

South Alaska Peninsula Commercial Fisheries

Chum Salmon Harvest Genetic Sampling

2022



A Report to the Alaska Board of Fisheries

February 2023

Division of Commercial Fisheries

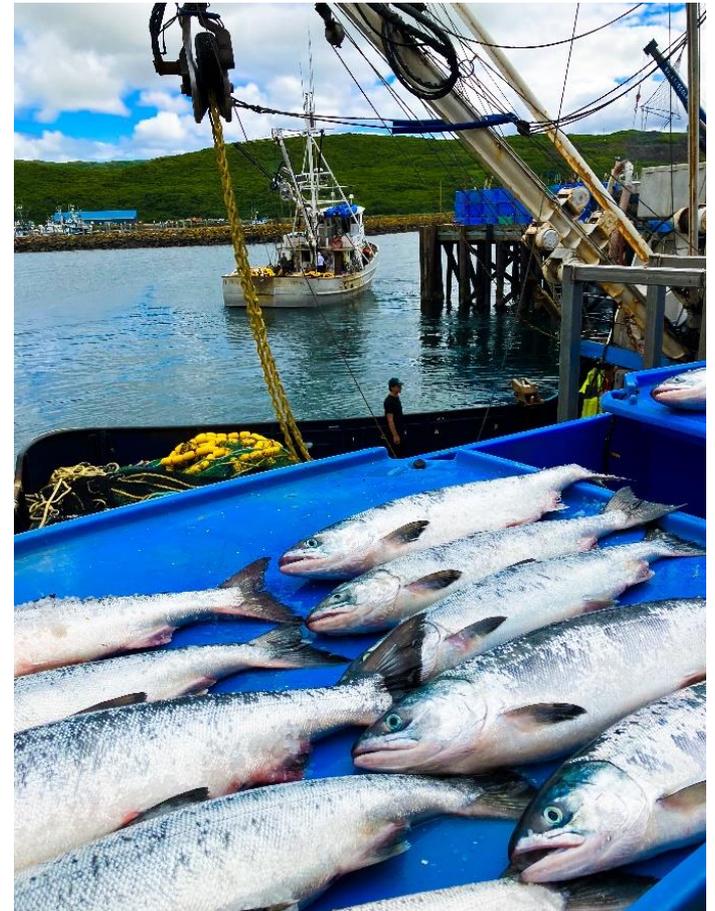
M. Birch Foster

Oral Report: RC #3; Tab #8



Overview

- Background
- Historical Fishery and Research
- Objectives
- Study Design
- Sampling Areas
- Sample Determination
- Sample Collection
- Results



Background

- South Alaska Peninsula chum salmon harvest unusually high in 2021 (~1.16 million fish)
- Recent chum salmon returns to AYK (Arctic-Yukon-Kuskokwim) have been poor
 - 2021 record low run
 - 2022 second lowest run
- WASSIP (Western Alaska Salmon Stock ID program)
 - 2007 – 2009 for chum salmon

Historical Fishery and Research

- South Alaska Peninsula commercial fisheries date back to 1908.
- Long history of studies to determine chum salmon stock of origin
 - Tagging studies: 1923, 1939, 1950s–60s, 1983, 1987.
 - Genetics: 1993–1997, 2007–2009 (WASSIP).
 - Showed high abundance of non-local chum in June and early July.



IKATAOV 1917

Objectives

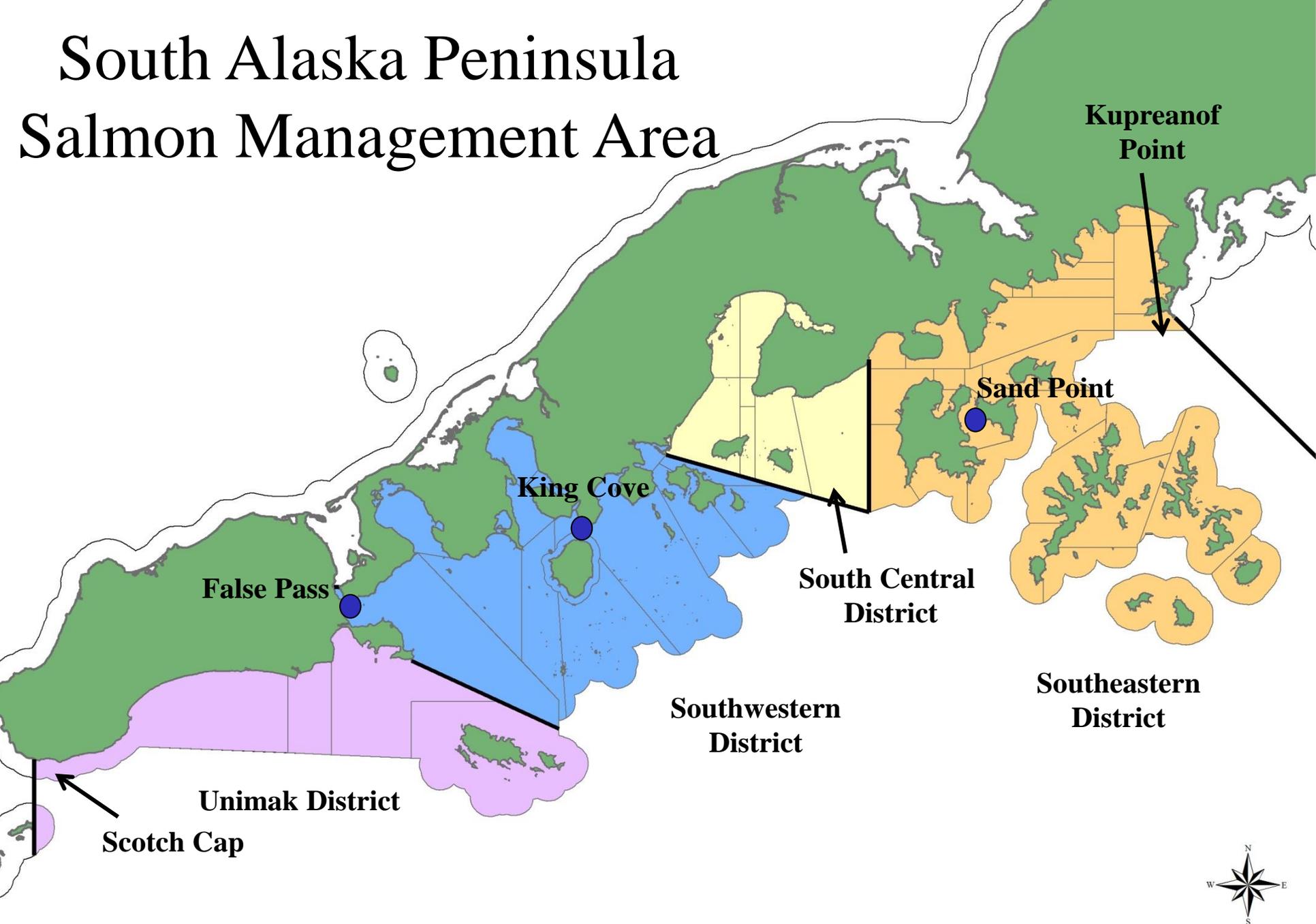
- The primary objectives of this study were to sample, genotype, and estimate the stock composition and stock specific harvest of the chum salmon commercial fisheries of the South Alaska Peninsula in 2022.



