

Nushagak River King Salmon Stock of Concern Update

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Commercial Fisheries

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Sport Fisheries

Oral Report: RC 3 Tab 7
Written Report: RC 3 Tab 3

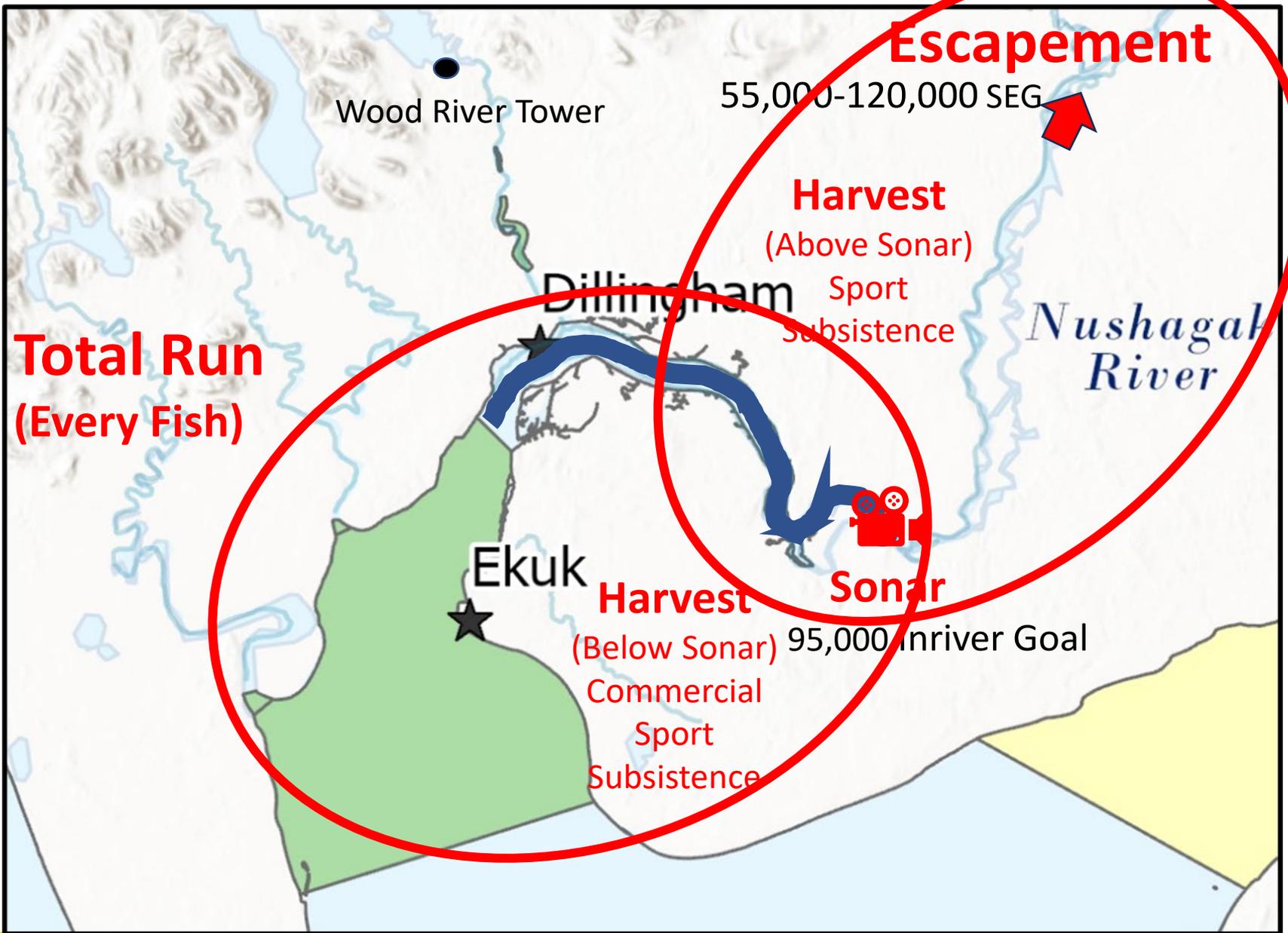


Konrad Mittelstadt has been battling the mighty
