

# Yukon River Summer Season Management Considerations

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Yukon River Summer Season Area Manager (ADF&G)



YRDFA Pre-season Planning Meeting  
Fairbanks, April 2019



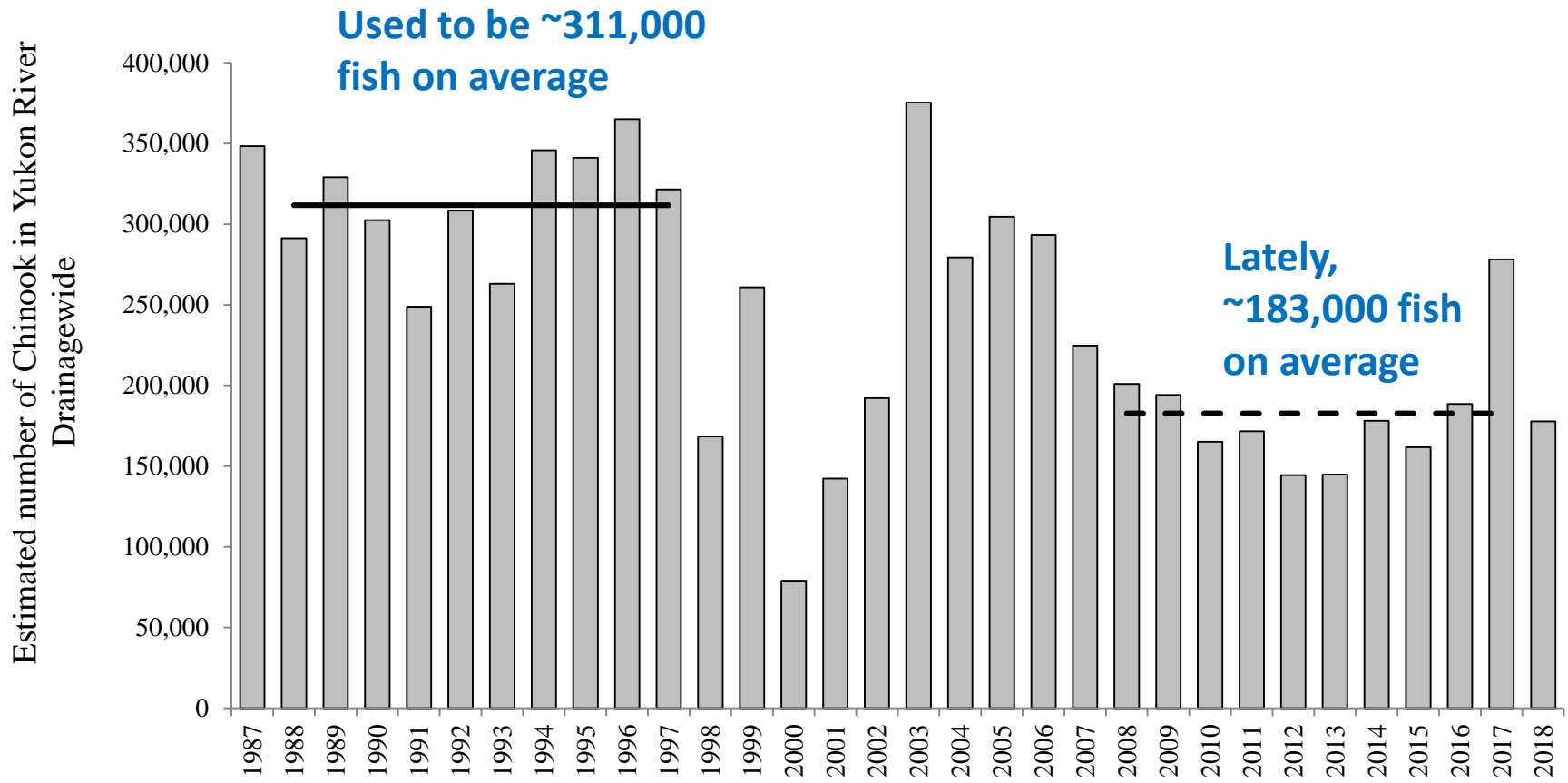
# Yukon Chinook – WHAT IS THE PROBLEM

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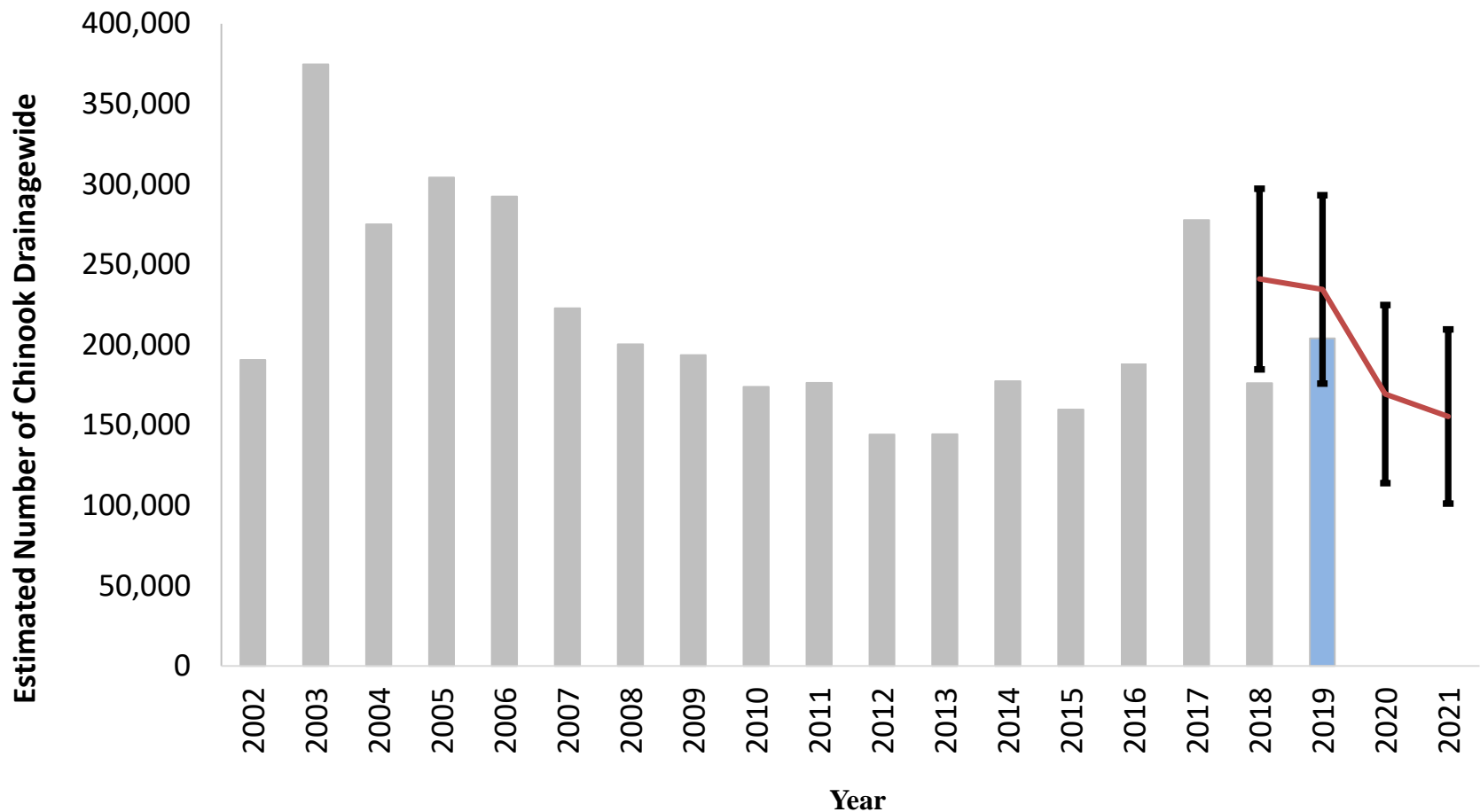
- Run sizes have been smaller than they used to be historically
- Though we have been in conservation mode for nearly a decade, runs may take years to recover to former abundance, or may not get as large as they used to be
- When run sizes are smaller there is not always enough fish to have a full subsistence harvest (used to average about 50,000)
- We continue to need conservative management to get enough fish to spawning grounds to sustain future runs.
- The Chinook runs haven't been large enough to provide king-directed commercial harvests, which is a lost industry to many

# Yukon Chinook – WHAT IS THE PROBLEM

Productivity naturally fluctuates, but has declined from the past



# Yukon Chinook – A future glimpse



## Bering Sea juvenile-based Chinook salmon outlook

Blue bar represents the ADF&G Drainage-wide forecast  
(based on the Canadian-origin JTC forecast)

# Why are Chinook runs smaller?

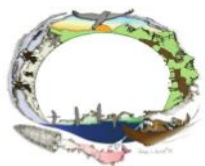
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Many things affect salmon run sizes, and these things are occurring to runs across the state

