Review of Salmon Escapement Goals in the Kodiak Management Area, 2022

Oral Report: RC-3; Tab-3
Written Report: Foster et al. 2023 RC-3, Tab-1

Changes: 1 sockeye goal changed; 1 sockeye goal eliminated

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Approach and Process for Review Team

- **Create review Team (Multi-Division)**
- **Compile all new information (2019 to 2021) since last review**
- **Review methods used to establish existing goals**
- **Determine appropriate goal type and methods**
- **Perform analyses, assess goal range, review by team**
- **Propose new goals, modifications or discontinue goals**
- **Team consensus on goal changes or updates**
- **Memo to Division Directors for approval of changes (2023)**
- **Submit written and oral reports to BOF**

Policy

This review was based on:

- ***Policy for the Management of Sustainable Salmon Fisheries*** **(SSFP; 5 AAC 39.222)**
- ***Policy for Statewide Salmon Escapement Goals*** **(EGP; 5 AAC 39.223)**

- **Establishment of escapement goals a collaborative process of the BOF and ADF&G**
- **BOF recognizes ADF&G responsibility to establish biological escapement goals, sustainable escapement goals, sustained escapement thresholds, and aggregate goals.**

Escapement Goal Definitions

Biological Escapement Goal (BEG): **the escapement that provides the greatest potential for maximum sustained yield (MSY)**

- **MSY: greatest average annual yield over the long term**

Sustainable Escapement Goal (SEG): **a level of escapement that is known to provide for sustained yield over a 5 to 10 yr period**

- **Lower Bound SEG: this is a single escapement level that we attempt to exceed**

Aggregate goals: **escapement goals for aggregates of individual spawning populations with similar productivity and vulnerability to fisheries and for salmon stocks managed as units.**

Escapement Goal Methods

Spawner-Recruit Method: **Typically, those systems with estimates of escapement, age composition and stock-specific harvest were analyzed using spawner-recruit models and result in BEGs.**

Percentile Approach: **Those systems with available escapement estimates but lacking both estimates of harvest and age composition were suited for SEGs and primarily accommodate the percentile approach (Clark et al. 2014).**

- **A specific range of historical escapements, observed to be sustainable, and can approximate MSY.**
- **3 tiers of percentiles calculations:**
  - **Based on escapement contrast (>8)**
  - **Based on measurement error (weir, survey, etc.)**
  - **Based on harvest rate (>0.4)**

Clark et al. 2014. An evaluation of the percentile approach for establishing sustainable escapement goals in lieu of stock productivity information. Alaska Department of Fish and Game, Fishery Manuscript No. 14-06, Anchorage.

Kodiak Management Area Salmon Escapement Goals and Types

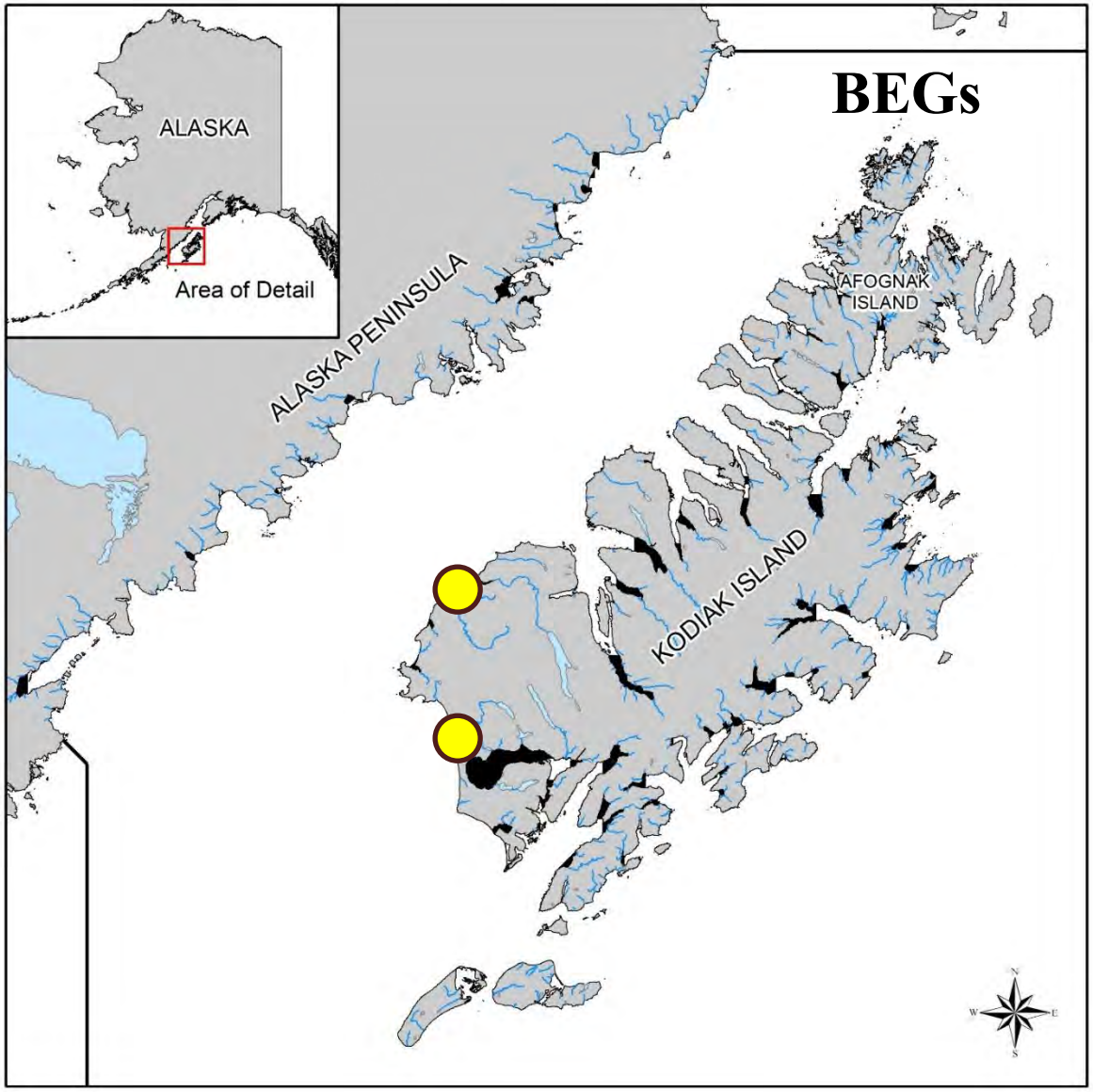
Species	King	Sockeye	Coho	Pink	Chum
BEG	**2**	**6**			
SEG		**6**	**4**		
SET					
SEG (Agg)				**3**	**1**

