

# BSFRF Research Update

May Crab Plan Team

05.16.24

- *CPS2 Preliminary Summaries*
- *RKC Research Tags/Camsled*
- *Opilio Research Plans*
- *Disaster Relief*



Scott Goodman | Executive Director  
Bering Sea Fisheries Research Foundation

# PRELIMINARY SUMMARY MAPS

## CPS2 Pot and Trawl Sampling

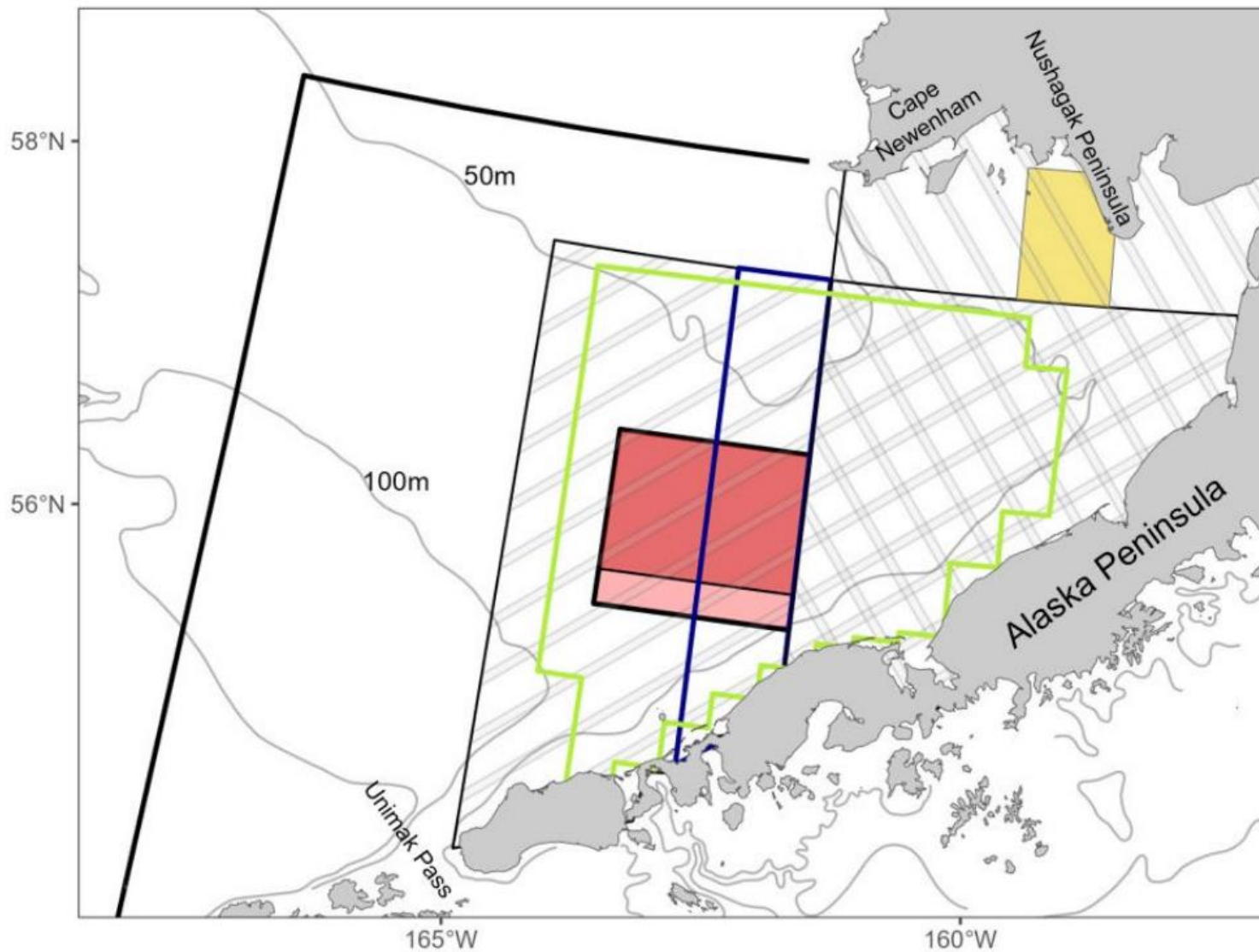
Density Plots for  
Crab – RKC and Bairdi  
Fish – Cod, Pollock, YFS, Rock sole  
with Temperature and Shell Condition layers









BSFRF-Goodman-05.16.24

In collaboration with ADF&G and NOAA

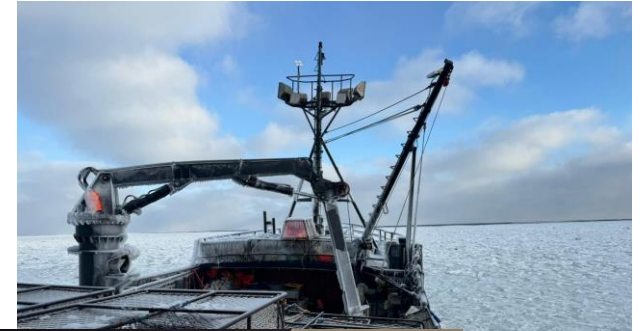
Information presented is part of ongoing research, is not final and may change.

# BBRKC CPS Survey Extent and Closure Areas



- |  |                                 |   |                                 |   |  |
|--|---------------------------------|---|---------------------------------|---|--|
|  | Red King Crab Savings Area      |  | Bristol Bay management boundary |  | Bycatch Limitation Zone 1                |
|  | Red King Crab Savings Subarea   |  | Area 516                        |  | Nearshore Bristol Bay Trawl Closure Area |
|  | Northern Bristol Bay Trawl Area |  | CPS1 survey extent              |   |  |

# Three charters – everybody home safely – work complete



Three charters – everybody home safely – work complete

## Huge thanks to all hands that helped !

- Vessel crews of FV Arctic Lady, FV Seabrooke, and the FV Vesteraalen
- Science party members – 11 people total
- Planning team – several collaborators before and during project
- Data management team – sending daily info, data checking
- Preliminary summary team – mapping of catches, temps, etc.
- BSFRF Board and other funding partners

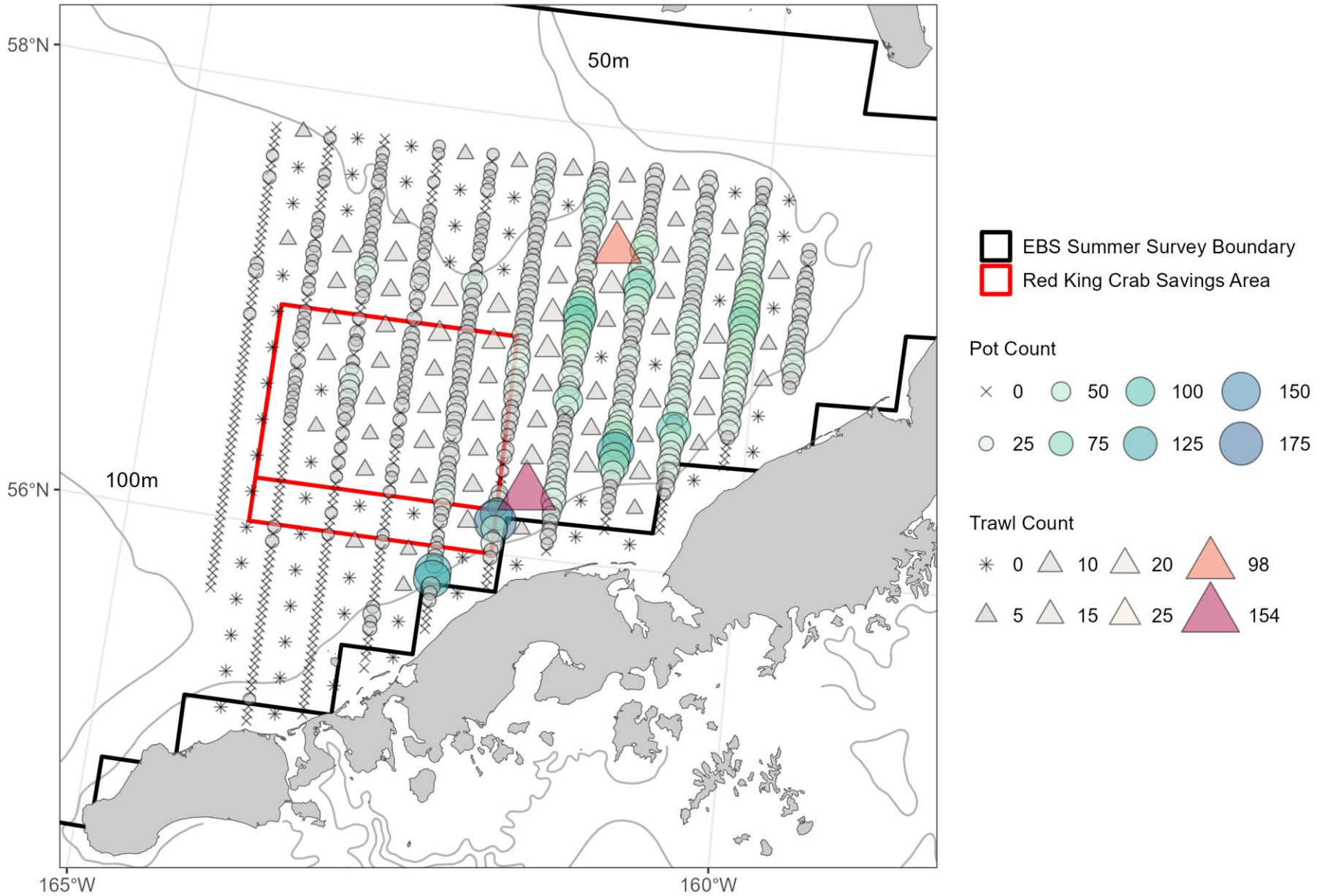
# CPS2 Summary Maps

(CPUE maps are catch/pot lift and catch/tow)

- Study extent and management boundaries
- Total male and female BBRKC densities
- Mature male BBRKC densities
- Mature female BBRKC densities
- Immature male BBRKC densities
- Immature female BBRKC densities
- Total male and female bairdi densities
- Male bairdi densities
- Female bairdi densities
- Pacific cod densities
- Pollock densities
- Yellowfin sole densities
- Rock sole densities
- Observed temperature maps (as layer)
- Shell condition maps

