

2023/24 BSAI crab catch and fishery performance

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Crab Plan Team Meeting
September 9-12, 2024
Seattle, WA



Directed fishery observer coverage

Mandatory catcher-vessel coverage requirements, per **5 AAC 39.645**.

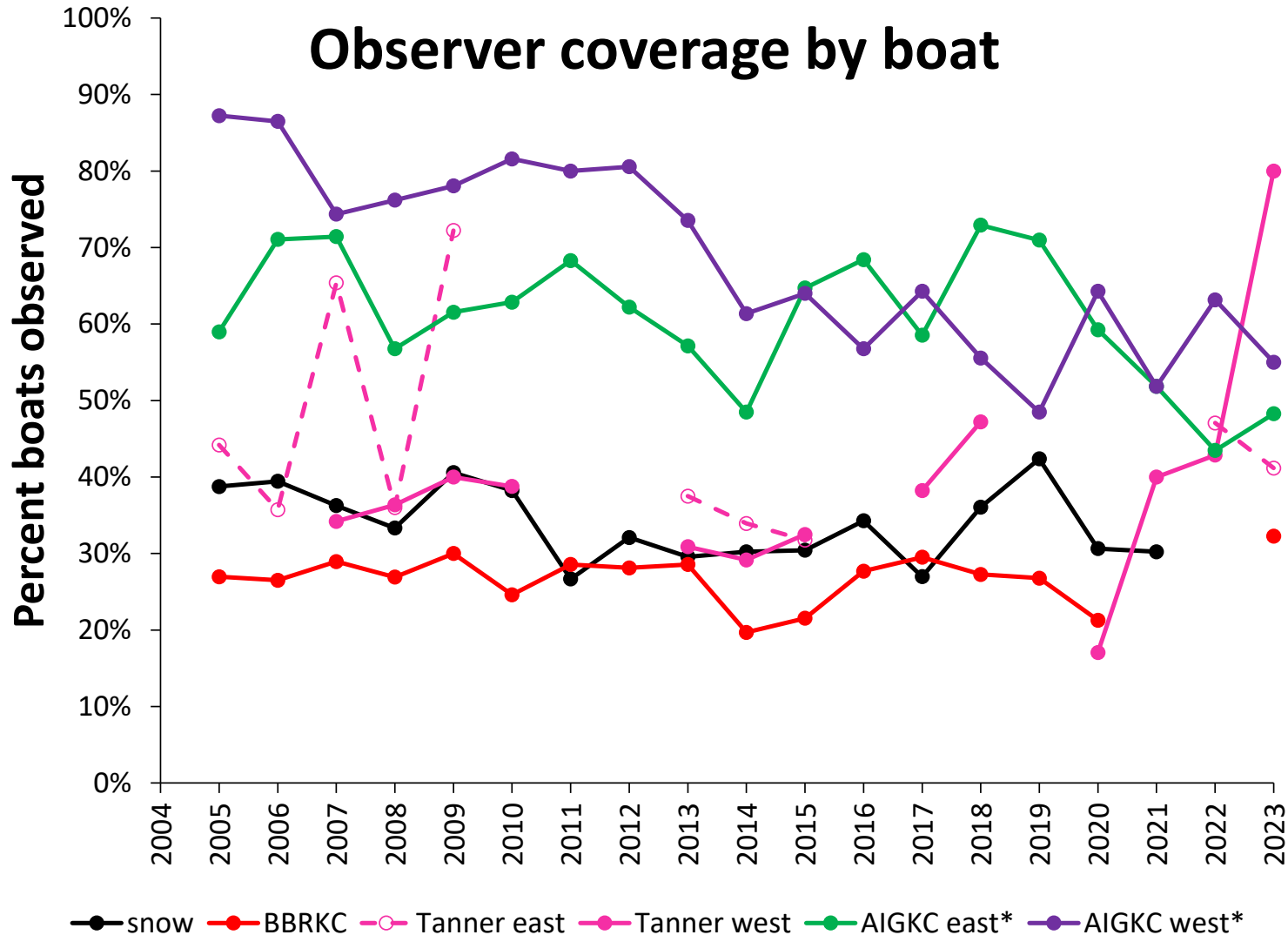
All vessels processing crab must carry observers.

Fishery	Coverage
Bering Sea snow crab	30-100% (a)
Bristol Bay red king crab	20% (a)
Bering Sea Tanner crab	30-100% (a)
Pribilof District red king crab	100%
Pribilof District blue king crab	100%
Saint Matthew Island blue king crab	100%
Norton Sound red king crab	Discretionary
Aleutian Islands golden king crab	50% (b)
Pribilof District golden king crab	100%
Adak red king crab	100%

^a Vessels required to carry observers are randomly selected.

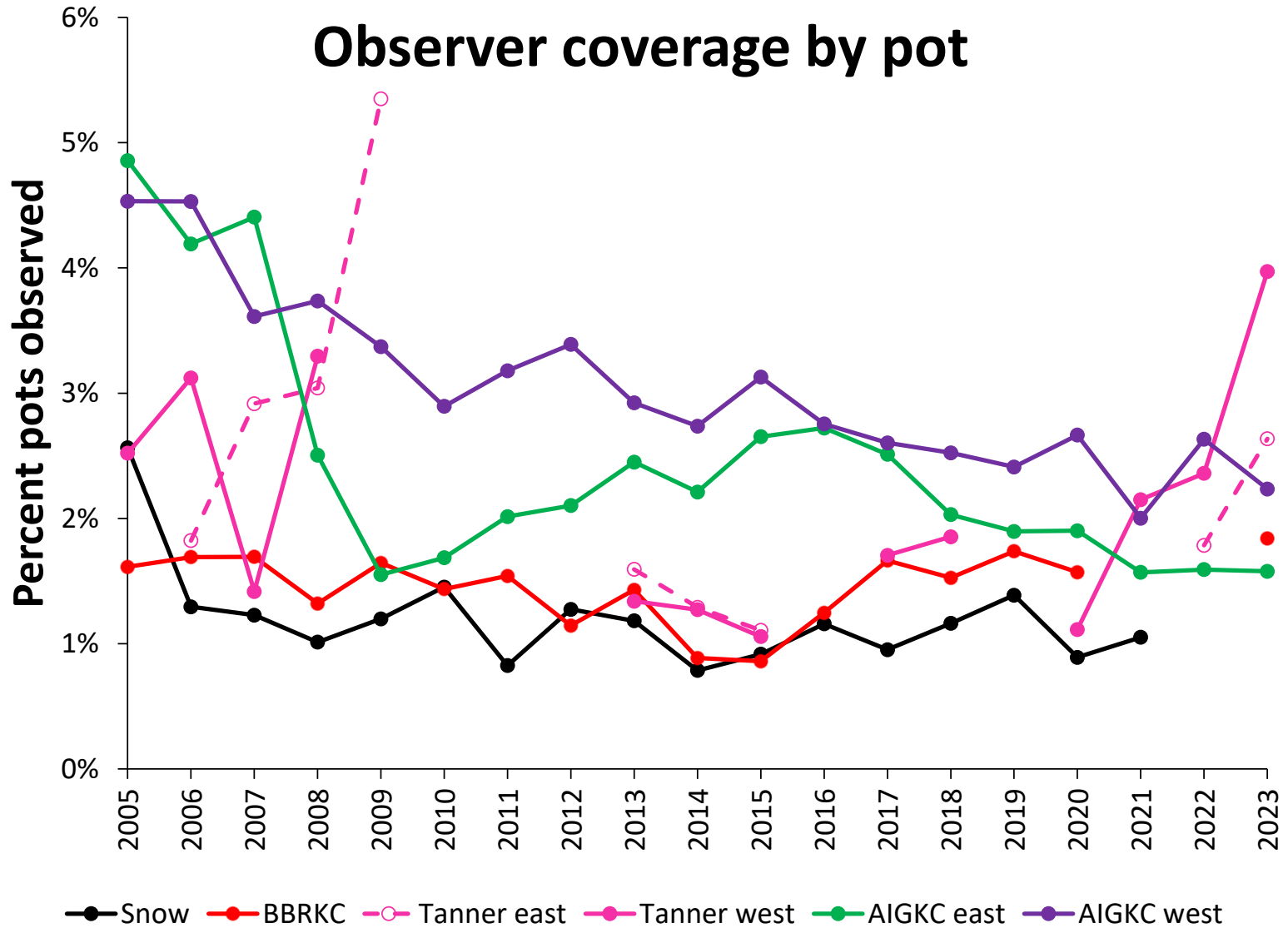
^b All catcher vessels must carry an observer during harvest of 50% of total landed catch weight in each three-month trimester of nine-month season Aug 1 – Oct 31; Nov 1 – Jan 31; Feb 1 – April 30.

Directed fishery observer coverage



*AIGKC calculated by trip because of trimester regulation

Directed fishery observer coverage



Groundfish Vessels in Full vs Partial Coverage

- **Full Coverage (1 or 2 observers 100% of time)**
 - Catcher/Processors (limited exceptions for small non-trawl CPs)
 - Motherships
 - AFA pollock catcher vessels delivering shoreside (unless participating in EM EFP)
 - 2024 was the first year of the new PCTC program for BSAI trawl Pacific cod and requires 100% coverage
- **Partial Coverage**
 - Catcher vessels fishing groundfish
 - Catcher vessels fishing IFQ/CDQ halibut/sablefish
- **No Coverage**
 - Vessels < 40 ft.
 - Jig catcher vessels
 - State Guideline Harvest Level fisheries



BSAI Partial Coverage Groundfish Observer Rates

- Partial observer coverage rates adjusted in 2024 so sampling strata is by FMP.
- Increases sampling selection rates
- Designed to spread sampled trips throughout fisheries to increase the proportion of trips sampled.
- Fixed-gear combines hook-and-line/pot gear.

BSAI Partial Observer Coverage Selection Rates

Year	EM (Fixed Gear)	Trawl	HAL	Pot	Fixed Gear (combined)
2020	30%	20%	15%	15%	N/A
2021	30%	16%	15%	15%	N/A
2022	30%	30%	19%	17%	N/A
2023	30%	23%	18%	17%	N/A
2024	74%	72%	N/A	N/A	44%

Source: 2024 Annual Deployment Plan for Observers and Electronic Monitoring



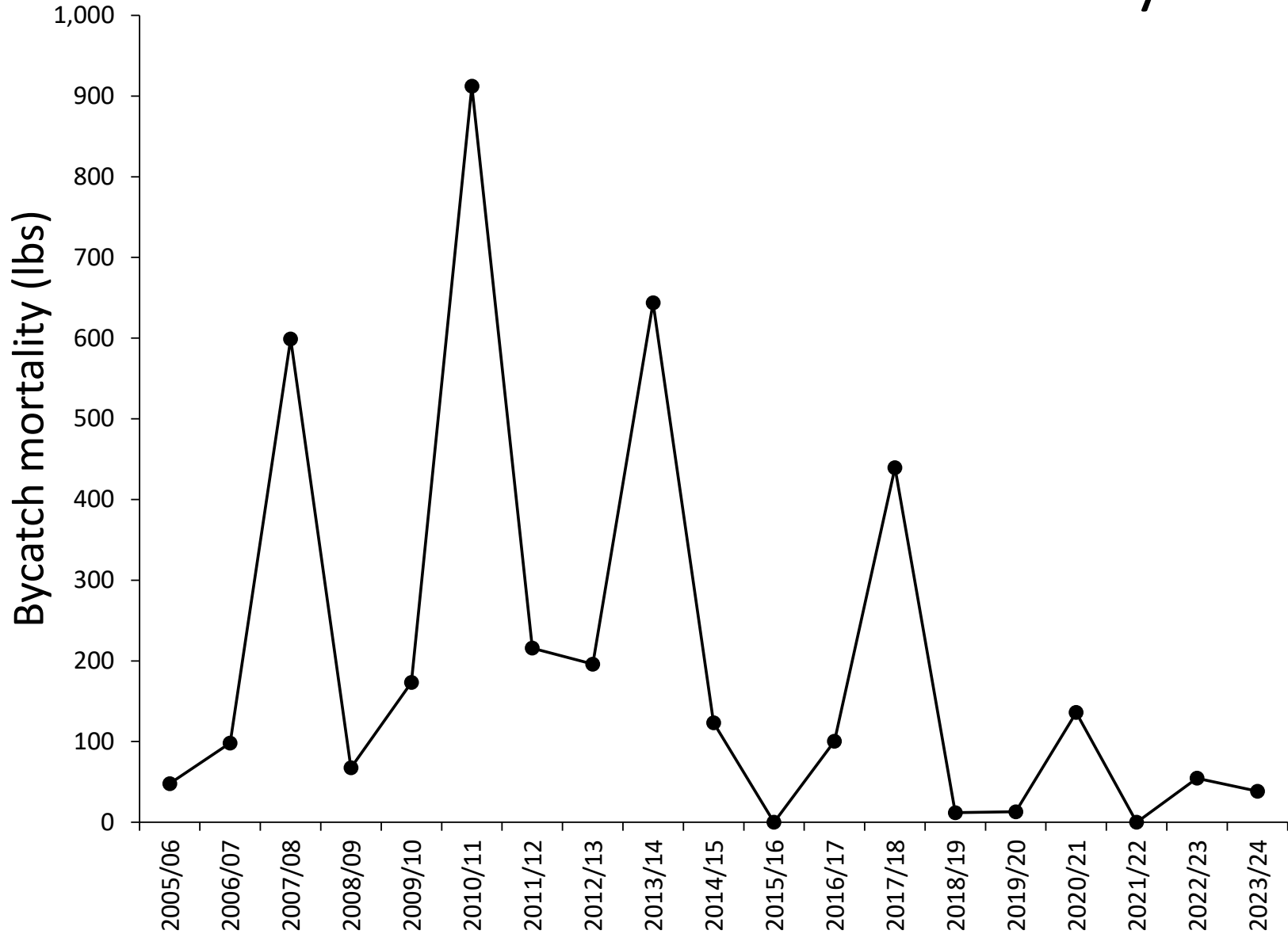
Crab Incidental Catch in Groundfish Fisheries

- Data Source:
 - AKFIN database
 - Observer/Electronic Monitoring (full and partial coverage)
 - Estimated weight (kg) of crab mortality
- Fixed Gear = pot, hook-and-line, and jig
 - 50% estimated crab mortality
- Trawl Gear = non-pelagic and pelagic
 - 80% estimated crab mortality
- Crab Fishing Year (July 1 – June 30)
 - Calendar year for Pribilof Island GKC and Norton Sound RKC
 - Years in graphs represent the year the crab fishing year began.

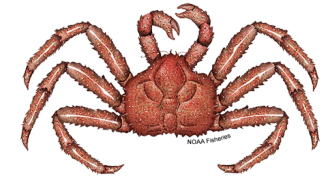


WAIRKC

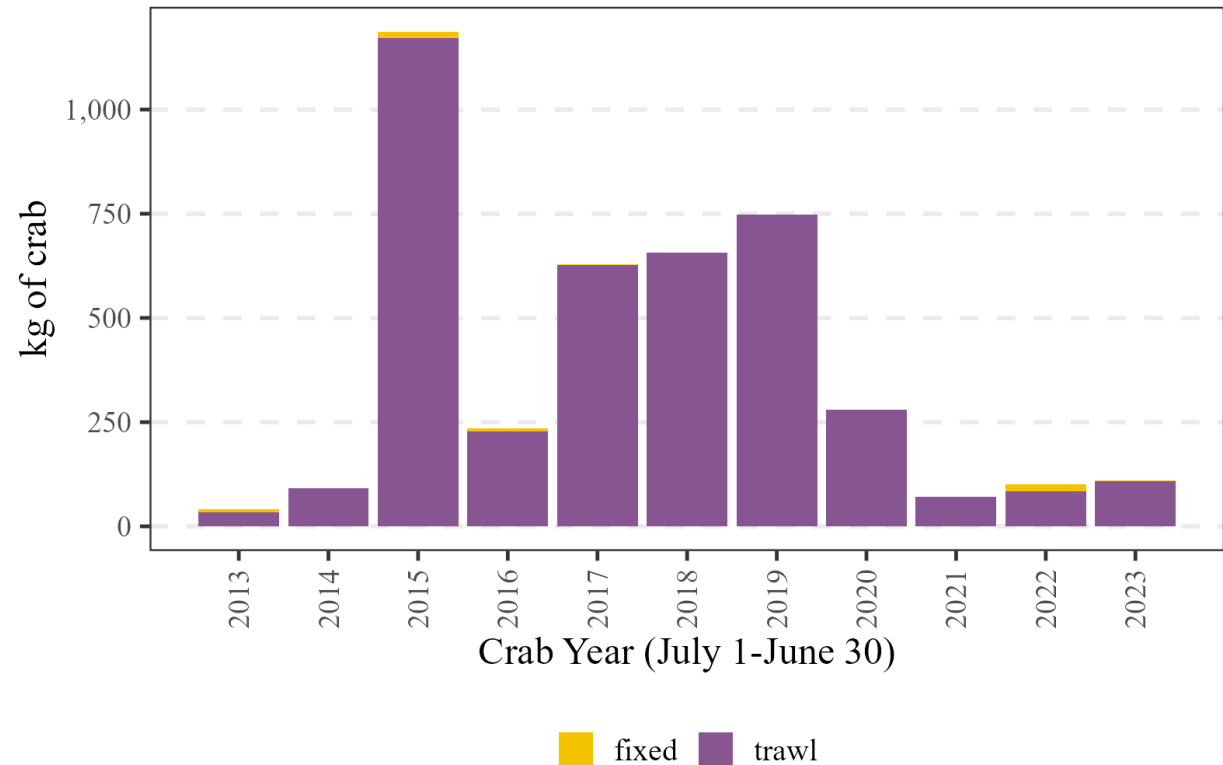
WAIRKC in AIGKC fishery



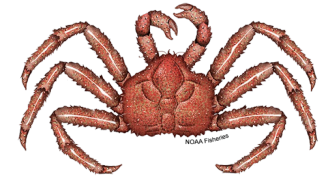
- Minimal fixed gear fishing in this area.
- Minimal fixed gear observer coverage.
- State Pacific Cod fishery in area, however, no observer/EM coverage in State groundfish fisheries



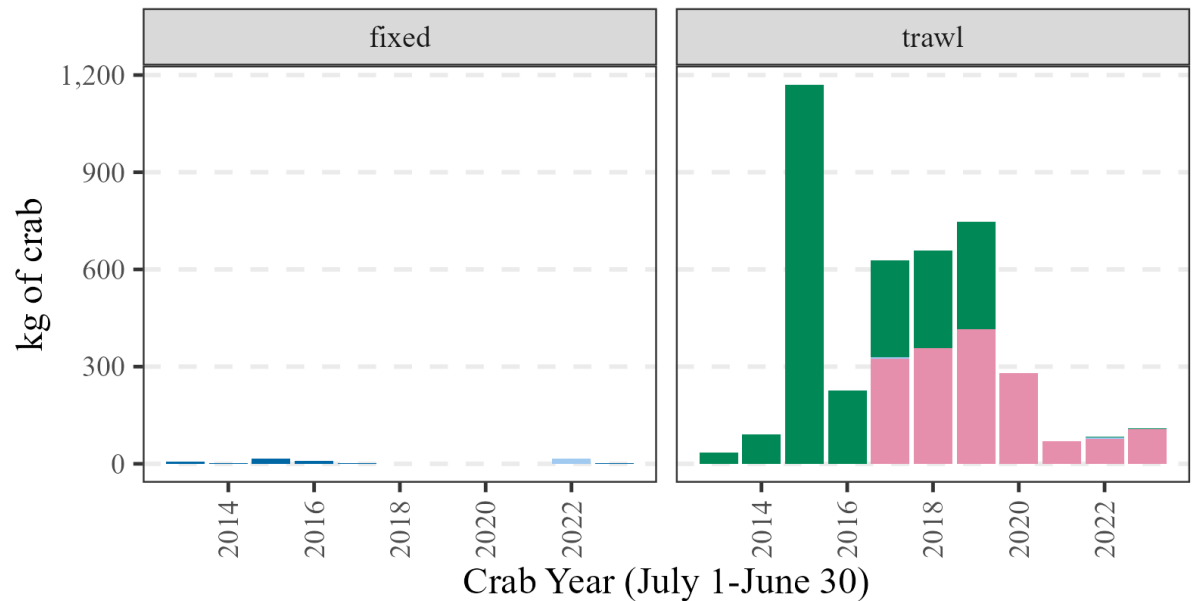
Aleutian Islands RKC Incidental Catch in Groundfish Fisheries



- A80 targeting both Atka mackerel and rockfish in recent years.
- Post-pandemic fishing patterns changed due to market conditions
- Tier 5 RKC stock and low biomass



Aleutian Islands RKC Incidental Catch by Trip Target

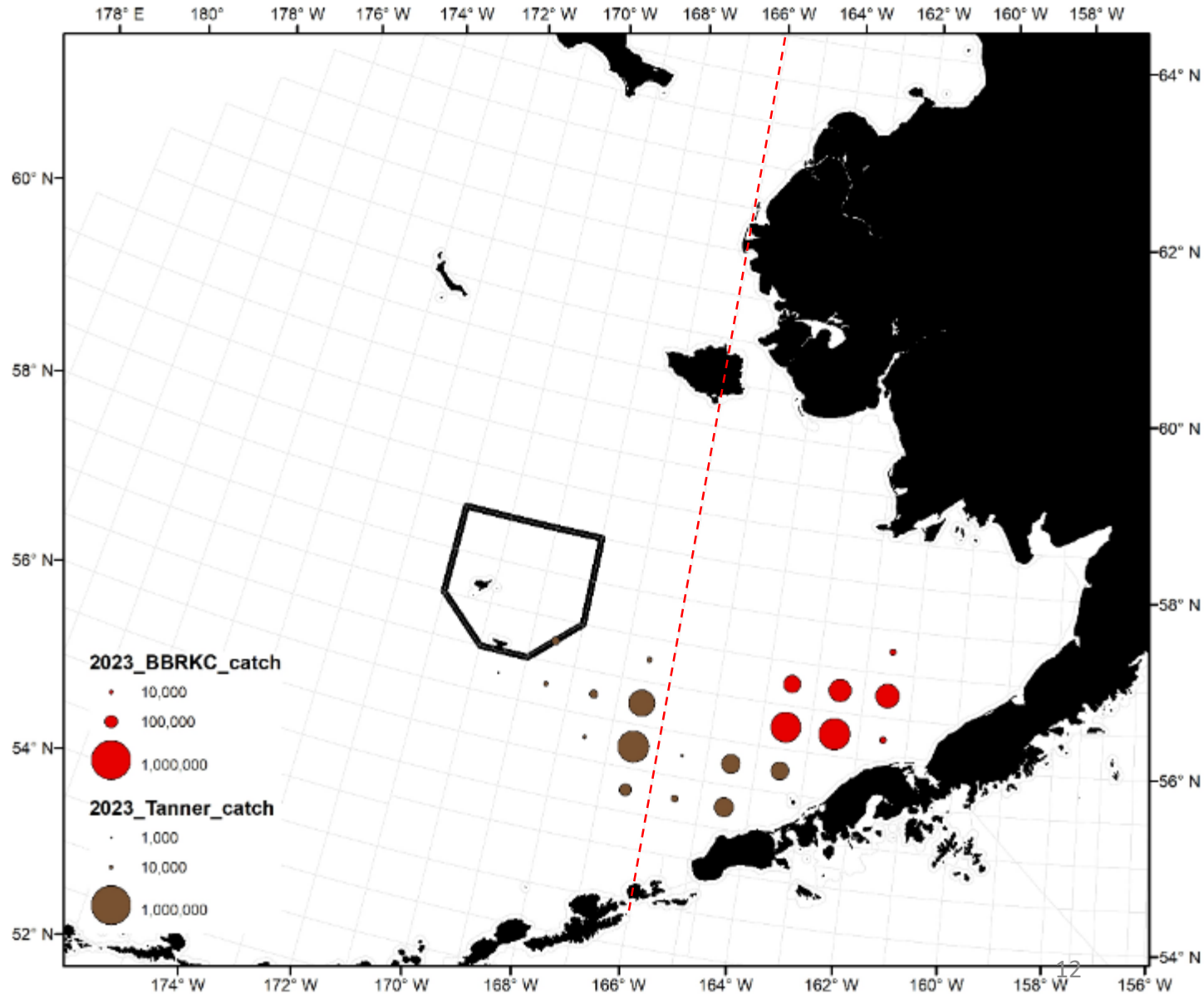


*Other species includes: pollock, halibut, & sablefish



NOAA
FISHERIES

2023/24 Tanner + BBRKC cost recovery

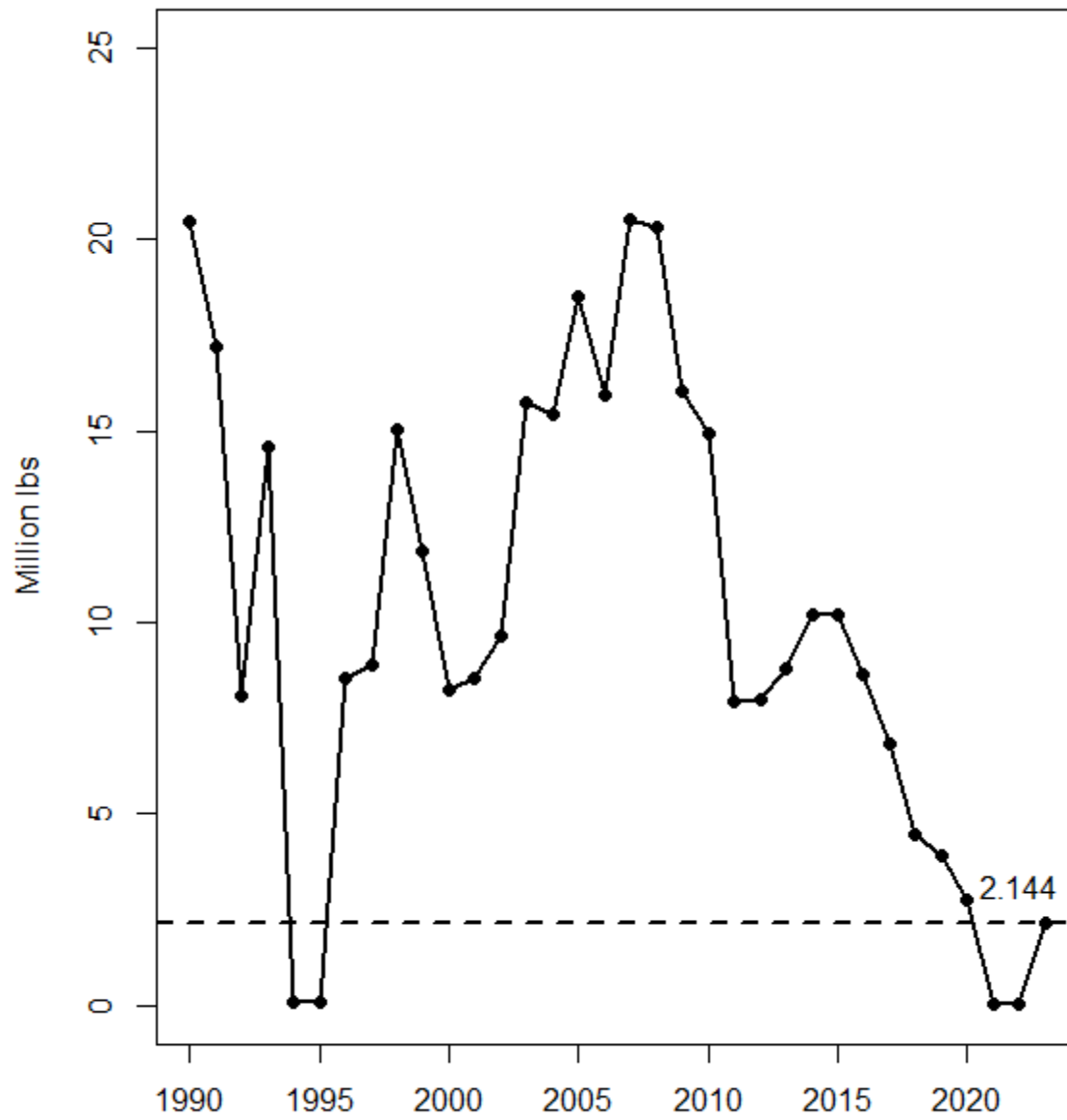


Excludes stat
areas with <3
vessels

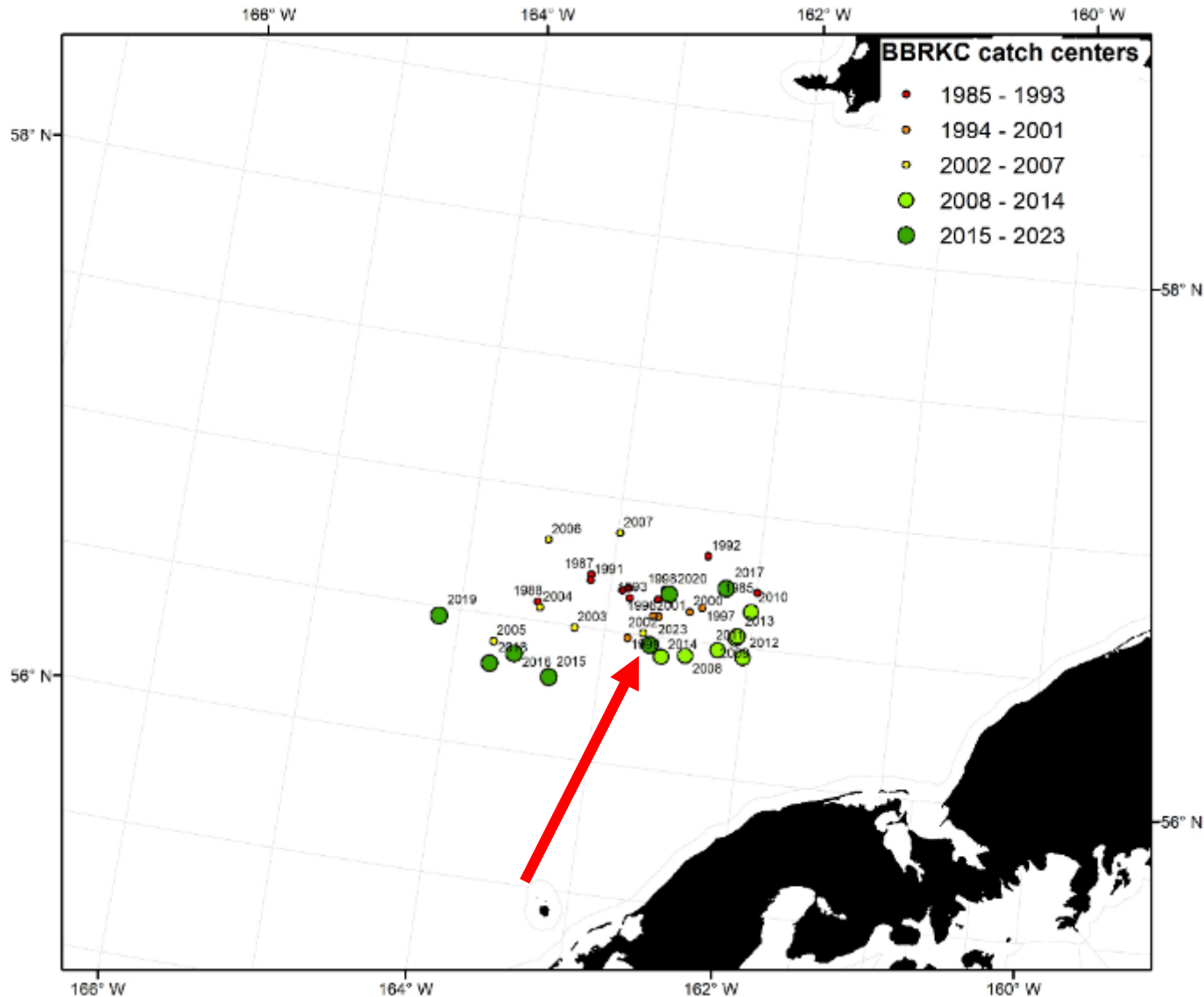
A large pile of crabs, likely in a boat, with a central text box containing the acronym BBRKC. The crabs are densely packed and appear to be of various species, including what looks like a large crab with a patterned shell. The background is a dark blue, possibly the water or the interior of a boat. A yellow rope is visible running vertically through the center of the pile.