Nush for 29 years

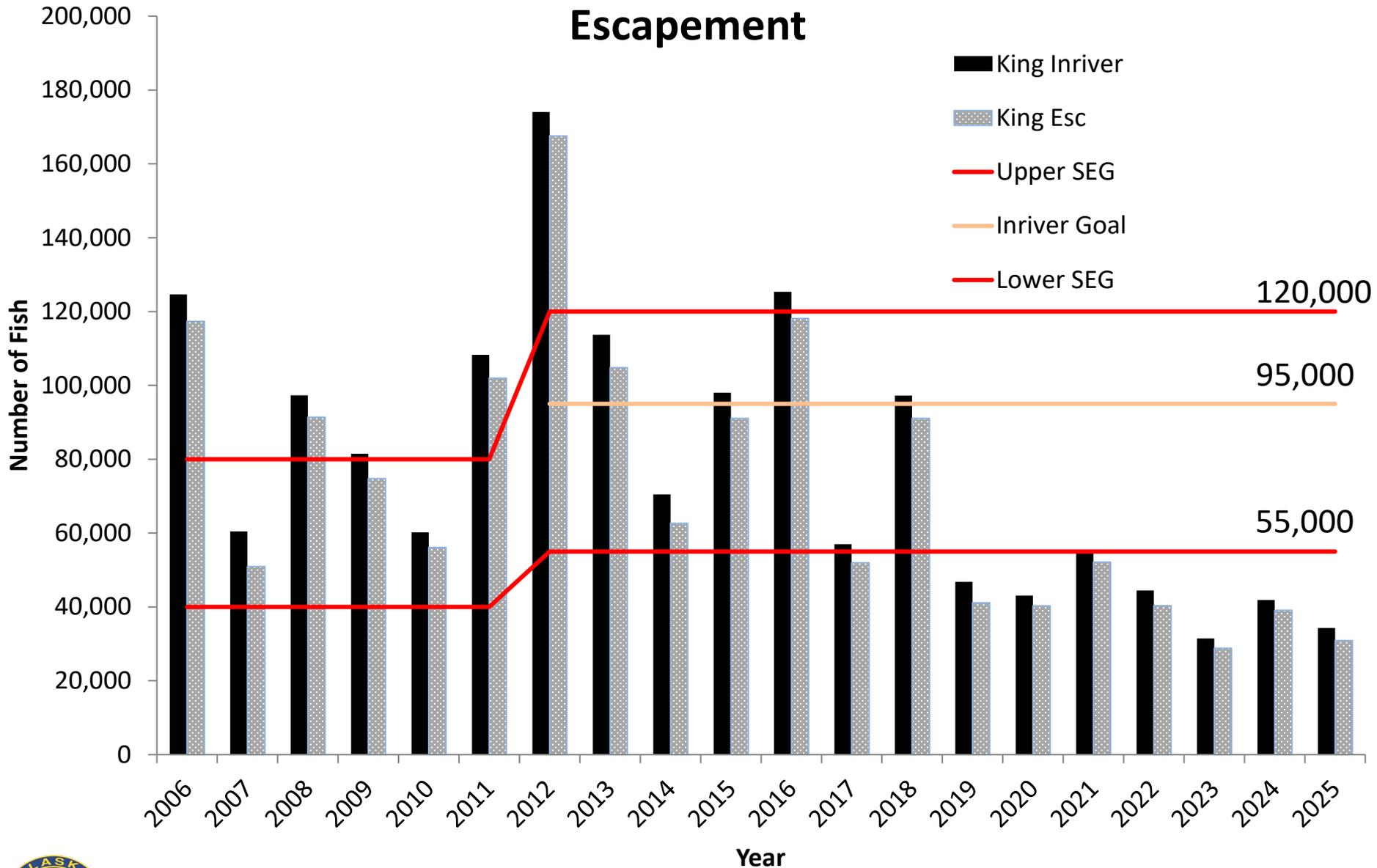


Outline

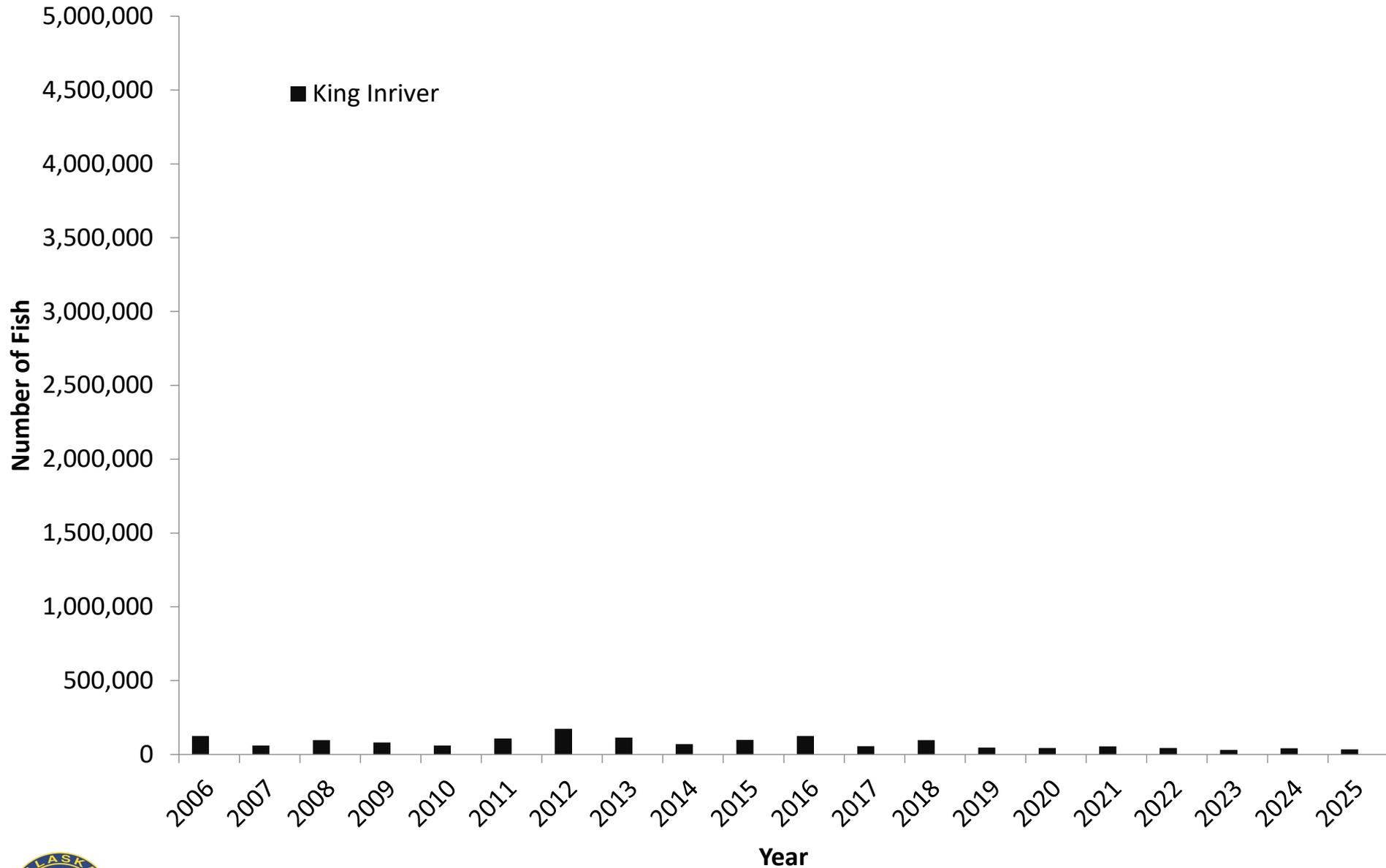
- Data collection and goals
- Changing run sizes to the Nushagak River
- Evidence of reduced king salmon index
- Management plan performance



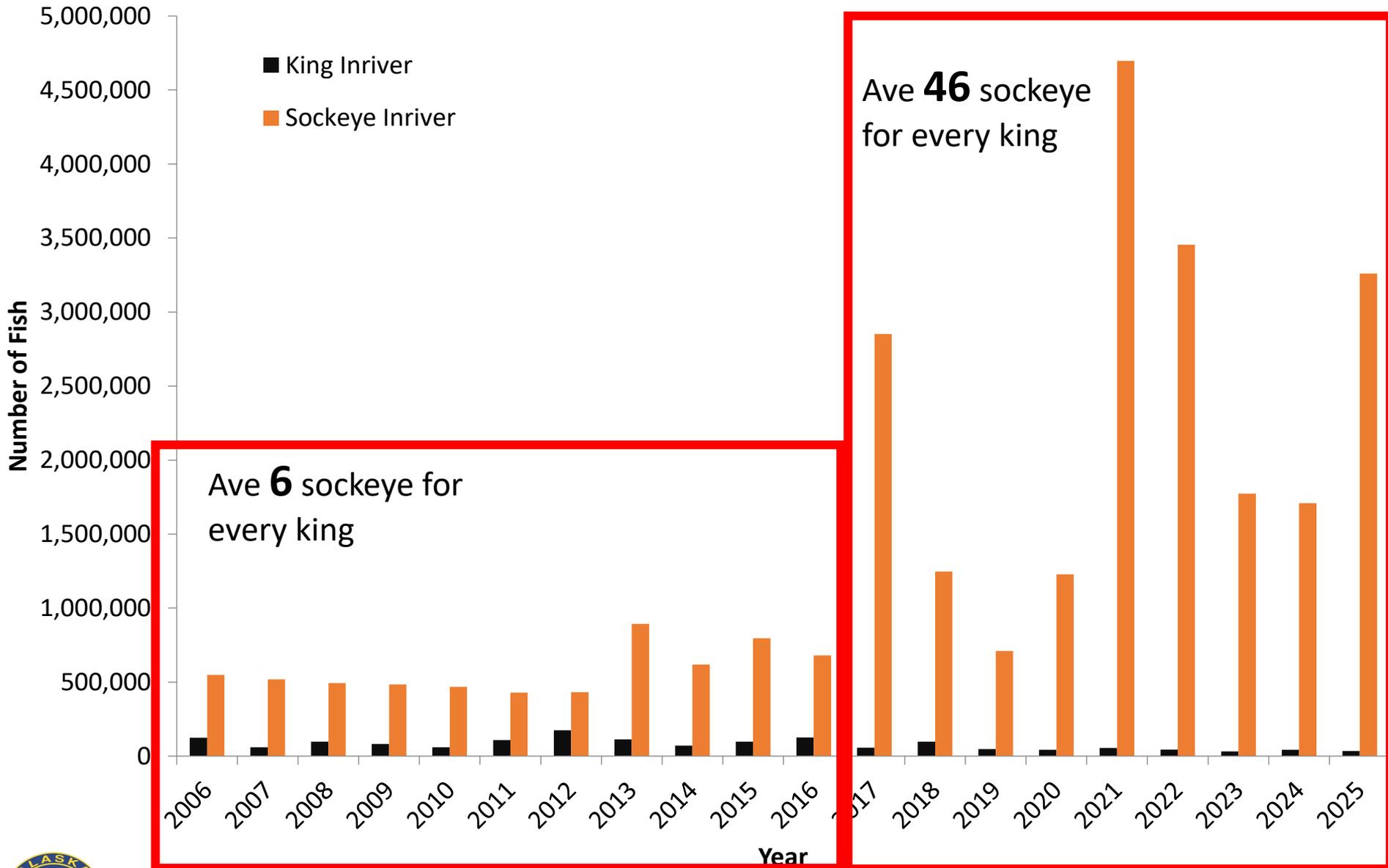
Nushagak River King Salmon Inriver Estimate and Escapement