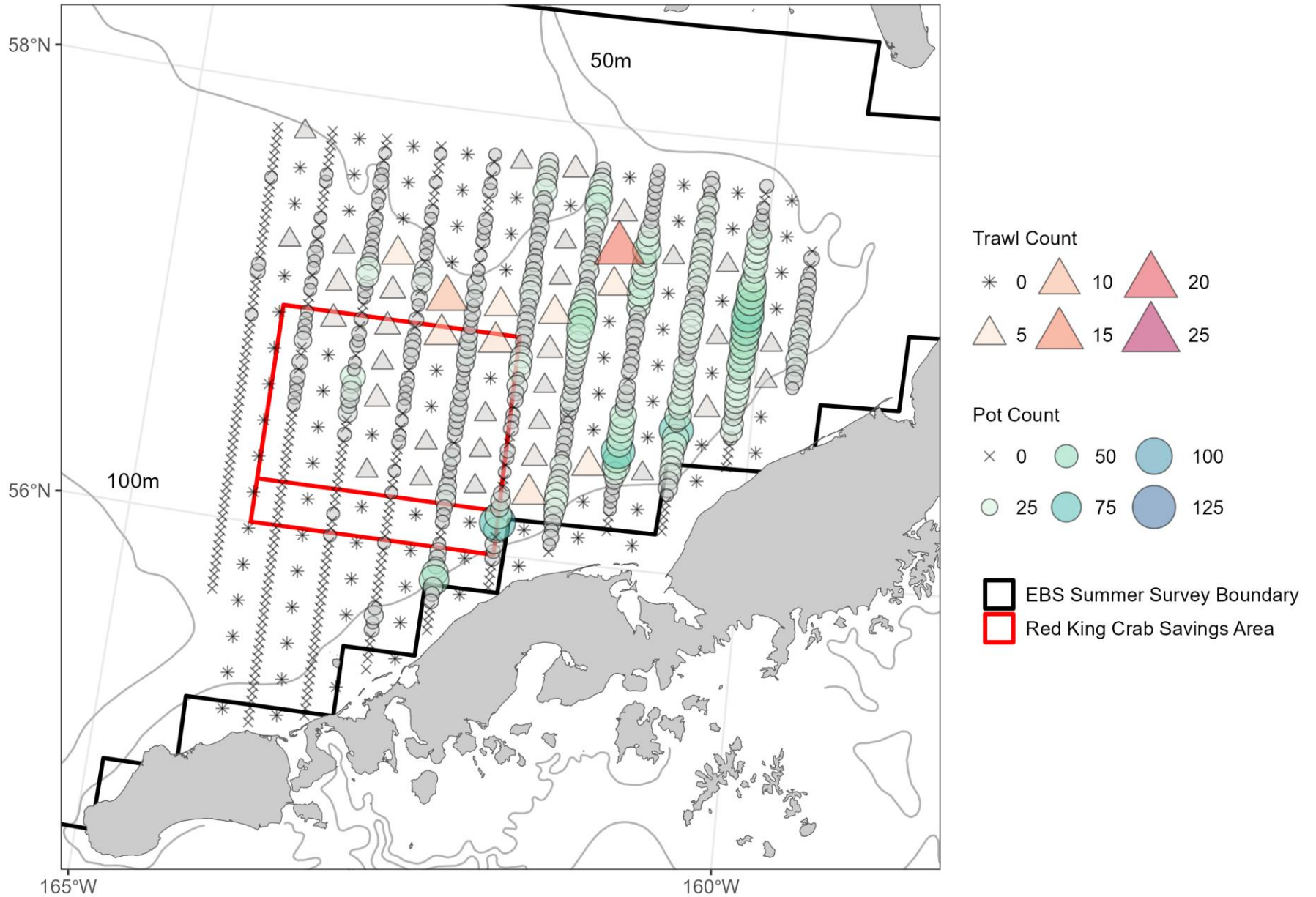
# 2024 BBRKC Collaborative Pot Sampling

Total BBRKC



# 2024 BBRKC Collaborative Pot Sampling

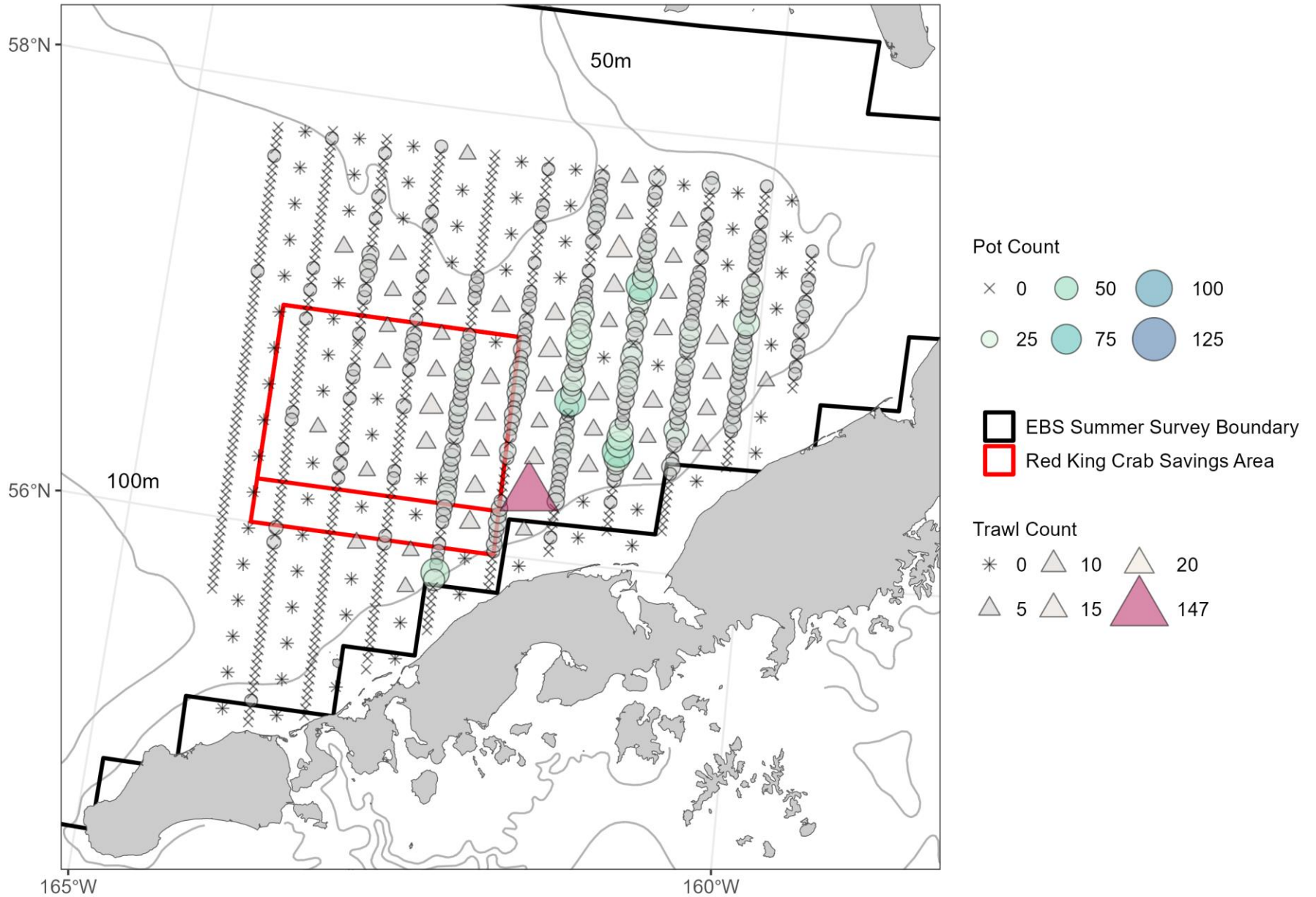
Mature male ( $\geq 120\text{mm}$ )