BBRKC

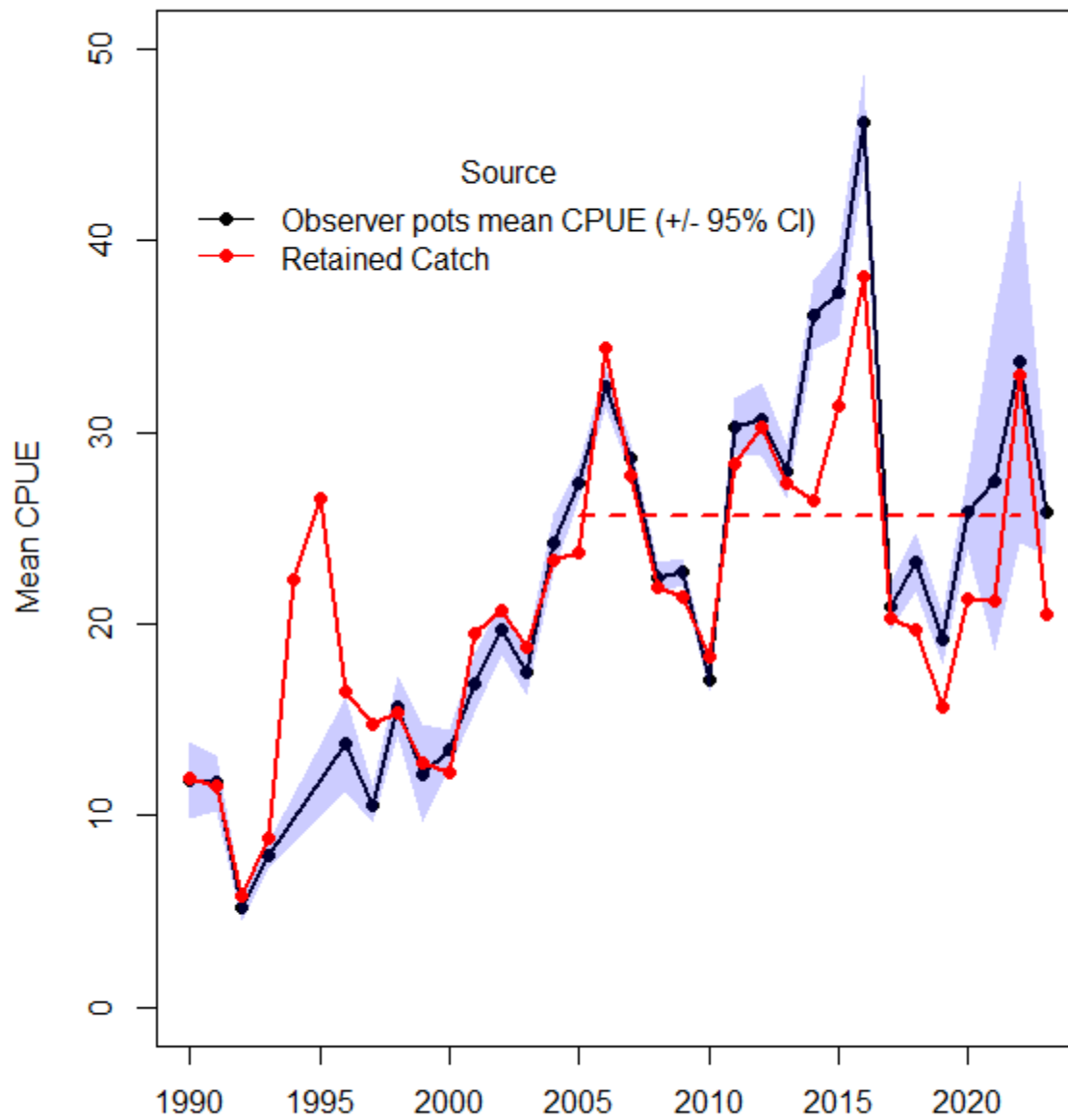
BBRKC retained catch



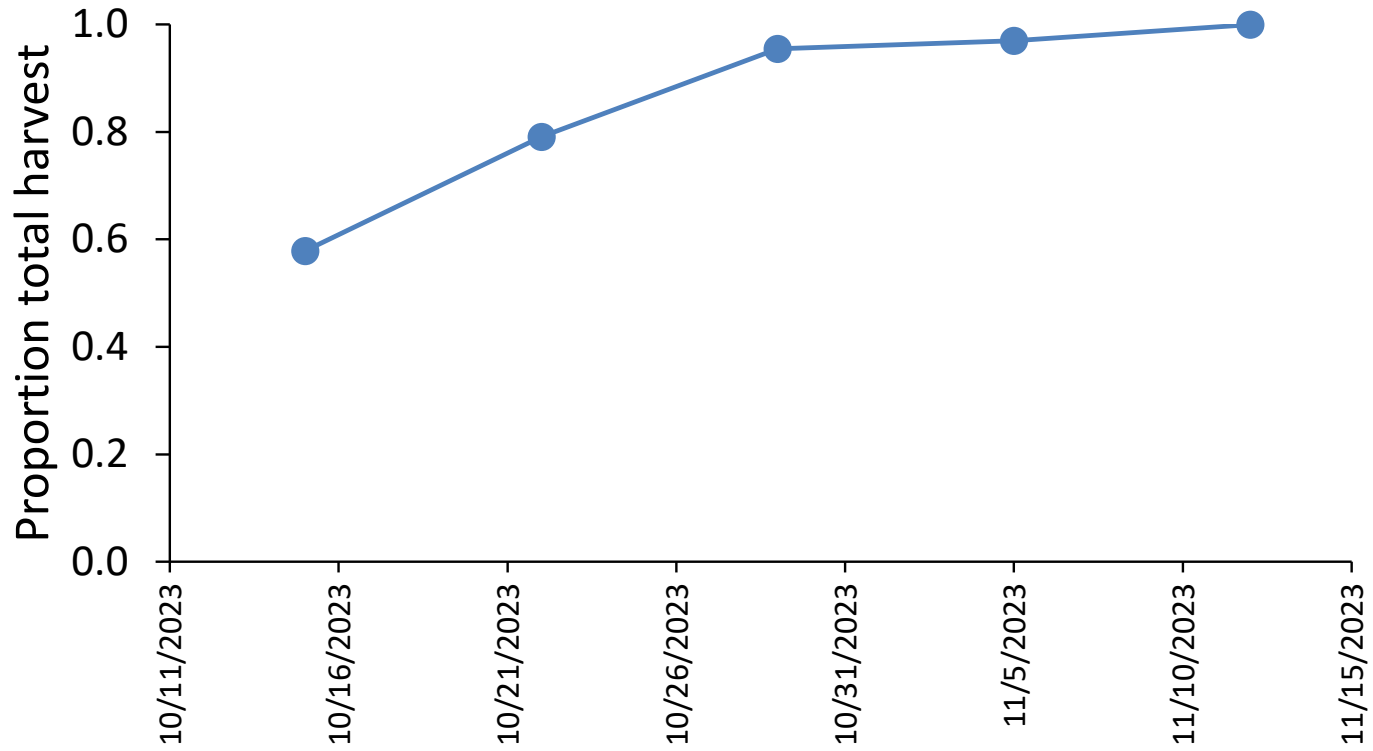
Weighted catch centers



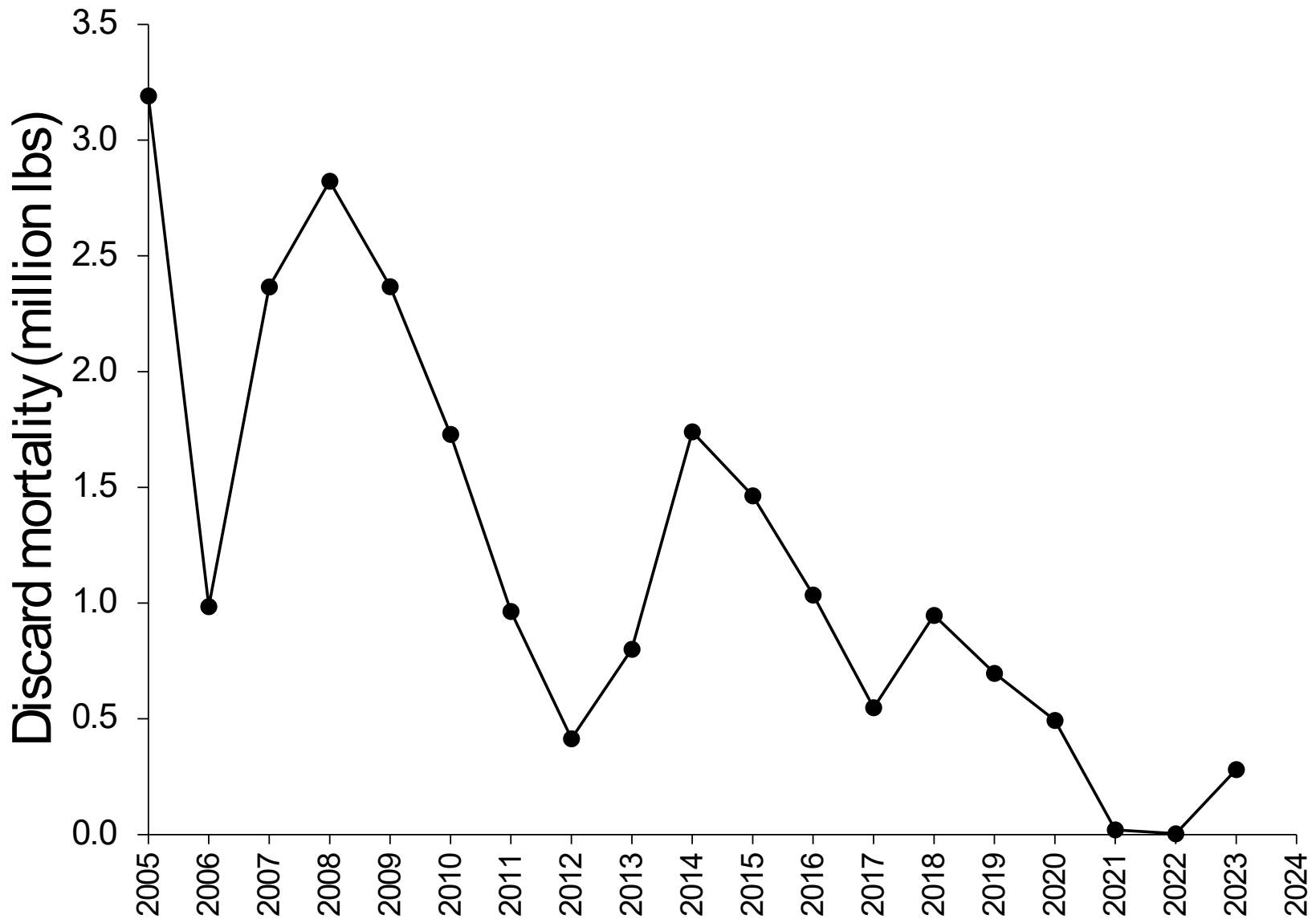
BBRKC legal male CPUE



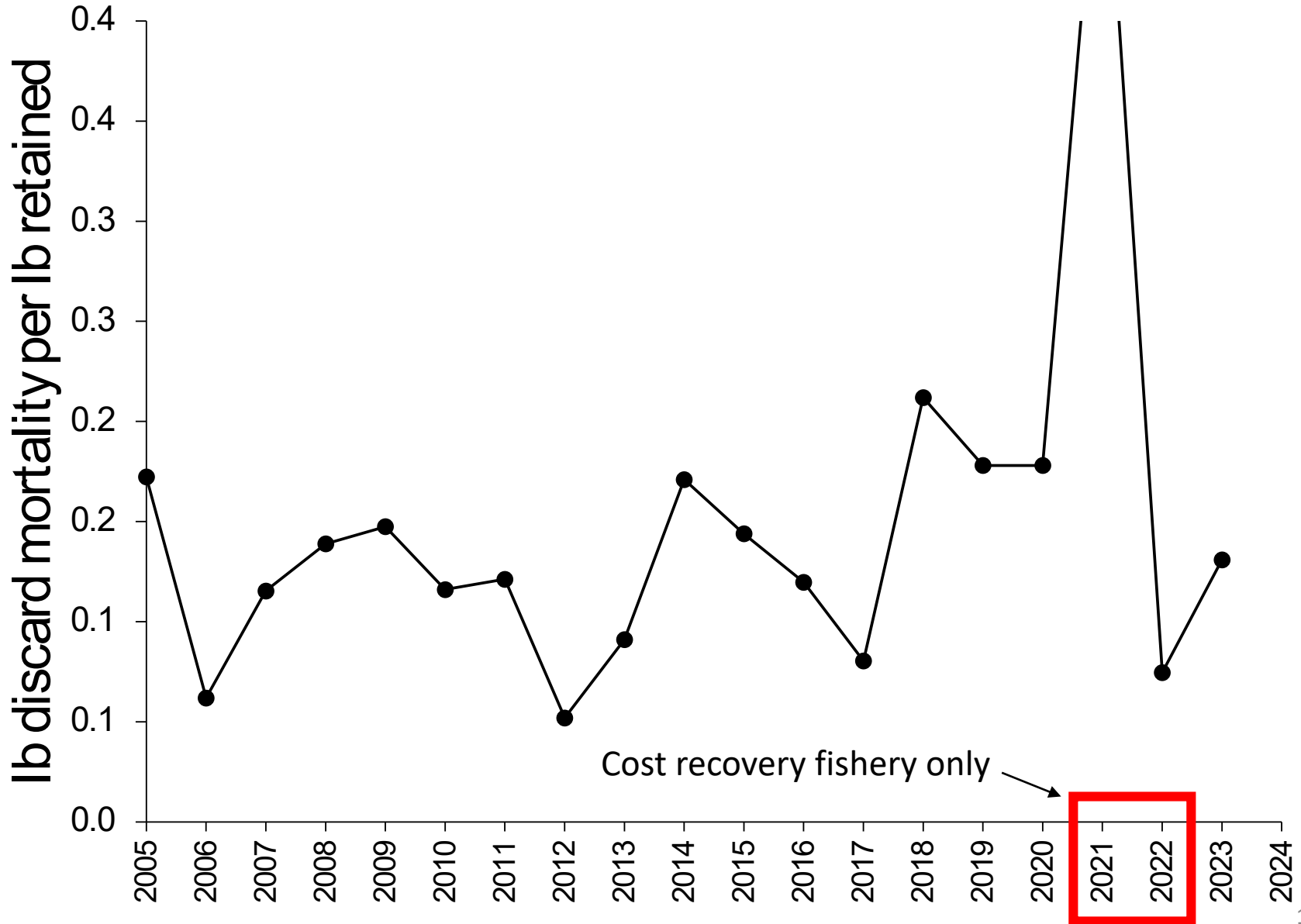
2023/24 BBRKC



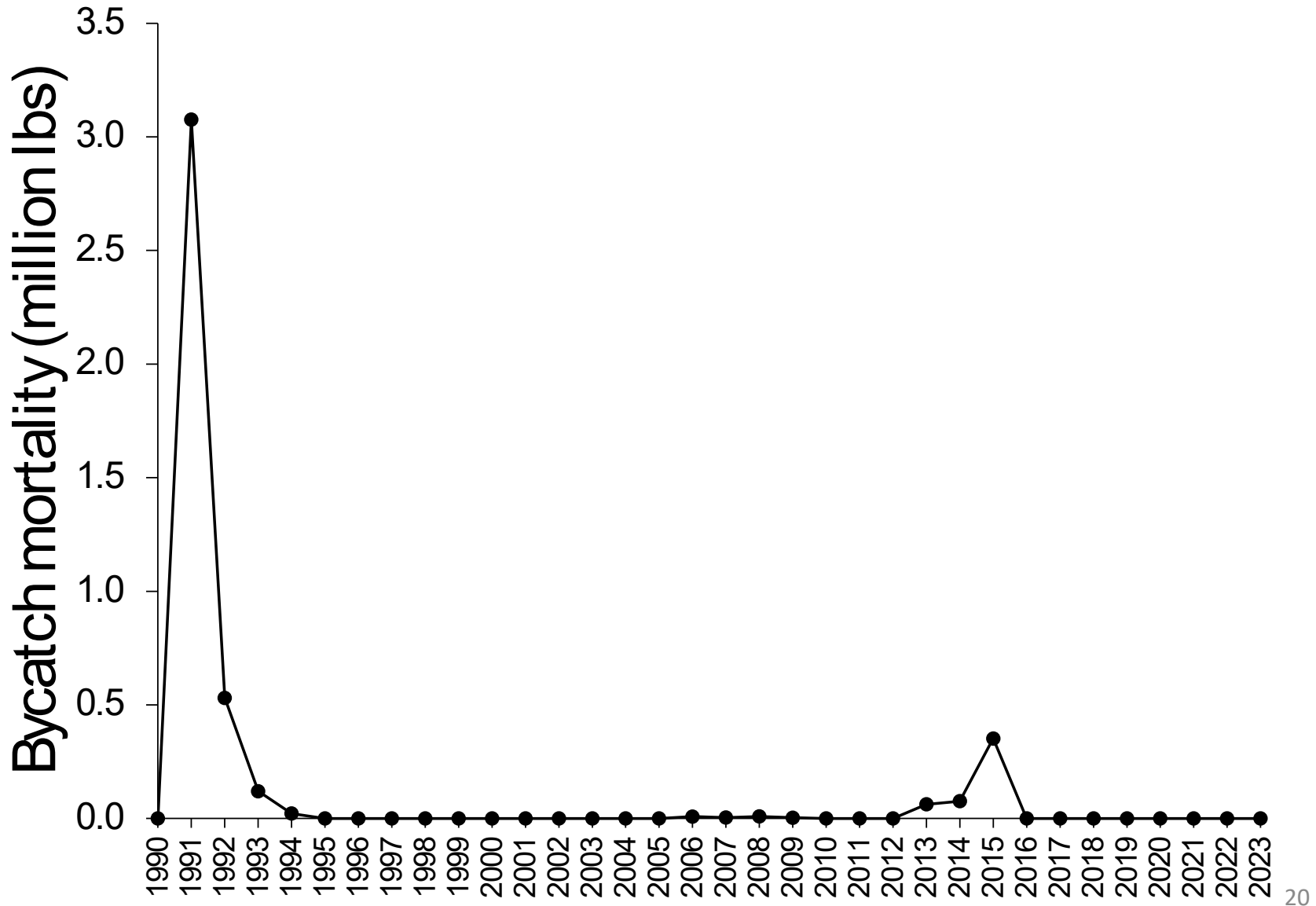
Discard mortality in directed fishery

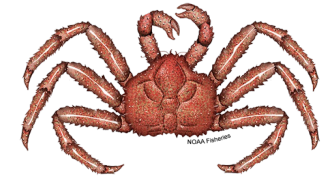


Discard mortality in directed fishery



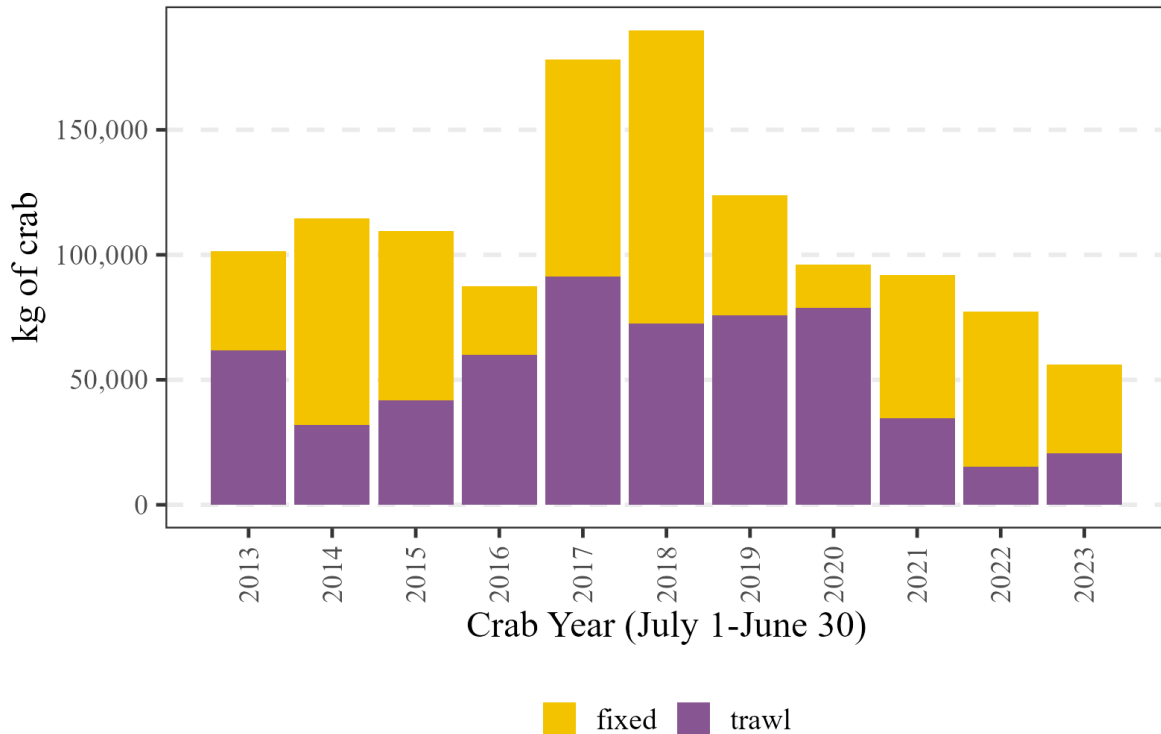
BBRKC bycatch in Tanner fishery



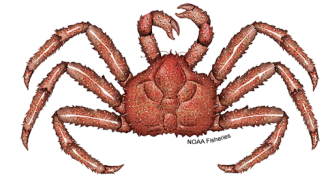


Bristol Bay RKC Incidental Catch in Groundfish Fisheries

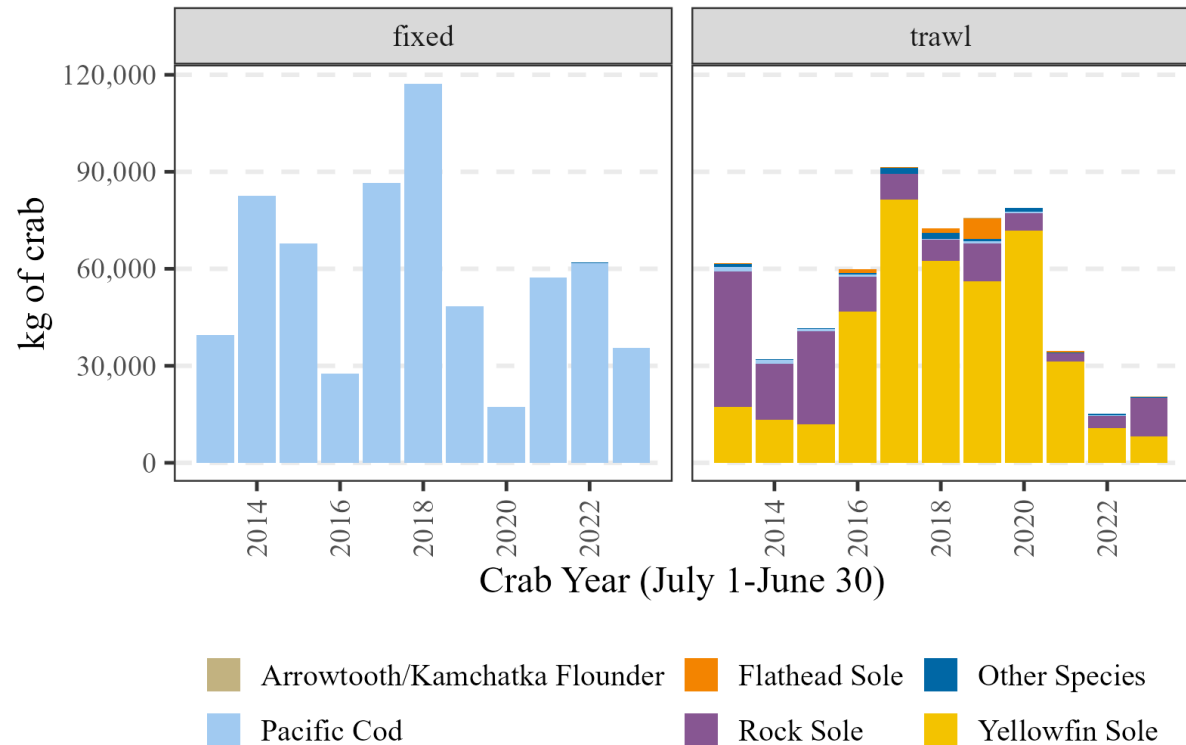
- Most fixed gear bycatch is in the Pacific cod pot fishery with increases in bycatch occurring in recent years
- 2020/21 lower RKC rates in fixed gear likely due to:
 - Lower observer coverage due to COVID-19
 - Lower P. cod TACs



- Rock and yellowfin sole are often targeted during the same fishing trip.
- RKC savings subarea closed to nonpelagic trawl in the 2022 and 2023 calendar years.
- Bycatch of BBRKC in trawl gear typically occurs throughout the year.