Nushagak River King Vs. Sockeye Sonar Estimates



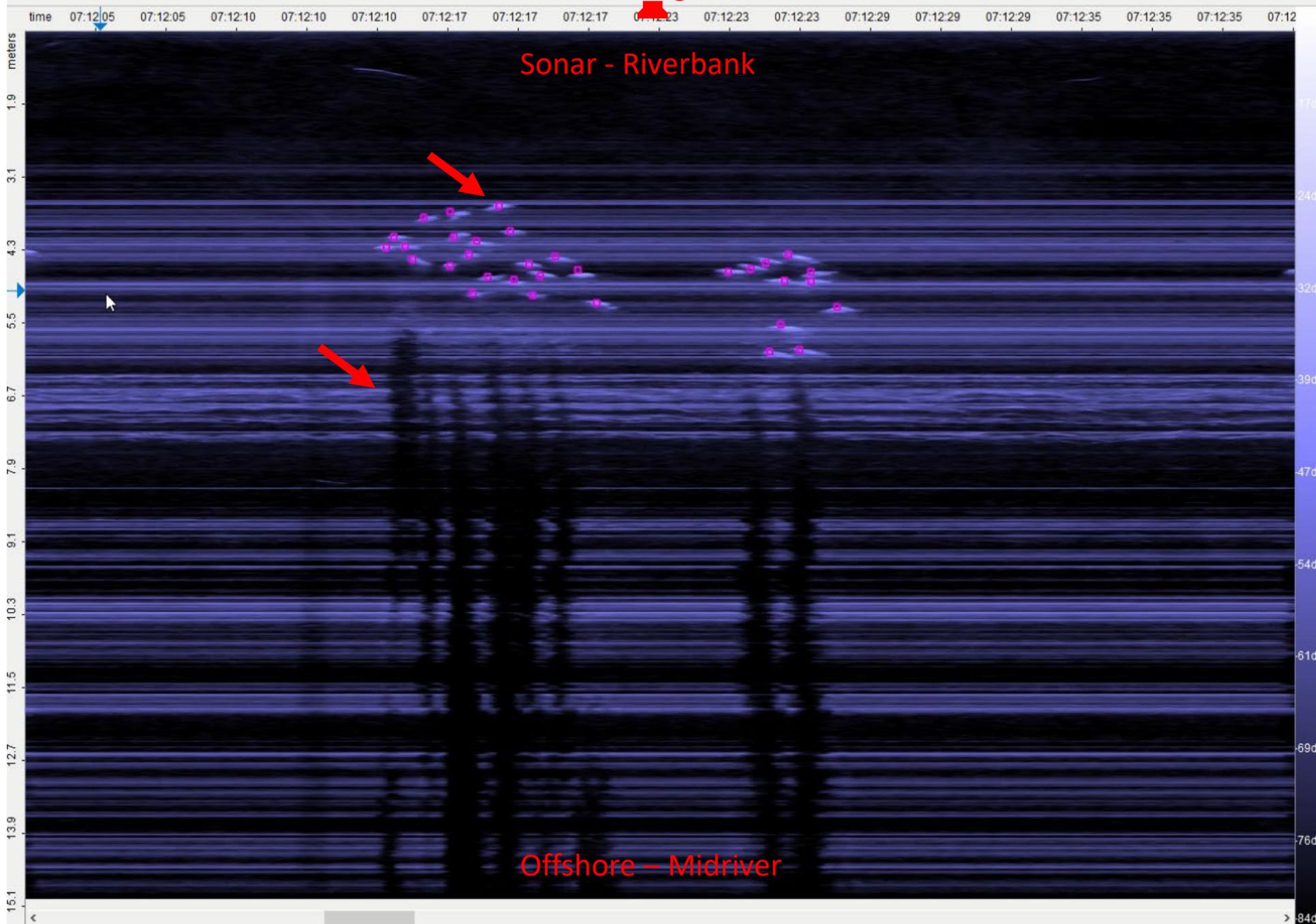
Nushagak River King Vs. Sockeye Sonar Estimate



Challenges Estimating Salmon Passage During Times of High Abundance

- Sonar count
(Shadowing)
- Species percent – drift gillnets
(Net saturation)
- Consistency of king salmon index
(Kings pushed offshore outside of sonar beams)

