

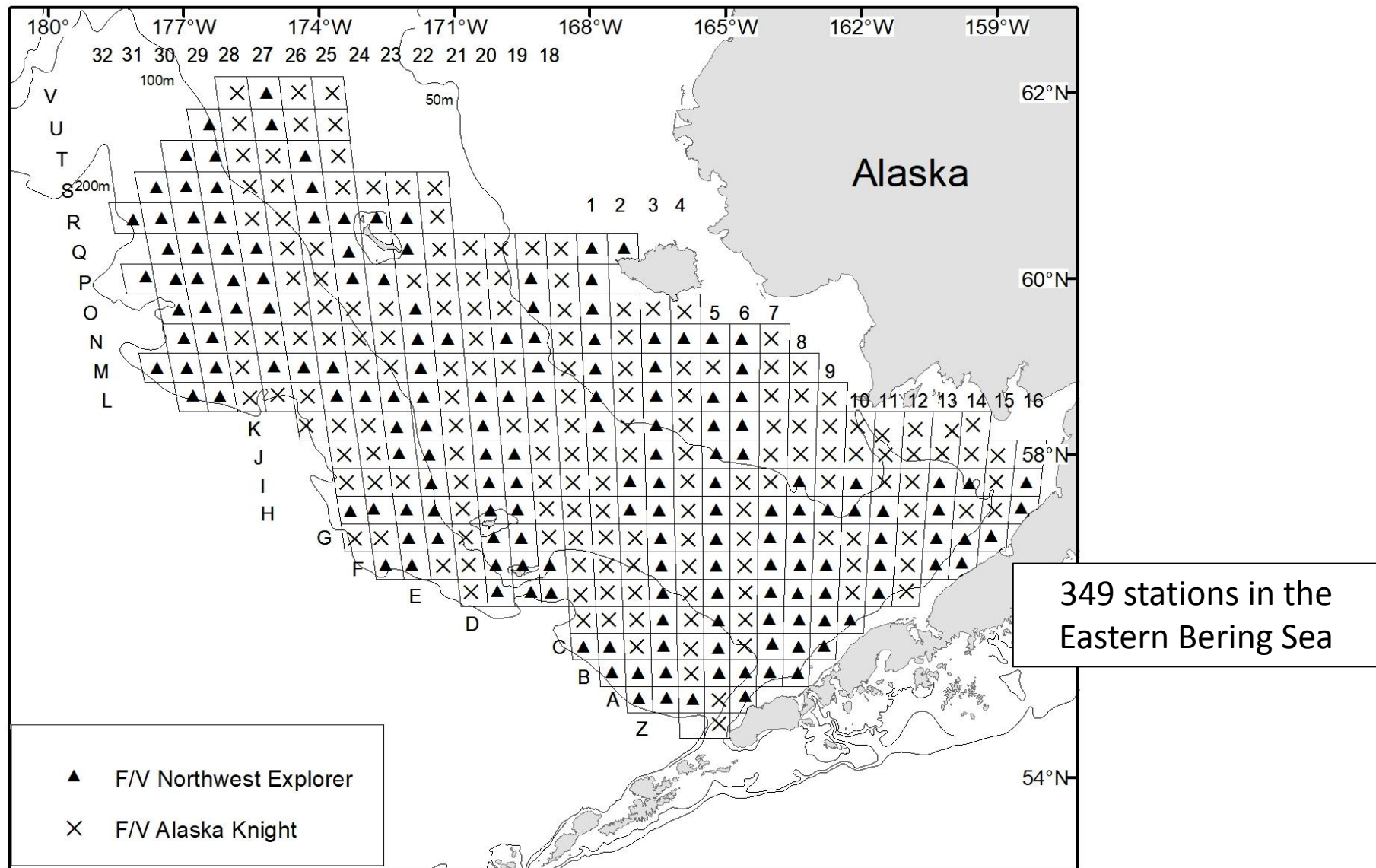
2024 trawl survey results: Eastern Bering Sea crab stocks

Leah Zacher, Shannon Hennessey, Jon Richar, Erin Fedewa,
Emily Ryznar, and Mike Litzow

With contributions from everyone in the Shellfish Assessment Program

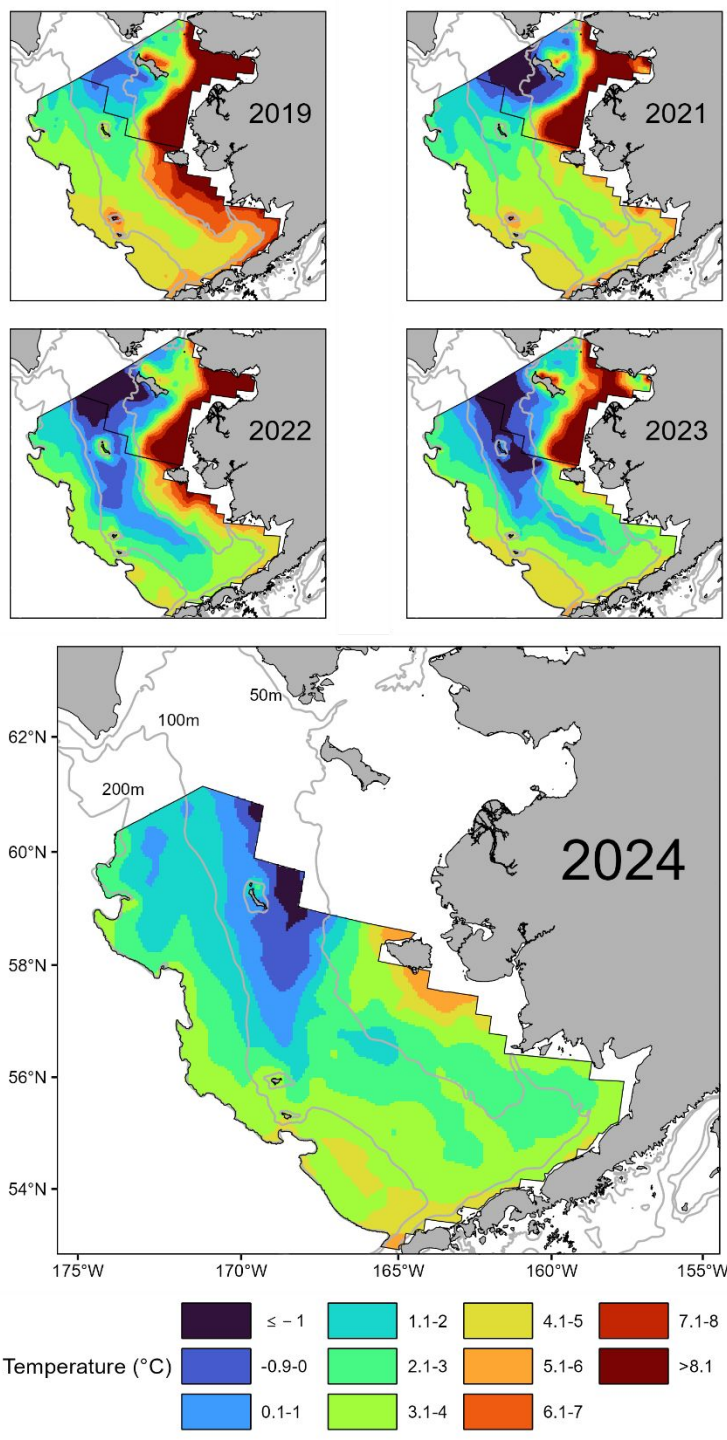
Outline of results

- Bottom temperatures
- Red king crab (Bristol Bay, Pribilofs, Northern District)
- Red king crab – Bristol Bay retow decision
- Blue king crab
- Tanner crab
- Snow crab
- *Chionoecetes* hybrids
- Slope/shelf comparison (survey modernization)



Bottom temperature

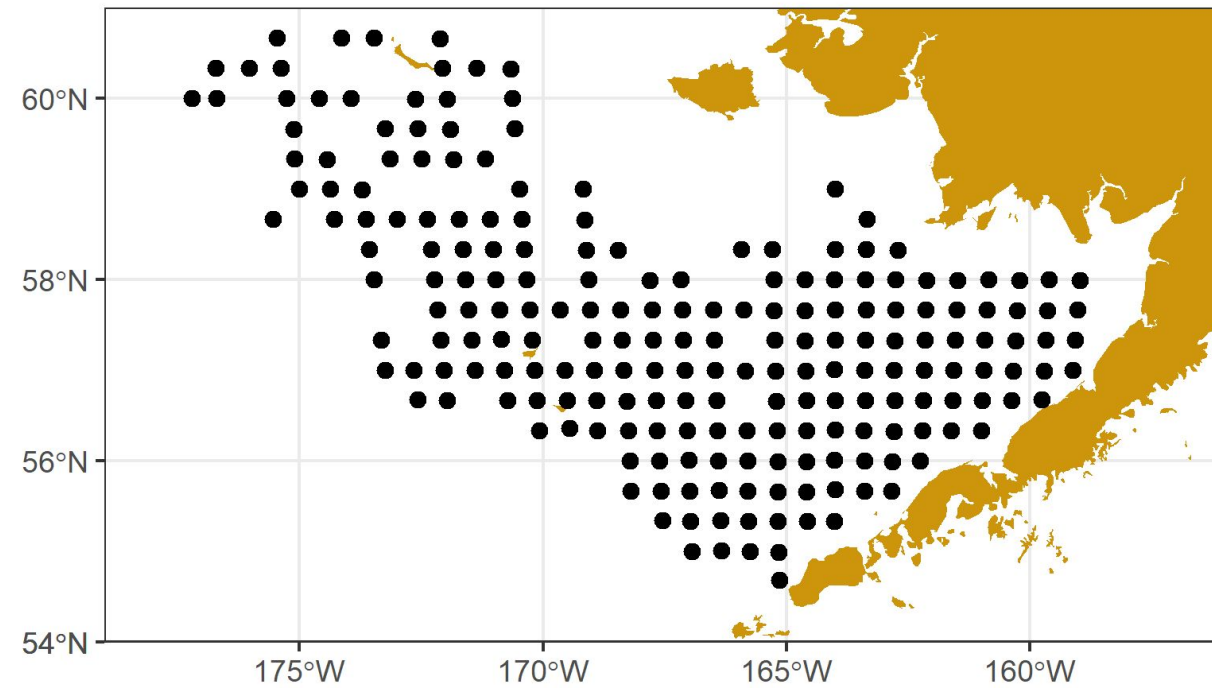
Intermediate cold pool compared to previous four surveys



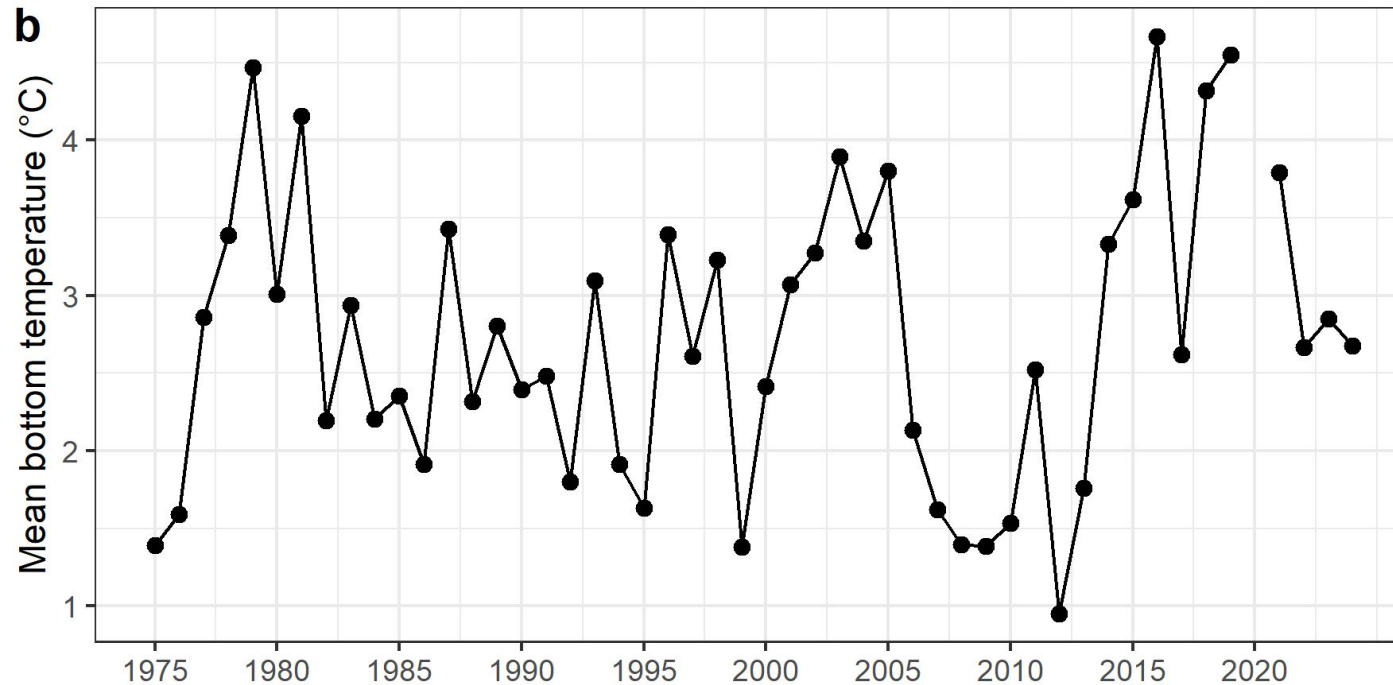
Bottom
temperature close
to 1975-2024
mean

(temperatures
controlled for
missing values
and sampling
date)

a



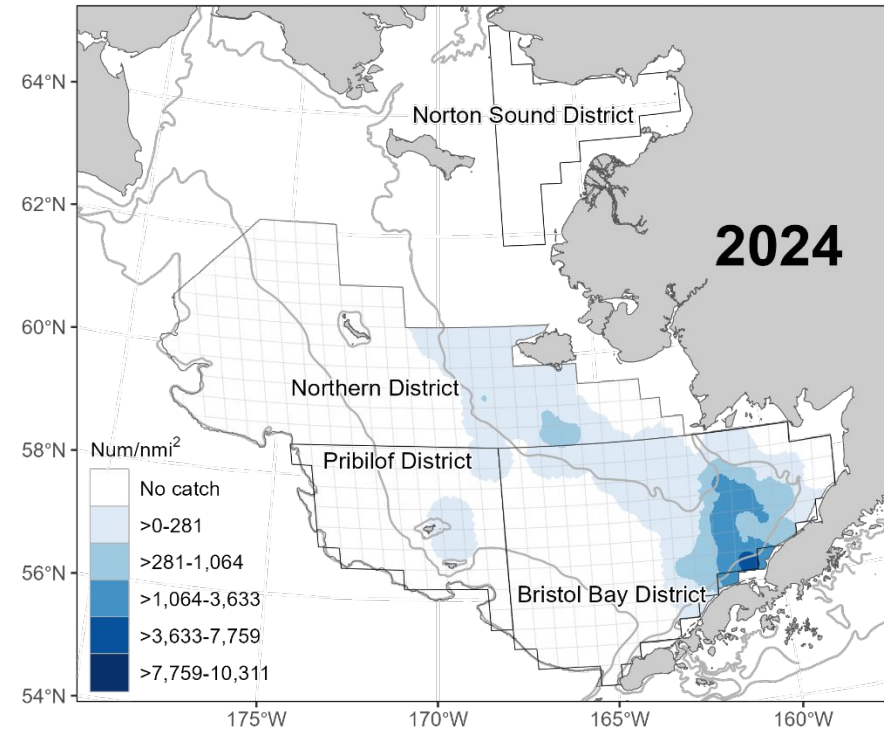
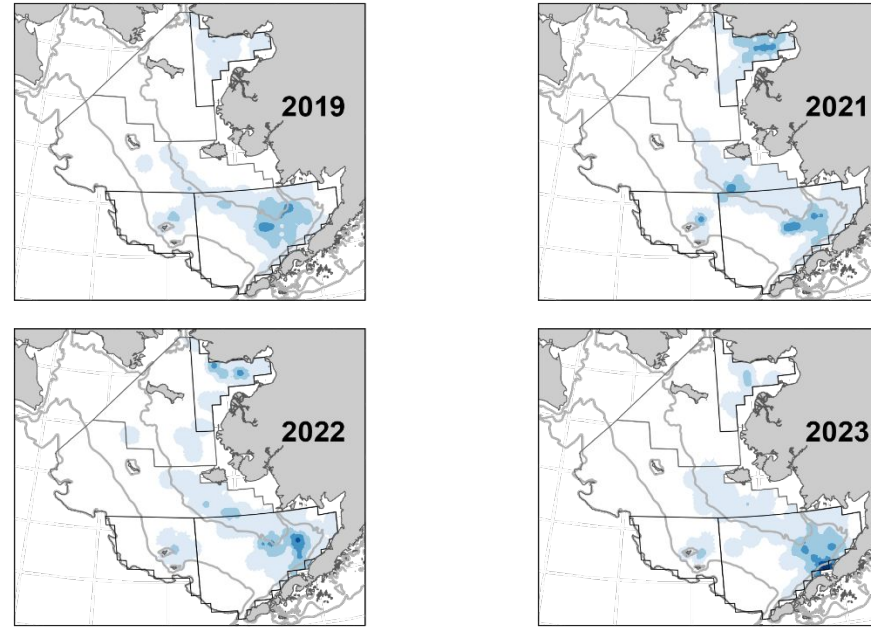
b



Red king crab

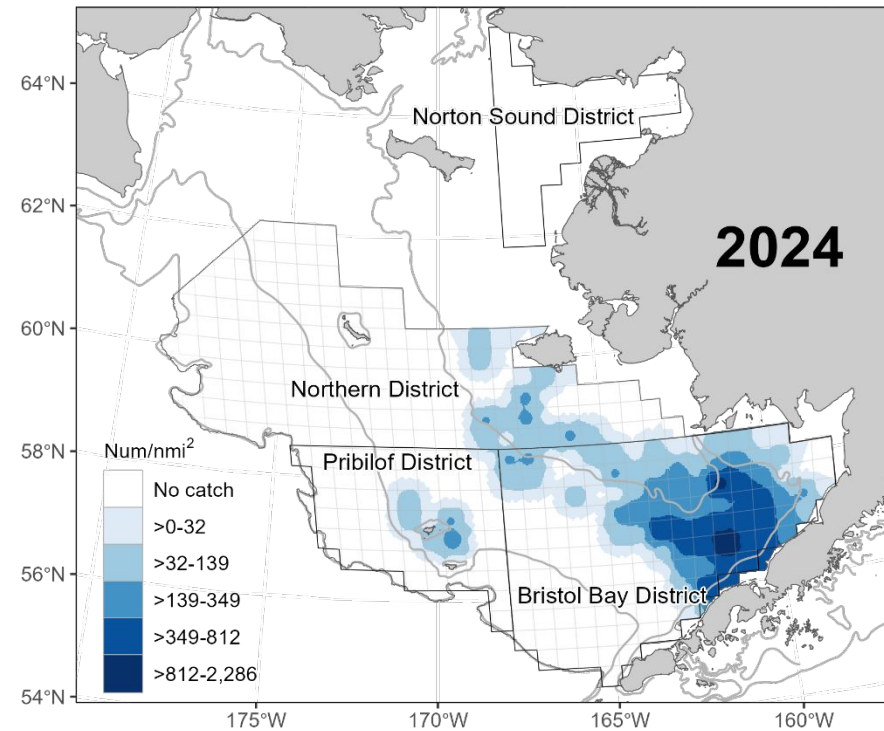
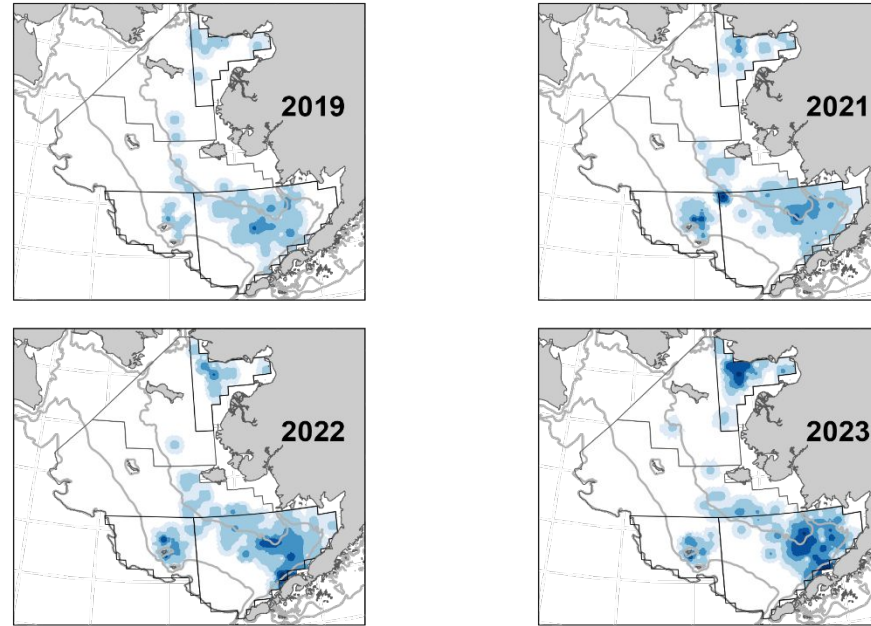
Distribution by year

