



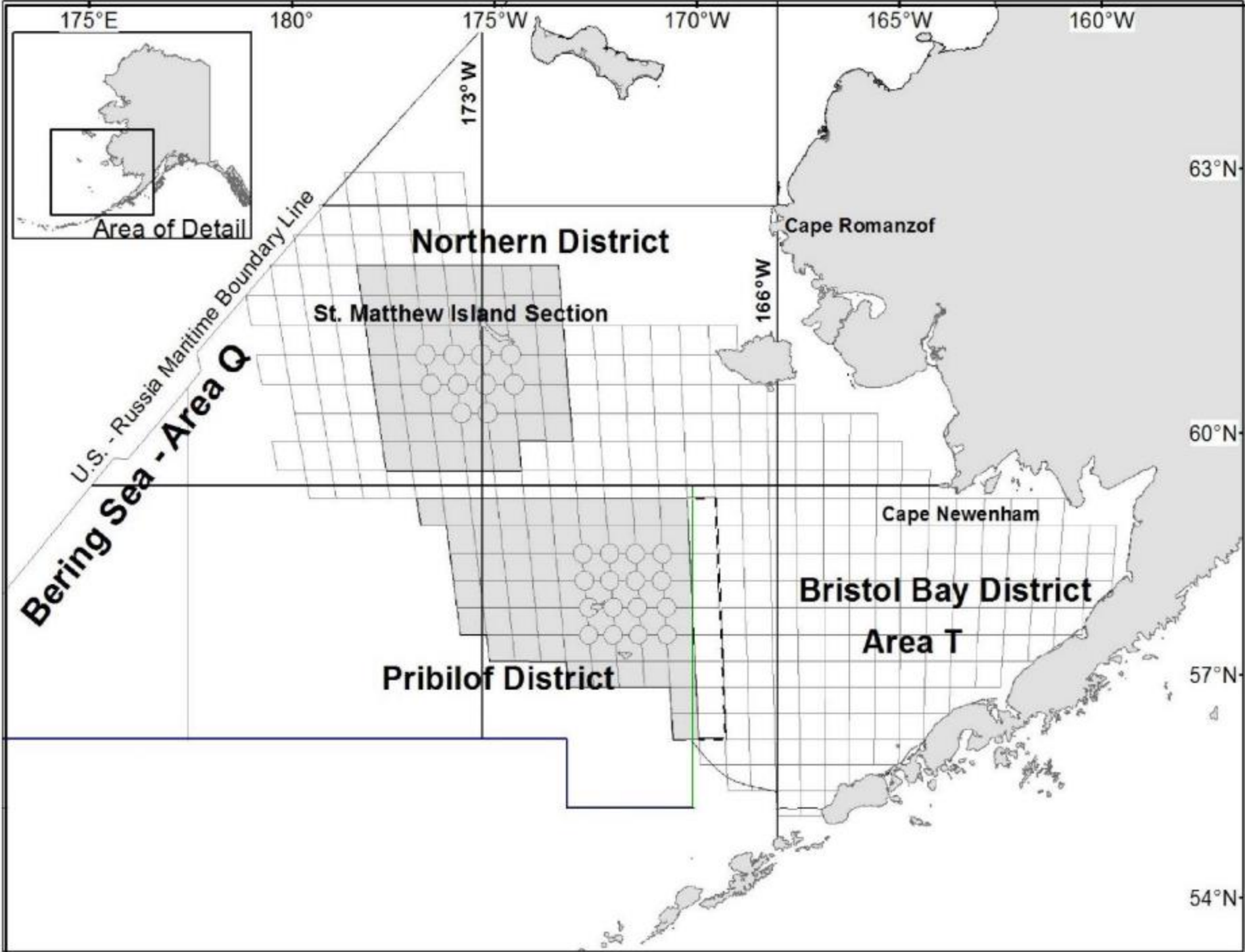
**NOAA
FISHERIES**

Alaska Fisheries
Science Center-
Kodiak Lab

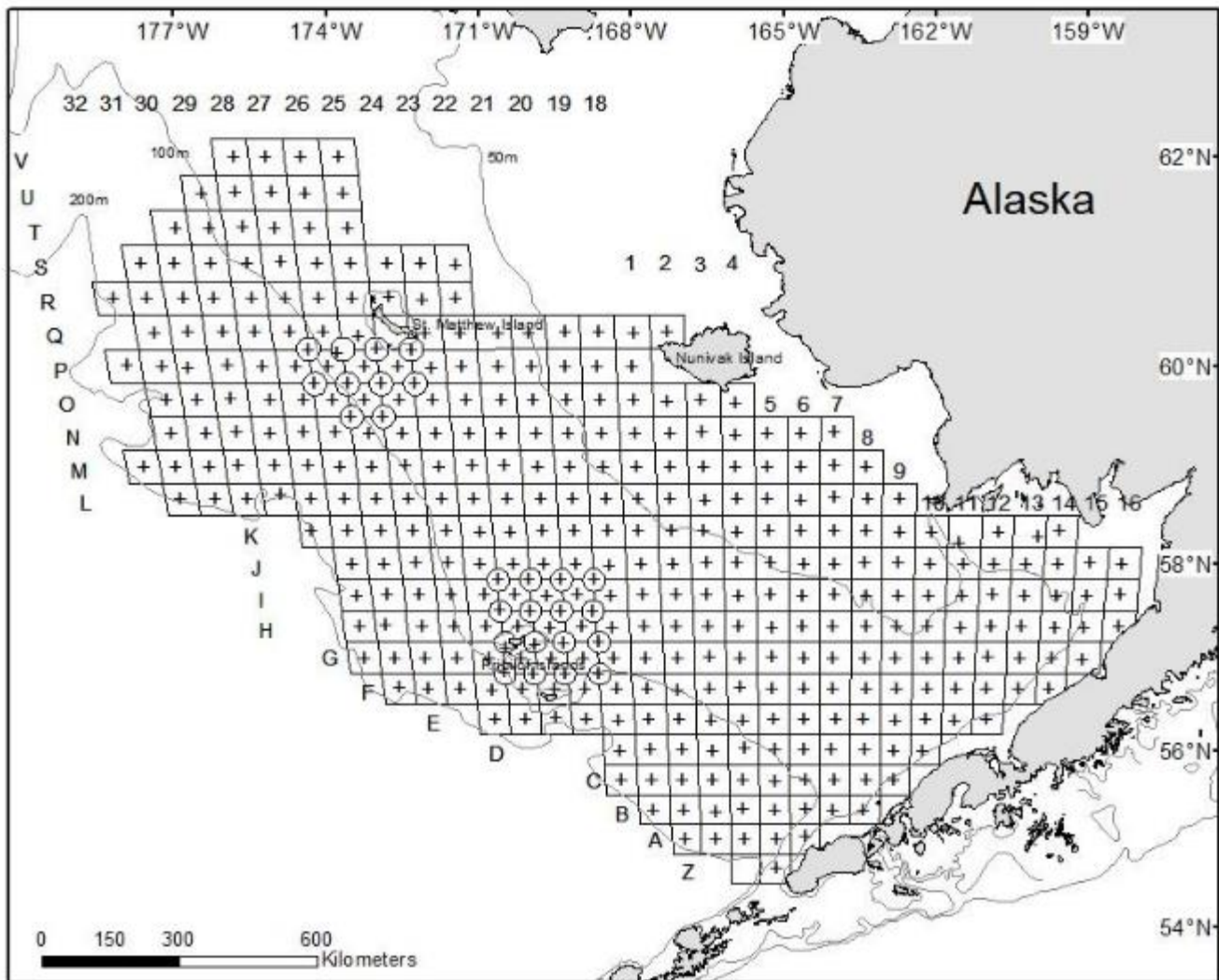
The 2018 Eastern Bering Sea Continental Shelf Bottom Trawl Survey: Results for Commercial Crab Species

Christie Lang, Jon Richar, Robert Foy,
AFSC SAP and GAP programs

Crab Plan Team
September 2018



2018 standard Bering Sea survey



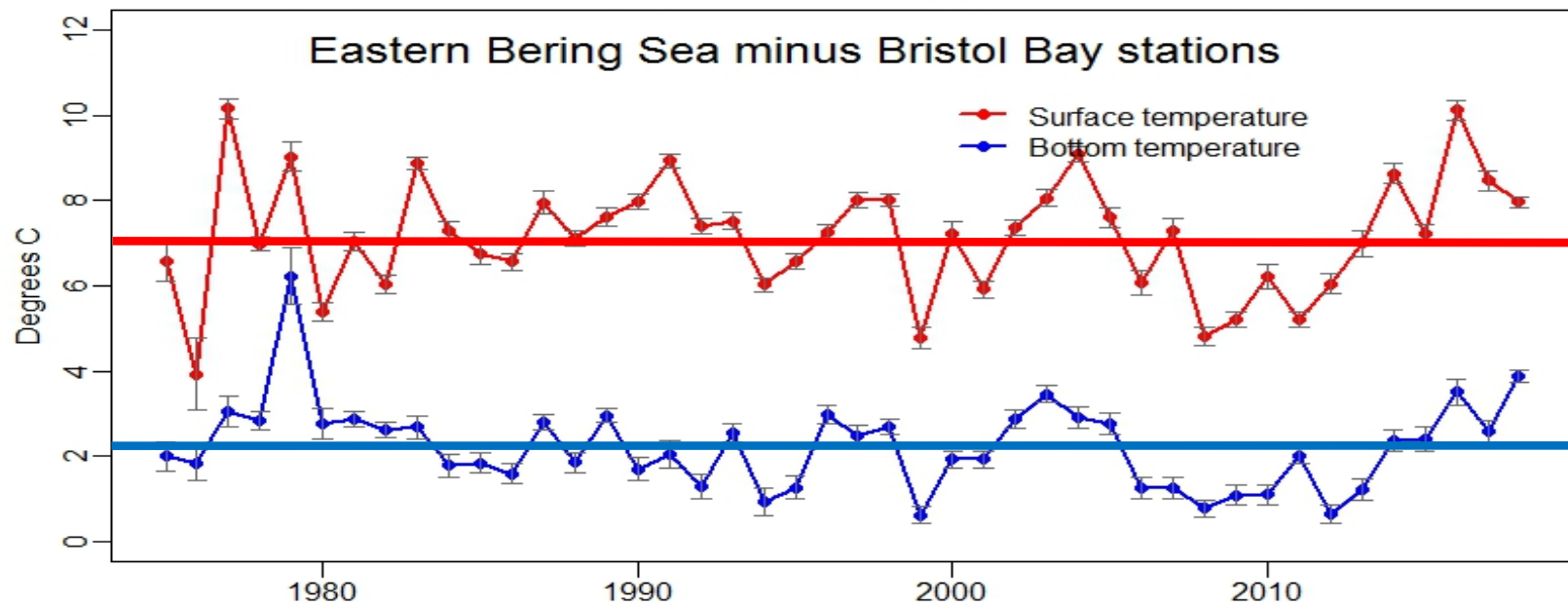
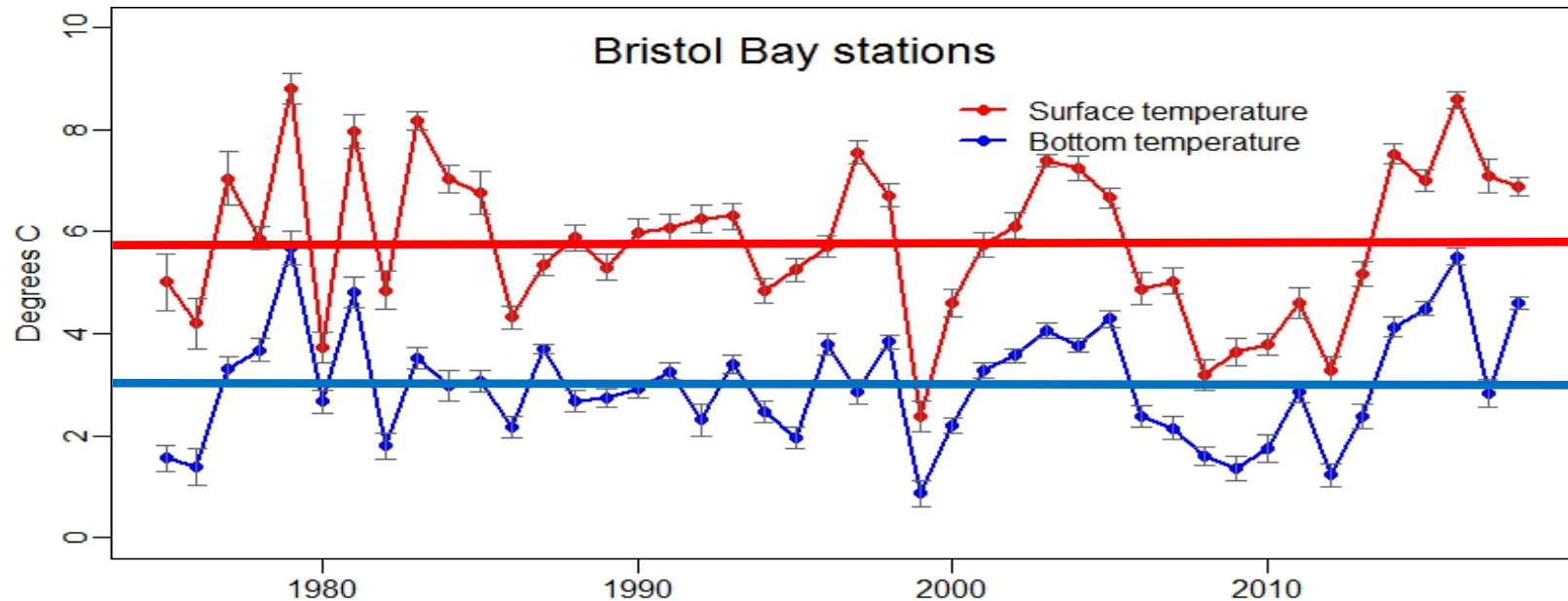
HIGHLIGHTS

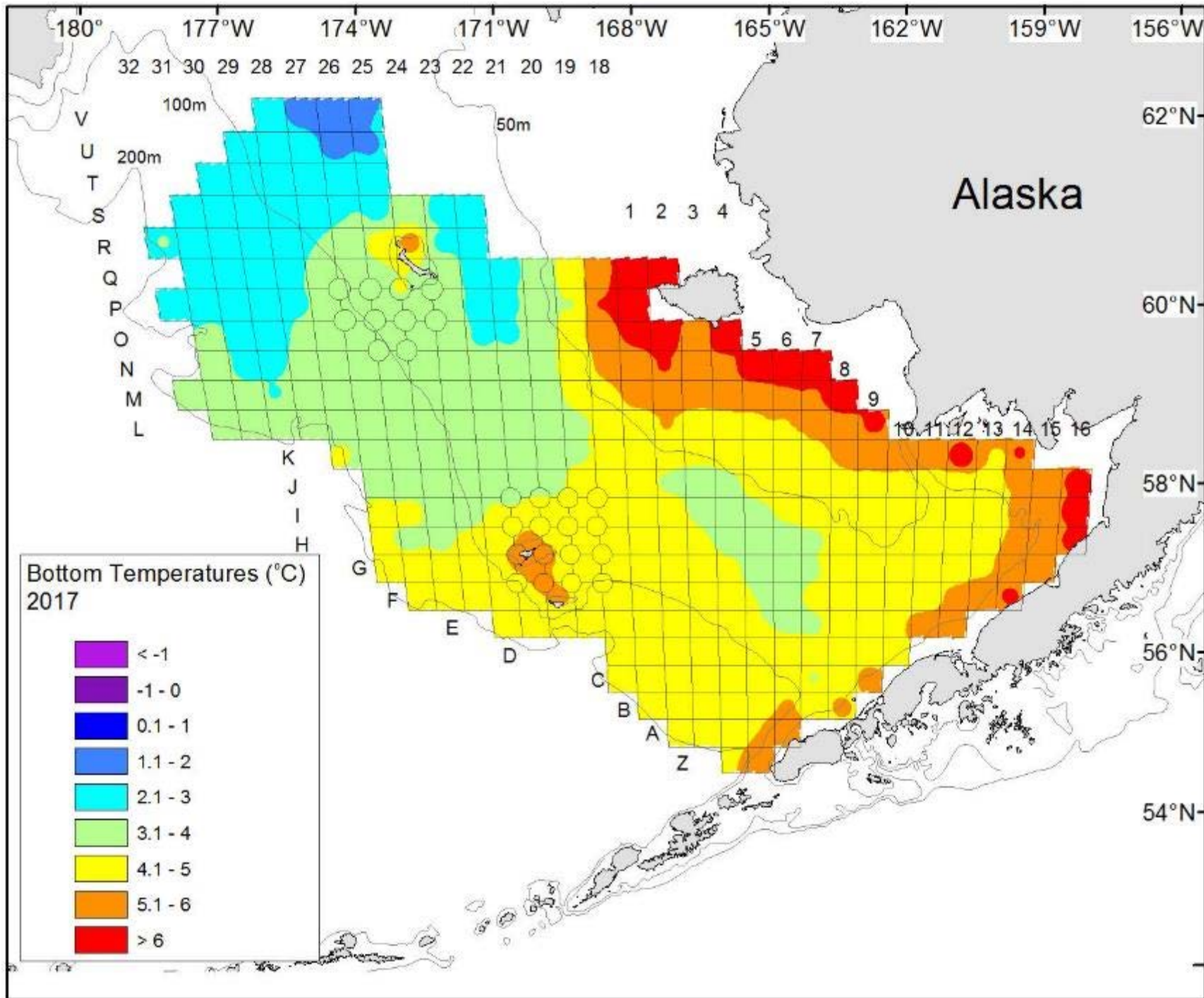
- June 3– July 31
- 375 standard stations
- 139,949 nm²
- 6 special crab projects
- Warm water
- Northern Bering Sea

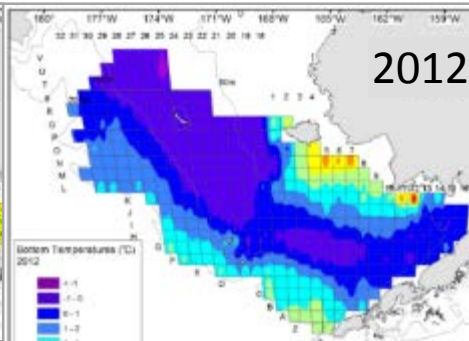
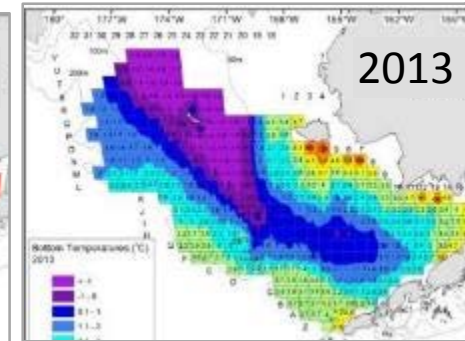
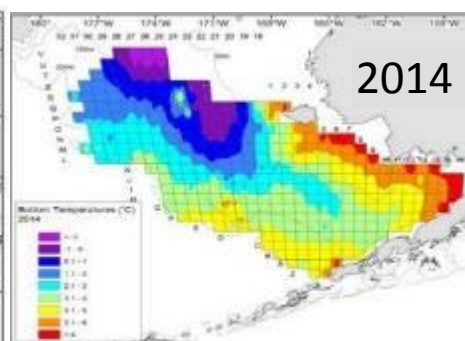
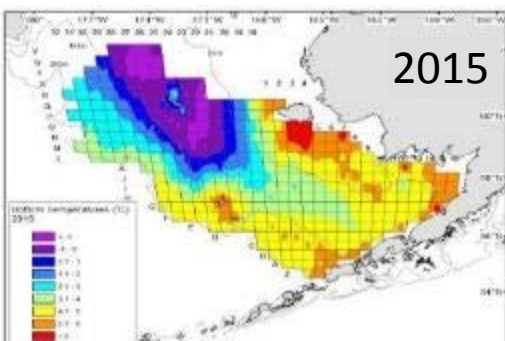
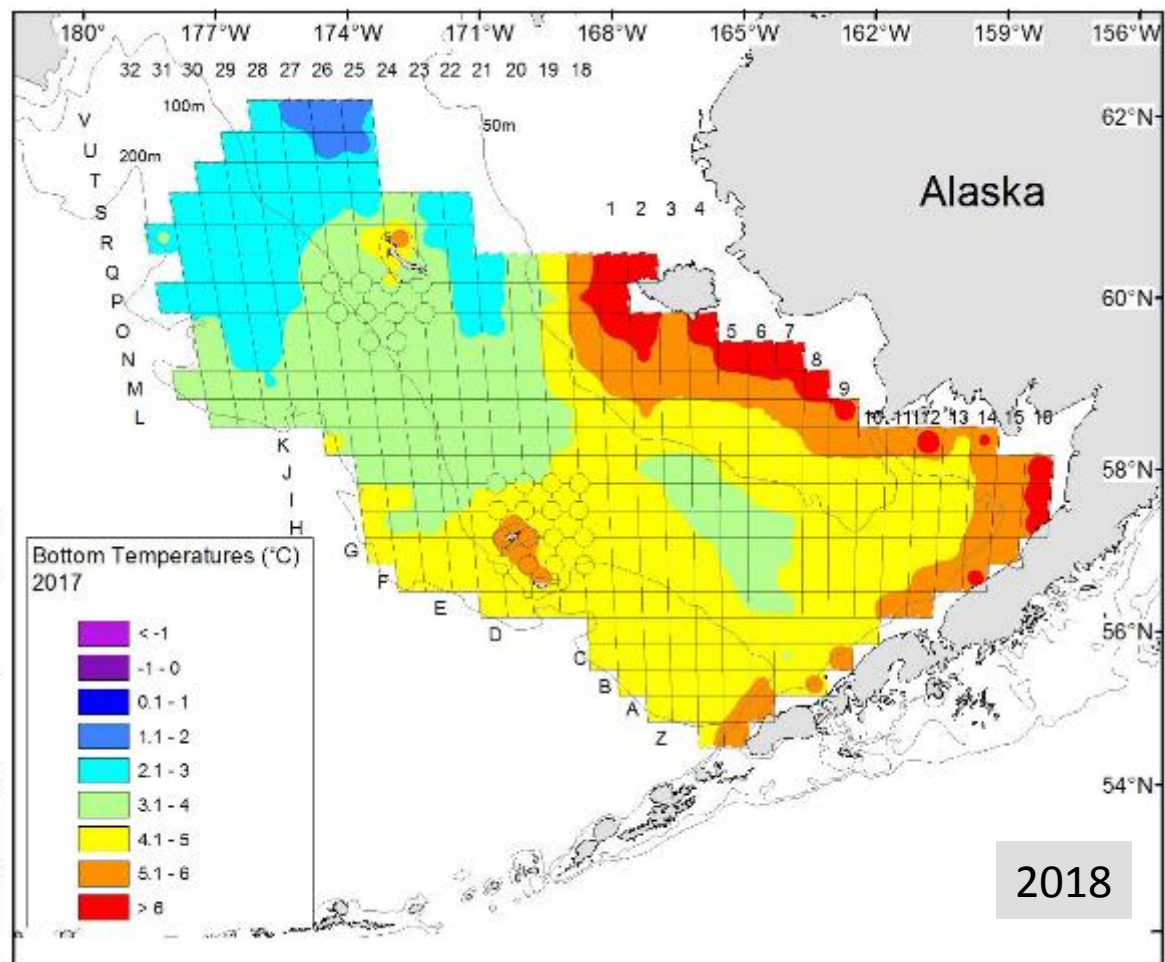
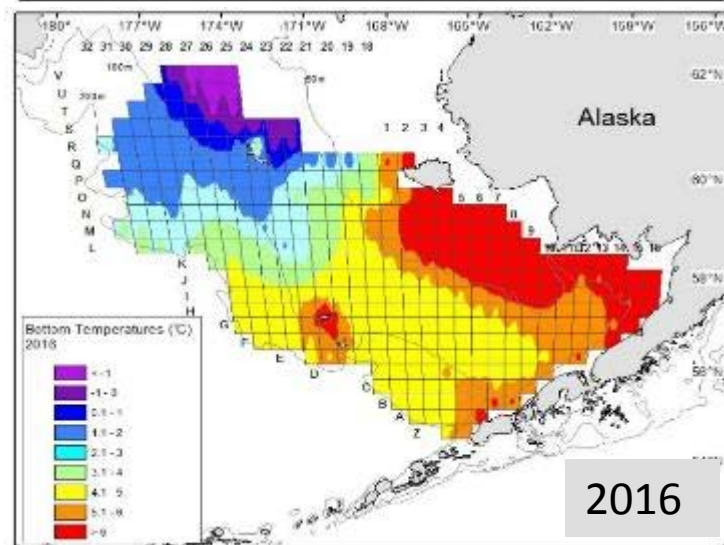
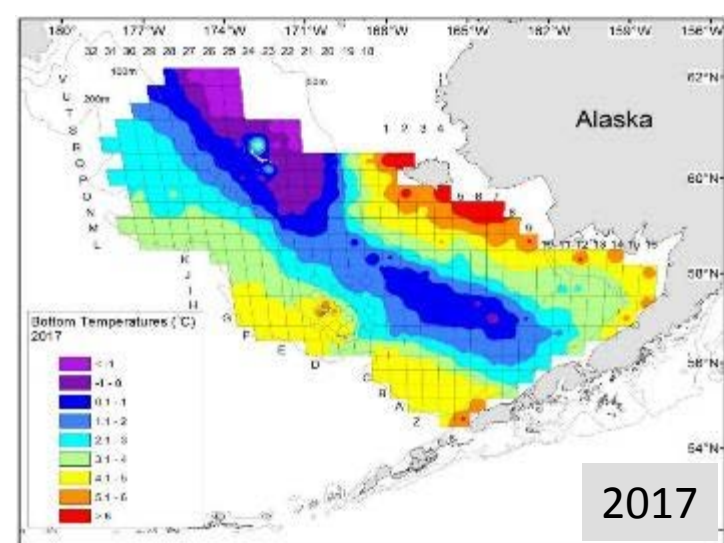
Special projects related to crab species

Project title	Principle Investigator	Agency
Bitter crab syndrome	P Jensen	RACE-SAP
Annual vs. biennial snow crab reproductive cycle	J Newby; R Foy	RACE-SAP
Population genomic structure of EBS Tanner crab	T Jackson	ADF&G
Genetics of mating dynamics in EBS snow crab	T Jackson	ADF&G
Crabs for outreach	L Slater	ADF&G
Population genomics of red king crab	J-I Westgaard	Inst. Mar. Res. Norway

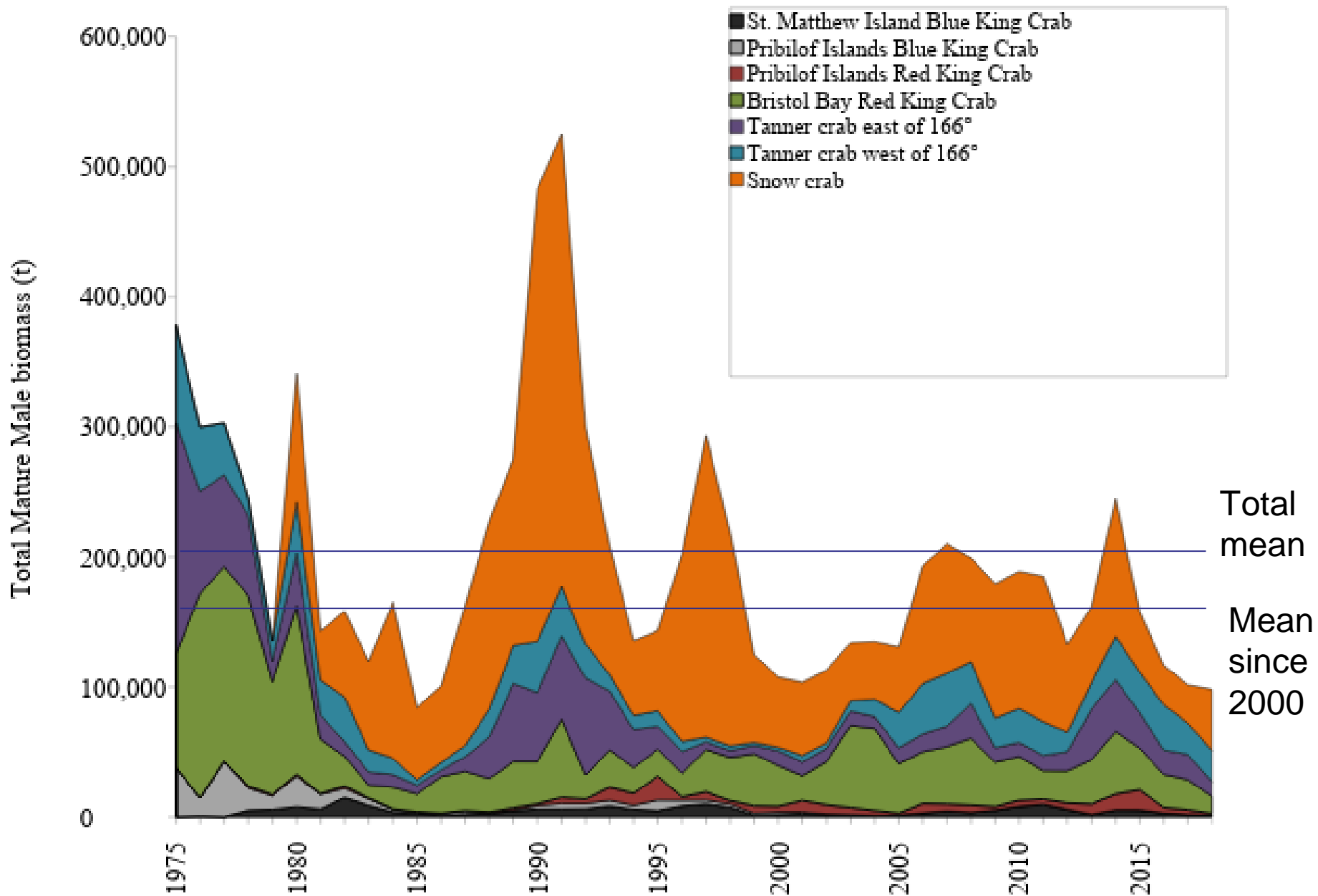
Bristol Bay Surface (red) and Bottom (blue) temperatures





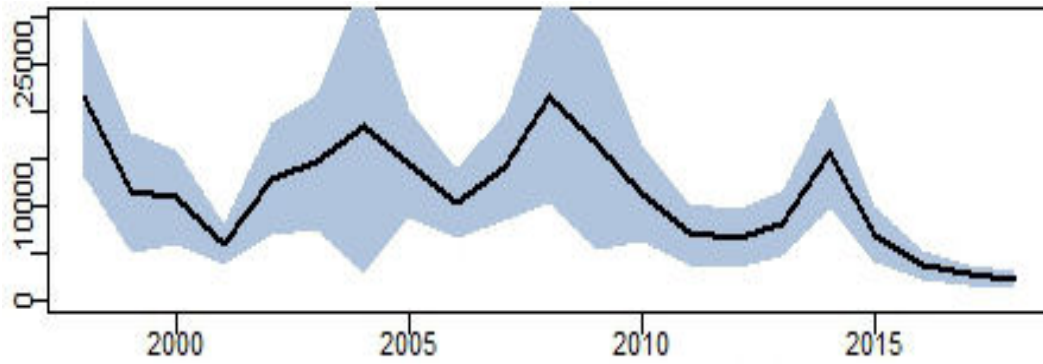
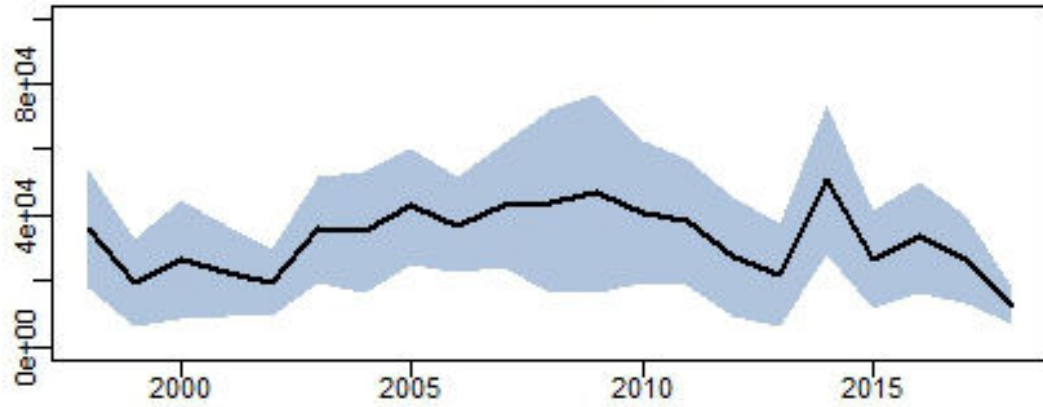
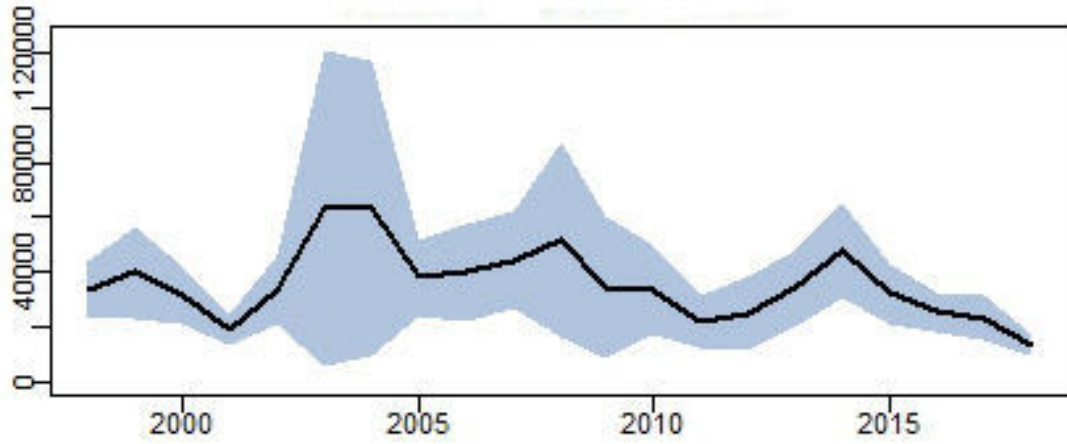


