

# JBER FISHERIES PROGRAM

Overview of the  
2018 Field Season

# EAGLE RIVER SALMON MONITORING

## Goals

- ❖ Support the recovery of Cook Inlet Beluga Whales
- ❖ Support small sport fishery on Eagle River

## Objectives

- ❖ Deploy two (2) DIDSONs sonars and associated picket weir in Eagle River to enumerate the adult salmon return.
- ❖ Process the data for total abundance, diurnal patterns, and riverbank preference.
- ❖ Compare peak run timing to previous years



# 2018 – EAGLE RIVER SALMON MONITORING

## 14 May and removed on 12 October

- ❖ Operation was continual 24-hours/day, five days/week (but not operational on weekends): 112 days (2,688 hours)
- ❖ Operational 70 (62.5%) of the 112-day sampling period
- ❖ Due to a combination of high-water events and military training, the sonars were not operational from 4 August until 2 September
  - ❖ Flooding for 27 days (24.1 % of total effort)
  - ❖ 15 days (13.4% of total effort) due to military training

	May	Jun	Jul	Aug	Sep	Oct	Total
# active sample days	14	14	18	4	10	10	70
Total fish	23	99	822	352	69	5	1370
Avg. # fish/day	1.6	7.1	45.7	88.0	6.9	0.5	25.0
Peak # fish	5	18	154	183	4	2	183
Peak date	31-May	6-Jun	30-Jul	2-Aug	4-Sep	4-Oct	2-Aug
# days out of water	1	7	4	19	11	0	42
Out of water reason	1 HW	7 HW	4 HW	15 HW, 4 MT	11 MT		27 HW, 15 MT



