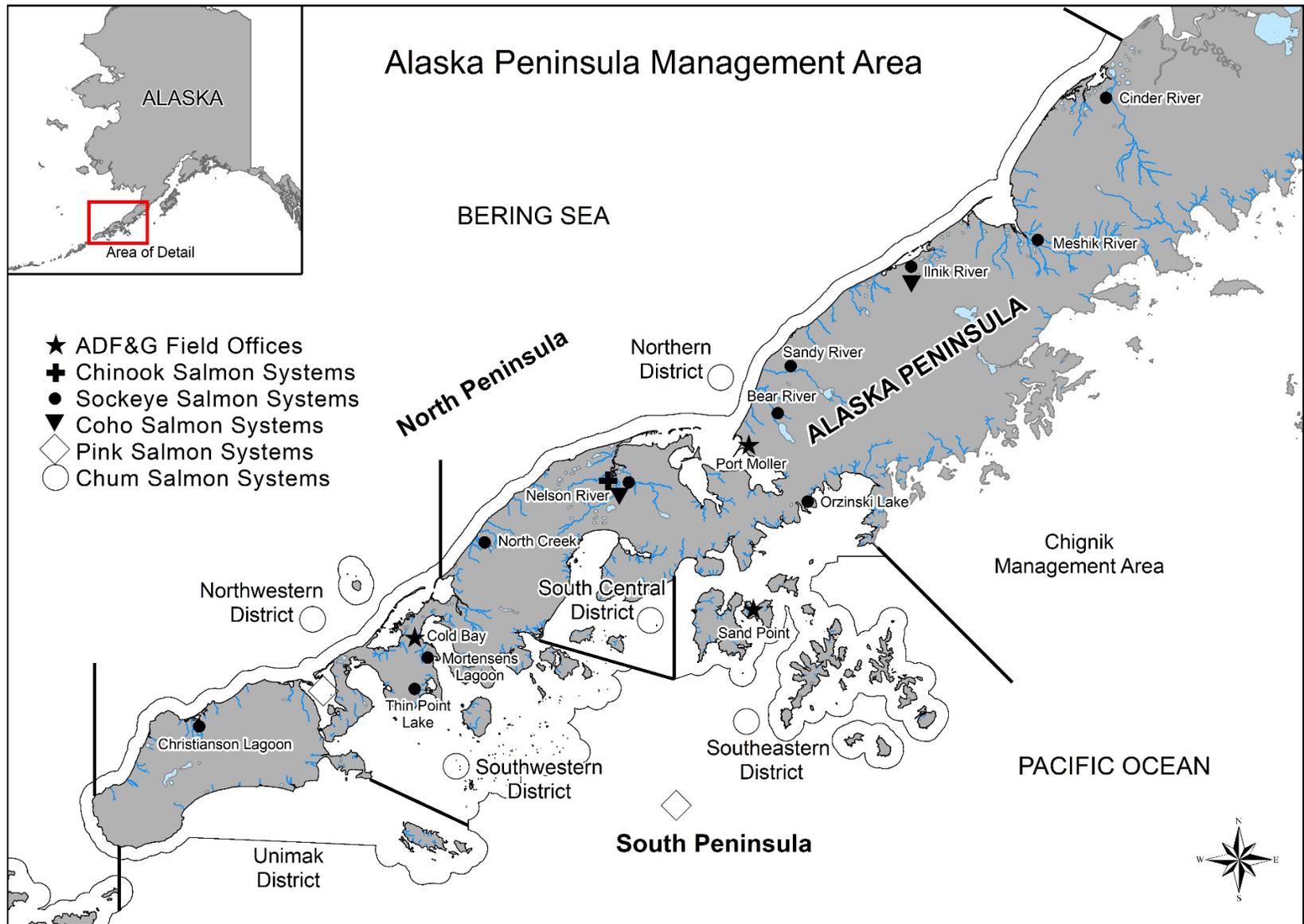
Figure 3.–Map of the Alaska Peninsula Management Area with salmon systems that currently have escapement goals depicted.
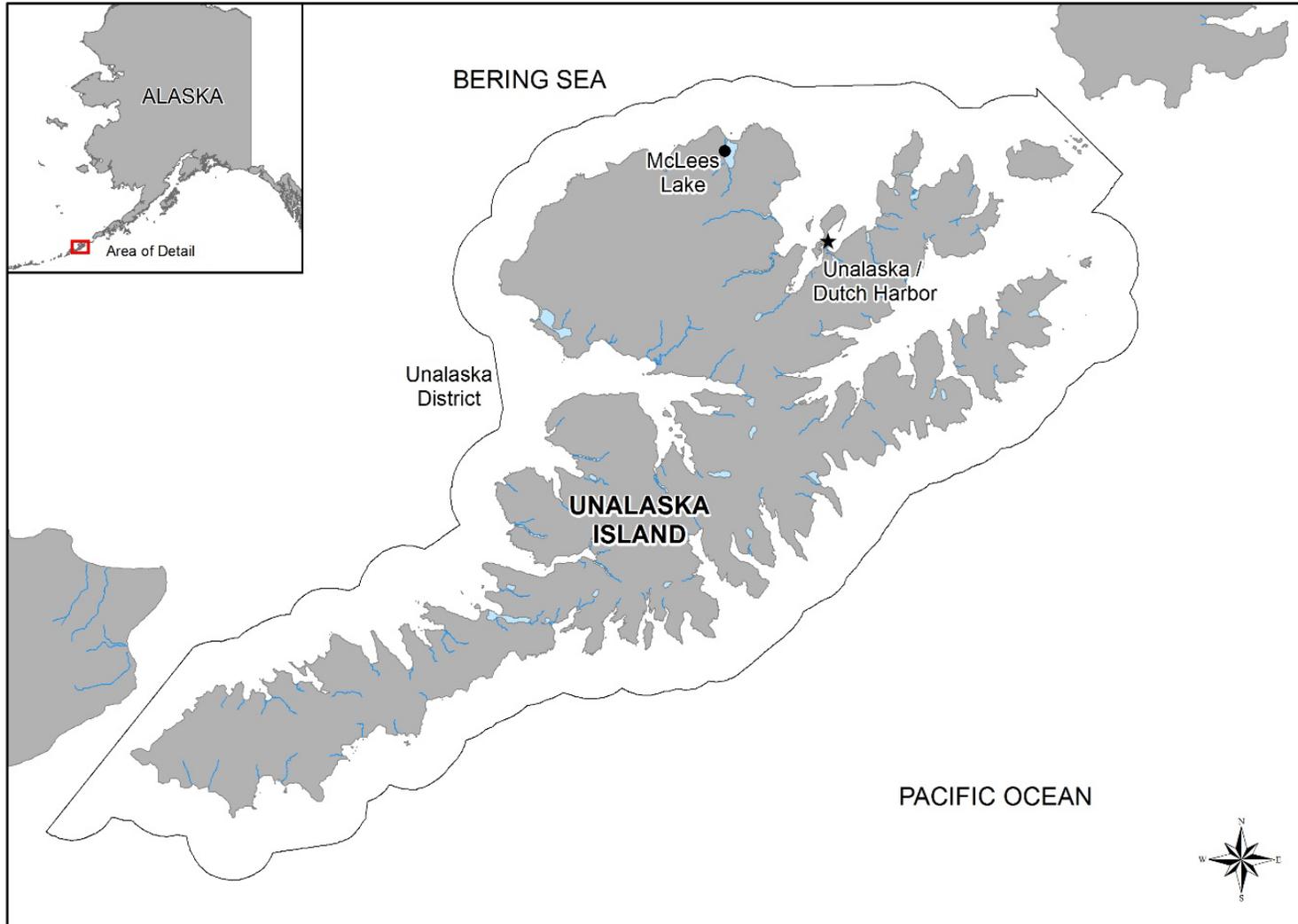
Figure 4.–Map of Unalaska Island within the Aleutian Islands Management Area with McLees Lake depicted.

# APPENDIX A. SUPPORTING INFORMATION FOR THE NELSON CHINOOK SALMON ESCAPEMENT GOAL

Appendix A1.–Description of stock and escapement goal for Nelson Chinook salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Nelson |
| Fishery: | Sport, commercial, and subsistence |
| Current escapement goal: | BEG: 2,400–5,000 (2019). |
| Updated escapement goal: | No change |
| Optimal escapement goal: | None |
| Inriver run goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Tower and weir |
| Data available: | |
| Counts: | Tower 1974–1988, Weir counts 1989 to present |
| Age composition: | Commercial harvest 1985–2003 and 2014 |
| Stock specific harvest: | Annual subsistence harvests were estimated from returns of completed permits (2001–2022). Commercial harvests include all Chinook salmon harvested within the Nelson Lagoon Section (313-30) of the APAIMA. |
| Smolt information: | None |
| Limnology: | Sapsuk Lake: 1993–1995, 2014 |
| Data contrast: | 1974 to present: 10.2 |
| Methodology: | Bayesian age-structured spawner–recruit analysis, percentile approach (15th and 65th percentiles), simple Ricker analysis |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Escapement goal originally based on historical escapements starting in 1985 (4,500–9,000) and modified in 1993 (3,200–6,400), 2003 (2,400–4,400) and 2019 (2,400–5,000). |
| Comments: | The ADF&G weir is located on the Sapsuk River (stream 313-3003) that drains into Nelson Lagoon Section (313-30) in the Northern District of the APAIMA. Post-weir estimates of escapement are included in the total escapement. |
| | A Percentile Approach analysis was conducted to corroborate the existing BEG because age composition data have not been collected since 2014 and an accurate brood table could not be maintained for further spawner–recruit analysis. |

Appendix A2.–Nelson Chinook salmon escapement, harvest, and total run estimates, 1974–2024.

| Year | Escapement index[a] | Commercial harvest[b] | Inriver sport harvest | Total run | Harvest rate |
|------|------|------|------|------|------|
| 1974 | 1,092 | 1,987 | – | 3,079 | 0.65 |
| 1975 | 1,917 | 1,074 | – | 2,991 | 0.36 |
| 1976 | 3,232 | 1,982 | – | 5,214 | 0.38 |
| 1977 | 4,844 | 1,548 | – | 6,392 | 0.24 |
| 1978 | 3,901 | 2,991 | – | 6,892 | 0.43 |
| 1979 | 10,463 | 4,820 | – | 15,283 | 0.32 |
| 1980 | 4,506 | 7,996 | – | 12,502 | 0.64 |
| 1981 | 5,046 | 9,804 | – | 14,850 | 0.66 |
| 1982 | 6,503 | 12,042 | – | 18,545 | 0.65 |
| 1983 | 12,561 | 11,594 | – | 24,155 | 0.48 |
| 1984 | 5,412 | 6,965 | – | 12,377 | 0.56 |
| 1985 | 4,500 | 10,388 | – | 14,888 | 0.7 |
| 1986 | 4,757 | 4,329 | – | 9,086 | 0.48 |
| 1987 | 3,854 | 5,536 | – | 9,390 | 0.59 |
| 1988 | 1,873 | 5,335 | – | 7,208 | 0.74 |
| 1989 | 2,500 | 3,413 | – | 5,913 | 0.58 |
| 1990 | 1,800 | 2,923 | – | 4,723 | 0.62 |
| 1991 | 4,981 | 2,738 | – | 7,719 | 0.35 |
| 1992 | 2,320 | 2,141 | – | 4,461 | 0.48 |
| 1993 | 5,160 | 4,256 | – | 9,416 | 0.45 |
| 1994 | 4,552 | 3,193 | – | 7,745 | 0.41 |
| 1995 | 2,127 | 3,377 | – | 5,504 | 0.61 |
| 1996 | 3,967 | 2,224 | – | 6,191 | 0.36 |
| 1997 | 6,902 | 3,075 | – | 9,977 | 0.31 |
| 1998 | 4,809 | 2,349 | – | 7,158 | 0.33 |
| 1999 | 3,907 | 1,746 | – | 5,653 | 0.31 |
| 2000 | 3,891 | 1,229 | – | 5,120 | 0.24 |
| 2001 | 7,088 | 1,908 | – | 8,996 | 0.21 |
| 2002 | 6,750 | 1,181 | – | 7,931 | 0.15 |
| 2003 | 5,154 | 906 | – | 6,060 | 0.15 |
| 2004 | 7,664 | 2,710 | – | 10,374 | 0.26 |
| 2005 | 4,993 | 2,887 | – | 7,880 | 0.37 |
| 2006 | 2,516 | 3,020 | – | 5,536 | 0.55 |
| 2007 | 2,492 | 1,372 | 175 | 4,039 | 0.38 |
| 2008 | 5,012 | 881 | 153 | 6,046 | 0.17 |
| 2009 | 2,048 | 575 | 41 | 2,664 | 0.23 |
| 2010 | 2,769 | 360 | 14 | 3,143 | 0.12 |
| 2011 | 1,704 | 499 | 19 | 2,222 | 0.23 |
| 2012 | 1,092 | 254 | 0 | 1,346 | 0.19 |
| 2013 | 1,221 | 346 | 0 | 1,567 | 0.22 |
| 2014 | 3,801 | 415 | 0 | 4,216 | 0.1 |
| 2015 | 2,890 | 1,035 | 0 | 3,925 | 0.26 |
| 2016 | 4,618 | 1,188 | 0 | 5,806 | 0.2 |
| 2017 | 1,852 | 652 | 0 | 2,504 | 0.26 |
| 2018 | 5,022 | 902 | 0 | 5,924 | 0.15 |
| 2019 | 12,163 | 1799 | 0 | 13,962 | 0.13 |
| 2020 | 2,498 | 699 | 0 | 3,197 | 0.22 |
| 2021 | 4,839 | 398 | 0 | 5,237 | 0.08 |
| 2022 | 5,285 | 282 | 0 | 5,567 | 0.05 |
| 2023 | 4,078 | 316 | 0 | 4,394 | 0.07 |
| 2024 | 3,542 | 152 | 0 | 3,694 | 0.04 |

*Note*: En dashes denote inriver sport harvest data was unavailable prior to 2006.

[a] The cumulative tower or weir count and aerial survey count downstream of the tower/weir site; includes enumeration of carcasses, as well as ancillary and qualitative data.

[b] Commercial harvest in the Nelson Lagoon (313-30) statistical area with an estimated proportion of the David's River Stock removed annually.

Appendix A3.–Nelson Chinook salmon escapement and escapement goals, 1977–2024.
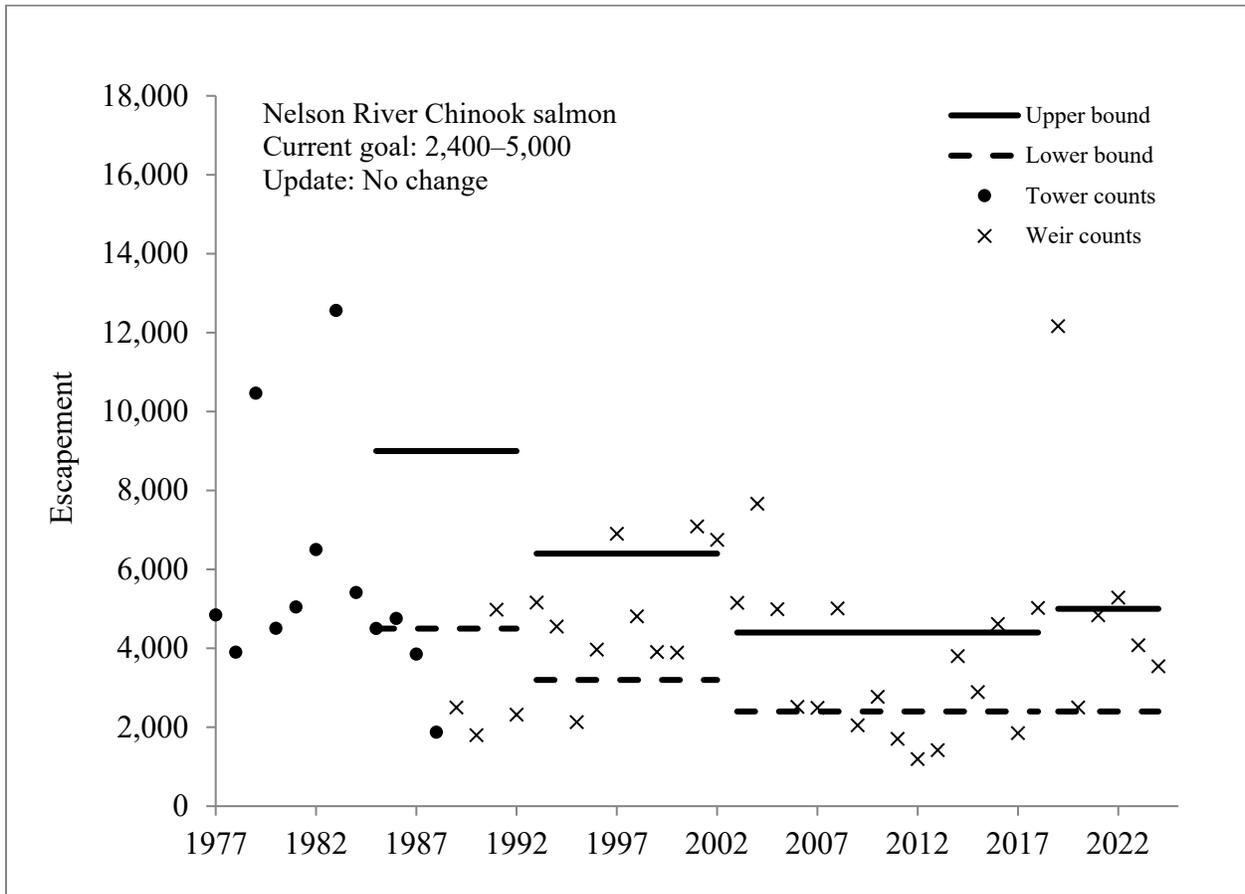
# APPENDIX B. SUPPORTING INFORMATION FOR THE NORTHERN DISTRICT CHUM SALMON ESCAPEMENT GOAL

Appendix B1.–Description of stock and escapement goal for Northern District chum salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Northern District |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 49,000–132,000 (2023) |
| Updated escapement goal: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Indexed peak aerial survey |
| Data available: | |
|    Counts: | Aerial survey 1982 to present |
|    Age composition: | Commercial harvest 1985–1992, 1997–1999, 2001 |
|    Stock specific harvest: | No stock-specific harvest information is available. Commercial harvests include all chum salmon harvested within the Northern District of the APAIMA. |
|    Smolt information: | None |
|    Limnology: | None |
|    Data contrast: | 1987 to present: 7.9 |
|    Methodology: | Percentile approach (5th and 65th percentiles), Ricker analysis |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Escapement goal originally based on historical escapements starting in 1992 (district aggregate 119,600–239,200) and modified in 2023 (district aggregate of peak aerial survey index streams 49,000–132,000). |
| Comments: | Peak aerial survey counts are from 18 index streams, which are 313-1002 North Creek, 313-3003 Sapsuk River, Branches, and Lake, 314-2003 Doe Valley, 314-2004 Deer Valley, 314-2005 Portage Creek, 314-2007 Lawrence Valley, 314-2009 Coal Creek, 314-3004 Mud Bay, West Creek, 314-3005 Mud Bay, East Creek, 314-2006 Grass Valley, 314-3007 Right Head Bay, South Creek, 314-3009 Right Head Bay, North Creek , 14-3010 Left Head Creek,  315-1001 Frank's Lagoon, 316-1004 SW Three Hills,  317-207A Meshik River, Mainstem, 317-207E Blue Violet, Sleepy And Black Creeks, 318-206A Cinder River, Mainstem. |

Appendix B2.–Northern District chum salmon escapements, 1987–2024.

| Year | Indexed total escapement | PAS district index |
|------|--------------------------|--------------------|
| 1987 | 161,400 | 78,405 |
| 1988 | 144,100 | 109,095 |
| 1989 | 102,300 | 39,370 |
| 1990 | 115,530 | 76,650 |
| 1991 | 81,450 | 51,450 |
| 1992 | 136,400 | **68,100** |
| 1993 | 183,350 | **99,000** |
| 1994 | 230,800 | **124,300** |
| 1995 | 347,700 | **219,700** |
| 1996 | 436,400 | **311,300** |
| 1997 | 160,985 | **73,525** |
| 1998 | 380,350 | 143,925 |
| 1999 | 299,475 | 216,250 |
| 2000 | 338,900 | 182,850 |
| 2001 | 285,900 | 256,000 |
| 2002 | 262,710 | 149,240 |
| 2003 | 214,660 | 117,350 |
| 2004 | 139,350 | 72,800 |
| 2005 | 103,675 | 47,300 |
| 2006 | 382,583 | 174,000 |
| 2007 | 243,334 | 80,550 |
| 2008 | 228,537 | 134,400 |
| 2009 | 154,131 | 121,800 |
| 2010 | 145,310 | 116,900 |
| 2011 | 96,952 | 64,500 |
| 2012 | 140,418 | 126,900 |
| 2013 | 137,251 | 71,300 |
| 2014 | 191,586 | 135,100 |
| 2015 | 189,944 | 123,050 |
| 2016 | 277,674 | 160,400 |
| 2017 | 234,440 | 118,700 |
| 2018 | 236,109 | 129,930 |
| 2019 | 208,397 | 147,050 |
| 2020 | 118,815 | 92,850 |
| 2021 | 94,856 | **57,500** |
| 2022 | 163,882 | **81,800** |
| 2023 | 150,300 | **128,000** |
| 2024 | 51,300 | **41,200** |

*Note*: PAS = peak aerial survey, and bold counts do not include all index streams.

Appendix B3.–Northern District chum salmon escapement and escapement goal, 1987–2024.

# APPENDIX C. SUPPORTING INFORMATION FOR THE NORTHWESTERN DISTRICT CHUM SALMON ESCAPEMENT GOAL

Appendix C1.–Description of stock and escapement goal for Northwestern District chum salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Northwestern District |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 49,000–133,000 (2023) |
| Updated escapement goal: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Indexed peak aerial survey |
| Data available: | |
|    Counts: | Aerial survey 1980 to present |
|    Age composition: | Commercial harvest 1985–1992, 1994, 1995, 1997, 1998 |
|    Stock specific harvest: | Genetic data available for 2022 and 2023 harvests. Commercial harvests include all chum salmon harvested within the Northwestern District of the APAIMA. |
|    Smolt information: | None |
|    Limnology: | None |
|    Data contrast: | 1987 to present: 6.8 |
|    Methodology: | Percentile approach (5th and 65th percentiles), Ricker analysis |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Escapement goal originally based on historical escapements starting in 1992 (district aggregate 223,600–447,200), modified in 2003 (district aggregate 100,000–215,000) and 2023 (district aggregate of peak aerial survey index streams 49,000–133,000). |
| Comments: | Peak aerial survey counts are from 9 index streams in the Northwestern District, which are 311-5002 Swanson Lagoon, 311-6001 Mike's Valley, 311-6008 Trader's Cove, 311-6012 Warmsprings Bay, 312-2002 Mike's Duck Camp, 312-2003 Alligator Hole, Ctr., 312-2004 Alligator Hole, East, 312-2005 Frosty Creek, and 312-4001 Joshua Green River. |

Appendix C2.–Northwestern District chum salmon escapements, 1987–2024.

| Year | Indexed total escapement | PAS district index |
|------|--------------------------|--------------------|
| 1987 | 341,500 | 133,600 |
| 1988 | 356,200 | 140,900 |
| 1989 | 212,300 | 46,900 |
| 1990 | 110,905 | 53,200 |
| 1991 | 221,800 | 76,600 |
| 1992 | 215,300 | 104,200 |
| 1993 | 219,030 | 109,700 |
| 1994 | 249,420 | 114,400 |
| 1995 | 408,300 | 196,000 |
| 1996 | 389,730 | 165,900 |
| 1997 | 227,200 | 138,000 |
| 1998 | 349,000 | 244,100 |
| 1999 | 366,800 | 185,000 |
| 2000 | 255,800 | 89,200 |
| 2001 | 406,812 | 155,000 |
| 2002 | 417,100 | 170,700 |
| 2003 | 236,000 | 100,700 |
| 2004 | 295,600 | 108,700 |
| 2005 | 192,965 | 80,600 |
| 2006 | 193,460 | 93,775 |
| 2007 | 335,450 | 193,800 |
| 2008 | 241,750 | 210,000 |
| 2009 | 84,460 | 57,460 |
| 2010 | 144,100 | **137,400** |
| 2011 | 151,400 | 94,500 |
| 2012 | 140,000 | 109,500 |
| 2013 | 92,800 | 64,300 |
| 2014 | 54,525 | 51,550 |
| 2015 | 89,900 | **35,600** |
| 2016 | 113,250 | 79,850 |
| 2017 | 195,700 | 132,300 |
| 2018 | 90,705 | **40,405** |
| 2019 | 173,600 | **97,600** |
| 2020 | 62,100 | 36,100 |
| 2021 | 68,050 | **28,850** |
| 2022 | 50,900 | **31,500** |
| 2023 | 94,000 | **74,600** |
| 2024 | 126,405 | **85,275** |

*Note*: PAS = peak aerial survey, and bold counts do not include all index streams.

Appendix C3.–Northwestern chum salmon escapement index and escapement goal, 1987–2024.