Bristol Bay RKC Incidental Catch by Trip Target

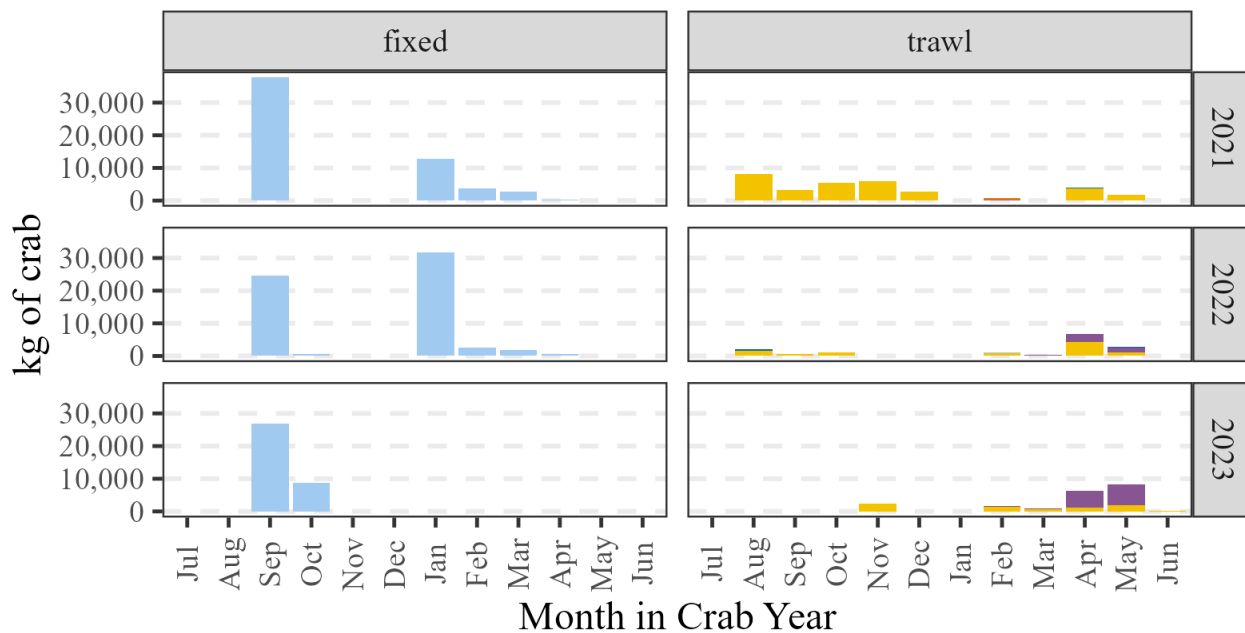
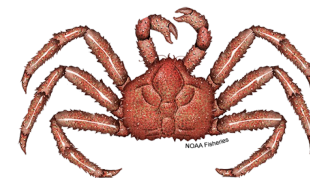


*Other species includes: Atka mackerel, Greenland turbot, other flatfish, plaice, pollock, halibut, rockfish & sablefish

- In most years more RKC bycatch in the P. cod pot fisheries occur in the fall.
- Minimal P.cod pot fishing occurred in Jan/Feb 2024 due to poor markets which resulted in minimal RKC bycatch.
- Increase in rock sole target due to changing market conditions

Bristol Bay RKC

Incidental Catch by Month and Trip Target



- Arrowtooth/Kamchatka Flounder
- Flathead Sole
- Other Species
- Pacific Cod
- Rock Sole
- Yellowfin Sole

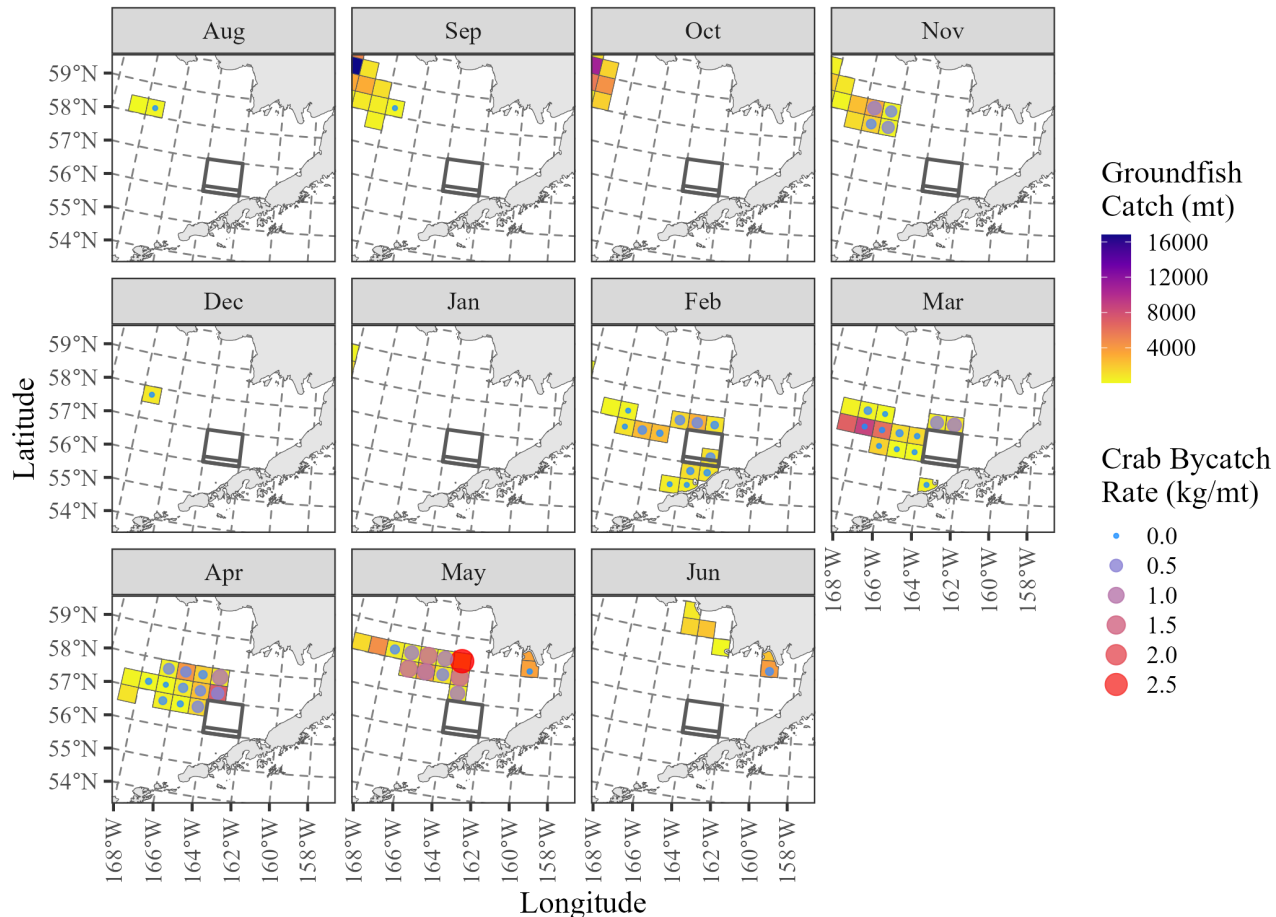
*Other species includes: Atka mackerel, Greenland turbot, other flatfish, plaice, pollock, halibut, rockfish & sablefish



2023/24 Average Rate (kg crab/mt of Groundfish) in the Flathead, Rock, and Yellowfin Soles NPT Fisheries by ADF&G Statistical Area and Months

Bristol Bay RKC

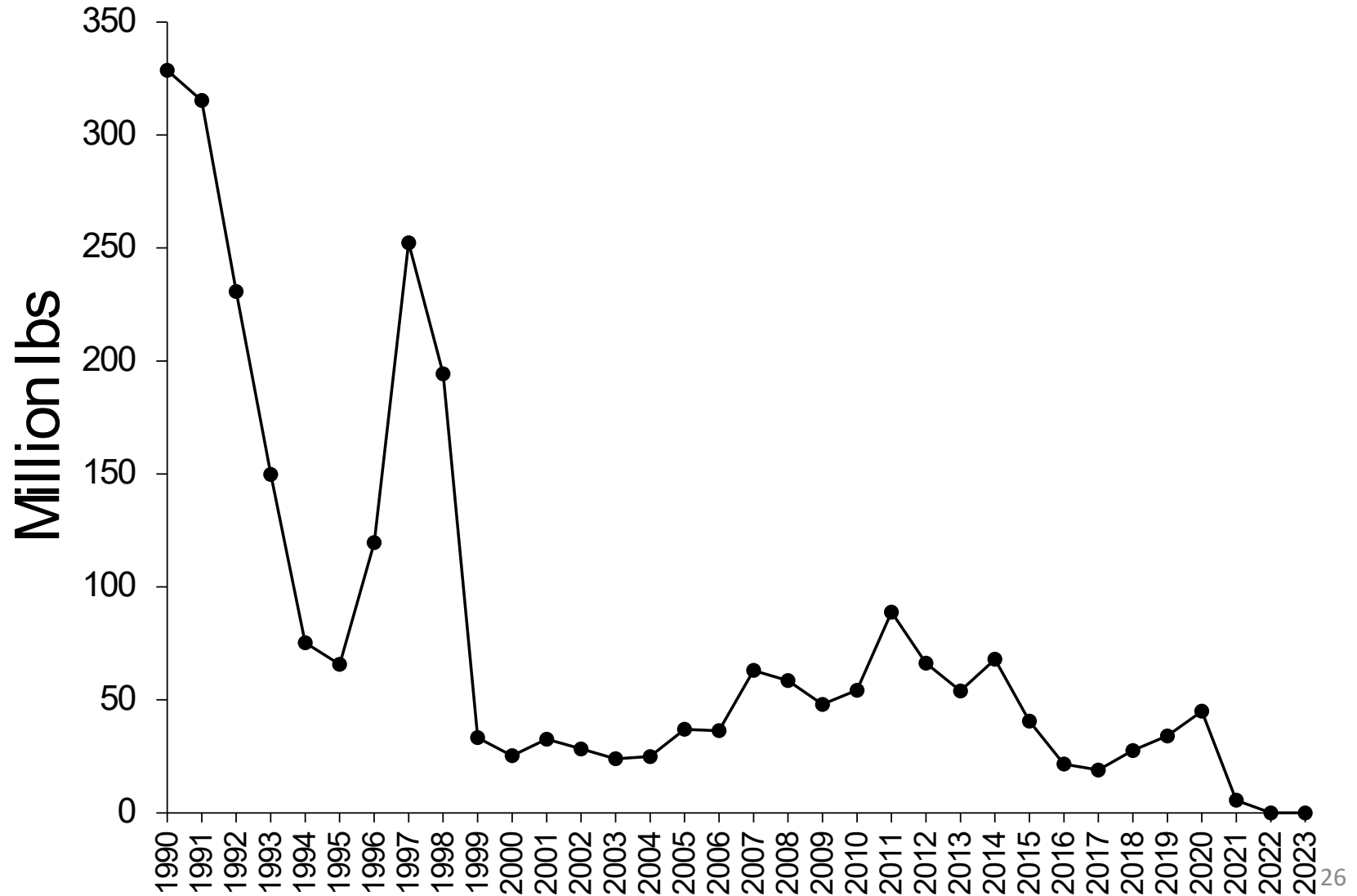
- Data mapped to stat-area and dots are center of boxes
- Confidential fishing areas excluded



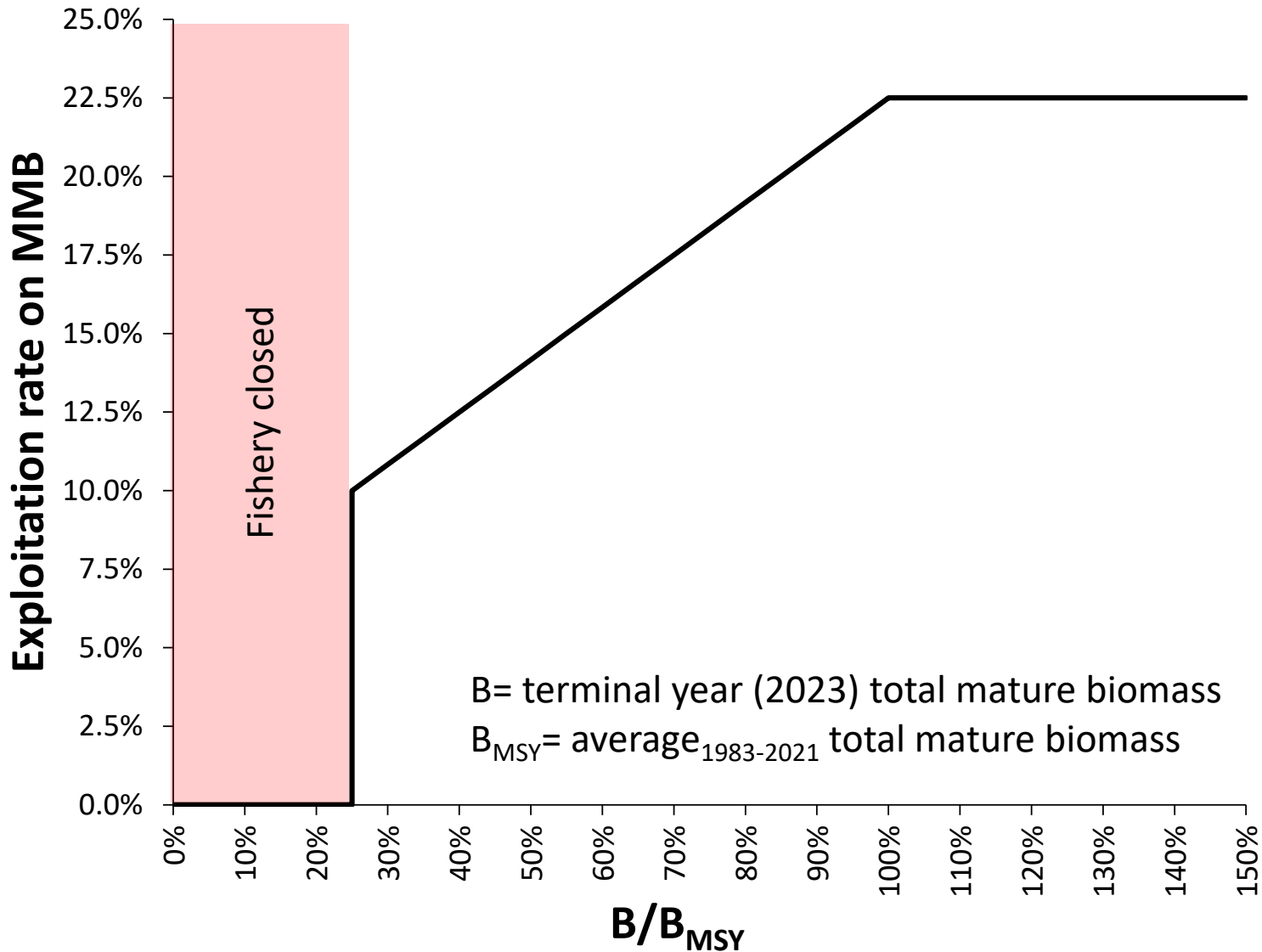
A large pile of snow crabs, showing their characteristic light brown and tan colors. The crabs are densely packed, with many legs and claws visible. A central crab is more prominent, showing its carapace and legs. The background is a soft, out-of-focus grey, suggesting a natural or processed environment.

Snow crab

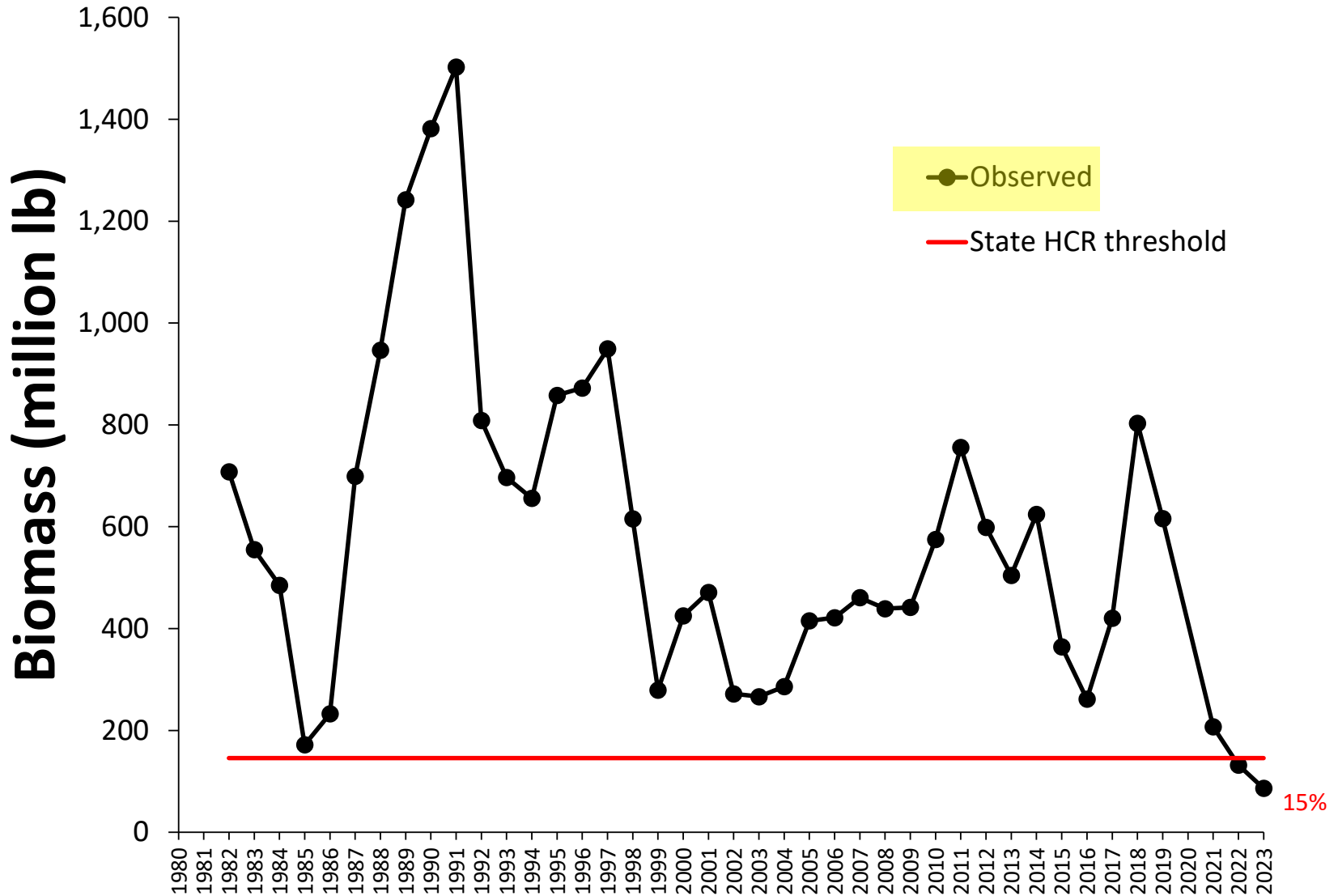
Retained catch



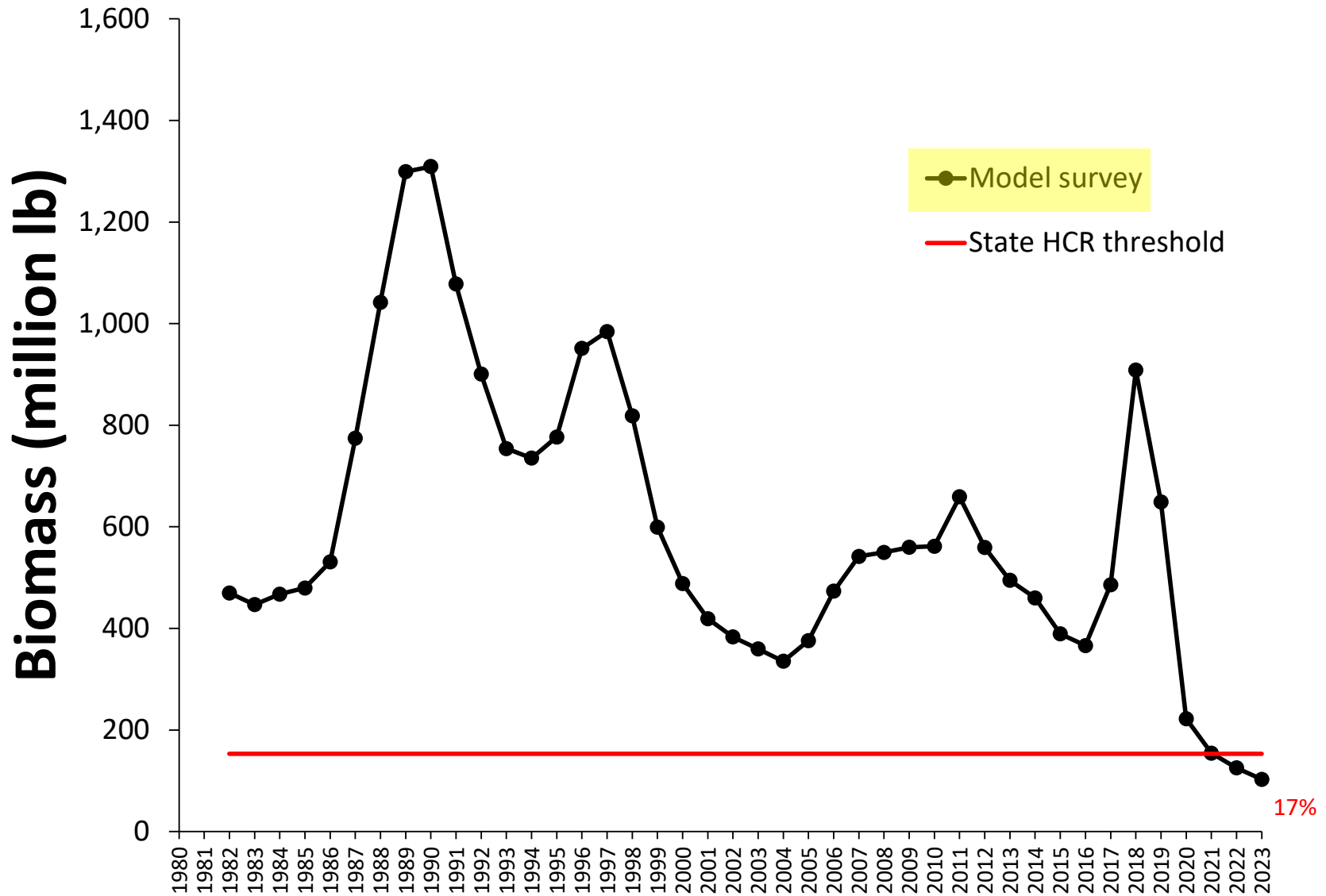
State Harvest Strategy



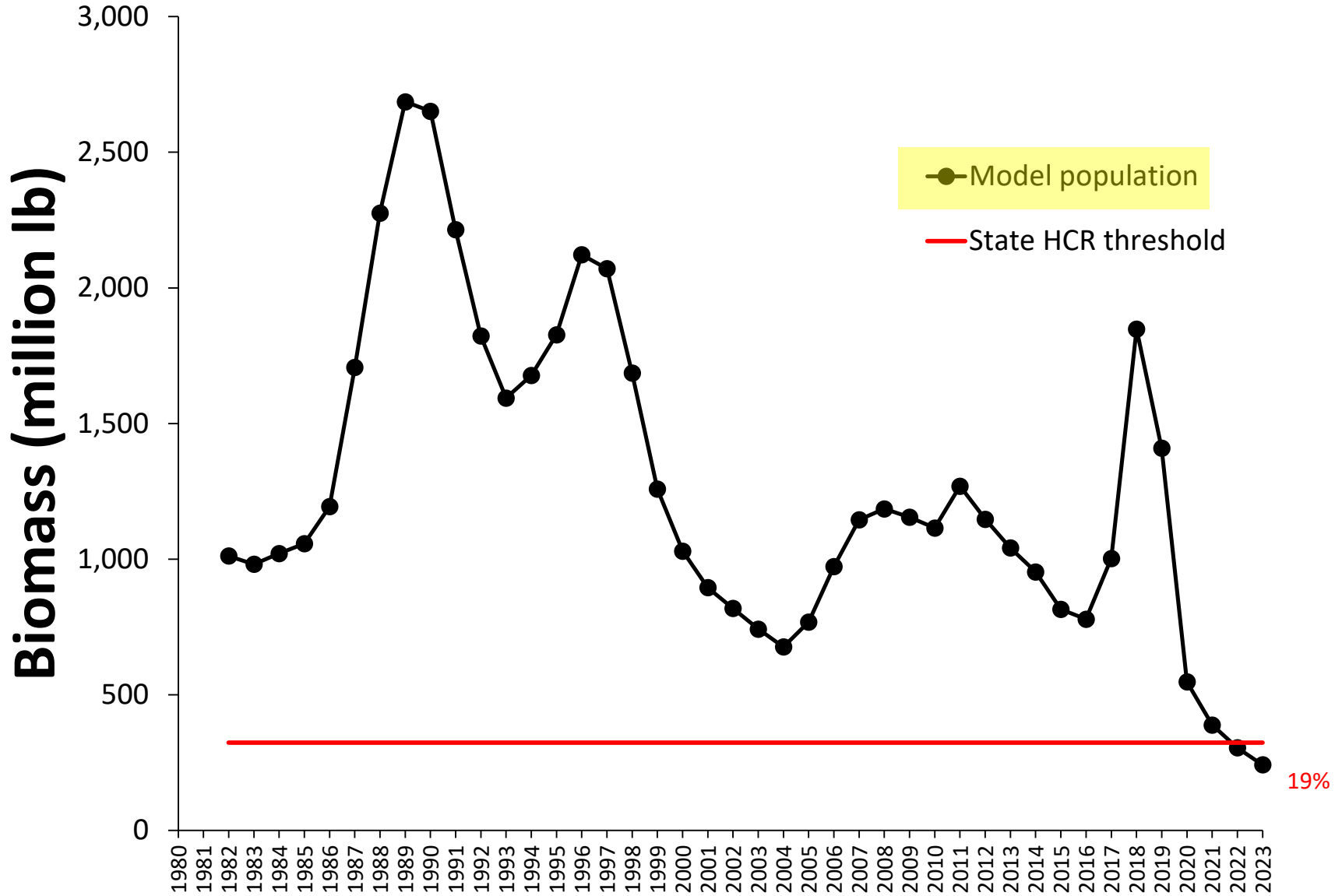
Total Mature Biomass: Survey data



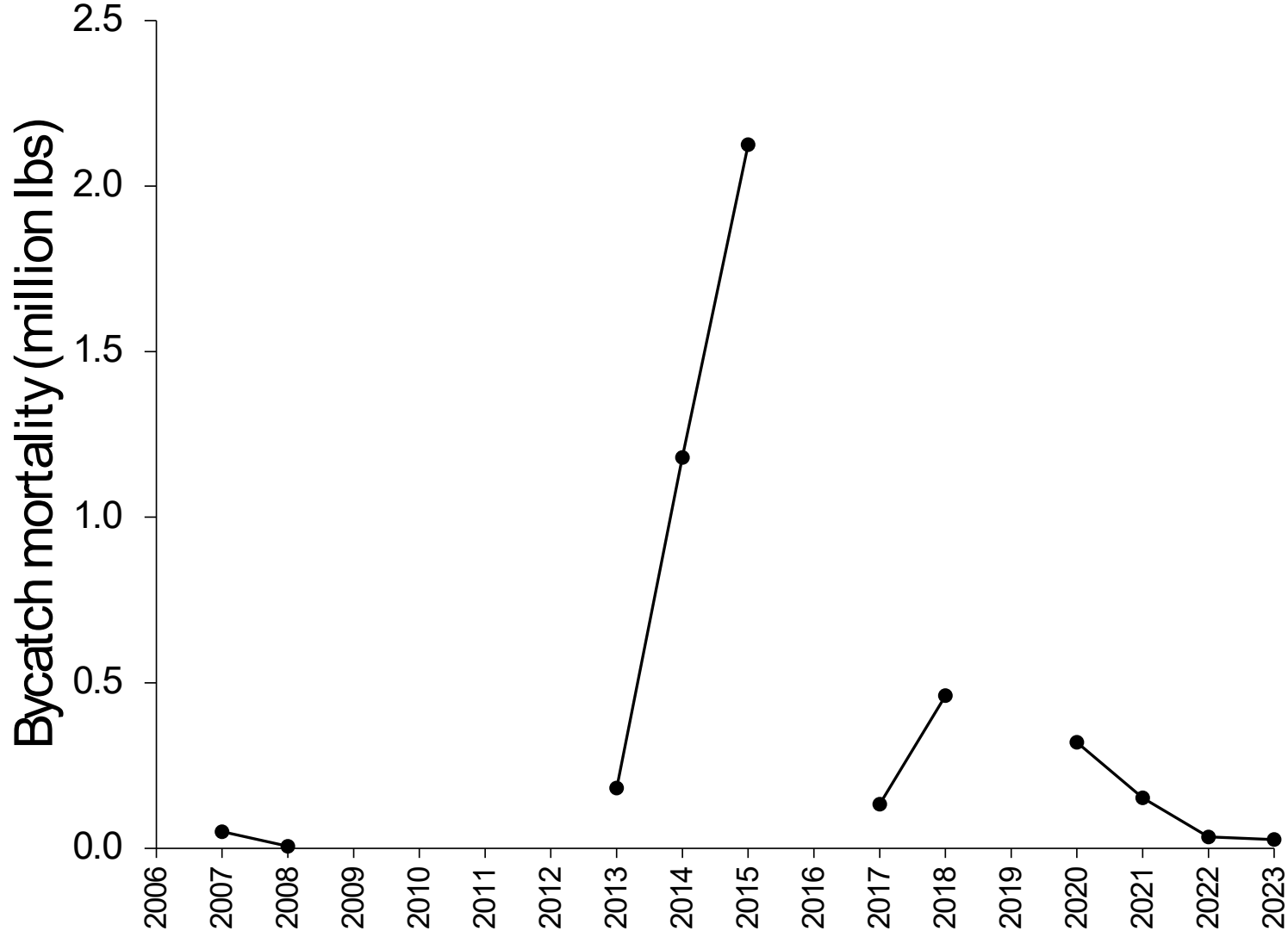
Total Mature Biomass: Model-Survey



Total Mature Biomass: Model-Population

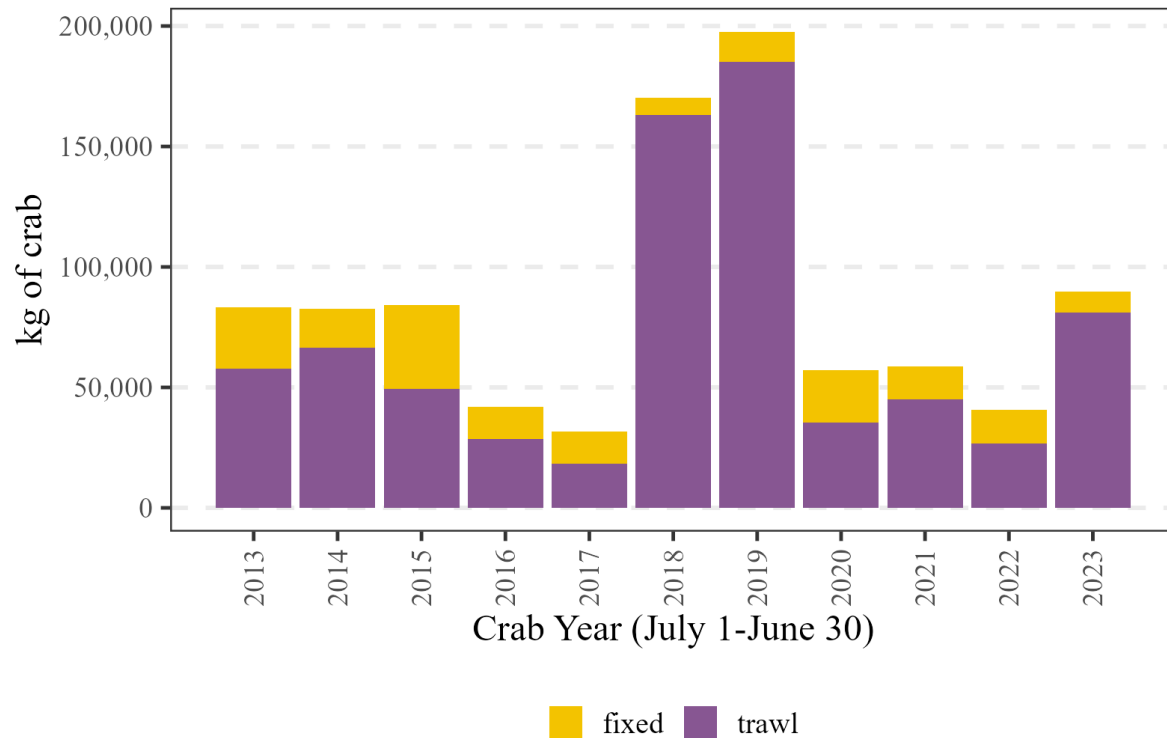
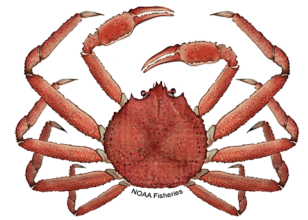