: Weir

: Aerial survey

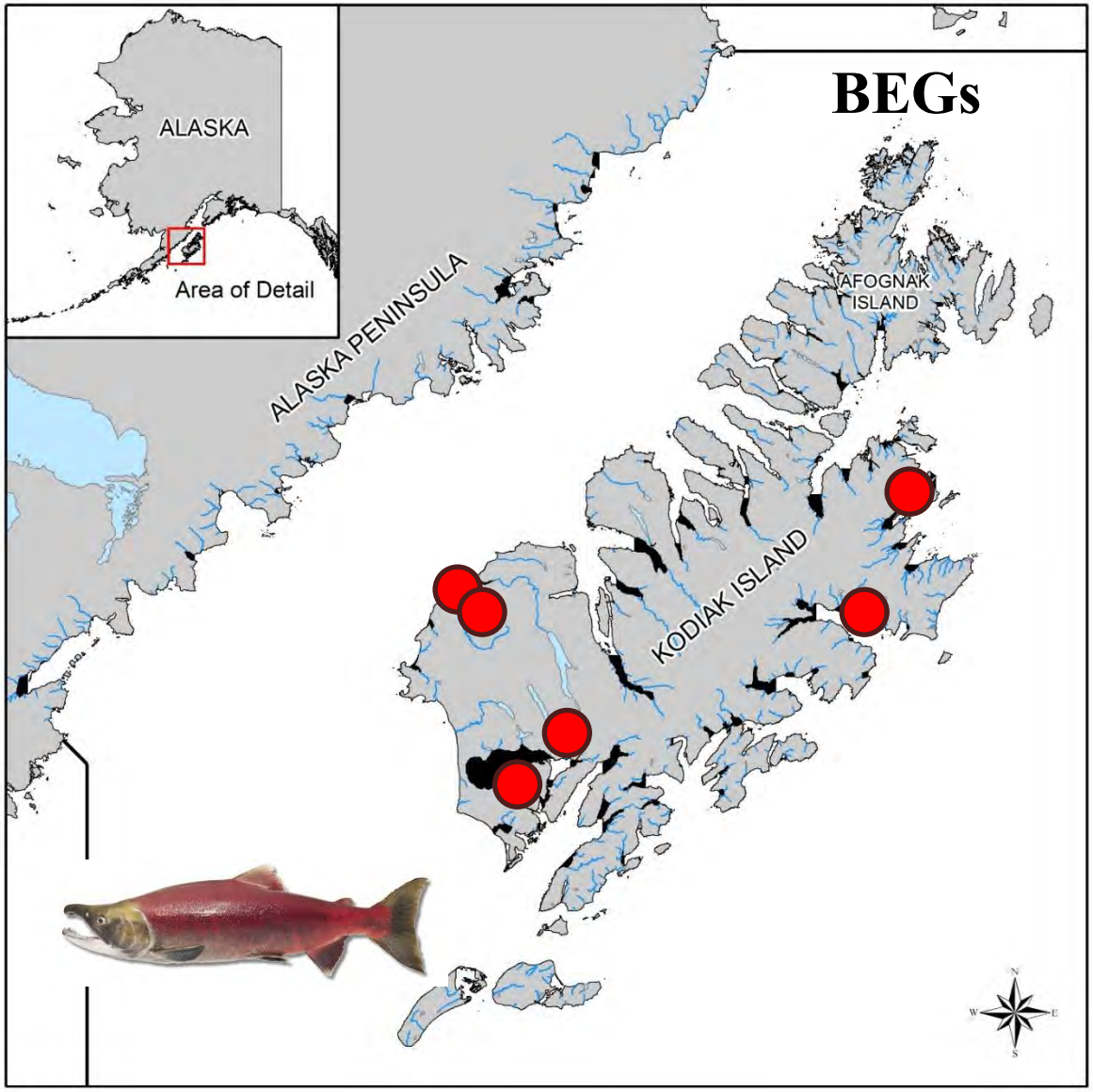
: Foot survey

Current King Salmon Escapement Goals in the KMA



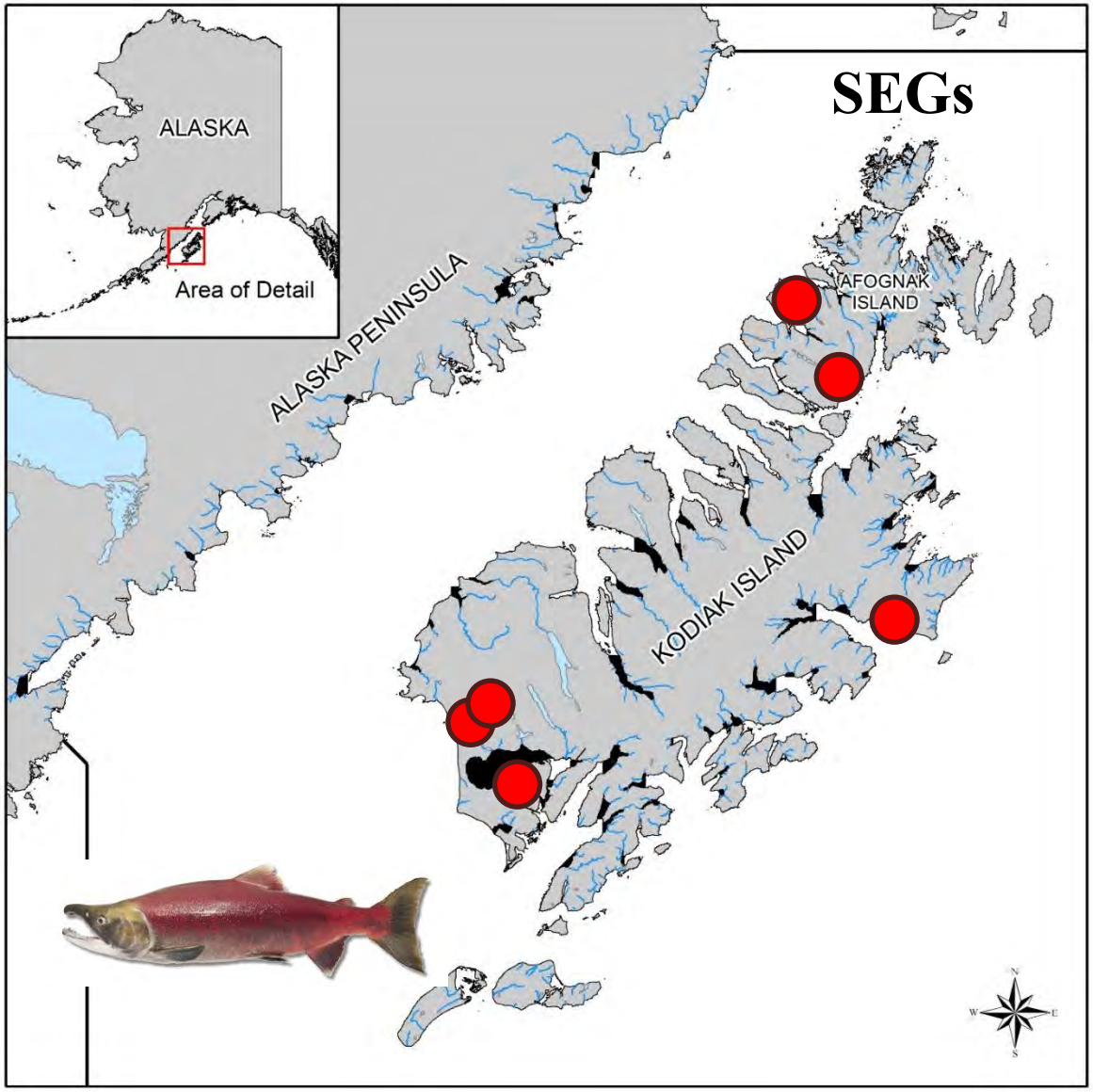
- **Karluk River**
  BEG (4,800–8,400)
  Stock of Mgmt Concern (2011)
- **Ayakulik River**
  BEG (3,000–6,000)
  Stock of Mgmt Concern (2020)