# 2018 – EAGLE RIVER SALMON MONITORING



Typical low and high water

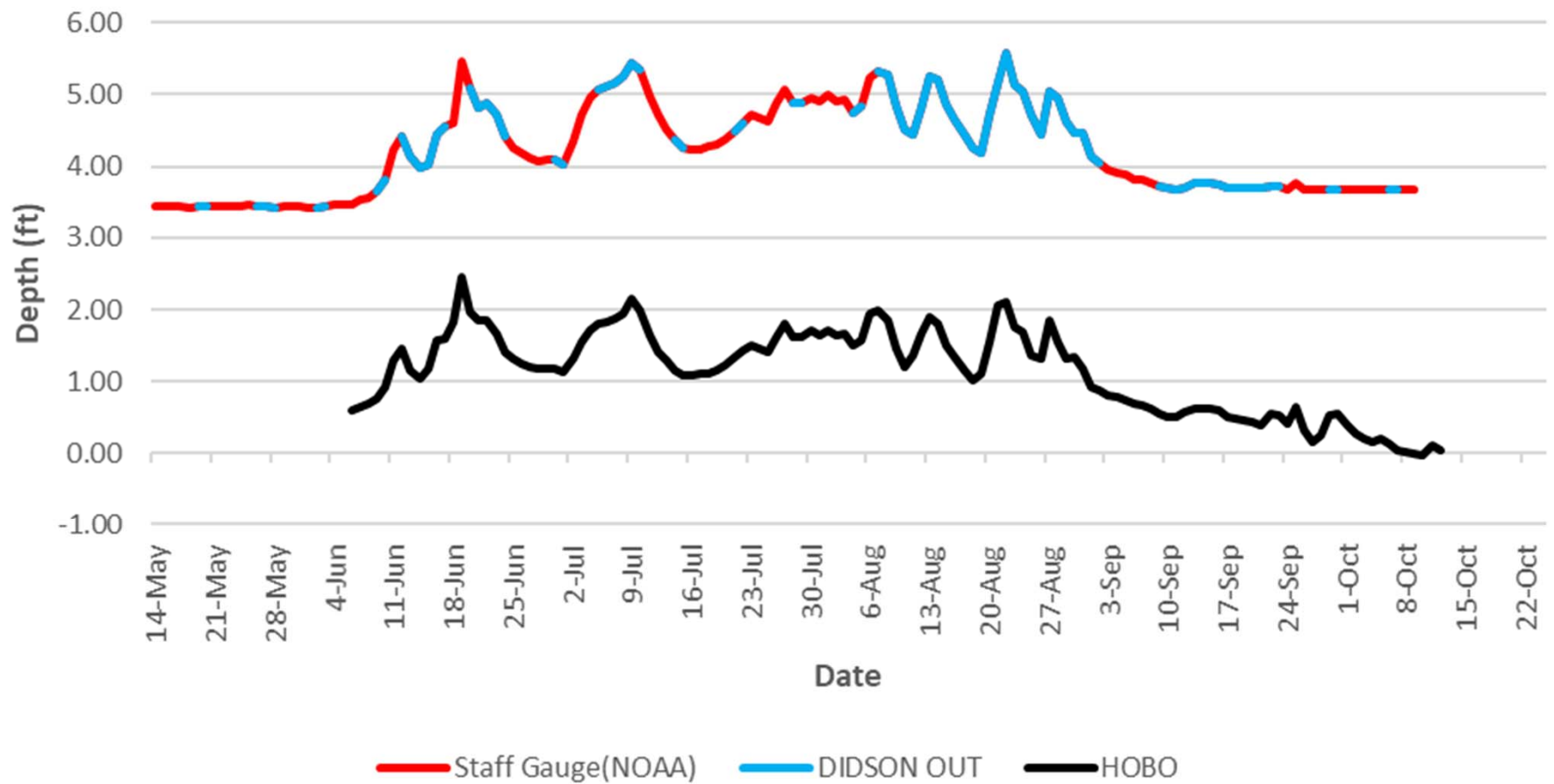


Extreme flooding event



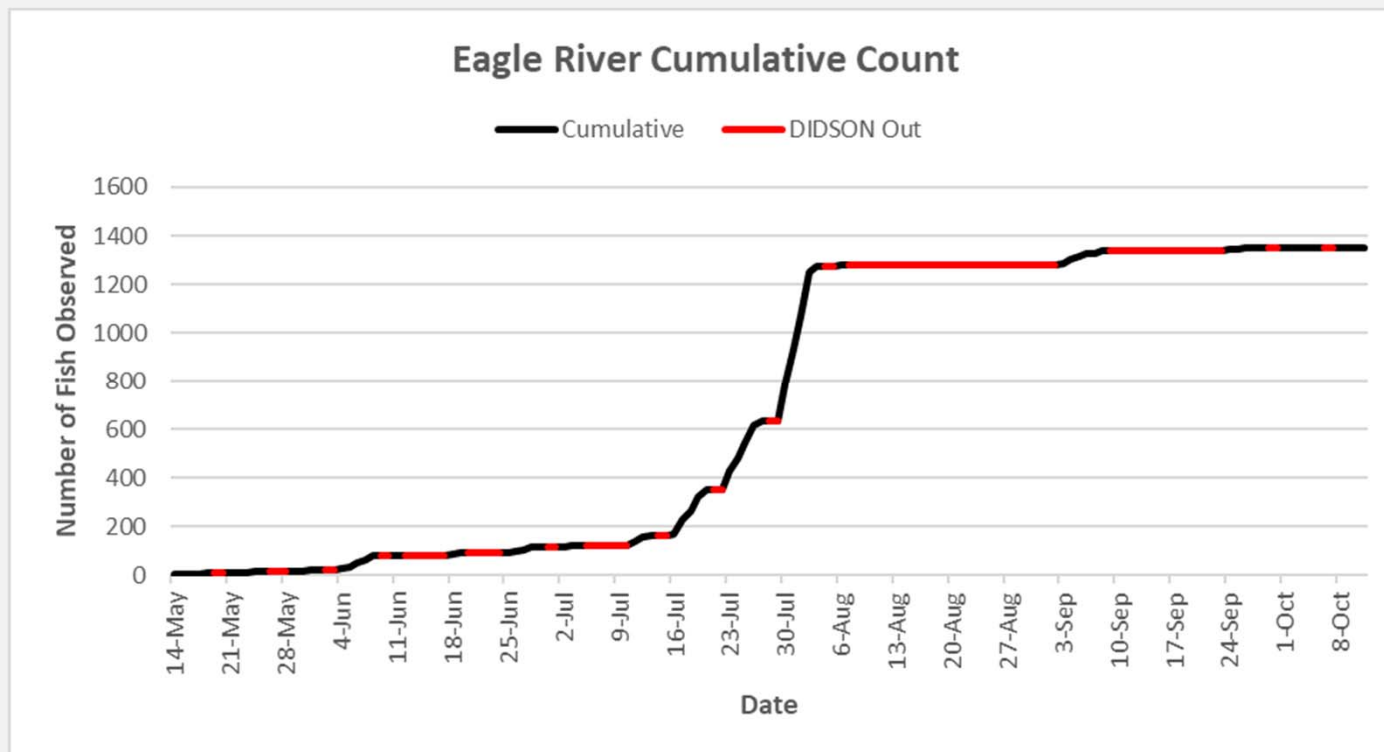
## 2018 - EAGLE RIVER SALMON MONITORING

2018 Staff Gauge Height Daily Average



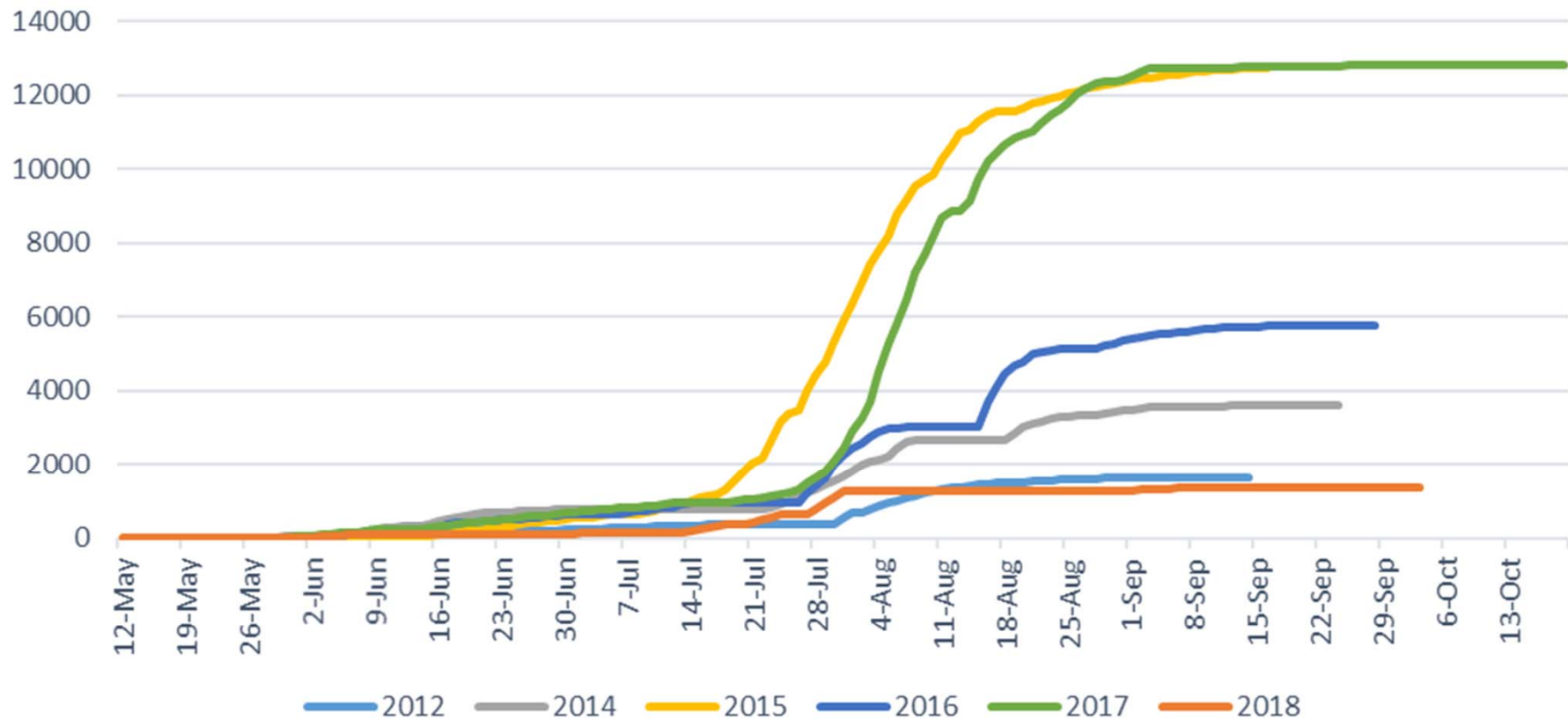
## 2018 – EAGLE RIVER SALMON MONITORING

- ❖ A total of 1,370 salmon were counted passing in front of the DIDSON's between 14 May and 12 October.
- ❖ 20 fish traveling downstream
- ❖ 1,350 fish traveling upstream
- ❖ Absolute minimum escapement count