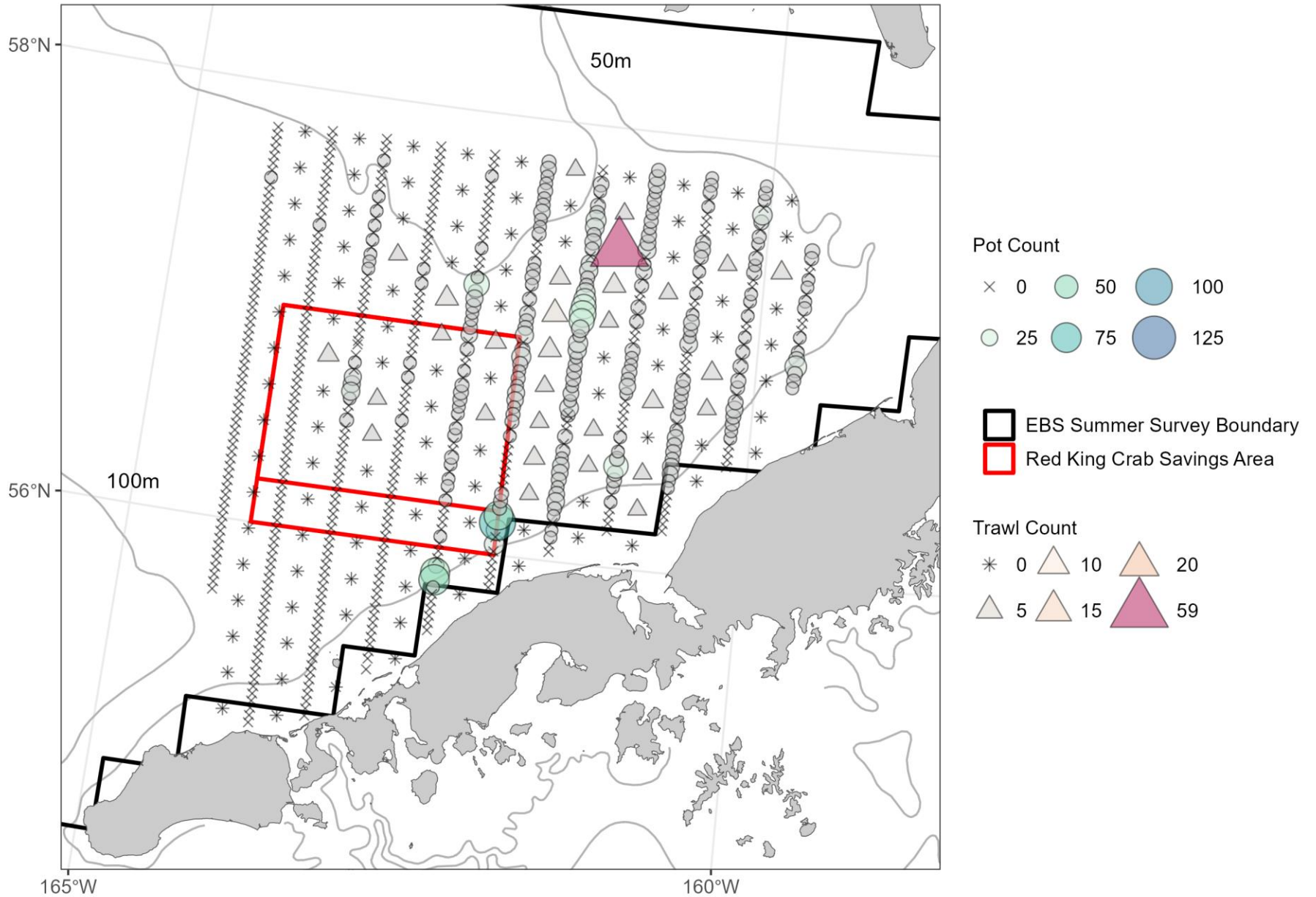
# 2024 BBRKC Collaborative Pot Sampling

Mature female



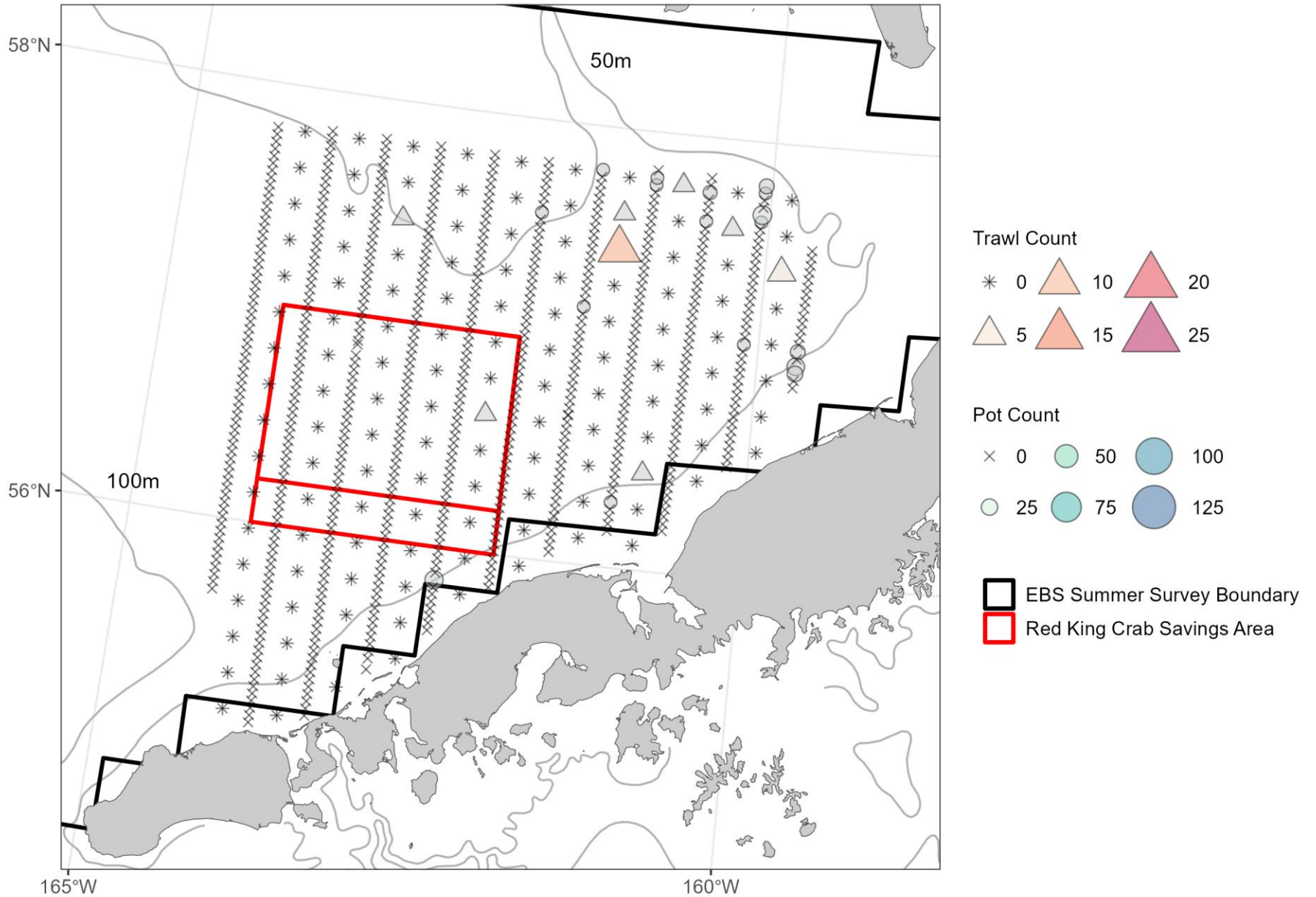
# 2024 BBRKC Collaborative Pot Sampling

Immature male (< 120mm)



