

# 2018 ADF&G Saint Matthew Island pot survey: results for blue king crab

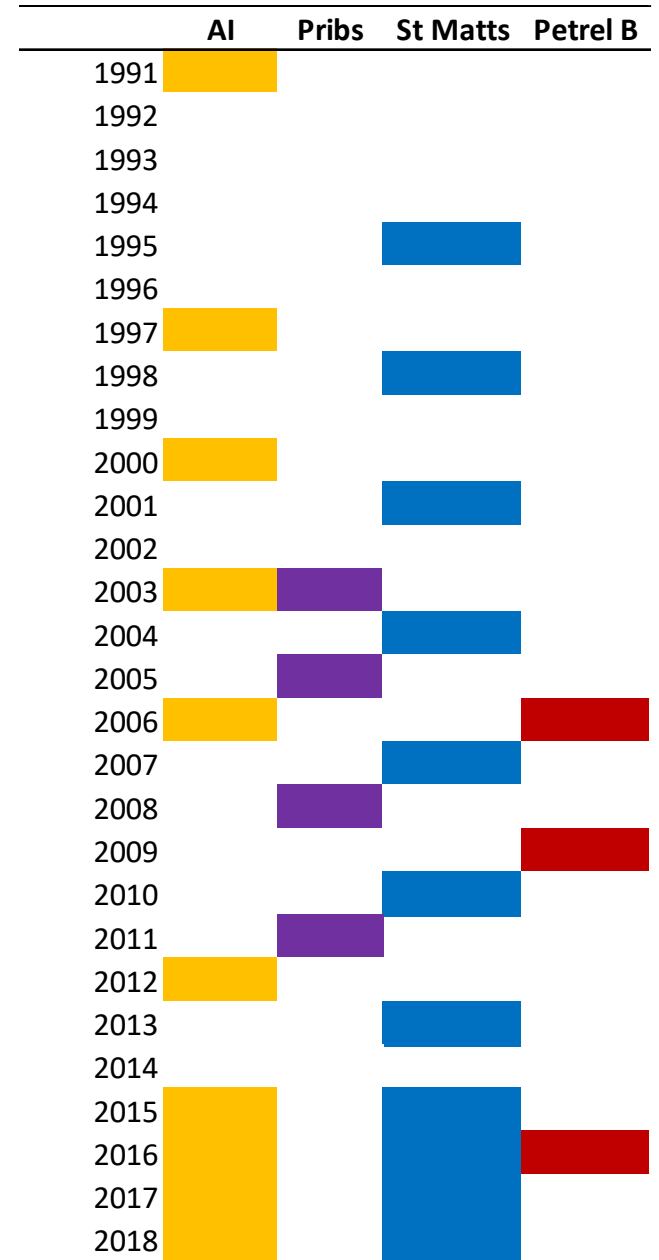
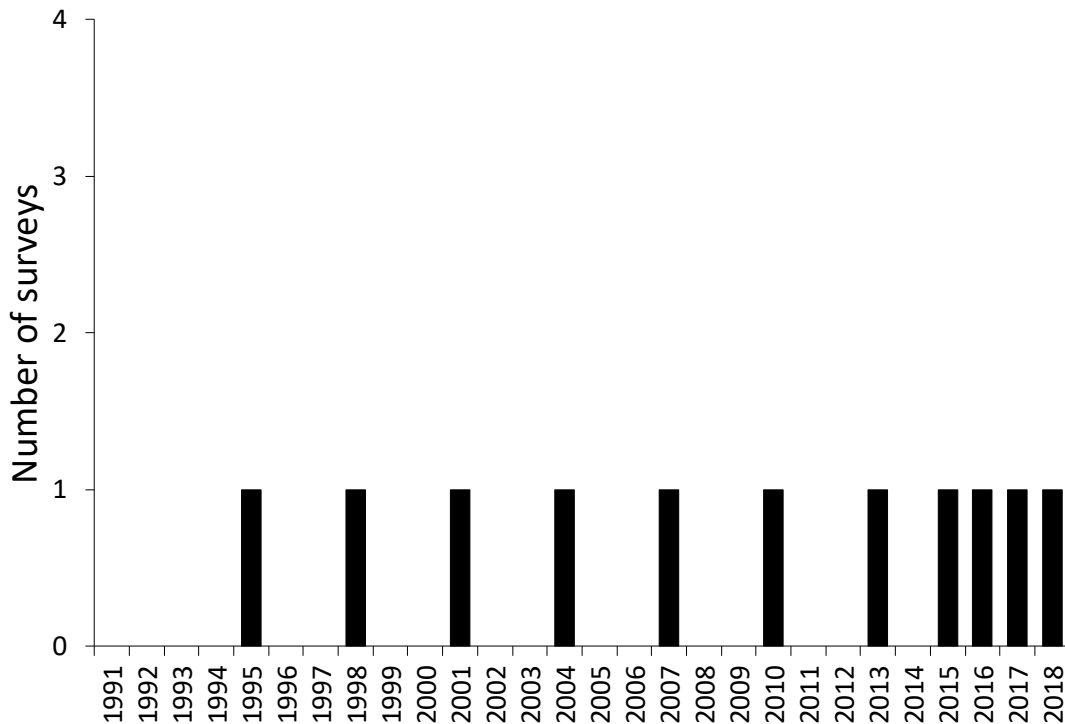
Benjamin Daly  
Alaska Department of Fish and Game  
Crab Plan Team meeting  
September 10-13, 2018  
Seattle, WA

# A brief history.....

- Pot surveys: AIGKC, Pribis, St Matts, Petrel Bank
  - Determine size compositions
  - Depth distribution
  - Abundance index via CPUE
  - Estimate size at maturity
  - Tag and release
  - Oceanographic data
  - Platform for special studies
- AIGKC evolved into industry collaborative survey: best way to cover the vast spatial expanse
- Pribilof Islands survey was put on hold due to low population abundances
- Saint Matthew Island survey has been conducted annually in recent years
- Petrel Bank surveys were to provide information needed by fishery managers to consider a fishery opening
- Norton Sound trawl triennial surveys

# ADF&G Westward Region pot survey frequency

Saint Matthew Island survey frequency



# St Matts pot survey area

“Core 96” = Strata 1 + 2

- Sampled all survey years,  
best for inter-annual  
comparisons

Station density  
relative to NMFS  
survey

# Sampling Design

## **Gear:**

- Commercial king crab pots (7 ft x 7 ft x 34 inches)
  - Manufactured in 2013
  - 2.5 inch mesh
  - 2 tunnel eye openings (9 x 36 inches)
  - No escape rings or panels
  - Cotton twine to protect against ghost fishing if lost
  - Baited with 3.8 L chopped herring
- 4 pots per station
- CPUE/station

**Soak time: target 30-36 h (2018 31 h)**

## **Sub-sampling?**

- Never for BKC, sometimes for snow crab (not in 2018)

# 2018 Sampling

## St. Matthew Island

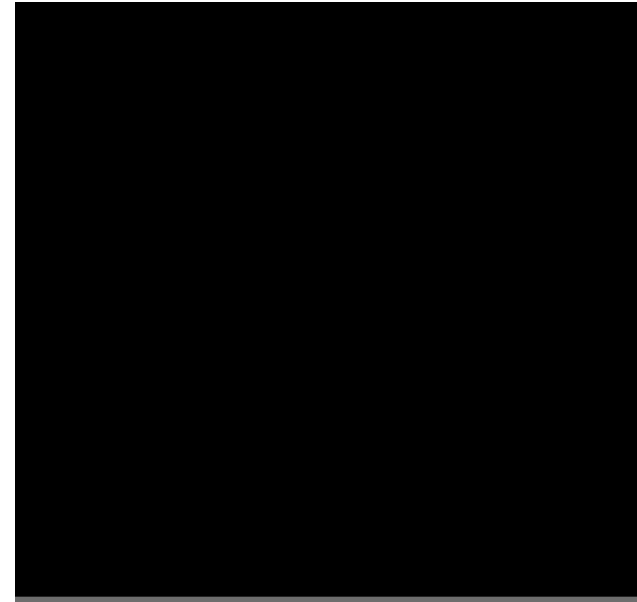
- Strata 1 & 2:
  - 96 in-common stns
  - 6 additional stns
- Stratum 3
  - 10 stns
- Snow crab chela data

## Pribilof Islands

- Satellite tagging of Tanner crabs

# Oceanographic Data

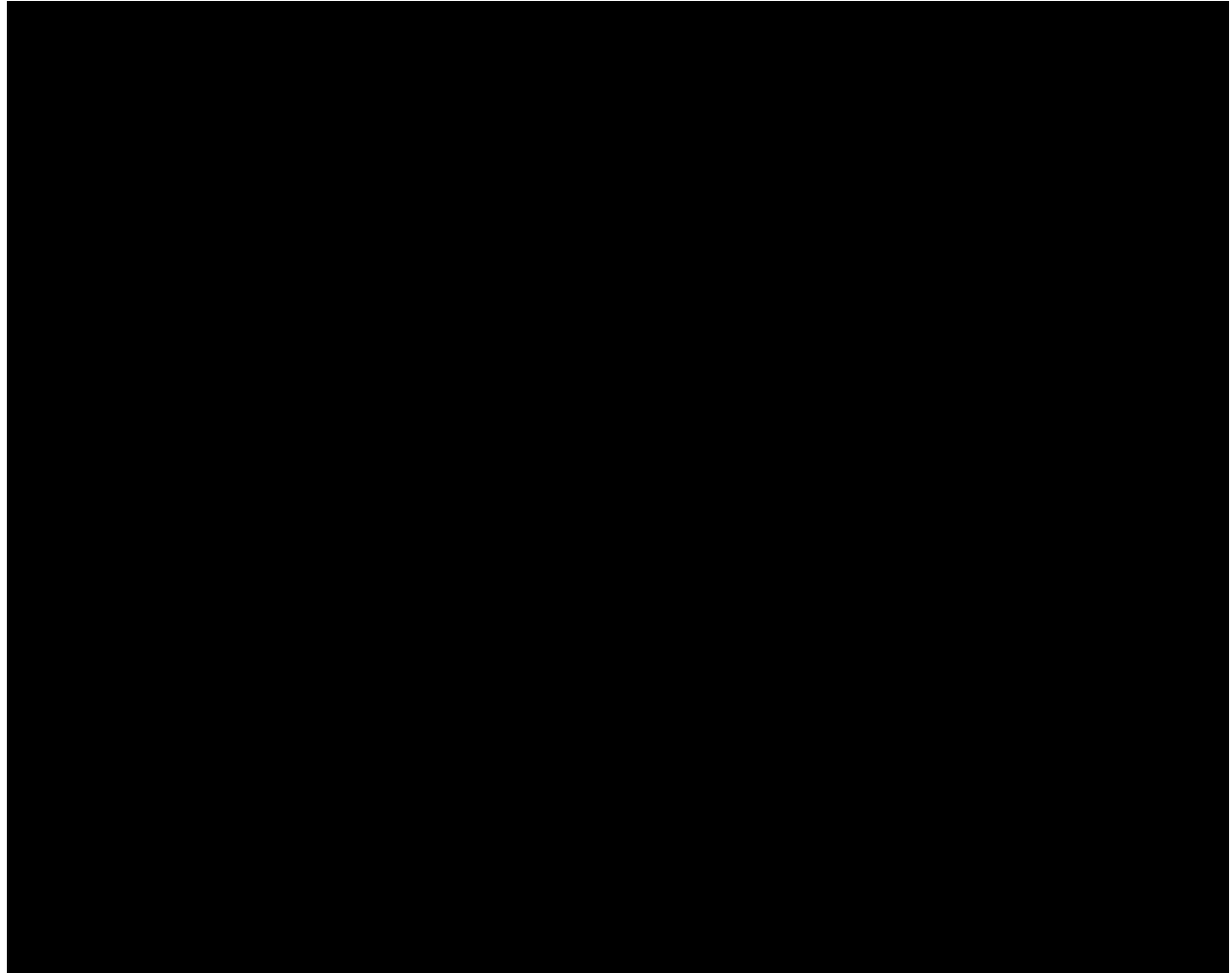
- Temperature/Depth logger in 1 pot at each station
- 2 “Reference Pots”
  - 2 non-station pots
  - Duration of survey
  - Temperature , pH, dissolved oxygen, depth, salinity
  - Same location in Strata 1 & 2  
for last 5 surveys