Red King Crab Mature Female

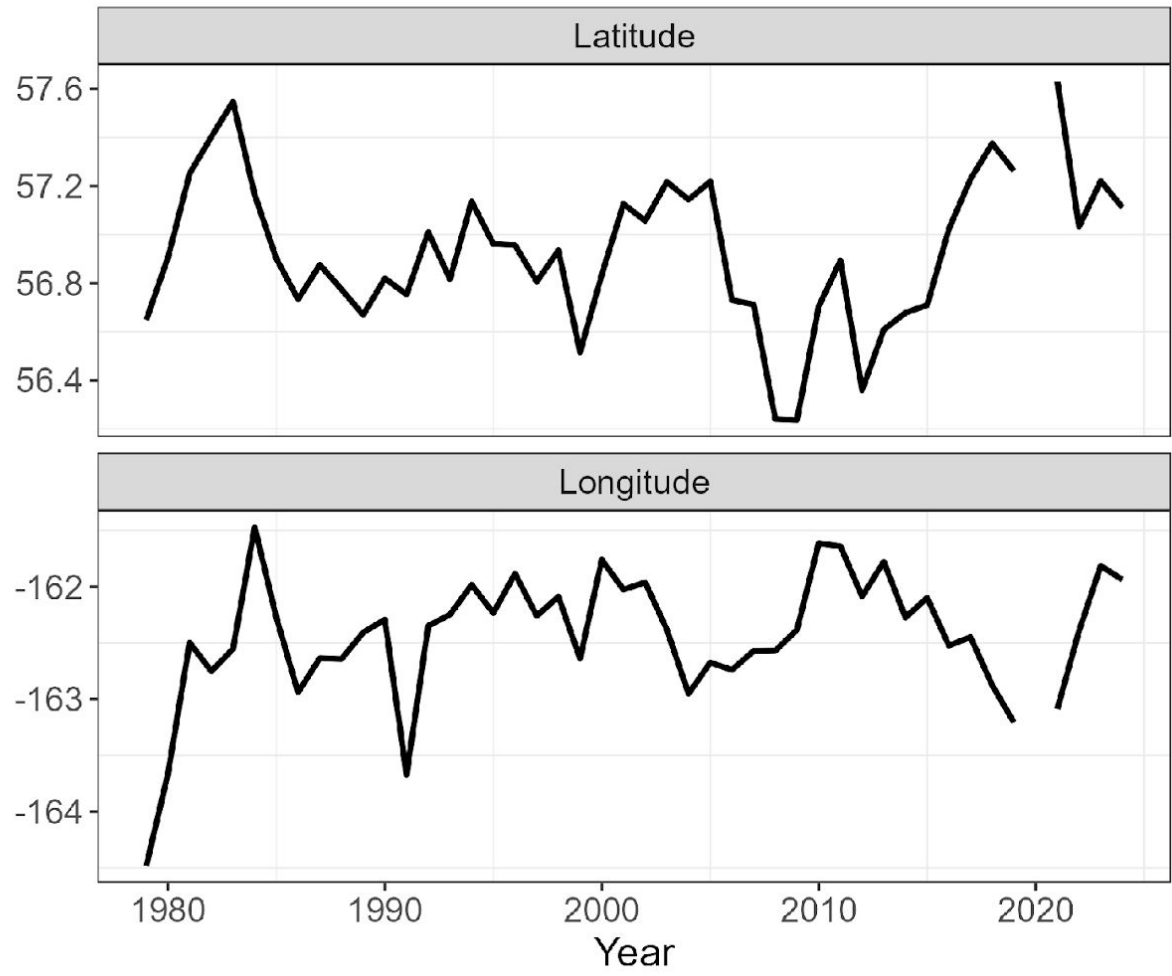
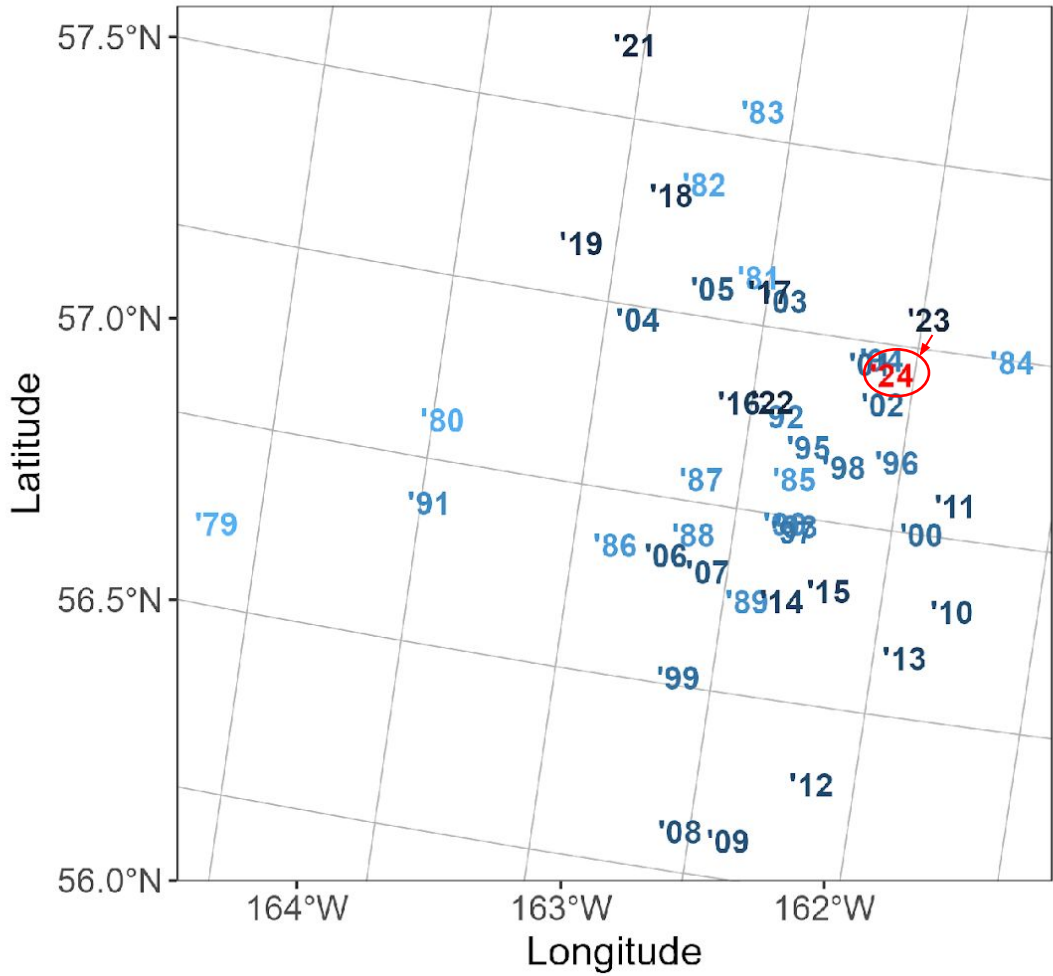


Distribution by year

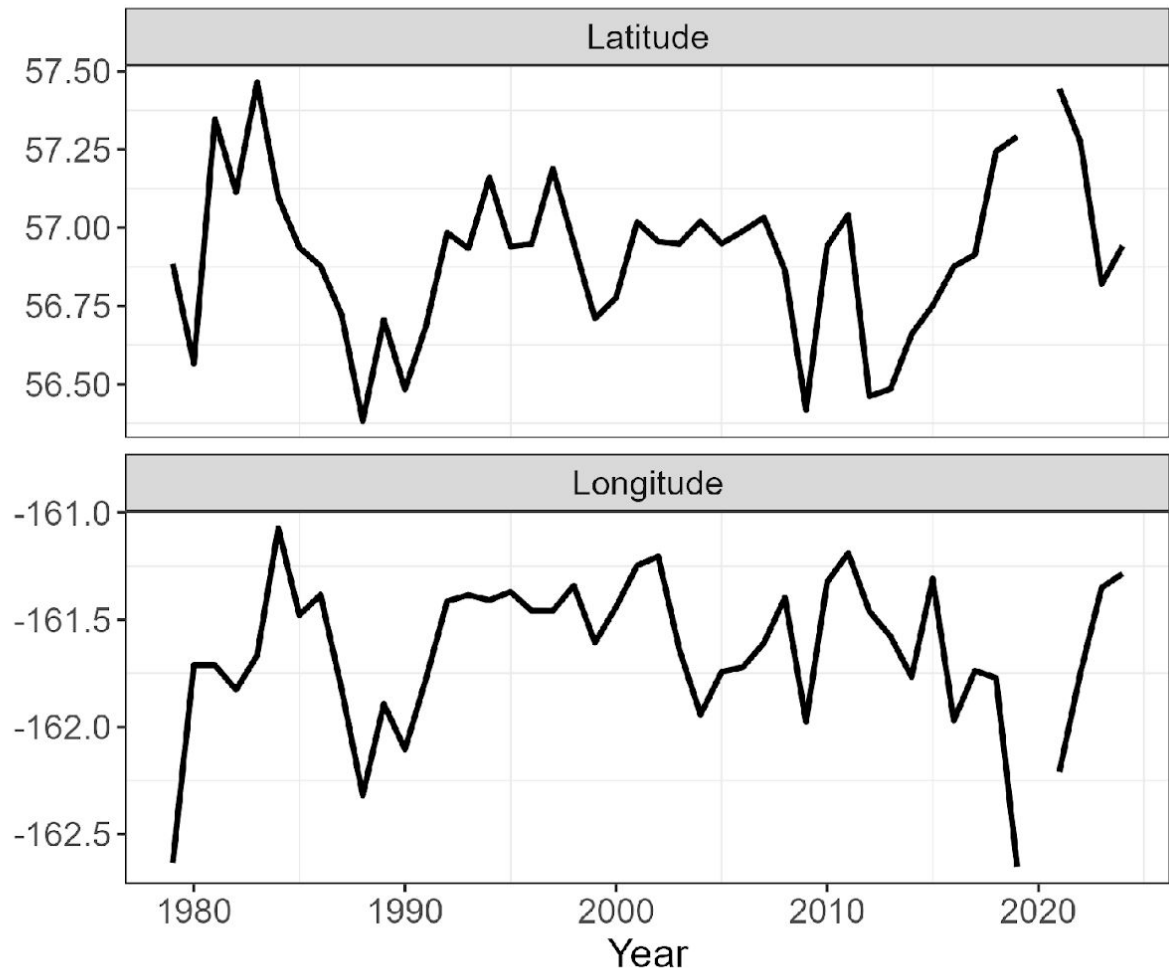
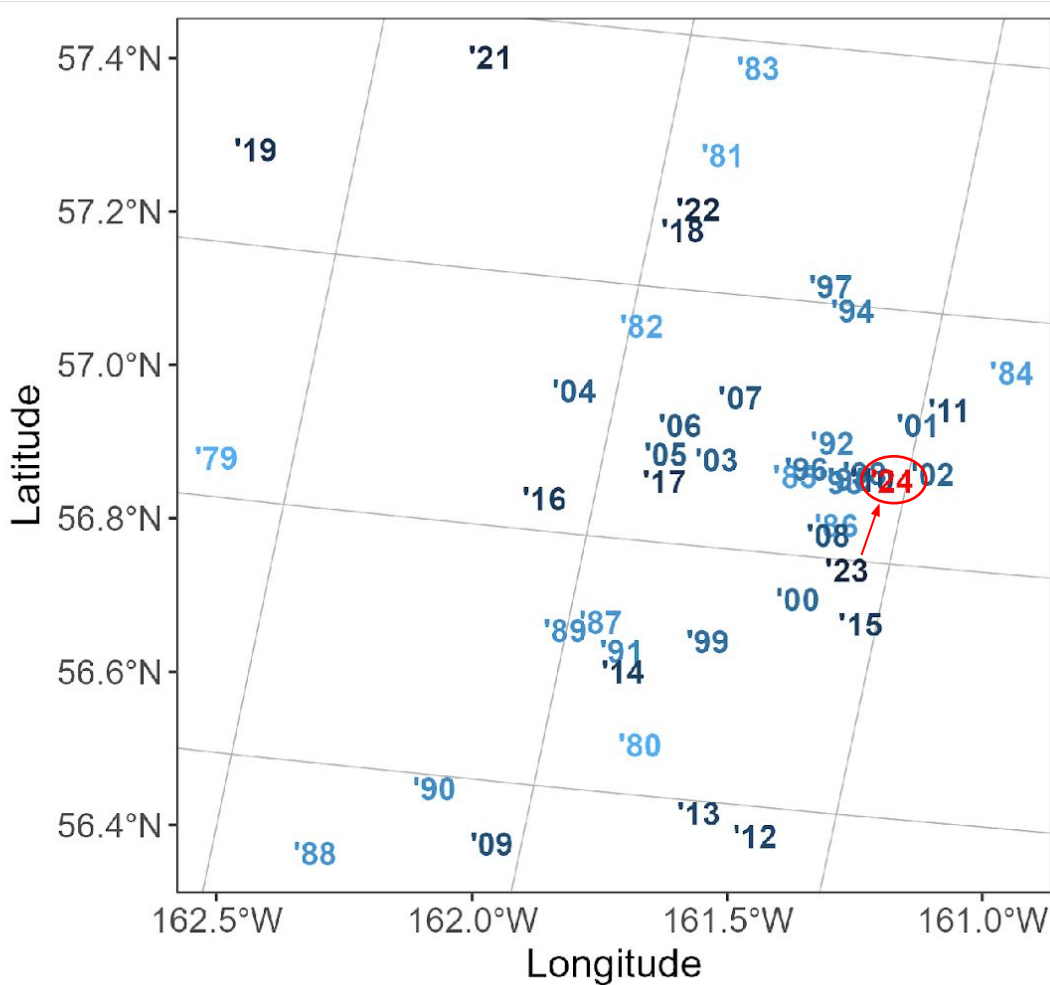
Red King Crab Legal Male



