

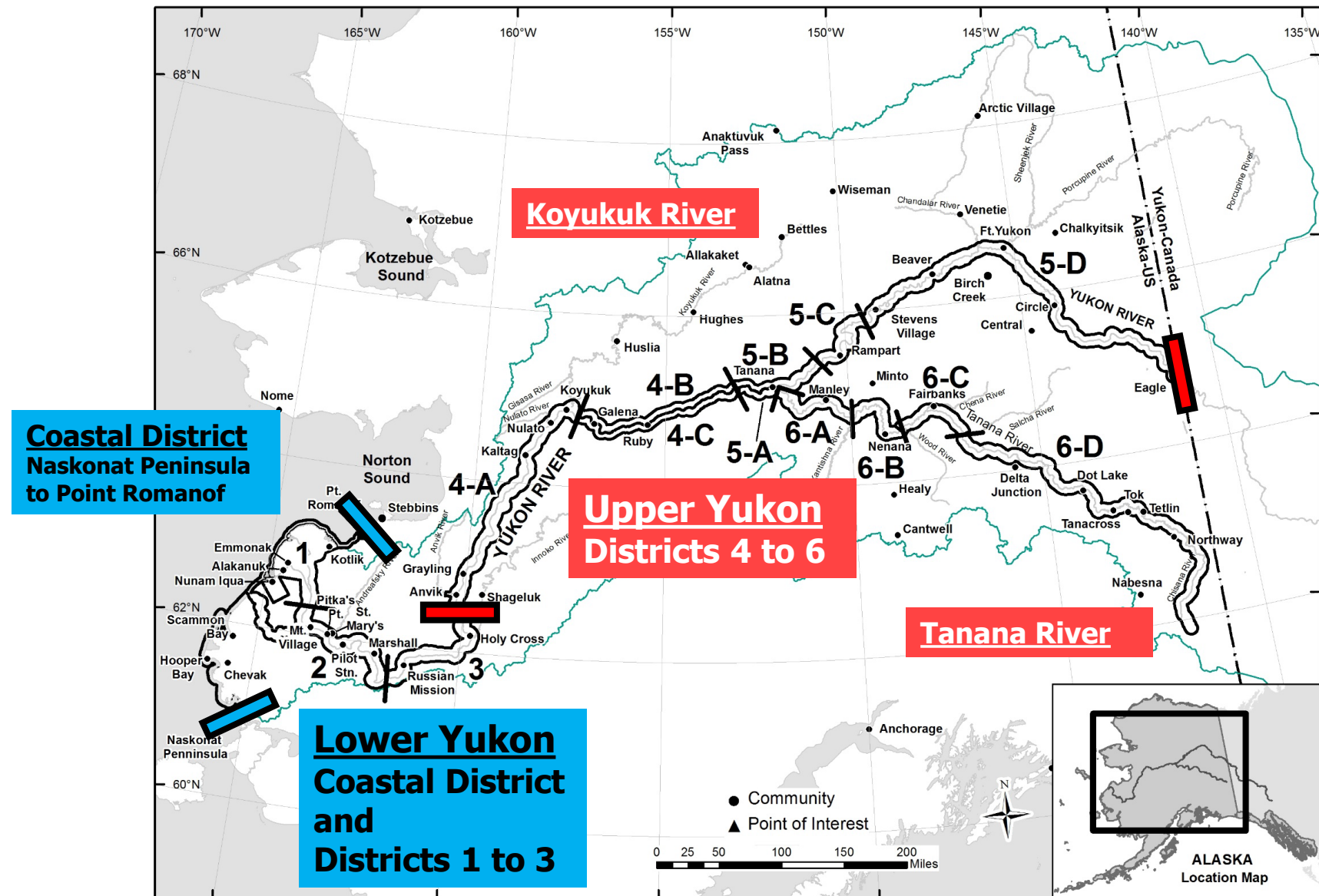
Yukon River King and Summer Chum Salmon Stock Status

A Report to the Alaska Board of Fisheries



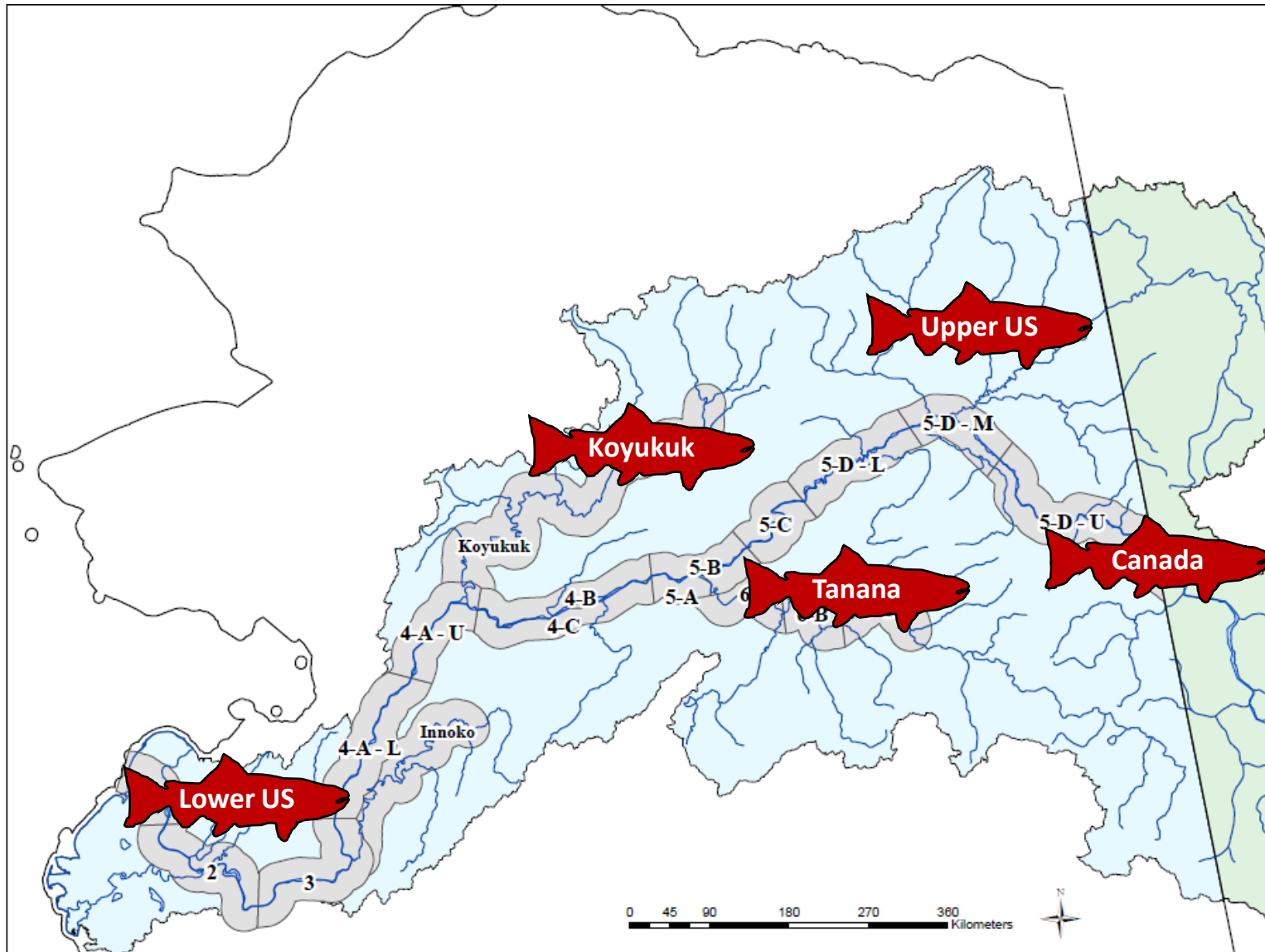
Presented by Deena Jallen and Fred West
January 2023