Stratum 4 =  
NMFS R-24

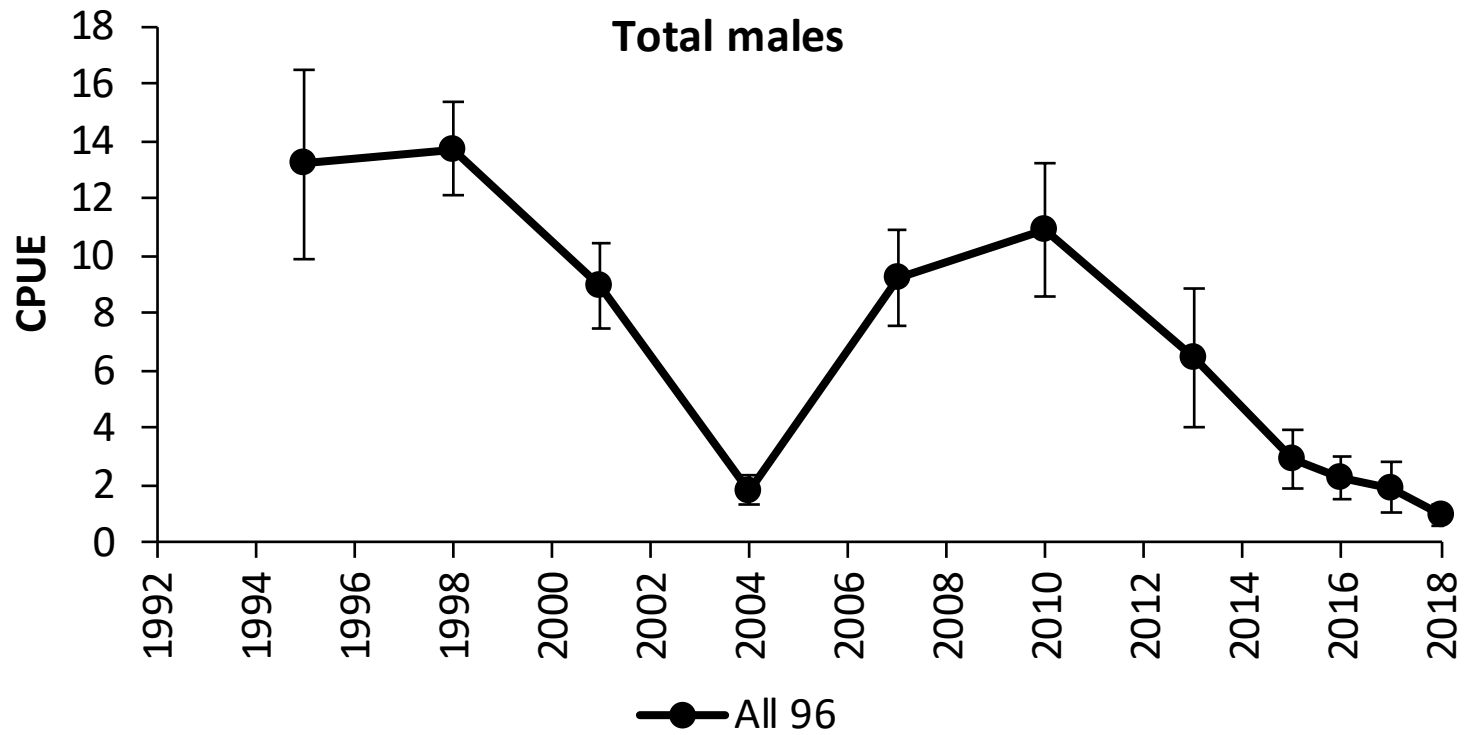
Not sampled in  
2018 due to  
restrictions in  
charter duration

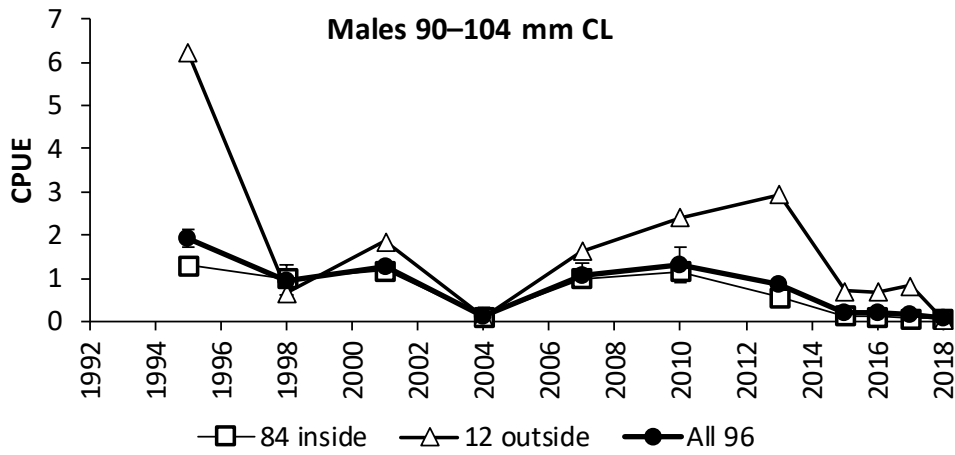
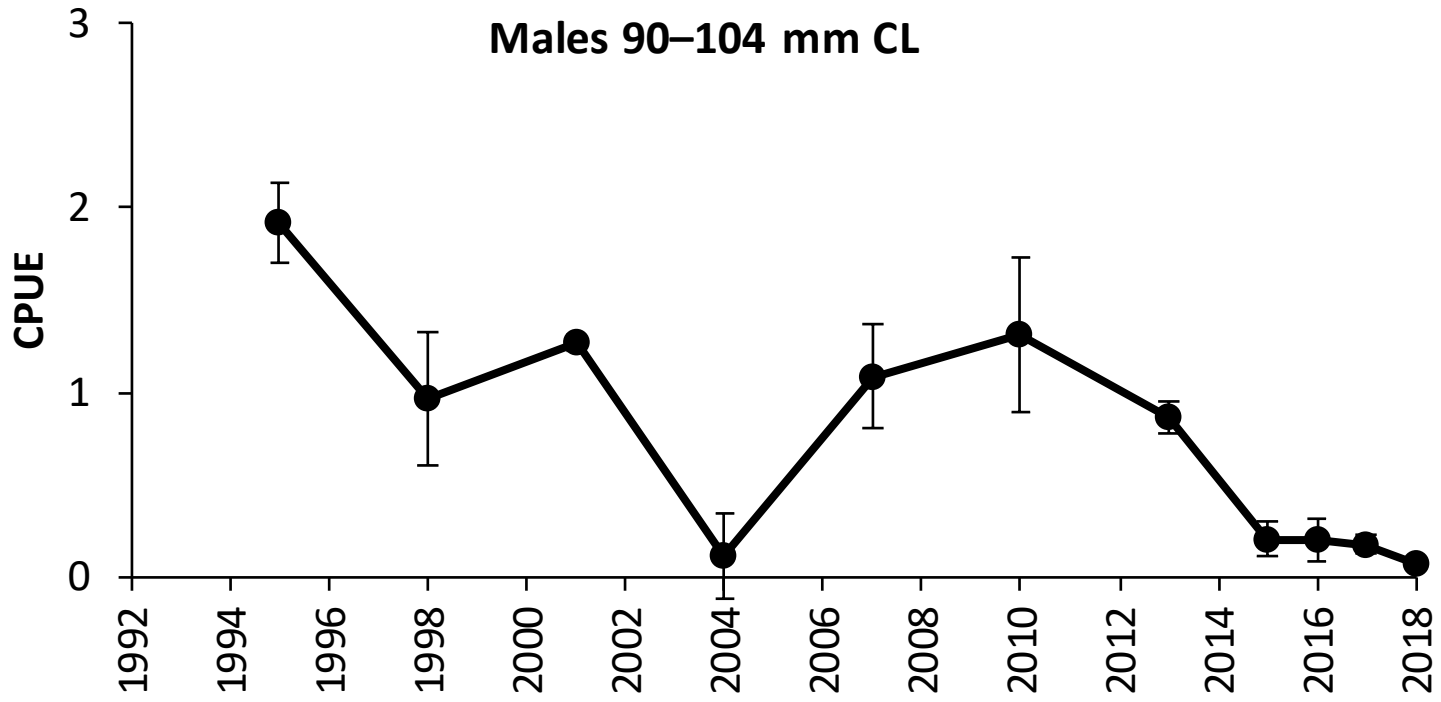