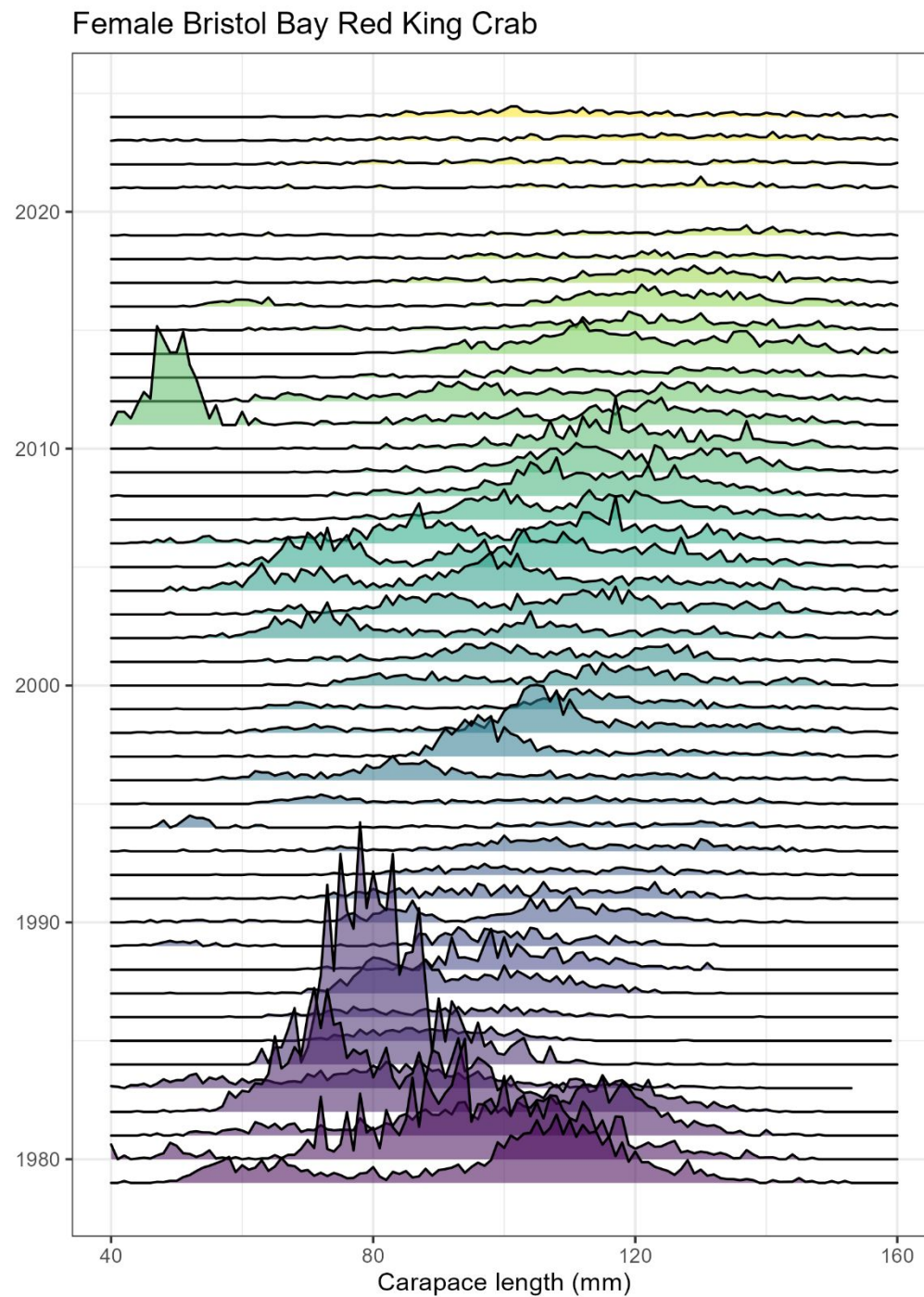
Bristol Bay Red King Crab Legal Male



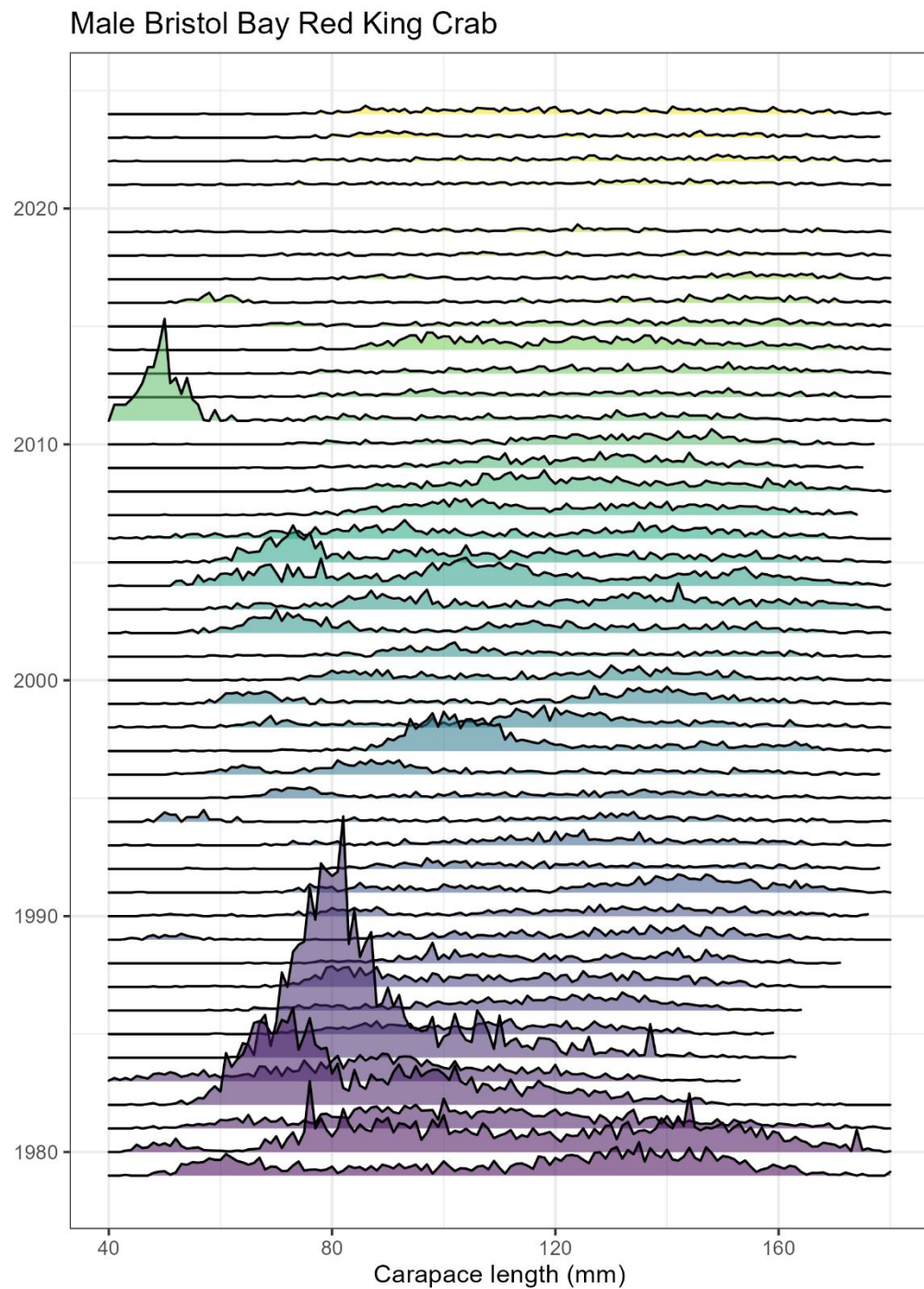
Bristol Bay Red King Crab Mature Female



Abundance by size, 1979-2024

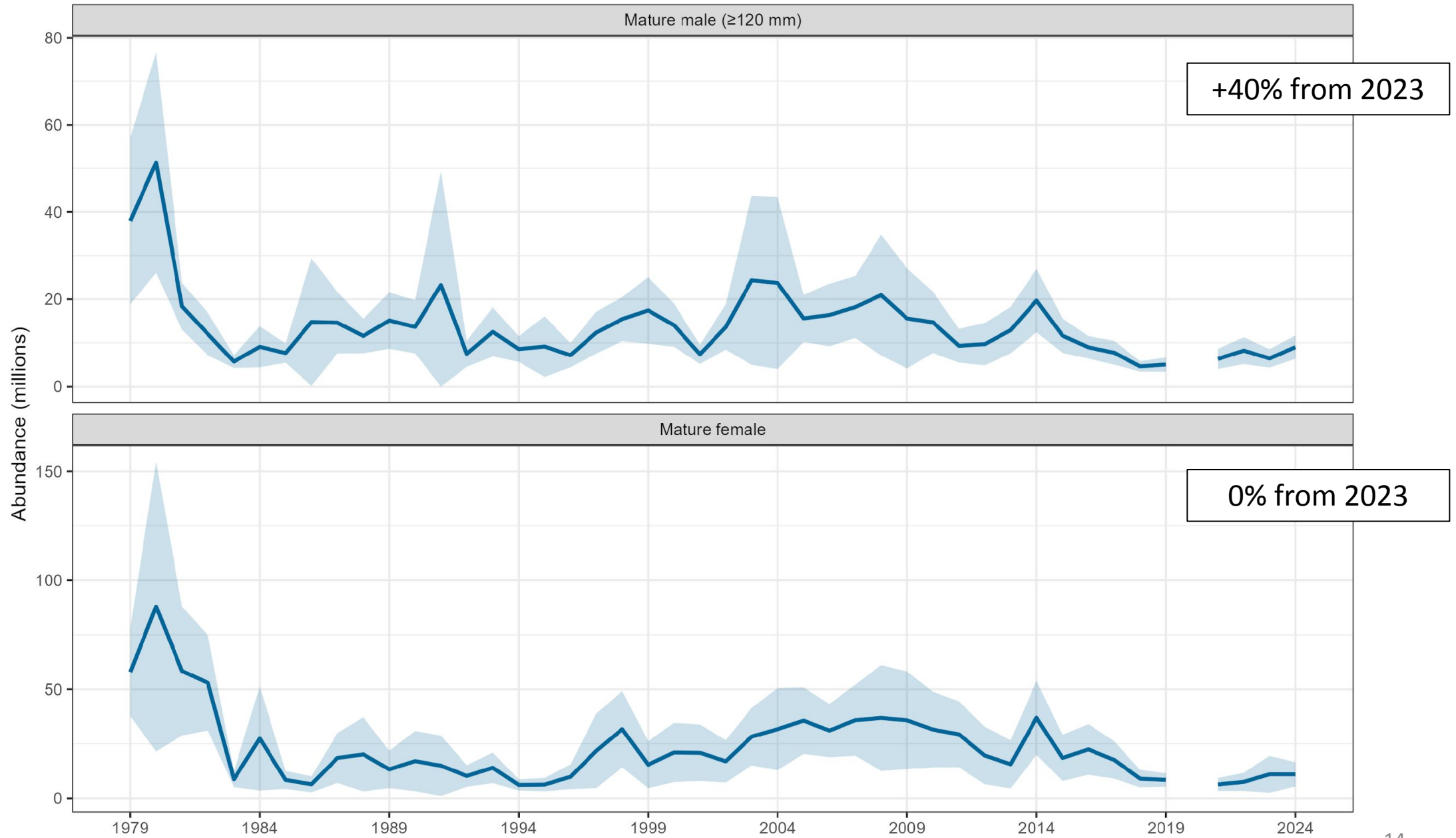


Abundance by size, 1979-2024



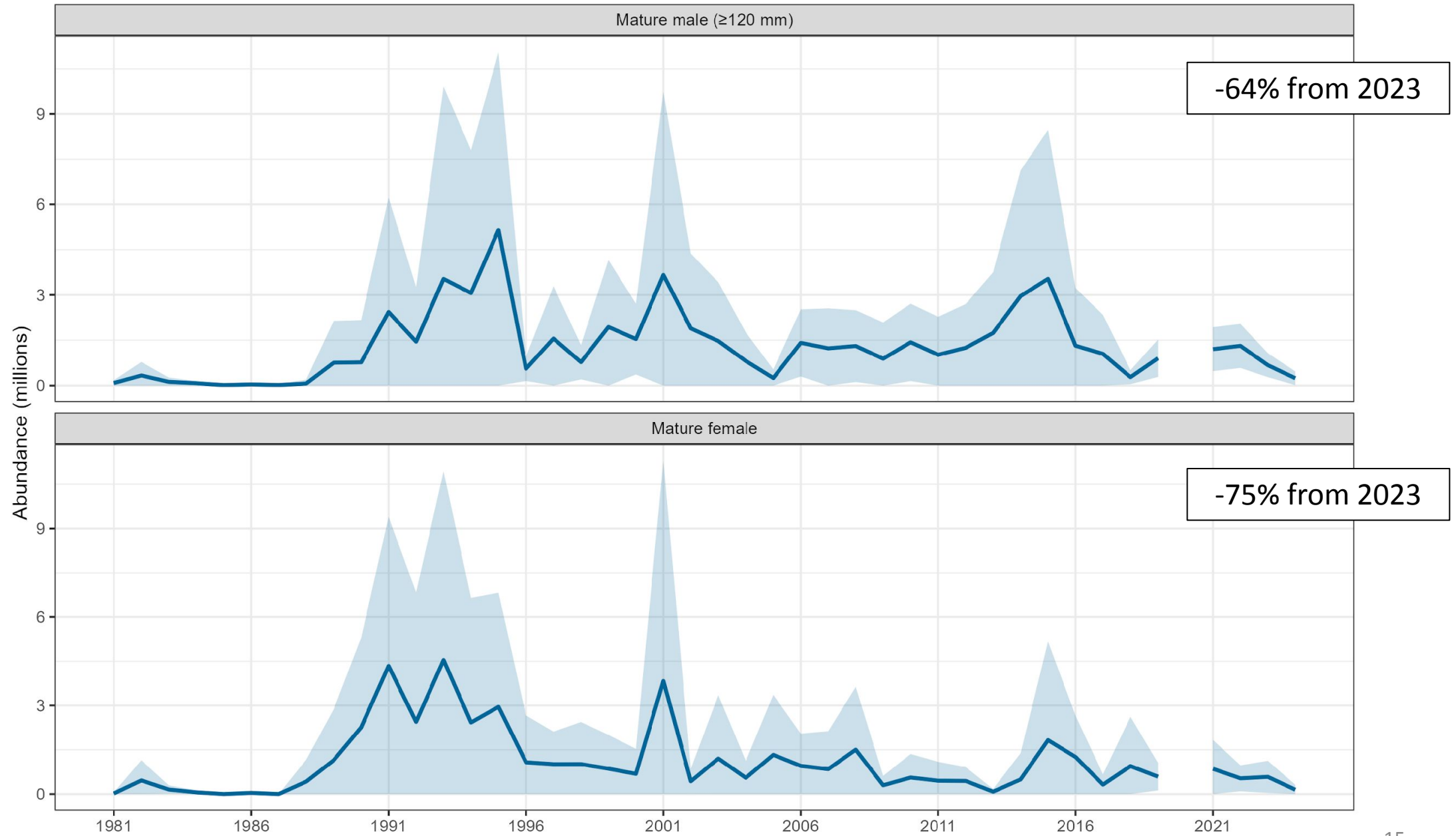
Estimated abundance

Bristol Bay Red King Crab



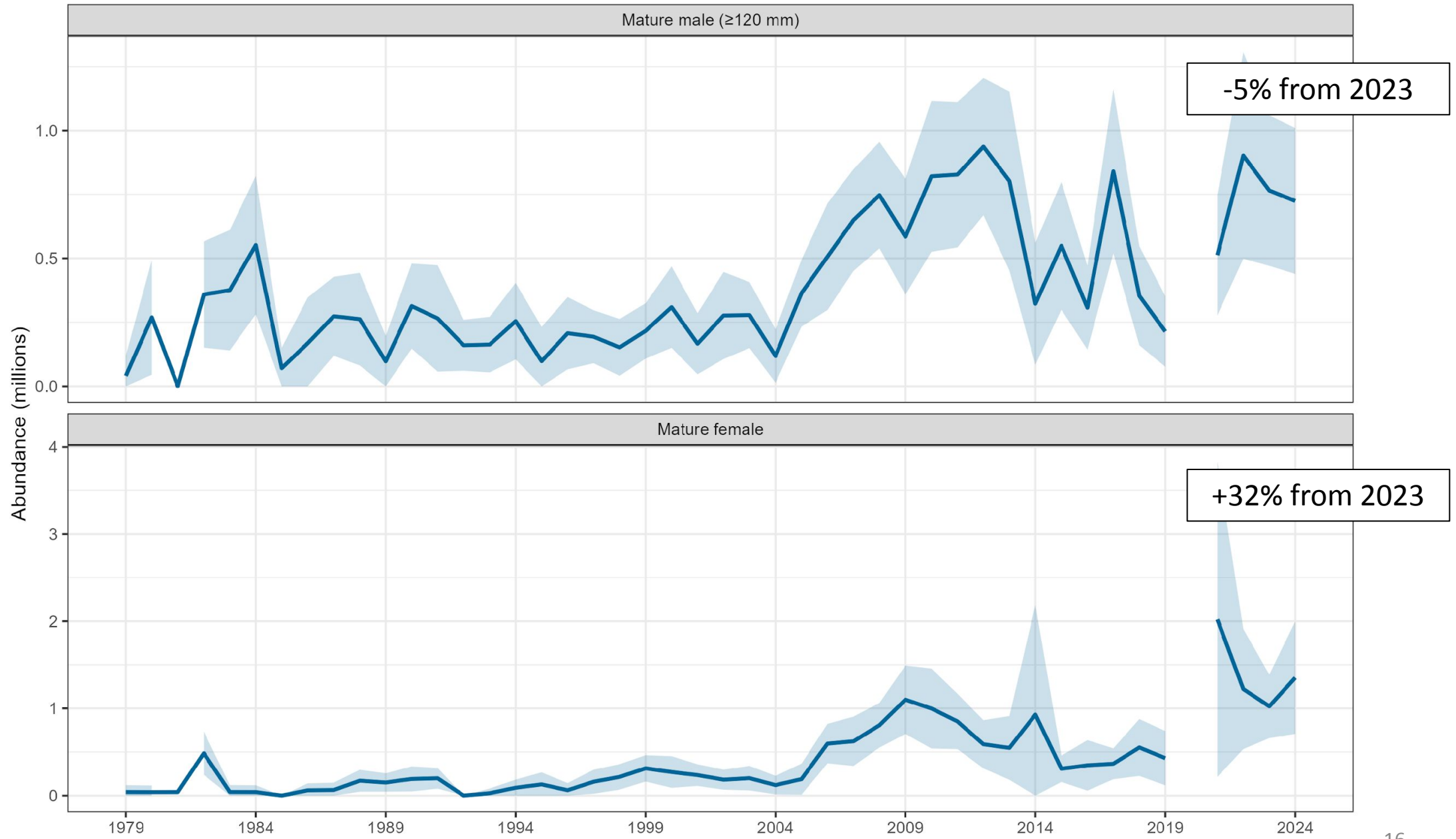
Estimated abundance

Pribilof Islands Red King Crab



Estimated abundance

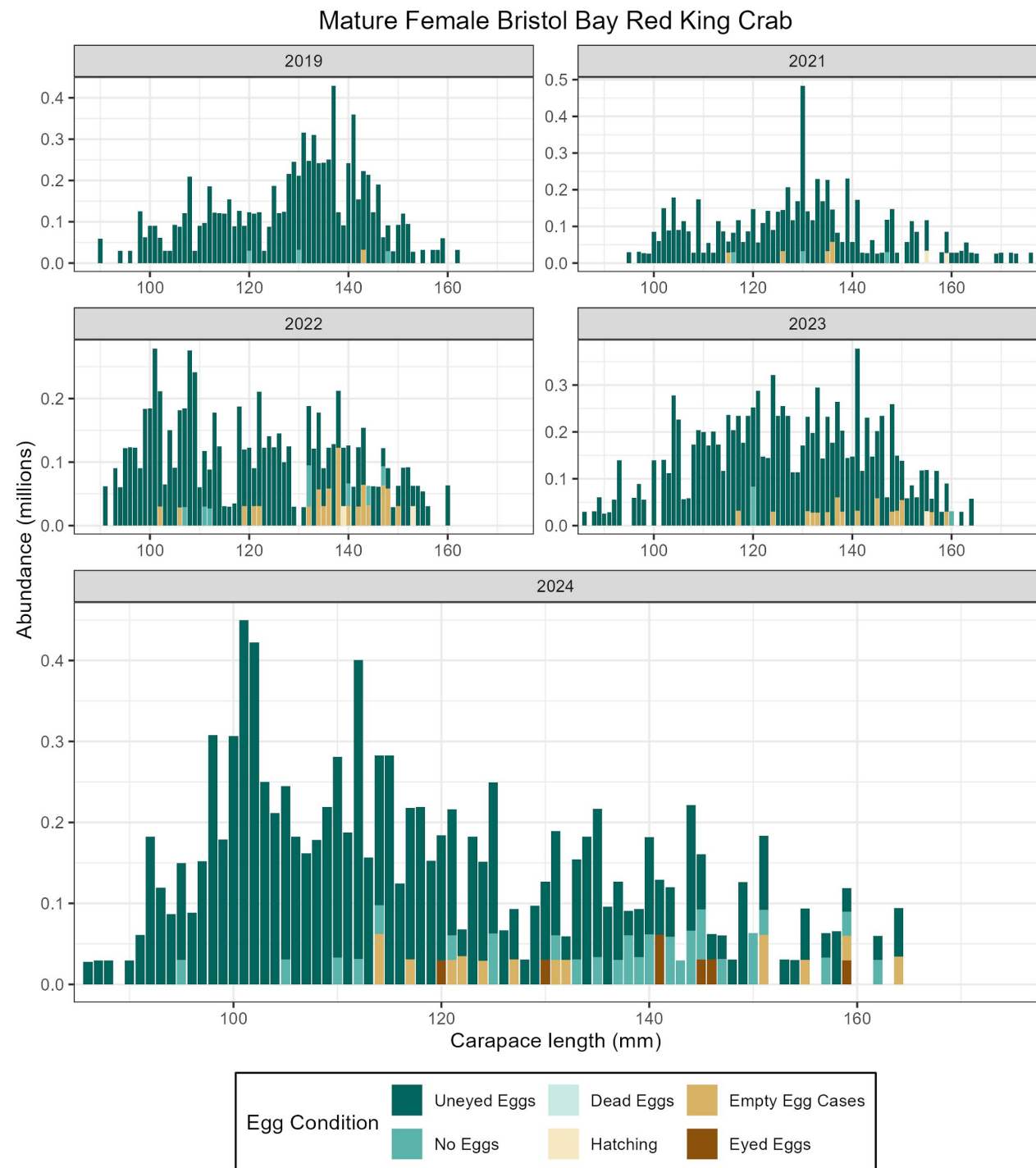
Northern District Red King Crab



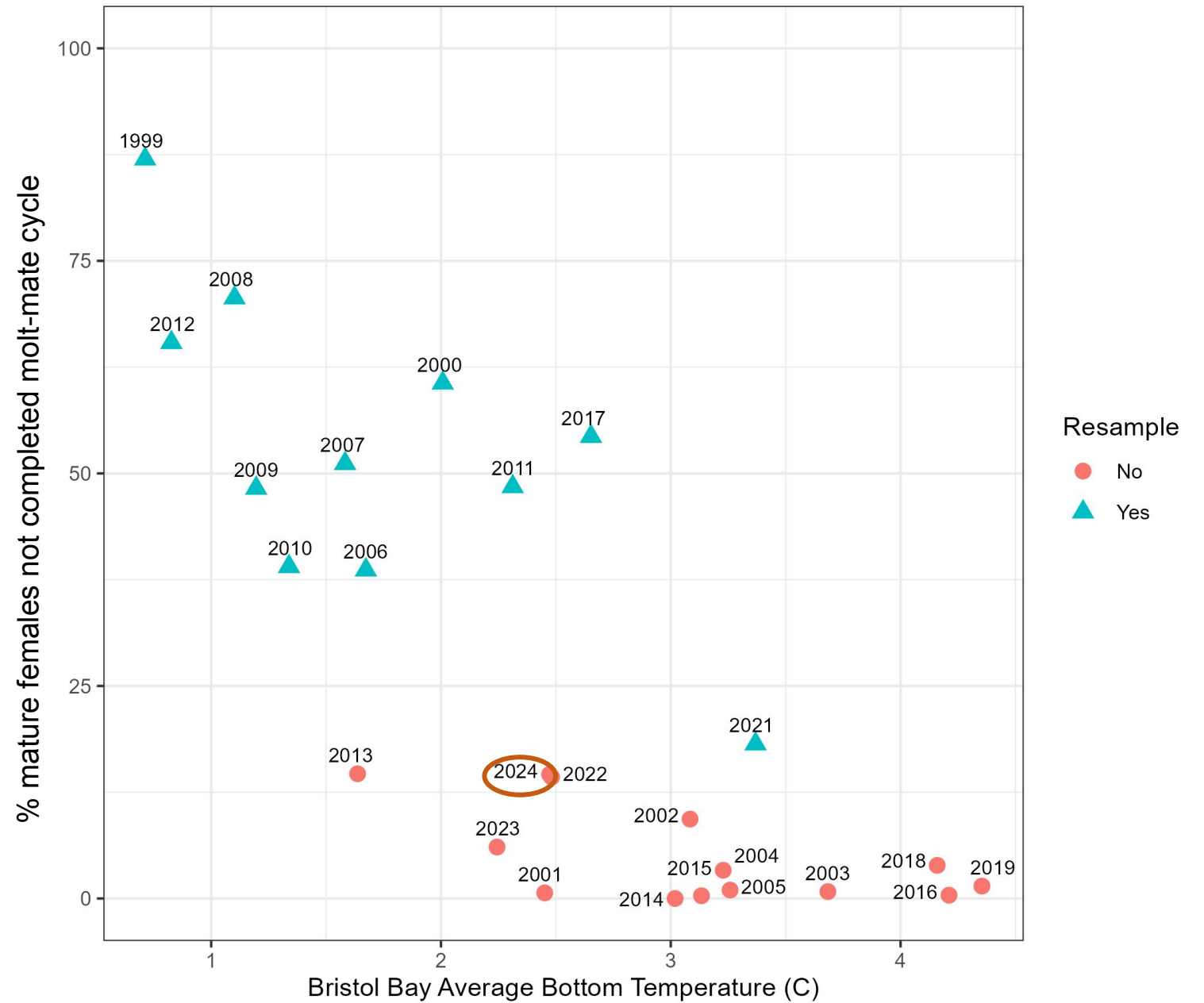
Bristol bay red king
crab retow decision

Abundance by size and clutch category

15% of Bristol Bay mature females were barren, empty egg cases, eyed eggs, or hatching



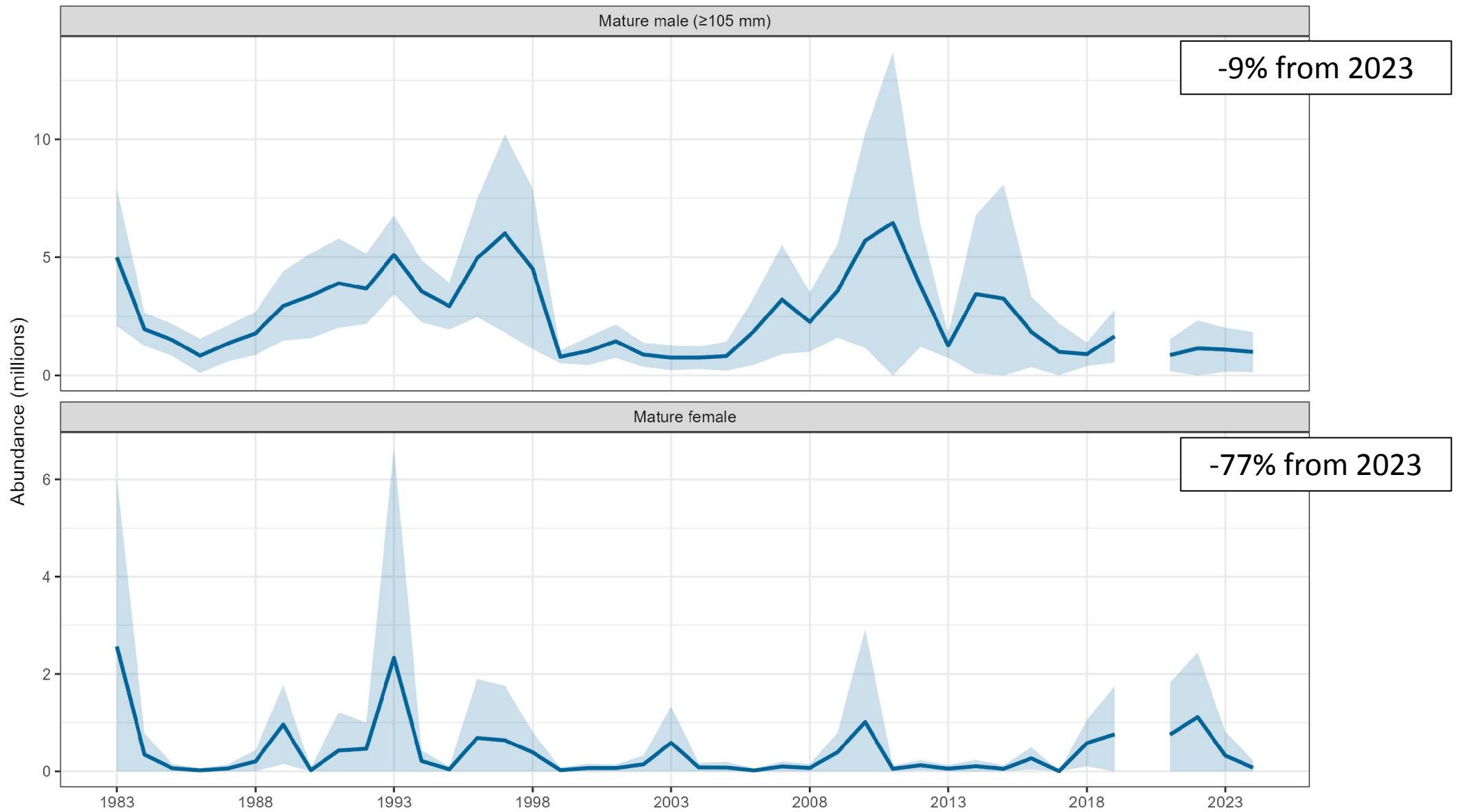
Retow history:
% not molt-mated vs
bottom temperature