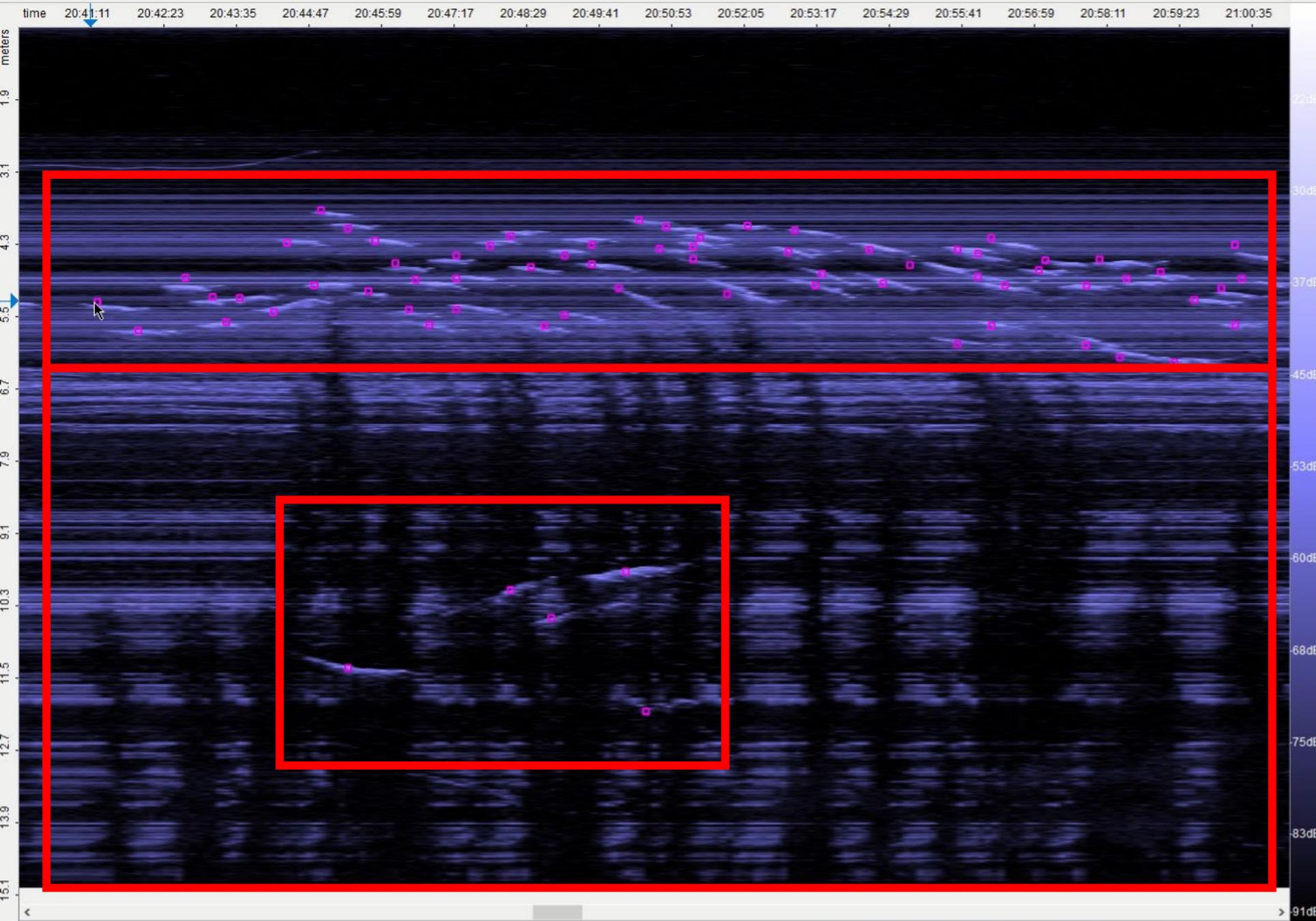




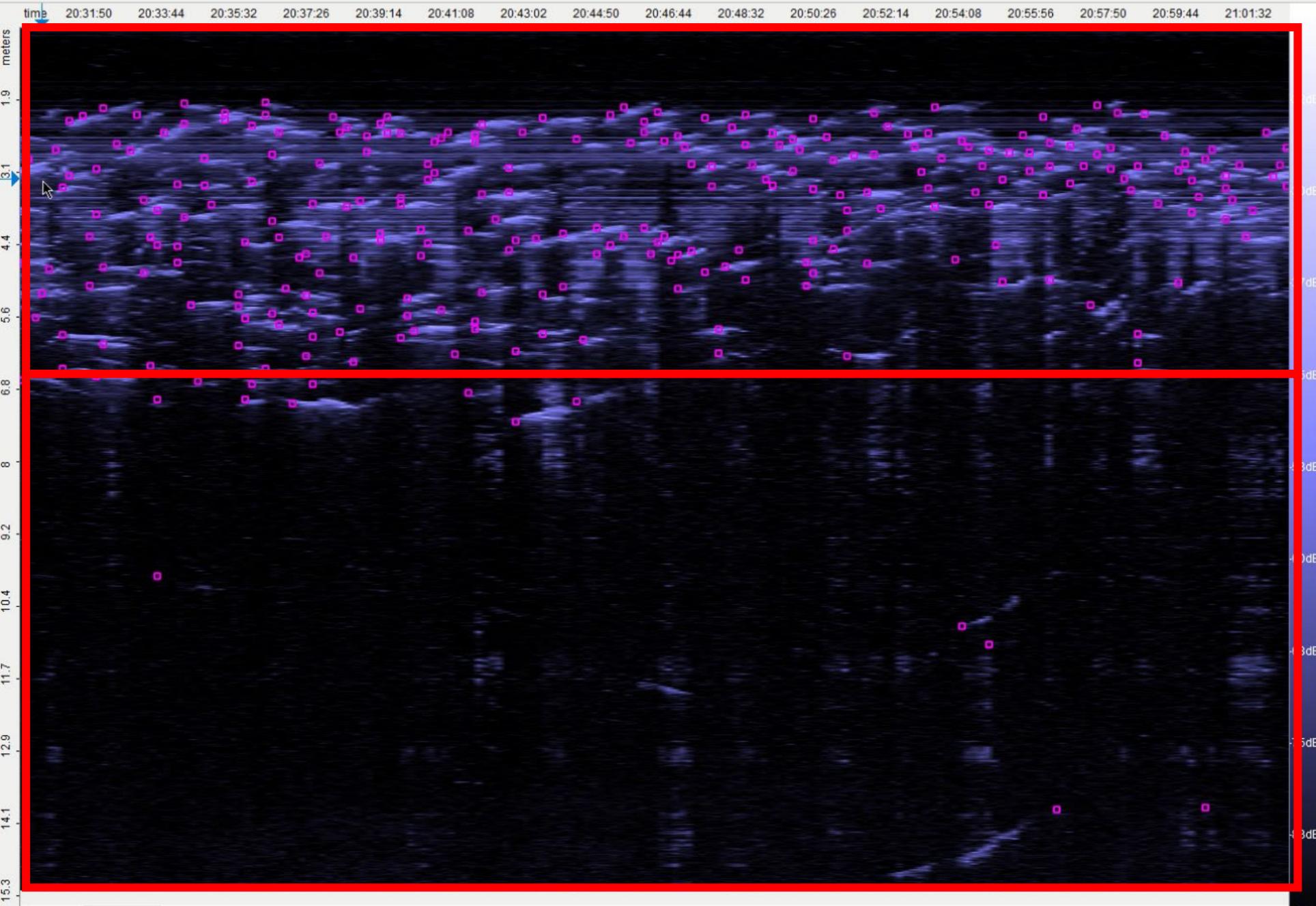
Sonar - Riverbank

Offshore - Midriver

Passage: 1237



Passage: 4389

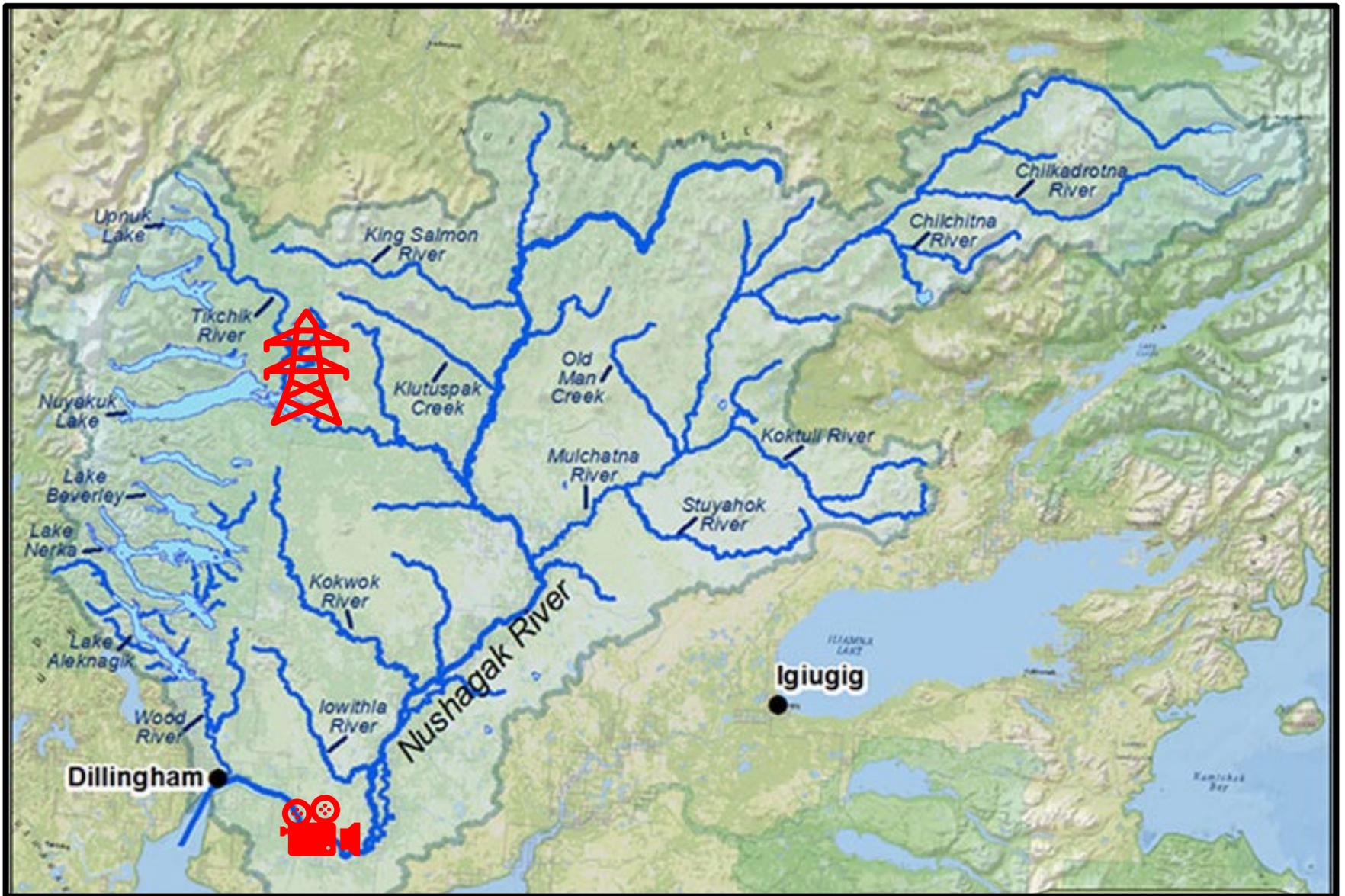


Challenges Estimating Salmon Passage During Times of High Abundance

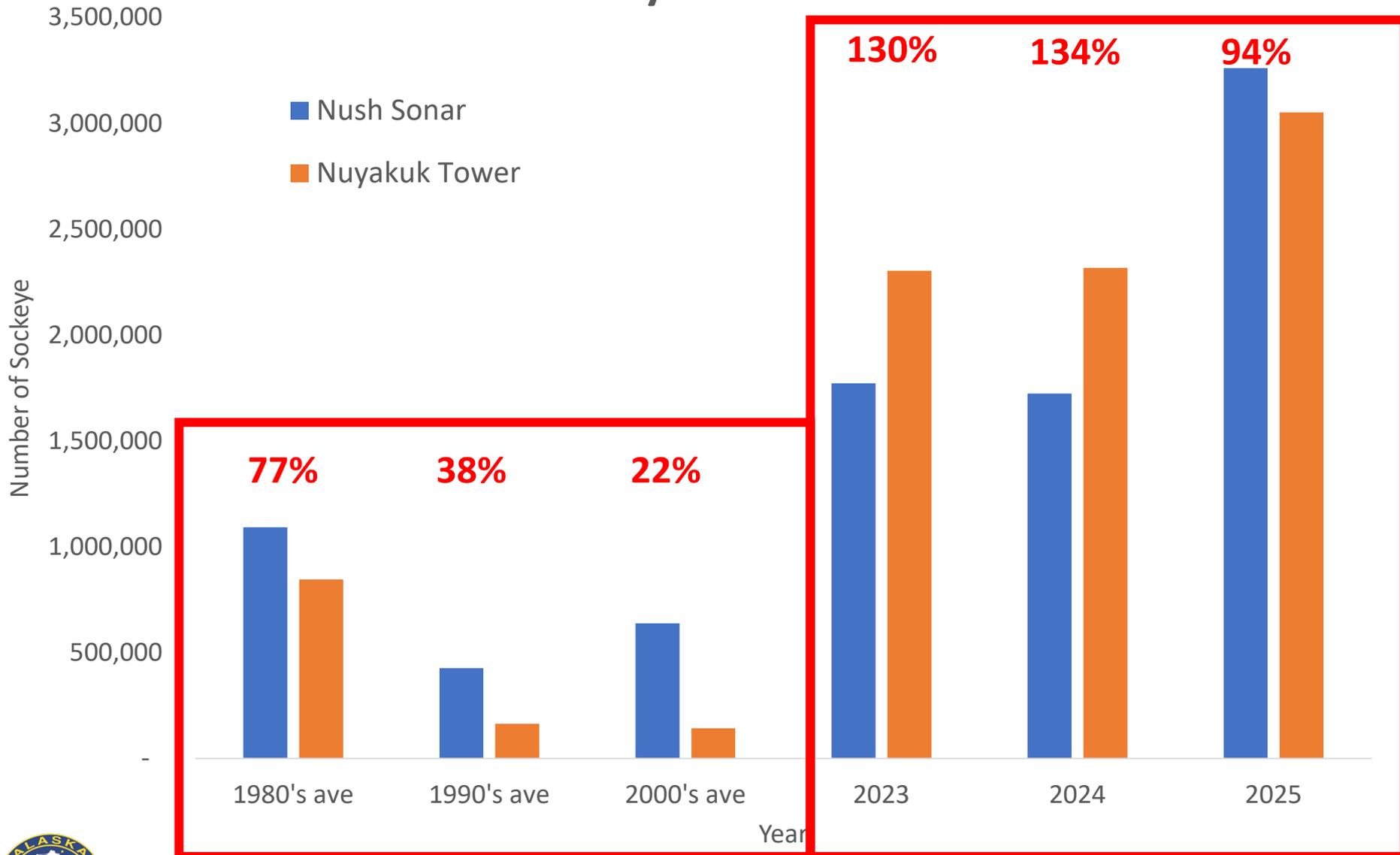
Impact to sonar estimate

- Sonar count
(Shadowing) **Underestimate**
- Species percent – drift gillnets
(Net saturation) **Undetermined**
- Consistency of king salmon index
(Kings push outside of sonar beams) **Undetermined – likely underestimate**





Nushagak River Sockeye Estimate Vs. Nuyakuk River Sockeye Estimate



Looking Forward



Photo credit: Tyler Henegan

- Continue to operate the Nushagak sonar as the main inseason management tool
- Update and improve king salmon run reconstruction estimates (Long Term)
- Cooperate with BB Science and Research Institute (BBSRI) through BB Fishery Collaborative (BBFC)



Progress

- Current areas
 - Sonar gillnetting program
 - New sonar software and data flow
 - Increased QA/QC
 - Aerial surveys of spawning grounds (funded by BBSRI)
 - Expanded king salmon Age Sex Length (ASL) data collection in sport and commercial harvest
 - Upstream weirs (BBSRI)
 - Sport fish creel survey (funded by BBSRI)
- Upcoming
 - Mark-recapture sonar independent estimate (BBSRI)



Summary

- Recent large sockeye runs present challenges for enumerating king salmon
- The department is confident these challenges have caused us to index fewer kings than historical estimates
