

# Aleutian Island Pollock

## SSLMC Proposal #22

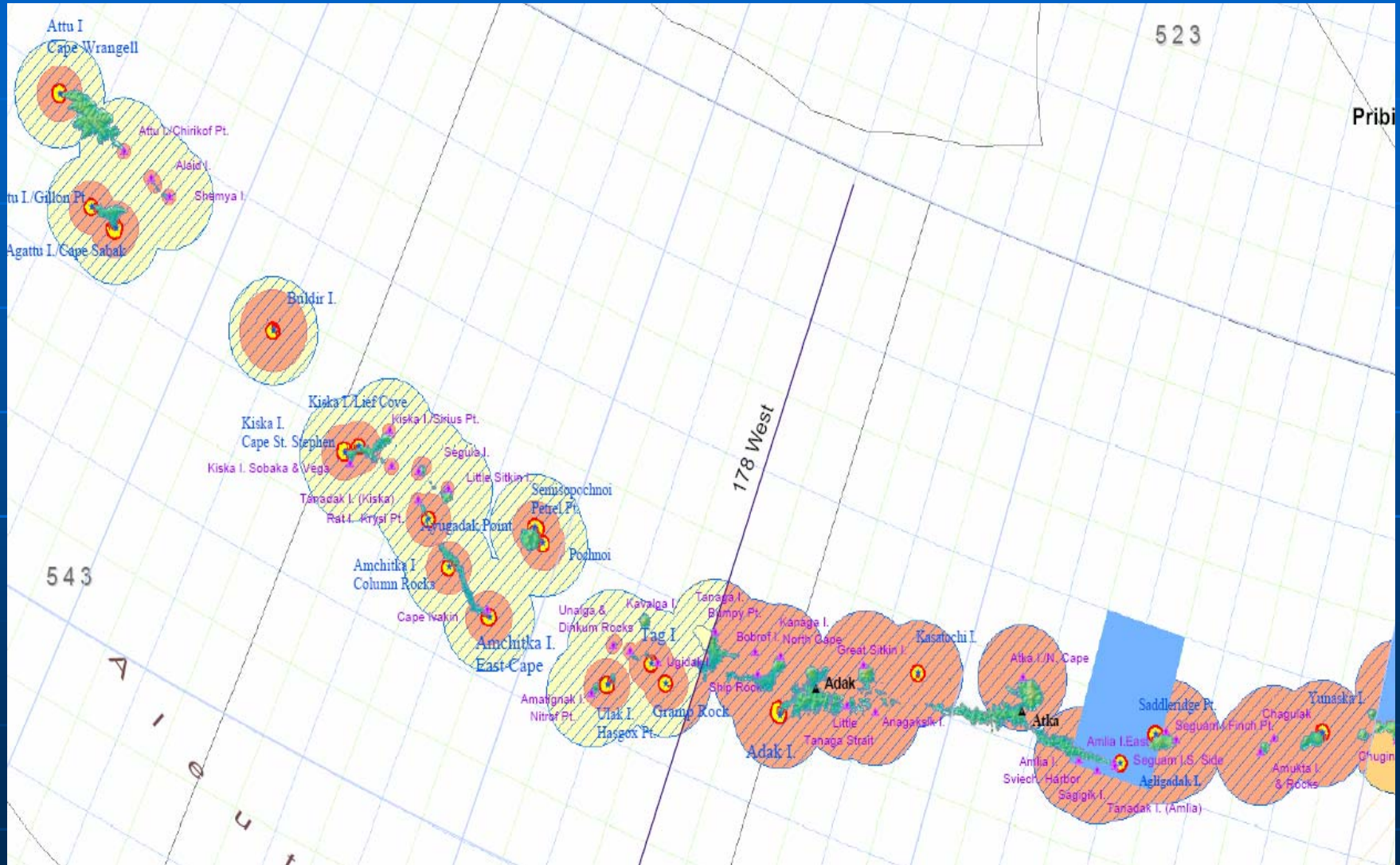
submitted by

Aleut Enterprise LLC and Adak Fisheries

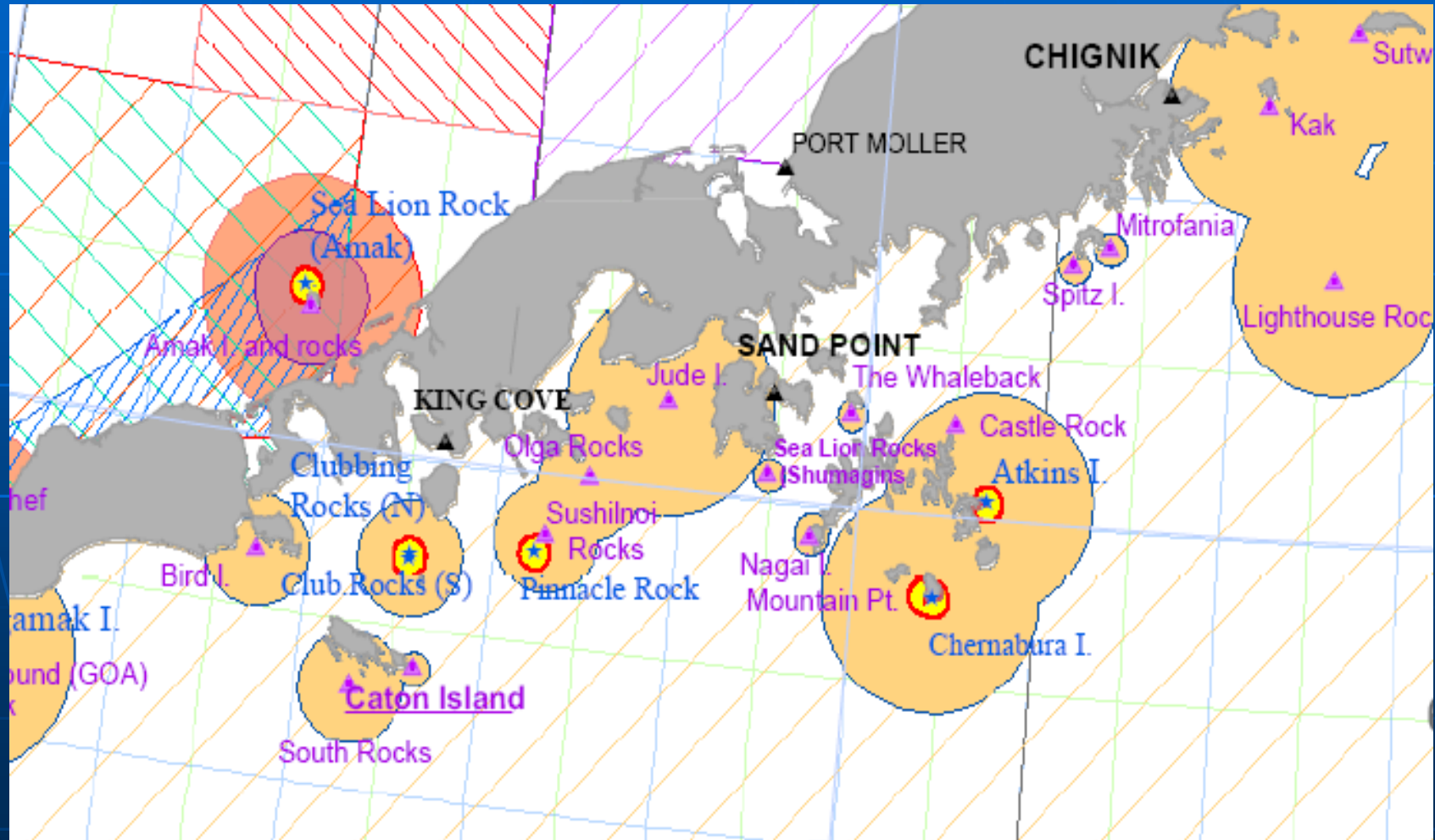
*Part I:*

*Allow Pollock trawling in the AI based on the same area restrictions applying to the AI trawl P. cod fishery.*