# APPENDIX D. SUPPORTING INFORMATION FOR THE SOUTH CENTRAL DISTRICT CHUM SALMON ESCAPEMENT GOAL

Appendix D1.–Description of stock and escapement goal for South Central District chum salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), South Central District |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 68,900–99,200 (2019) |
| Updated escapement goal: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Indexed peak aerial survey |
| Data available: | |
|    Counts: | Aerial survey 1960 to present |
|    Age composition: | Commercial harvest 1985–1998, 2022–2024 |
|    Stock specific harvest: | Genetic data available for 2022 and 2023 harvests. Commercial harvests include all chum salmon harvested within the South Central District of the APAIMA. |
|    Smolt information: | None |
|    Limnology: | None |
|    Data contrast: | 1987 to present: 13.2 |
|    Methodology: | Percentile approach (20th and 60th percentiles) |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Escapement goal originally based on historical escapements starting in 1992 (district aggregate 89,800–179,600) and modified in 2019 (district aggregate of peak aerial survey index streams 68,900–99,200). |
| Comments: | Peak aerial survey counts are from 10 index streams in the South Central District, which are 283-6102 SW. Stream, Long John Lagoon, 283-6104 Long John Lagoon Springs, 283-6304 Strm S of Chinaman Lagoon, 283-6310 Chinaman Lagoon Main, 283-6313 Ruby's (Jackson's) Lagoon, 283-6316 Settlement Point (Creek), 283-6405 Bluff Point, 283-6406 Canoe Bay River, 283-6408 Entrance (Arnies) Creek, and 283-7001 Mino's Creek. |

Appendix D2.–South Central District chum salmon escapement indices, 1987–2024.

| Year | Indexed total escapement | PAS district index |
|------|--------------------------|--------------------|
| 1987 | 161,900 | 80,300 |
| 1988 | 183,400 | 118,300 |
| 1989 | 89,530 | 47,500 |
| 1990 | 96,280 | 63,680 |
| 1991 | 163,990 | 96,700 |
| 1992 | 110,640 | 77,700 |
| 1993 | 126,800 | 69,540 |
| 1994 | 151,900 | 76,900 |
| 1995 | 187,100 | 104,150 |
| 1996 | 173,800 | 104,290 |
| 1997 | 274,400 | 221,000 |
| 1998 | 144,300 | 100,900 |
| 1999 | 253,500 | 89,200 |
| 2000 | 84,100 | 53,300 |
| 2001 | 155,500 | 81,900 |
| 2002 | 129,400 | 83,100 |
| 2003 | 79,000 | 42,900 |
| 2004 | 184,800 | 85,300 |
| 2005 | 235,700 | 198,900 |
| 2006 | 119,600 | **95,920** |
| 2007 | 126,000 | **112,900** |
| 2008 | 140,450 | 106,000 |
| 2009 | 18,600 | **6,100** |
| 2010 | 85,600 | 63,600 |
| 2011 | 169,000 | 68,800 |
| 2012 | 86,190 | **56,190** |
| 2013 | 155,050 | 101,400 |
| 2014 | 95,000 | 91,600 |
| 2015 | 298,900 | 182,000 |
| 2016 | 248,360 | 166,000 |
| 2017 | 810,053 | 566,213 |
| 2018 | 238,720 | **35,000** |
| 2019 | 237,100 | 226,800 |
| 2020 | 154,000 | 93,500 |
| 2021 | 53,200 | **51,900** |
| 2022 | 150,400 | **140,600** |
| 2023 | 155,900 | **151,200** |
| 2024 | 188,505 | **178,480** |

*Note*: PAS = peak aerial survey, and bold counts do not include all index streams.

Appendix D3.–South Central District chum salmon escapement indices and escapement goal, 1987–2024.

# APPENDIX E. SUPPORTING INFORMATION FOR THE SOUTHEASTERN DISTRICT CHUM SALMON ESCAPEMENT GOAL

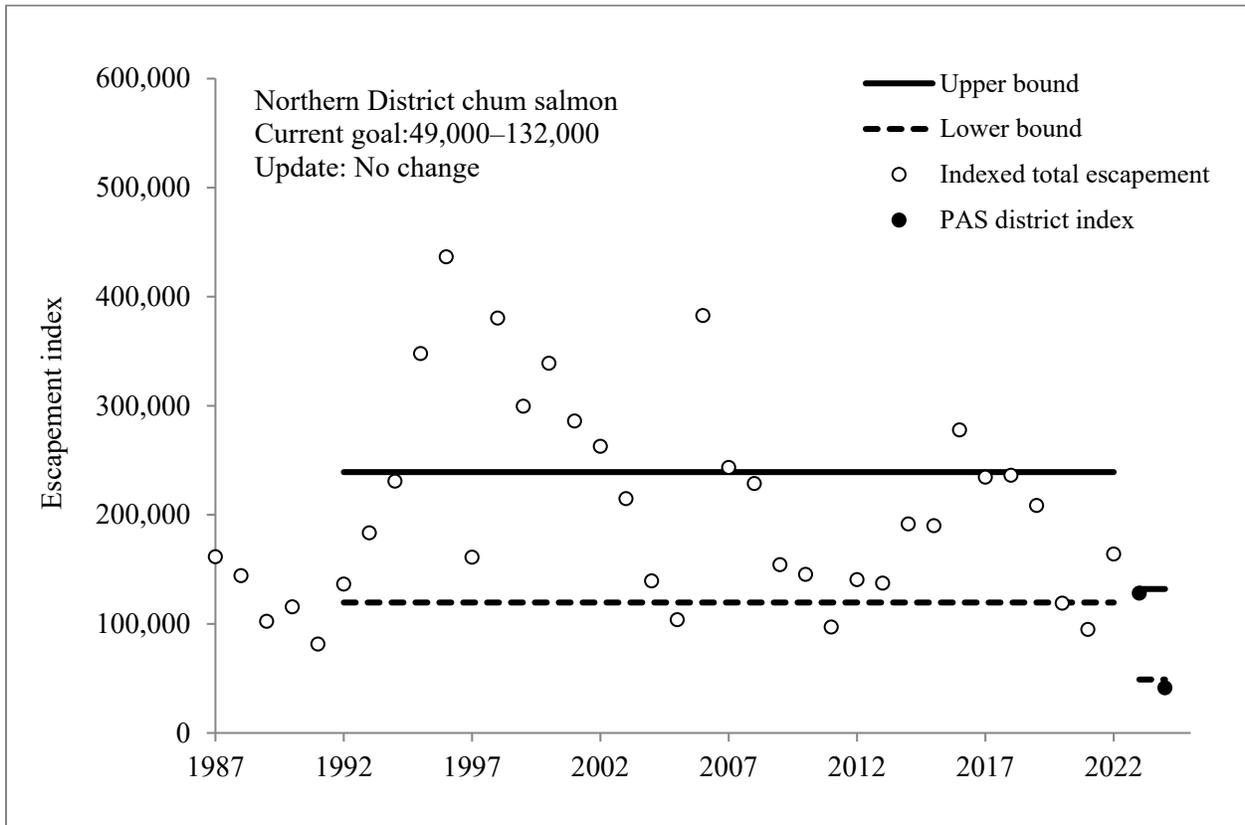Appendix E1.–Description of stock and escapement goal for Southeastern District chum salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Southeastern District |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 62,500–151,900 (2019) |
| Updated escapement goal: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Indexed peak aerial survey |
| Data available: | |
|    Counts: | Aerial survey 1960 to present |
|    Age composition: | Commercial harvest 1985–1998, 2022–2024 |
|    Stock specific harvest: | Genetic data available for 2022 and 2023 harvests. Commercial harvests include all chum salmon harvested within the Southeastern District of the APAIMA. |
|    Smolt information: | None |
|    Limnology: | None |
|    Data contrast: | 1987 to present: 46.7 |
|    Methodology: | Percentile approach (20th and 60th percentiles) |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Escapement goal originally based on historical escapements starting in 1992 (district aggregate 106,400–212,800) and modified in 2019 (district aggregate of peak aerial survey index stream 62,500–151,900). |
| Comments: | Peak aerial survey counts are from 26 index streams, which are 281-1001 Dorenoi Bay, Major (SW), 281-1002 Dorenoi Bay, Minor (NE River), 281-2002 Chichagof Lagoon, 281-3204 Little Norway, 281-3205 Clark Bay (SW), 281-3207 Grub Gulch, 281-3301 Ramsey Bay (1st Stm N Rock Wall), 281-3302 Ramsey Bay (2nd Stm N Rock Wall), 281-3303 Louie's Corner, 281-3304 Big River, 281-3305 Stepovak River, 281-3401 Granville Bay, 281-3506 Boulder Bay, 281-7005 Beaver River, Big River 281-8008 Lefthand Bay Kagayan (Lefthand River), 281-8009 Foster Creek, 281-8014 Johnson Creek, 281-8015 Coleman Creek, 281-9003 San Diego (West Side), 281-9004 San Diego (Lagoon and Stream), 282-1011 Apollo Gold Mine Creek (Delarof Harbor), 282-1203 Zachary Bay, 282-1204 Zachary Bay, 282-1205 Zachary Bay, 282-1302 Dry Lagoon, 282-1303 Bay Point. |

Appendix E2.–Southeastern District chum salmon escapement index data, 1987–2024.

| Year | Indexed total escapement | PAS district index |
|---|---|---|
| 1987 | 167,300 | 118,375 |
| 1988 | 85,700 | 76,775 |
| 1989 | 99,650 | 59,575 |
| 1990 | 114,595 | 64,470 |
| 1991 | 181,365 | 150,650 |
| 1992 | 83,450 | **63,950** |
| 1993 | 45,550 | 22,905 |
| 1994 | 59,800 | 27,130 |
| 1995 | 137,650 | 75,750 |
| 1996 | 133,600 | 102,600 |
| 1997 | 267,650 | 169,700 |
| 1998 | 246,025 | 168,700 |
| 1999 | 82,550 | 58,200 |
| 2000 | 179,950 | 134,150 |
| 2001 | 318,300 | 217,800 |
| 2002 | 204,150 | 152,150 |
| 2003 | 218,810 | 201,000 |
| 2004 | 367,200 | 251,100 |
| 2005 | 412,500 | 442,000 |
| 2006 | 405,300 | 169,100 |
| 2007 | 201,451 | 165,301 |
| 2008 | 277,450 | **178,700** |
| 2009 | 106,500 | **96,950** |
| 2010 | 62,612 | **68,660** |
| 2011 | 145,300 | 137,500 |
| 2012 | 31,072 | 30,152 |
| 2013 | 184,350 | **136,050** |
| 2014 | 82,300 | 74,300 |
| 2015 | 250,370 | **156,870** |
| 2016 | 150,456 | **118,690** |
| 2017 | 592,460 | 416,845 |
| 2018 | 71,232 | 9,460 |
| 2019 | 159,600 | 106,100 |
| 2020 | 144,350 | **108,800** |
| 2021 | 157,950 | **141,550** |
| 2022 | 150,402 | **130,800** |
| 2023 | 181,850 | **163,600** |
| 2024 | 58,200 | **56,900** |

*Note*: PAS = peak aerial survey, and bold counts do not include all index streams.

Appendix E3.–Southeastern District chum salmon escapement index data and escapement goal, 1987–2024.
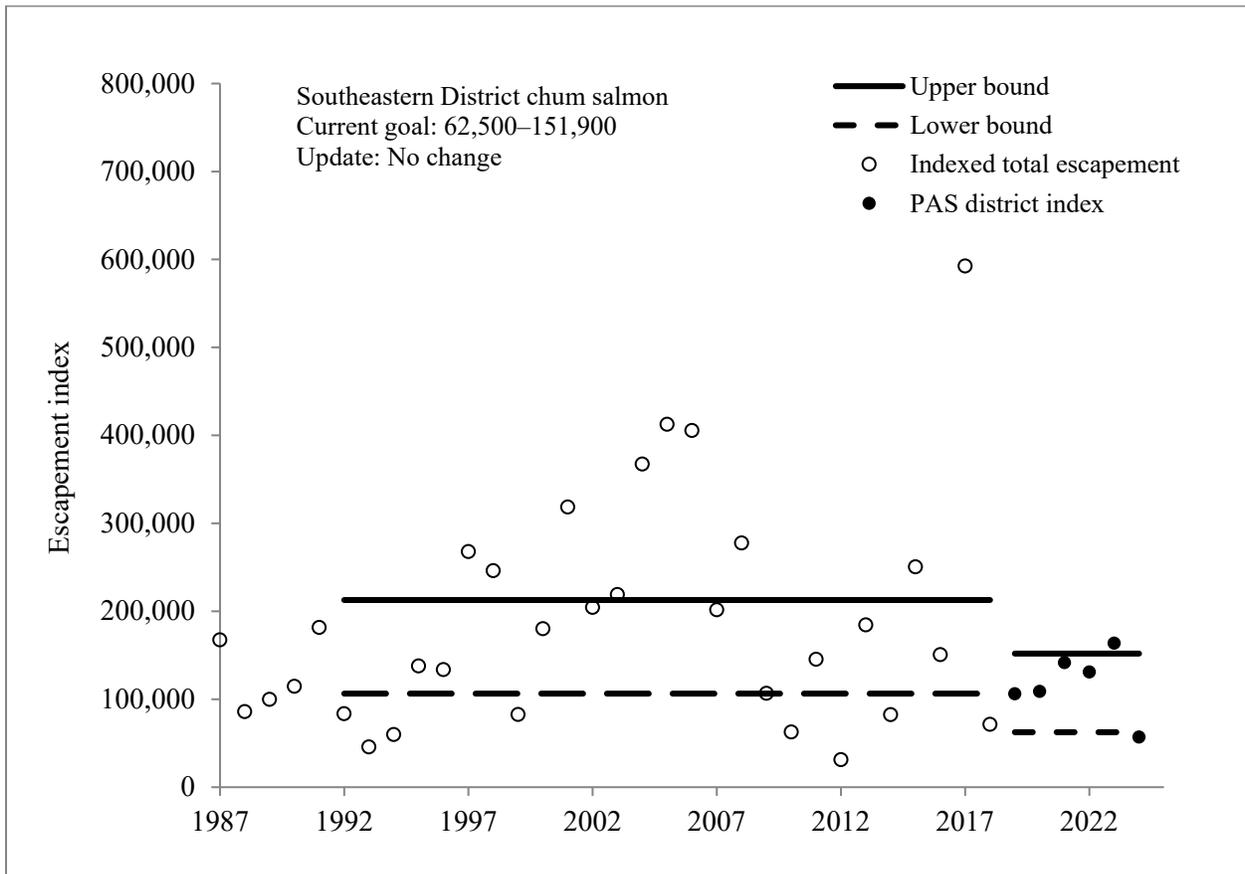
# APPENDIX F. SUPPORTING INFORMATION FOR THE SOUTHWESTERN DISTRICT CHUM SALMON ESCAPEMENT GOAL

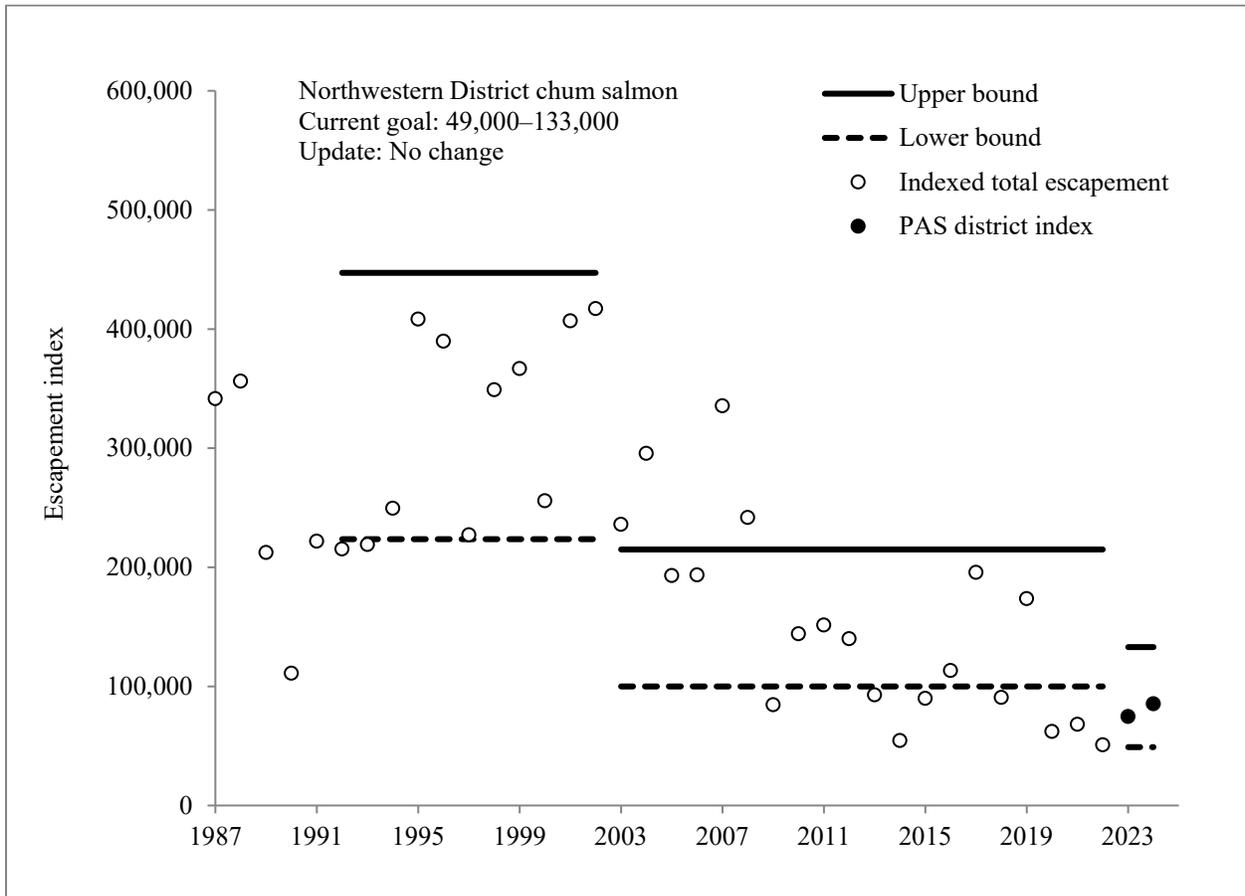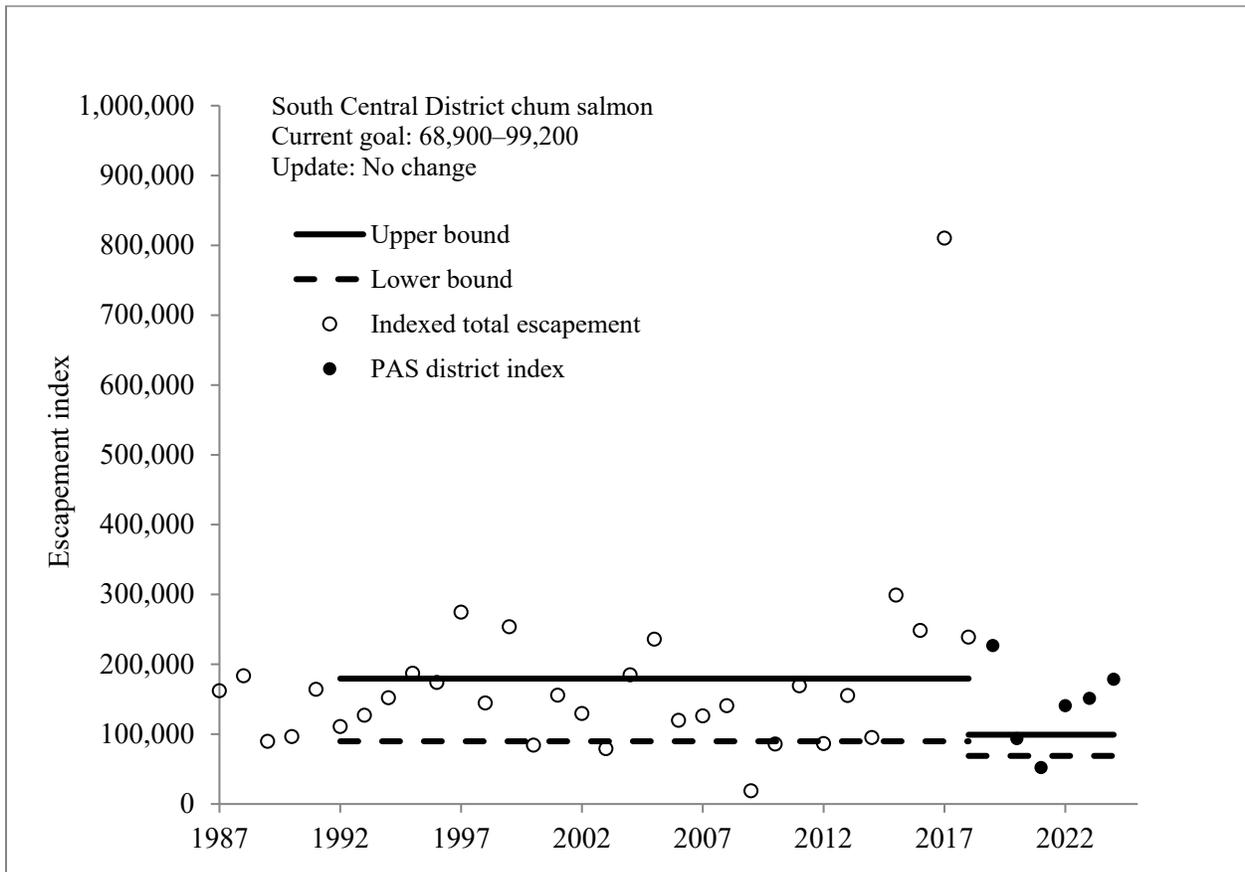Appendix F1.–Description of stock and escapement goal for Southwestern District chum salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Southeastern District |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 86,900–159,500 (2019) |
| Updated escapement goal: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Indexed peak aerial survey |
| Data available: | |
|    Counts: | Aerial survey 1960 to present |
|    Age composition: | Commercial harvest 1985–1998, 2022–2024 |
|    Stock specific harvest: | Genetic data available for 2022 and 2023 harvests. Commercial harvests include all chum salmon harvested within the Southeastern District of the APAIMA. |
|    Smolt information: | None |
|    Limnology: | Thin Point Lake 1989, 1991–1995, 1998, 2008 |
|    Data contrast: | 1987 to present: 6.6 |
|    Methodology: | Percentile approach (5th and 65th percentiles) |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Escapement goal originally based on historical escapements starting in 1992 (district aggregate 133,400–266,800) and modified in 2019 (district aggregate of peak aerial survey index stream 86,900–159,500). |
| Comments: | Peak aerial survey counts are from 19 index streams, which are 284-1211 Cannery Creek, 284-1212 Little John Lagoon S Spit, 284-1213 Little John Lagoon Stream, 284-2001 Sandy Cove Stream, 284-3201 Old Man's Lagoon Stream, 284-3305 Ram's Creek, 284-3402 Russel Creek, 284-3409 Barney's Creek, 284-3410 Delta Creek, Lenard Harbor, 284-4101 Belkofski Village Creek, 284-4207 Belkofski Bay River, 284-4209 Captain's Harbor, 284-5203 Little Bear Bay, 284-5205 Stream Guard Creek, 284-5206 West Spring Holes, 284-5207 Volcano Sloughs-Center, 284-5208 Volcano River, 284-6004 Ikatan River, and 284-6006 Sankin Bay Creek. |

Appendix F2.–Southwestern District chum salmon escapement index data, 1987–2024.

| Year | Indexed total escapement | PAS district index |
|------|--------------------------|--------------------|
| 1987 | 291,100 | **229,760** |
| 1988 | 226,200 | 152,250 |
| 1989 | 120,830 | 47,380 |
| 1990 | 142,770 | 89,320 |
| 1991 | 241,600 | **119,200** |
| 1992 | 141,000 | 86,900 |
| 1993 | 224,080 | 146,070 |
| 1994 | 365,900 | 212,700 |
| 1995 | 401,150 | 221,900 |
| 1996 | 302,100 | 210,500 |
| 1997 | 263,700 | 126,300 |
| 1998 | 351,410 | 169,710 |
| 1999 | 388,130 | 233,800 |
| 2000 | 257,225 | 144,525 |
| 2001 | 277,021 | 153,600 |
| 2002 | 268,000 | 137,000 |
| 2003 | 193,030 | 143,650 |
| 2004 | 180,000 | 118,100 |
| 2005 | 317,910 | 239,500 |
| 2006 | 231,935 | **160,200** |
| 2007 | 398,010 | 314,210 |
| 2008 | 171,250 | **123,100** |
| 2009 | 385,730 | 159,500 |
| 2010 | 142,650 | 151,000 |
| 2011 | 176,425 | **169,600** |
| 2012 | 87,230 | **62,600** |
| 2013 | 163,200 | **148,000** |
| 2014 | 130,745 | **97,300** |
| 2015 | 351,150 | **118,650** |
| 2016 | 220,060 | 146,200 |
| 2017 | 363,000 | **313,800** |
| 2018 | 32,900 | **31,400** |
| 2019 | 135,650 | **88,300** |
| 2020 | 90,750 | 84,550 |
| 2021 | 119,900 | 114,600 |
| 2022 | 62,718 | **57,250** |
| 2023 | 141,400 | **133,100** |
| 2024 | 76,580 | **74,560** |

*Note*: PAS = peak aerial survey, and bold counts do not include all index streams.

