



NORTON SOUND RED KING CRAB INVESTIGATIONS

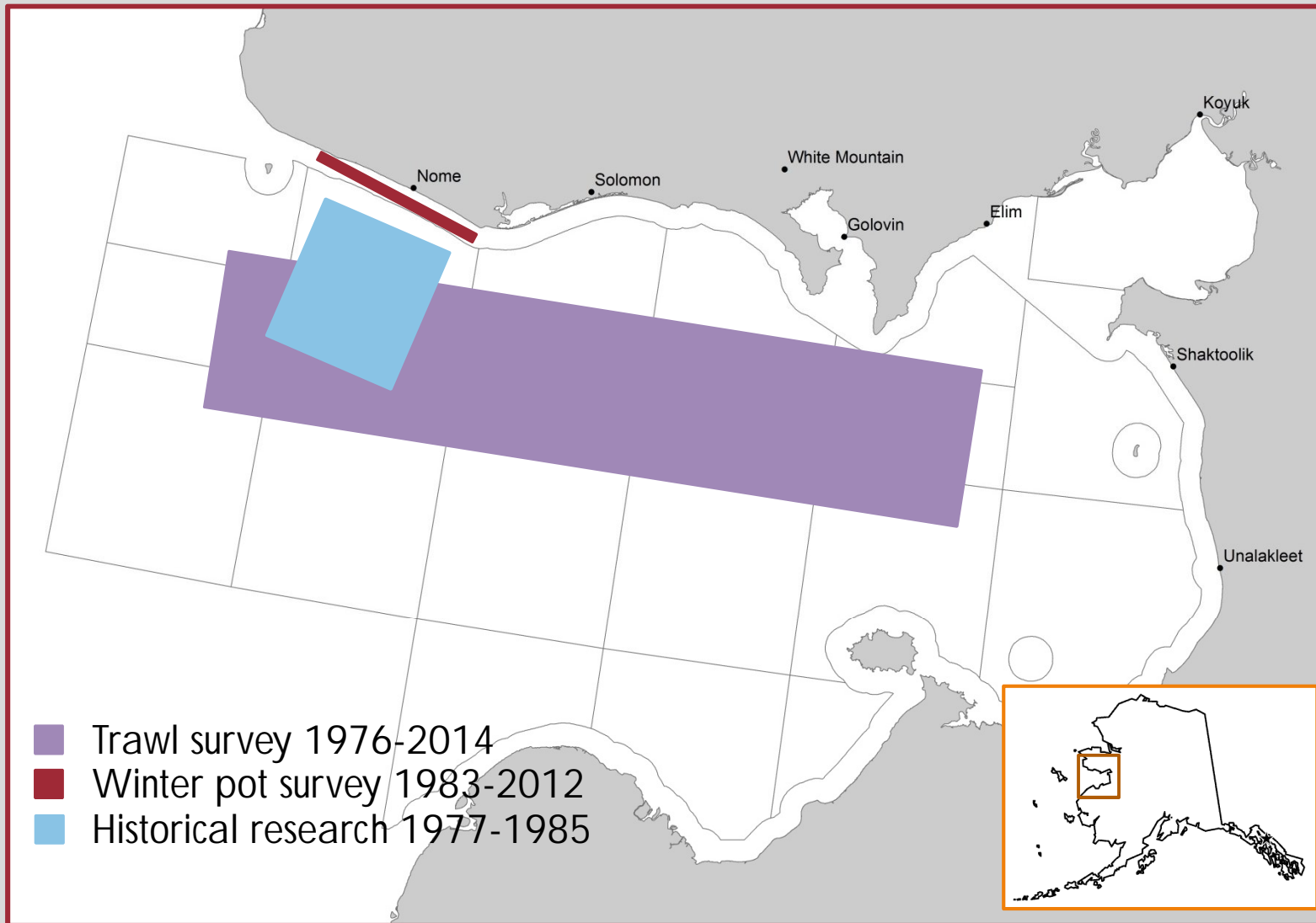
Jenefer Bell

Overview

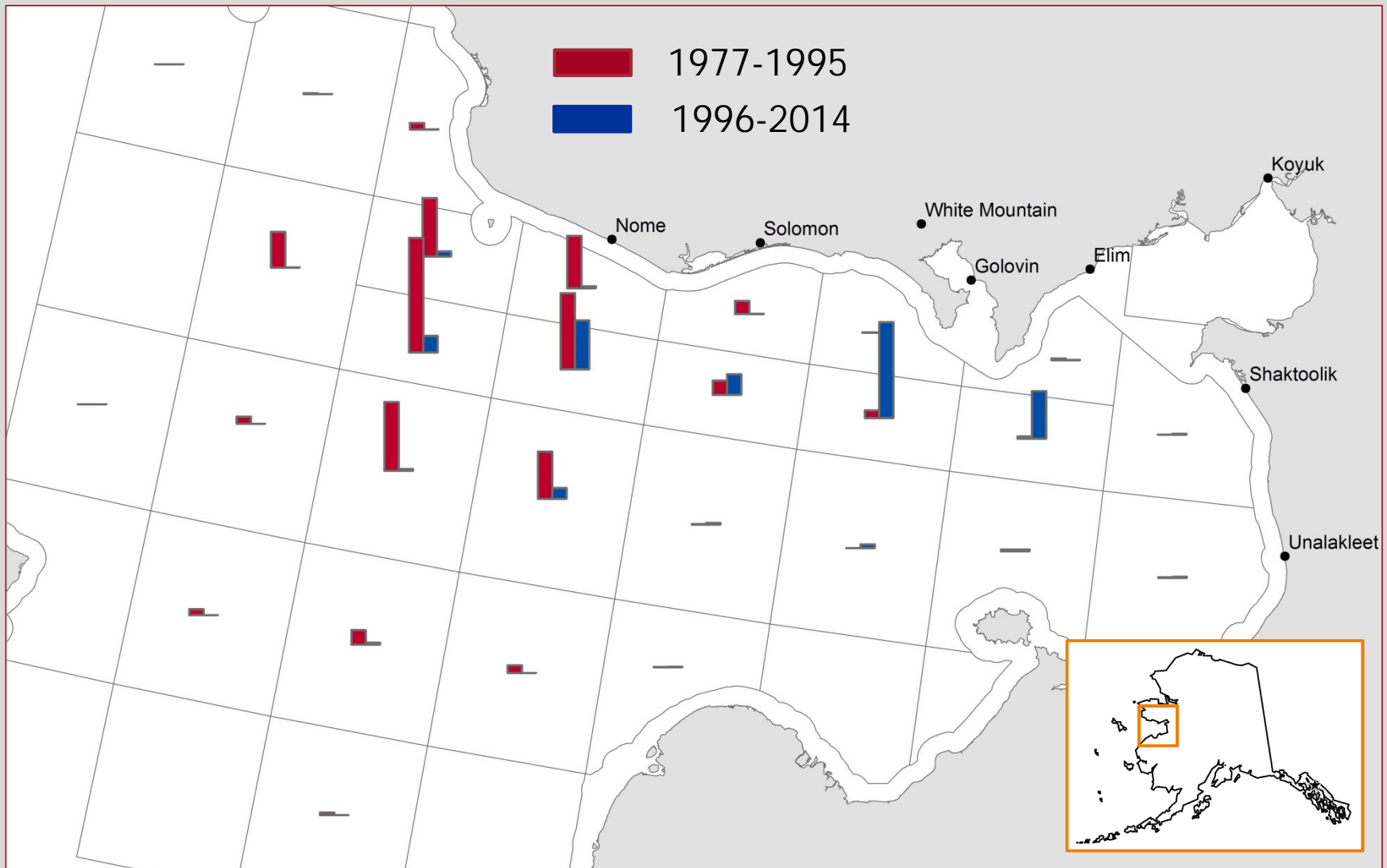
- Historical study areas
- Historical commercial harvest
- Past research of RKC
 - ▣ Migration patterns
- Current research
 - ▣ Spring tagging and observers
 - ▣ Fall pot survey
 - ▣ Molting hormone concentrations
- 2014 Trawl Survey



