

# Summary of the 2020 U.S. Yukon Area Fall Season

U.S./Canada  
Panel Meeting  
Wednesday, January 27, 2021; Agenda Item 2

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and Bonnie Borba



# Fall Chum Salmon Outlook

- Forecast derived using Ricker modelling:
  - range 827,000 to 1 M fish.
- Inseason projection based on summer/fall chum salmon relationship:
  - a run size less than 450,000 fish.



Photo by Bonnie Borba

# Management Objectives

- Endeavor to meet treaty border objectives for fall chum salmon.
  - Escapement objective of 70,000 – 104,000 fish.
  - Harvest sharing agreement.
- Endeavor to meet fall chum salmon escapement goals.
  - Drainagewide goal (300,000 – 600,000 fish).
  - Teedriinjek River (85,000 – 234,000 fish).
  - Delta River (Tanana River tributary; 7,000 – 20,000).
- Environmental conditions would be considered in-season to inform management decisions regarding harvest opportunities.

# Yukon River Drainage

## Fall Chum Salmon Management Plan

<b>Management Actions</b>		
<b>Fall Chum Salmon Directed Fisheries</b>		
<b>Run Size Estimate</b>	<b>Commercial/Personal Use/Sport</b>	<b>Subsistence</b>
300,000 or Less	Closed	Closed
300,000 to 550,000	Closed	Possible Restrictions
Greater than 550,000	Open	Schedules

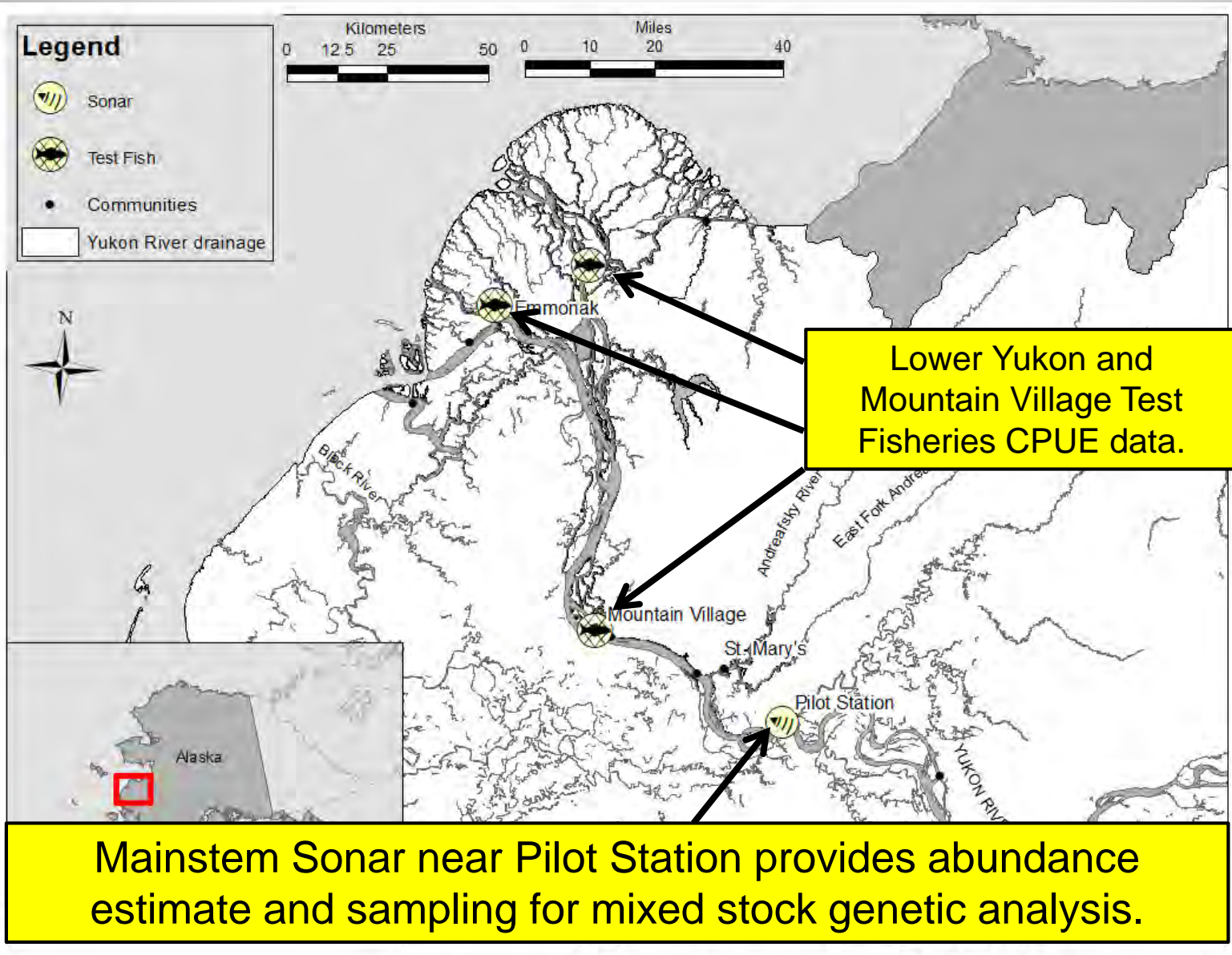
- Expected an average to below average subsistence harvest.
- Did not anticipate any commercial harvest.