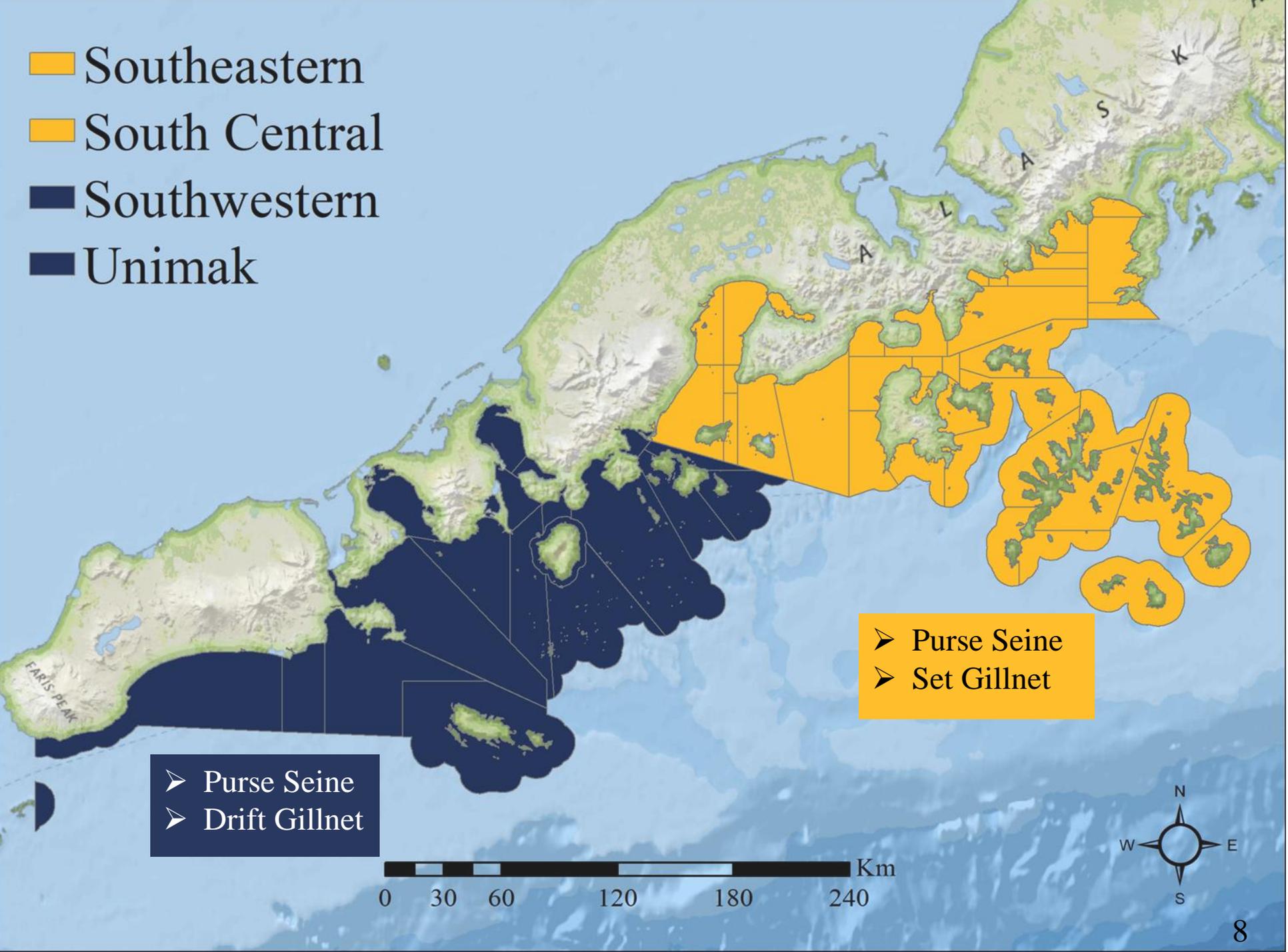
Study Design

- Geographic Sampling Areas (2)
 - Unimak and Southwestern Districts
 - Southeastern and South Central Districts
- Sampling at 3 Ports:
 - Sand Point, King Cove, and False Pass
- Separate Gear Types (2)
 - Seine, Gillnet (drift and set)
- Analyze a representative 380 samples per spatio-temporal strata
 - Seine: 9 temporal strata
 - Drift Gillnet: 8 temporal strata
 - Set Gillnet: 5 temporal strata

