

Genetic Stock Composition of the Eastside Set Gillnet Chinook Salmon Harvest 2010–2019



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Eastside Set Gillnet Fishery

Kasilof Section

- Ninilchik Beach
- Cohoe Beach
- South K-Beach

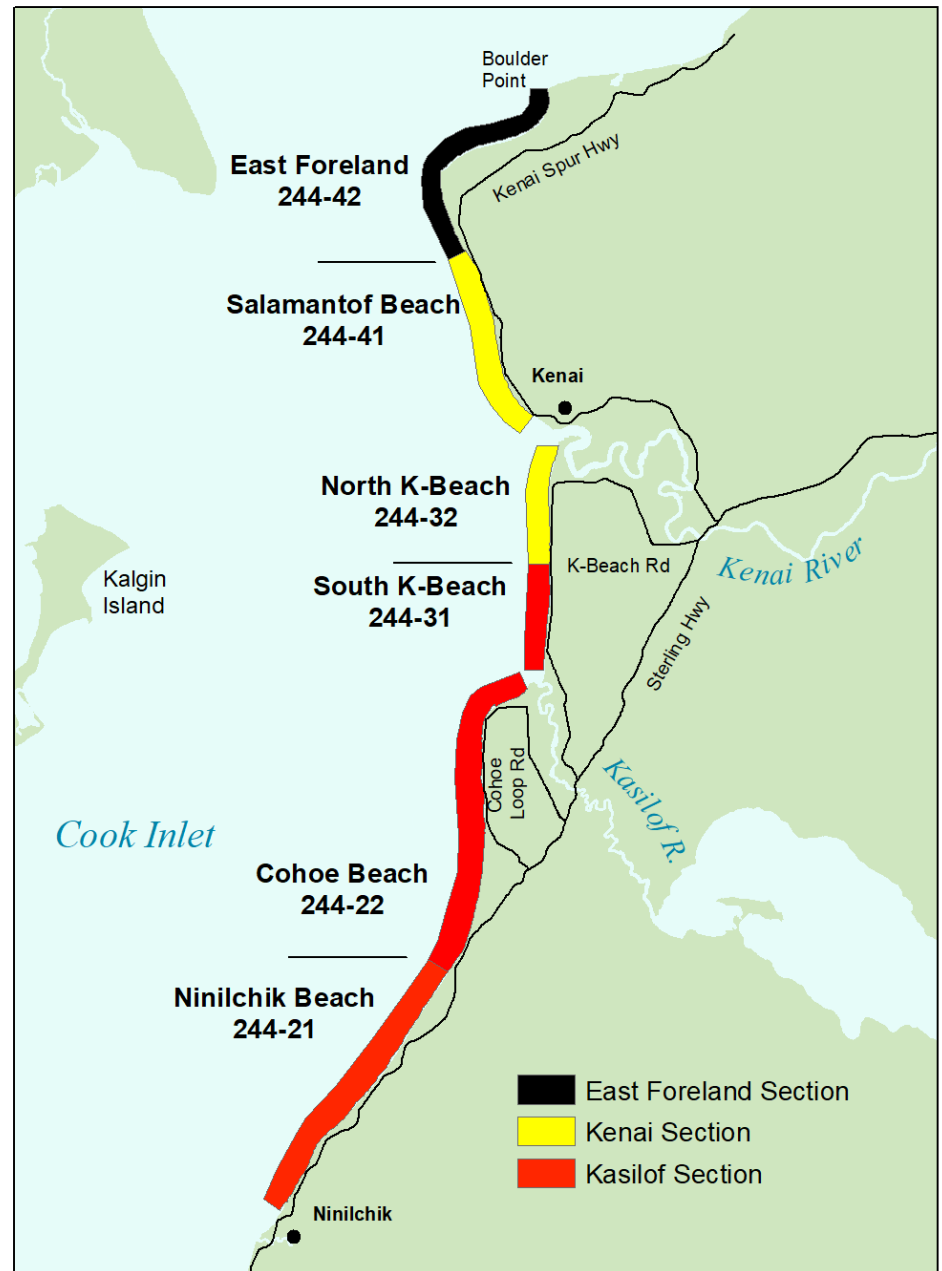
Kenai Section

- North K-Beach
- Salamatof Beach

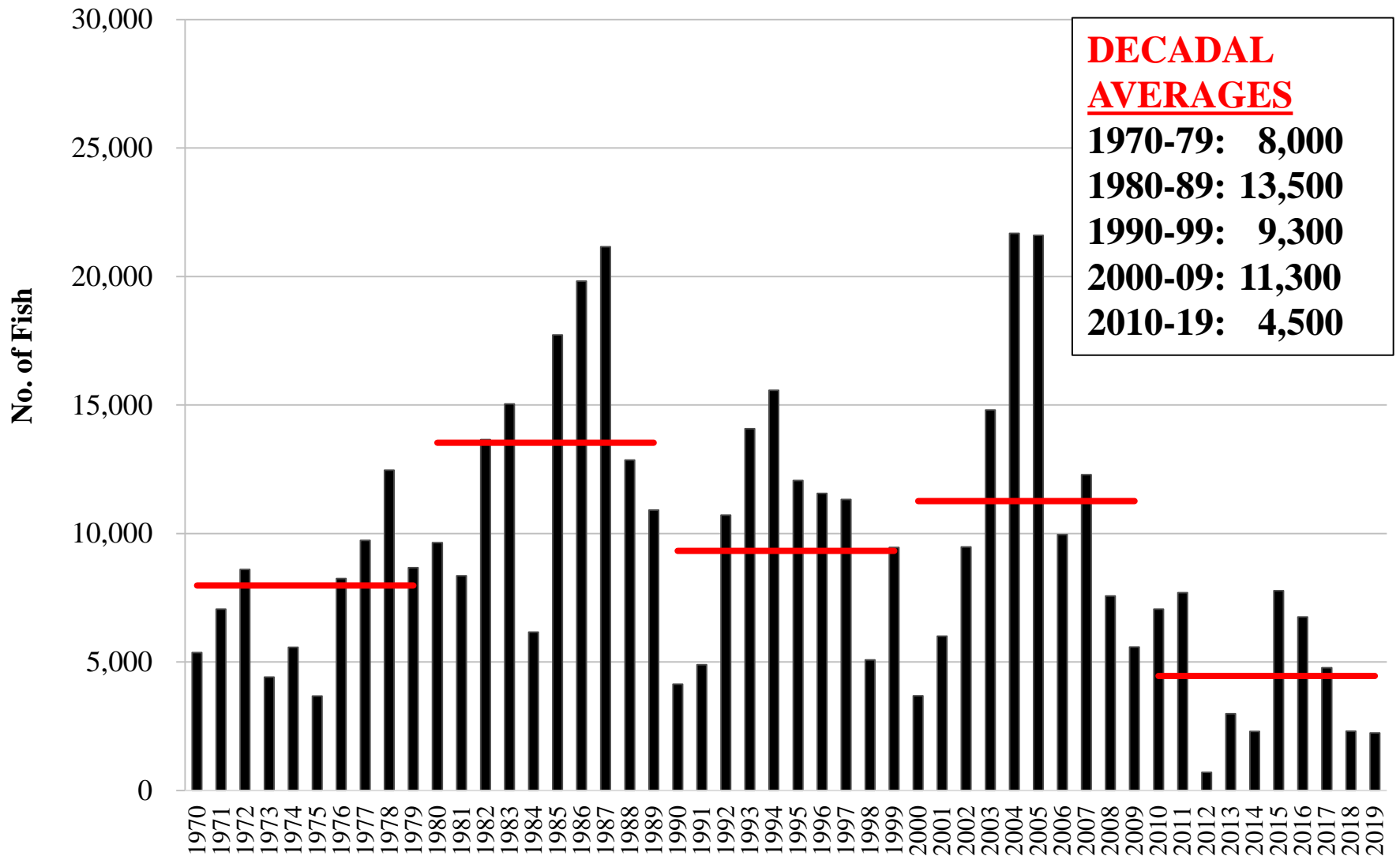
East Foreland Section

- East Foreland Beach

Kasilof River Special Harvest area



Eastside Set Gillnet Chinook Salmon Harvest 1970–2019



Sampling History

1980s to present

Age, sex, and length composition

2010

Genetic tissue collection added to sampling protocol

2012

UCI Chinook Salmon genetic baseline developed

2013

First genetic analyses produced



Sampling Strategy

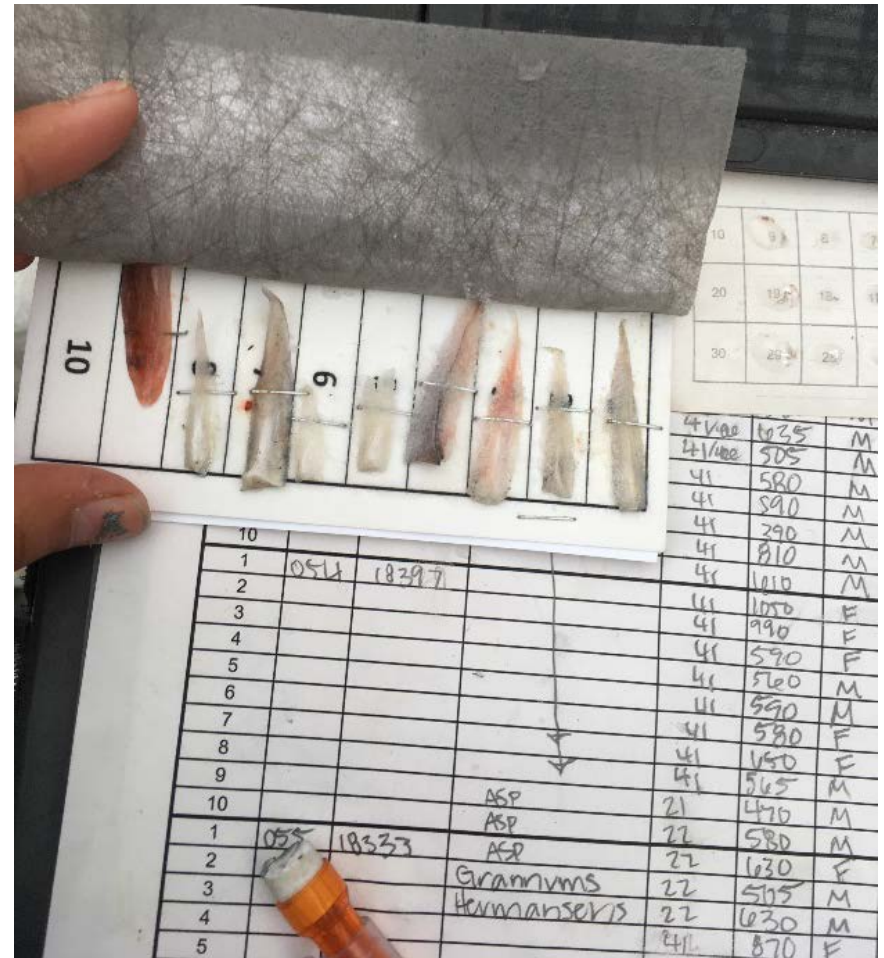
- Road system
- Receiving sites and fish processors
- Opportunistic
- 30% of harvest



Genetic Tissue Collection



Target sample size is
100 fish per mixture



Analyses by Time and Area

Time

- Early – Late June to early July
- Late – In July after Kenai and East Foreland sections open
- August

Area

- Kasilof Section
- Kenai and East Foreland sections (combined)
- Kasilof River Special Harvest area
- “By Beach”
- Kasilof Section 600 foot

“Large” Fish Analyses



Analysis Summary

Main strata (All 9 years)

1. Kasilof Section “Early”
2. Kasilof Section “Late”
3. Kenai and East Foreland Sections “Late”

Other limited estimates

- August “All Areas combined” (4 years)
- Kasilof River Special Harvest Area (3 years)
- August “By Section” (2 years)
- “By beach” (2 years)
- Kasilof Section 600 ft. (1 year)



