

*Initial Meeting of a Board of
Fisheries Committee:*
Nushagak-Mulchatna King Salmon
Fishery Management Plan

Room 104, Atwood Building
550 West 7th Avenue
Anchorage, Alaska
Monday, October 21, 2019

Agenda

Morning

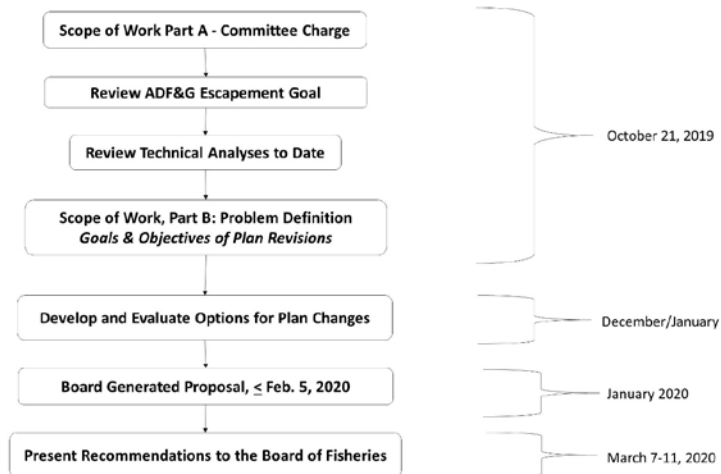
1. Call to Order
2. Introductions of Board Committee Members and other participants.
3. Defining scope of work **PART A, Committee Charge**
4. Review ADF&G escapement goal and implications for plan
5. Review technical analysis scope and preliminary results

Afternoon

Return to 3. Scope of work, PART B, Goals/objectives of Plan revisions

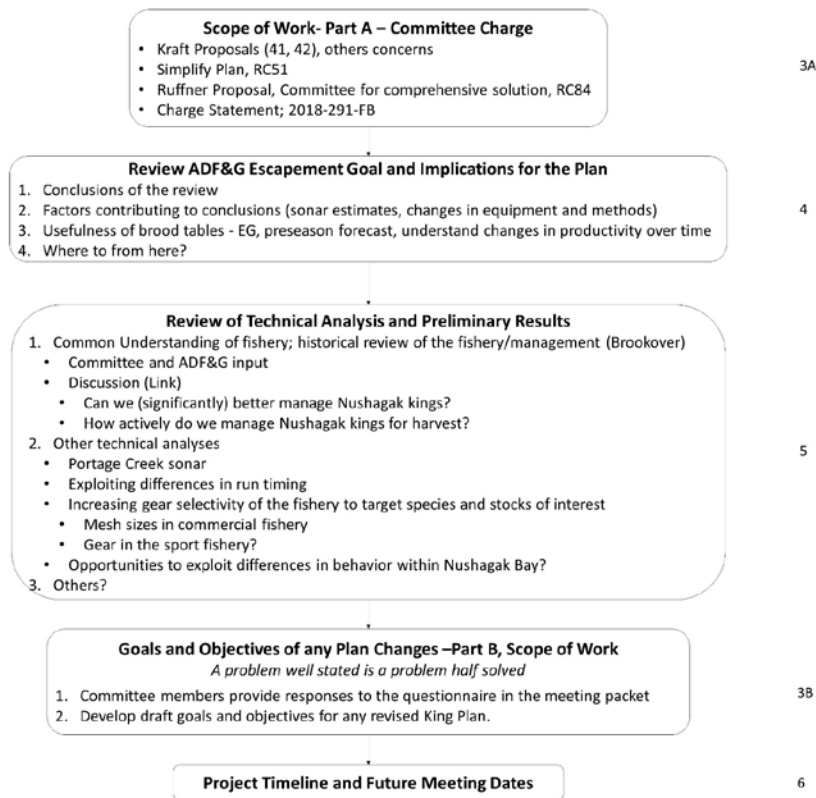
6. Project timeline and future meeting dates
7. Adjourn

Road Map



Detailed Road Map for October 21, 2019

Agenda Item



Background

- Proposals 41, 42 (Kraft) – sought paired restrictions when sport fishery restricted
- Kraft not alone on the inadequacy of Plan
- Board Action - simplified the Plan, removed intermediate triggers (Payton; RC51)
- Commitment to look for comprehensive solution: 2018-291-FB, RC84 (Ruffner)

RC 84; Paraphrased

- Two areas need additional consideration
 - Uncertainty in escapement estimates have affected usefulness of the escapement goals and may have caused unwarranted restrictive actions.
 - Restricting the sport fishery without (simultaneously) restricting the commercial sockeye fishery may not achieve conservation goals and should be considered in the context of sharing a conservation burden.

RC 84, con't

1. ADF&G to update escapement goal by October
2. Stakeholder study team to provide technical support to Committee.
3. Target any proposed changes to Plan prior to the next cycle (i.e., March 2020).
4. Adhere to Sustainable Salmon Policy
 - Share conservation burden
5. Recognize any hard-trigger closures acknowledge tradeoffs between sockeye and king salmon

Committee Charge - Summary

- Have any management targets take into account the current uncertainty in the escapement goal and inseason assessment of inriver runs
- Better manage the fishery for conservation so sustainable escapement goals are met, and fisheries don't get restricted unnecessarily at great cost to traditional users

A “Comprehensive Solution”

- Identify ways management and the Plan can be improved to:
 - Ensure sustainable harvests of all species by all users and equitable sharing of conservation between sport and commercial users
 - Improve upon a sustainable escapement goal (now and in the future)
 - Identify stock assessment needed to provide a robust escapement goal and inseason targets upon which to base management decisions and fishery restrictions.

Clarify Roles of ADF&G and Stakeholder Study Team

- ADF&G staff
 - Revise the Chinook escapement goal
 - Repository of key datasets for analyses
 - Work with study team to vet research and management ideas, provide feedback on technical analyses and to the committee
- Stakeholder Study Team (BBSRI)
 - Technical analyses and meeting support for the Board Committee

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Review Escapement Goal

- Escapement goal memo, July 11, 2019
- Jack Erickson, ADF&G Research Supervisor
- *-> break away for Jack to present (a separate Powerpoint presentation)*

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Technical Analyses

Work toward a common understanding of the fishery

- Historical review – Brookover 2019
- Discussion, feedback from committee and ADF&G