- We do not have the ability to quantify how much the king index has changed
- Robust solutions will take time



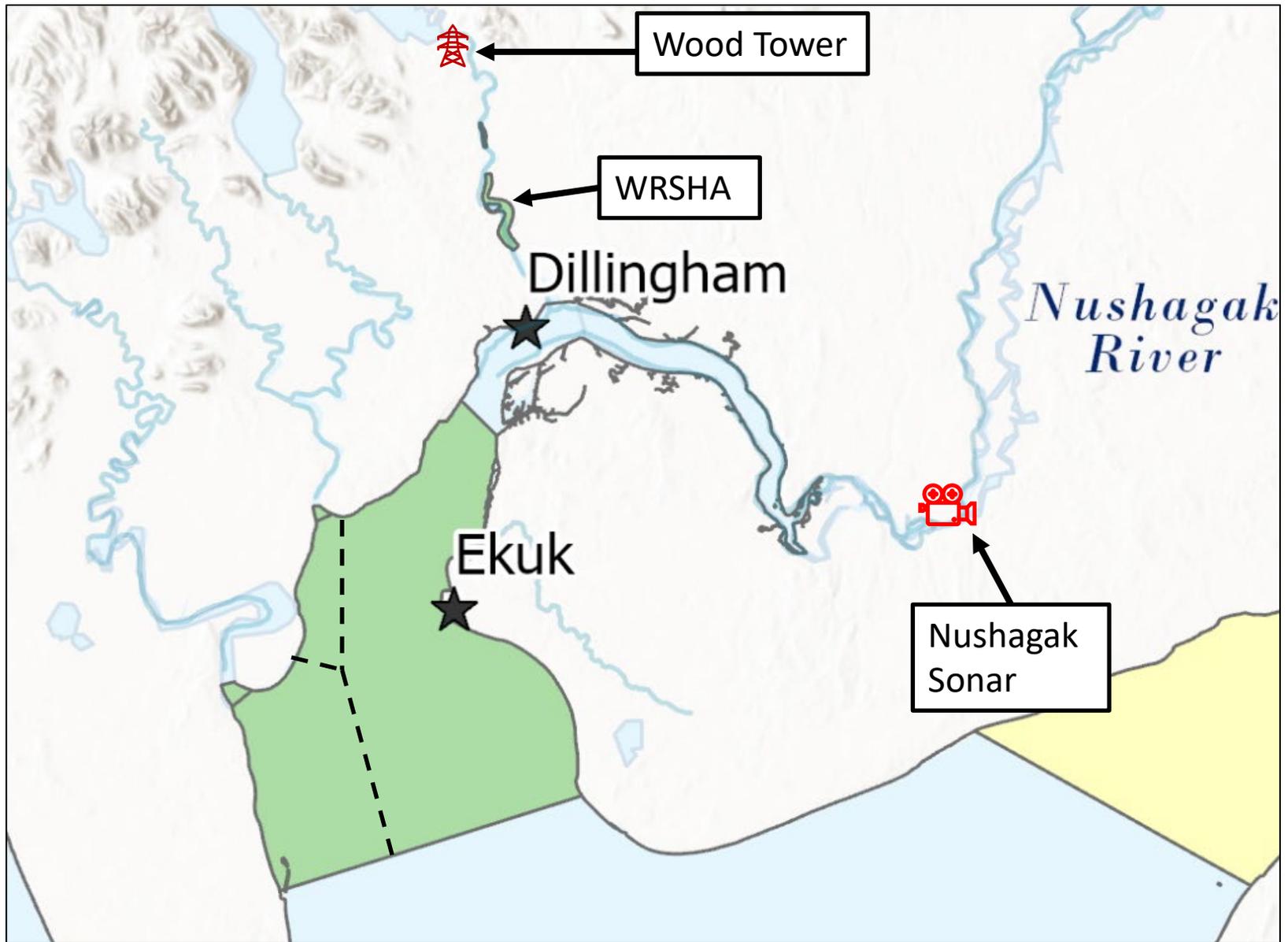
Outline

- Data collection and goals
- Changing run sizes to the Nushagak River
- Challenges and evidence of reduced king salmon index
- Background on subsistence
- Stock of Concern Action plan
- Commercial fishery management and performance 2023-2025
- Sport fishery management and performance 2023-2025

Subsistence Fishery Management

- Salmon can be taken for subsistence at anytime
- Can be restricted by EO (time and area)
 - Shall provide opportunity in times of extended commercial fishing closures in commercial district
- Fishing time has not been restricted
- No harvest or gillnet mesh restrictions
- Set and drift gillnet, dipnet are gear types used
- Subsistence report will show effort and harvest
- Dillingham beaches





Commercial Fishery Management

- SOC plan starting in 2023 to balance king conservation and sockeye escapement
- <95,000 inriver goal = mesh restriction
- Triggers must be met before opening the commercial fishery
- OEGs increase upper end of sockeye salmon escapement ranges
- OEGs allow for less intense fishing thus more king salmon escapement



Triggers

- Trigger based plans to allow commercial fishing:
 - 6% of total Nushagak River sockeye salmon run is projected to pass the sonar
 - 10% of total Wood River sockeye salmon run is projected to pass the tower
 - June 28 at 9:00 a.m.