# Management Strategies

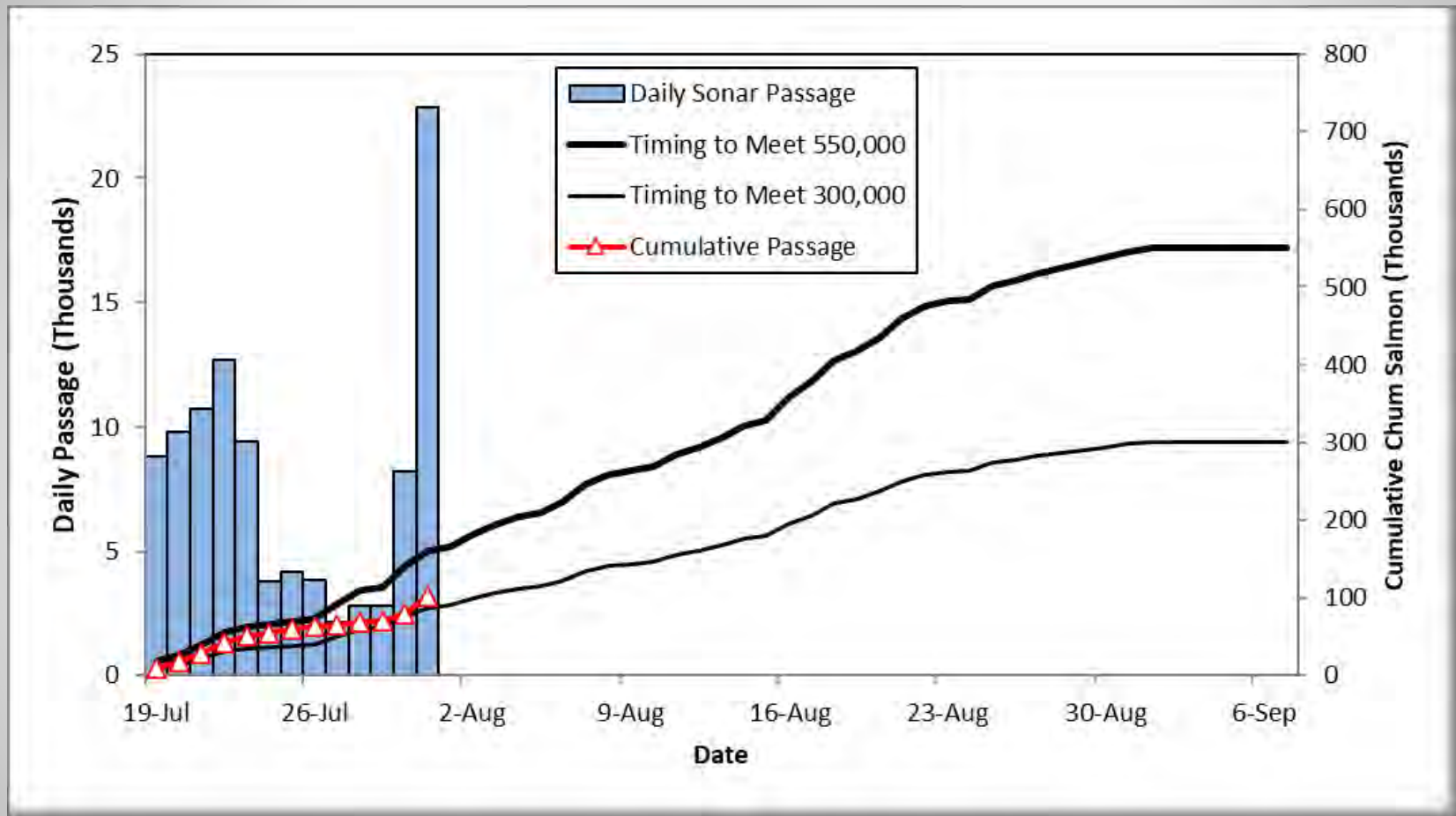
- All districts and subdistricts would be placed on regulatory subsistence fishing schedules to start the season.
- A complete closure of subsistence salmon fishing in the Alaska portion of the mainstem Porcupine River.
- Commercial salmon fishing would not be allowed unless the inseason fall chum salmon run projection exceeded 550,000 fish.
- Modify inseason management based on inseason assessment.