Yukon Area Management Districts

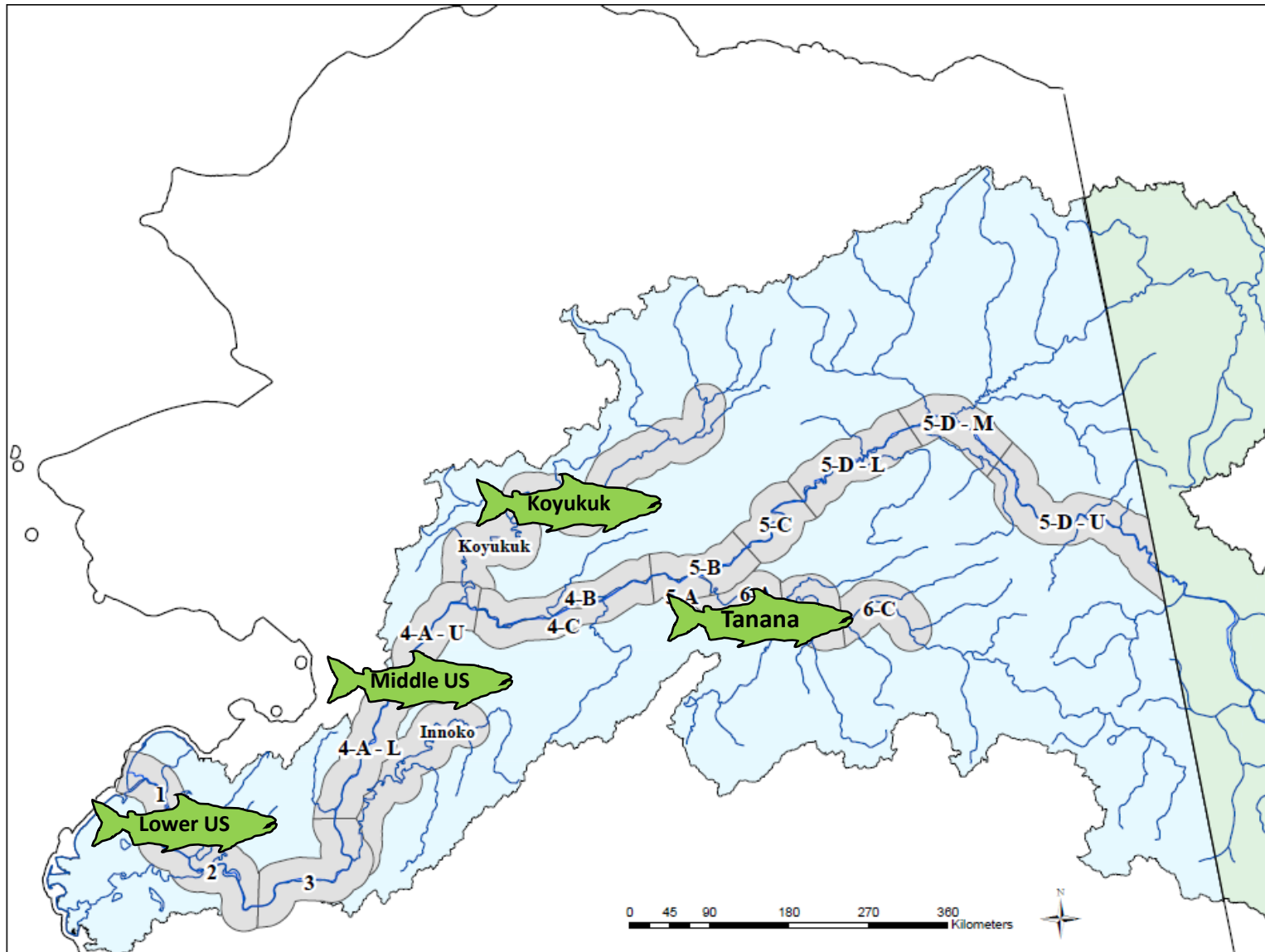




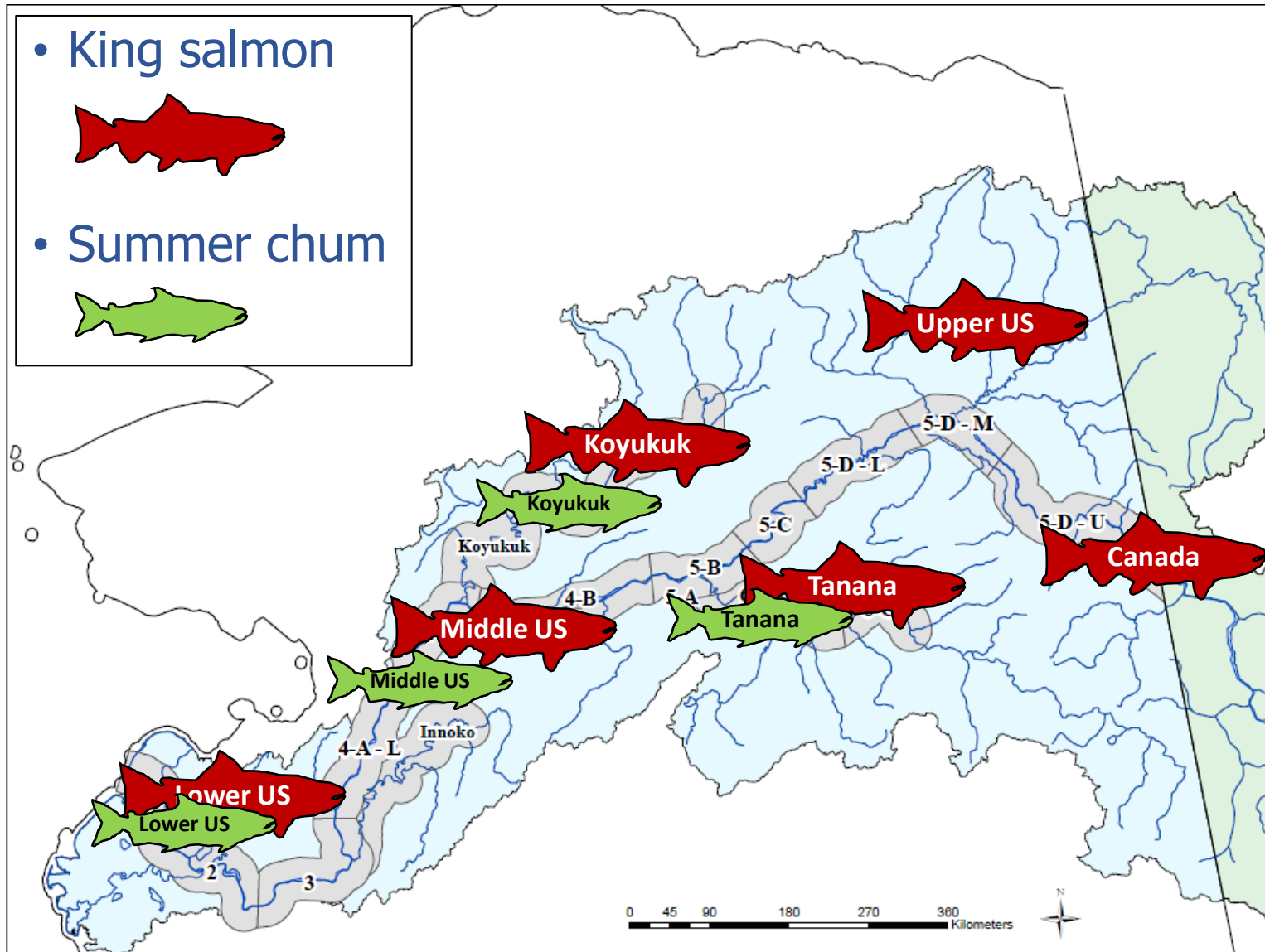
King salmon Stock Distribution