Appendix F3.–Southwestern District chum salmon escapement index data and escapement goals, 1987–2024.
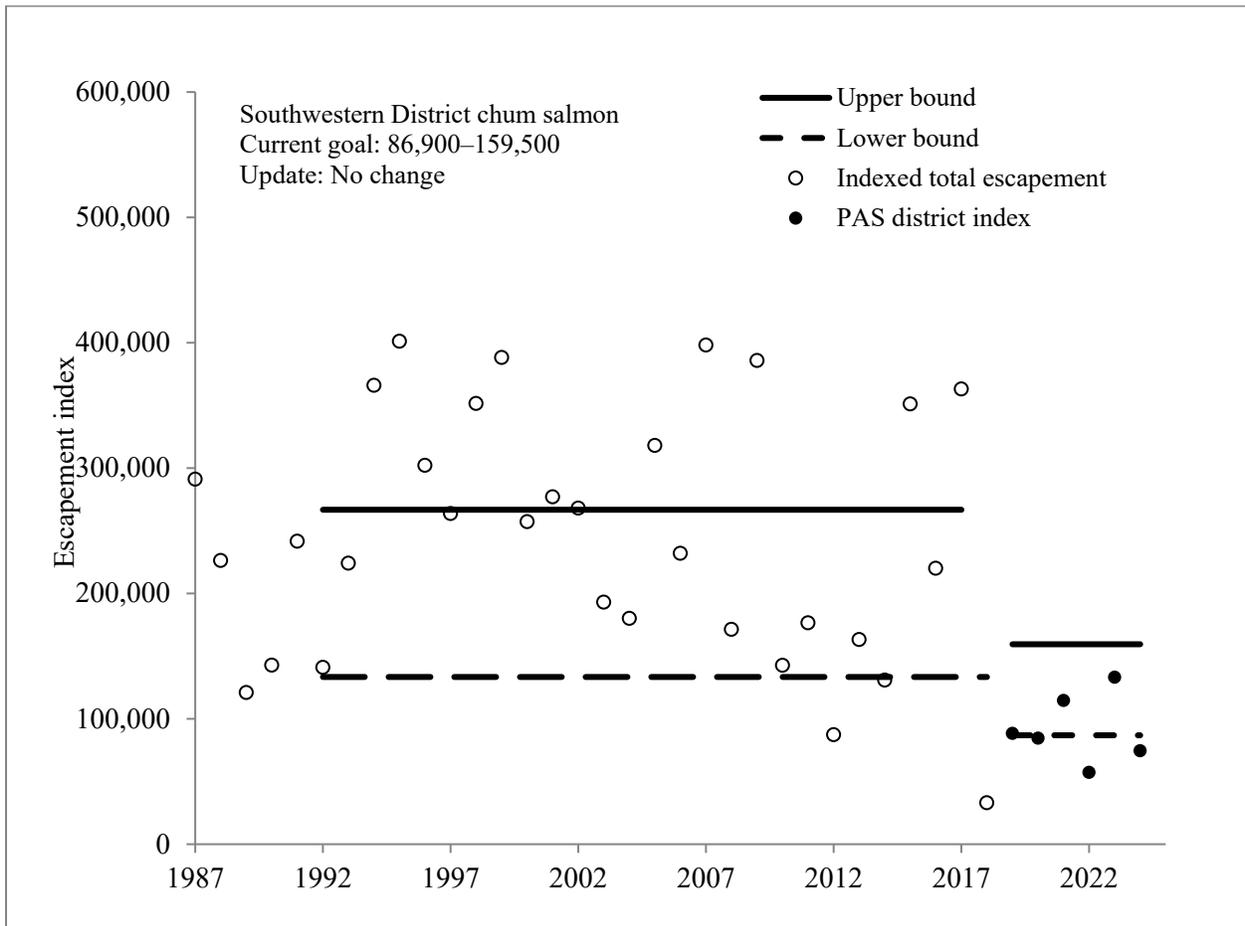
# APPENDIX G. SUPPORTING INFORMATION FOR THE ILNIK RIVER COHO SALMON ESCAPEMENT GOAL

Appendix G1.–Description of stock and escapement goal for Ilnik River coho salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Ilnik River |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 9,000–24,000 (2023) |
| Updated escapement goal: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Aerial survey counts, 1968–1984, peak aerial survey counts 1985–present. |
| Data available: | |
| Counts: | Aerial surveys sporadically 1968 to 1984; more consistently surveyed 1985 to present. |
| Age composition: | Commercial harvest 1986–1997, 1989–1990 |
| Stock specific harvest: | No stock-specific harvest information is available. Commercial harvests include all coho salmon harvested within Ilnik Lagoon Section (317-20) of the APAIMA. |
| Smolt information: | None |
| Limnology: | None |
| Data contrast: | 1985 to present: 122,200 |
| Methodology: | Percentile approach (20th and 60th percentiles) |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Escapement goal adopted in 1993 (10,000–19,000), eliminated in 2004 due to poor aerial survey coverage, reinstated as a lower bound SEG in 2009 (9,000) with increased fishery effort, modified in 2023 (9,000–24,000). |
| Comments: | Data are peak aerial survey counts from the Ilnik River (stream number 316-2001) in the Northern District of the APAIMA. |

Appendix G2.–Ilnik River coho salmon escapements, 1985–2024.

| Year | Peak aerial survey escapement |
|------|-------------------------------|
| 1985 | 35,000 |
| 1986 | 25,000 |
| 1987 | 8,000 |
| 1988 | 8,500 |
| 1989 | 25,300 |
| 1990 | 24,000 |
| 1991 | 27,000 |
| 1992 | 20,900 |
| 1993 | 28,000 |
| 1994 | 6,000 |
| 1995 | 12,000 |
| 1996 | 2,100 |
| 1997 | 19,000 |
| 1998 | 9,000 |
| 1999 | 1,000 |
| 2000 | 3,000 |
| 2001 | 37,000 |
| 2002 | 45,000 |
| 2003 | 37,000 |
| 2004 | 40,000 |
| 2005 | 0 |
| 2006 | 27,000 |
| 2007 | 19,000 |
| 2008 | 27,000 |
| 2009 | 24,000 |
| 2010 | 19,600 |
| 2011 | 18,000 |
| 2012 | 11,800 |
| 2013 | 17,000 |
| 2014 | 33,000 |
| 2015 | 14,000 |
| 2016 | 28,000 |
| 2017 | 6,000 |
| 2018 | 122,200 |
| 2019 | 24,000 |
| 2020 | 45,000 |
| 2021 | 11,000 |
| 2022 | 36,200 |
| 2023 | NS |
| 2024 | NS |

*Note*: NS = no survey was conducted.

Appendix G3.–Ilnik River coho salmon escapement and escapement goals, 1985–2024.



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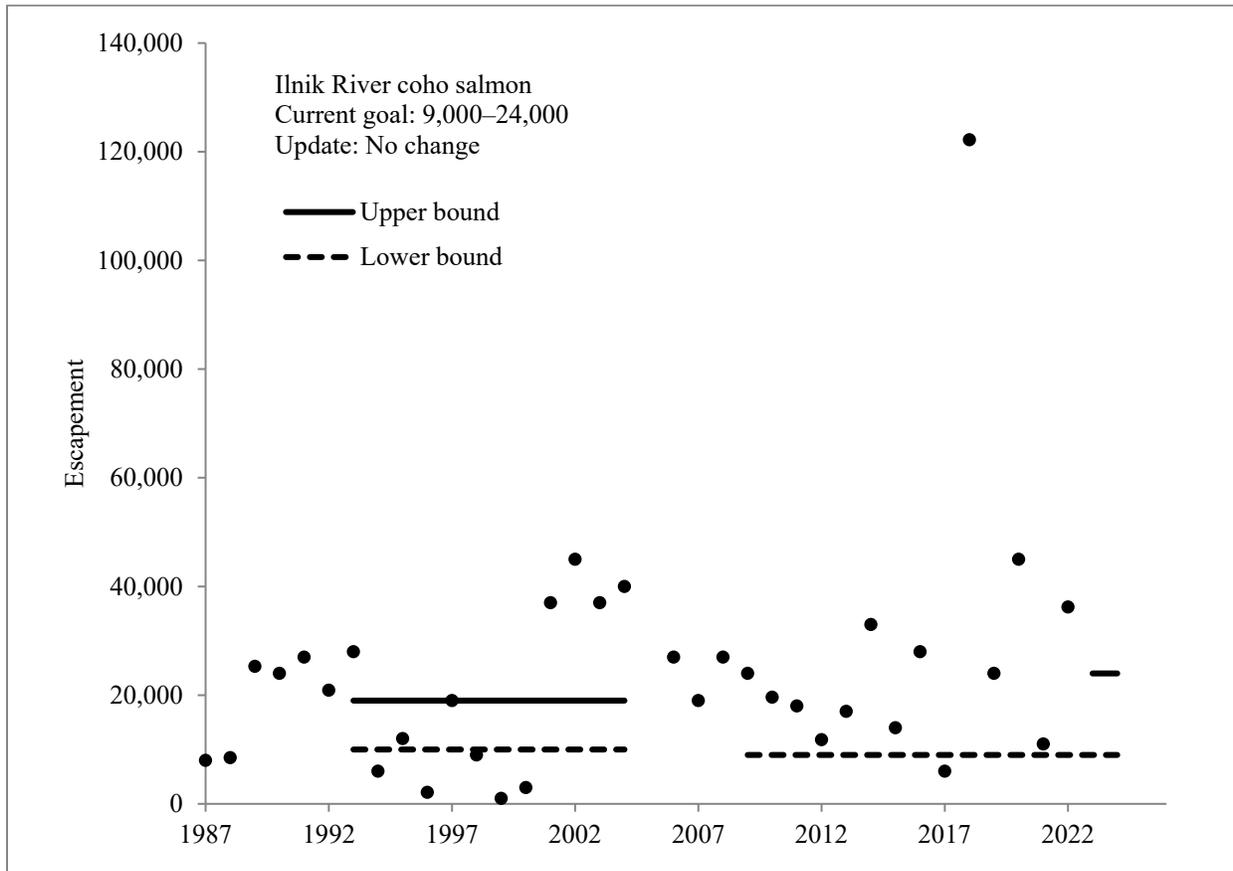
# APPENDIX H. SUPPORTING INFORMATION FOR THE NELSON COHO SALMON ESCAPEMENT GOALS

Appendix H1.–Description of stock and escapement goals for Nelson coho salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Nelson |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 19,000–29,000 (2023) |
| Updated escapement goal: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Peak aerial survey count |
| Data available: | |
|   Counts: | Aerial surveys 1968 to present. |
|   Age composition: | Commercial harvest 1985–2000, 2002, 2003 |
|   Stock specific harvest: | No stock-specific harvest information is available. Commercial harvests include all coho salmon harvested within the Nelson Lagoon Section (313-30) of the APAIMA. |
|   Smolt information: | None |
|   Limnology: | Sapsuk Lake: 1993–1995, 2014 |
|   Data contrast: | 1987 to present: 10.5 |
|   Methodology: | Percentile approach (15th and 65th percentiles) |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Escapement goal first adopted in 1983 (18,000–25,000), lower bound SEG established in 2003 (18,000), and modified in 2023 to an SEG (19,000–29,000). |
| Comments: | The ADF&G weir is located on the Sapsuk River (stream 313-3003) that drains into Nelson Lagoon (313-30) located in the Northern District of the APAIMA. |

Appendix H2.–Nelson coho salmon escapements, 1970–2024.

| Year | Peak aerial survey escapement | Year | Peak aerial survey escapement |
|------|------|------|------|
| 1970 | 3,900 | 2001 | 36,000 |
| 1971 | 3,400 | 2002 | 35,500 |
| 1972 | 1,210 | 2003 | 26,700 |
| 1973 | 1,500 | 2004 | 52,500 |
| 1974 | 1,200 | 2005 | 24,000 |
| 1975 | 1,200 | 2006 | 19,000 |
| 1976 | 5,700 | 2007 | 19,000 |
| 1977 | 13,000 | 2008 | 24,000 |
| 1978 | 1,425 | 2009 | 22,000 |
| 1979 | 17,000 | 2010 | 15,000 |
| 1980 | 26,700 | 2011 | 21,000 |
| 1981 | 30,000 | 2012 | 19,160 |
| 1982 | NS | 2013 | 22,000 |
| 1983 | 13,000 | 2014 | 25,000 |
| 1984 | 28,630 | 2015 | 45,000 |
| 1985 | 17,500 | 2016 | 45,000 |
| 1986 | 23,000 | 2017 | 19,000 |
| 1987 | 27,500 | 2018 | 44,000 |
| 1988 | 17,000 | 2019 | 23,000 |
| 1989 | 32,000 | 2020 | 23,000 |
| 1990 | 30,000 | 2021 | 26,000 |
| 1991 | 33,000 | 2022 | 21,500 |
| 1992 | 20,000 | 2023 | 5,000 |
| 1993 | 14,600 | 2024 | NS |
| 1994 | 18,000 | | |
| 1995 | 22,500 | | |
| 1996 | 20,500 | | |
| 1997 | 18,000 | | |
| 1998 | 20,000 | | |
| 1999 | 16,000 | | |
| 2000 | 18,000 | | |

*Note*: NS = no survey or the counts were incomplete.

Appendix H3.–Nelson coho salmon escapement and escapement goals, 1982–2024.
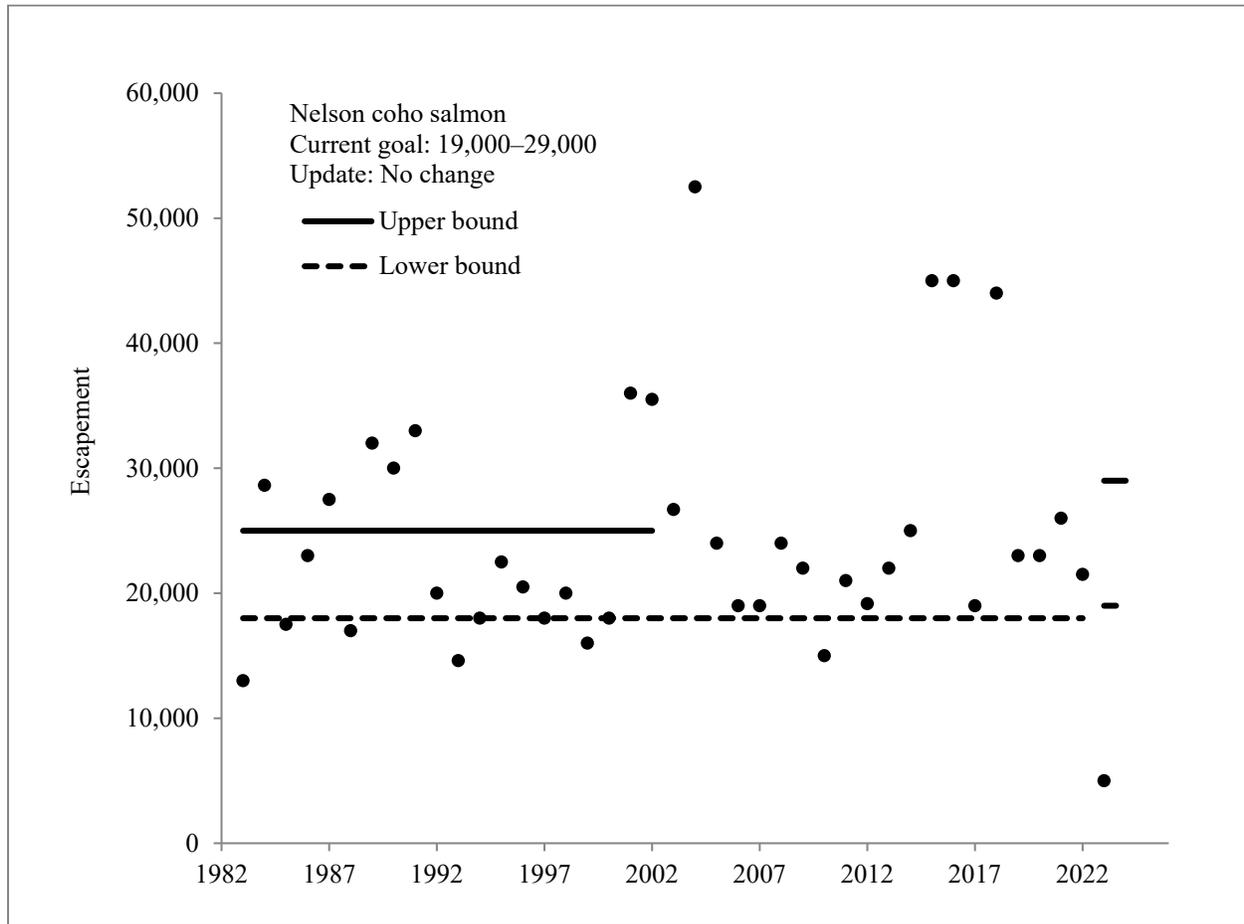
# APPENDIX I. SUPPORTING INFORMATION FOR THE SOUTH PENINSULA PINK SALMON ESCAPEMENT GOAL

Appendix I1.–Description of stock and escapement goal for South Peninsula pink salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula Management Area, South Peninsula |
| Fishery: | Commercial |
| Current escapement goal: | Annual SEG: 1,750,000–4,000,000 (2016) |
| Updated escapement goal: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Peak aerial survey count |
| Data available: | |
|    Counts: | Aerial surveys 1968 to present. |
|    Age composition: | None |
|    Stock specific harvest: | No stock-specific harvest information is available. Commercial harvests include all pink salmon harvested within the Southeastern, South Central, Southwestern, and Unimak Districts of the APAIMA. |
|    Smolt information: | None |
|    Limnology: | None |
|    Data contrast: | 1975 to present: 17.4 |
|    Methodology: | Spawner–recruit analysis |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Even- and odd-year goals by district were established in 1992; the sums of the bounds of district goals were 1,864,600–3,729,300 for even years and 1,637,800–3,275,700 for odd years. In 2003, district goals did not change but were aggregated for area-wide even- and odd-year goals. Subsequent reviews corroborated the 2003 goals until 2015, when total harvest for South Peninsula pink salmon was estimated from July 15 onward. This resulted in a single South Peninsula pink salmon goal of 1.75–4.0 million fish. |
| Comments: | The South Peninsula is composed of the Southeastern, South Central, Southwestern, and Unimak Districts. In the 2025 review, a Ricker model with escapement counts expanded by a factor of 1.5 was significant ($P < 8.5 \times 10^{-6}$) and used to corroborate $S_{MSY}$. |
| | The current simple Ricker analysis using data from 1975 to 2022 estimated $S_{MSY}$ at 3,130,954 fish with the 5th and 95th percentiles of the median ranging 2,270,000–3,967,000 fish after accounting for the expansion factor. |

Appendix I2.–South Peninsula pink salmon escapements and harvest, 1975–2024.

| Year | Escapement | Total harvest[a] | Recruits | R/S | Year | Escapement | Total harvest[a] | Recruits | R/S |
|---|---|---|---|---|---|---|---|---|---|
| 1975 | 552,100 | 55,395 | 4,113,817 | 7.5 | 2006 | 2,862,250 | 2,845,617 | 13,938,442 | 4.9 |
| 1976 | 1,456,400 | 2,300,748 | 8,284,540 | 5.7 | 2007 | 2,680,213 | 6,842,618 | 8,175,290 | 3.1 |
| 1977 | 2,677,800 | 1,436,017 | 8,980,149 | 3.4 | 2008 | 3,338,370 | 10,600,072 | 1,185,176 | 0.4 |
| 1978 | 2,858,700 | 5,425,840 | 8,801,269 | 3.1 | 2009 | 3,067,000 | 5,108,290 | 6,616,906 | 2.2 |
| 1979 | 2,629,500 | 6,350,649 | 6,829,503 | 2.6 | 2010 | 742,912 | 442,264 | 664,044 | 0.9 |
| 1980 | 2,641,600 | 6,159,669 | 6,993,466 | 2.6 | 2011 | 2,494,950 | 4,121,956 | 9,623,217 | 3.9 |
| 1981 | 2,306,800 | 4,522,703 | 3,576,093 | 1.6 | 2012 | 478,910 | 185,134 | 1,844,492 | 3.9 |
| 1982 | 2,293,000 | 4,700,466 | 14,713,689 | 6.4 | 2013 | 2,320,790 | 7,302,427 | 23,065,223 | 9.9 |
| 1983 | 851,200 | 2,724,893 | 5,913,566 | 6.9 | 2014 | 1,340,380 | 504,112 | 1,341,580 | 1.0 |
| 1984 | 4,351,600 | 10,362,089 | 5,378,871 | 1.2 | 2015 | 7,820,800 | 15,244,423 | 25,556,581 | 3.3 |
| 1985 | 1,613,800 | 4,299,766 | 2,698,805 | 1.7 | 2016 | 1,038,160 | 303,420 | 1,077,164 | 1.0 |
| 1986 | 1,716,700 | 3,662,171 | 9,667,154 | 5.6 | 2017 | 5,663,637 | 19,892,944 | 14,499,933 | 2.6 |
| 1987 | 1,540,500 | 1,158,305 | 8,783,157 | 5.7 | 2018 | 732,422 | 344,742 | 6,443,564 | 8.8 |
| 1988 | 2,839,600 | 6,827,554 | 3,884,568 | 1.4 | 2019 | 4,236,700 | 10,263,233 | 16,519,876 | 3.9 |
| 1989 | 1,870,900 | 6,912,257 | 12,903,424 | 6.9 | 2020 | 3,209,750 | 3,233,814 | 9,768,964 | 3.0 |
| 1990 | 1,598,400 | 2,286,168 | 11,908,705 | 7.5 | 2021 | 4,388,100 | 12,131,776 | 22,565,959 | 5.1 |
| 1991 | 2,946,800 | 9,956,624 | 12,820,896 | 4.4 | 2022 | 5,177,350 | 4,591,614 | 3,686,650 | 0.7 |
| 1992 | 2,834,400 | 9,074,305 | 9,722,866 | 3.4 | 2023 | 5,914,600 | 16,651,359 | | |
| 1993 | 2,990,100 | 9,830,796 | 22,523,513 | 7.5 | 2024 | 2,486,157 | 1,200,493 | | |
| 1994 | 3,071,725 | 6,651,141 | 5,444,530 | 1.8 | | | | | |
| 1995 | 6,406,300 | 16,117,213 | 6,948,735 | 1.1 | | | | | |
| 1996 | 3,647,550 | 1,796,980 | 12,128,294 | 3.3 | | | | | |
| 1997 | 5,243,275 | 1,705,460 | 13,201,054 | 2.5 | | | | | |
| 1998 | 4,668,065 | 7,460,229 | 5,883,882 | 1.3 | | | | | |
| 1999 | 5,015,310 | 8,185,744 | 6,887,202 | 1.4 | | | | | |
| 2000 | 2,792,985 | 3,090,897 | 5,787,715 | 2.1 | | | | | |
| 2001 | 2,965,136 | 3,922,066 | 9,483,367 | 3.2 | | | | | |
| 2002 | 3,762,800 | 2,024,915 | 14,481,357 | 3.8 | | | | | |
| 2003 | 5,511,220 | 3,972,147 | 13,600,587 | 2.5 | | | | | |
| 2004 | 8,311,410 | 6,169,947 | 5,707,867 | 0.7 | | | | | |
| 2005 | 6,165,634 | 7,434,953 | 9,522,831 | 1.5 | | | | | |

*Note*: R/S = recruits per spawner.

[a]  Total harvest was estimated using reported harvest from July 15 through the end of the season to more accurately estimate harvest of local stocks and exclude fish bound for other areas.

Appendix I3.–South Peninsula pink salmon escapement and current escapement goals, 1975–2024.
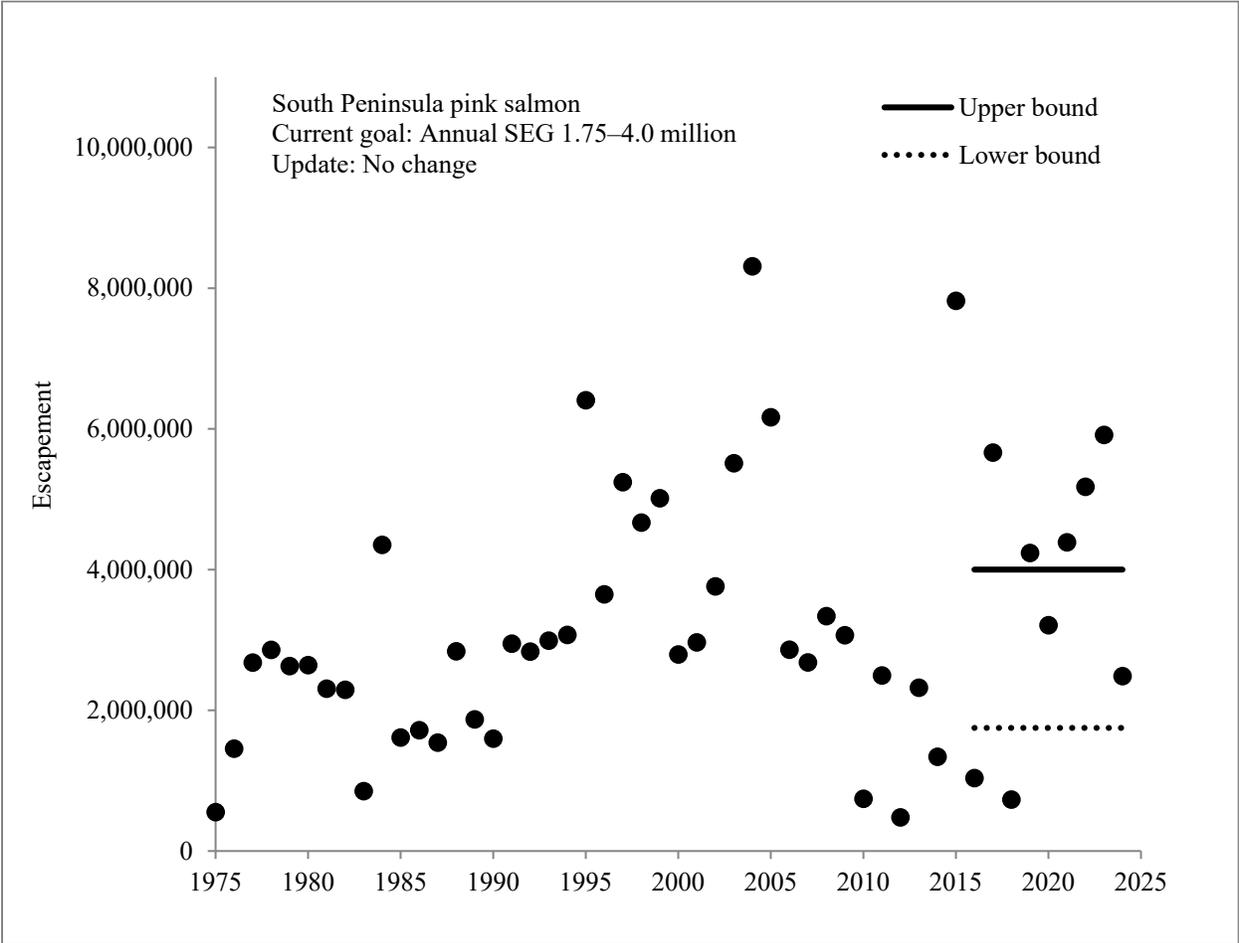
Appendix I4.–Ricker spawner–recruit function fitted to South Peninsula salmon data, 1975–2022 brood years. Escapement data expanded by a factor of 1.5. Outliers were removed. Model parameters are below the plot.
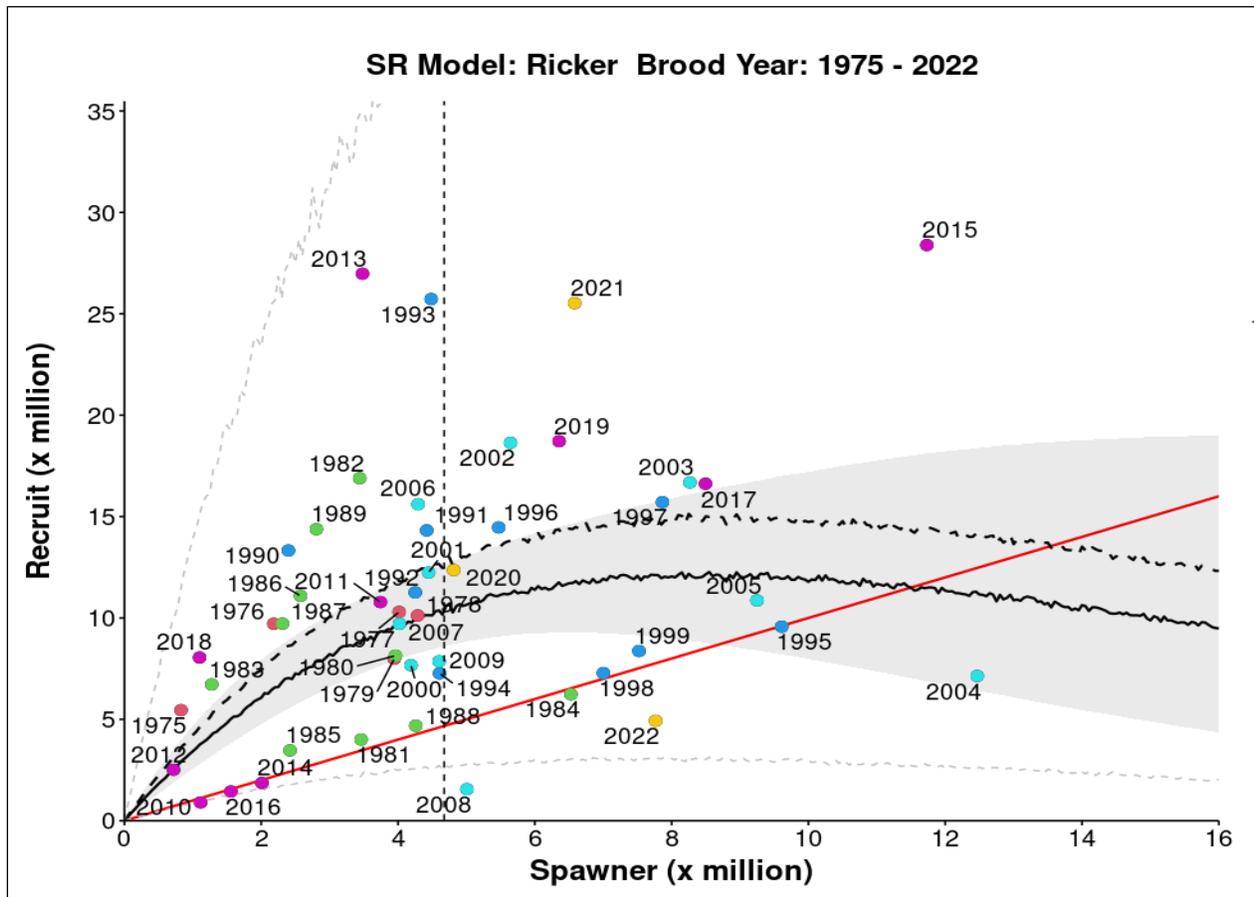


