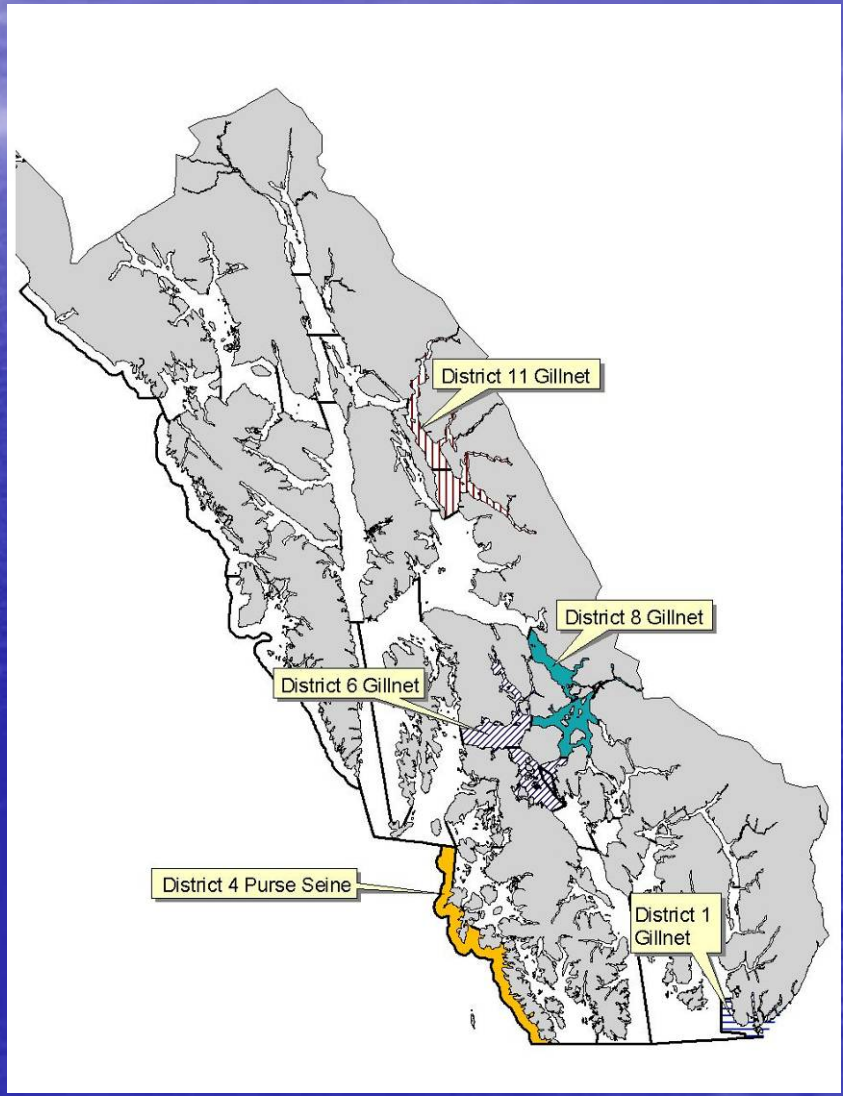
Summary of Transboundary and Northern Boundary Commercial Salmon Fisheries in Southeast Alaska and Potential Management Applications of GSI Technology

Alaska Department of Fish and Game

Scott Kelley/Regional Supervisor/Commercial Fisheries Division
Chris Habicht/Geneticist/Commercial Fisheries Division

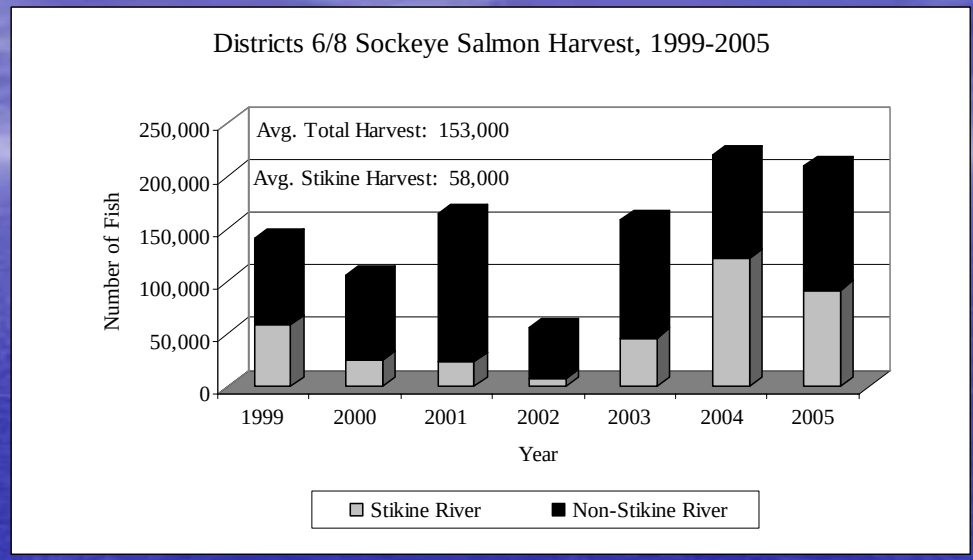
PST Net Fisheries In Southeast Alaska

- Transboundary Rivers: Annex IV, Chapter 1
- ✓ District 6, District 8, and District 11 driftnet, Alsek setnet (Chinook, sockeye, and coho salmon)
- Northern Boundary: Annex IV, Chapter 2
- ✓ District 4 purse seine and District 1 driftnet (sockeye salmon)



District 6/8 Drift Gillnet, Sockeye Salmon

- Harvest share of 50% of Stikine River sockeye Total Allowable Catch (TAC), no major issues
- Stikine (Tahltan Lake and mainstem) spawning escapements mixed results
- SPA, otolith (enhanced fish), and inriver egg diameter long standing stock ID methods
- Inseason abundance determined from test fish CPUE modeling and otolith data

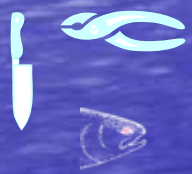


District 106 and 108 Stock ID

Inseason

Sample otoliths; 4 areas, 2-300/area, 10 weeks

Dissect otoliths, ship to Juneau



Prepare and read otoliths:
Inseason – 100/area/week
Postseason 2-3 months

Postseason

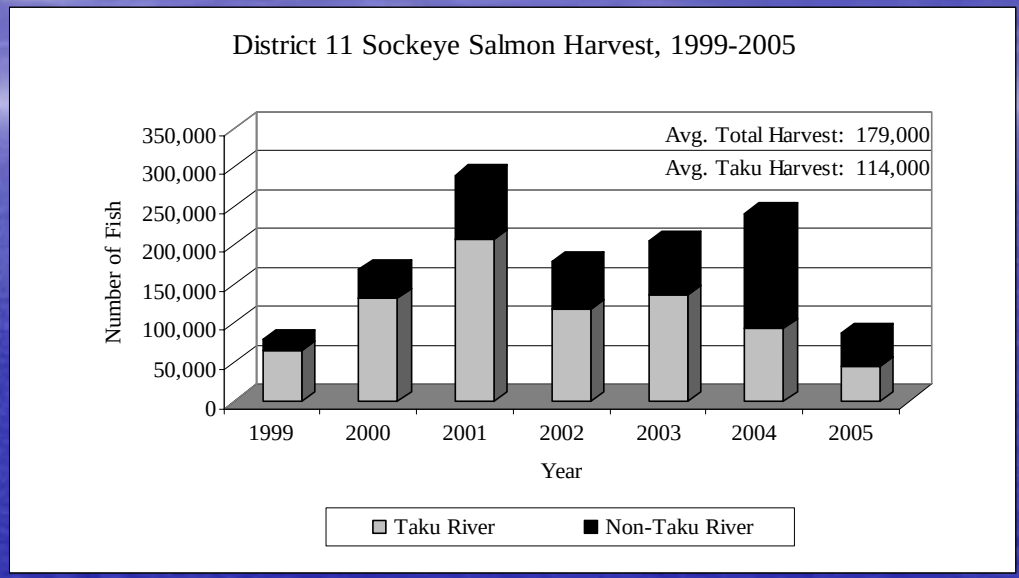
Sample scales: 3 areas, 600/area

Ship samples to Juneau

Age and digitize scales 3 areas
300/area/week 10 weeks
6-8 months

District 11 Drift Gillnet, Sockeye Salmon

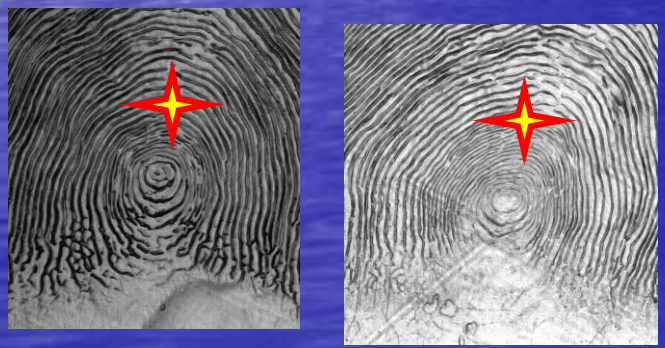
- Harvest share of 82% of Taku River wild sockeye TAC, no major issues
- Taku River sockeye escapement objectives consistently achieved
- SPA, otolith (enhanced fish), and brain parasite long standing stock ID methods
- Excellent inseason stock assessment capability