South Alaska Peninsula Salmon Management Area



-  Southeastern
-  South Central
-  Southwestern
-  Unimak



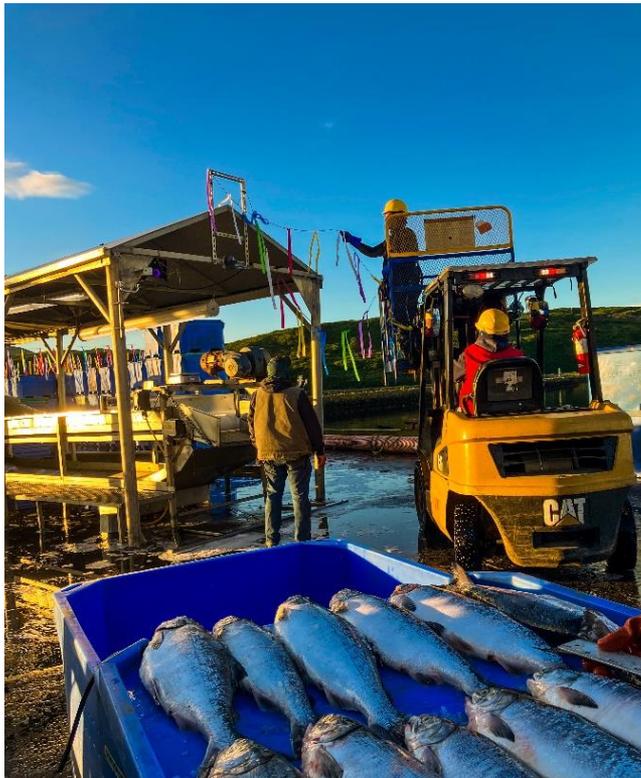
-  ➤ Purse Seine
-  ➤ Set Gillnet

-  ➤ Purse Seine
-  ➤ Drift Gillnet



Sample Determination

- Coordinate with processors to locate delivery
- Stat areas and gear types confirmed
- Harvest date(s) and sampling date recorded



Sample Collection

- Pelvic fin (genetics)
- Scales (age)
- Length (mm)



Sample Collection

- Pelvic fin collected from left side of fish
 - Placed on numbered grid paper
 - Fin clips desiccated



Sample collection

- Pelvic fin (genetics)
- Scales (age)
- Length (mm)



Results

- Collected 14,869 samples
Tissues, scales, length
- Length (METF):
 - Range: 396 to 720 mm
 - Mean: 554 mm
- Age Composition :
 - Age-0.3 (63.9%)
 - Age-0.4 (29.4%)
 - Age-0.2 (6.3%)
 - Age-0.5 (0.5%)