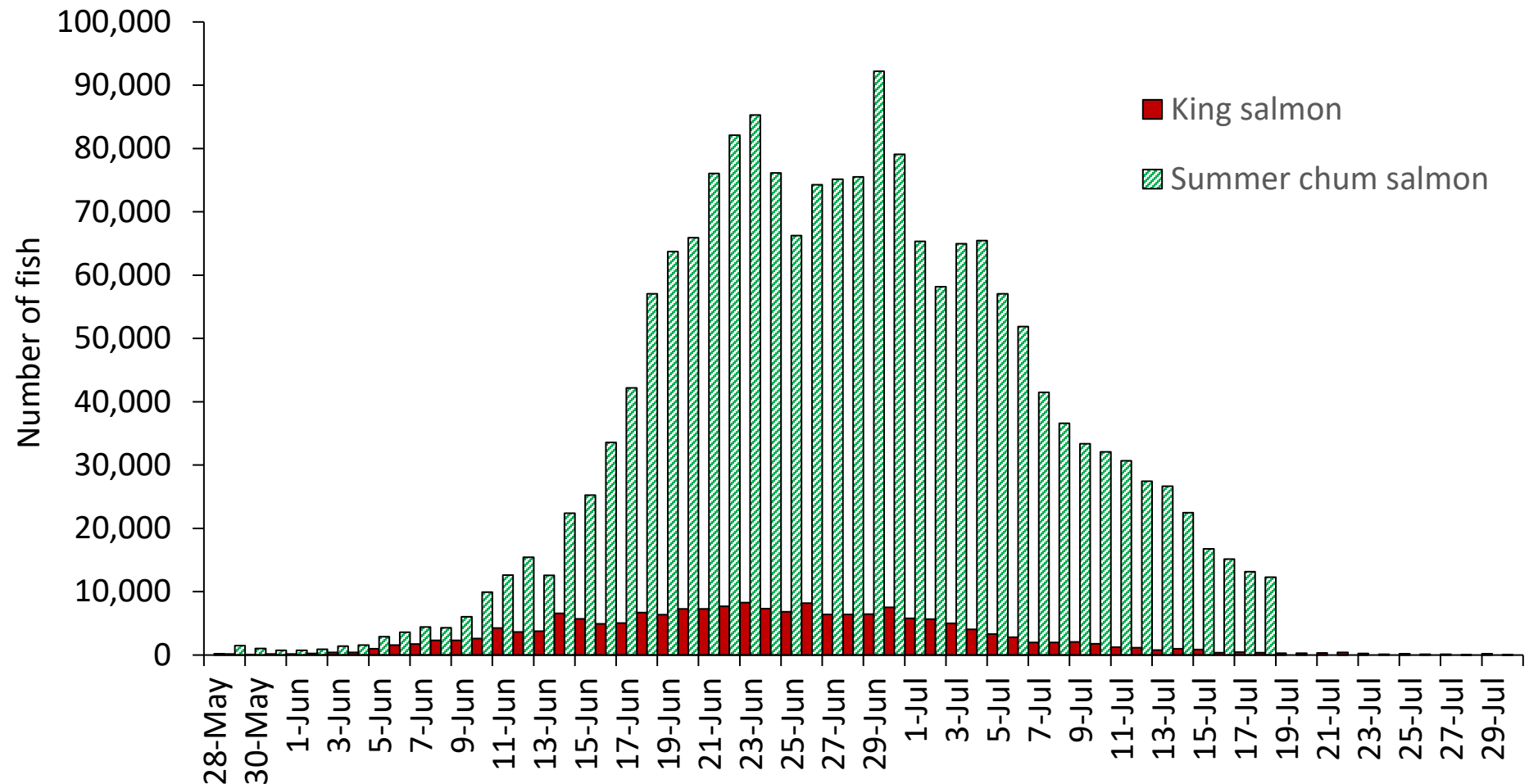
Summer chum salmon Stock Distribution



King and summer chum salmon distribution overlap

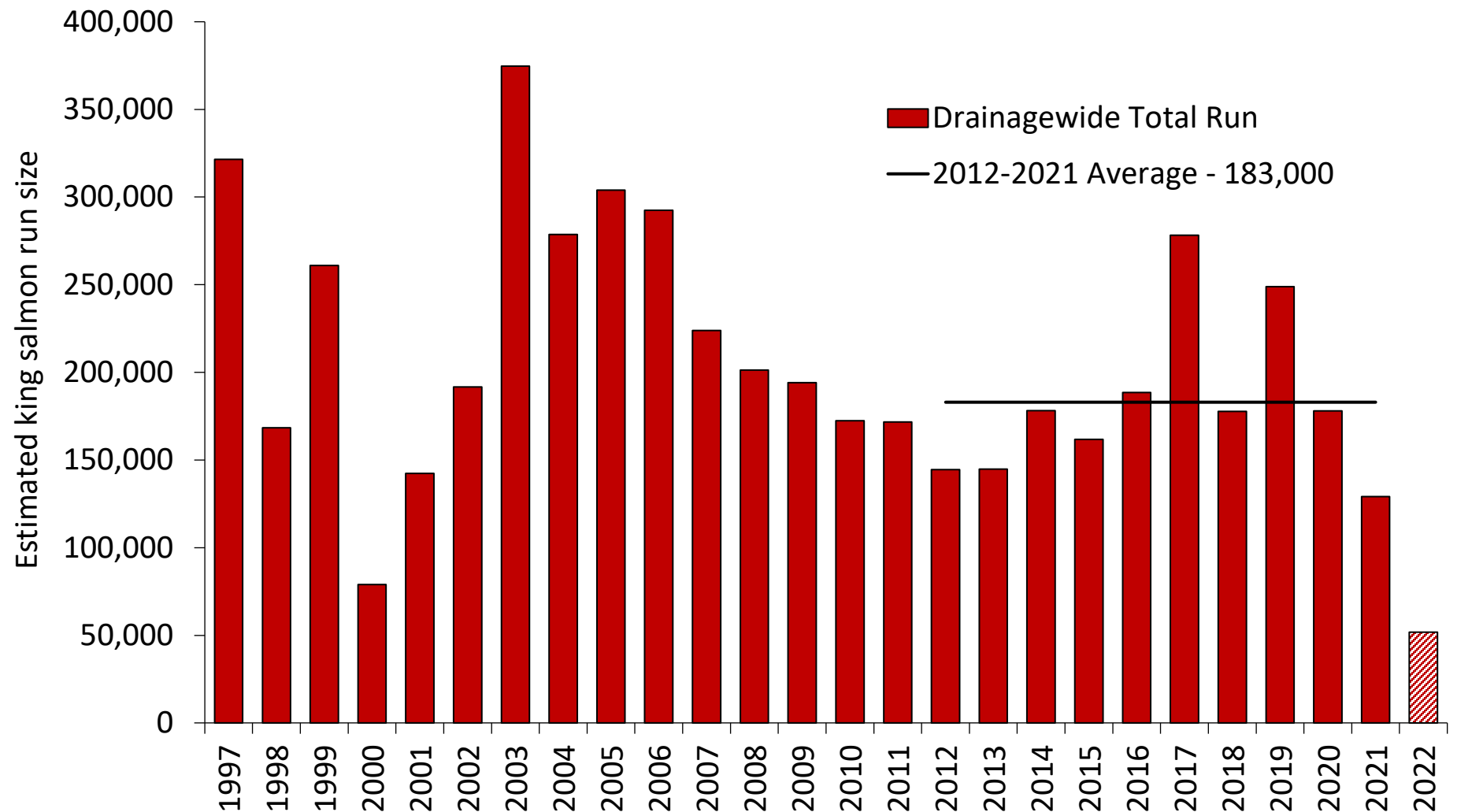