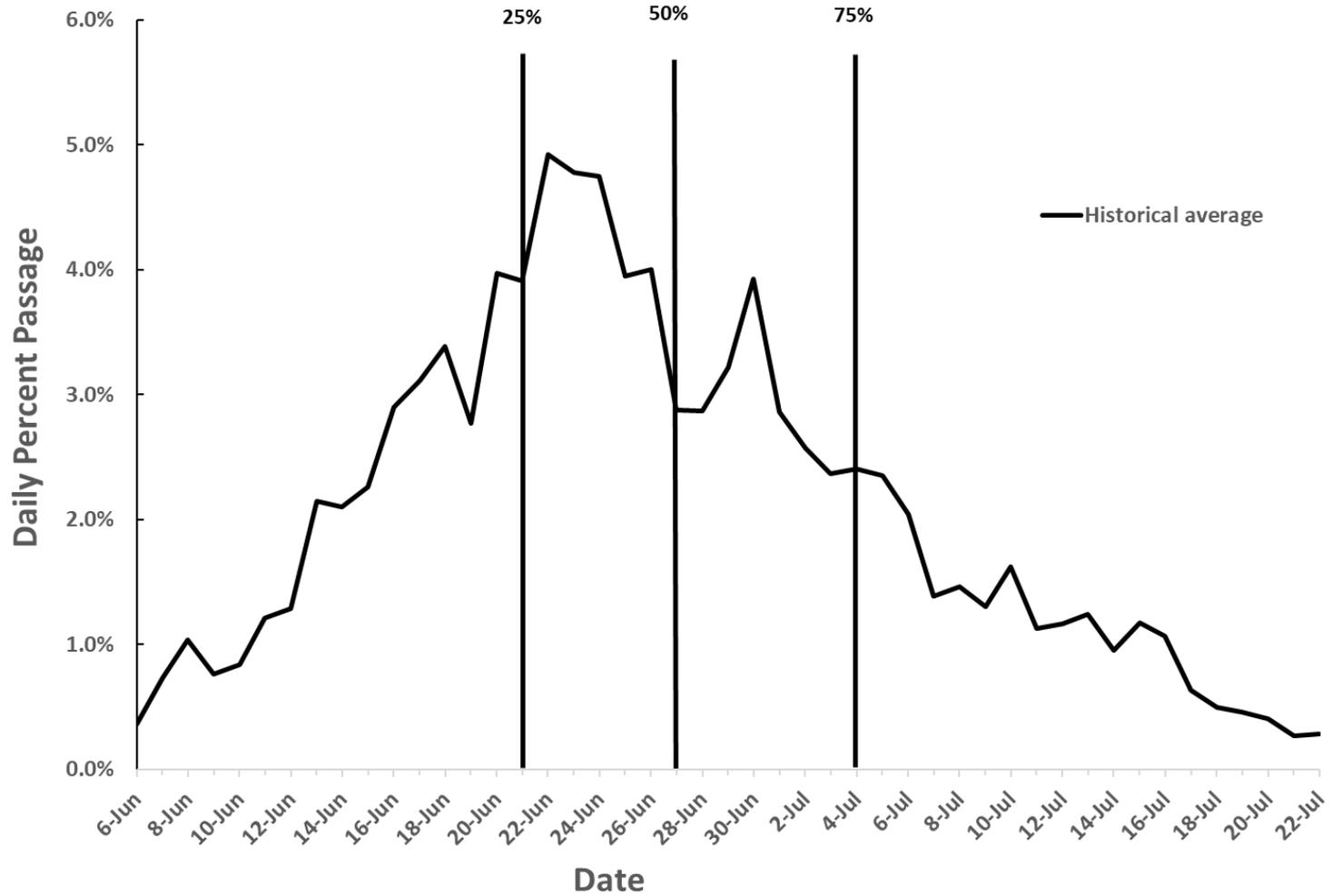


Optimal Escapement Goals

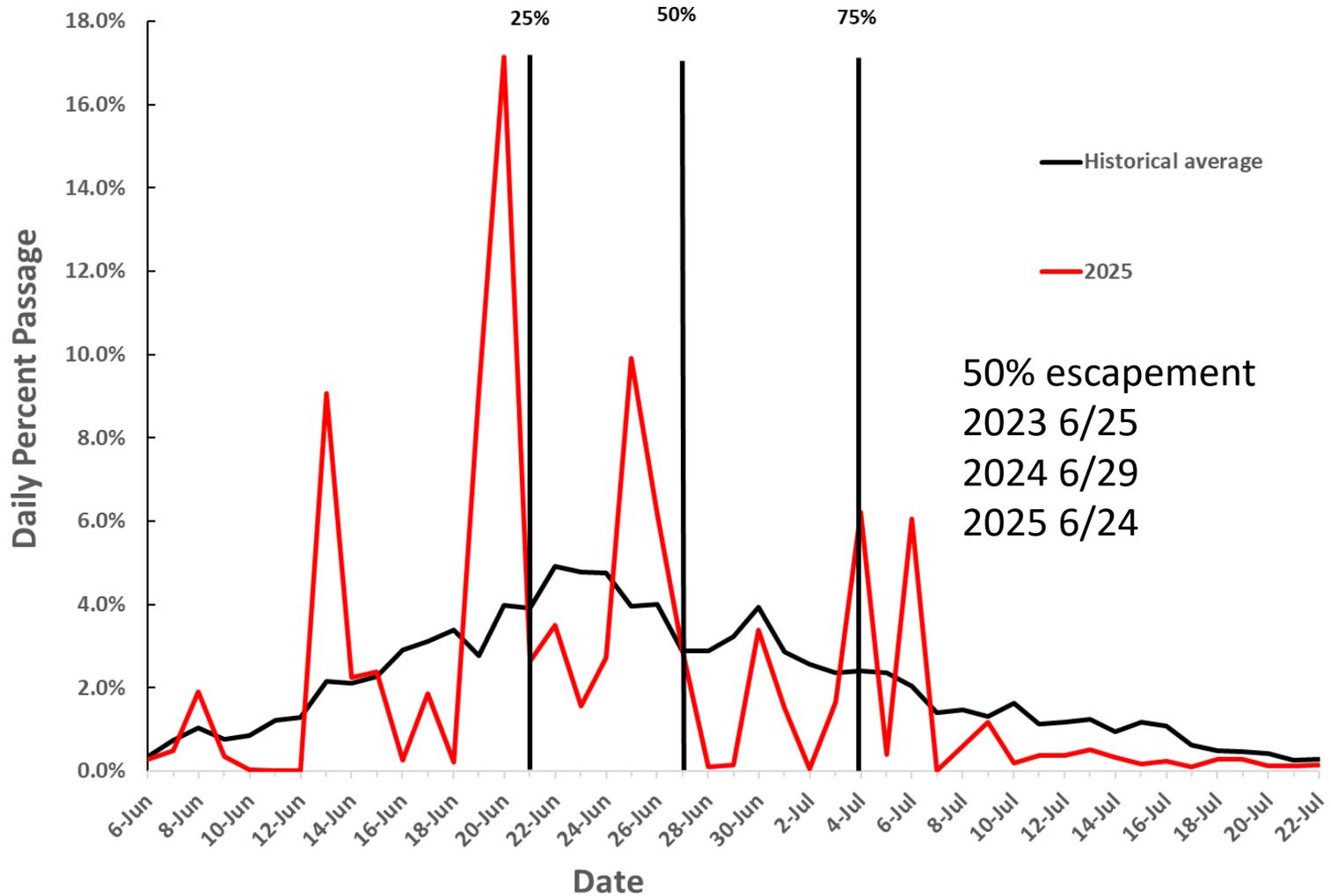
- The SOC plan also includes OEGs
- These direct the department to fish more conservatively to also allow king salmon passage
- The OEGs add 15% of forecast to the upper end of the SEGs in the Wood and Nushagak Rivers
- In 2026, the Nushagak River sockeye salmon forecast is 11.4 million
- 15% of that is 1.7 million + 0.9 million upper bound SEG = 2.6 million OEG



King Salmon Run Timing at Nushagak Sonar



King Salmon Run Timing at Nushagak Sonar



How Did it Work Out in 2023?