# Inseason Run Assessment Projects

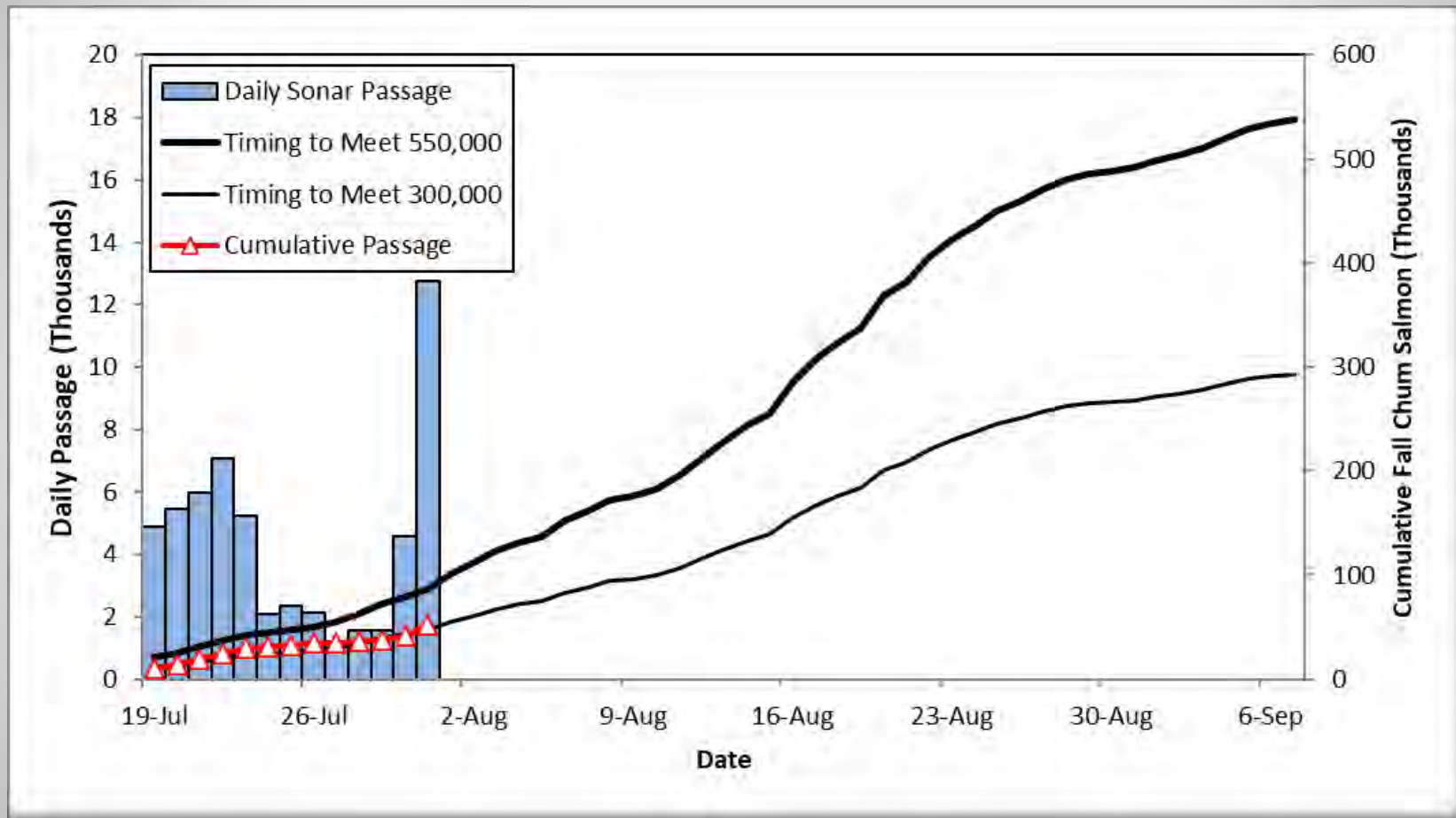


# Chum Salmon Assessment 7/19 – 7/31



Districts 1-4: subsistence fishing open on regulatory schedules.

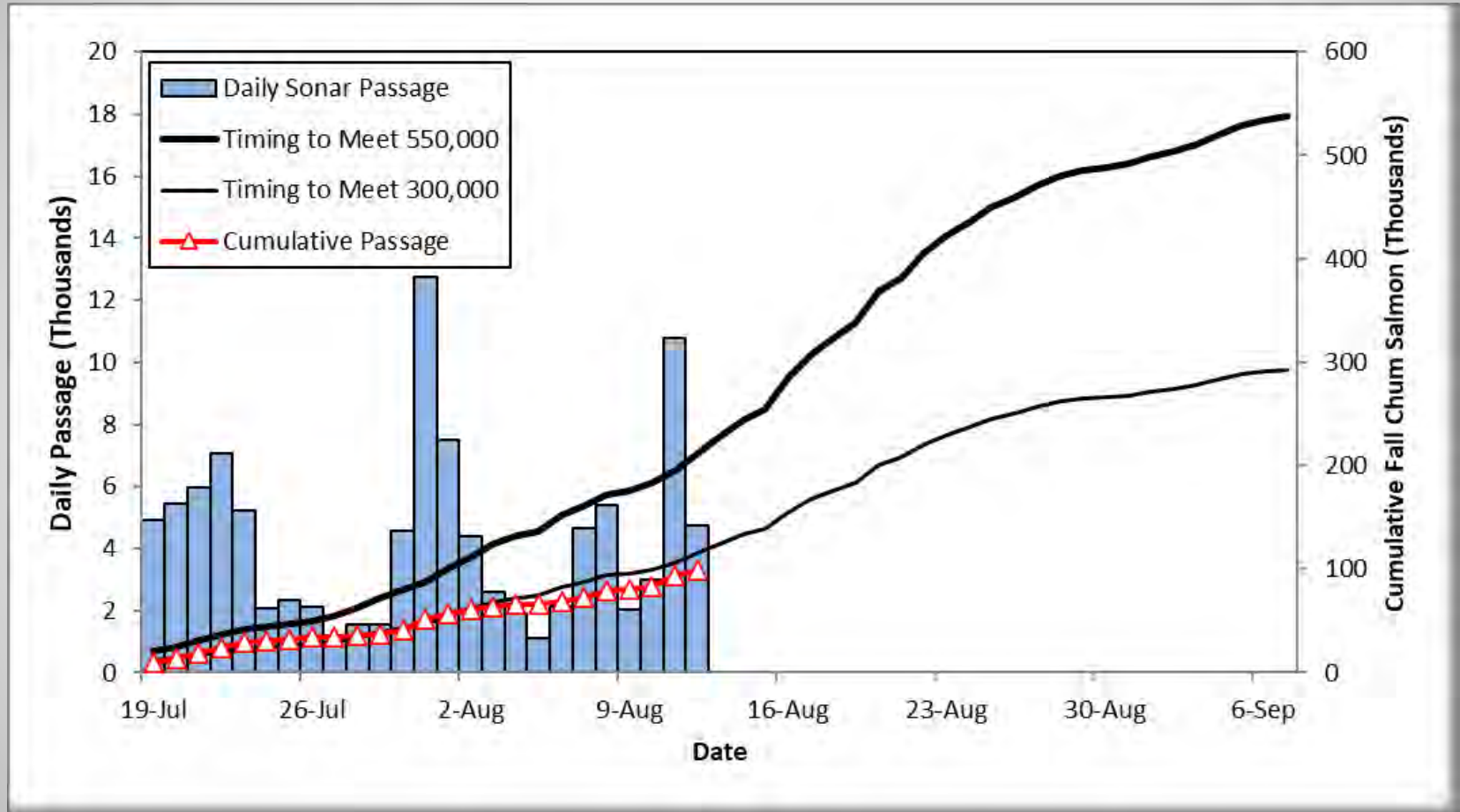
# Fall Chum Salmon Assessment thru 7/31 (Adjusted Using Genetic Analysis)



Districts 1-4, Subdistricts 5-ABC: restricted subsistence fishing schedules.