*****Large and small fish estimates produced for all time and area strata**

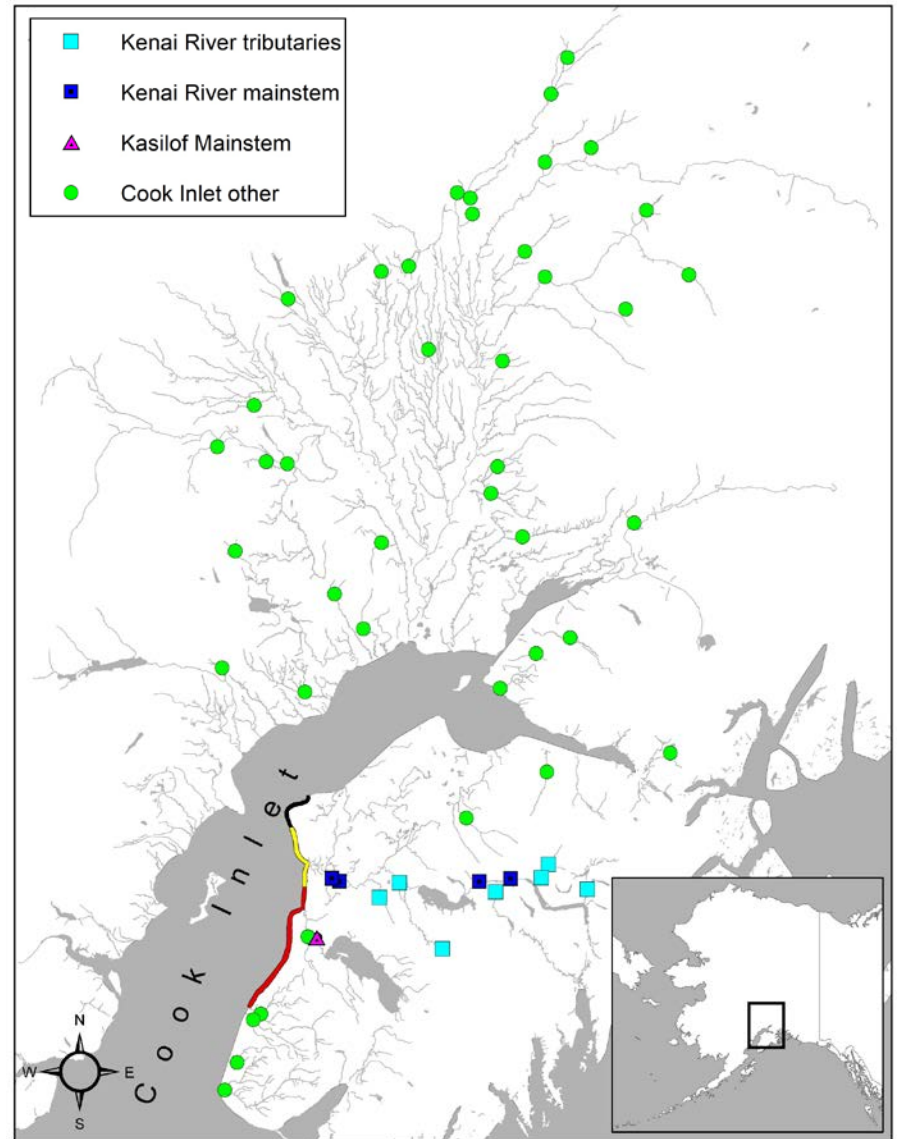
Genetic baseline

- Sampled populations
- All potential stocks represented
- Populations genetically characterized
- Used to estimate stock contributions
- Mixed-stock analysis



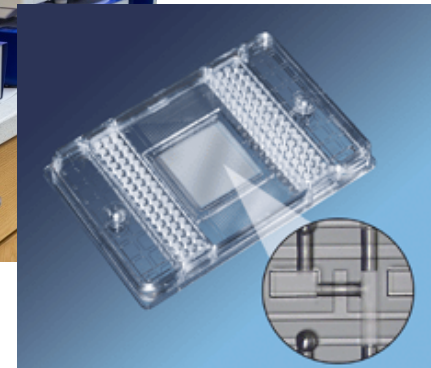
Genetic baseline

- East Side Set Gillnet
- 54 populations
- Reporting groups tested
 - Groups of populations that can be genetically distinguished
- 4 reporting groups identified
 - Kenai River tributaries
 - Kenai River mainstem
 - Kasilof River mainstem
 - Cook Inlet other

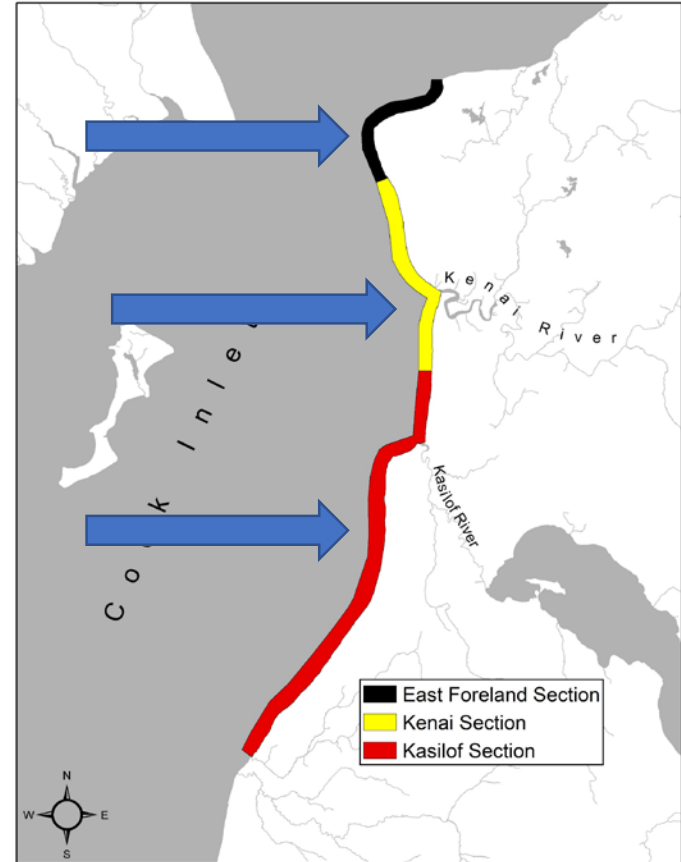
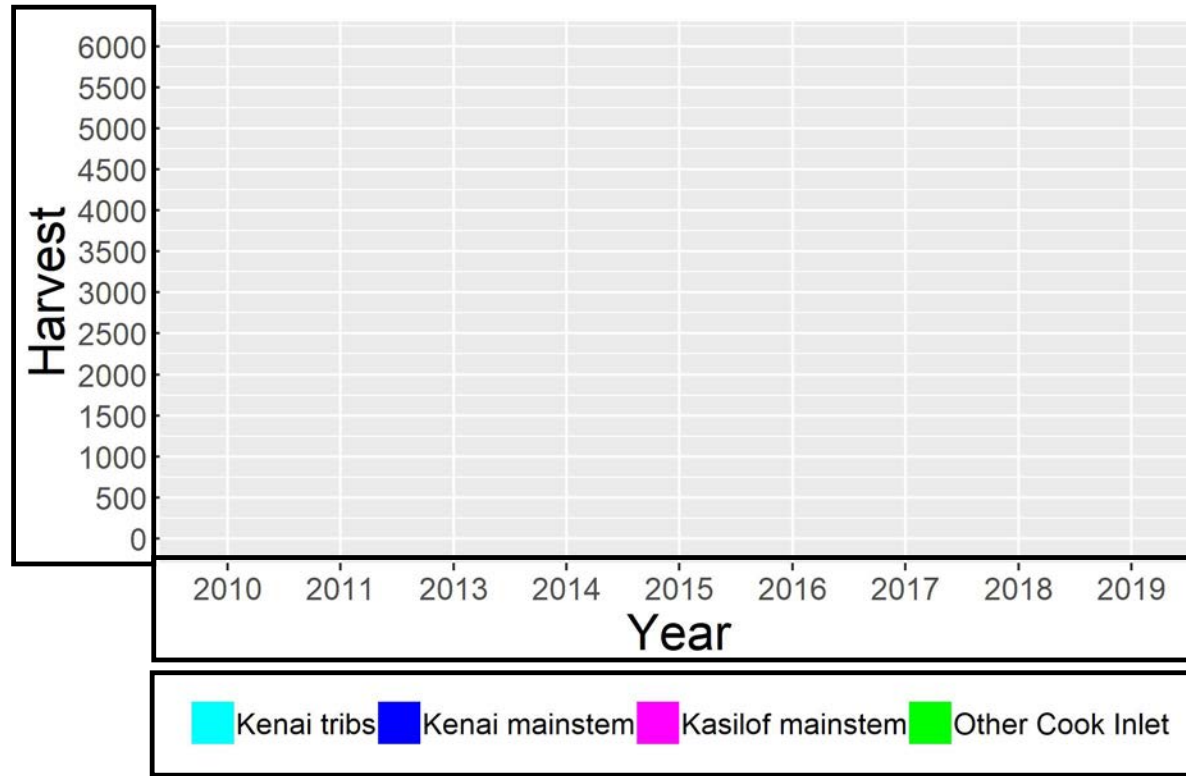