## 2018 - EAGLE RIVER SALMON MONITORING

### Annual Comparative Cumulative Daily Escapement





## 2018 – EAGLE RIVER SALMON MONITORING

- ❖ Diurnal Patterns consistent between years:
  - ❖ Lowest in the early morning
  - ❖ Highest passage rates from 6 p.m. (18hr) to 11 p.m
- ❖ 93% of total fish enumerated traveled within 0-6 m range of the DIDSONs

### Looking Ahead:

- ❖ 7 day/24hr operation
- ❖ Data Management and Analysis
  - ❖ Correlation of the salmon run and beluga occurrences presence, milling, or feeding
- ❖ ADF&G South Fork Eagle River Foot Surveys
  - ❖ 1994-2003: average 233 chinook (27-447)
  - ❖ Current king salmon escapement goal for SF Eagle River: 50-300



# SIXMILE SALMON MONITORING



## Goals

- ❖ Support the recovery of Cook Inlet Beluga Whales
- ❖ Support small sport fishery

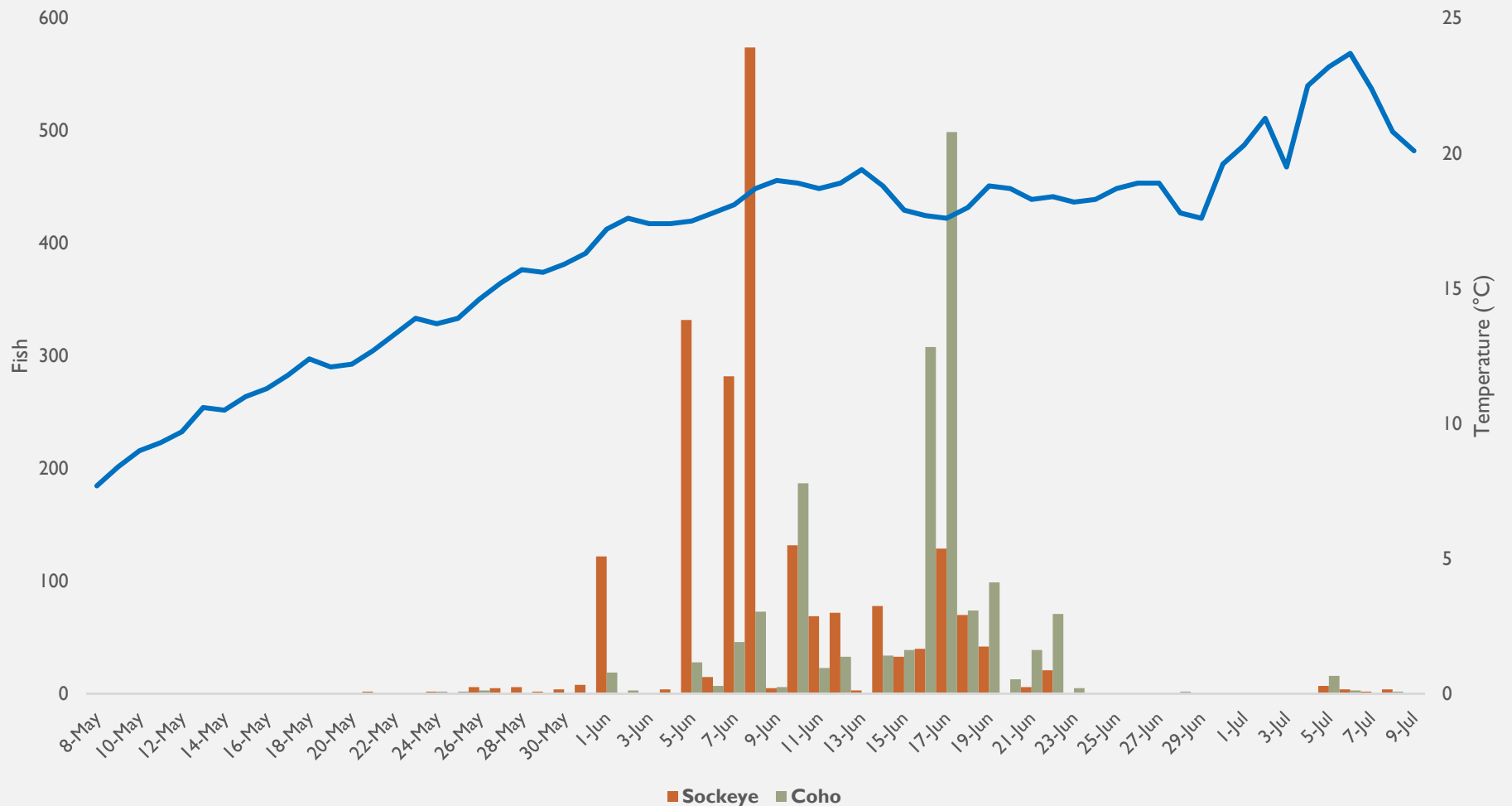
## Objectives

- ❖ Count the number of salmon smolt emigrating from Sixmile Lake
- ❖ New/Added to 2018:
  - ❖ Length measurements
  - ❖ Fin clips of Rainbow trout
- ❖ Count the number of adult salmon escapement into Sixmile Lake