Mature male biomass

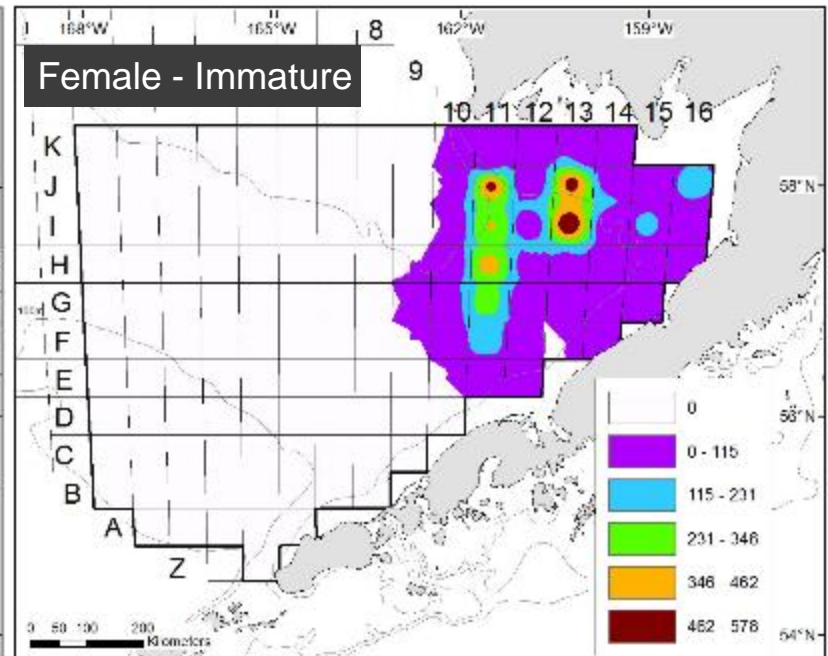
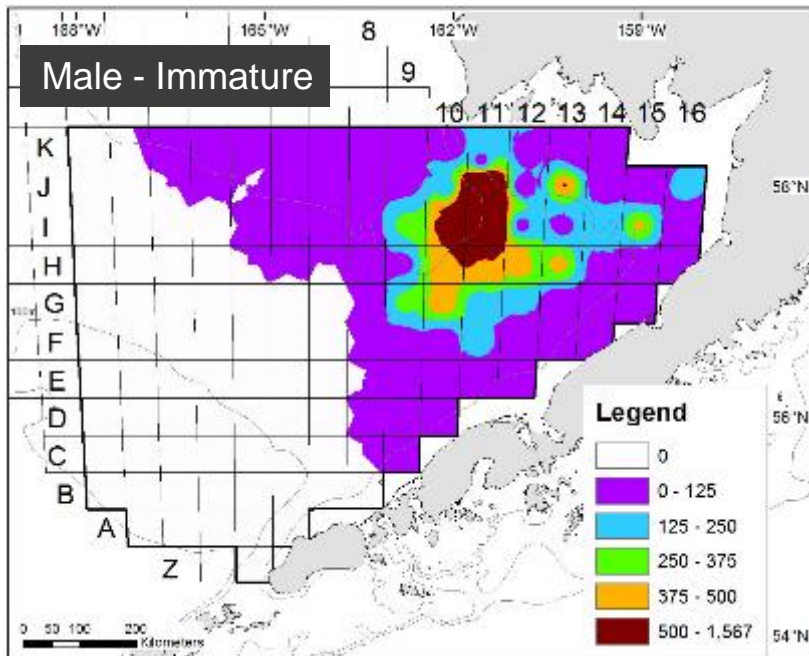
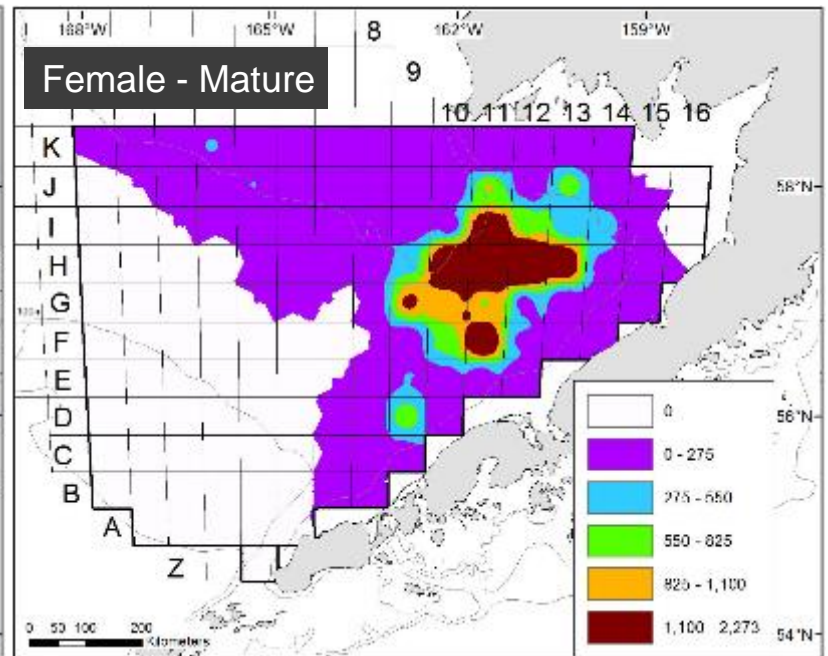
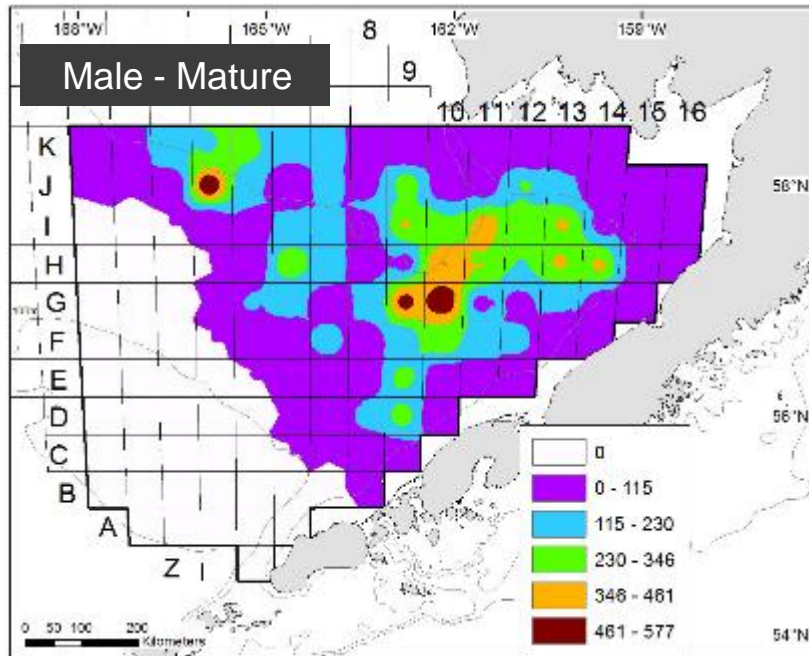


Bristol Bay red king crab

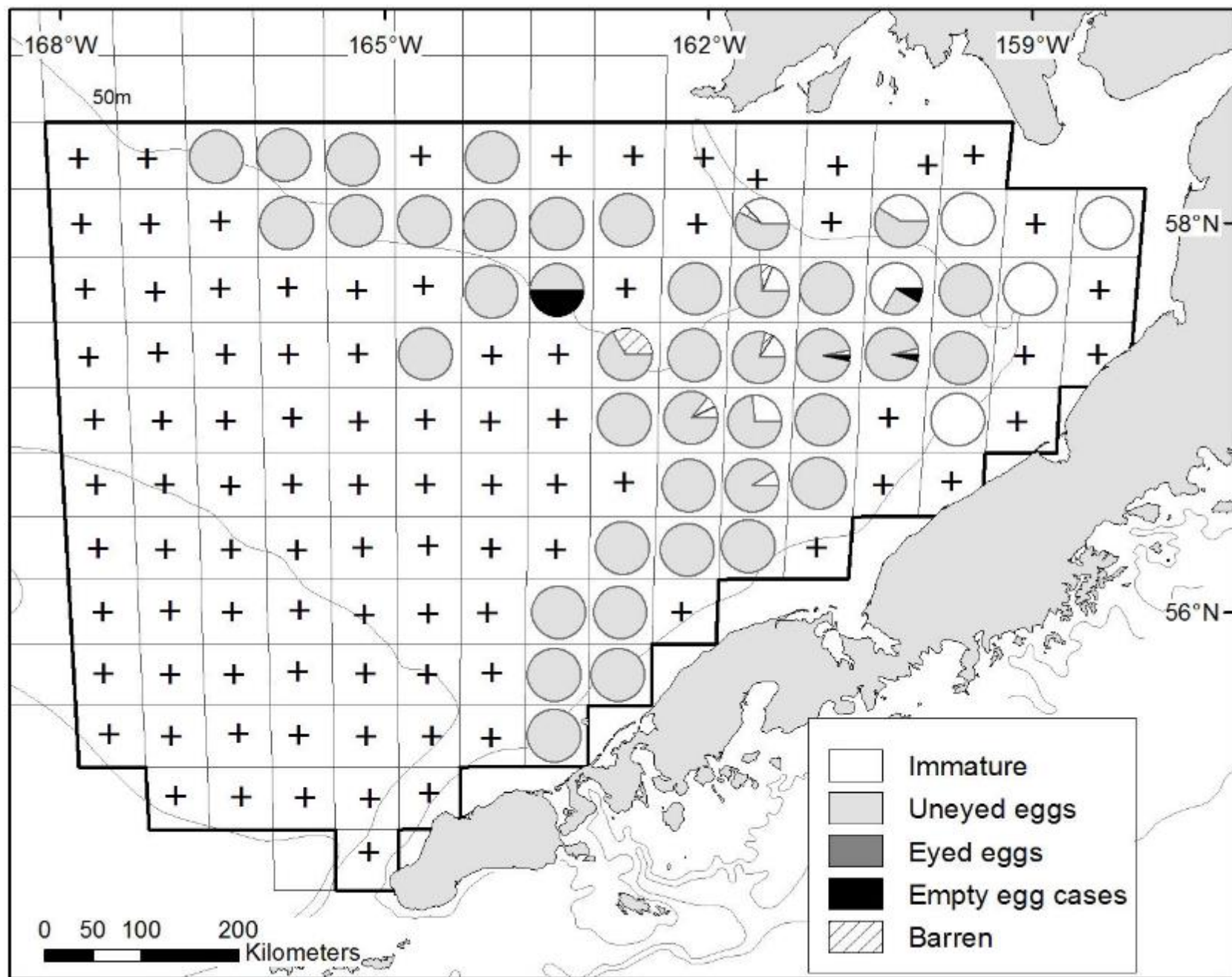
Biomass (t)



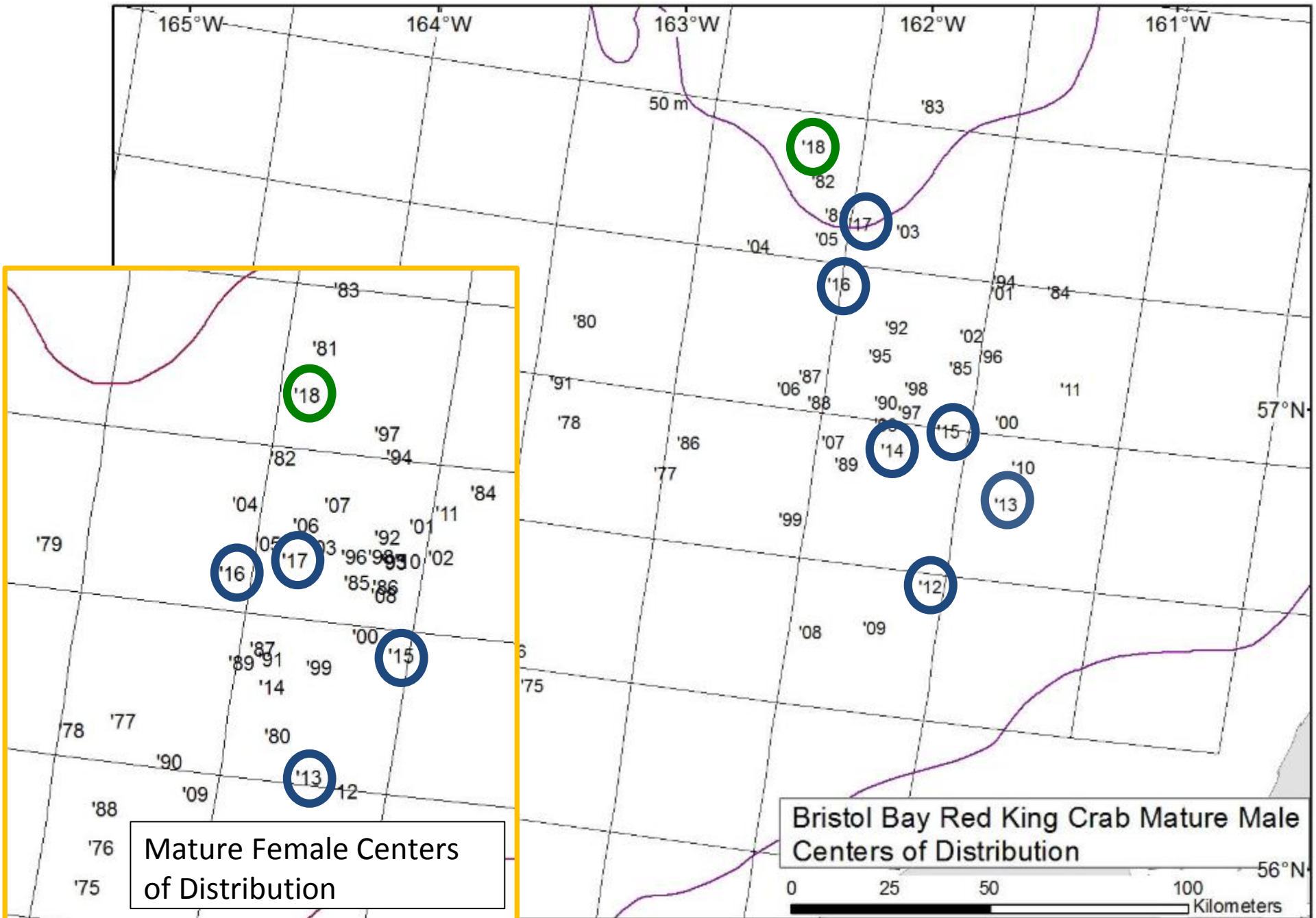
Bristol Bay red king crab



Bristol Bay red king crab



Bristol Bay red king crab

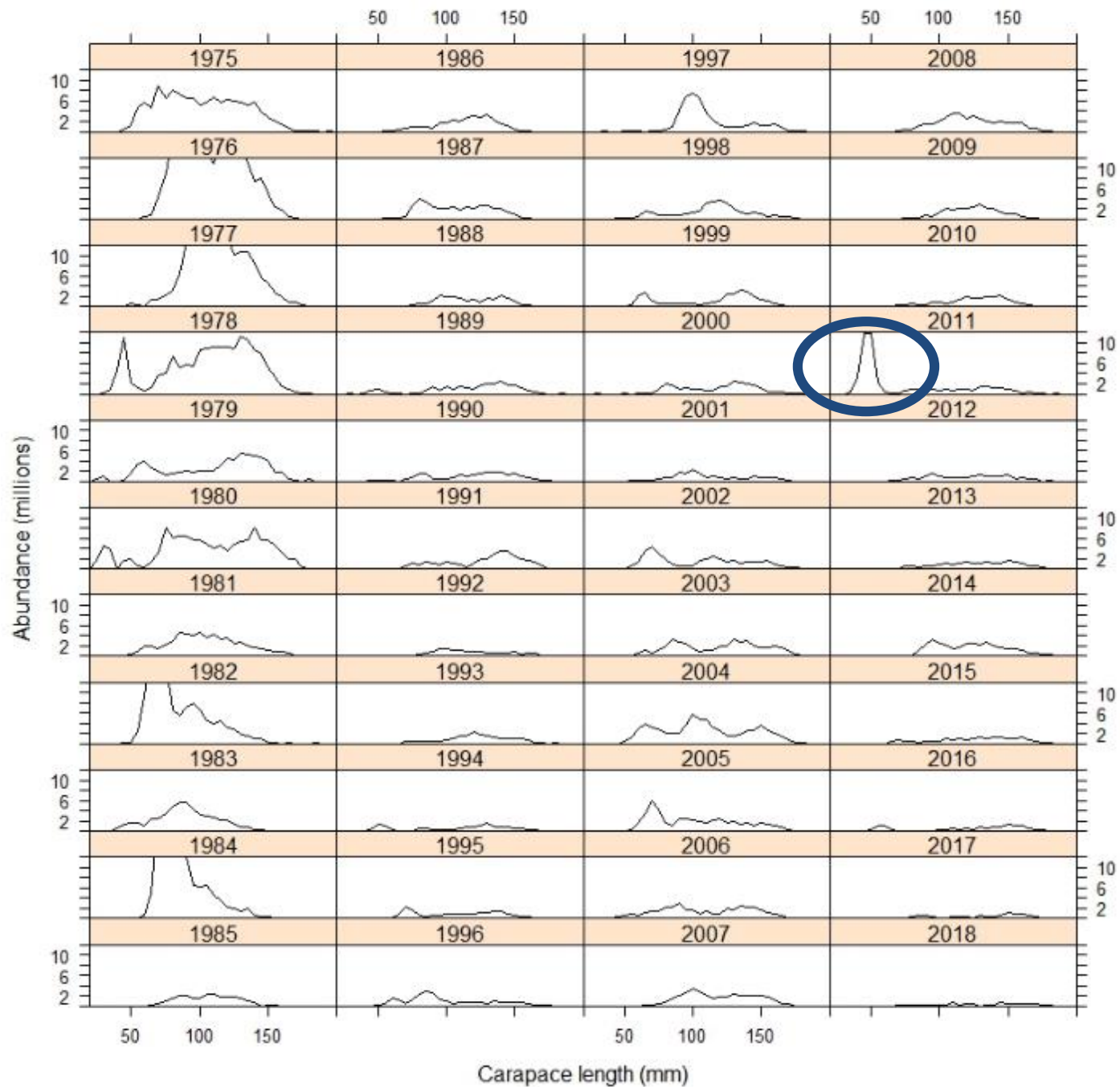


Mature Female Centers of Distribution

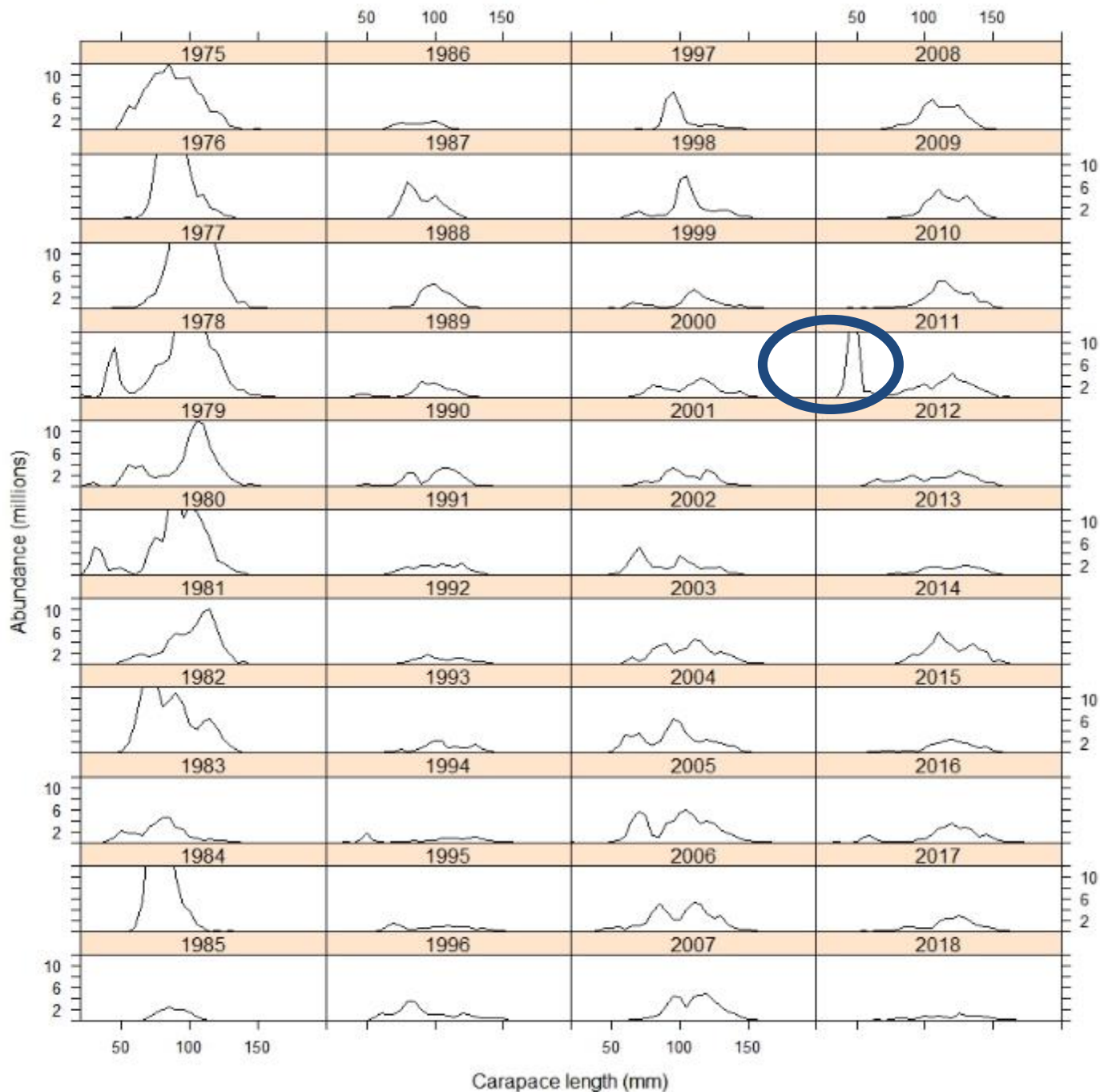
Bristol Bay Red King Crab Mature Male Centers of Distribution

0 25 50 100 Kilometers

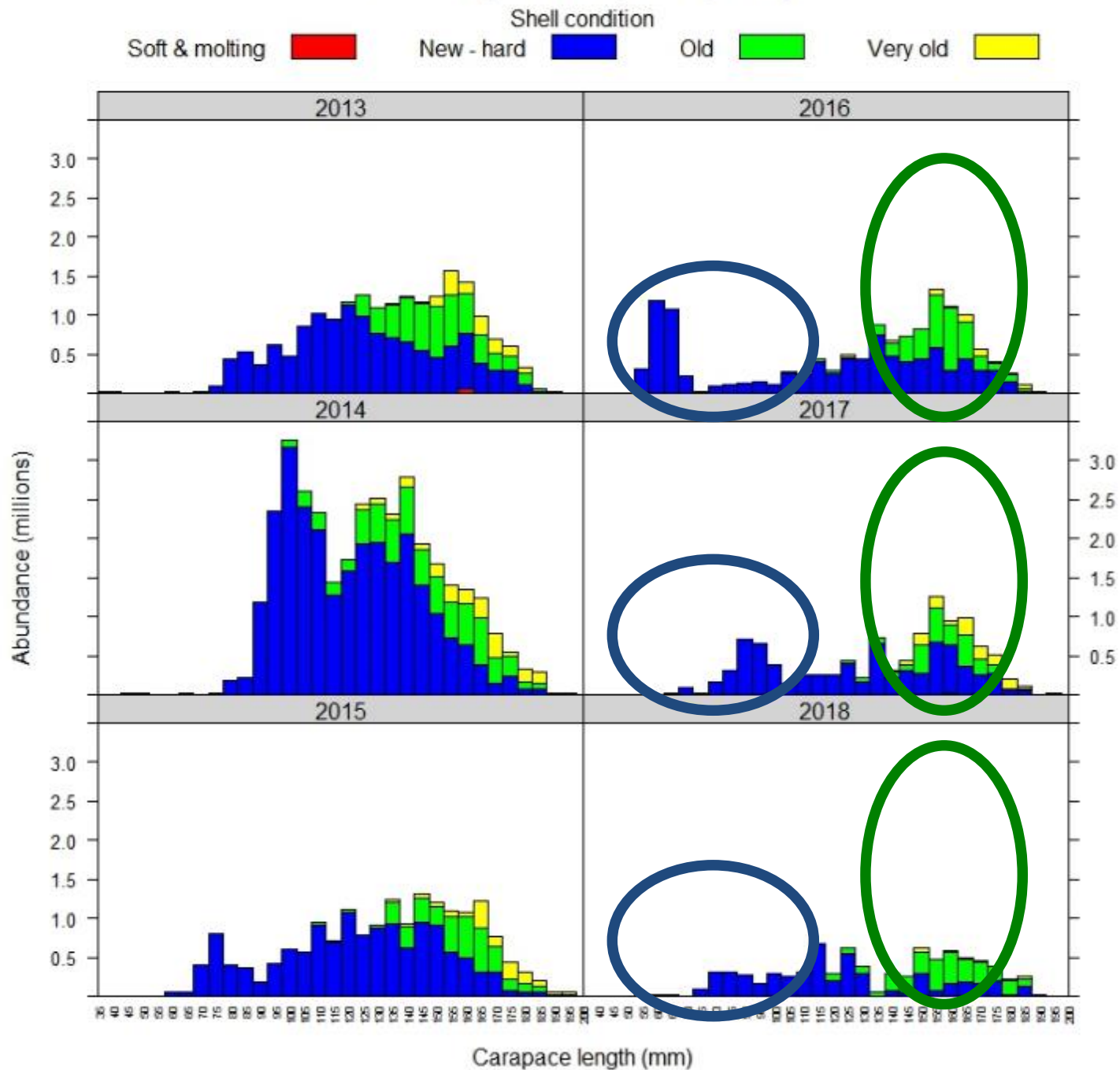
Bristol Bay Red King Crab (male)



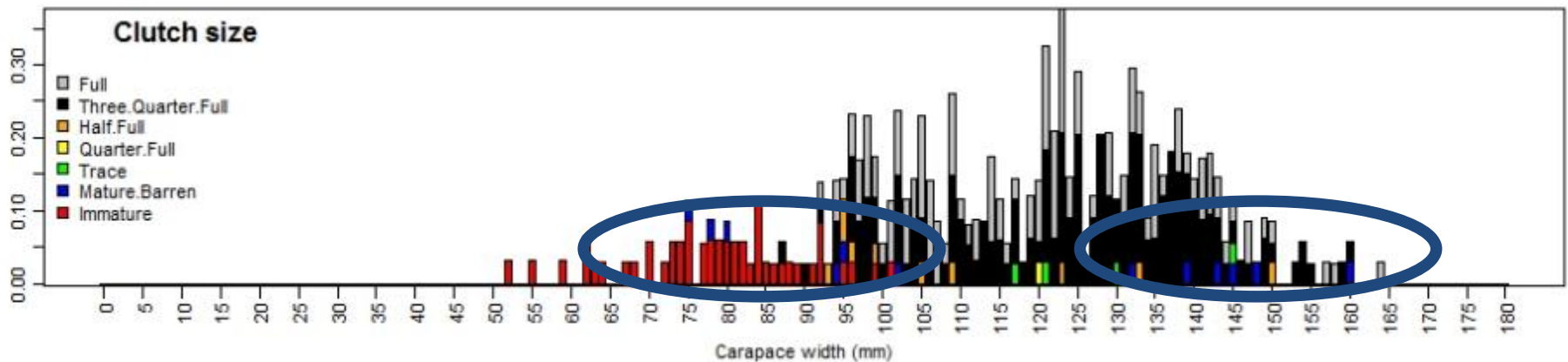
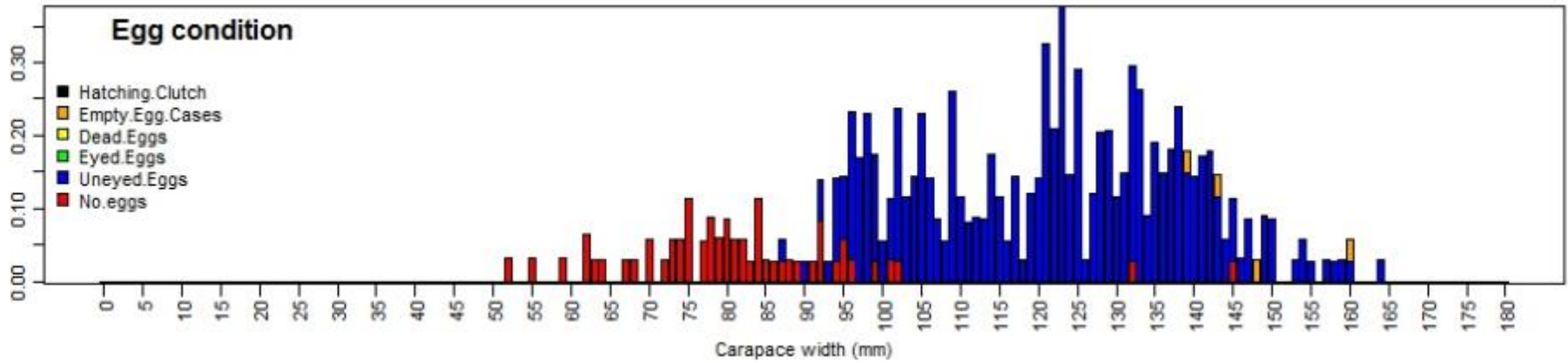
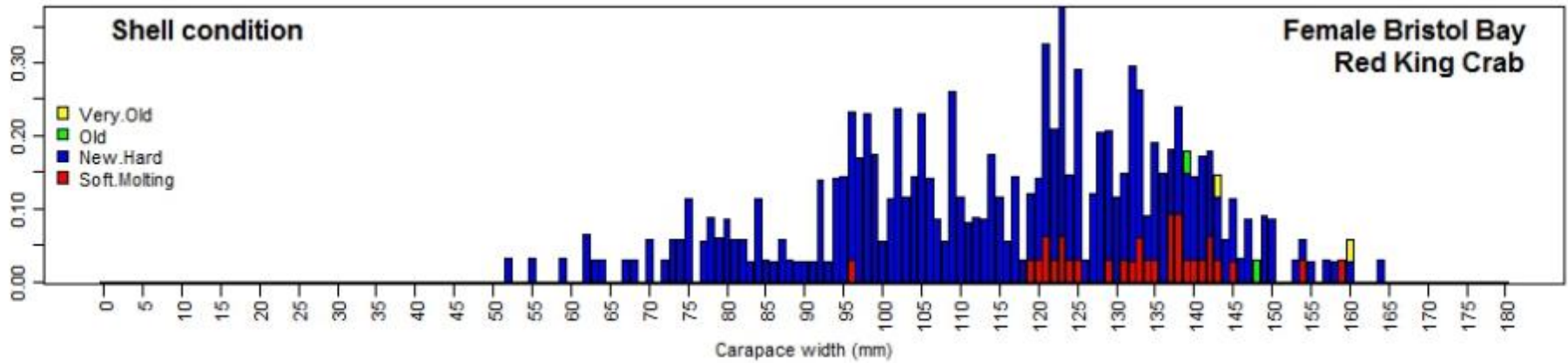
Bristol Bay Red King Crab (female)



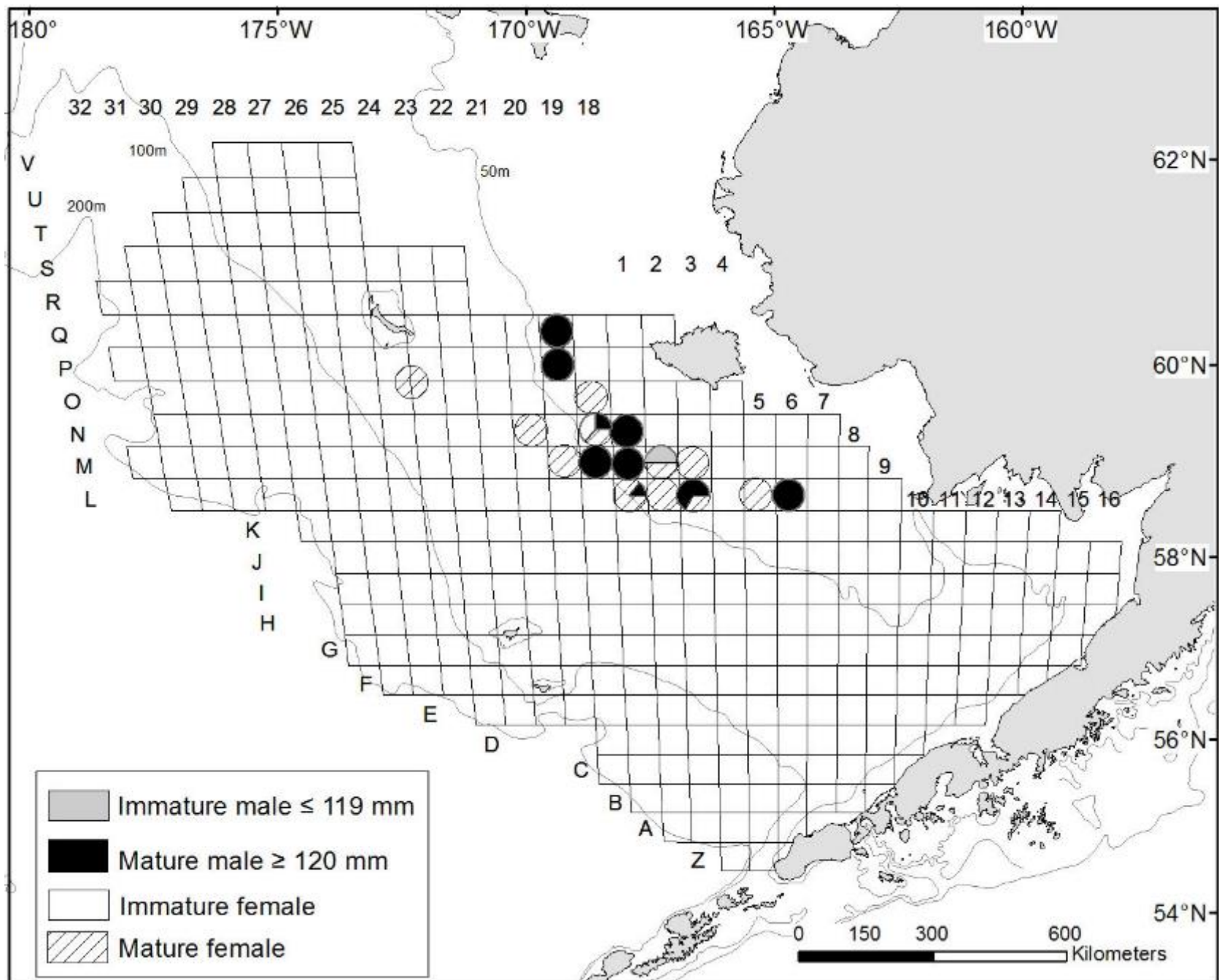
Bristol Bay Red King Crab (male)