Blue king crab

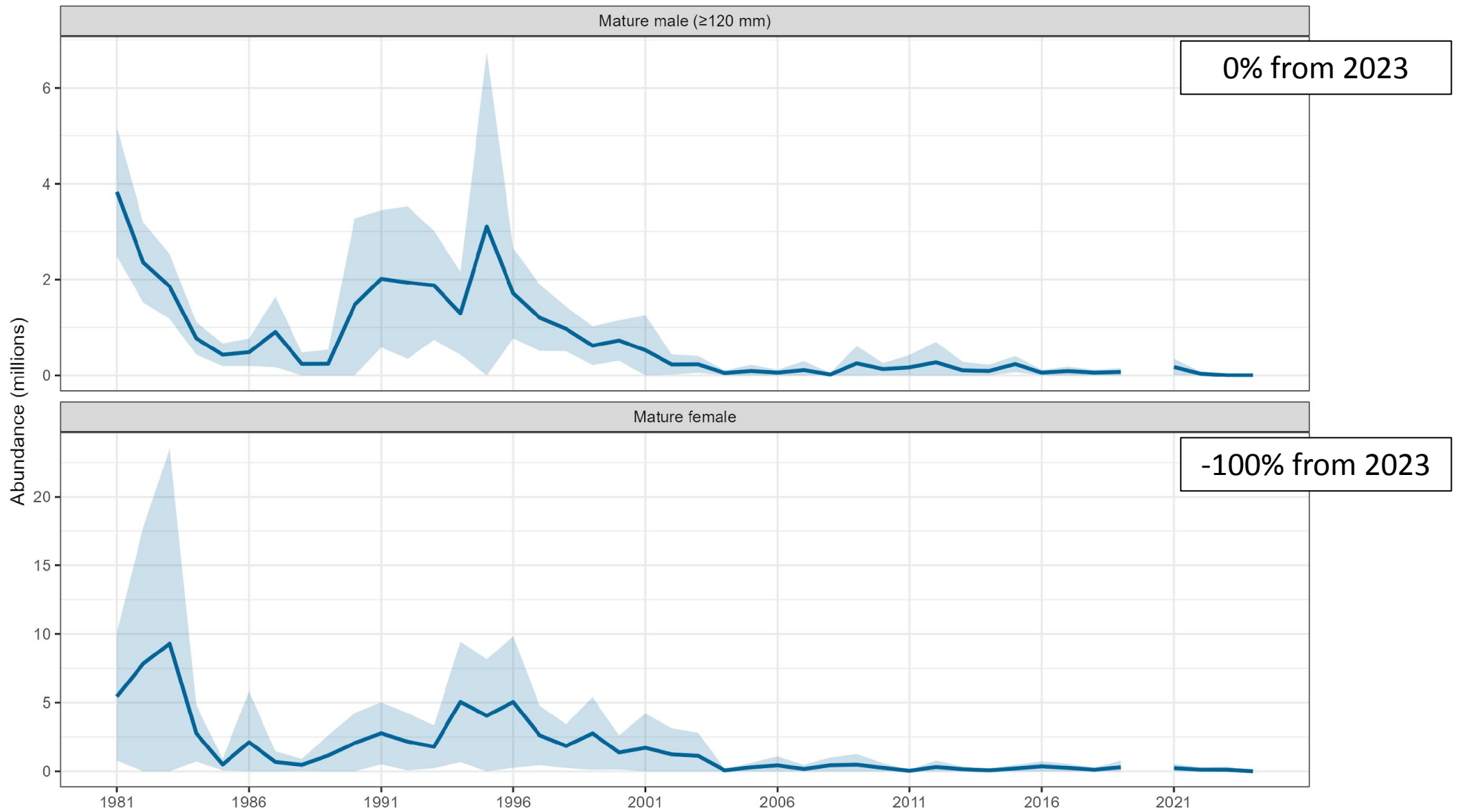
Estimated abundance

St. Matthew Island Blue King Crab



Estimated abundance

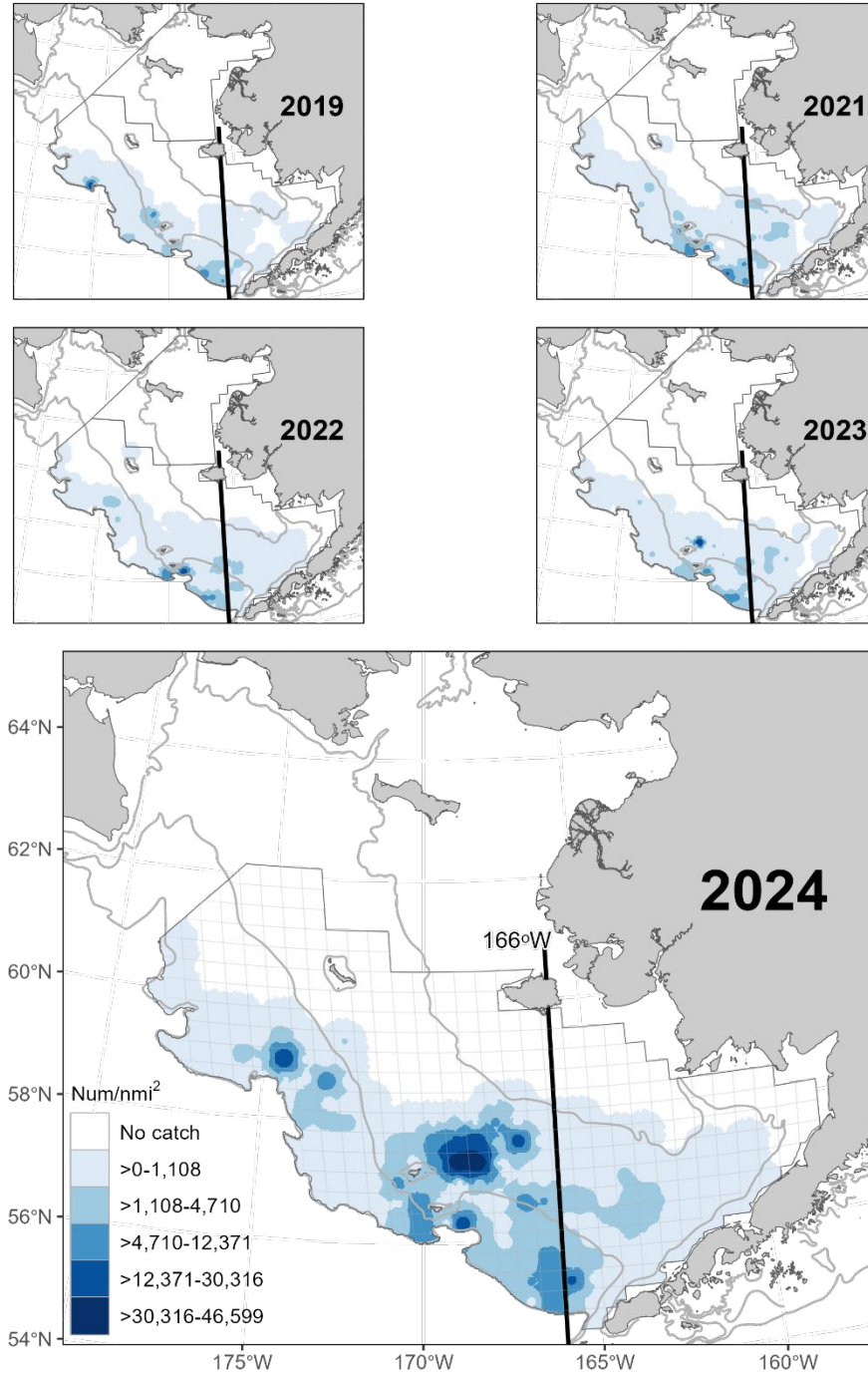
Pribilof Islands Blue King Crab



Tanner crab

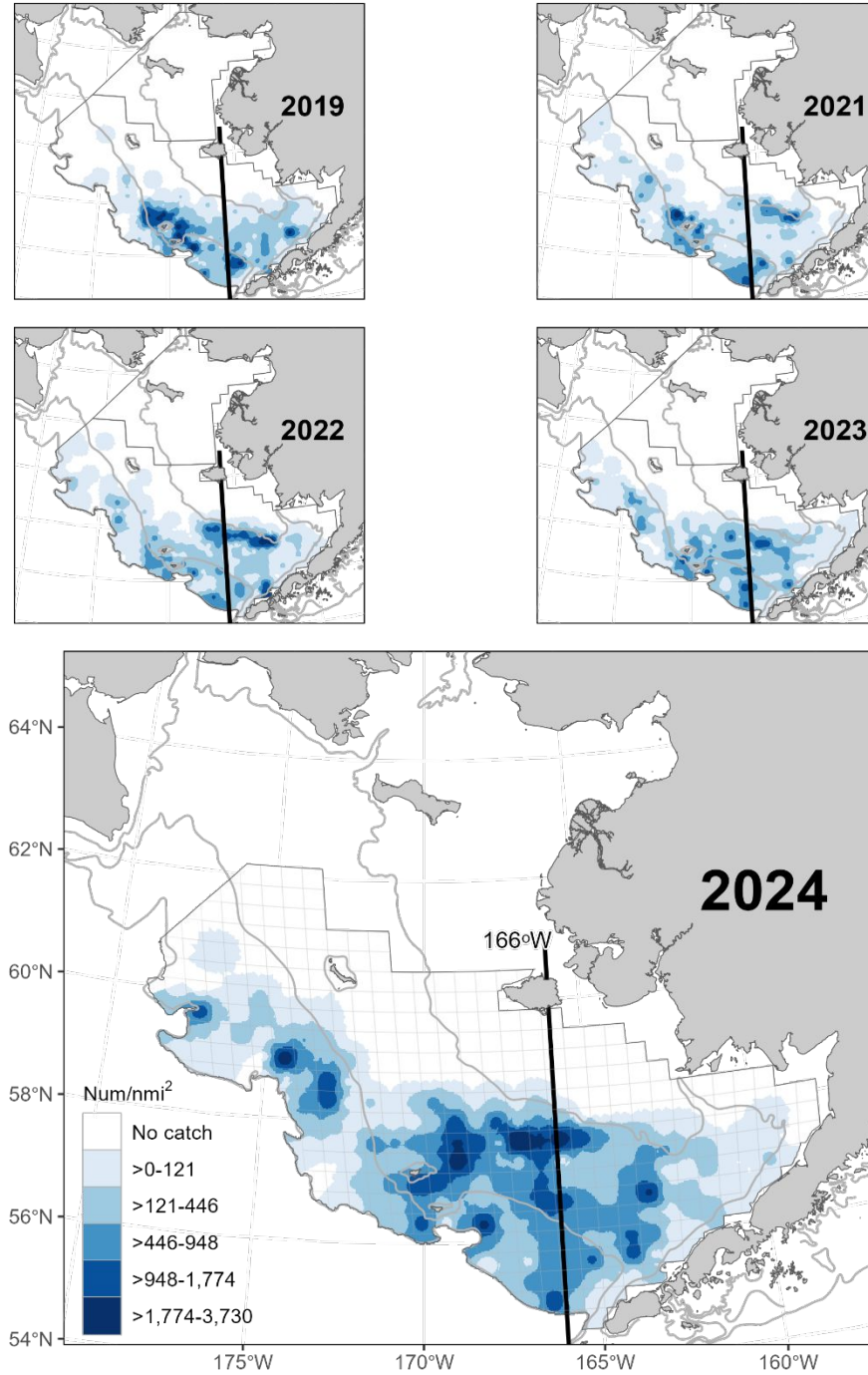
Distribution by year

Tanner Crab Mature Female



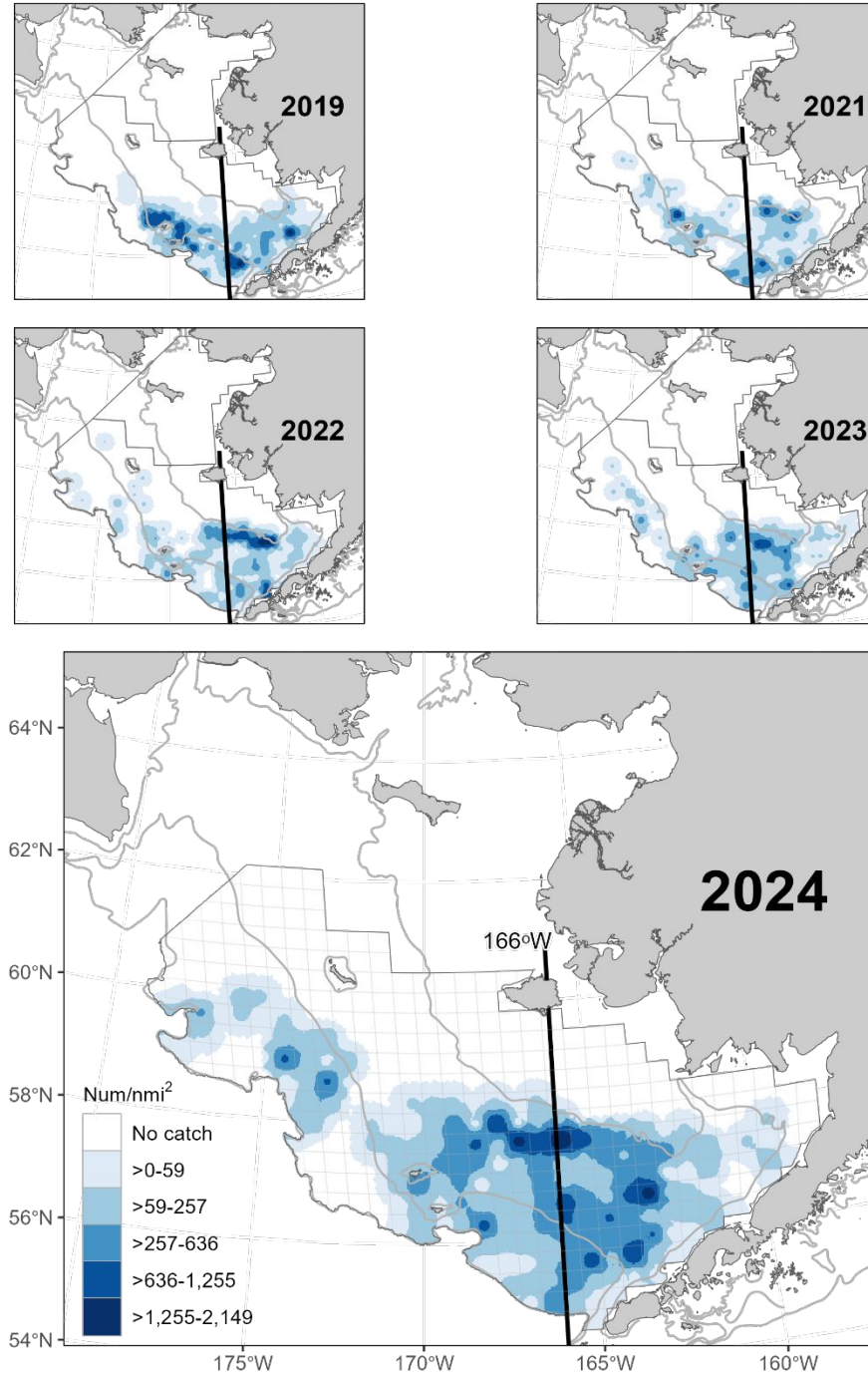
Distribution by year

Tanner Crab Legal Male

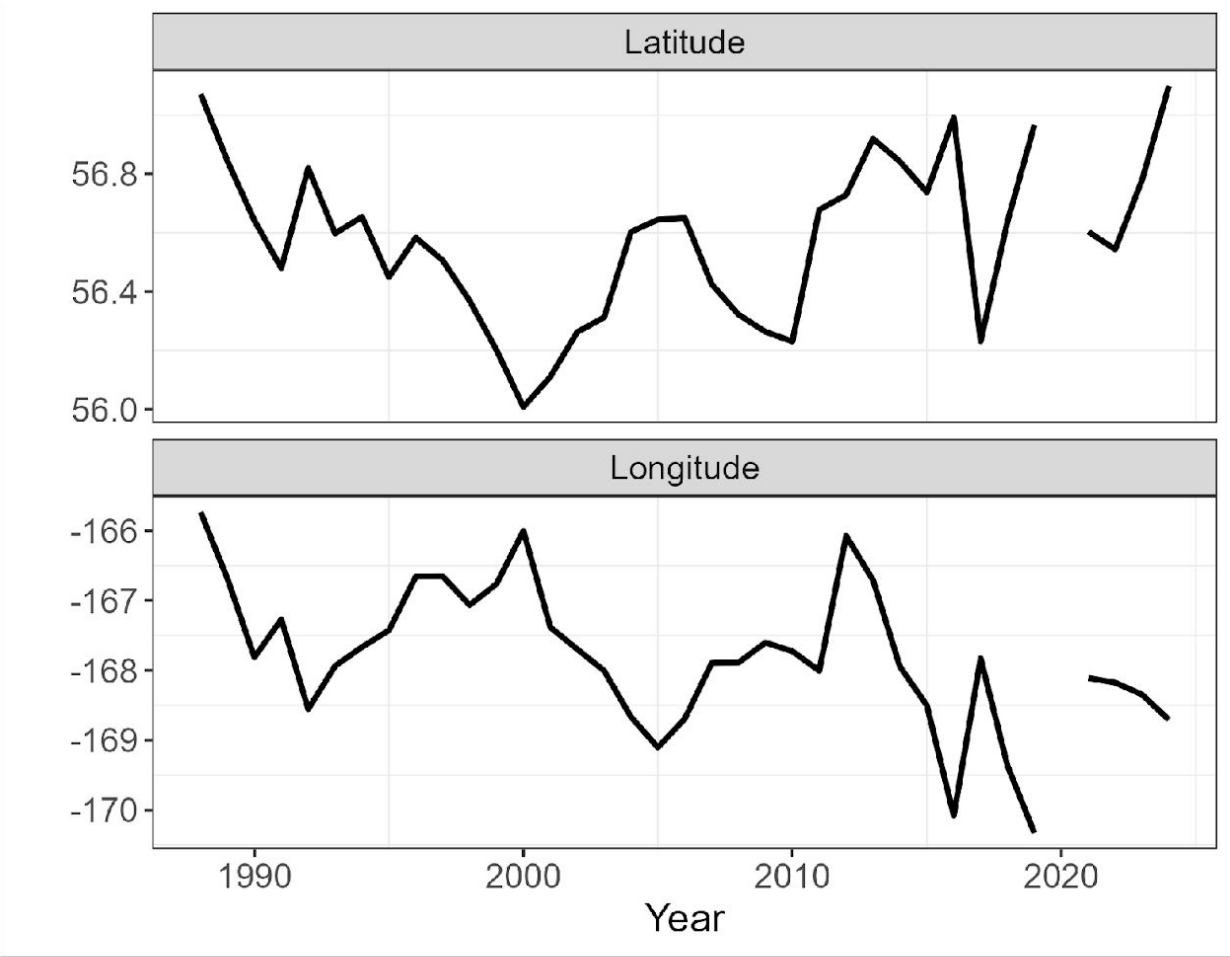
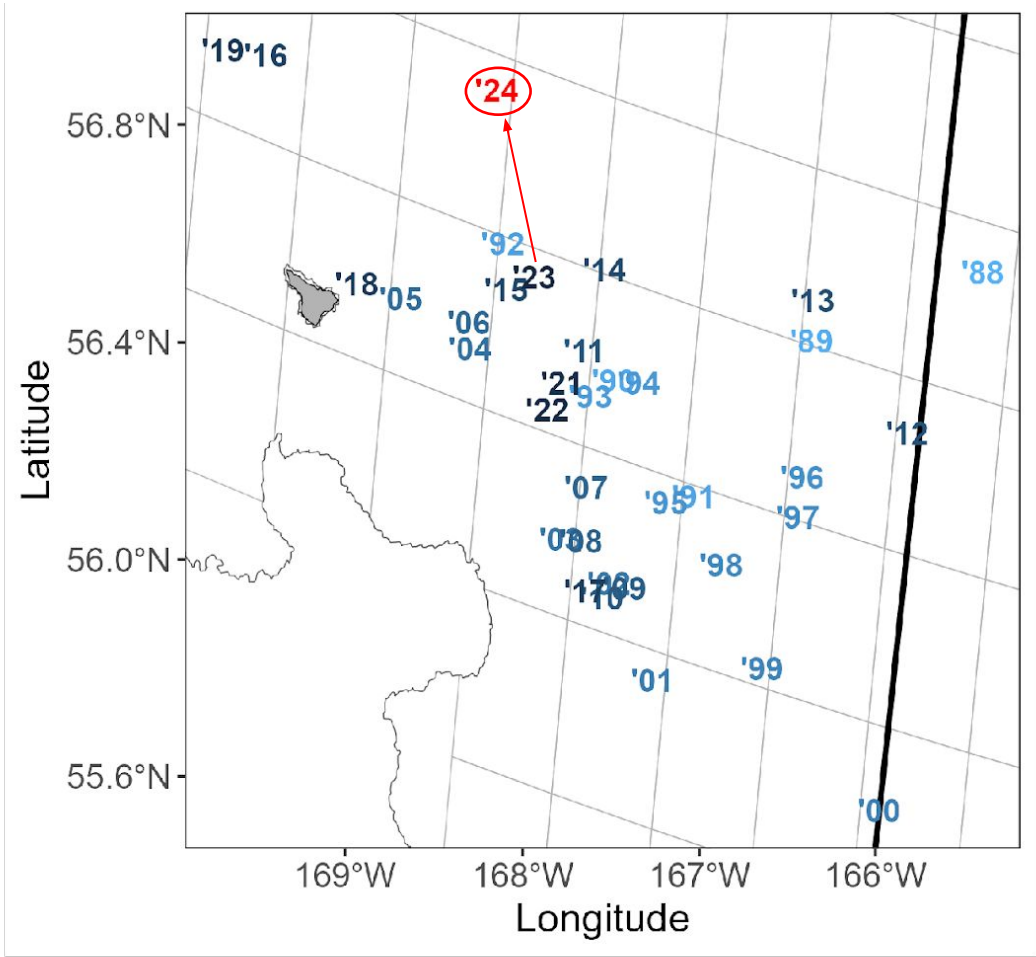


Distribution by year

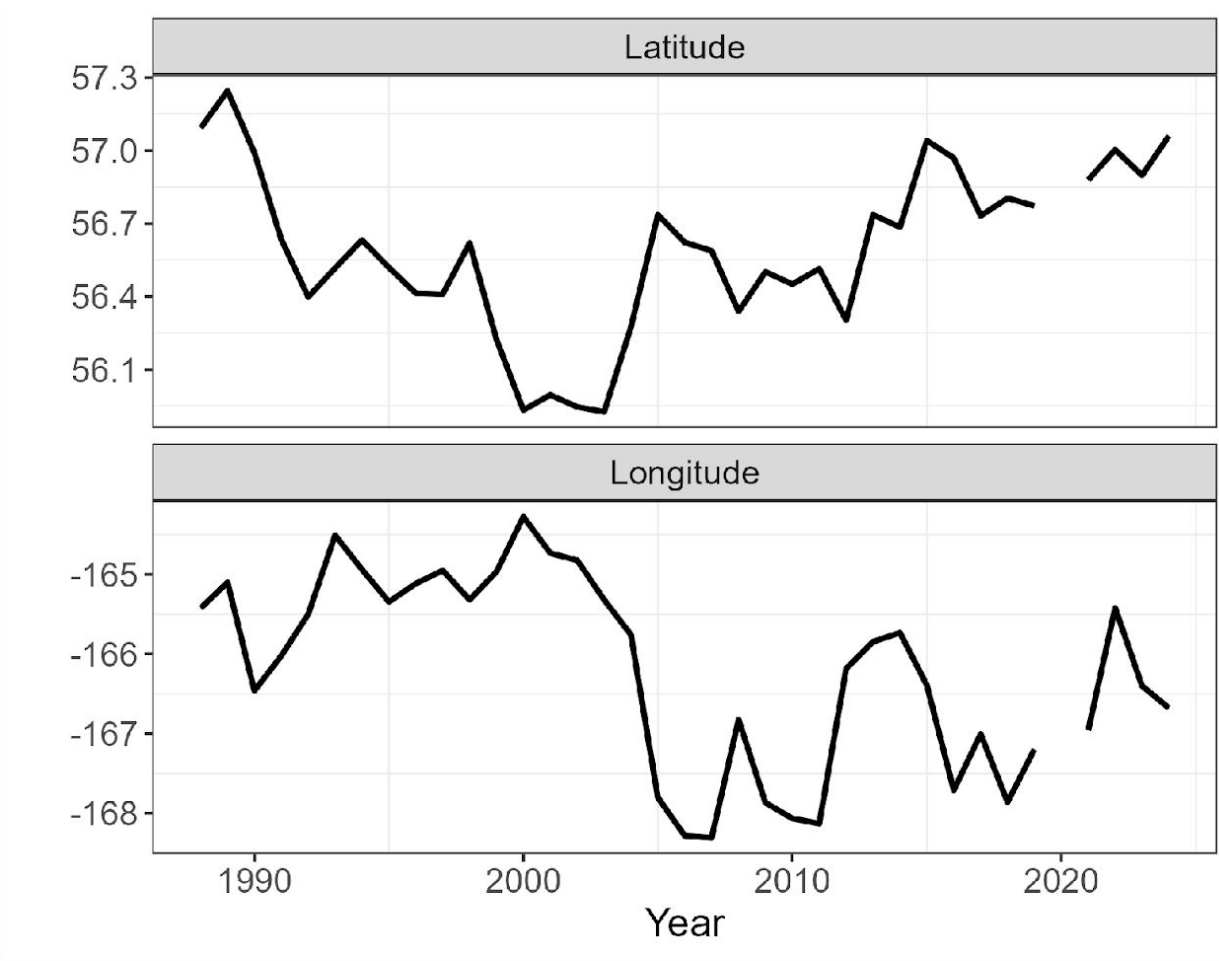
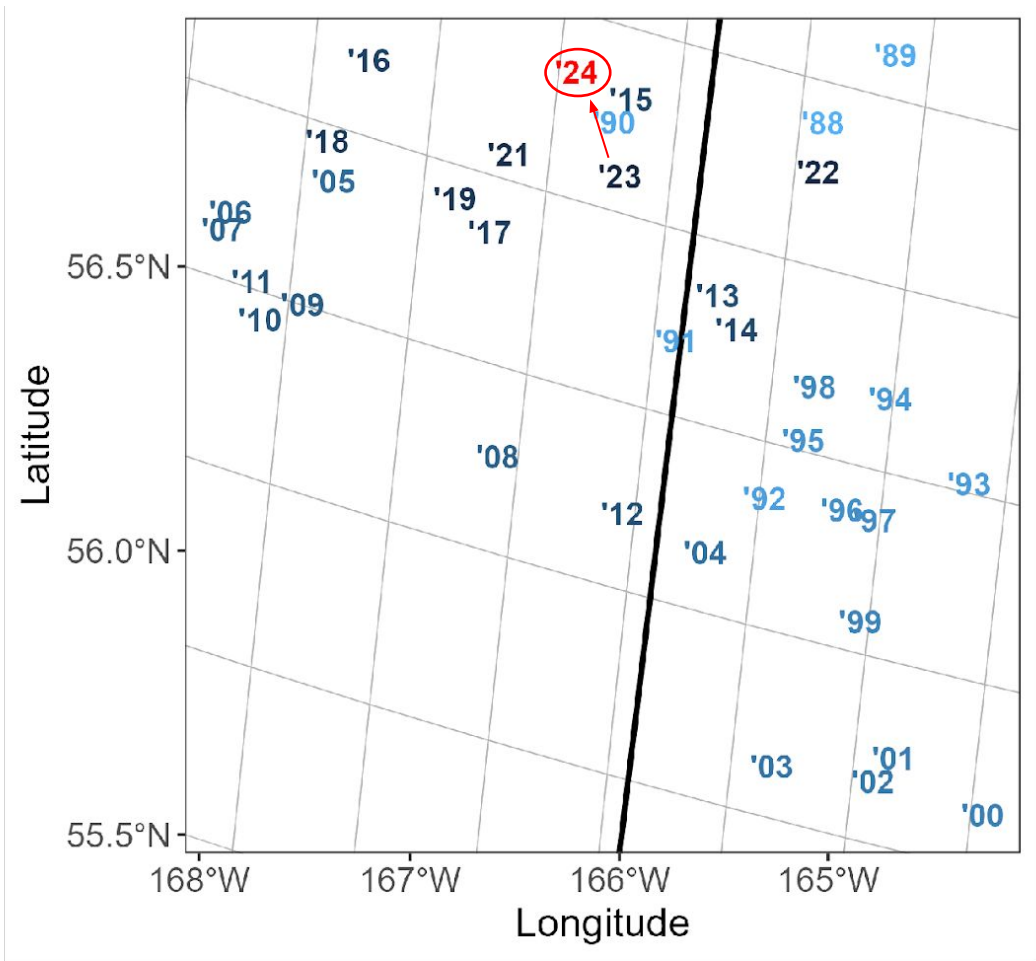
Tanner Crab Industry Preferred Male