Brookover 2019

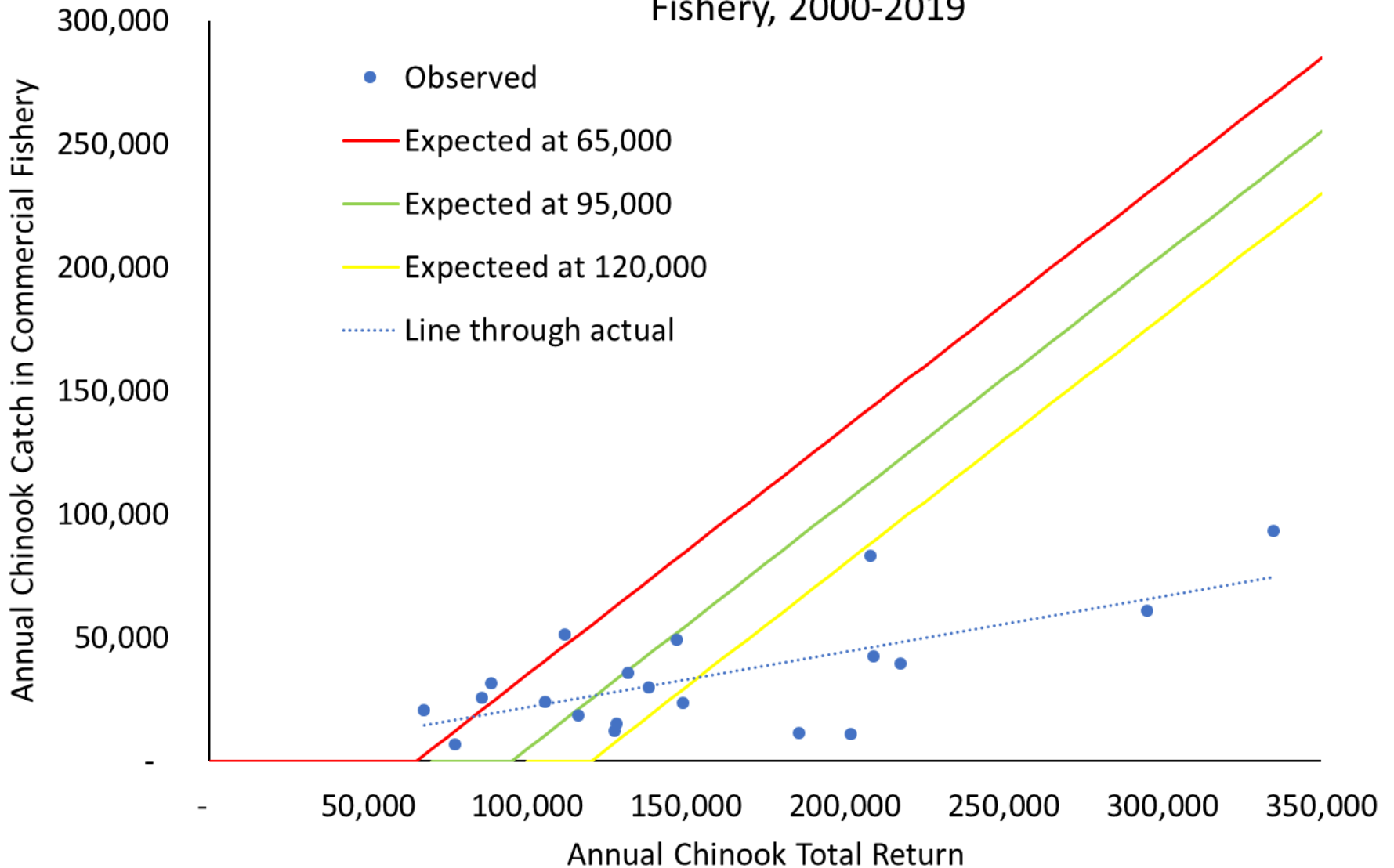
- Historical review of the fishery

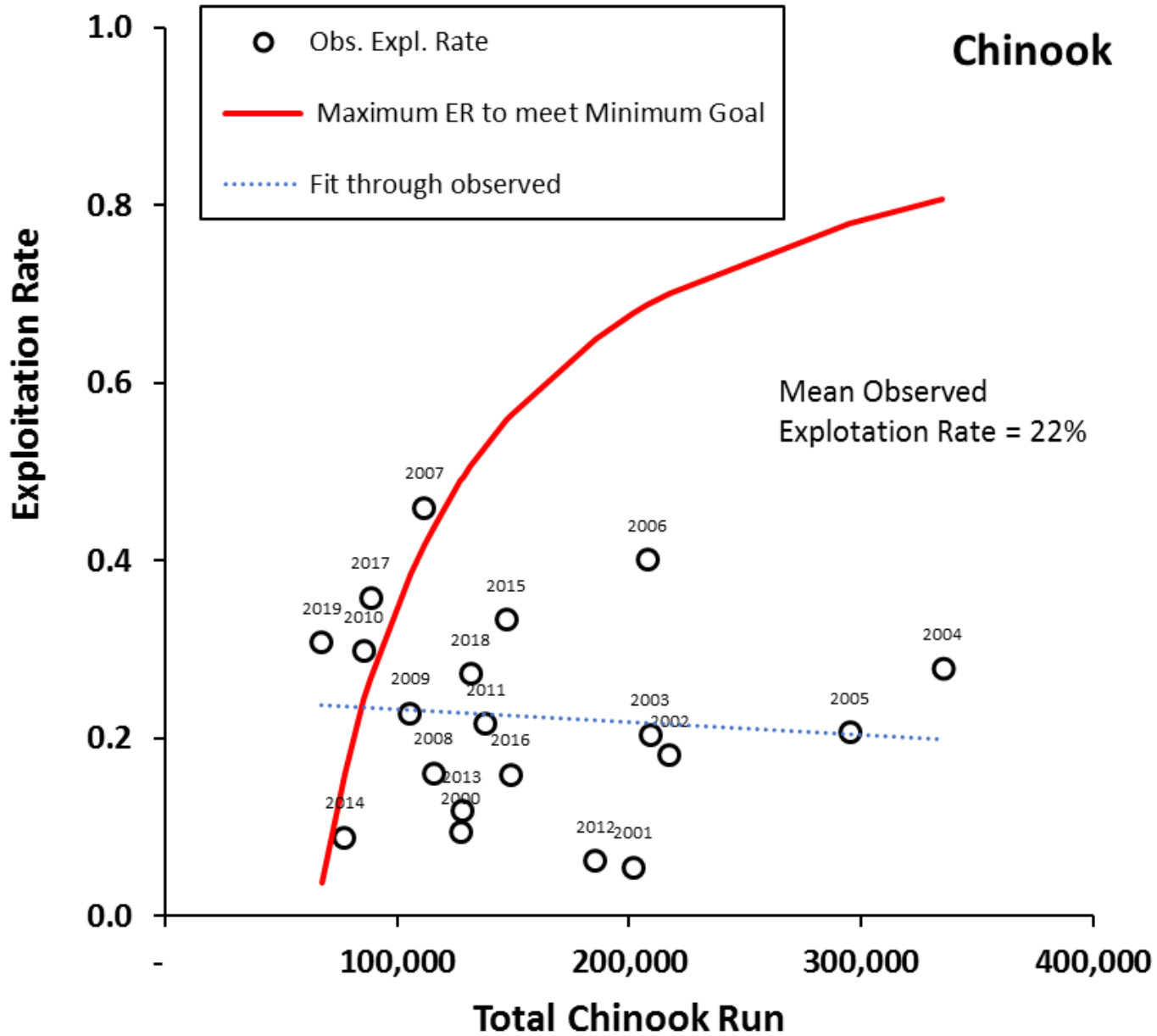
Discussion

- Can we better manage Nushagak kings?
- How valuable might improvements to inseason and postseason estimates of escapement be? Estimates of catch?