Snow crab bycatch mortality in Tanner W fishery



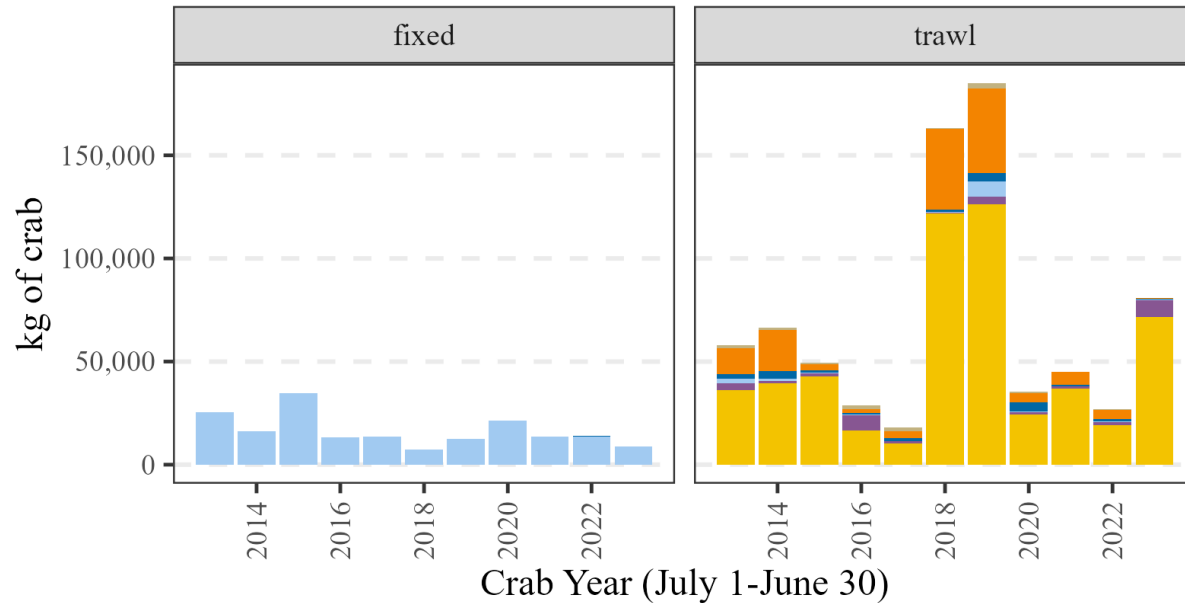
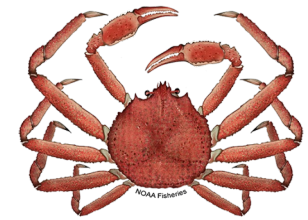
- Pot and hook-and-line Pacific cod fishing accounts for most BSS bycatch in the fixed gear category.
- Hook-and-line Pacific cod fishing is spread out throughout the stock area.
- Pot Pacific cod fishing is concentrated on the north side of Unimak Island to Port Moller.

Bering Sea snow crab
Incidental Catch in Groundfish Fisheries



- 2018/19 and 2019/20 increased BSS bycatch in the yellowfin fishery was due mainly to increased yellowfin sole fishing in the area above the Pribilof Islands.

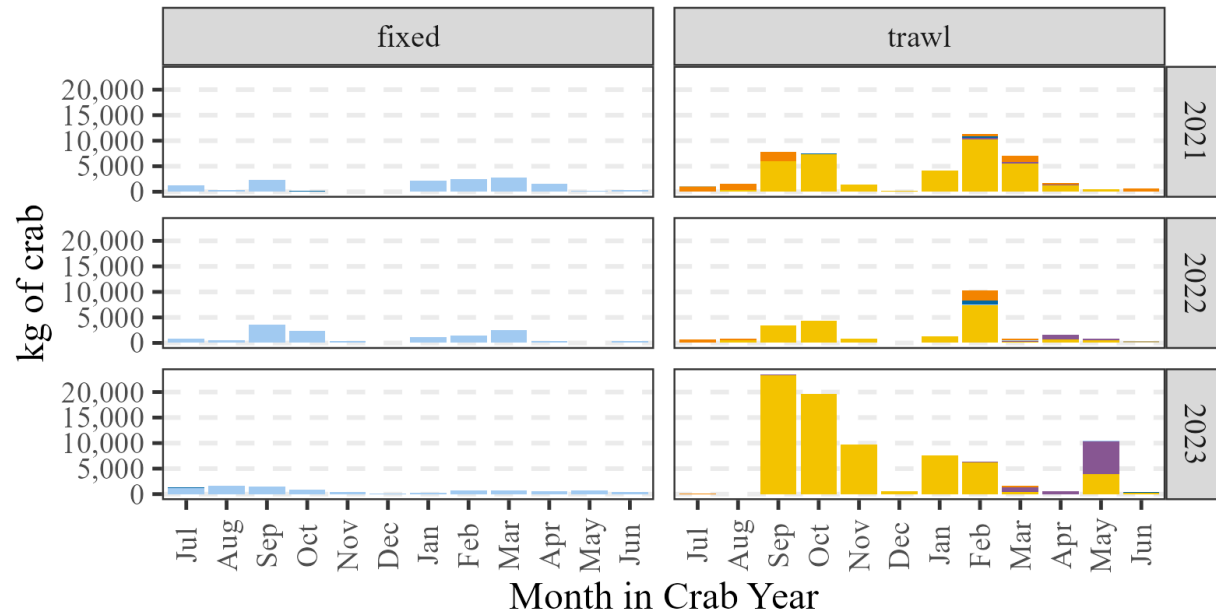
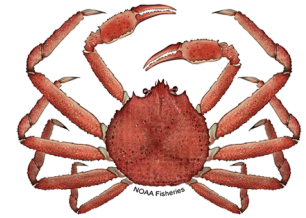
Bering Sea snow crab Incidental Catch by Trip Target



*Other species includes: Atka mackerel, Greenland turbot, other flatfish, plaice, pollock, halibut, rockfish, & sablefish

- Bycatch of BSS in trawl gear typically occurs throughout the crab year.
- Majority of yellowfin sole harvest occurred in Sept.-Nov.

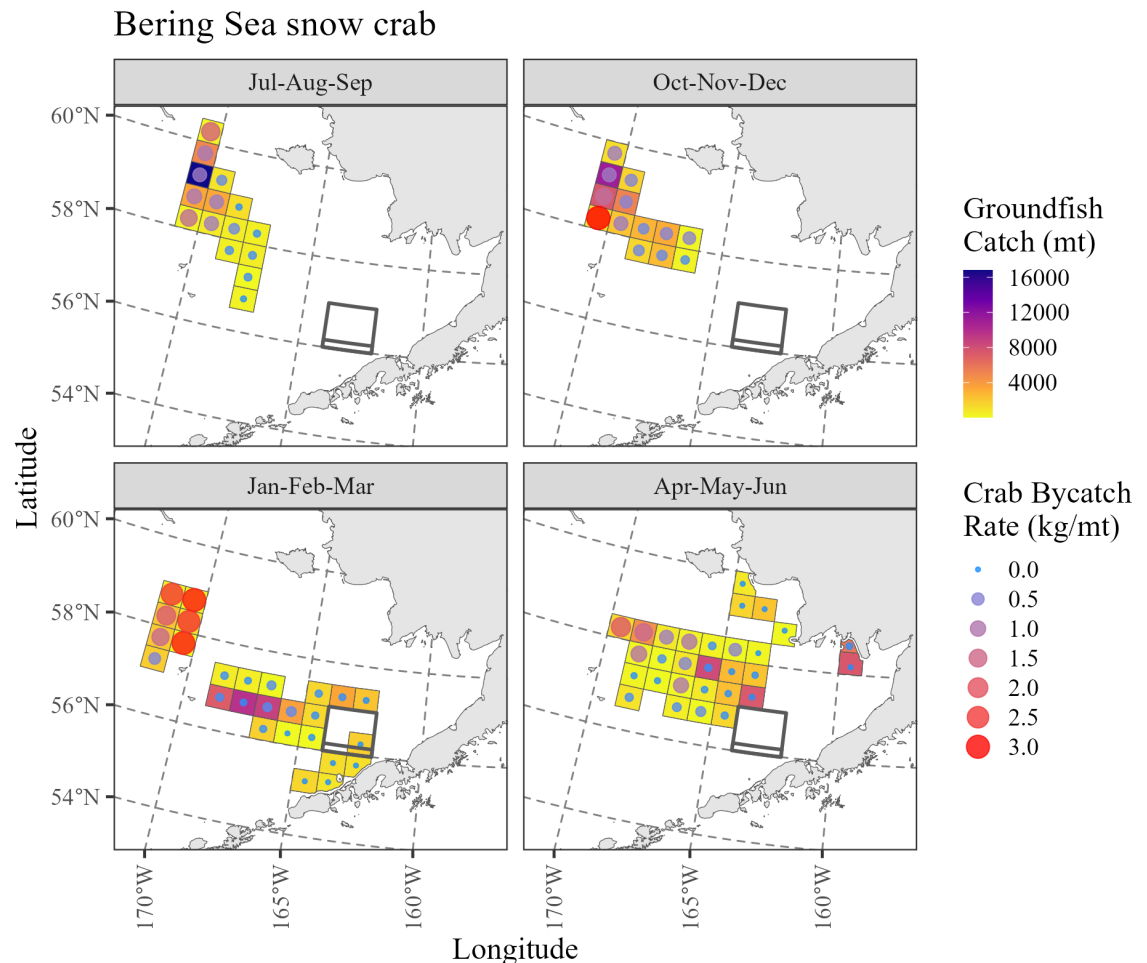
Bering Sea snow crab Incidental Catch by Month and Trip Target



*Other species includes: Atka mackerel, Greenland turbot, other flatfish, plaice, pollock, halibut, rockfish, & sablefish

2023/24 Average Rate (kg crab/mt of Groundfish) in the Flathead, Rock, and Yellowfin Soles NPT Fisheries by ADF&G Statistical Area and Months

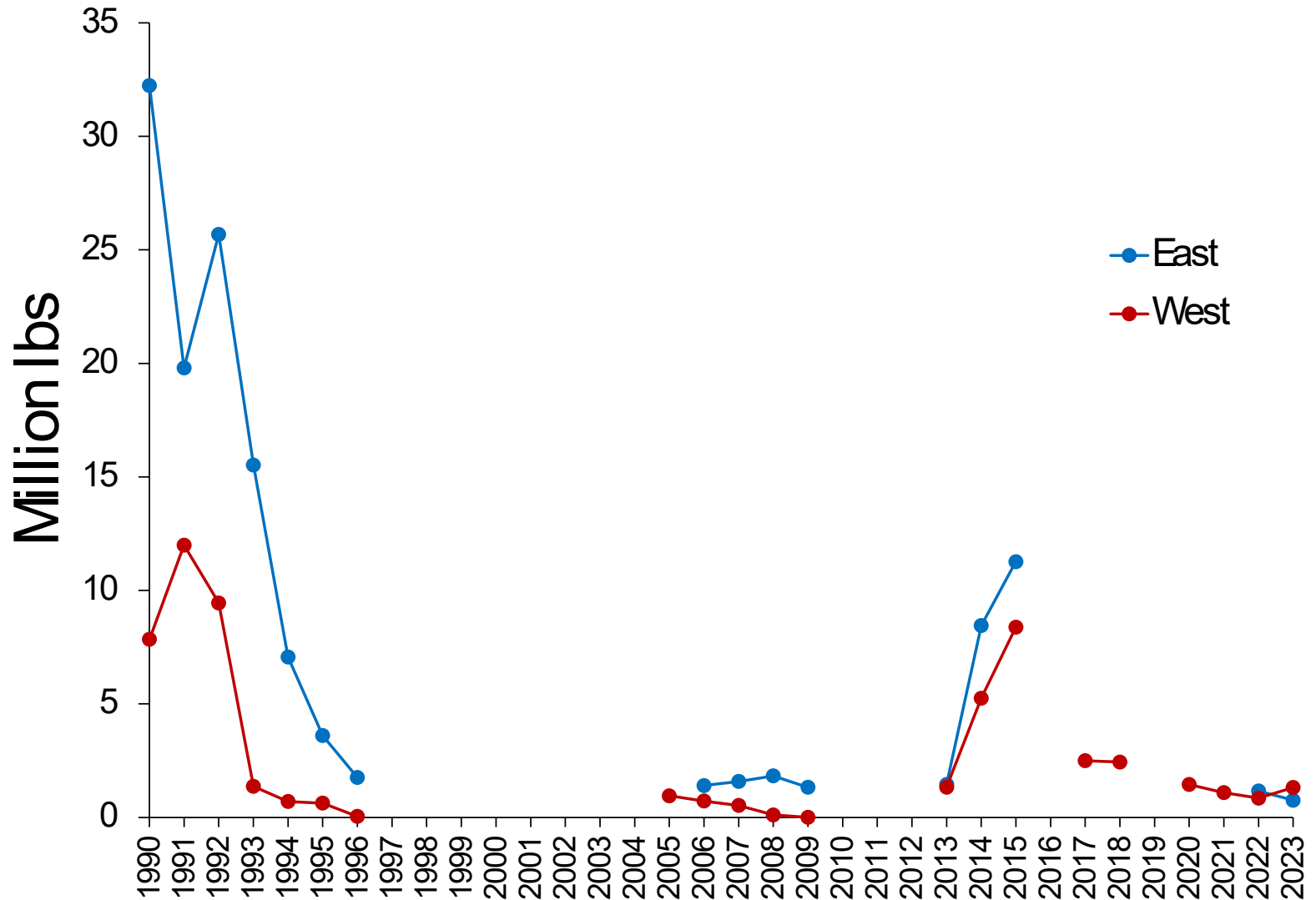
- Data mapped to stat-area and dots are center of boxes
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Tanner crab