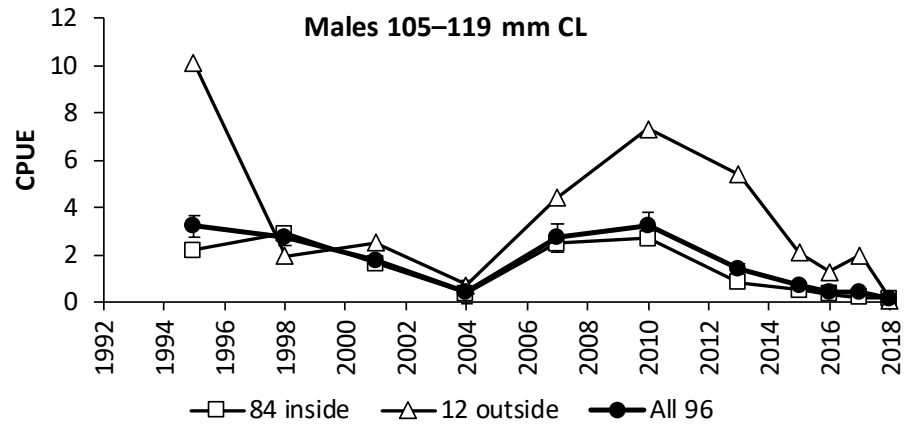
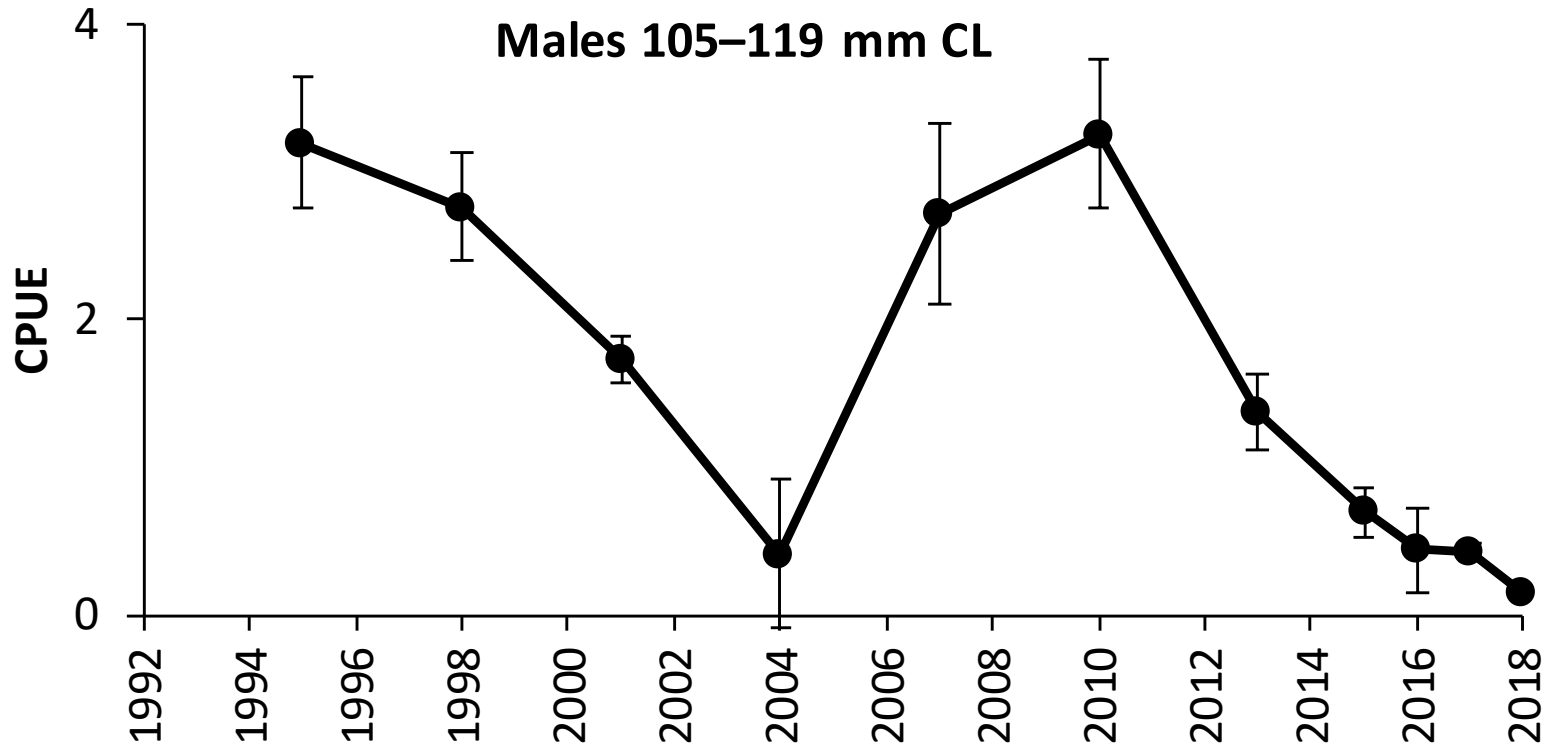
# P/V Stimson

- Normally ADF&G survey charters commercial fishing vessels
- Received 0 viable bids from fleet
- Alaska Wildlife Trooper patrol vessel Stimson stepped up
  - 156 ft
  - Primary function: enforcement of commercial fisheries in the Bering Sea and Bristol Bay

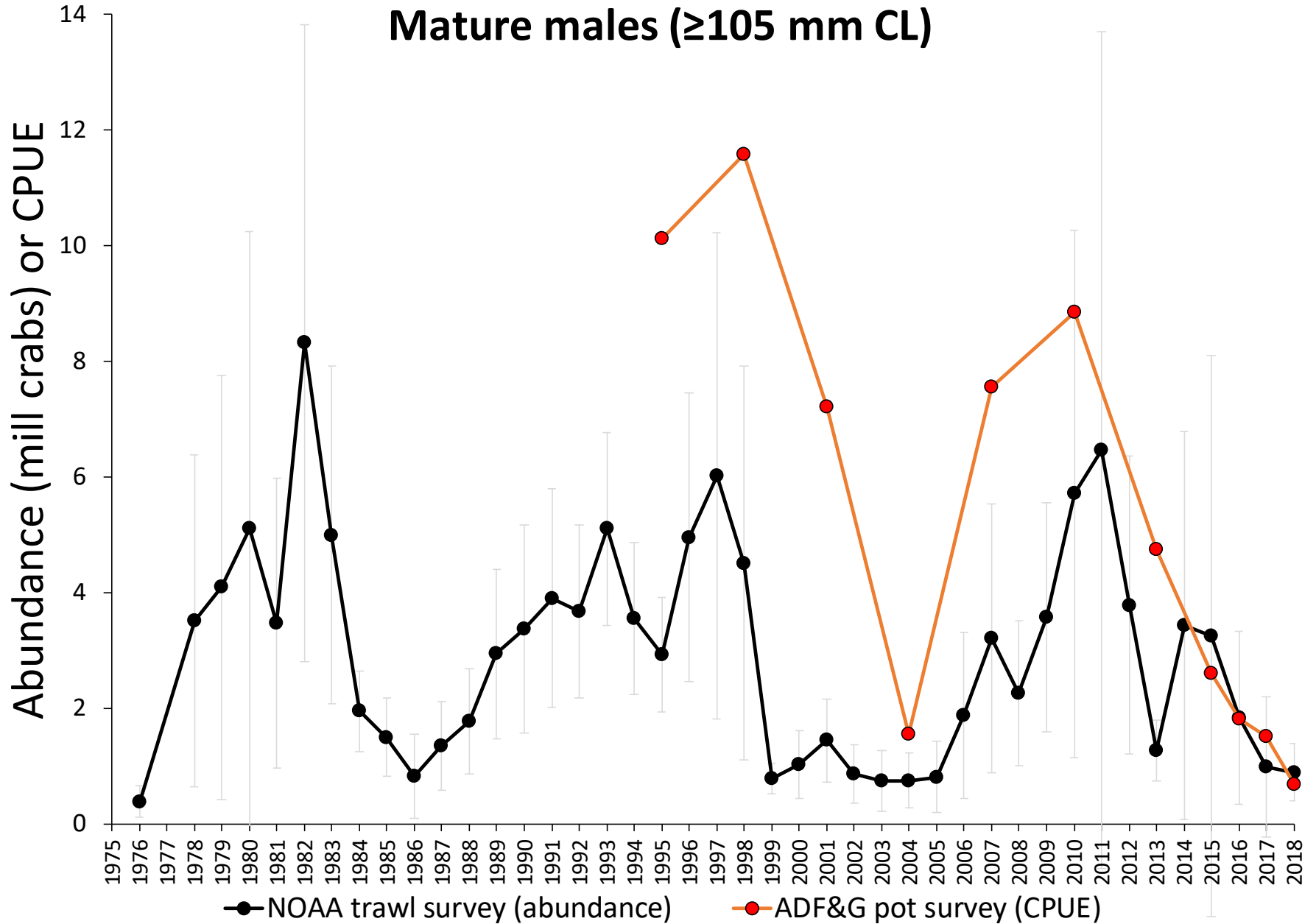


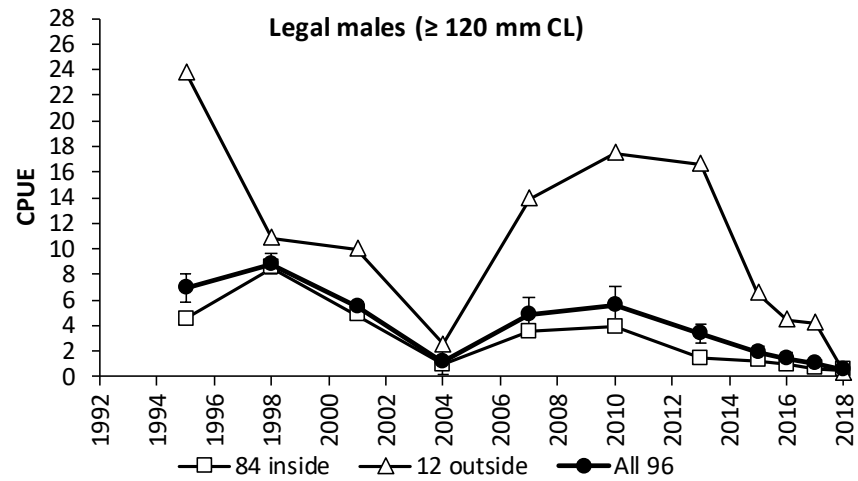
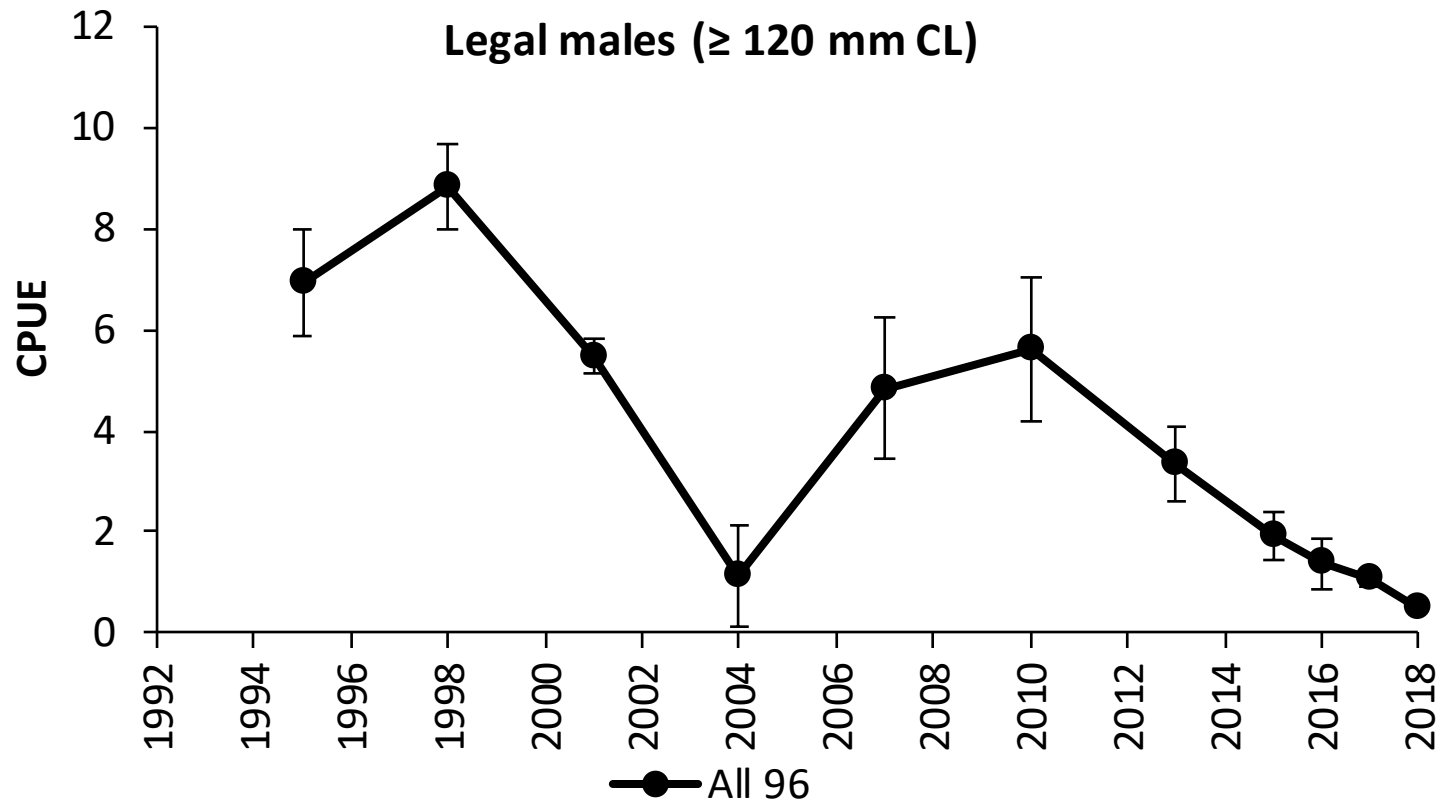