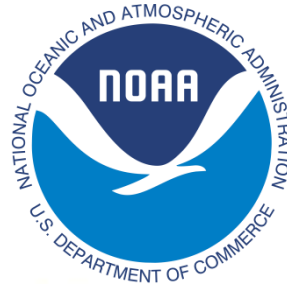
- Climate change has an effect on spawning habitat, ocean environment and in-river temperatures which affect different life stages of salmon
- Overfishing in the past and/ or bycatch may have affected productivity
  - Larger mesh gear in the past may have selected for largest most fecund fish (Board of Fisheries reduced max mesh size to 7.5" in 2012 to stop this selection from occurring)
- Fish are returning to rivers smaller (in length) and younger, and this is likely due to something in the ocean environment
  - Changes to food chain, competition with other salmon species, mortality, etc.
- Some of it we just don't understand! E.g., sometimes the best escapements give us the lowest adult returns, and sometimes the poorest escapements give us great returns 5, 6 years later

..... So Who is Doing something about it?

Most entities that work with salmon are tackling some part of the research and efforts to conserve salmon



Tanana  
Chiefs  
Conference



Research, Assessment, Restoration, Stewardship, Citizen Science,  
Habitat, Ocean, River, Tribal leadership and Management

# Bycatch- an example of progress

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- Interception of Yukon-bound Chinook occurs in the pollock fishery
- Since 2007 when a high catch of kings spurred stakeholders and organizations like YRDFA to take action: regulatory improvements have occurred:
  - hard caps, rolling closures, and better observer coverage, means less bycatch
- The number of fish that would have returned to the Yukon as adults if they'd not been intercepted, on average is less than 1% of the total return
- Your packet has a handout with more information



# What is the solution for dealing with smaller Chinook runs?

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- Countless groups, agencies, universities work to study population declines, habitat restoration, etc.
- Here in this meeting, we focus on what we can do once the run arrives on the Yukon: [inriver management](#)
- Tribal management is a goal of many, and the Yukon River Intertribal Fish Commission is working towards that
- ADF&G and USFWS management staff here, jurisdiction is limited to the river



# ADF&G management priorities

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- 1) Assessment using the best science and incorporating local and traditional knowledge
- 2) no matter the run size, meet escapement goals if possible
- 3) if there's harvestable surplus- priority goes to subsistence
- 4) if there's large enough surplus and subsistence opportunity has been provided, can consider personal use, sport and commercial harvest

# Assessment and Local Knowledge Intertwined

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- Lower Yukon Test fish: gives us run timing, when the pulses enter the river and relative abundance
- Much of fishing crew is local with decades of experience fishing



# Assessment and Local Knowledge Intertwined

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- While test fishing and sonar counts are the best they can be, there's error around the estimates. We use local knowledge about catches, fishing, to help ground-truth these estimates
- Fishermen reports help verify test fish data, counts, swim speeds, predict when and where pulses come in



# How Do We Assess run size INSEASON?

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- Daily counts at pilot Station sonar are compared to years of similar run timing and full season total is projected
- Canadian run size is also projected using genetic analysis
- The estimate of the run size gets more precise around the midpoint of the Chinook run



# Meeting Escapement Goals

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# 2018 Chinook Escapement Goals- Alaska

Escapement project	Current Goal	2018 Estimate
EF Andreafsky River Weir	2,100 – 4,900	4,144
WF Andreafsky River Aerial	640 – 1,600	455
Anvik River Index Aerial	1,100 – 1,700	1,109
Nulato River Aerial	940 – 1,900	870
Chena River Tower	2,800 – 5,700	4,227*
Salcha River Tower	3,300 – 6,500	4,053*

\* Preliminary inseason tower count expanded with sonar for missed days.

# 2018 Canadian-origin Chinook Escapement Objectives

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				Actual Post-Season
Spawning Escapement (IMEG)	Goal	42,500	55,000	54,474
Canadian harvest share (23%)		4,300	8,800	2,700
U.S. Harvest share (77%)		15,900	27,200	19,300

These values measured post season using Eagle Sonar passage and harvest information

# Subsistence harvest priority

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- 2) no matter the run size, meet escapement goals if possible
- 3) if there's harvestable surplus- priority goes to subsistence**
- 4) if there's large enough surplus and subsistence opportunity has been provided, can consider commercial harvest