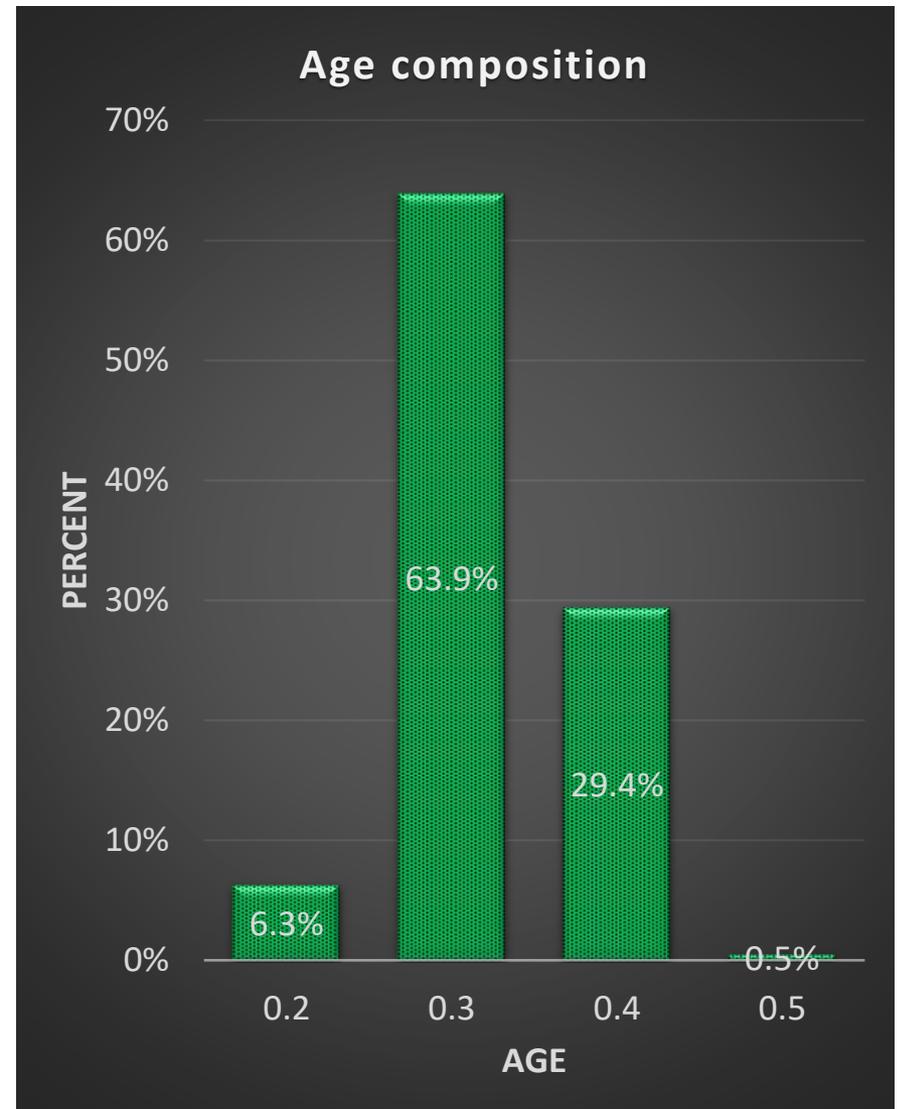


Table 7

June Fishery

7,738 samples

Unimak/SW

SE/SC

Seine

Drift Gillnet

Seine

Set Gillnet

June Seine 1

June Gillnet 1

June Seine 1

June Gillnet 1

June Seine 2

June Gillnet 2

June Seine 2
40 hrs

June Seine 3

June Gillnet 3

June Seine 3
40 hrs

June Seine 4

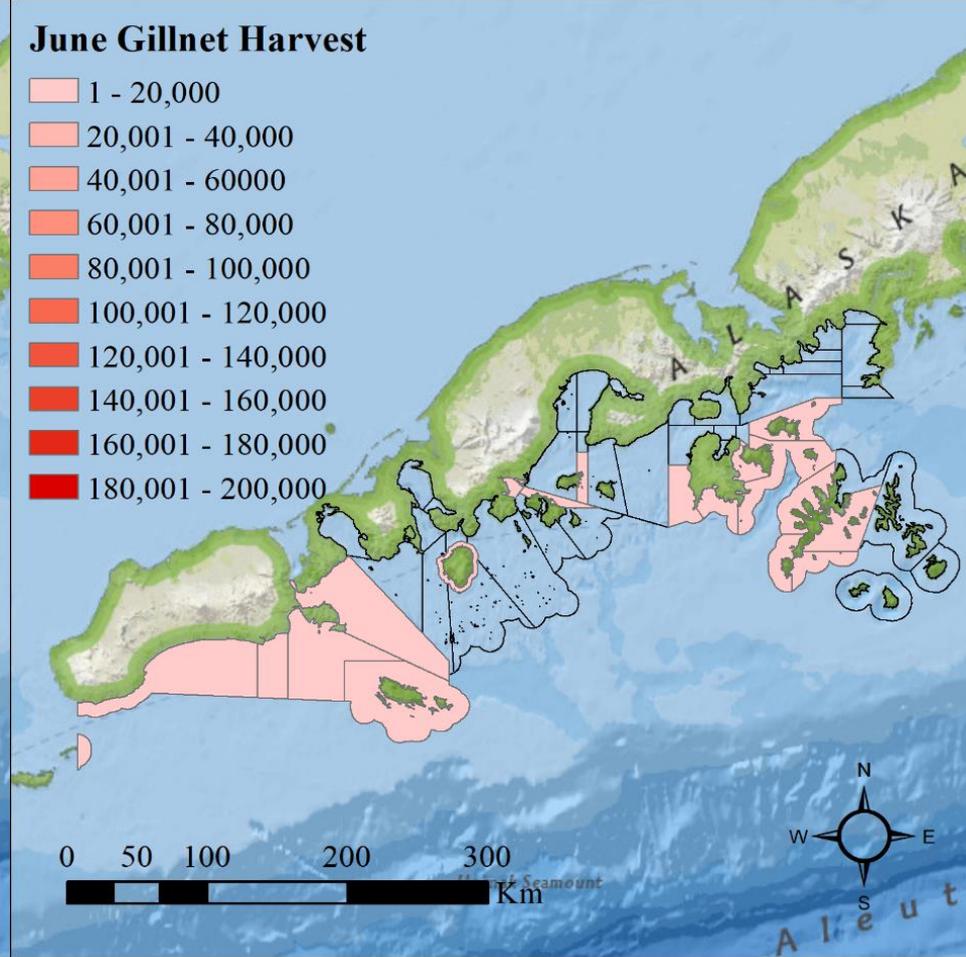
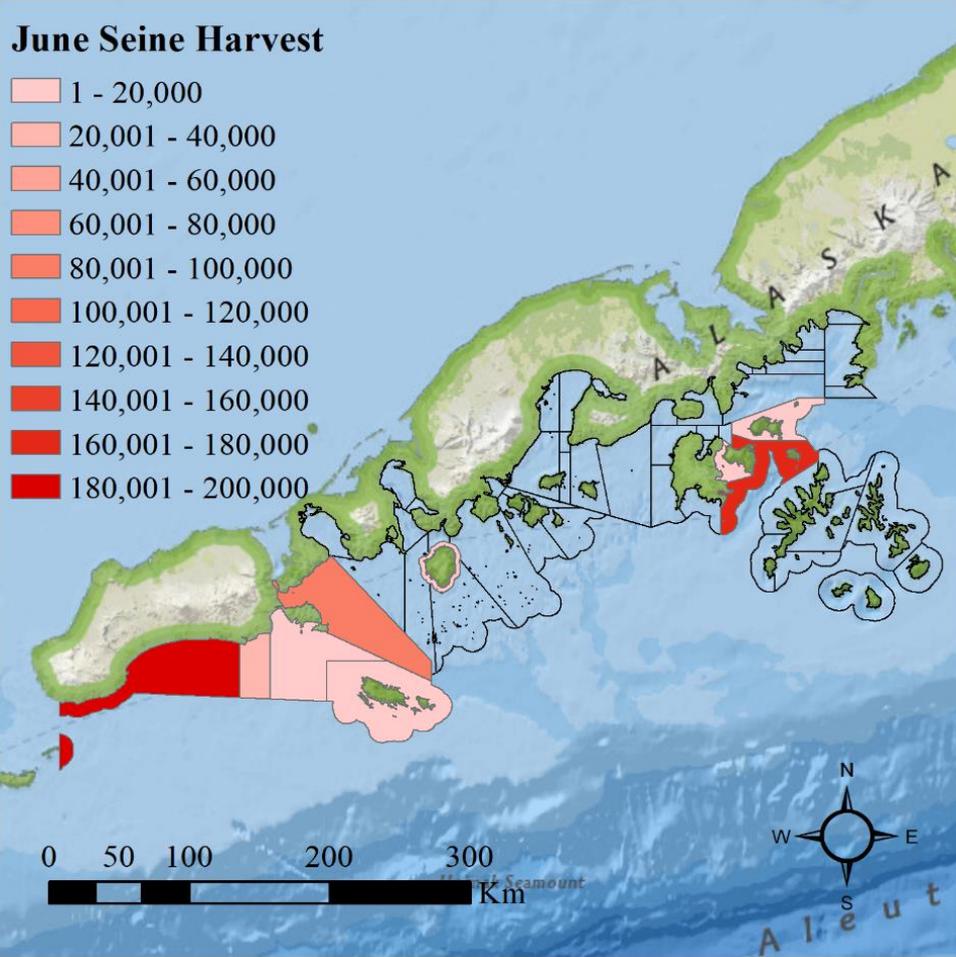
June Gillnet 4