Harvest Samples Analyzed

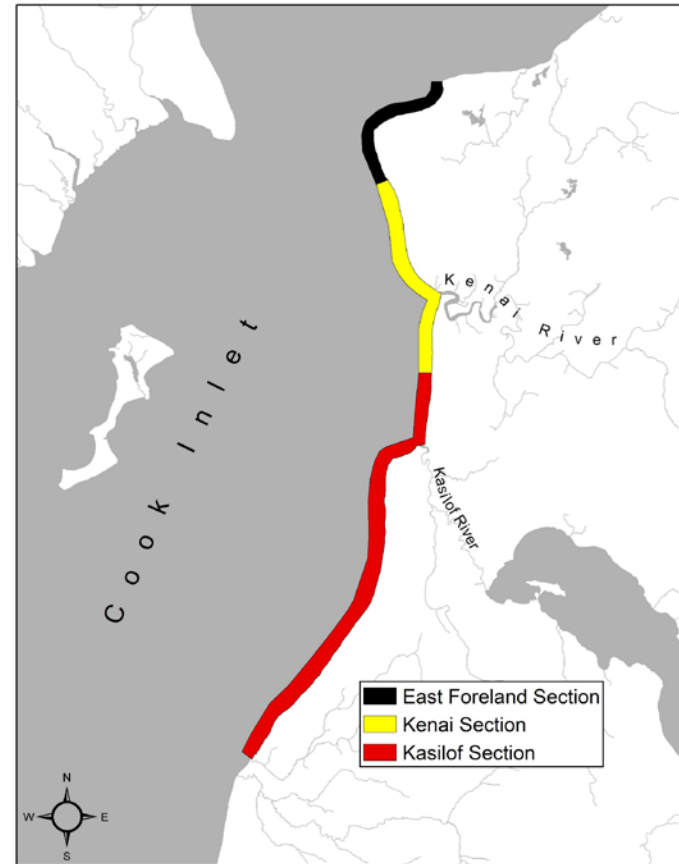
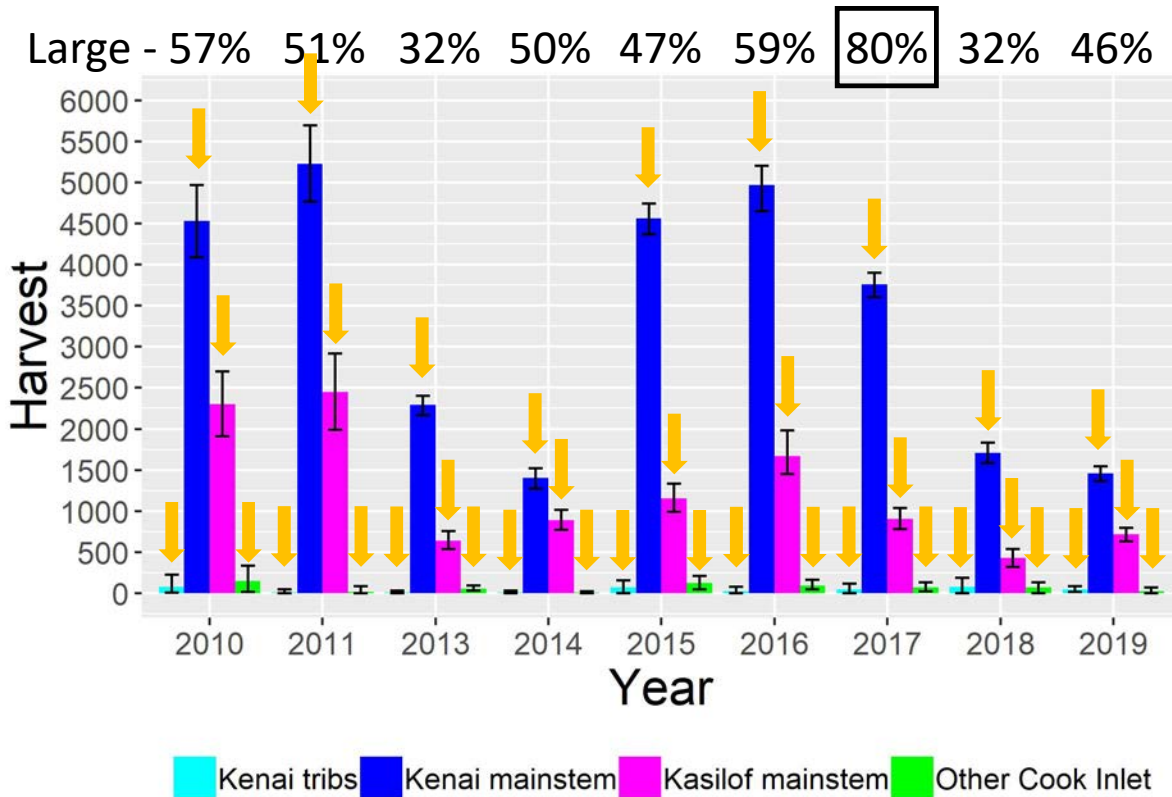
**Eastside Set
Gillnet:
2010-2019**