Current Sockeye Salmon Escapement Goals in the KMA



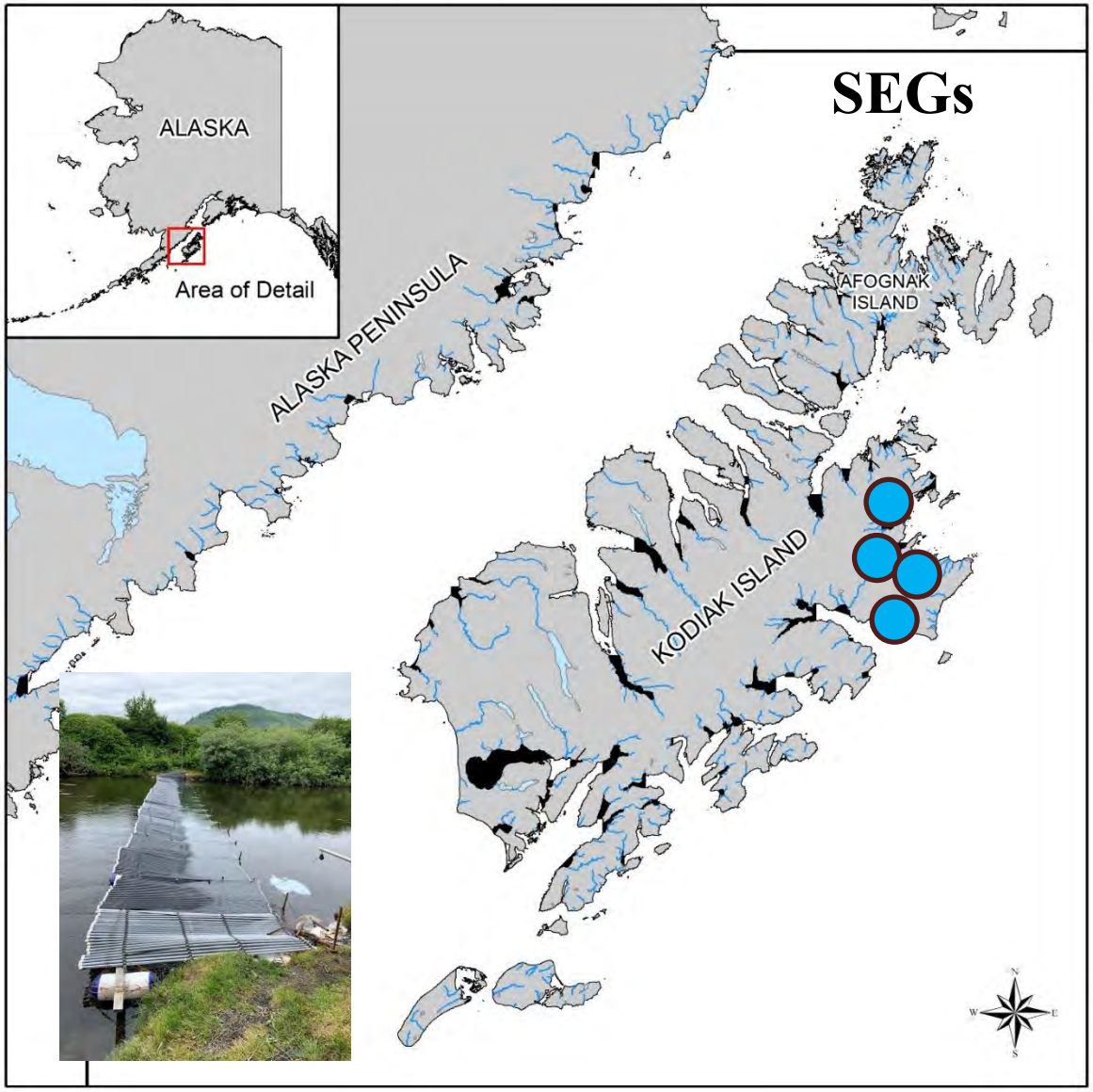
- **Buskin Lake**
  BEG (5,000–8,000)
- **Frazer Lake**
  BEG (75,000–170,000)
- **Karluk R. (early)**
  BEG (150,000–250,000)
- **Karluk R. (late)**
  BEG (200,000–450,000)
- **Saltery Lake**
  BEG (15,000–35,000)
- **Upper Stn. (early)**
  BEG (43,000–93,000)