# But what if there's not enough Kings to meet everyone's needs?

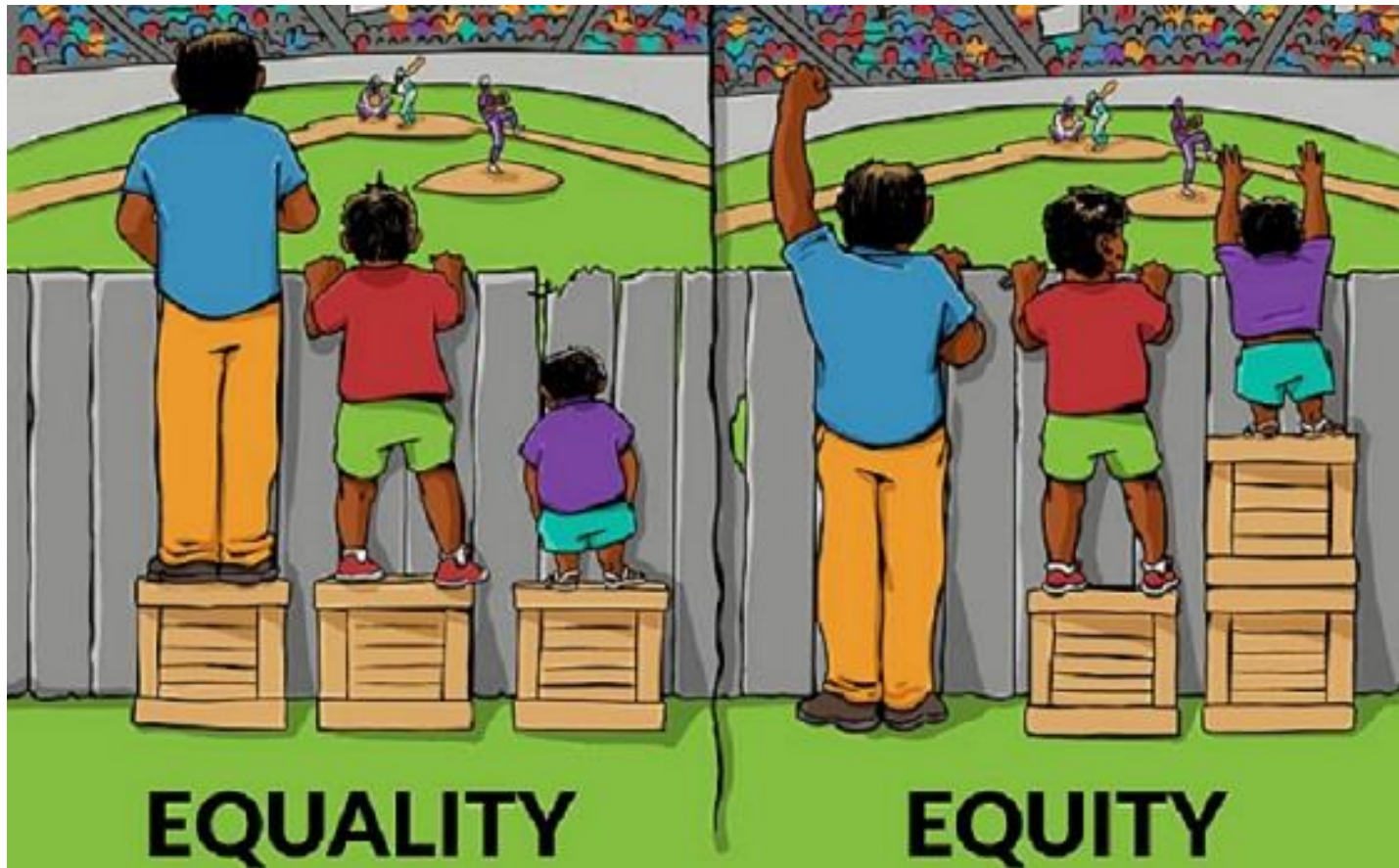
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- 1) If the average harvest is 50,000, most years the run sizes aren't large enough to meet the subsistence needs for the whole river
- 2) Each household may only take what they need, but we need to consider ALL the households
- 3) Managers must make fishing harder (more restricted) to reduce harvests across the board