Summer season run timing overlap at Pilot Station sonar

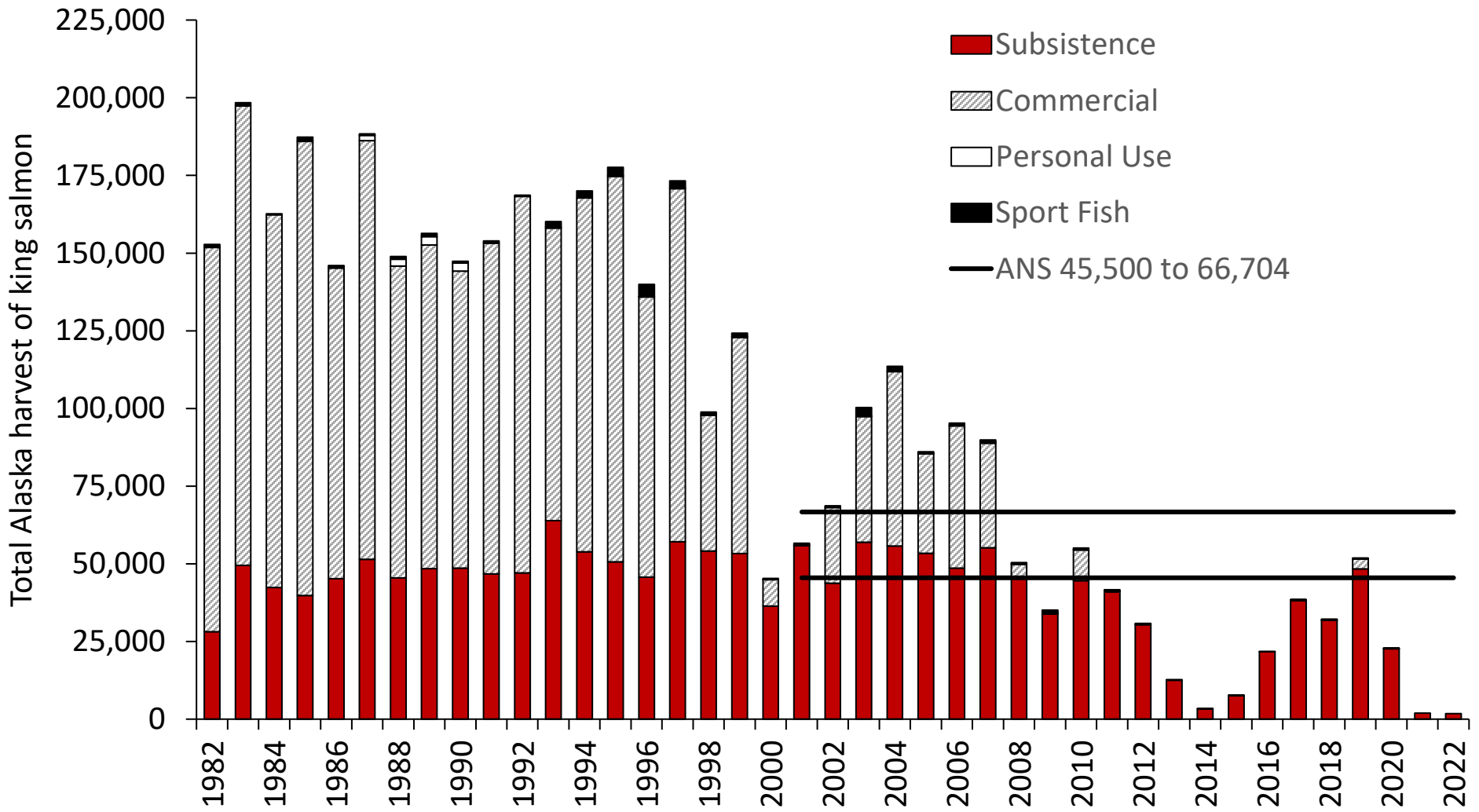


Average passage estimates by date (1995-2022)