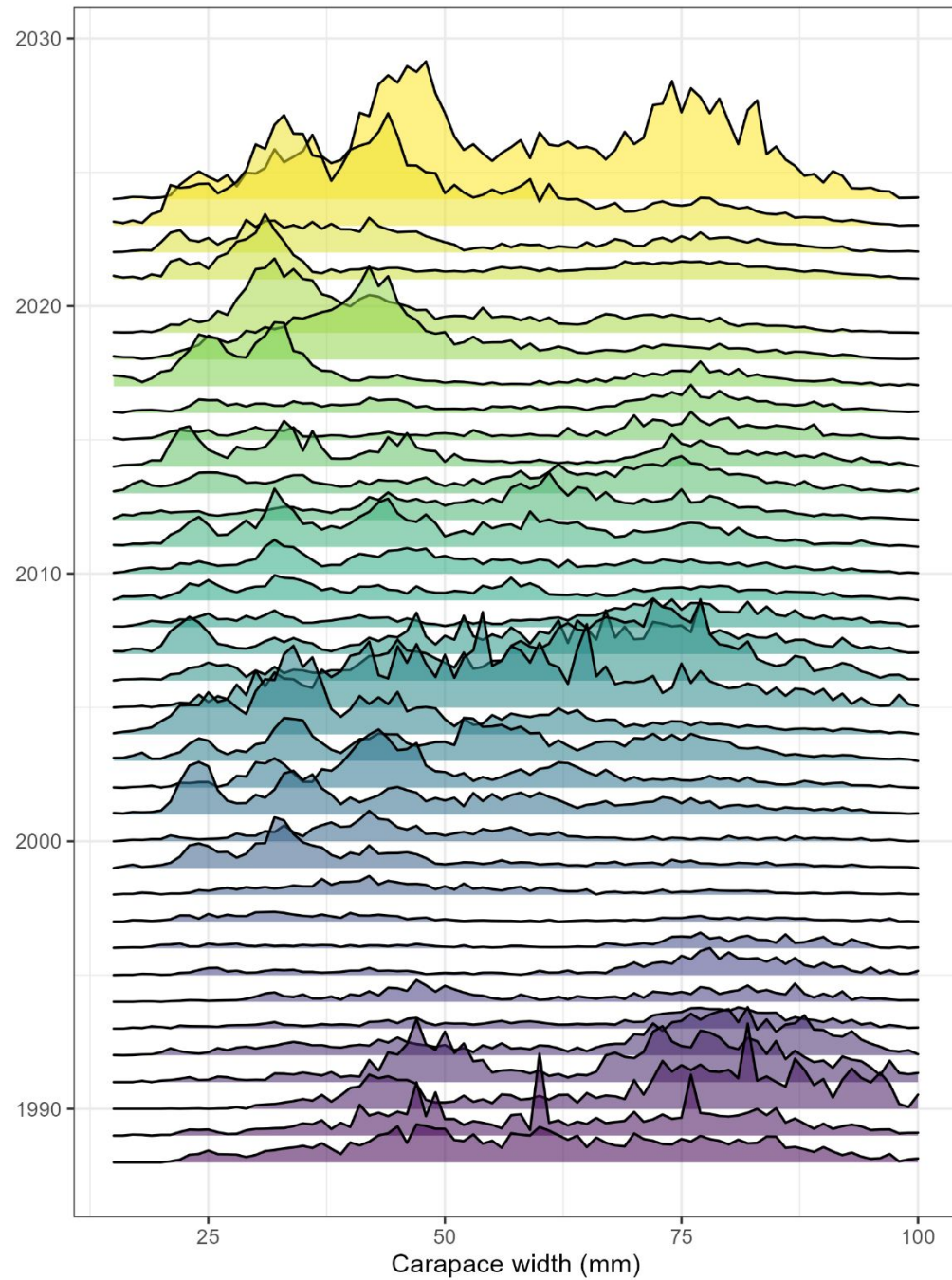
Tanner Crab Mature Female



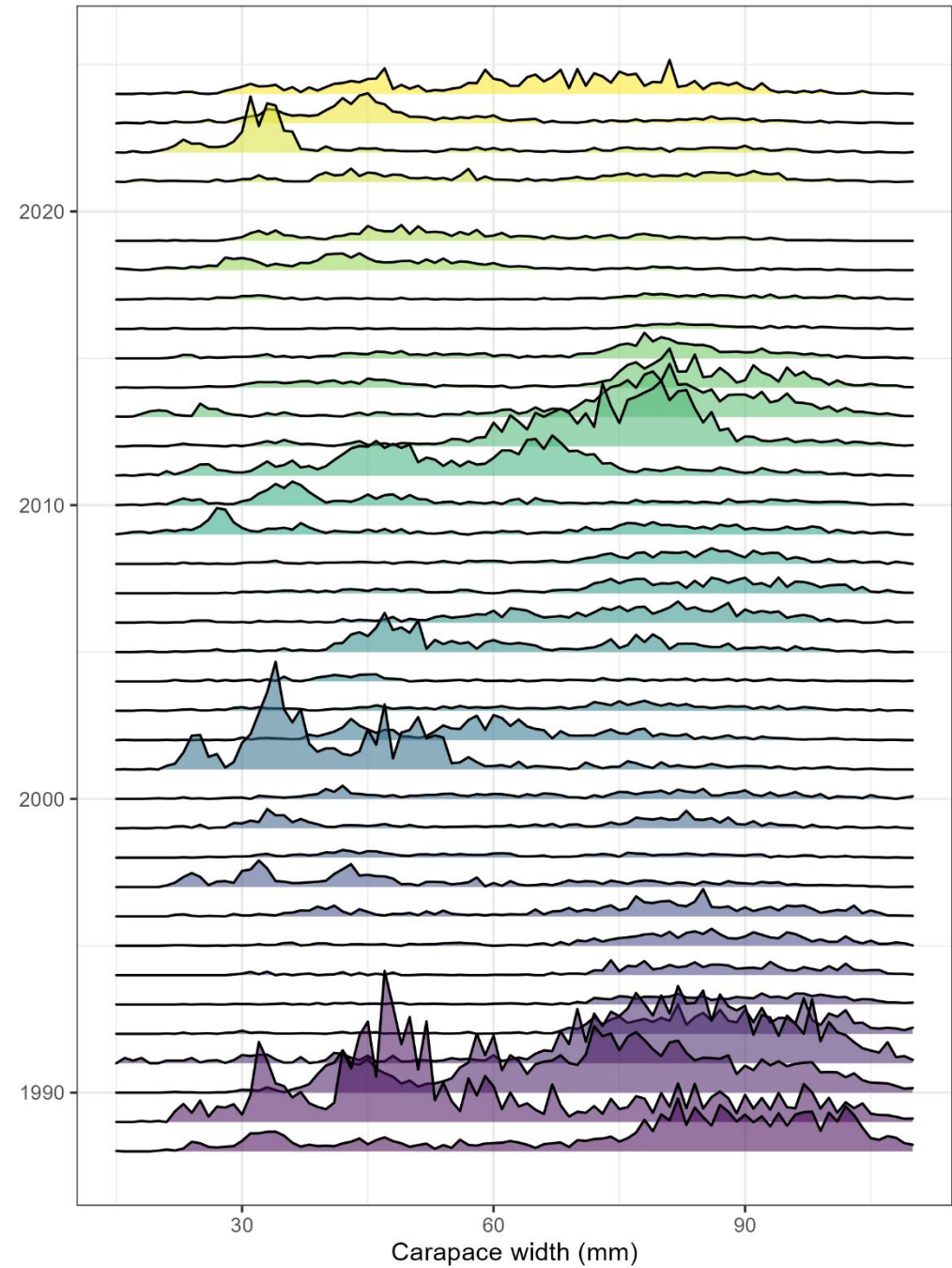
Tanner Crab Industry Preferred Male



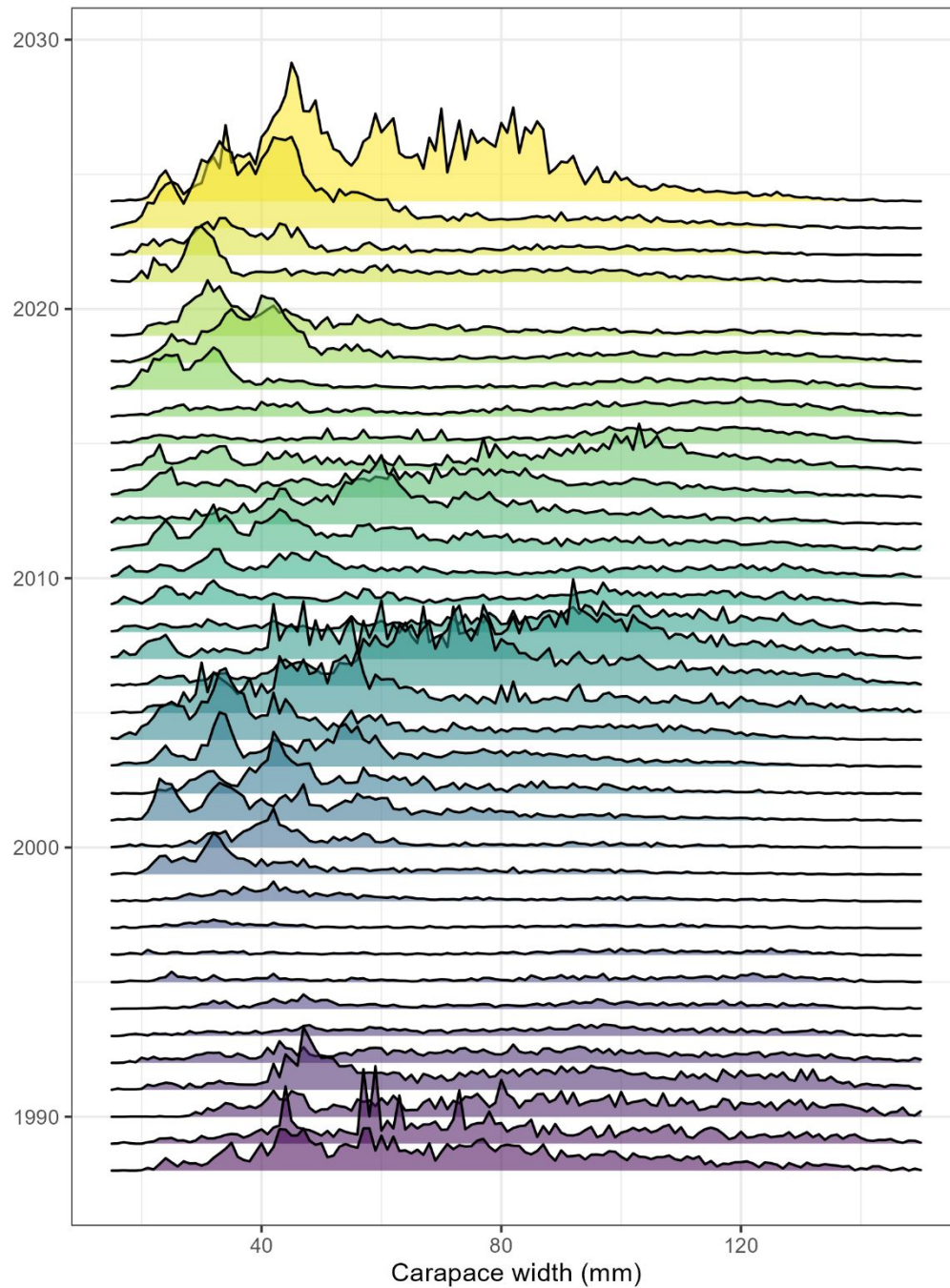
Female Tanner Crab West



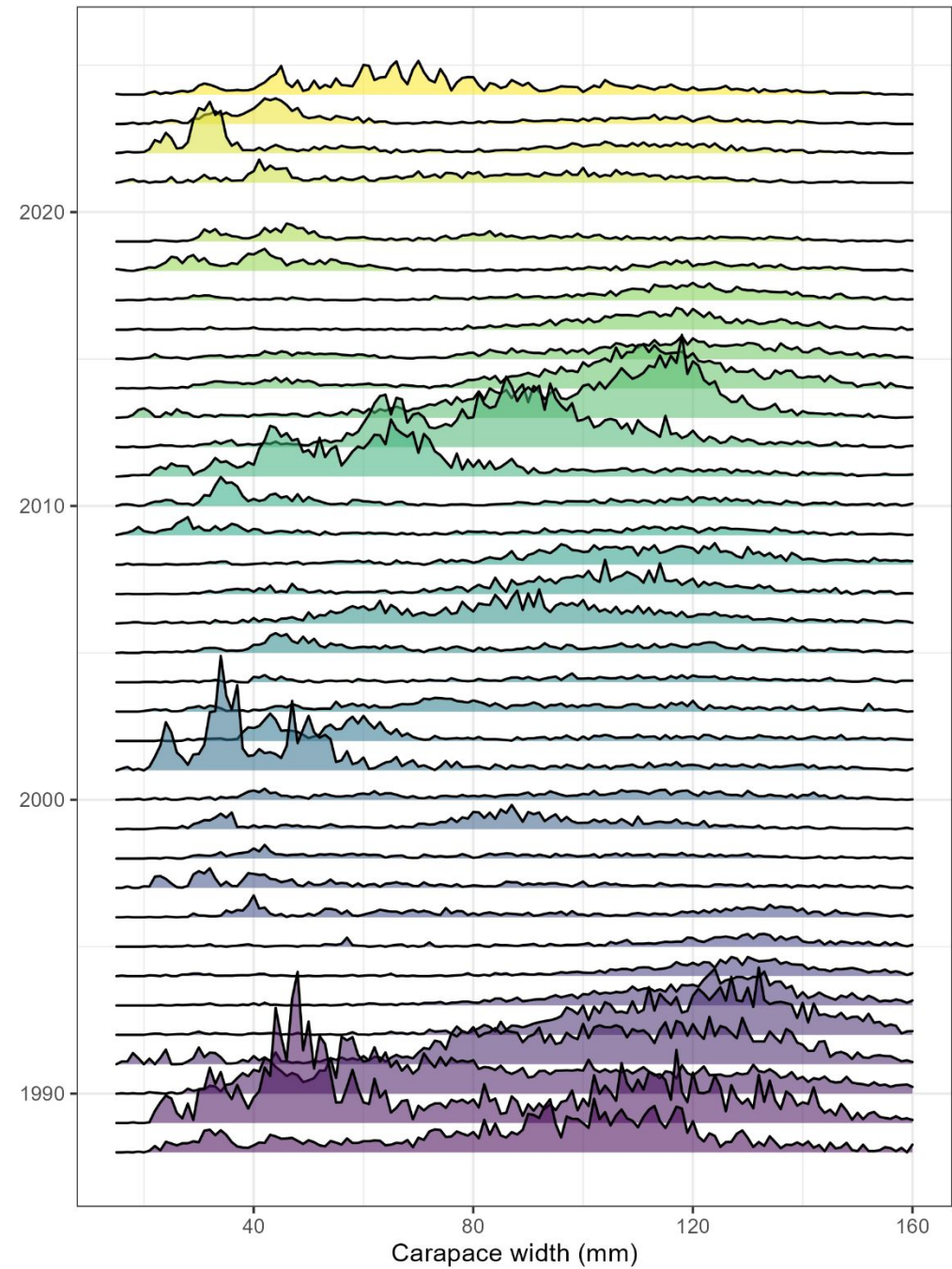
Female Tanner Crab East



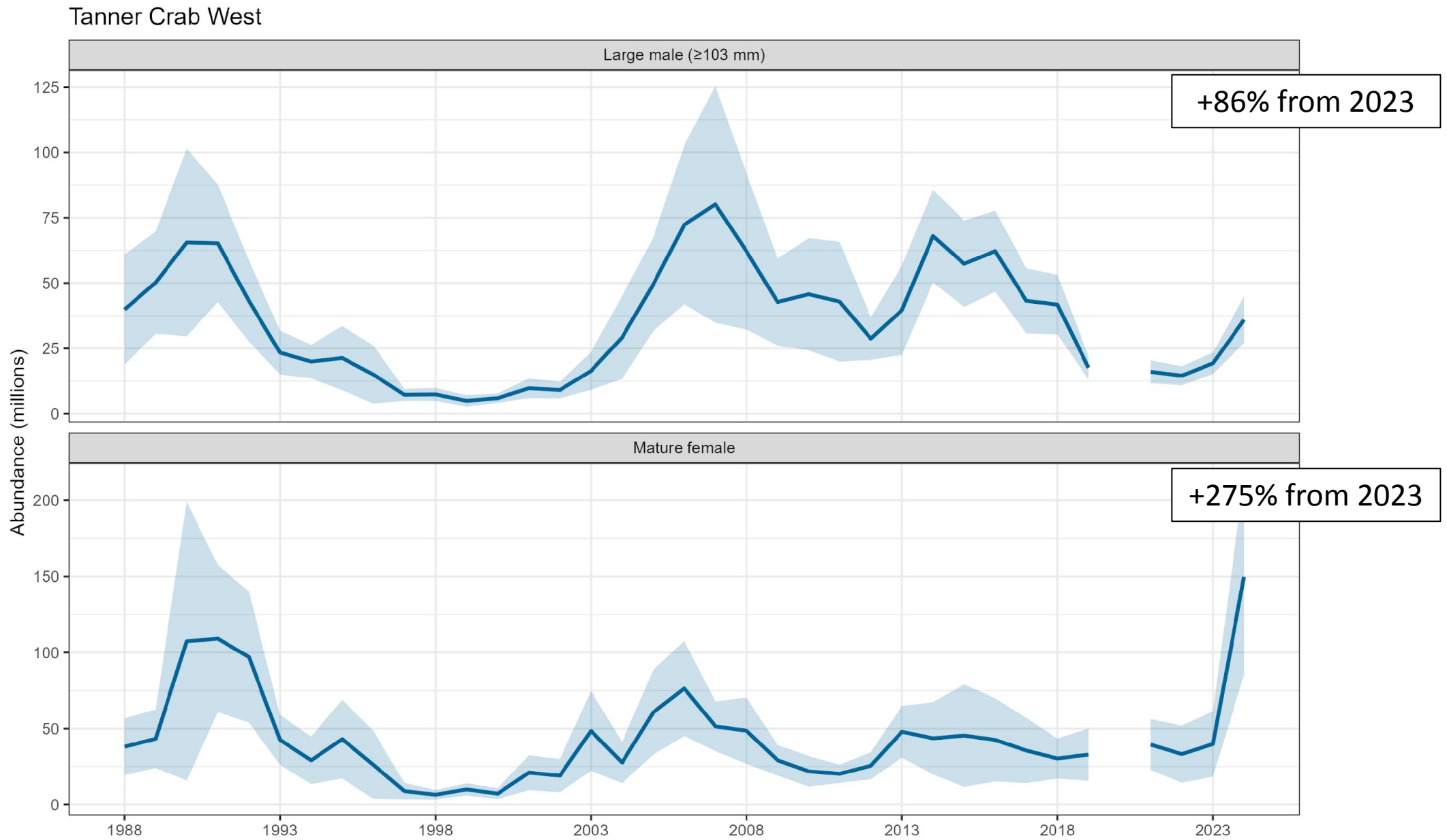
Male Tanner Crab West



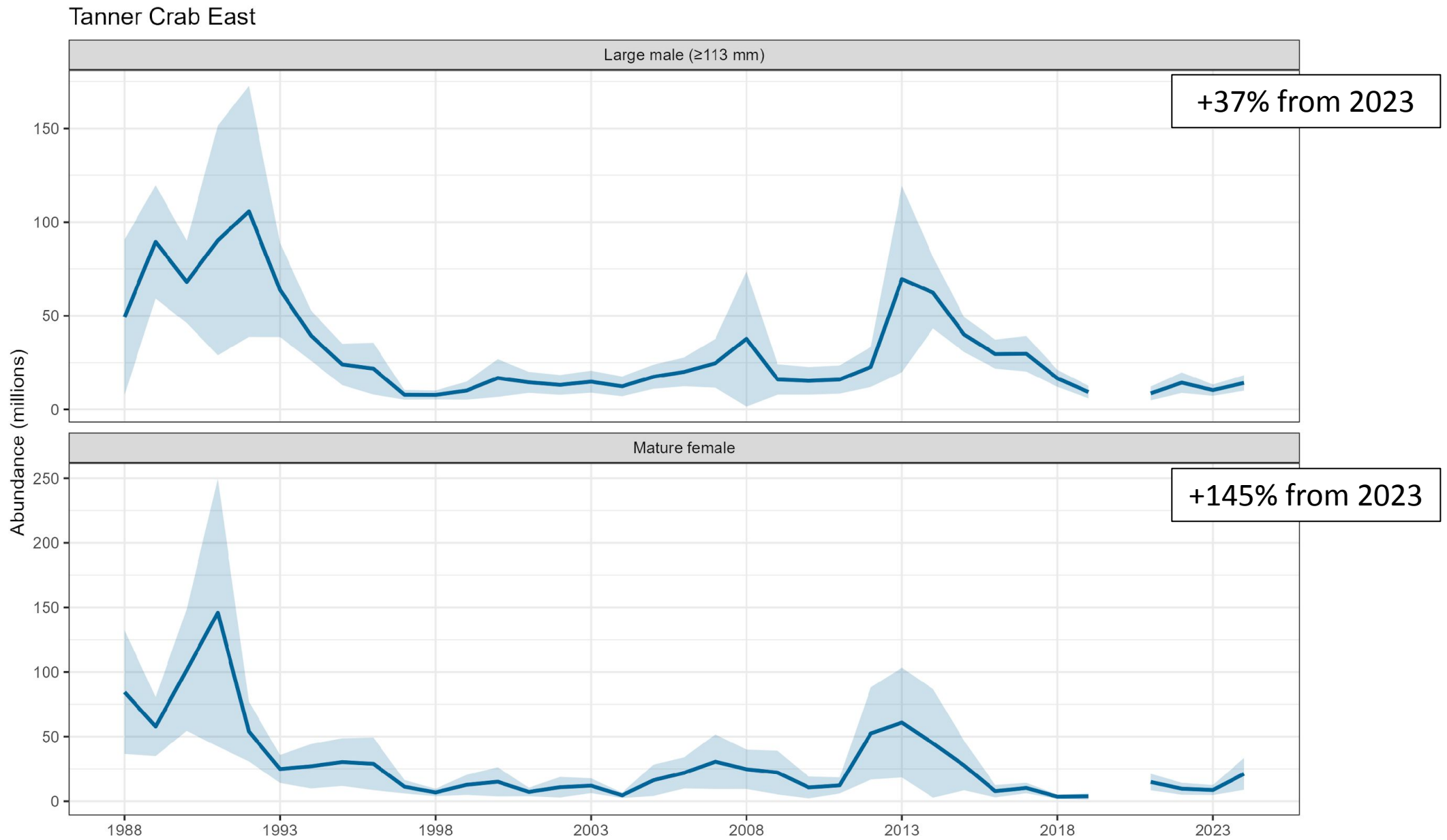
Male Tanner Crab East



Estimated abundance

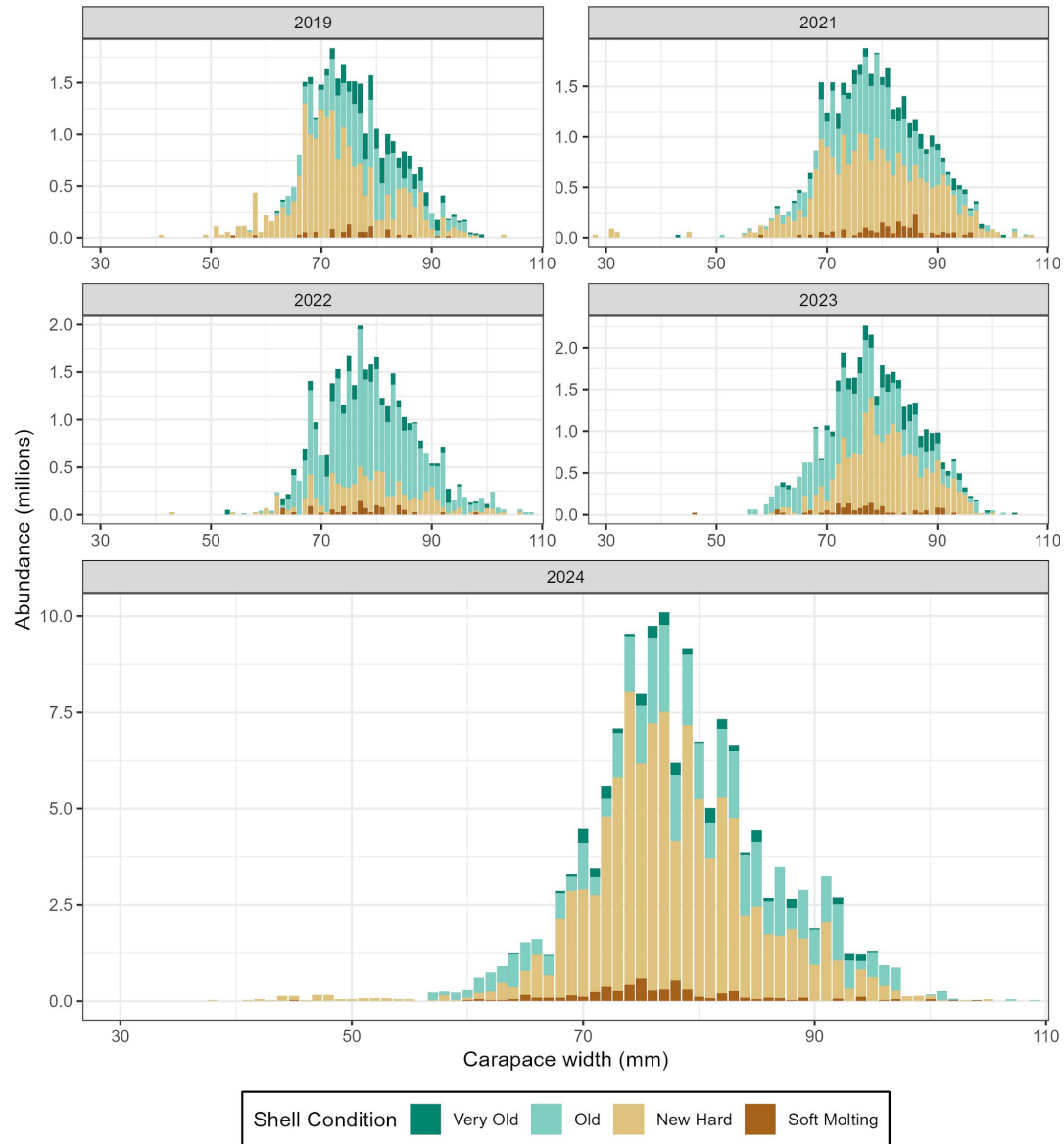


Estimated abundance

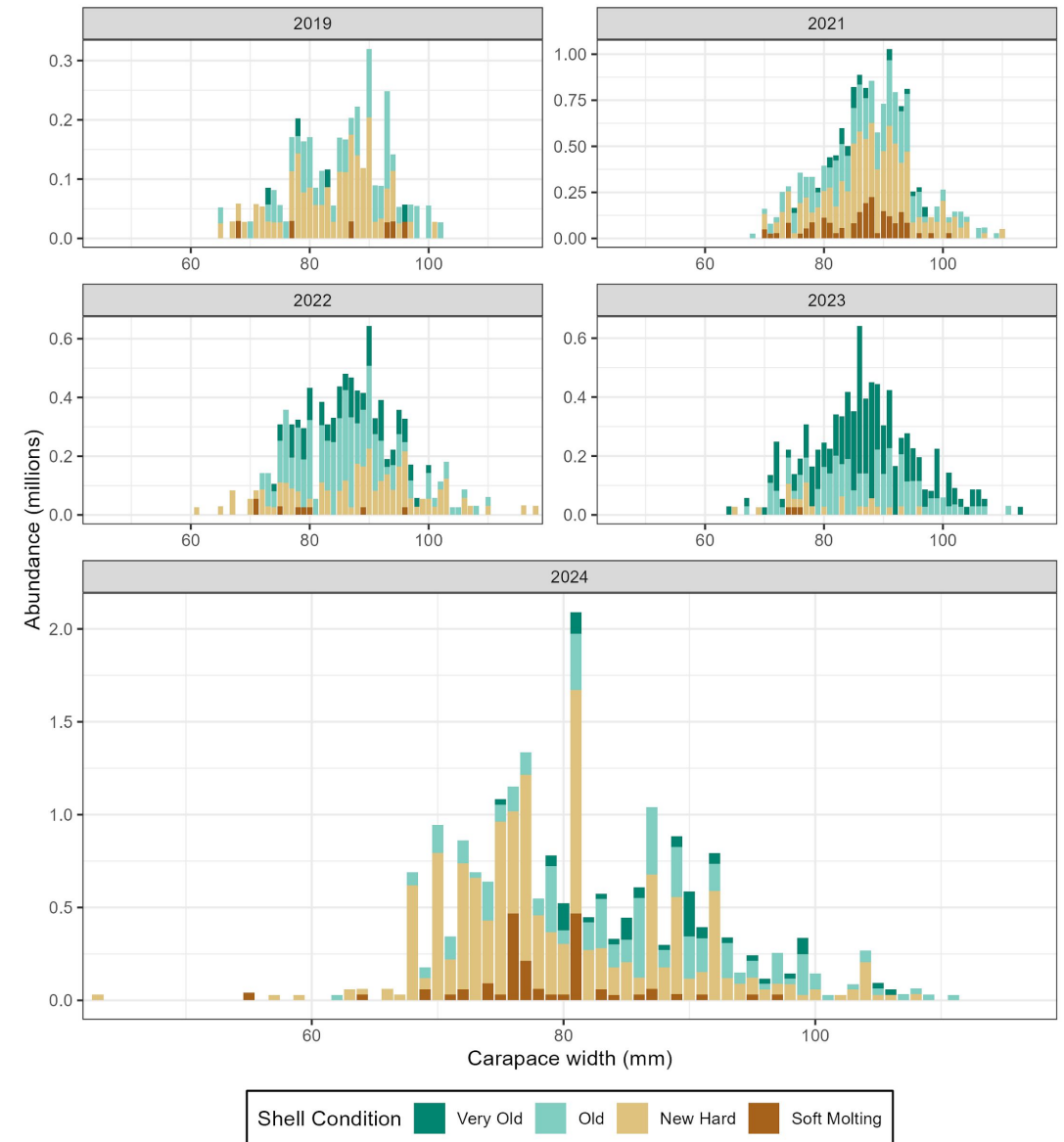


Abundance by size and shell condition

Mature Female Tanner Crab West



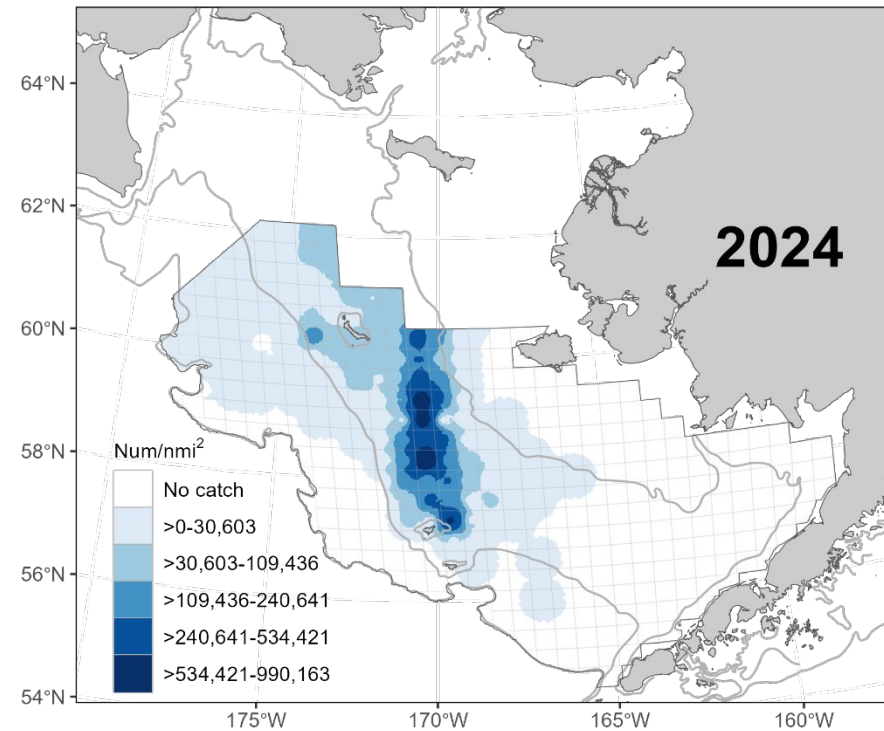
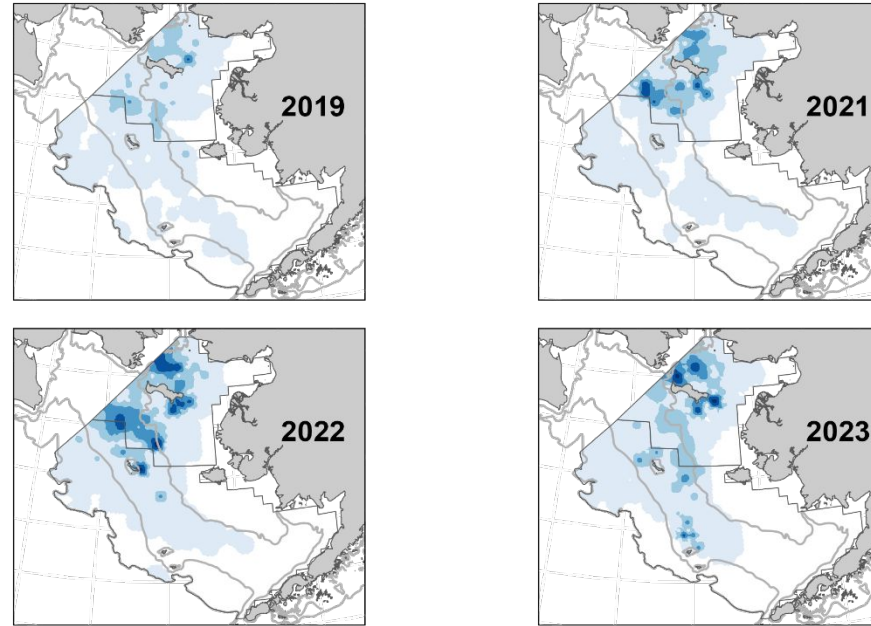