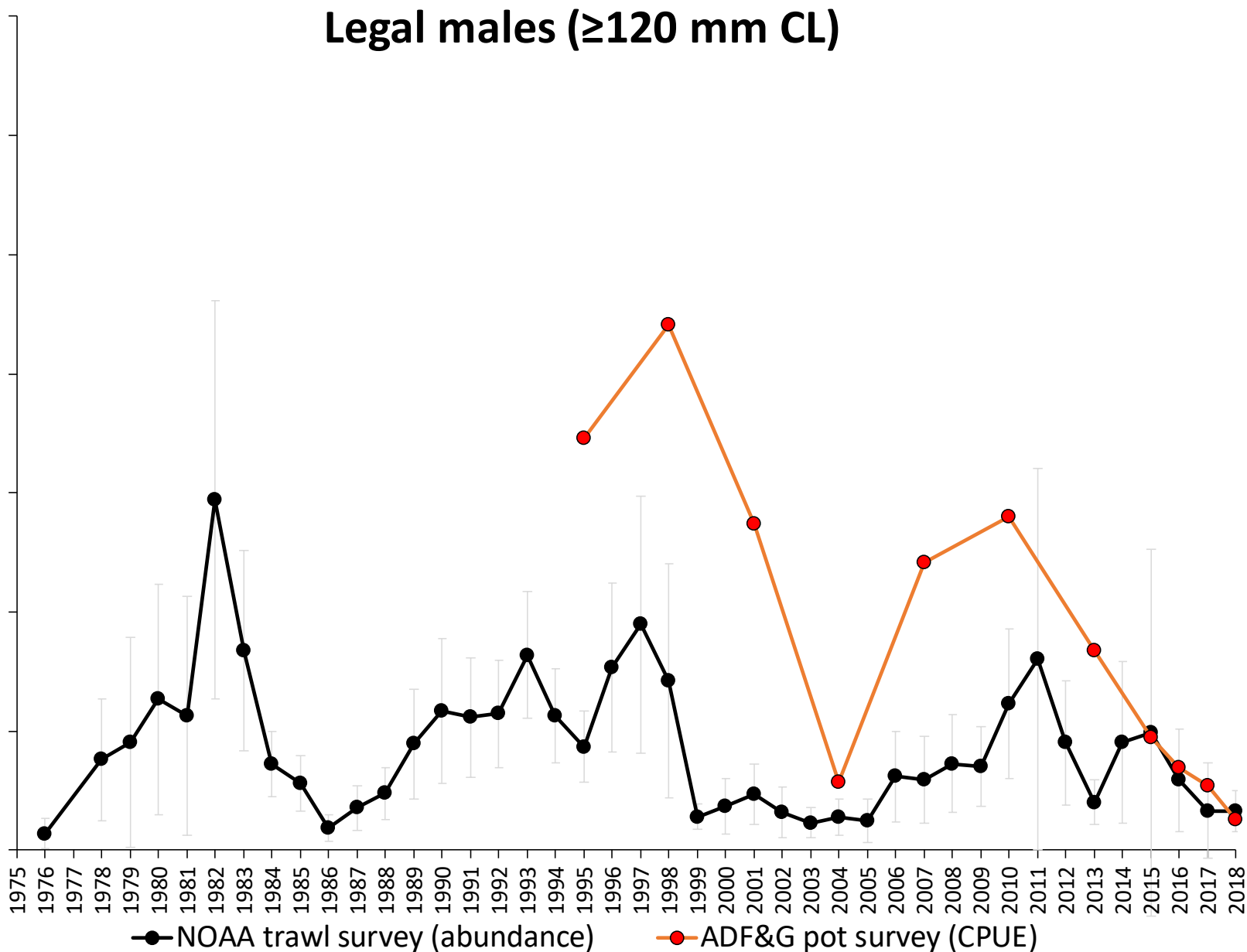
# Mature males ( $\geq 105$ mm CL)



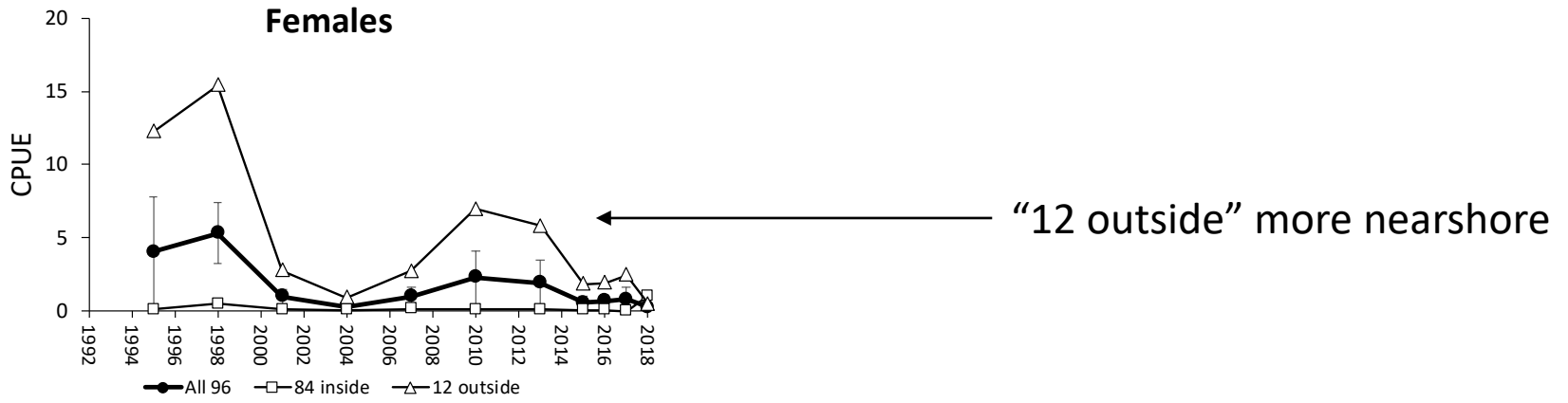
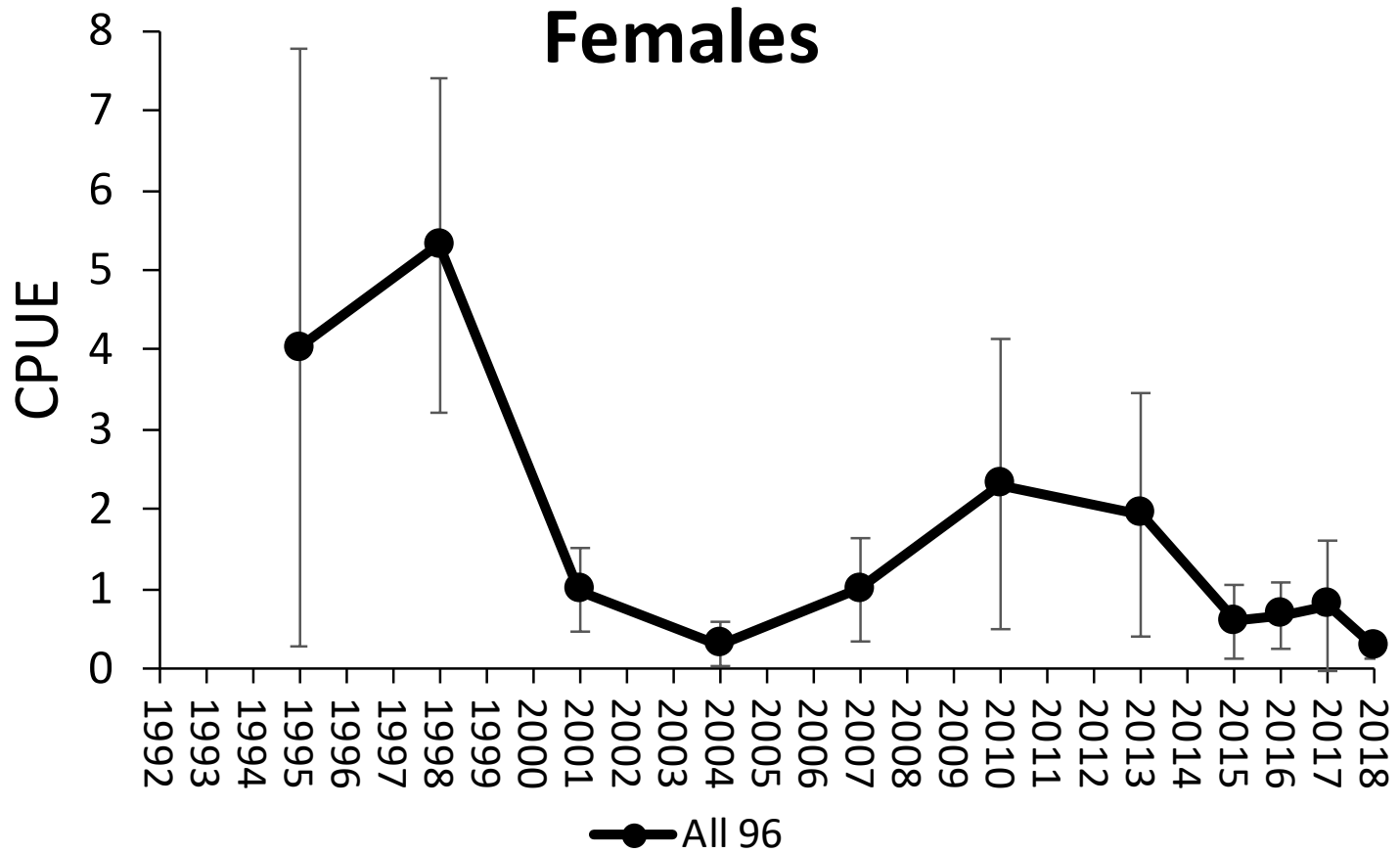