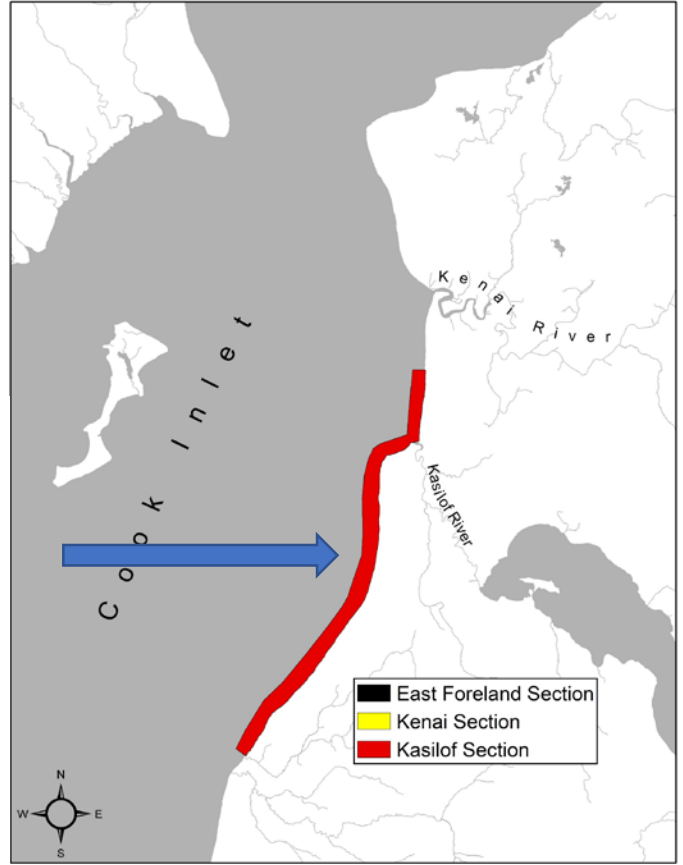
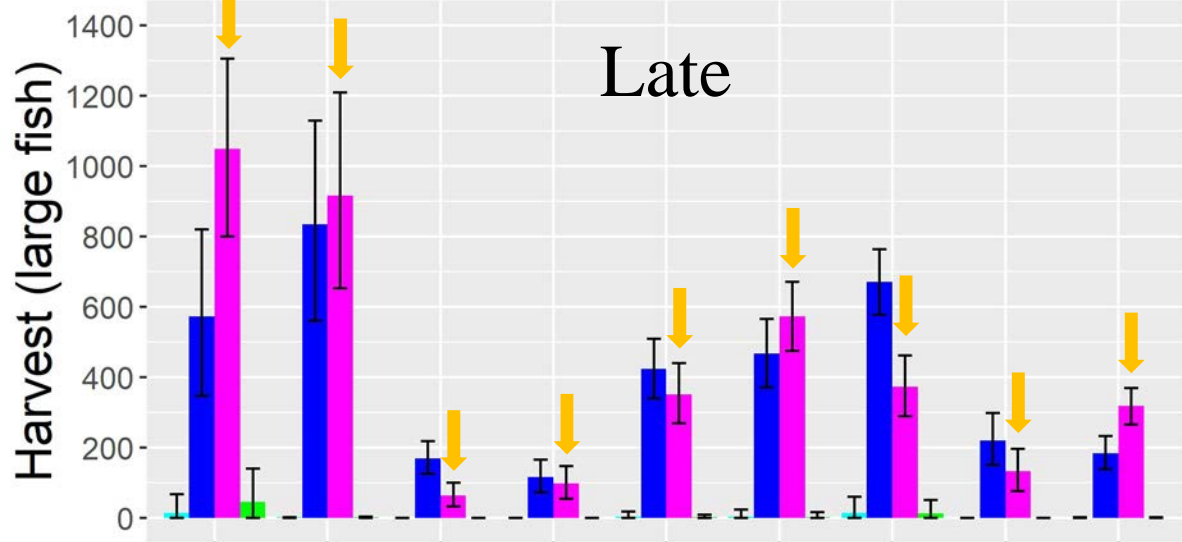
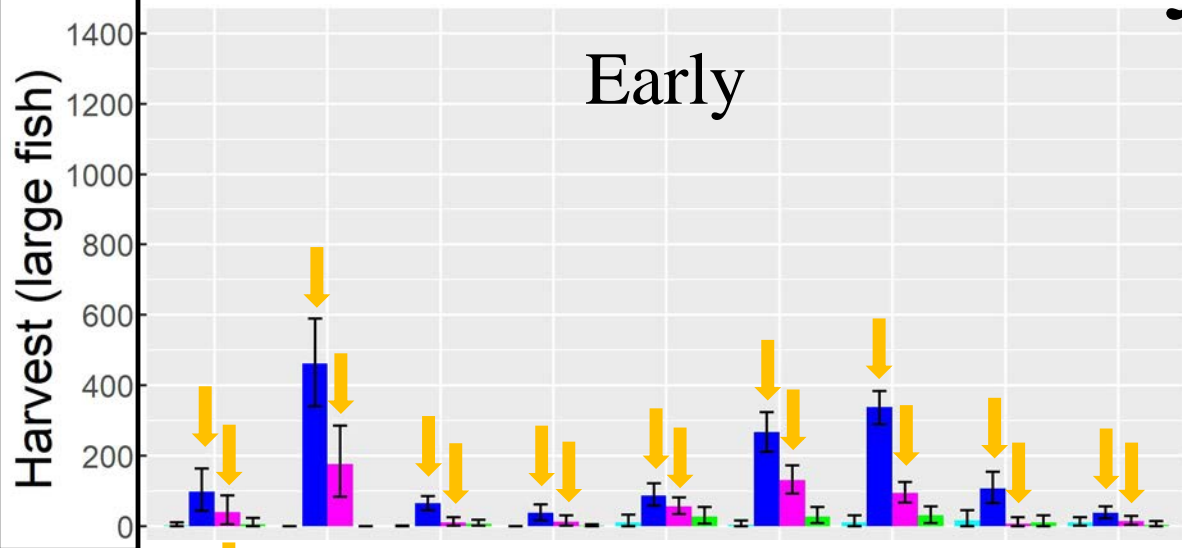
All Sections



All Sections (Total Harvest – large and small fish)