Historical study areas

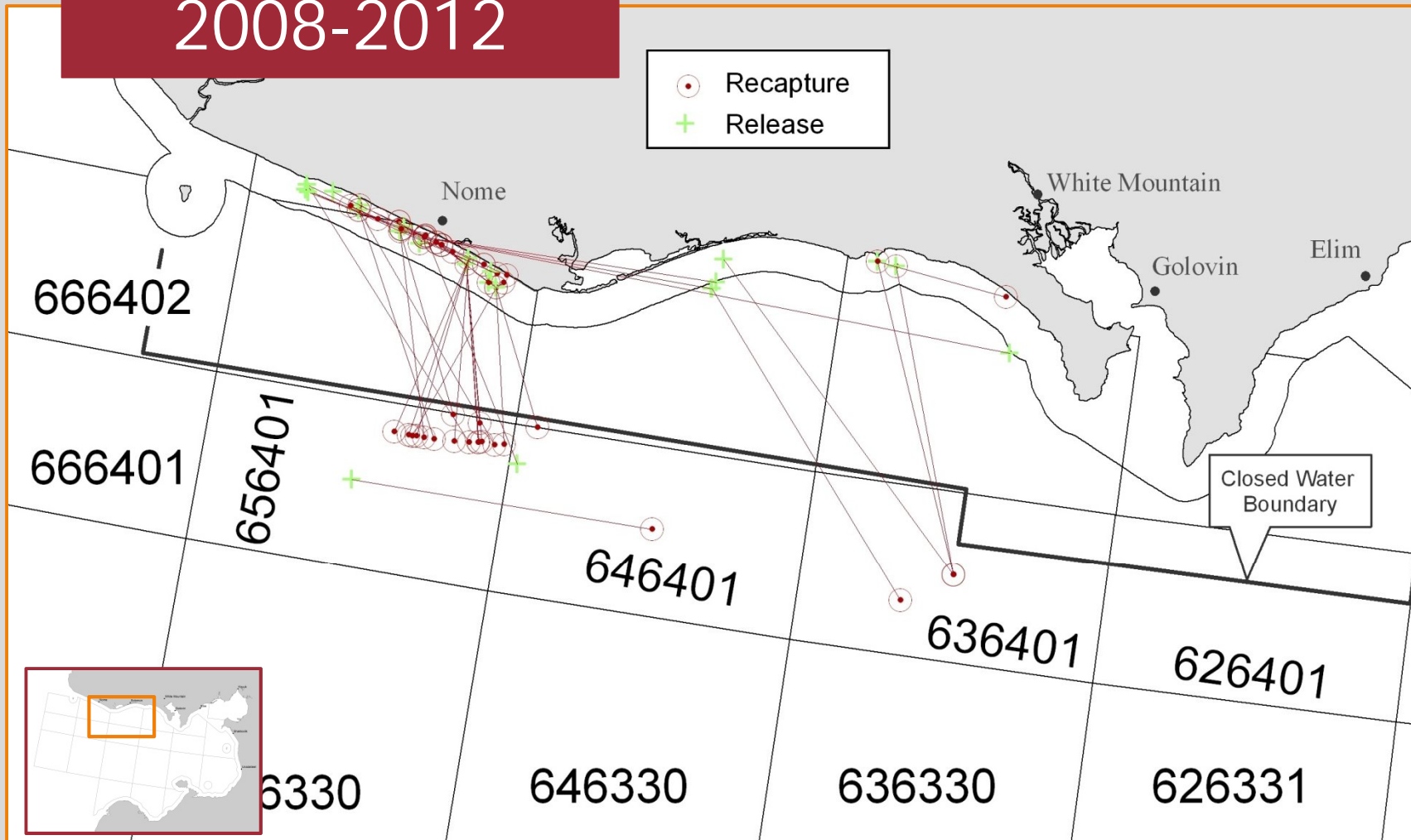


Historical Summer commercial harvest



Nearshore-Offshore Migration

Winter Pot Survey
2008-2012



Red king crab movement, growth, and size composition in Norton Sound



Project objectives

- Identify possible critical locations in eastern Norton Sound used by juvenile and breeding female red king crab.
- Determine size composition, reproductive condition, and growth increments of eastern Norton Sound red king crab.
- Determine offshore movement patterns of eastern Norton Sound red king crab.
- Estimate discard ratio of non-target red king crab in commercial crab pots.

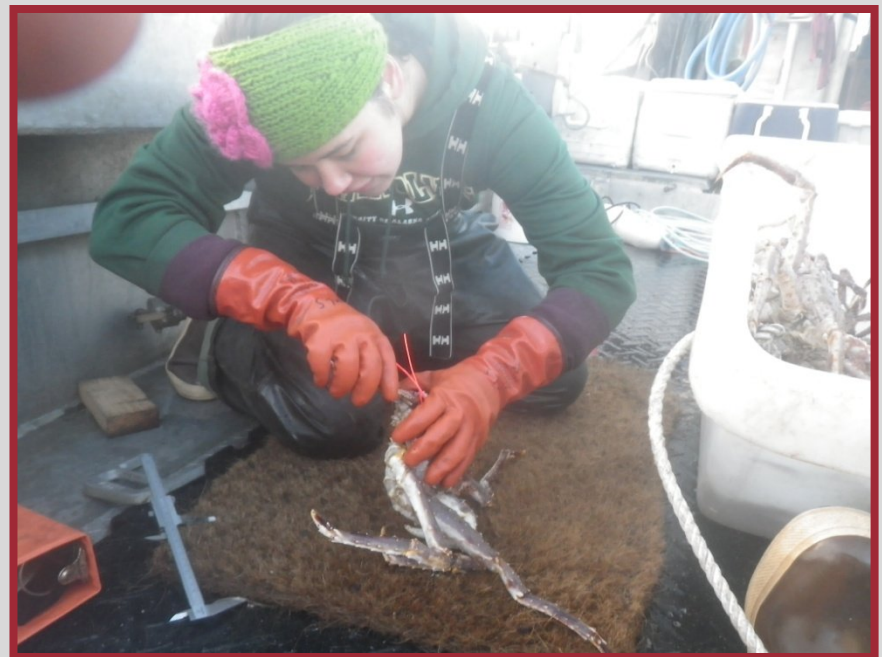


Methods – pot survey



- 5' X 4' pots-no escape mechanisms
- Two transects – 5/10 miles offshore
- 45 pots along each transect