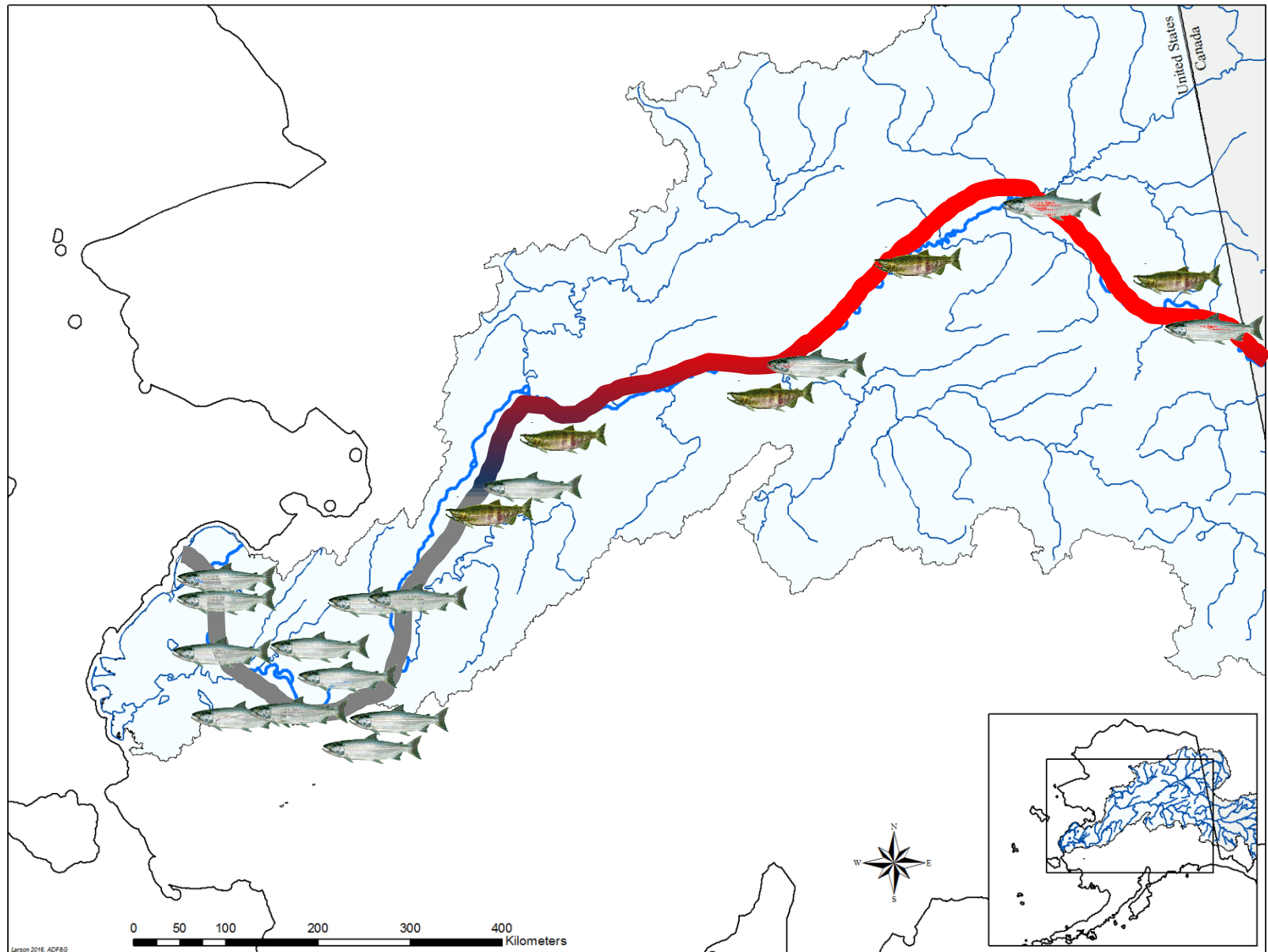
But it's not as simple as everyone just gets the same amount

# Making Harvest Opportunity Fair: Equitable Does Not Mean Equal

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# Making Harvest Opportunity Fair: Equitable Does Not Mean Equal



# Not All Fishing Districts Created Equal

- Further upriver: less fish, more spread out, harder to catch, thus need more fishing time
- District 5 above the Tanana is only harvesting Chinook bound for Canada, while other districts can catch other stocks
- Managers may not be able to make the districts equal, but they try to make fishing opportunity equitable
- This meeting helps us understand how people are willing to share the limited available fish



# Regulatory “Windows” Schedule

Area	Fishing Periods
Coastal District, Koyukuk and Innoko Rivers	7 days/week
District 1	Two 36-hour periods/week
District 2	Two 36-hour periods/week
District 3	Two 36-hour periods/week
District 4	Two 48-hour periods/week
Subdistricts 5A, 5B, 5C	Two 48-hour periods/week
Subdistrict 5D	7 days/week
Subdistrict 6	Two 42-hour periods/week
Old Minto Area	5 days/week