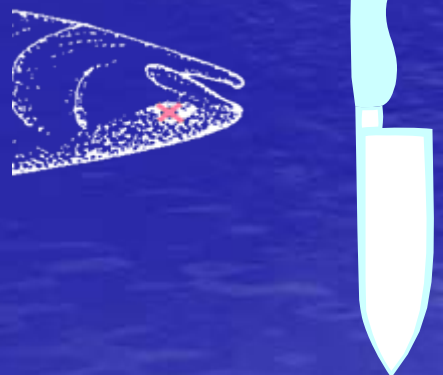
District 111 – all samples matched

Otoliths: Inseason, 2 areas, 400/week/area, 10 weeks

Scales: Postseason, 300/week, 10 weeks
Wild fish only
6 months

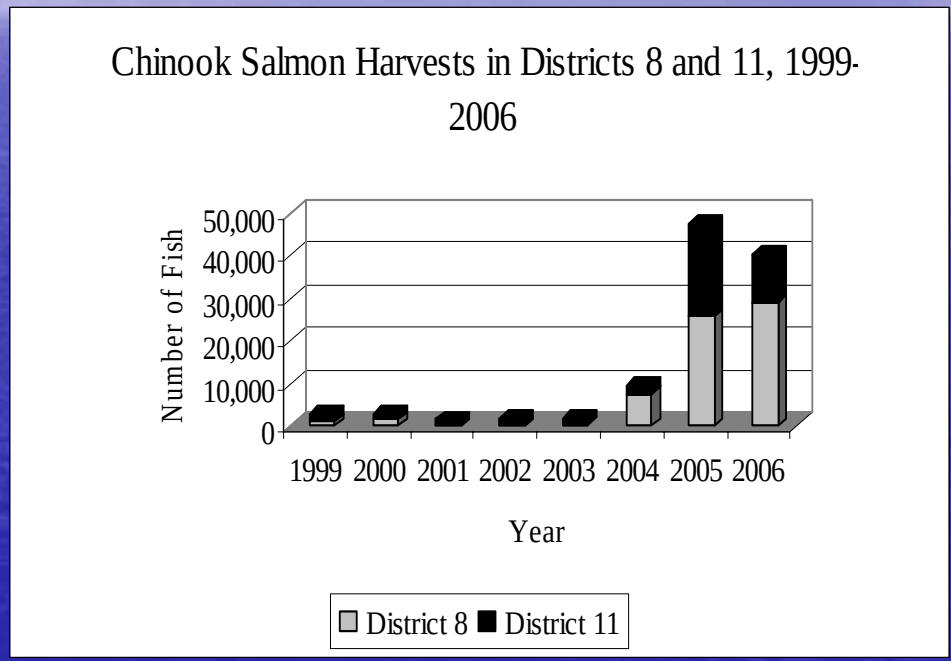


Brain Parasites, 2 areas, 1-400/week/area, 10 weeks
Wild fish only
6 months



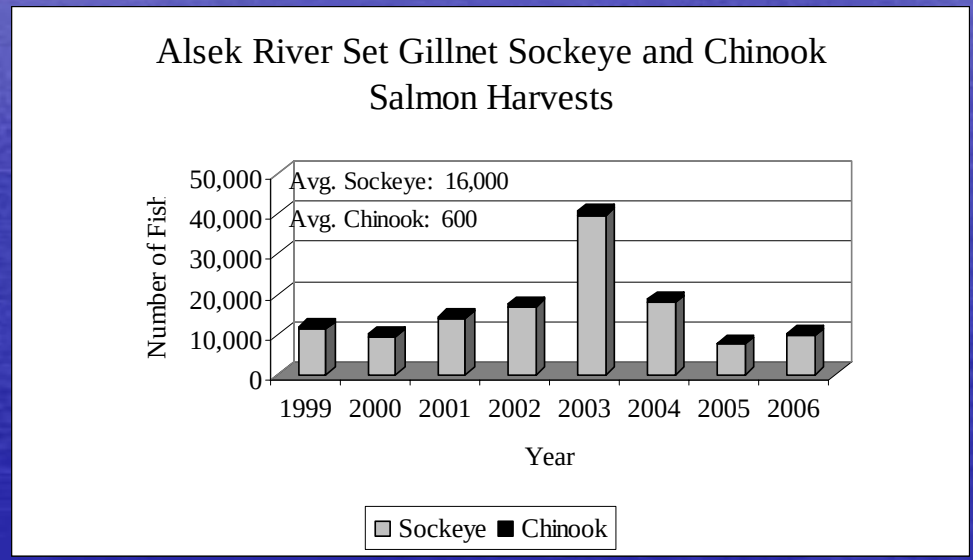
Districts 8 and 11 Drift Gillnet, Chinook Salmon (Stikine and Taku)

- Harvest sharing fluctuates depending on run size
- Escapement objectives consistently met for both rivers
- Stock ID method is CWT for both rivers
- Excellent inseason stock assessment capability
- Terminal exclusion from Southeast Alaska all-gear Chinook quota based on stock and area



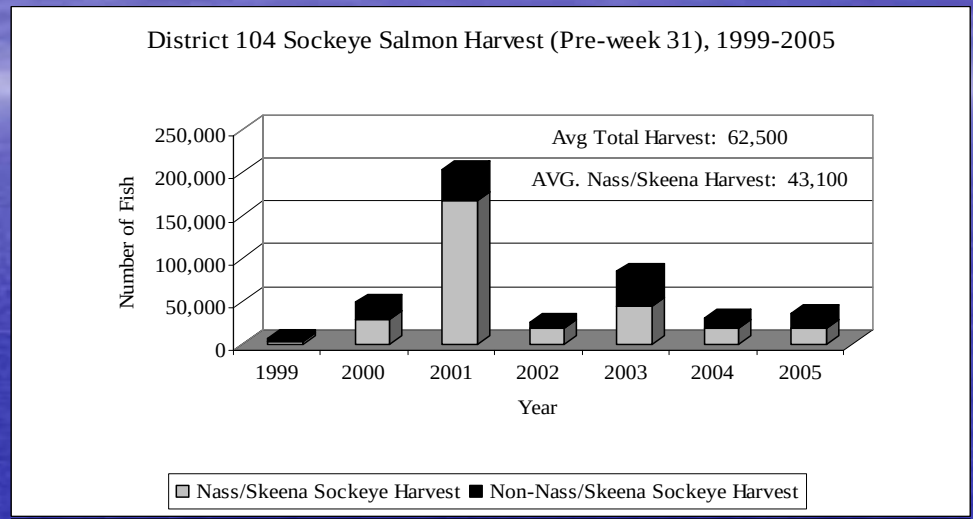
Alsek River Set Gillnet, Sockeye Salmon

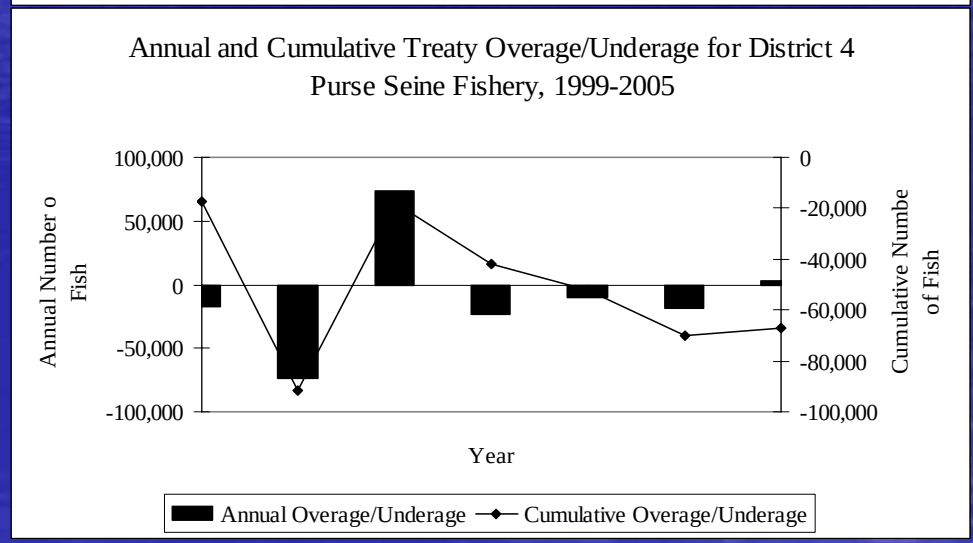
- No formal harvest sharing objectives but commitment to develop ABM programs
- Inseason run strength based on commercial fishery CPUE