Current Sockeye Salmon Escapement Goals in the KMA



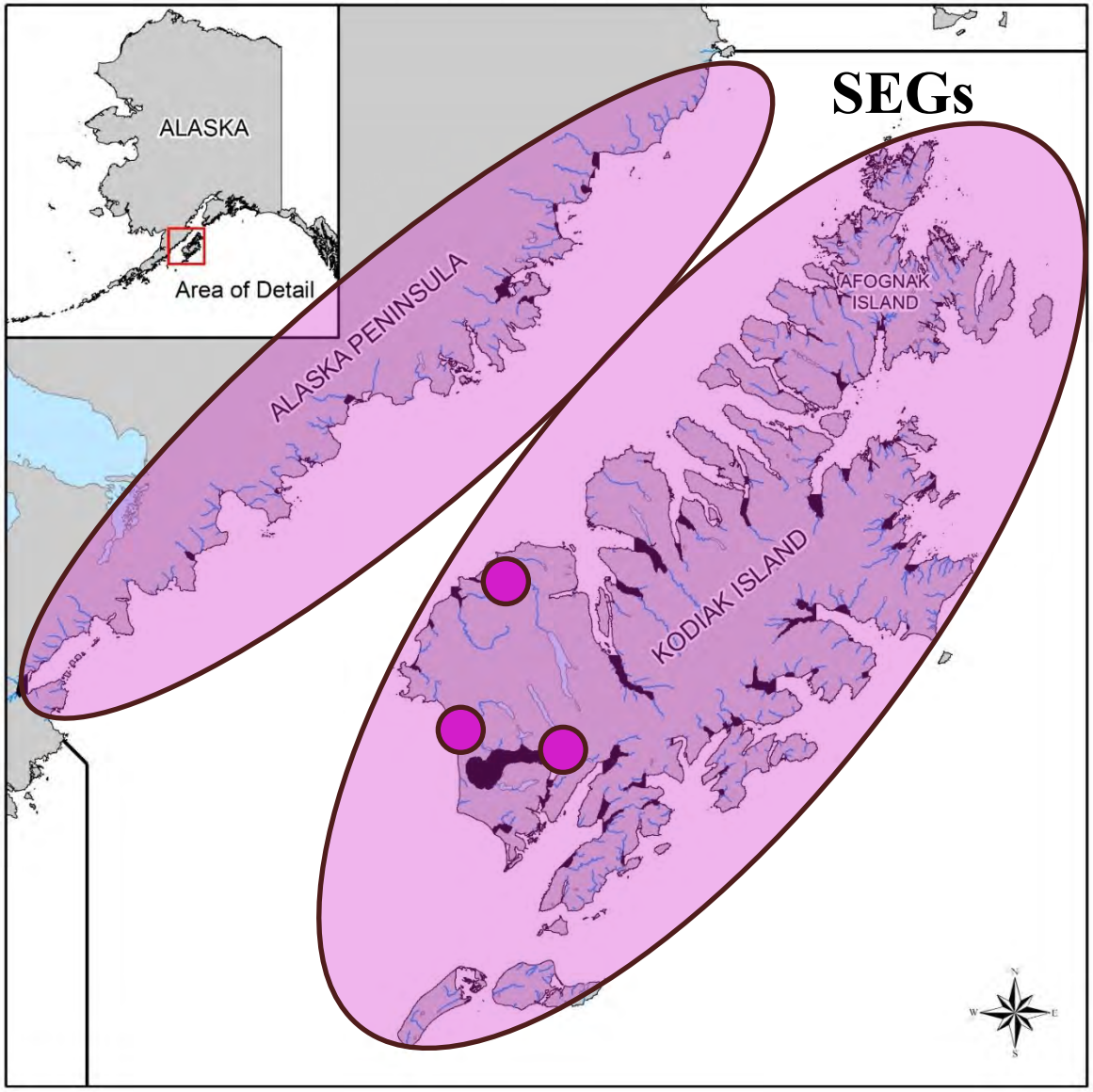
- **Afognak Lake**
  SEG (20,000–50,000)
- **Malina Creek**
  SEG (1,000–10,000)
- **Ayakulik R. (early)**
  SEG (140,000–280,000)
- **Ayakulik R. (late)**
  SEG (60,000–120,000)
- **Pasagshak River**
  LB SEG (3,000)
- **Upper Stn. (late)**
  SEG (120,000–265,000)