- Counted and measured all red king crab
- Tagged all red king crab > 70 mm CL

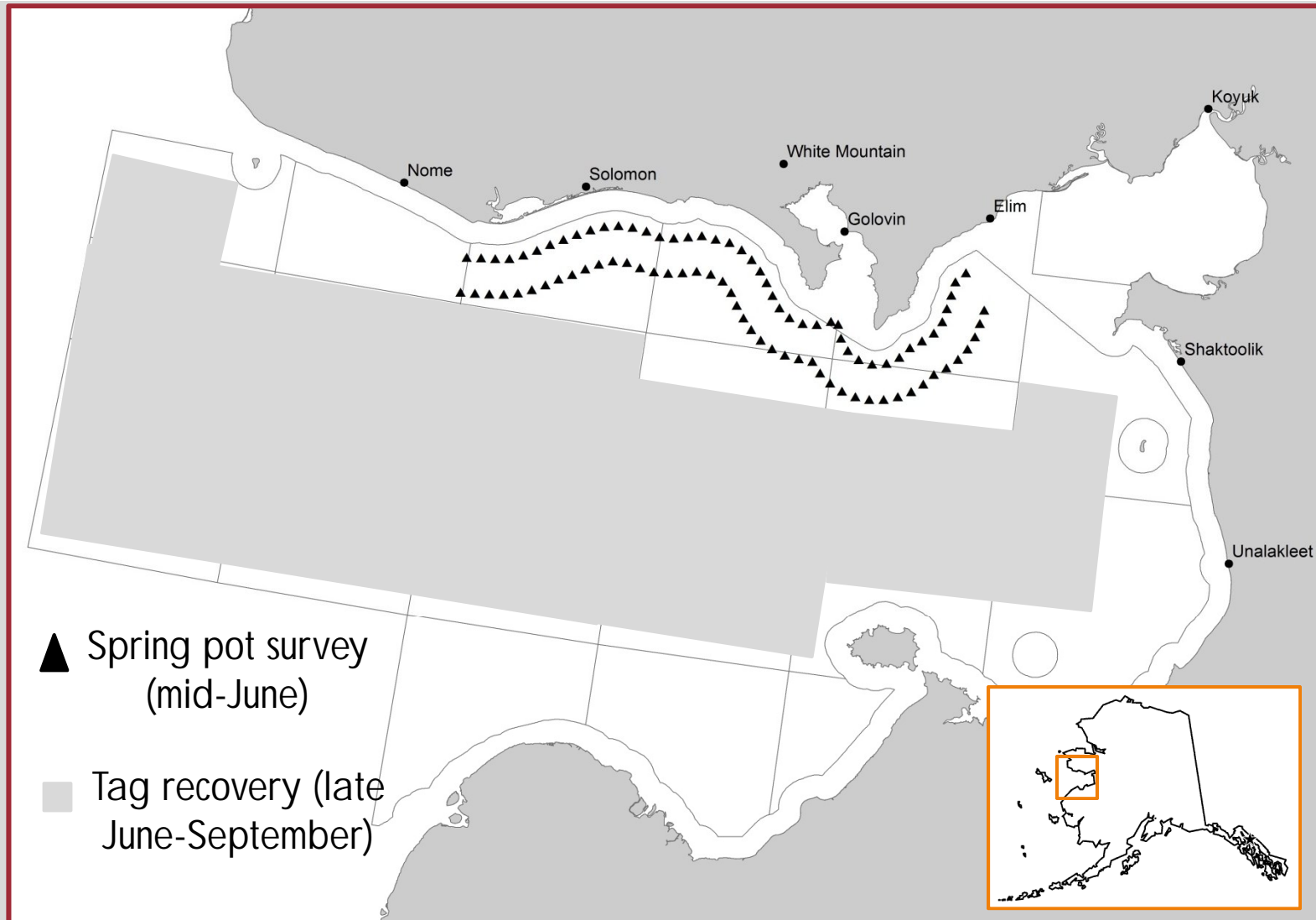


Methods – observers

- Recorded biological information and capture location of all recaptured tagged RKC each trip
- Sampled at least 5 pots per trip for species composition and RKC size composition
- Volunteer program



Methods – pot survey and tag recovery



Results – Tagging



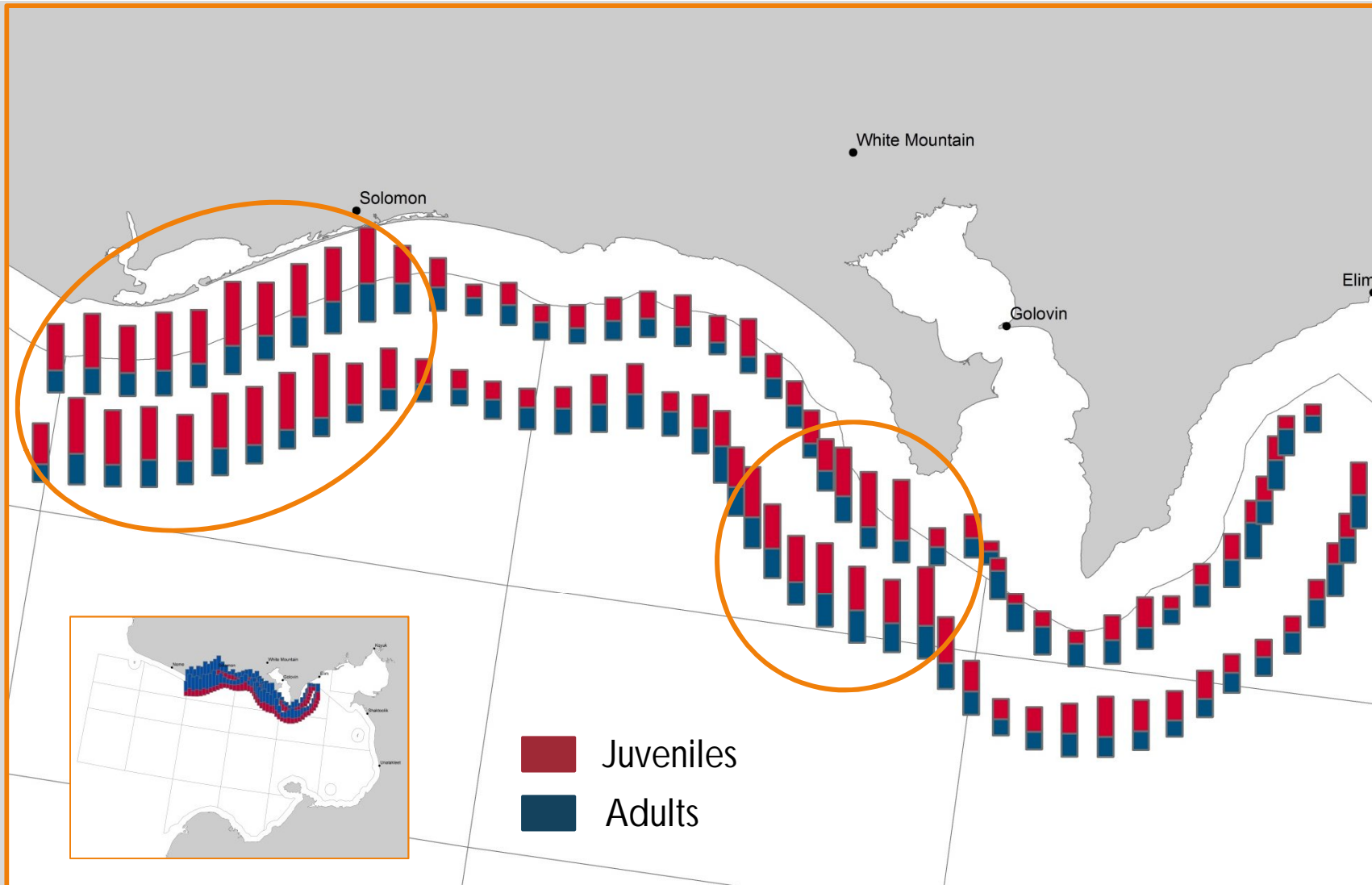
	2012	2013	2014	2015	Total
Number tagged	4,578	9,074	5,844	5,700	25,196
Number of pot pulls	170	263	269	204	702
Number of tags recovered	617	542	207		1,366
Percent recovery	14%	6%	4%		7%