June Seine 4
40 hrs

Reduced

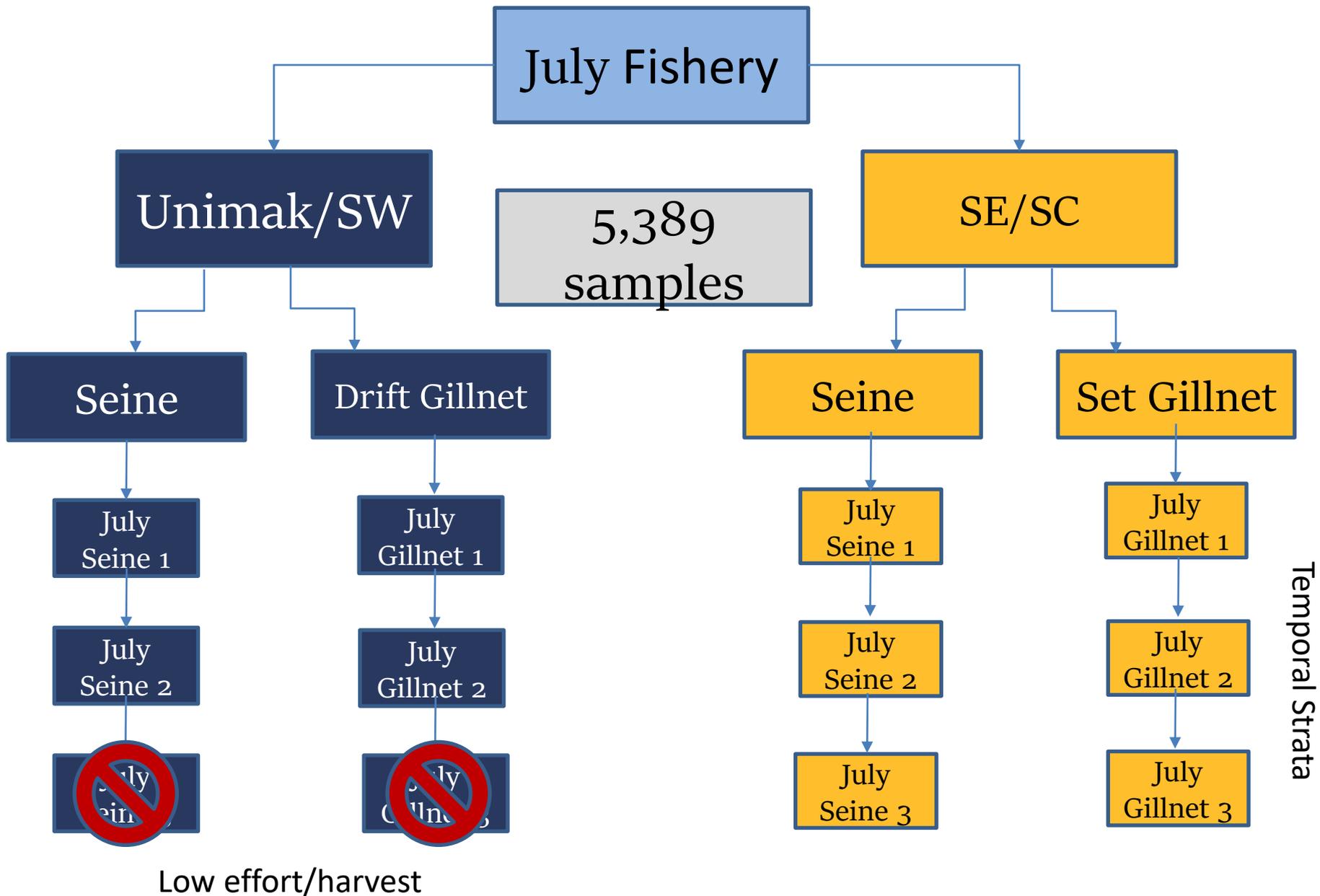
Temporal Strata

Summary of Harvests