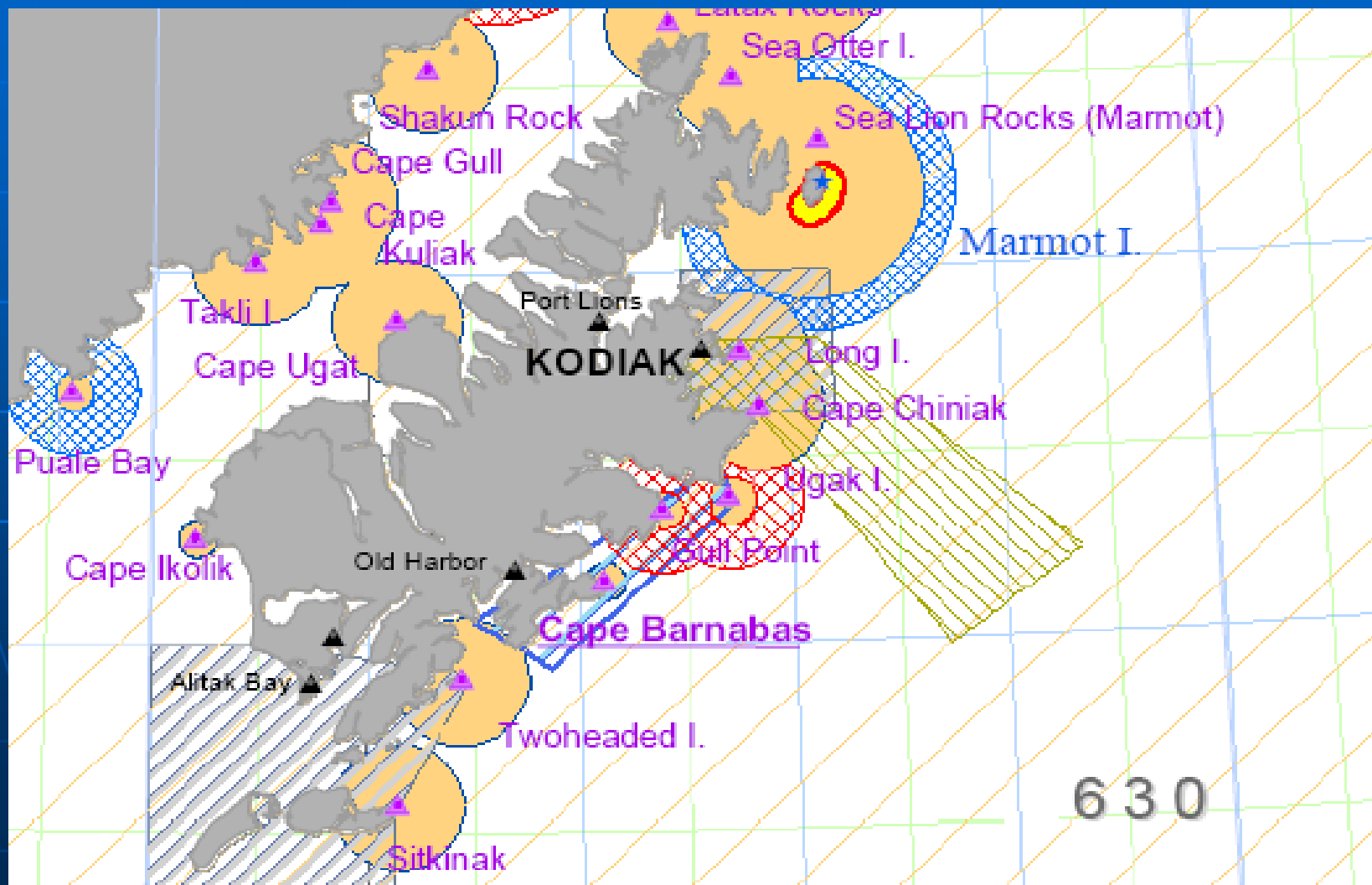
# Status Quo Pollock Closures CAI-WAI



# Compared to: Pollock Closures WGOA



# Compared to: Pollock Closures CGOA



# Proposed Pollock Closures CAI-WAI (same as current P. Cod closures)



# *Comparison of AI to BS and GOA*

## Status Quo Pollock in C/W-AI

100% of CH is closed in the AI

0% of AI Pollock TAC harvested in CH

## Status Quo Pollock in GOA

X% of CH is closed in the GOA

75% of GOA Pollock TAC harvested in CH

## Status Quo Pollock in BS

Y% of CH is closed in the BS

40% to 50% of BS Pollock TAC harvested in CH

# Model Scoring

## Effects of fishing on Fish

Not Applicable

## Effects of Fishing on SSL

Proximity:

Haulouts – WAI 3 of 3 remain closed 0 to 3

CAI 36 of 36 remain closed 0 to 3

Rookeries – WAI 4 of 4 remain closed 0 to 10

CAI 12 of 12 remain closed 0 to 10

Seasons:

A & B

Region:

CAI/WAI

Target Species:

Pollock

Does the model ask the right questions?

If so, does it measure the variables correctly?

The real question:

Will a spatially dispersed pollock fishery in the AI result in Jeopardy or Adverse Modification of SSL Critical Habitat through competition for prey?

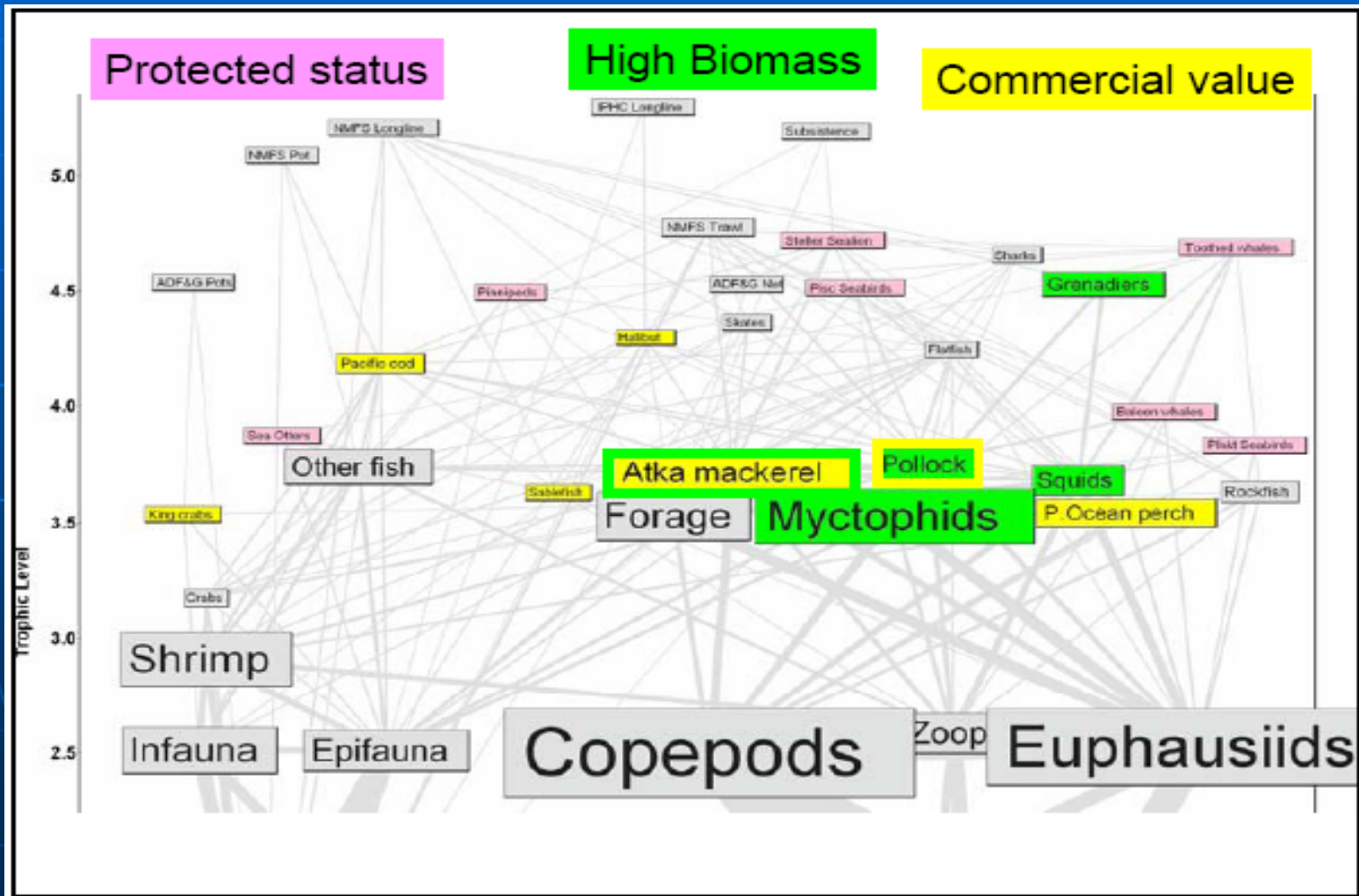


# Competition?

Competition that limits SSL foraging success requires overlap in:

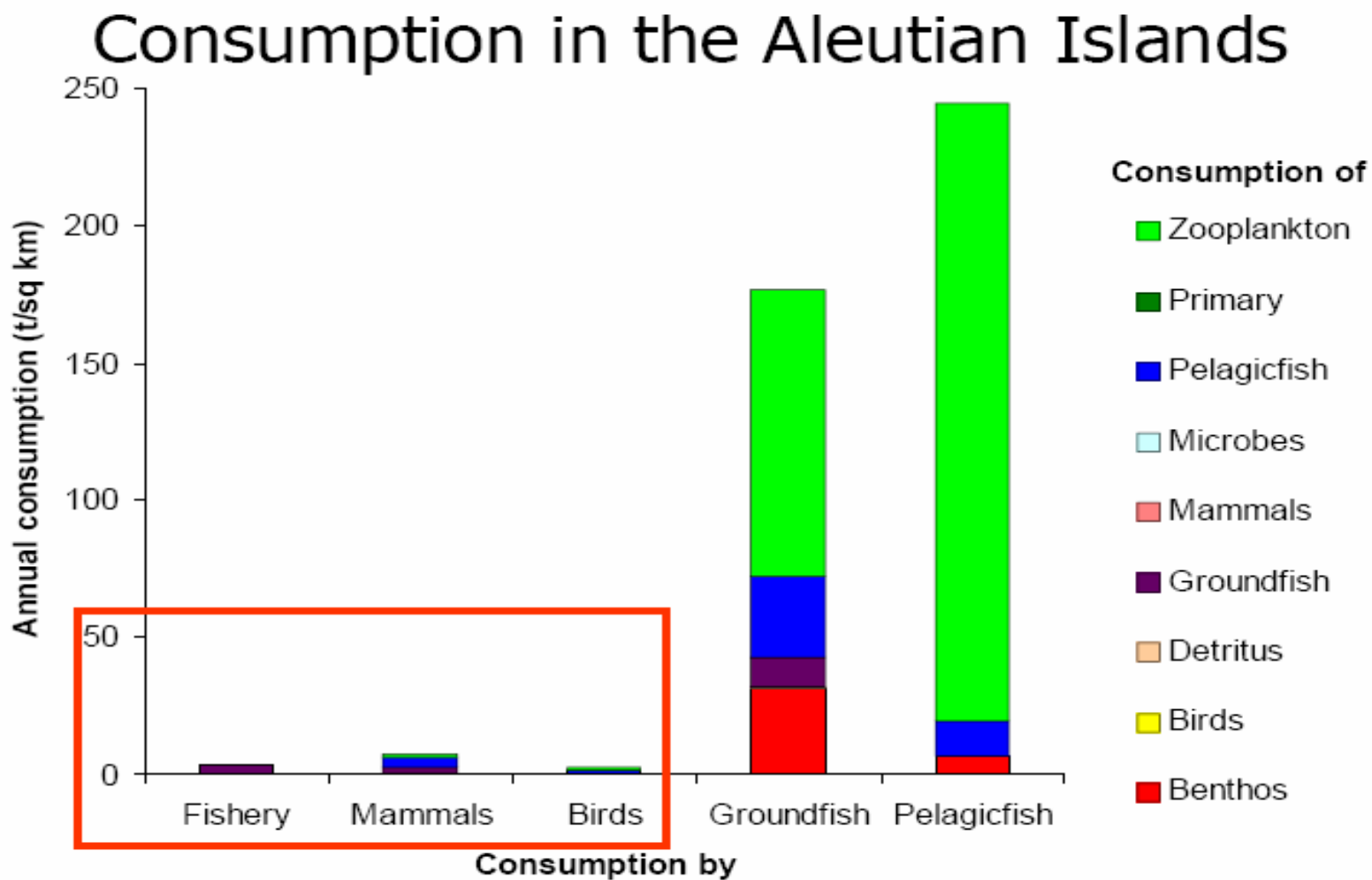
1. Fishery target species = Important SSL prey species
2. Fishery removals substantially reduce overall prey biomass
3. Fishery pollock size = SSL pollock size
4. Fishery depths = SSL foraging depths
5. Fishery spatial distribution = SSL foraging spatial distribution