District 4 Purse Seine

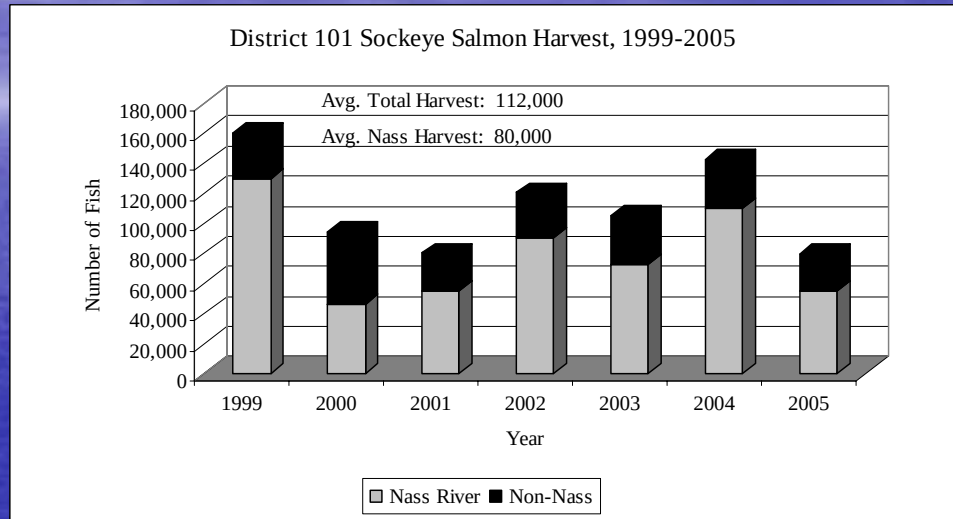
- Harvest share of 2.45% of total Nass/Skeena sockeye Annual Allowable Harvest (AAH) prior to week 31 (third week of July), no major issues
- Scale Pattern Analysis (SPA) long standing stock ID method

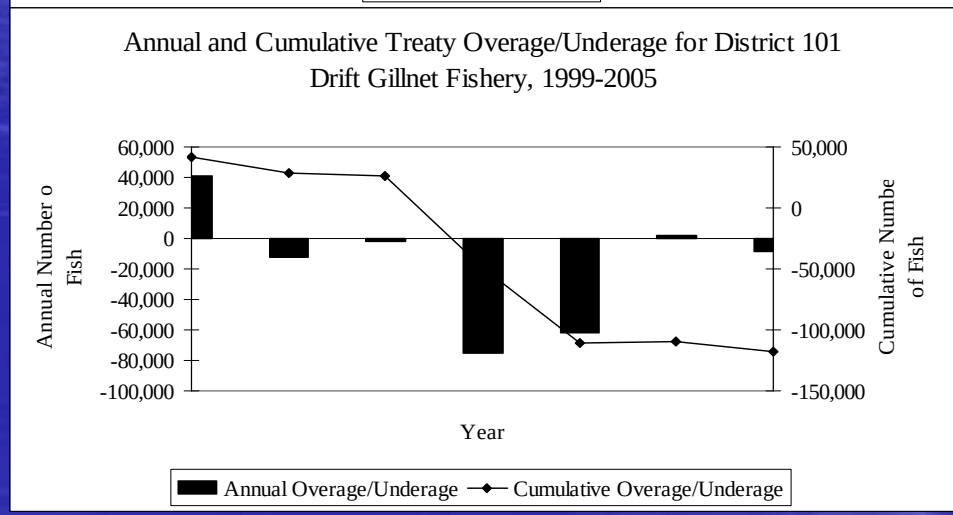




District 1 Drift Gillnet

- Harvest share of 13.8% of Nass River sockeye AAH, no major issues
- Nass River sockeye escapement objectives consistently achieved
- SPA long standing stock ID method





Summary

- In general, management objectives of achieving spawning escapement objectives and Treaty related harvest sharing requirements for TBR and NB fisheries are met.
- Run reconstruction and stock separation methods currently a hodge podge mix of SPA, brain parasite, egg diameter, and otoliths for sockeye salmon. These technologies are probably as advanced as they can get and are labor intensive. SPA and brain parasite provide no opportunities for inseason results.
- GSI may provide significant improvement to current stock separation methods and seemingly has significant room for future growth and improvement as the technology advances.