Results – Objective 1

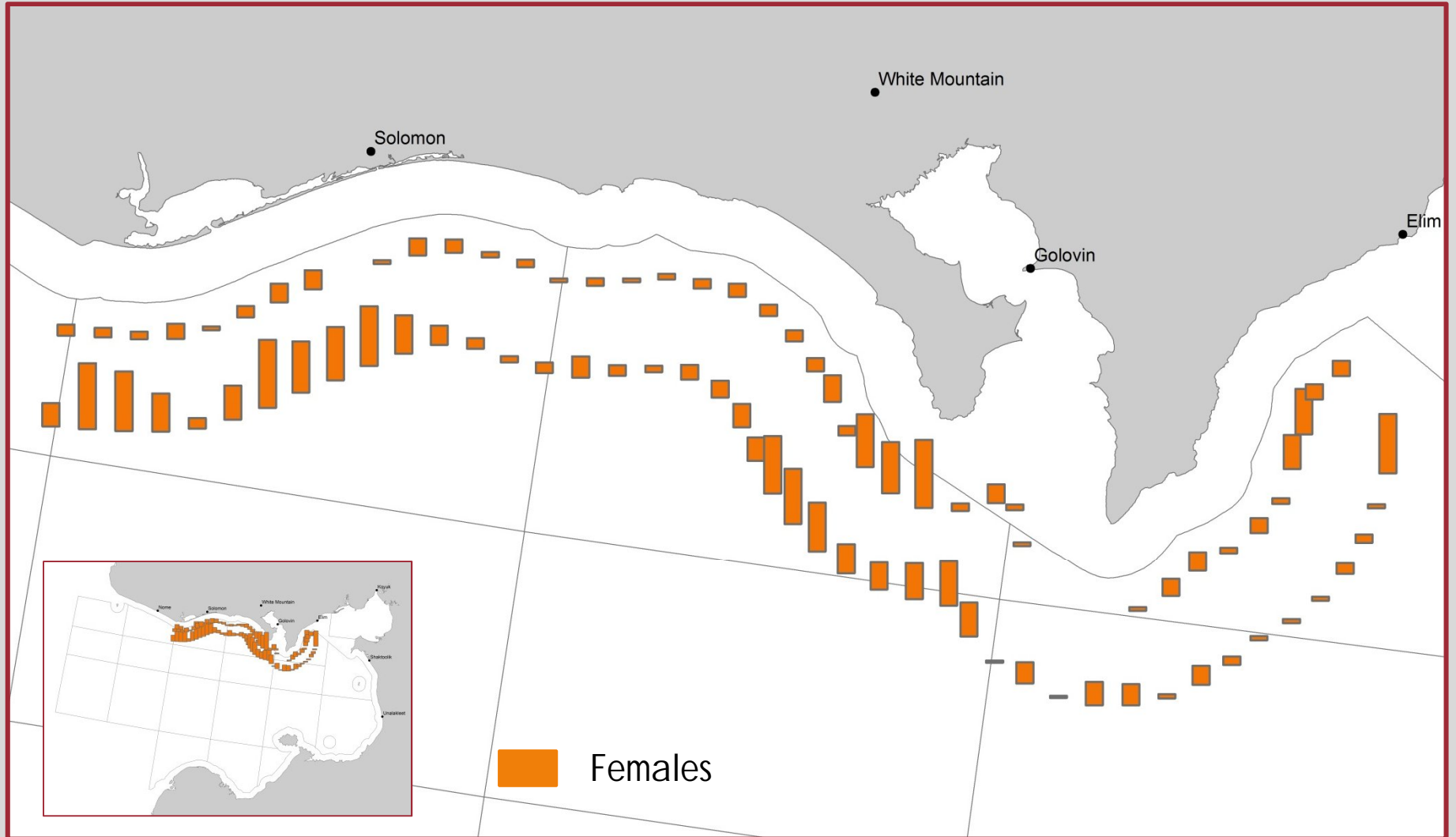


Identify possible critical locations in eastern Norton Sound used by juvenile and breeding female red king crab