Wood Sockeye Escapement: 2.6 million

OEG: 700k-3.0 million

Nushagak Sockeye Sonar Index: 1.8 million

OEG: 370k-2.0 million

Nushagak King Sonar Index: 31,497

SEG: 55k-120k

- Hit both Nushagak and Wood triggers before June 25 opening under SOC plan
- June 22: Opening date based on prior regulations
- 10,000 king salmon escaped due to extended closure
- We estimate 66% of the king salmon escapement past the district prior to commercial fishing



How Did it Work Out in 2024?

Wood Sockeye Escapement: **4.4 million**
OEG: 700k-3.0 million

Nushagak Sockeye Sonar Index: **1.7 million**
OEG: 370k-1.4 million

Nushagak King Sonar Index: **41,920**
SEG: 55k-120k

- Hit both Nushagak and Wood triggers before June 26 opening under SOC plan
- June 21: Opening date based on prior regulations
- 11,000 king salmon escaped due to extended closure
- We estimate 48% of the king escapement past the district prior to commercial fishing



How Did it Work Out in 2025?

Wood Sockeye Escapement: **2.7 million**
OEG: 700k-3.0 million

Nushagak Sockeye Sonar Index: **3.3 million**
OEG: 370k-2.5 million

Nushagak King Sonar Index: **34,134**
SEG: 55k-120k

- Hit both Nushagak and Wood triggers before June 22 opening under SOC plan
 - Nushagak escapement more than double the trigger
- June 20: Opening date based on prior regulations
- 8,000 king salmon escaped due to extended closure
- We estimate 52% of the king escapement past the district prior to commercial fishing