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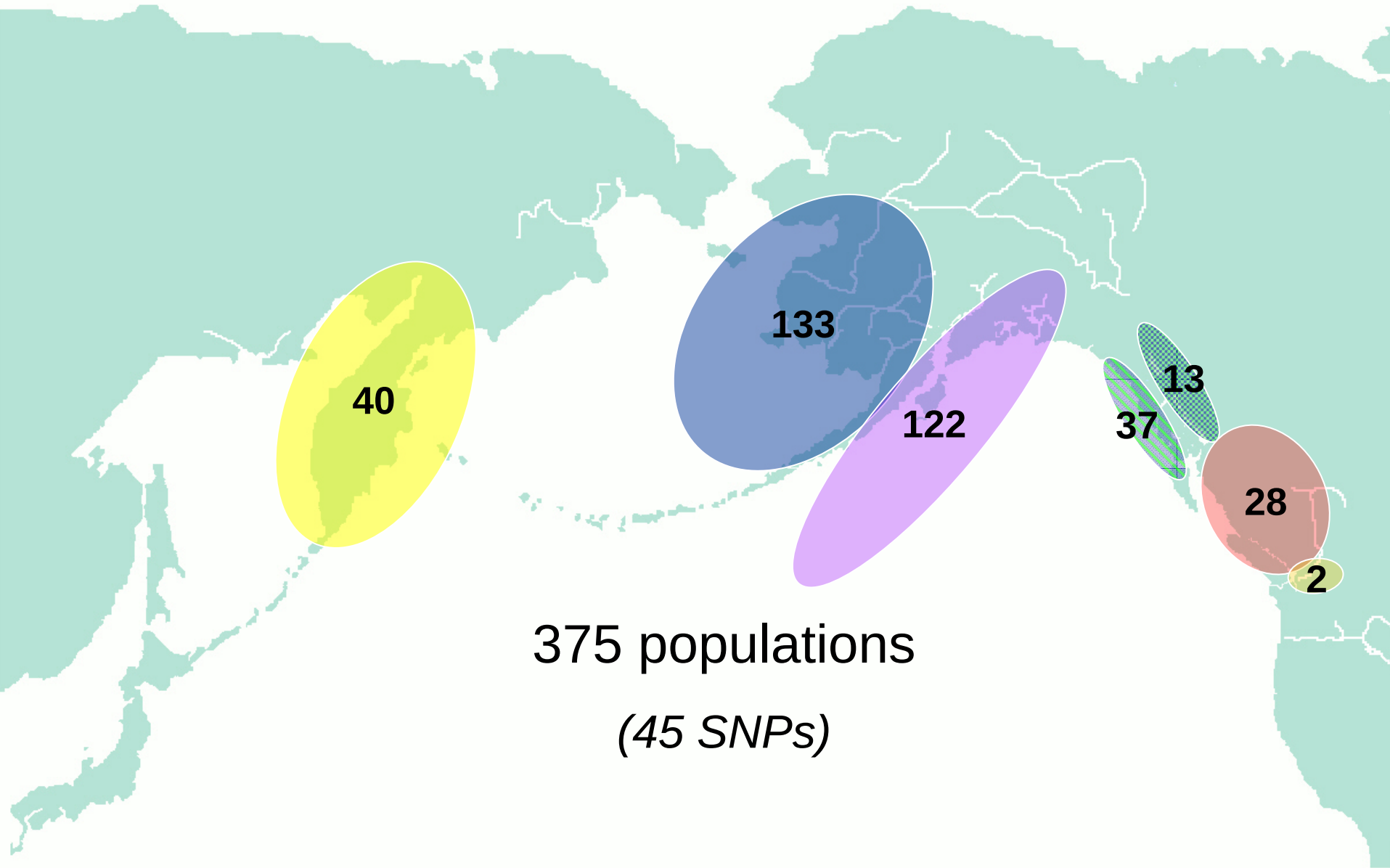
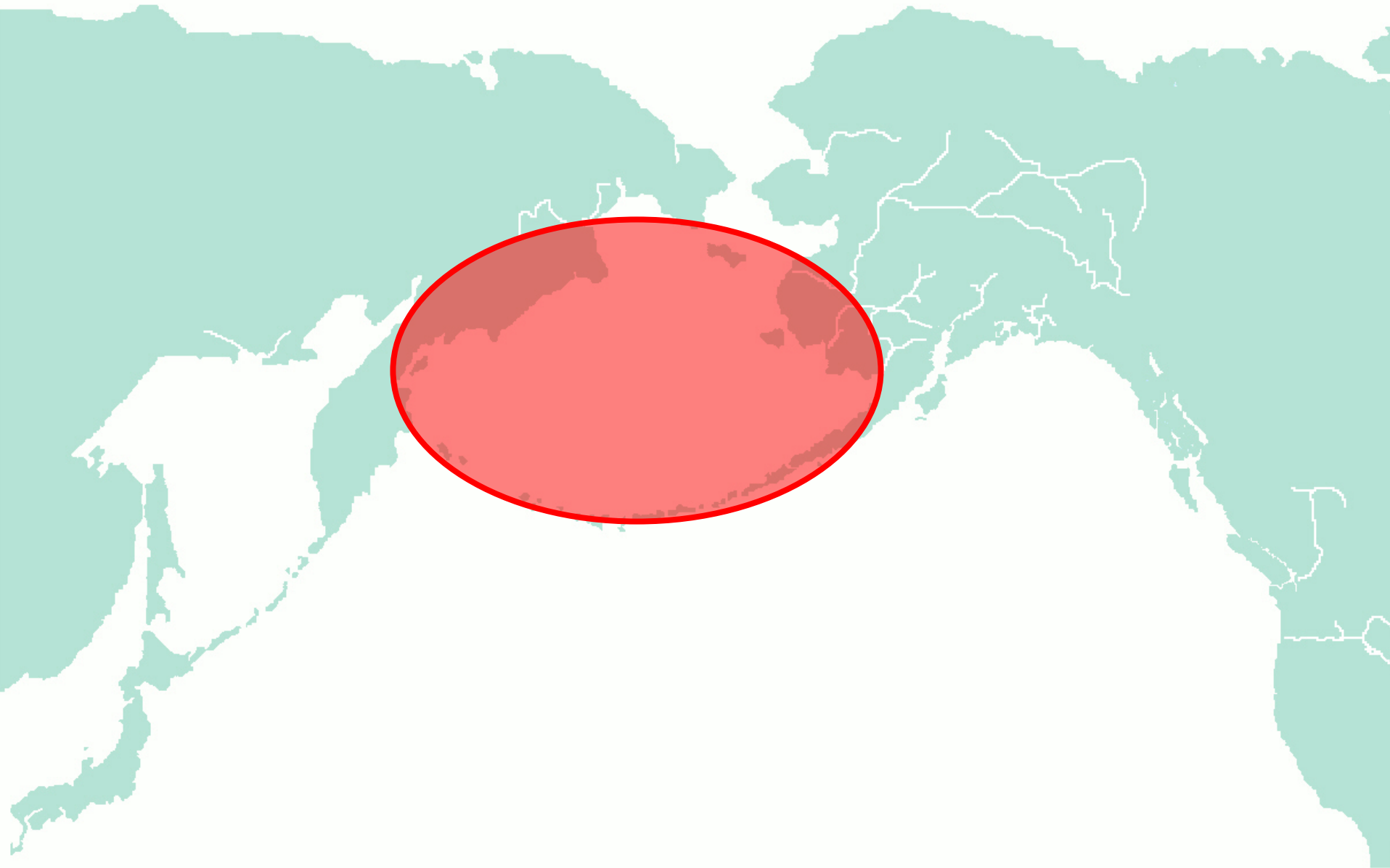
2007 Sockeye SNP Baseline