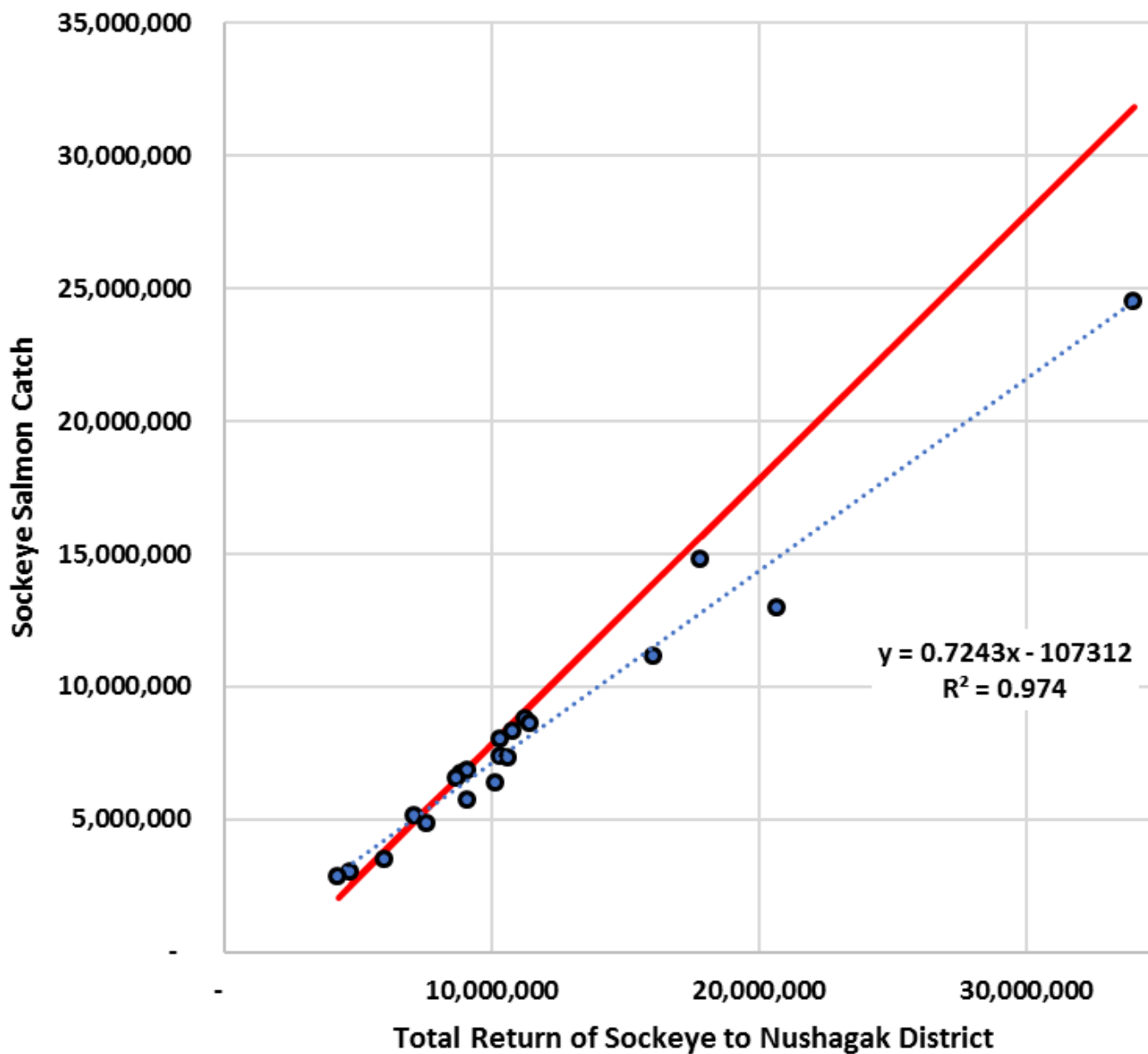
Are Nushagak Chinook Actively Managed for Harvest?

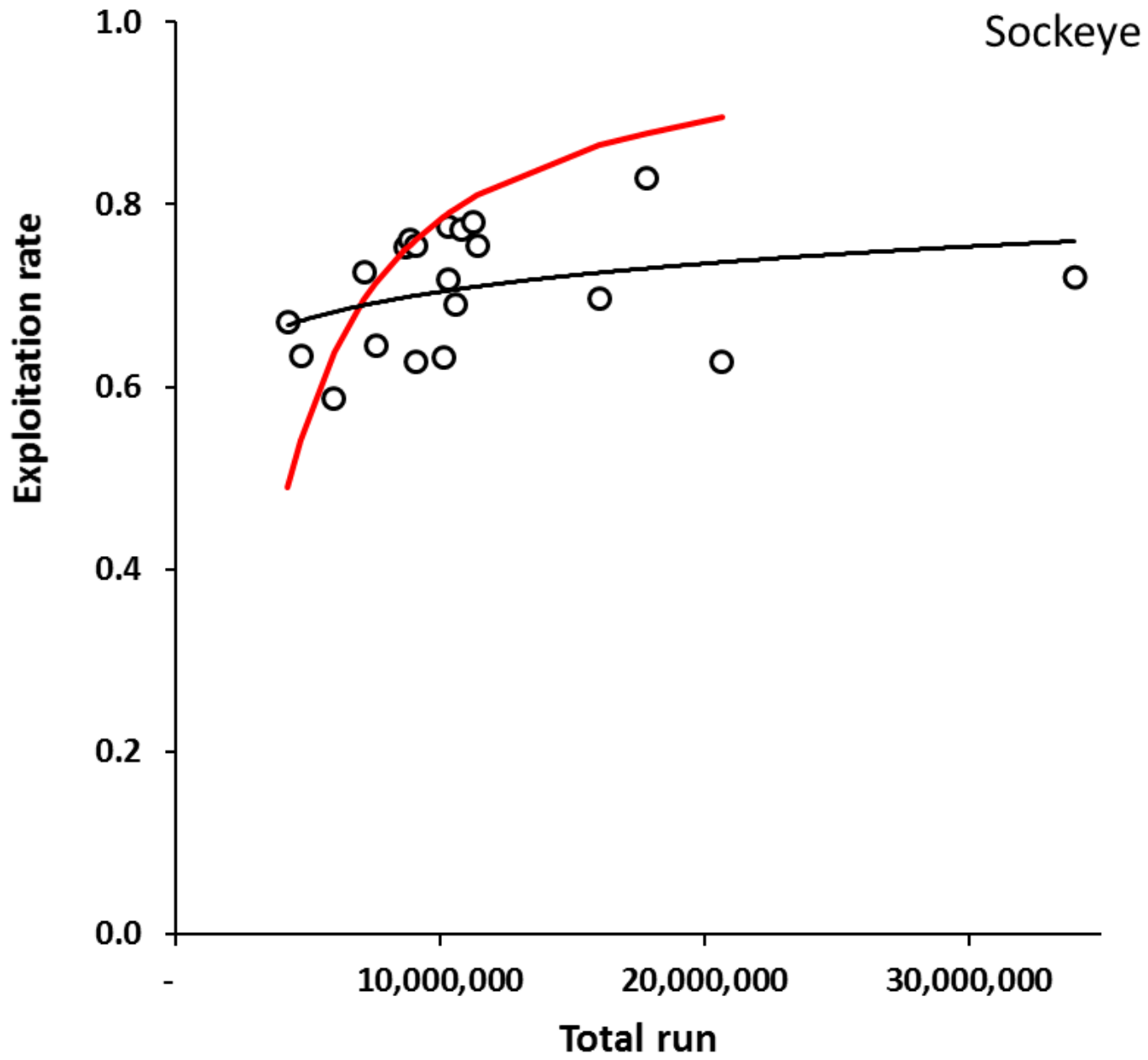
Actual and optimal Chinook harvests versus observed total run to accomplish range of inriver abundance, Nushagak District Commercial Fishery, 2000-2019