# Who Is Competing with Whom? (Is removal of pollock a loss or a gain to SSL?)



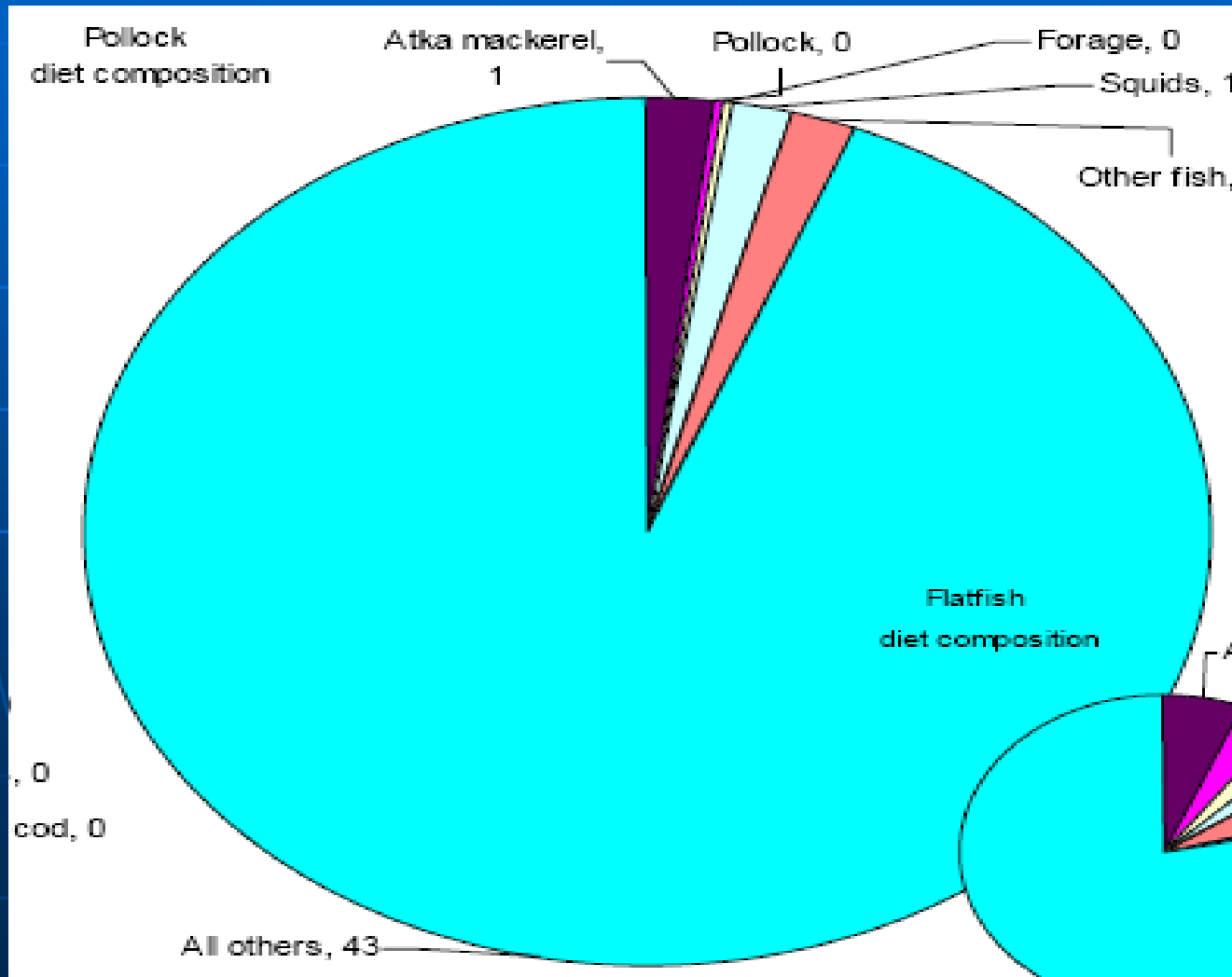
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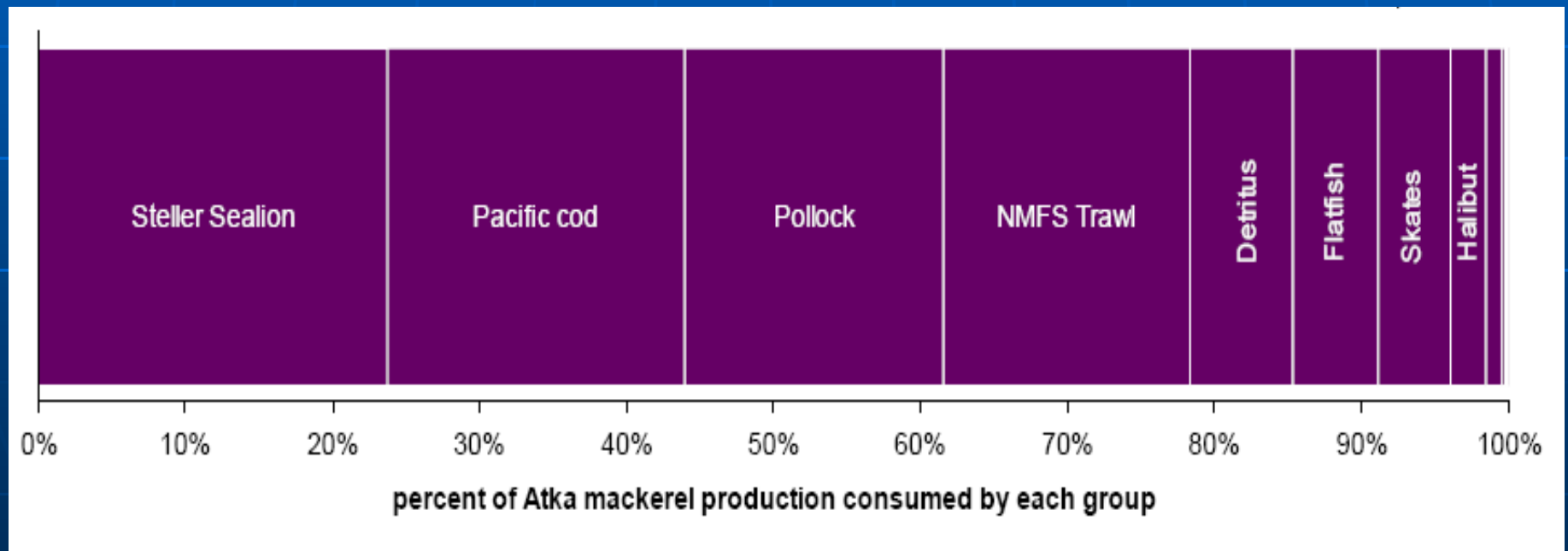
# Are Pollock Competing with Sea Lions?

(Is removal of pollock a loss or a gain to SSL?)