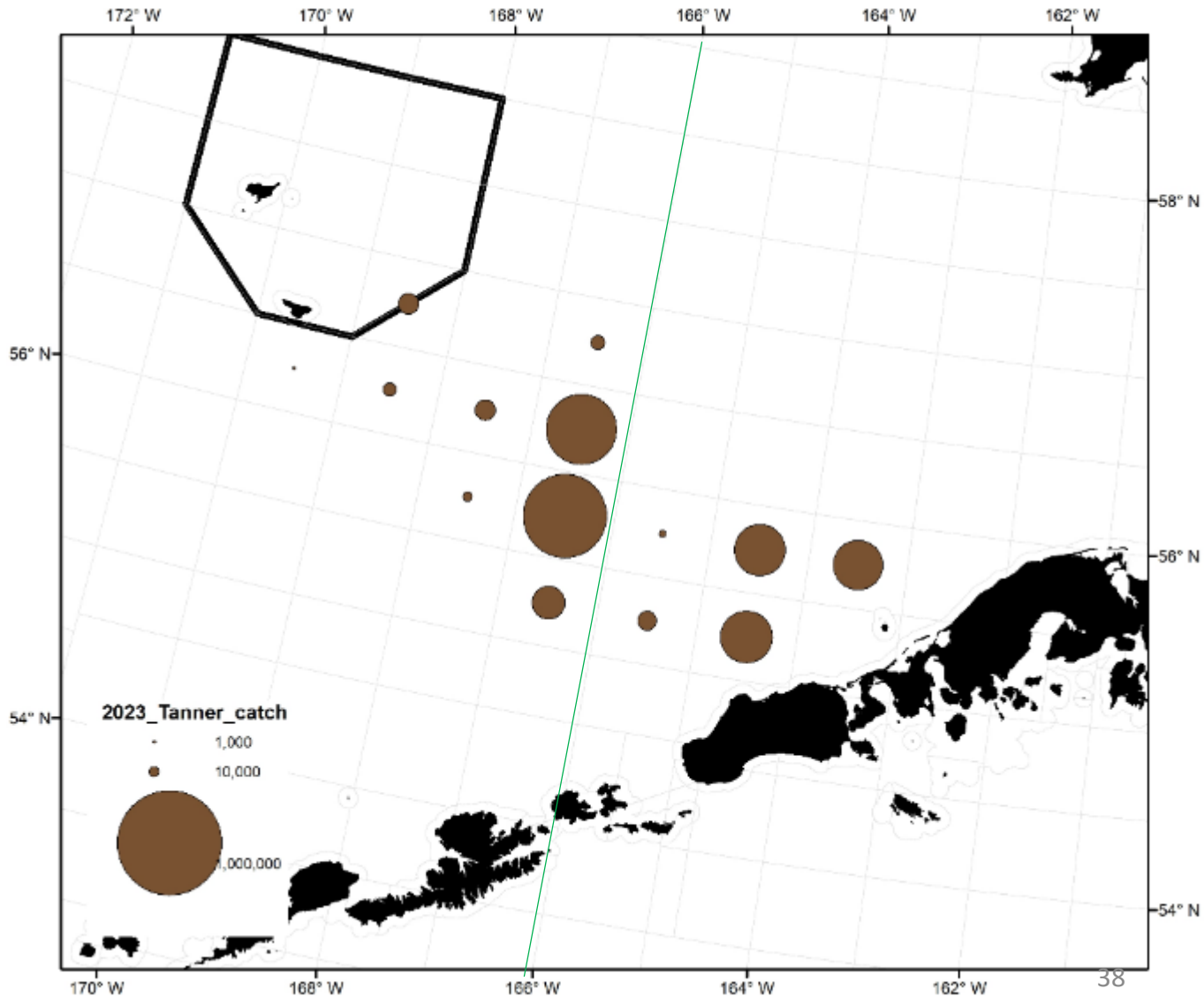
Tanner crab retained catch



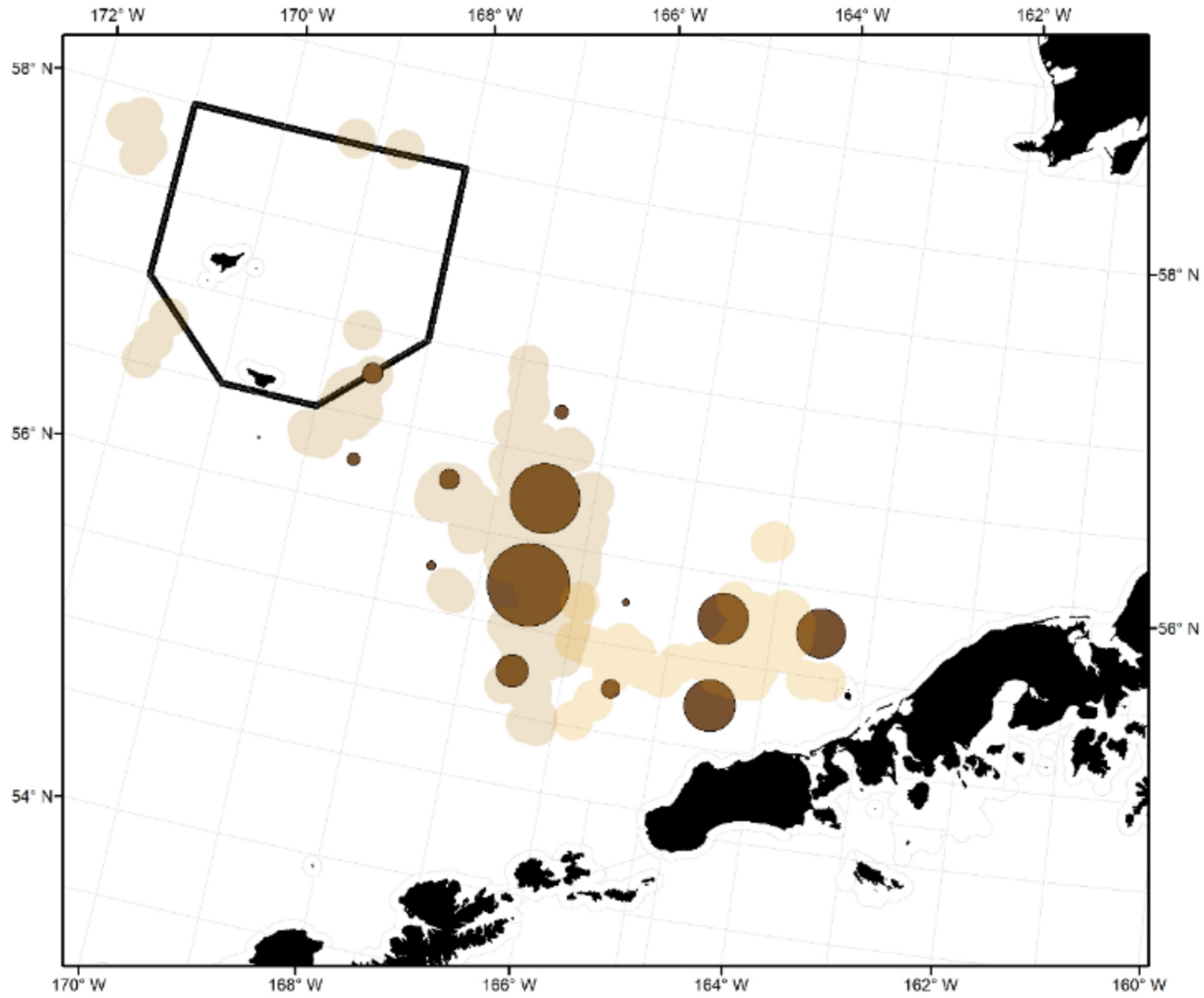
2023/24 Tanner crab retained catch

Excludes stat
areas with <3
vessels

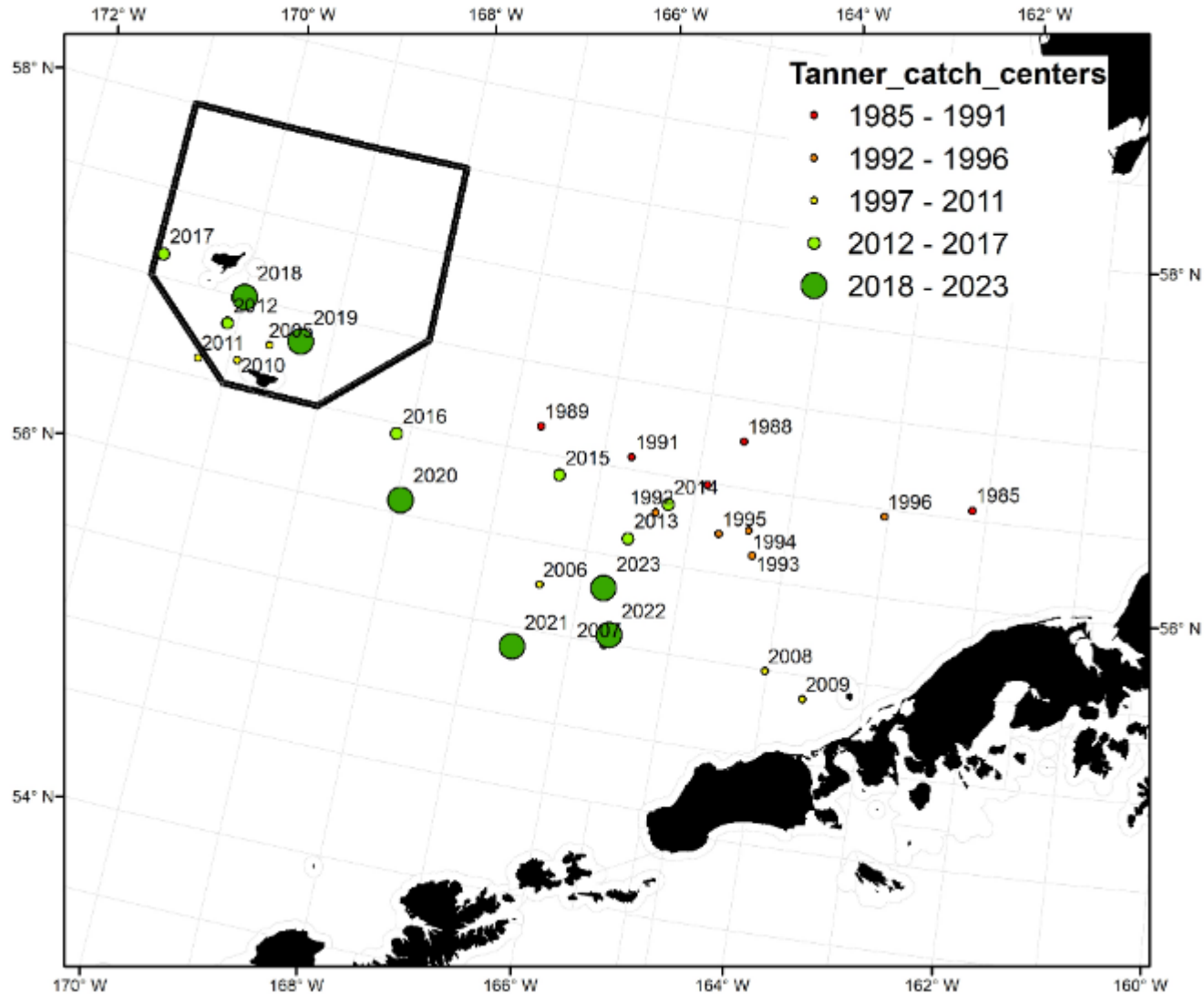
99% of harvest
shown here



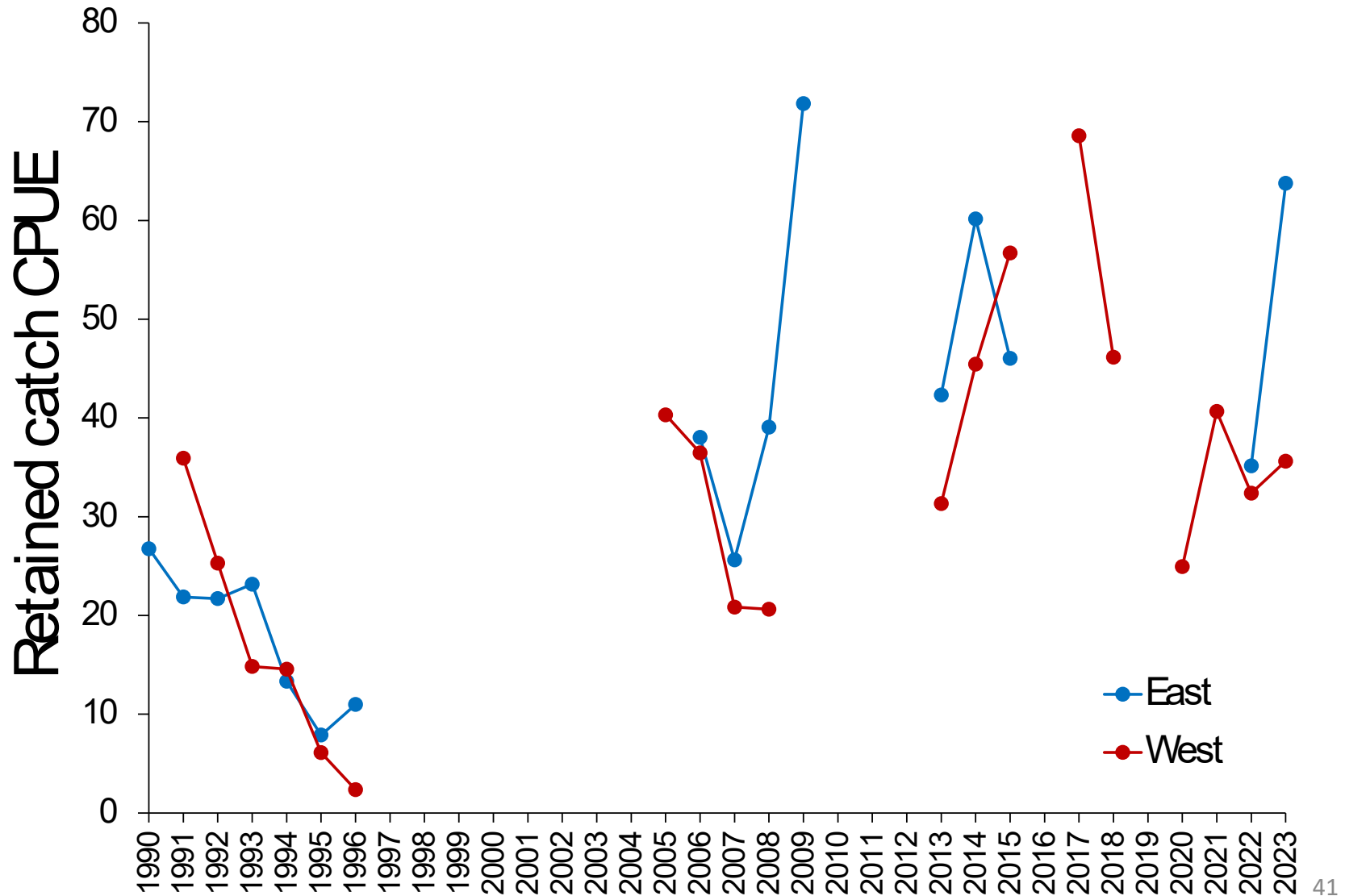
Observer spatial coverage



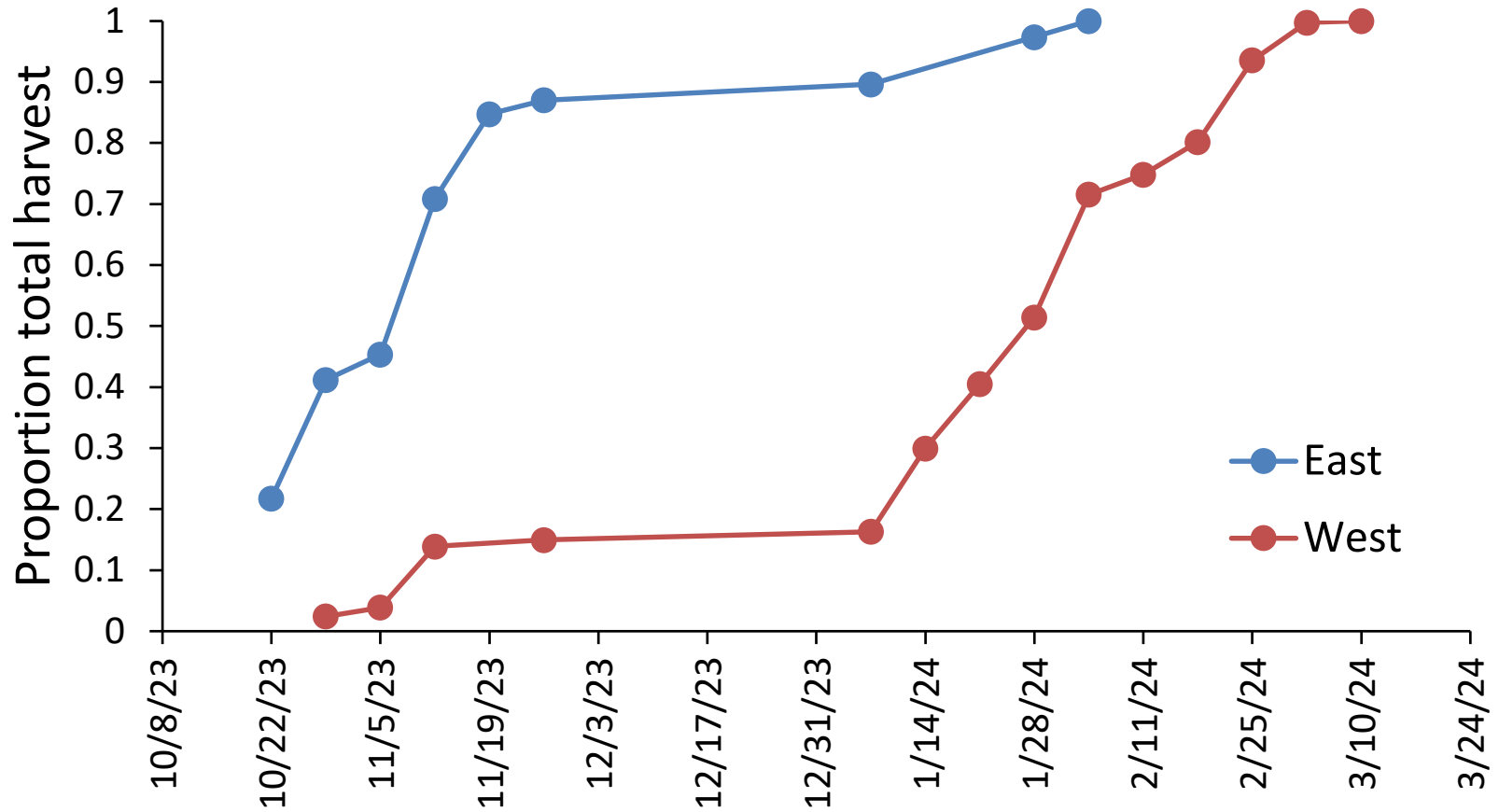
Weighted catch centers



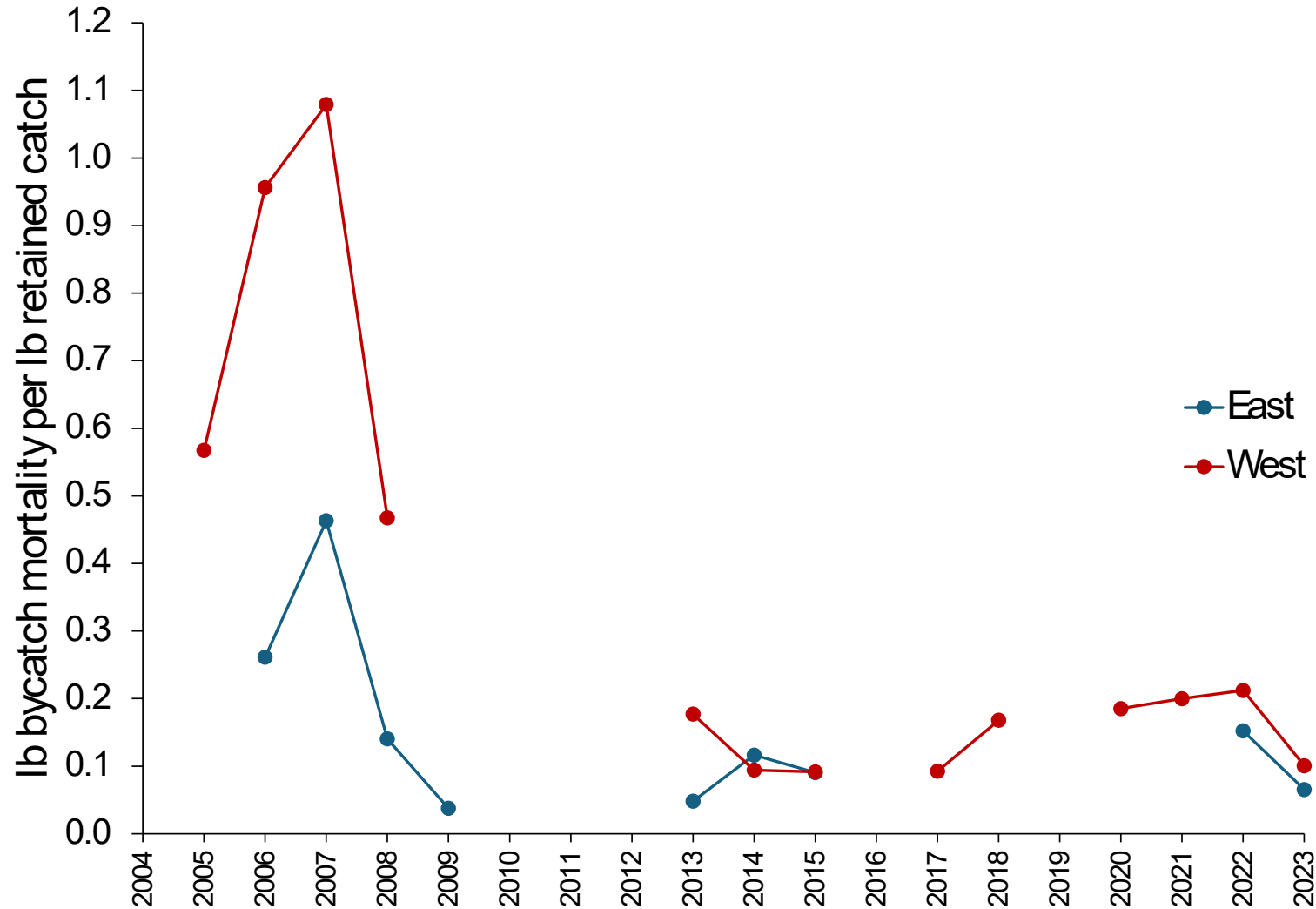
Tanner crab retained catch CPUE



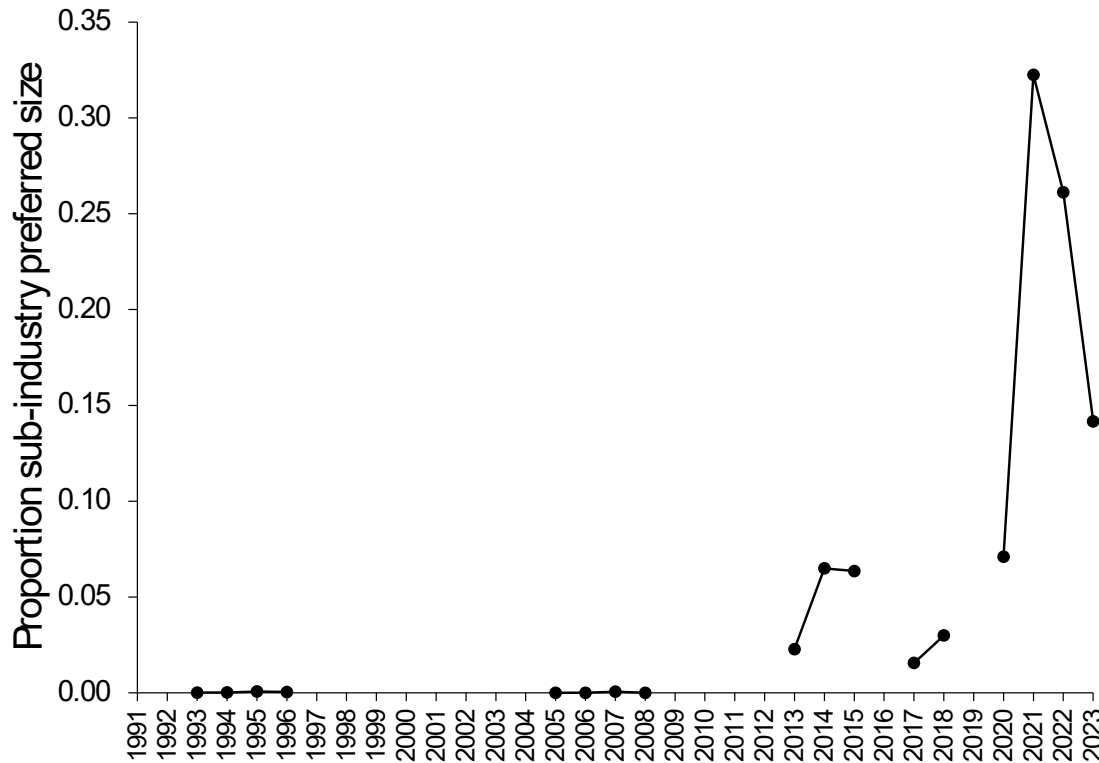
2023/24 Tanner crab



Tanner crab discard mortality rate



Retained catch (dockside data)



Legal size:

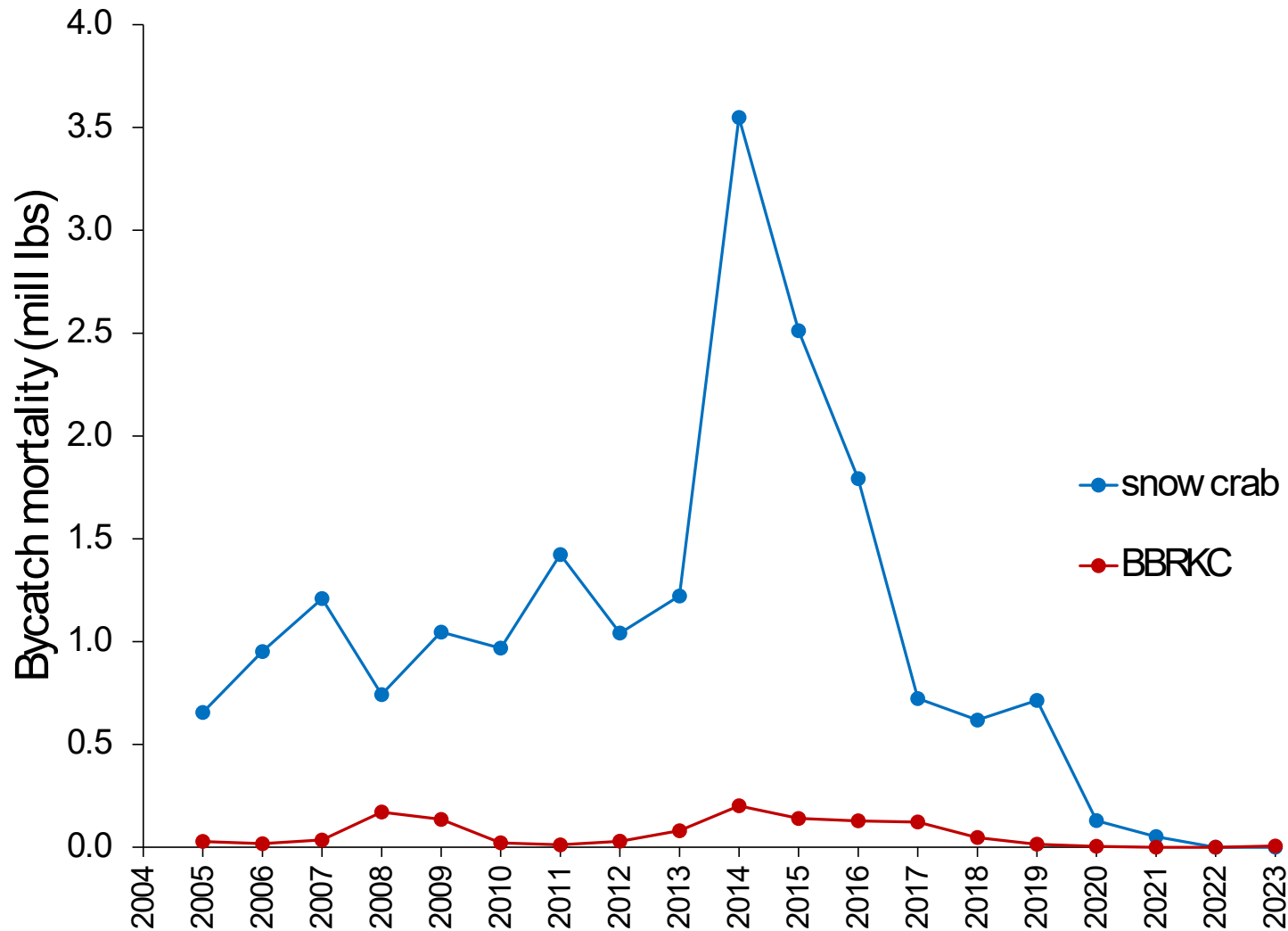
west 4.4 inches

east 4.8 inches

Preferred size: 5 inches

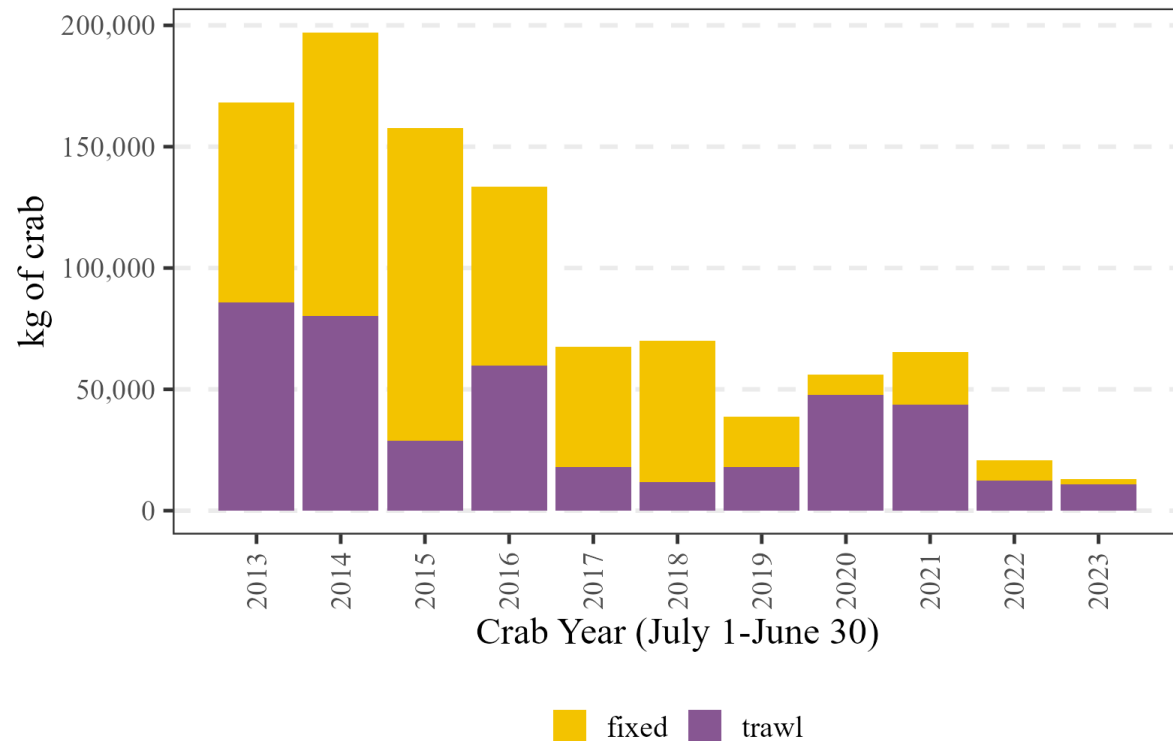
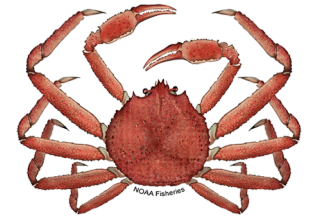
2021-2023: market for small Tanner crab in place of snow crab

Tanner crab bycatch in non-directed crab fisheries



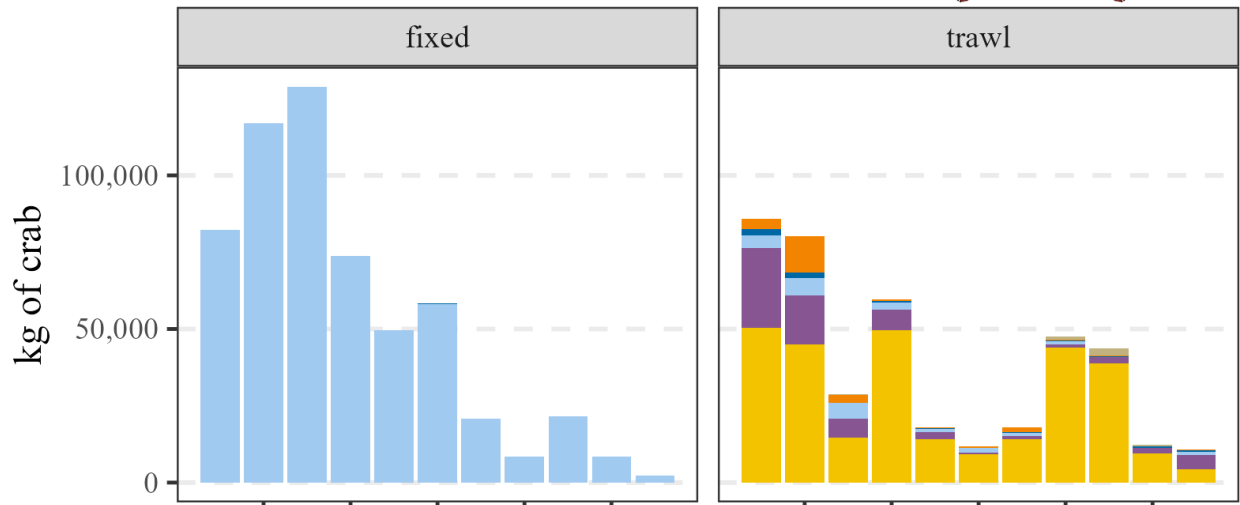
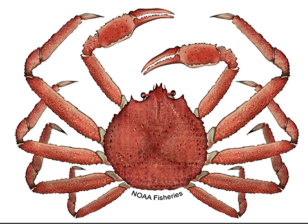
- Pacific cod fishing with pot gear accounts for most EBST bycatch in the fixed gear category.
- Pot Pacific cod fishing is concentrated on the north side of Unimak Island to Port Moller.
- East of 166° W longitude

Eastern Bering Sea Tanner crab
Incidental Catch in Groundfish Fisheries



- P. cod fixed gear bycatch decreasing since 2015.
- Trawl bycatch primarily from yellowfin sole fishery.

Eastern Bering Sea Tanner crab Incidental Catch by Trip Target



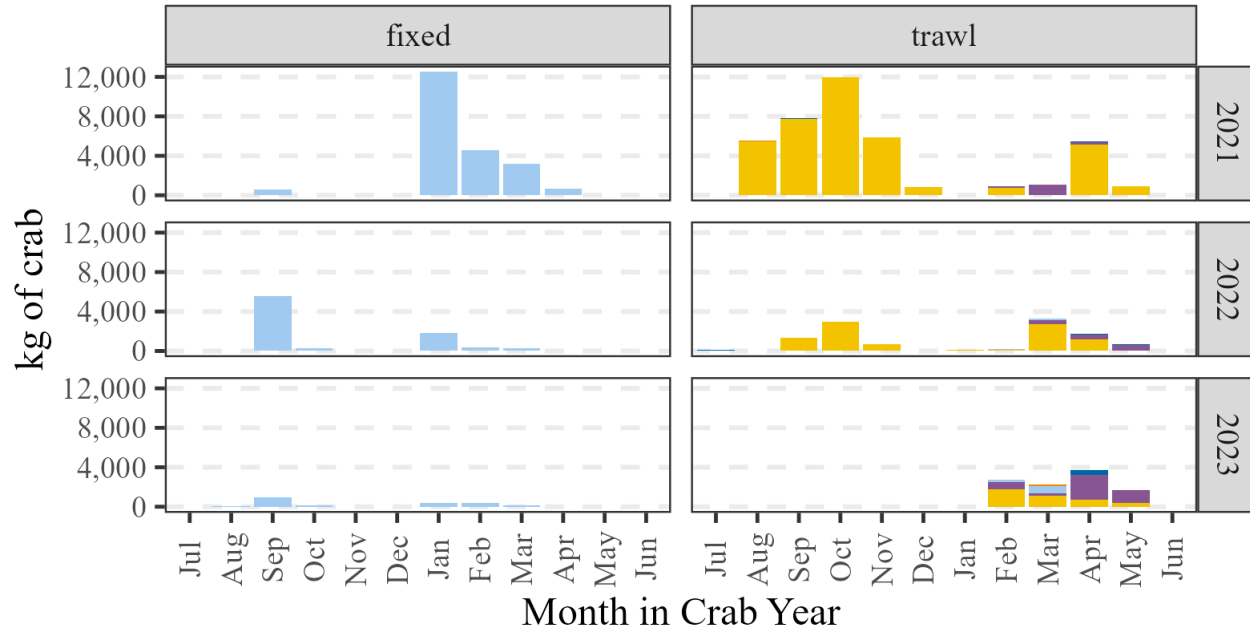
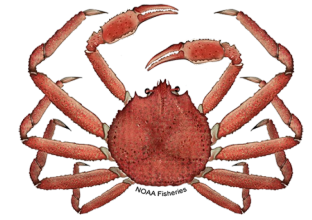
- Arrowtooth/Kamchatka Flounder
- Flathead Sole
- Other Species
- Pacific Cod
- Rock Sole
- Yellowfin Sole

*Other species includes: Atka mackerel, Greenland turbot, other flatfish, plaice, pollock, halibut, rockfish, & sablefish



- In 2023/24 bycatch was highest in Feb.-May during the yellowfin and rock sole fisheries.