*Note*: Solid line = median, dashed line = mean, vertical dashed line = $S_{SMY}$, grey fill = 95% Bayesian credible interval.

| | alpha | Ln alpha | beta x $10^{-6}$ | $S_{MSY}$ | $U_{MSY}$ | $S_{MAX}$ |
|---|---|---|---|---|---|---|
| Median | 3.816 | 1.339 | 0.116 | 4,696,431 | 0.544 | 8,623,659 |

Appendix I5.–Yield curve for South Peninsula pinks with expanded (1.5x) escapement.
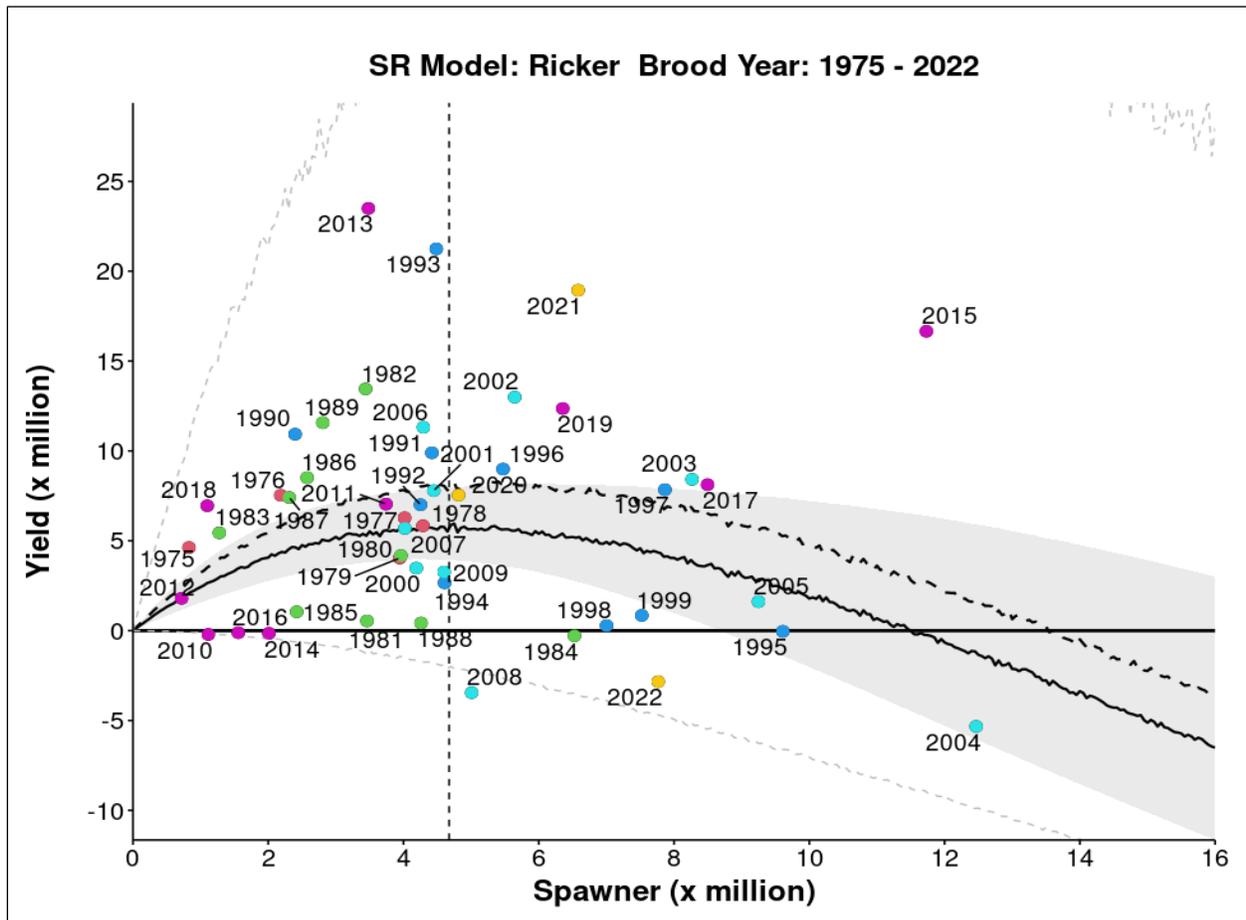


*Note*: Solid line = median, dashed line = mean, vertical dashed line= $S_{SMY}$, grey fill = 95% Bayesian credible interval.

Appendix I6.–Maximum sustained yield (MSY) profile for South Peninsula pink salmon.
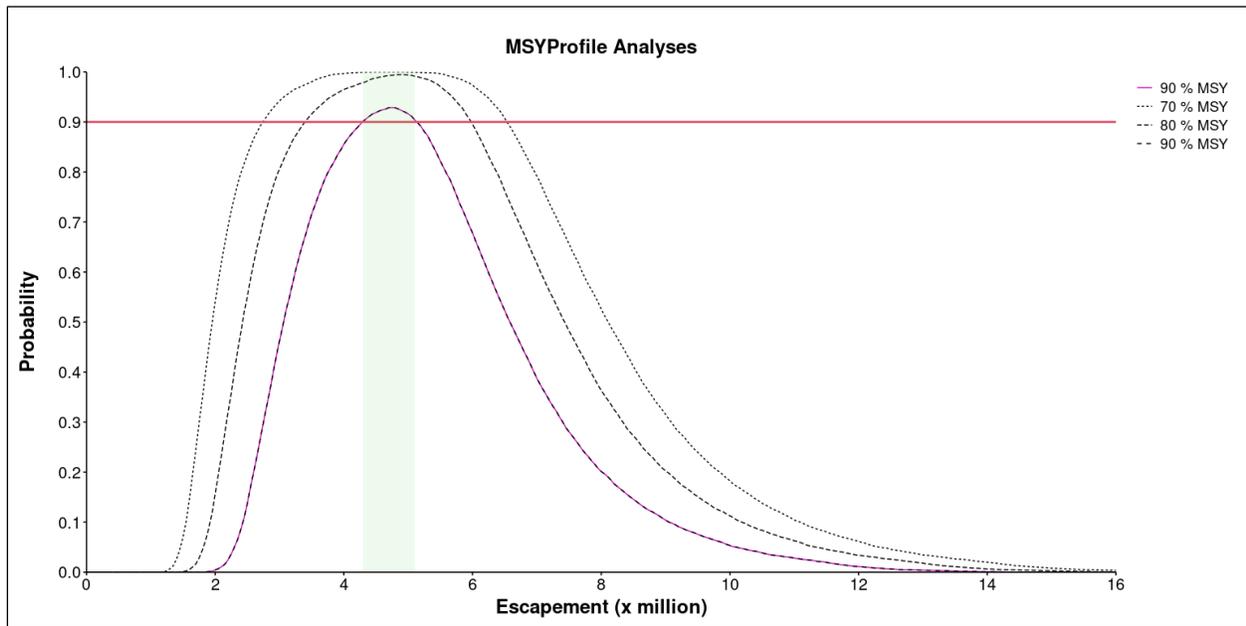


*Note*: The current South Peninsula pink salmon SEG is 1.75 to 4.0 million fish. The updated simple Ricker analysis estimated that an escapement range of 2,270,000–3,967,000 fish should achieve 80% of MSY 90% of the time after accounting for the 1.5 expansion factor.

# APPENDIX J. SUPPORTING INFORMATION FOR THE BEAR RIVER SOCKEYE SALMON ESCAPEMENT GOAL

Appendix J1.–Description of stock and escapement goal for Bear River sockeye salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Bear River |
| Fishery: | Commercial |
| Current escapement goal: | Early run SEG: 176,000–293,000 (2003)<br>Late run SEG: 117,000–195,000 (2003)<br>Total run SEG: 293,000–488,000 (2003) |
| Updated escapement goals: | No changes |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Tower and weir counts |
| Data available: | |
| Counts: | Tower counts, 1964–1985, weir counts, 1986–present. |
| Age composition: | Catch: 2001, 2017; escapement: 1985–2024 |
| Stock specific harvest: | Genetic samples collected from harvest 2006–2008. Statistical areas 315-11 to 315-20 and 314-12 are used to estimate Bear River late-run salmon commercial harvest. No stock specific harvest data are available for the early run. |
| Smolt information: | Smolt age, weight, length: 1967–1975, 1978, 1980, 1986–1989, 1992–2024 |
| Limnology: | 1989, 2000–2015, 2023, 2024 |
| Data contrast: | Data from 1986–2024<br>Early run: 4.67<br>Late run: 3.27<br>Total run: 3.16 |
| Methodology: | Ricker analysis, percentile approach, smolt biomass as a function of zooplankton biomass, euphotic volume model |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Goals originally established in late 1960s for the early run (150,000–175,000), late run (50,000–75,000), and total run (200,000–250,000). Modified in 2003, increasing the early (176,000–293,000), late (117,000–195,000), and total (293,000–488,000) run goals. |
| Comments: | Sockeye salmon escaping the Bear River (stream 315-1102) weir on or after August 1 are considered late-run fish. Bear River early-run goal was calculated as the difference between the Bear River late-run Ricker estimates of $S_{SMY}$ and the averages of the euphotic volume (307,000–512,000 fish) and smolt biomass (175,000–388,000 fish) models, which estimated the early-run goal as 139,000–305,000 sockeye salmon. The current AR(1) Ricker analysis using data from 1989 to 2018 estimated $S_{MSY}$ at 3119,113 fish with the 5th and 95th percentiles of the median ranging 102,000–143,000 fish. |

Appendix J2.–Bear River early-run sockeye salmon escapements, 1970–2024.

| Year | Tower counts | Weir counts | Year | Tower counts | Weir counts |
|------|------|------|------|------|------|
| 1970 | 147,367 | – | 2001 | – | 177,495 |
| 1971 | 65,950 | – | 2002 | – | 179,480 |
| 1972 | 106,571 | – | 2003 | – | 226,201 |
| 1973 | 90,998 | – | 2004 | – | 354,565 |
| 1974 | 143,505 | – | 2005 | – | 332,248 |
| 1975 | 138,793 | – | 2006 | – | 262,995 |
| 1976 | 163,135 | – | 2007 | – | 206,233 |
| 1977 | 153,383 | – | 2008 | – | 125,526 |
| 1978 | 311,528 | – | 2009 | – | 216,237 |
| 1979 | 384,613 | – | 2010 | – | 226,534 |
| 1980 | 436,962 | – | 2011 | – | 207,451 |
| 1981 | 475,272 | – | 2012 | – | 173,158 |
| 1982 | 195,497 | – | 2013 | – | 219,074 |
| 1983 | 157,857 | – | 2014 | – | 259,046 |
| 1984 | 286,849 | – | 2015 | – | 304,356 |
| 1985 | 269,261 | – | 2016 | – | 293,280 |
| 1986 | – | 174,453 | 2017 | – | 585,840 |
| 1987 | – | 168,683 | 2018 | – | 324,093 |
| 1988 | – | 172,363 | 2019 | – | 294,727 |
| 1989 | – | 246,196 | 2020 | – | 299,198 |
| 1990 | – | 283,854 | 2021 | – | 387,240 |
| 1991 | – | 432,087 | 2022 | – | 368,072 |
| 1992 | – | 254,170 | 2023 | – | 280,626 |
| 1993 | – | 254,012 | 2024 | – | 208,459 |
| 1994 | – | 260,559 | | | |
| 1995 | – | 197,039 | | | |
| 1996 | – | 247,371 | | | |
| 1997 | – | 214,689 | | | |
| 1998 | – | 221,580 | | | |
| 1999 | – | 222,110 | | | |
| 2000 | – | 184,053 | | | |

*Note*: En dashes (–) denote the method of enumeration was not in operation.

Appendix J3.–Bear River early-run sockeye salmon escapement and escapement goal, 1970–2024.



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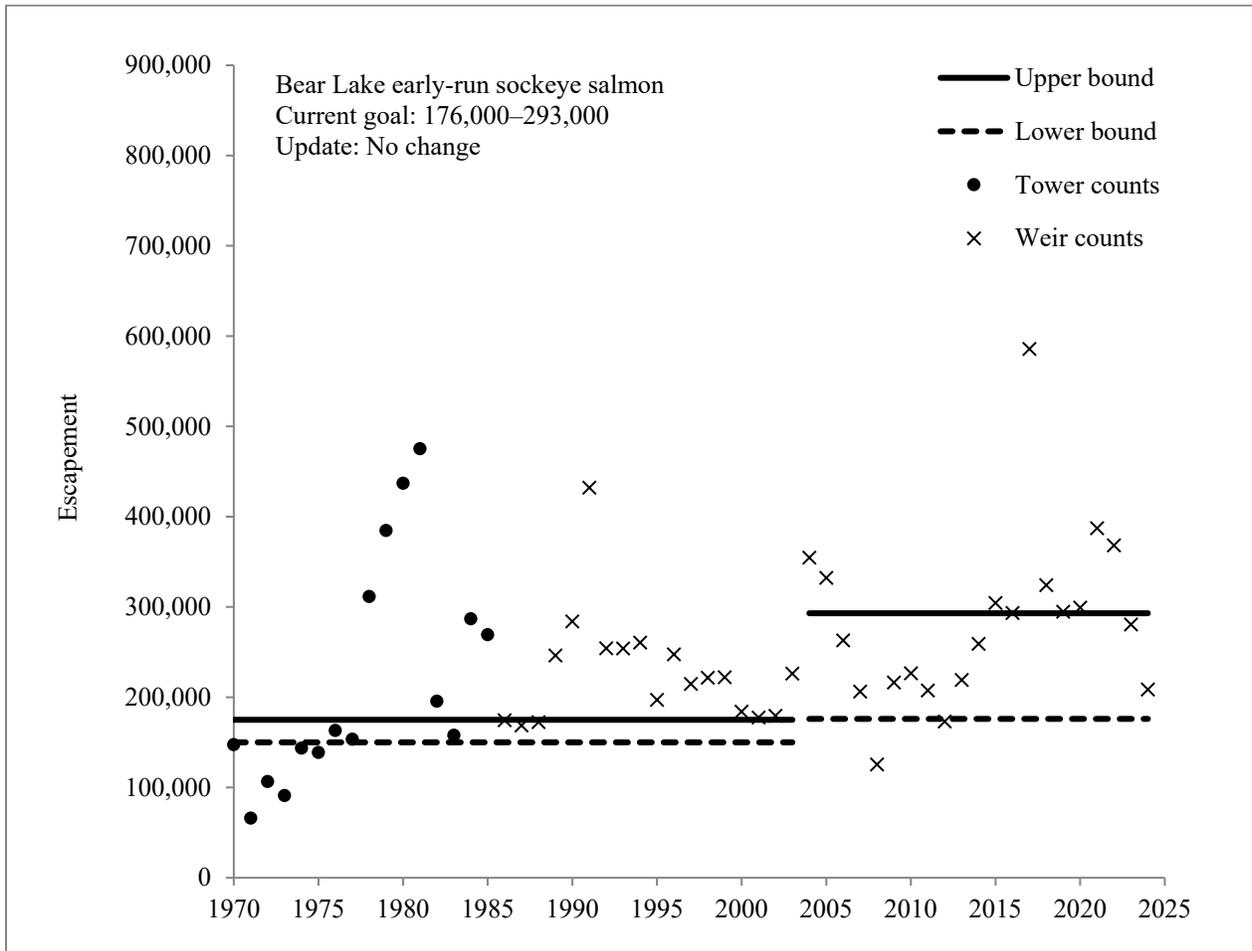
Appendix J4.–Bear River late-run sockeye salmon escapements, 1970–2024.

| Year | Tower counts | Weir counts | Year | Tower counts | Weir counts |
|------|------|------|------|------|------|
| 1970 | 121,633 | – | 2001 | – | 122,505 |
| 1971 | 185,050 | – | 2002 | – | 95,520 |
| 1972 | 20,429 | – | 2003 | – | 139,799 |
| 1973 | 34,002 | – | 2004 | – | 80,435 |
| 1974 | 106,495 | – | 2005 | – | 221,752 |
| 1975 | 131,207 | – | 2006 | – | 182,005 |
| 1976 | 121,865 | – | 2007 | – | 224,767 |
| 1977 | 61,617 | – | 2008 | – | 195,474 |
| 1978 | 418,472 | – | 2009 | – | 133,263 |
| 1979 | 567,387 | – | 2010 | – | 142,966 |
| 1980 | 238,038 | – | 2011 | – | 132,549 |
| 1981 | 214,728 | – | 2012 | – | 116,442 |
| 1982 | 104,503 | – | 2013 | – | 196,926 |
| 1983 | 172,143 | – | 2014 | – | 206,954 |
| 1984 | 108,151 | – | 2015 | – | 210,644 |
| 1985 | 170,739 | – | 2016 | – | 139,720 |
| 1986 | – | 98,047 | 2017 | – | 214,160 |
| 1987 | – | 89,317 | 2018 | – | 232,907 |
| 1988 | – | 140,637 | 2019 | – | 205,273 |
| 1989 | – | 204,804 | 2020 | – | 200,802 |
| 1990 | – | 262,946 | 2021 | – | 192,760 |
| 1991 | – | 173,913 | 2022 | – | 148,928 |
| 1992 | – | 195,830 | 2023 | – | 170,703 |
| 1993 | – | 197,988 | 2024 | – | 245,768 |
| 1994 | – | 204,441 | | | |
| 1995 | – | 107,961 | | | |
| 1996 | – | 119,629 | | | |
| 1997 | – | 145,311 | | | |
| 1998 | – | 193,420 | | | |
| 1999 | – | 127,890 | | | |
| 2000 | – | 90,947 | | | |

*Note*: En dashes (–) denote the method of enumeration was not in operation.

Appendix J5.–Bear River late-run sockeye salmon escapement and escapement goal, 1970–2024.
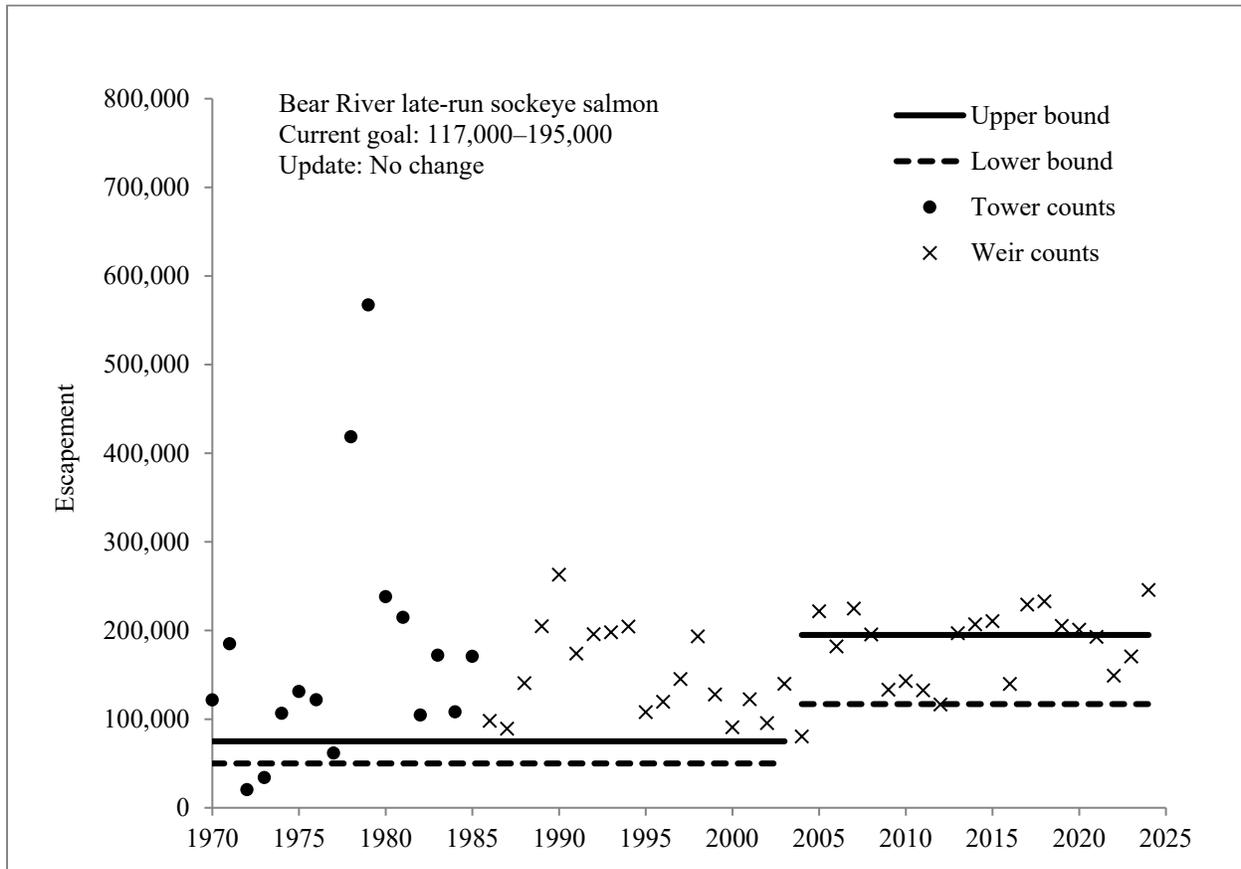
Appendix J6.–Bear Lake late-run sockeye salmon brood table.