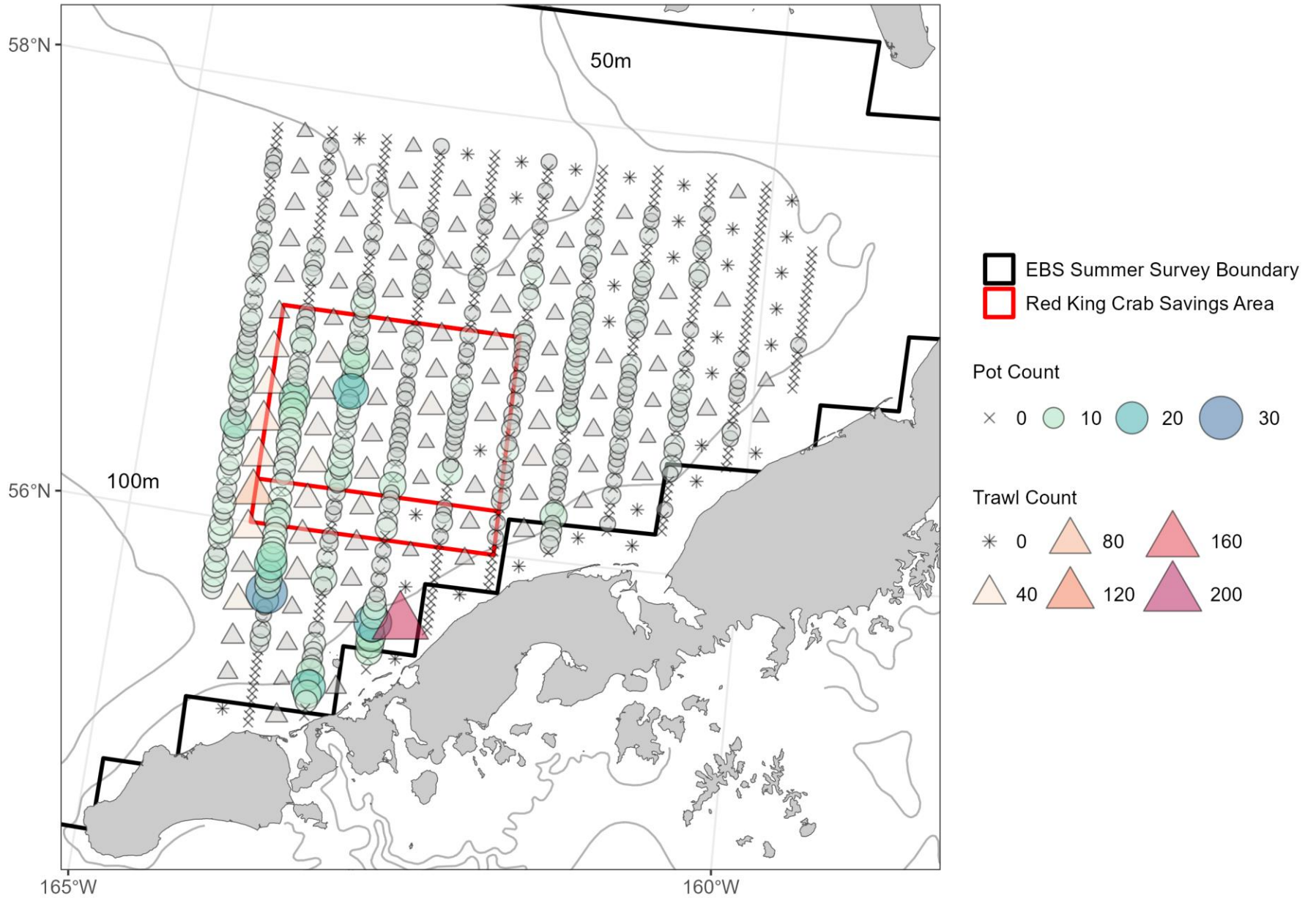
# 2024 BBRKC Collaborative Pot Sampling

Immature female



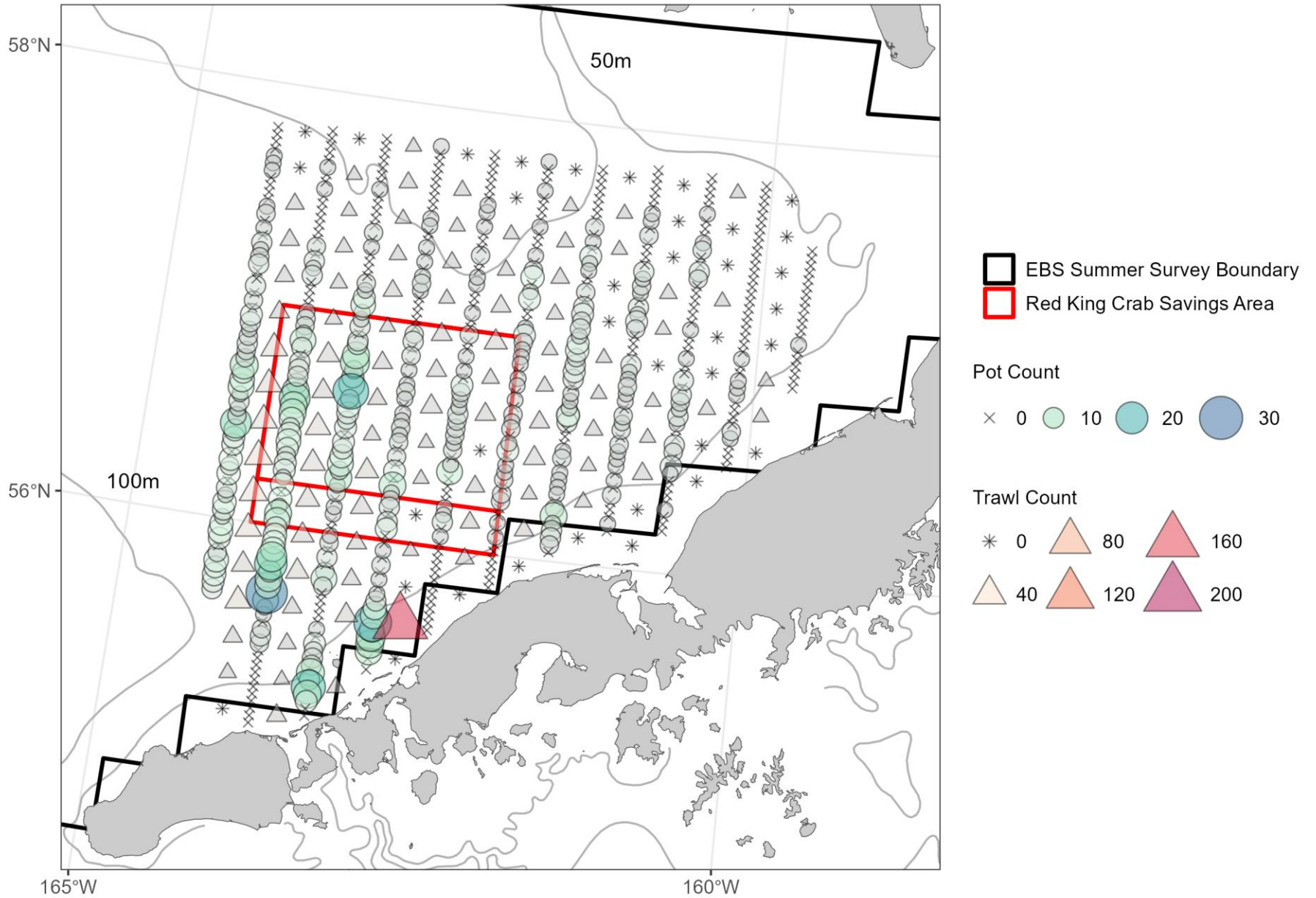
# 2024 BBRKC Collaborative Pot Sampling

Tanner crab



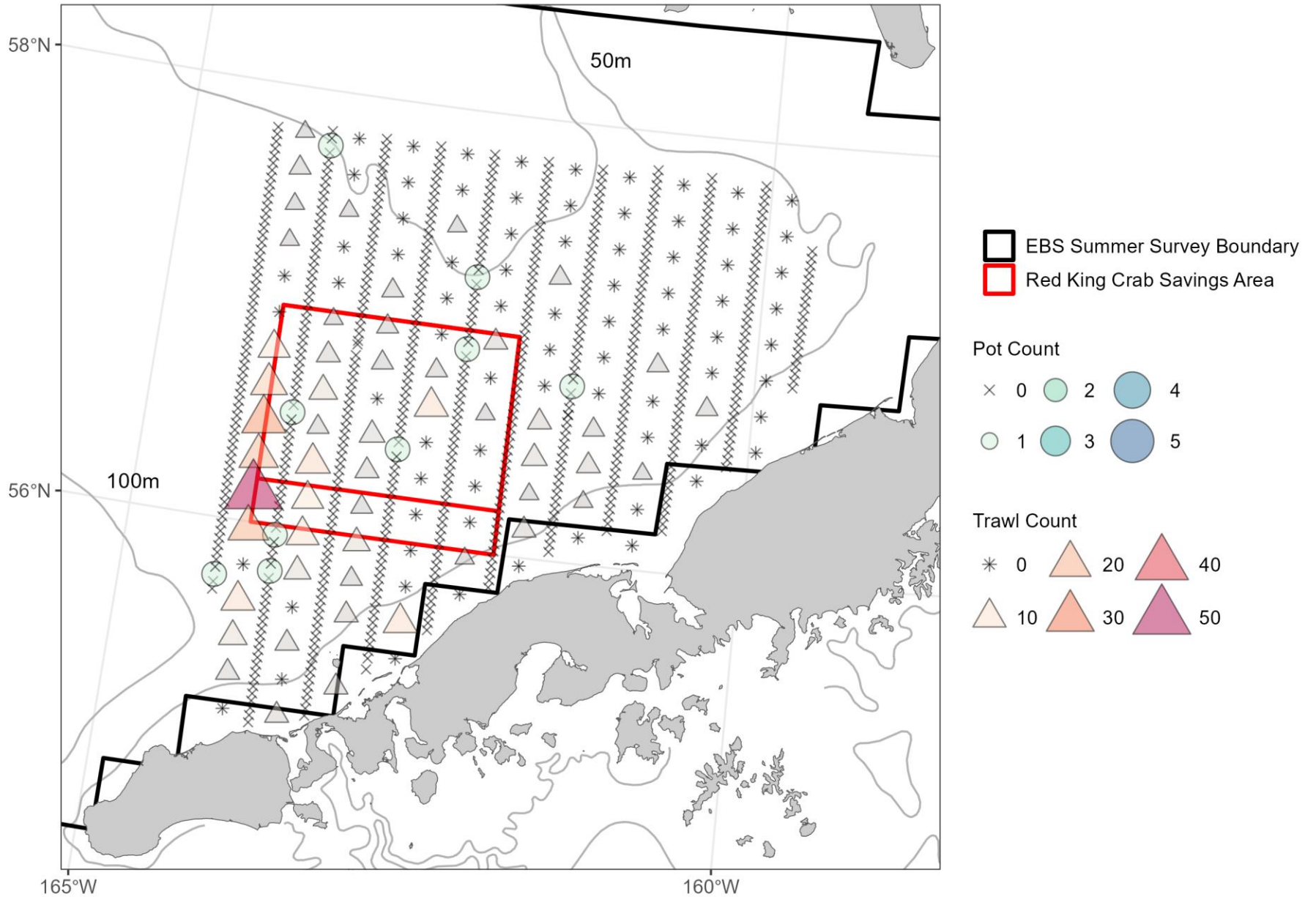
# 2024 BBRKC Collaborative Pot Sampling

Male Tanner crab



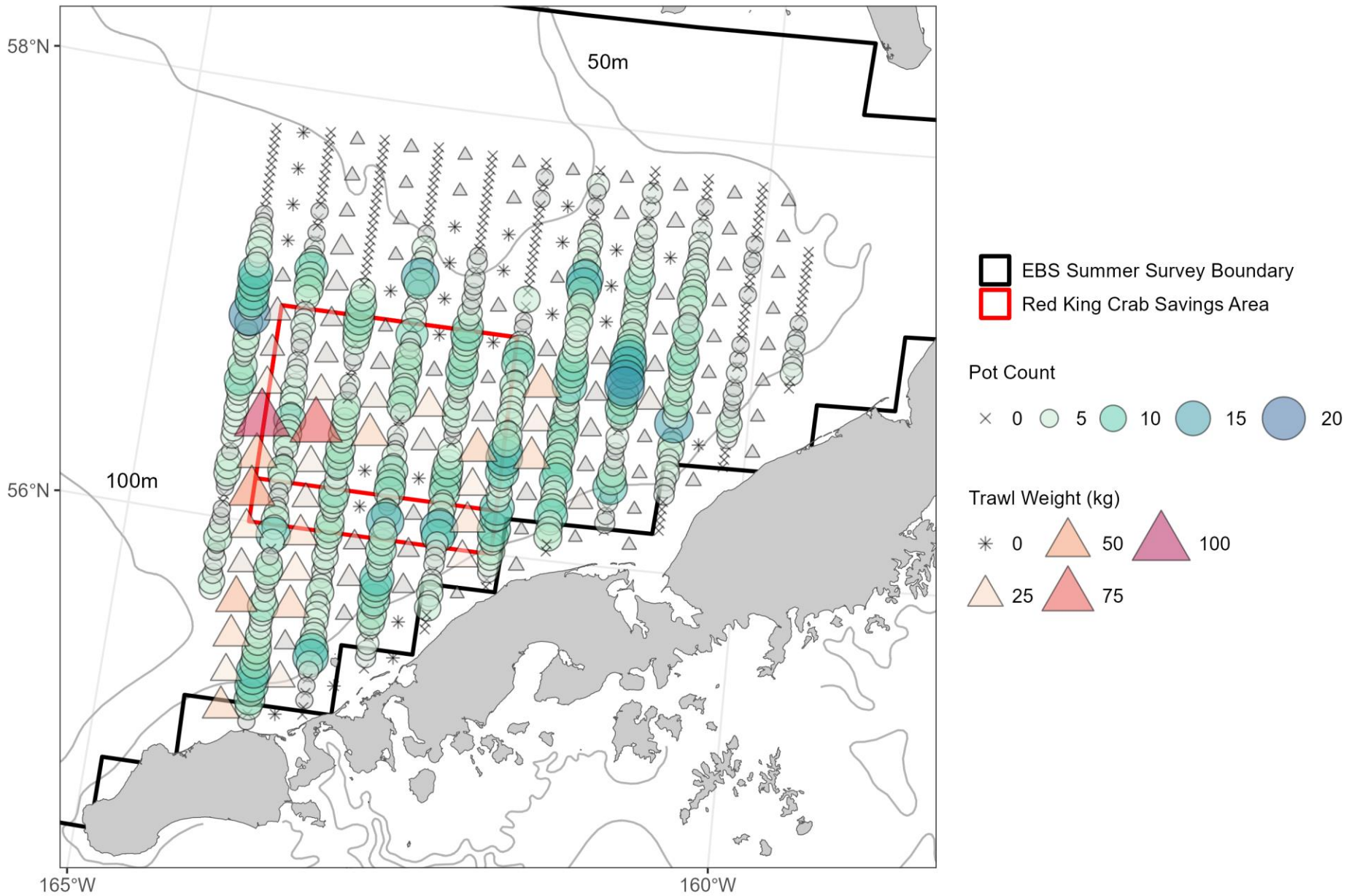
# 2024 BBRKC Collaborative Pot Sampling

Female Tanner crab



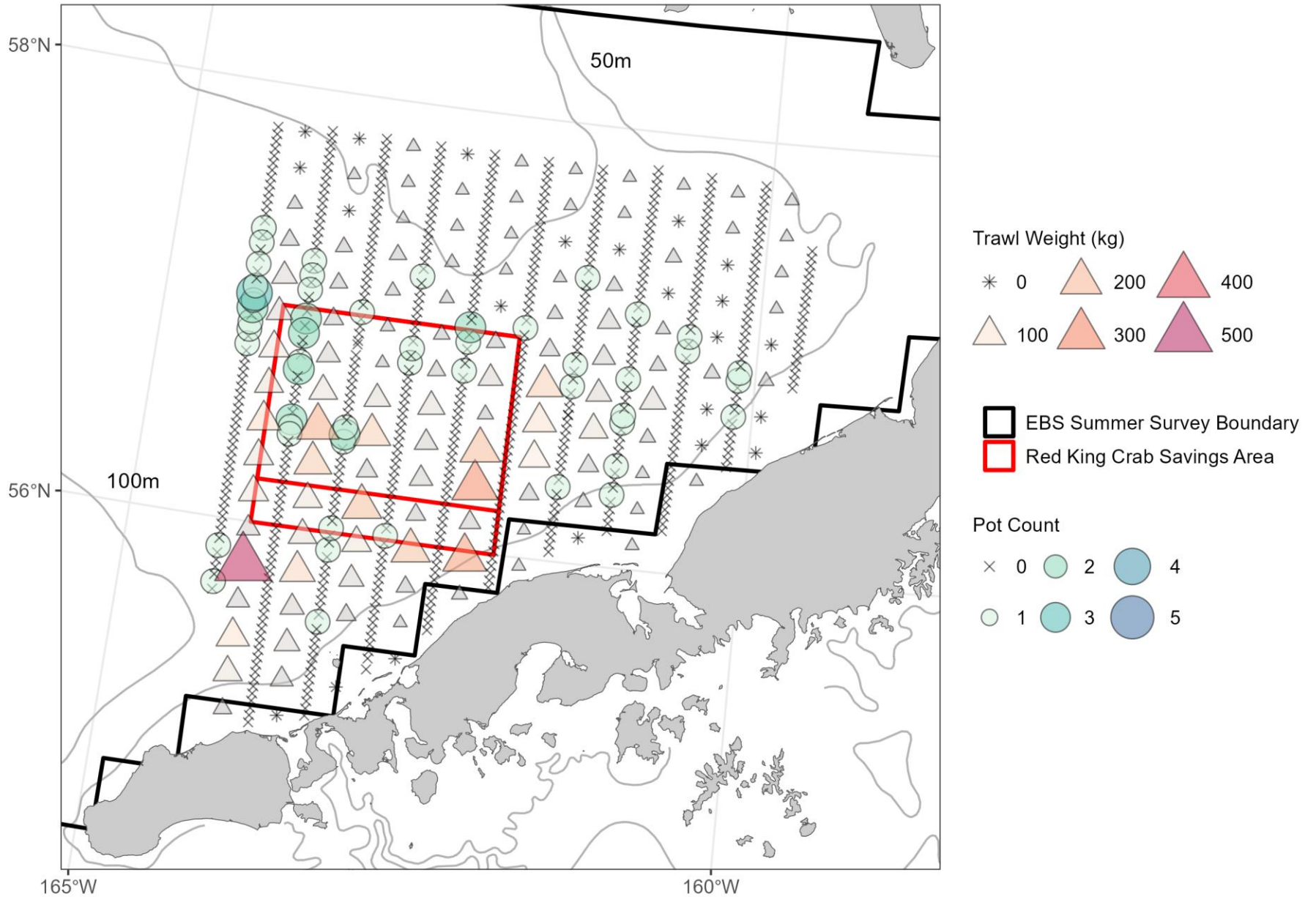