Eastern Bering Sea Tanner crab Incidental Catch by Month and Trip Target



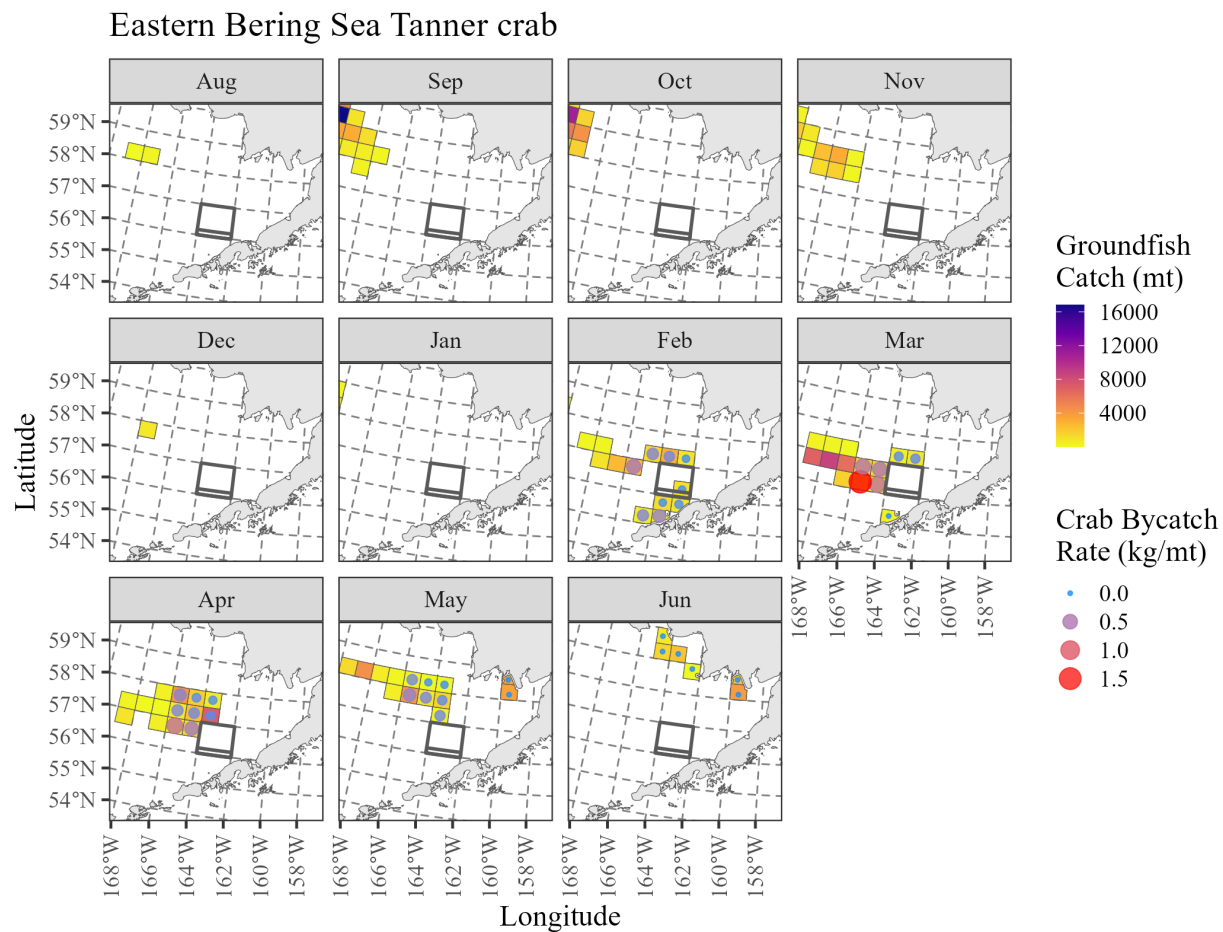
- Flathead Sole
- Other Species
- Pacific Cod
- Rock Sole
- Yellowfin Sole

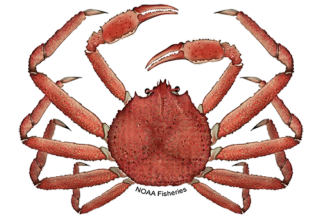
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2023/24 Average Rate (kg crab/mt of Groundfish) in the Flathead, Rock, and Yellowfin Soles NPT Fisheries by ADF&G Statistical Area and Month

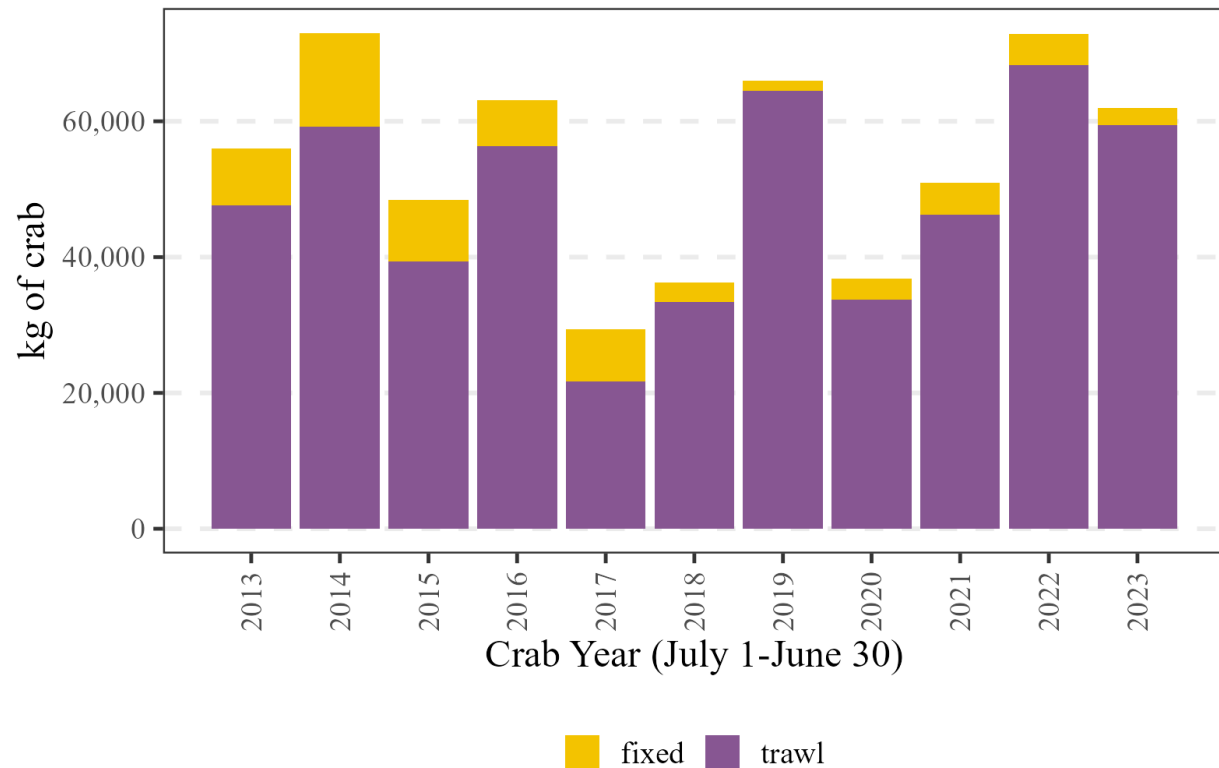
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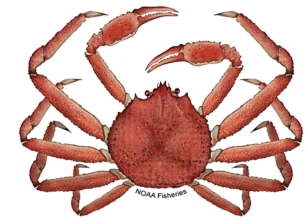


Western Bering Sea Tanner crab Incidental Catch in Groundfish Fisheries

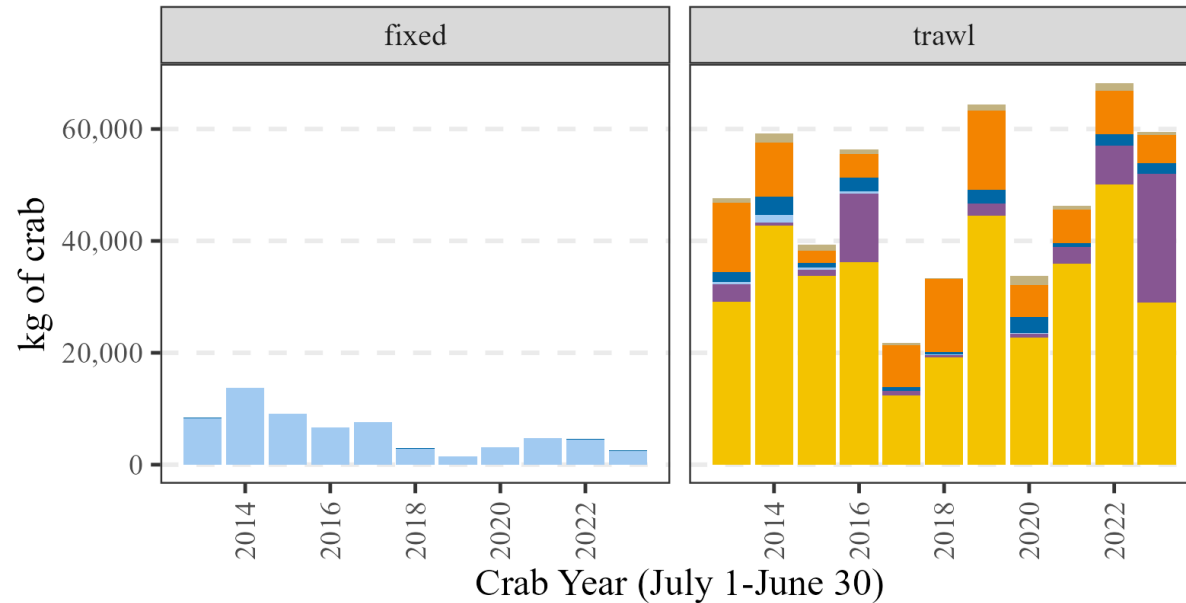
- WBST bycatch in fixed gear is mostly from hook-and-line and pot Pacific cod fisheries.
- Pot catcher vessels do not fish for groundfish in the WBST stock area as much as in the EBST stock area which results in less fixed gear bycatch in the Western area than the Eastern area.



- Bycatch of WBST in trawl gear typically occurs through the crab year.
- Majority of trawl bycatch from yellowfin/flathead/rock sole fisheries
- West of 166° W longitude



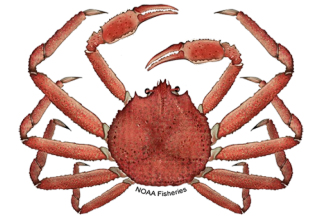
Western Bering Sea Tanner crab Incidental Catch by Trip Target



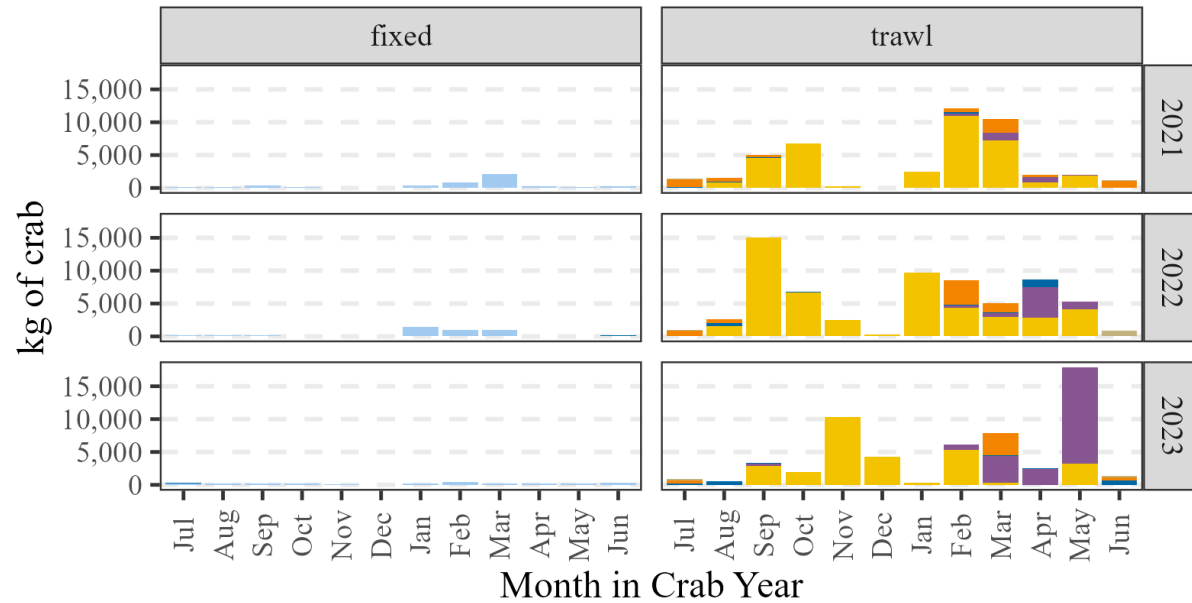
*Other species includes: Atka mackerel, Greenland turbot, other flatfish, plaice, pollock, halibut, rockfish, & sablefish



- In 2023/2024 bycatch was highest in Nov., Mar. and May.
- Rock sole increase driven by market conditions



Western Bering Sea Tanner crab Incidental Catch by Month and Trip Target



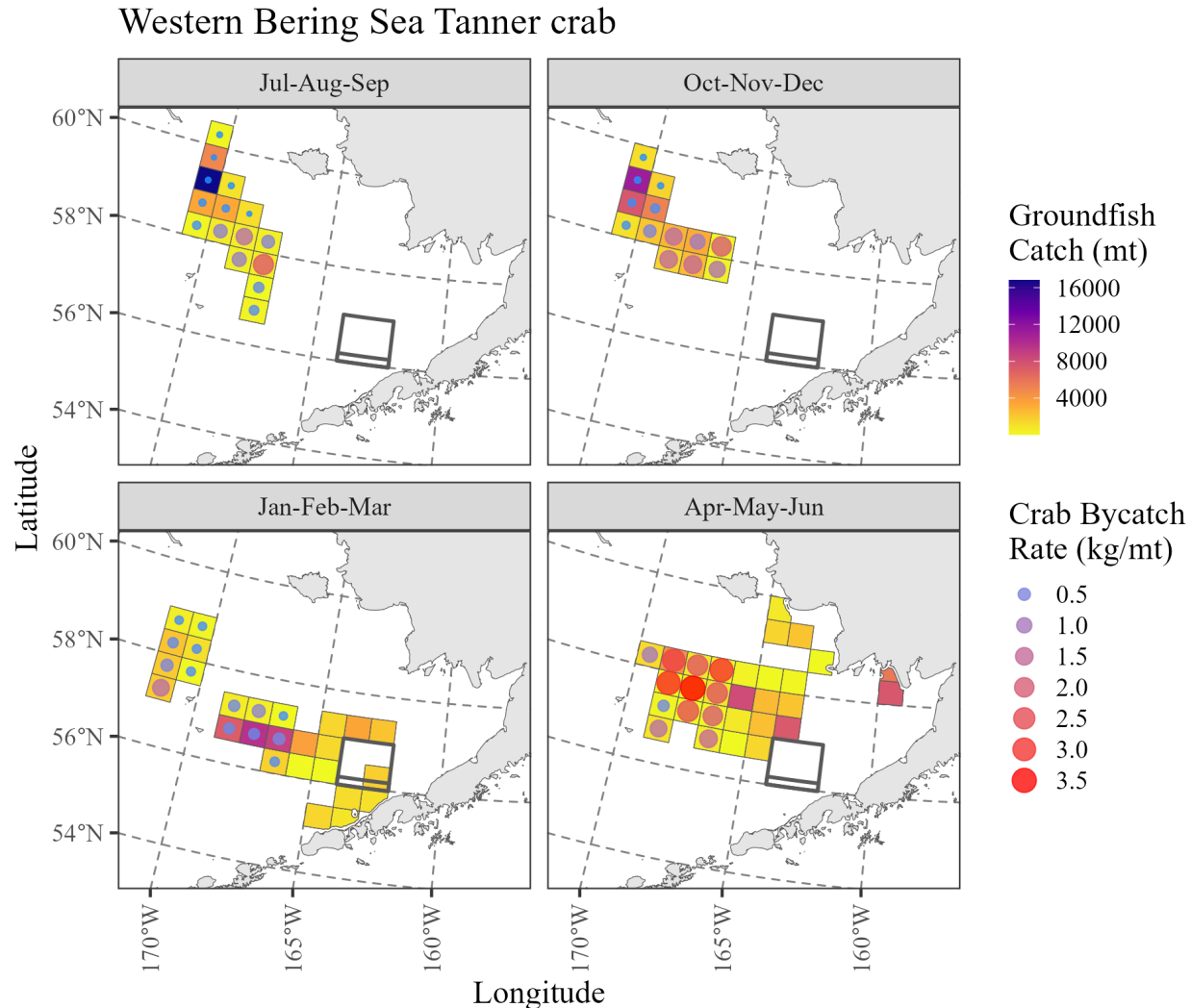
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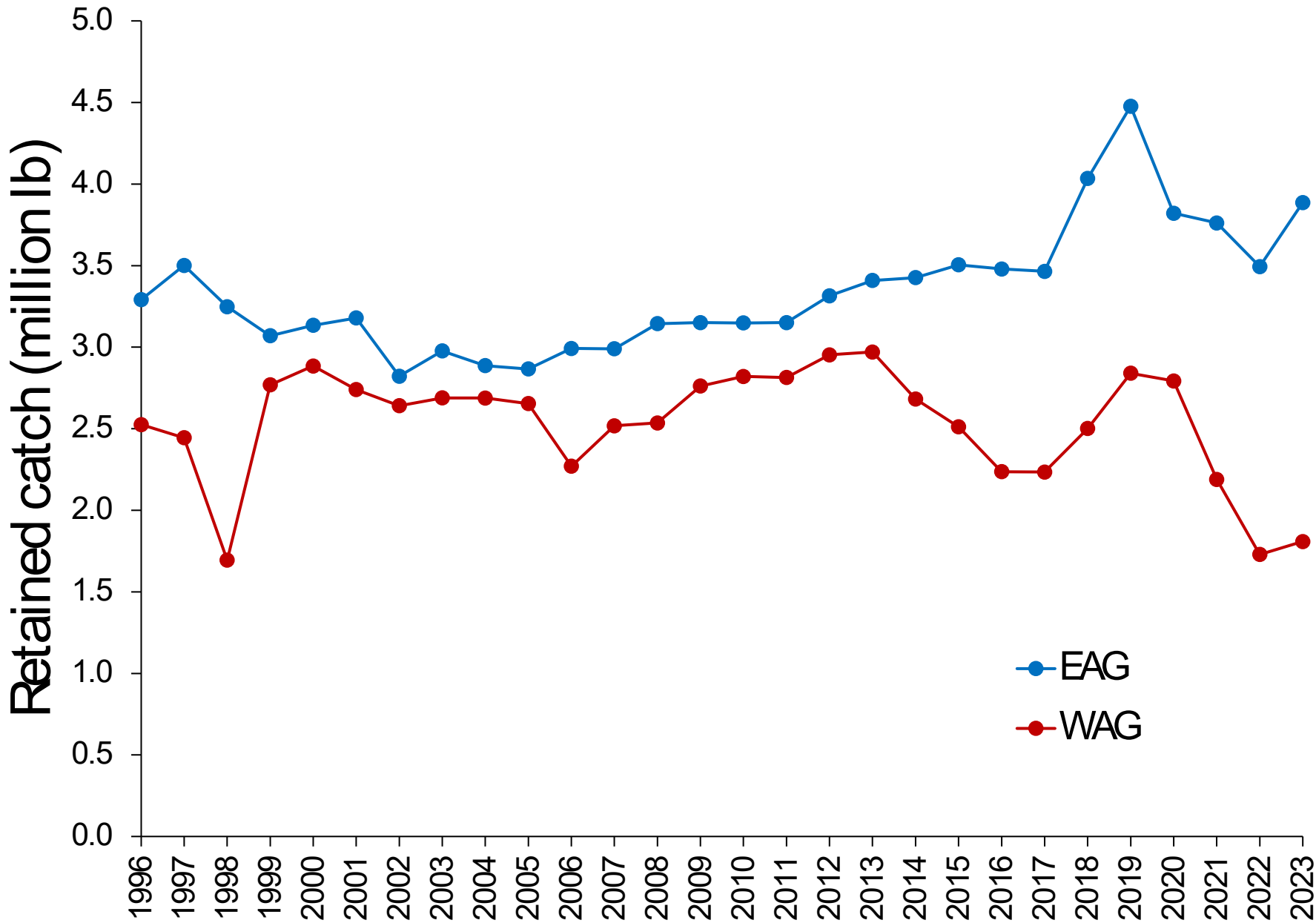
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- Confidential fishing areas excluded

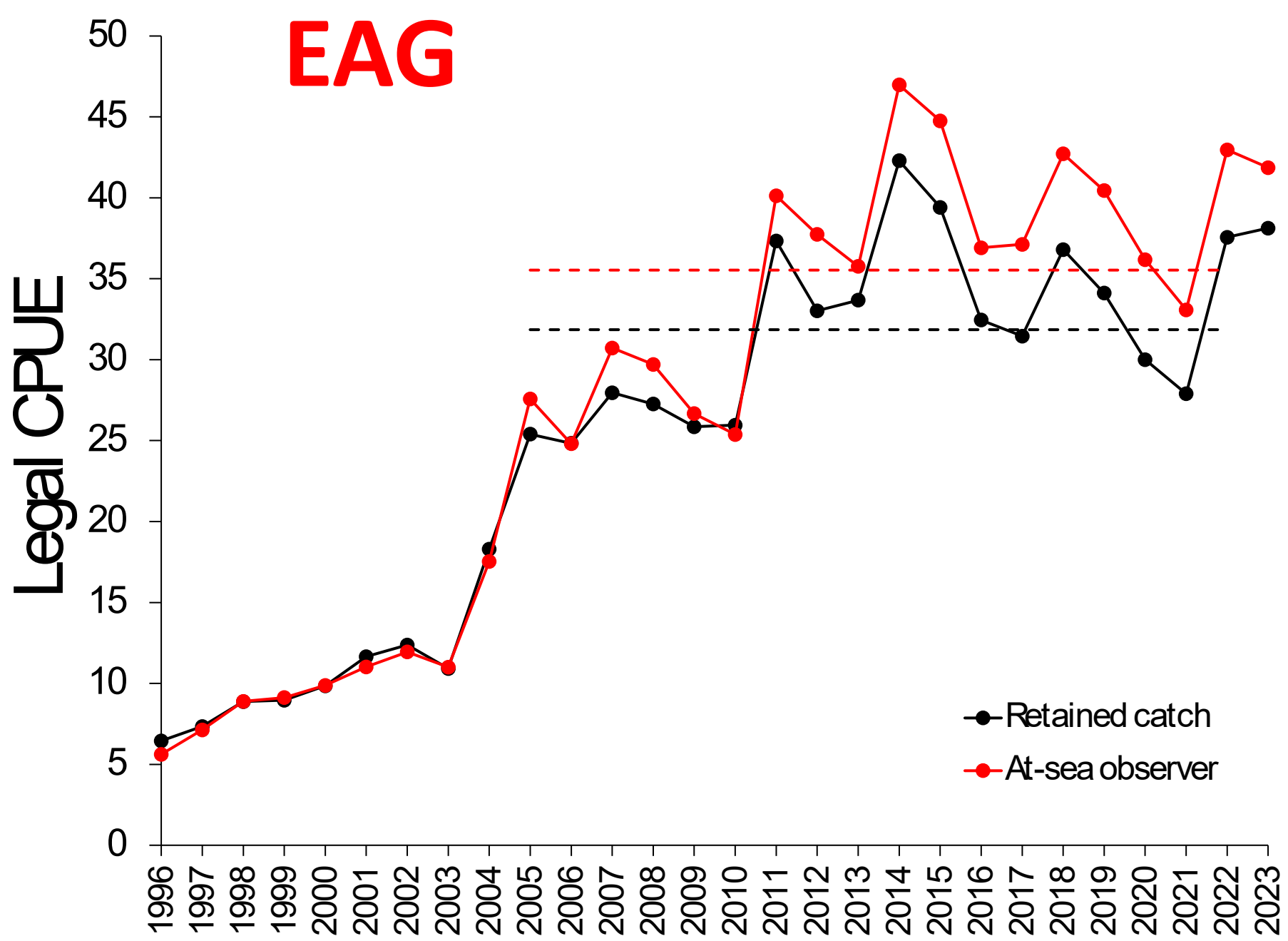


A dense crowd of crabs, likely a crab festival, with a central text box containing the acronym 'AIGKC'. The crabs are of various sizes and colors, including shades of brown, orange, and purple. They are packed closely together, filling the entire frame. The text 'AIGKC' is centered in a black box with a white border.