Results – Critical locations: juveniles



Results – Critical locations: females

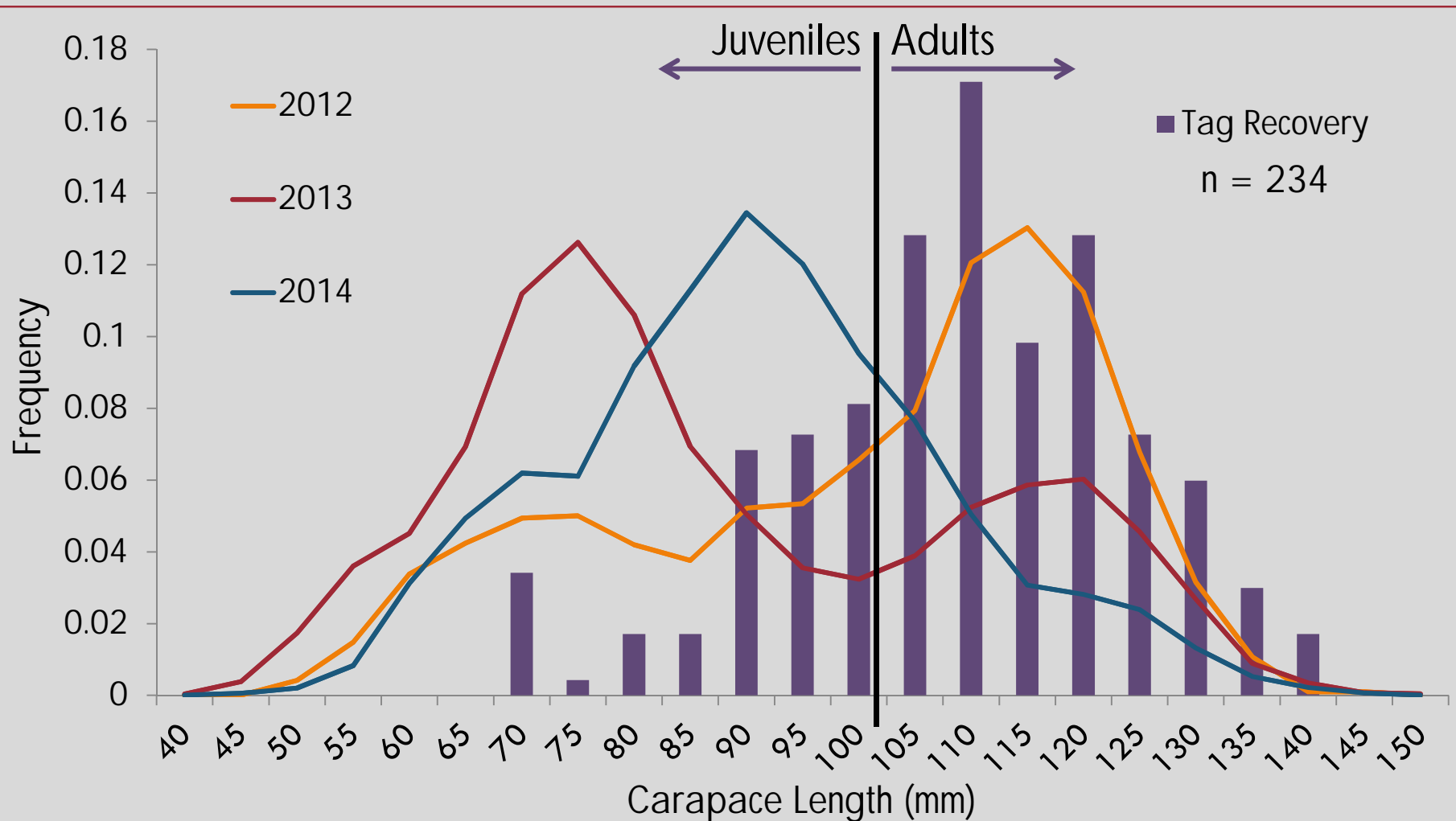


Results – Objective 2

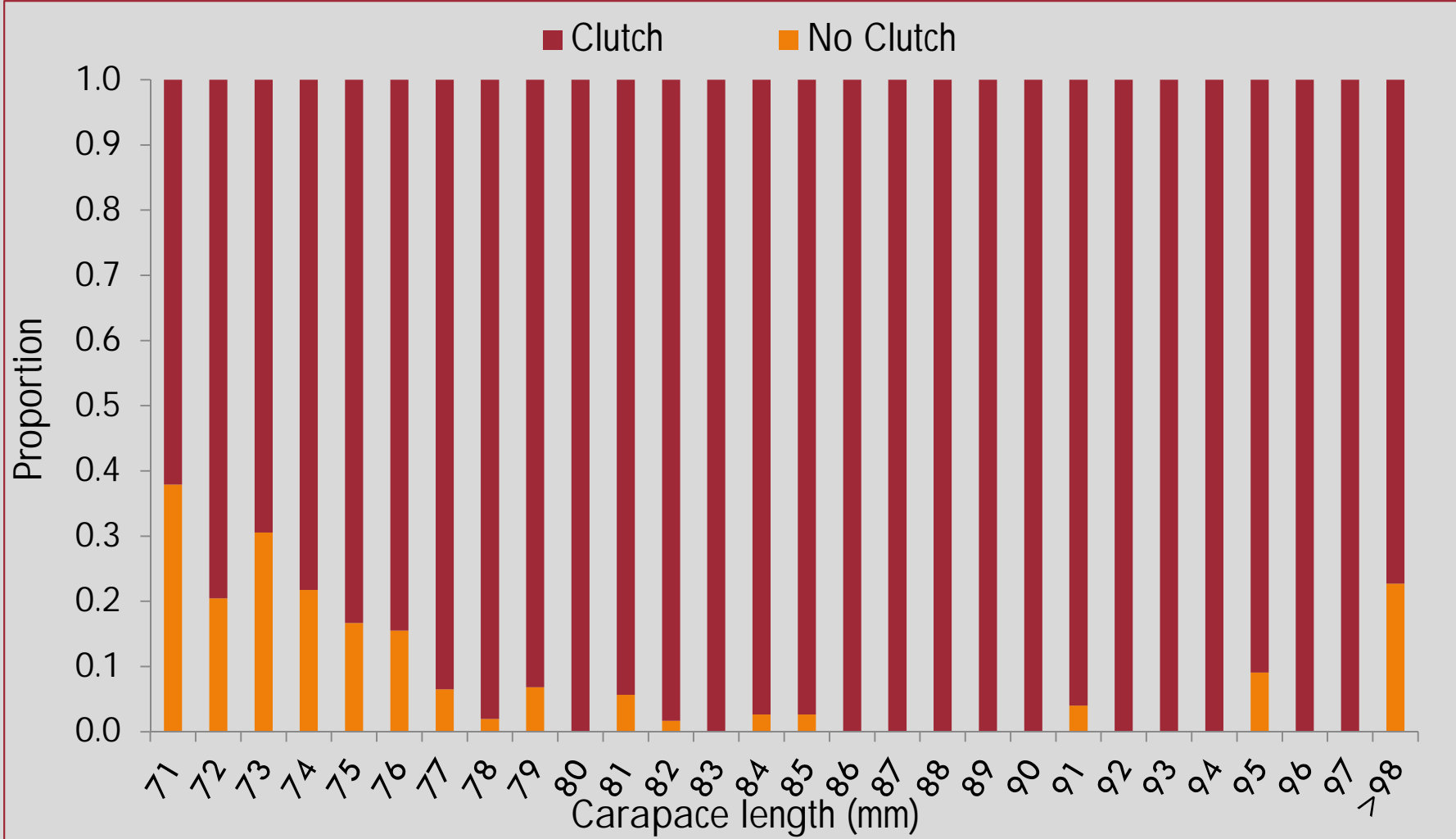
Determine size composition, reproductive condition, and growth increment of eastern Norton Sound red king crab