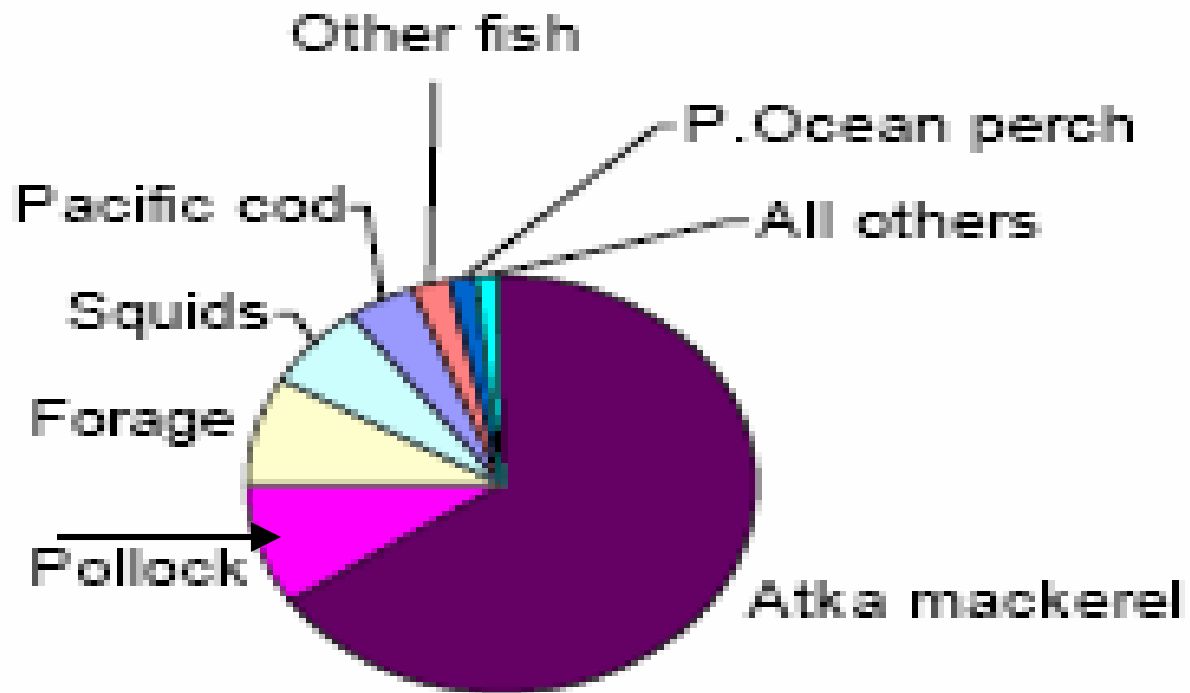
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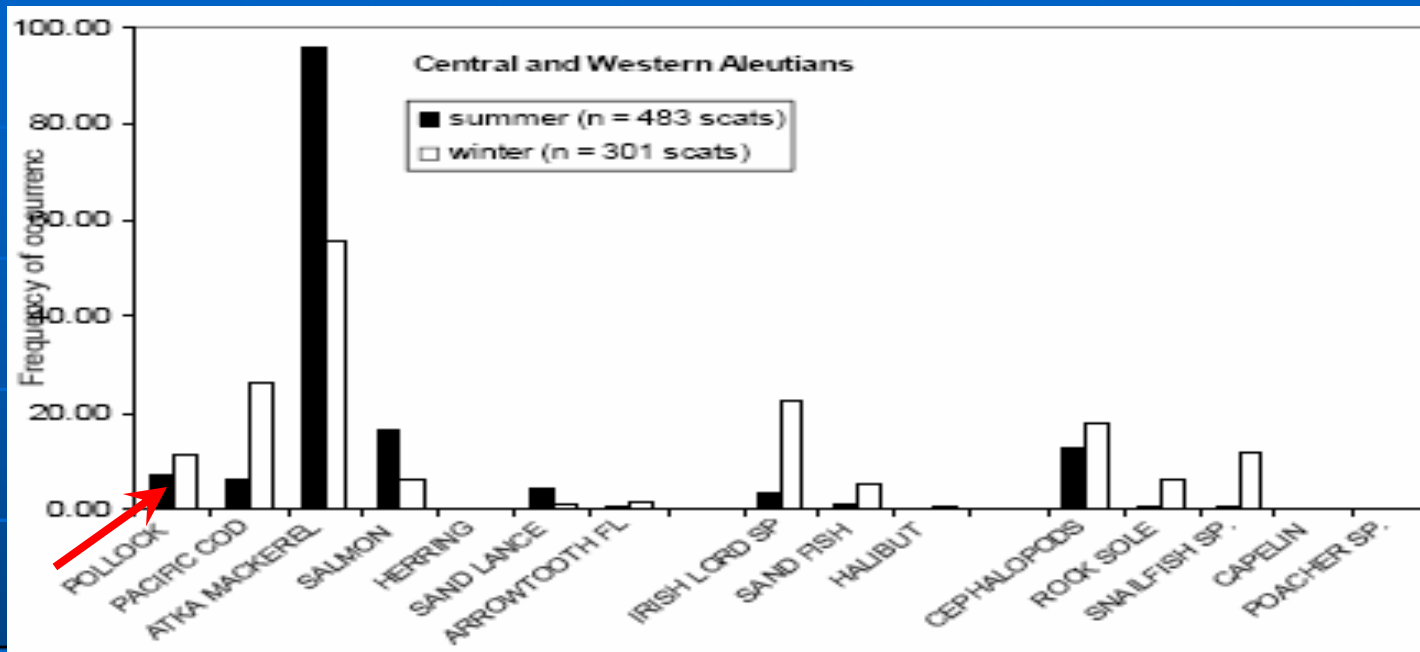


# How Important is Pollock to Sea Lions?

## Steller Sealion diet composition



# Prey = Target? – Scat Data Overlap?



Frequency of occurrence of SSL prey species in scat in Central/Western AI in winter

Atka Mackerel	55.0%
P. cod	26.0%
Sculpins	23.0%
Cephalopods	18.0%
Snailfish	12.0%
Pollock (1999-2005)	12.0%
<i>Pollock (1990-1998)</i>	2.7%

# Prey Field Biomass - Limited?

**Aleutian Island combined biomass of Atka Mackerel, P. cod, and POP**

**1,000,000 tons**

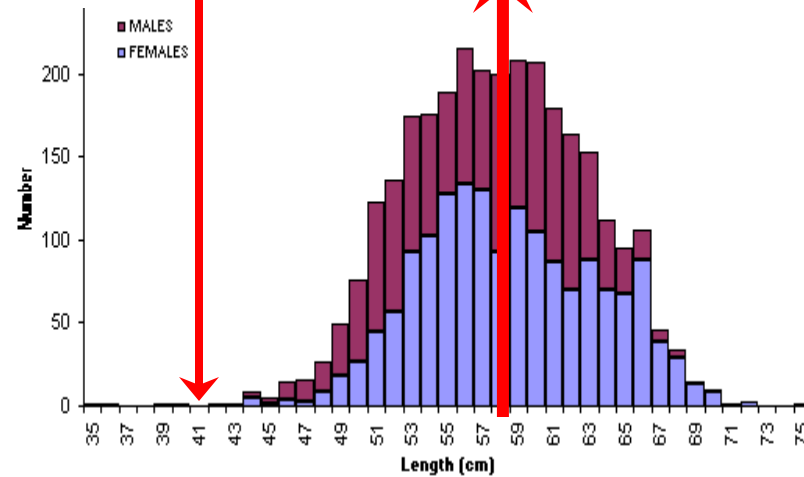
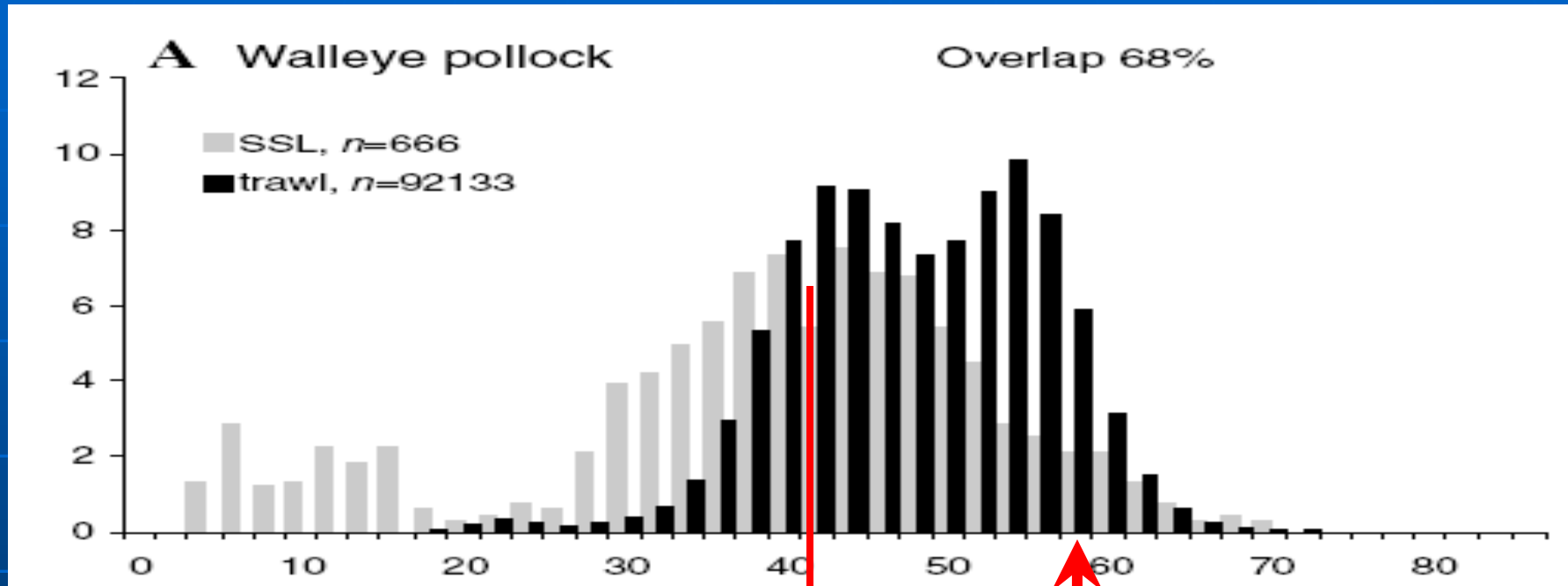
**Other prey species found in SSL scat in Central/Western Aleutians in winter 1990-1998 (Sinclair and Zeppelin) with equal or greater frequency of occurrence than pollock in the scat:**

Salmon, Rock Greenlings, Irish Lords, Snailfish, Cephalopods, Kelp Greenlings, Other Greenlings, Rockfishes, Herrings, Lumpfishes, Gunnels, Rocksole, Yellowfish sole, Other flatfish

<b>AI Pollock 2006 biomass (model 1)</b>	<b>180,000 tons</b>
<b>AI Pollock 2006 biomass (model 2)</b>	<b>362,000 tons</b>
<b>AI Pollock biomass (bottom trawl survey)</b>	<b>94,000 tons</b>
<b>AI Pollock 2007 ABC</b>	<b>44,500 tons</b>
<b>AI Pollock 2006 TAC</b>	<b>19,000 tons</b>