# 2018 – SIXMILE SMOLT EMIGRATION

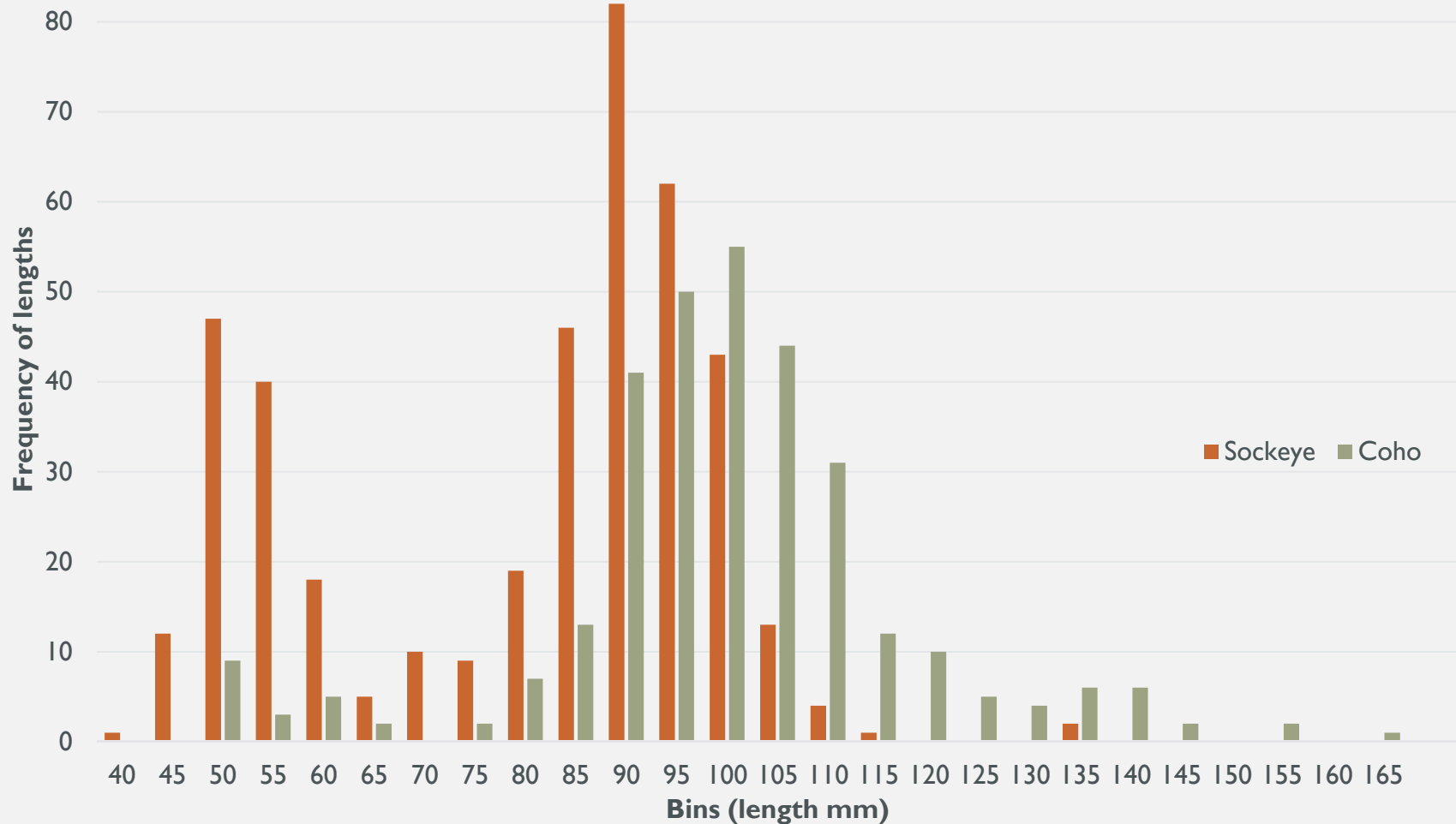
09 May to 06 July – 59 days

- ❖ Sockeye first recorded 10 May: 2,456 sockeye recorded
- ❖ Coho first recorded 17 May: 1,641 coho recorded



## 2018 – SIXMILE SMOLT EMIGRATION

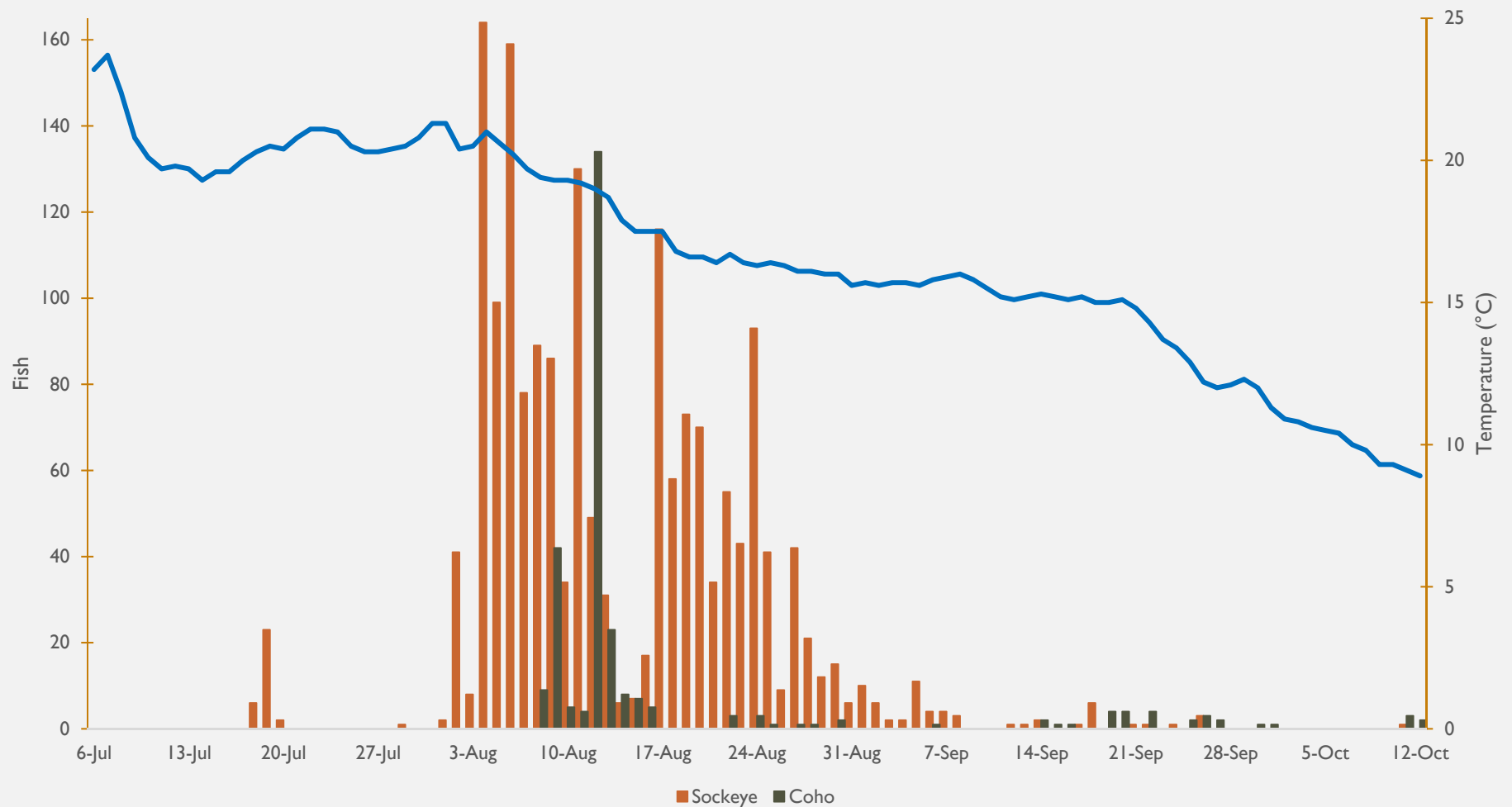
- Length measurements collected during each check
  - 414 sockeye measured and 310 coho measured