| Year | Escapement | Age | | | | | | | | | | | | | | | | Total return | R/S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.1 | 0.2 | 1.1 | 0.3 | 1.2 | 2.1 | 0.4 | 1.3 | 2.2 | 3.1 | 1.4 | 2.3 | 3.2 | 1.5 | 2.4 | 3.3 | | |
| 1989 | 204,804 | 0 | 0 | 2,599 | 1,932 | 6,504 | 40,756 | 0 | 52,714 | 638,148 | 0 | 2,223 | 322,645 | 1,191 | 0 | 439 | 67 | 1,069,218 | 5.22 |
| 1990 | 262,946 | 0 | 0 | 0 | 1,037 | 35,887 | 11,911 | 82 | 77,905 | 795,302 | 0 | 94 | 250,526 | 13,215 | 0 | 751 | 1,370 | 1,188,080 | 4.52 |
| 1991 | 173,913 | 0 | 0 | 1,123 | 211 | 39,738 | 15,637 | 90 | 32,615 | 192,725 | 146 | 979 | 91,586 | 1,564 | 0 | 0 | 1 | 376,415 | 2.16 |
| 1992 | 195,830 | 0 | 0 | 247 | 741 | 7,789 | 19,961 | 226 | 44,890 | 356,357 | 0 | 0 | 73,155 | 339 | 0 | 44 | 215 | 503,964 | 2.57 |
| 1993 | 197,988 | 0 | 189 | 122 | 7,940 | 6,631 | 30,910 | 1 | 6,601 | 366,291 | 123 | 184 | 114,578 | 5,819 | 0 | 100 | 1,299 | 540,788 | 2.73 |
| 1994 | 204,441 | 0 | 316 | 1,705 | 312 | 20,444 | 21,371 | 0 | 18,139 | 566,411 | 0 | 55 | 156,901 | 1,098 | 32 | 714 | 261 | 787,759 | 3.85 |
| 1995 | 107,961 | 0 | 24 | 1,279 | 497 | 30,943 | 27,553 | 0 | 47,482 | 455,680 | 0 | 860 | 147,895 | 32 | 0 | 1,149 | 351 | 713,745 | 6.61 |
| 1996 | 119,629 | 0 | 217 | 1,208 | 1,287 | 37,755 | 8,026 | 32 | 15,639 | 271,516 | 0 | 301 | 143,781 | 19,931 | 0 | 423 | 2,901 | 503,017 | 4.20 |
| 1997 | 145,311 | 0 | 0 | 527 | 1,095 | 5,718 | 28,904 | 50 | 2,606 | 198,531 | 201 | 196 | 103,653 | 7,179 | 0 | 0 | 10 | 348,670 | 2.40 |
| 1998 | 193,420 | 0 | 2,749 | 202 | 1,549 | 13,224 | 10,321 | 0 | 13,915 | 163,150 | 0 | 0 | 20,433 | 375 | 0 | 139 | 25 | 226,082 | 1.17 |
| 1999 | 127,890 | 211 | 2,058 | 347 | 1,316 | 5,837 | 27,362 | 0 | 1,592 | 42,043 | 0 | 520 | 32,175 | 69 | 0 | 579 | 11 | 114,120 | 0.89 |
| 2000 | 90,947 | 15 | 722 | 7,625 | 225 | 15,160 | 7,762 | 69 | 78,873 | 491,468 | 0 | 1,916 | 134,683 | 339 | 0 | 1,062 | 837 | 740,756 | 8.14 |
| 2001 | 122,505 | 134 | 921 | 540 | 3,355 | 14,271 | 10,434 | 106 | 41,740 | 203,429 | 0 | 816 | 124,321 | 5 | 0 | 1,670 | 0 | 401,742 | 3.28 |
| 2002 | 95,520 | 11 | 7,476 | 6,420 | 2,354 | 137,064 | 15,417 | 104 | 150,956 | 584,702 | 0 | 1,123 | 136,306 | 0 | 0 | 234 | 0 | 1,042,167 | 10.91 |
| 2003 | 139,799 | 221 | 2,665 | 4,320 | 2,046 | 62,296 | 17,103 | 0 | 230,760 | 436,775 | 0 | 1,841 | 145,171 | 233 | 0 | 0 | 0 | 903,431 | 6.46 |
| 2004 | 80,435 | 0 | 0 | 1,171 | 5,012 | 51,056 | 9,458 | 0 | 24,643 | 115,873 | 0 | 174 | 85,731 | 0 | 0 | 0 | 0 | 293,118 | 3.64 |
| 2005 | 221,752 | 0 | 0 | 419 | 0 | 6,422 | 9,871 | 0 | 63,392 | 260,270 | 0 | 0 | 117,166 | 27 | 0 | 0 | 70 | 457,637 | 2.06 |
| 2006 | 182,005 | 0 | 0 | 0 | 346 | 27,840 | 3,337 | 0 | 50,692 | 33,869 | 135 | 0 | 21,657 | 10,994 | 0 | 543 | 1,320 | 150,733 | 0.83 |
| 2007 | 224,767 | 0 | 0 | 1,753 | 0 | 4,504 | 2,348 | 0 | 16,311 | 56,893 | 0 | 35 | 33,983 | 1,456 | 0 | 625 | 851 | 118,759 | 0.53 |
| 2008 | 195,474 | 0 | 0 | 1,366 | 0 | 1,394 | 8,315 | 0 | 10,494 | 224,569 | 0 | 17 | 71,361 | 2,015 | 0 | 0 | 489 | 320,020 | 1.64 |
| 2009 | 133,263 | 0 | 0 | 807 | 0 | 12,396 | 14,650 | 0 | 9,667 | 367,576 | 0 | 0 | 110,111 | 0 | 0 | 0 | 0 | 515,207 | 3.9 |
| 2010 | 142,966 | 0 | 0 | 0 | 159 | 7,333 | 10,439 | 0 | 2,538 | 417,546 | 0 | 0 | 78,302 | 630 | 0 | 0 | 0 | 516,947 | 3.6 |
| 2011 | 132,549 | 0 | 0 | 238 | 0 | 8,809 | 32,542 | 0 | 9,597 | 184,773 | 0 | 0 | 75,191 | 0 | 0 | 296 | 0 | 311,446 | 2.35 |
| 2012 | 116,442 | 0 | 0 | 666 | 0 | 7,204 | 9,401 | 0 | 8,584 | 77,008 | 0 | 0 | 114,961 | 0 | 0 | 0 | 793 | 218,617 | 1.9 |
| 2013 | 196,926 | 0 | 0 | 43,356 | 0 | 142,870 | 16,982 | 0 | 199,652 | 352,759 | 0 | 108 | 107,790 | 0 | 0 | 0 | 0 | 863,515 | 4.4 |
| 2014 | 208,459 | 0 | 0 | 7,319 | 0 | 93,514 | 8,763 | 0 | 54,500 | 186,611 | 0 | 0 | 70,586 | 0 | 0 | 0 | 0 | 421,294 | 2.0 |
| 2015 | 201,664 | 0 | 0 | 12,744 | 0 | 87,604 | 8,045 | 0 | 69,092 | 185,934 | 0 | 0 | 42,439 | 0 | 0 | 0 | 0 | 405,859 | 2.0 |
| 2016 | 139,720 | 0 | 0 | 3,575 | 0 | 28,758 | 5,372 | 0 | 63,806 | 104,082 | 0 | 759 | 42,376 | 0 | 0 | 0 | 0 | 248,728 | 1.8 |
| 2017 | 214,160 | 0 | 0 | 8,992 | 0 | 151,732 | 5,244 | 0 | 63,711 | 103,901 | 0 | 0 | 23,422 | 0 | 0 | 0 | 0 | 357,002 | 1.7 |

-continued-

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| Year | Escapement | 0.1 | 0.2 | 1.1 | 0.3 | 1.2 | 2.1 | 0.4 | 1.3 | 2.2 | 3.1 | 1.4 | 2.3 | 3.2 | 1.5 | 2.4 | 3.3 | Total return | R/S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Age | | | | | | | | | | |
| 2018 | 232,907 | 0 | 0 | 8,502 | 0 | 151,485 | 5,234 | 0 | 117,155 | 47,268 | 0 | 386 | 9,085 | 0 | 0 | 0 | 0 | 339,116 | 1.5 |
| 2019 | 205,273 | 0 | 0 | 8,487 | 0 | 55,100 | 0 | 0 | 102,669 | 29,340 | 0 | 0 | 6,102 | 0 | | | | | |
| 2020 | 200,802 | 0 | 0 | 6,005 | 0 | 41,375 | 4,334 | 0 | 78,429 | 54,030 | 0 | | | | | | | | |
| 2021 | 192,760 | 0 | 0 | 17,906 | 0 | 198,586 | 994 | | | | | | | | | | | | |
| 2022 | 148,928 | 0 | 0 | 1,219 | | | | | | | | | | | | | | | |
| 2023 | 123,703 | 0 | | | | | | | | | | | | | | | | | |
| 2024 | 245,768 | 0 | | | | | | | | | | | | | | | | | |

Note: R/S = recruits per spawner.

Appendix J7.–Ricker AR(1) spawner–recruit function fitted to Bear River late-run sockeye salmon data, 1989–2018 brood years. Outliers were removed. Model parameters are below the plot.
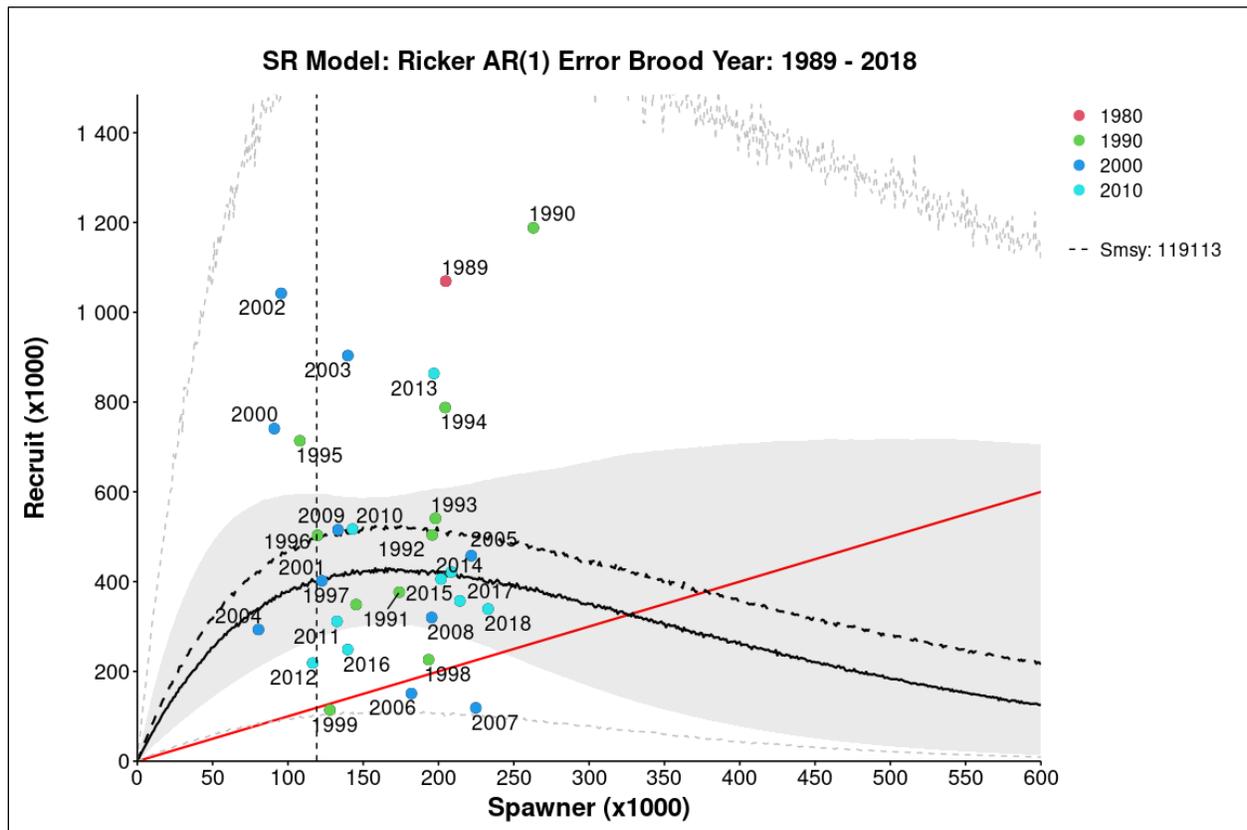


*Note*: Solid line = median, dashed line = mean, vertical dashed line = S$_{SMY}$, grey fill = 95% Bayesian credible interval.

| | alpha | Ln alpha | beta x 10$^{-6}$ | S$_{MSY}$ | U$_{MSY}$ | S$_{MAX}$ |
|---|---|---|---|---|---|---|
| Median | 6.669 | 1.897 | 0.573 | 119,113 | 0.697 | 174,381 |

Appendix J8.–Yield curve for Bear River late-run sockeye salmon.
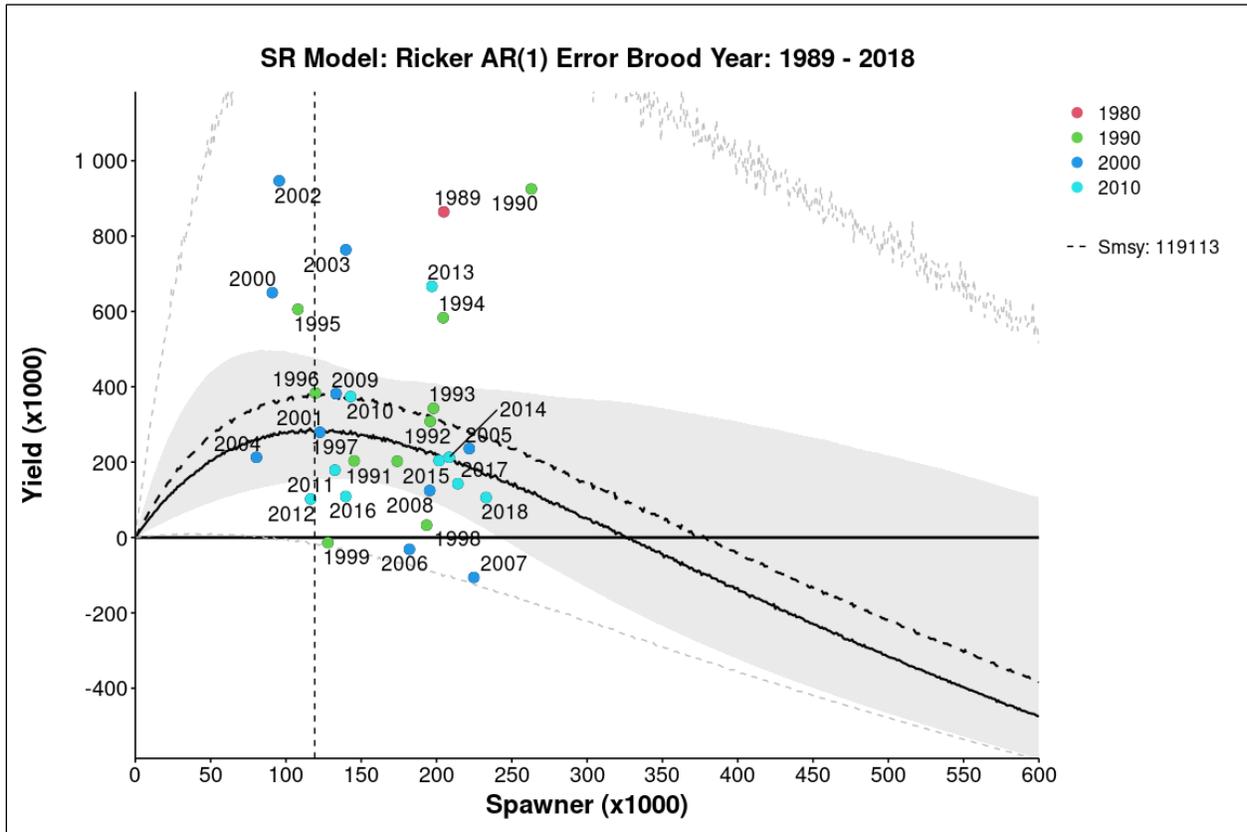


*Note*: Solid line = median, dashed line = mean, vertical dashed line = S$_{SMY}$, grey fill = 95% Bayesian credible interval.

Appendix J9.–Maximum sustained yield (MSY) profile for Bear Rive late-run sockeye salmon.
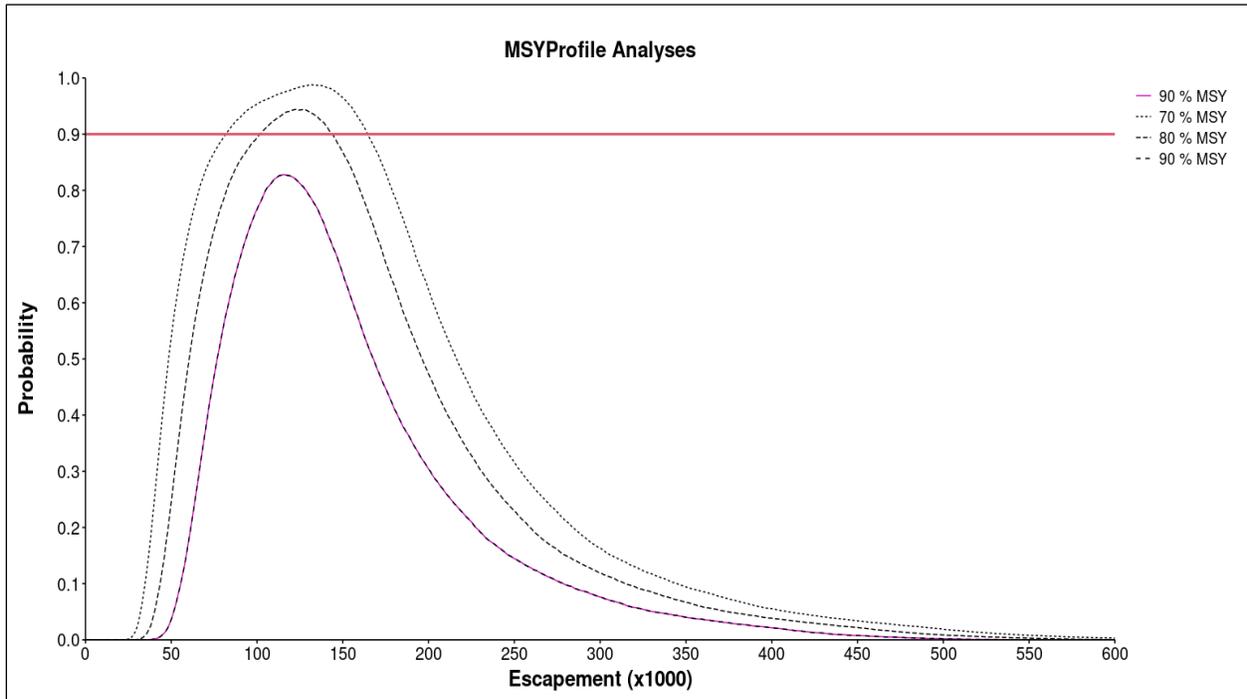


*Note*: The current SEG for Bear River late-run sockeye salmon is 117,000–195,000 fish. The updated AR(1) Ricker analysis estimated that an escapement range of 102,000–143,000 fish would achieve 80% of MSY 90% of the time.

# APPENDIX K. SUPPORTING INFORMATION FOR THE CHRISTIANSON LAGOON SOCKEYE SALMON ESCAPEMENT GOAL

Appendix K1.–Description of stock and escapement goal for Christianson sockeye salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Christianson Lagoon |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 23,000–50,000 (2023) |
| Updated escapement goals: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Peak aerial survey counts |
| Data available: | |
| Counts: | Aerial survey, 1971–present. |
| Age composition: | None |
| Stock specific harvest: | No stock specific harvest data are available. |
| Smolt information: | None |
| Limnology: | None |
| Data contrast: | 1971–2024: 101.6 |
| Methodology: | Percentile approach (20th and 60th percentiles) |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Goals originally established in 1987 (25,000–50,000). Modified in 2023 using the updated percentile approach to 23,000–50,000. |
| Comments: | Sockeye salmon escaping streams 311-3008 and 311-3007 in the Northwestern District are considered Christianson Lagoon fish. Harvest rates are believed to exceed 0.40. |

Appendix K2.–Christianson Lagoon sockeye salmon escapements, 1971–2024.

| Year | Peak aerial survey count | Year | Peak aerial survey count |
|---|---|---|---|
| 1971 | 29,540 | 2001 | 36,400 |
| 1972 | 4,330 | 2002 | 54,700 |
| 1973 | 4,070 | 2003 | 52,200 |
| 1974 | 3,050 | 2004 | 75,400 |
| 1975 | 10,400 | 2005 | 51,300 |
| 1976 | 21,035 | 2006 | 35,705 |
| 1977 | 2,200 | 2007 | 56,700 |
| 1978 | 10,150 | 2008 | 110,800 |
| 1979 | 24,700 | 2009 | 46,700 |
| 1980 | 60,700 | 2010 | 11,300 |
| 1981 | 58,100 | 2011 | 35,200 |
| 1982 | 25,500 | 2012 | 40,000 |
| 1983 | 13,300 | 2013 | 16,500 |
| 1984 | 63,000 | 2014 | 59,000 |
| 1985 | 25,700 | 2015 | 34,900 |
| 1986 | 36,800 | 2016 | 111,700 |
| 1987 | 22,300 | 2017 | 290,600 |
| 1988 | 29,700 | 2018 | 26,100 |
| 1989 | 44,700 | 2019 | 39,300 |
| 1990 | 43,600 | 2020 | 22,800 |
| 1991 | 61,900 | 2021 | 61,100 |
| 1992 | 27,500 | 2022 | 40,700 |
| 1993 | 44,700 | 2023 | 79,600 |
| 1994 | 37,800 | 2024 | 55,000 |
| 1995 | 41,800 | | |
| 1996 | 18,260 | | |
| 1997 | 33,300 | | |
| 1998 | 34,800 | | |
| 1999 | 48,000 | | |
| 2000 | 45,000 | | |

Appendix K3.–Christianson Lagoon sockeye salmon escapement and escapement goal, 1971–2024.
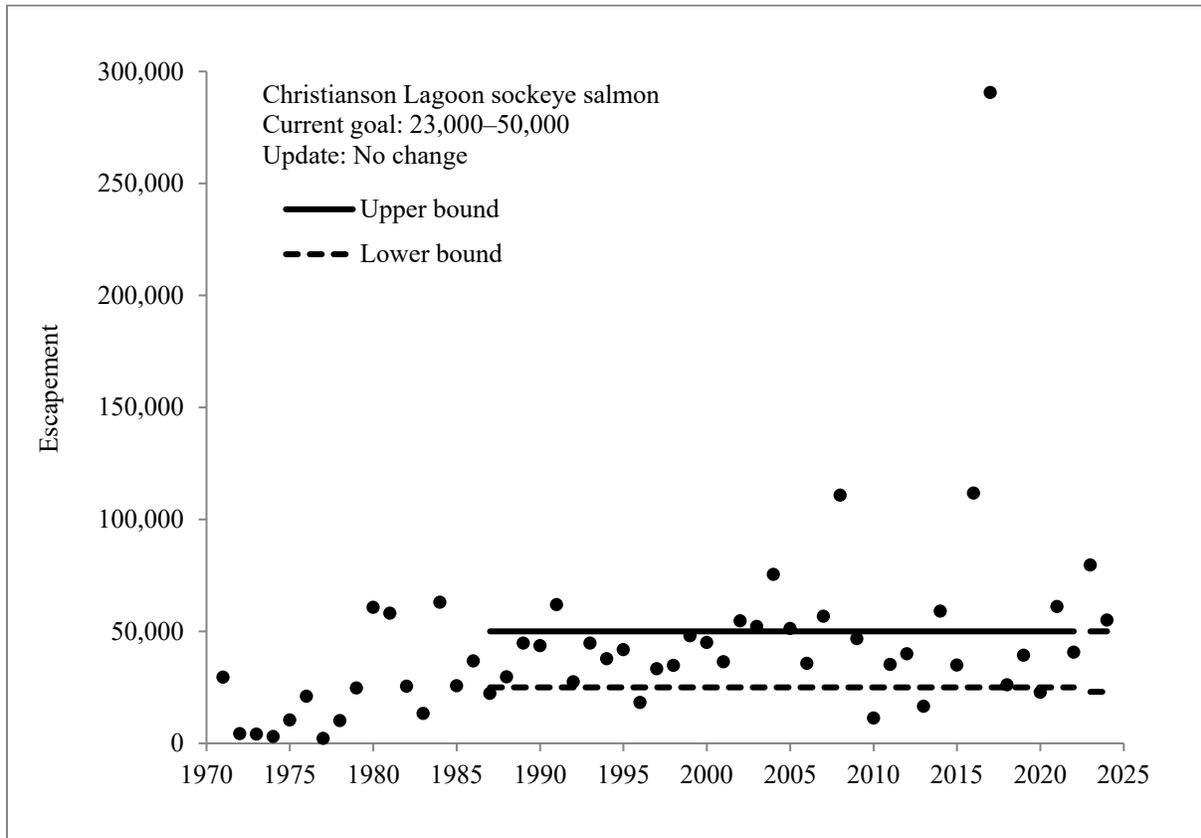
# APPENDIX L. SUPPORTING INFORMATION FOR THE CINDER RIVER SOCKEYE SALMON ESCAPEMENT GOAL

Appendix L1.–Description of stock and escapement goal for Cinder River sockeye salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIM), Cinder River |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 36,000–94,000 (2016) |
| Updated escapement goals: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Peak aerial survey counts |
| Data available: | |
| Counts: | Aerial survey, 1970–present, with greater effort since 1991. |
| Age composition: | None |
| Stock specific harvest: | No stock specific harvest data are available. |
| Smolt information: | None |
| Limnology: | None |
| Data contrast: | 1991–2024: 21.82 |
| Methodology: | Percentile approach (20th and 60th percentiles) |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Goals originally established in 1980s (6,000–12,000) and modified in 2006 (12,000–48,000). Mud Creek was included in the Cinder River goal in 2016, which revised the goal to 36,000–94,000. |
| Comments: | The percentile approach used data from 1991 to the present as those data represent better quality aerial surveys. Only streams that were consistently sampled for 10 or more years and that contributed ≥5% to the total historical aggregate peak aerial survey escapement were used in the analysis. For this review cycle, the following streams met the criteria: Mud Creek (318-2004), Cinder River mainstem (318-2006A), Lava Creek (318-2006D), and Wiggly Creek (318-2006J) in the Northern District of the APAIMA. |

Appendix L2.–Cinder River sockeye salmon escapements, 1991–2024.

| Year | Peak aerial survey escapement[a] |
|------|------|
| 1991 | 45,500 |
| 1992 | 11,100 |
| 1993 | NS |
| 1994 | 77,400 |
| 1995 | 36,000 |
| 1996 | NS |
| 1997 | 65,000 |
| 1998 | 22,703 |
| 1999 | 18,000 |
| 2000 | 82,500 |
| 2001 | 51,000 |
| 2002 | 10,200 |
| 2003 | 111,000 |
| 2004 | 65,000 |
| 2005 | 120,000 |
| 2006 | 106,000 |
| 2007 | 130,000 |
| 2008 | 121,800 |
| 2009 | 131,000 |
| 2010 | 106,000 |
| 2011 | 105,500 |
| 2012 | 73,000 |
| 2013 | 90,000 |
| 2014 | 96,000 |
| 2015 | 118,000 |
| 2016 | 200,500 |
| 2017 | 222,600 |
| 2018 | 189,000 |
| 2019 | 95,025 |
| 2020 | 115,800 |
| 2021 | 54,500 |
| 2022 | 102,500 |
| 2023 | 54,700 |
| 2024 | 35,200 |

*Note*: NS = No survey or the counts were incomplete.

[a] The peak aerial survey represents the streams consistently sampled ≥10 years and contributing ≥5% to the total historical aggregate peak aerial survey escapement.

Appendix L3.–Cinder River sockeye salmon escapement and escapement goal, 1991–2024.