Current Coho Salmon Escapement Goals in the KMA



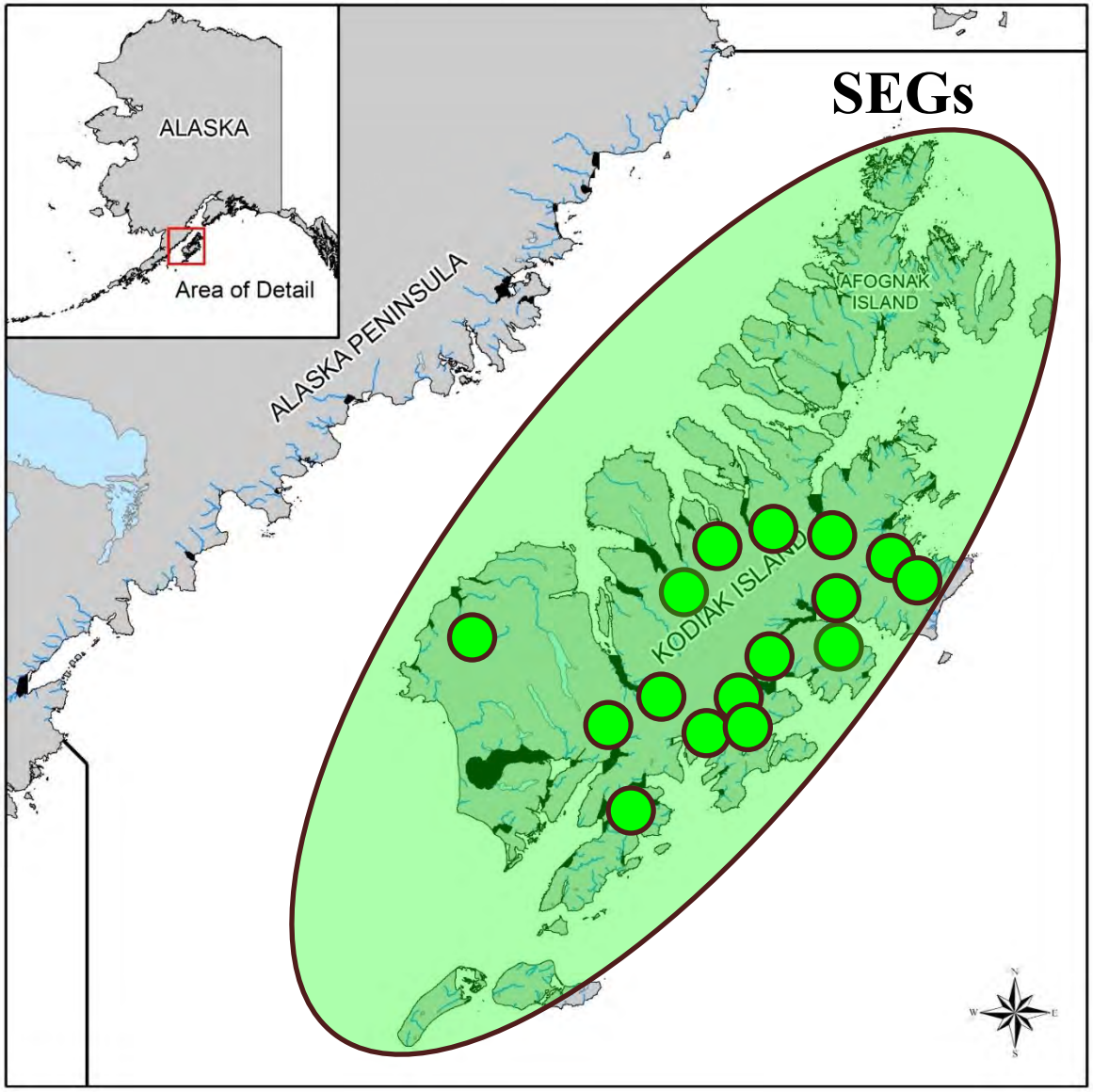
- **American River**
  LB SEG (400)
- **Buskin River**
  SEG (4,700–9,600)
- **Olds River**
  LB SEG (500)
- **Pasagshak River**
  LB SEG (1,200)

Current Pink Salmon Escapement Goals in the KMA



- **Kodiak Arch. (Odd)**
  SEG (2,000,000–5,000,000)
  Aggregate
- **Kodiak Arch. (Even)**
  SEG (2,000,000–7,000,000)
  Aggregate
- **Mainland District**
  SEG (250,000–1,000,000)
  Aggregate