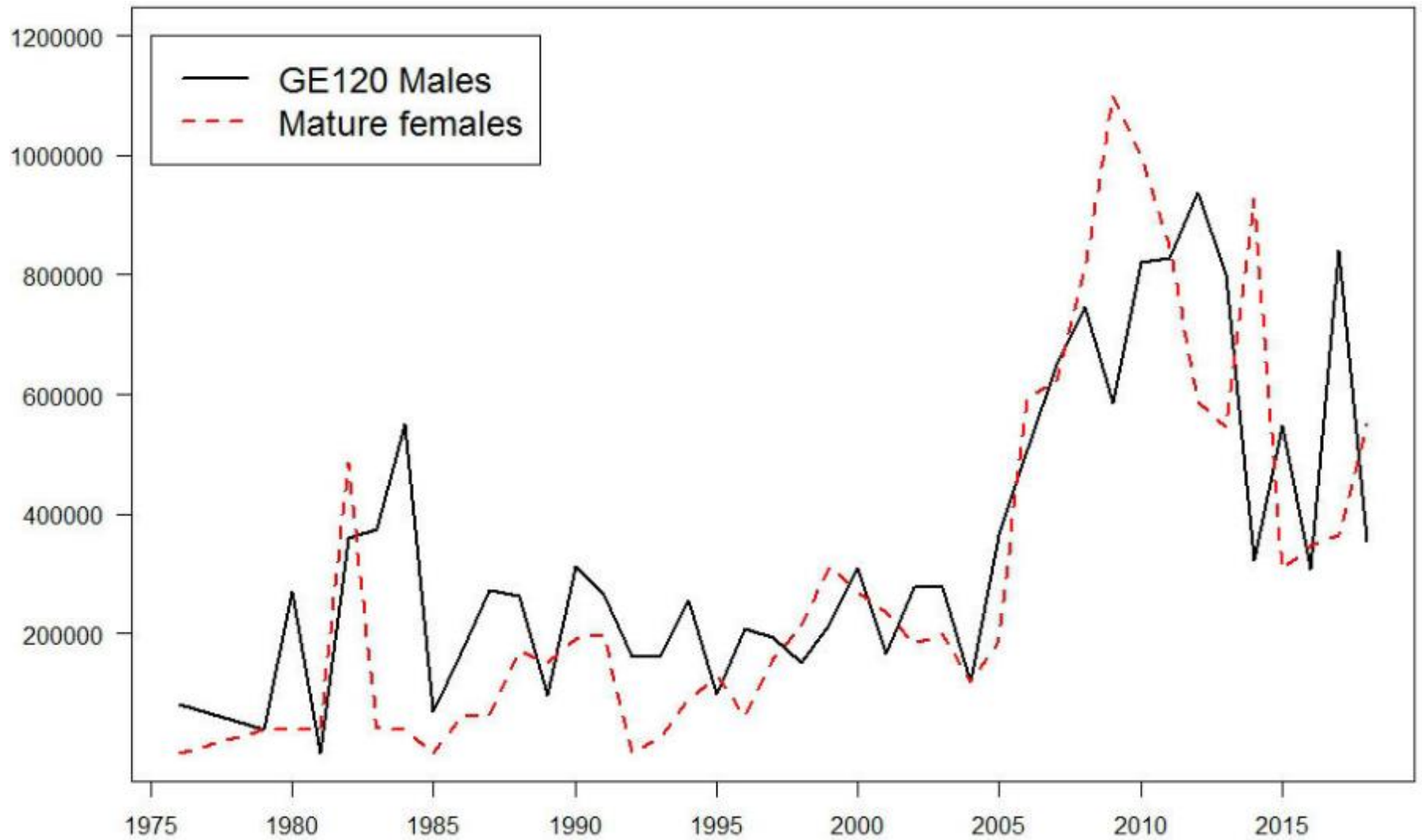
Bristol Bay red king crab



Unstratified red king crab

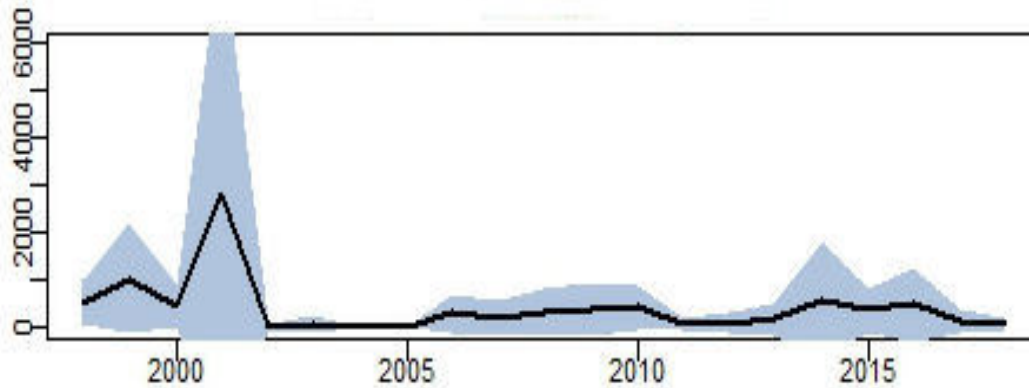
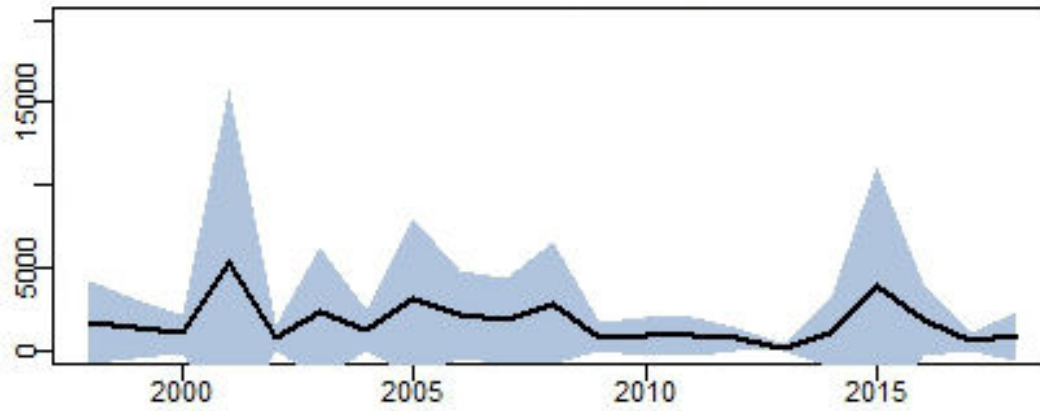
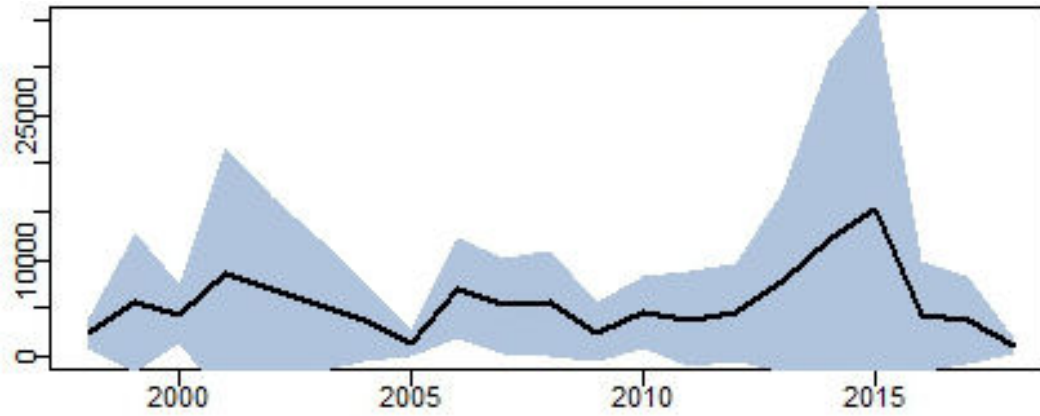


Unstratified red king crab

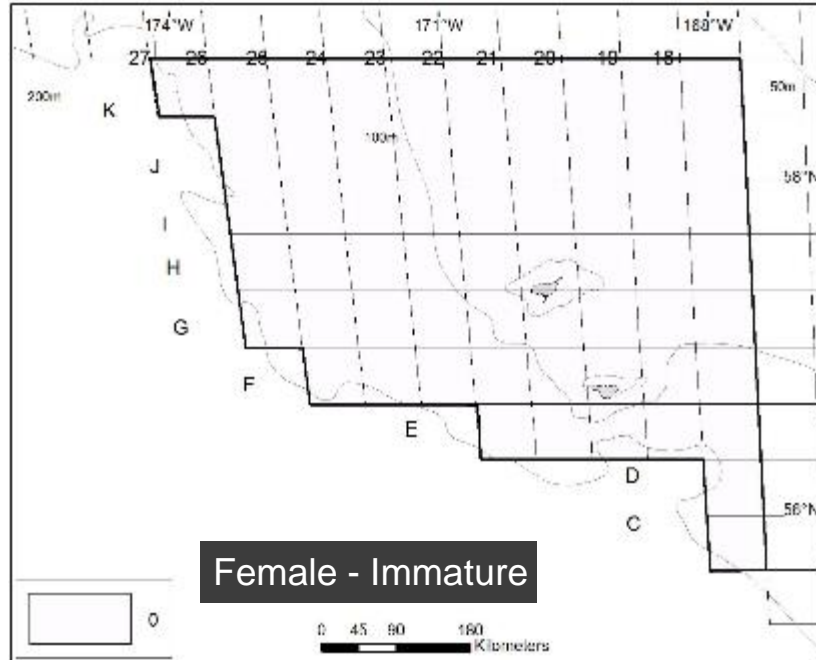
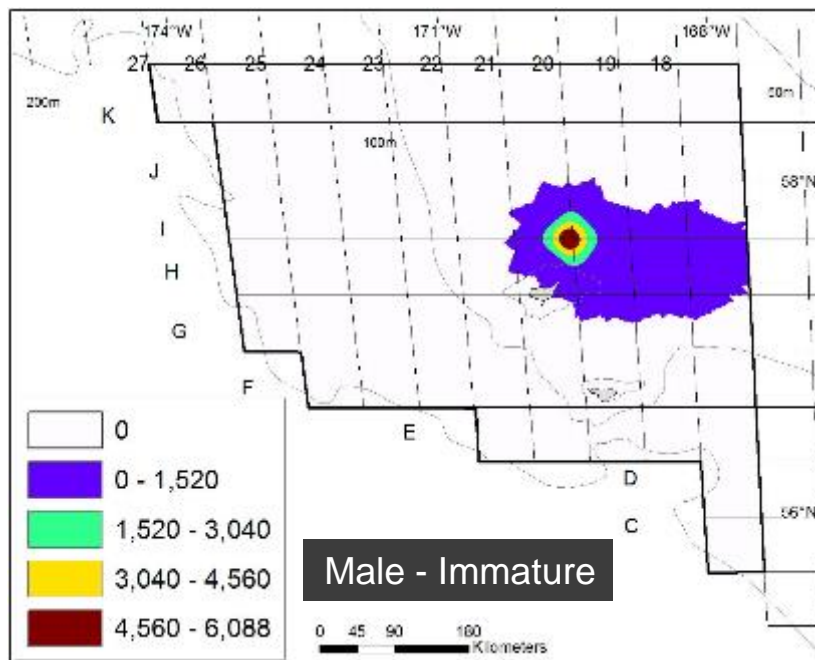
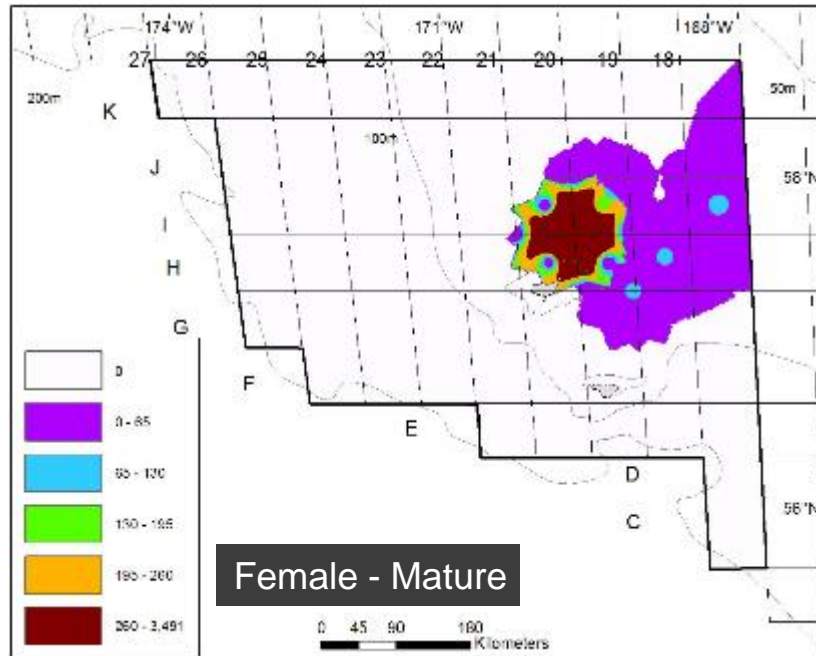
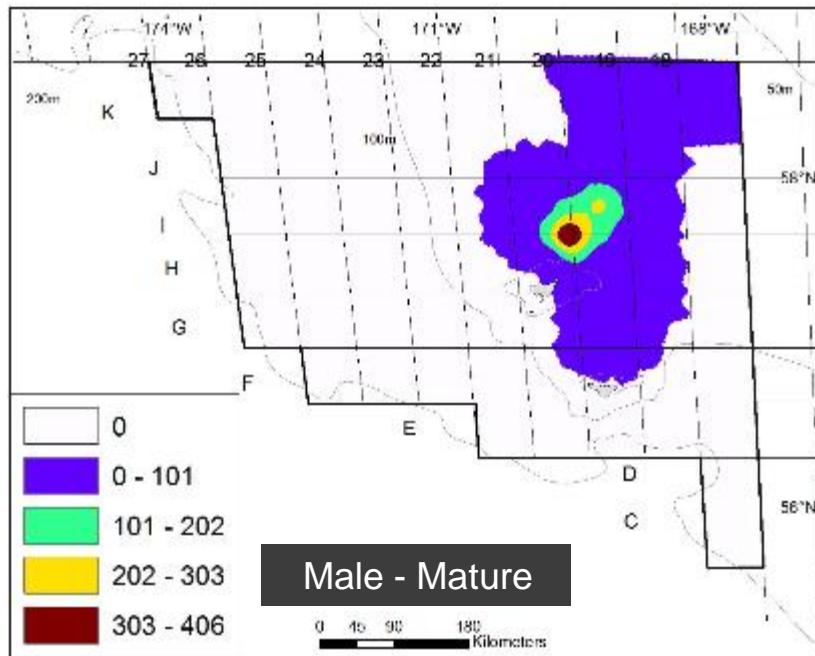


Pribilof Islands red king crab

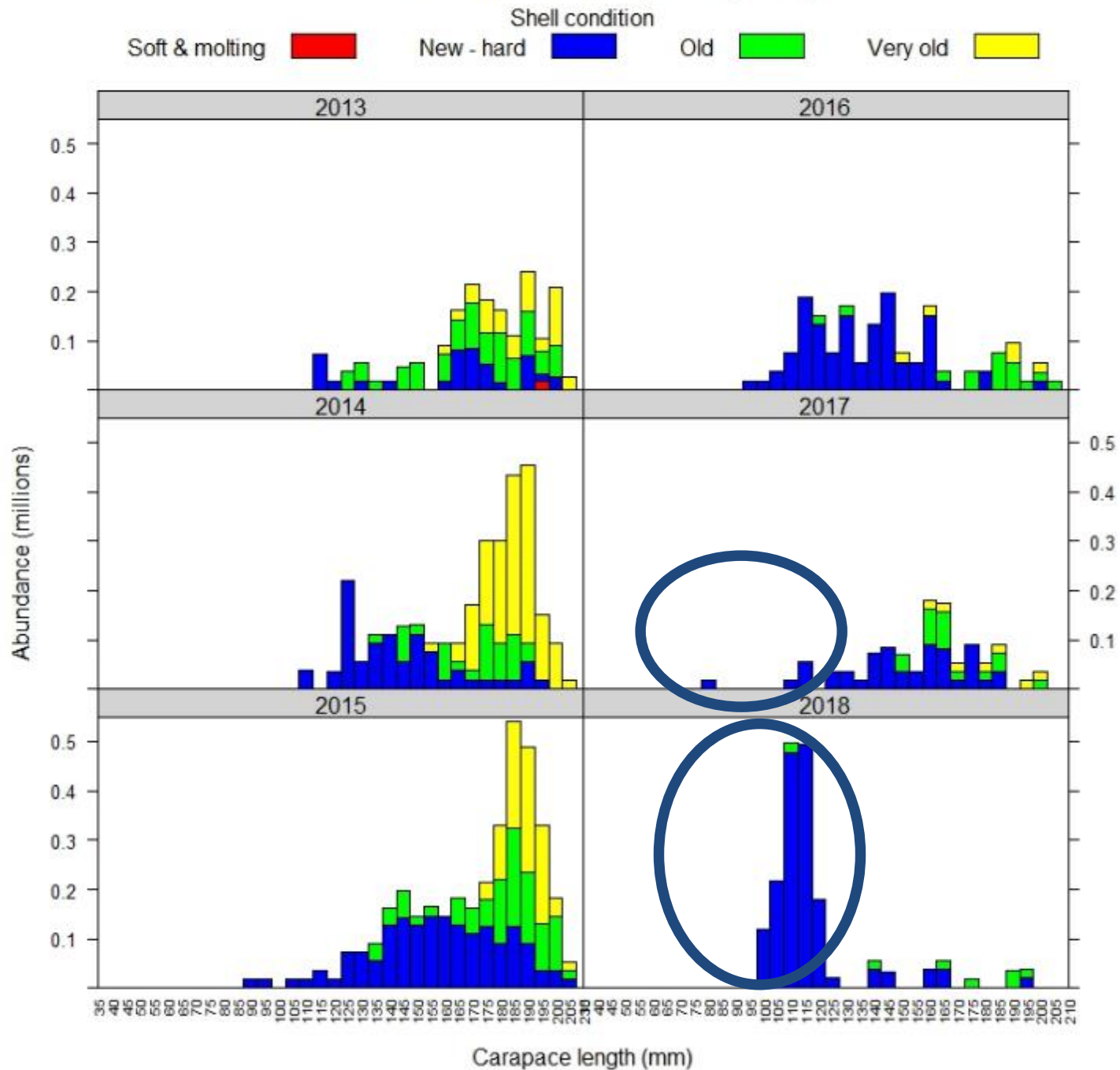
Biomass (t)



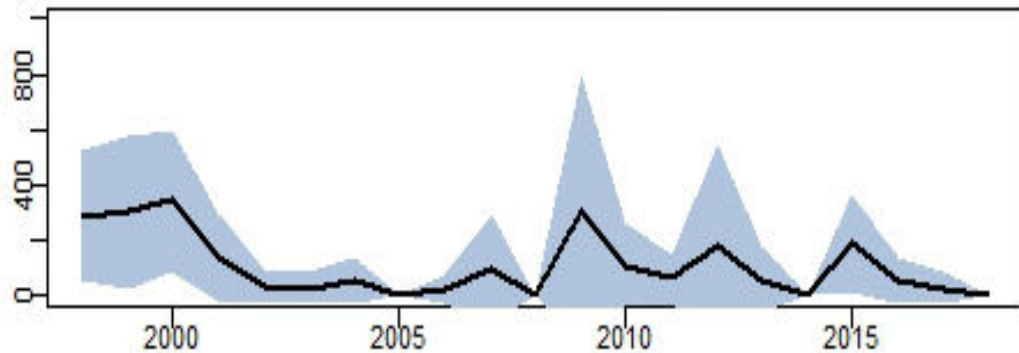
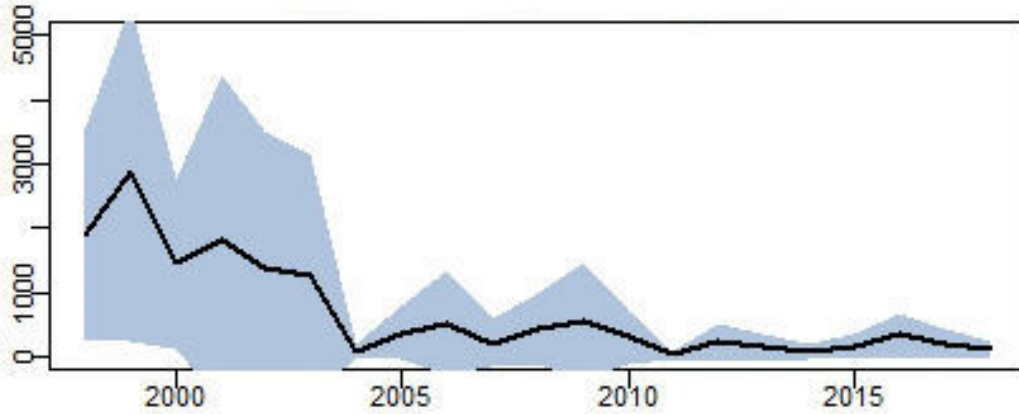
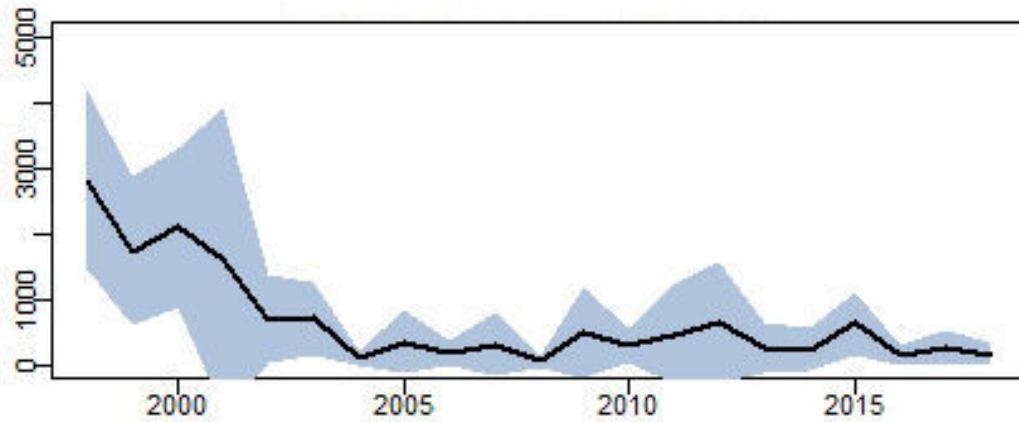
Pribilof Islands red king crab



Pribilof Islands Red King Crab (male)

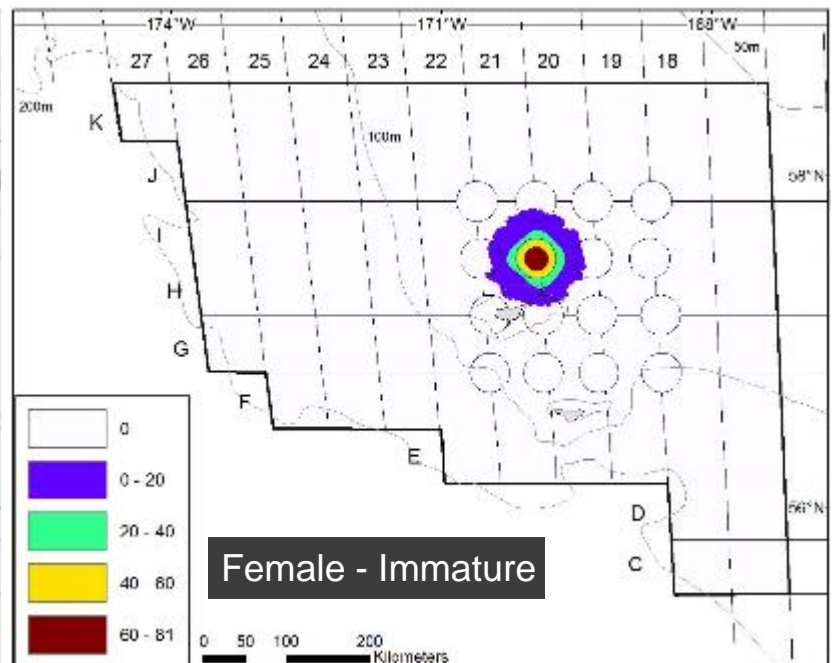
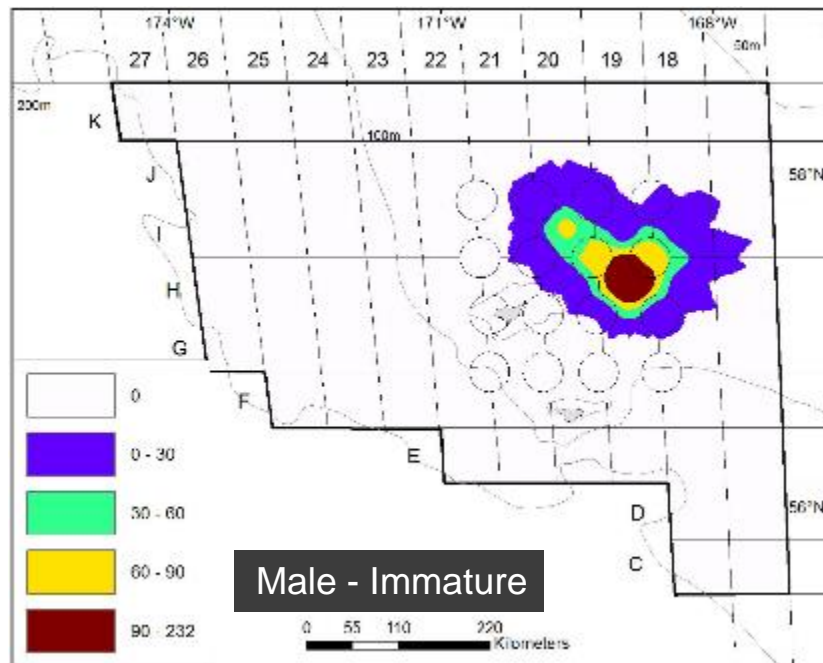
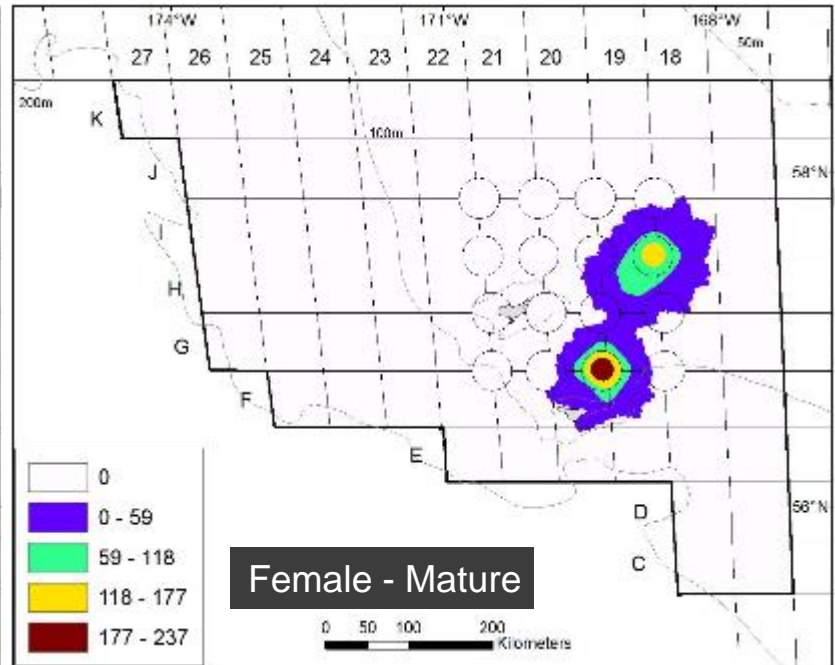
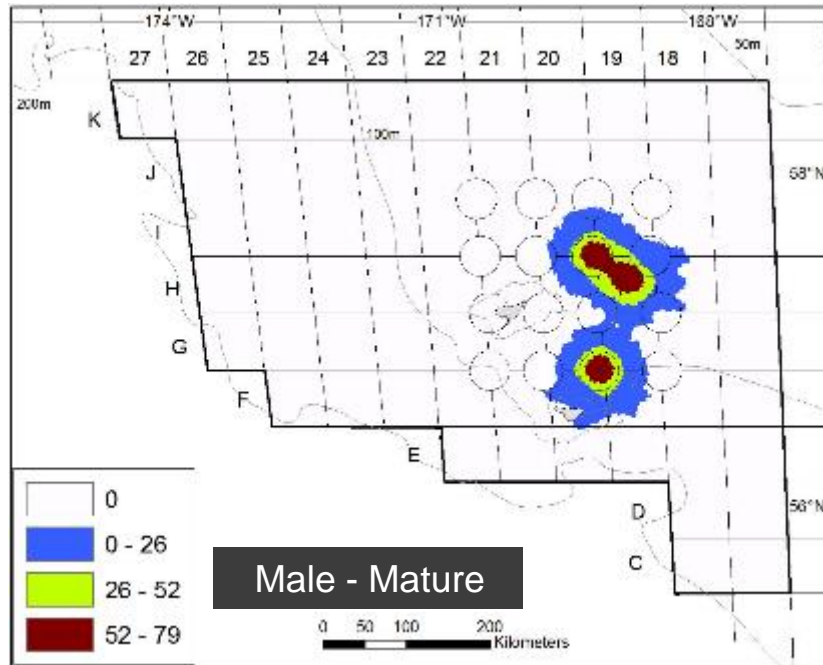


Pribilof Islands blue king crab



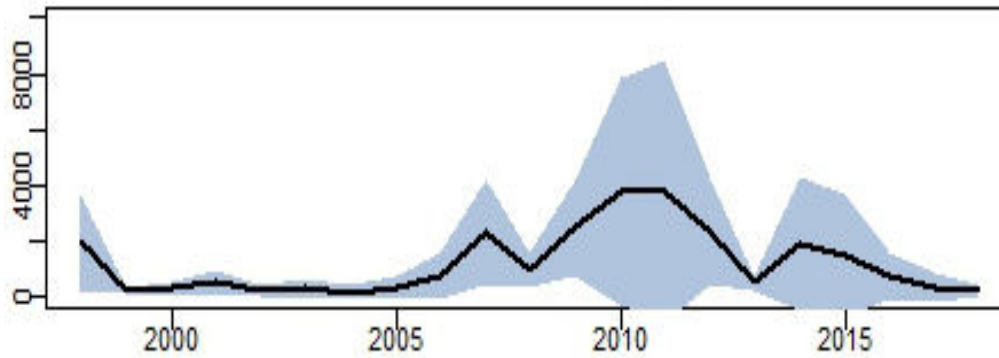
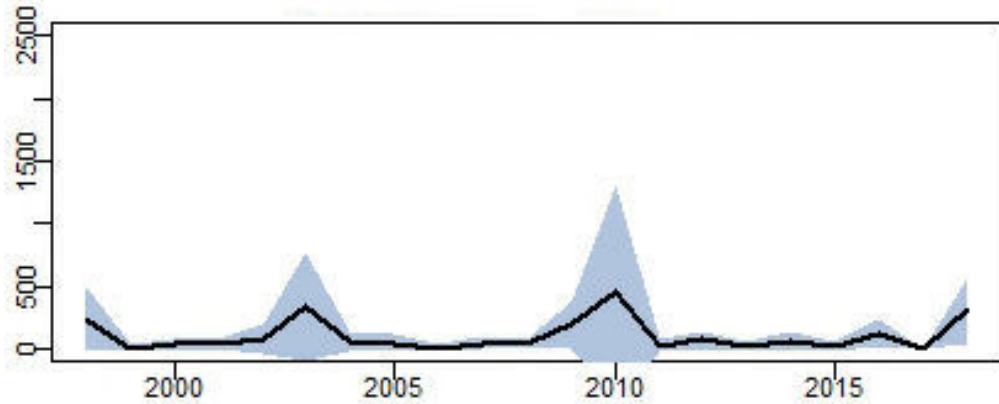
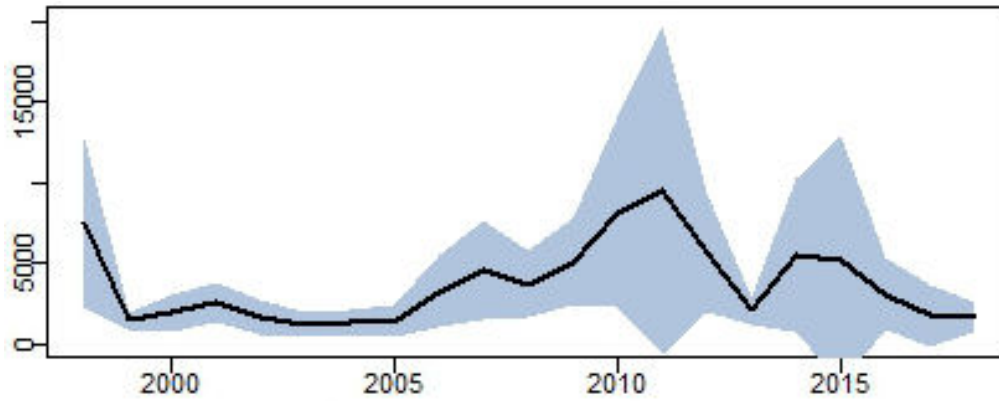
Biomass (t)