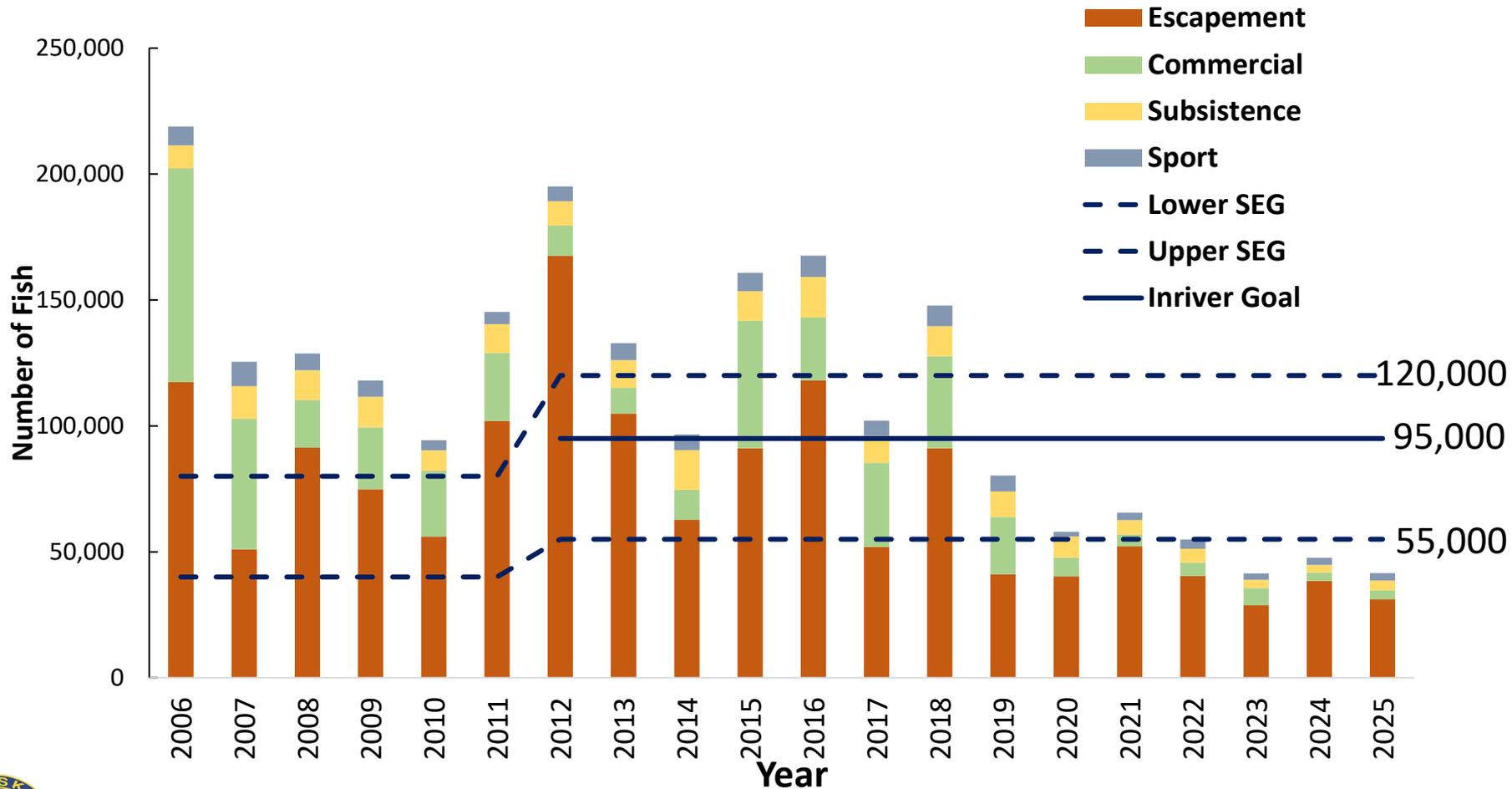


King Salmon Escapement

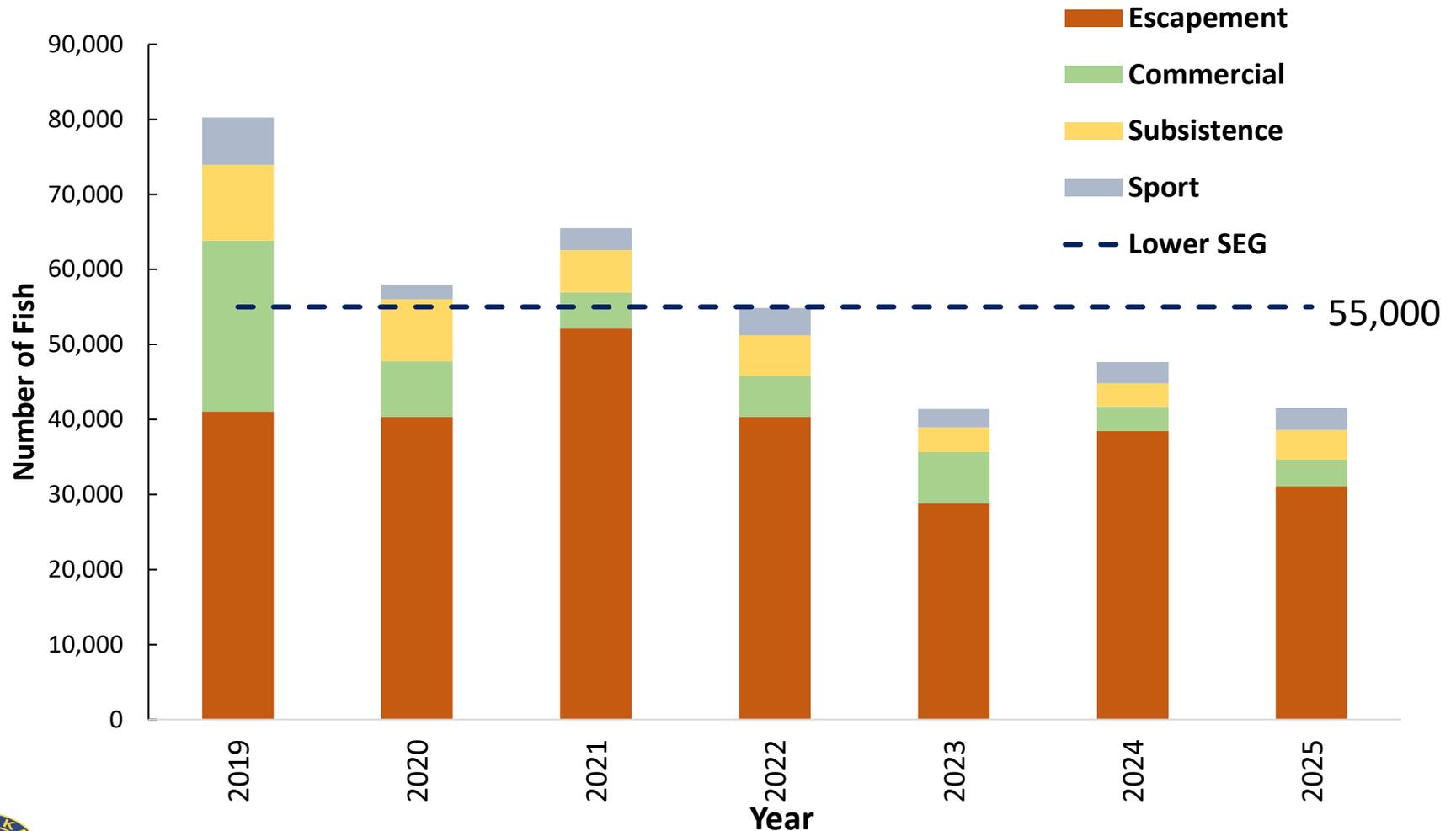
Year	Opening dates under prior regs	Opening dates under SOC	Escapement at opening		Lagged escapement		Unfished escapement
2023	22-Jun	25-Jun	12,720	+	10,230	=	22,950
2024	21-Jun	26-Jun	10,997	+	11,190	=	22,187
2025	20-Jun	22-Jun	9,766	+	7,982	=	17,748



Annual King Salmon Components, Nushagak River 2019–2025



Annual King Salmon Components, Nushagak River 2019–2025



Challenges

- Commercial- we remind processors in pre-season packets and the pre-season outlook that we require full reporting of kings
- King salmon reporting in the commercial fishery remains a challenge
- We have always known there are more kings that pass the sonar than we count
- However, with recent large sockeye salmon runs the proportion of kings counted has likely dropped



Summary

- The department has taken conservative action more than what is required by the SOC plan
- King salmon escapement and total run has continued to underperform the last 3 years not just in the Nushagak but statewide
- Finding a balance between controlling sockeye salmon escapement and achieving king salmon goals is a challenge

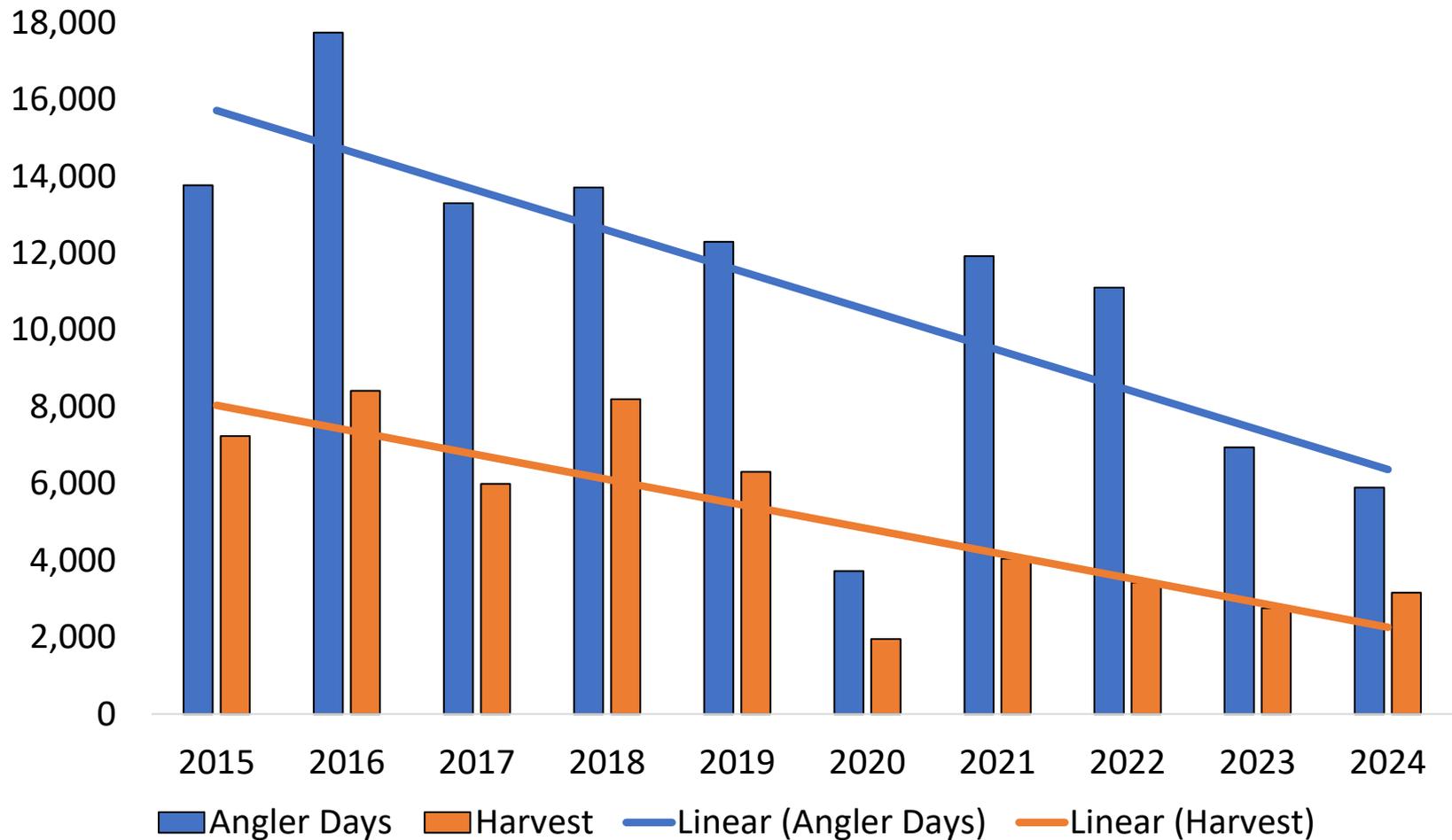


Sport Fishery Management

- Nushagak District King Salmon Stock of Concern Management Plan established in 2023
- Reduced the sport fishery annual limit for fish over 28 inches in length from 4 fish to 1 fish
- Began operating an annual king salmon creel survey in 2023 to provide fisheries managers with in-season information on sport fishing effort, success, and harvest composition



Nushagak River sport fishing effort in angler days and king salmon harvest 2015-2024



Sport Fishery Management Actions

- Emergency order restrictions issued in 8 of the last 10 years (2017, 2019 through 2025).
 - Issued emergency orders each year since the Stock of Concern management plan was implemented to further protect king salmon.
 - 2023 – Bag limit reduction effective July 7 & Non-retention and prohibit use of bait effective July 13.
 - 2024 – Non-retention and prohibit use of bait effective July 3.
 - 2025 – Bag limit reduction effective July 7.



Questions?