Actual and Optimum Harvests in the Commercial Fishery, Nushagak District Sockeye Salmon, 2000-2019





Technical Analyses

Selected tasks to support committee deliberations

- Portage Creek sonar
- Opportunities to exploit run timing differences
- Gillnet selectivity in comm. fishery
- Effects of tide stage on Chinook catch rate

Technical Analyses

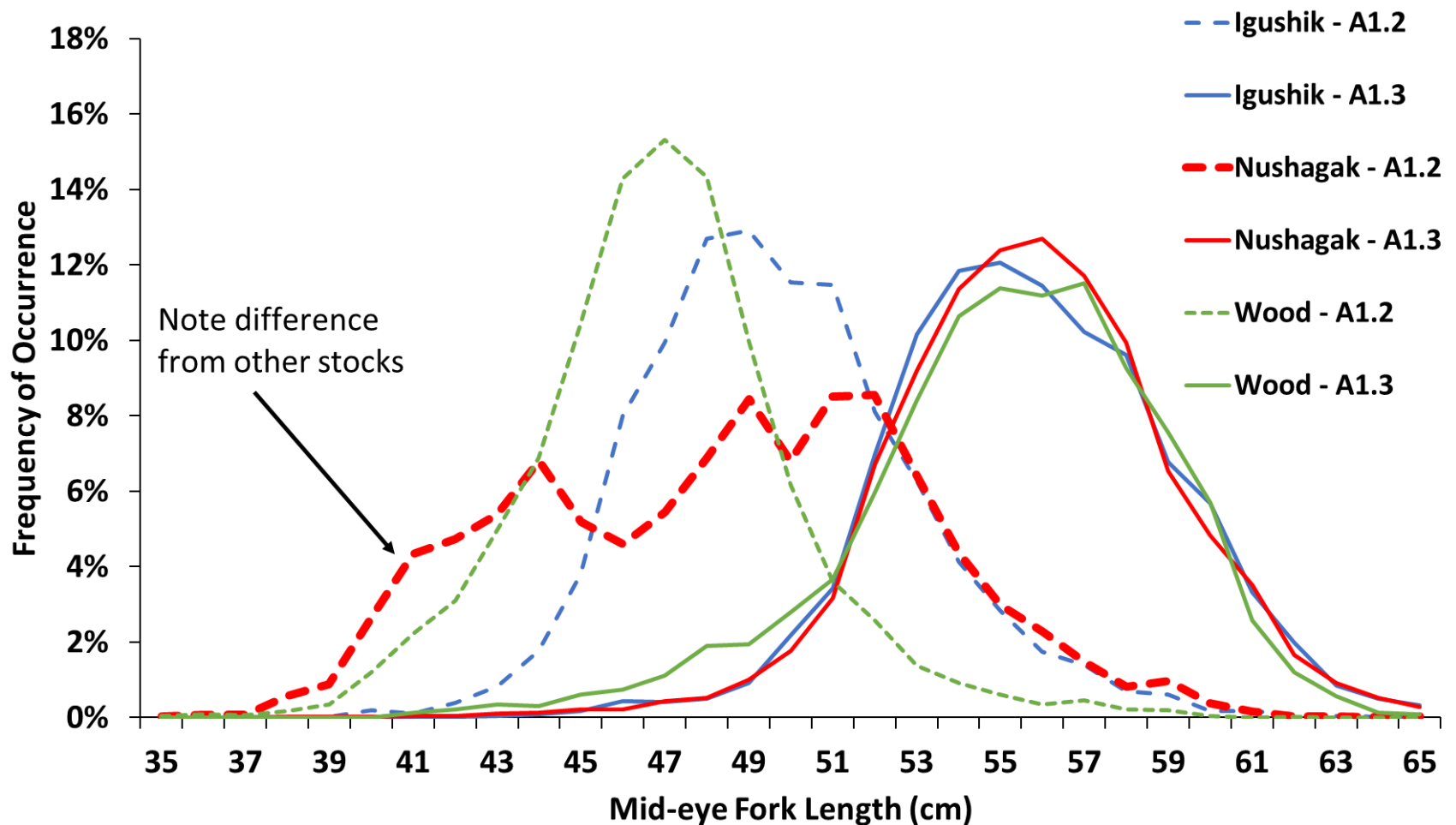
- Portage Creek Sonar
 - Uncertain escapement goal
 - Conservative management in all fisheries
 - More frequent closures, foregone opportunities
 - No brood tables, no preseason forecasts, difficult to deal with small and large runs

Examine previous work & sampling protocols

- Fraction outside of sonar (acoustic tagging)
- Detectability within sonar
- Independent estimates of escapement (M-R)
- Species apportionment – a big issue?

Gillnet-based Apportionment of Sonar Counts to Species

Mean Length Frequency Histograms for Nushagak District Stocks
(2009-2019) for ages 1.2 and 1.3