## Making Harvest Opportunity Fair: Equitable Does Not Mean Equal

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- Managers work within a regulatory framework driven by a public process
- Managers adjust fishing time, or can close or limit areas and may restrict gear
  - These measures may be meant to reduce harvest numbers equitably
  - Sometimes adjustments to make fishing more liberal are also possible
  - We adjust times, closures and gear for commercial fishing
- Feedback from fishermen is helpful for many reasons. Sometimes we can adjust management actions, but many actions affect over 100 miles of river and multiple villages

# Reduced Regulatory Subsistence Schedule- Pros and Cons

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- Set schedule people can plan around
- Naturally spreads harvest across run
- With closures we get “pulse protection”
- Length of openings accounts for different fishing efficiency for each district
- Presence of high numbers of kings or chums cannot be predicted- luck of the draw
- Openings not always ideal for weather, personal schedules
- Unrestricted schedule could allow too much harvest

# Gillnet mesh sizes- Effects on the Harvest

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## 6" gillnet mesh:

- Better for targeting summer chum salmon
- Chinook caught will likely be smaller males
- If many chum are present, numbers of Chinook caught will be low (but could result in unwanted chum)

## 7.5" gillnet mesh:

- More efficient mesh size for catching Chinook
- Harvest of Chinook spread across all ages, sexes, and stocks
- If folks are finished harvesting summer chum, they can harvest Chinook and get what they need in a shorter amount of time



## Making Harvest Opportunity Fair: Equitable Does Not Mean Equal

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- The number of fish harvested by household varies for MANY reasons:
  - location on the river, weather, economics, other game and fish availability, cultural practices and preferences, personal issues, family and extended network size
  - Each family will determine their harvest needs, not ADF&G
- So how do we reduce the COLLECTIVE harvest when it needs to be less than average to meet escapement goals?
- the various management restrictions used throughout the season, reduces the final total harvest.

# Chinook Subsistence Harvest in Alaska

Average 2007-2011	2015	2016	2017	2018
44,000	7,600	21,600	38,100	32,000

- Includes Chinook from test fisheries, kept from commercial gillnet openings and personal use



# Responsibility of Fishermen

- Stay informed about the runs- comply with the restrictions and closures
- Report your harvest accurately
- Take only what you need
- Pass on your fishing traditions and knowledge to youth




# How can fishermen conserve the king run

- Conservation may take many more years, help others to understand the need for harvest reductions for the long-term
- You may need to take less kings than you want or 'need'
- Harvest more of other fish instead of kings
- Use smaller mesh, and let larger female fish go to spawn



# Your Input Ensures Successful Management

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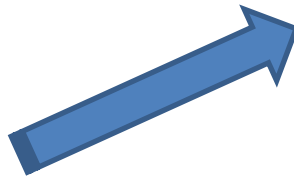
- Share your local knowledge on the weekly YRDFA teleconferences
- Like our Facebook page and check it frequently 
- Read News Releases –know what gear is legal and when you can fish
- Call the hotline for daily counts and fishing schedules





# Engage with the ADF&G Management Team

- How is your fishing going?
- Ask us your questions!
- Share your concerns!



How many fish this year?



# 2019 Summer Season Outlook and Management Considerations





# 2019 Canadian-origin Chinook Forecasts

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- Using US/Canada Joint Technical Committee method:  
69,000- 99,000
- Indicates a Chinook run size similar to last year (~77,000)
- A similar management strategy to last year should provide some harvest and meet goals
- Which end of this range the run comes in at dictates whether more or less restrictions will be in place

# 2019 Chinook Drainage-wide Outlook

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2018 forecast of Canadian-origin chinook:

69,000 to 99,000

The Canadian stock makes up  
41% of the run

$$69,000 / .41 = 168,000$$

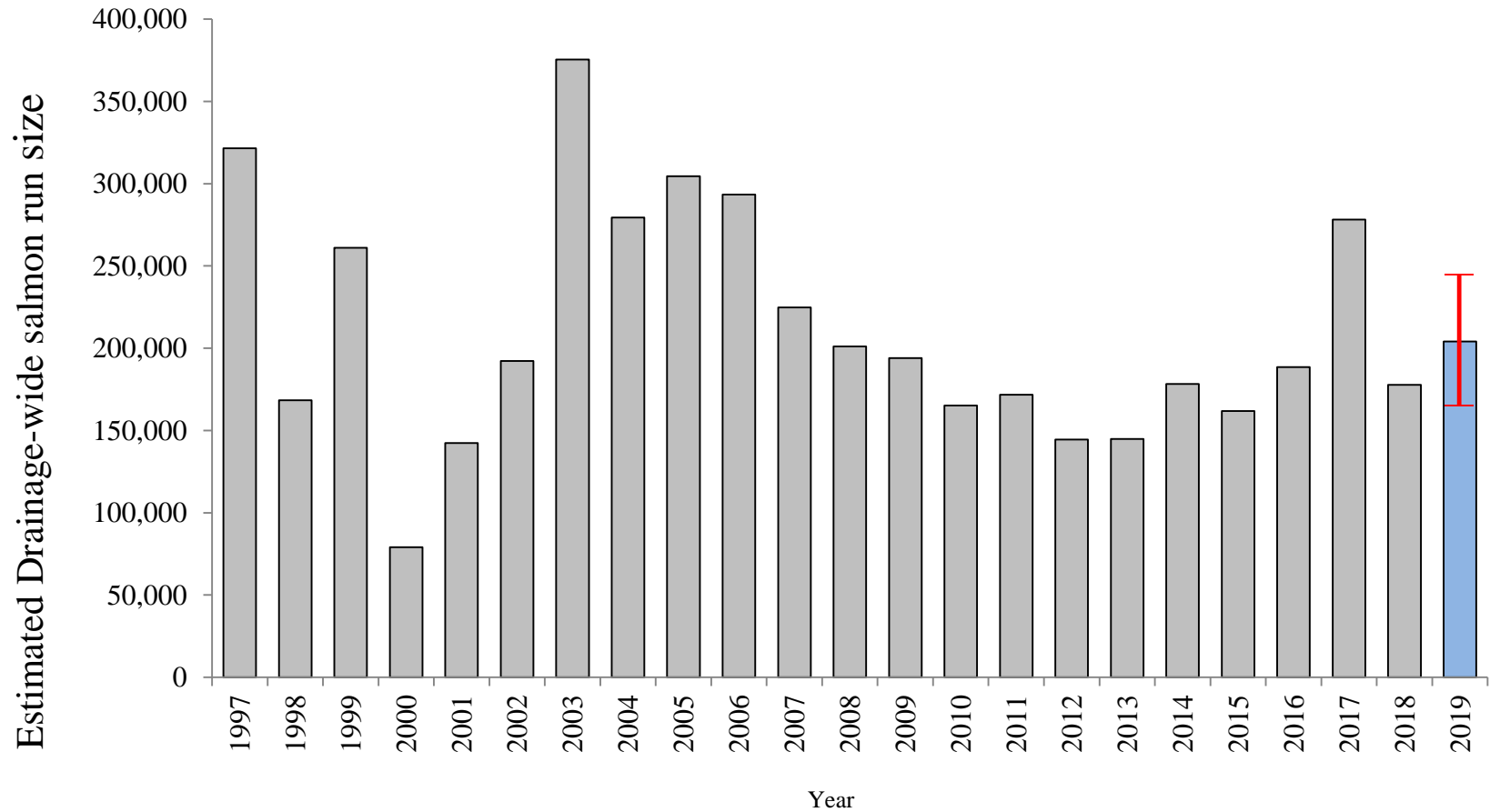
$$99,000 / .41 = 241,000$$

Drainage-wide run size range=  
168,000 to 241,000

2019 US all stocks harvest potential: 26,300-106,100

# 2019 Chinook Drainage-wide Calculation

Forecasted range: 168,000- 241,000



# Run sizes as they relate to fishing restrictions

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Drainage-wide Run sizes less than 150,000 require heavy harvest restrictions to meet escapement needs :

- Potential Actions: maintaining the reduced subsistence schedule all season, or possible closure and use of selective gear only

Run sizes between ~150,000 to 200,000:

- should provide some level of subsistence harvest with restrictions in place during low assessment certainty period (could be up thru midpoint of run)
- cautious approach early in season in case run is at lower end of forecast

Run sizes above ~200,000:

- should provide average (40,000-50,000) subsistence harvest
- All subsistence fishing restrictions would be relaxed
- possibility for sale of incidentally-caught Chinook in commercial chum fishery
  - this would likely occur at tail end of the run when most Chinook have passed District 2 and have been provided a priver for escapement and subsistence harvest