# Size Overlap?

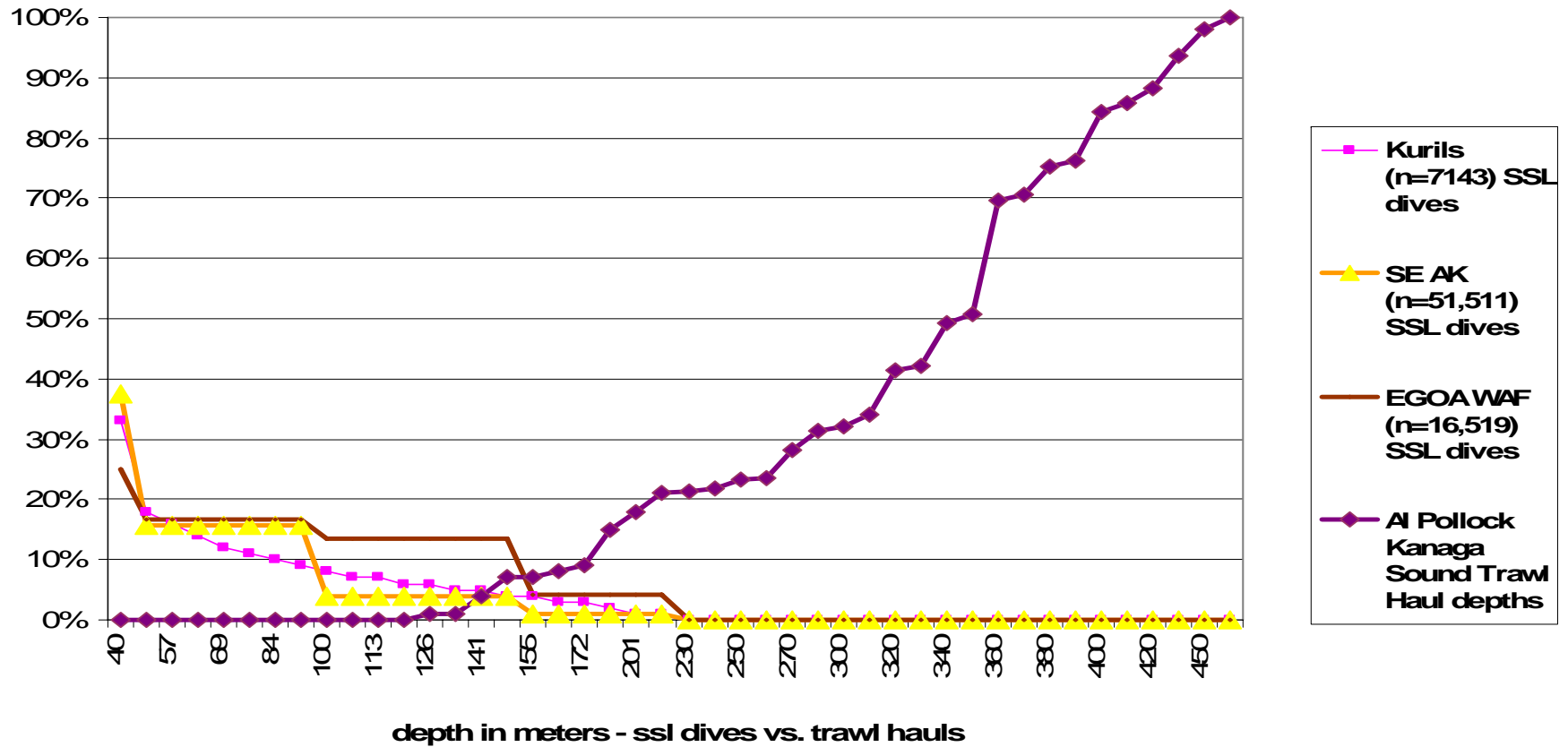


# Depth Overlap?

## Dive Overlap - Stellers & Trawl Fishery

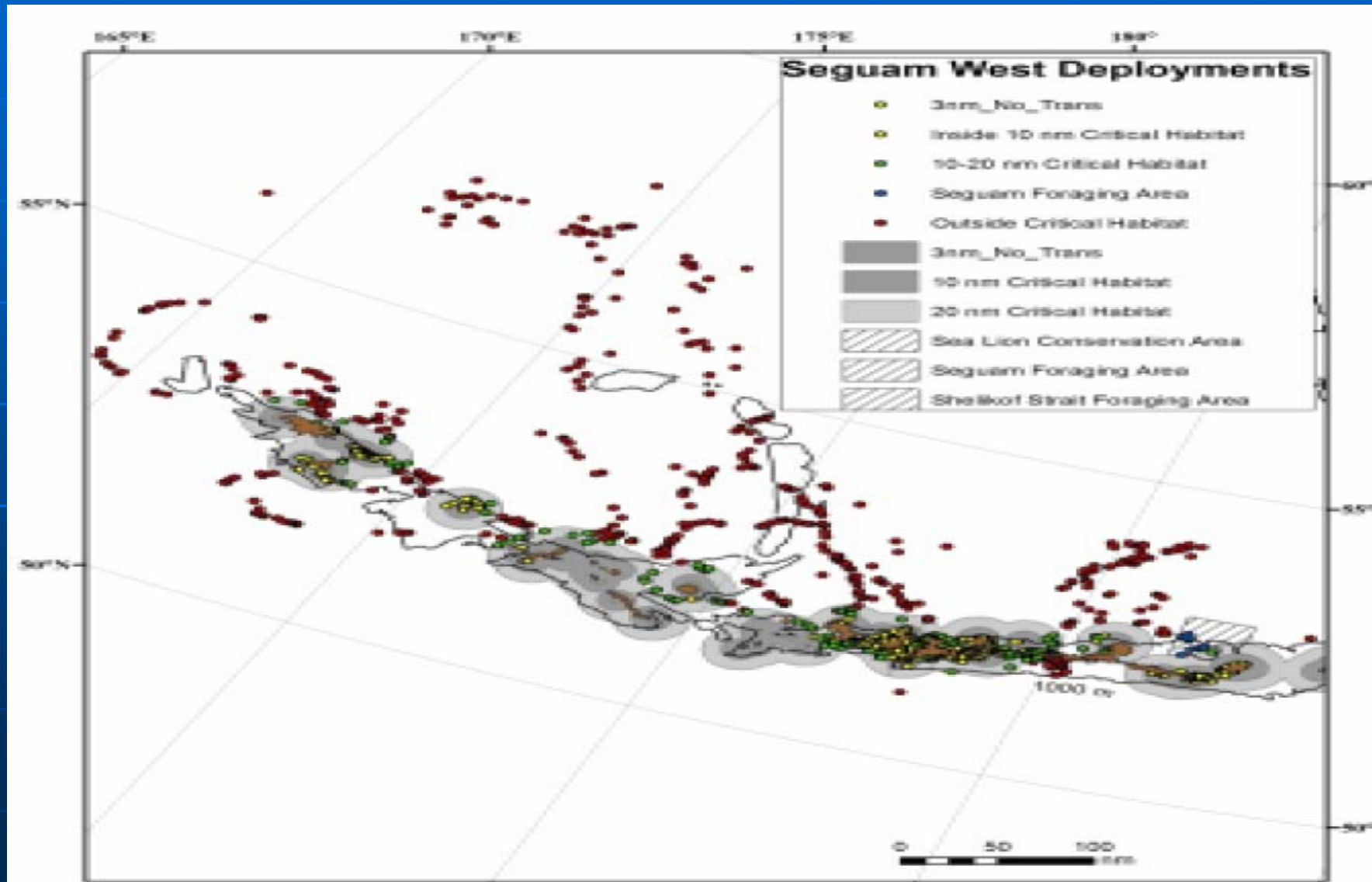
Dive information from:

"Diving Behaviour of Adult Female Steller Sea Lions in the Kuril Islands, Russia" Loughlin, 1998 Table 3, page 28 & "ADF&G Wildlife Technical Bulletin No. 13" May 1996, Table 2 pg. 144