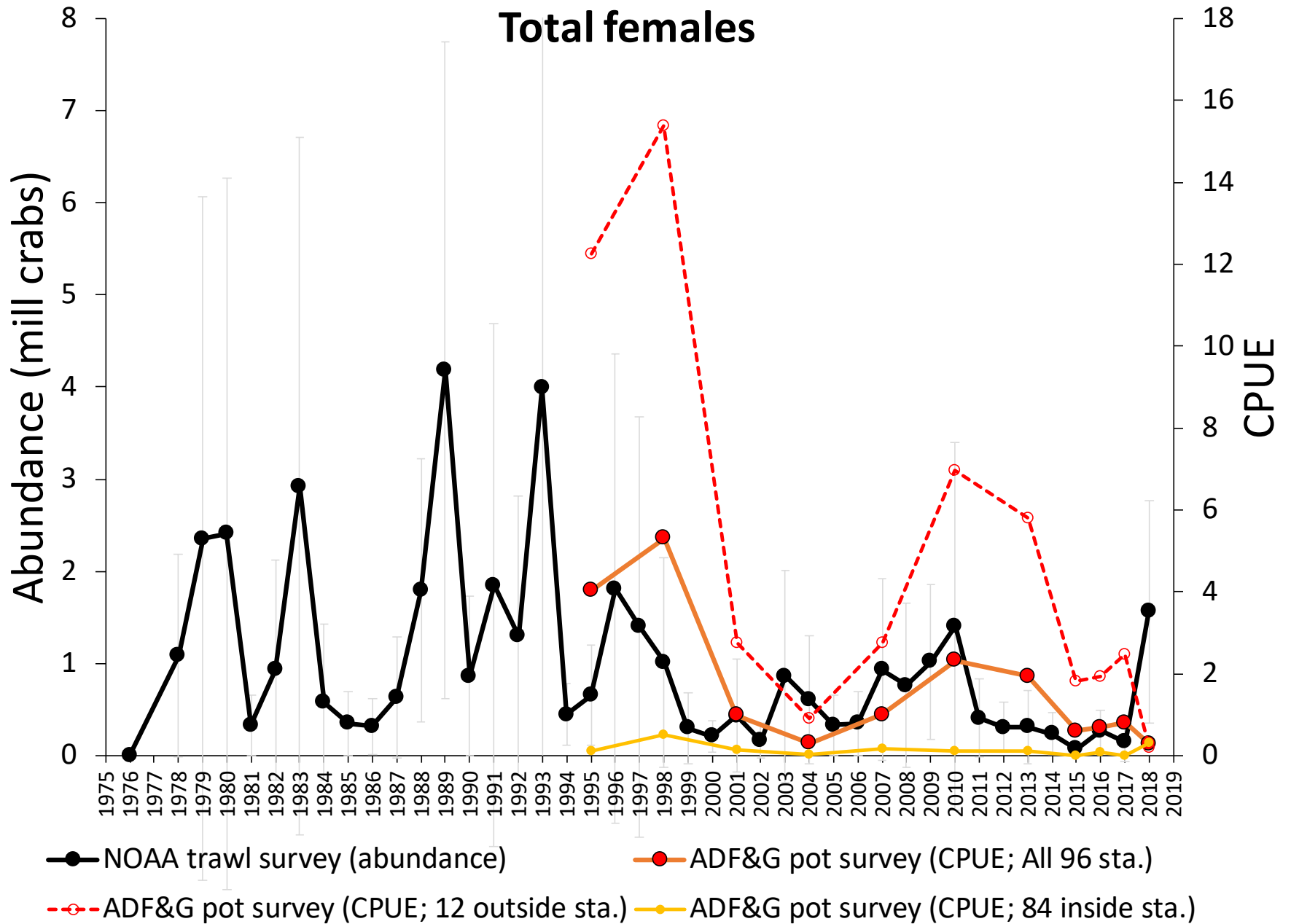
# Legal males ( $\geq 120$ mm CL)

Abundance (mill crabs) or CPUE

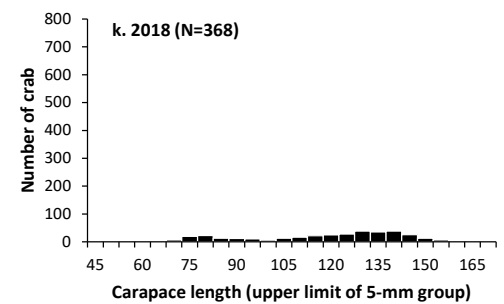
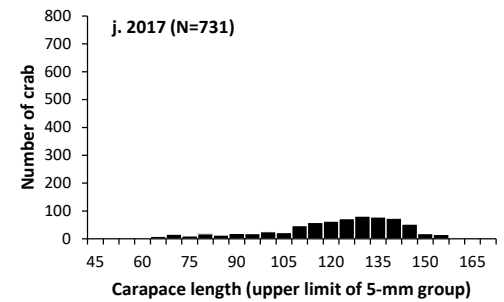
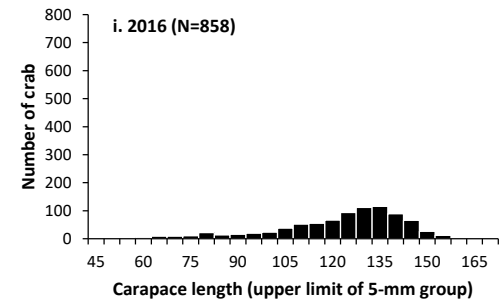
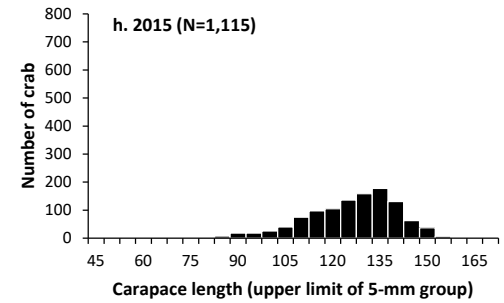
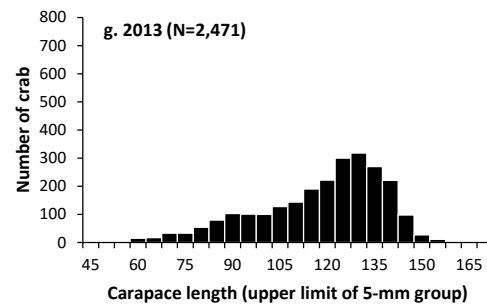
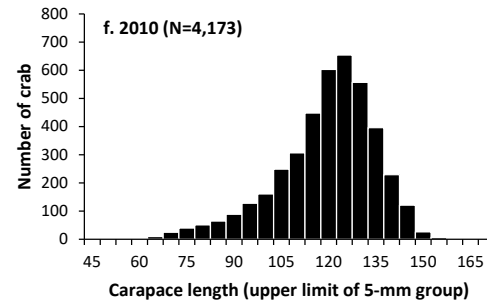
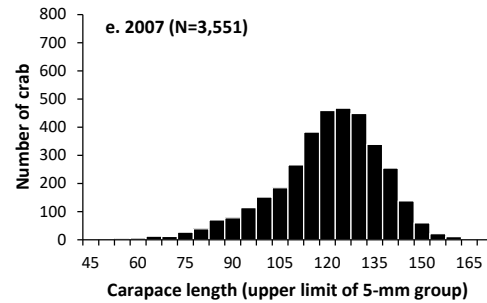
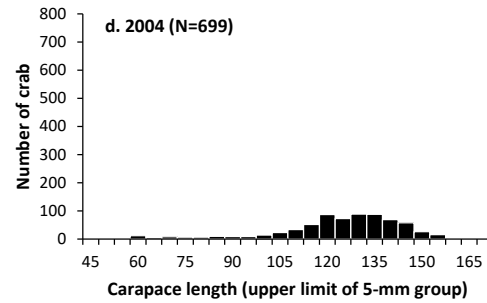
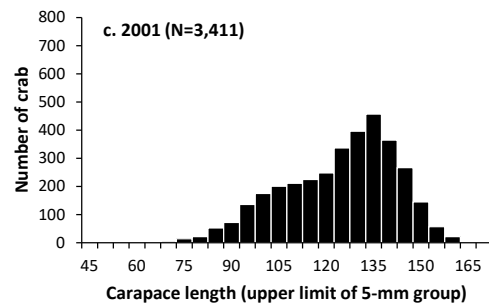
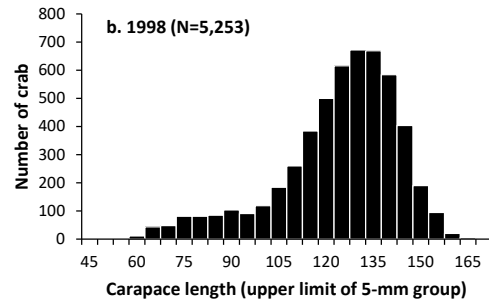
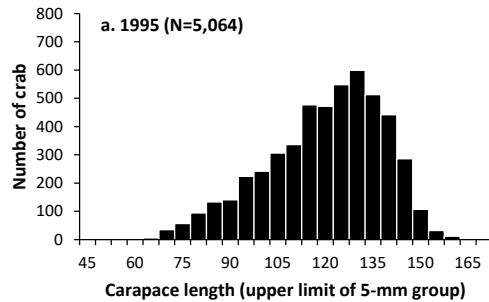