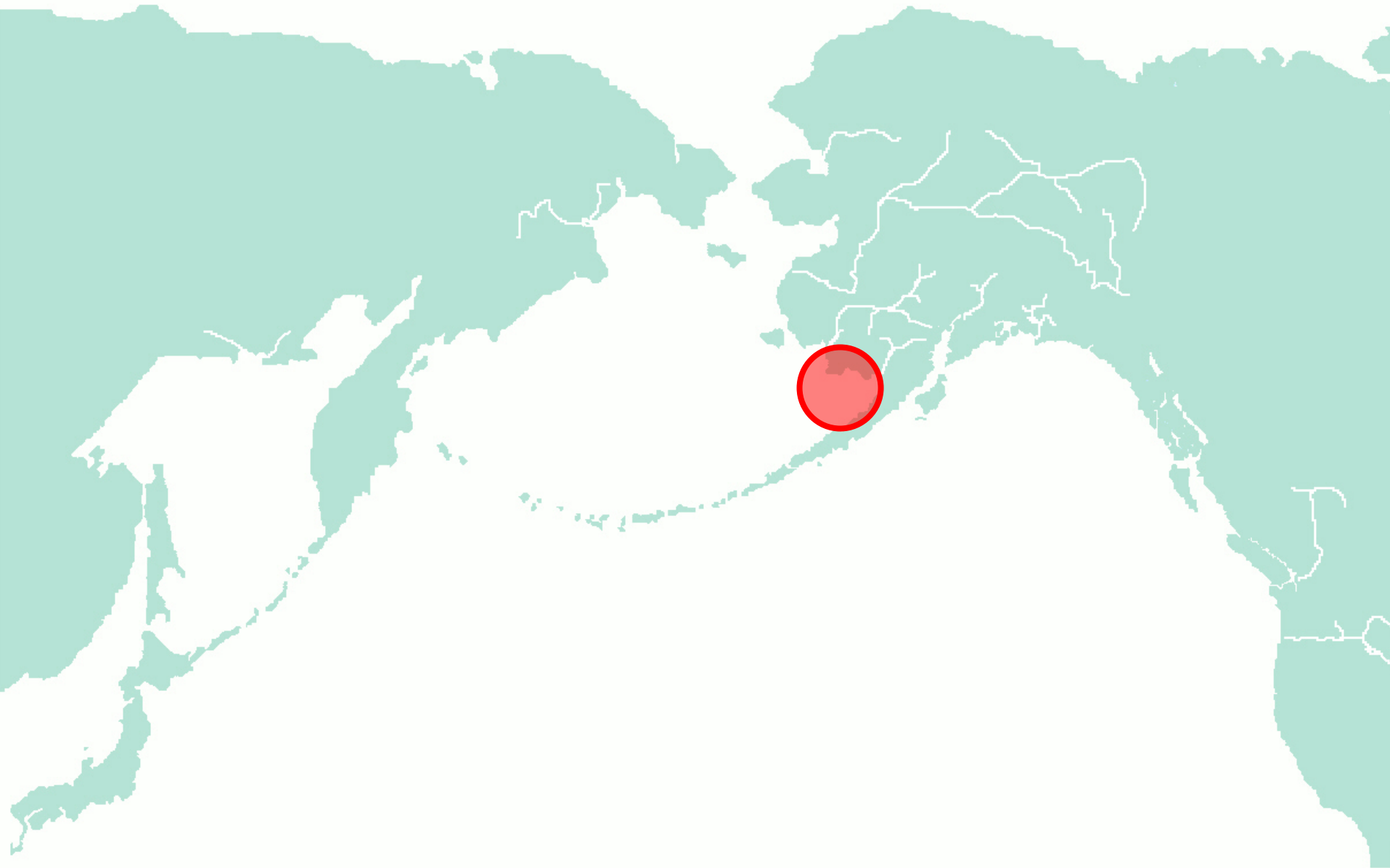
375 populations

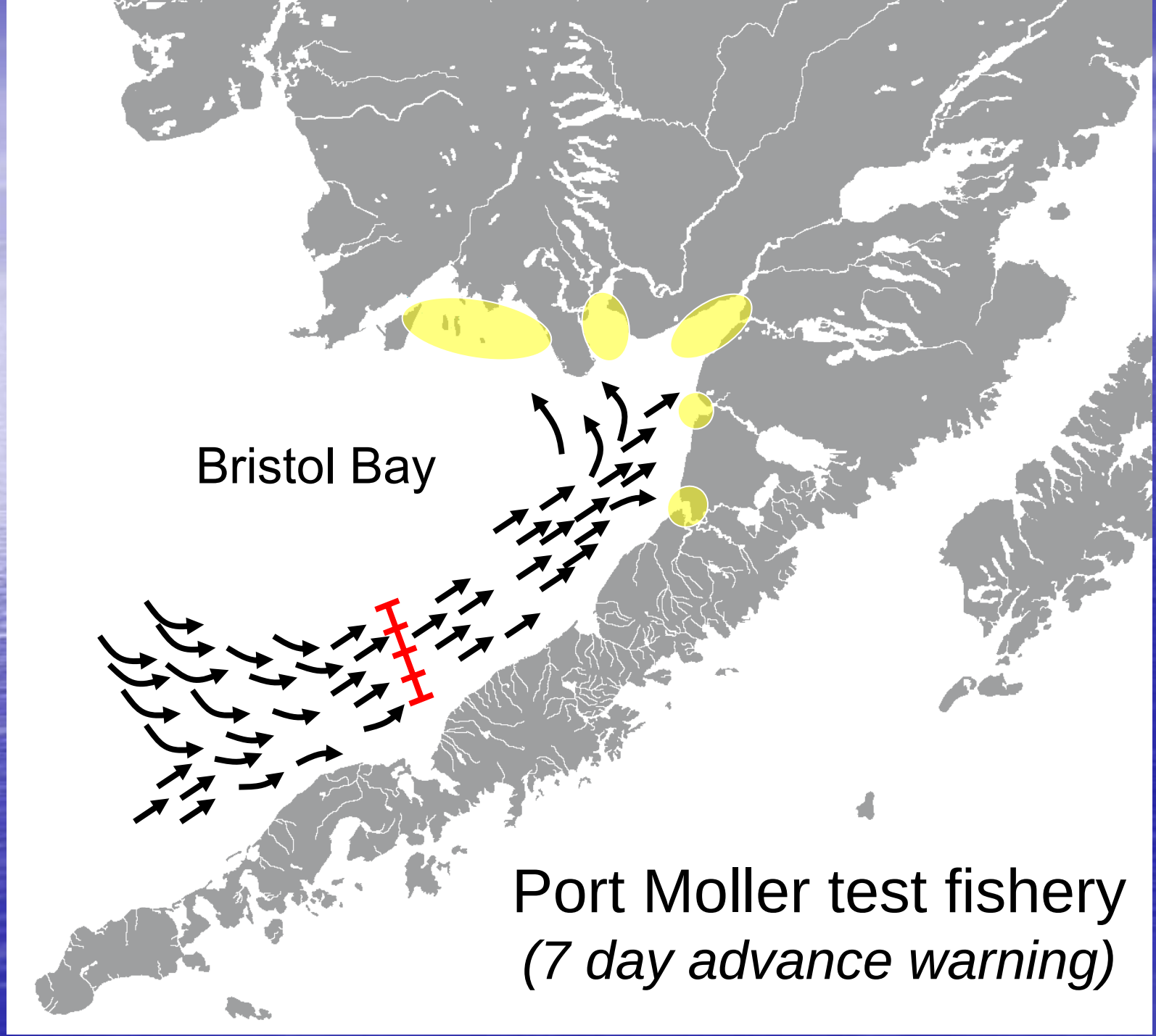
(45 SNPs)