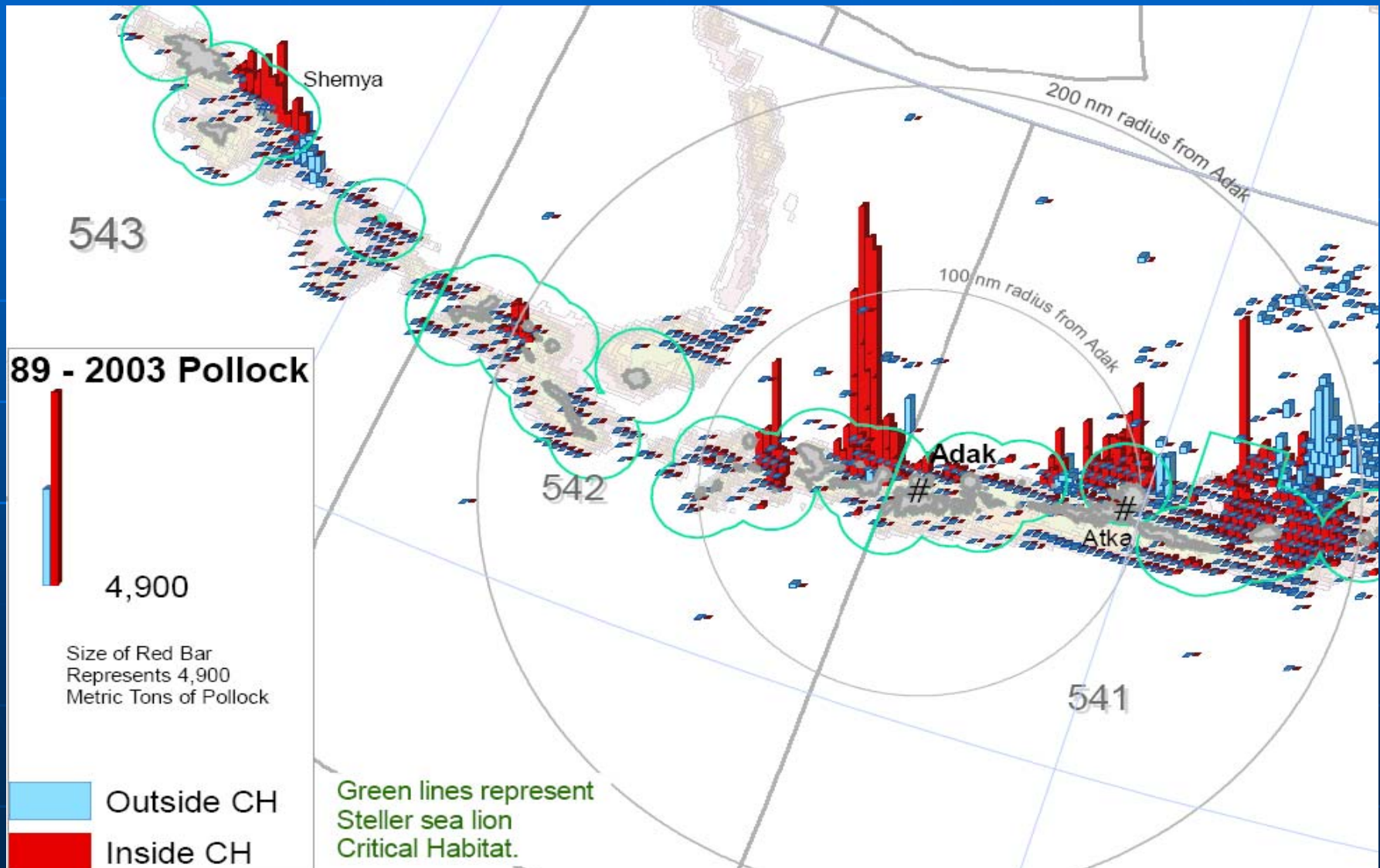


# Spatial Overlap

## SSL foraging in the Aleutian Islands Telemetry Data



# Historic AI Pollock Catch Data

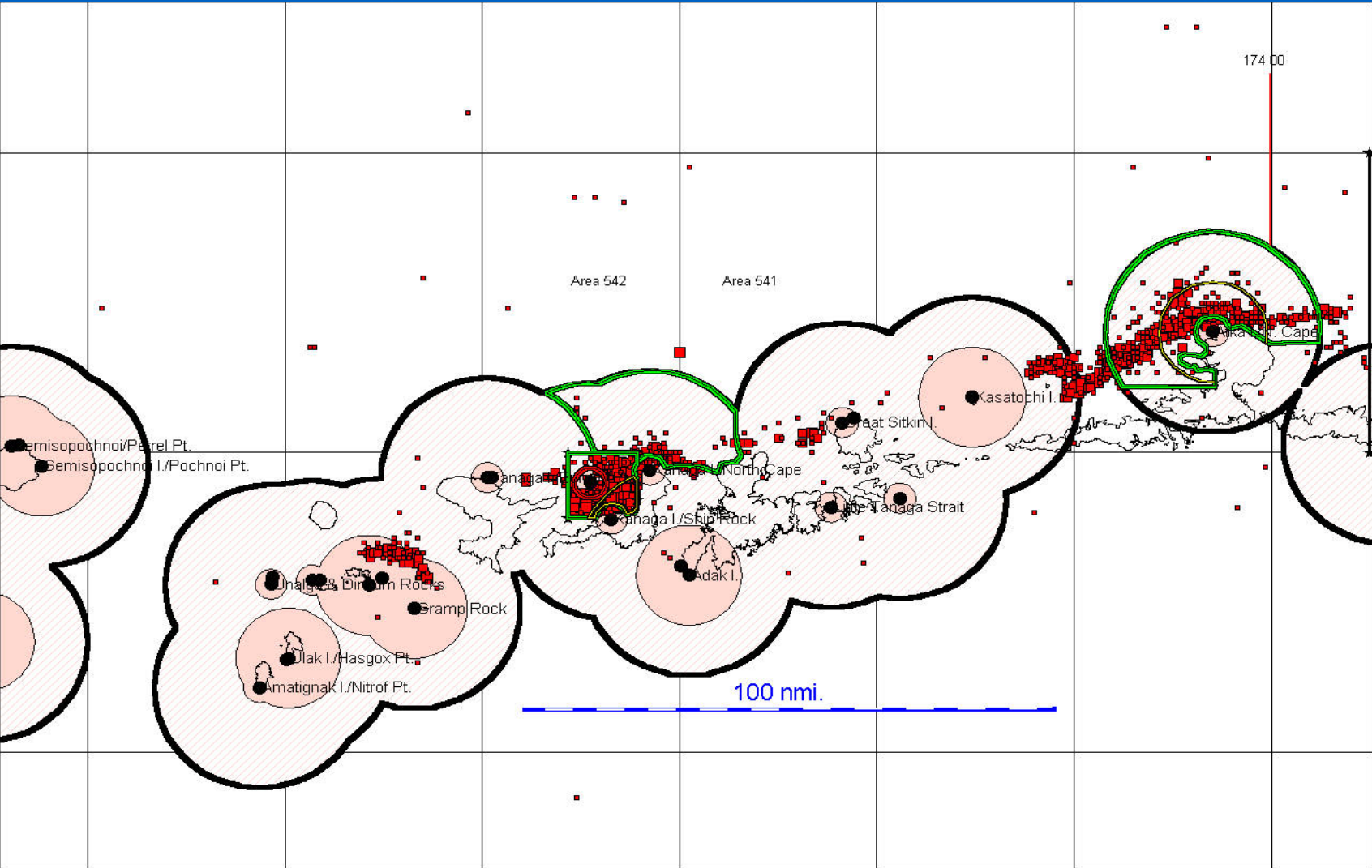


# Part II:

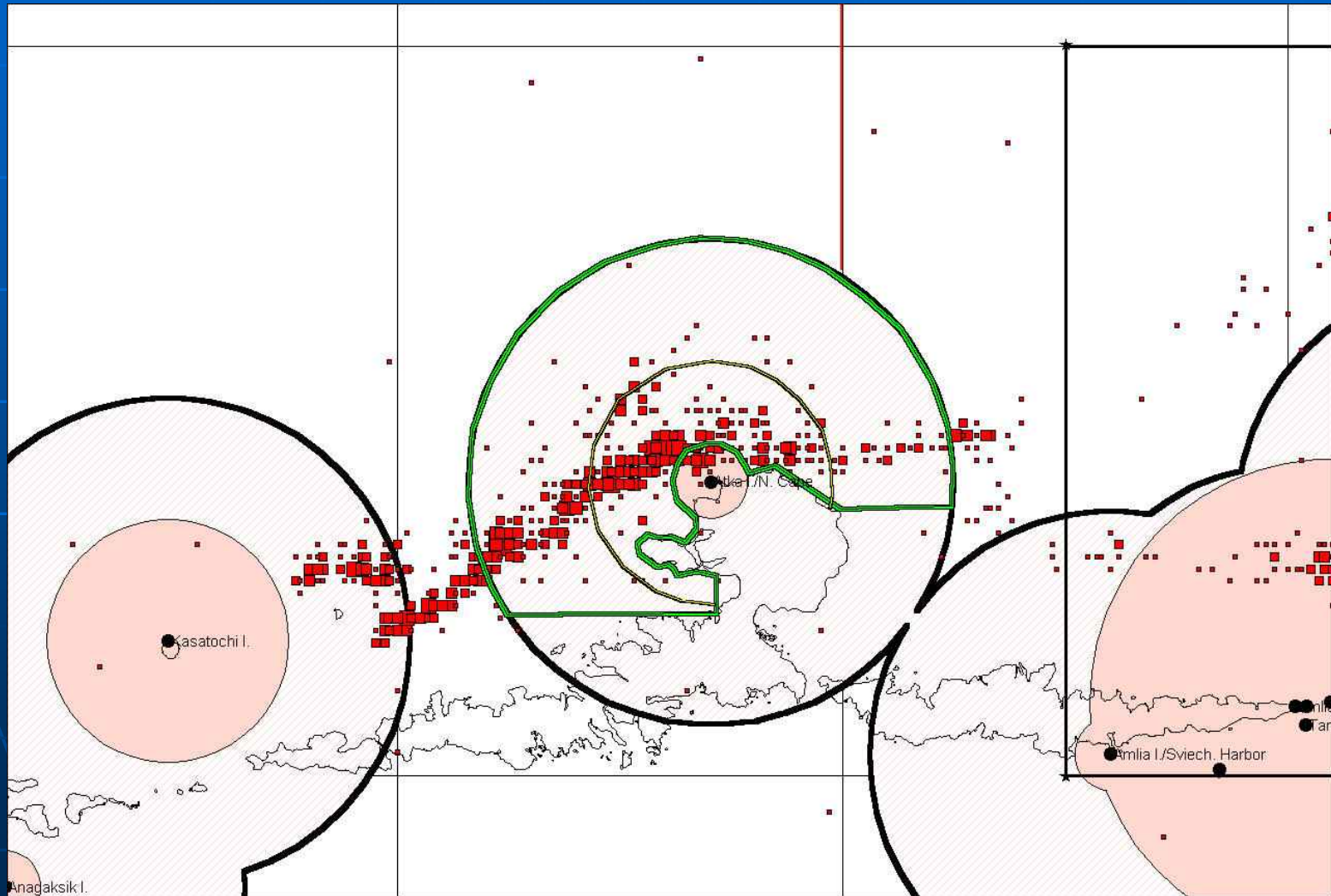
## Limited Pollock Open Areas

- **Open an area in Kanaga Sound (CAI)**
  - 3 haulouts to 3 miles
  - 1 haulout to 10 miles
  - no\* rookeries
- **Open an area around Atka Island (CAI)**
  - 1 haulouts to 3 miles
  - 1 rookery to 10 miles
- *Open an area in the Rat Islands (CAI)*
  - 3 haulouts to 3miles
  - 2 haulouts to 10 miles
  - 2 rookeries to 10 miles
- *Open an area in Amutka Pass (CAI)*
  - 4 haulouts to 10 miles,
  - no rookeries
- *Open an area near Shemya (WAI)*
  - 3 haulouts to 3 miles,
  - no rookeries