Pribilof Islands blue king crab

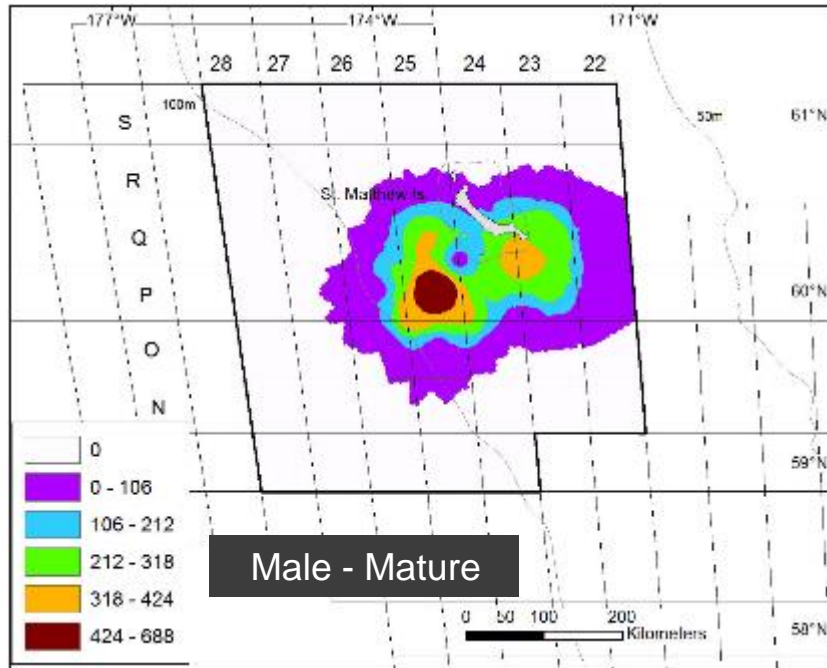


St. Matthew Island blue king crab

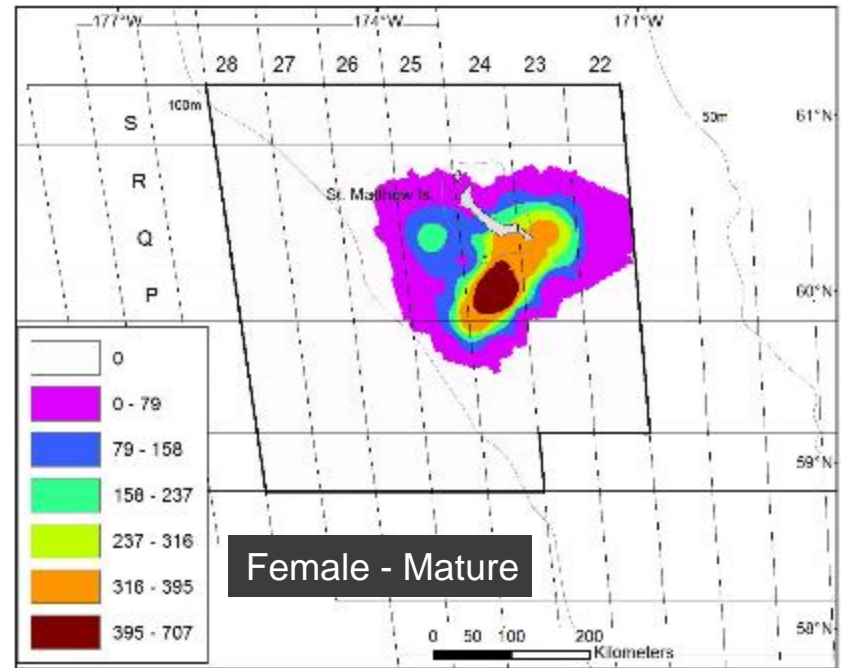
Biomass (t)



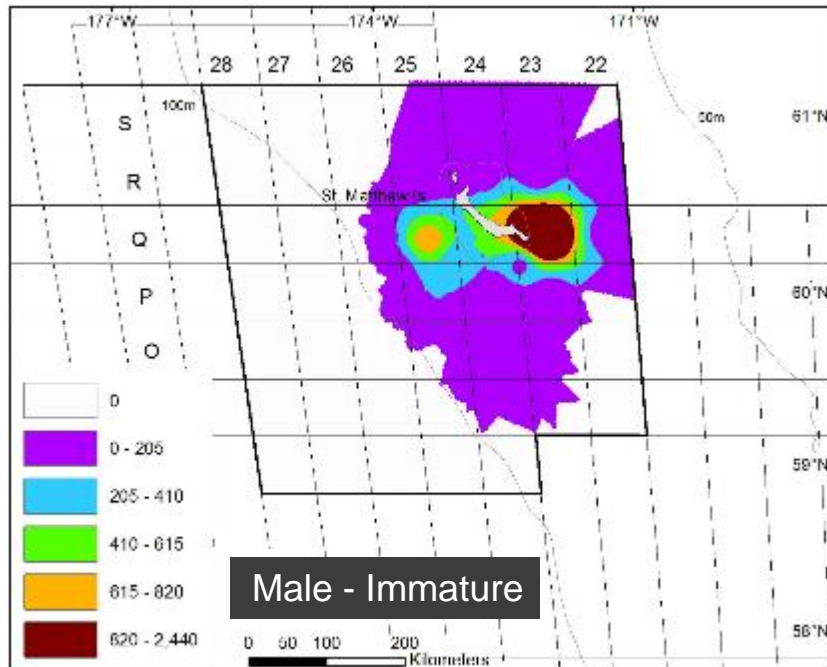
St. Matthew Island blue king crab



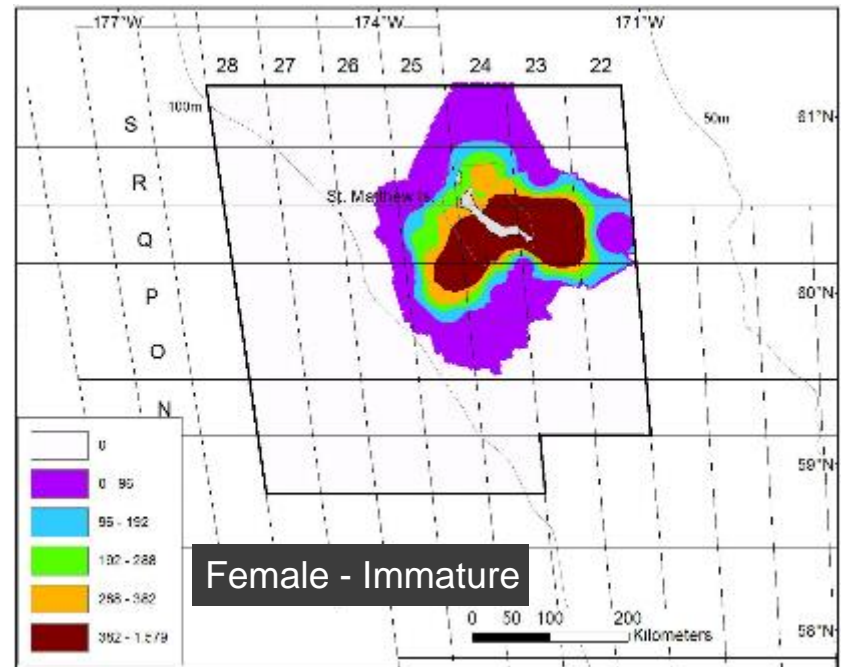
Male - Mature



Female - Mature

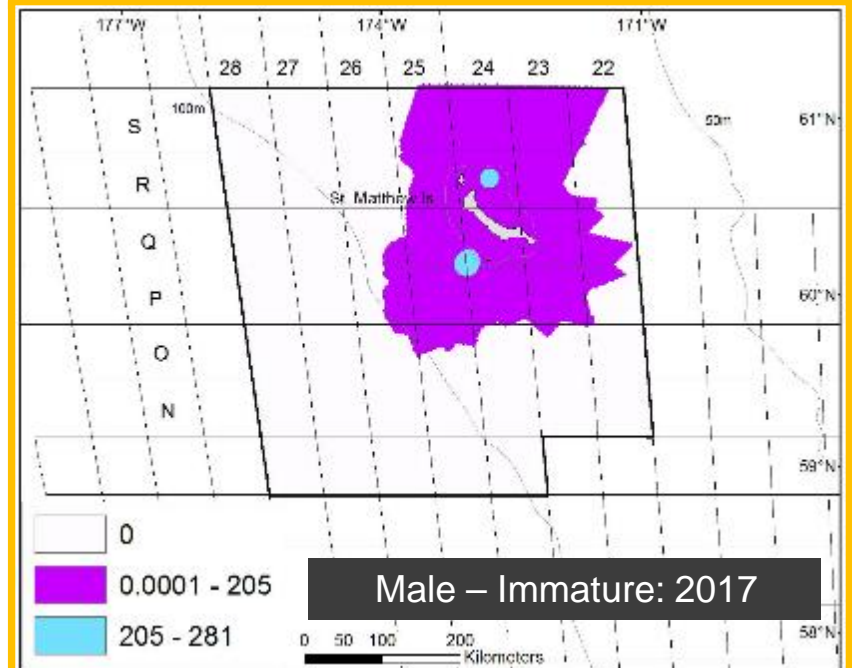
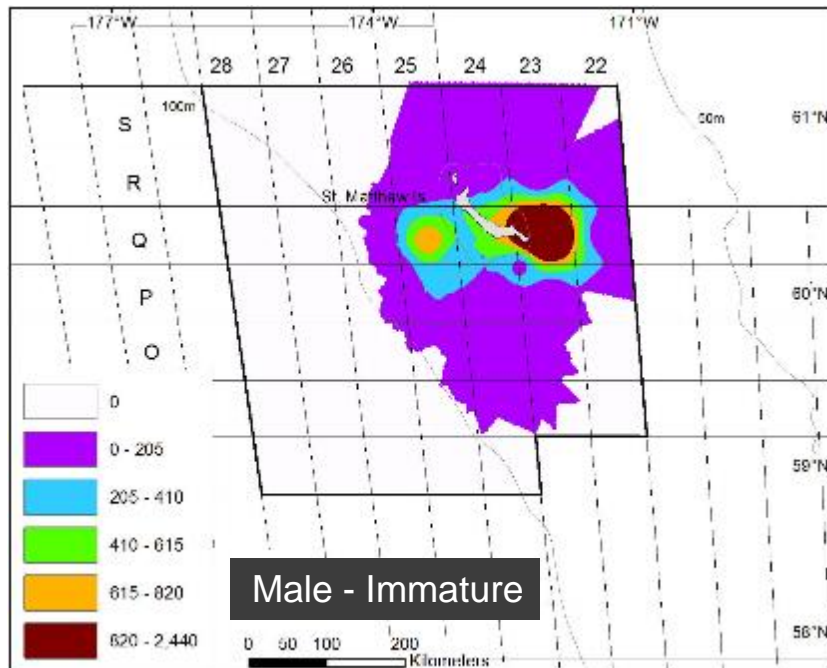
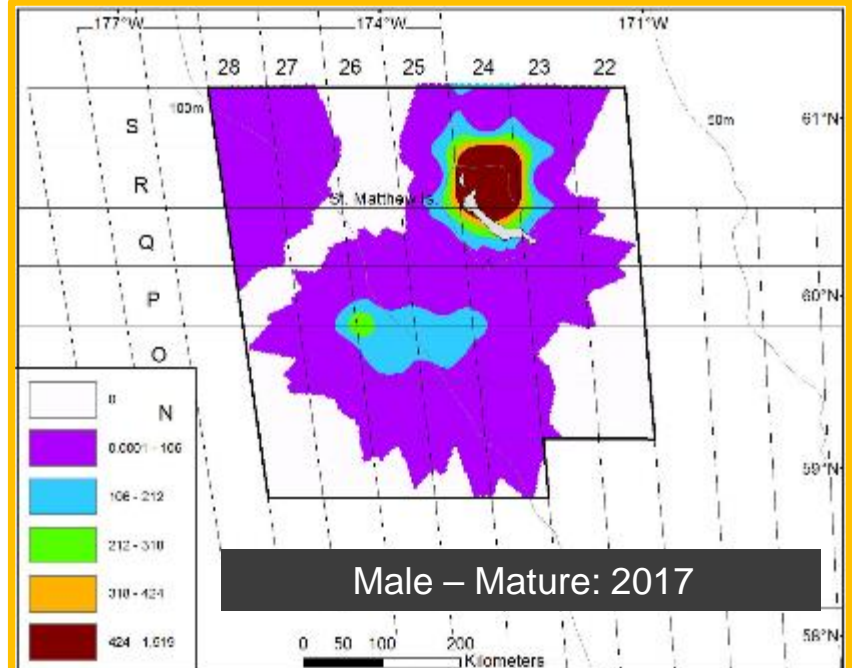
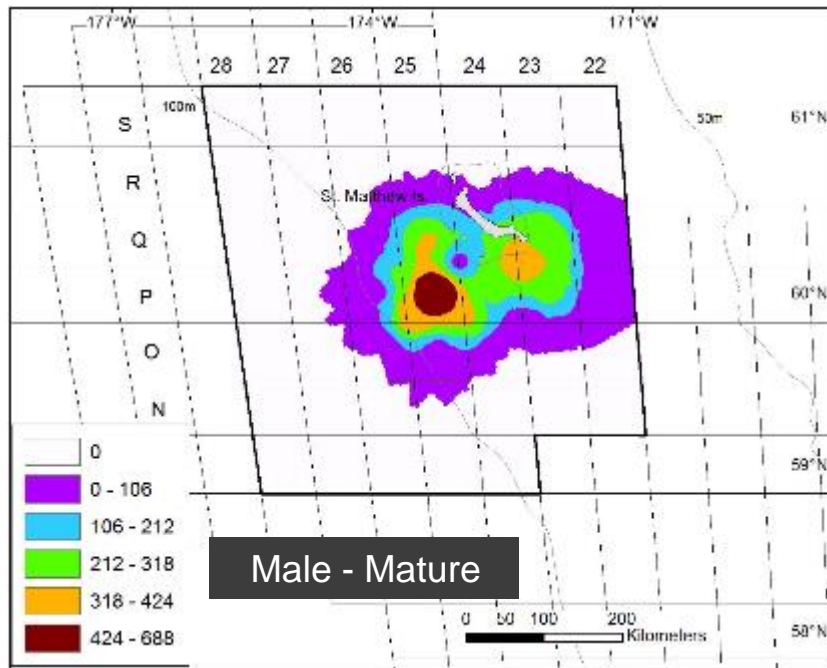


Male - Immature

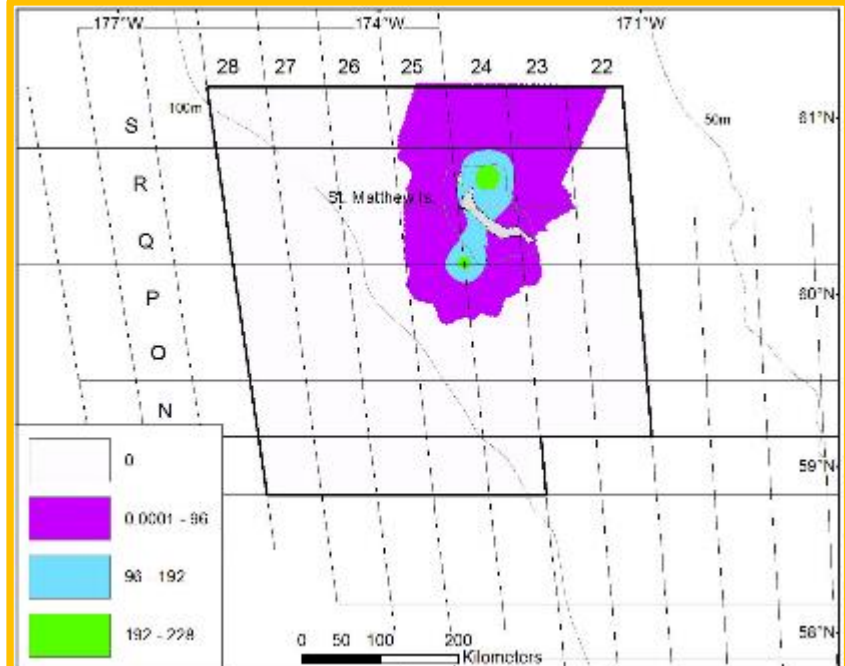
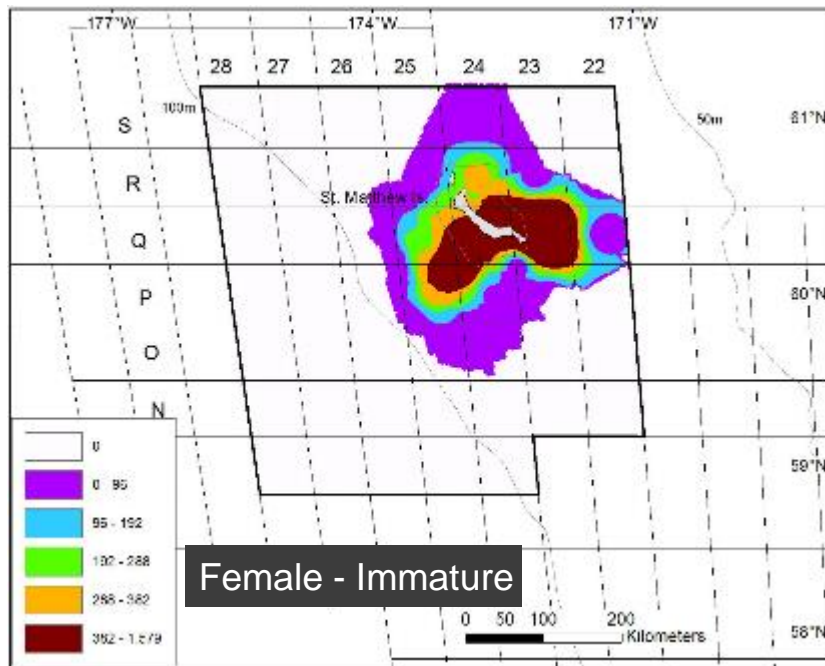
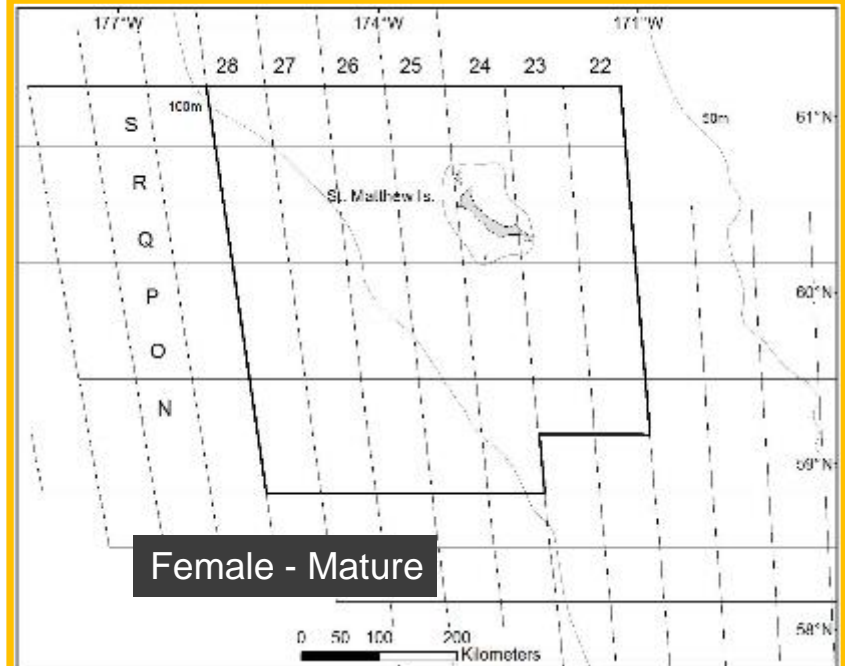
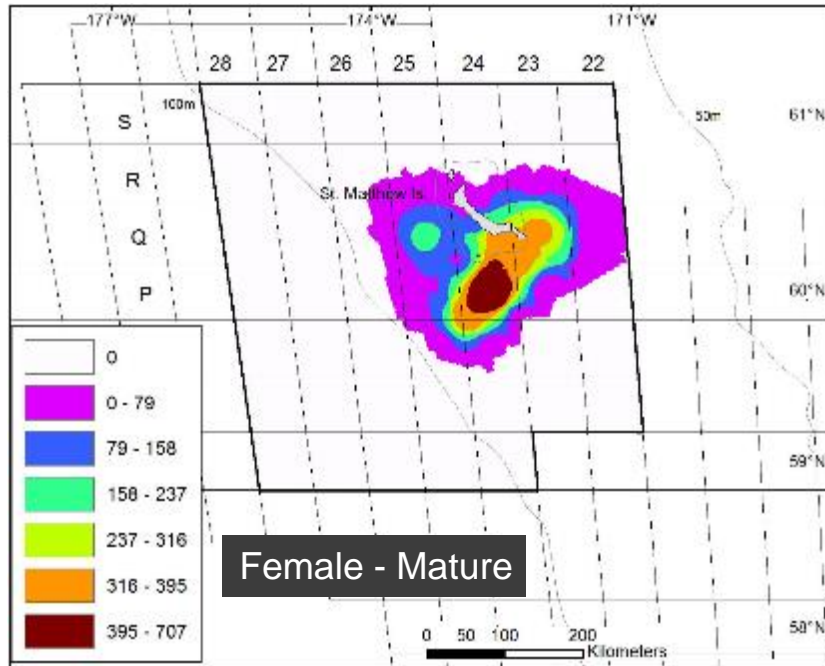


Female - Immature

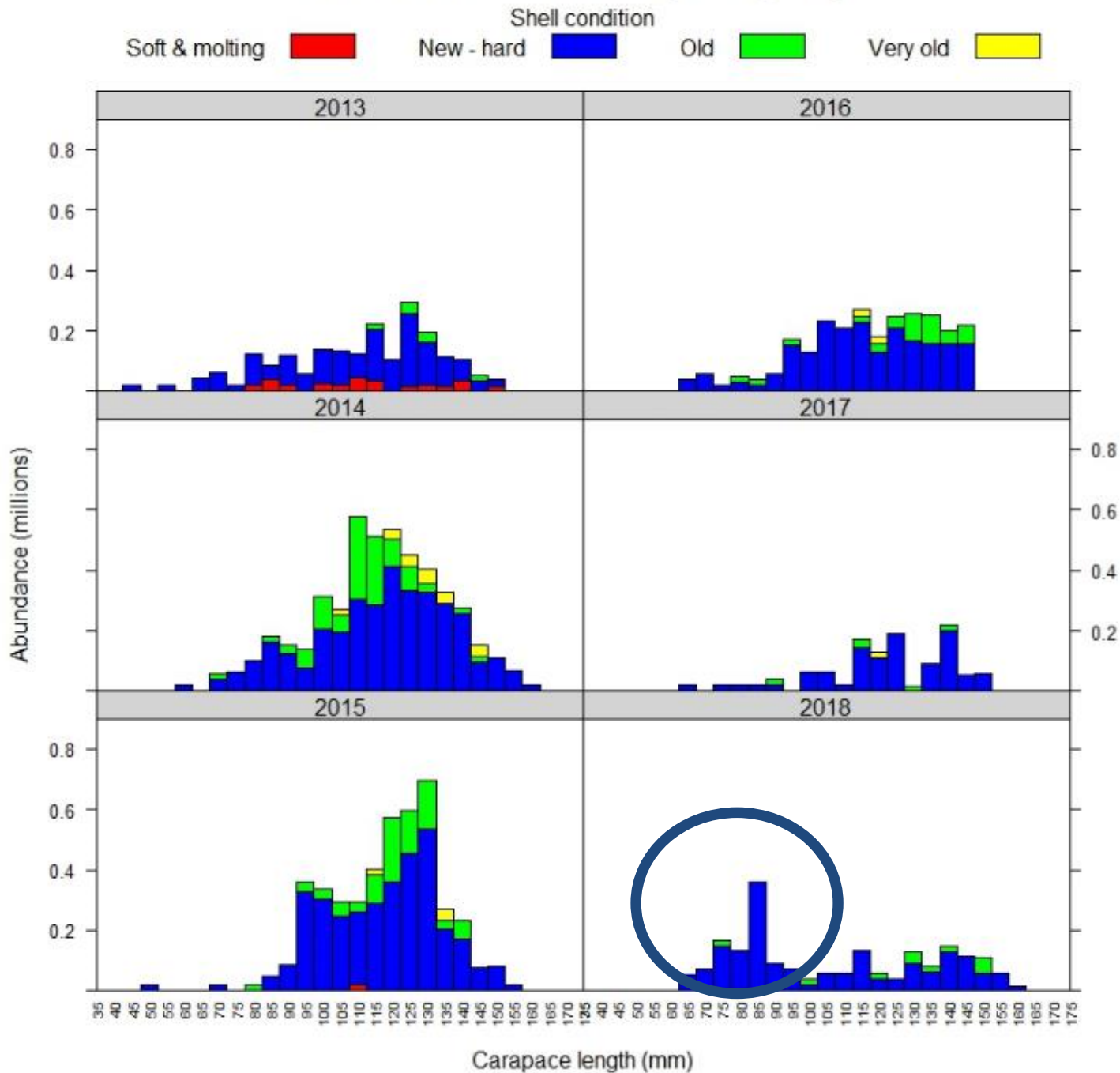
St. Matthew Island blue king crab



St. Matthew Island blue king crab



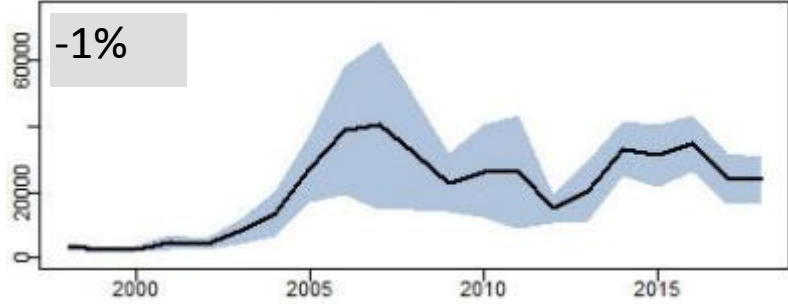
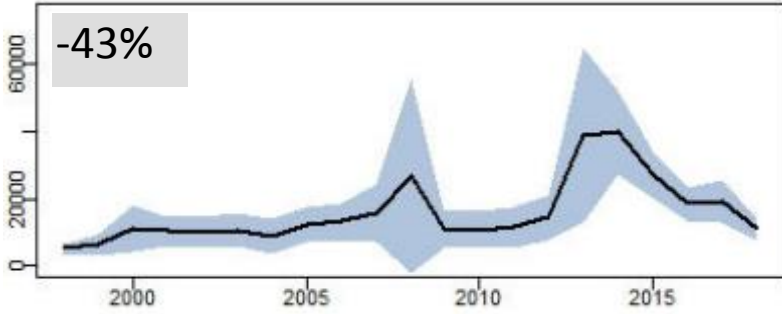
St. Matthew Island Blue King Crab (male)



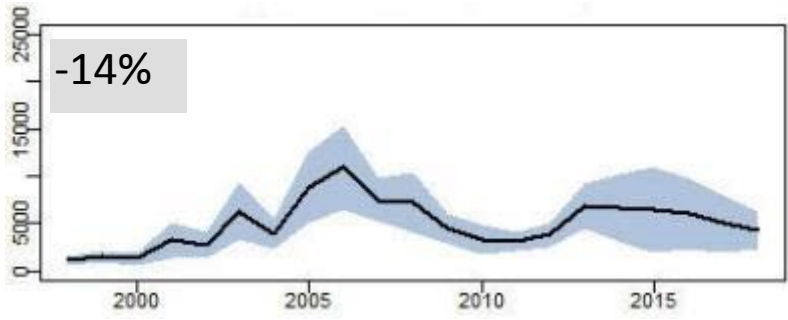
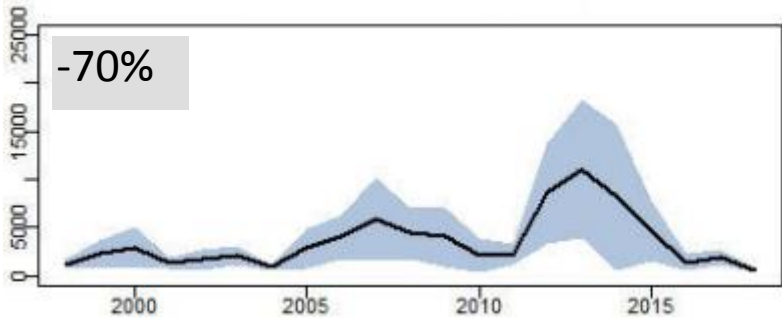
Tanner crab east of 166°W

Tanner crab west of 166°W

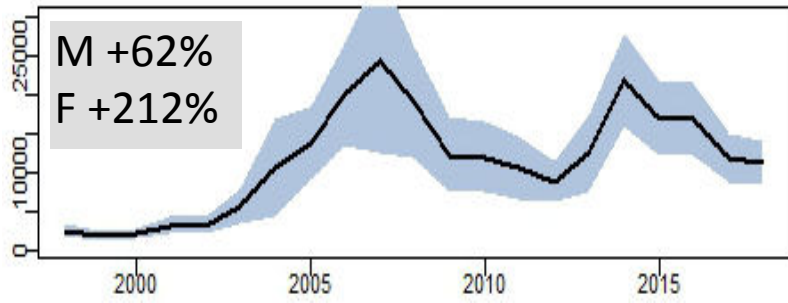
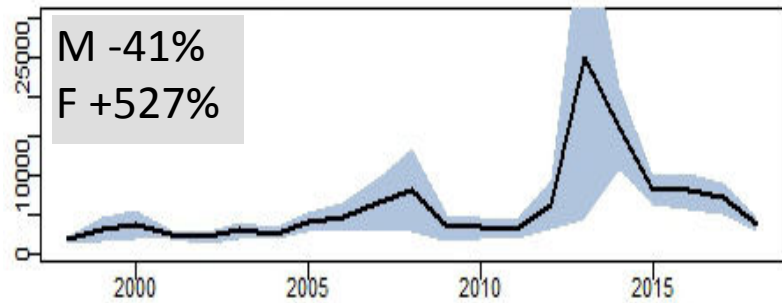
Biomass (t)



Mature male

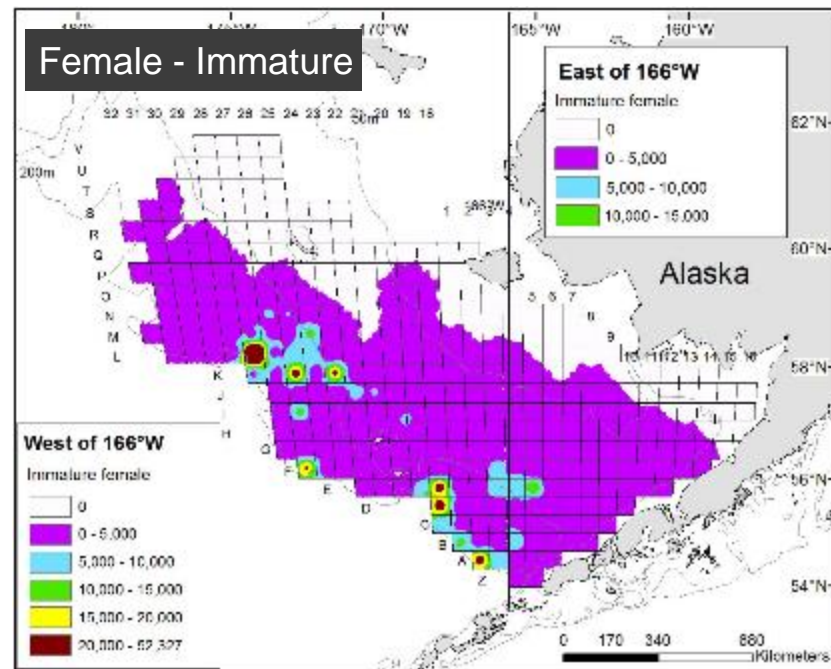
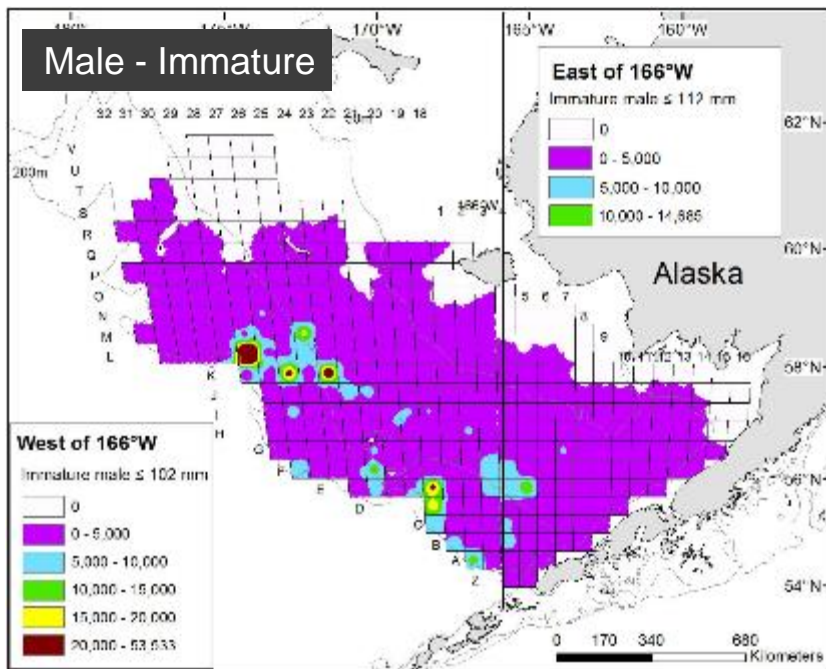
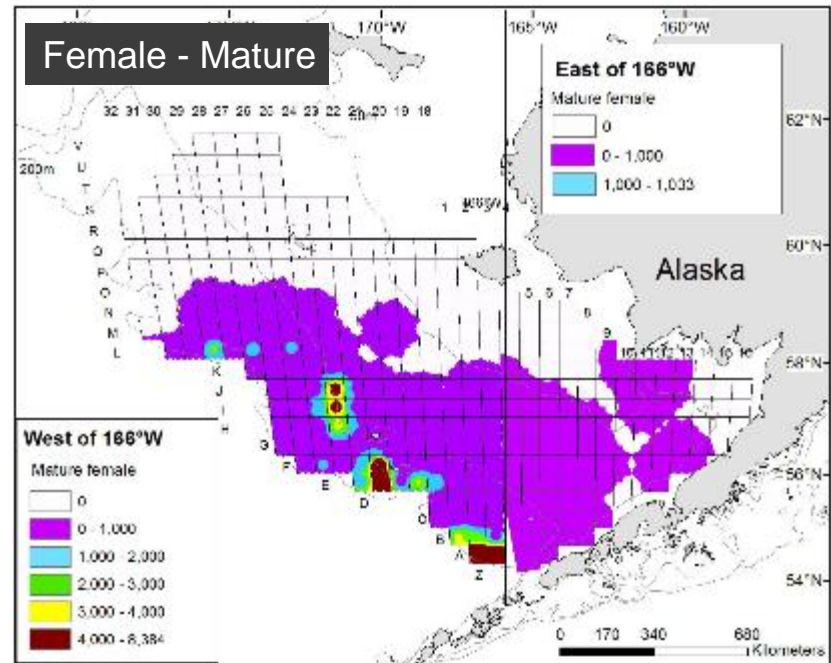
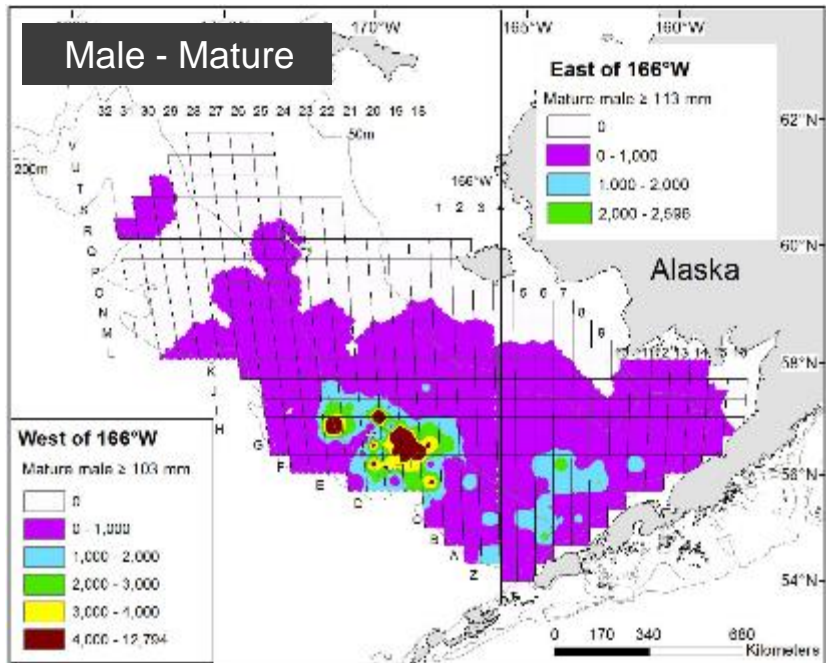