Current Chum Salmon Escapement Goal in the KMA



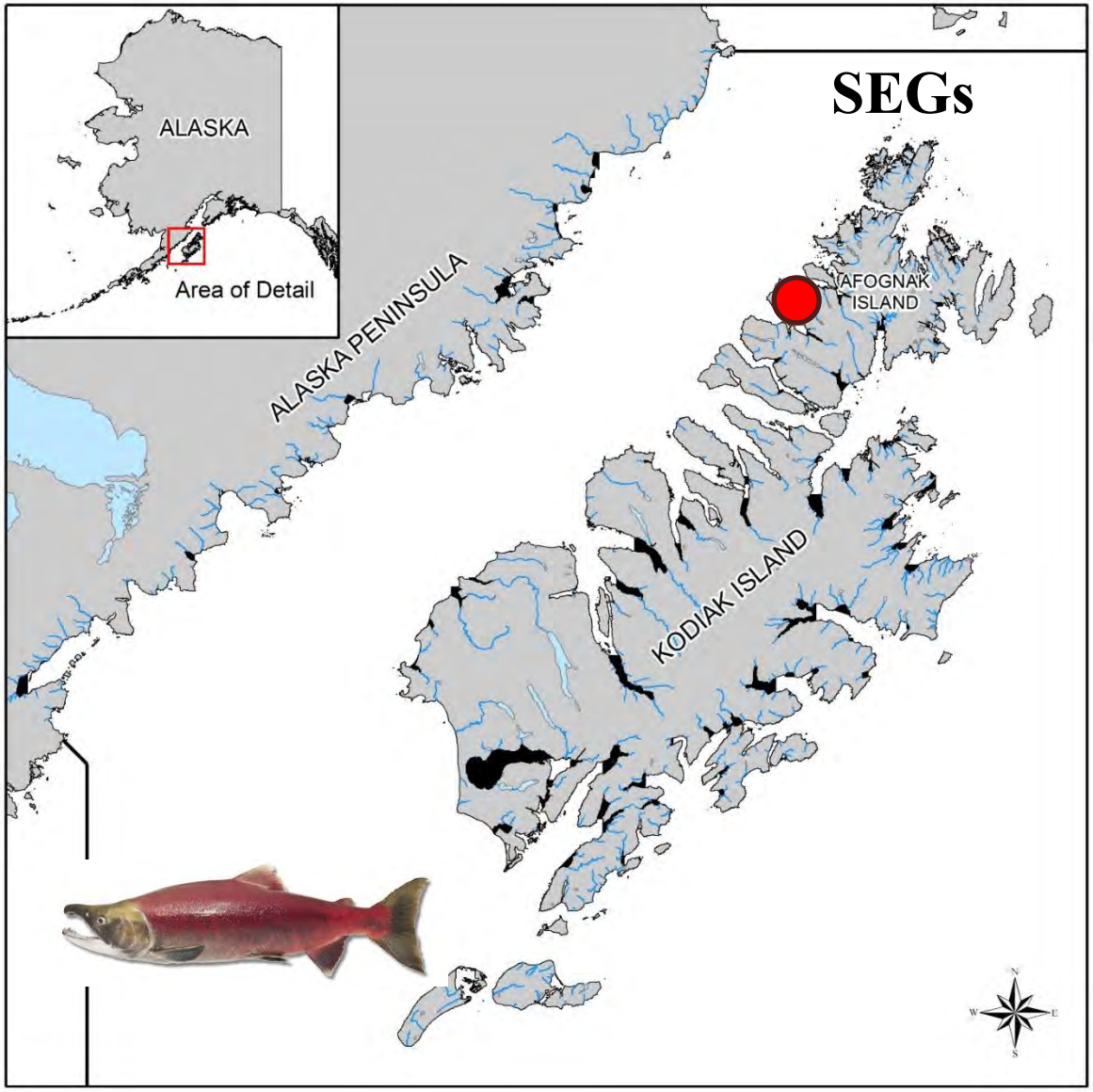
- **Kodiak Arch.**
  LB SEG (101,000)
  Aggregate

KMA Escapement Goal Review Team Findings

Connecticut Creek (Ayakulik system)

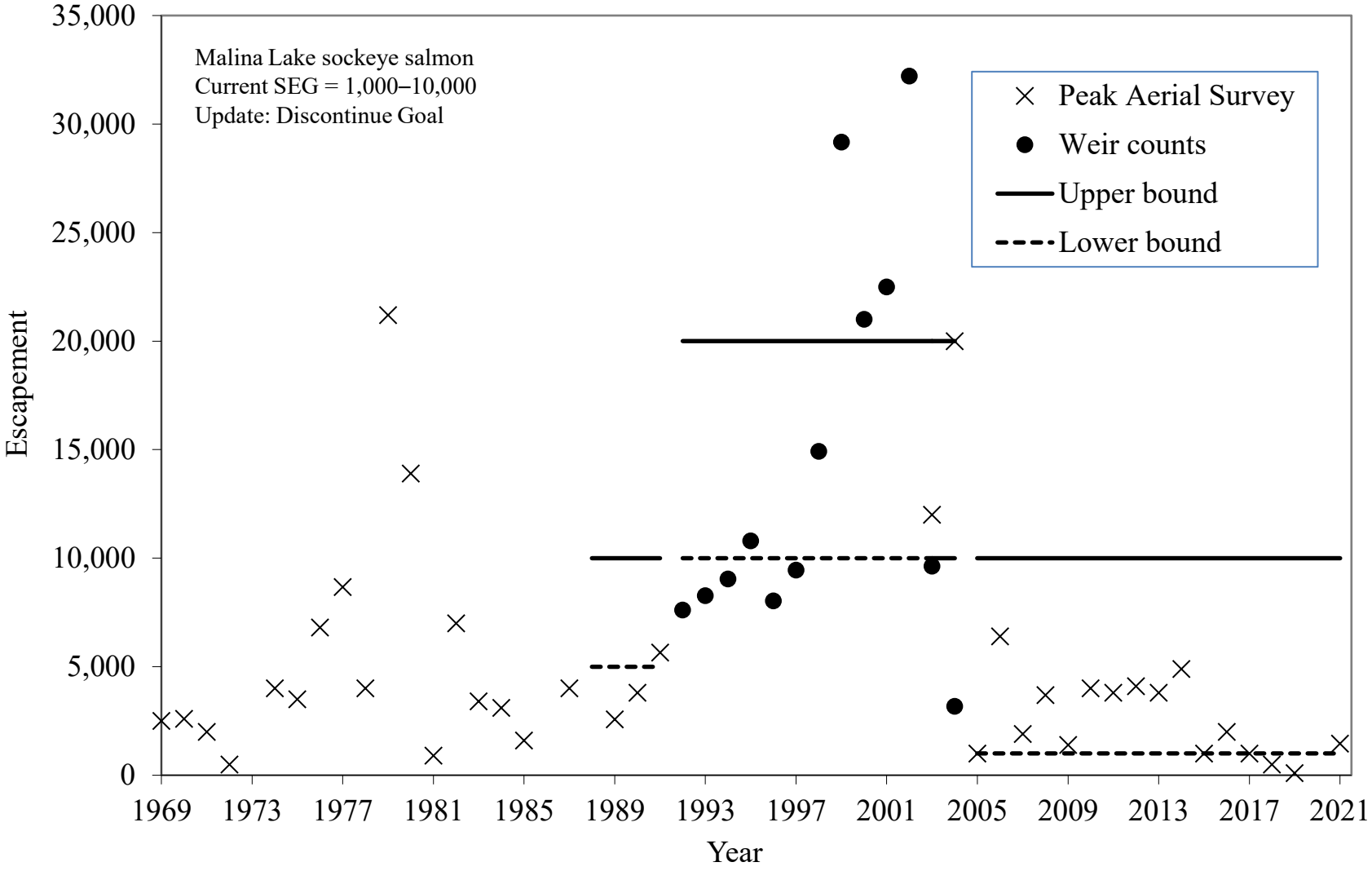
- **20 Goals: No Change**
- **1 Goal: change**
- **1 Goal: eliminate**