Mature Female Tanner Crab East



Snow crab

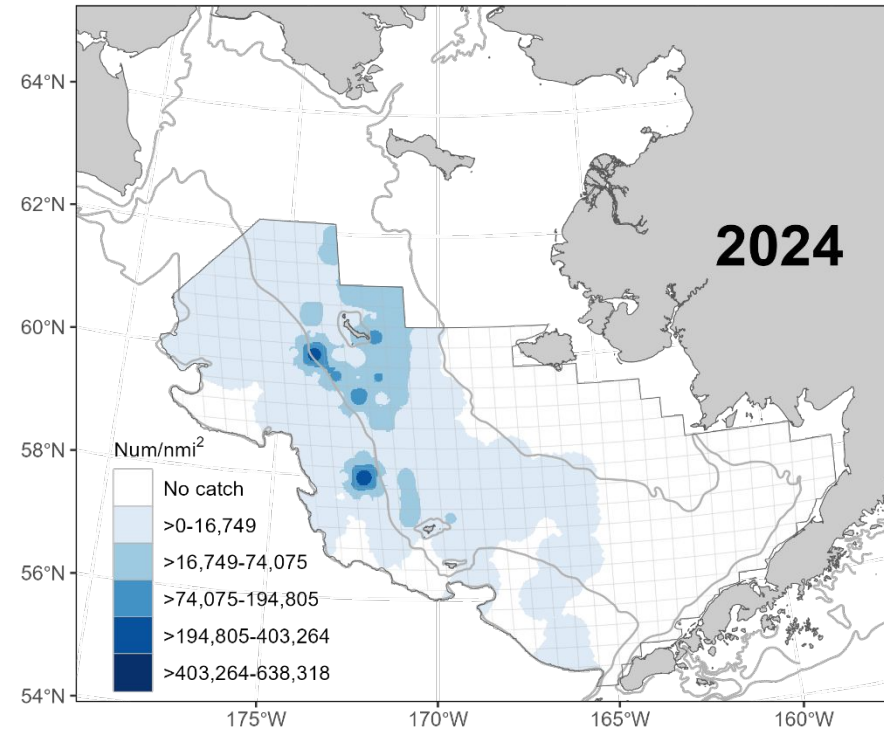
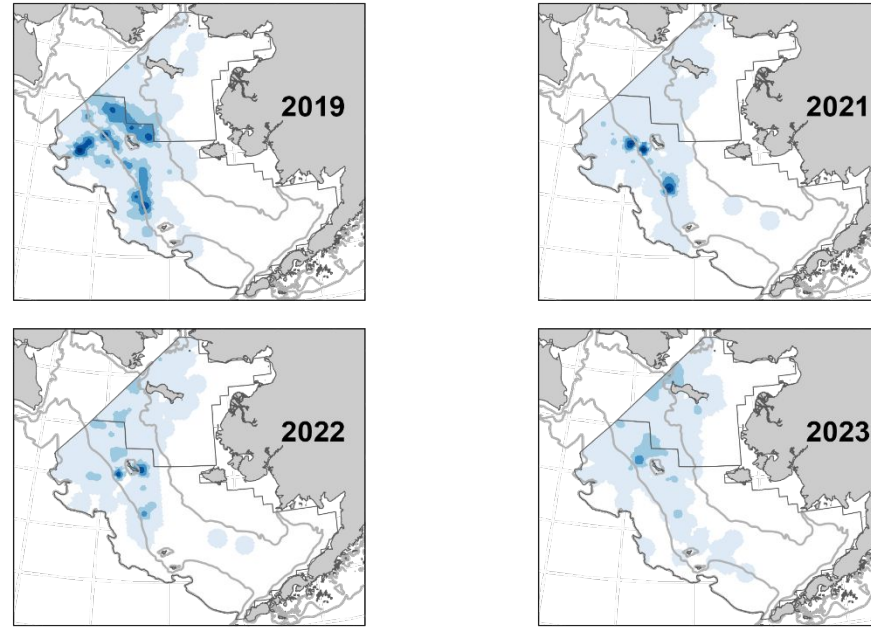
Distribution by year

Snow Crab Immature Female



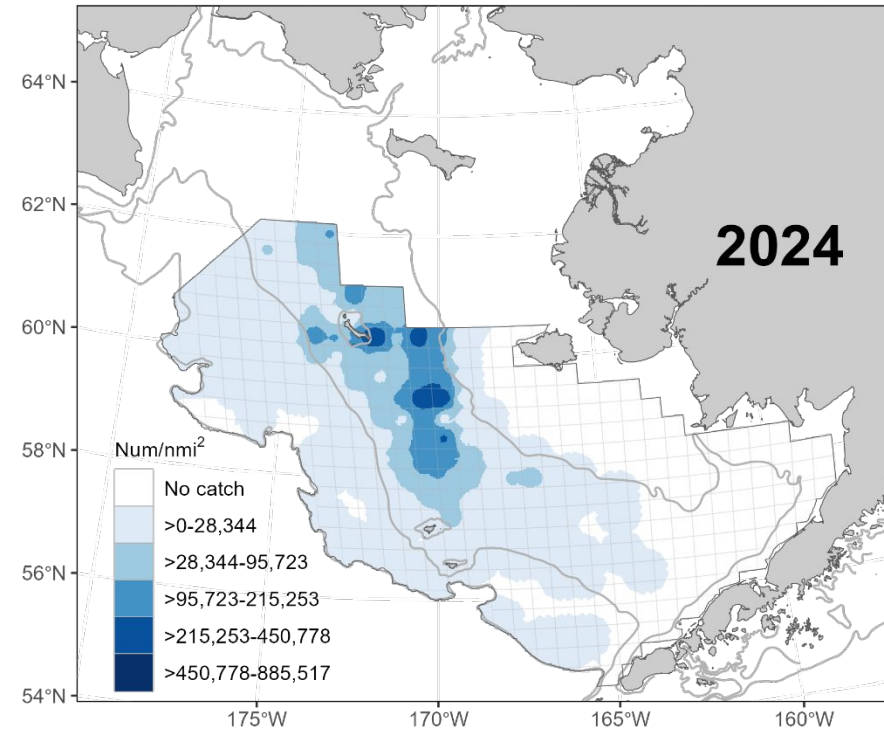
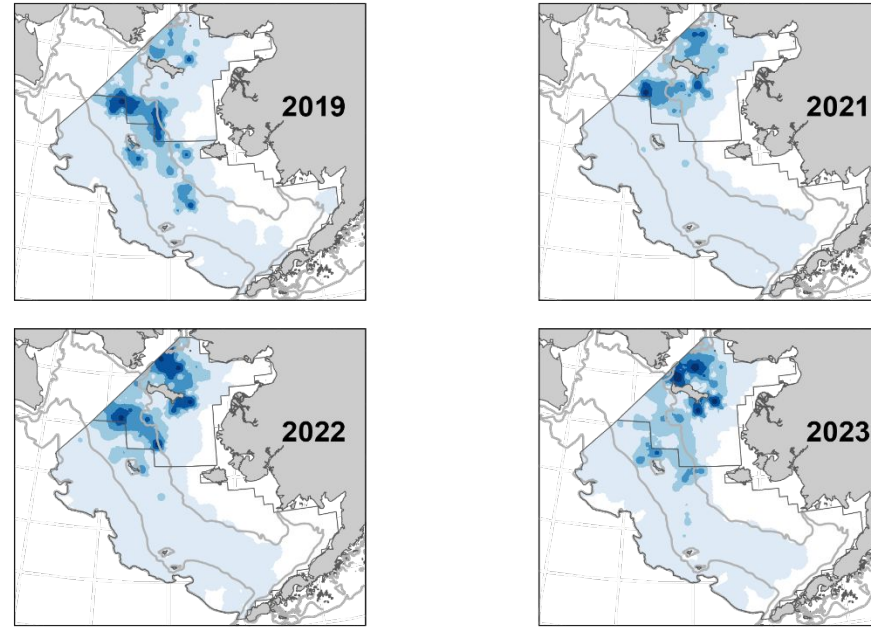
Distribution by year

Snow Crab Mature Female



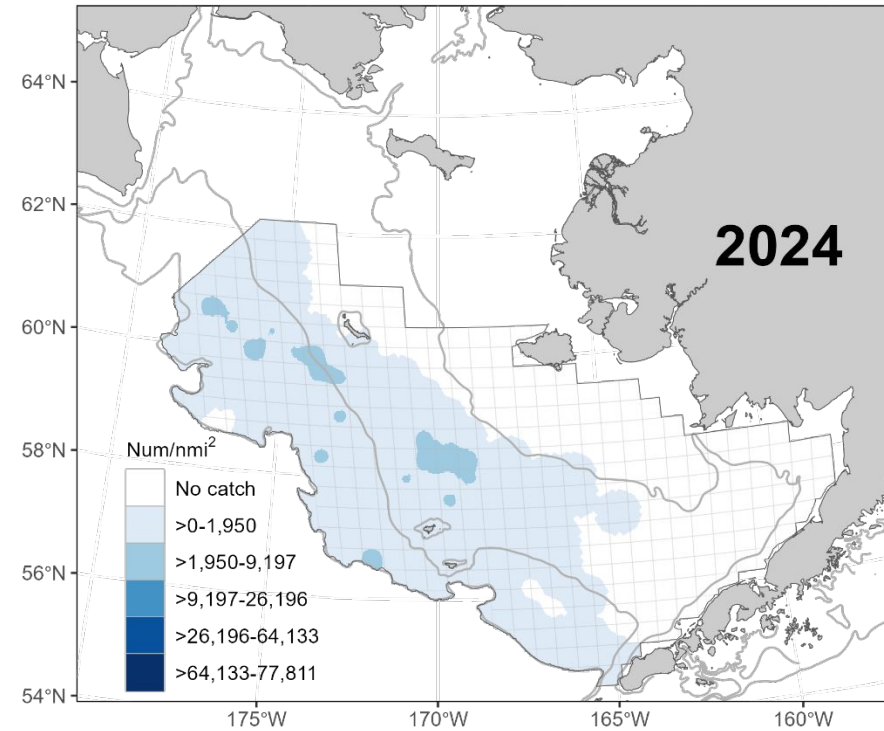
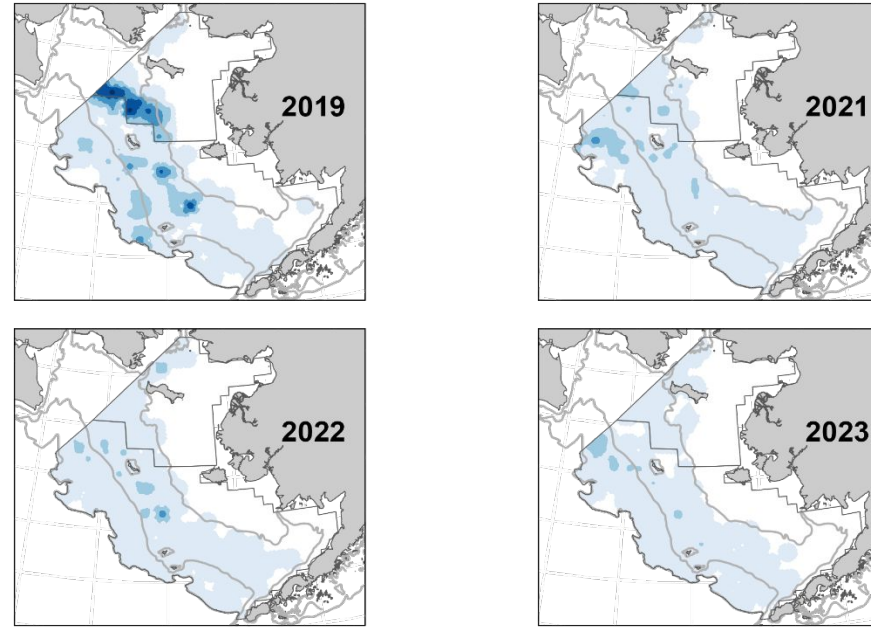
Distribution by year

Snow Crab Small Male (< 95 mm carapace width)



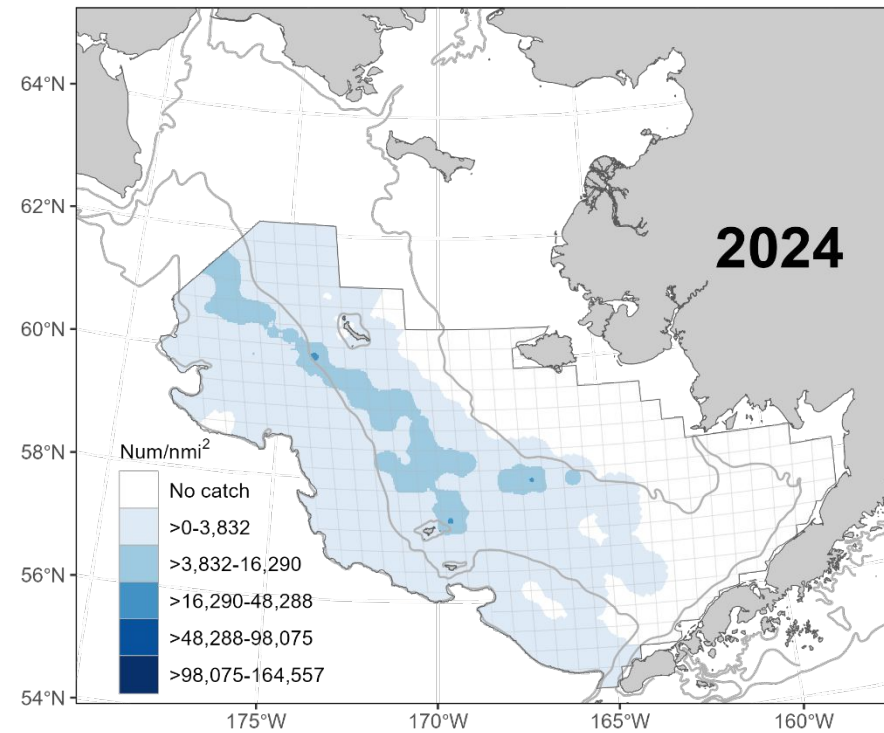
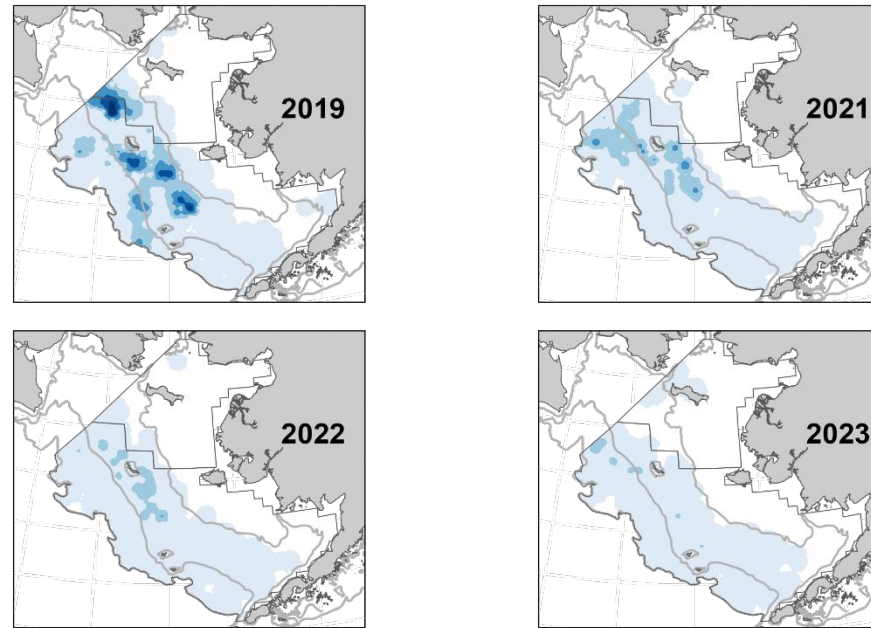
Distribution by year

Snow Crab Large Male (≥ 95 mm carapace width)



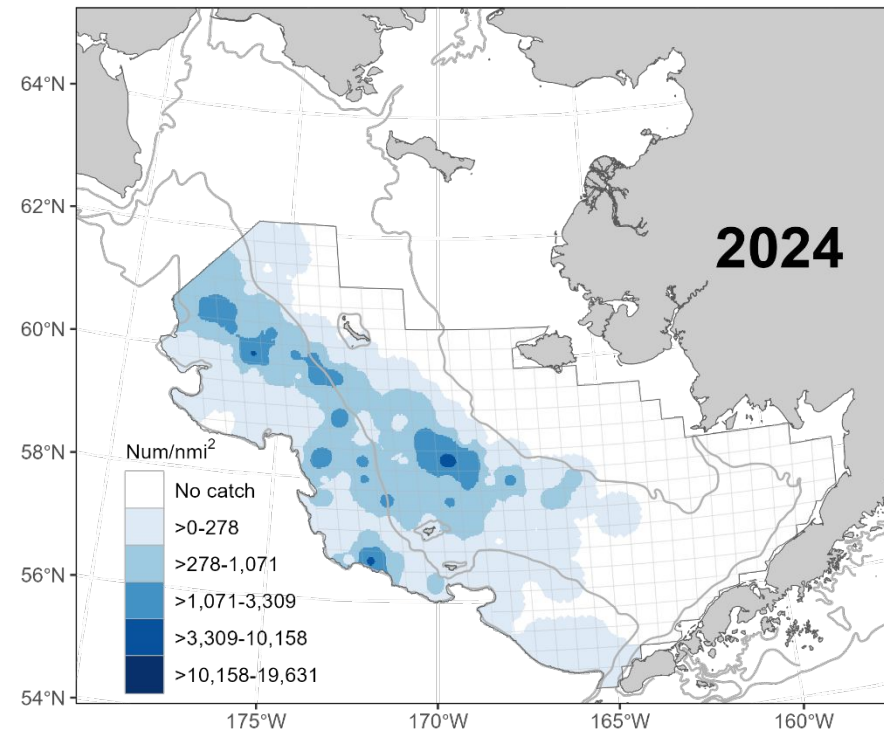
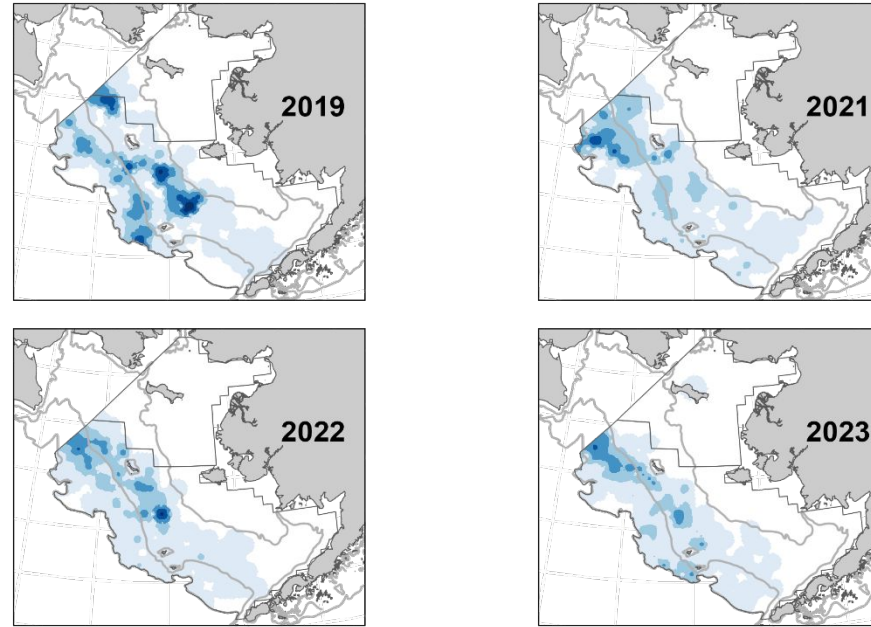
Distribution by year