Cinder River sockeye salmon
Current goal: 36,000–94,000
Update: No change
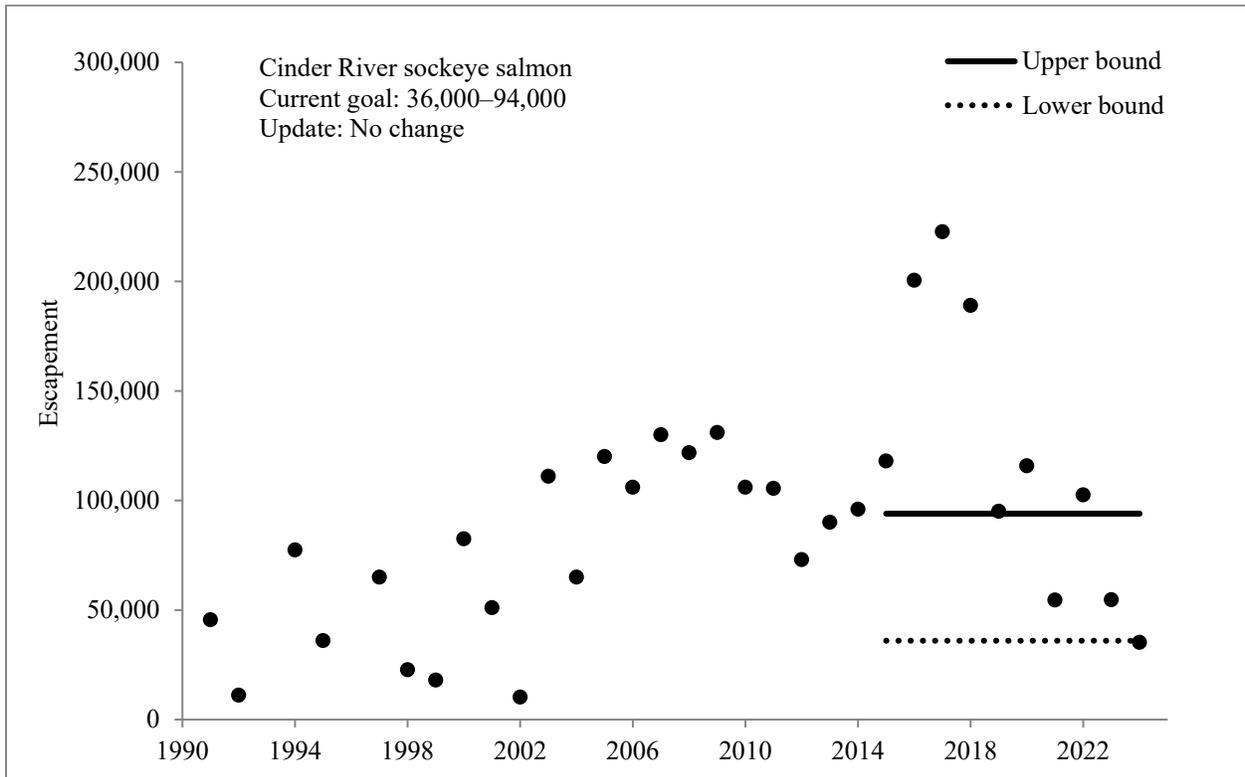
# APPENDIX M. SUPPORTING INFORMATION FOR THE ILNIK RIVER SOCKEYE SALMON ESCAPEMENT GOAL

Appendix M1.–Description of stock and escapement goal for Ilnik River sockeye salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Ilnik River |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 40,000–75,000 (2023) |
| Updated escapement goals: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Weir counts |
| Data available: | |
|    Counts: | Aerial survey 1960–1990, weir counts 1991–present. |
|    Age composition: | Catch: 1988–1990, 1996–2000; escapement: 1987–2024 |
|    Stock specific harvest: | No stock specific harvest data are available. |
|    Smolt information: | None |
|    Limnology: | Wildman Lake 1993–1995 |
|    Data contrast: | 1991–2024: 9.2 |
|    Methodology: | Percentile approach (15th and 65th percentiles) |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Goals originally established in 1991 (40,000–60,000) and modified in 2023 (40,000–75,000). |
| Comments: | When limnological data were available, past escapement goals were based on percentile, euphotic volume analysis, smolt biomass as a function of zooplankton biomass, and lake surface area methods. Ilnik River (stream 316-2001) system escapement includes Ocean River (streams 316-1005 and 316-1006) escapement. Wildman Lake drains into either the Bering Sea or, on rare occasion, Ilnik Lagoon via Ocean River depending on shore morphology. |

Appendix M2.–Ilnik Lake sockeye salmon escapements, 1970–2024.

| Year | Escapement index[a] | Weir counts | Year | Escapement index[a] | Weir counts |
|------|------|------|------|------|------|
| 1970 | 15,300 | – | 2001 | – | 58,000 |
| 1971 | 26,100 | – | 2002 | – | 43,000 |
| 1972 | 13,100 | – | 2003 | – | 69,000 |
| 1973 | 16,000 | – | 2004 | – | 82,000 |
| 1974 | 14,500 | – | 2005 | – | 154,000 |
| 1975 | 40,500 | – | 2006 | – | 88,000 |
| 1976 | 37,500 | – | 2007 | – | 93,000 |
| 1977 | 30,000 | – | 2008 | – | 44,300 |
| 1978 | 23,100 | – | 2009[b] | – | 66,000 |
| 1979 | 97,200 | – | 2010[b] | – | 59,000 |
| 1980 | 97,600 | – | 2011 | – | 43,000 |
| 1981 | 97,500 | – | 2012[b] | – | 61,000 |
| 1982 | 42,500 | – | 2013[b] | – | 51,000 |
| 1983 | 28,600 | – | 2014 | – | 59,000 |
| 1984 | 29,500 | – | 2015 | – | 26,000 |
| 1985 | 27,000 | – | 2016[b] | – | 124,000 |
| 1986 | 66,800 | – | 2017 | – | 238,000 |
| 1987 | 30,700 | – | 2018 | – | 81,000 |
| 1988 | 26,900 | – | 2019 | – | 75,000 |
| 1989 | 16,500 | – | 2020 | – | 41,000 |
| 1990 | 35,700 | – | 2021 | – | 70,000 |
| 1991 | – | 135,000 | 2022 | – | 110,500 |
| 1992 | – | 45,000 | 2023 | – | 109,021 |
| 1993 | – | 70,000 | 2024 | – | 99,694 |
| 1994 | – | 75,000 | | | |
| 1995 | – | 39,000 | | | |
| 1996 | – | 62,000 | | | |
| 1997 | – | 82,000 | | | |
| 1998 | – | 50,000 | | | |
| 1999 | – | 75,000 | | | |
| 2000 | – | 95,000 | | | |

*Note*: En dashes (–) denote the method of enumeration was not in operation.

[a]   The escapement index represents the peak survey, enumeration of carcasses, as well as ancillary and qualitative data.

[b]   Estimate includes Ocean River sockeye salmon.

Appendix M3.–Ilnik River sockeye salmon escapement and escapement goal, 1970–2024.
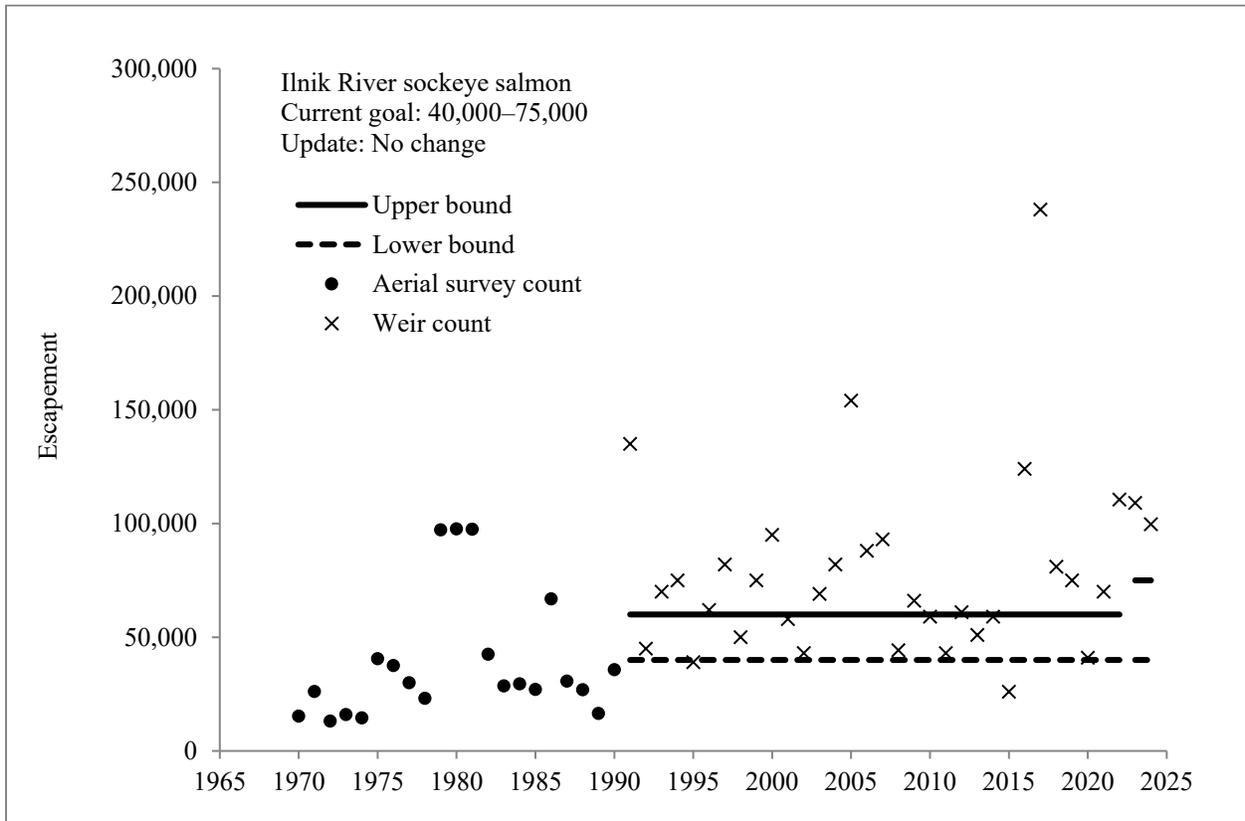
# APPENDIX N. SUPPORTING INFORMATION FOR THE MCLEES LAKE SOCKEYE SALMON ESCAPEMENT GOAL

Appendix N1.–Description of stock and escapement goal for McLees Lake sockeye salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), McLees Lake |
| Fishery: | Commercial and subsistence |
| Current escapement goal: | LB SEG: >10,000 (2019) |
| Updated escapement goals: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Aerial surveys and weir counts |
| Data available: | |
|   Counts: | Aerial survey, 1974–2003, 2018, 2019; weir counts, 2001–2017, 2020–2023 |
|   Age composition: | Escapement: 2001–2017, 2020–2023 |
|   Stock specific harvest: | No stock specific commercial harvest data are available. Stock-specific subsistence harvest data from returns of completed permits are available from 2001–2024. |
|   Smolt information: | 2013 |
|   Limnology: | McLees Lake nutrients:1994; zooplankton, temperature, dissolved oxygen, and light: 1993, 1994, 2009–2017, 2020–2023 |
|   Data contrast: | 2001–2024: 20.2 |
|   Methodology: | Percentile approach (15th and 65th percentiles), euphotic volume analysis, and smolt biomass as a function of zooplankton biomass. |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Goals originally established in 1993 (4,000–6,000). The goal was eliminated in 2003 but after reevaluation in 2009, an SEG of 10,000–60,000 fish during years of weir operations was employed. The goal was modified to a LB SEG of 10,000 fish in 2019. |
| Comments: | Only weir escapement was examined in the review. McLees Lake drains into Reese Bay located in statistical area 302-35 of the Unalaska District. |

Appendix N2.–McLees Lake sockeye salmon escapements, 2001–2024.

| Year | Weir counts |
|------|-------------|
| 2001 | 45,866 |
| 2002 | 97,780 |
| 2003 | 101,793 |
| 2004 | 40,328 |
| 2005 | 12,097 |
| 2006 | 12,936 |
| 2007 | 21,428 |
| 2008 | 8,661 |
| 2009 | 10,120 |
| 2010 | 32,842 |
| 2011 | 36,602 |
| 2012 | 15,111 |
| 2013 | 15,687 |
| 2014 | 12,424 |
| 2015 | 20,284 |
| 2016 | 39,892 |
| 2017 | 13,195 |
| 2018 | NW |
| 2019 | NW |
| 2020 | 5,037 |
| 2021 | 16,173 |
| 2022 | 14,015 |
| 2023 | 26,945 |
| 2024 | NW |

*Note*: NW = No weir.

Appendix N3.–McLees Lake sockeye salmon escapement and escapement goals, 2001–2024.
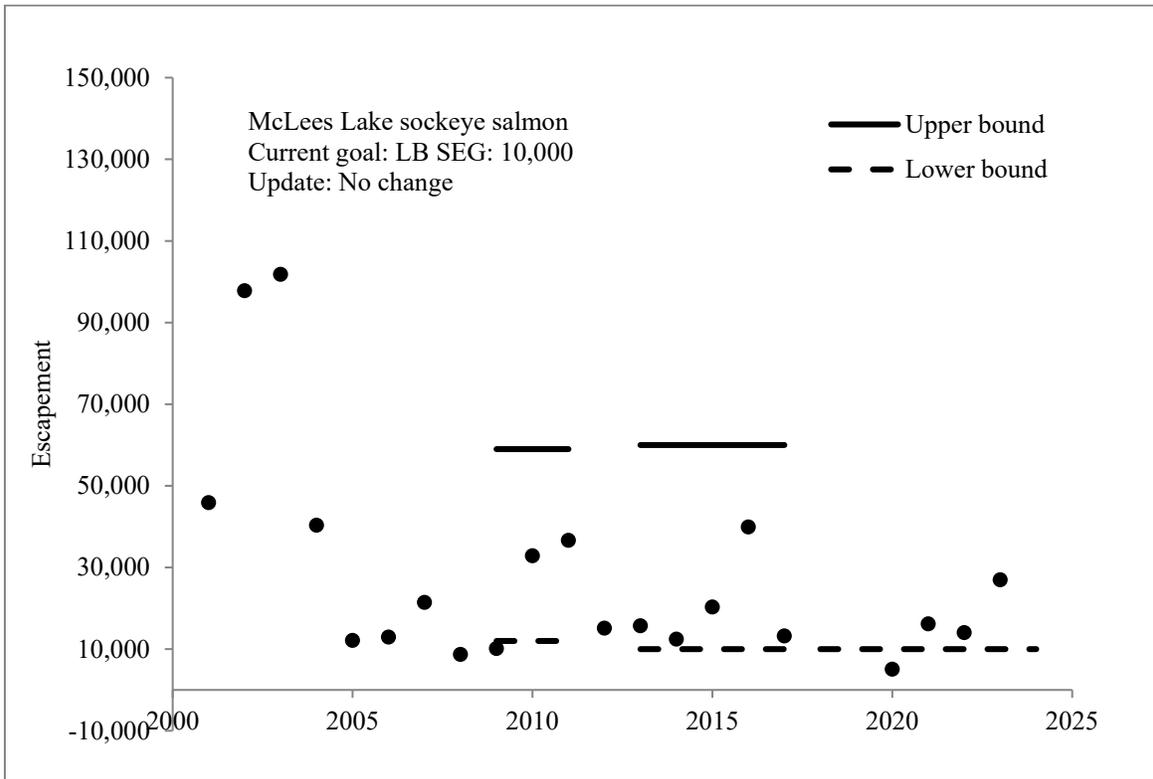


*Note*: LB SEG = lower bound sustainable escapement goal.

# APPENDIX O. SUPPORTING INFORMATION FOR THE MESHIK RIVER SOCKEYE SALMON ESCAPEMENT GOAL

Appendix O1.–Description of stock and escapement goals for Meshik River sockeye salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Meshik River |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 48,000–86,000 (2015) |
| Updated escapement goals: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Peak aerial survey count |
| Data available: | |
|    Counts: | Aerial survey, 1968–present. Survey effort increased from 1990 onward. |
|    Age composition: | None |
|    Stock specific harvest: | No stock specific commercial harvest data are available. |
|    Smolt information: | None |
|    Limnology: | None |
|    Data contrast: | 1990–2024: 18.5 |
|    Methodology: | Percentile approach (20th and 60th percentiles) |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Goals originally established in 1980s (10,000–20,000). Modified in 2006 (20,000–60,000). In 2007, Red Bluff and Yellow Bluff Creeks were included in the Meshik River sockeye salmon goal, increasing it to 25,000–100,000 fish. The goal was again revised in 2015 (48,000–86,000 fish). |
| Comments: | This index includes Red Bluff (stream number 317-204A) and Yellow Bluff (stream number 317-204B) Creeks in addition to Meshik River (stream number 317-207A-T). Counts exclude carcasses and are limited to streams. Peak counts for each stream were used for the review. If both Red Bluff and Yellow Bluff Creeks were not surveyed, that year was excluded from the analysis. Current escapement goal based on percentile approach. |

Appendix O2.–Meshik River sockeye salmon escapements, 1990–2024.

| Year | Indexed escapement[a] |
|------|------------------------|
| 1990 | 36,790 |
| 1991 | 24,880 |
| 1992 | 37,400 |
| 1993 | NS |
| 1994 | 45,700 |
| 1995 | 70,020 |
| 1996 | 59,950 |
| 1997 | 15,100 |
| 1998 | 56,025 |
| 1999 | 68,800 |
| 2000 | 279,100 |
| 2001 | 237,700 |
| 2002 | **37,570** |
| 2003 | 153,600 |
| 2004 | 132,100 |
| 2005 | 144,600 |
| 2006 | 152,700 |
| 2007 | 92,700 |
| 2008 | 95,750 |
| 2009 | 125,000 |
| 2010 | 110,700 |
| 2011 | 101,900 |
| 2012 | 50,900 |
| 2013 | 123,600 |
| 2014 | 114,700 |
| 2015 | 171,700 |
| 2016 | 112,800 |
| 2017 | 191,525 |
| 2018 | 133,700 |
| 2019 | 103,200 |
| 2020 | 63,350 |
| 2021 | 117,500 |
| 2022 | 112,700 |
| 2023 | 79,100 |
| 2024 | 48,000 |

[a] The peak aerial survey represents the peak survey for each stream and excludes enumeration of carcasses and ancillary or qualitative data. This index includes Red Bluff (317-204A) and Yellow Bluff (317-204B) creeks in addition to Meshik River (317-207). Bold escapements do not include all index streams, NS = no survey.

Appendix O3.–Meshik River sockeye salmon escapement and escapement goals, 1990–2024.



90
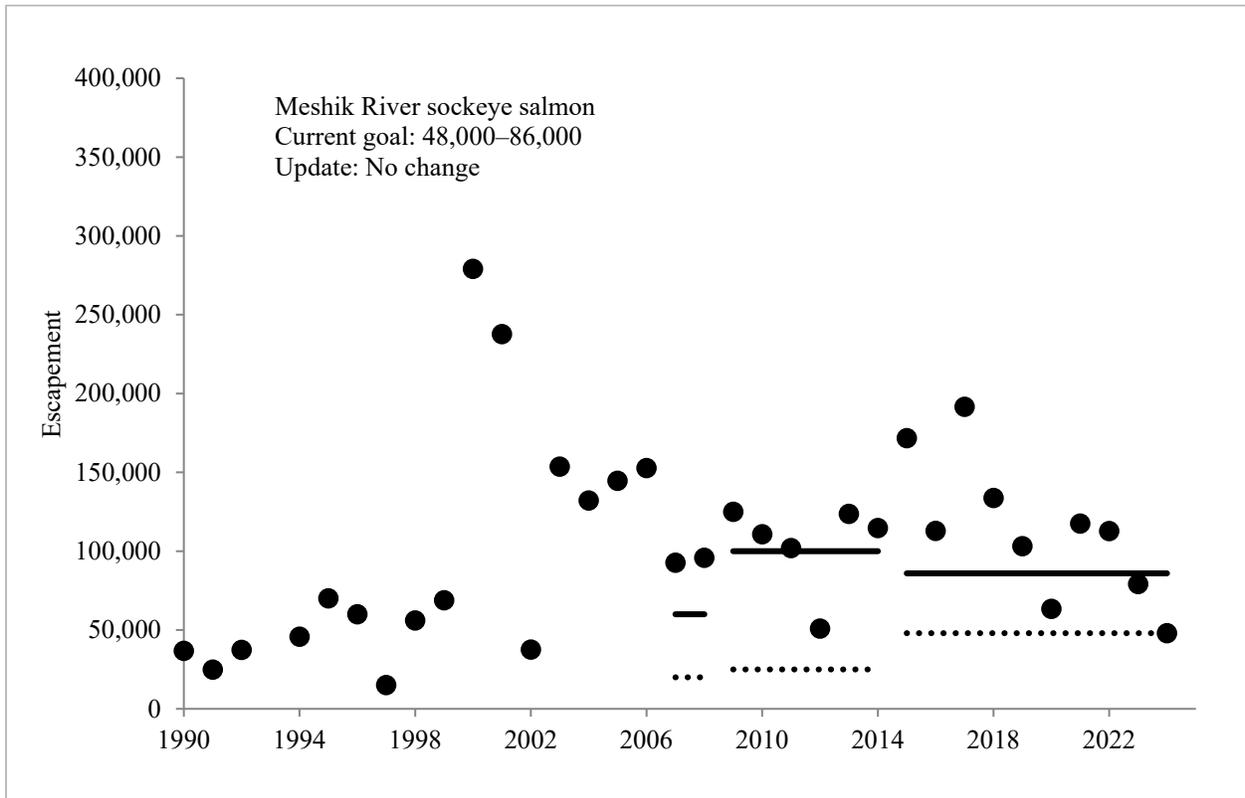
# APPENDIX P. SUPPORTING INFORMATION FOR THE MORTENSENS LAGOON SOCKEYE SALMON ESCAPEMENT GOALS

Appendix P1.–Description of stock and escapement goals for Mortensens Lagoon sockeye salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Mortensens Lagoon |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 1,400–5,700 (2023) |
| Updated escapement goals: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Peak aerial survey and weir counts |
| Data available: | |
|    Counts: | Aerial survey, 1968–present. Weir counts 2001–2006. |
|    Age composition: | Escapement 2001–2006 |
|    Stock specific harvest: | No stock specific commercial harvest data are available. |
|    Smolt information: | None |
|    Limnology: | Mortensen Lake 1993, 1994 |
|    Data contrast: | 1970–2024: 35 |
|    Methodology: | Percentile approach (20th and 60th percentiles) |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Goal (3,200–3,400) first established in 1987 and modified to 1,400–5,700 in 2023 using the updated percentile approach. |
| Comments: | Harvest rates were believed to exceed 0.40. Peak aerial survey counts used in this review. Mortensens Lagoon is in statistical area 284-62 of the Southwestern District of the APAIMA. |

Appendix P2.–Mortensens Lagoon sockeye salmon escapement, 1970–2024.

| Year | Peak aerial survey count | Weir count | Year | Peak aerial survey count | Weir count |
|------|--------------------------|------------|------|--------------------------|------------|
| 1970 | 800 | – | 2001 | 5,500 | – |
| 1971 | 800 | – | 2002 | 4,000 | 5,200 |
| 1972 | 1,000 | – | 2003 | 6,500 | 16,804 |
| 1973 | 1,250 | – | 2004 | 6,400 | 7,215 |
| 1974 | 3,070 | – | 2005 | 17,500 | 21,703 |
| 1975 | 4,000 | – | 2006 | 3,000 | 14,688 |
| 1976 | 3,400 | – | 2007 | 6,200 | – |
| 1977 | 5,700 | – | 2008 | 5,600 | – |
| 1978 | 13,000 | – | 2009 | 9,000 | – |
| 1979 | 5,900 | – | 2010 | 6,600 | – |
| 1980 | 2,100 | – | 2011 | 500 | – |
| 1981 | 2,800 | – | 2012 | 5,000 | – |
| 1982 | 1,800 | – | 2013 | 4,000 | – |
| 1983 | 3,400 | – | 2014 | 500 | – |
| 1984 | 4,700 | – | 2015 | NS | – |
| 1985 | 2,800 | – | 2016 | 13,000 | – |
| 1986 | 1,400 | – | 2017 | 15,500 | – |
| 1987 | 3,200 | – | 2018 | 1,200 | – |
| 1988 | 2,300 | – | 2019 | 800 | – |
| 1989 | 2,400 | – | 2020 | 800 | – |
| 1990 | 800 | – | 2021 | 1,500 | – |
| 1991 | 7,050 | – | 2022 | 3,900 | – |
| 1992 | 5,700 | – | 2023 | 5,100 | – |
| 1993 | 3,000 | – | 2024 | NS | – |
| 1994 | 2,800 | – | | | |
| 1995 | 7,900 | – | | | |
| 1996 | 1,060 | – | | | |
| 1997 | 1,300 | – | | | |
| 1998 | 2,100 | – | | | |
| 1999 | 1,500 | – | | | |
| 2000 | 1,500 | – | | | |

*Note*: En dashes (–) denote the project was not in operation, or the data were not used in the analysis.
NS = No survey was conducted.

Appendix P3.–Mortensens Lagoon sockeye salmon escapement and escapement goal, 1970–2024.

# APPENDIX Q. SUPPORTING INFORMATION FOR THE NELSON SOCKEYE SALMON ESCAPEMENT GOAL

Appendix Q1.–Description of stock and escapement goal for Nelson sockeye salmon.