Malina Creek Sockeye Salmon



- **Malina Creek**
  SEG (1,000–10,000)
- **Creek drains Upper and Lower Malina Lakes**
- **Fertilized in 1991 to 2001**
- **Backstocked 1992 to 1999**
- **Backup KRAA brood source**
- **Historical terminal harvest fishery**

Malina Creek Sockeye Salmon



Malina Creek Sockeye Salmon

- **Malina Creek**
  SEG (1,000–10,000)

Monitored via aerial survey and sockeye counts made incidental to pink salmon monitoring

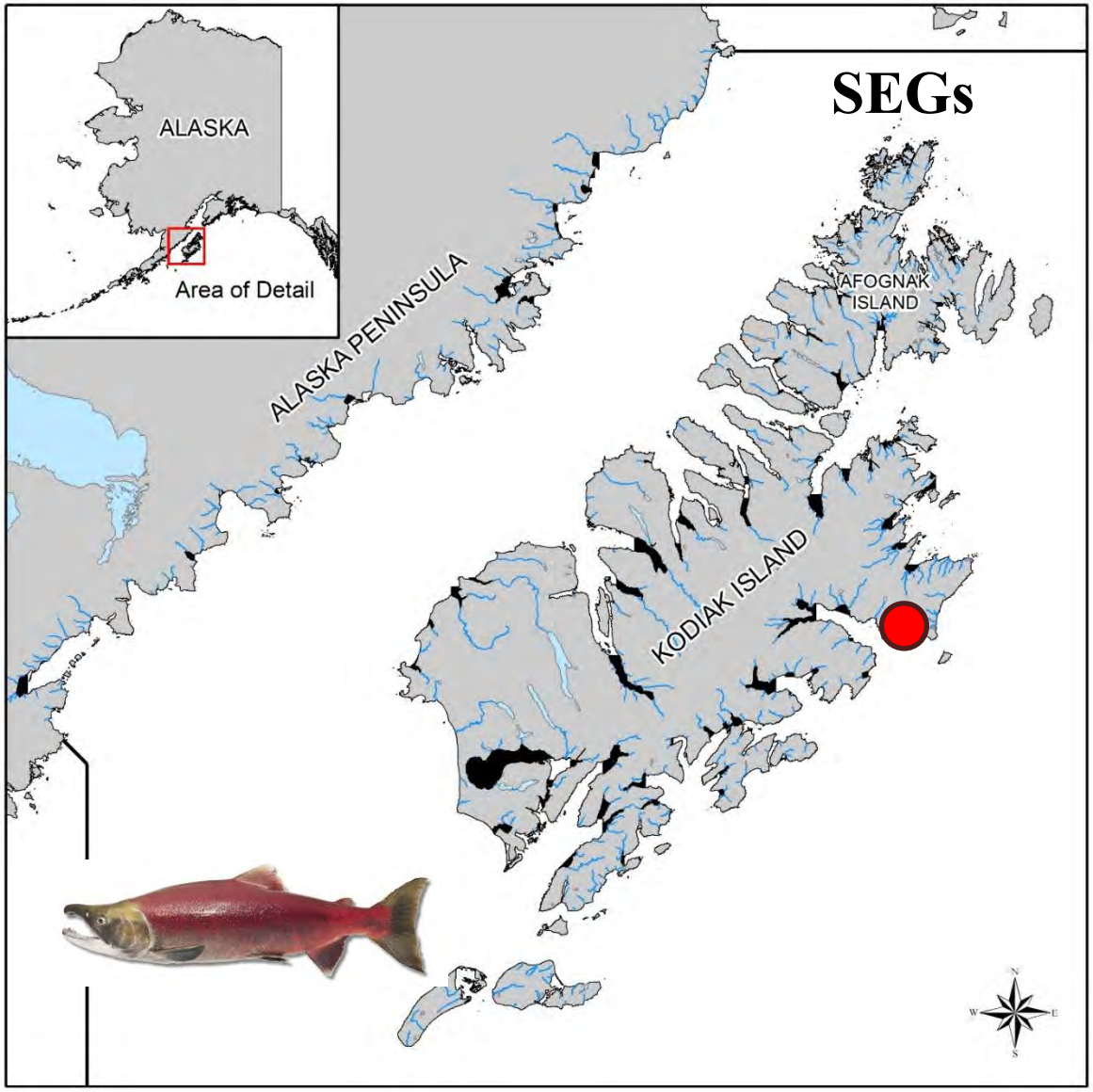
System difficult to assess for sockeye salmon