Results – Size composition: males



Results – Reproductive condition

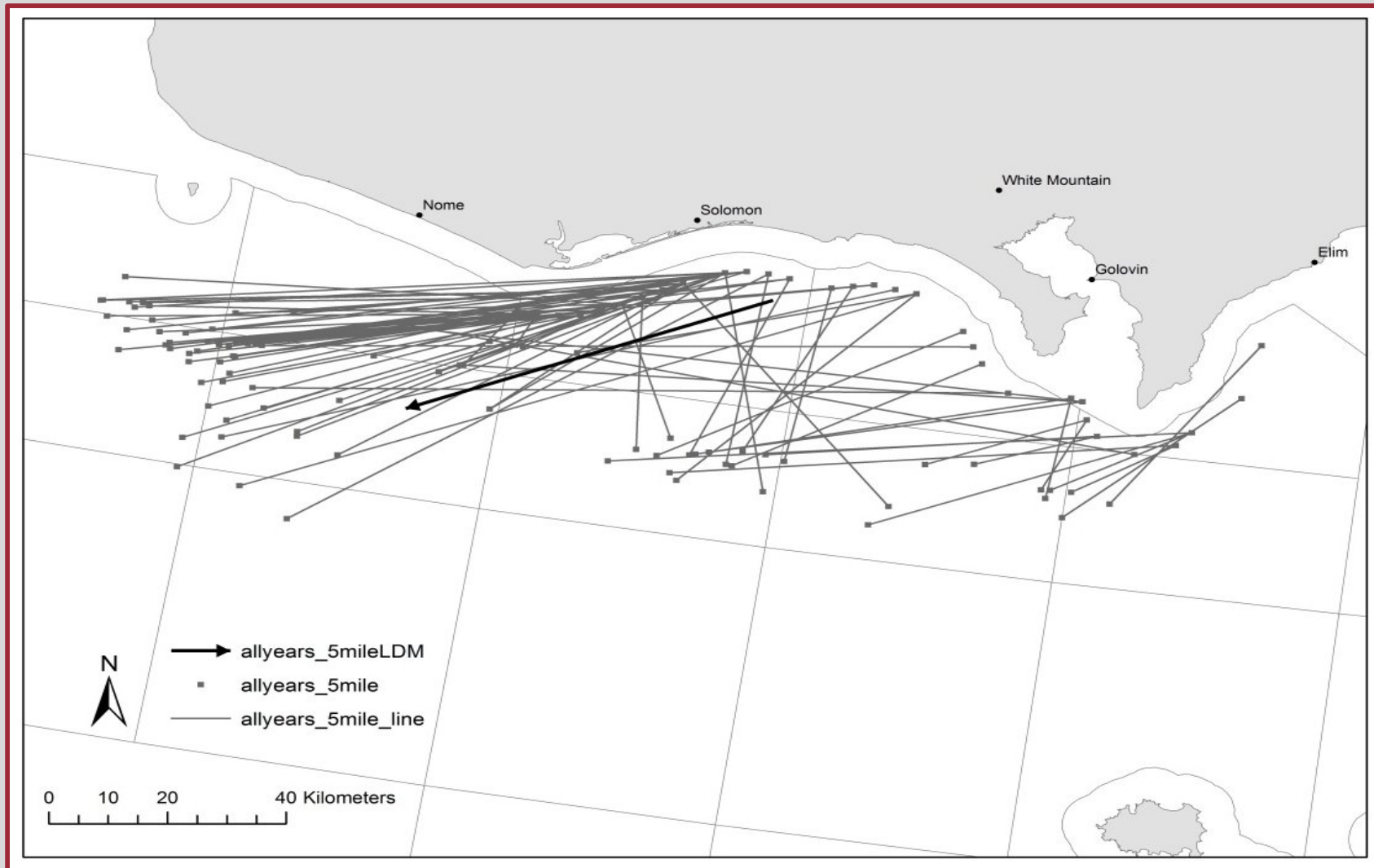


Results – Objective 3

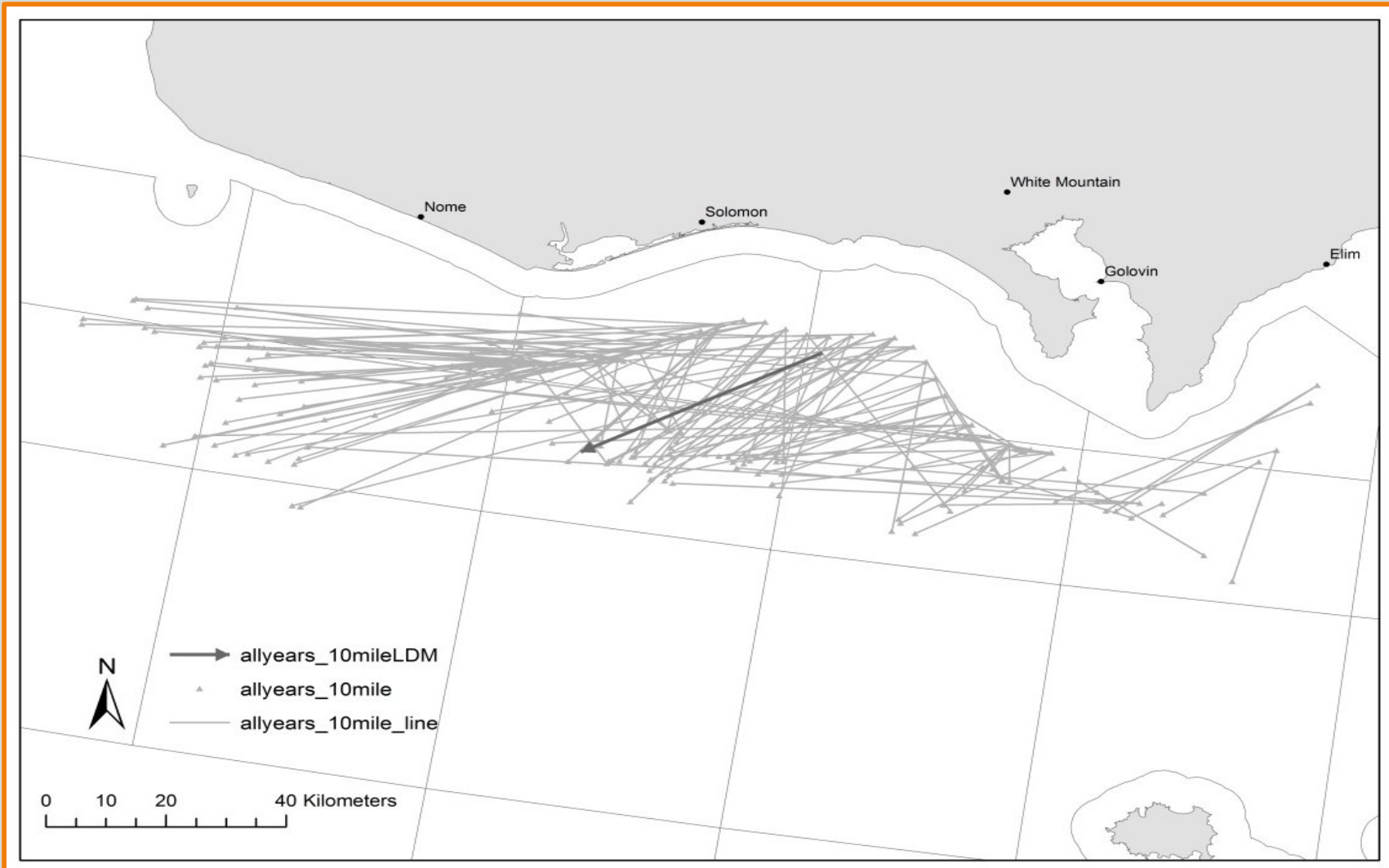
Determine offshore movement patterns of eastern Norton Sound red king crab