Mature female

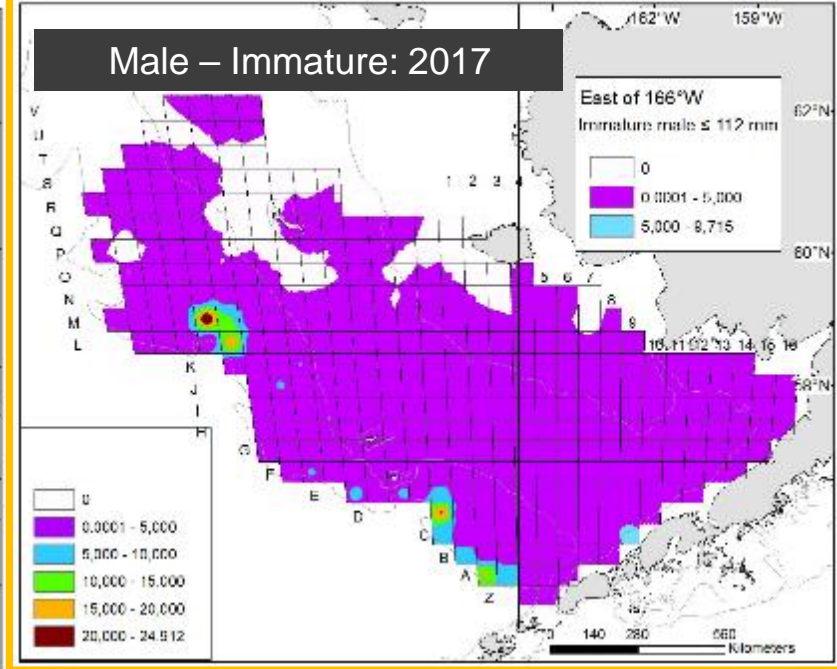
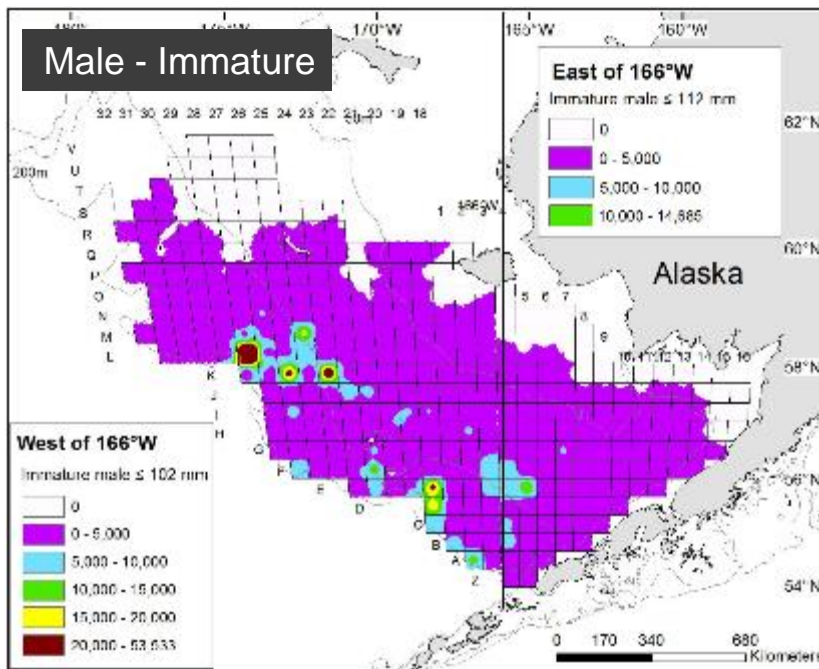
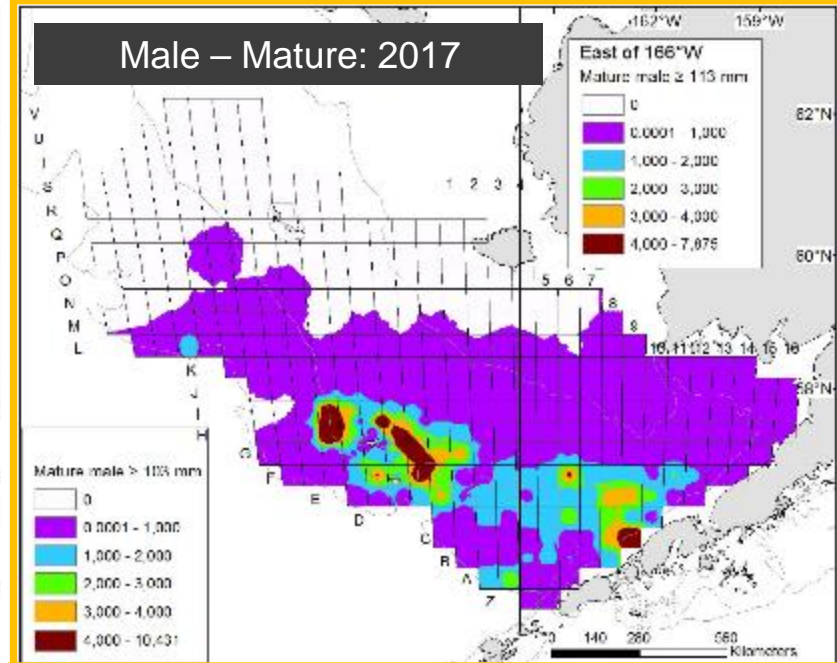
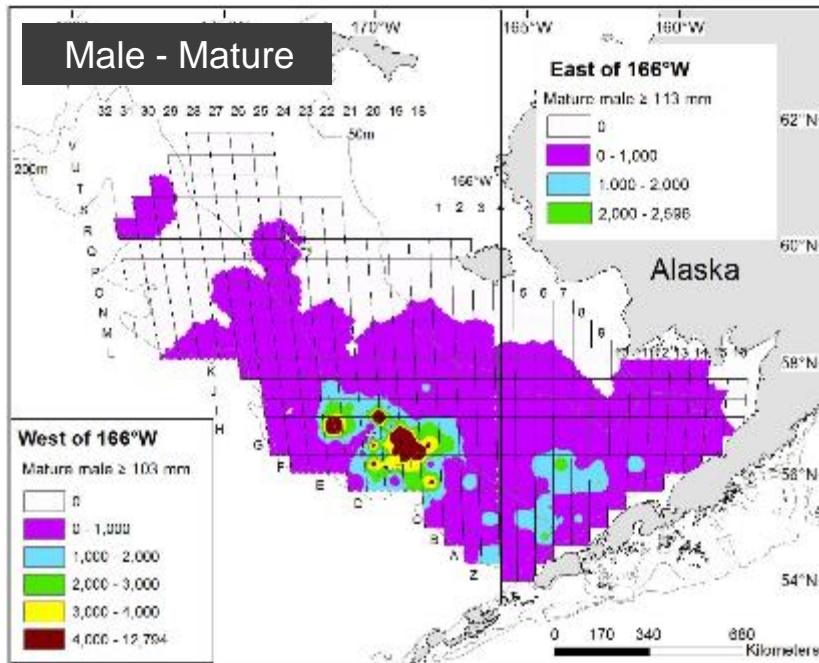


Juveniles

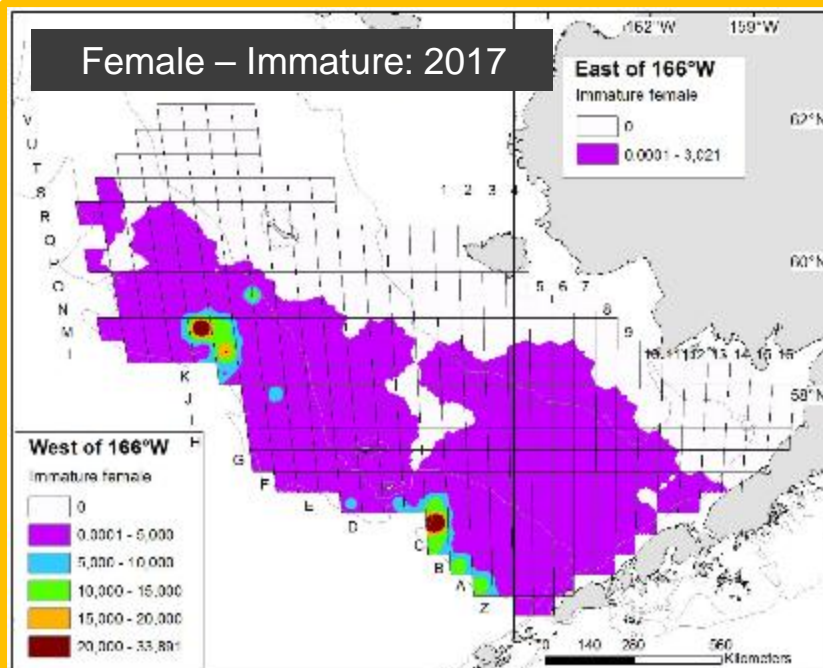
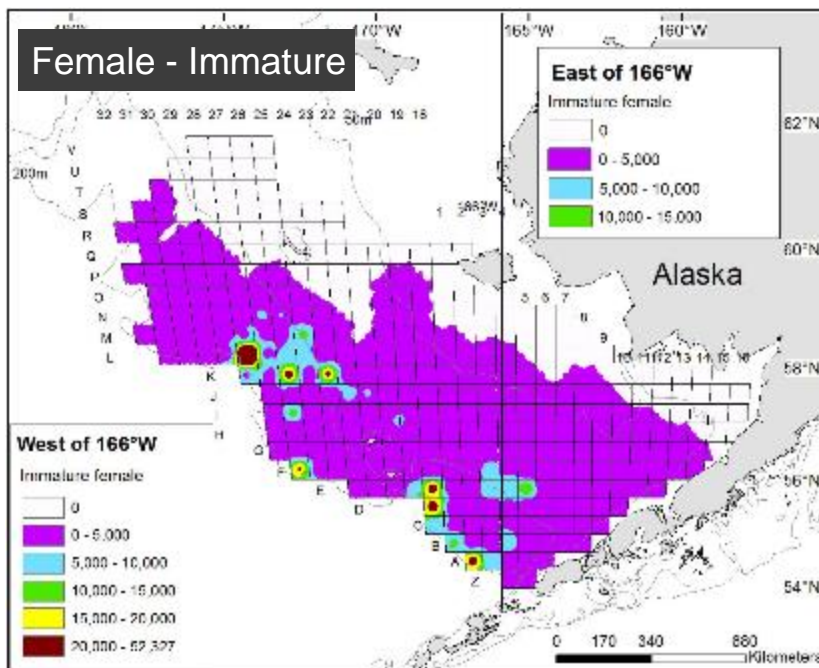
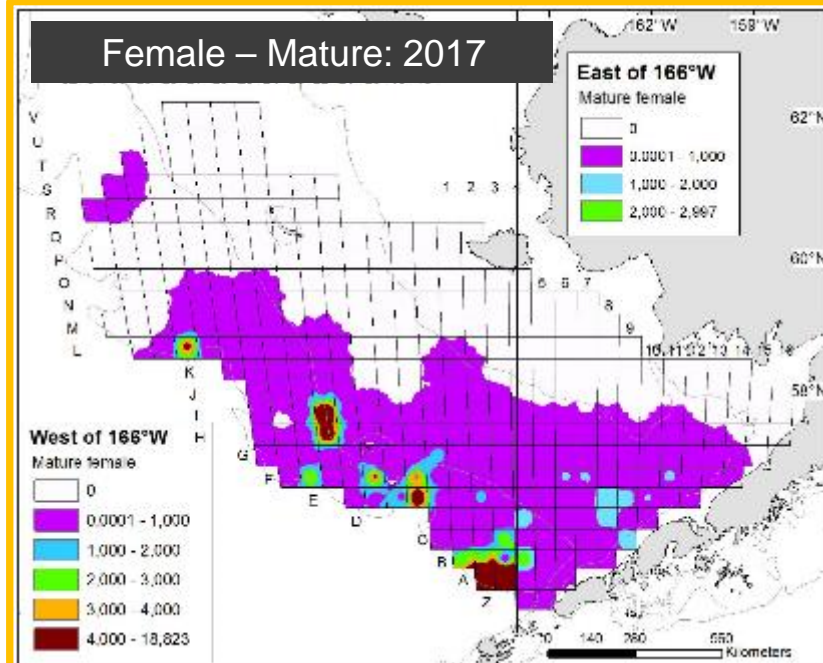
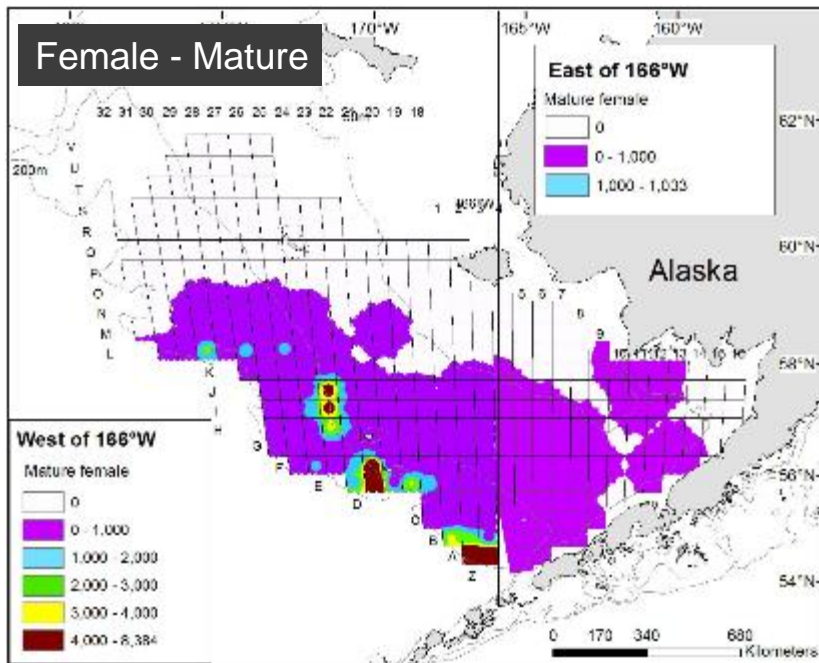
Tanner crab



Tanner crab

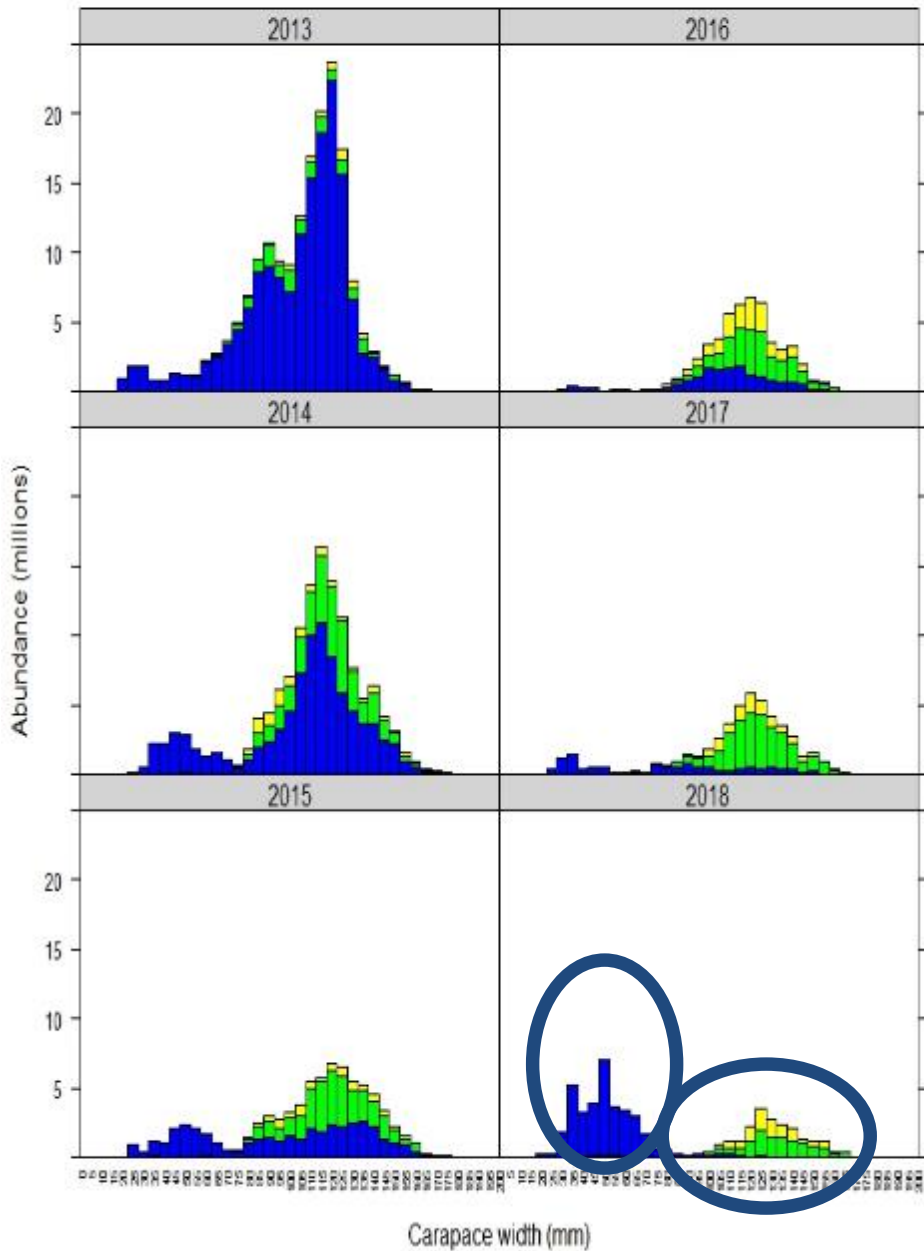


Tanner crab



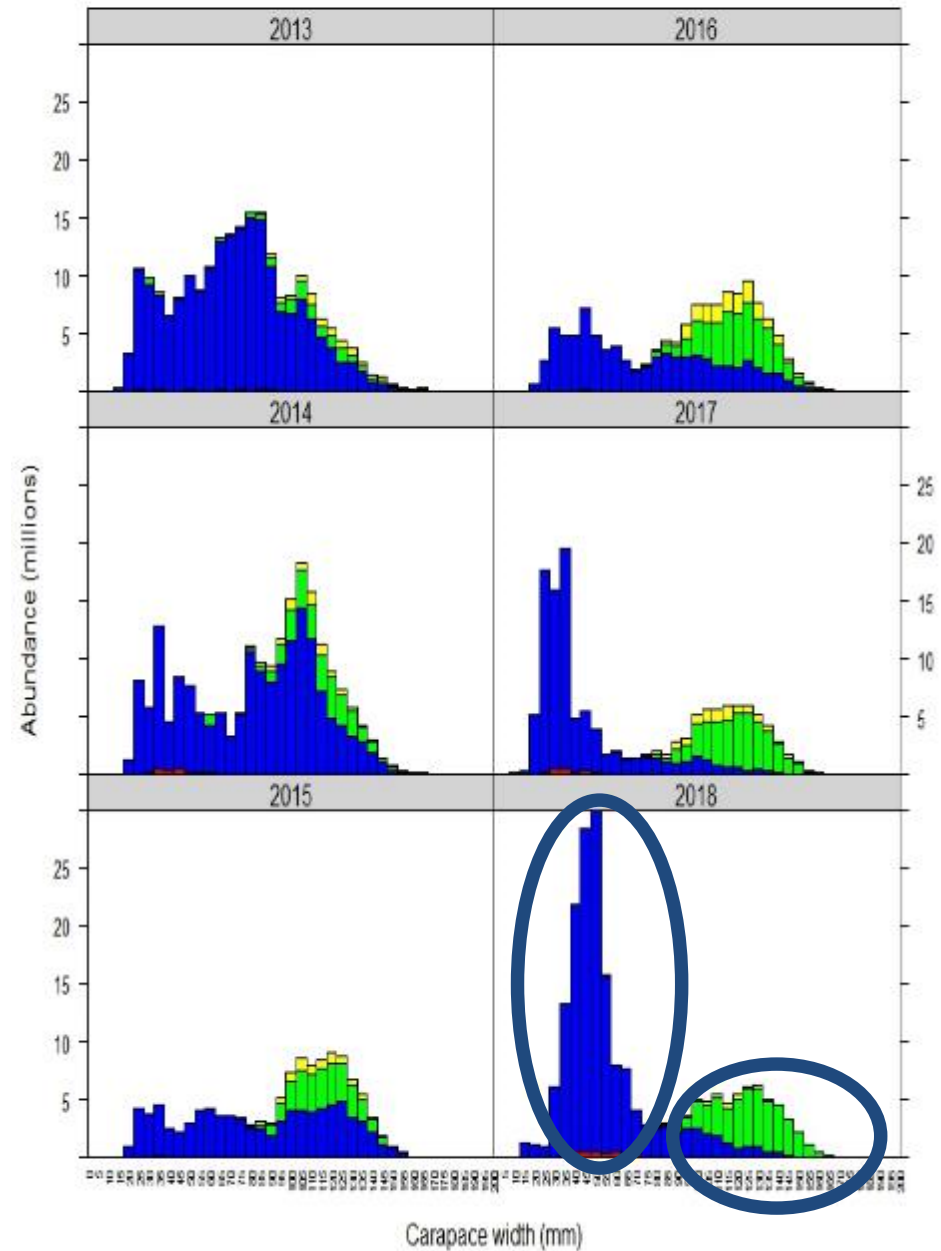
Tanner Crab east of 166W (male)

Shell condition
 Soft & molting ■ New - hard ■ Old ■ Very old ■

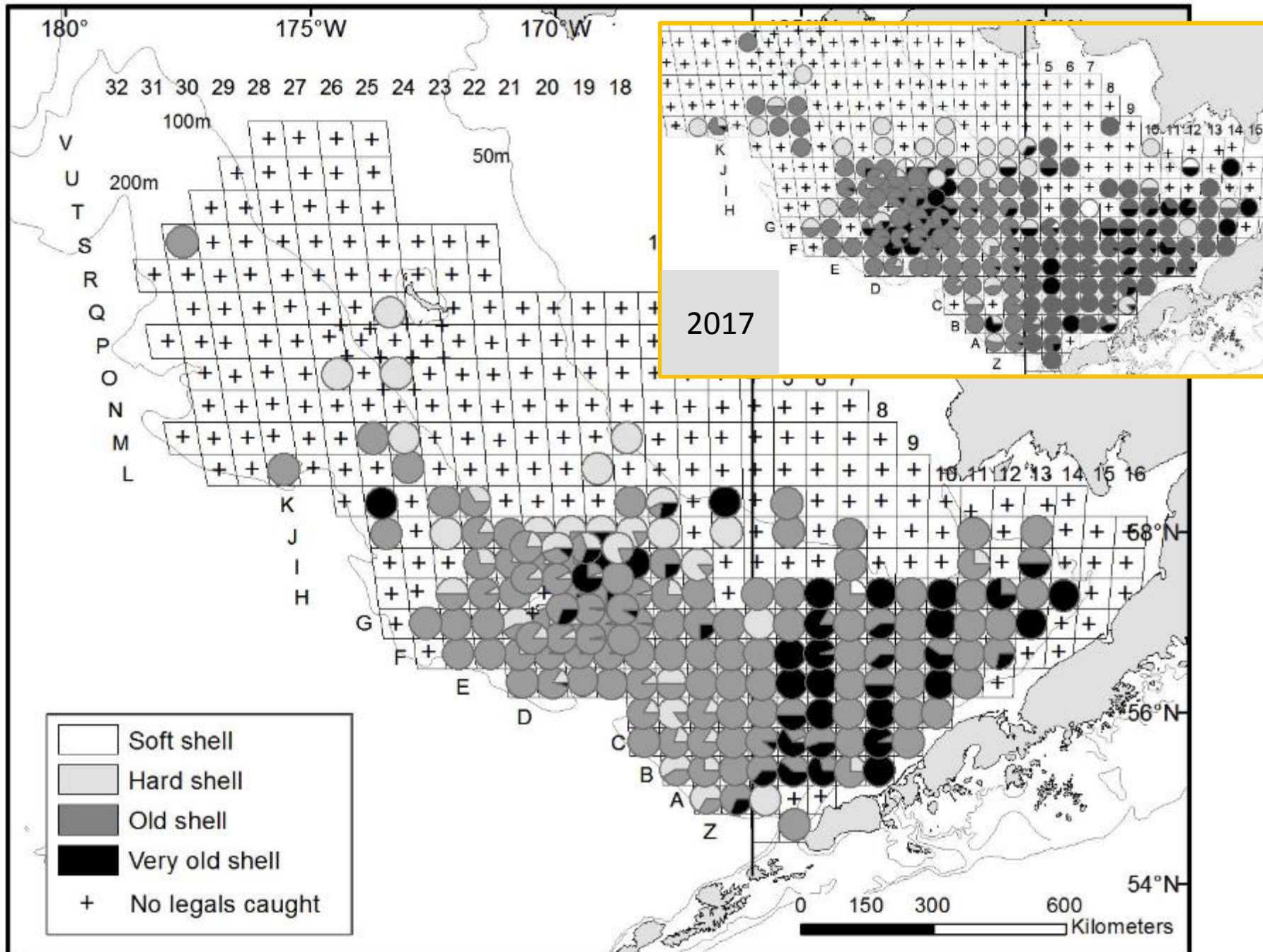


Tanner Crab west of 166W (male)

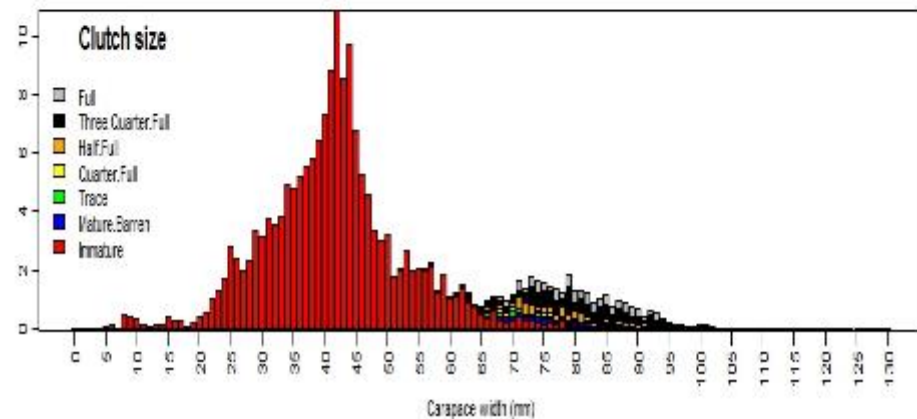
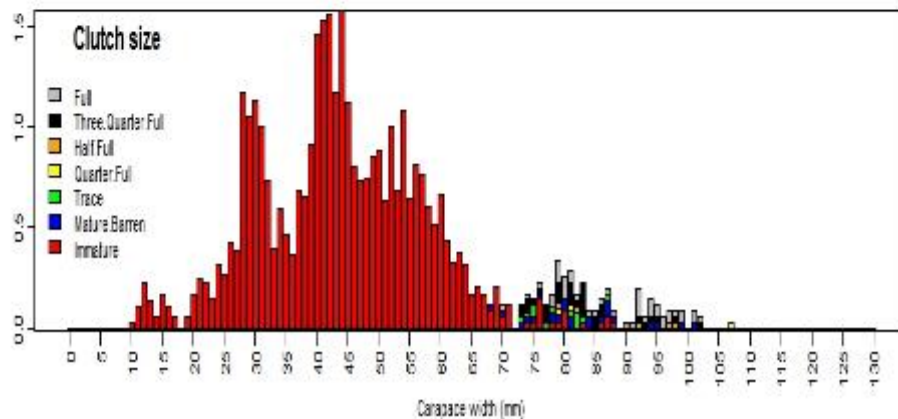
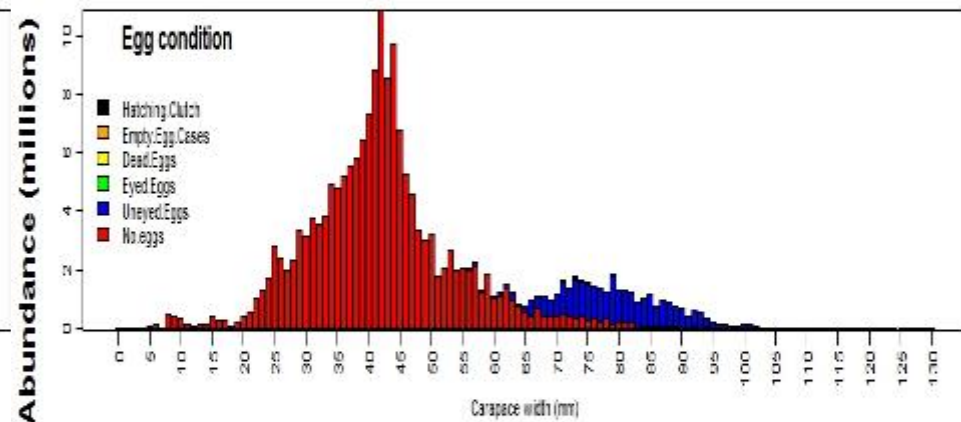
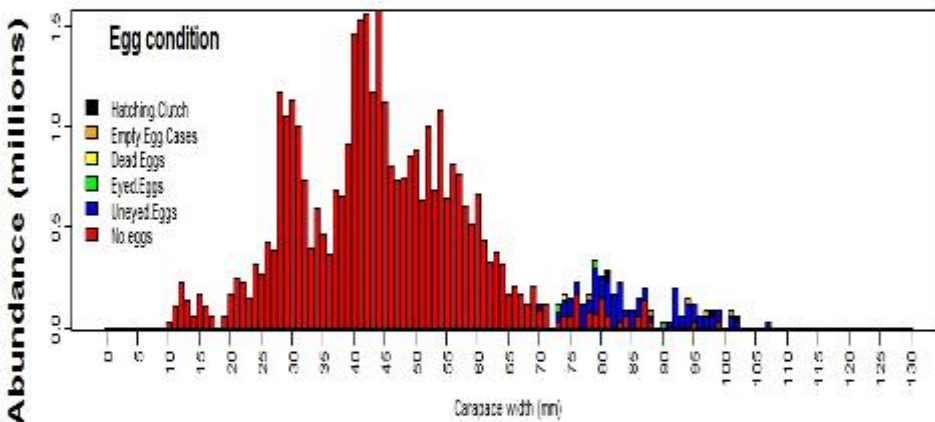
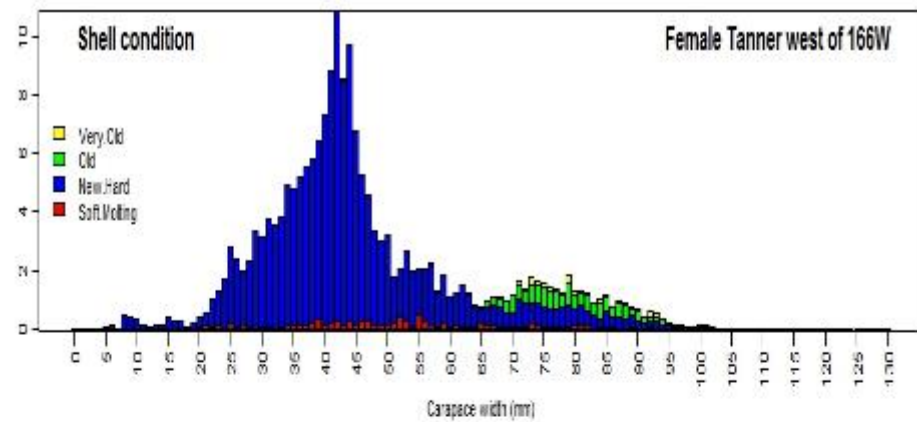
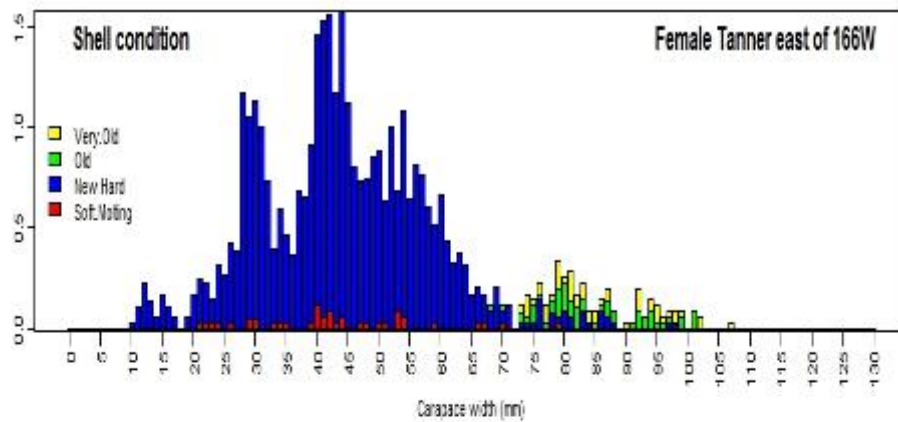
Shell condition
 Soft & molting ■ New - hard ■ Old ■ Very old ■