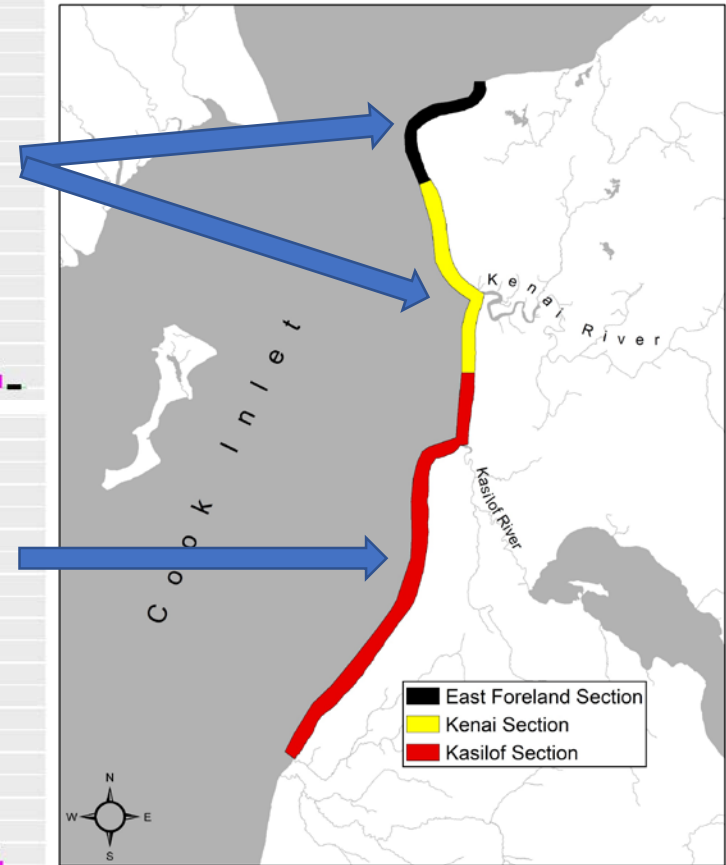
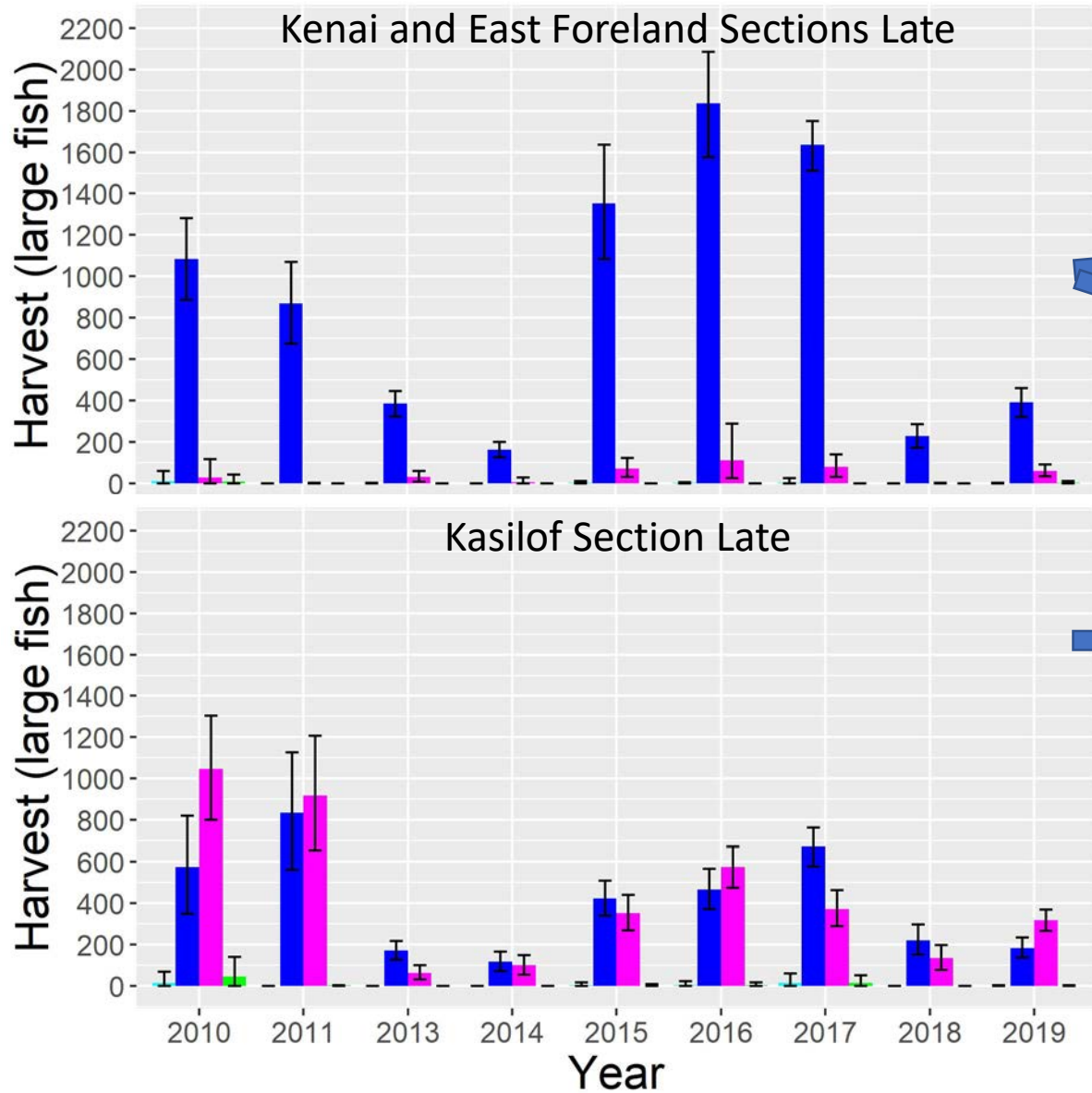