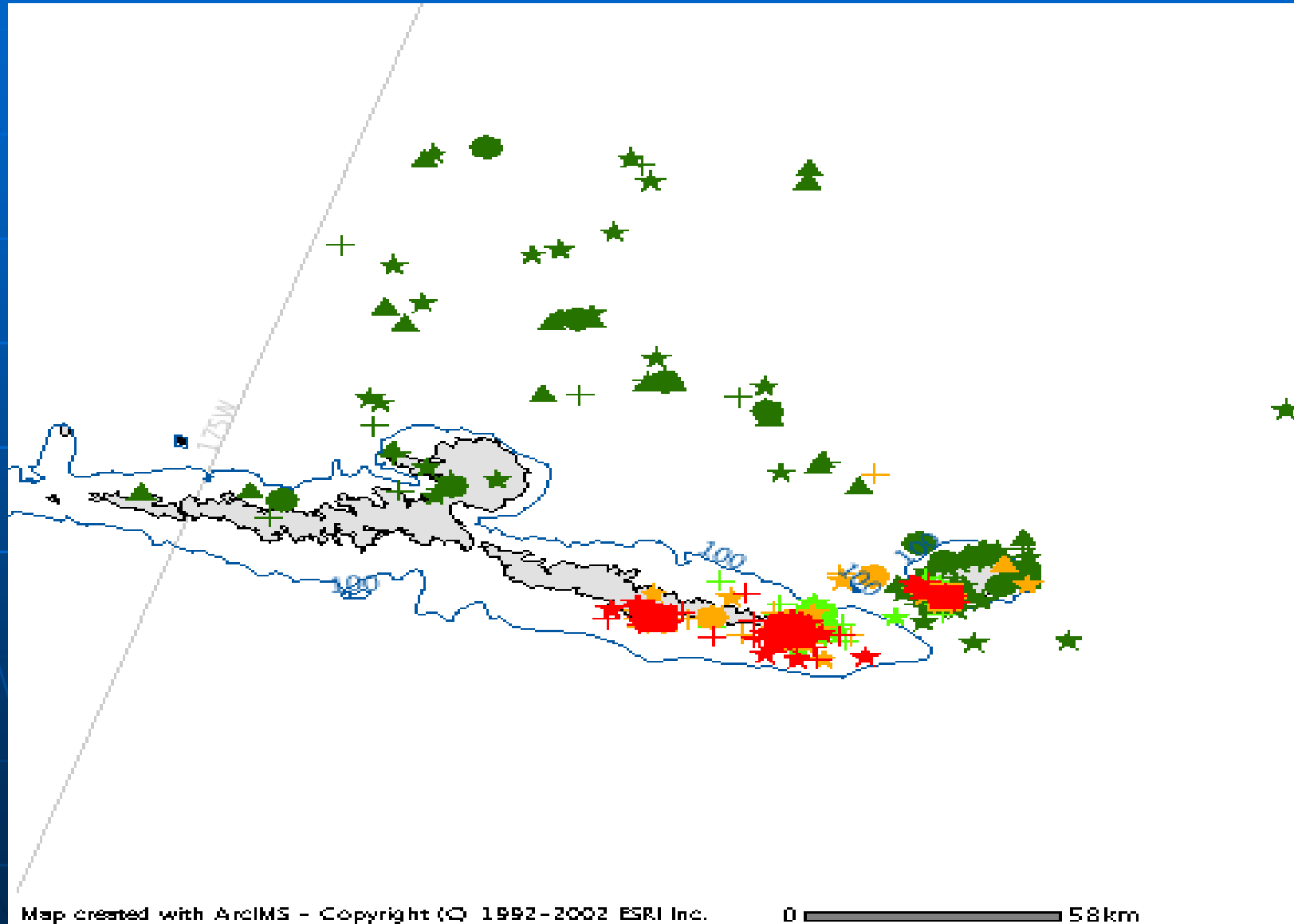
# Alternative AI Pollock Open Areas



# Alternative Pollock Open Area Atka Island

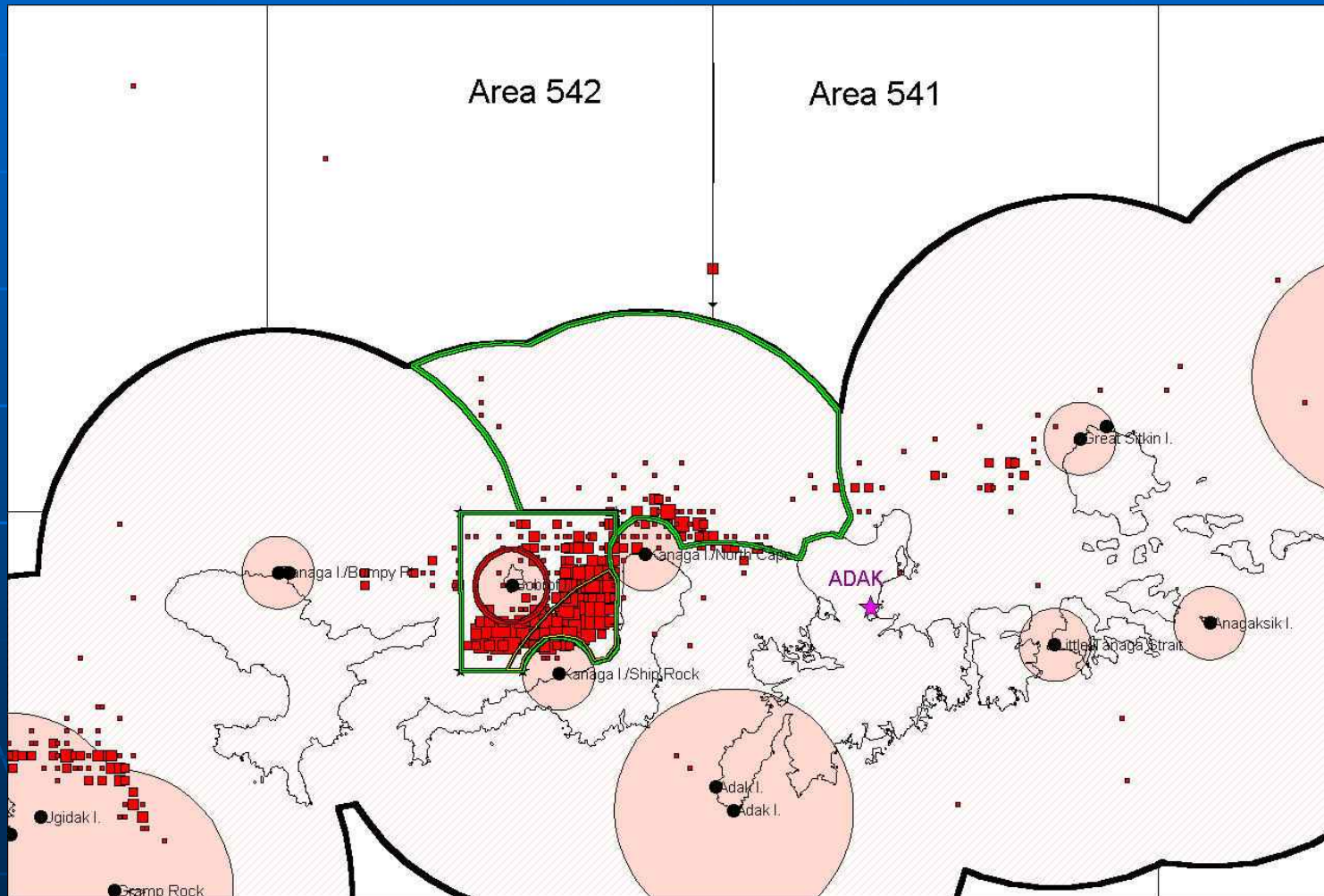


# CAI-541 SSL 2000 telemetry

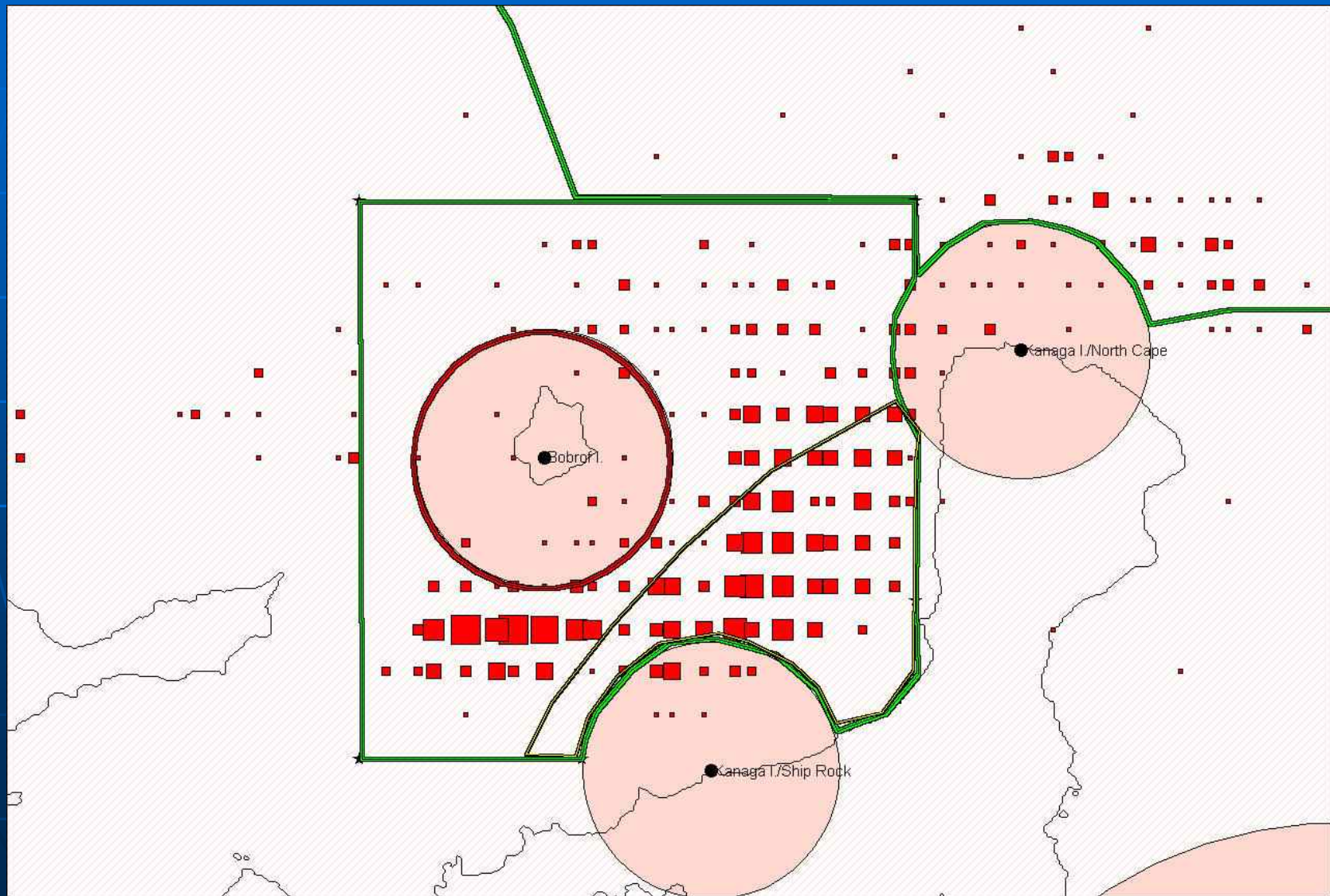




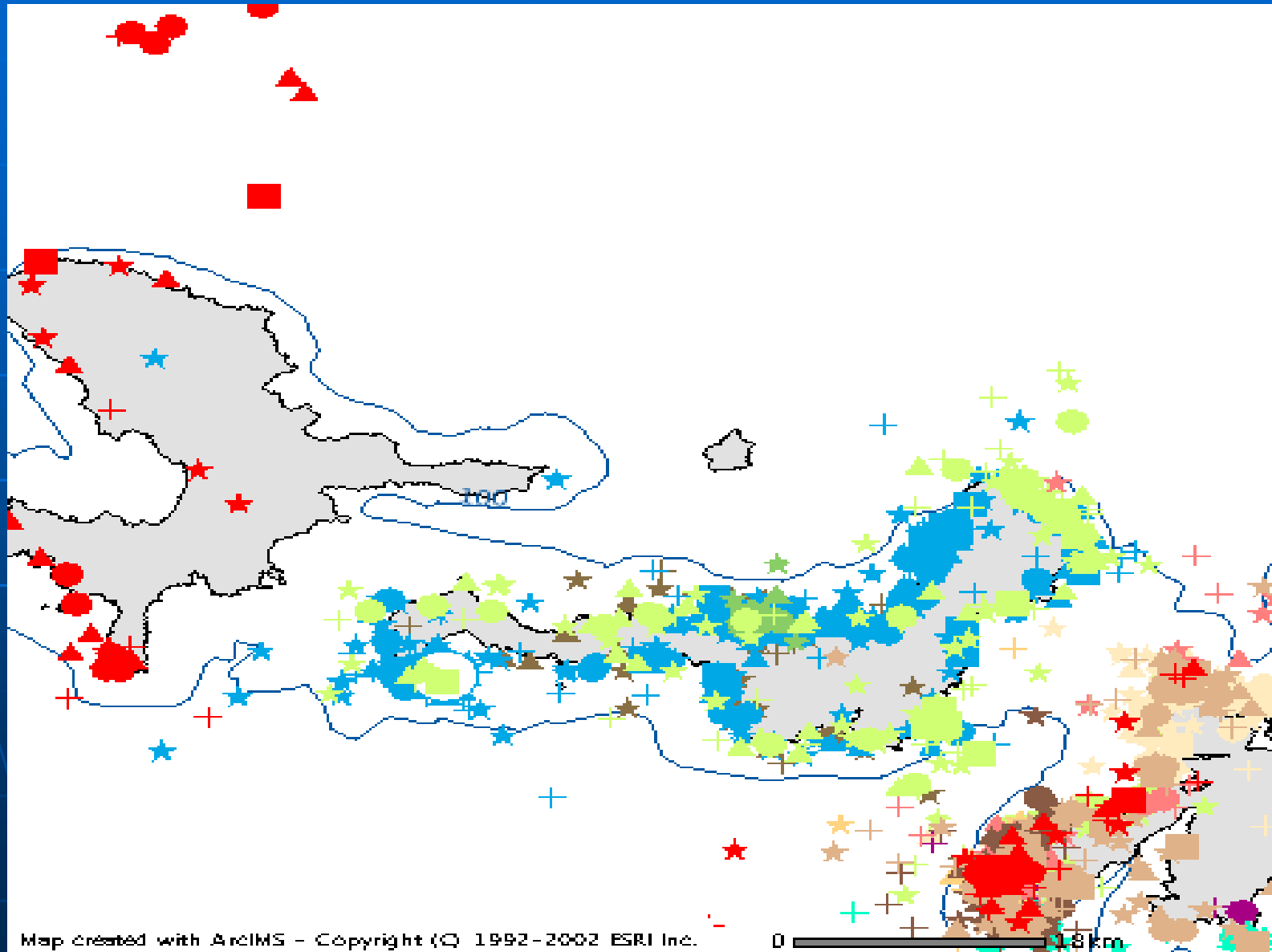
# Alternative Pollock Open Area Kanaga Sound



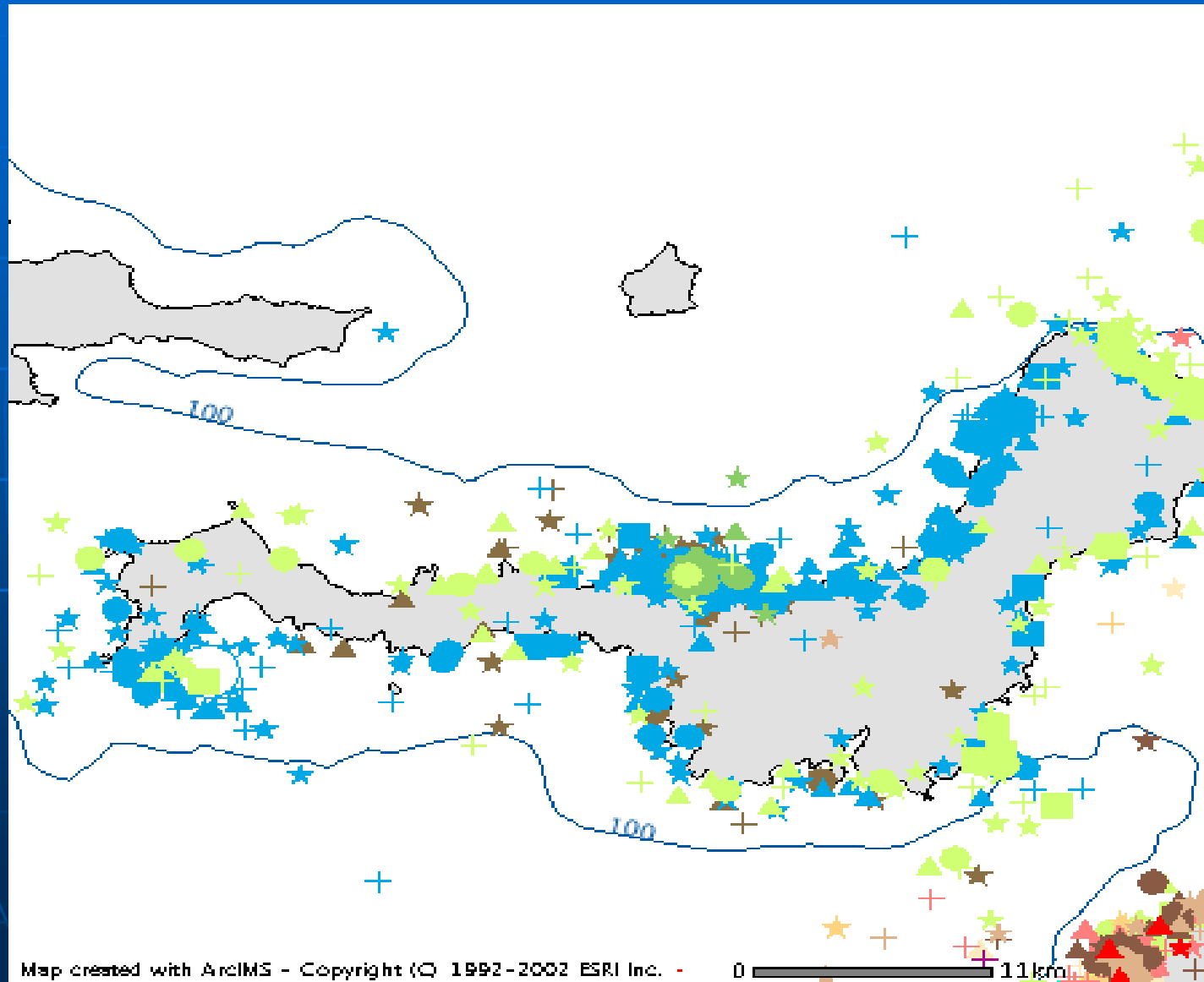
# Kanaga Sound Close-up



# SSL foraging in the Aleutian Islands - Telemetry Data



# SSL foraging in the Aleutian Islands - Telemetry Data



## Part III:

# Other “Outside the Model” Mitigation

- Sub-divide the Pollock TAC among the three AI management areas (541/542/543)
- Add caps within smaller sub-areas
- Limit the amount of catch by week
- Incorporate in-season surveys
- Restrict access to CH during Summer (May-Sept.) breeding season
- Only open “semi-circles” of CH around SSL sites

# State Water Deeper than 100 Fathoms