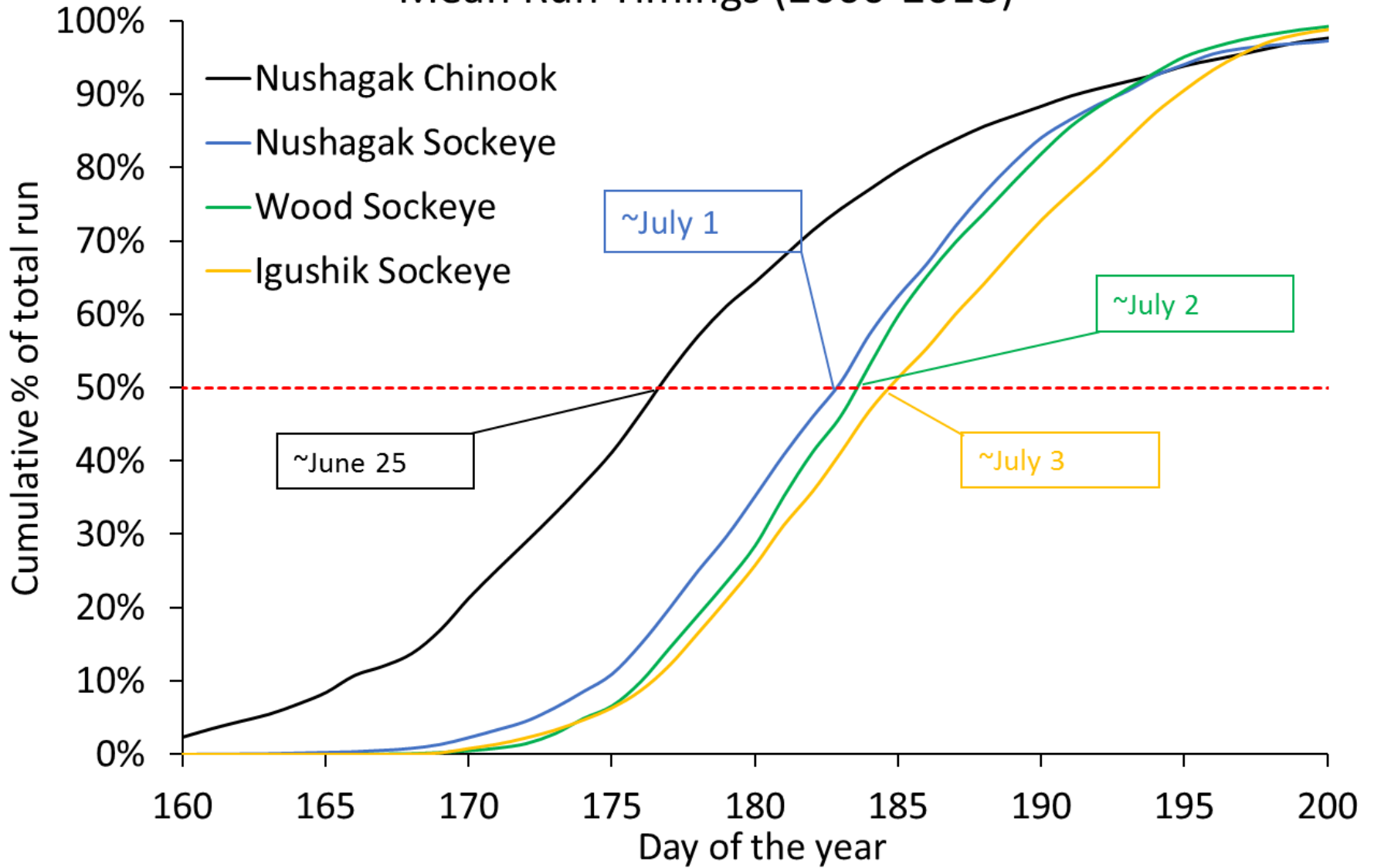
Portage Sonar

- Species apportionment
 - Gillnet mesh to apportion to species, and age classes within the sockeye run
 - Sampling times within days
 - Detectability within and outside of sonar

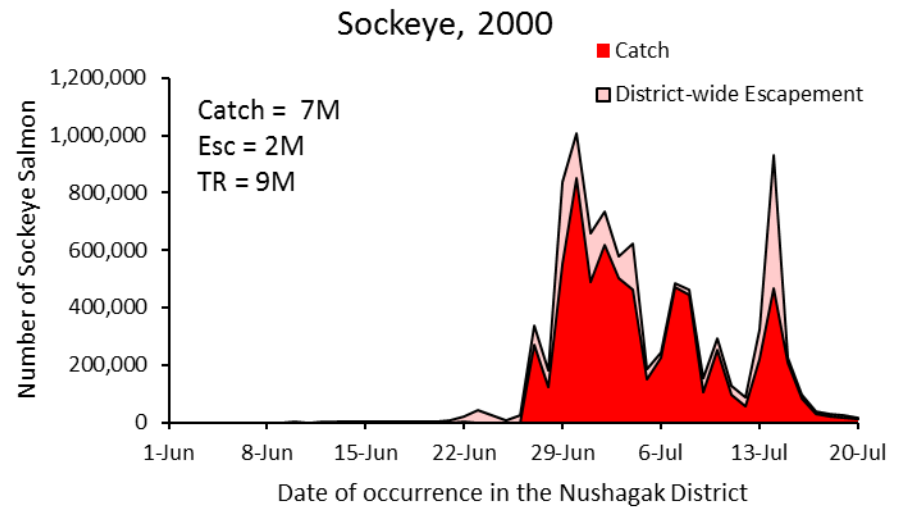
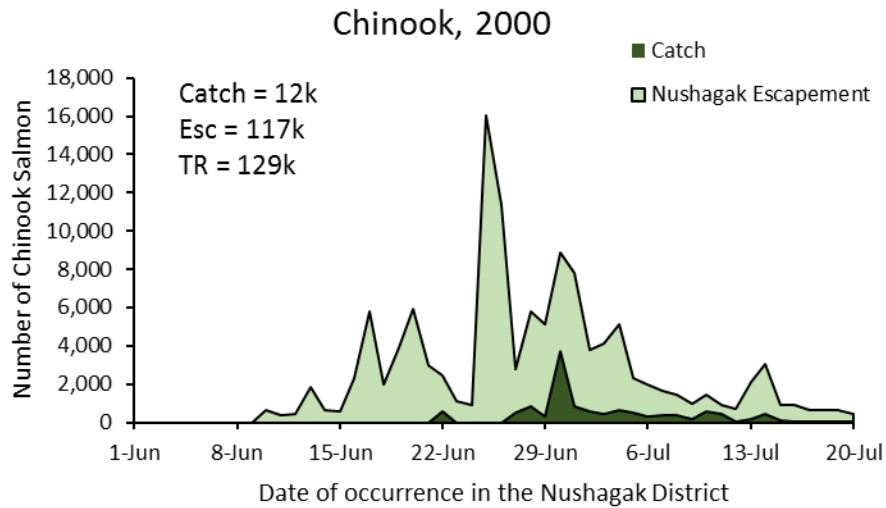
Differences in Run Timing

- Exploiting differences in run timing and fishery location to target conservation actions with the greatest benefit and least costs