among Areas and Gear Types

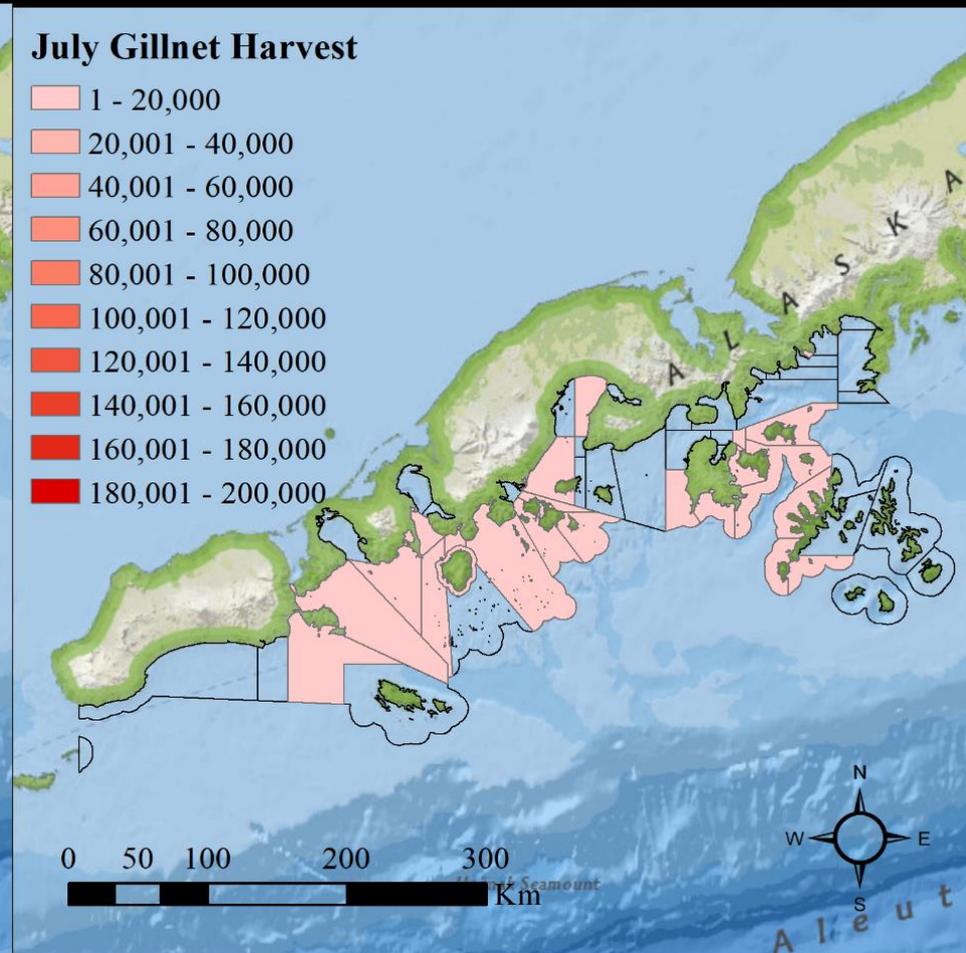
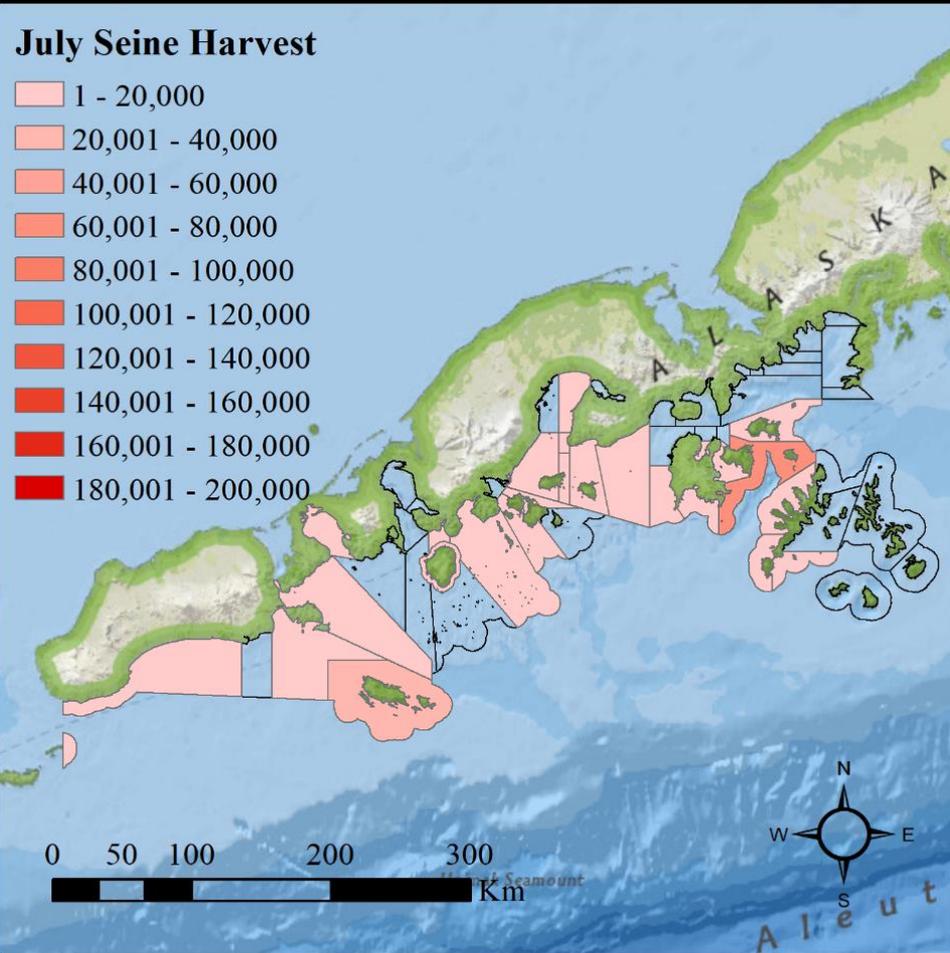