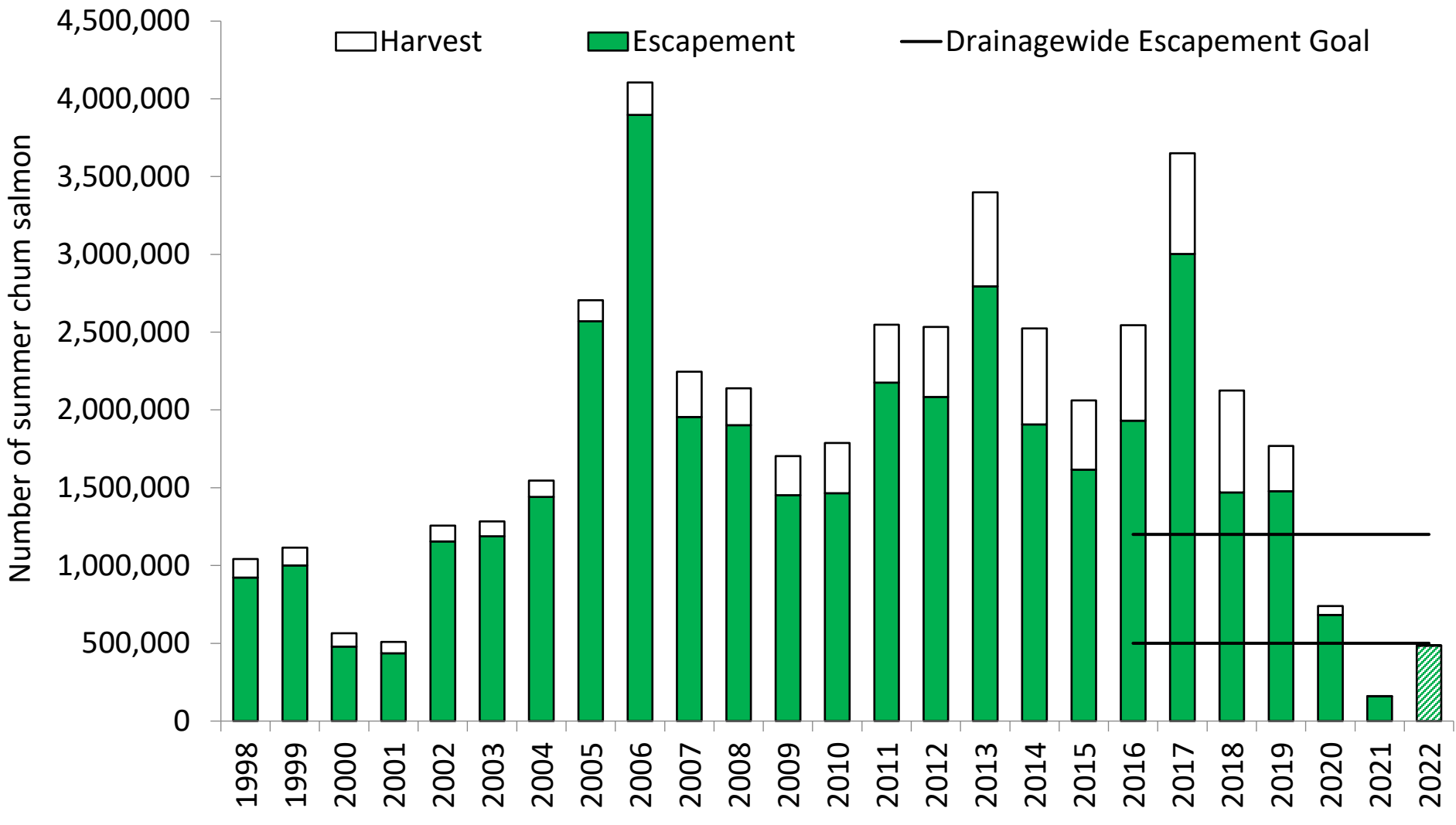
King salmon drainagewide total run



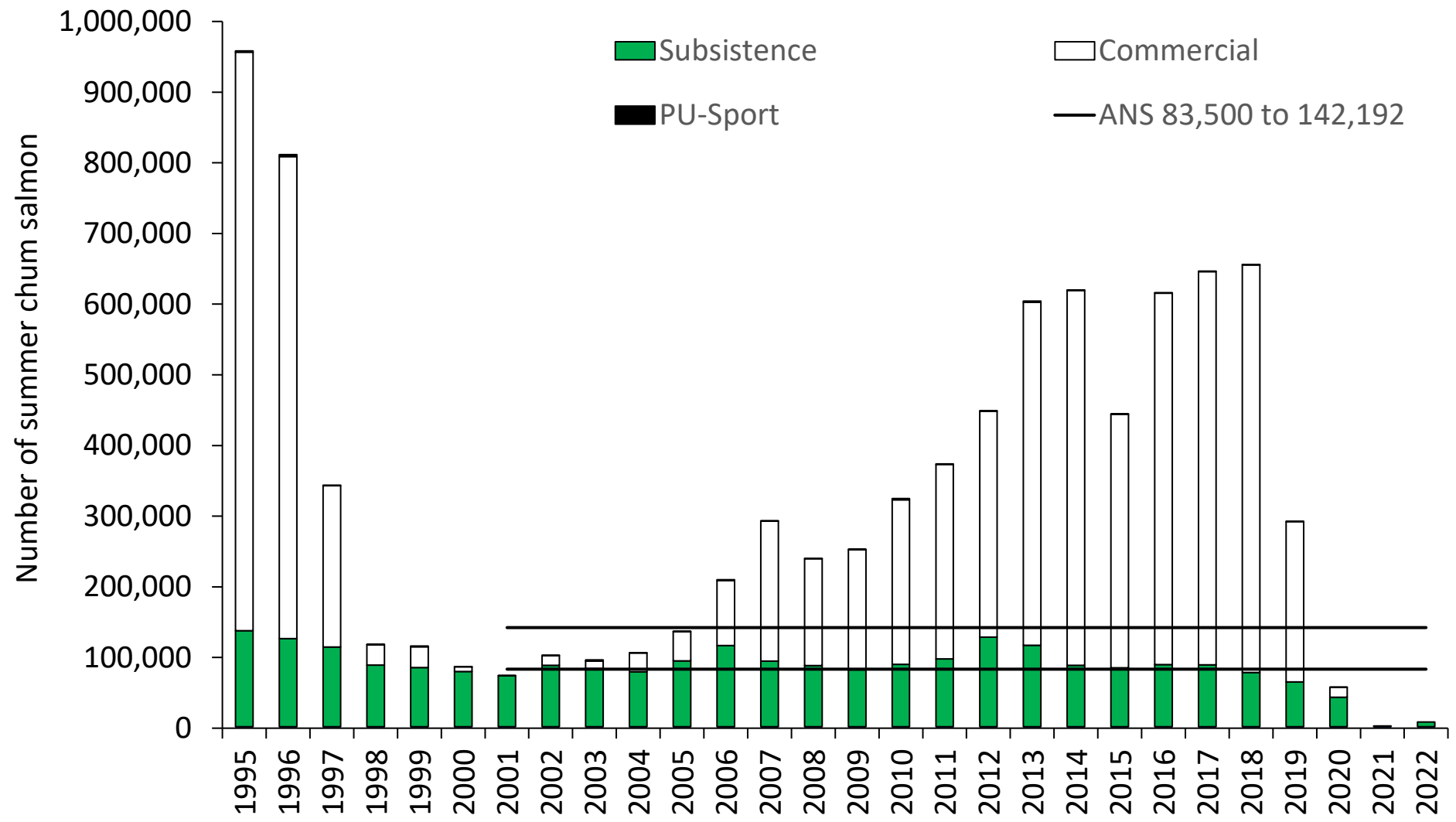
King salmon harvest - Alaska



Summer chum salmon total run



Summer chum salmon harvest by type



King salmon escapement goals – recent 5 years

Below goal

Goal met

Goal exceeded

	<i>Goal</i>	2018	2019	2020	2021	2022
E.F. Andreafsky (weir)	2,100 - 4,900	4,171	5,134	–	1,454	–
W.F. Andreafsky (aerial)	640 - 1,600	455	904	508	–	–
Anvik R. (aerial)	1,100 - 1,700	1,109	1,432	675	–	179
Nulato R. (aerial)	940 - 1,900	870	1,141	862	–	60
Chena R. (sonar/tower)	2,800 - 5,700	5,947	2,404	–	1,416	355
Salcha R. (sonar/tower)	3,300 - 6,500	5,021	4,863	–	2,081	1,041

– Indicates no survey or project did not operate

Canadian-origin king salmon border objectives

	<i>Goal</i>	2018	2019	2020	2021	2022
Interim Management Escapement Goal (IMEG)	42,500-55,000	Exceeded Border passage: 57,264 fish	Not met Border passage: 44,816 fish	Not met Border passage: 33,330 fish	Not met Border passage: 31,758 fish	Not met Border passage: 12,000 fish
Canadian harvest share	20%-26% of TAC	Less than 20% taken	Less than 20% taken	More than 26% taken	More than 26% taken	More than 26% taken
U.S. harvest share	74%-80% of TAC	Harvest within range	More than 80% taken	More than 80% taken	More than 80% taken	More than 80% taken

Total Allowable Catch= TAC, varies annually based on post-season run size

Summer chum salmon escapement goals – recent 5 years

Below goal

Goal met

Goal exceeded

	<i>Goal</i>	2018	2019	2020	2021	2022
Drainagewide (sonar +)	<i>500,000 – 1,200,000</i>	1,432,100	1,398,400	705,880	153,120	484,618
East Fork Andreafsky (weir)	<i>>40,000</i>	36,330	49,881	–	2,634	–
Anvik River (sonar)	<i>350,000 - 700,000</i>	305,098	249,014	–	18,819	45,580