Sockeye salmon program: Bering Sea



Sockeye salmon program: Bristol Bay

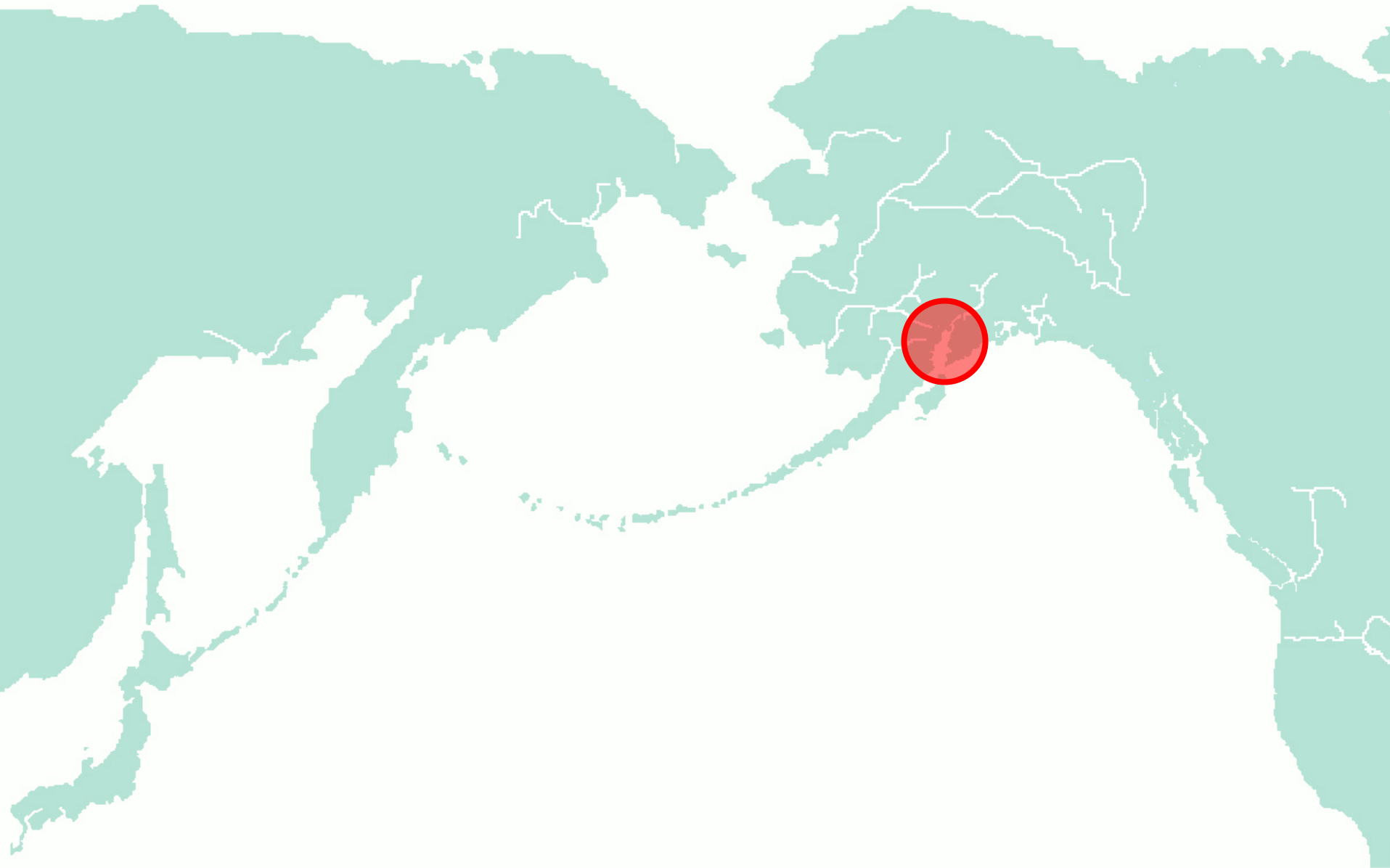




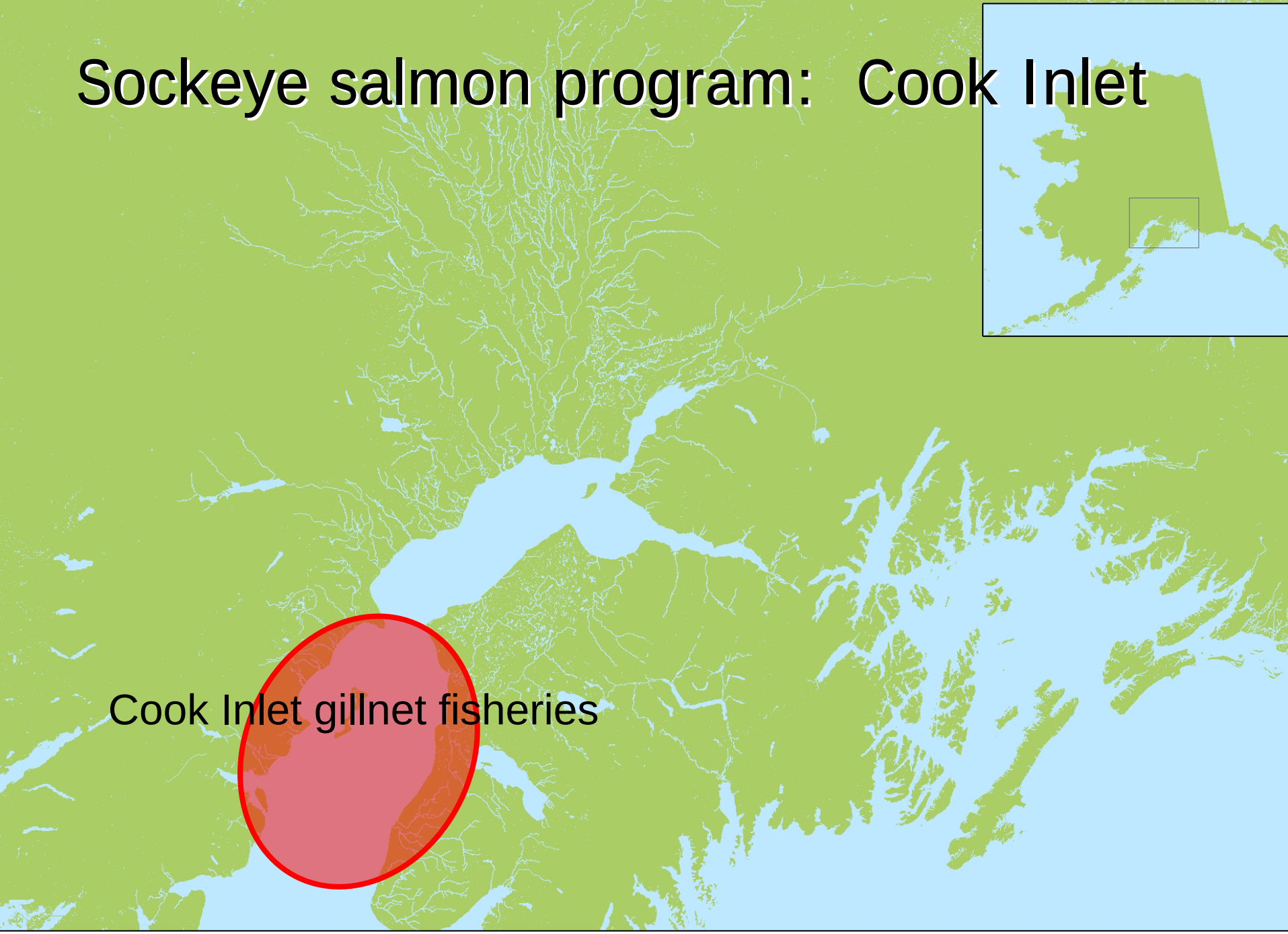
Port Moller test fishery

(7 day advance warning)