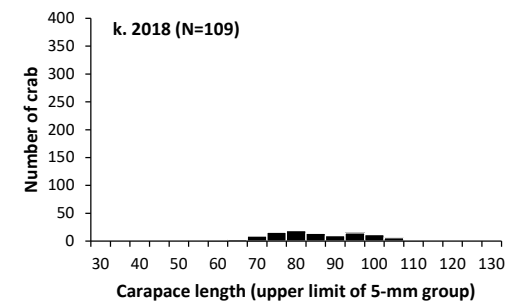
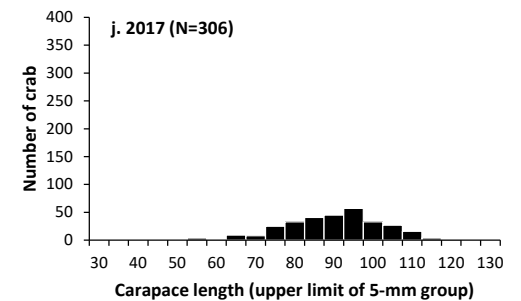
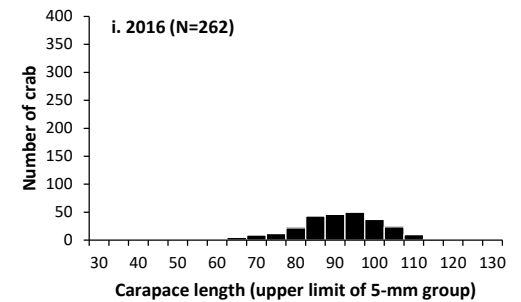
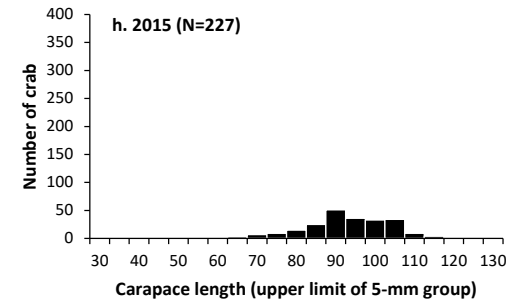
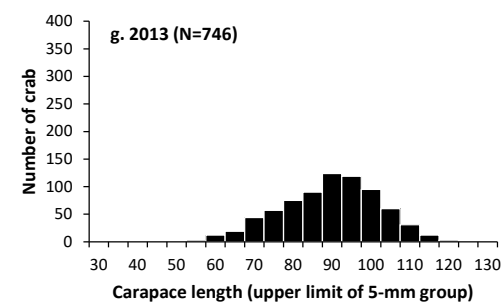
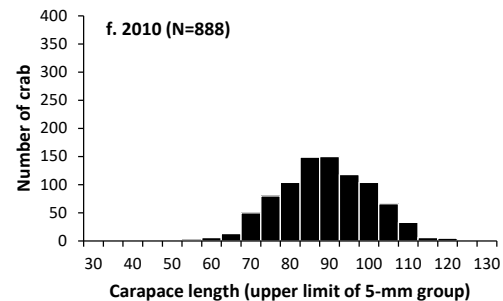
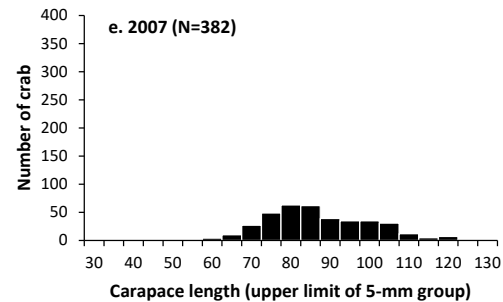
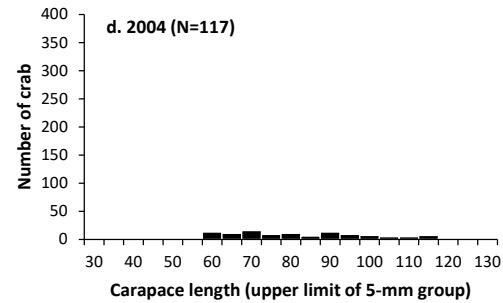
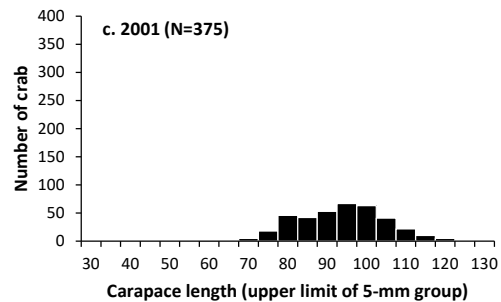
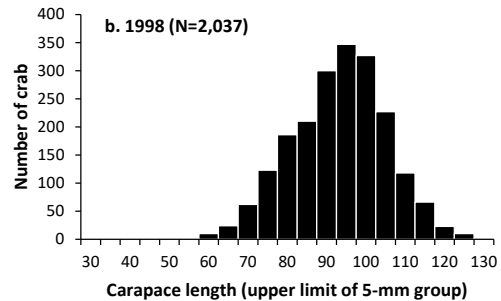
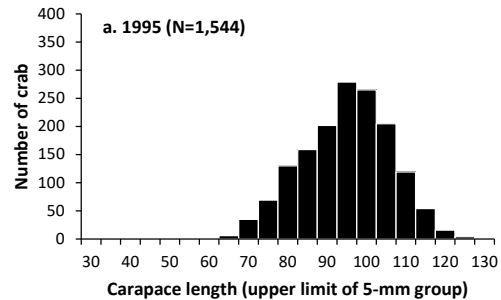