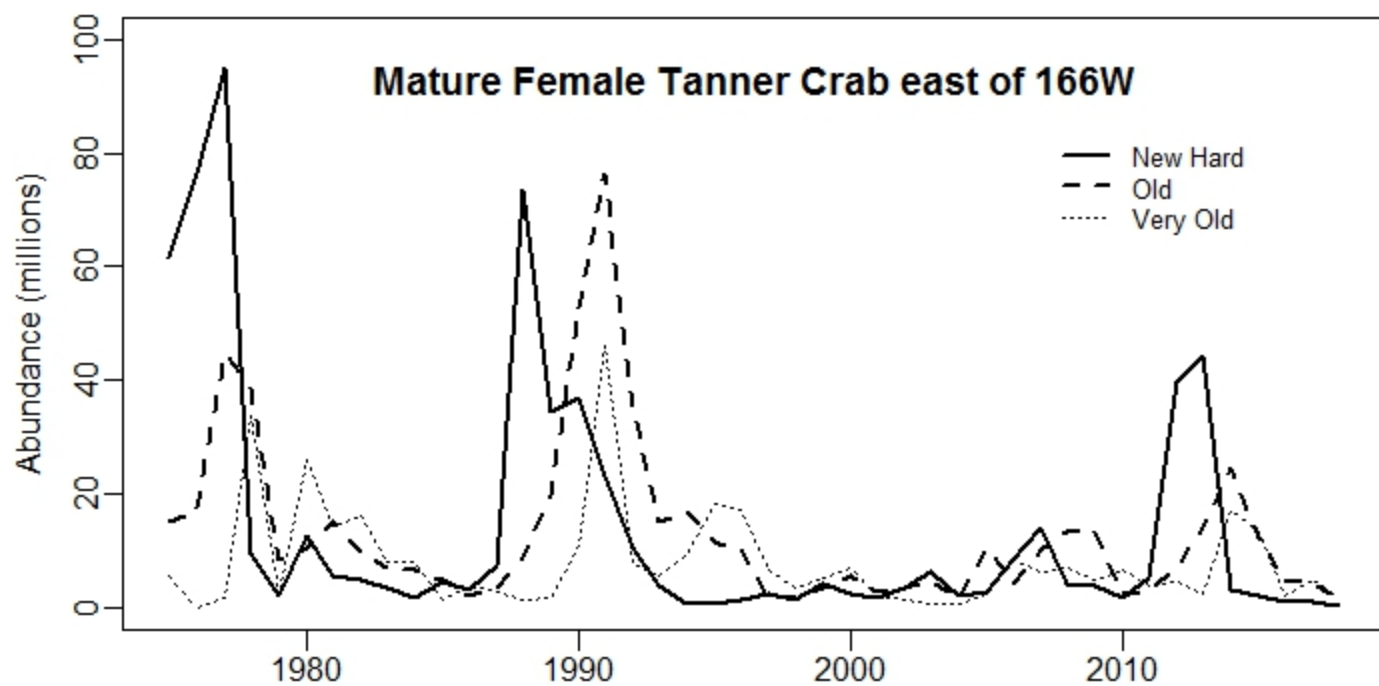
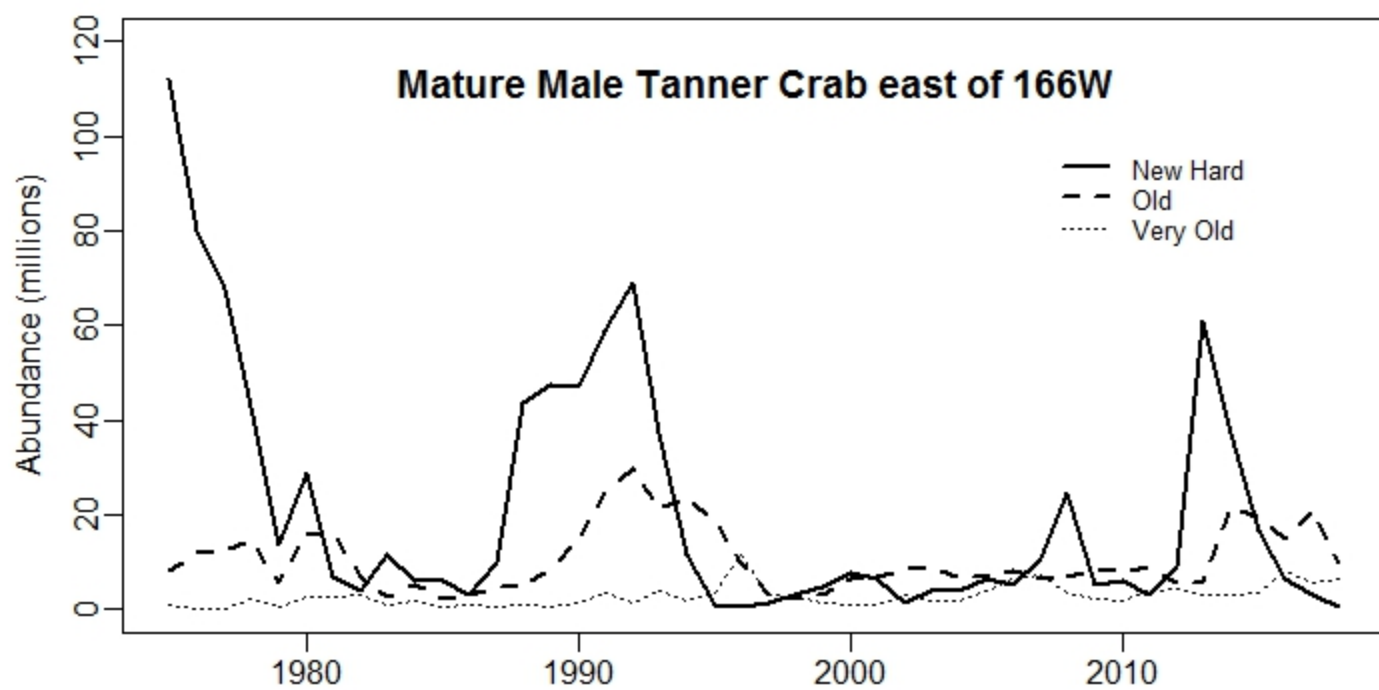


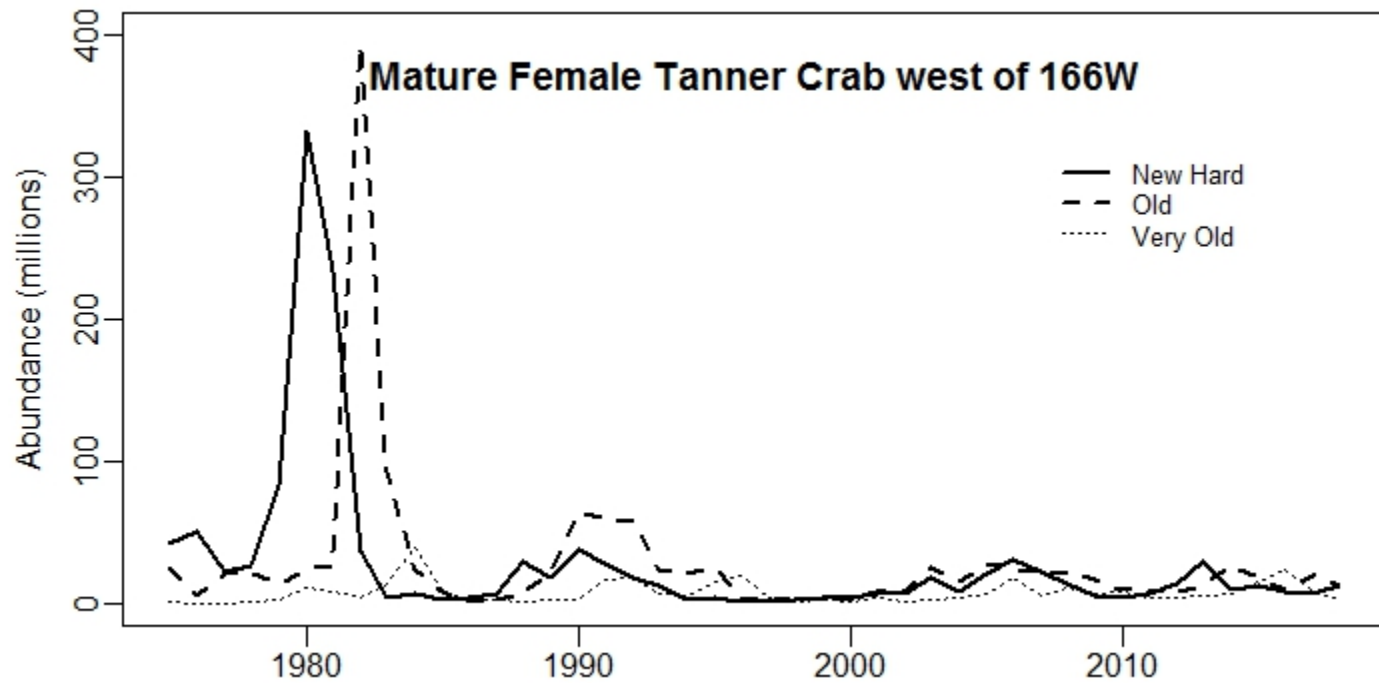
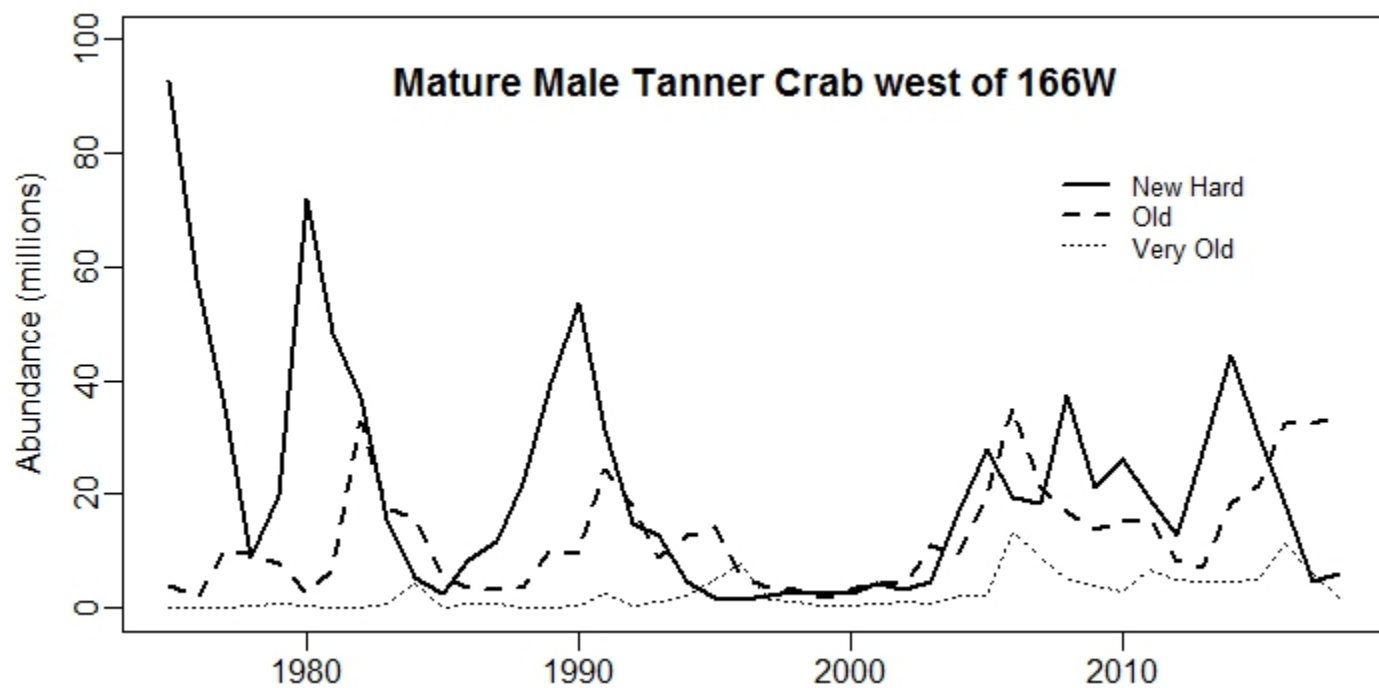
Tanner crab: east and west of 166°W



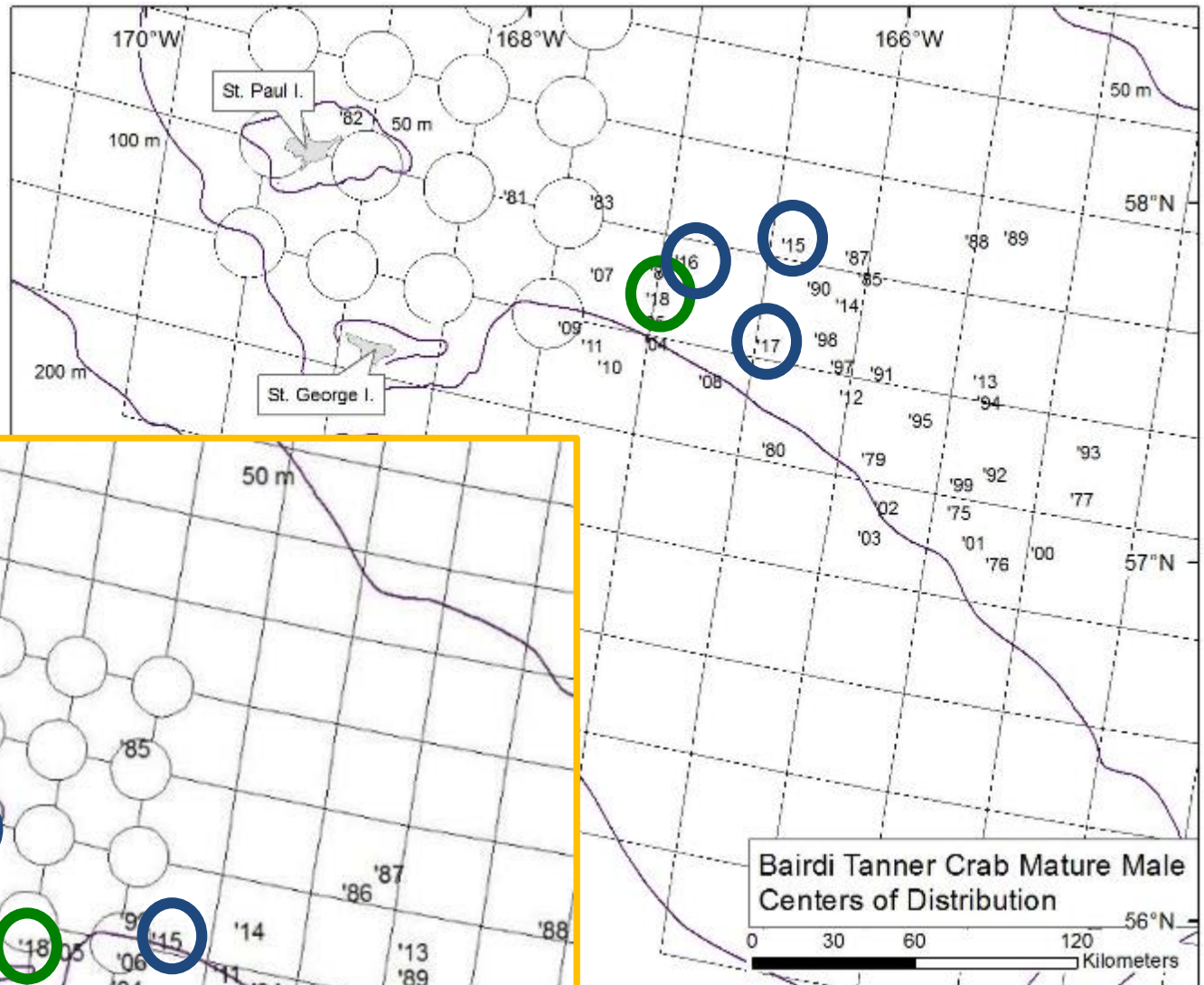
Tanner crab: east and west of 166°W



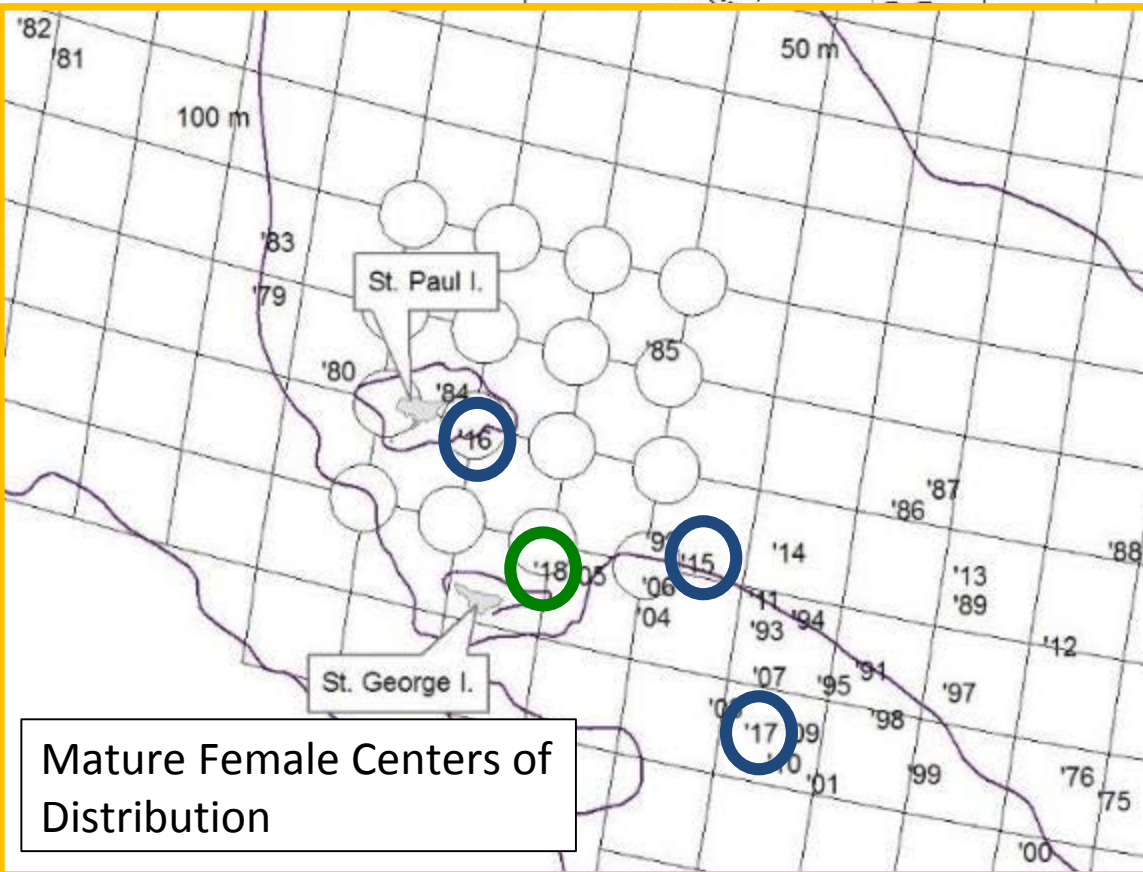




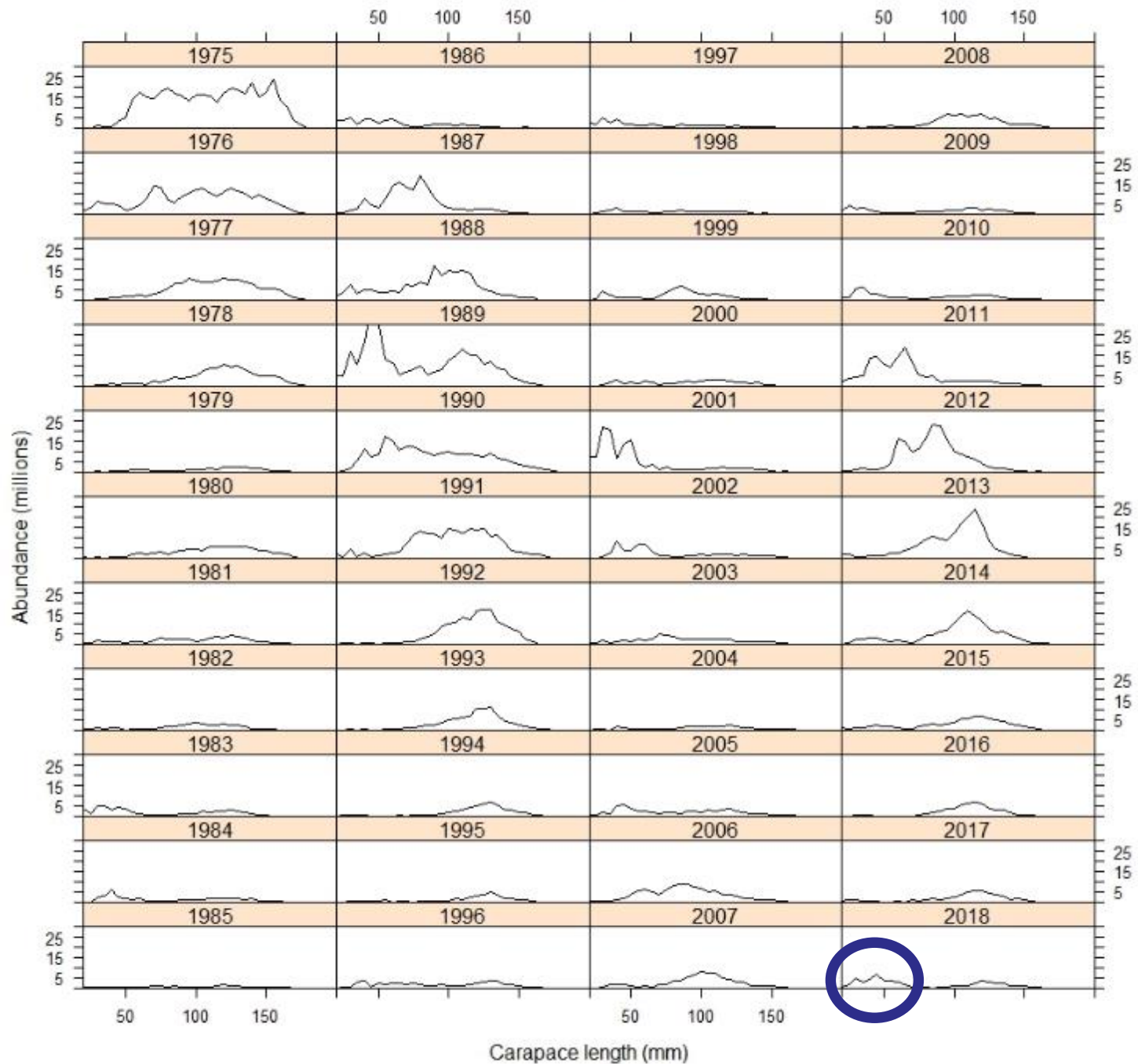
Tanner crab: east and west of 166°W



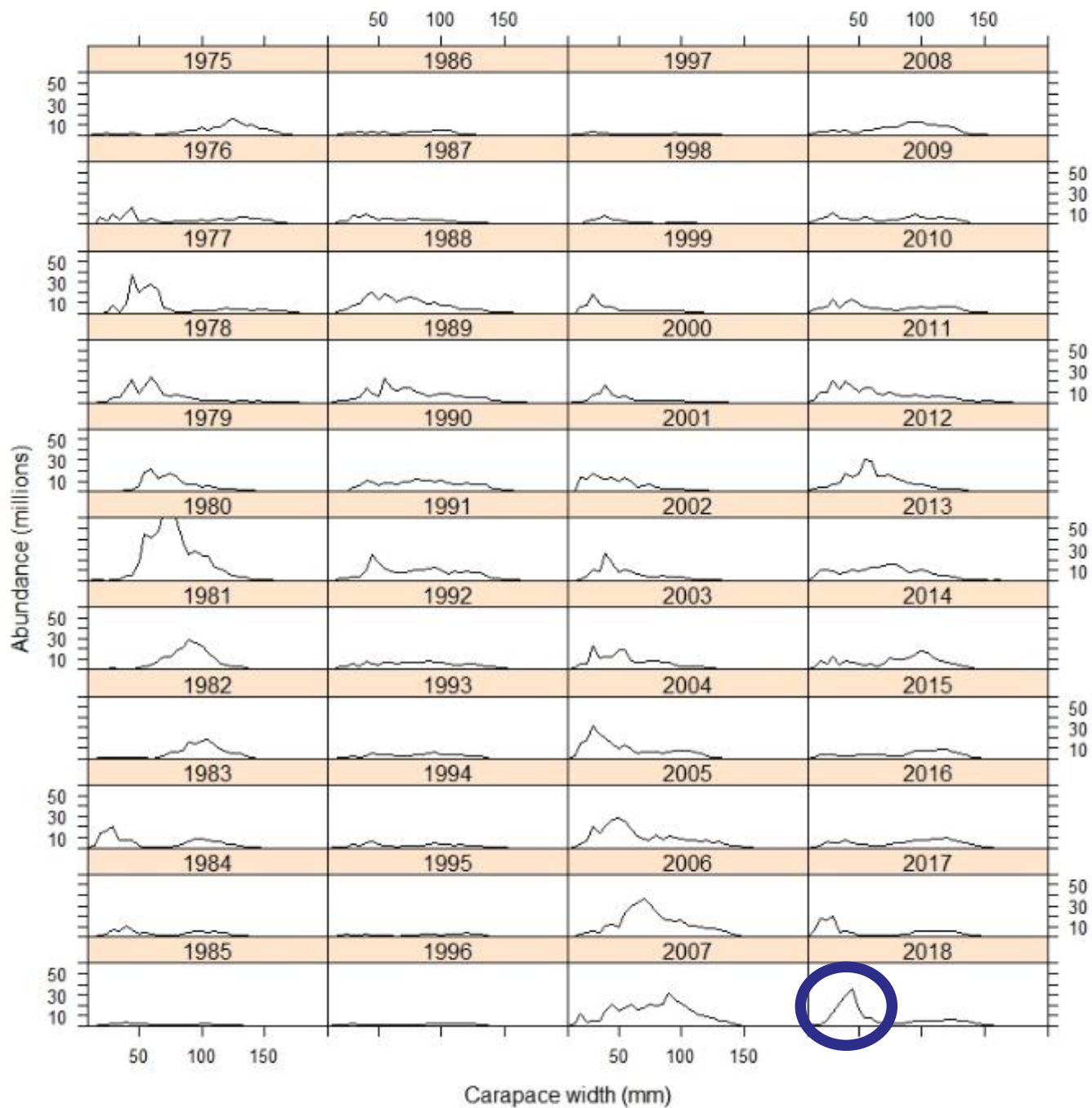
Mature Female Centers of Distribution



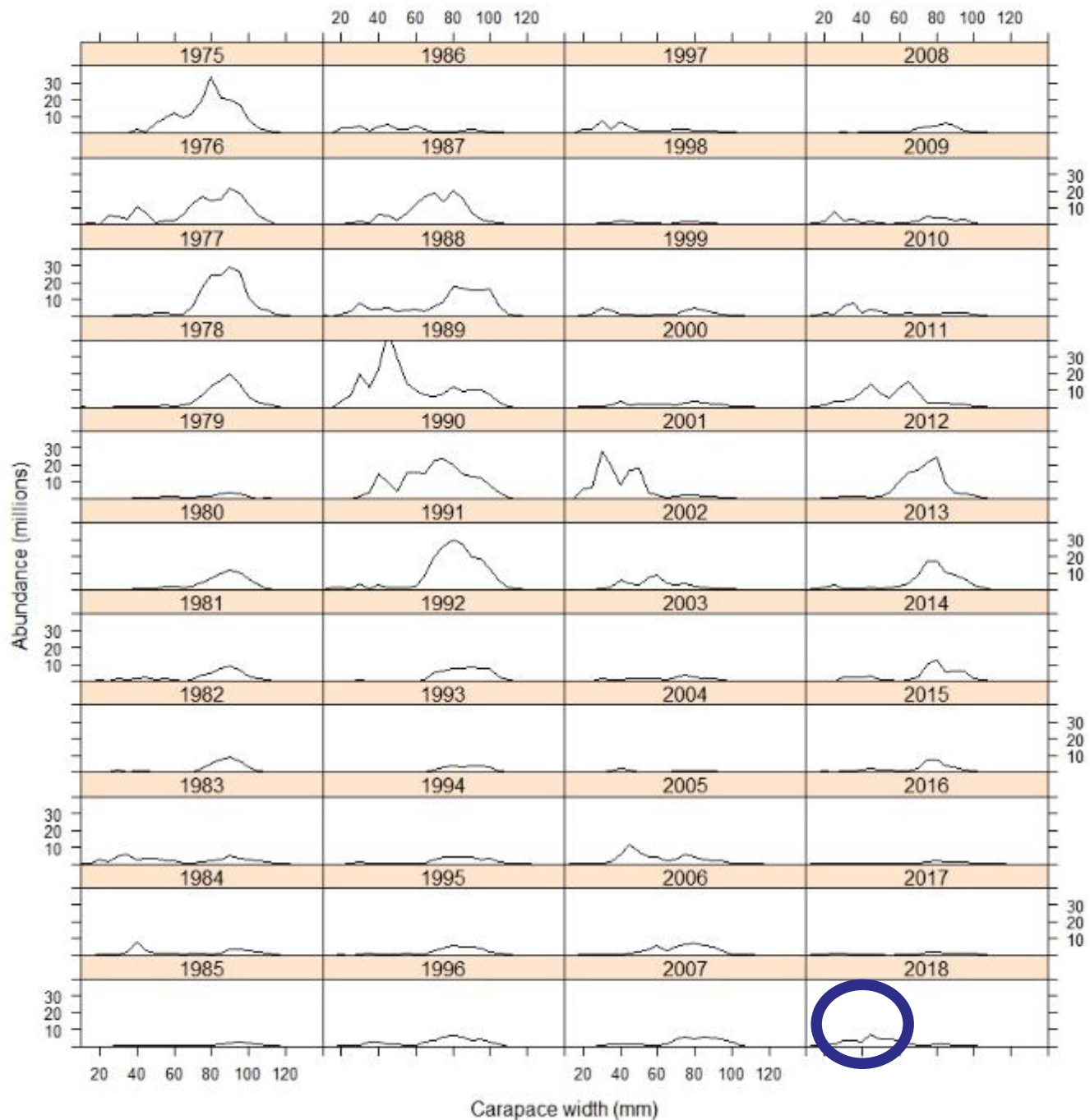
Tanner Crab east of 166W (male)



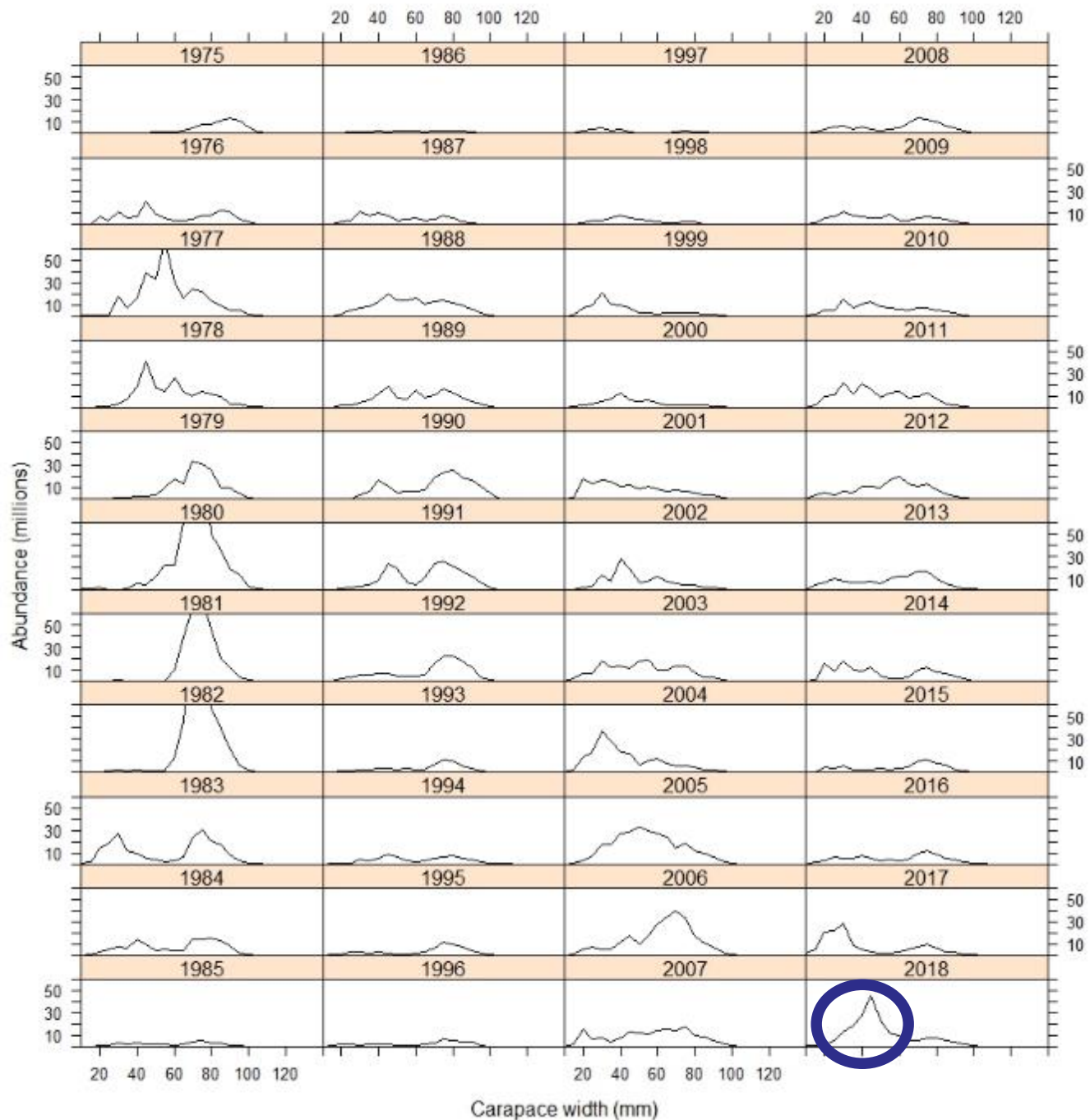
Tanner Crab west of 166W (male)