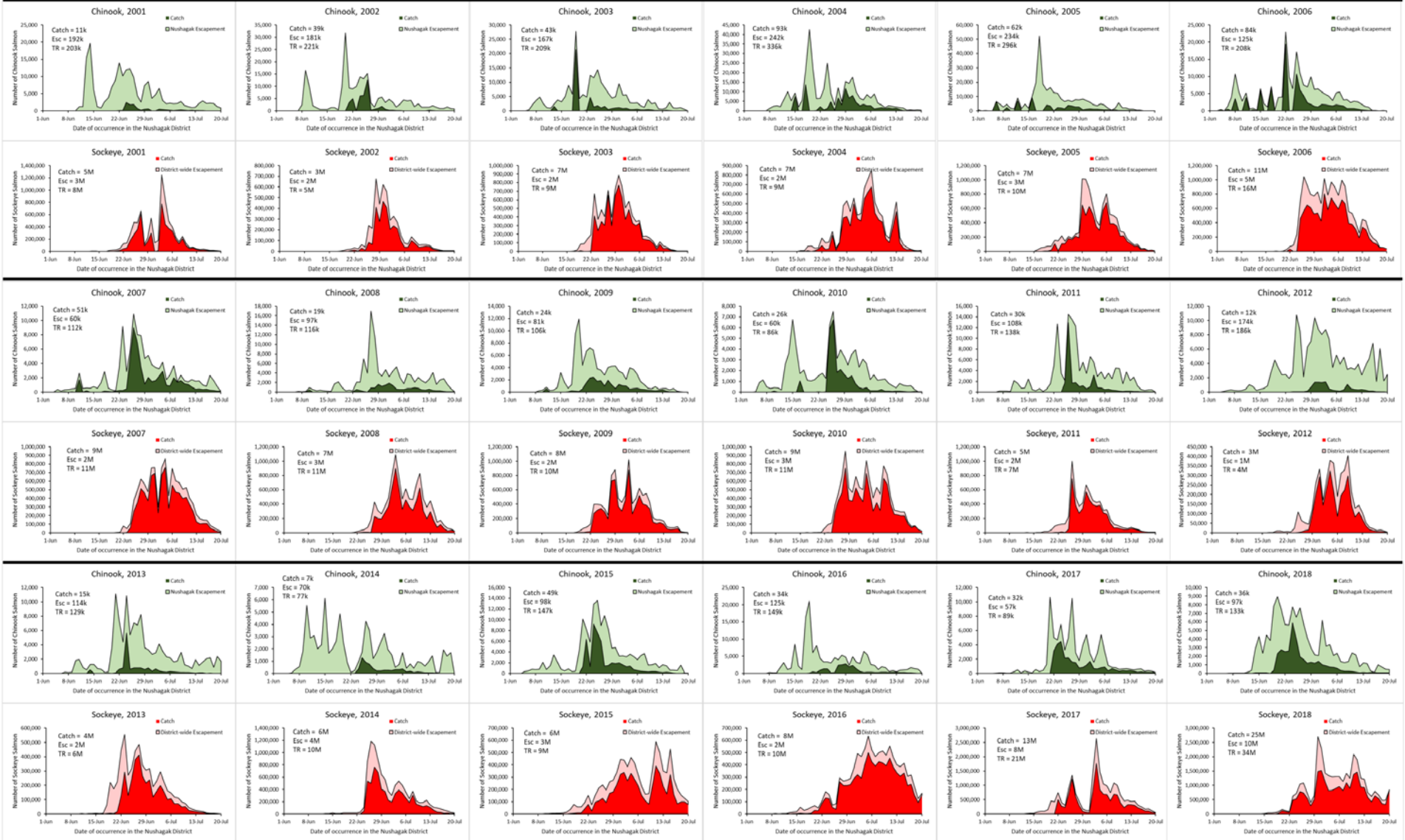
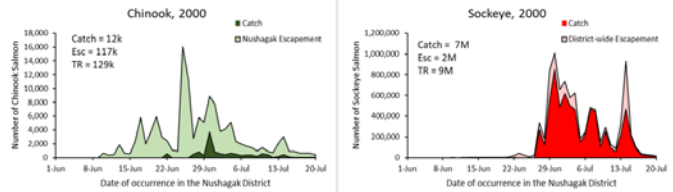
Mean Run Timings (2000-2018)



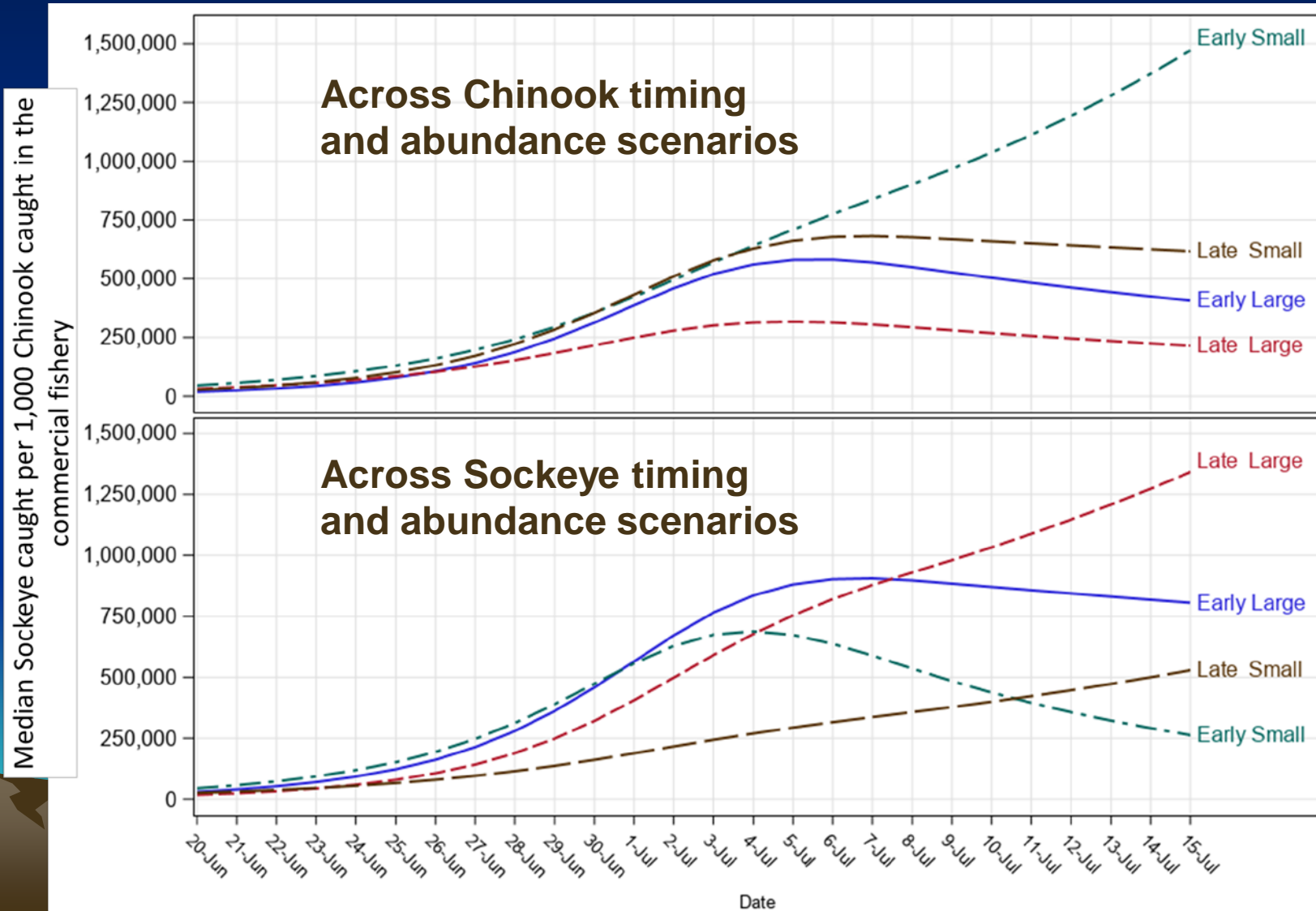
Reconstructed Chinook and Sockeye runs in District, 2000-2018