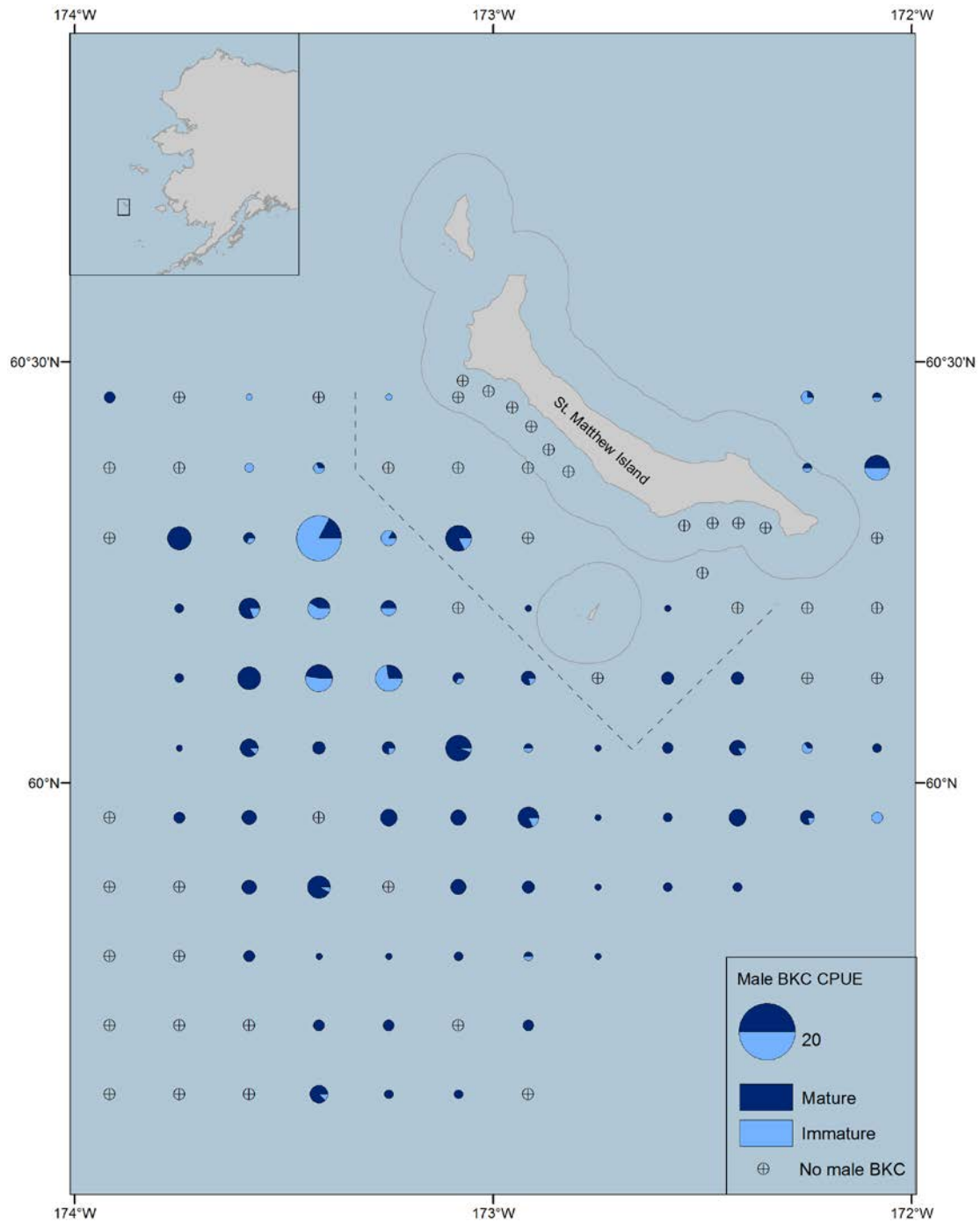
# Males



# Females

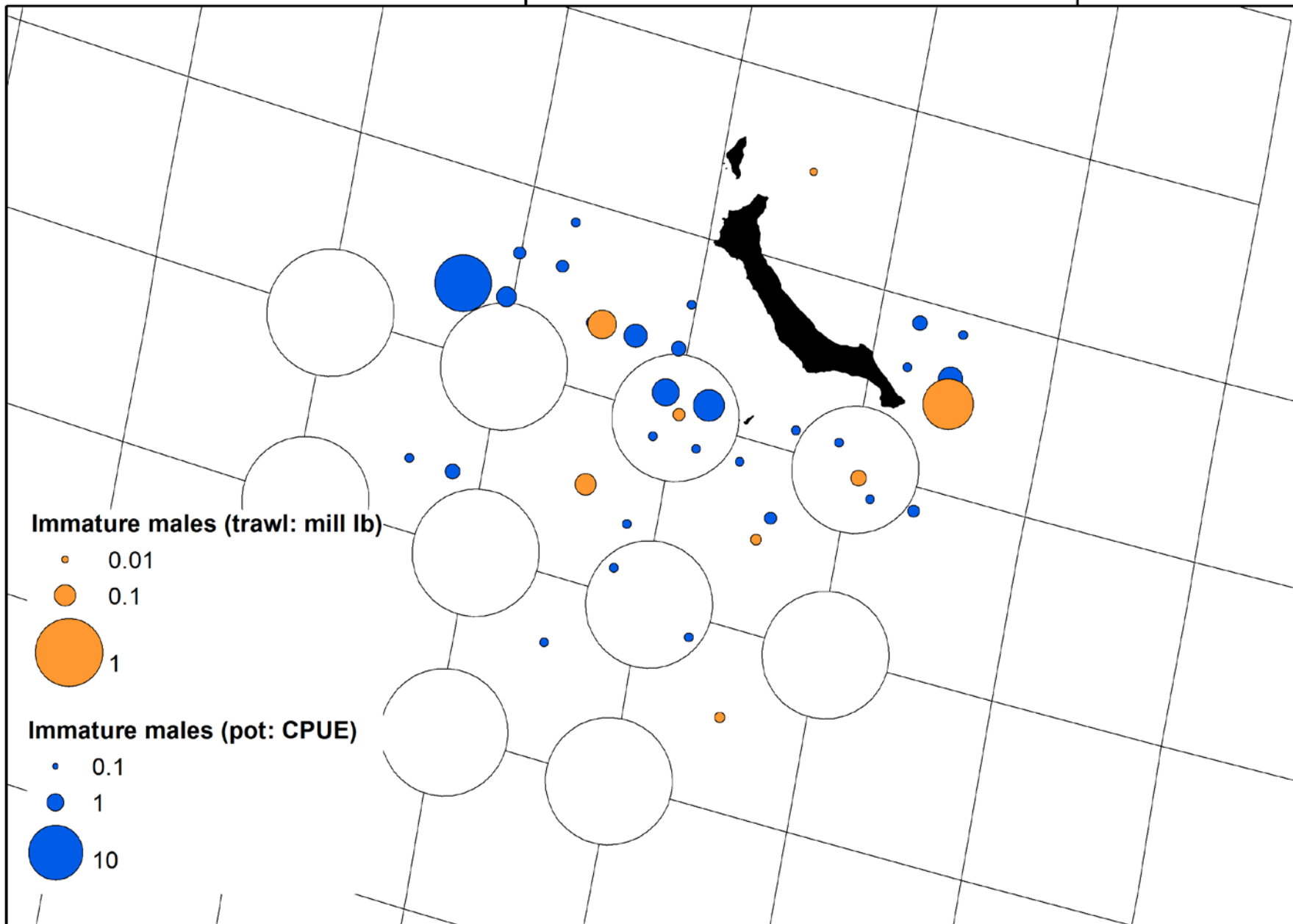


# Male BKC CPUE



174° W

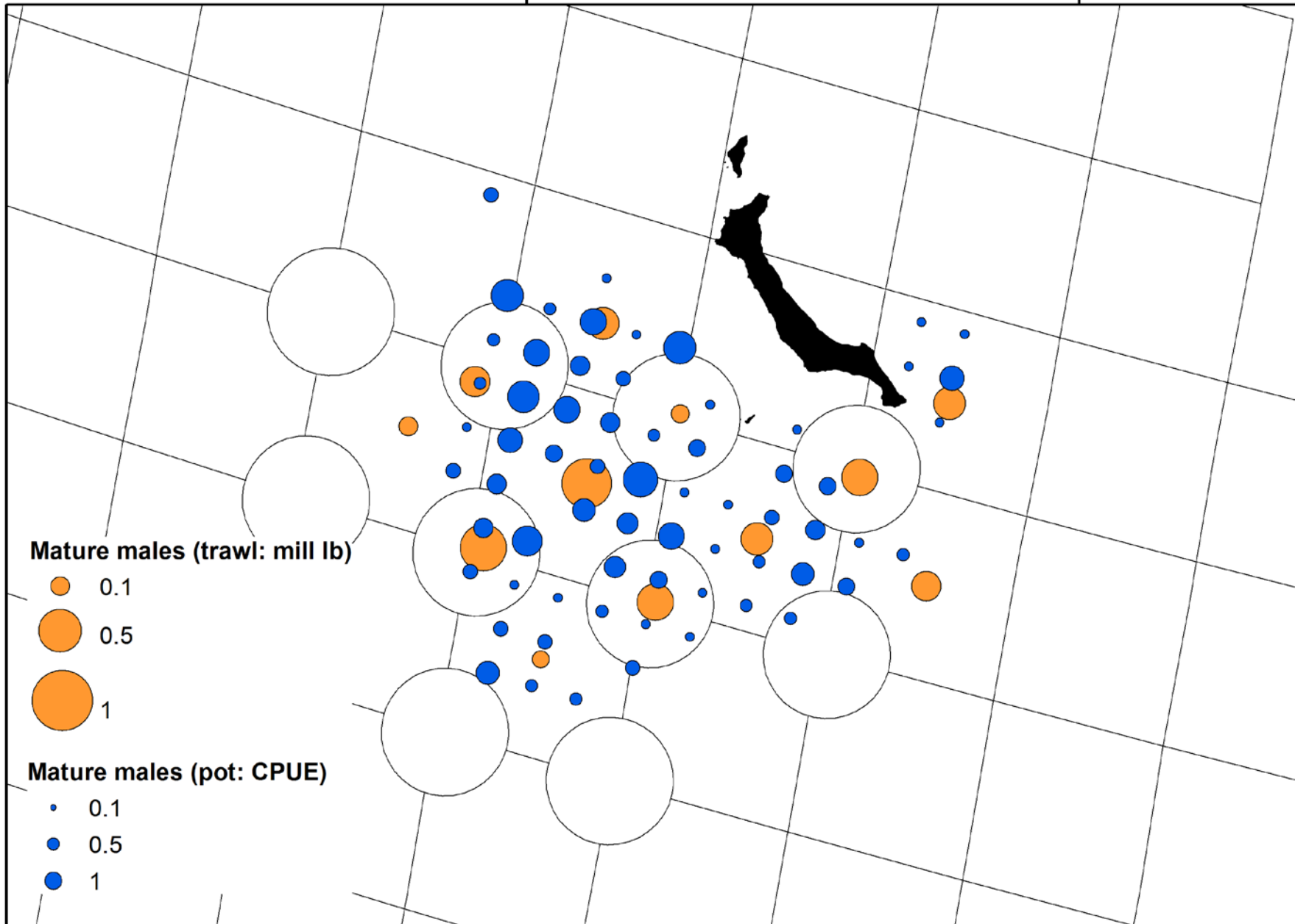
172° W



60

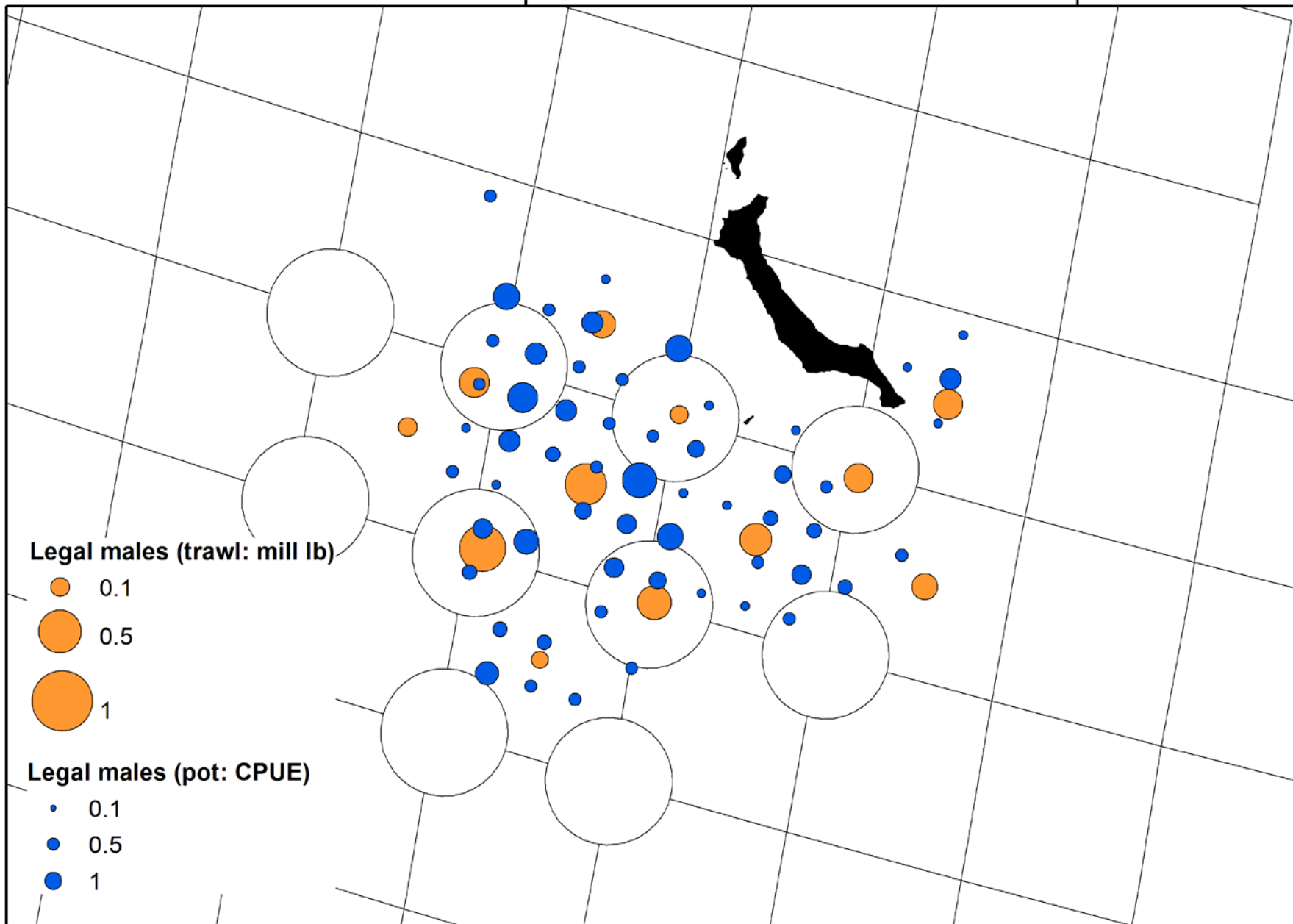
174° W

172° W



174° W

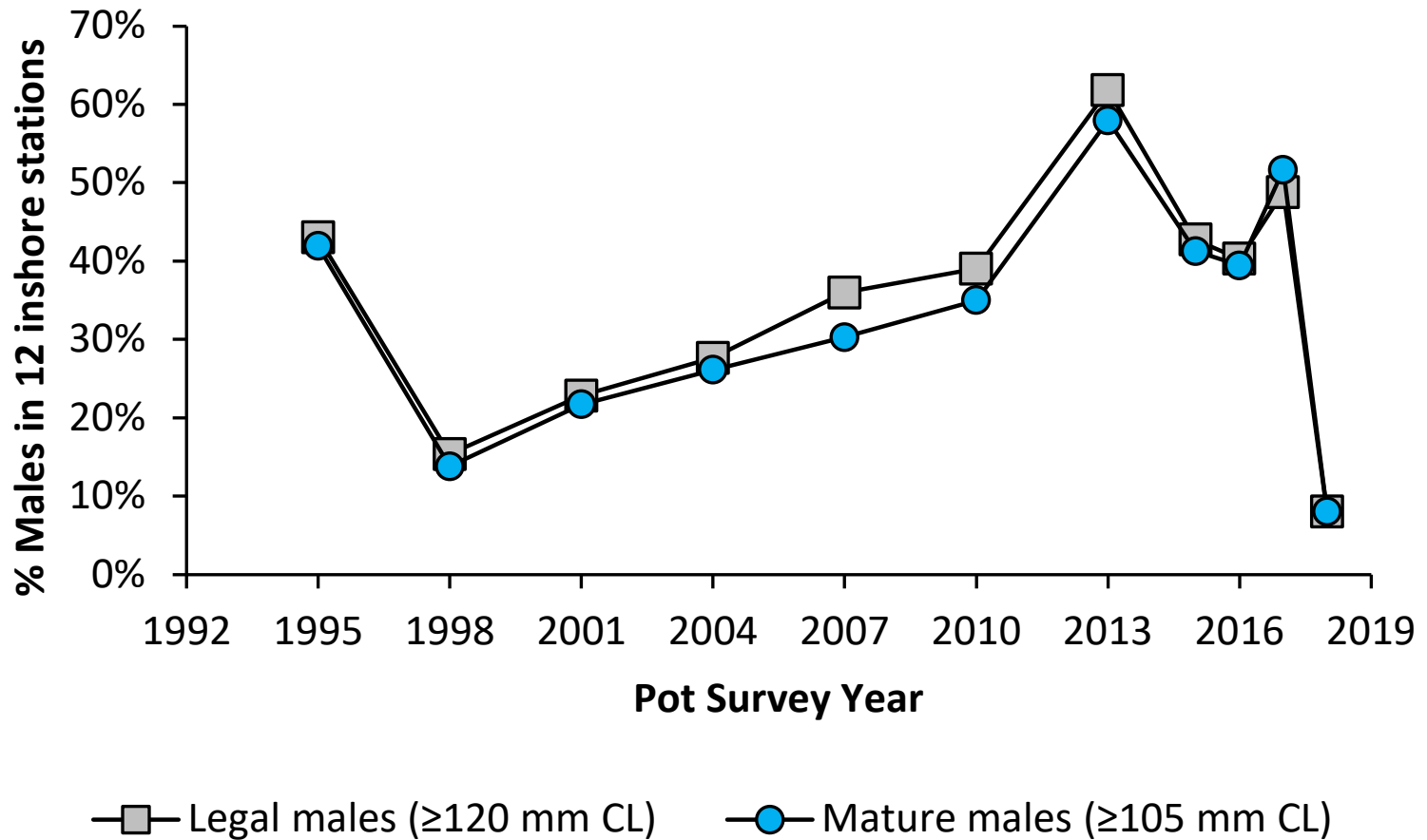
172° W



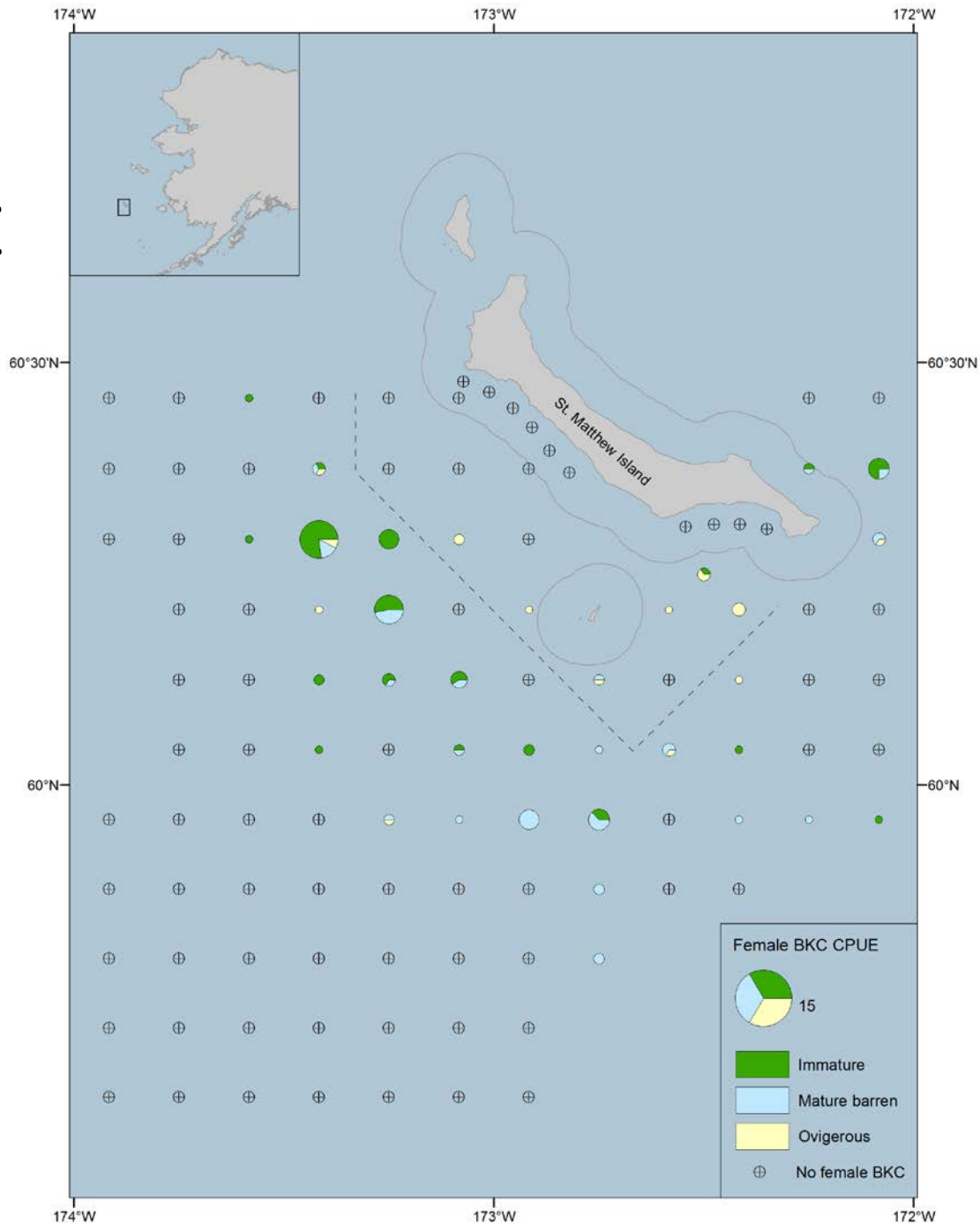