# 2024 BBRKC Collaborative Pot Sampling

Pacific cod



# 2024 BBRKC Collaborative Pot Sampling

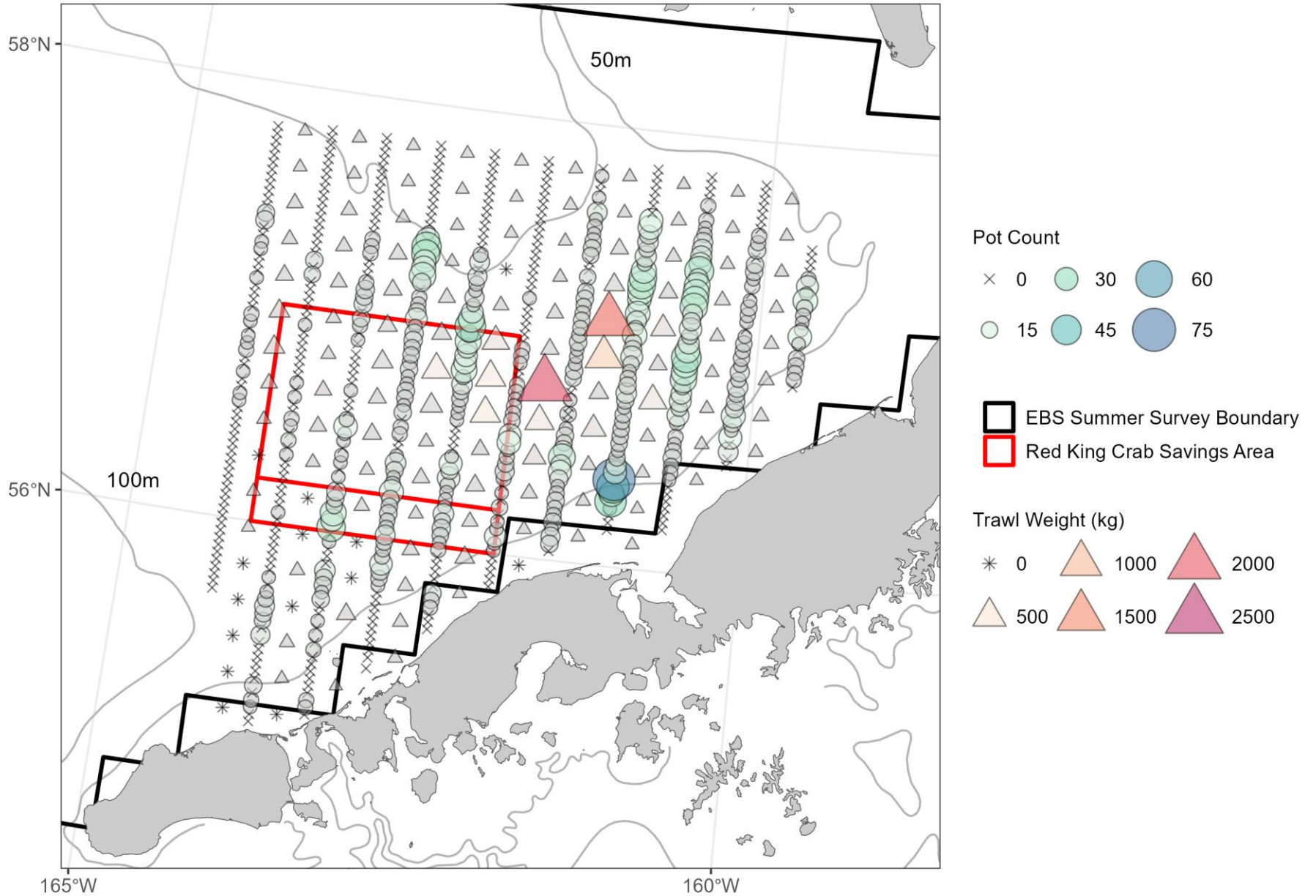
Pollock





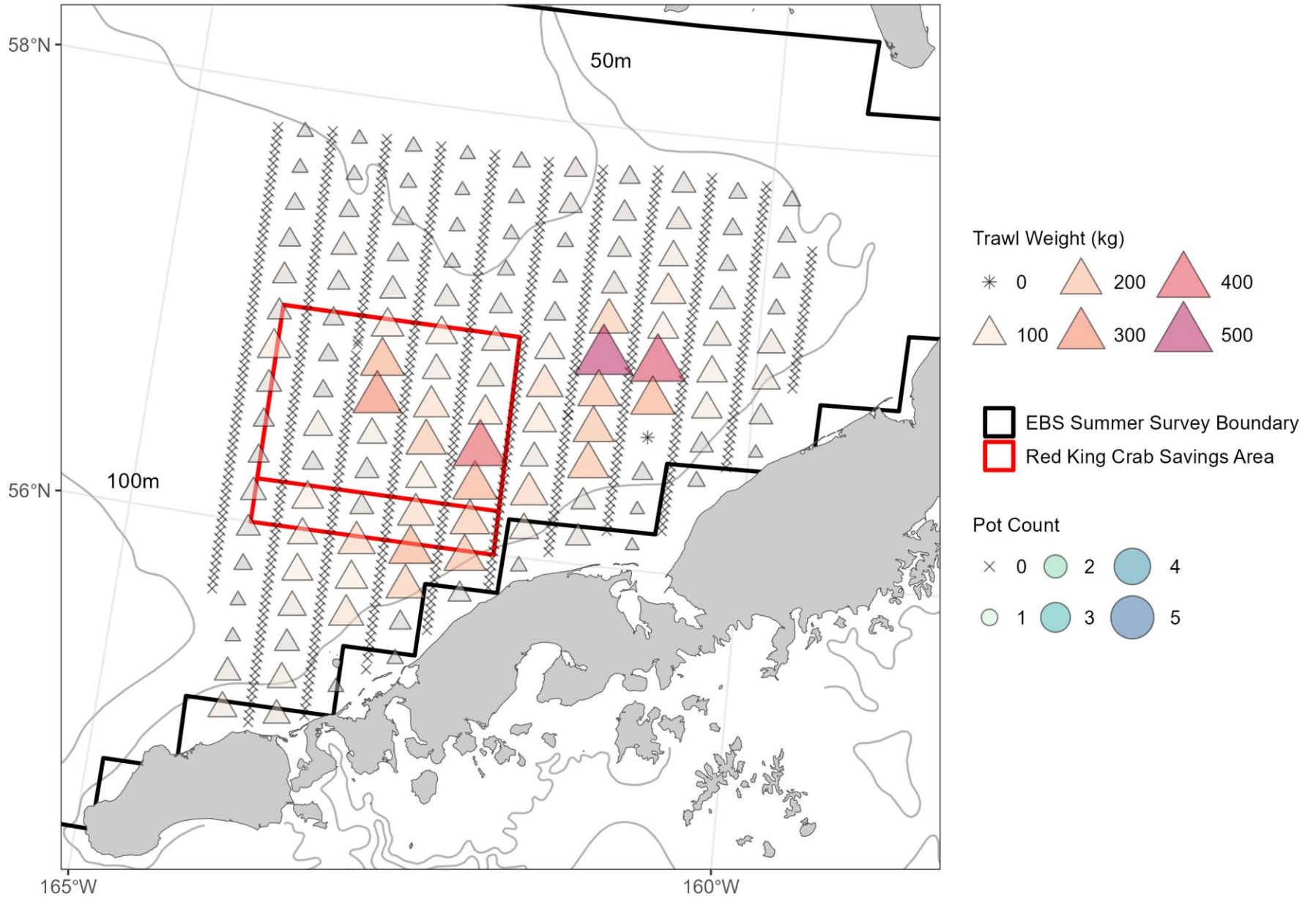
# 2024 BBRKC Collaborative Pot Sampling

Yellowfin sole



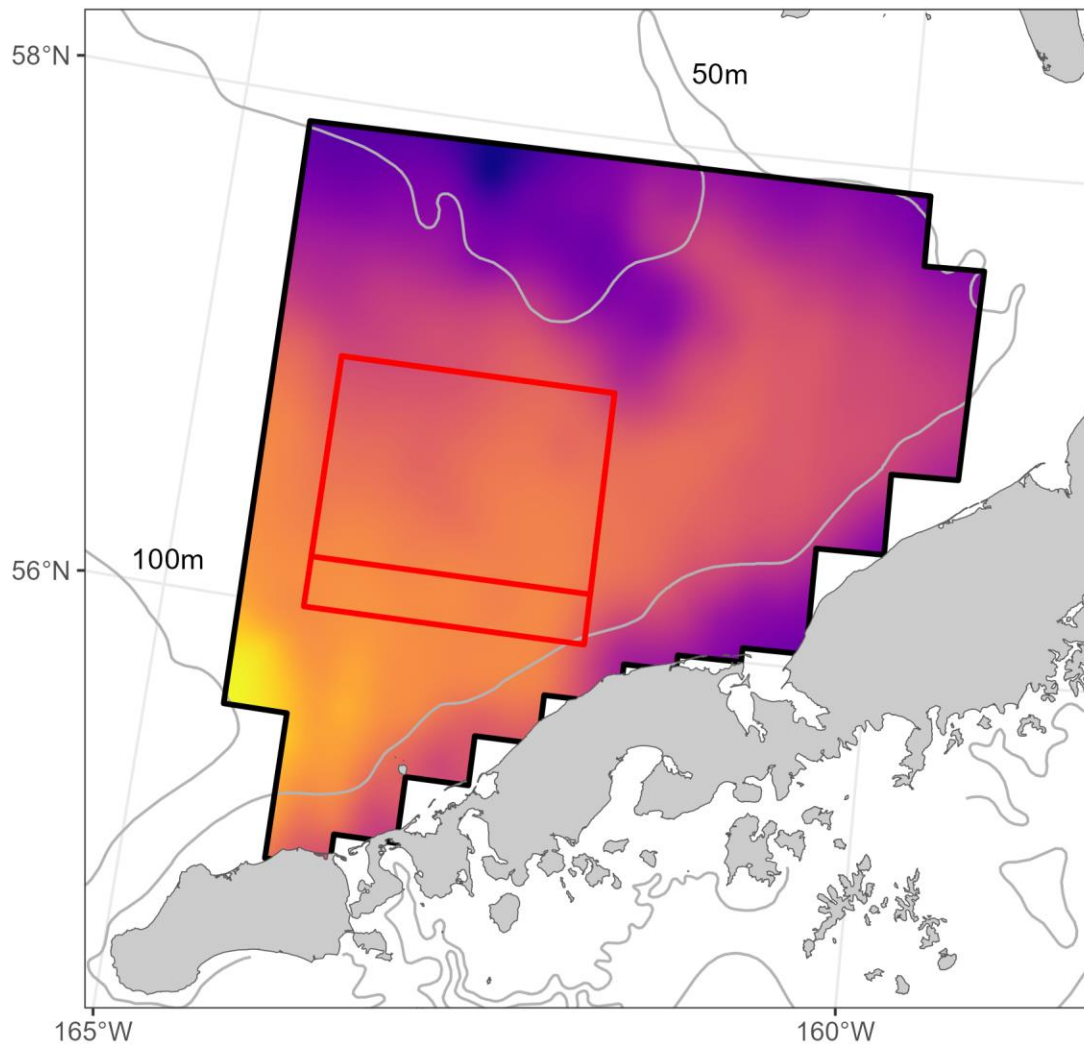
# 2024 BBRKC Collaborative Pot Sampling

Rock sole

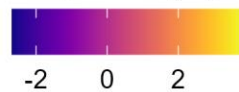


# 2024 BBRKC Collaborative Pot Sampling

Temperature



Temperature (°C)