– Indicates project did not operate

Yukon Management process - forecasts

- Forecasts available later this spring
- Set the stage for preseason management strategies and outreach
- Help answer questions about what the upcoming season may be like
 - Should the first pulse of king salmon be closed?
 - Could there be summer chum salmon fishing?
- King salmon
 - Joint Technical Committee (advising the Yukon River Panel) creates a forecast for the Canadian-origin stock using a combination of models in a Bayesian framework, including Dynamic Ricker, Dynamic Sibling, and the Juvenile forecast from the Bering Sea trawl survey
 - Canadian-origin forecast is incorporated into a drainagewide outlook
- Summer chum salmon
 - Drainagewide run reconstruction model



Early inseason assessment

- Lower Yukon Test Fishery
 - Detects salmon as they enter the river
 - Catch Per Unit Effort (CPUE) index of abundance
- Pilot Station sonar
 - Apportionment from test fishery
 - Multiple mesh sizes and size selectivity curves
 - Estimates for salmon and nonsalmon
 - Sampling and genetics
 - Alaskan and Canadian-origin king salmon run sizes estimated in season
 - Helps assess run timing and strength

A whiteboard with handwritten data for the Lower Yukon Test Fishery (LYTF). The board is divided into two main sections: 'This Morning June 24' and 'YESTERDAY June 23'. Each section contains a table with columns for fish species, BE (Catch Per Unit Effort), and MM (Miles Moved). The data is as follows:

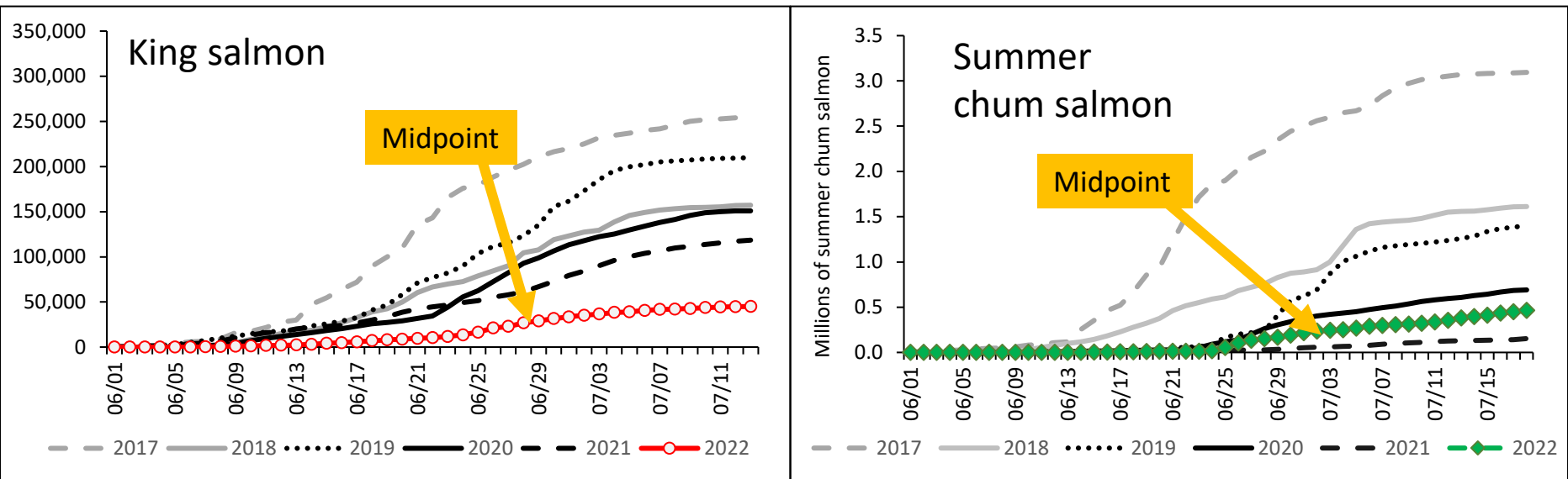
LYTF		
This Morning June 24		
	BE	MM
Chinook	3	0
CHUM	6	11

YESTERDAY June 23		
	BE	MM
Chinook ^{AM}	12	1
Chinook ^{PM}	8	1
CHUM ^{AM}	50	93
CHUM ^{PM}	20	10

The whiteboard also features several small items at the bottom, including a calendar, a small map, and some colorful beads.

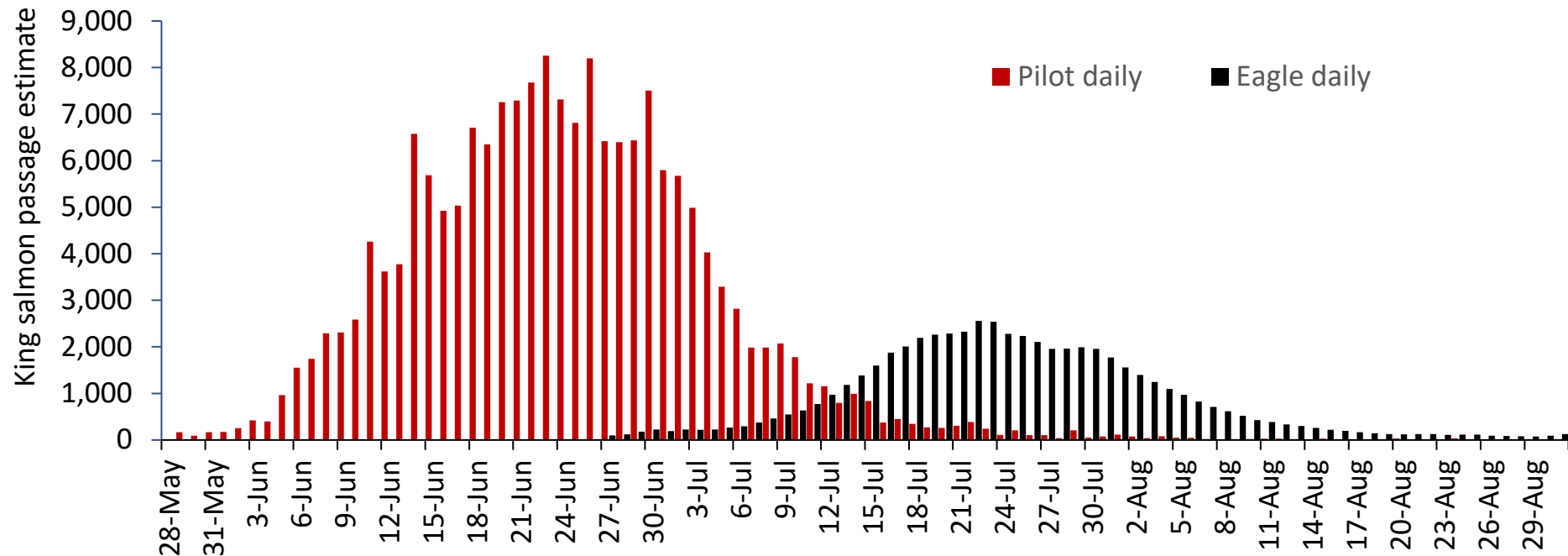
Pilot Station sonar passage and inseason projections