Snow Crab Legal Male (≥ 78 mm carapace width)

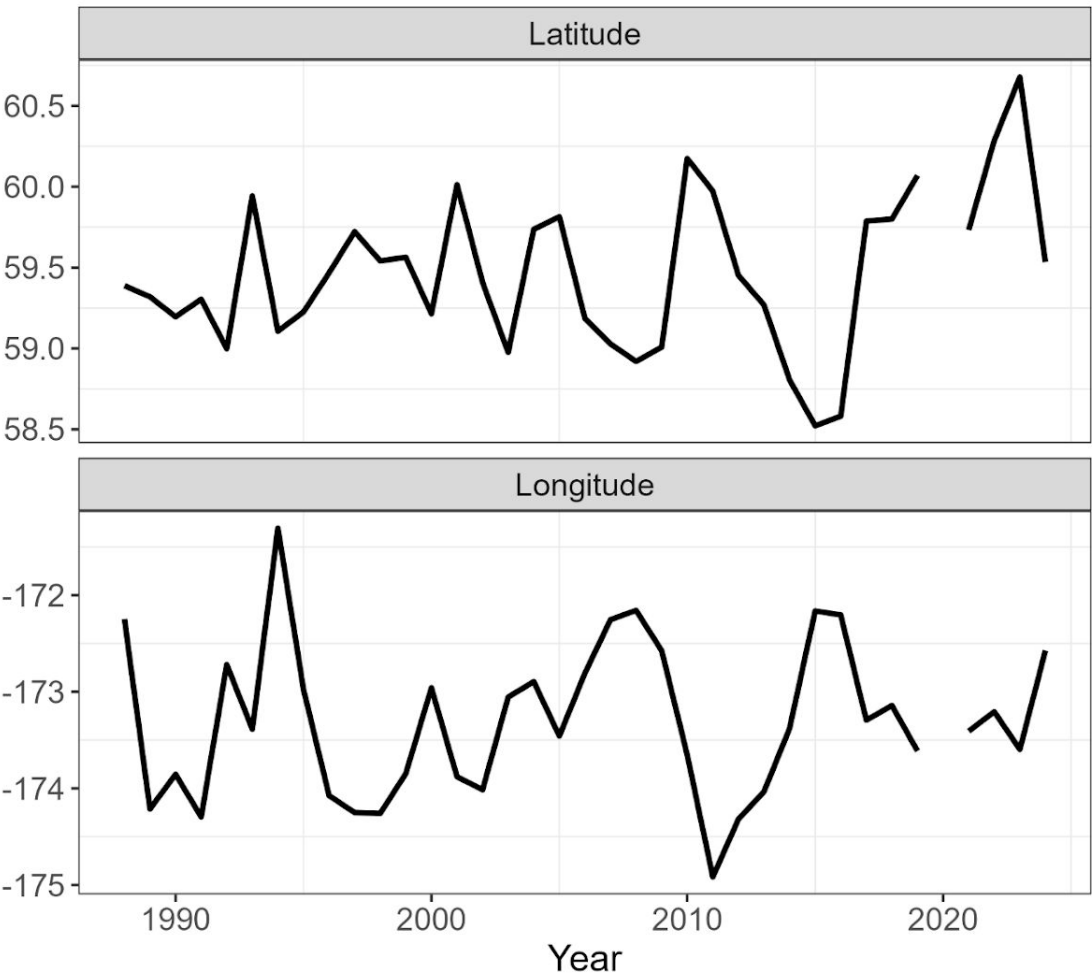
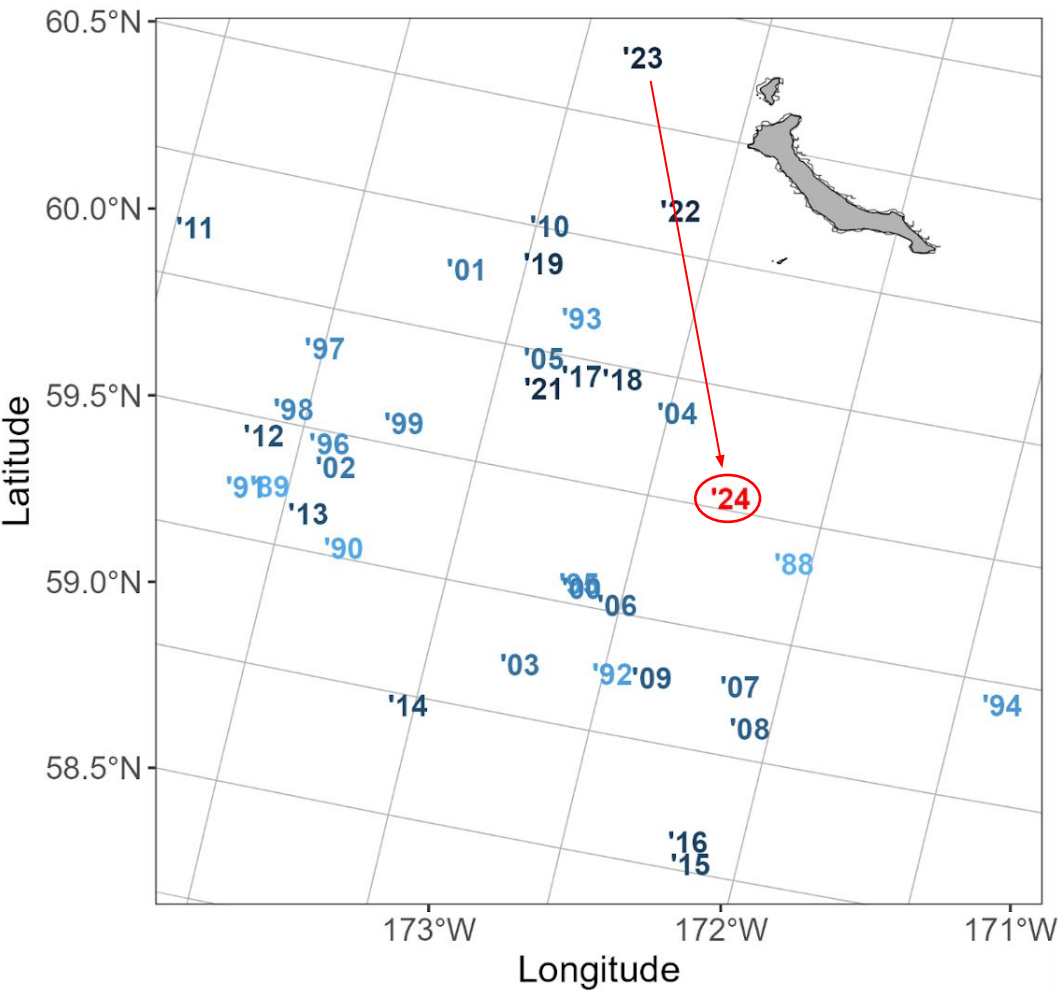


Distribution by year

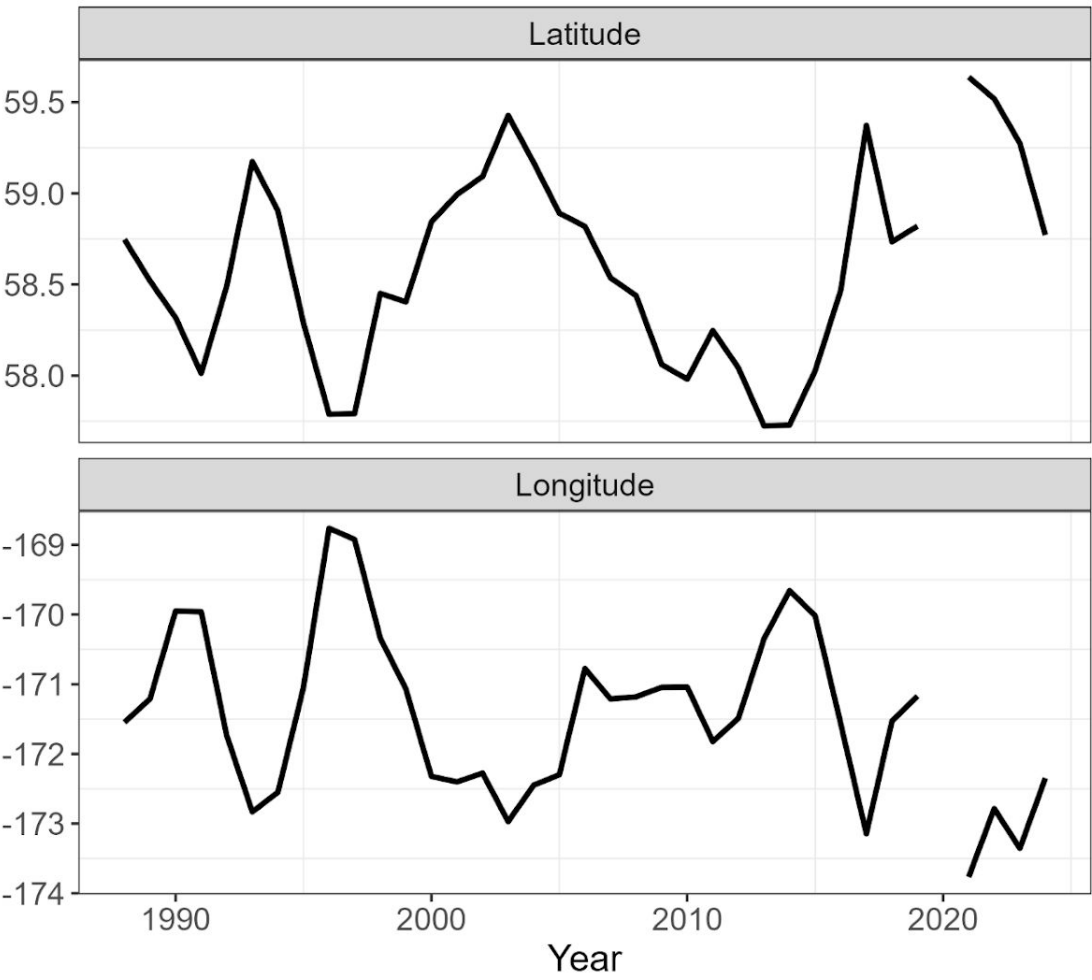
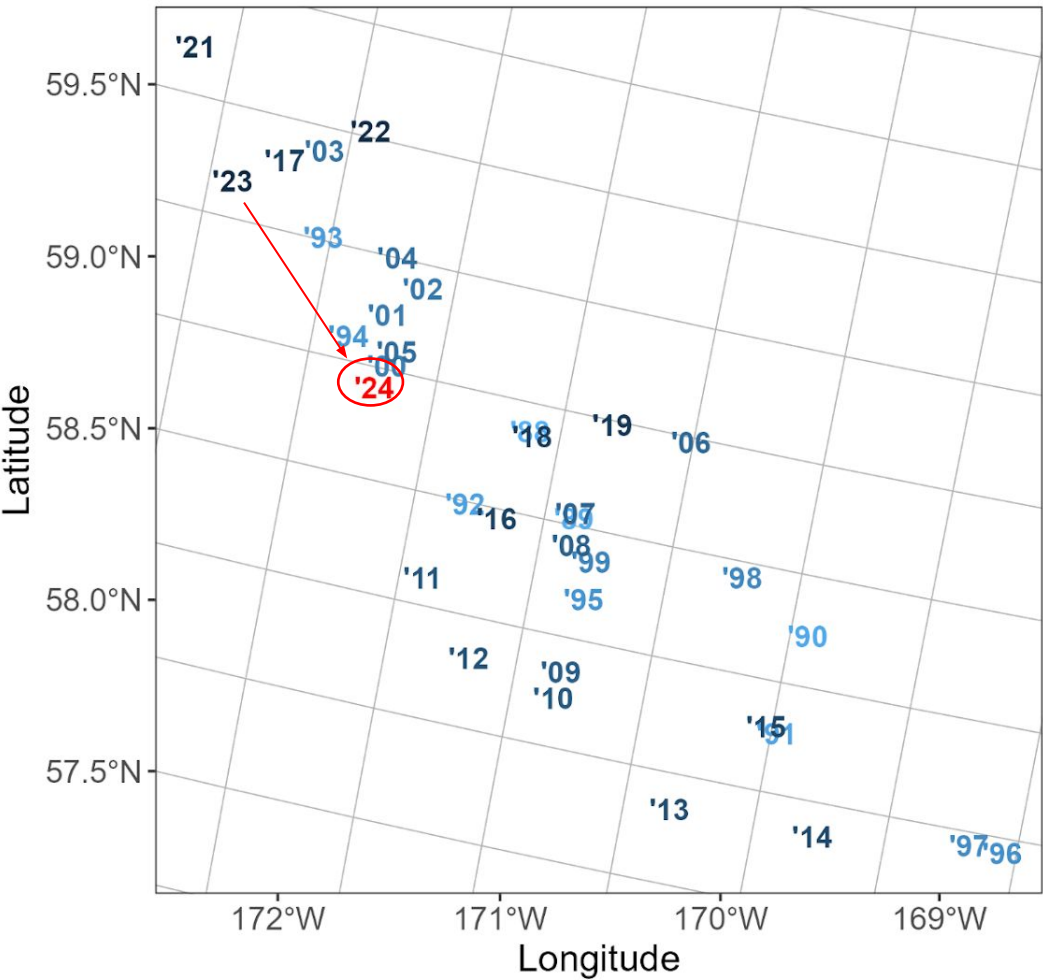
Snow Crab Industry Preferred Male (≥ 102 mm carapace width)



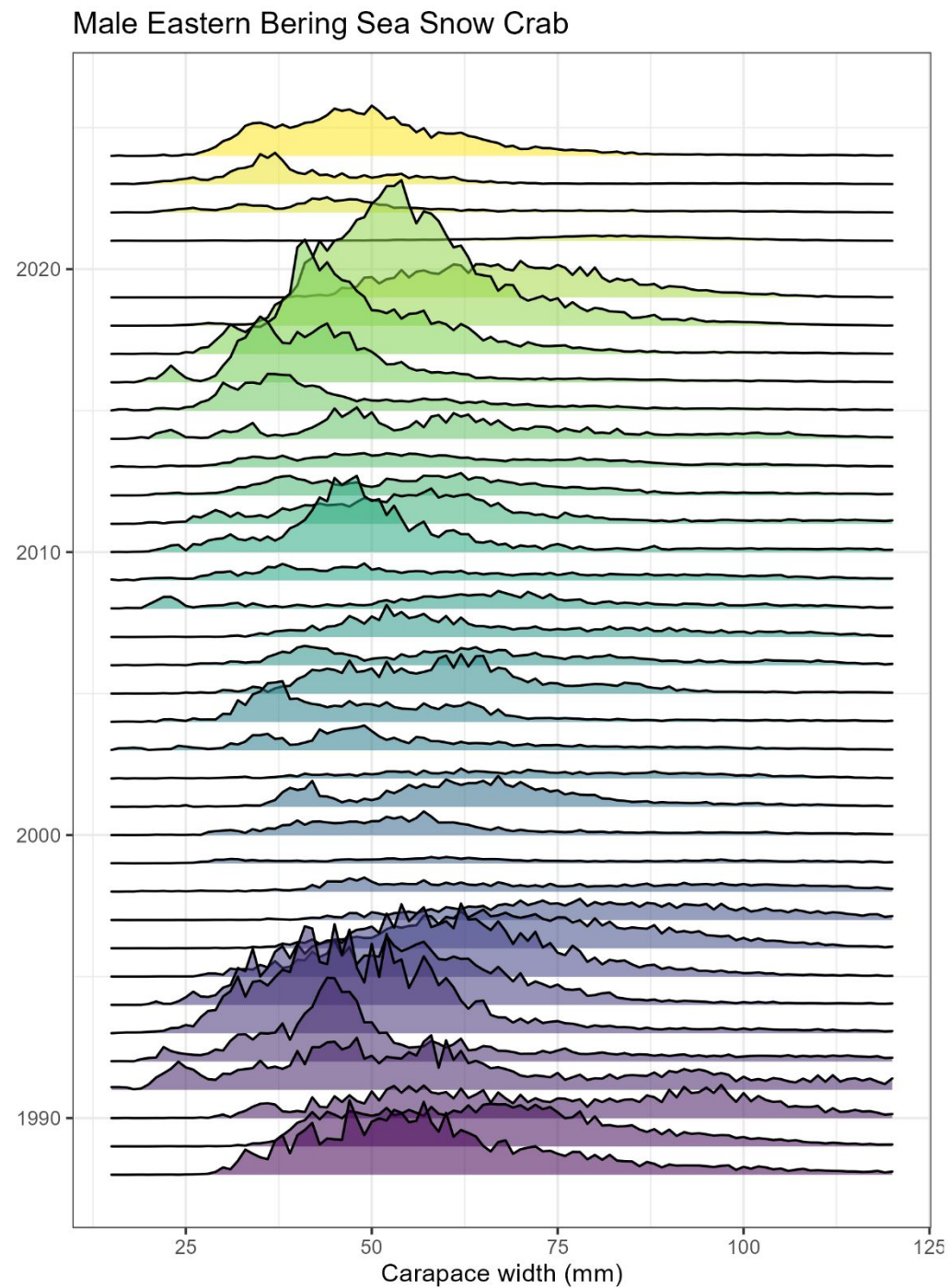
Snow Crab Mature Female



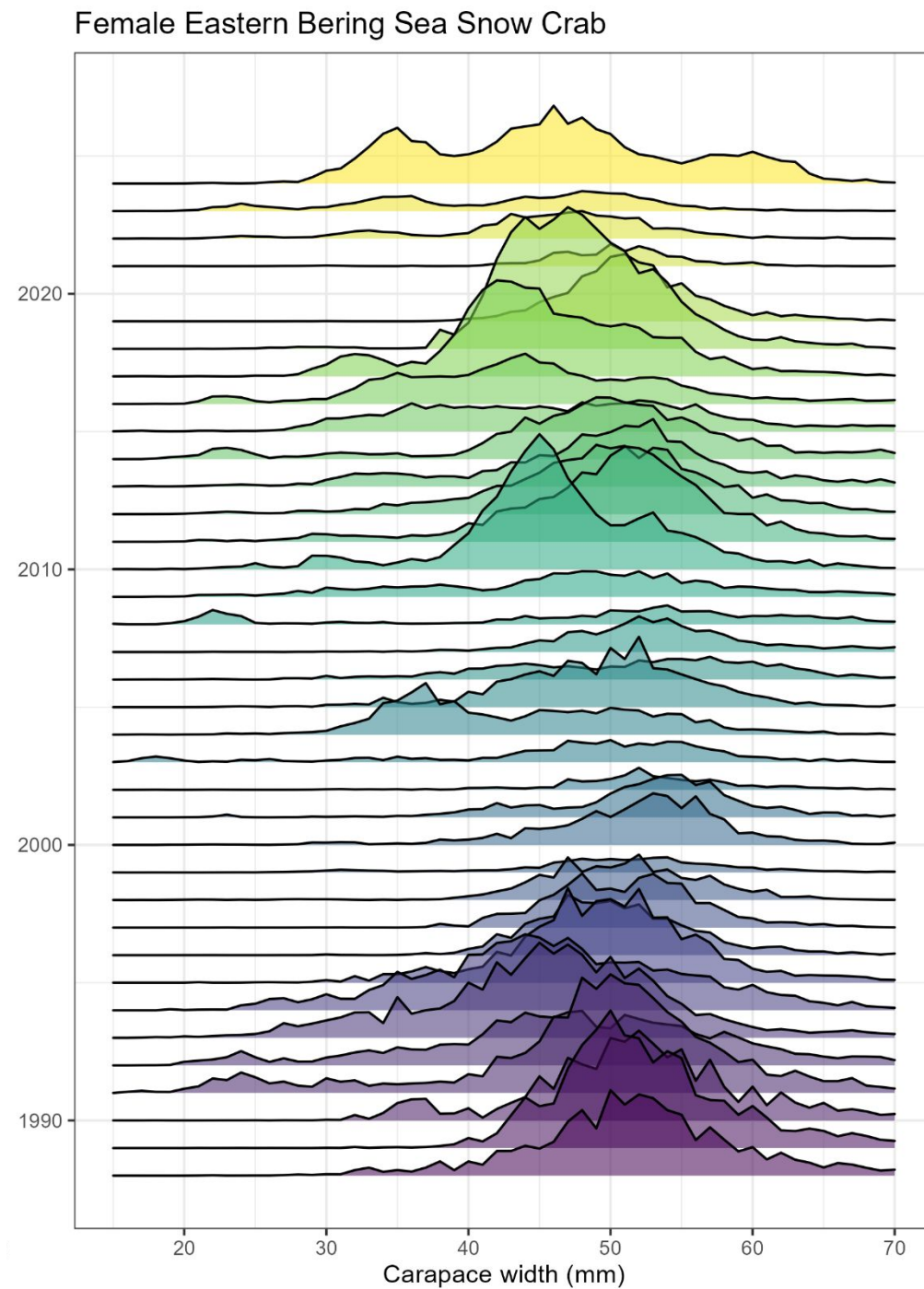
Snow Crab Industry Preferred Male



Abundance by size, 1988-2024 (EBS only)

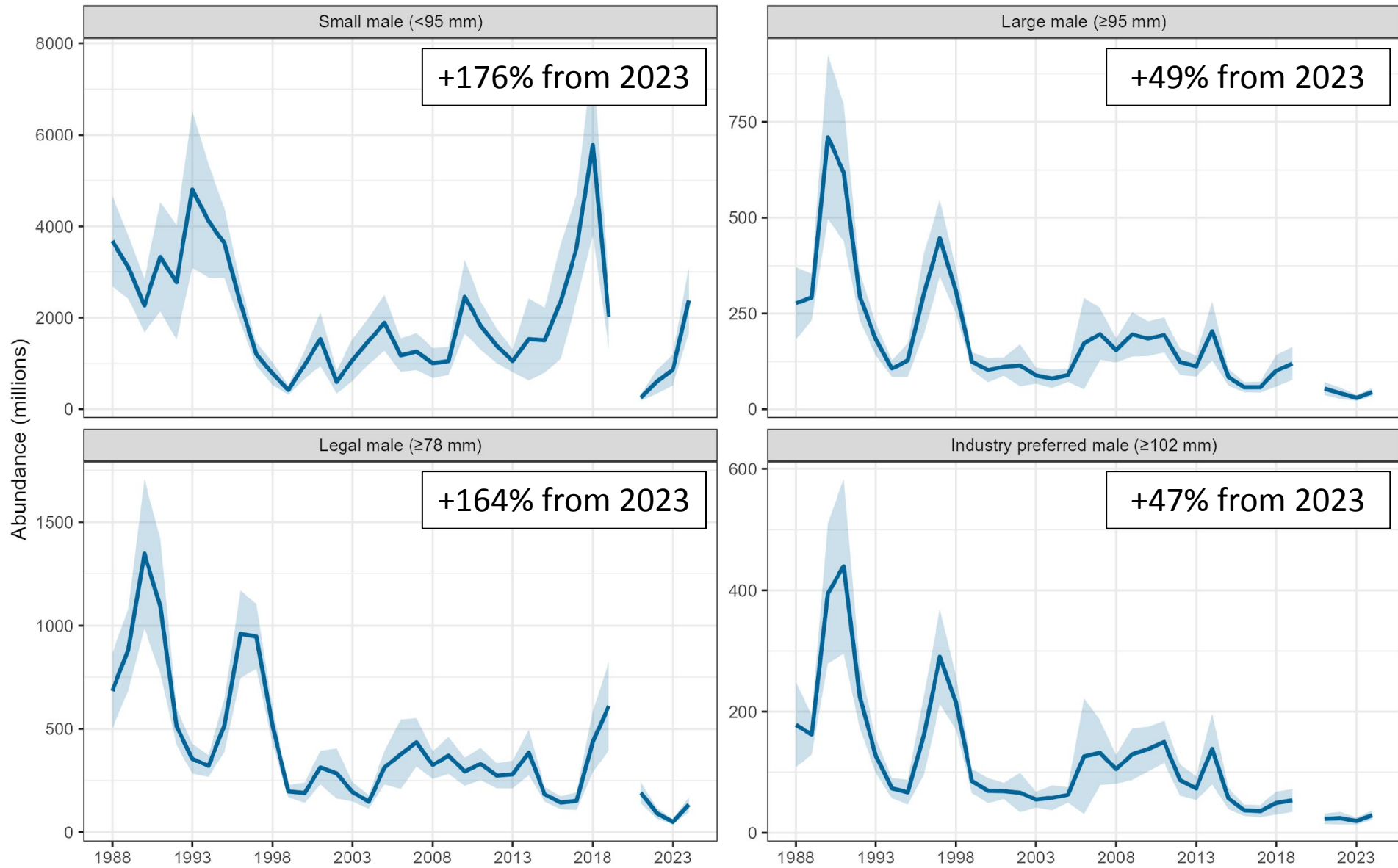


Abundance by size, 1988-2024 (EBS only)