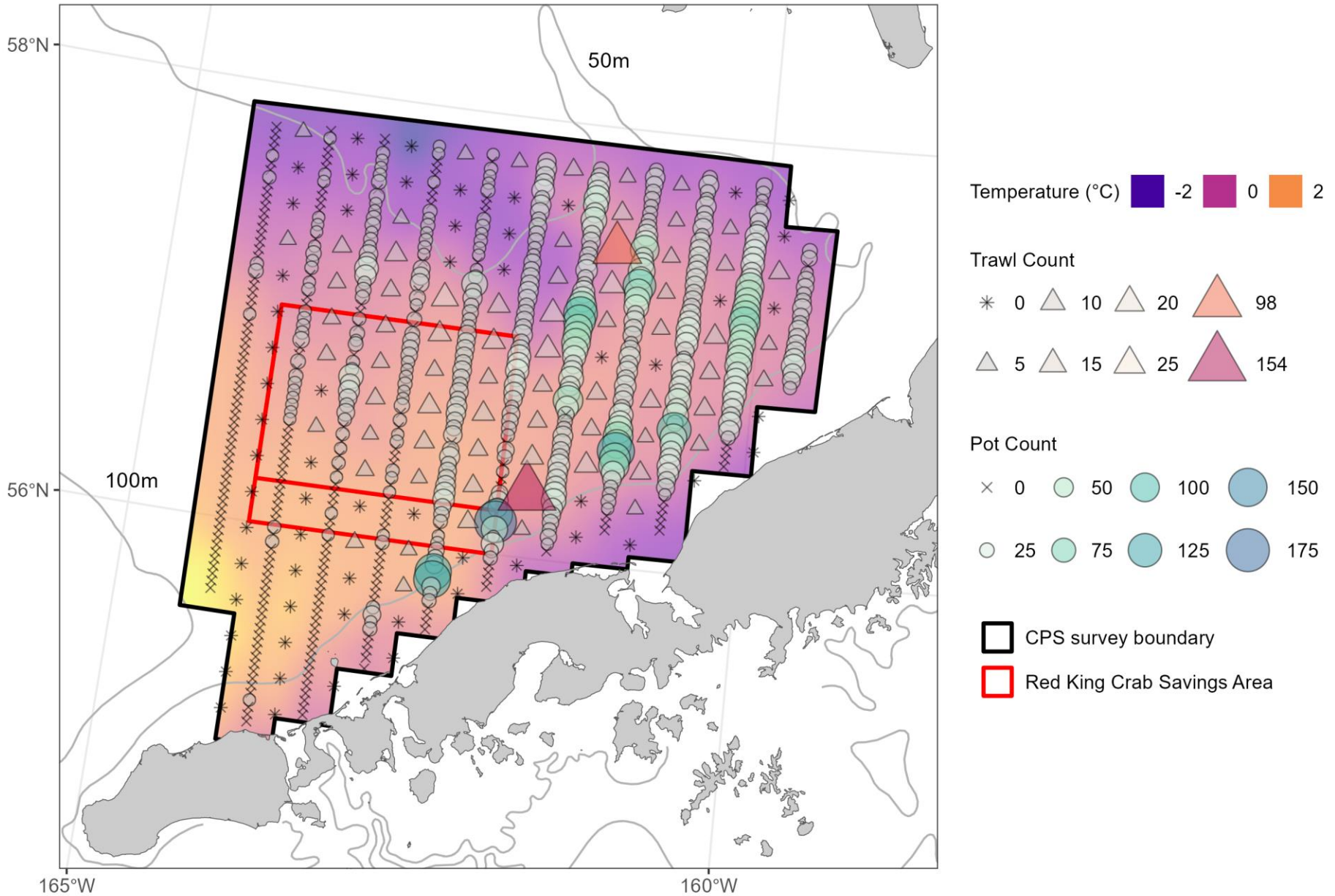


□ CPS survey boundary

□ Red King Crab Savings Area

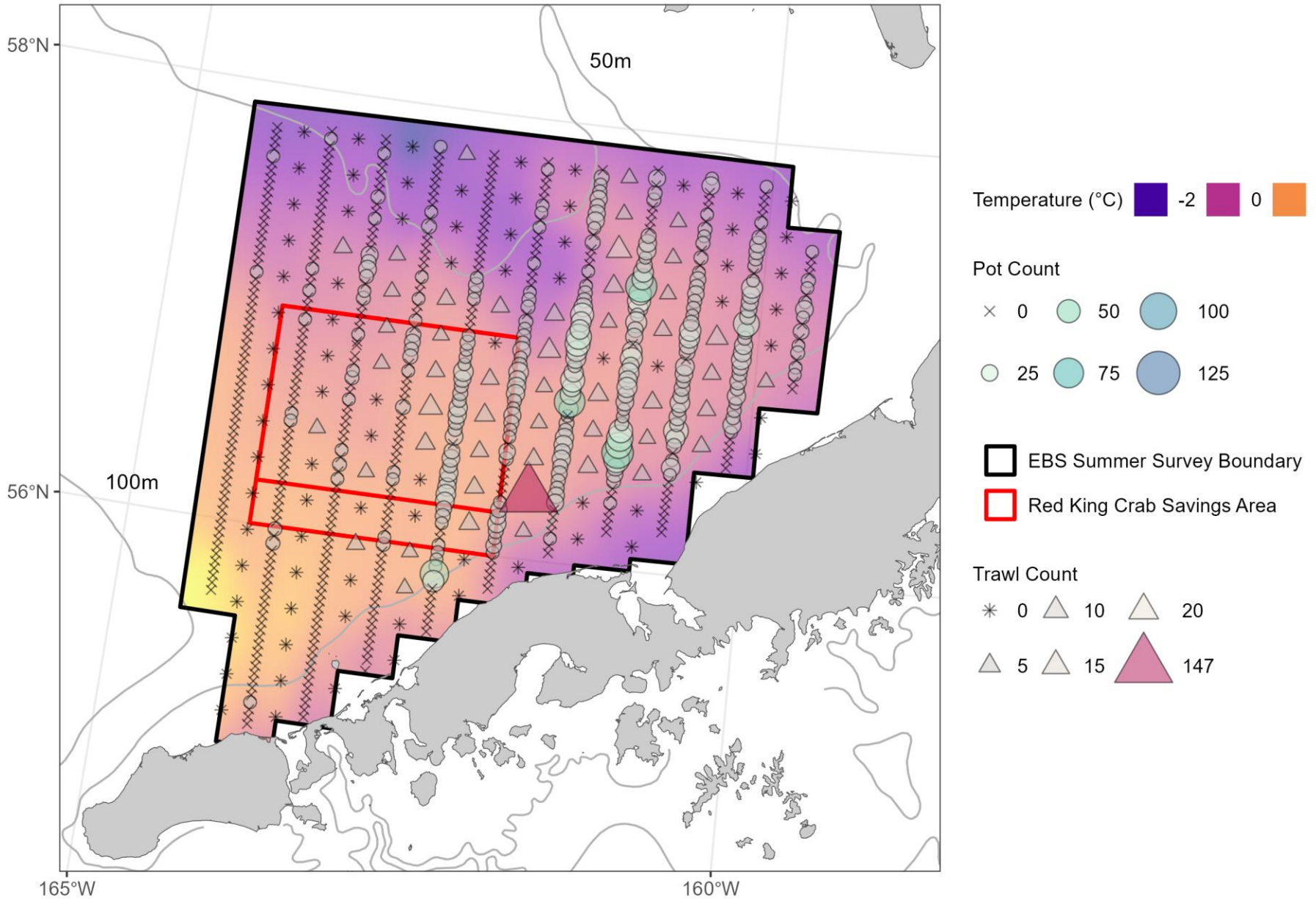
# 2024 BBRKC Collaborative Pot Sampling

Total BBRKC



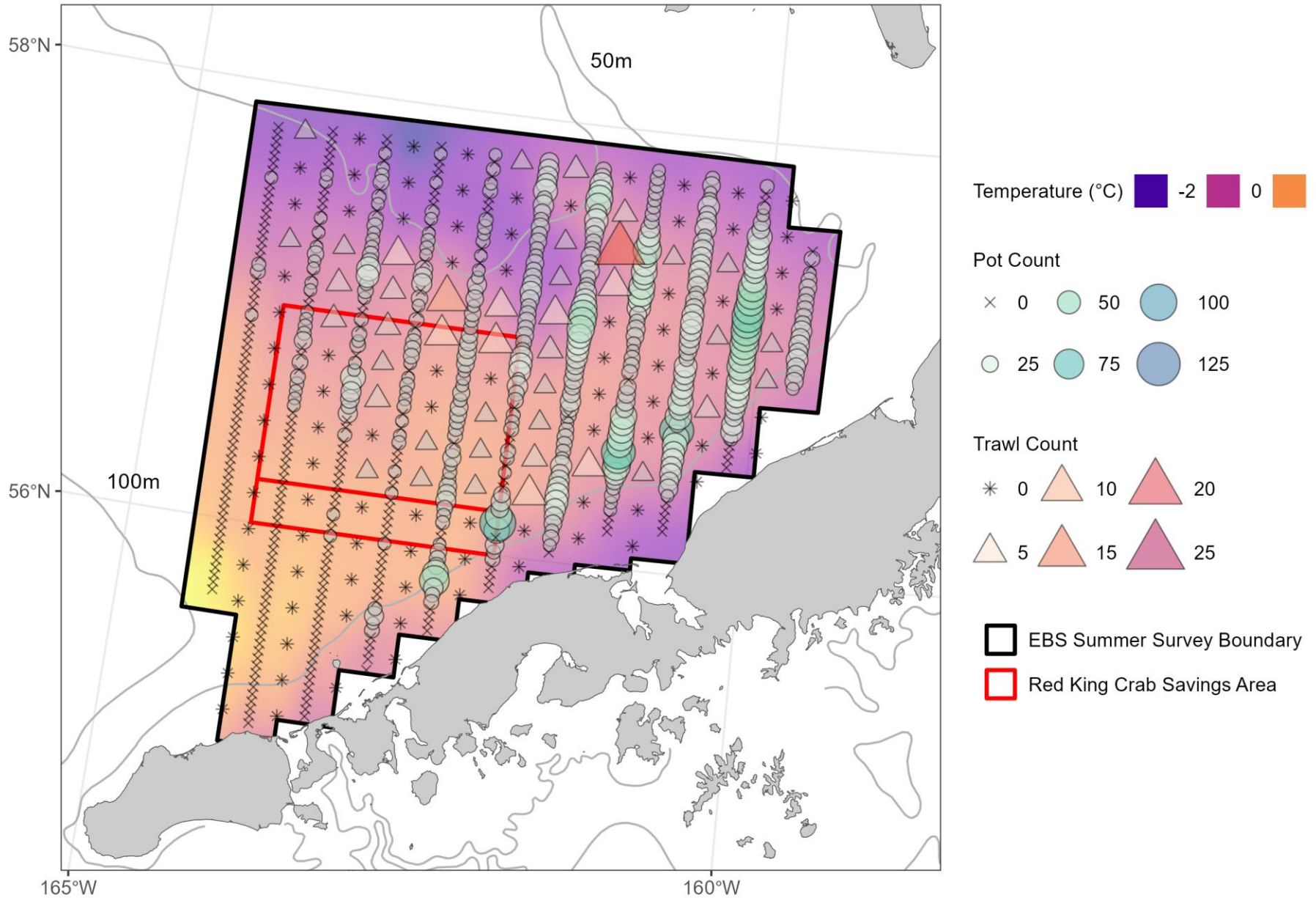
# 2024 BBRKC Collaborative Pot Sampling

Mature female



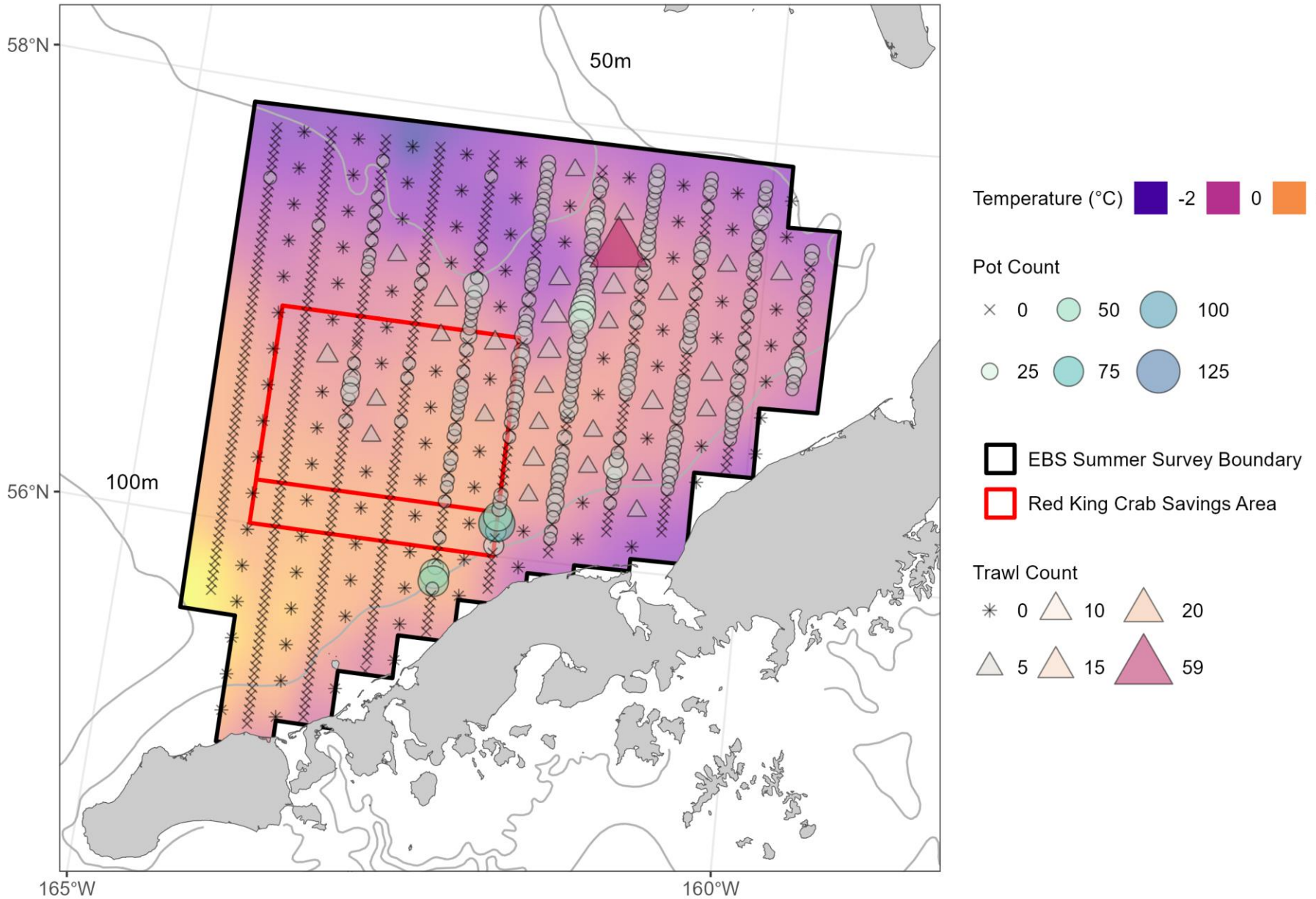
# 2024 BBRKC Collaborative Pot Sampling

Mature male ( $\geq 120\text{mm}$ )