Results – Offshore Movement-5 mile



Results – Offshore Movement-10 mile



Results – Objective 4

Estimate discard ratio of non-target red king crab in commercial crab pots



Results – Target and non-target crab

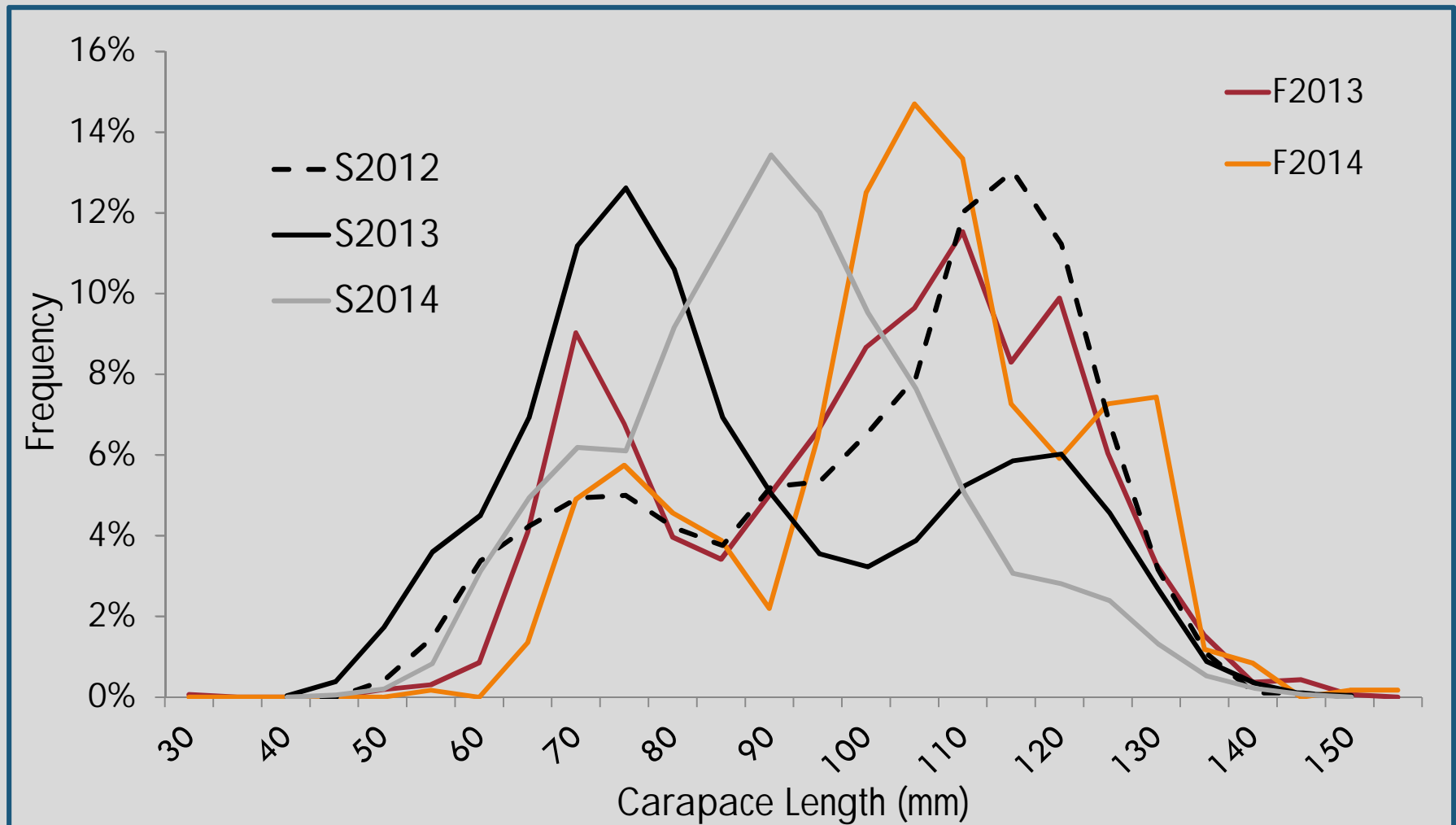


Summary

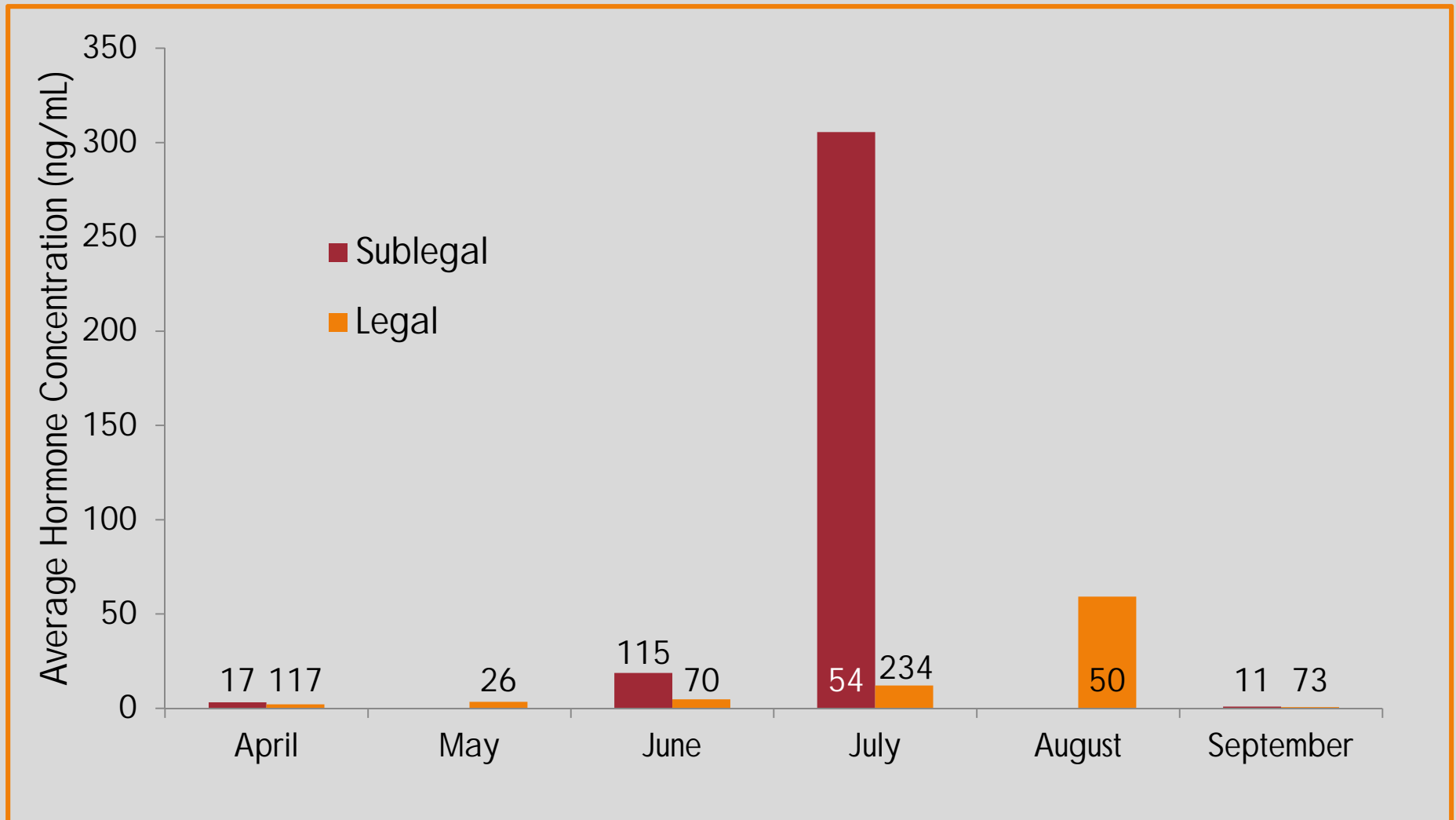
- 2 possible critical locations for juveniles
- Females tended to be along the 10 mile transect
- Spring nearshore size composition of male RKC varies by year
- Size at maturity for females RKC 65-70 mm CL
- Carapace length and shell condition determine the size of the molt increment
- Movement is southwest offshore
- Areas of high SL abundance