# Fall Chum Salmon Assessment thru 8/12 (Adjusted Using Genetic Analysis)



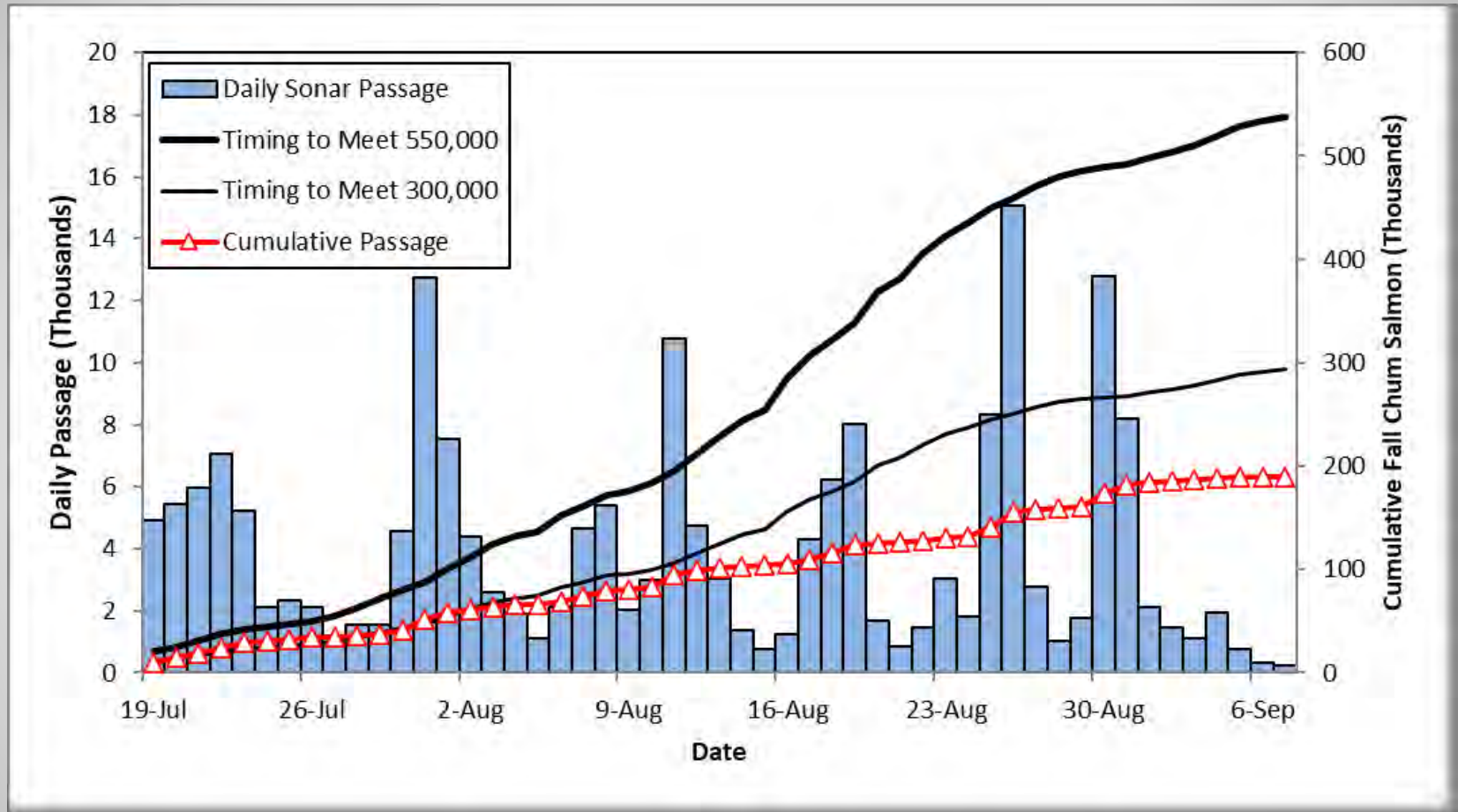
Subsistence fishing for fall chum salmon closed.

# Management Strategies

During subsistence fall chum salmon closure:

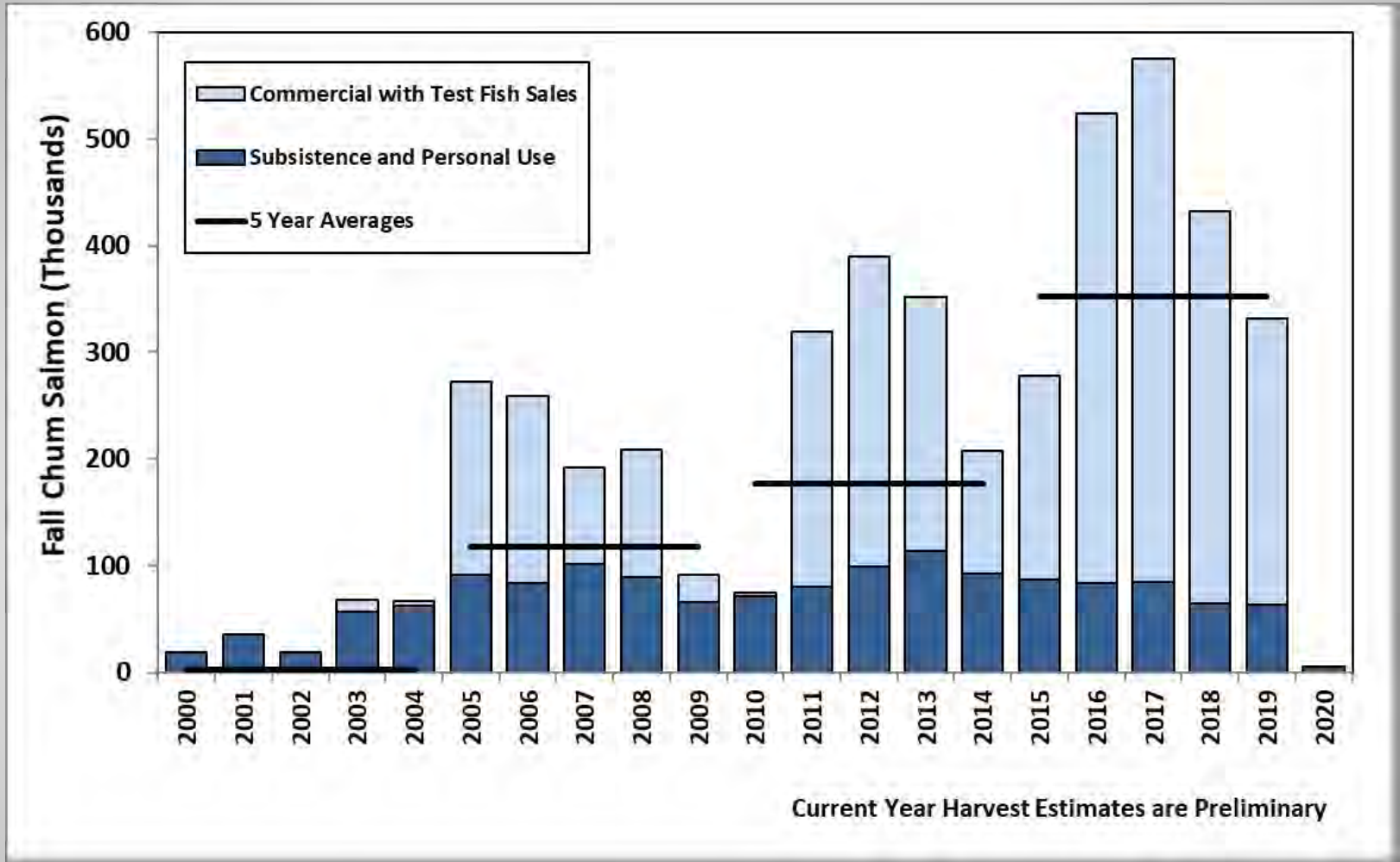
- 4-inch mesh or less gillnets were allowed to target non-salmon species.
  - All districts and subdistricts.
- Selective gear was allowed to target other salmon and non-salmon species.
  - Districts 1-4, Subdistricts 5-A, District 6.
  - Manned fishwheels.
  - Dipnets.
  - Hook and line.
  - Fall chum salmon released alive immediately.