# Faith versus confidence during a short season

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- During first/second pulse, we start with a cautious approach and find ways to spread harvest opportunity across run
- As more fish enter the river we get a better sense of what end of the forecast we are seeing:
  - If it's worse than we thought, we can restrict or 'pull periods'
  - if it gets better, we can 'relax' the schedule or restrictions



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# 2019 Potential Subsistence Management Actions

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## **Once ice is out, before kings arrive:**

- Subsistence fishing 24/7 with 7.5" and smaller gear
  - Opportunity to harvest first fish for religious and ceremonial use
  - Can target sheefish and catch some early salmon

## **Early Season during assessment uncertainty and/or**

### **If run comes in weak:**

- Reduced regulatory fishing schedule
- Gillnets possibly restricted to 6" or smaller
- Selective gear (dipnets) for summer chum

# 2019 Potential Subsistence Management Actions

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## **Once confident run above lower end of forecast:**

- Regulatory subsistence fishing schedule
- King gear (7.5" gillnets allowed in most districts)
- Consider 6" restriction for most of king season in District 5

## **If run comes in at upper end of forecast (over 200,000):**

- Commercial fishermen may have option to sell or retain incidentally-caught Chinook salmon
- This is only considered if escapement goals likely to be met
- Reasonable opportunity was provided for subsistence and not restricted for majority of season

# 2019 Summer Chum Outlook

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- Run outlook: 1.7-2.2 M
- Similar to last year's run size (2.1M)
- Sufficient for escapement goals and subsistence needs
- Potential surplus for commercial harvest of > 1 M fish
- Harvest will be affected by Chinook run strength

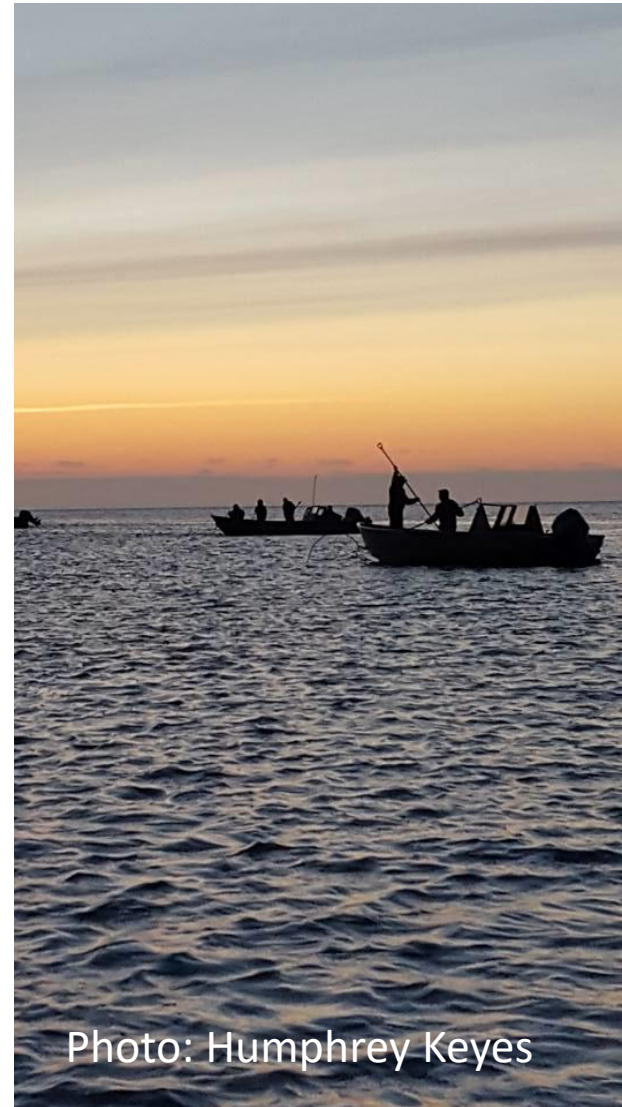


Photo: Humphrey Keyes



# 2019 Summer Chum Commercial Management Actions

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- Only one buyer in Y2, below Mt. Village, Y4 buyer returning
- Openings may not be offered before June 15 based on capacity
- Selective gear types to start: dip nets, beach seines (live release of Chinook)
- 6" or smaller mesh gillnets (once highly confident Chinook run strength is adequate)

# Fishermen Feedback Shapes next season



After lunch: breakout  
groups by District  
Discuss management  
and report out



*The most effective tool in conservation is support from the fishermen*

Thank you to the fishermen of the Yukon River!





# Questions?



Follow us at Yukon River Fishing- ADF&G