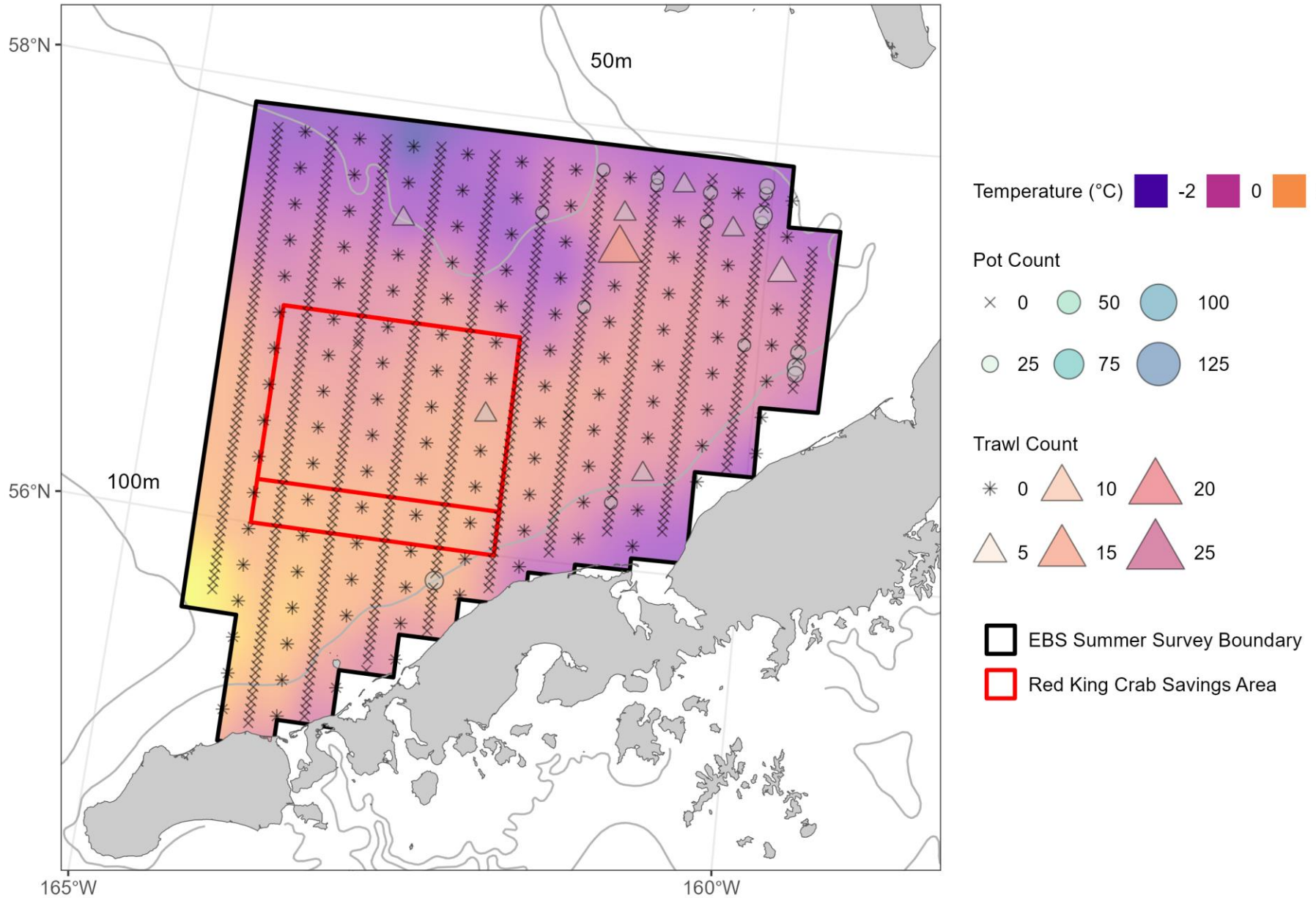
# 2024 BBRKC Collaborative Pot Sampling

Immature male (< 120mm)