# 2018 – SIXMILE ADULT ESCAPEMENT

6 July to 12 October – 99 days

- ❖ Sockeye first recorded 18 July: 1,780 sockeye recorded
- ❖ Coho first recorded 8 August: 279 coho recorded



## 2018 – SIXMILE SALMON MONITORING

- ❖ Historical peak daily smolt emigration typically between 16-17 °C
  - ❖ 2018 peak smolt emigration: 17-19 °C
- ❖ Adult escapement began when lake outlet temperatures began to drop below 20 °C

### Looking Ahead:

- ❖ Lengths and weights of both smolt and adults
- ❖ Data Management and Analysis
  - ❖ Correlation of the salmon run and beluga occurrences presence, milling, or feeding 2018 Beluga observations occurred at the mouth of Sixmile
  - ❖ Correlation of the Sockeye and coho adult run and beluga occurrences of milling, or feeding at the mouth of Sixmile Creek
  - ❖ Angler effort at the Mouth of Sixmile

Year	Effort	Coho		Sockeye		Pink	
	Days	Catch	Harvest	Catch	Harvest	Catch	Harvest
2018	15	26	15	16	11	13	5

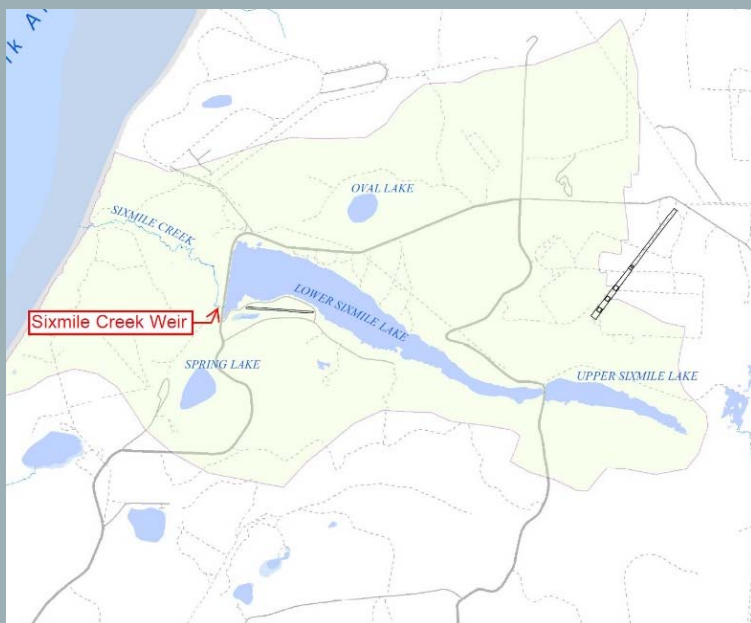


# SIXMILE SALMON MONITORING

Sixmile salmon monitoring since 1988

Adult weir first operated approx. 0.5 km downstream

Smolt out-migration monitoring started in 2003



Year	Sockeye Smolt	Coho Smolt	Temperature for Smolt	Adult Sockeye	Adult Coho	Temperature for Adults
1998				✓		
1999				✓		
2000				✓		
2001				✓		
2002				✓		
2003	✓	✓		✓	✓	
2004	✓	✓	✓	✓	✓	
2005	✓	✓	✓	✓	✓	
2006	✓	✓	✓	✓	✓	
2007				✓	✓	
2008				✓	✓	
2009	✓	✓		✓	✓	
2010	✓	✓		✓	✓	
2011				✓	✓	✓
2012	✓	✓	✓	✓	✓	✓
2013	✓	✓	✓	✓	✓	✓
2014	✓	✓	✓	✓	✓	✓
2015	✓	✓	✓	✓	✓	✓
2016	✓	✓	✓	✓	✓	✓
2017	✓	✓	✓	✓	✓	✓
2018	✓	✓	✓	✓	✓	✓