Chinook and Sockeye Runs in the Nushagak District, 2000-2018



Median # Sockeye Caught per 1,000 Chinook vs Date, 2000-2018



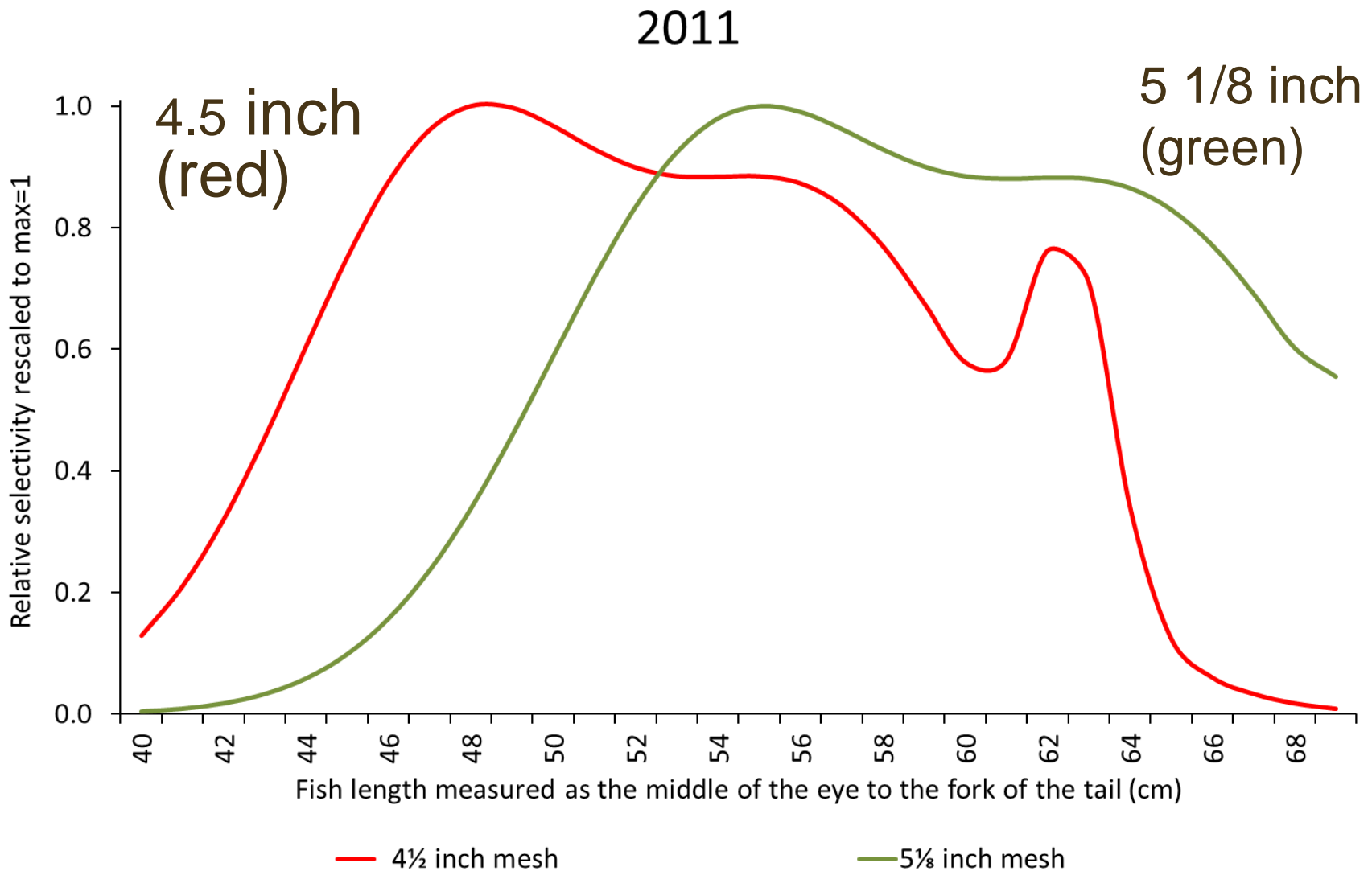
Mesh size: Exploit Gillnet Selectivity to Target Stocks and Species

- Vulnerability to a gillnet varies with fish body size
- Directly relevant to Nushagak sockeye fishery and Chinook salmon catch in two ways:
 1. Contact selectivity: Increase effectiveness on sockeye and reduce effectiveness on chinook
 2. Fleet effectiveness: Potentially reduces fishing time in district to control escapement and lowers harvest rate on Chinook (?)
 3. Benefits and costs of different mesh sizes