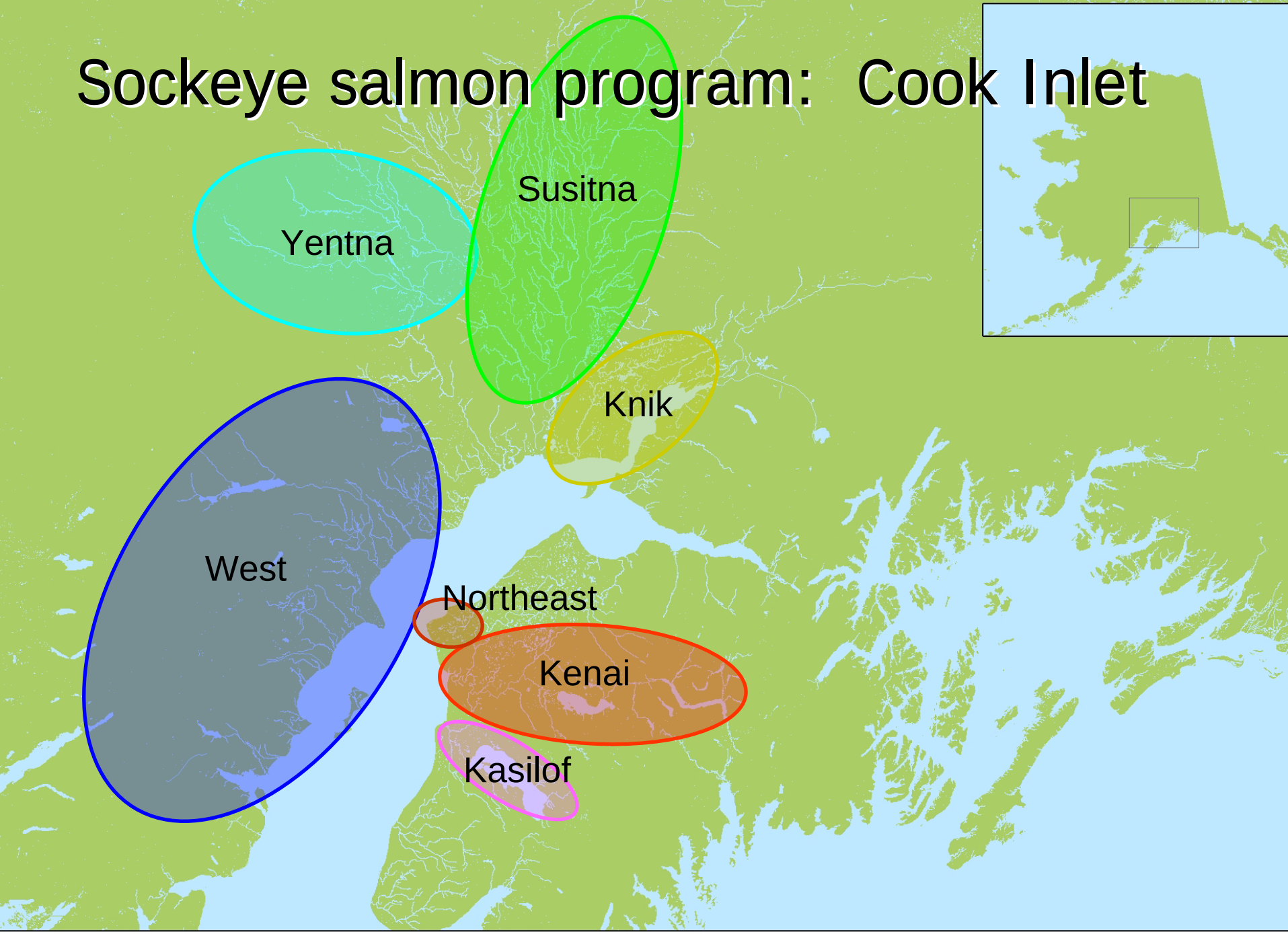
Sockeye salmon program: Cook Inlet



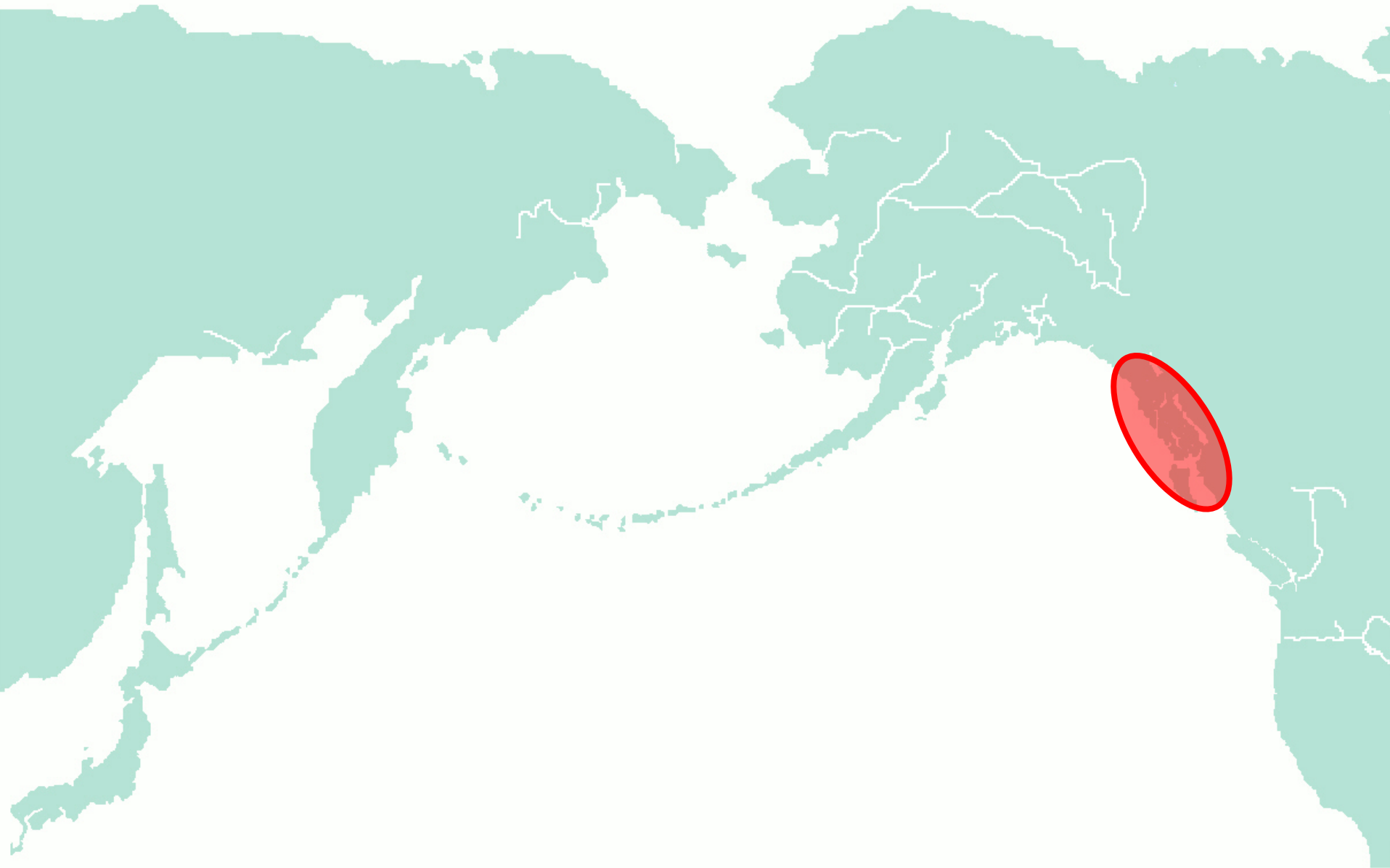
Sockeye salmon program: Cook Inlet



Sockeye salmon program: Cook Inlet



Sockeye salmon program: SEAK/BC



Sockeye salmon program: SEAK/BC

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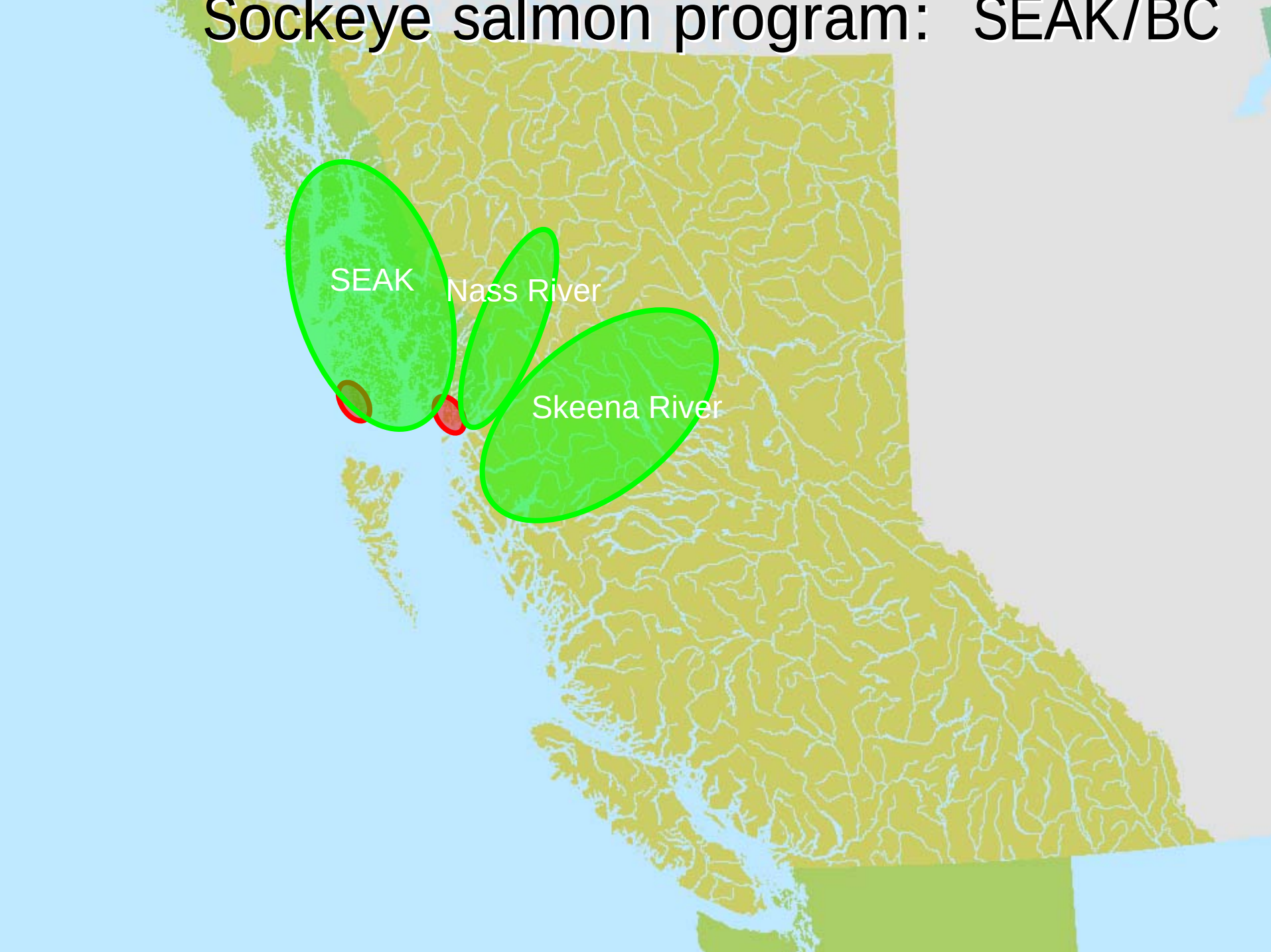