# Fall Chum Salmon Run Assessment (Adjusted Using Genetic Analysis)



- Subsistence salmon fishing reopened beginning 9/8.
- Subsequent districts/subdistricts reopened concurrent with end of fall chum salmon run.

# U.S. Harvest of Fall Chum Salmon



- Estimated 2020 subsistence harvest ~ 6,200.
- No commercial harvest in 2020.

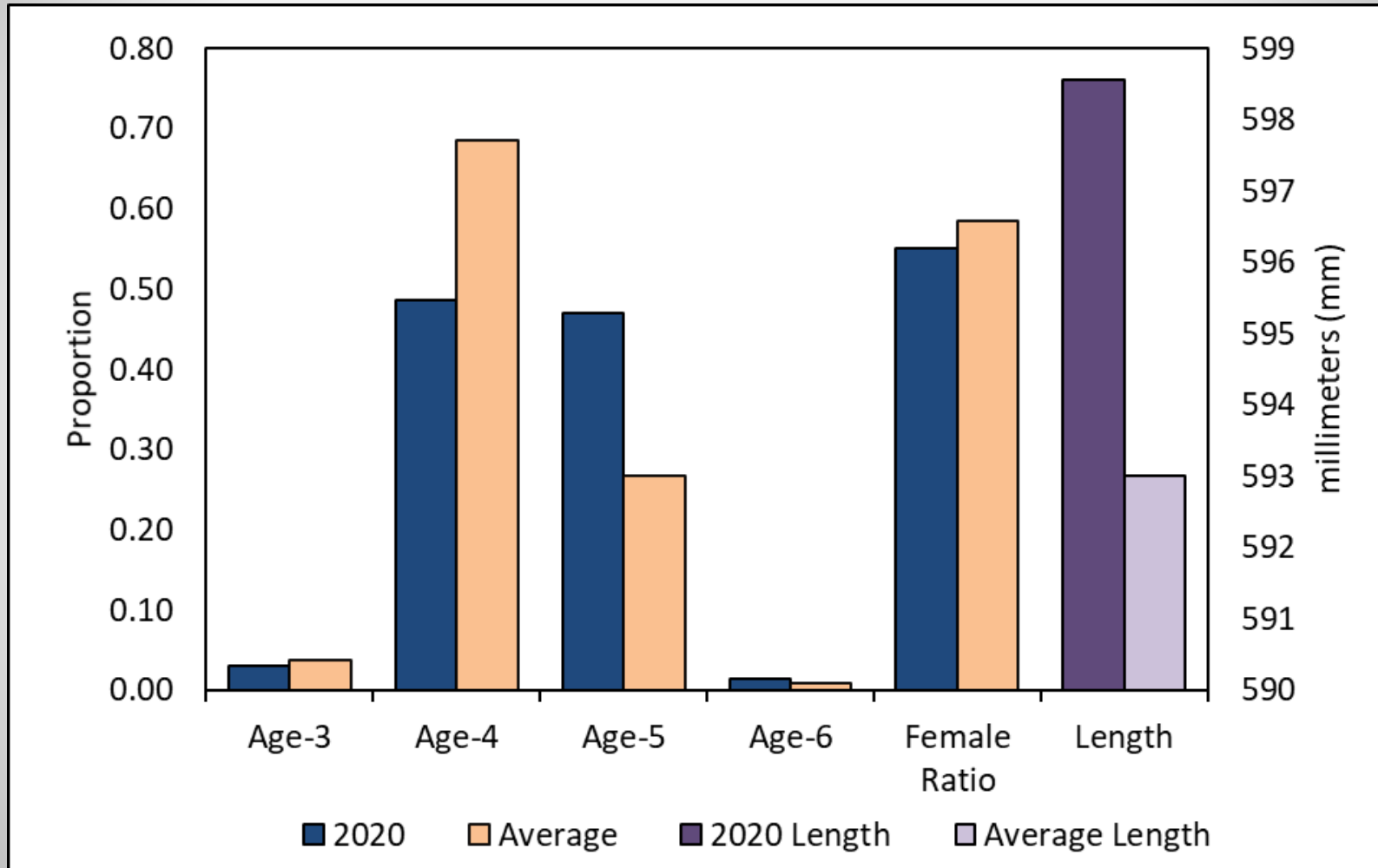


# Post Season Assessment

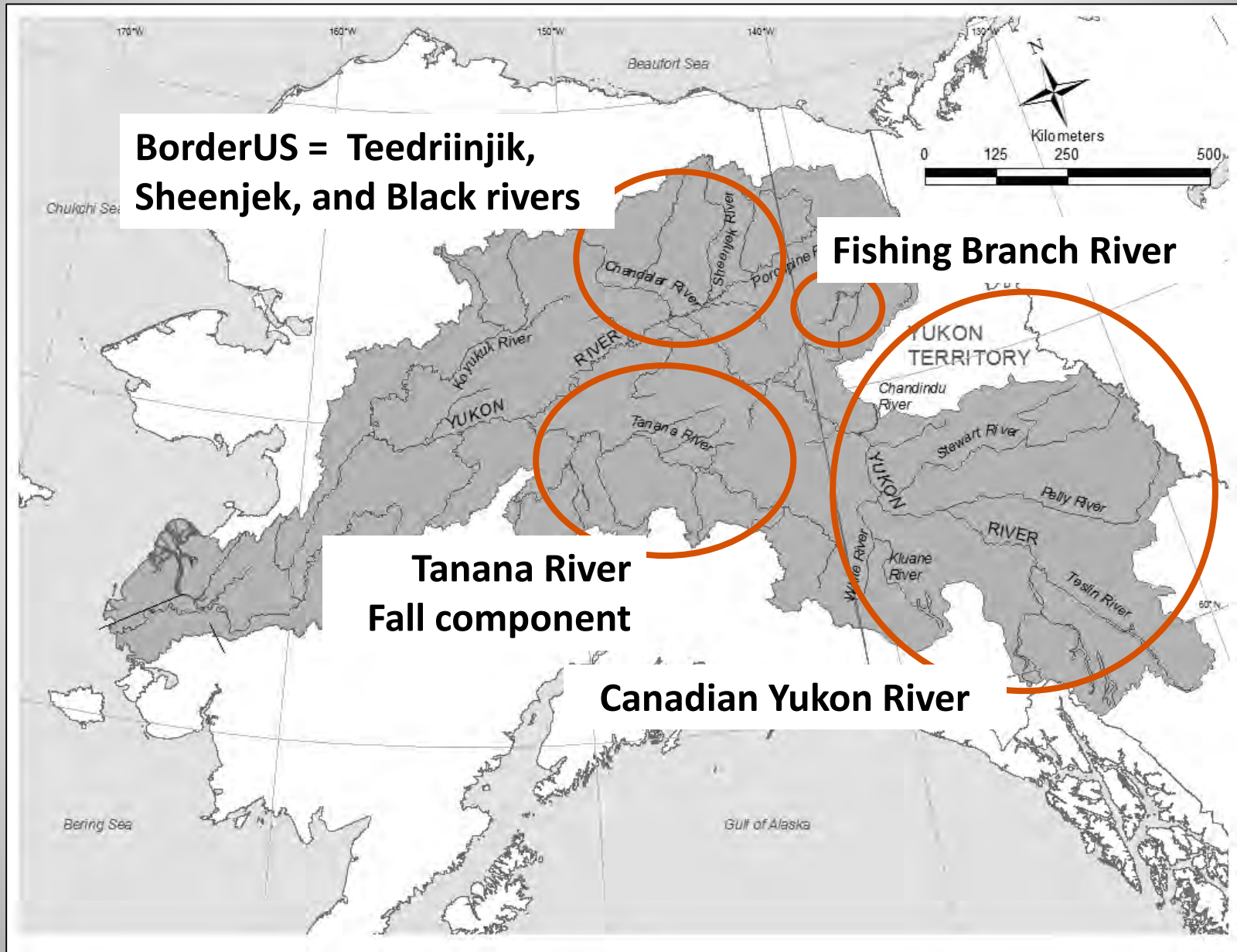
Bonnie Borba Presenting



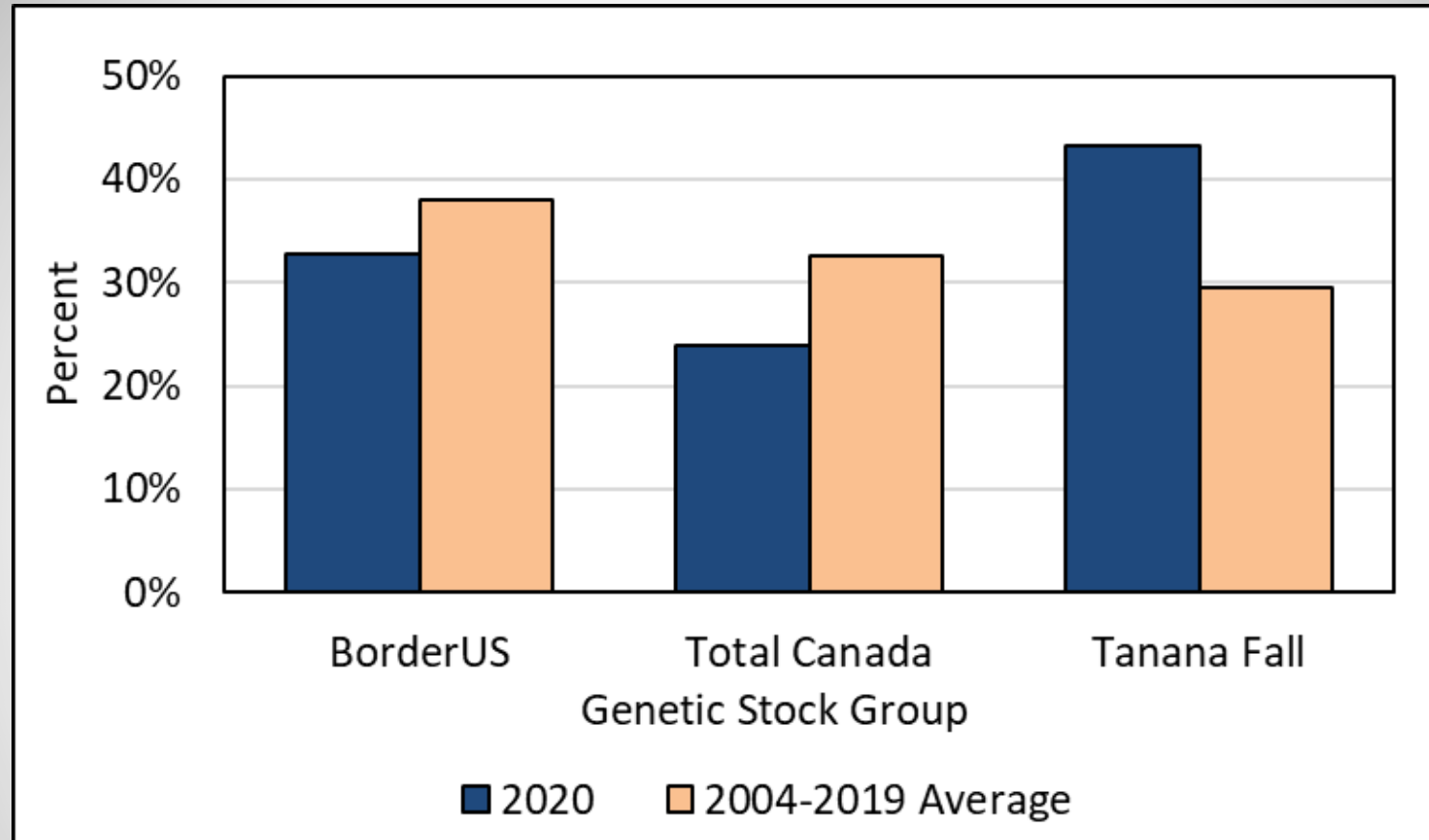