Fall pot surveys



Hormone concentrations

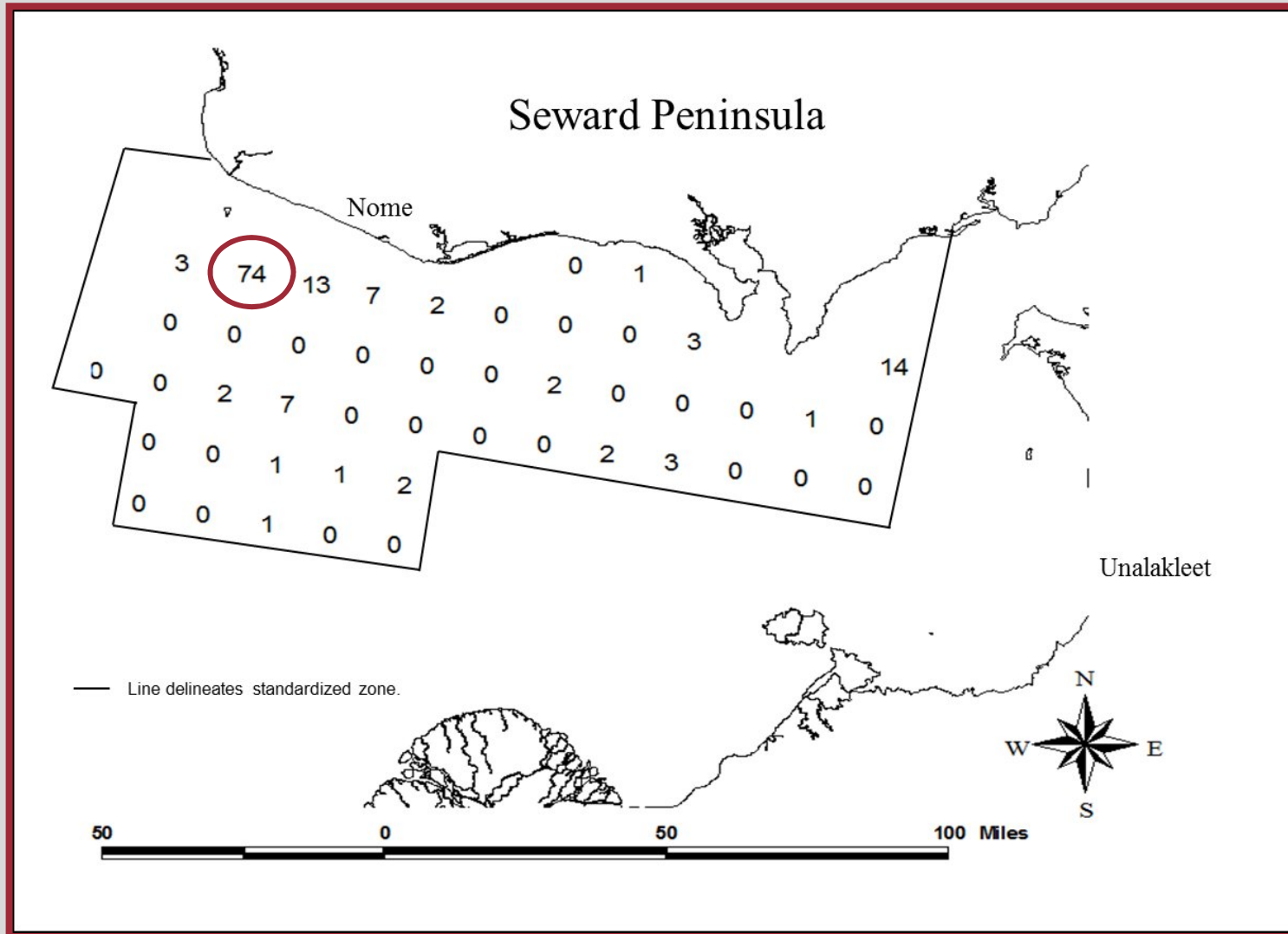




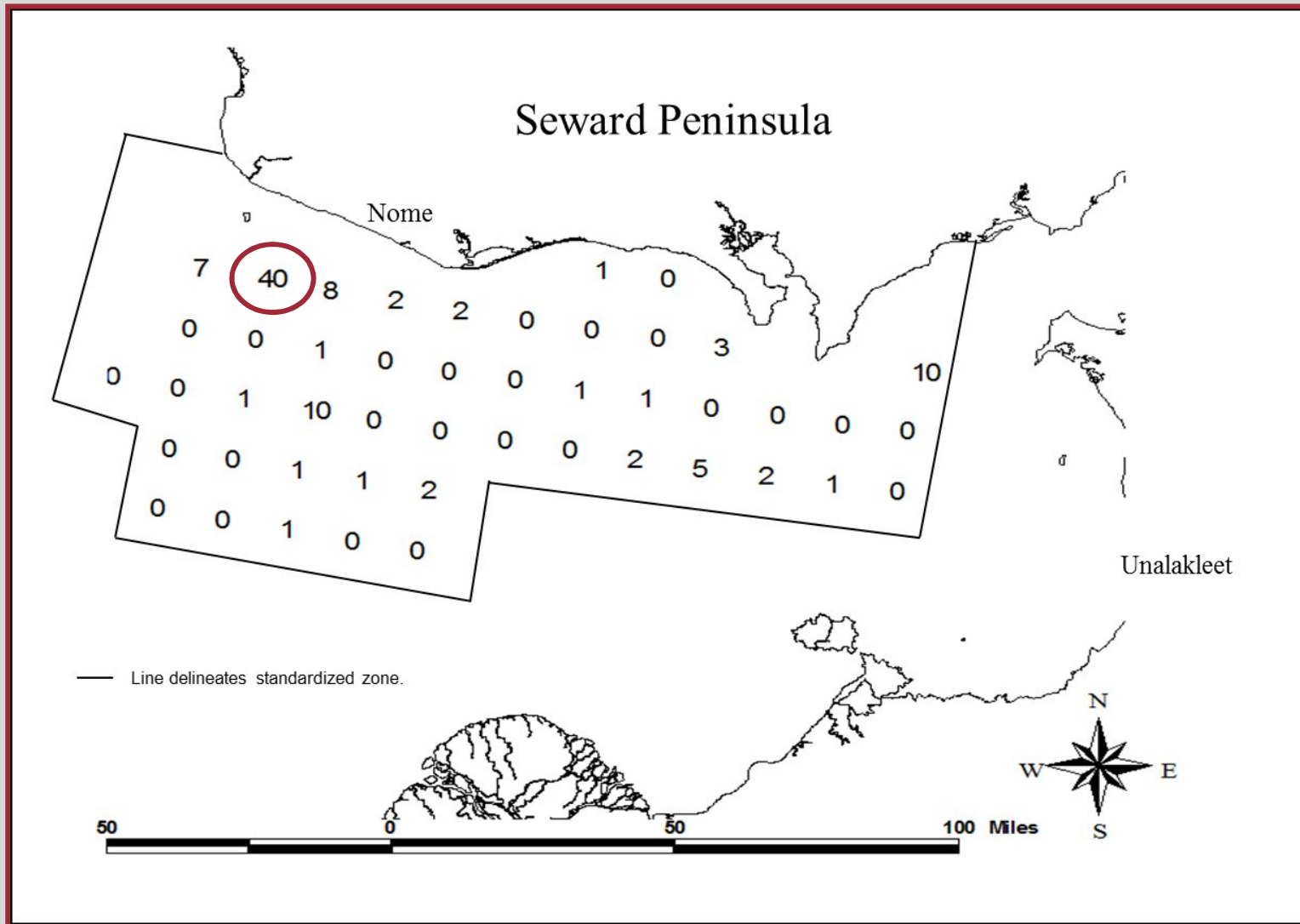
2014 TRAWL SURVEY

Joyce Soong and Toshihide Hamazaki

Pre-recruit 1 red king crab



Pre-recruit 2 red king crab



Abundance estimates

Pre-recruit 2

1,547,538 (SE=643,563)

Pre-recruit 1

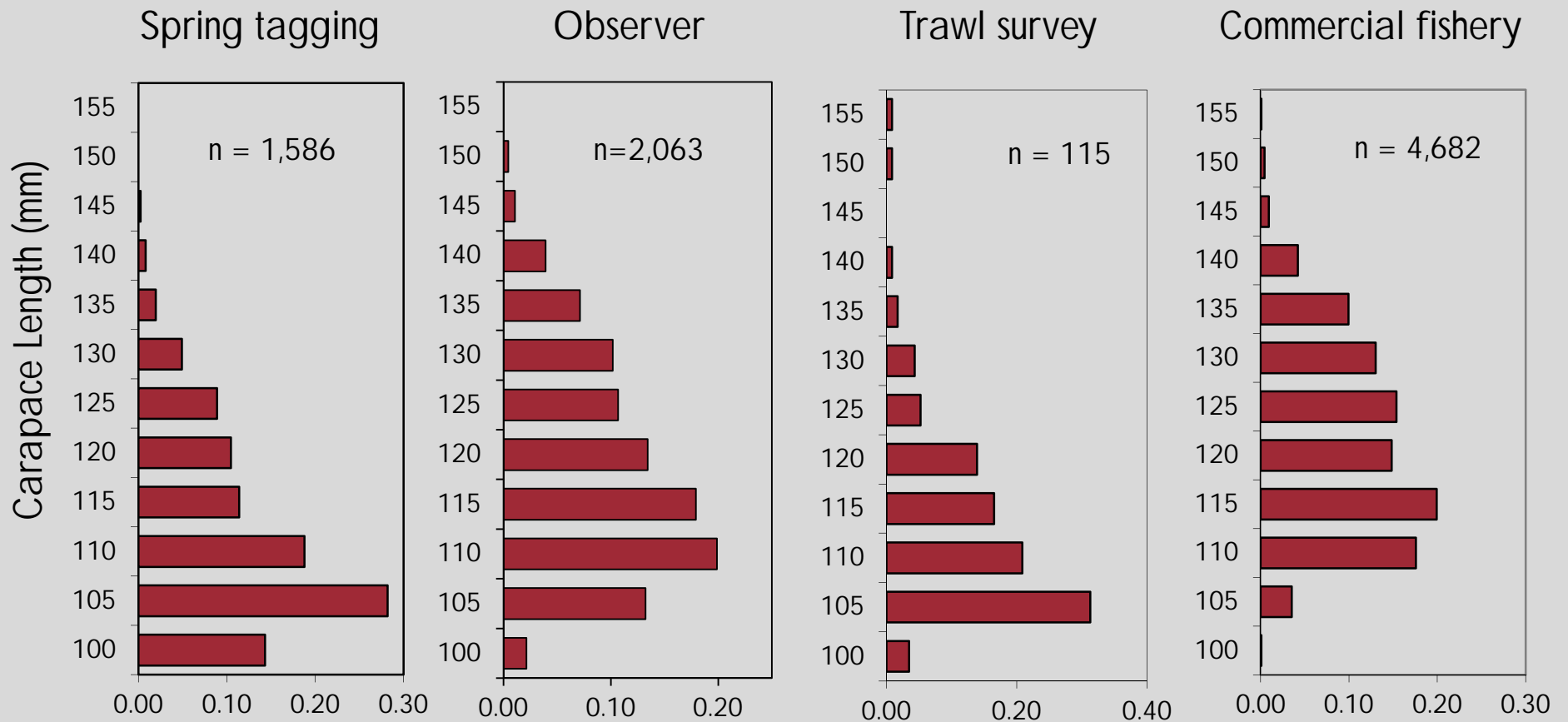
2,110,274 (SE=1,474,574)

Legal

1,747,720 (SE=912,399)



Size comparisons- legal red king crab



Thanks!

Questions?