No directed commercial, subsistence, or sport harvest of Malina Creek sockeye salmon

Team Consensus:

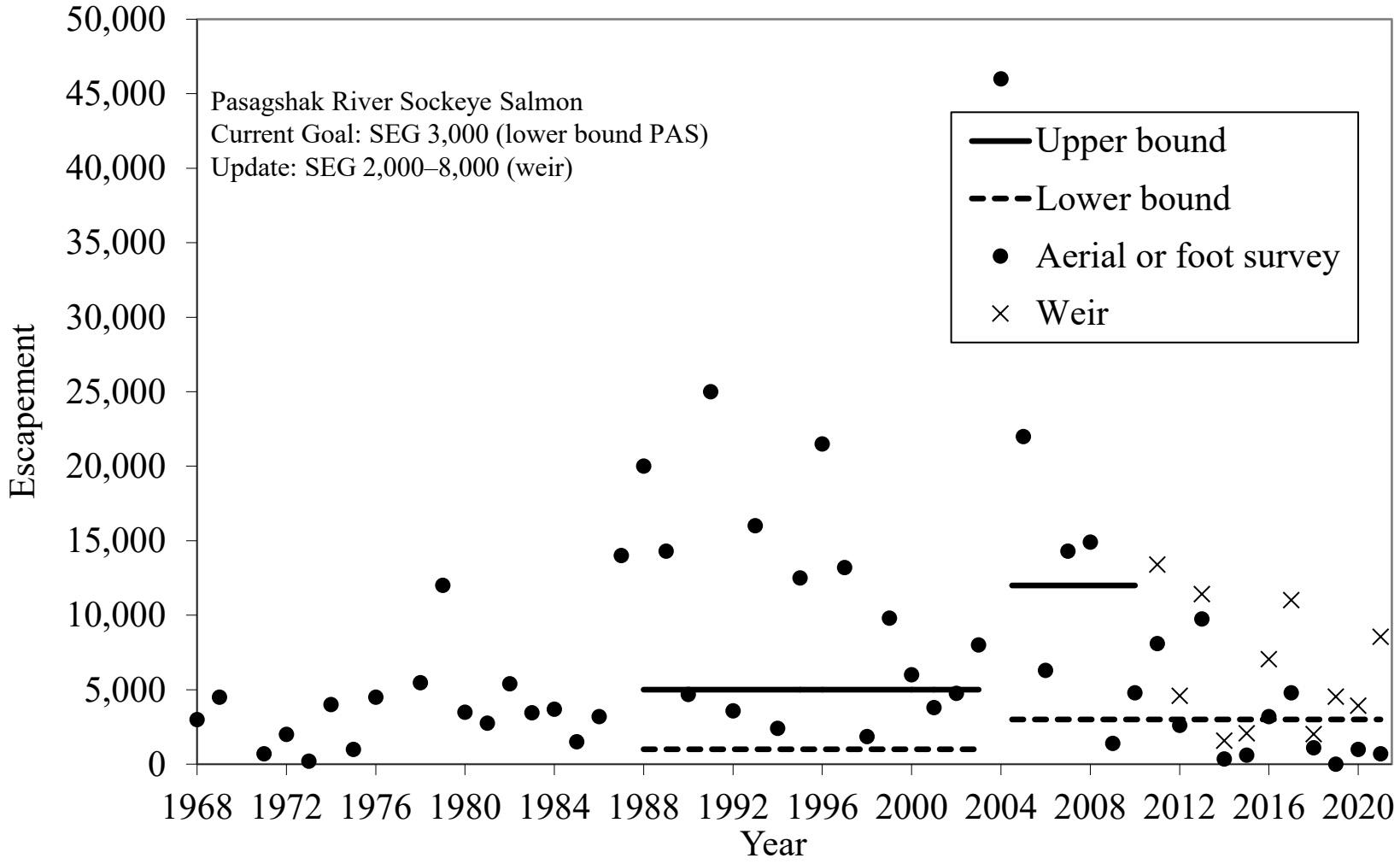
Eliminate Goal

Pasagshak River Sockeye Salmon



- **Pasagshak River**
  LB SEG (3,000)
- **River drains Lake Rose Teed into Ugak Bay**
- **One of largest subsistence fisheries for sockeye**
- **River reverses direction with tides over 9.2 ft**
- **Historically surveyed using aerial or foot surveys**
- **Sockeye weir operated since 2011**

Pasagshak River Sockeye Salmon



Pasagshak River Sockeye Salmon

- **Pasagshak River**
  current goal: LB SEG (3,000)

Consistent aerial survey funding an issue.

Weir in place since 2011 and funding continuation likely

Team Consensus:

New Goal: SEG (2,000–8,000)
Weir based

Review Summary

- **King salmon: No Change**
- **Pink salmon: No Change**
- **Chum salmon: No Change**
- **Coho salmon: No change**

- **Sockeye salmon:**
  - **Eliminate Malina Creek sockeye salmon SEG**
  - **Change Pasagshak River sockeye salmon SEG from aerial survey to weir based SEG**

Thank You

Questions?