AIGKC

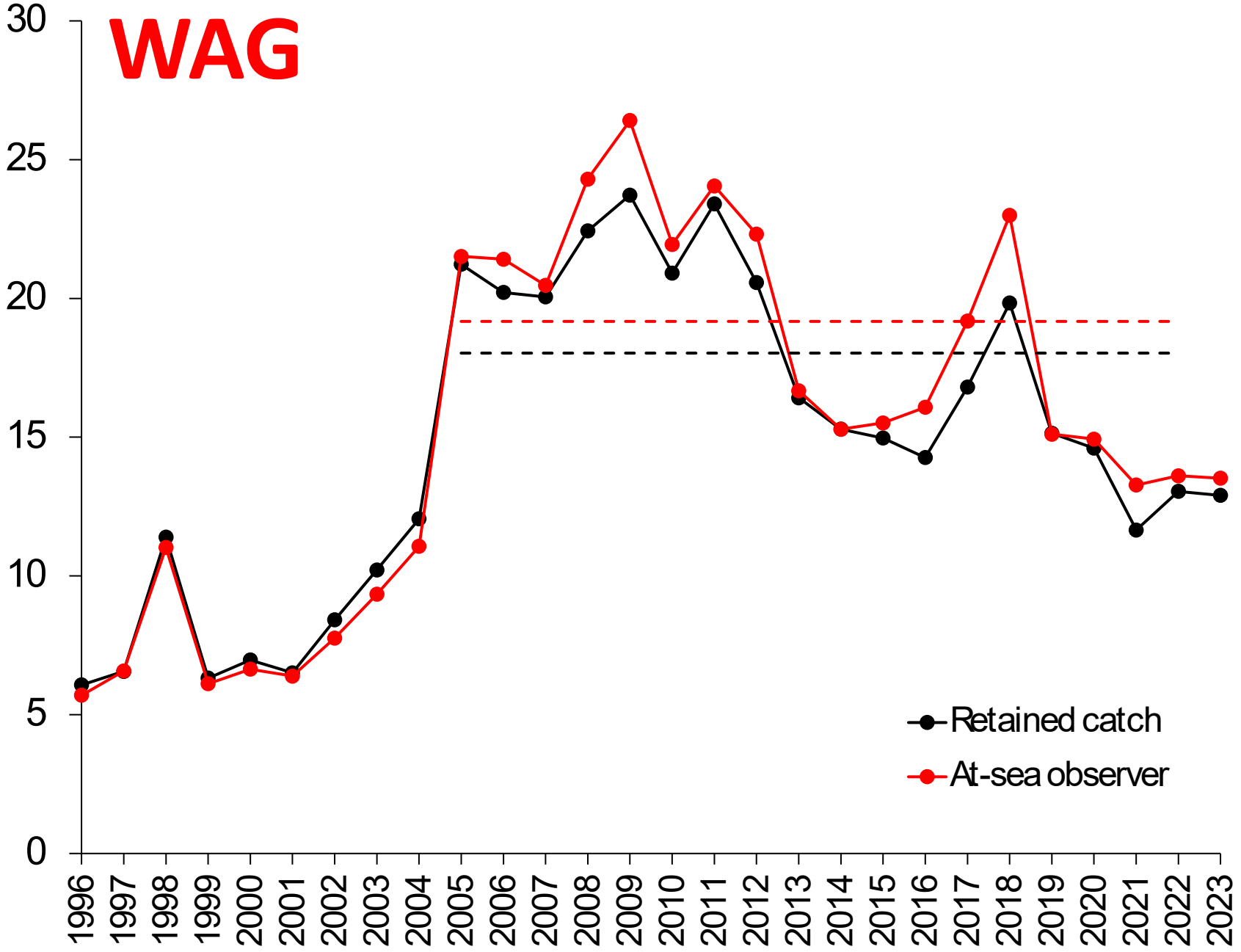


EAG

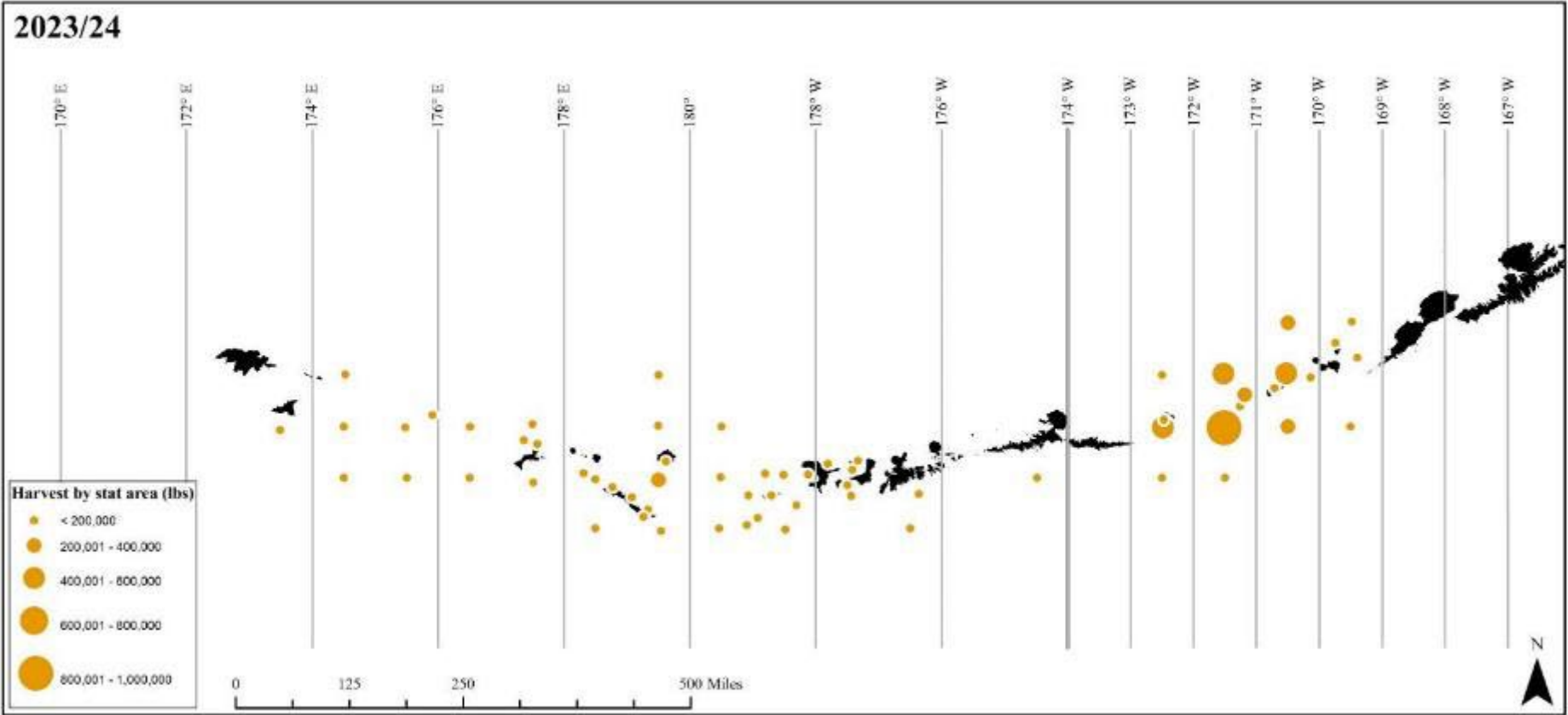


WAG

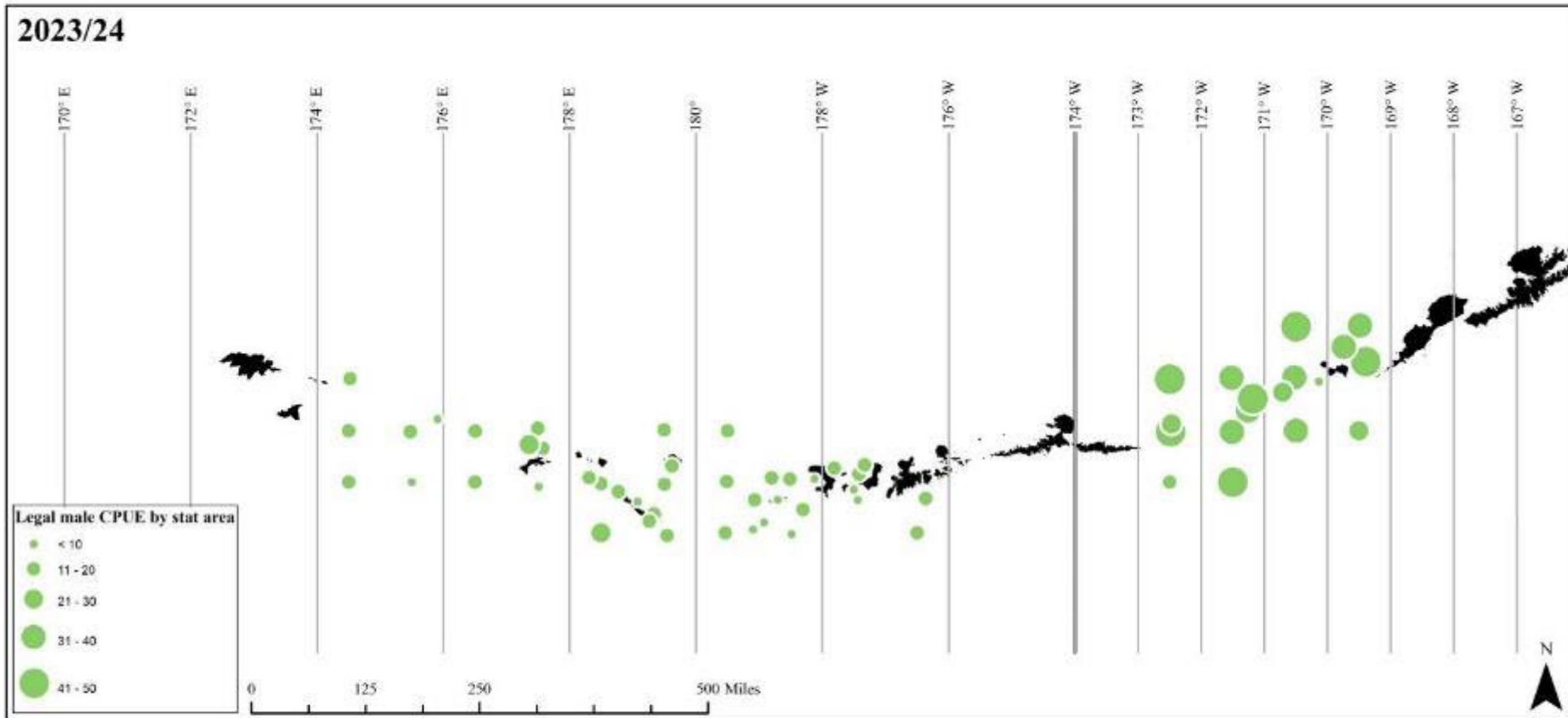
Legal CPUE



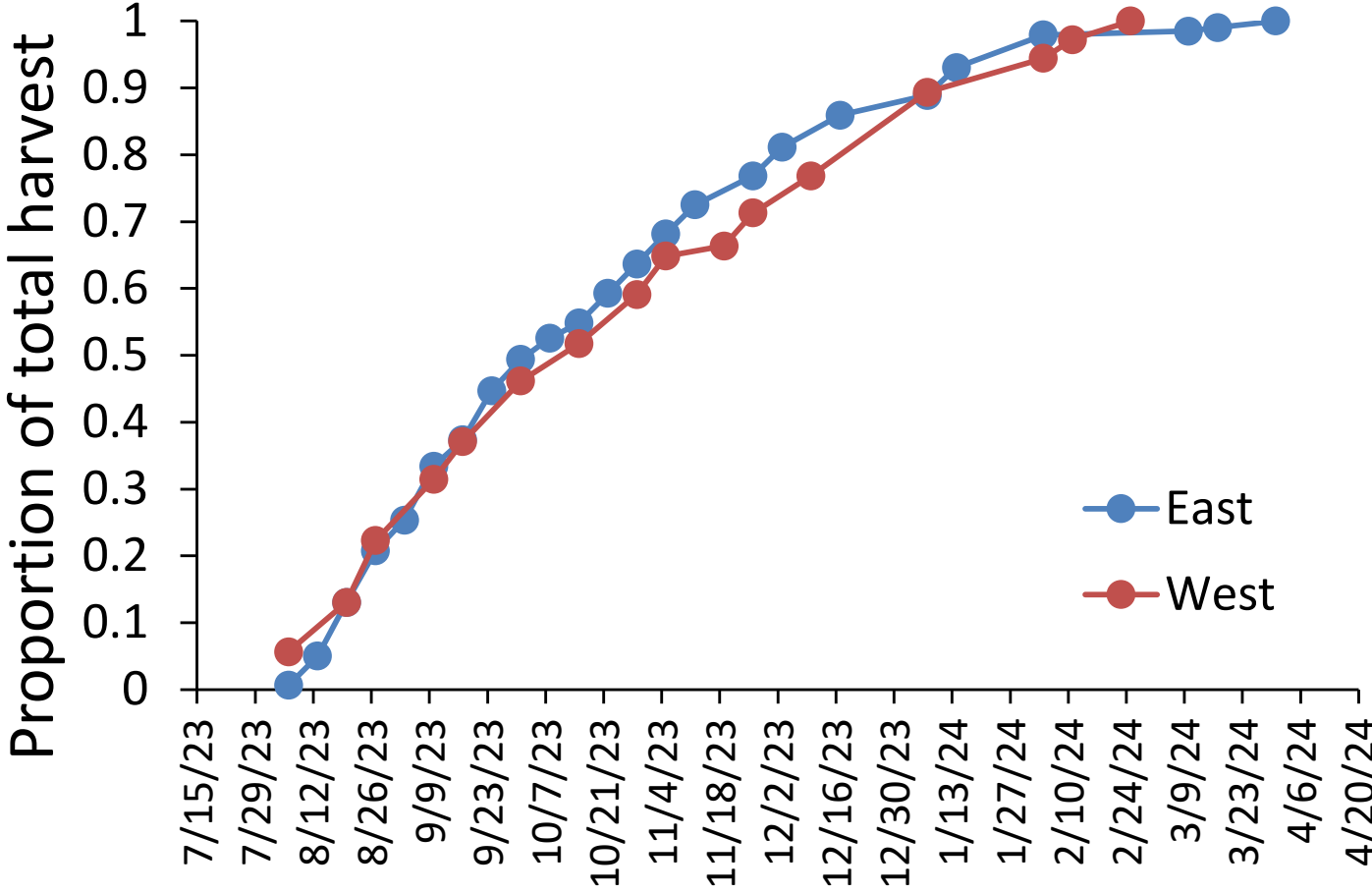
2023/24 Harvest Spatial Distribution

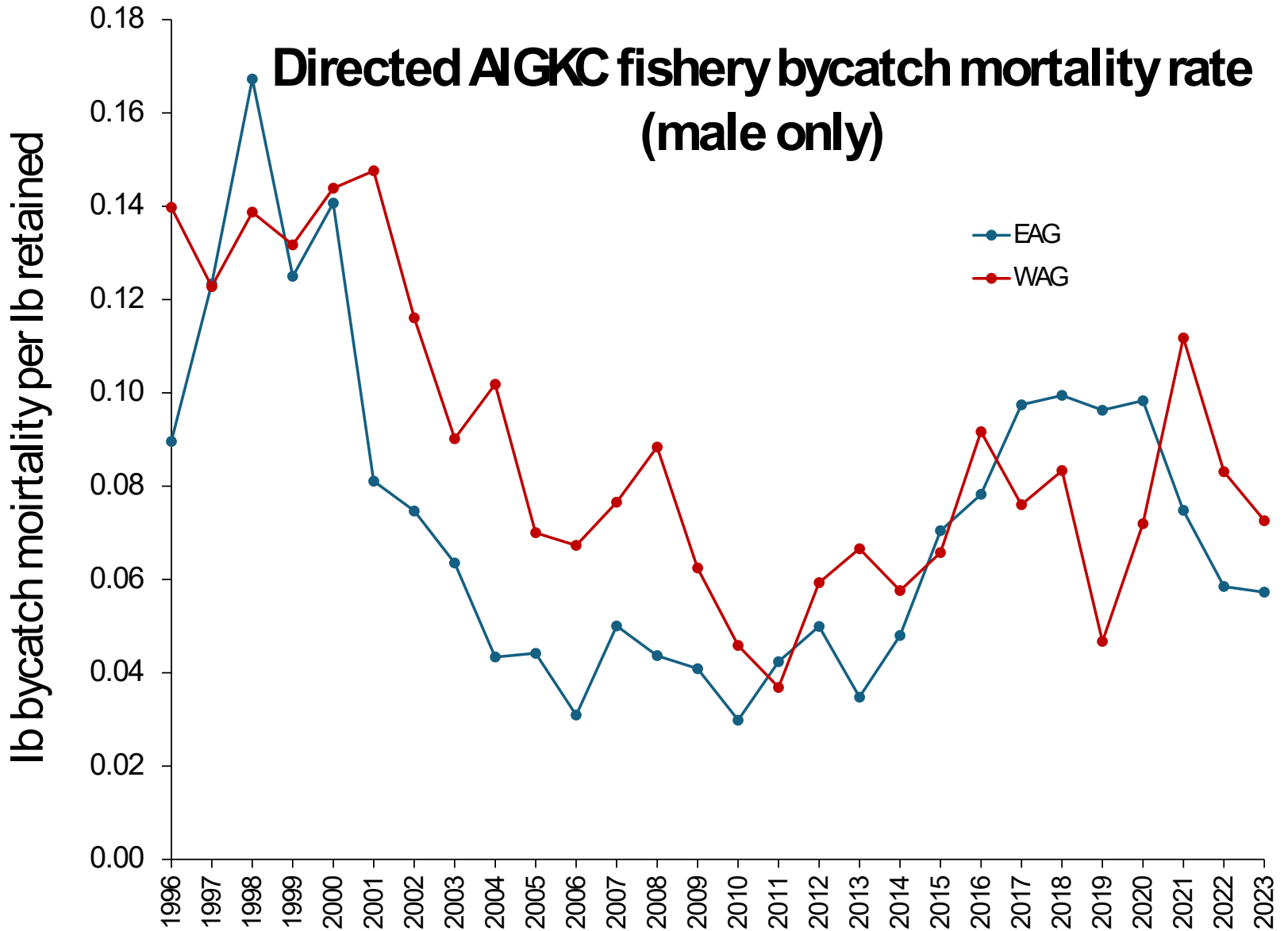


2023/24 CPUE Spatial Distribution



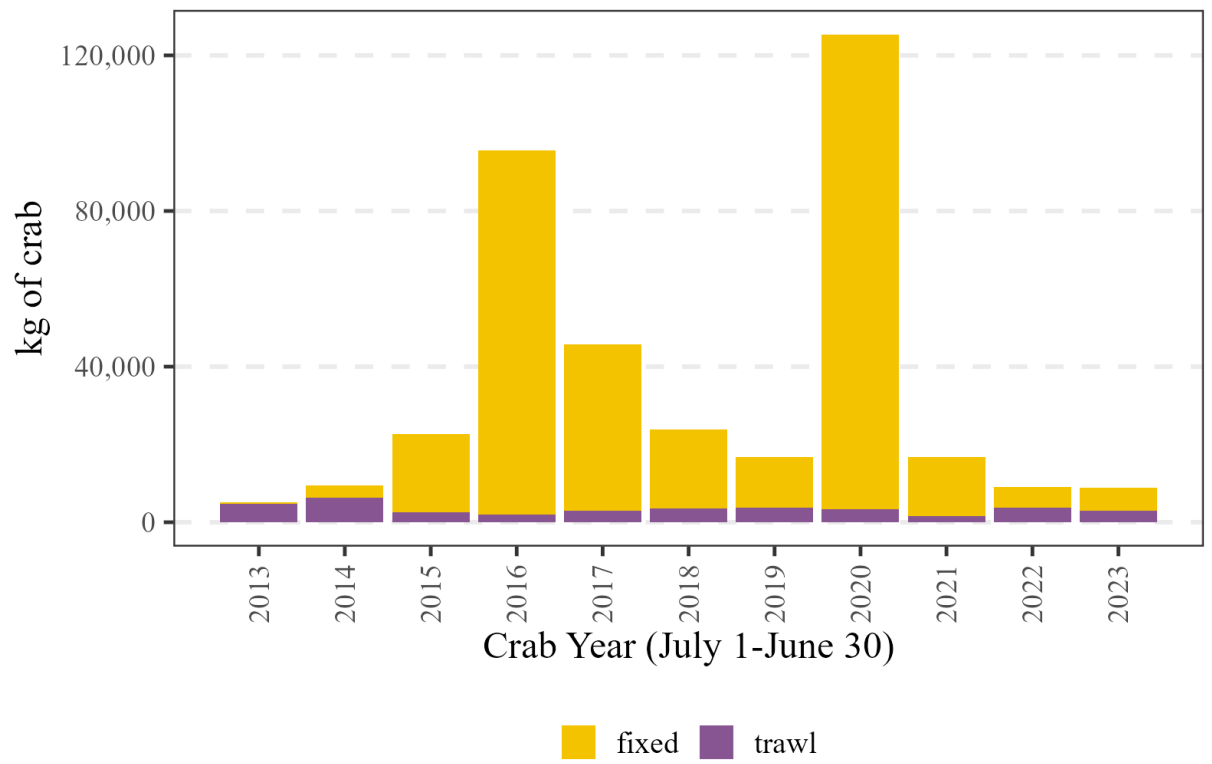
2023/24 AIGKC





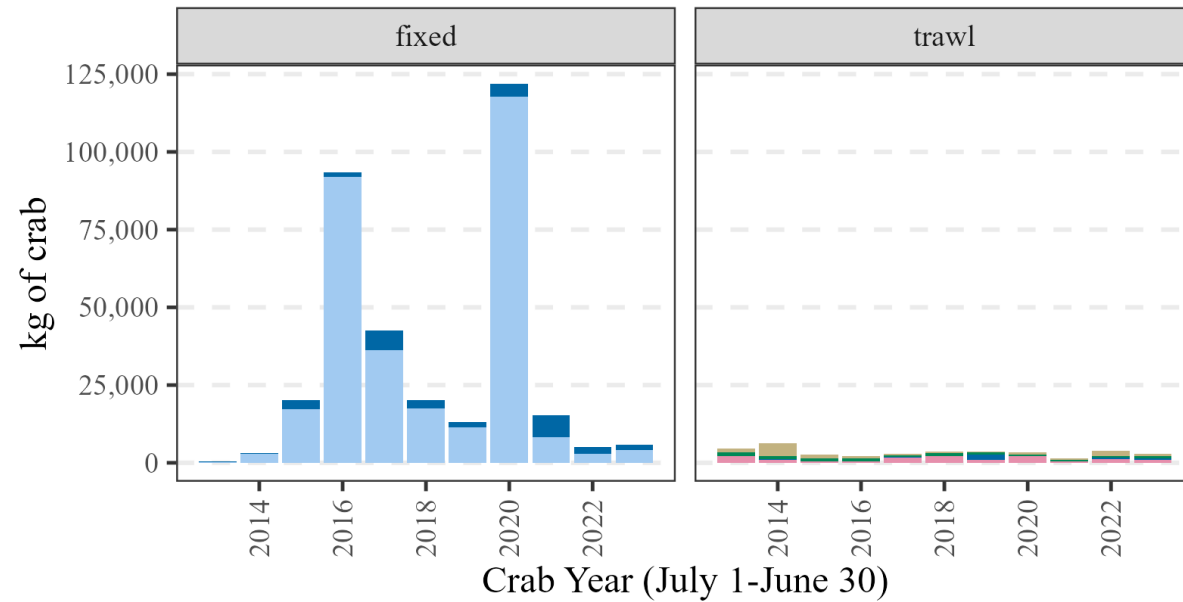
- The EAG stock area includes federal groundfish areas from the WGOA, BS, and AI.
- There is a Pacific cod State fishery for pot gear which can occur in the Eastern AI stock area and opens early in the year.

Eastern Aleutian Islands GKC Incidental Catch in Groundfish Fisheries





Eastern Aleutian Islands GKC Incidental Catch by Trip Target



Arrowtooth/Kamchatka Flounder
 Atka Mackerel
 Other Species
 Pacific Cod
 Rockfish

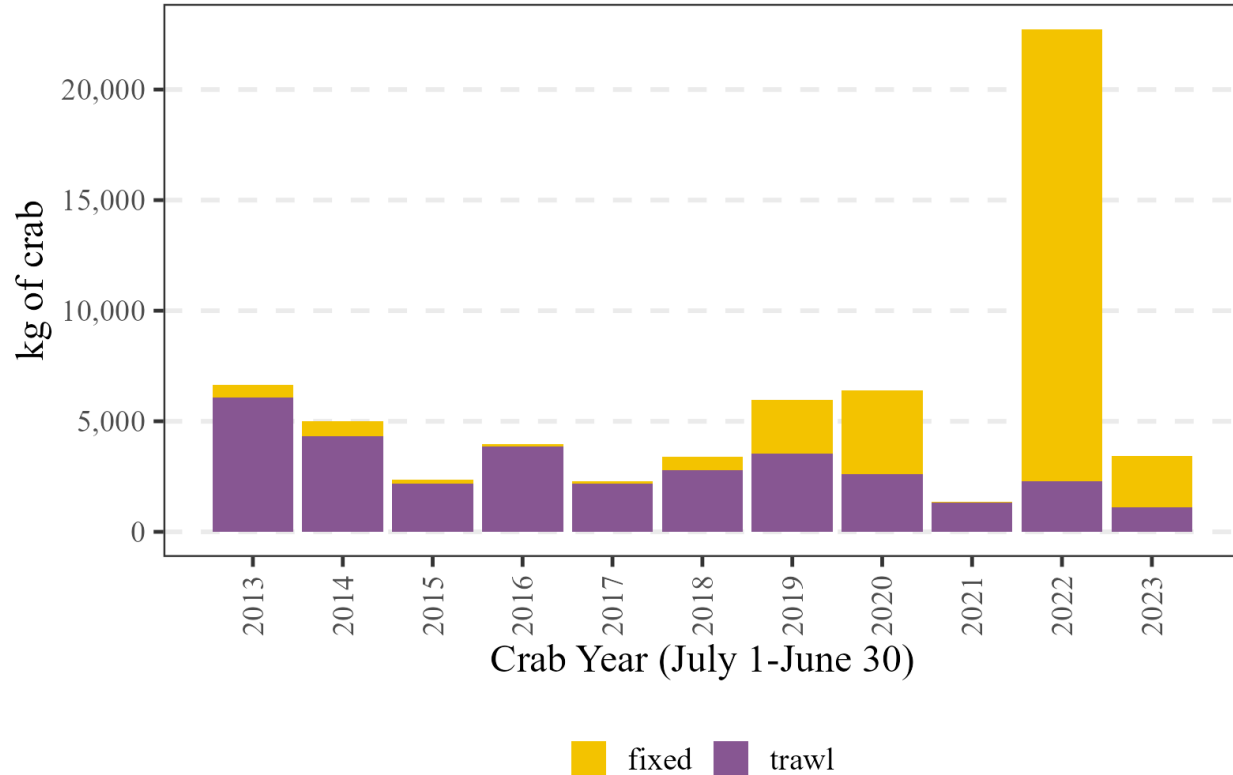
*Other species includes: Flathead sole, Greenland turbot, other flatfish, plaice, pollock, halibut, rockfish, & sablefish



- When there is no federal pot P. cod observer/EM coverage in the stock area the State pot vessels get an extrapolation rate based on all observed/EM groundfish targeted with pot gear in the stock area, including sablefish.
- Majority of bycatch in fixed gear Pacific cod is from extrapolations into the State's GHL fishery.

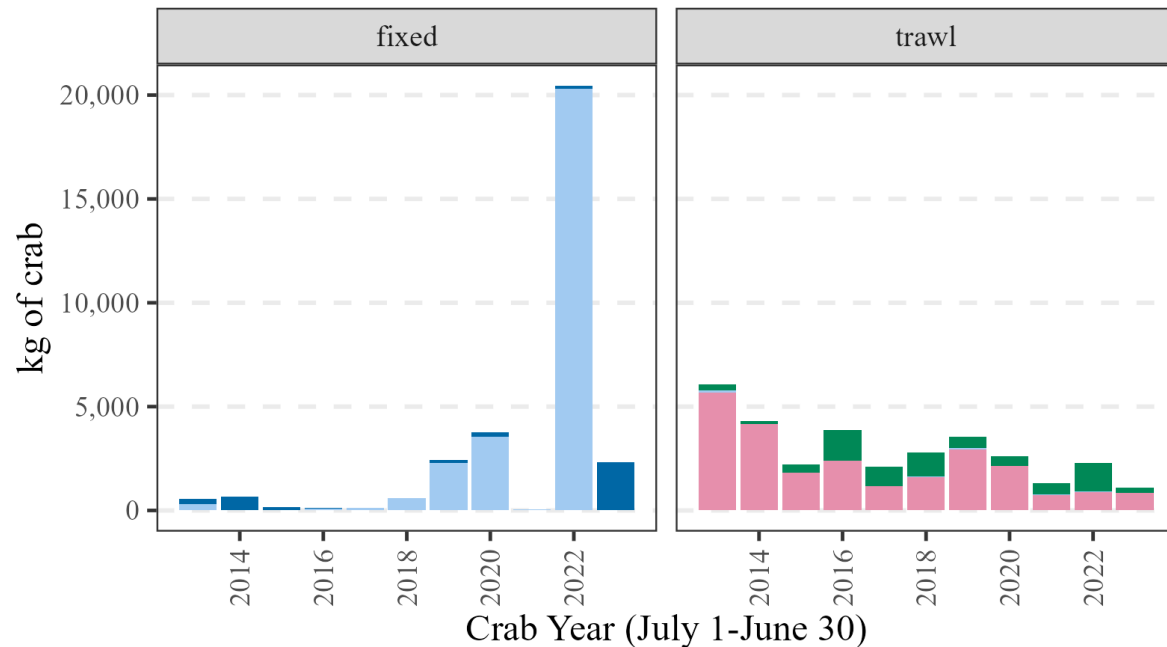
- Not much federal fixed gear fishing in this area.
- Not very much fixed gear observer coverage.
- High bycatch in pot gear in 2022 was due to extrapolations occurring from sablefish observed trips to State GHL P.cod fishery.

Western Aleutian Islands GKC Incidental Catch in Groundfish Fisheries





Western Aleutian Islands GKC Incidental Catch by Trip Target



Atka Mackerel Other Species Pacific Cod Rockfish

*Other species includes: Kamchatka flounder, pollock, halibut & sablefish

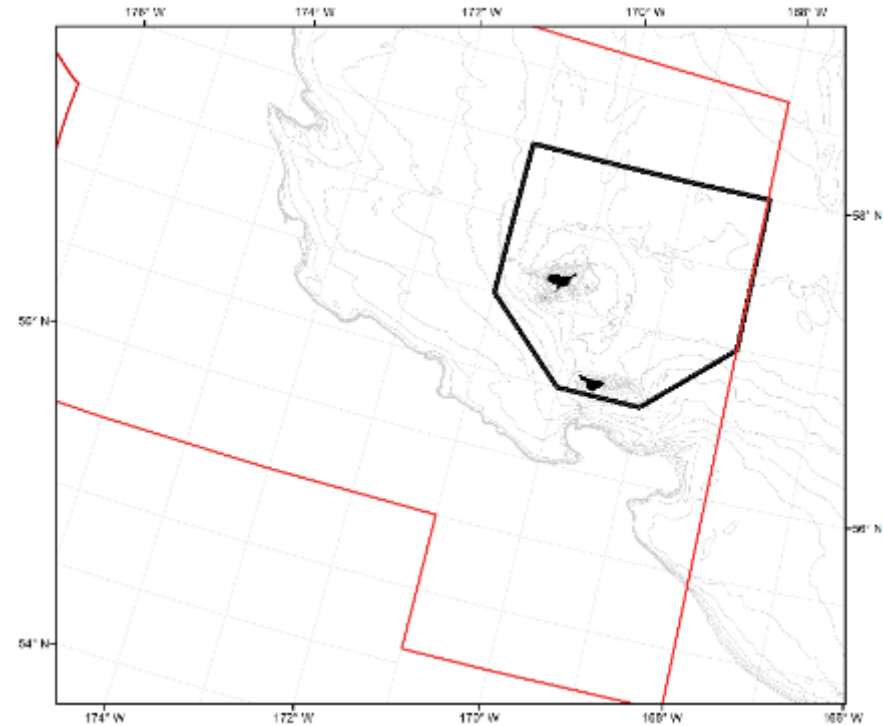


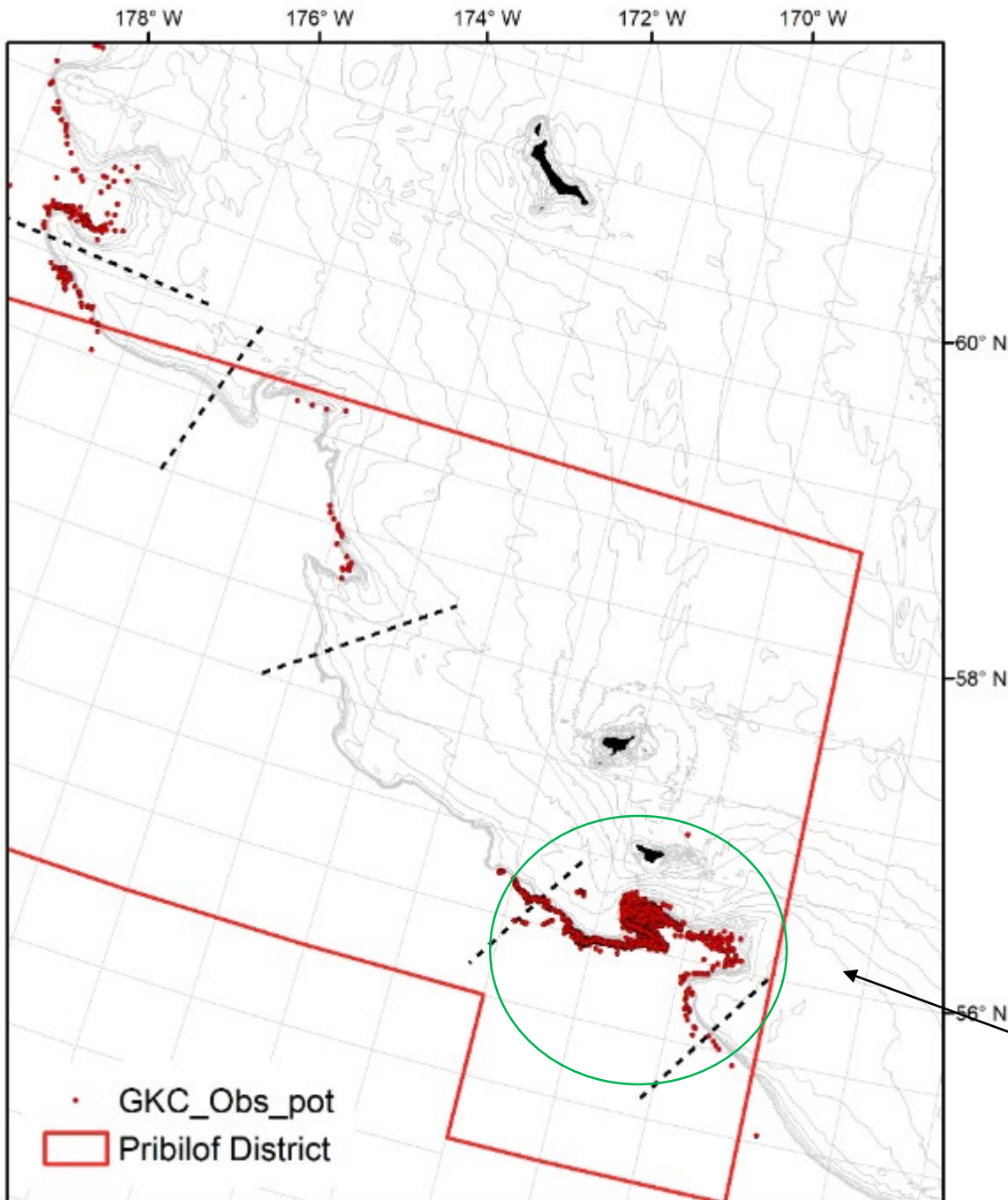
A large pile of spiny lobsters is shown in a metal container. The lobsters are densely packed, with their long, spiny legs and reddish-brown carapaces visible. A white rectangular object is partially visible in the upper right corner. A black rectangular box is overlaid on the center of the image, containing the text "PIGKC".