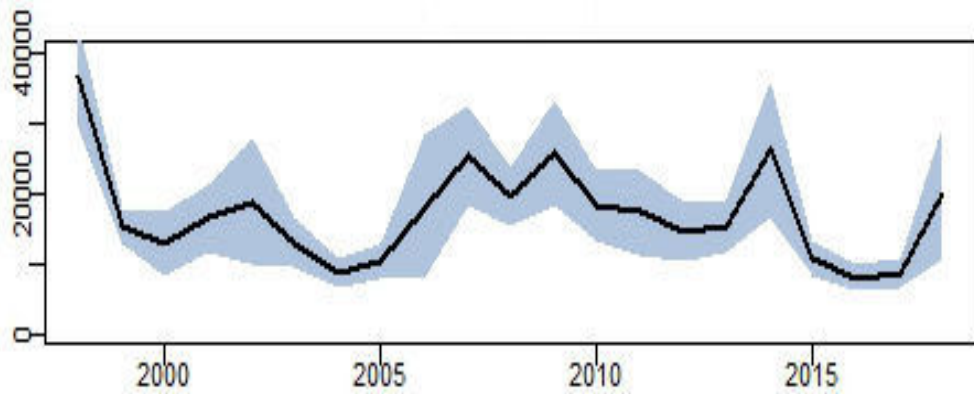
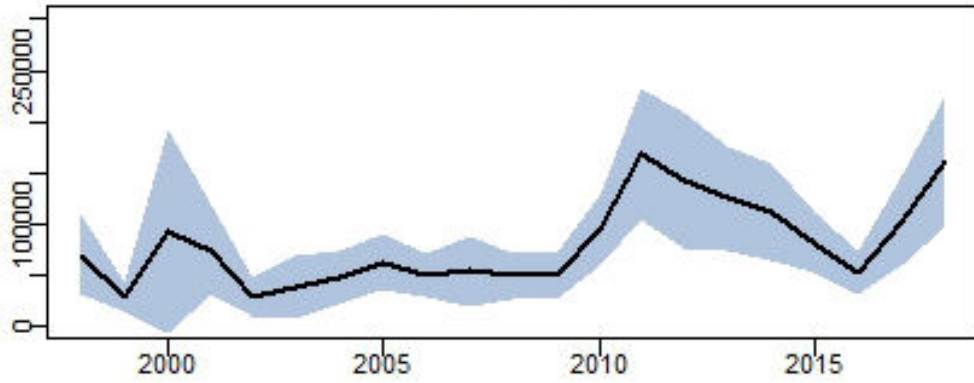
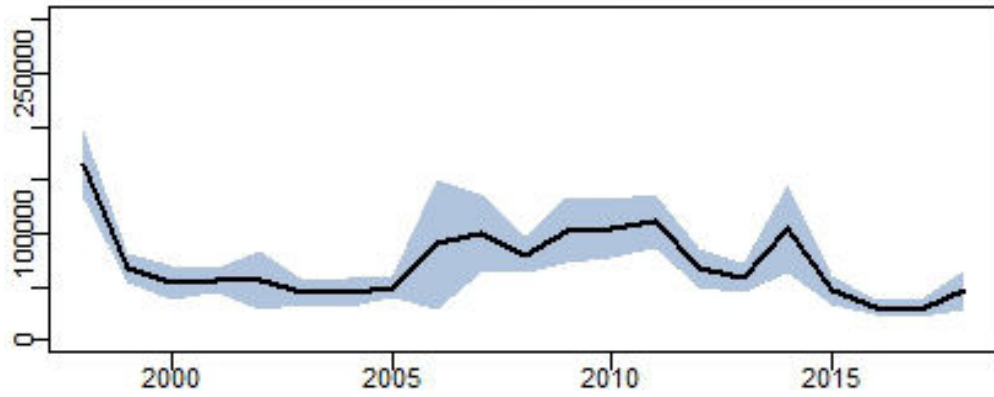
Tanner Crab east of 166W (female)



Tanner Crab west of 166W (female)

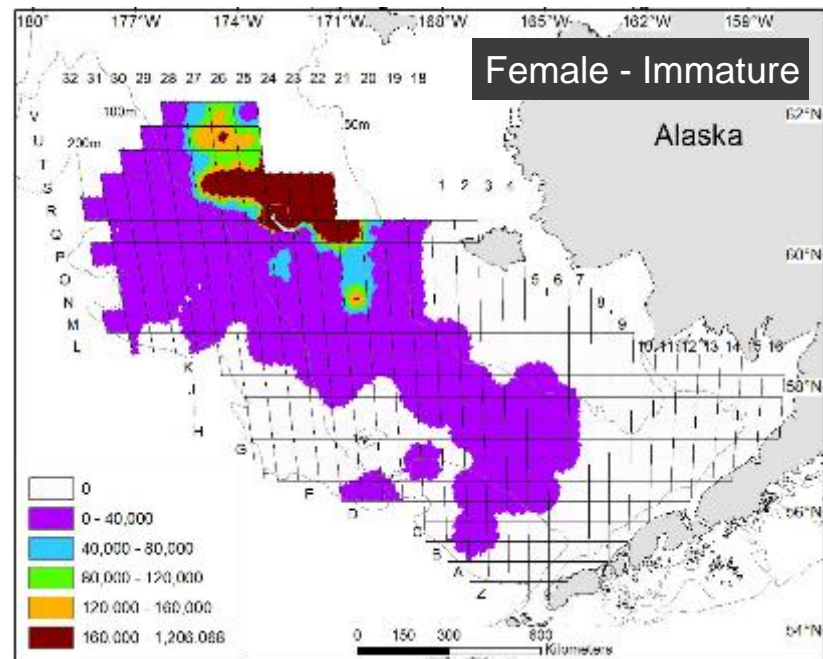
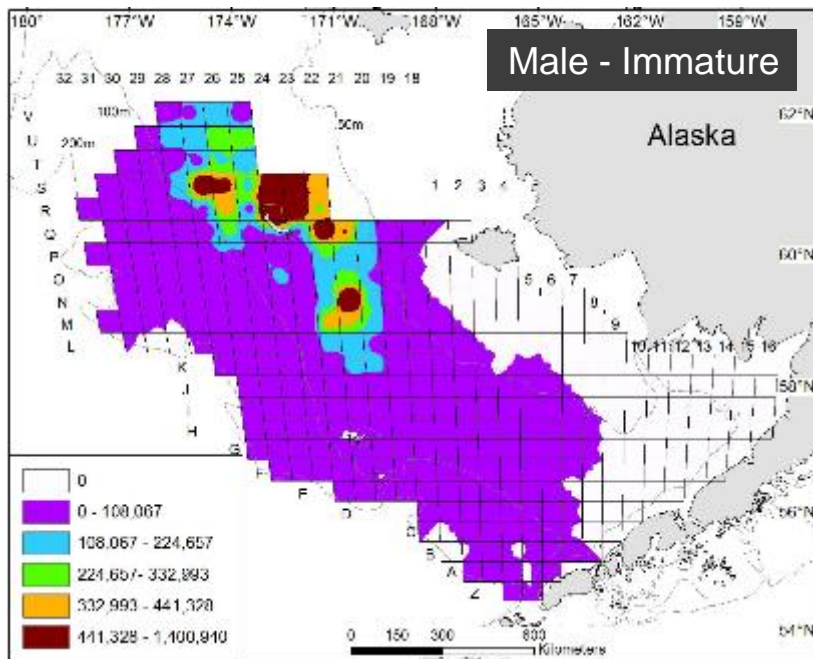
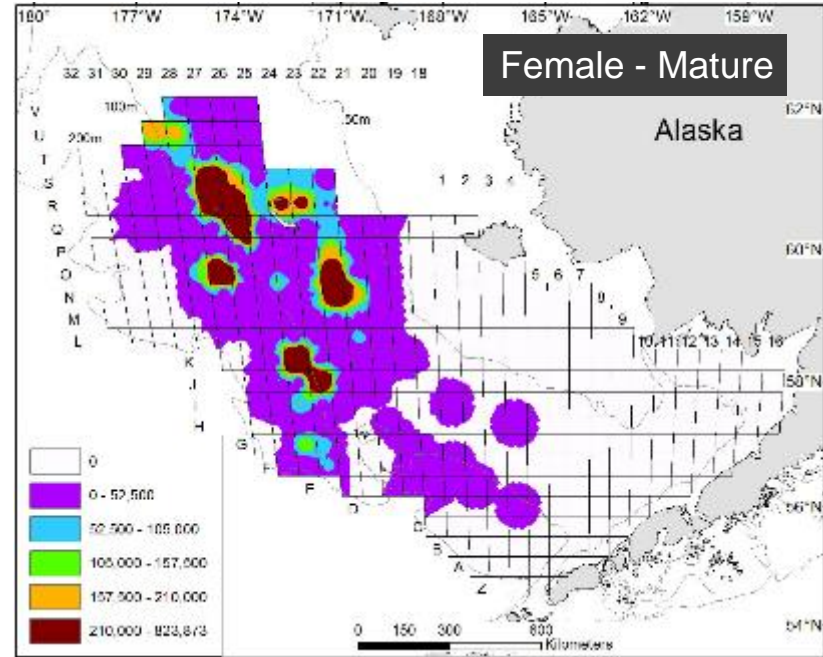
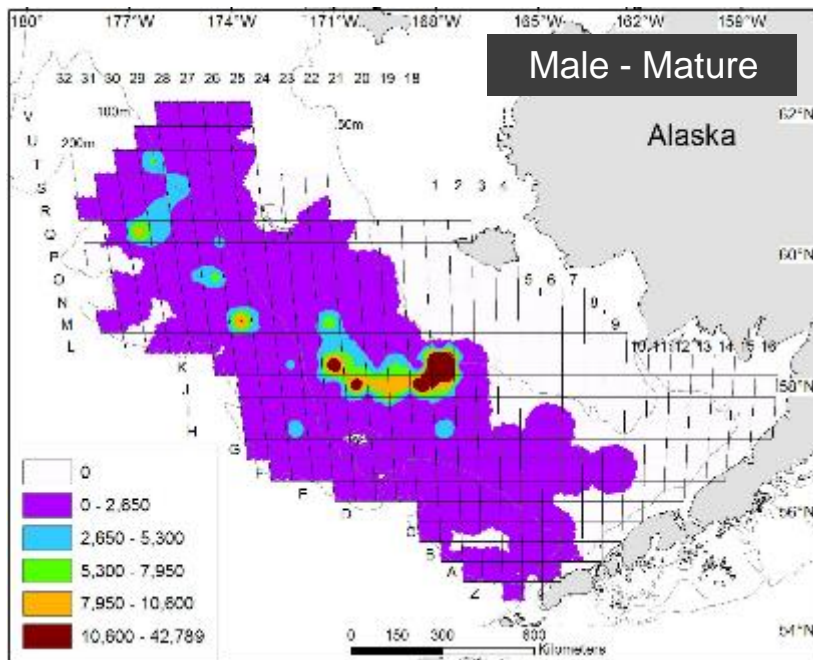


Snow crab

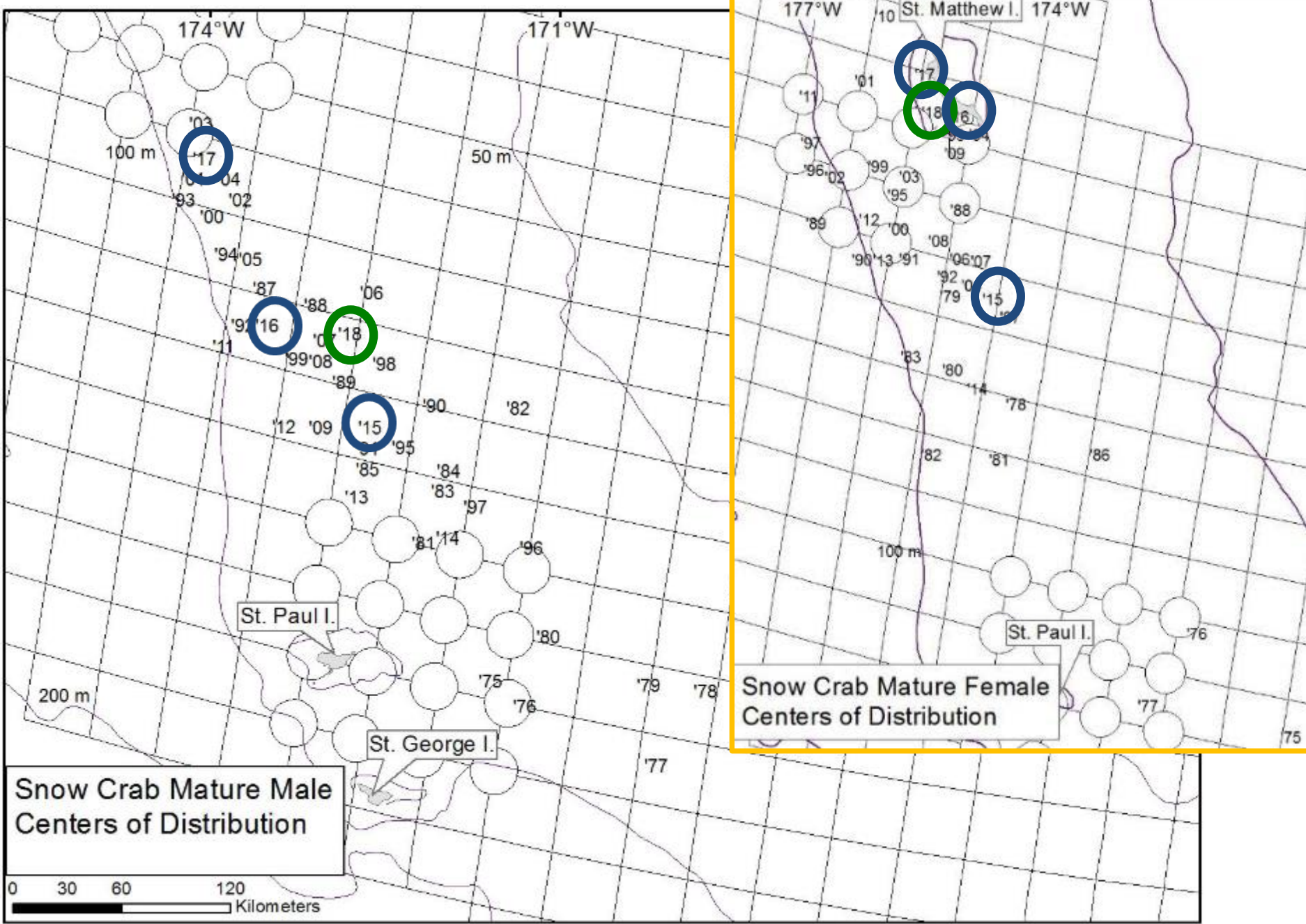


Biomass (t)

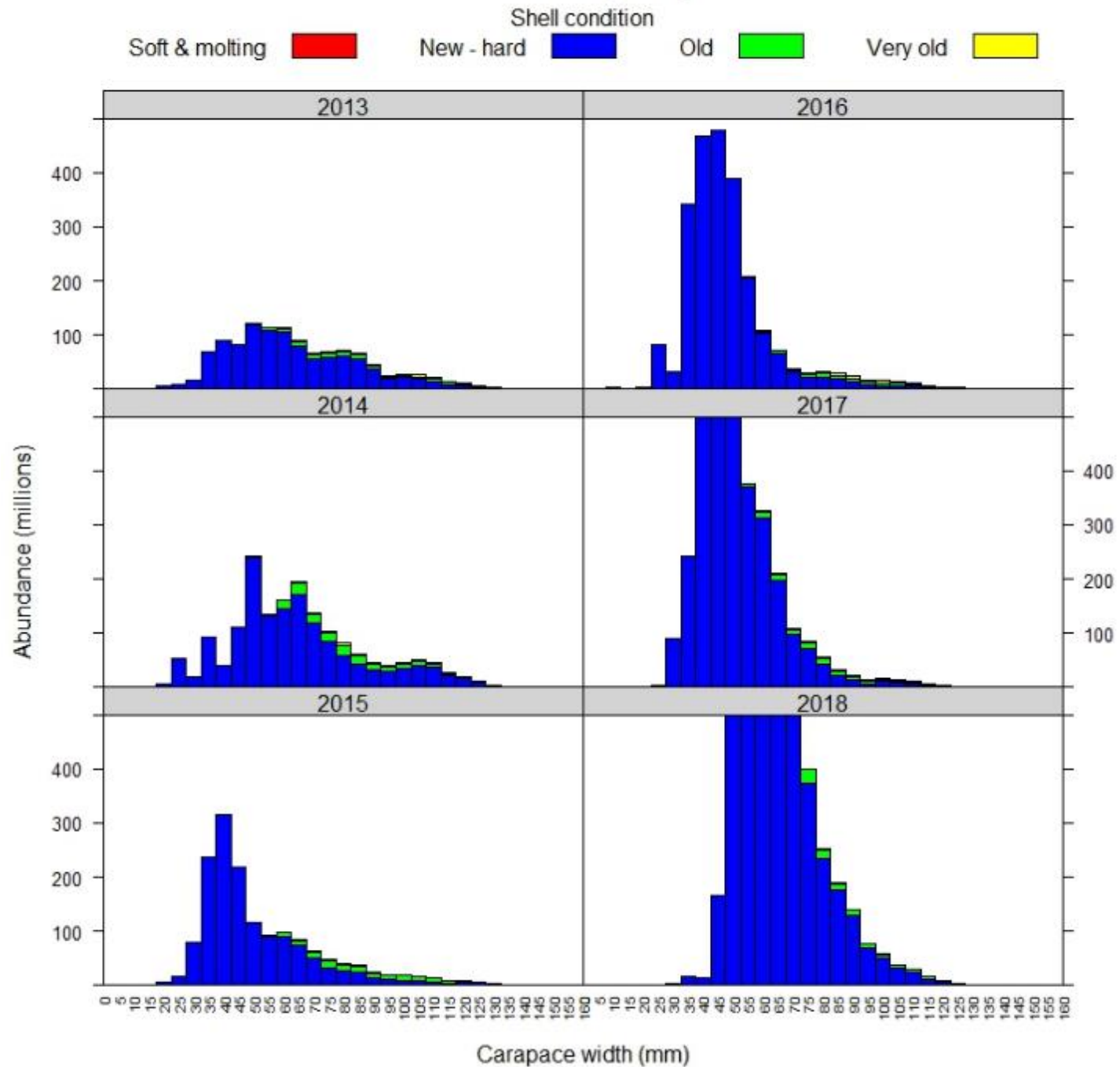
Snow crab



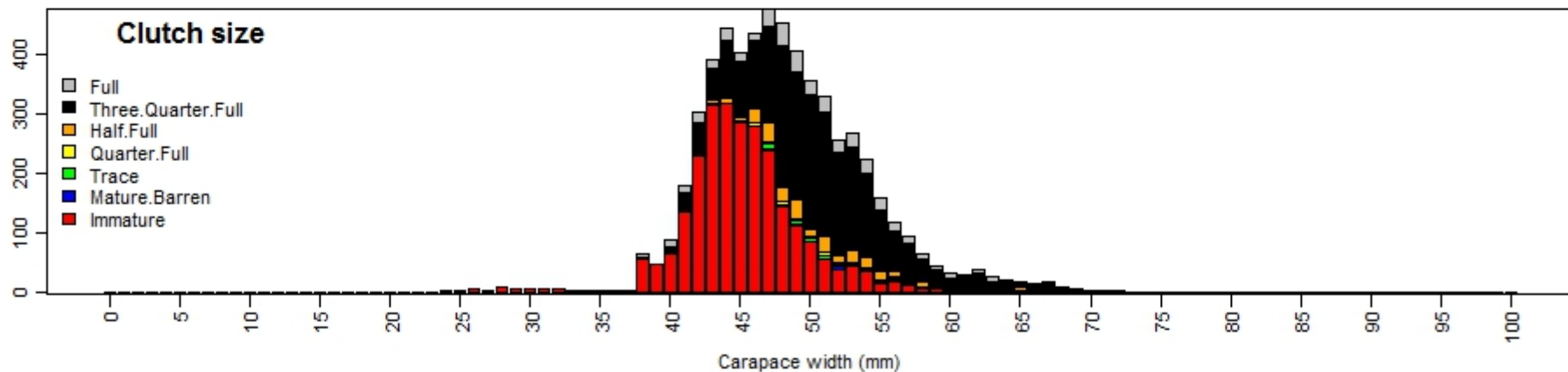
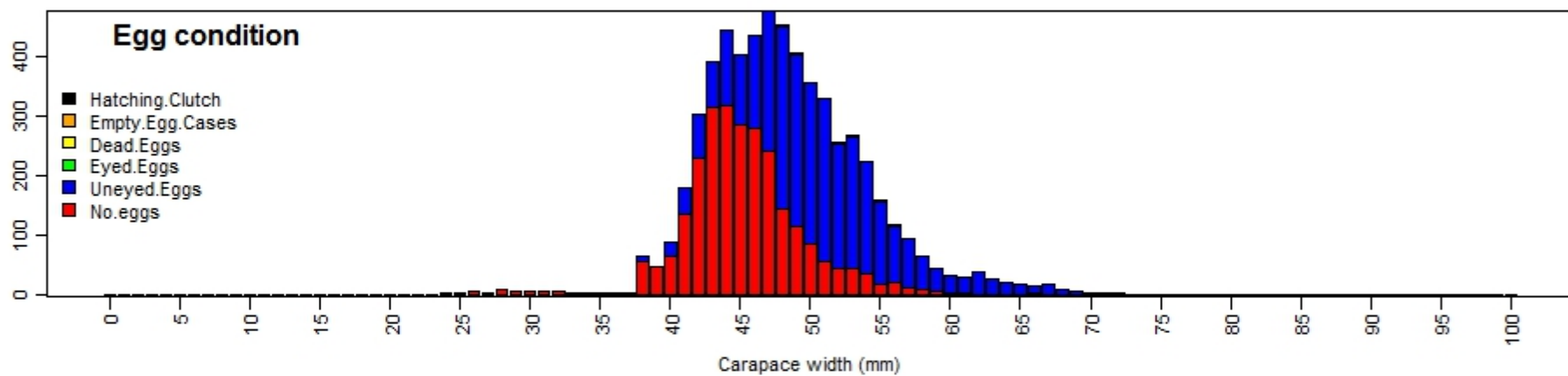
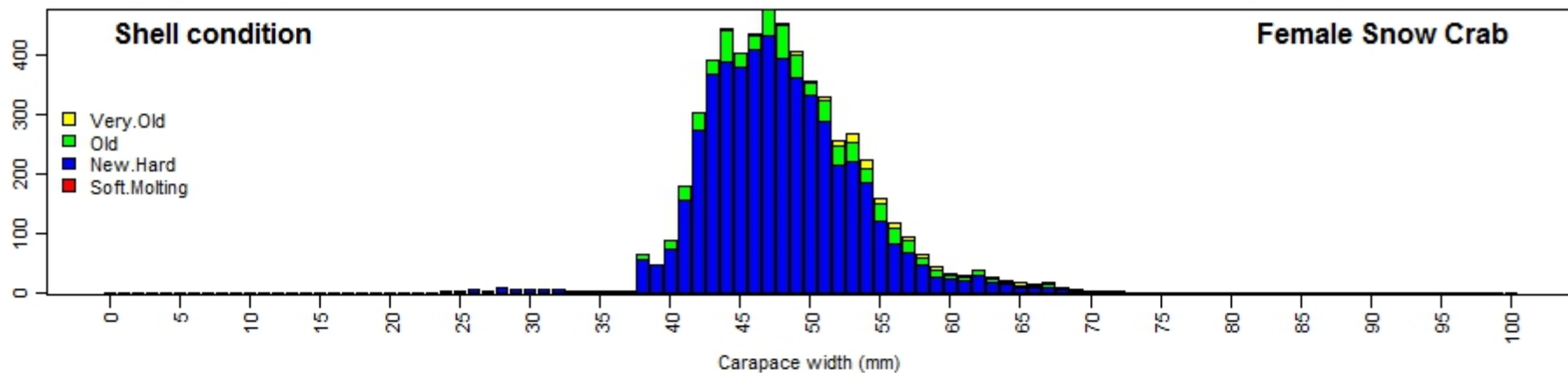
Snow crab



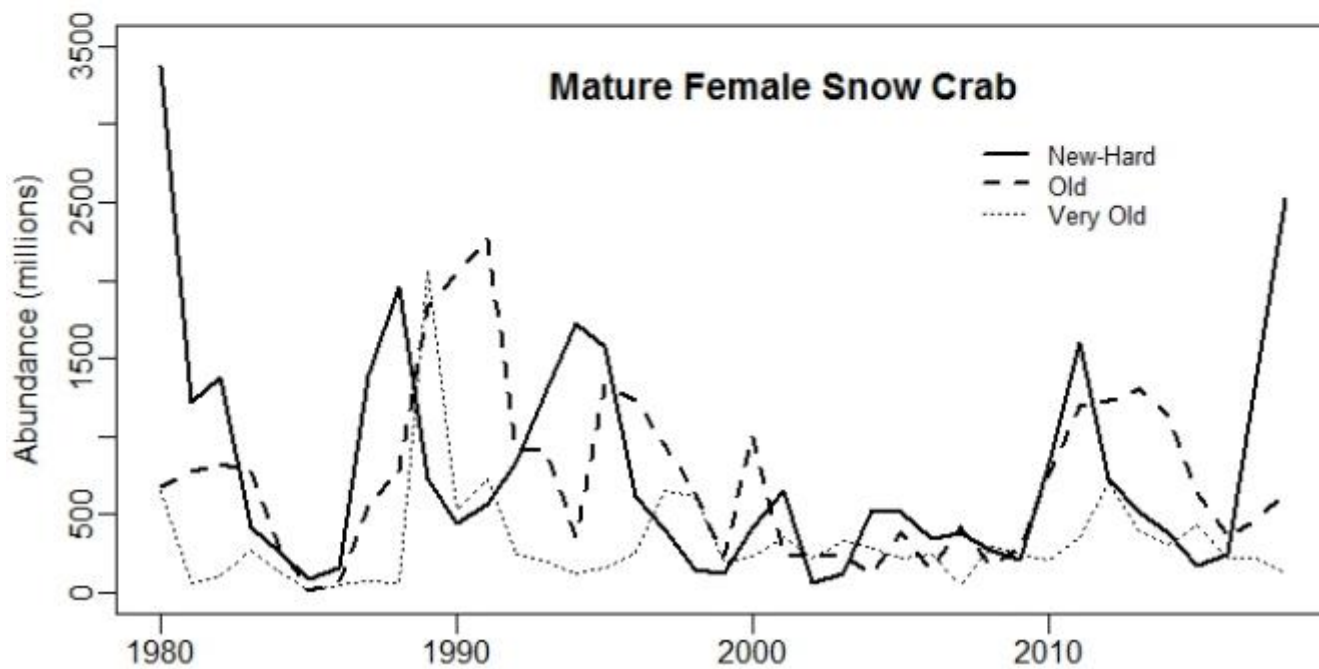
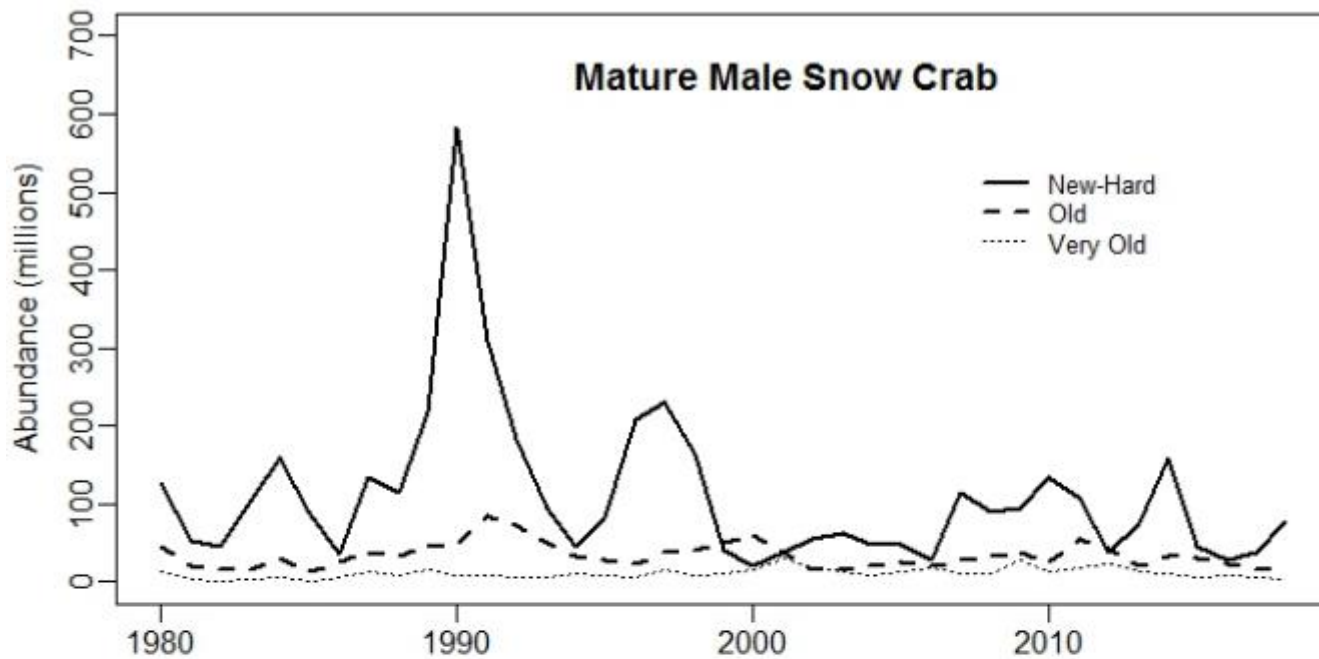
Snow Crab (male)