Kasilof Section Early and Late



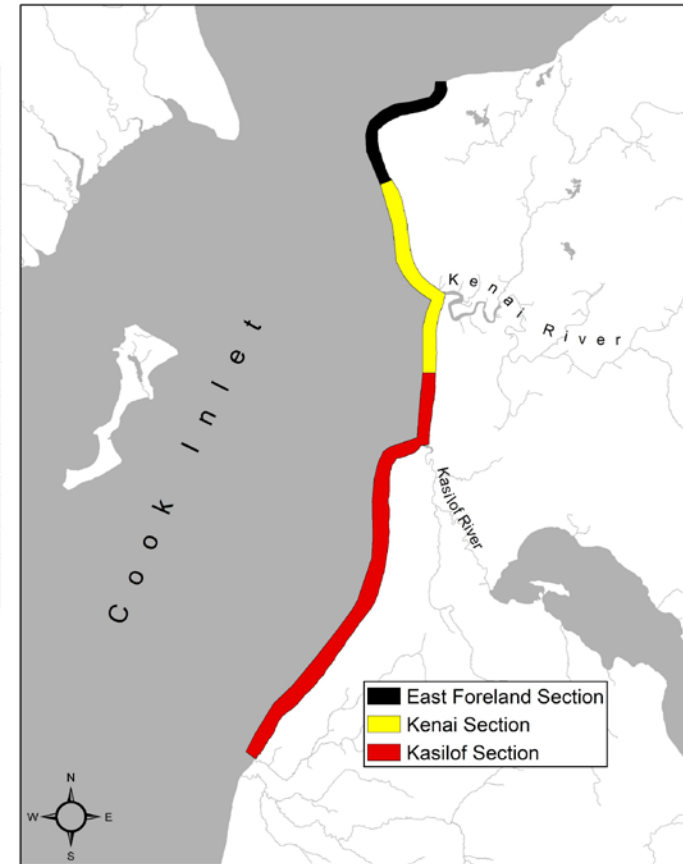
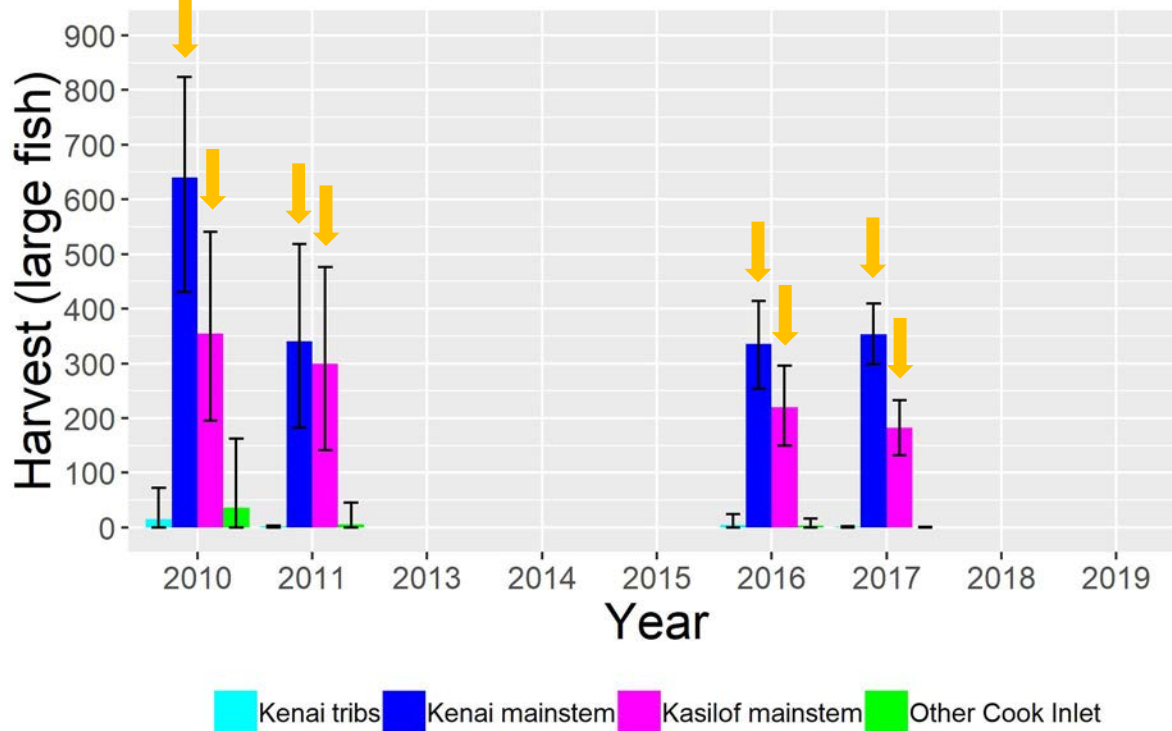
■ Kenai tribs
 ■ Kenai mainstem
 ■ Kasilof mainstem
 ■ Other Cook Inlet