13 Years

Intermittent 10  
years

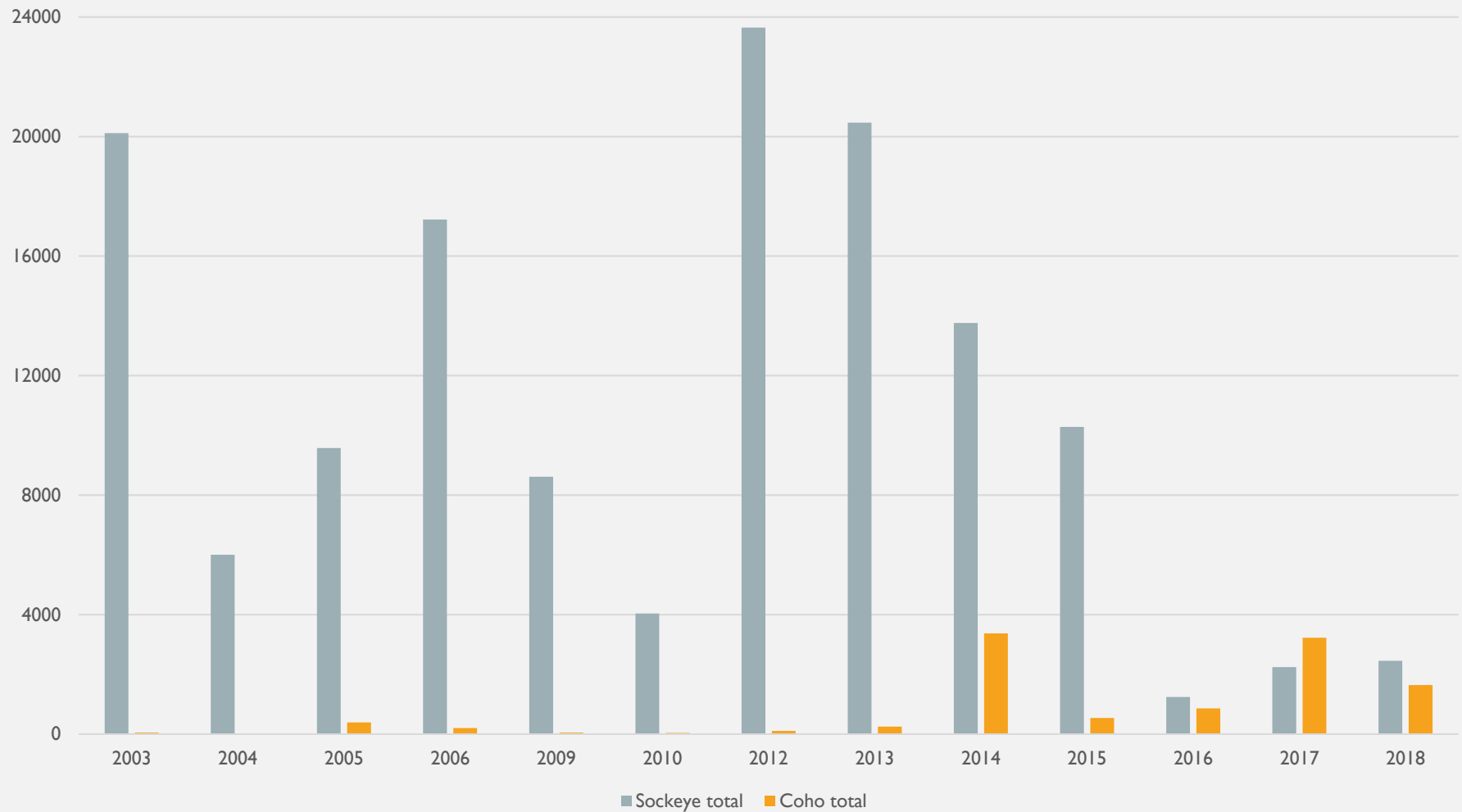
21 Years

16 Years

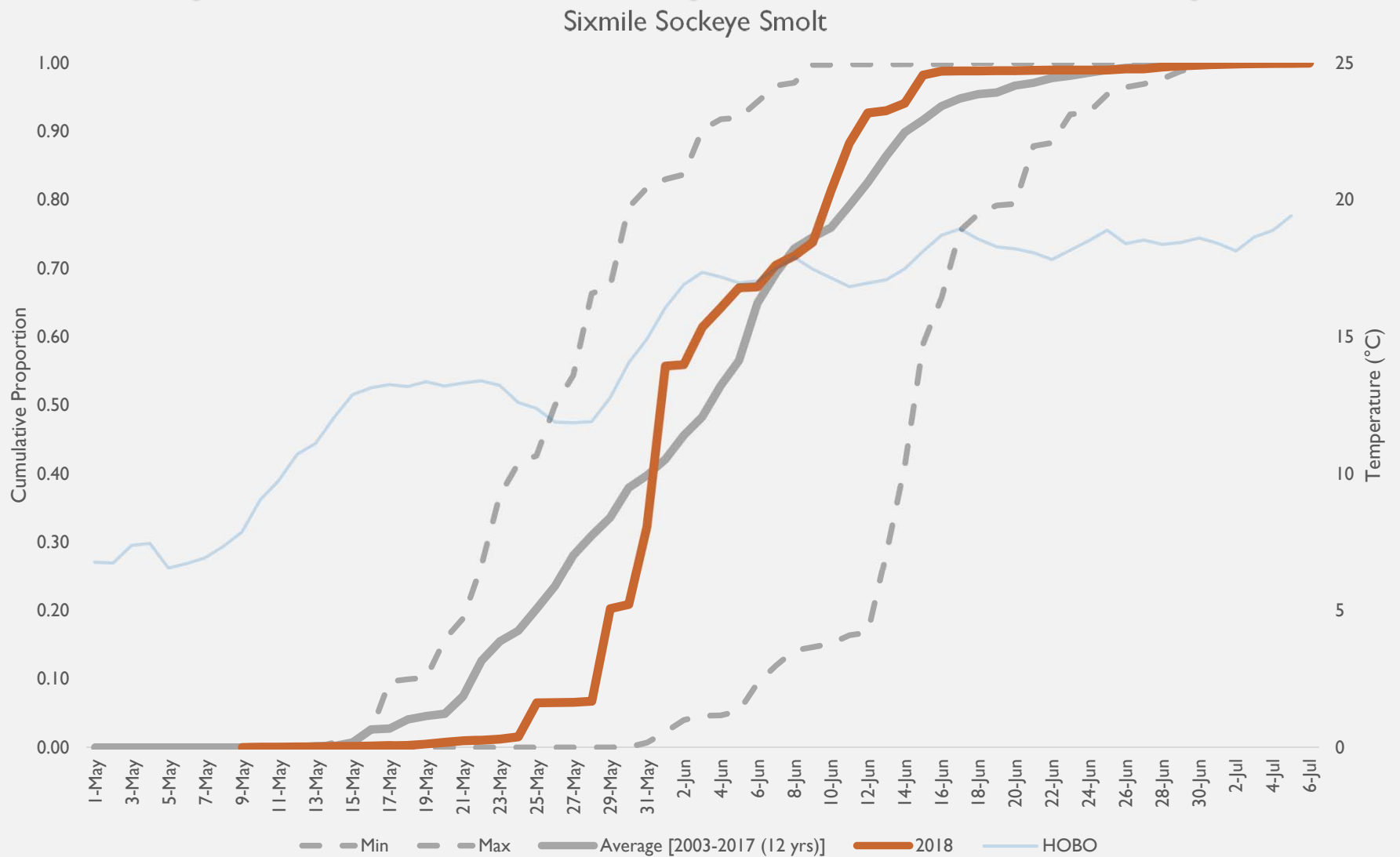
8 Years

# SIXMILE SMOLT EMIGRATION

Smolt Annual Counts

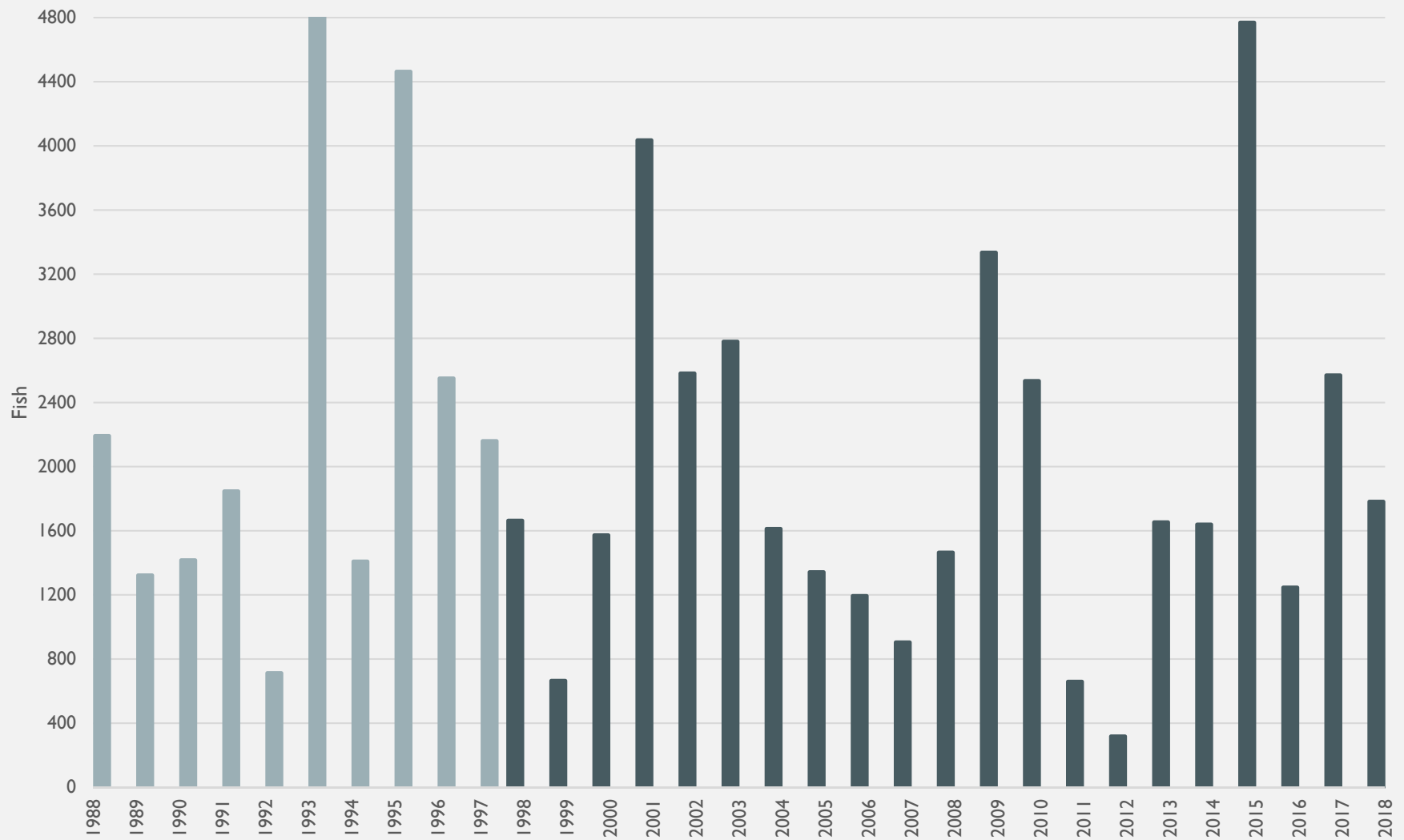


# SIXMILE SOCKEYE SMOLT EMIGRATION TIMING

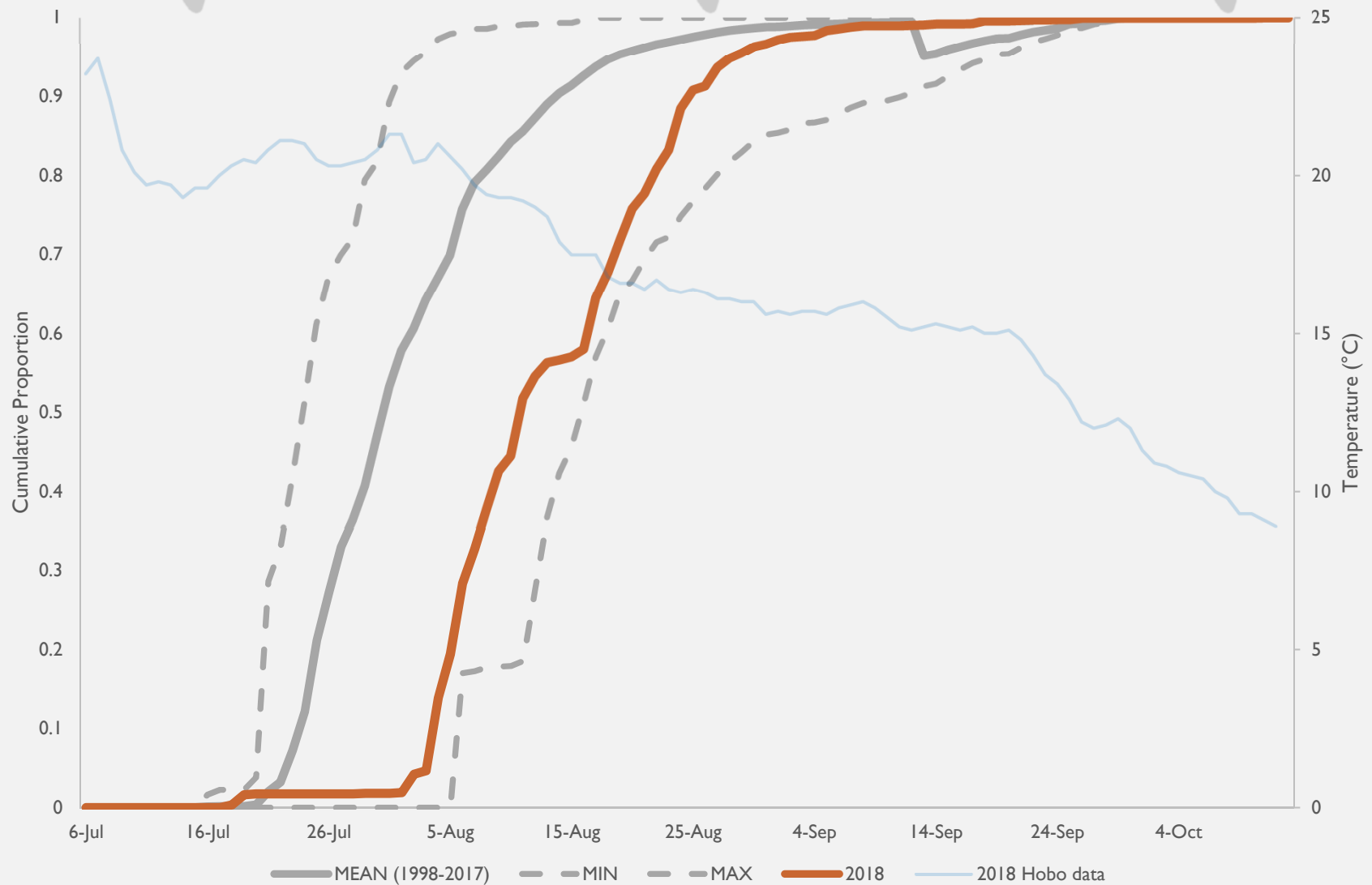


# SIXMILE ADULT ESCAPEMENT

Sockeye adult