# Inseason Assessment of Age, Sex, and Length



# Genetic Groupings of Fall Chum Salmon



# Fall Chum Salmon Genetic Assessment

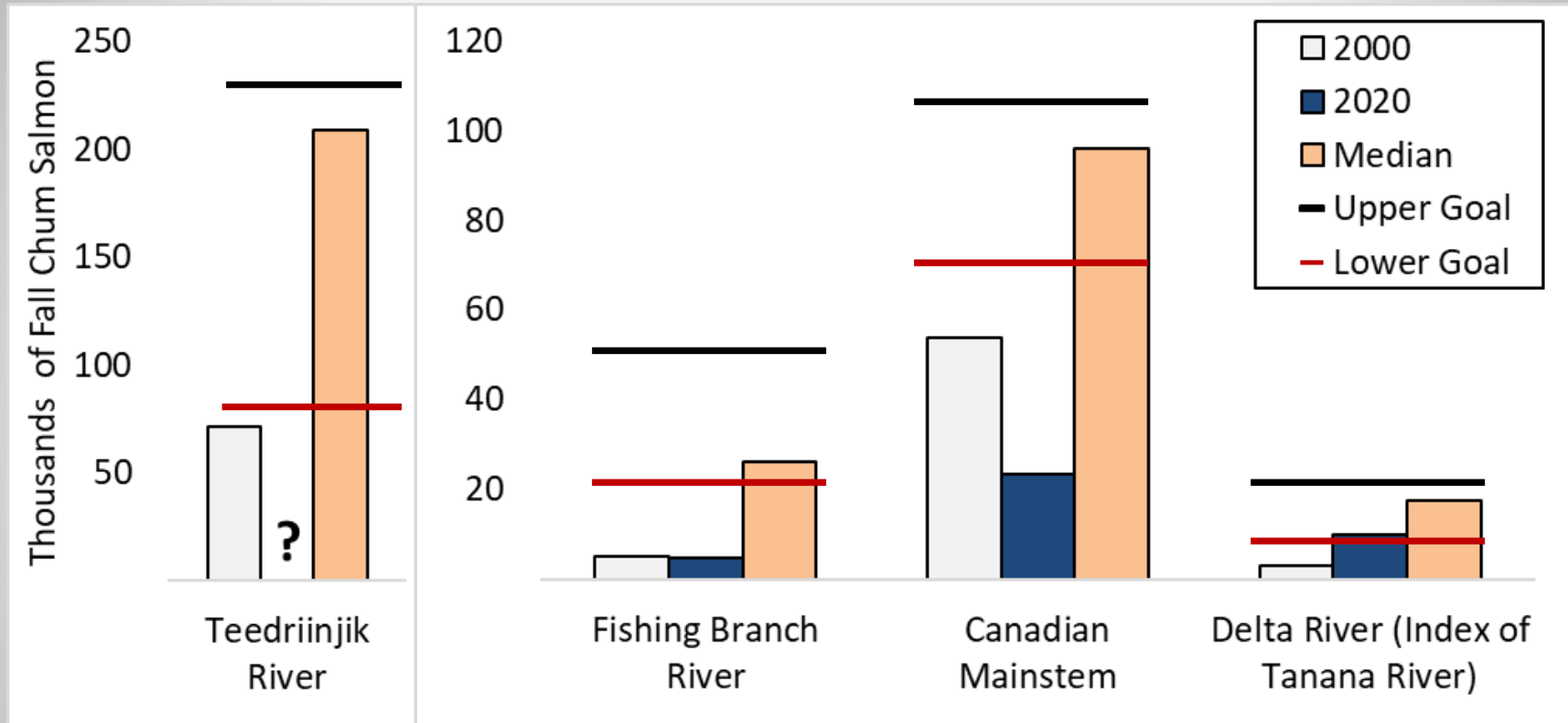


- Border US stocks were lower than average
- Mainstem Canada stocks were lower than average
- Tanana River stocks were higher than average