Kenai/E.F. and Kasilof Sections Late

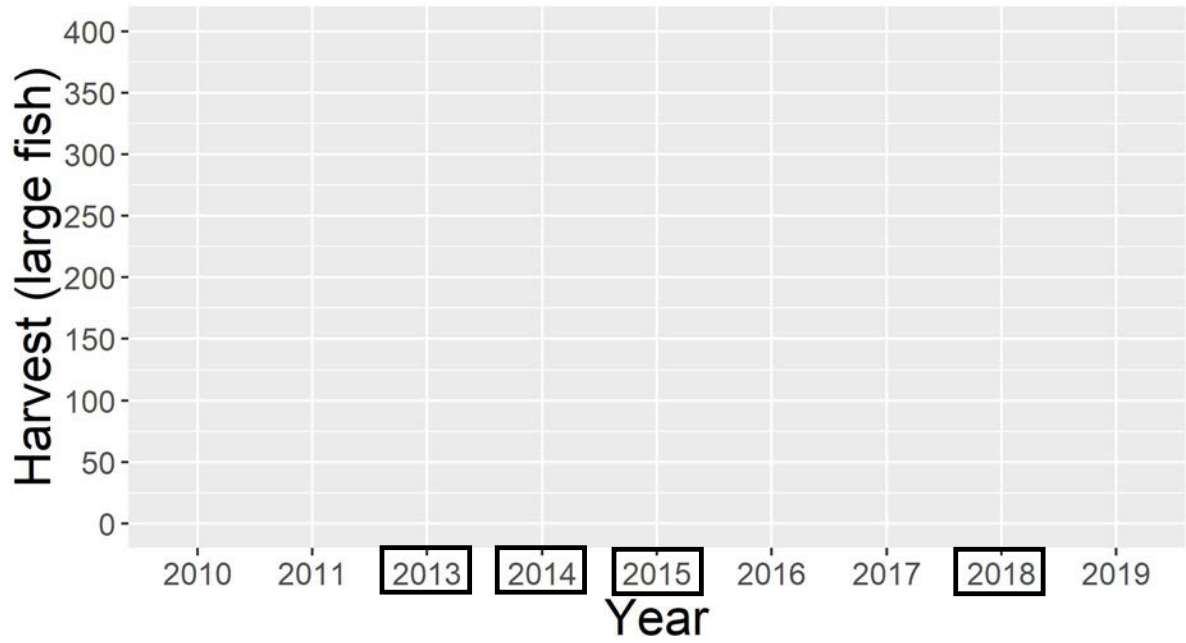


■ Kenai tribs
 ■ Kenai mainstem
 ■ Kasilof mainstem
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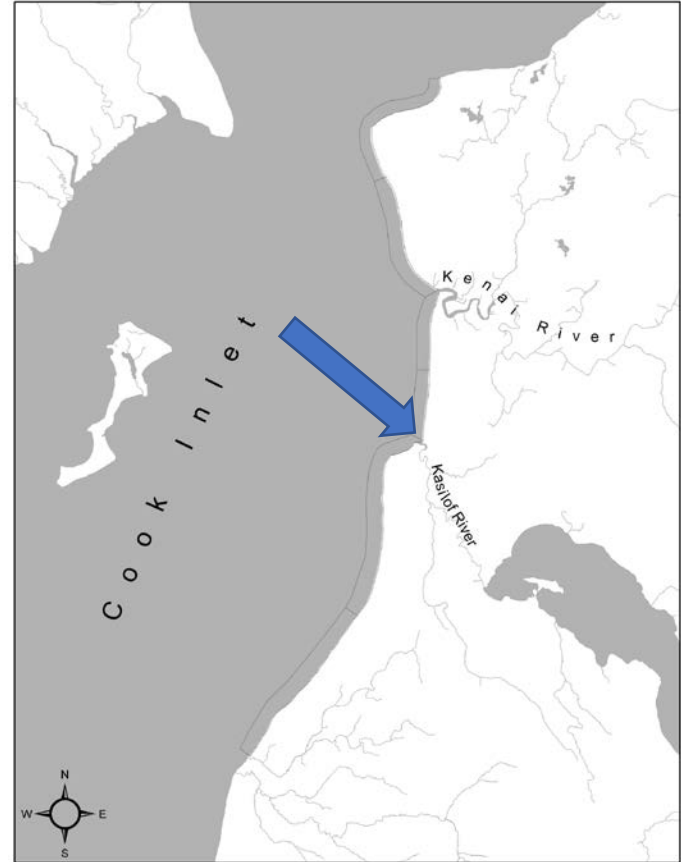
August (All Sections)



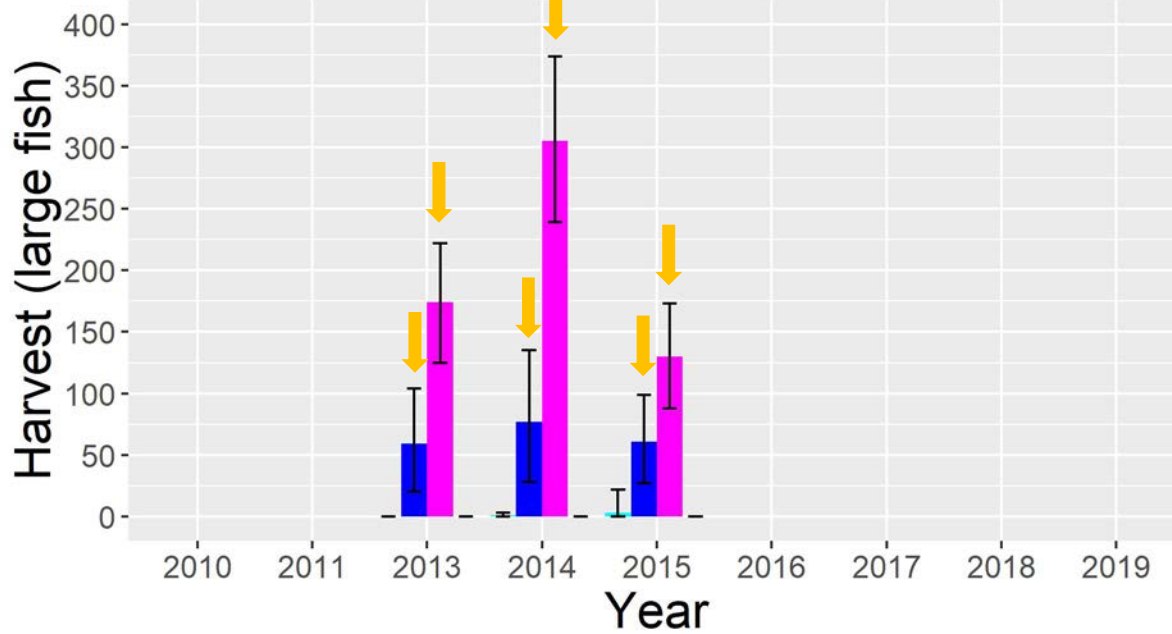
Kasilof River Special Harvest Area



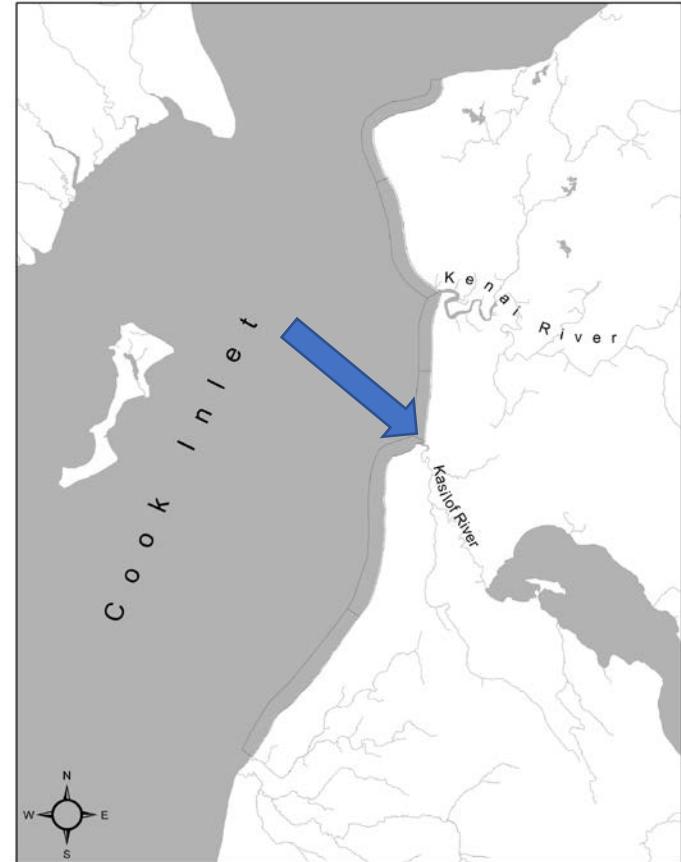
Kenai tribs Kenai mainstem Kasilof mainstem Other Cook Inlet



Kasilof River Special Harvest Area



Kenai tribs Kenai mainstem Kasilof mainstem Other Cook Inlet



Results Summary

- Stock compositions follow expectations based on life history patterns and migratory pathways of Kenai and Kasilof mainstem stocks
- Spatial Patterns
 - Kasilof section – variable mix of Kenai and Kasilof mainstem
 - Kenai and East Foreland sections – Kenai mainstem dominated the harvests
 - Kasilof River Special Harvest Area – greater harvests of Kasilof mainstem, but about a quarter of the harvest is Kenai mainstem
- Temporal Patterns
 - Kenai and Kasilof mainstem present throughout the season, but harvests are generally greater for Kenai mainstem early in the season

Interpreting Results

- Results represent 9 years of genetic stock composition of ESSN harvests
- These years represent a period of low harvest
- Inferences outside the study years
 - Stock abundance
 - Ocean conditions
 - Prosecution of fisheries

Questions?