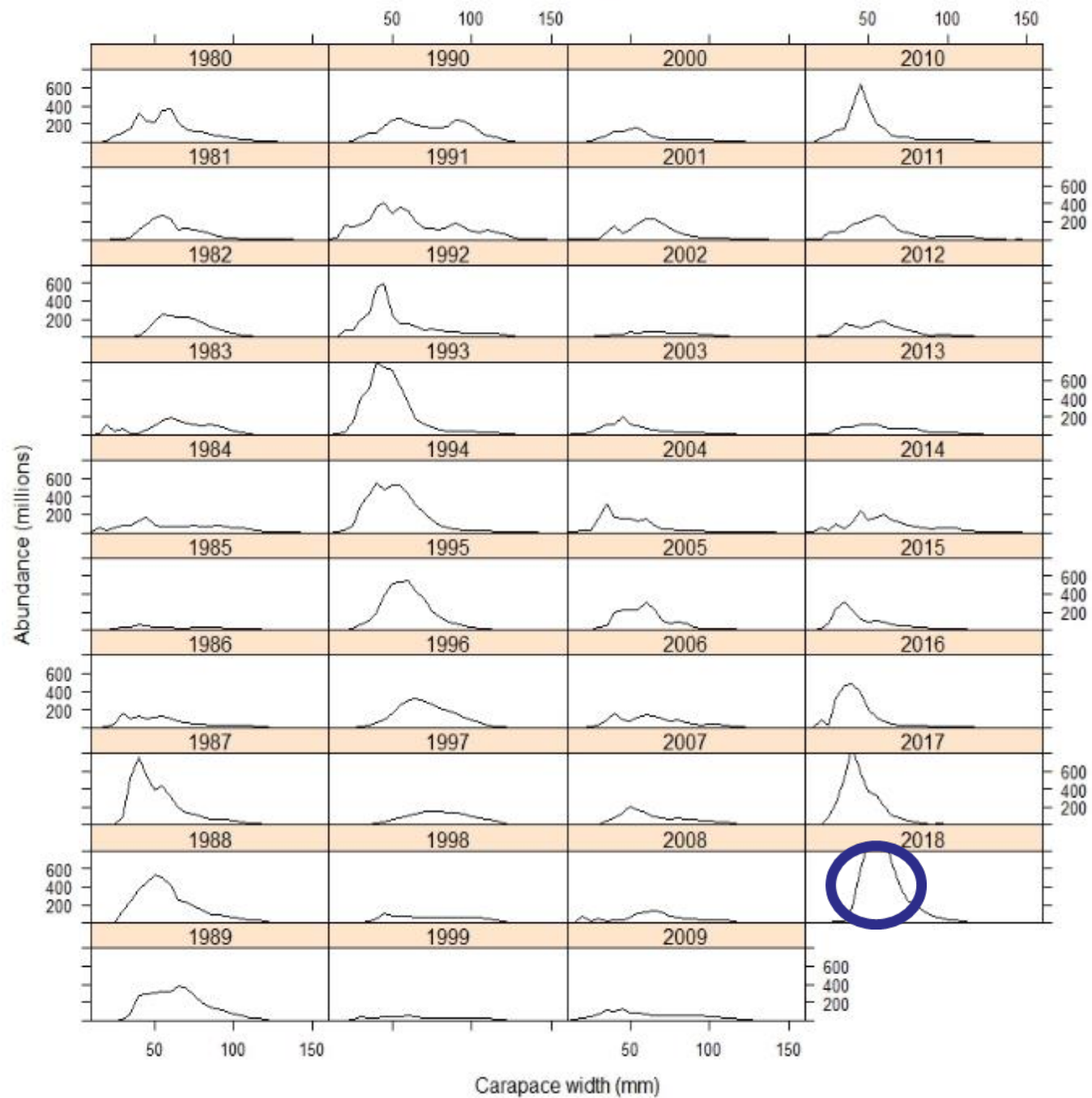
Snow crab



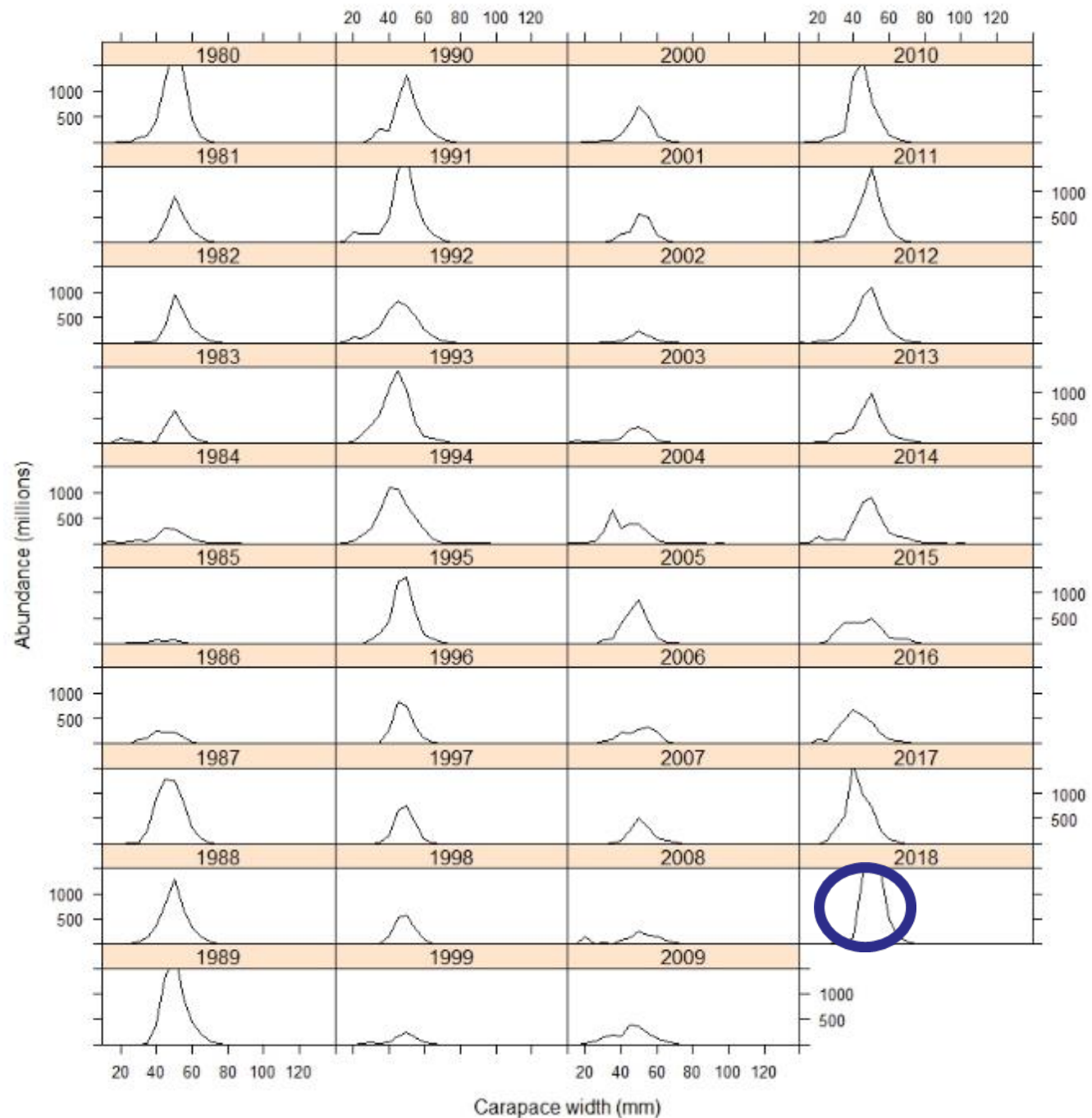
Snow crab



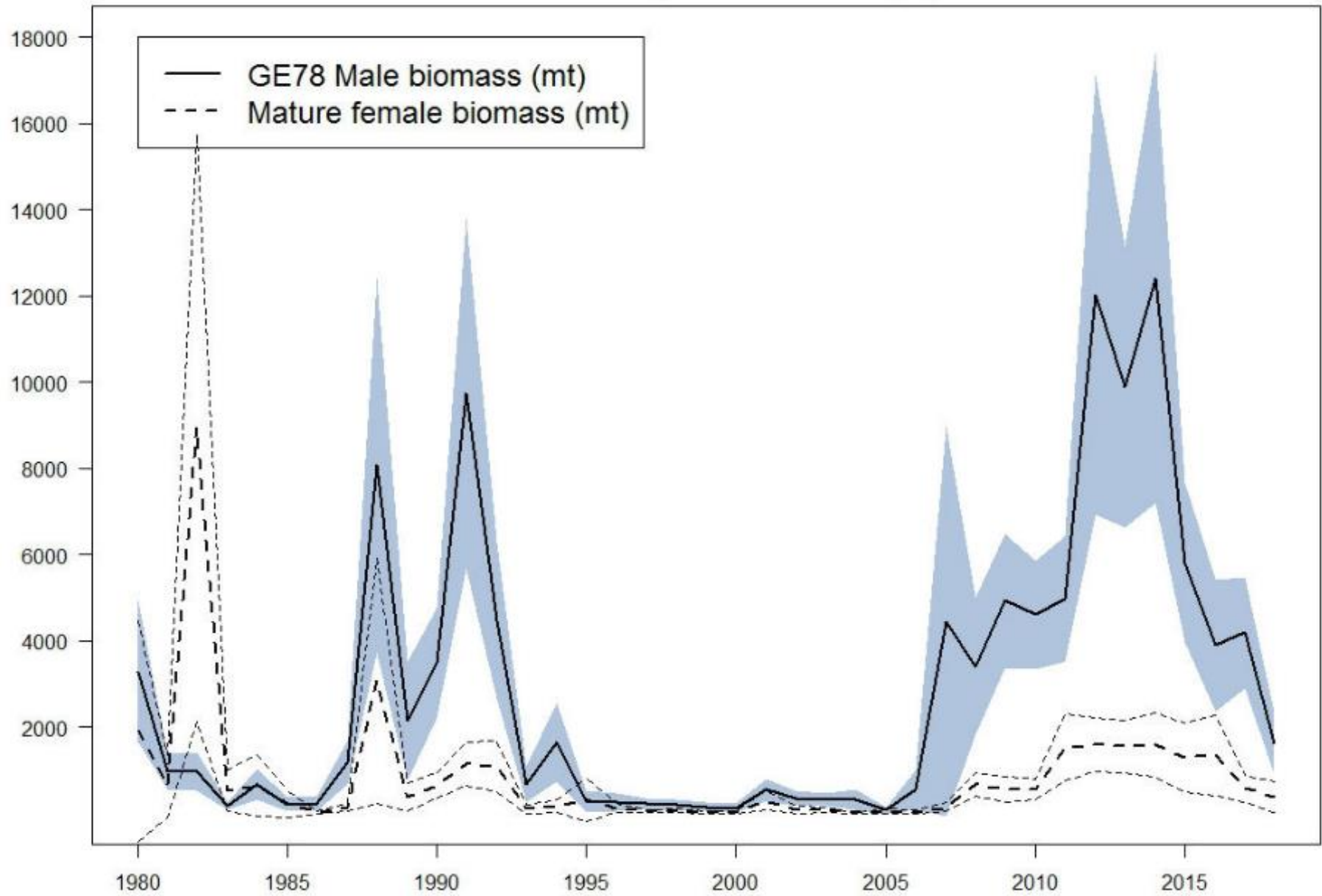
Snow Crab (male)



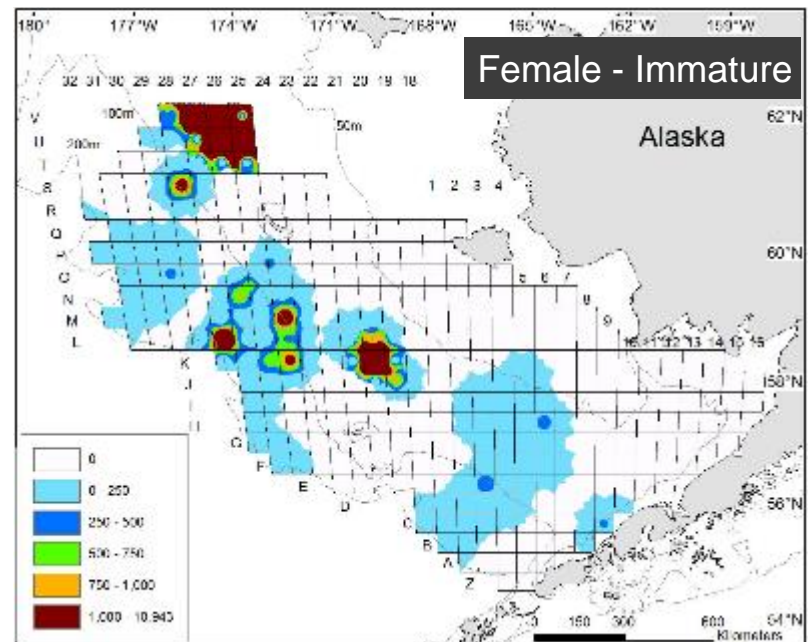
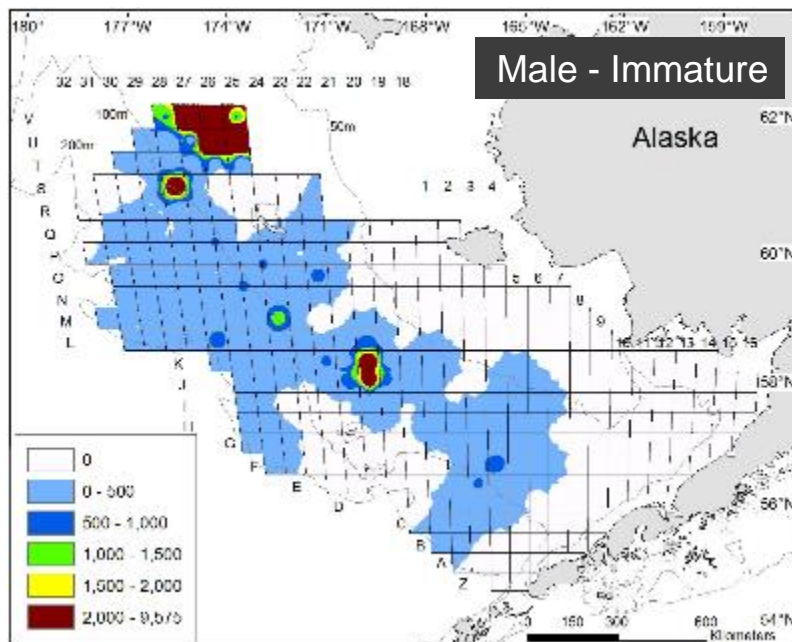
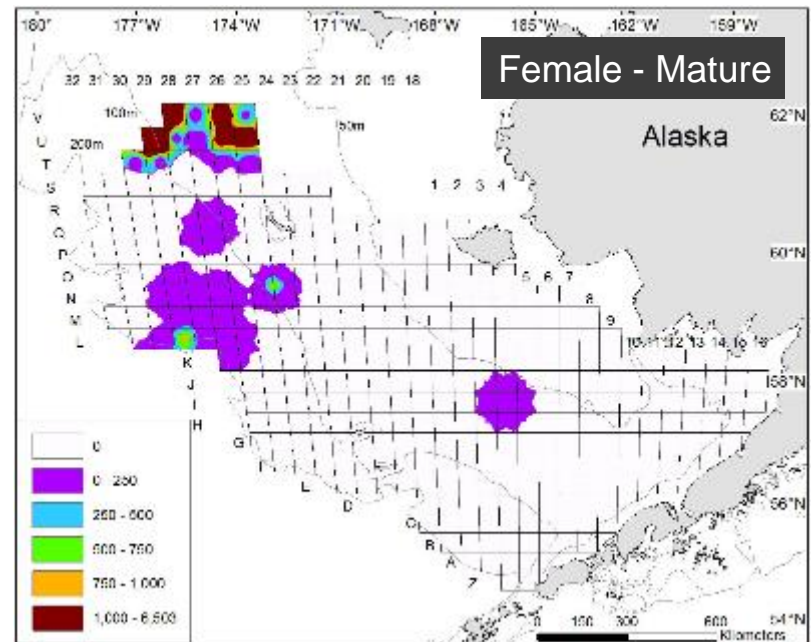
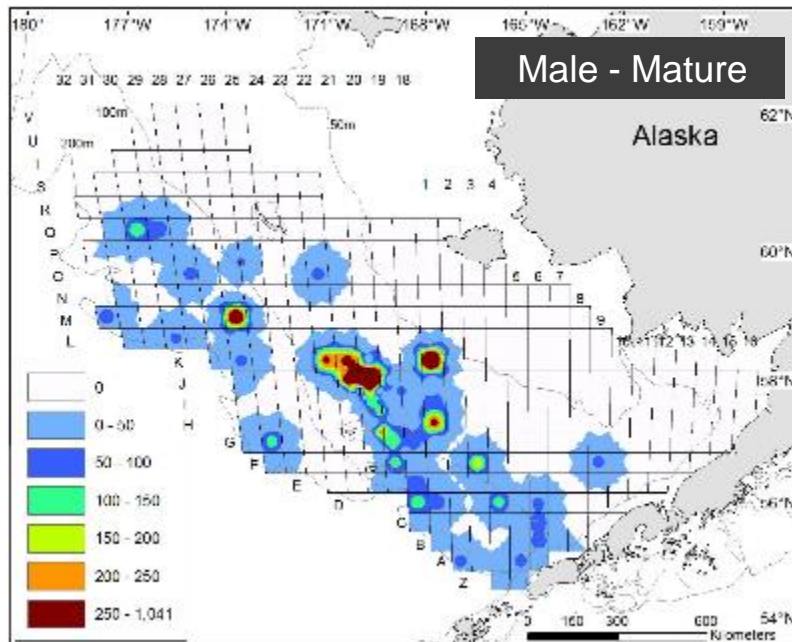
Snow Crab (female)



Chionoecetes bairdi/opilio hybrid crab



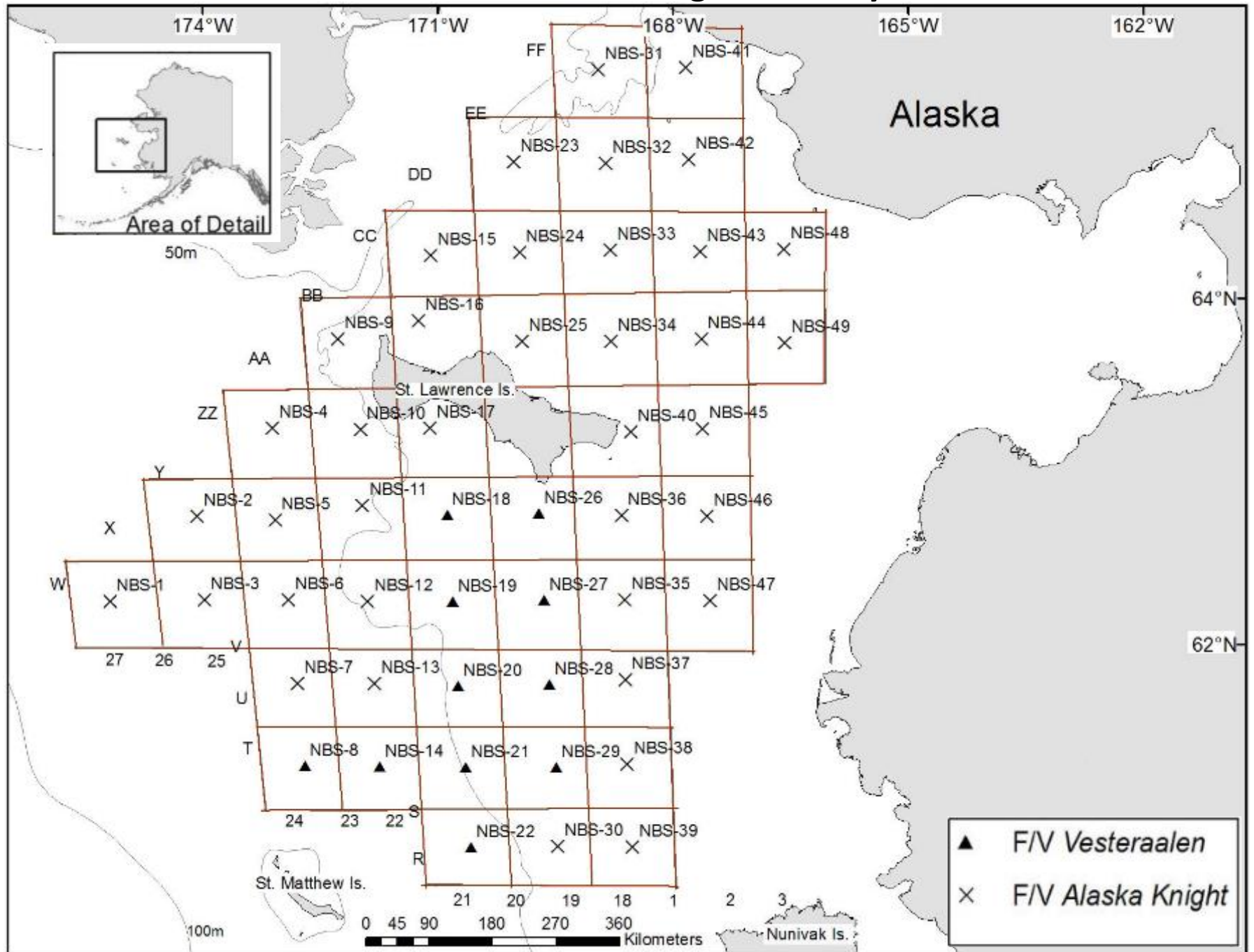
Chionoecetes bairdi/opilio hybrid crab



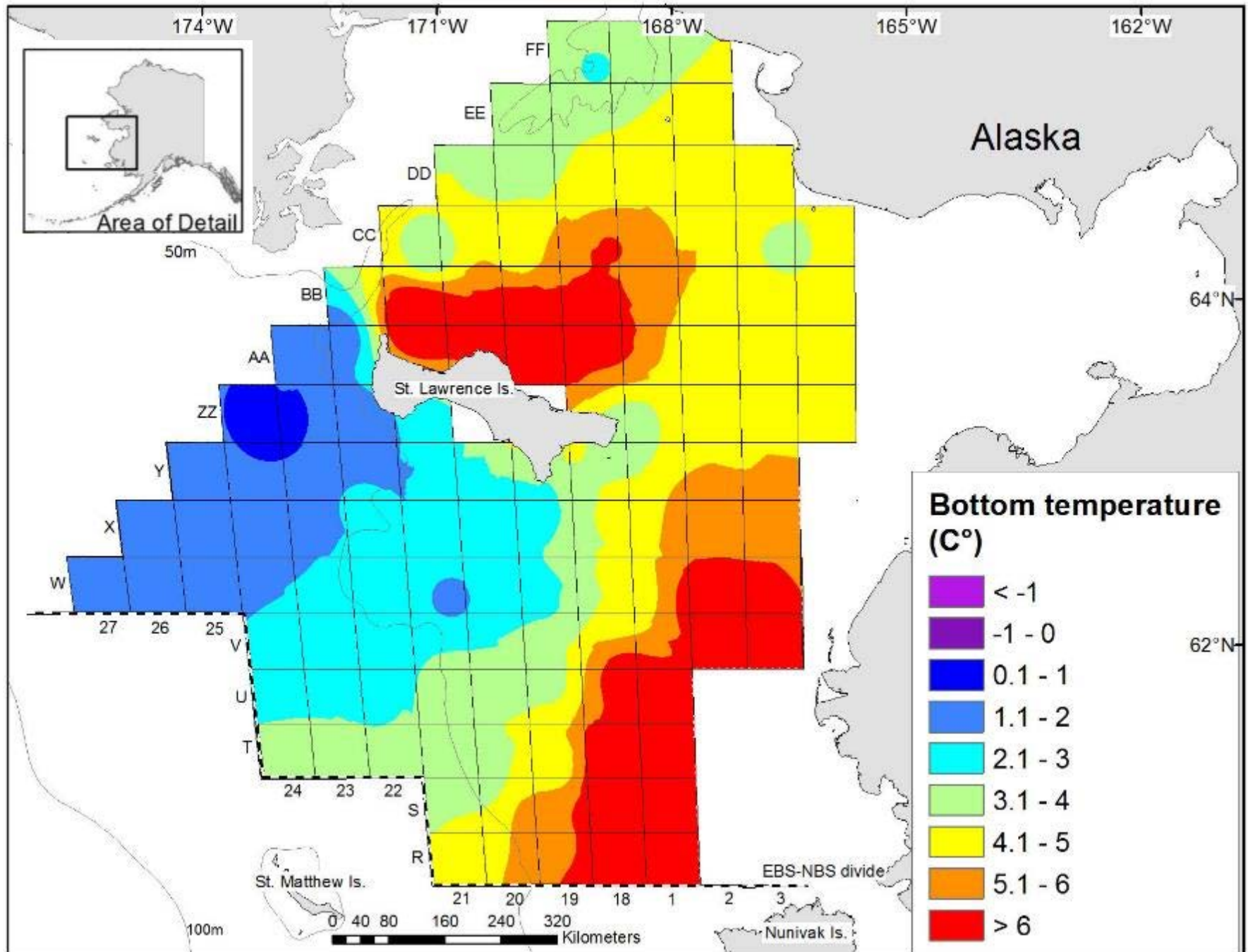
2018 Mature Males (2017 value in parentheses)

	# tows	#tows with crab	# caught	% measured	Biomass (t)
BB RKC	136	56 (64)	155 (266)	100%	13,226 (23,102)
PI RKC	77	8 (8)	14 (57)	100%	929 (3,658)
PI BKC	86	3 (4)	3 (4)	100%	152 (253)
SM BKC	56	12 (13)	47 (39)	100%	1,612 (1,721)
TC east	120	73 (80)	574 (1,053)	100%	11,058 (19,313)
TC west	255	106 (107)	1,898 (1,955)	100% (99%)	23,948 (24,268)
SC	375	157 (167)	3,398 (2,198)	85% (96%)	47,054 (29,240)

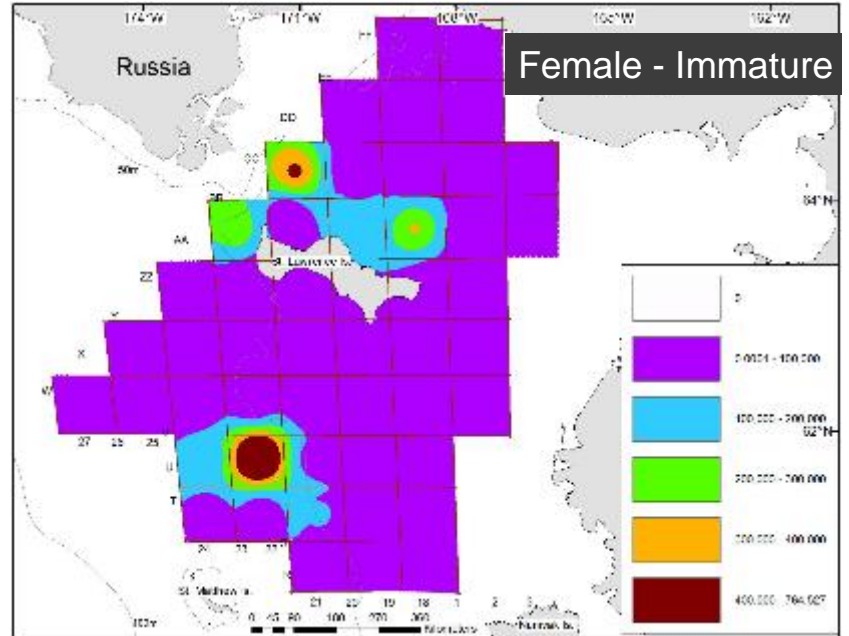
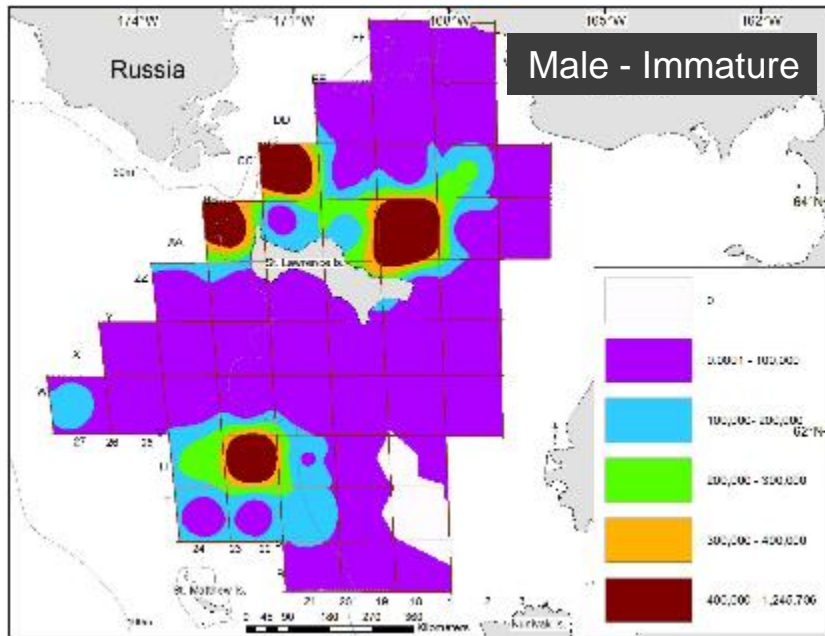
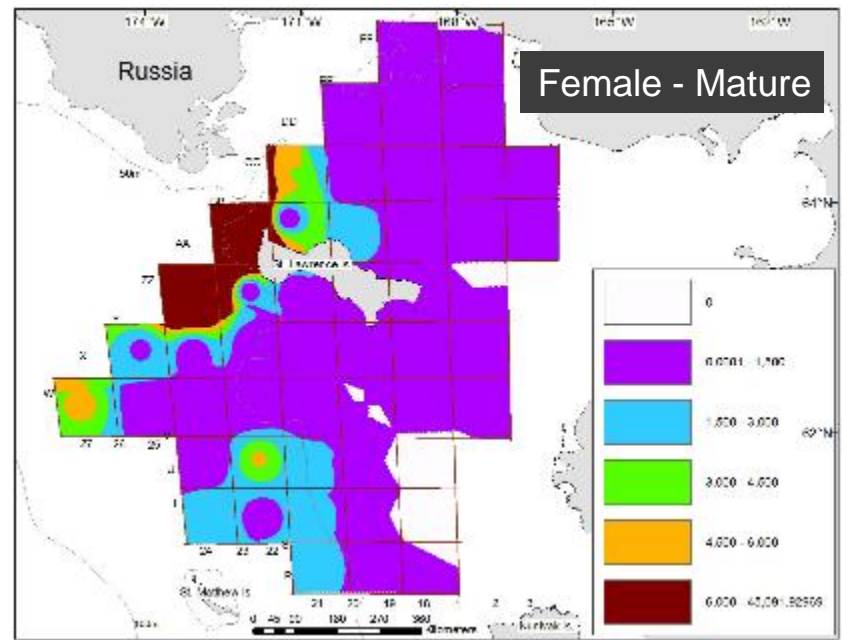
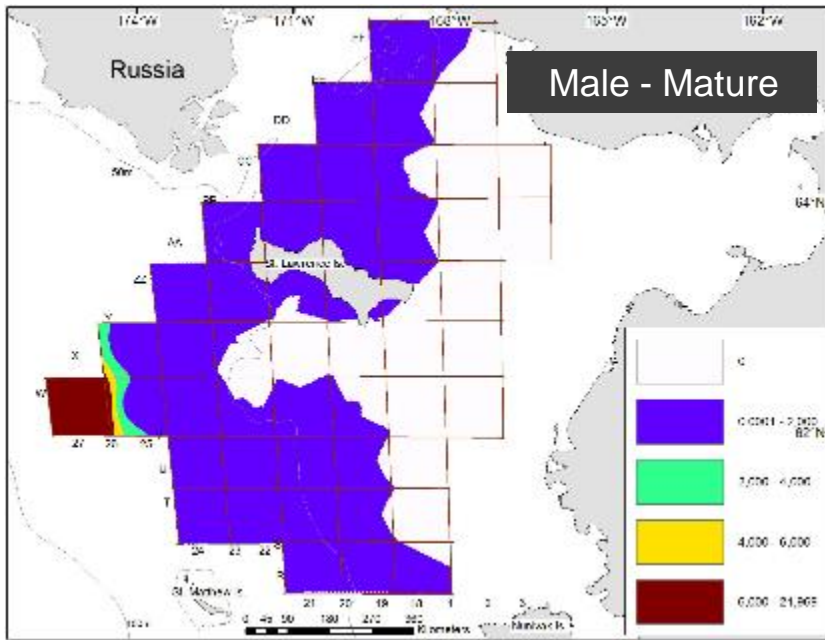
2018 Northern Bering Sea Survey



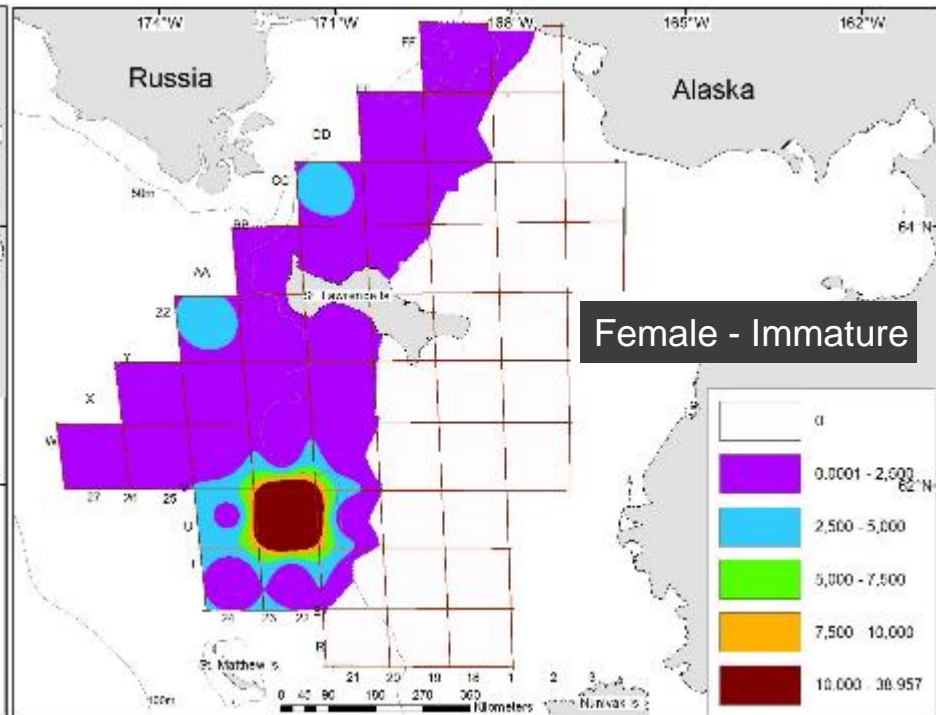
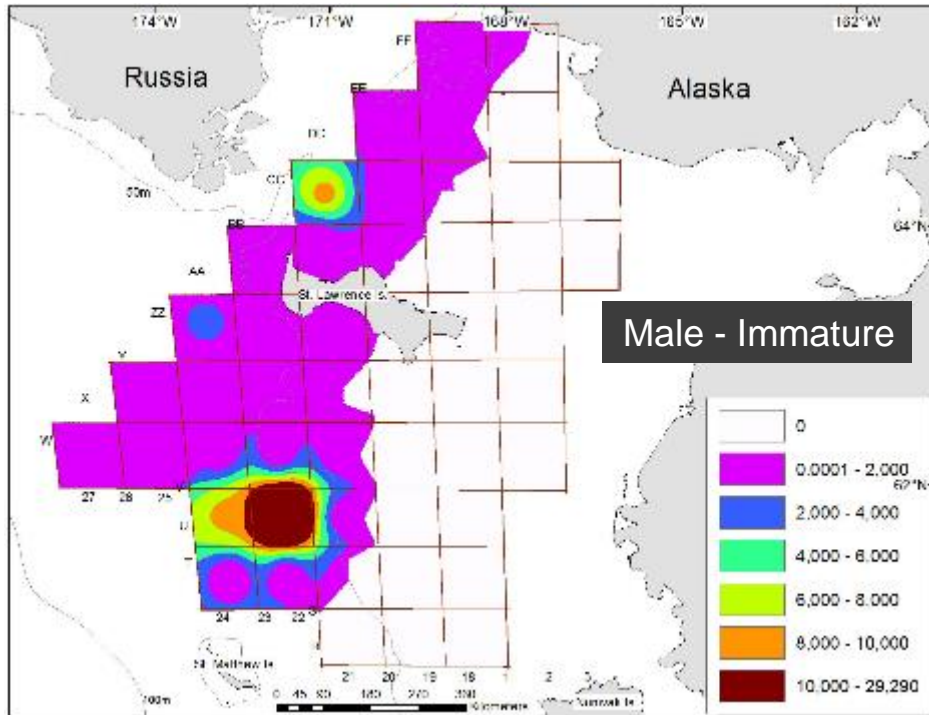
2018 Northern Bering Sea Survey



Northern Bering Sea snow crab



Northern Bering Sea *Chionoecetes bairdi/opilio* hybrid crab



Snow crab: eastern Bering Sea vs. northern Bering Sea

	Station count		Biomass (t)	
	<u>South</u>	<u>North</u>	<u>South</u>	<u>North</u>
Immature male (2017)	204 (205)	35 (103)	458,902 (188,849)	115,491 (135,802)
Mature male (2017)	157 (167)	12 (2)	47,054 (29,240)	3,799 (349)
Immature female (2017)	135 (109)	41 (103)	83,164 (66,240)	56,667 (80,918)
Mature female (2017)	121 (135)	41 (53)	161,573 (103,422)	3,265 (6,147)