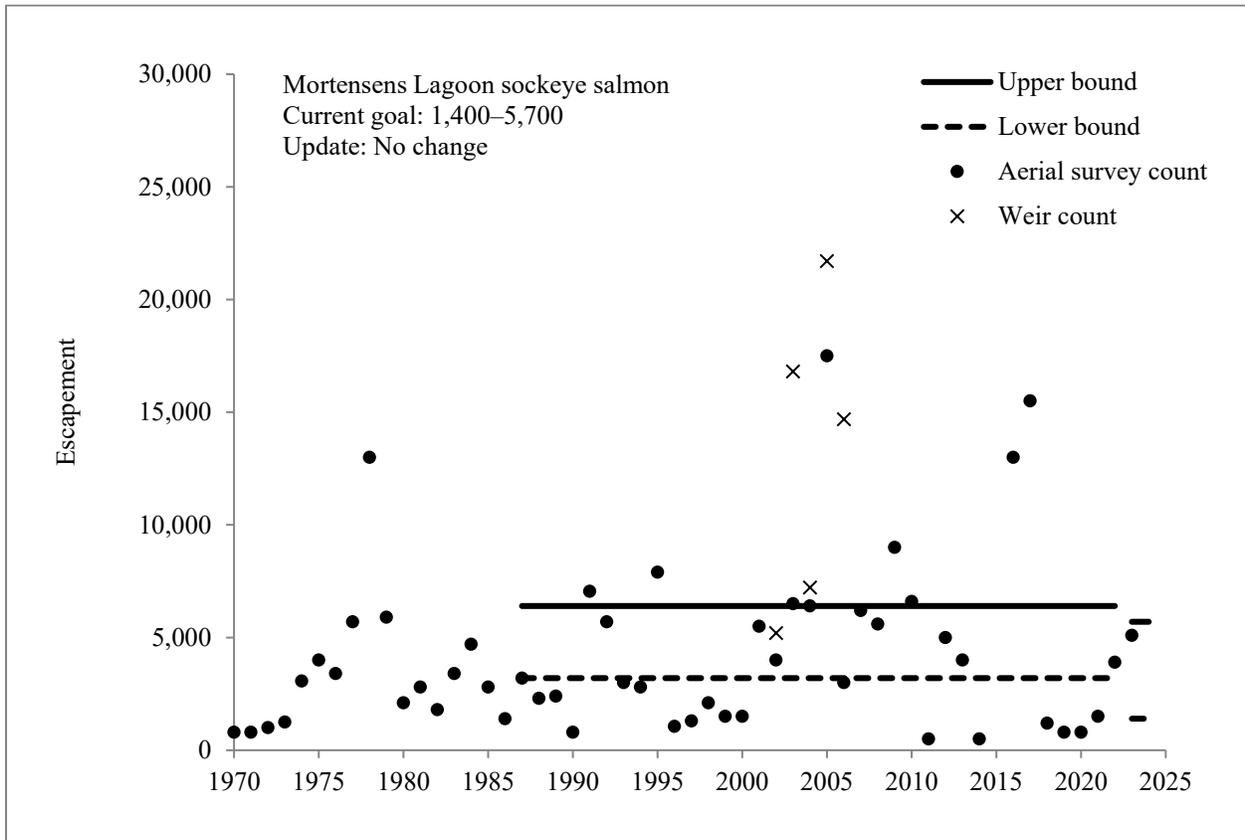| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Nelson |
| Fishery: | Commercial |
| Current escapement goal: | BEG: 97,000–219,000 (2004) |
| Updated escapement goals: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Tower and weir counts |
| Data available: | |
| Counts: | Tower counts, 1962–1988; weir counts, 1989–present. |
| Age composition: | Escapement 1985–present, catch 1985–1991, 2017 |
| Stock specific harvest: | Stock-specific harvest information is available from 1970 to present. |
| Smolt information: | 2023 to present |
| Limnology: | Sapsuk Lake: 1993–1995, 2014 |
| Data contrast: | 1970–2024: 49 |
| Methodology: | Ricker analysis, percentile approach, euphotic volume model, smolt biomass as a function of zooplankton biomass model, |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Goal (100,000–150,000) first established in 1979 and modified to 97,000–219,000 in 2003. |
| Comments: | Catch and catch age data are from Nelson Lagoon (statistical area 313-30). The Sapsuk River (stream number 313-3003) drains into Nelson Lagoon. |
| | The 2025 AR(1) Ricker analysis using data from 1982 to 2017 estimated $S_{MSY}$ at 132,524 fish with the 5th and 95th percentiles of the median ranging 87,000–183,000 fish. |

Appendix Q2.–Nelson sockeye salmon escapements, 1970–2024.

| Year | Tower escapement | Weir escapement | Year | Tower escapement | Weir escapement |
|------|------------------|-----------------|------|------------------|-----------------|
| 1970 | 81,900 | – | 2001 | – | 201,962 |
| 1971 | 58,900 | – | 2002 | – | 315,693 |
| 1972 | 27,600 | – | 2003 | – | 343,511 |
| 1973 | 18,200 | – | 2004 | – | 480,097 |
| 1974 | 37,400 | – | 2005 | – | 303,000 |
| 1975 | 133,100 | – | 2006 | – | 215,000 |
| 1976 | 101,000 | – | 2007 | – | 180,000 |
| 1977 | 146,000 | – | 2008 | – | 141,600 |
| 1978 | 280,000 | – | 2009 | – | 157,000 |
| 1979 | 352,100 | – | 2010 | – | 108,000 |
| 1980 | 335,400 | – | 2011 | – | 89,000 |
| 1981 | 244,200 | – | 2012 | – | 103,300 |
| 1982 | 171,600 | – | 2013 | – | 248,000 |
| 1983 | 124,000 | – | 2014 | – | 250,000 |
| 1984 | 244,100 | – | 2015 | – | 257,000 |
| 1985 | 314,300 | – | 2016 | – | 300,000 |
| 1986 | 117,000 | – | 2017 | – | 381,000 |
| 1987 | 144,000 | – | 2018 | – | 221,000 |
| 1988 | 128,300 | – | 2019 | – | 115,000 |
| 1989 | – | 193,300 | 2020 | – | 185,000 |
| 1990 | – | 240,700 | 2021 | – | 110,000 |
| 1991 | – | 268,400 | 2022 | – | 98,000 |
| 1992 | – | 162,300 | 2023 | – | 250,213 |
| 1993 | – | 207,200 | 2024 | – | 754,766 |
| 1994 | – | 325,300 | | | |
| 1995 | – | 329,400 | | | |
| 1996 | – | 250,500 | | | |
| 1997 | – | 183,100 | | | |
| 1998 | – | 159,800 | | | |
| 1999 | – | 202,067 | | | |
| 2000 | – | 182,700 | | | |

*Note*: En dashes (–) denote the project was not in operation.

Appendix Q3.–Nelson sockeye salmon escapement and escapement goals, 1970–2024.
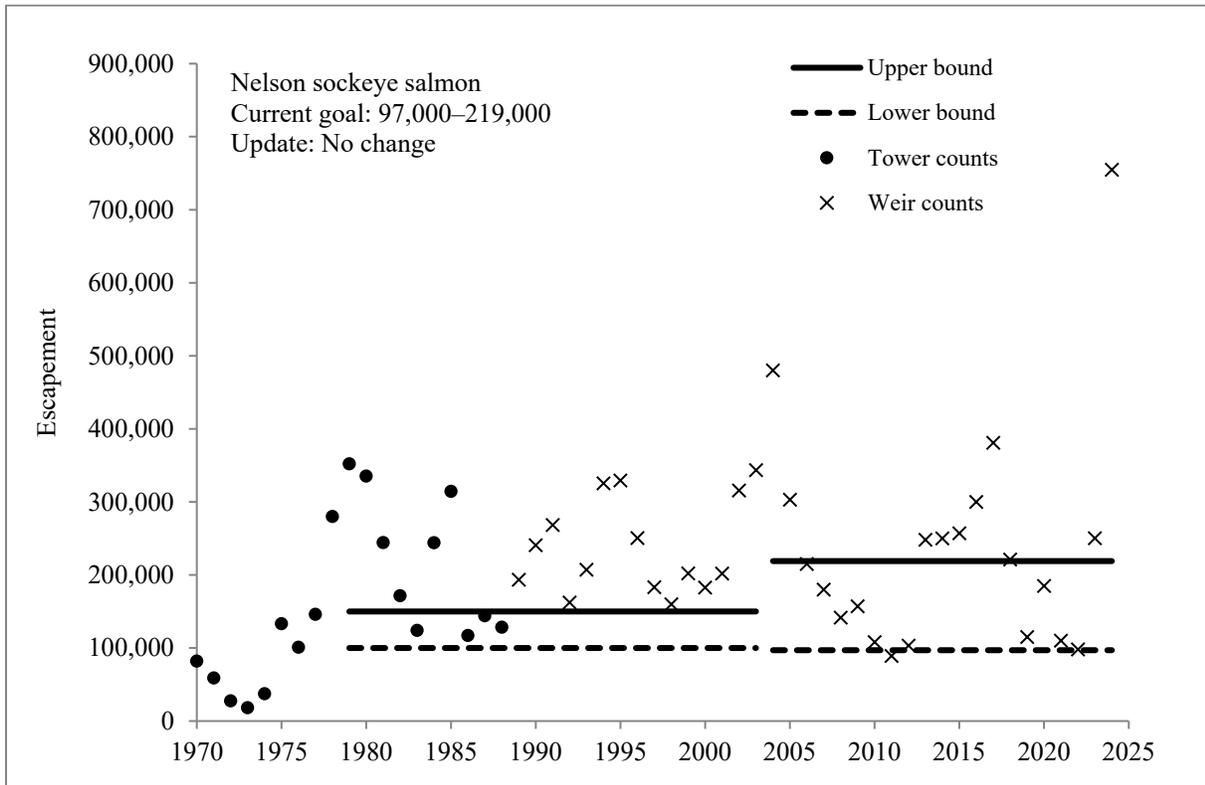
Appendix Q4.–Brood table for Nelson sockeye salmon.

| Brood year | Escapement | 0.1 | 0.2 | 1.1 | 0.3 | 1.2 | 2.1 | 0.4 | 1.3 | 2.2 | 3.1 | 1.4 | 2.3 | 3.2 | 1.5 | 2.4 | 3.3 | 2.5 | Total return | Return/ spawner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1982 | 179,600 | 0 | 314 | 65 | 5,608 | 11,464 | 2,635 | 67 | 45,490 | 143,389 | 0 | 123 | 125,841 | 1,572 | 0 | 963 | 8 | 0 | 337,539 | 1.9 |
| 1983 | 128,800 | 0 | 852 | 0 | 5,740 | 43,856 | 23,711 | 244 | 72,682 | 53,532 | 0 | 936 | 66,102 | 210 | 0 | 2,964 | 2,751 | 0 | 273,580 | 2.1 |
| 1984 | 251,000 | 0 | 624 | 6,638 | 1,912 | 59,603 | 12,678 | 206 | 59,696 | 276,557 | 154 | 449 | 275,013 | 10,624 | 0 | 17 | 0 | 0 | 704,171 | 2.8 |
| 1985 | 314,000 | 0 | 168 | 671 | 976 | 77,339 | 8,037 | 171 | 110,618 | 238,924 | 0 | 0 | 109,028 | 0 | 0 | 1,632 | 46 | 0 | 547,610 | 1.7 |
| 1986 | 117,500 | 40 | 187 | 353 | 4,370 | 33,650 | 13 | 0 | 188,884 | 175,014 | 0 | 7,801 | 140,116 | 285 | 0 | 1,817 | 1,979 | 0 | 554,509 | 4.7 |
| 1987 | 155,700 | 0 | 57 | 0 | 1,588 | 71,043 | 4,221 | 143 | 112 | 151,270 | 0 | 2,986 | 287,652 | 7,874 | 0 | 3,054 | 288 | 0 | 530,288 | 3.4 |
| 1988 | 142,900 | 0 | 574 | 3,357 | 3,441 | 132,457 | 9,261 | 0 | 126,716 | 257,895 | 0 | 4,422 | 129,241 | 2,311 | 0 | 1,025 | 1,051 | 0 | 671,751 | 4.7 |
| 1989 | 206,800 | 0 | 520 | 394 | 3,029 | 21,813 | 8,550 | 0 | 42,705 | 422,926 | 333 | 510 | 129,324 | 2,124 | 0 | 104 | 0 | 0 | 632,332 | 3.1 |
| 1990 | 269,200 | 0 | 274 | 0 | 1,836 | 39,391 | 15,830 | 47 | 104,895 | 490,010 | 0 | 770 | 66,012 | 0 | 0 | 0 | 388 | 0 | 719,453 | 2.7 |
| 1991 | 279,200 | 0 | 43 | 57 | 850 | 27,591 | 29,153 | 13 | 93,773 | 397,612 | 0 | 1,059 | 117,254 | 0 | 0 | 0 | 0 | 0 | 667,405 | 2.4 |
| 1992 | 179,700 | 177 | 372 | 367 | 7,022 | 101,543 | 16,002 | 35 | 88,011 | 138,846 | 0 | 270 | 65,466 | 1,950 | 0 | 0 | 323 | 0 | 420,384 | 2.3 |
| 1993 | 262,200 | 0 | 588 | 696 | 6,168 | 32,200 | 0 | 0 | 101,468 | 68,567 | 0 | 757 | 43,961 | 0 | 0 | 247 | 822 | 0 | 255,474 | 1.0 |
| 1994 | 333,400 | 0 | 0 | 66 | 1,784 | 56,338 | 25,719 | 0 | 55,711 | 278,510 | 0 | 187 | 64,812 | 2,238 | 0 | 396 | 850 | 0 | 486,611 | 1.5 |
| 1995 | 338,700 | 0 | 408 | 1,225 | 9053 | 40,189 | 8,048 | 45 | 40,011 | 159,412 | 0 | 443 | 59,776 | 0 | 0 | 427 | 1,805 | 0 | 320,842 | 0.9 |
| 1996 | 250,500 | 0 | 487 | 369 | 4,798 | 103,080 | 373 | 1,351 | 127,901 | 121,449 | 179 | 258 | 116,142 | 29,140 | 0 | 284 | 5,141 | 0 | 510,952 | 2.0 |
| 1997 | 183,000 | 0 | 28 | 336 | 11,403 | 40,783 | 5,776 | 0 | 36,770 | 364,391 | 234 | 781 | 188,100 | 3,880 | 0 | 1,428 | 592 | 0 | 654,502 | 3.6 |
| 1998 | 159,810 | 0 | 5,419 | 603 | 8,105 | 49,739 | 8,673 | 0 | 88,210 | 248,385 | 1,082 | 989 | 122,876 | 1,015 | 0 | 77 | 738 | 0 | 535,911 | 3.4 |
| 1999 | 202,067 | 0 | 23,892 | 284 | 13,776 | 47,362 | 104,402 | 591 | 106,577 | 677,132 | 532 | 1,501 | 117,938 | 6,593 | 0 | 446 | 2,055 | 0 | 1,103,081 | 5.5 |
| 2000 | 182,694 | 234 | 10,599 | 2,296 | 15,861 | 42,510 | 2,498 | 0 | 53,774 | 363,805 | 0 | 927 | 75,988 | 433 | 0 | 258 | 598 | 0 | 569,781 | 3.1 |
| 2001 | 201,962 | 2152 | 34,953 | 20 | 15,722 | 38,048 | 8,544 | 705 | 60,178 | 252,169 | 0 | 672 | 124,101 | 1,063 | 0 | 469 | 1,137 | 0 | 539,933 | 2.7 |
| 2002 | 315,689 | 159 | 16,950 | 191 | 12,230 | 52,044 | 4,310 | 271 | 67,350 | 238,834 | 0 | 392 | 94,440 | 836 | 0 | 238 | 0 | 0 | 488,245 | 1.5 |
| 2003 | 343,511 | 820 | 7,994 | 784 | 10,424 | 71,839 | 884 | 327 | 79,730 | 73,596 | 0 | 2,072 | 30,449 | 497 | 0 | 0 | 244 | 0 | 279,660 | 0.8 |
| 2004 | 480,097 | 0 | 1,166 | 96 | 7,016 | 65,083 | 1,158 | 236 | 144,813 | 163,350 | 0 | 0 | 45,616 | 244 | 0 | 1,142 | 0 | 0 | 429,920 | 0.9 |
| 2005 | 290,000 | 0 | 564 | 181 | 1,962 | 26,112 | 572 | 0 | 80,858 | 35,531 | 0 | 1,604 | 17,003 | 0 | 0 | 0 | 0 | 0 | 164,386 | 0.6 |
| 2006 | 215,000 | 0 | 488 | 430 | 2,386 | 30,824 | 3,136 | 273 | 26,912 | 98,009 | 147 | 0 | 39,325 | 1,618 | 0 | 0 | 1,188 | 145 | 204,881 | 1.0 |
| 2007 | 180,000 | 0 | 0 | 1,296 | 0 | 11,964 | 2,859 | 85 | 11,822 | 66,603 | 0 | 317 | 49,128 | 2,560 | 145 | 1,292 | 554 | 0 | 148,625 | 0.8 |
| 2008 | 141,600 | 0 | 0 | 2,989 | 2,034 | 62,468 | 1,716 | 0 | 73,143 | 189,559 | 0 | 893 | 57,108 | 410 | 0 | 0 | 0 | 0 | 390,320 | 2.8 |
| 2009 | 157,000 | 0 | 0 | 34,315 | 551 | 144,145 | 2,426 | 82 | 98,081 | 157,232 | 0 | 0 | 50,372 | 7,474 | 0 | 0 | 0 | 0 | 494,678 | 3.2 |
| 2010 | 108,000 | 0 | 1,372 | 808 | 4,285 | 132,747 | 6,293 | 0 | 24,898 | 378,437 | 662 | 0 | 61,935 | 4,127 | 0 | 0 | 0 | 0 | 615,564 | 5.7 |
| 2011 | 89,000 | 0 | 221 | 1,369 | 254 | 60,056 | 35,843 | 0 | 45,176 | 325,695 | 0 | 0 | 57,501 | 0 | 0 | 0 | 0 | 0 | 526,115 | 5.9 |
| 2012 | 103,300 | 0 | 0 | 8,532 | 0 | 116,014 | 38,668 | 0 | 45,460 | 375,078 | 0 | 0 | 65,640 | 0 | 0 | 158 | 0 | 0 | 649,550 | 6.3 |
| 2013 | 248,000 | 0 | 0 | 10,170 | 0 | 218,766 | 31,392 | 0 | 42,944 | 241,768 | 0 | 0 | 28,244 | 316 | 0 | 0 | 0 | 0 | 573,601 | 2.3 |

-continued-

| Brood year | Escapement | 0.1 | 0.2 | 1.1 | 0.3 | 1.2 | 2.1 | 0.4 | 1.3 | 2.2 | 3.1 | 1.4 | 2.3 | 3.2 | 1.5 | 2.4 | 3.3 | 2.5 | Total return | Return/spawner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2014 | 250,000 | 0 | 0 | 456 | 0 | 31,427 | 3,780 | 0 | 21,250 | 85,210 | 0 | 0 | 12,203 | 342 | 0 | 0 | 0 | 0 | 154,668 | 0.6 |
| 2015 | 257,000 | 0 | 171 | 575 | 237 | 44,140 | 16,481 | 0 | 15,651 | 189,644 | 0 | 648 | 50,181 | 0 | 0 | 0 | 0 | 0 | 317,728 | 1.2 |
| 2016 | 300,000 | 0 | 0 | 2,842 | 0 | 55,075 | 3,467 | 0 | 31,988 | 60,872 | 0 | 0 | 26,508 | 0 | 0 | 0 | 0 | 0 | 180,752 | 0.6 |
| 2017 | 381,000 | 0 | 0 | 659 | 0 | 59,718 | 1,514 | 0 | 39,821 | 38,163 | 0 | 234 | 5410 | 0 | 0 | 0 | 0 | 0 | 145,519 | 0.4 |
| 2018 | 221,000 | 0 | 0 | 0 | 373 | 15,957 | 4,502 | 340 | 15,907 | 14,675 | 0 | 0 | 4,033 | 1,131 | | | | | | |
| 2019 | 115,000 | 0 | 526 | 30,649 | 1,002 | 226,229 | 11,265 | 0 | 55,275 | 26,043 | 0 | | | | | | | | | |
| 2020 | 185,000 | 0 | 0 | 56,810 | 4 | 846,223 | 18,783 | | | | | | | | | | | | | |
| 2021 | 110,000 | 0 | 1,042 | 6,747 | | | | | | | | | | | | | | | | |
| 2022 | 98,000 | 0 | | | | | | | | | | | | | | | | | | |
| 2023 | 230,213 | | | | | | | | | | | | | | | | | | | |
| 2024 | 754,766 | | | | | | | | | | | | | | | | | | | |

Appendix Q5.–Ricker AR(1) spawner–recruit function fitted to Nelson sockeye salmon data, 1982–2017 brood years. Outliers were removed.
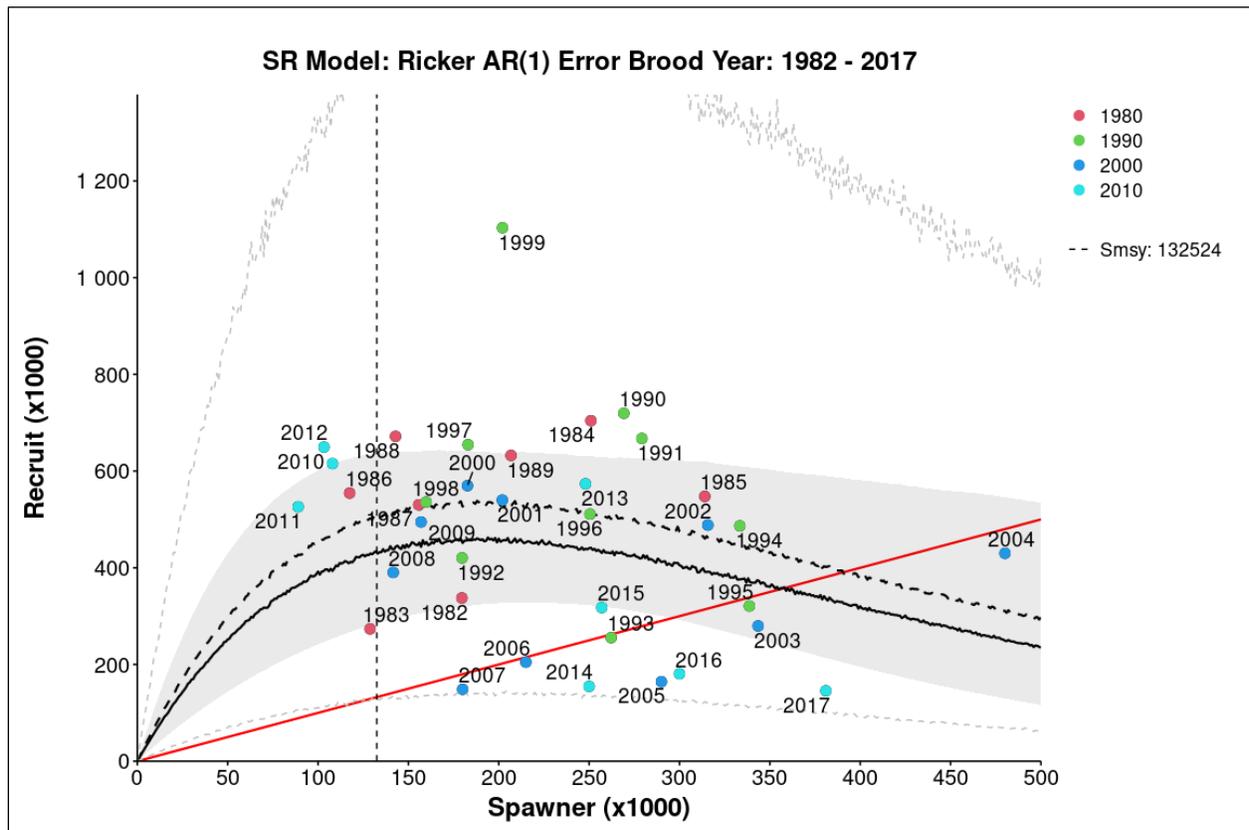


*Note*: Solid line = median, dashed line = mean, vertical dashed line = $S_{SMY}$, grey fill = 95% Bayesian credible interval.

|  | alpha | Ln alpha | beta x10^(-6) | $S_{MSY}$ | $U_{MSY}$ | $S_{MAX}$ |
|---|---|---|---|---|---|---|
| Median | 6.504 | 1.872 | 0.518 | 132,524 | 0..691 | 192,930 |

Appendix Q6.–Yield curve for Nelson sockeye salmon.
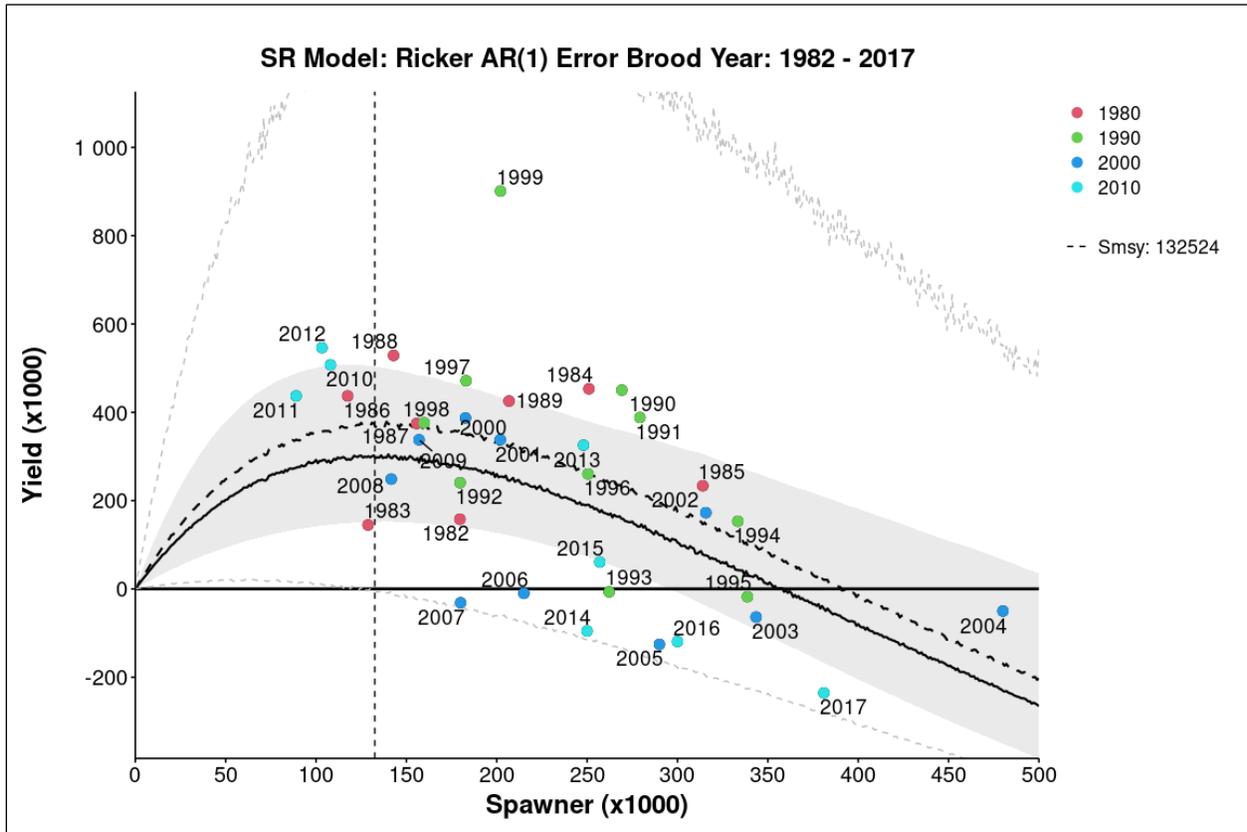


*Note*: Solid line = median, dashed line = mean, vertical dashed line = $S_{SMY}$, grey fill = 95% Bayesian credible interval.

Appendix Q7.–Maximum sustained yield (MSY) profile for Nelson sockeye salmon.