# 2024 BBRKC Collaborative Pot Sampling

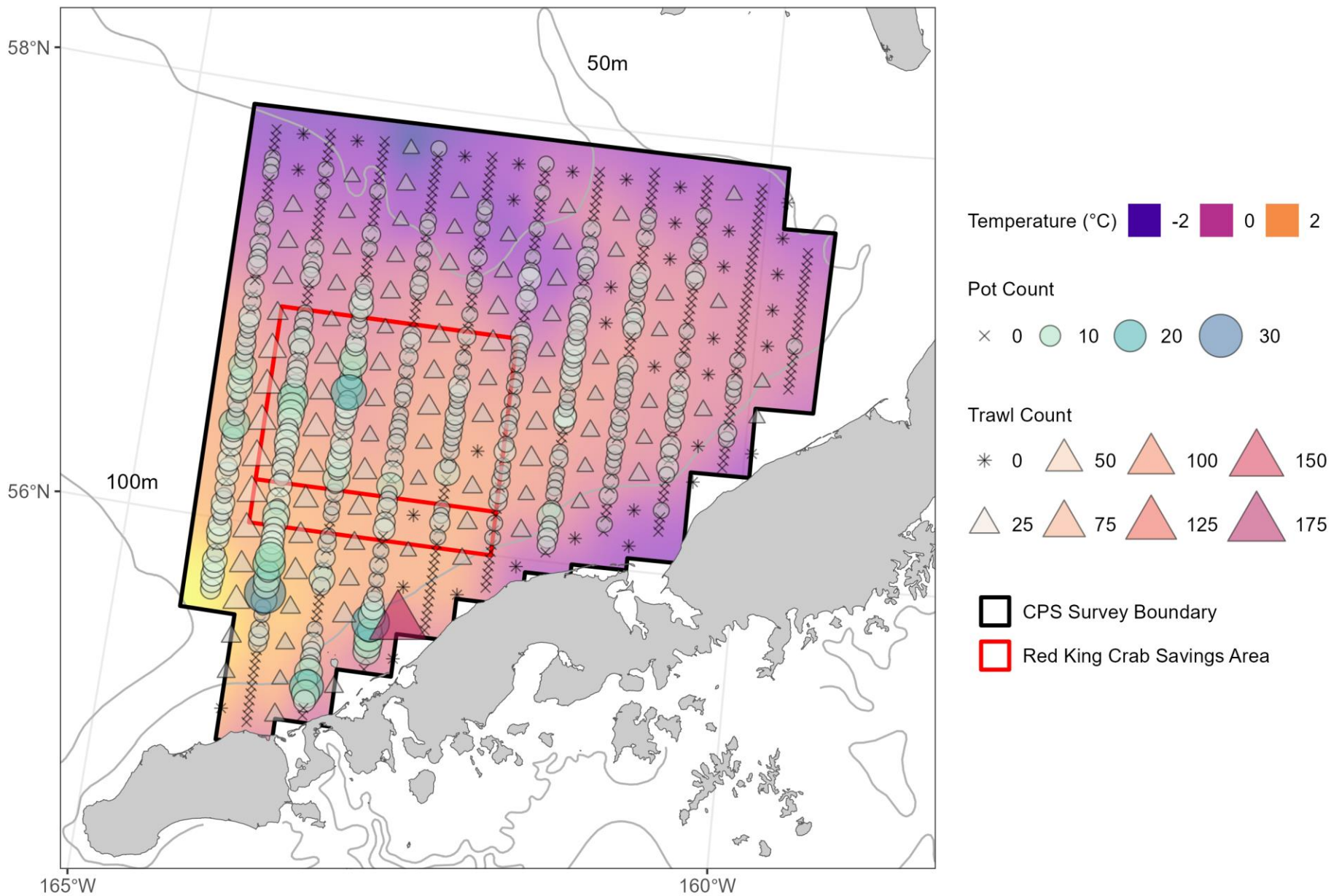
Immature female





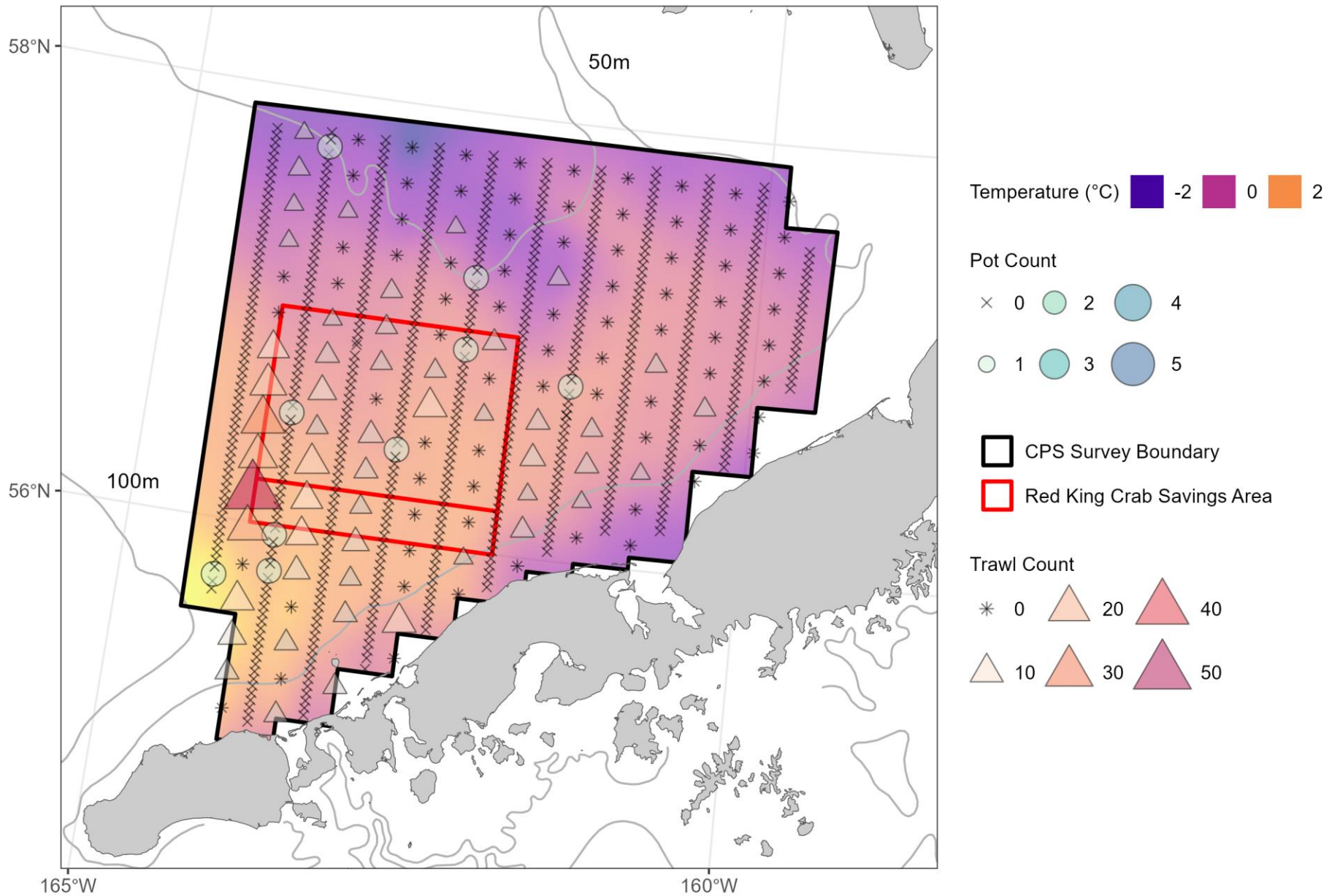
# 2024 BBRKC Collaborative Pot Sampling

Male Tanner crab



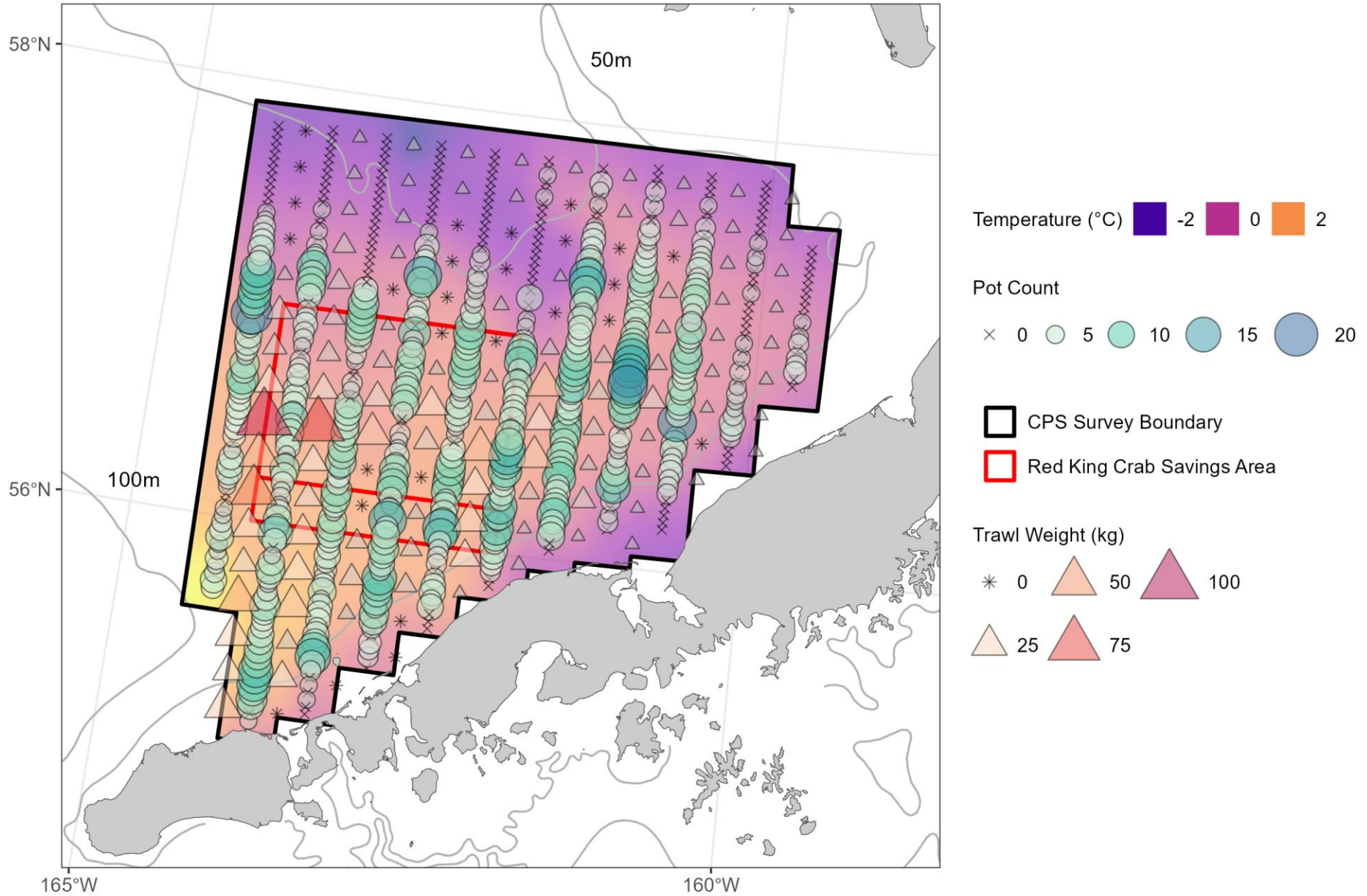
# 2024 BBRKC Collaborative Pot Sampling

Female Tanner crab



# 2024 BBRKC Collaborative Pot Sampling

Pacific cod



# Comparison of CPS1 and CPS2

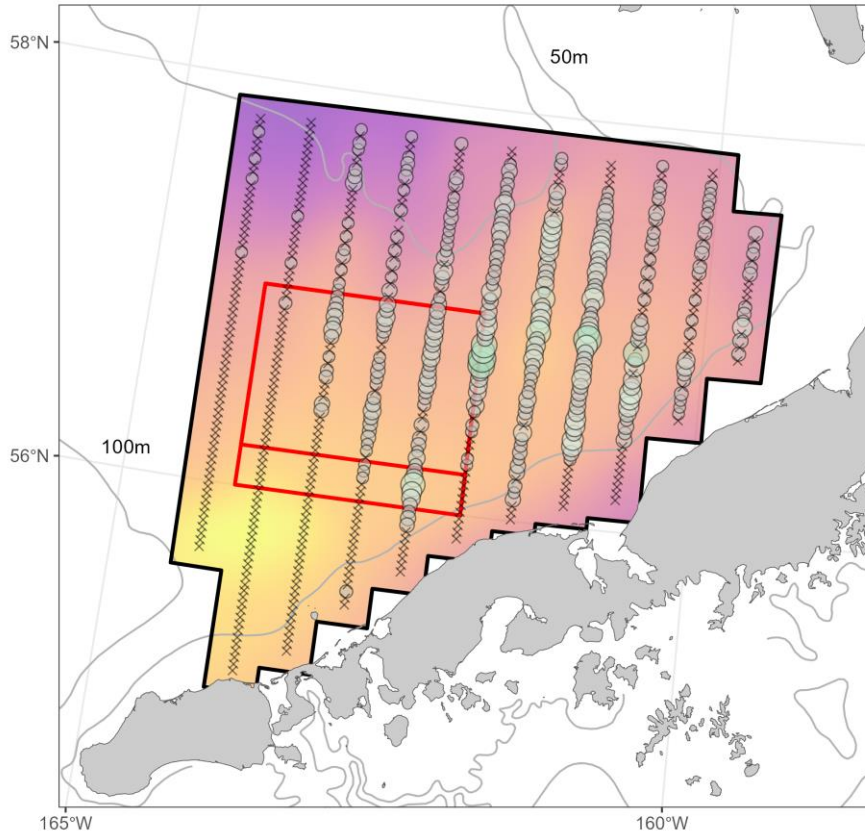
-- temperature is important --

Summary Item	CPS1 - 2023		CPS2 - 2024	
	POT	TRW	POT	TRW
Pot Lifts/Tows	637	0	646	128
RKC Catch	10,191		6,415	496
RKC Sex Ratio (M/F)	77/23	<--->	76/24	44/56
Bairdi Catch	670		1,009	928
Bairdi Sex Ratio (M/F)	83/17	<--->	99/1	68/32

# Comparison of CPS1 and CPS2

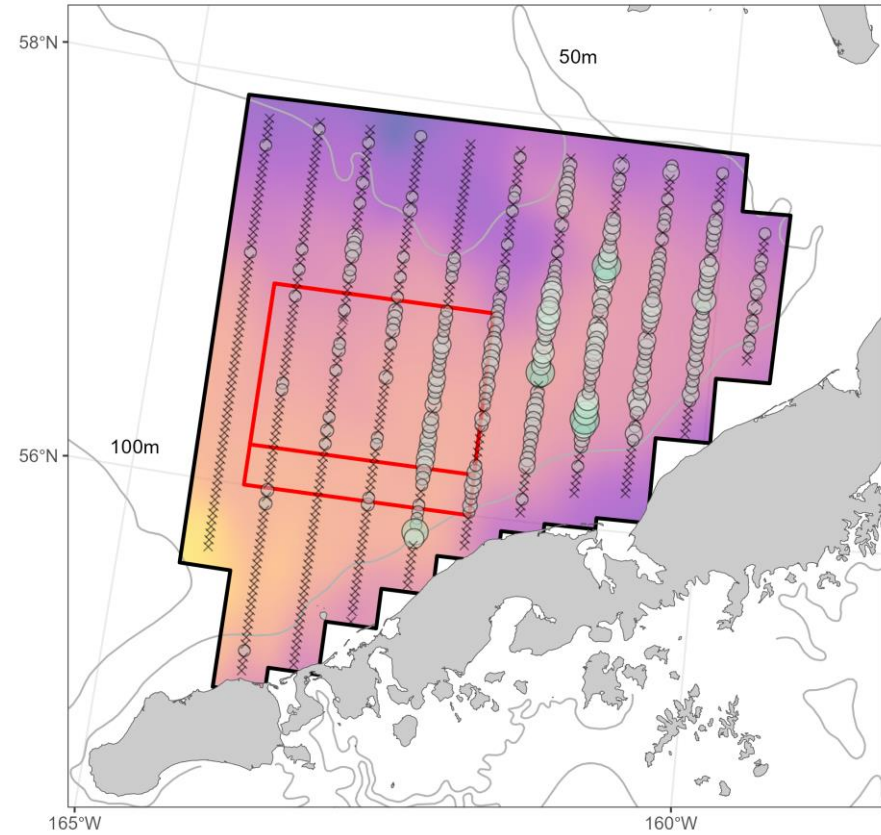
## 2023 BBRKC Collaborative Pot Sampling

Mature female

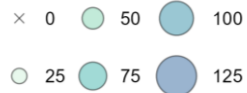


## 2024 BBRKC Collaborative Pot Sampling

Mature female



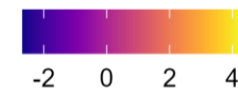
Pot Count



□ CPS Survey Boundary

□ Red King Crab Savings Area

Temperature (°C)





NOAA Technical Memorandum NMFS-AFSC-483

- Important short video from one of the Nephrops tows
- CPS1 publication (NOAA Tech Memo NMFS-AFSC-483)

## 2023 Early Spring Collaborative Pot Sampling (CPS1) for Bristol Bay District Red King Crab (*Paralithodes camtschaticus*)

T. Loher, B. Daly, S. E. Goodman, M. A. Litzow, A. Nault, E. R. Ryznar, and L. S. Zacher

April 2024

U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric  
Administration  
National Marine Fisheries Service  
Alaska Fisheries Science Center

# In Progress/Future Tagging Projects

Sex	Time	Release	Recover	Success
Male	Jun to Oct 2019 ( <i>acoustic tags</i> )	148	59	40%
Male	Jul to Oct 2020	84	79	94%
Male	Jun to Oct 2021	15	13	87%
Male	June to Oct 2022	16	13	81%
Male	June to Oct 2023	40	37	93%
Male	June to Oct 2024	40		
Male	Nov 2021 to Jan 2022	90	46	51%
Male	Oct 2022 to Jan 2023	20	20	100%
Male	Oct 2022 to Jun 2023	20	15	75%
Male	March/April to Jun 2023	100	91	91%
Female	Nov 2021 to April/May 2022	225	116	52%
Female	Jun 2023 to Oct 2023	16	10	63%
Female	Jun 2023 to Jan 2023	27		
Female	Jun 2023 to Apr 2023	32		
Female	Jun 2024 to Oct 2024	30		
Female	Jun 2024 to Jan 2025	50		
Female	Jun 2024 to Apr 2025	60		

EFH (NOAA internal)

NCRP (NOAA internal)

NPRB

Tags out on NMFS  
survey leg 1

Camsled work  
underway now

## Disaster Relief Planning → Bairdi, Opilio and BBRKC

- Bairdi funds coming online (PhD and other research)
- **Opilio Workshop in St John's – sharing more info soon**
- Opilio Pilot Project (In Process Planning)
- Research Strategy for 2025-2028
  - Likely several projects/charters for opilio/BBRKC





**CRAB  
RESEARCH**

SEABROOKE

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