# Fall Chum Salmon Escapement Assessment

## Low runs 2000 and 2020 compared to median

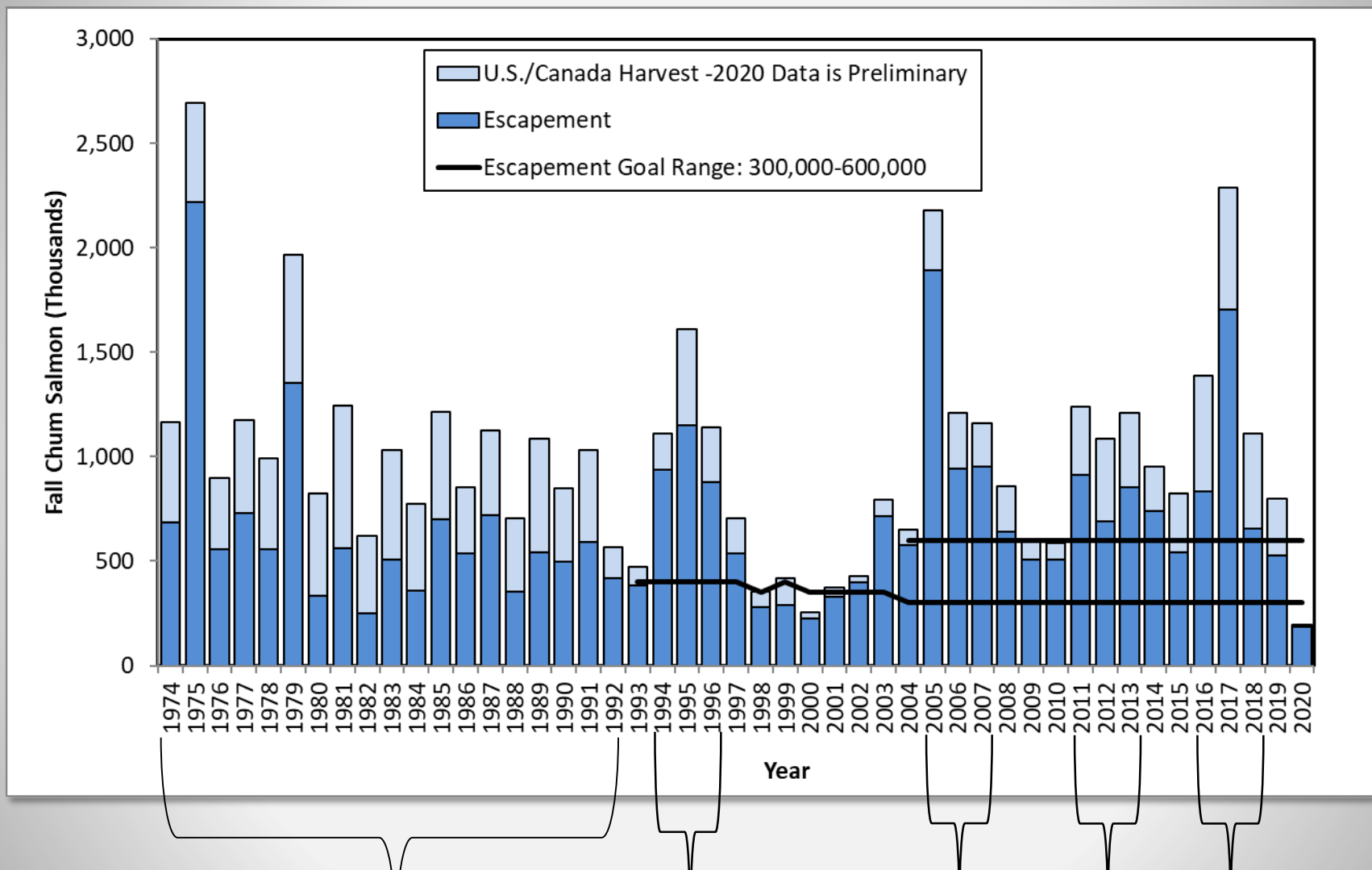


- Teedriinjik River was not monitored.
- Delta River (Tanana River drainage) was within the goal.
- Both Canadian system goals were not achieved.

# Observations

- Age-4 chum salmon were missing in both wild and hatchery Alaska stocks.
  - Indication of early marine effect since widespread.
  - US and Canadian stocks entered similar marine environment.
  - Possible effect of reduced production from Kluane River after glacier receded. Need more years of escapement data to evaluate.

# Fall Chum Salmon Run Sizes



Even/Odd year cycles

Three years in row over 1 million

# Observations (continued)

- Swings in fall chum salmon production
  - Even/Odd year changes in production 1974-1992
  - Wider swings in production since 1993
- Freshwater and marine examples of fall chum salmon declines
  - Extreme cold winter of 1988-1989
  - Coccolithophore blooms in 1997-1999
  - Bering Sea heat wave in 2016



# Observations (continued)

- Marine Research
  - Working on developing a fall chum salmon juvenile index of abundance
    - Does high juvenile abundance correspond to high fall chum salmon adult returns?
    - The index for the juveniles returning in 2020 was lower than the previous seven years.
    - The following two years show an above average juvenile abundance index.
    - Apply fall chum salmon abundance index to forecasting.

# Coho Salmon Summary

- 2020 Run size index was below average at ~121,000 coho salmon.
  - Average run size index ~ 239,000.
- Preliminary subsistence harvest estimate is ~2,900.
- Escapement goal at Delta Clearwater River was not achieved.



Photo by Bonnie Borba

# Acknowledgements

Asa'carsarmiut Tribal Council

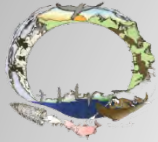
Tanana Chiefs Conference

U.S. Fish & Wildlife Service

Yukon Delta Fisheries Development  
Association

Yukon River Drainage Fisheries  
Association

Yukon River Intertribal Fish  
Commission



Tanana  
Chiefs  
Conference



YUKON RIVER DRAINAGE FISHERIES ASSOCIATION



# Questions?

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