**MSYProfile Analyses**
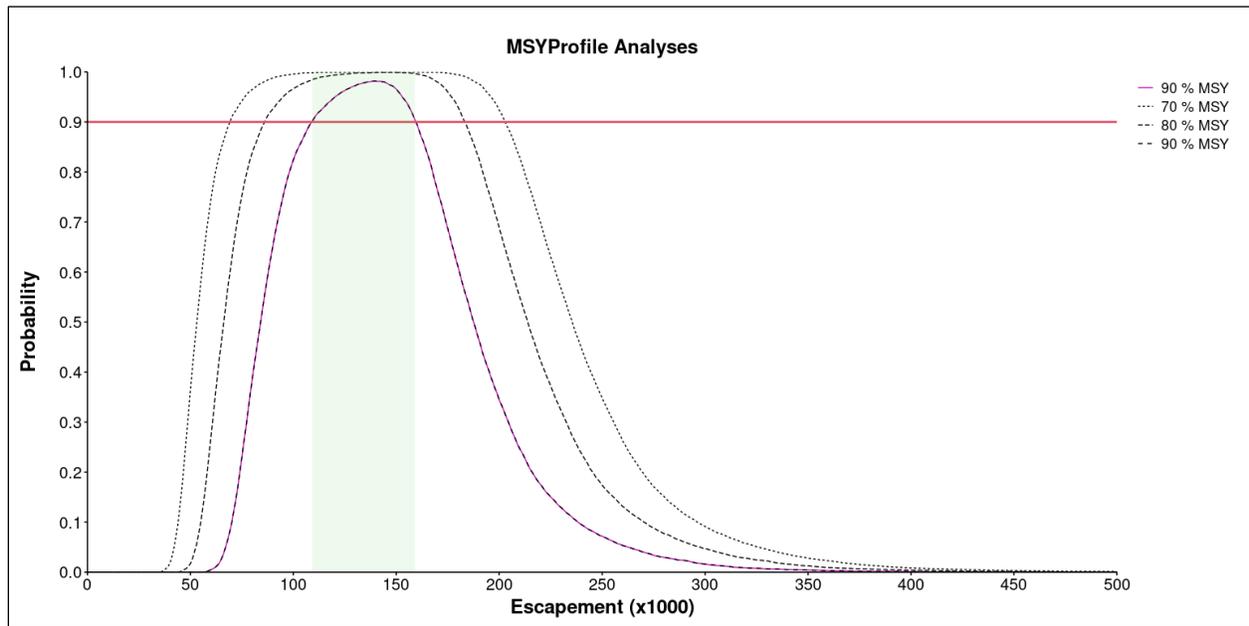
*Note*: The Nelson sockeye salmon BEG is 97,000–219,000 fish. The updated AR(1) Ricker analysis estimated that an escapement range of 87,000–183,000 fish would achieve 80% of MSY 90% of the time.

# APPENDIX R. SUPPORTING INFORMATION FOR THE NORTH CREEK SOCKEYE SALMON ESCAPEMENT GOAL

Appendix R1.–Description of stock and escapement goal for North Creek sockeye salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), North Creek |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 7,500–10,000 (2019) |
| Updated escapement goals: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Peak aerial survey counts |
| Data available: | |
|    Counts: | Aerial survey, 1960–present. |
|    Age composition: | None |
|    Stock specific harvest: | No stock-specific harvest information is available. |
|    Smolt information: | None |
|    Limnology: | None |
|    Data contrast: | 1995–2024: 13.2 |
|    Methodology: | Percentile approach (20th and 60th percentiles) |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Goal (4,400–8,800) first established in the 1980s, modified in 2019 (7,500–10,000) using the updated percentile approach. |
| Comments: | Data used was from 1995–2024. North Creek is stream 313-1002 in the Black Hills Section (313-10) of the Northern District of the APAIMA. |

Appendix R2.–North Creek sockeye salmon escapements, 1970–2024.

| Year | Peak aerial survey count | Year | Peak aerial survey count |
|---|---|---|---|
| 1970 | 600 | 2001 | 8,000 |
| 1971 | – | 2002 | 10,100 |
| 1972 | – | 2003 | – |
| 1973 | – | 2004 | 15,000 |
| 1974 | 1,800 | 2005 | 45,000 |
| 1975 | 1,650 | 2006 | 7,530 |
| 1976 | 7,000 | 2007 | 16,800 |
| 1977 | 3,300 | 2008 | 38,000 |
| 1978 | 500 | 2009 | 8,000 |
| 1979 | 2,100 | 2010 | 18,500 |
| 1980 | 3,350 | 2011 | 10,200 |
| 1981 | 100 | 2012 | 18,000 |
| 1982 | 5,800 | 2013 | 8,500 |
| 1983 | 2,000 | 2014 | 7,500 |
| 1984 | 500 | 2015 | 18,000 |
| 1985 | 3,600 | 2016 | 21,000 |
| 1986 | 2,100 | 2017 | 5,800 |
| 1987 | 8,300 | 2018 | 8,300 |
| 1988 | 6,300 | 2019 | 11,000 |
| 1989 | 7,000 | 2020 | 8,200 |
| 1990 | 5,100 | 2021 | 9,100 |
| 1991 | 9,900 | 2022 | 9,900 |
| 1992 | 15,700 | 2023 | 11,200 |
| 1993 | 6,600 | 2024 | 500 |
| 1994 | 4,600 | | |
| 1995 | 3,400 | | |
| 1996 | 8,000 | | |
| 1997 | 5,700 | | |
| 1998 | 6,700 | | |
| 1999 | 10,900 | | |
| 2000 | 8,100 | | |

*Note*: En dashes (–) denote no fish observed or survey not flown.

Appendix R3.–North Creek sockeye salmon escapement graph, 1970–2024.

# APPENDIX S. SUPPORTING INFORMATION FOR THE ORZINSKI SOCKEYE SALMON ESCAPEMENT GOAL

Appendix S1.–Description of stock and escapement goal for Orzinski sockeye salmon.

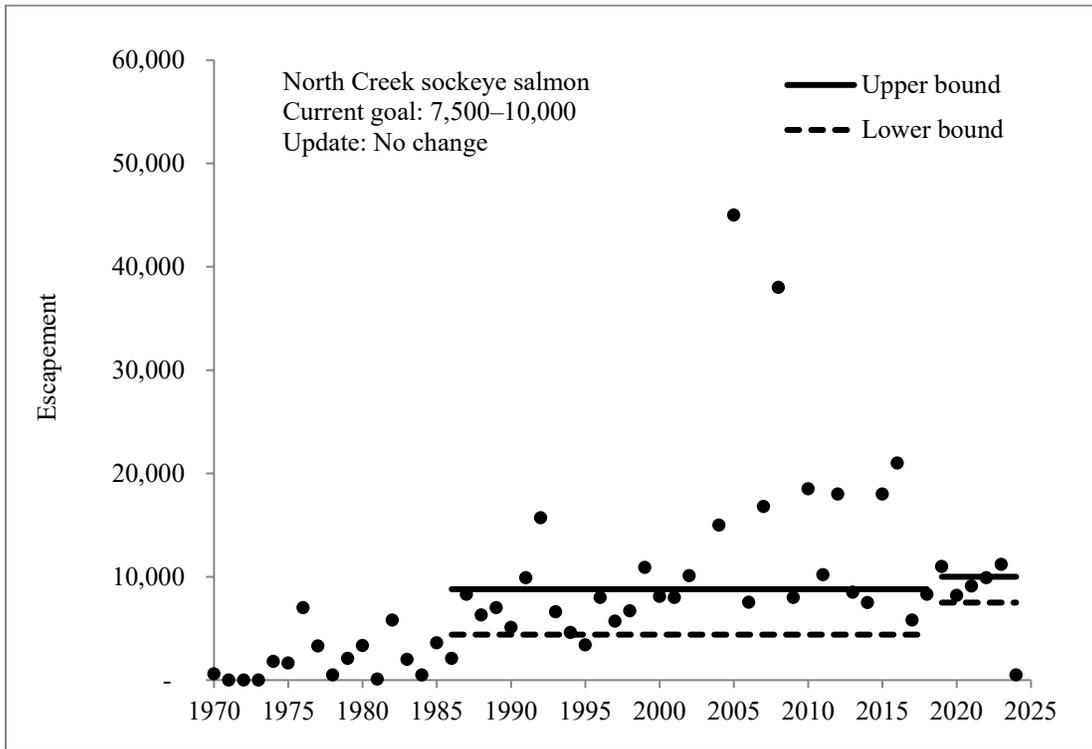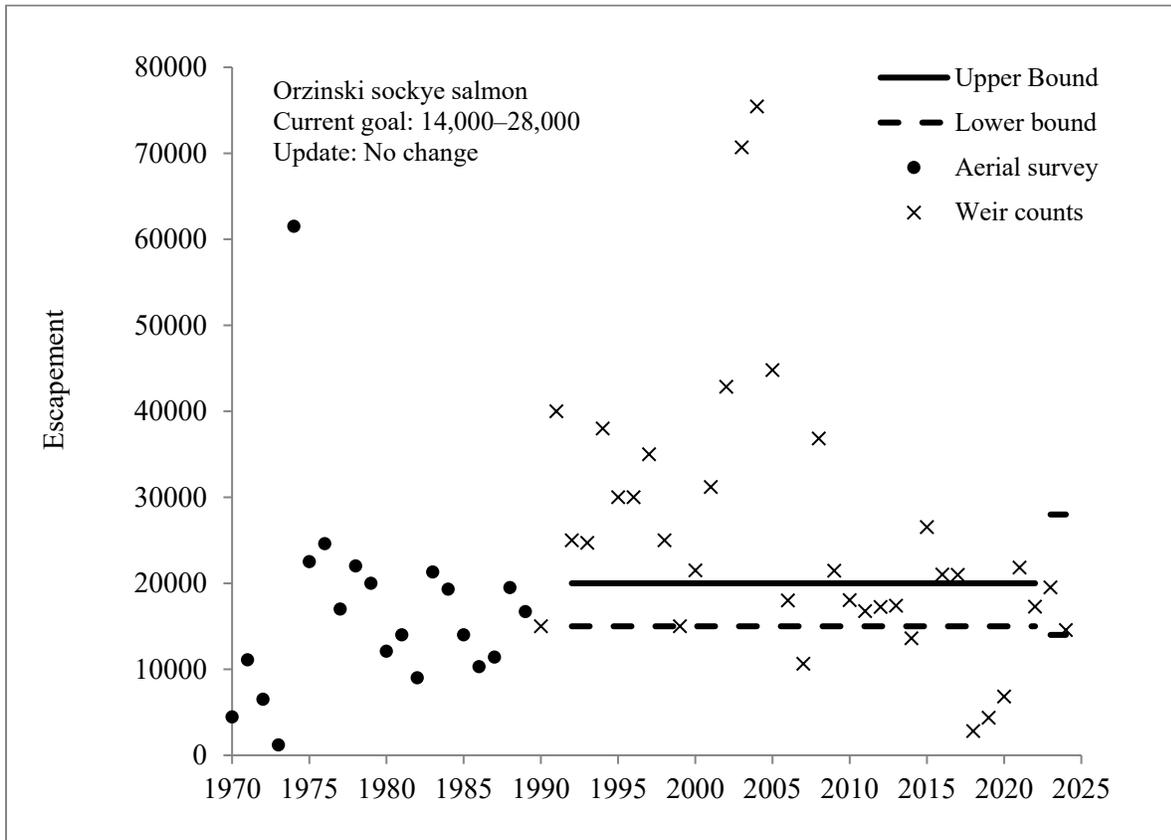| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Orzinski Lake |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 14,000–28,000 (2023) |
| Updated escapement goals: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Peak aerial survey and weir counts |
| Data available: | |
|     Counts: | Aerial survey counts 1970–1989; weir counts 1990–present. |
|     Age composition: | Escapement 1990–2024; Orzinski Bay catch 1993, 1995, 1998 |
|     Stock specific harvest: | No stock-specific harvest information is available. |
|     Smolt information: | 1994, 1995, 2010, 2011, 2013–2020 |
|     Limnology: | Orzinski Lake 1991–1995, 1998, 2008–2024 |
|     Data contrast: | 1990–2024: 26.8 |
|     Methodology: | Percentile approach (15th and 65th percentiles), euphotic volume model, smolt biomass as a function of zooplankton biomass model. |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Aerial survey-based goal (10,000–20,000) first established in 1980. Weir based goal established in 1992 (15,000–20,000). Modified in 2023 (14,000–28,000) using the updated percentile approach. |
| Comments: | Orzinski Lake is located in the Orzinski Bay Section (statistical area 281-50) of the Southeastern District of the APAIMA. |

Appendix S2.–Orzinski sockeye salmon escapements, 1970–2024.

| Year | Escapement index[a] | Weir counts | Year | Escapement index[a] | Weir counts |
|------|------|------|------|------|------|
| 1970 | 4,450 | – | 2001 | – | 31,200 |
| 1971 | 11,100 | – | 2002 | – | 42,849 |
| 1972 | 6,500 | – | 2003 | – | 70,690 |
| 1973 | 1,200 | – | 2004 | – | 75,450 |
| 1974 | 61,500 | – | 2005 | – | 44,797 |
| 1975 | 22,500 | – | 2006 | – | 18,000 |
| 1976 | 24,600 | – | 2007 | – | 10,643 |
| 1977 | 17,000 | – | 2008 | – | 36,839 |
| 1978 | 22,000 | – | 2009 | – | 21,457 |
| 1979 | 20,000 | – | 2010 | – | 18,039 |
| 1980 | 12,100 | – | 2011 | – | 16,764 |
| 1981 | 14,000 | – | 2012 | – | 17,243 |
| 1982 | 9,000 | – | 2013 | – | 17,386 |
| 1983 | 21,300 | – | 2014 | – | 13,600 |
| 1984 | 19,300 | – | 2015 | – | 26,534 |
| 1985 | 14,000 | – | 2016 | – | 21,019 |
| 1986 | 10,300 | – | 2017 | – | 20,989 |
| 1987 | 11,400 | – | 2018 | – | 2,817 |
| 1988 | 19,500 | – | 2019 | – | 4,367 |
| 1989 | 16,700 | – | 2020 | – | 6,821 |
| 1990 | – | 15,000 | 2021 | – | 21,839 |
| 1991 | – | 40,000 | 2022 | – | 17,283 |
| 1992 | – | 25,000 | 2018 | – | 2,817 |
| 1993 | – | 24,700 | 2019 | – | 4,367 |
| 1994 | – | 38,000 | 2020 | – | 6,819 |
| 1995 | – | 30,000 | 2021 | – | 21,839 |
| 1996 | – | 30,000 | 2022 | – | 17,283 |
| 1997 | – | 35,000 | 2023 | – | 19,512 |
| 1998 | – | 25,000 | 2024 | – | 14,571 |
| 1999 | – | 15,000 | | | |
| 2000 | – | 21,500 | | | |

*Note*: En dashes (–) denote the enumeration method was not employed.

[a] The escapement index represents the peak aerial survey, enumeration of carcasses, as well as ancillary and qualitative data.

Appendix S3.–Orzinski sockeye salmon escapement and escapement goals, 1970–2024.



Orzinski sockye salmon
Current goal: 14,000–28,000
Update: No change

Upper Bound
Lower bound
● Aerial survey
✕ Weir counts

# APPENDIX T. SUPPORTING INFORMATION FOR THE SANDY LAKE SOCKEYE SALMON ESCAPEMENT GOAL

Appendix T1.–Description of stock and escapement goal for Sandy Lake sockeye salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIMA), Sandy Lake |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 37,000–69,000 (2023) |
| Updated escapement goals: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Aerial survey, tower counts, and weir counts |
| Data available: | |
|    Counts: | Aerial survey, 1960–1993; tower counts, 1962–1964; Weir counts, 1994–present. |
|    Age composition: | Escapement 1988–2024 |
|    Stock specific harvest: | No stock-specific harvest information is available. |
|    Smolt information: | 1995–2003 |
|    Limnology: | Sandy Lake 1993–1995 |
|    Data contrast: | 1994–2024: 6.3 |
|    Methodology: | Percentile approach (5th and 65th percentiles), euphotic volume model, smolt biomass as a function of zooplankton biomass model. |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Aerial survey-based goal (20,000–30,000) first established in the 1970s. Weir based goal established in 1994 (40,000–60,000). Modified in 2007 (34,000–74,000) and using the updated percentile approach in 2023 (37,000–69,000). |
| Comments: | Sandy Lake drains via the Sandy River (stream 315-1201) into the Bear River Section (statistical area 315-11) of the Northern District of the APAIMA. Harvest rate assumed >0.40. |

Appendix T2.–Sandy Lake sockeye salmon escapements, 1970–2024.

| Year | Escapement index[a] | Weir counts | Year | Escapement index[a] | Weir counts |
|------|---------------------|-------------|------|---------------------|-------------|
| 1970 | 25,000 | – | 2001 | – | 51,000 |
| 1971 | 30,000 | – | 2002 | – | 49,000 |
| 1972 | 8,400 | – | 2003 | – | 66,000 |
| 1973 | 5,100 | – | 2004 | – | 32,000 |
| 1974 | 16,500 | – | 2005 | – | 101,000 |
| 1975 | 40,000 | – | 2006 | – | 48,000 |
| 1976 | 43,000 | – | 2007 | – | 44,700 |
| 1977 | 50,200 | – | 2008 | – | 32,200 |
| 1978 | 64,000 | – | 2009 | – | 36,000 |
| 1979 | 61,000 | – | 2010 | – | 37,000 |
| 1980 | 76,000 | – | 2011 | – | 37,500 |
| 1981 | 51,500 | – | 2012 | – | 27,100 |
| 1982 | 61,300 | – | 2013 | – | 42,000 |
| 1983 | 28,000 | – | 2014 | – | 59,000 |
| 1984 | 19,000 | – | 2015 | – | 116,000 |
| 1985 | 11,500 | – | 2016 | – | 170,000 |
| 1986 | 6,900 | – | 2017 | – | 145,000 |
| 1987 | 8,700 | – | 2018 | – | 35,000 |
| 1988 | 34,500 | – | 2019 | – | 71,000 |
| 1989 | 36,000 | – | 2020 | – | 60,000 |
| 1990 | 17,500 | – | 2021 | – | 52,657 |
| 1991 | 75,200 | – | 2022 | – | 44,000 |
| 1992 | 21,200 | – | 2023 | – | 48,757 |
| 1993 | 49,300 | – | 2024 | – | 38,007 |
| 1994 | – | 115,000 | | | |
| 1995 | – | 125,000 | | | |
| 1996 | – | 64,000 | | | |
| 1997 | – | 38,000 | | | |
| 1998 | – | 52,000 | | | |
| 1999 | – | 58,000 | | | |
| 2000 | – | 40,000 | | | |

*Note*: En dashes (–) denote the project was not in operation, or the data were not used in the analysis.

[a] The escapement index represents the peak aerial survey, enumeration of carcasses, as well as ancillary and qualitative data.

Appendix T3.–Sandy Lake sockeye salmon escapement and escapement goals, 1970–2024.
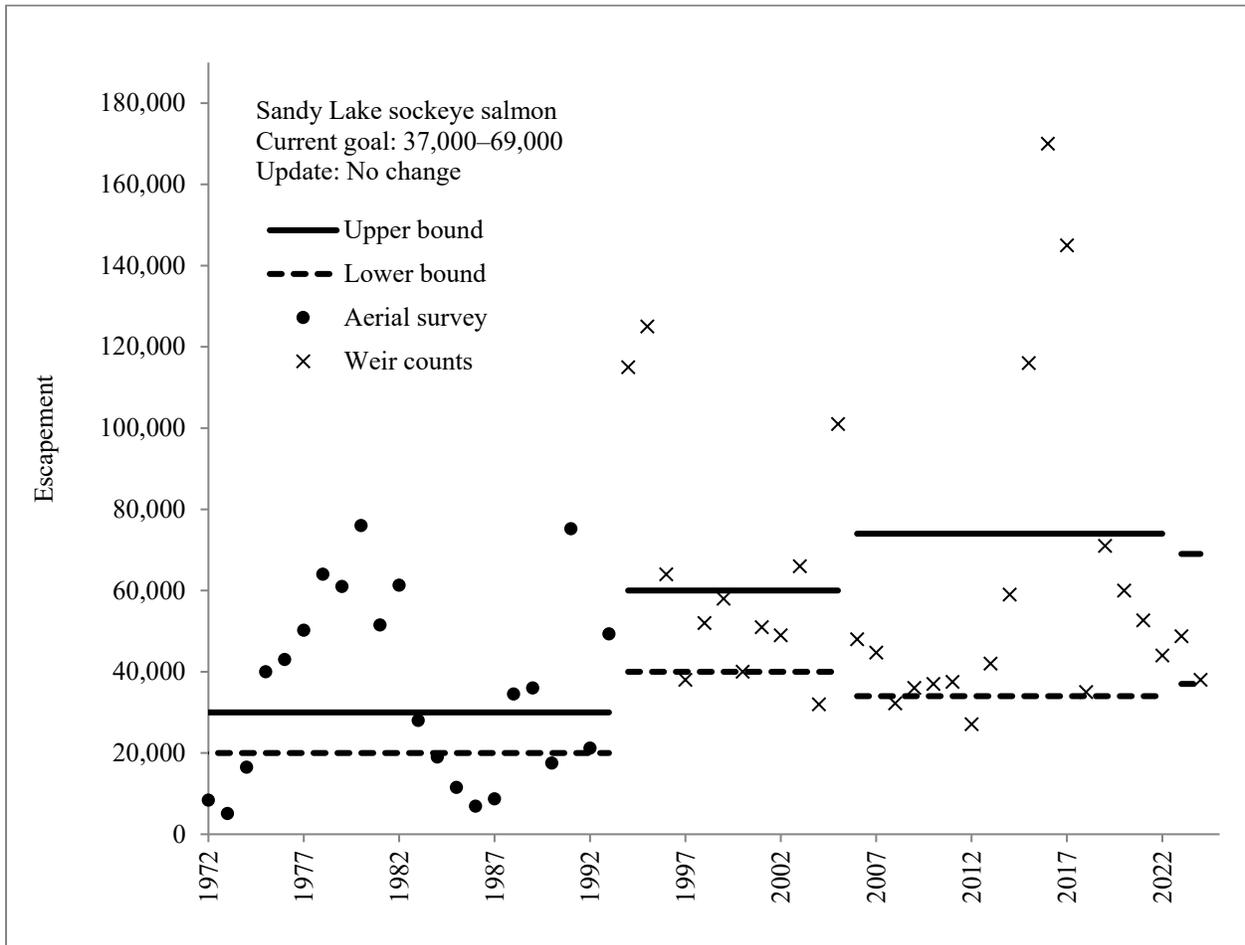
# APPENDIX U. SUPPORTING INFORMATION FOR THE THIN POINT SOCKEYE SALMON ESCAPEMENT GOAL

Appendix U1.–Description of stock and escapement goal for Thin Point sockeye salmon.

| | |
|---|---|
| Stream location: | Alaska Peninsula-Aleutian Islands Management Area (APAIM), Thin Point |
| Fishery: | Commercial |
| Current escapement goal: | SEG: 9,000–19,000 (2023) |
| Updated escapement goals: | No change |
| Optimal escapement goal: | None |
| Inriver goal: | None |
| SOC status (type and year): | None |
| Escapement enumeration type | Aerial survey and weir counts |
| Data available: | |
|    Counts: | Aerial survey, 1968–present; Weir counts, 1994–1998. |
|    Age composition: | Catch 1985, 1988, 1989, 1991–1993, 1997, 1998. Escapement 1993, 1995, 1998. |
|    Stock specific harvest: | No stock-specific harvest information is available. |
|    Smolt information: | None |
|    Limnology: | Thin point Lake 1989, 1991–1995, 1998, 2008 |
|    Data contrast: | 1970–2024: 40.1 |
|    Methodology: | Percentile approach (20th and 60th percentiles), euphotic volume model, smolt biomass as a function of zooplankton biomass model. |
| Criteria for updated goal (Table 1) | None |
| Goal history: | Aerial survey-based goal (14,000–28,000) first established in the 1980s. Modified in 2023 (9,000–19,000) using the updated percentile approach. |
| Comments: | Due to prolonged milling behavior in Thin Point Lagoon below the weir site, most of the yearly escapement was not counted past the weir; therefore, aerial survey counts are considered more accurate. Harvest rates are believed to exceed 0.40. Peak aerial survey counts for Thin Point sockeye salmon are from Thin Point Lagoon (284-2006), Thin Point West (284-2008) and Thin Point Lake Stream (284-2009) in the Southwestern District of the APAIMA. |

Appendix U2.–Thin Point sockeye salmon escapements, 1970–2024.

| Year | Peak aerial survey count | Year | Peak aerial survey count |
|------|-------|------|-------|
| 1970 | 1,730 | 2001 | 30,400 |
| 1971 | 1,320 | 2002 | 28,000 |
| 1972 | 980 | 2003 | 31,200 |
| 1973 | 1,000 | 2004 | 16,900 |
| 1974 | 16,000 | 2005 | 17,600 |
| 1975 | 5,340 | 2006 | 5,685 |
| 1976 | 27,500 | 2007 | 18,100 |
| 1977 | 17,000 | 2008 | 32,000 |
| 1978 | 11,400 | 2009 | 23,500 |
| 1979 | 5,605 | 2010 | 12,400 |
| 1980 | 10,450 | 2011 | 14,800 |
| 1981 | 7,920 | 2012 | 19,000 |
| 1982 | 13,800 | 2013 | 5,700 |
| 1983 | 10,200 | 2014 | 8,600 |
| 1984 | 10,400 | 2015 | 20,800 |
| 1985 | 15,100 | 2016 | 36,400 |
| 1986 | 11,600 | 2017 | 39,300 |
| 1987 | 9,000 | 2018 | 1,000 |
| 1988 | 21,000 | 2019 | 9,600 |
| 1989 | 18,700 | 2020 | 9,900 |
| 1990 | 17,600 | 2021 | 18,900 |
| 1991 | 27,200 | 2022 | 11,900 |
| 1992 | 24,800 | 2023 | 6,870 |
| 1993 | 14,000 | 2024 | 26,920 |
| 1994 | 9,600 | | |
| 1995 | 19,000 | | |
| 1996 | 8,000 | | |
| 1997 | 11,500 | | |
| 1998 | 18,000 | | |
| 1999 | 13,200 | | |
| 2000 | 8,700 | | |

Appendix U3.–Thin Point sockeye salmon escapement and escapement goal, 1970–2024.