489,157 chum harvest

54,980 chum harvest

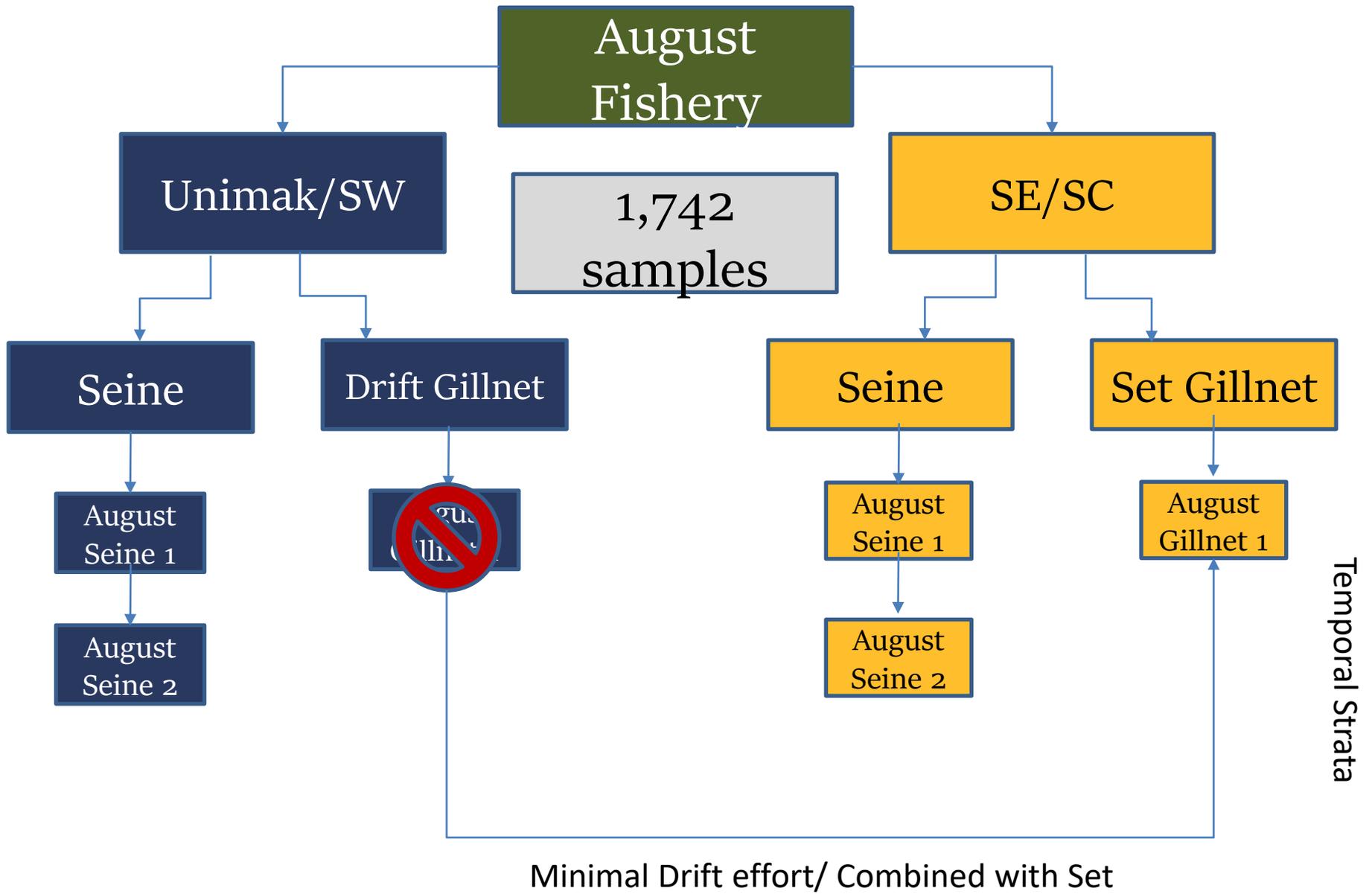


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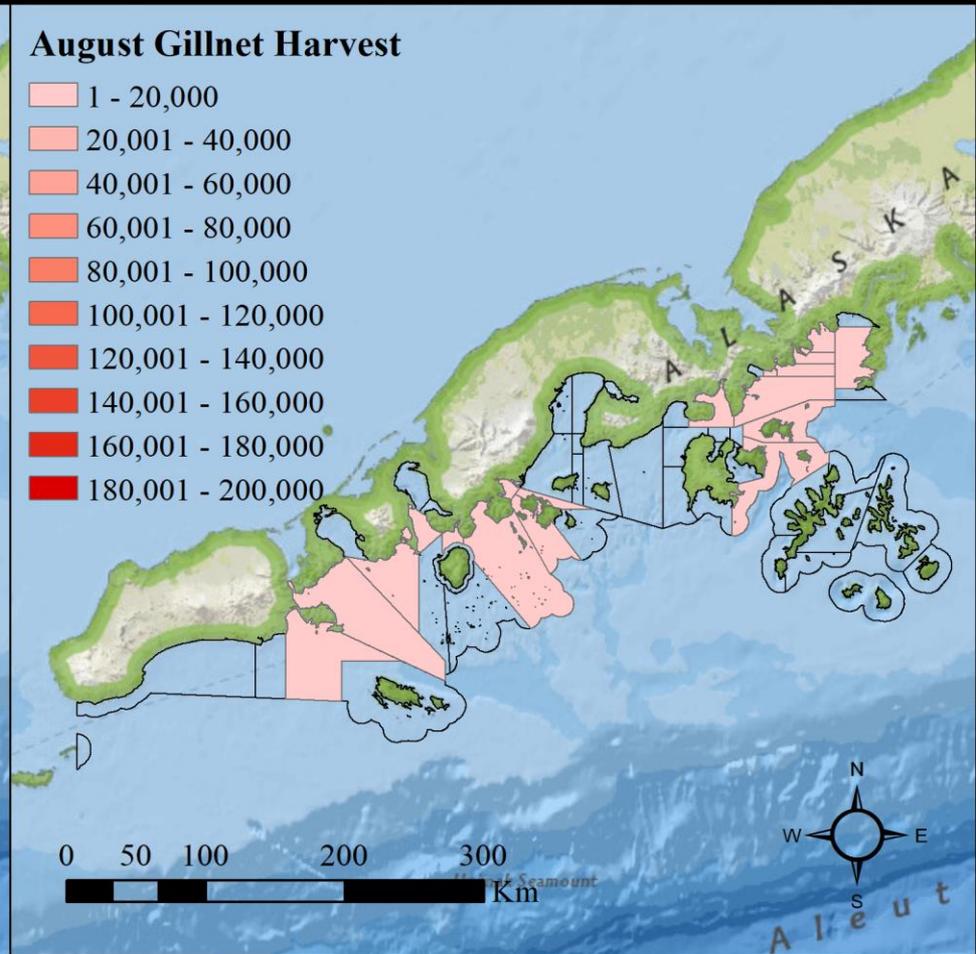
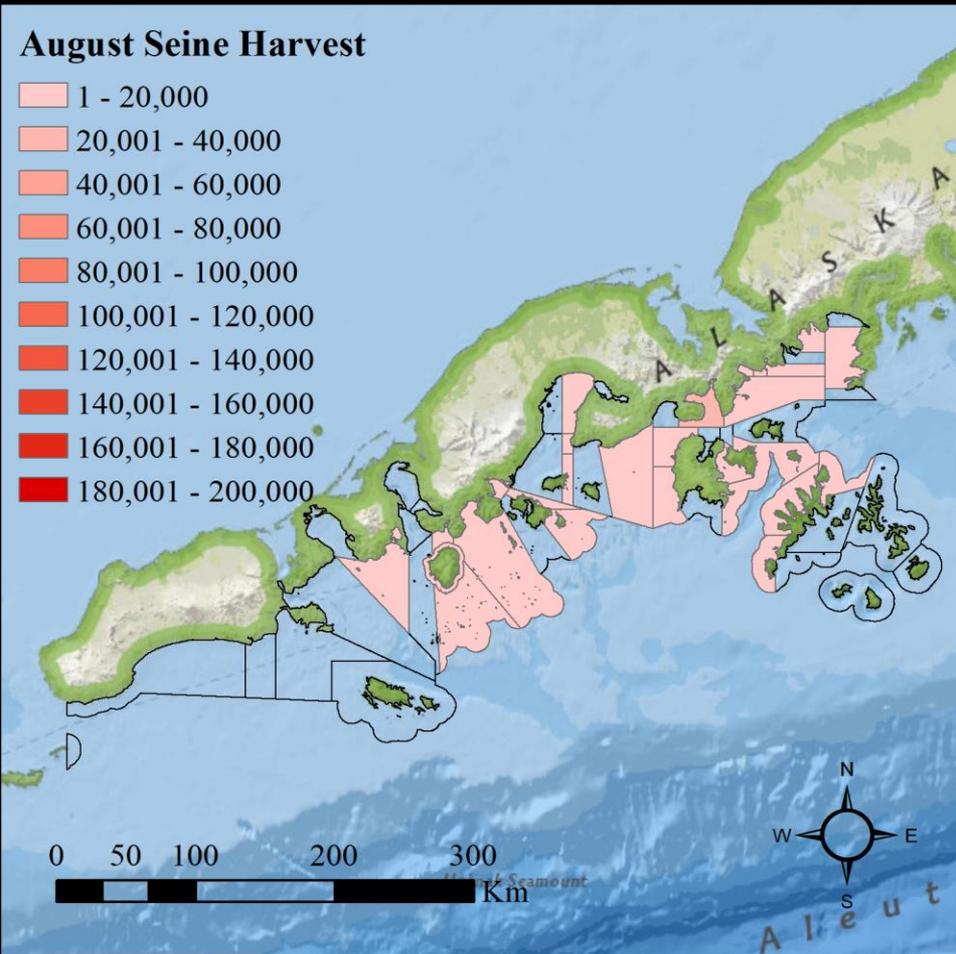


168,818 chum harvest

19,953 chum harvest



Summary of Harvests among Areas and Gear Types



74,323 chum harvest

7,048 chum harvest

Acknowledgements

- ADF&G Peninsula Management Staff
- Catch Samplers: Molly McFarland, Mekia Bushell, Brooke Harvey, Daryl Lee, Chip Schoff, Kyle Wondra & Kalynn Workman
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