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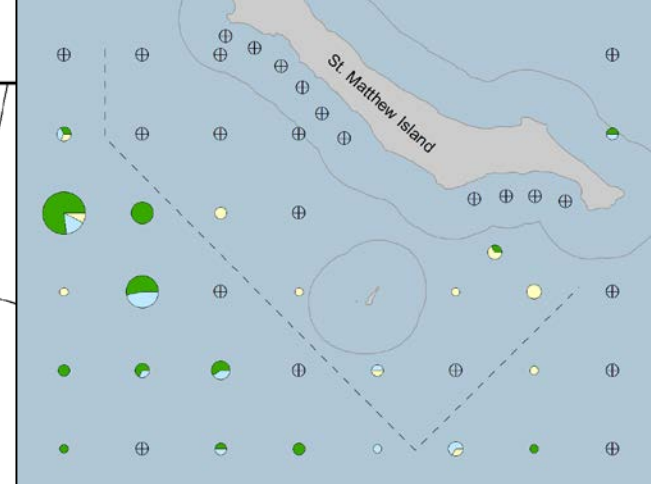
# Contribution of 12 inshore stations



# Female BKC CPUE

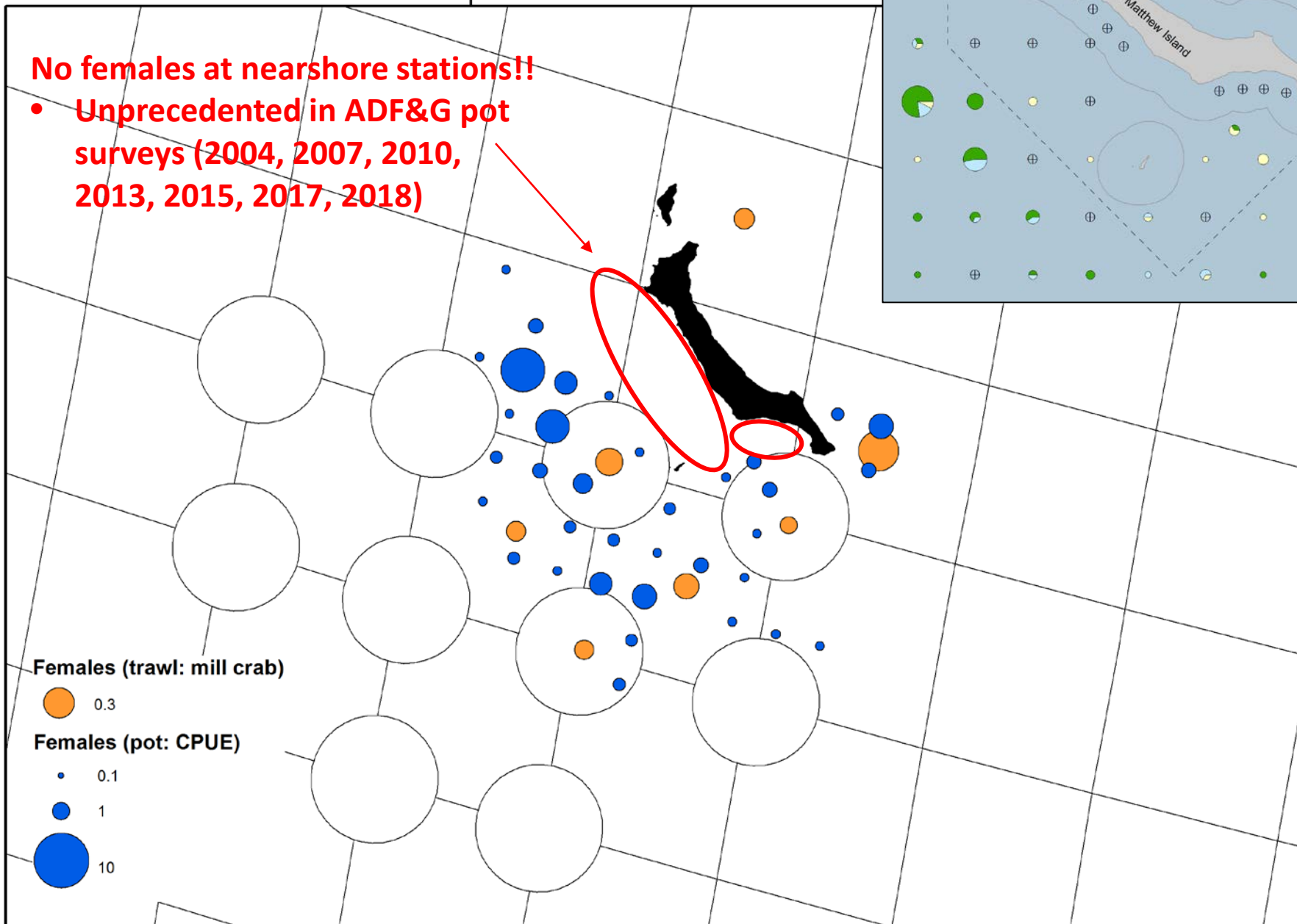


174° W



**No females at nearshore stations!!**

- **Unprecedented in ADF&G pot surveys (2004, 2007, 2010, 2013, 2015, 2017, 2018)**



60

# Contribution of 12 inshore stations