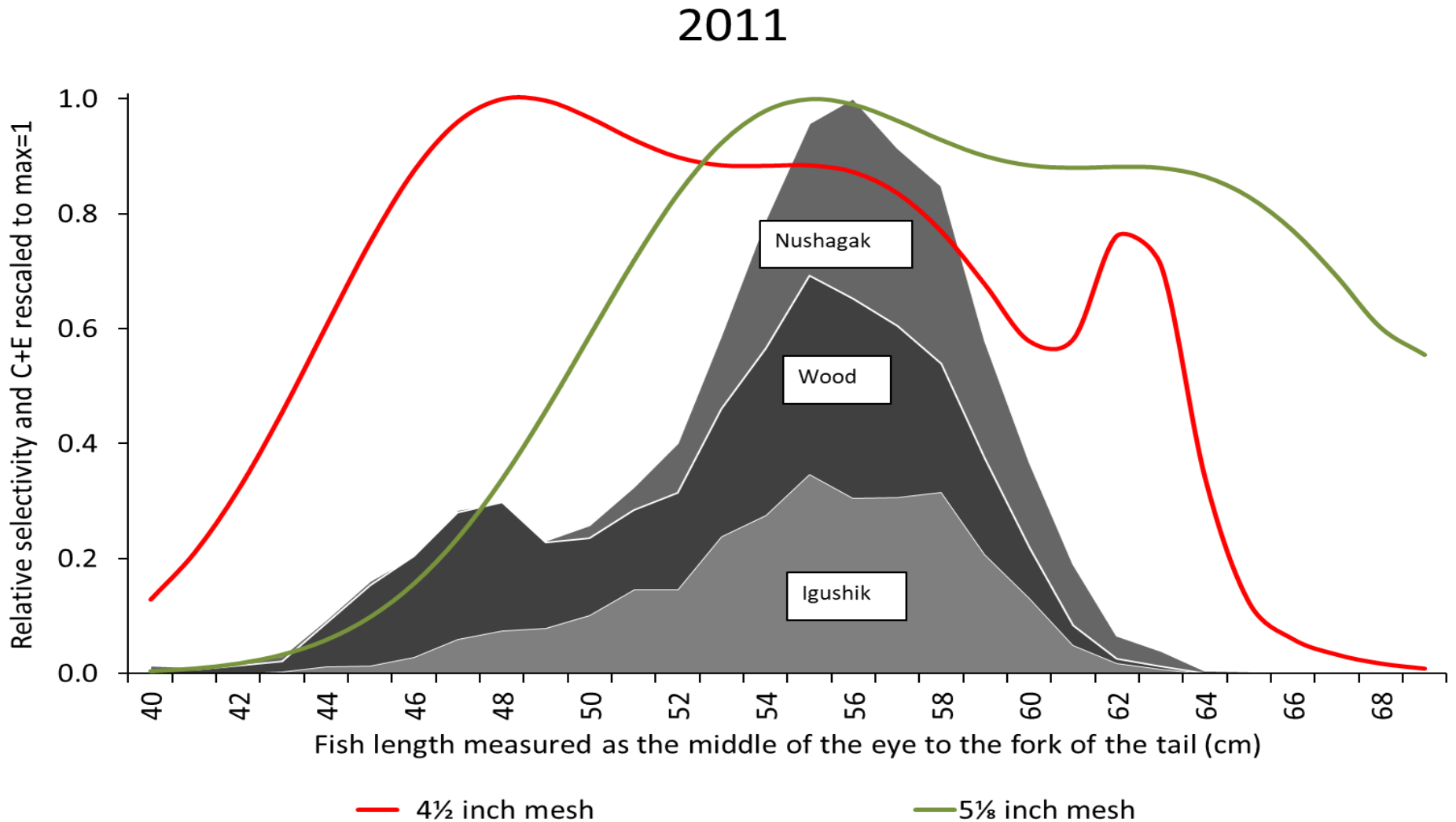
Selectivity Curves

- Initially developed from a decade of results from the Port Moller Test Fishery
 - Predicted effects/potential in the Nushagak to better target sockeye
- In 2019, test fished in the Nushagak District to develop district-and-commercial-fishery-specific selectivity curves, TBA.

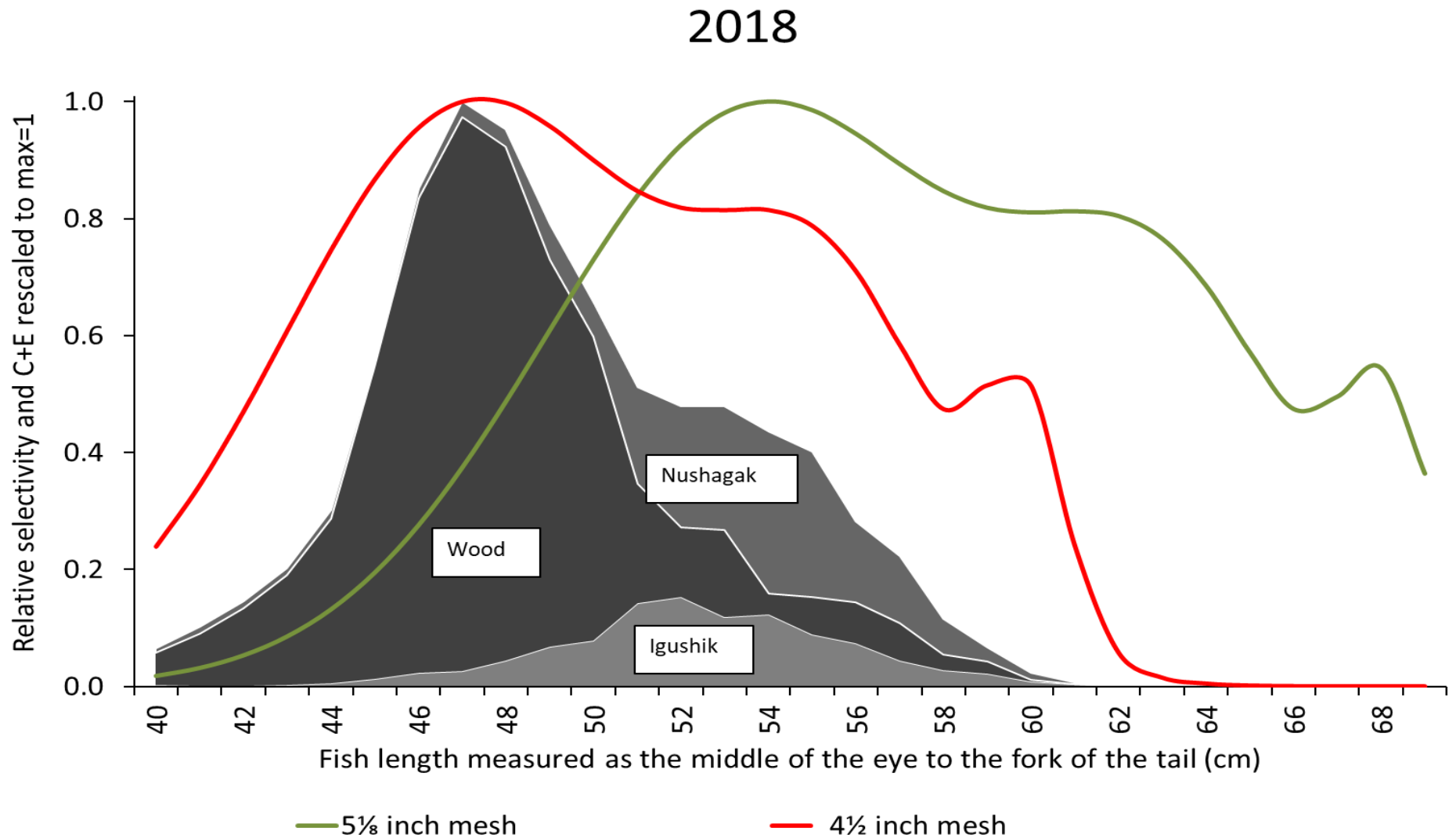
Selectivity curves, two meshes



Curves overlaid on the 2011 Run



Curves overlaid on 2018 Run



Exploit Tide stage?

- Does commercial fishing lower into the tide stage affect catch rates on Chinook salmon, which are typically deeper?

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Committee Questionnaire

- What problems/challenges do you see with Nushagak king salmon management?
 - Did the changes to the Plan made in December 2018 address any of these?

.../2

Committee Questionnaire

- What fraction of these issues could be addressed by:
 - Further modifications to the management plan? (altering time, area, and gear)
 - Improving assessment data? (sonar, test fishery, catch rates (CPUE) in the sport/subsistence fisheries, age-specific catch and escapement, preseason forecasts).

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Committee Questionnaire

- What characterizes a successful:
 - Subsistence fishery
 - Opportunity? High CPUE?
 - In-river sport fishery
 - Opportunity? Bag limits? Steady CPUE?
 - Commercial fishery
 - Sockeye catch? King catch? Early fishing?

Committee Questionnaire

- What are the more significant changes you have seen in the following areas, and how might they have affected the perception of what users define as a successful fishery. That is, what role have these factors played creating real (or perceived) problems with King salmon management.
 - Size and composition of the commercial sport fishery (e.g., single lodges, fly in, etc.).
 - Effects of sockeye abundance on meeting king salmon objectives.
 - King salmon abundance.
 - Confidence in the Portage sonar estimates of king (and sockeye).
 - What other significant changes have occurred?

Goals and Objectives of any Plan Revisions

- What (exactly) do we want to accomplish with Plan revisions?

Timeline and Meeting Dates?

- Is the Feb. 5 deadline for a board-generated proposal doable?

Wrap Up, Final Comments