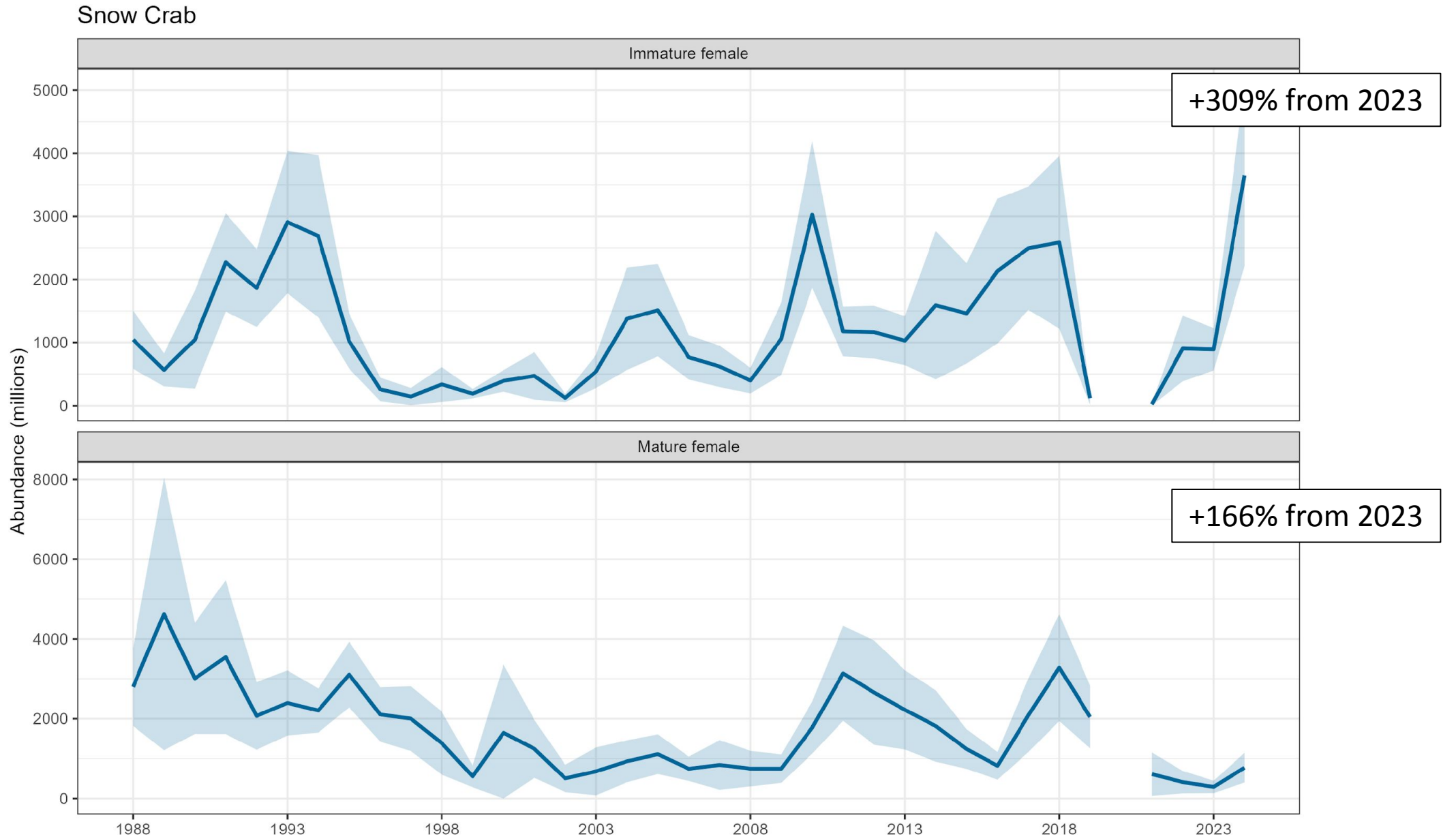


Estimated abundance

Snow Crab

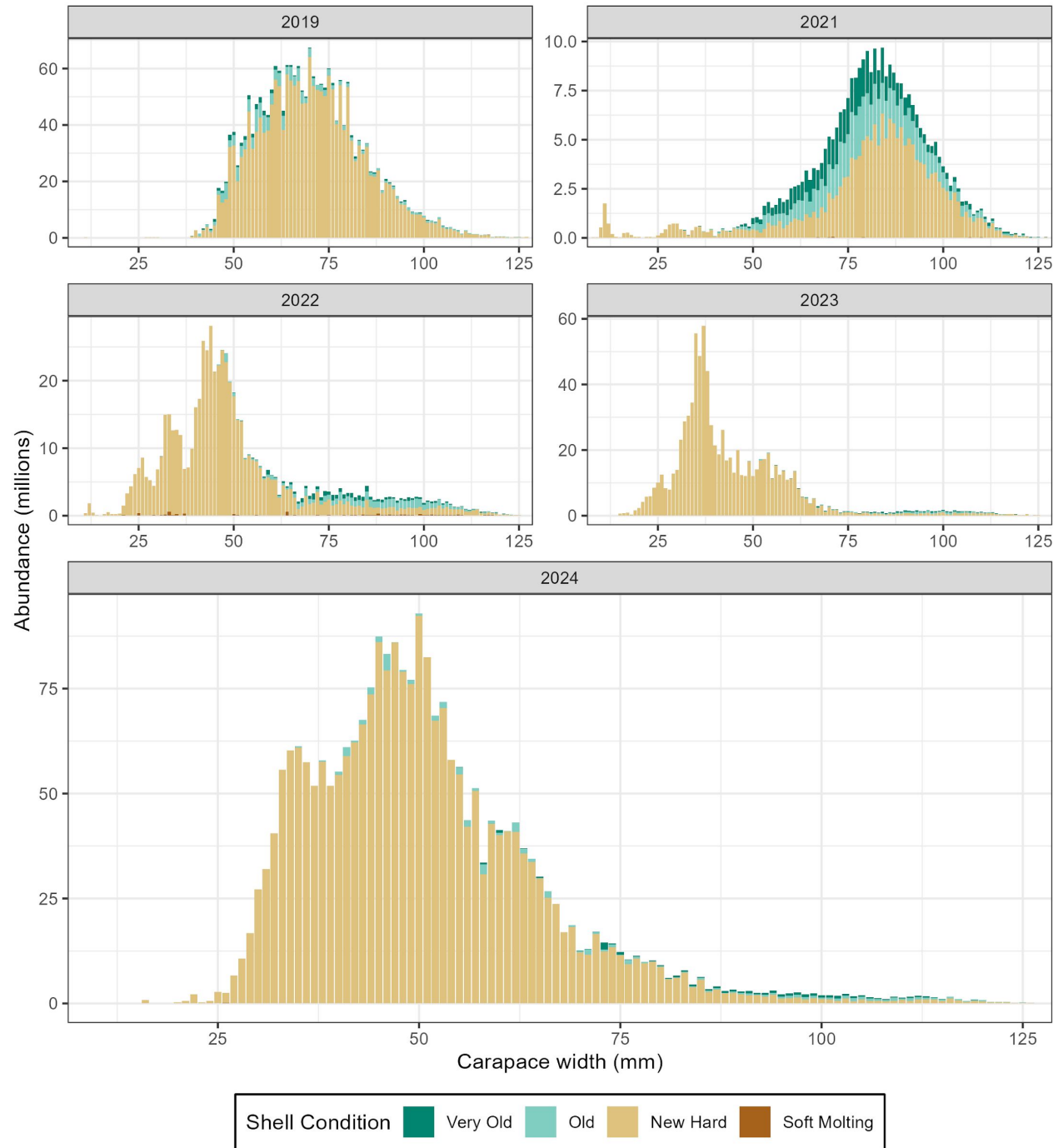


Estimated abundance



Male Eastern Bering Sea Snow Crab

Abundance by size and
shell condition



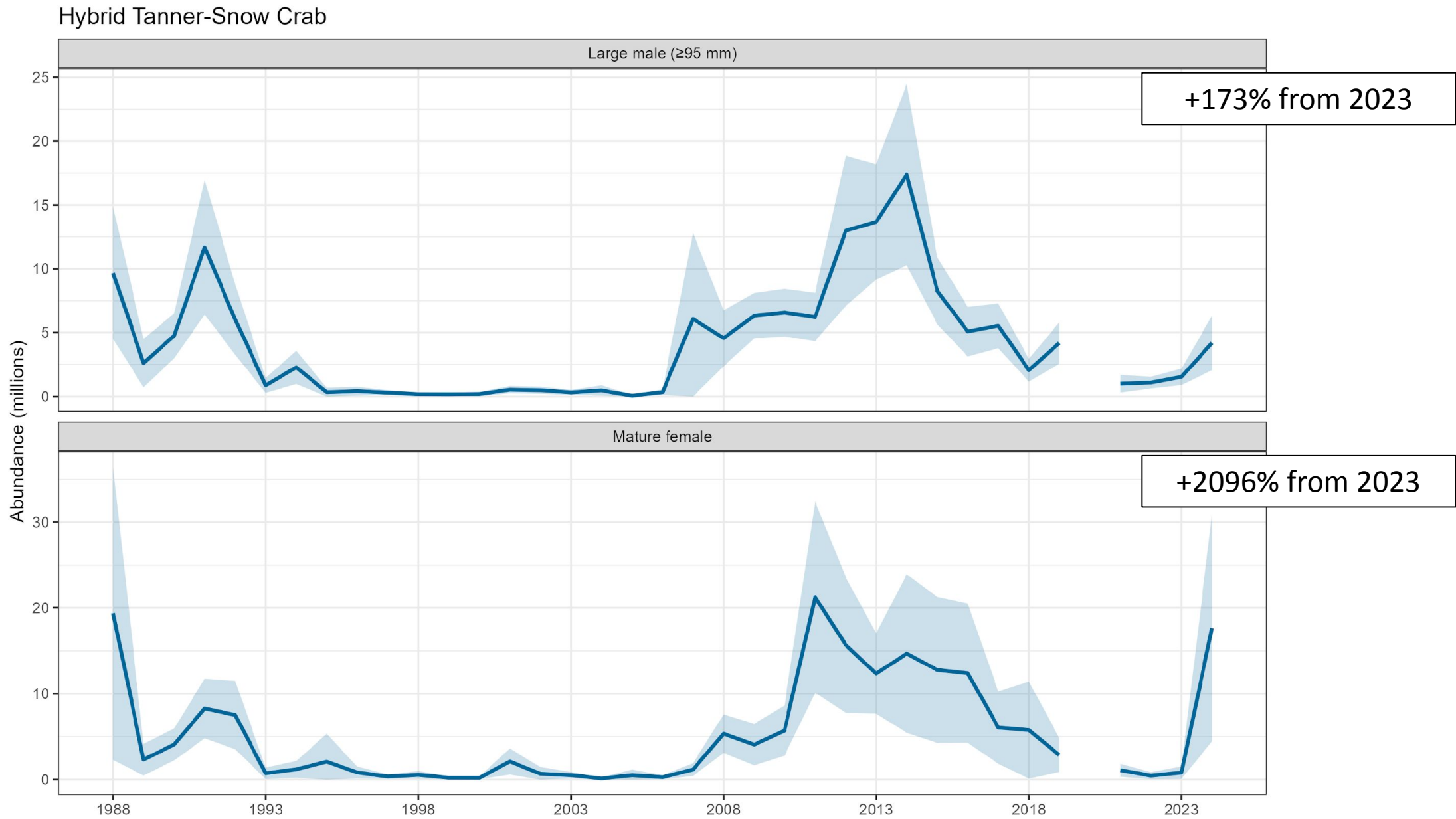
Female Eastern Bering Sea Snow Crab

Abundance by size and
shell condition

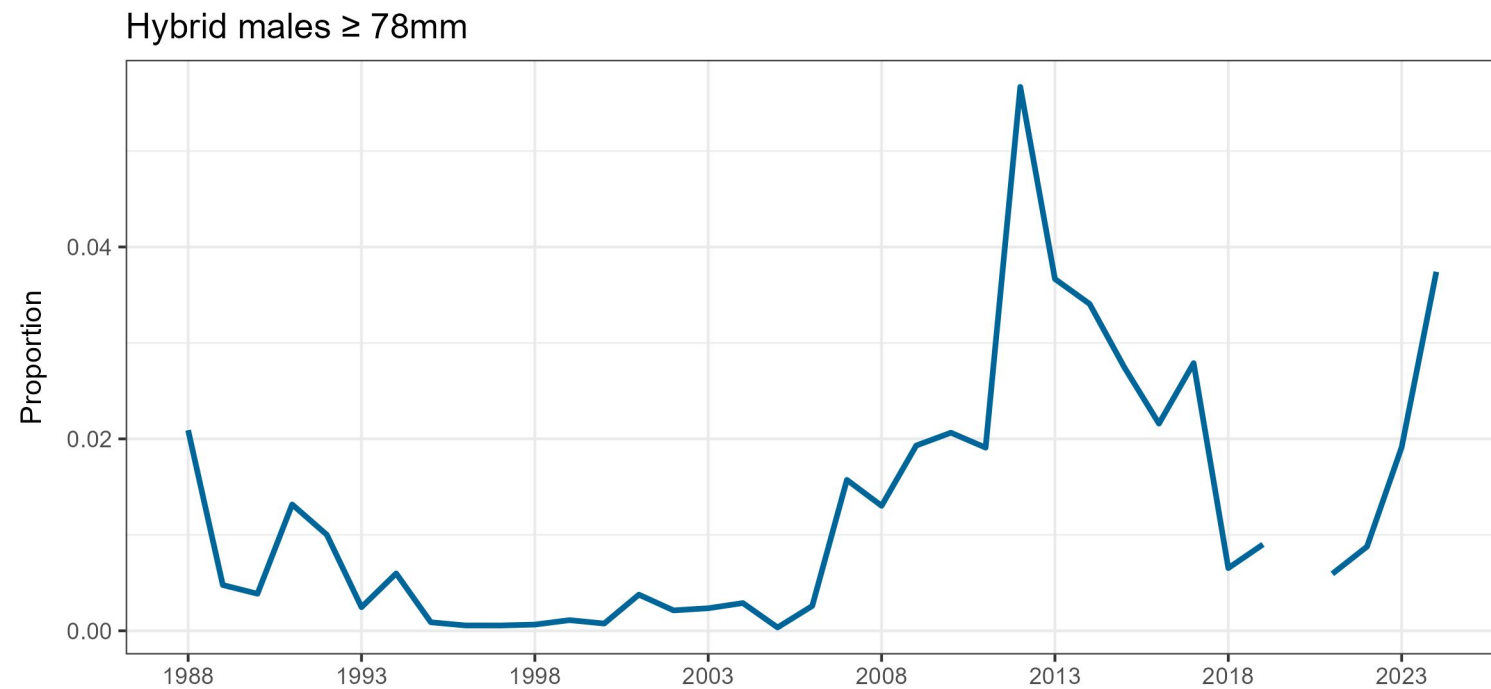
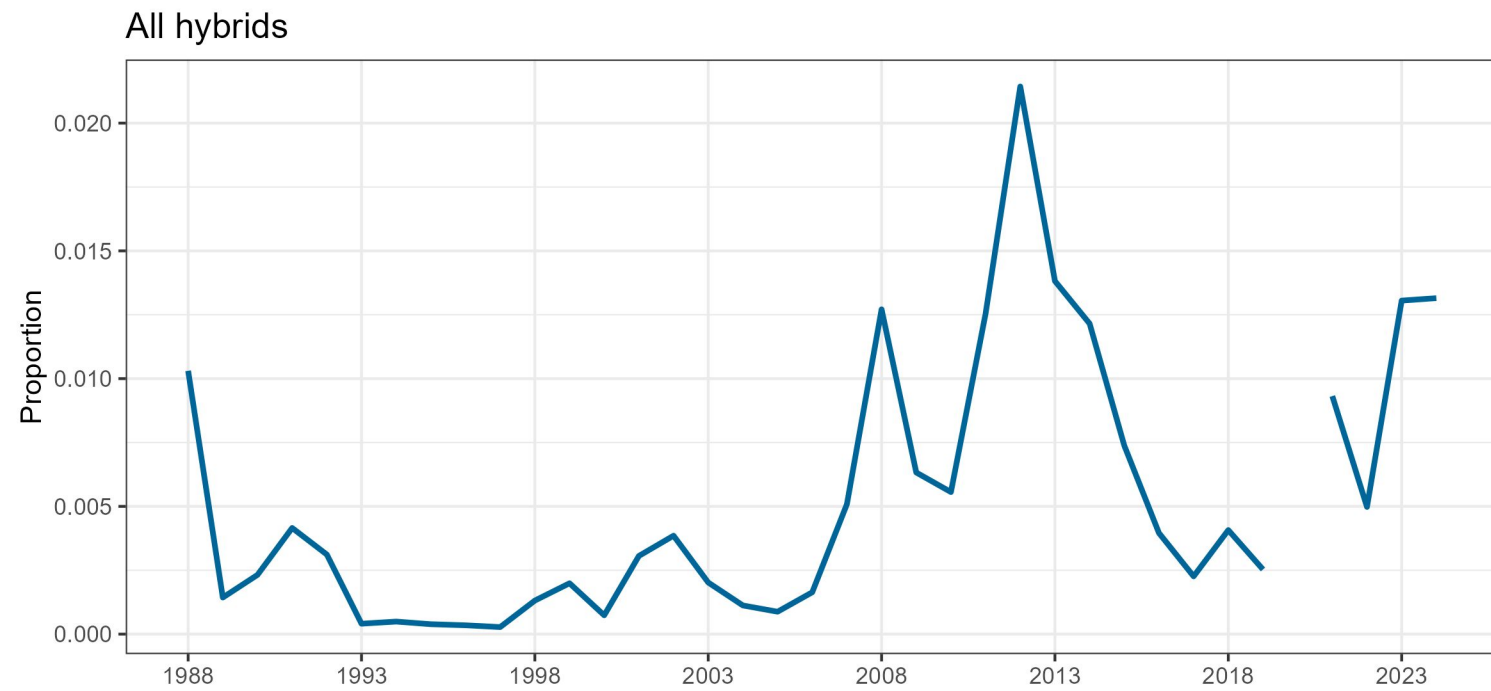


Chionoecetes hybrids

Estimated abundance



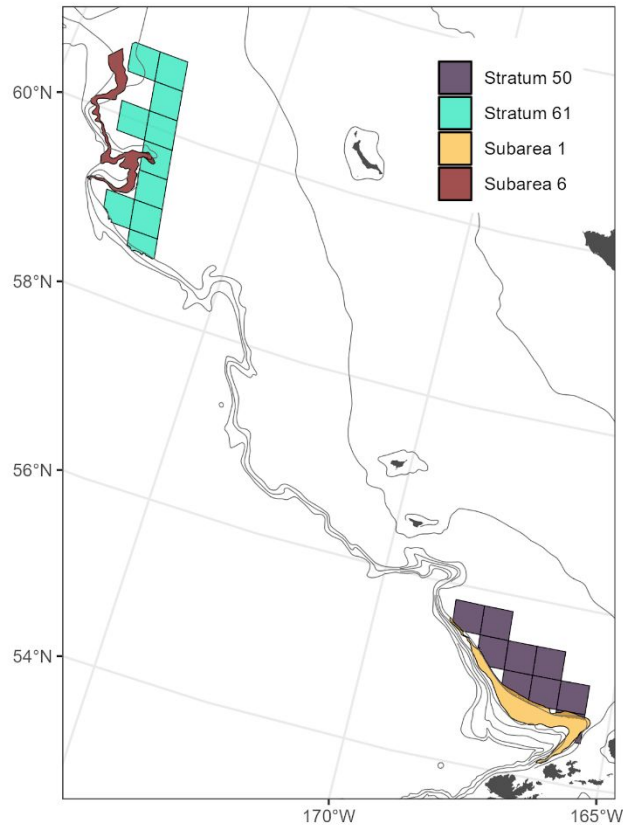
Hybrid proportion of total
Chionoecetes abundance



Slope/shelf comparison

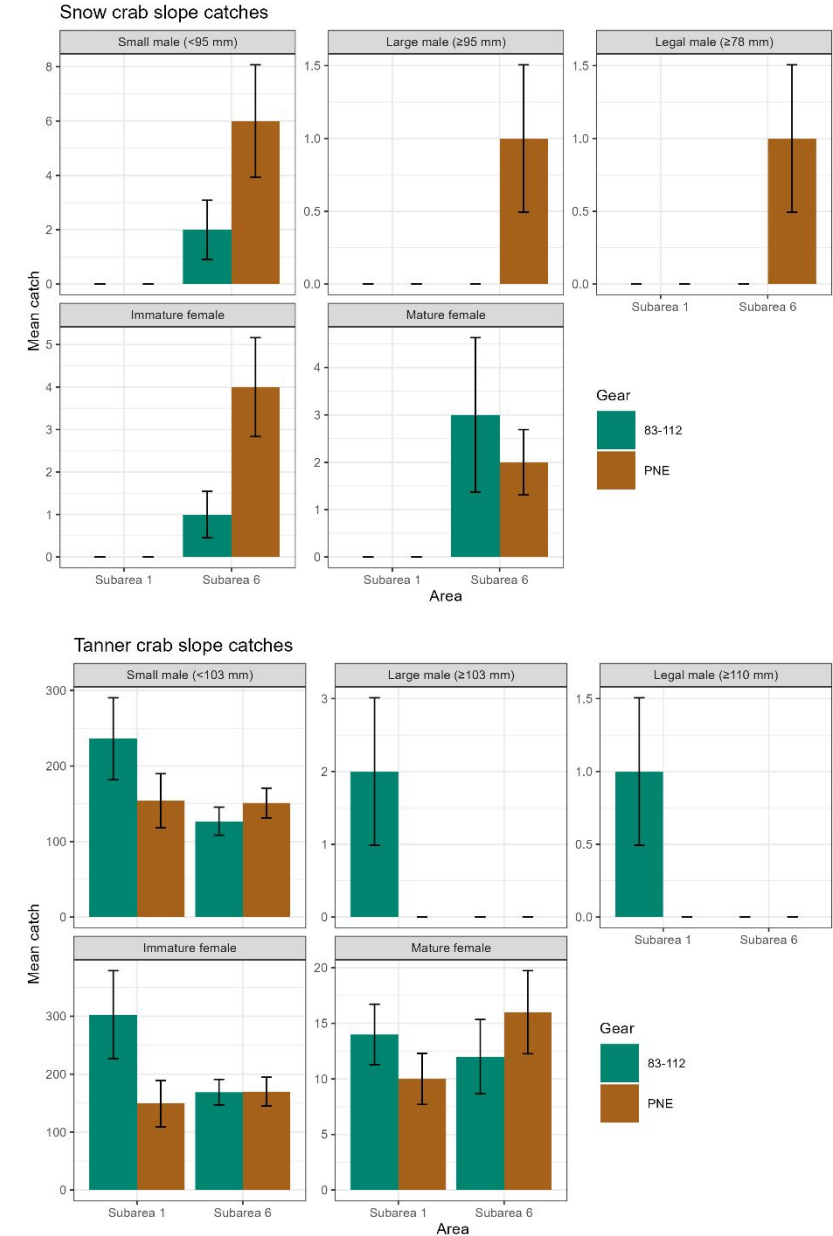
2024 slope / shelf gear comparison

Preliminary results



- Shelf/slope gear compared in northern and southern areas
- Orders of magnitude more Tanners than snow
- No evidence for high snow crab abundance in subarea 6 (northwestern slope)

Catch data, 30 minute tows



Acknowledgments

Thanks to the many people and programs who make the annual bottom trawl survey a success.

- RACE net loft
- RACE groundfish program
- ADF&G collaborators
- Captains and crew of the *Northwest Explorer* and *Alaska Knight*