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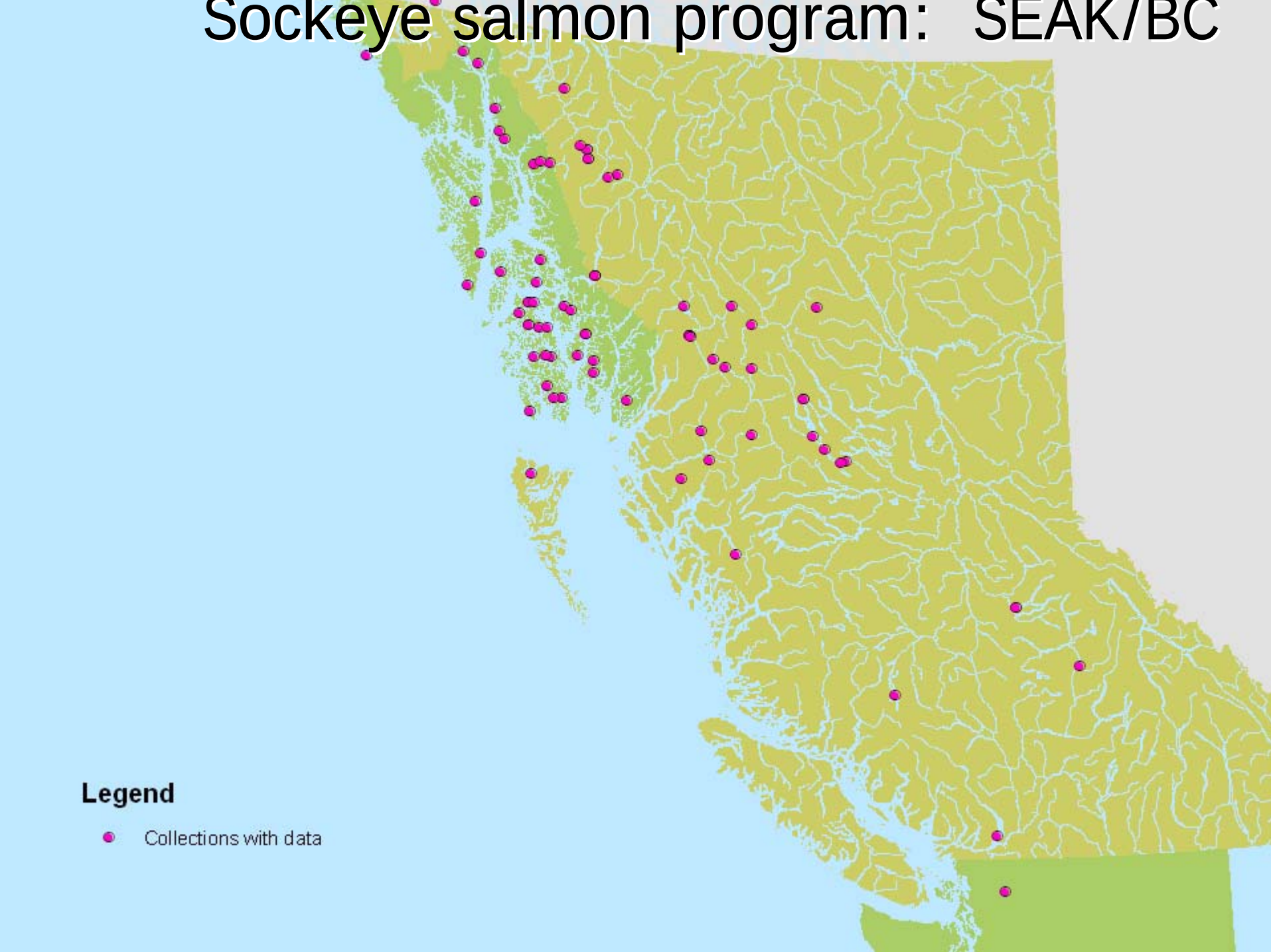
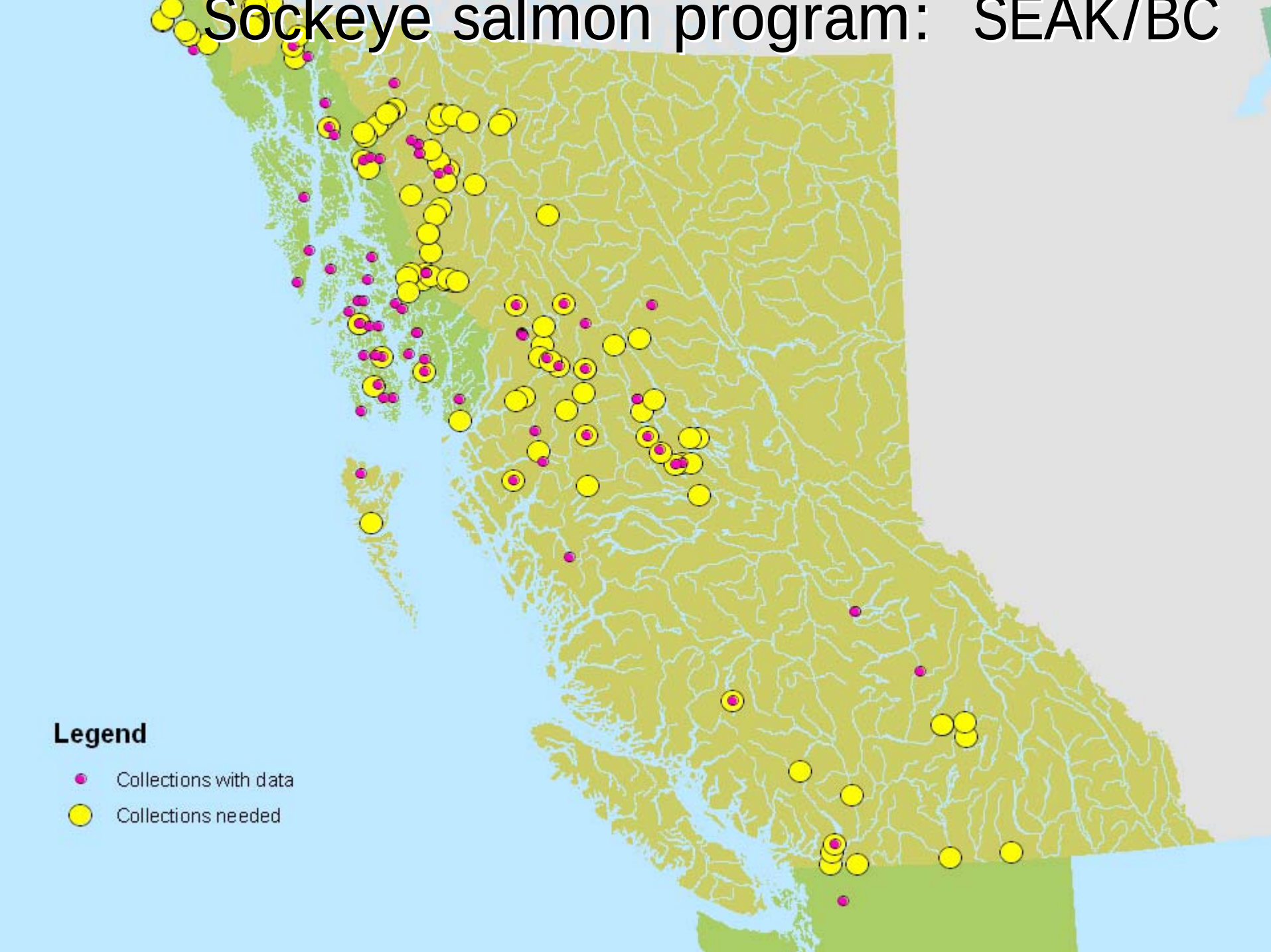
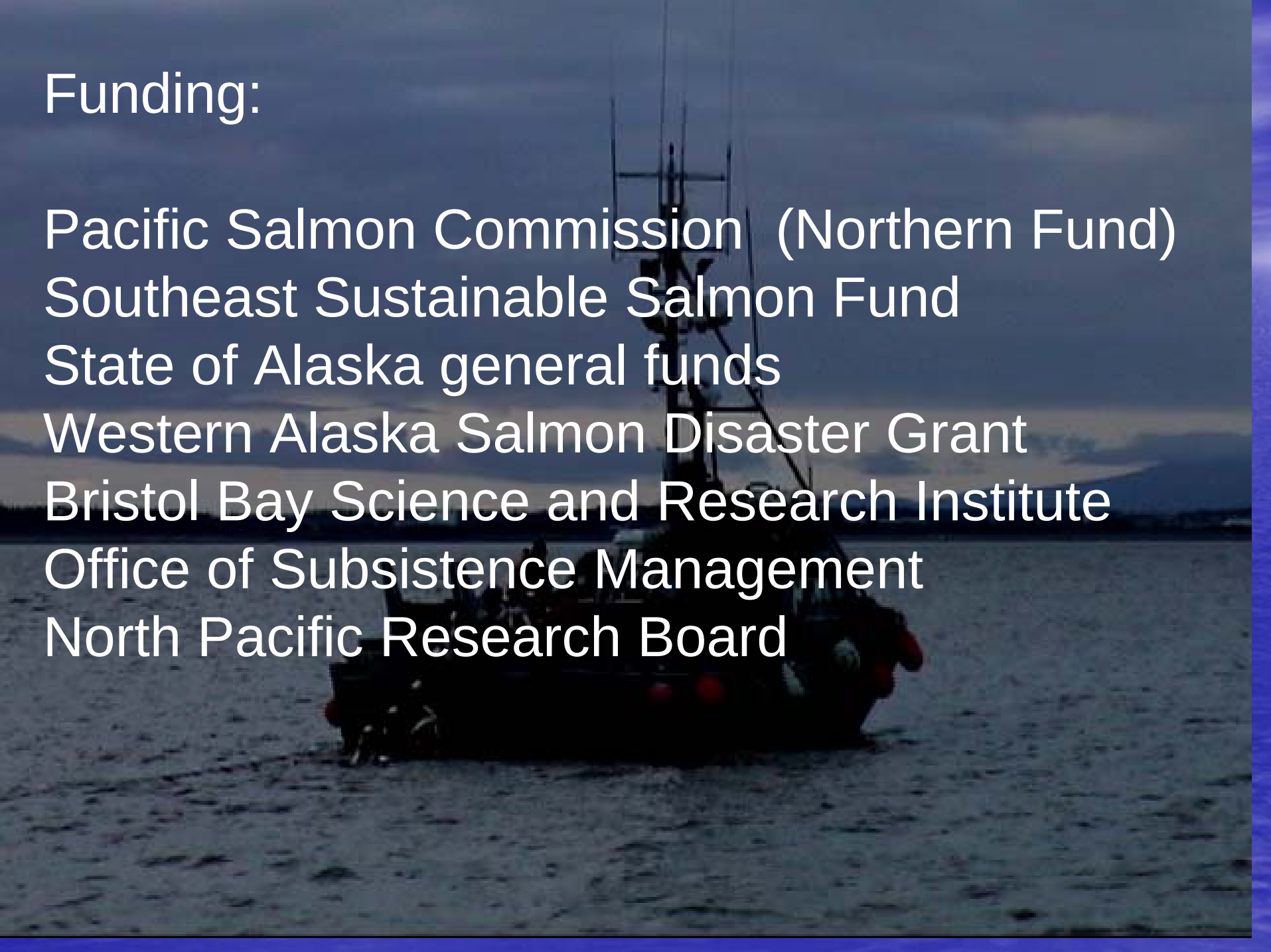


Sockeye salmon program: SEAK/BC





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