- Run timing and run size
 - Relative numbers of king and summer chum salmon
- Projections – how many fish are coming in this year
 - Gets better as we get towards historic midpoints
- Previous year comparisons
 - Management actions and harvest levels



King salmon management – Pilot Station and Eagle sonars

- Management of the Canadian-origin king salmon run shifts in focus to the Eagle sonar as fish travel upriver
- The Eagle sonar is used in assessing border passage objectives
- Additional management actions may be implemented to protect the king salmon run in the upper river based on assessment



Management tools – Time, Area, Gear

Time

- Windows, reductions, closures
- Spread harvest out and let fish pass upriver

Area

- Management actions 'follow' salmon upriver
- First pulse closures, pulse avoidance or targeting
- Tributary actions

Gear

- Mesh size restrictions
- Selective gear types and live release options during times of conservation
- Nonsalmon gear
 - Modifications or closures to reduce incidental salmon harvest



Management Communication and Outreach

- Preseason meetings with Yukon River Panel, Yukon River Drainage Fisheries Association (YRDFA) and other stakeholders
- Yukon Area households mailed an outlook in May
- Weekly river-wide teleconferences (YRDFA)
- Advisory Announcements
- Facebook posts of daily counts and Advisory Announcements
- Daily data packets through email subscription
- Toll free hotline updated daily with counts and management actions



Summary and ongoing research

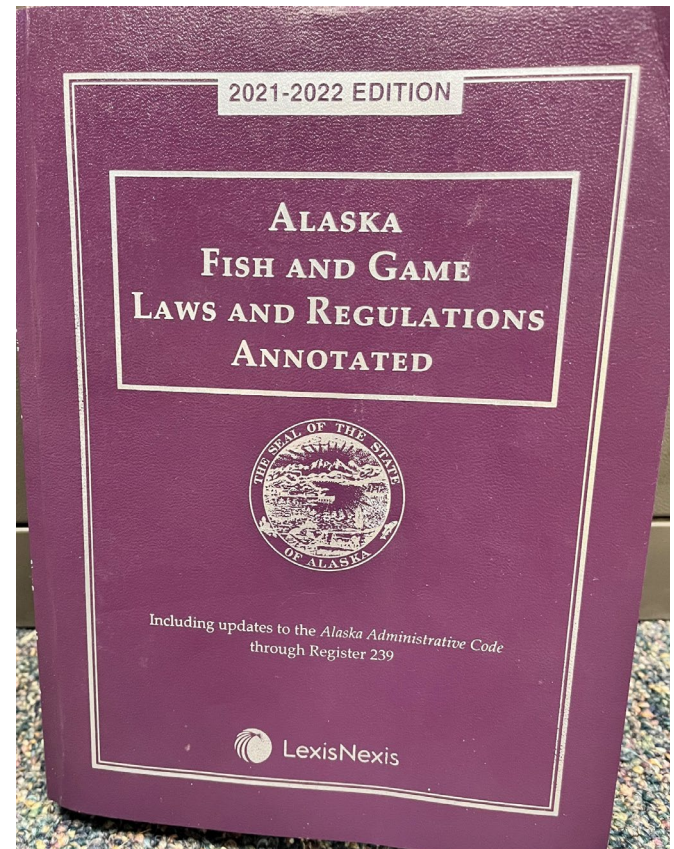
- Full subsistence salmon closures in 2021 and 2022 affected the entire Yukon Area
- Management is complicated by the difference in estimates between Pilot Station and Eagle sonars
- Ongoing research into salmon health, body condition and migration
 - King salmon radiotelemetry project in 2023
- King salmon stock of yield concern was recommended to continue at the 2022 work session



Yukon Area proposals

Subsistence and Personal
Use Fisheries – 7

Commercial Fisheries - 3



Subsistence and Personal Use proposals

- **Proposal 79** : Allow hook and line for subsistence up to and including the Koyukuk River.
- **Proposal 80**: Restrict subsistence king salmon harvest in the middle and upper Yukon River.
- **Proposal 81**: Implement a Yukon River drainage subsistence salmon permit to allow retention of king salmon less than 24 inches in length with an annual limit 10 fish during times of king salmon conservation.



Subsistence and Personal Use proposals - continued

- **Proposal 82**: Modify the dates sinking of gillnets is allowed in the Yukon Area from October 1 to April 30 (deliberation during Statewide Finfish meeting).
- **Proposal 83**: After August 15, a person may not take salmon with a gillnet that has a mesh size greater than six inches in the Yukon Area Personal Use Salmon Fishery.



Subsistence and Personal Use proposals - continued

- **Proposal 84**: Repeal and readopt Yukon Area subsistence fishery lawful gear and gear specifications.
- **Proposal 85**: Modify Yukon Area Personal Use Salmon Fishery specifications for selective gear types and gillnet mesh size during times of salmon conservation.



Commercial Fisheries proposals

- **Proposal 87**: Define eel stick (To be heard at the Arctic / Yukon / Kuskokwim meeting and deliberated during the Statewide Finfish and Supplemental Issues meeting).
- **Proposal 88**: Repeal and replace Yukon Area commercial salmon fishing gear specifications.
- **Proposal 89**: Modify Yukon Area commercial dip net gear operations in the commercial fishery to include a single rigid handle with a single line attached.



Acknowledgements



Questions or Comments?