# SIXMILE ADULT SOCKEYE ESCAPEMENT TIMING

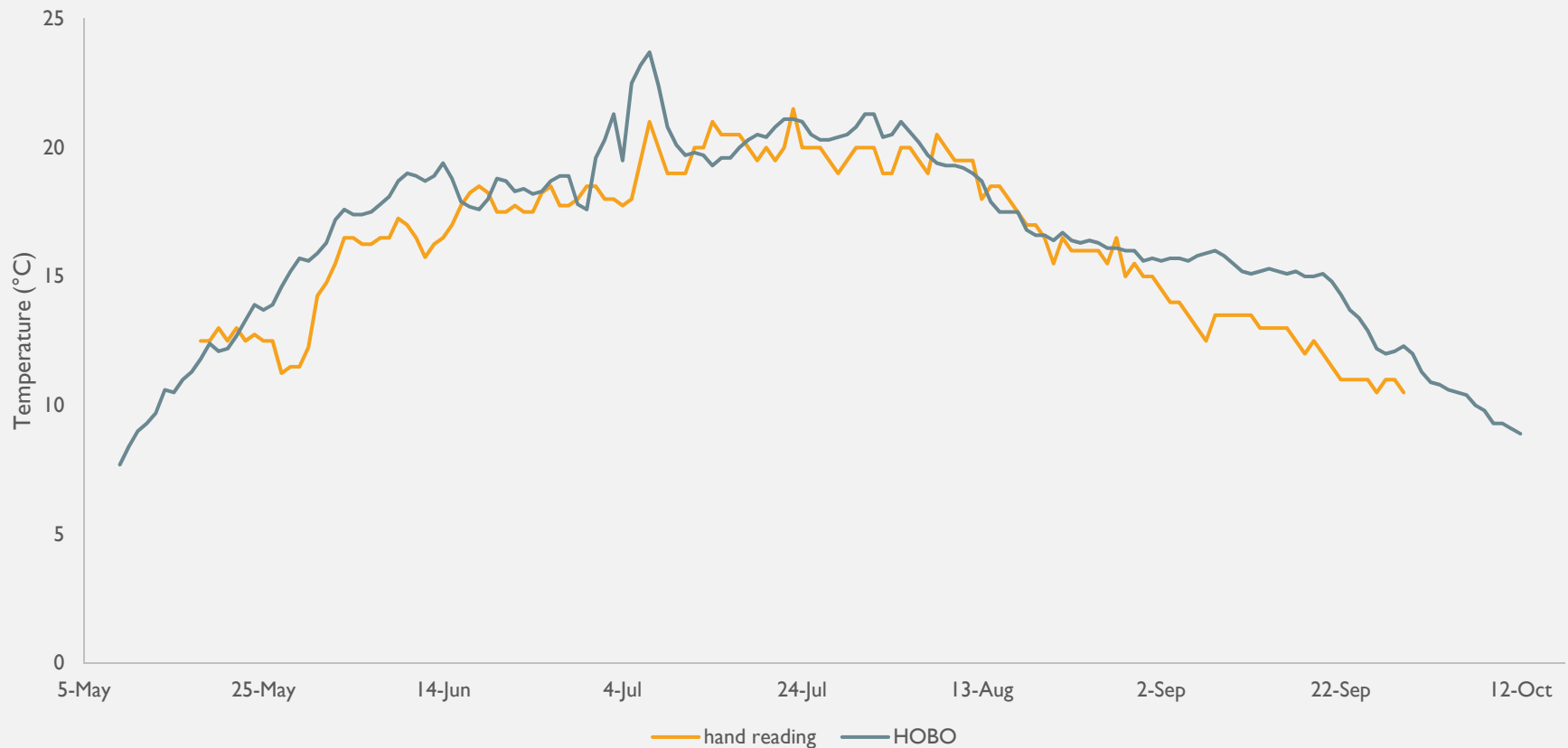




## TEMPERATURE TRENDS


- ❖ Average difference: 1.36 degrees
- ❖ Max Temperatures: HOBO: 23.7 °C vs Hand-held: 21.5 °C
- ❖ Other data challenges

2018 Hand-held Temperature vs HOBO Temperature Collection



A horizontal row of four salmon silhouettes swimming to the left, positioned above a white rectangular box containing the title.

## 2019 UPCOMING FIELD SEASON

- ❖ Otter Lake/Creek
    - ❖ Phase I of salmon monitoring
  - ❖ USFWS collaboration for Sixmile and Otter Lake
  - ❖ Data Management and Analysis
  - ❖ ADF&G collaboration
    - ❖ Stocked Lake Assessments
  - ❖ iSportsman Fishing Surveys
- 
- A horizontal row of four salmon silhouettes swimming to the left, positioned at the bottom of the slide.