PIGKC

2023 Pribilof GKC

- Managed by calendar year
- 2 vessels participated in the 2023 fishery
 - GHL = 130,000 lb (59 t)
 - Harvest = confidential

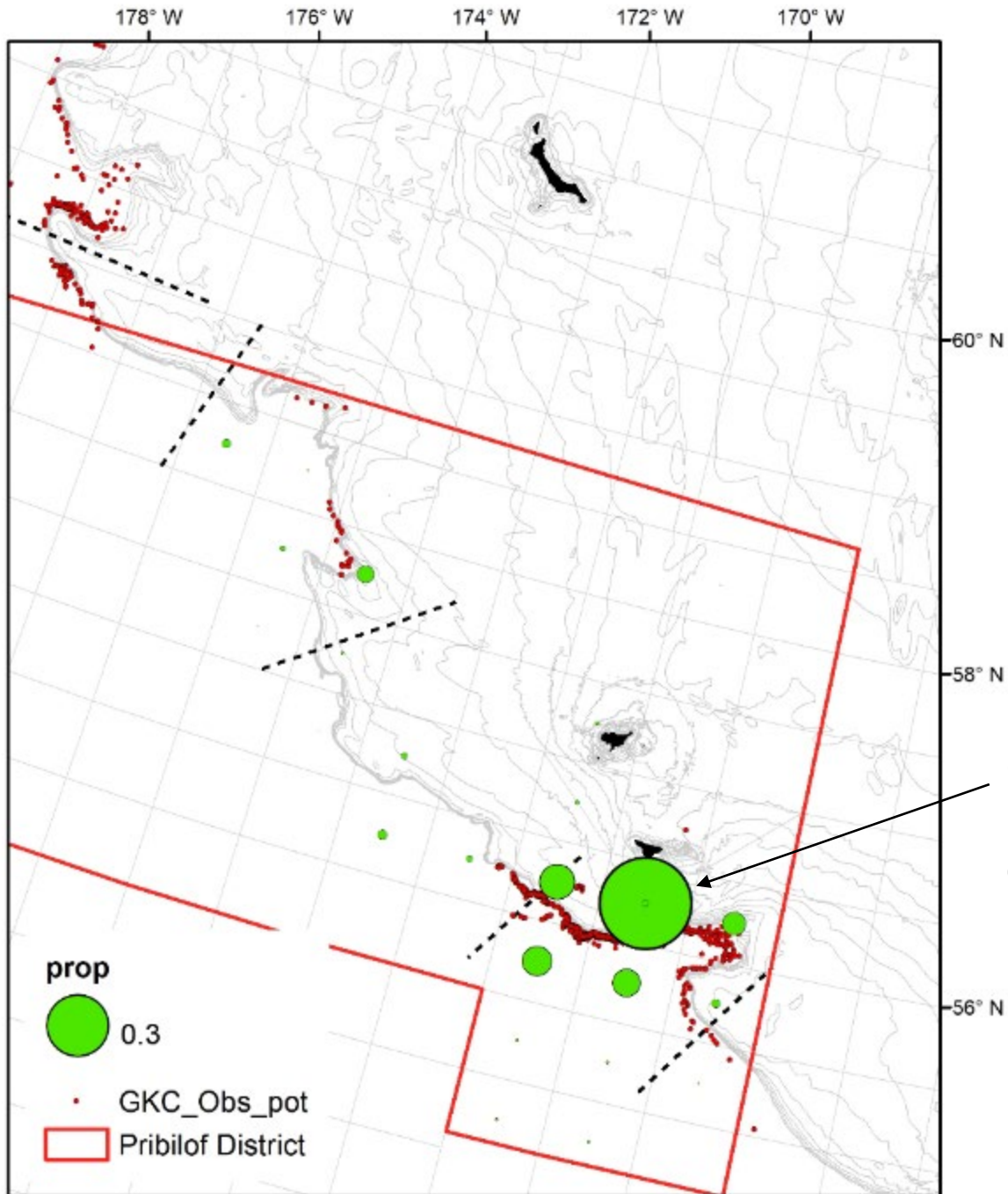




Observer pot location during Bering Sea golden king crab fisheries from 1992-2023 (n=8,251).

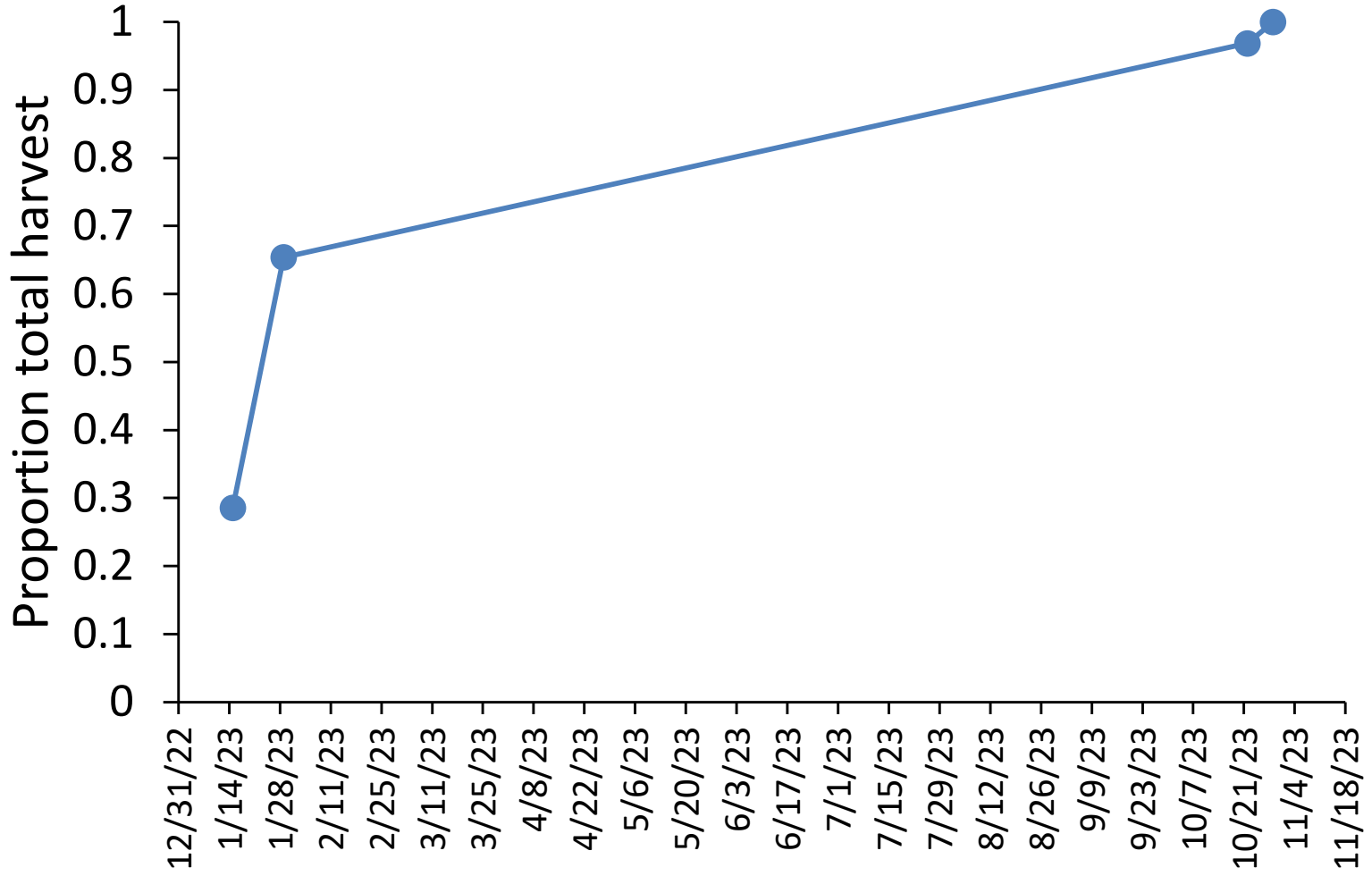
Pots north of the Pribilof District northern boundary were fished during the Northern District – Saint Matthew island Section fishery.

Proportion of historical catch by stat_area



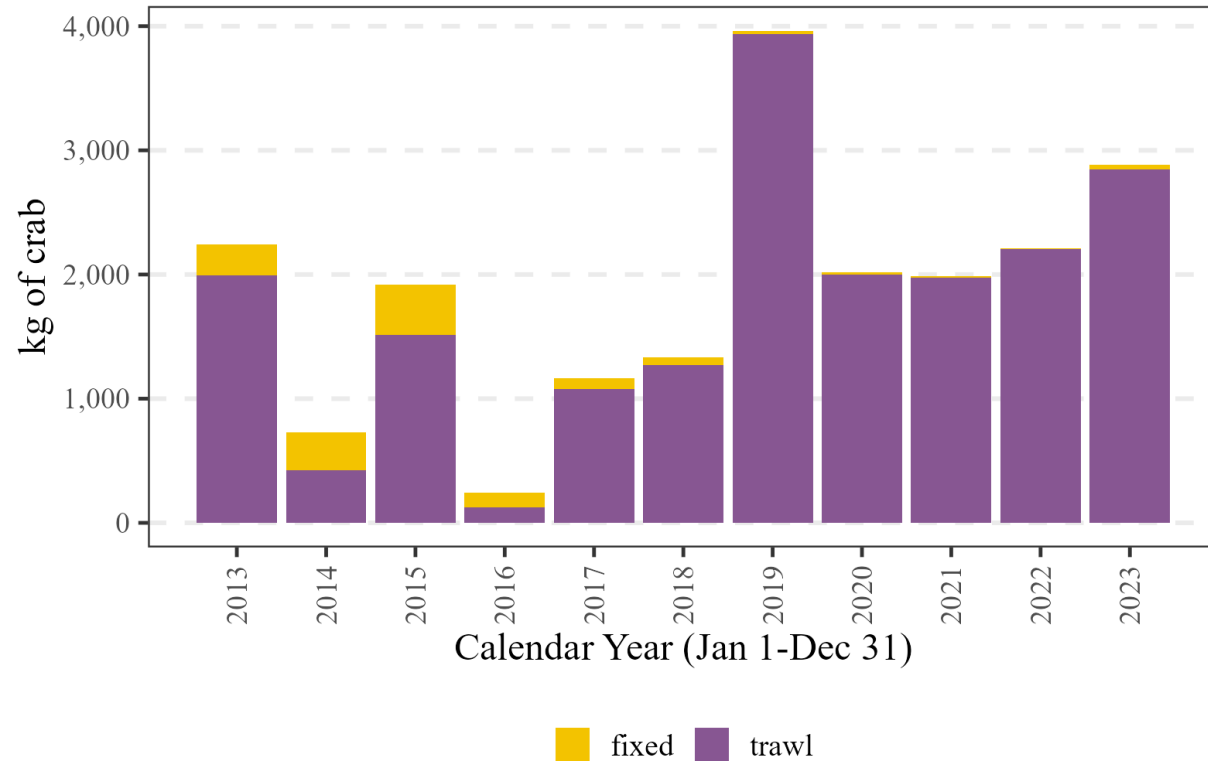
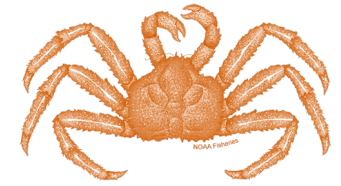
67% of all historical catch

2023 PIGKC



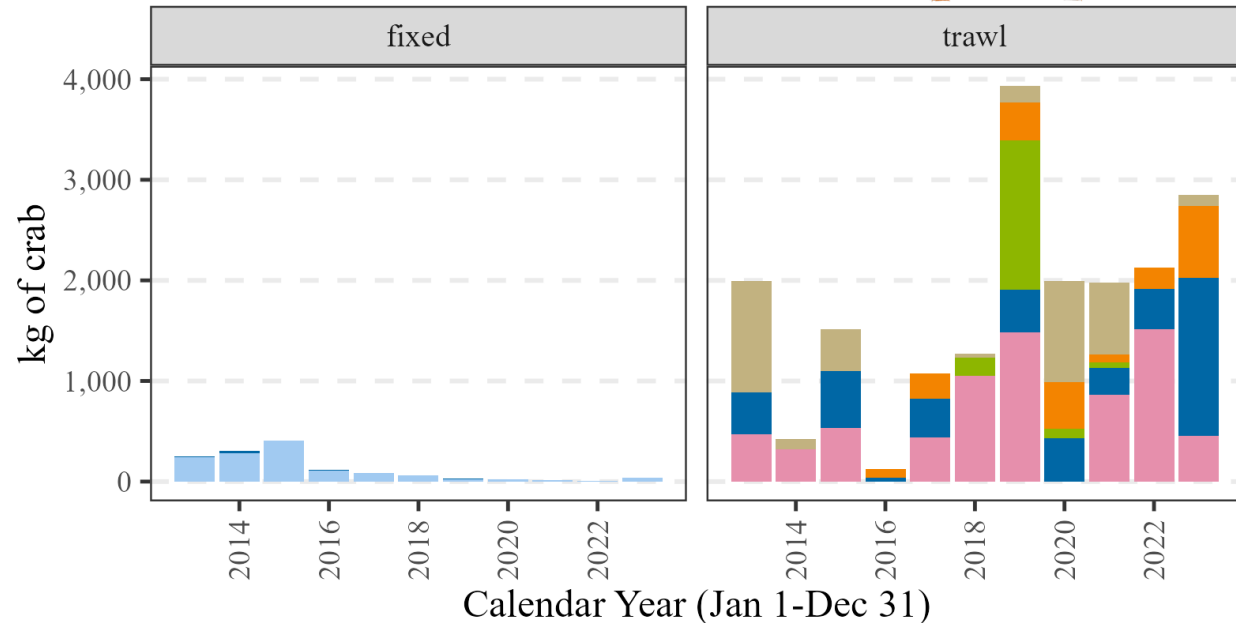
- Most fixed gear GKC bycatch is from hook-and-line Pacific cod fishing
- In 2025, there will be new regulations allowing directed fishing for Greenland turbot with longline pots which may increase PIGKC bycatch.

Pribilof Islands GKC Incidental Catch in Groundfish Fisheries



- Trawl fishery increased catch of Greenland turbot in 2019/2020
- Variety of trawl fishery targets.

Pribilof Islands GKC Incidental Catch by Trip Target

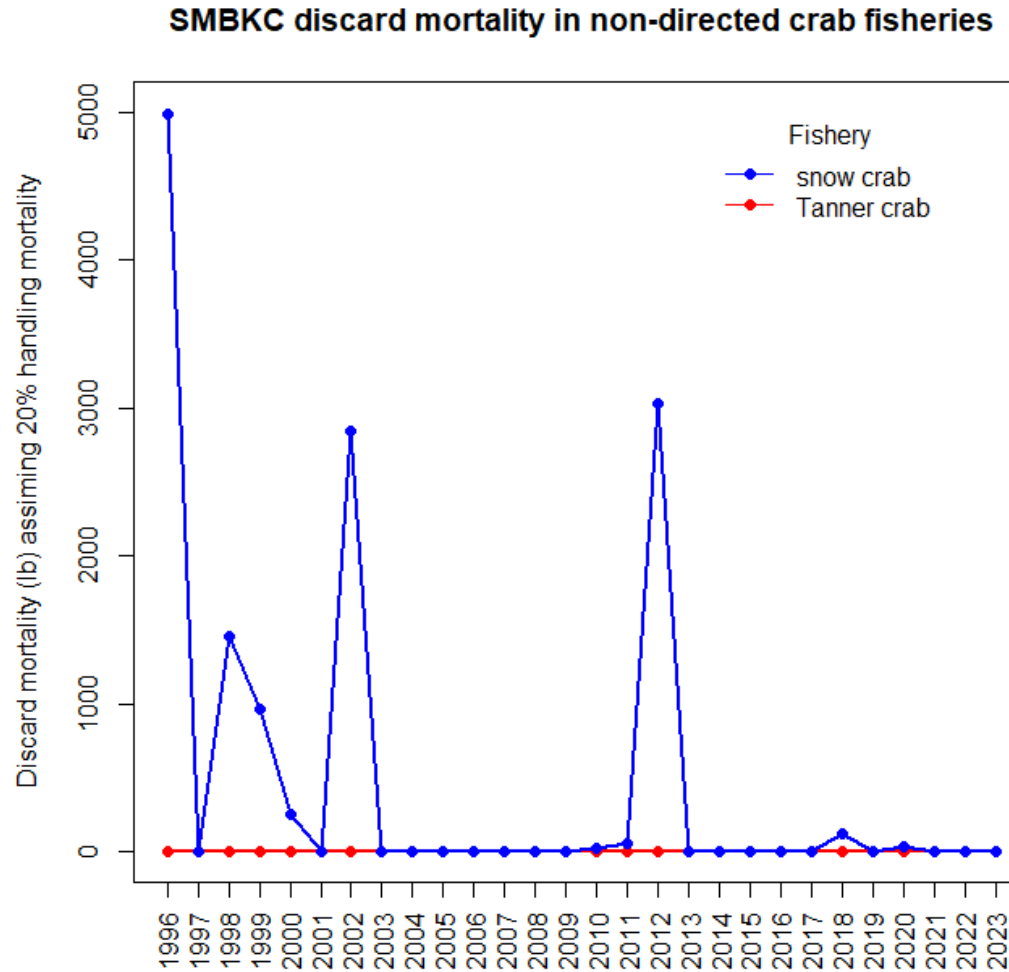


- Arrowtooth/Kamchatka Flounder
- Flathead Sole
- Greenland Turbot
- Other Species
- Pacific Cod
- Rockfish

*Other species includes: Atka mackerel, plaice, pollock, halibut, rock sole, sablefish & yellowfin sole

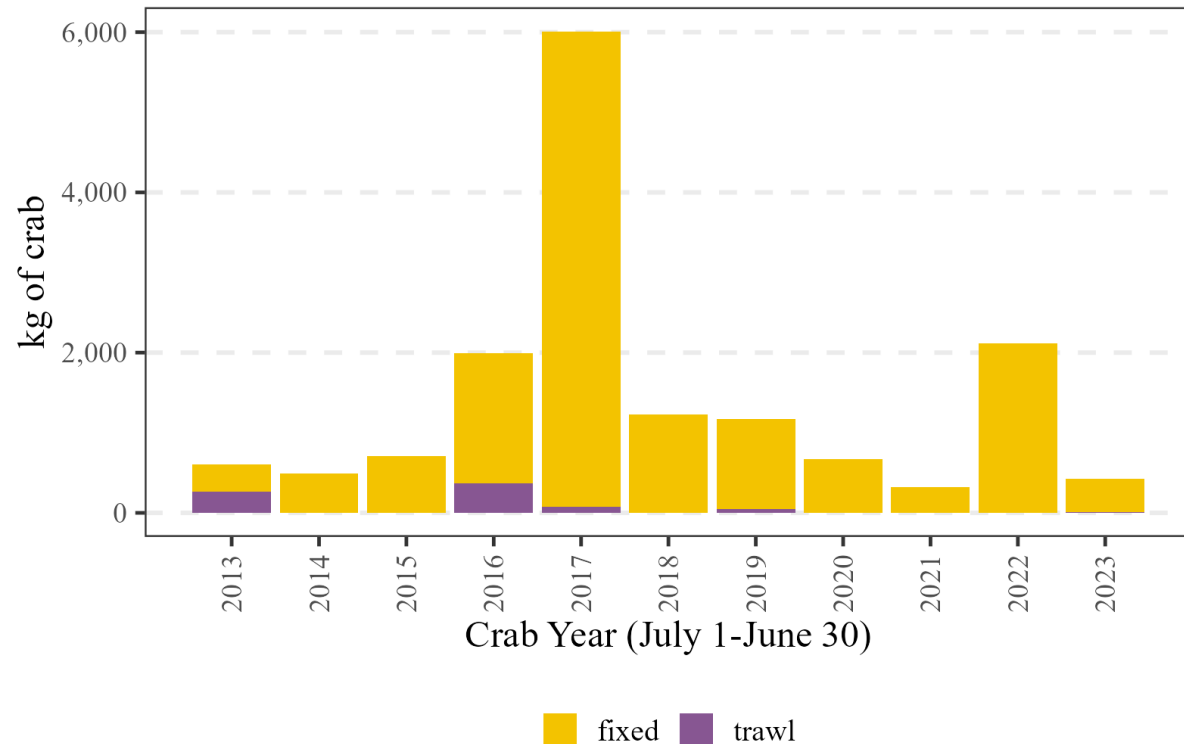
Other BSAI crab stocks

SMBKC: non-directed crab fishery bycatch



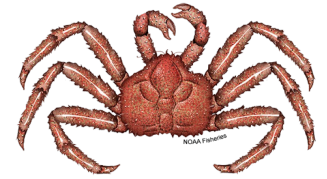
- Overfished stock.
- Very little trawling in this stock area due to trawl closure areas

St. Matthew BKC
Incidental Catch in Groundfish Fisheries

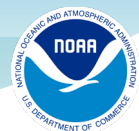
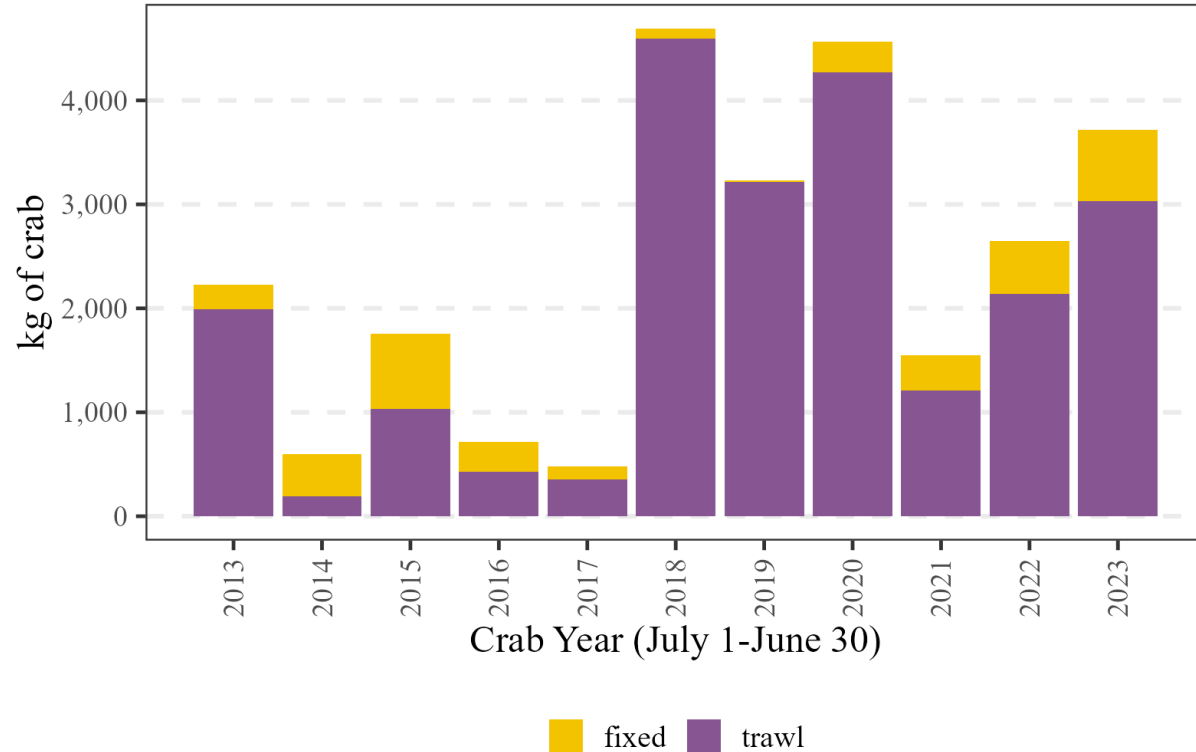


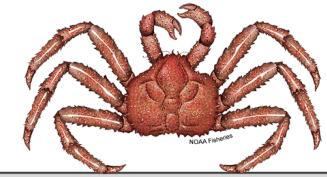


Pribilof Islands RKC Incidental Catch in Groundfish Fisheries

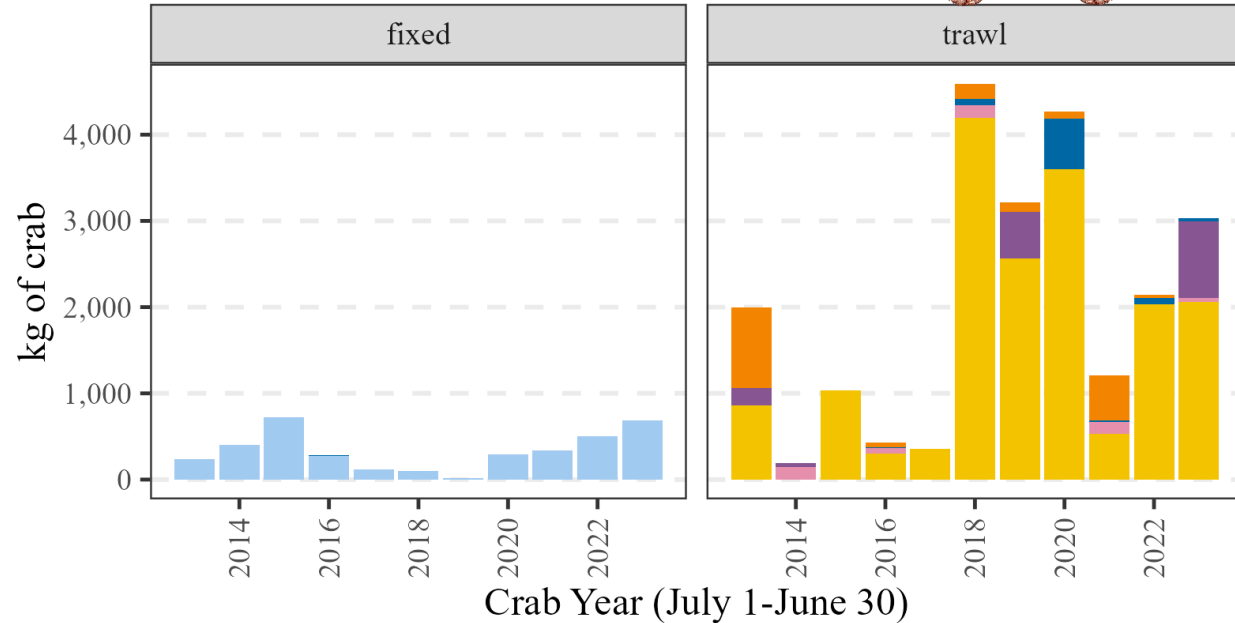


- Pot and trawl gear are prohibited in the Pribilof Islands Habitat Conservation Zone which is in place to protect blue king crab.
- Most fixed gear fishing in this area is by CPs using hook-and-line gear targeting Pacific cod and came from within the Pribilof Islands Habitat Conservation Zone..





Pribilof Islands RKC Incidental Catch by Trip Target



- Flathead Sole
- Other Species
- Pacific Cod
- Rock Sole
- Rockfish
- Yellowfin Sole

*Other species includes: Arrowtooth flounder, Atka mackerel, Greenland turbot, Kamchatka flounder, plaice, pollock, halibut, & sablefish

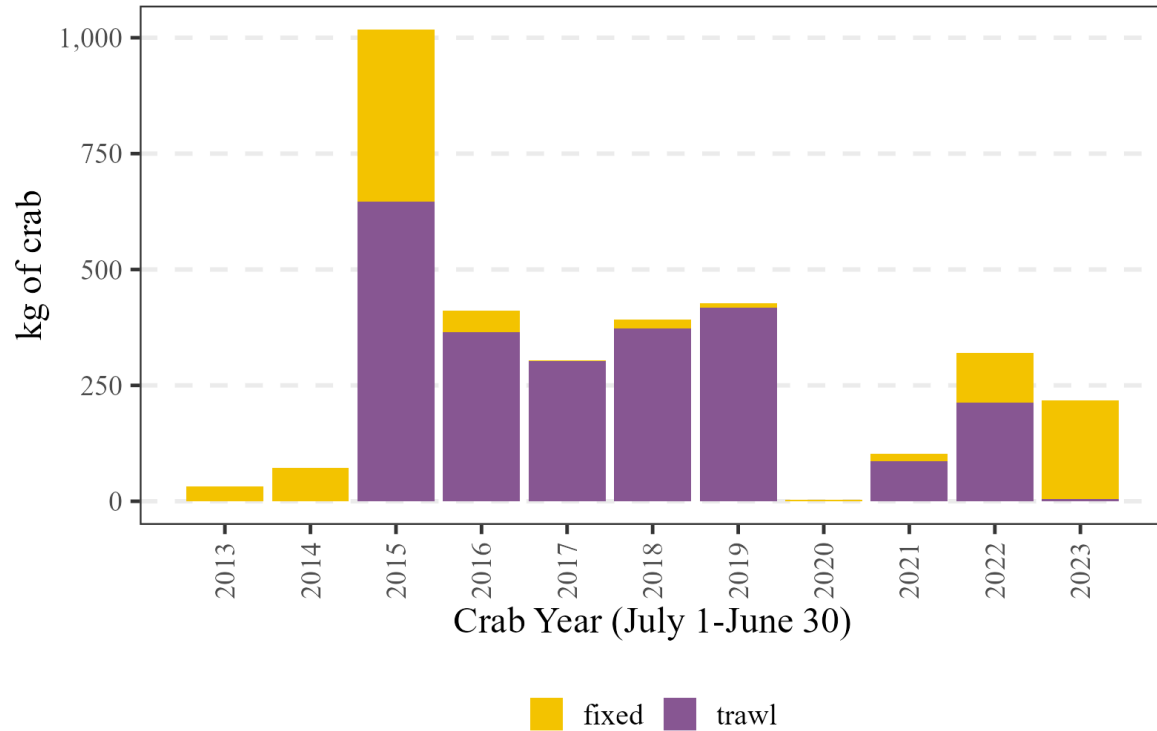
- Majority of 2023/24 bycatch was from yellowfin sole fishing in November with switching to rock sole in May



- Pot and trawl gear are prohibited in the Pribilof Islands Habitat Conservation Zone which is in place to protect blue king crab.
- Overfished stock
- Overfishing occurred in the 2015/16 crab year

Pribilof Islands BKC

Incidental Catch in Groundfish Fisheries

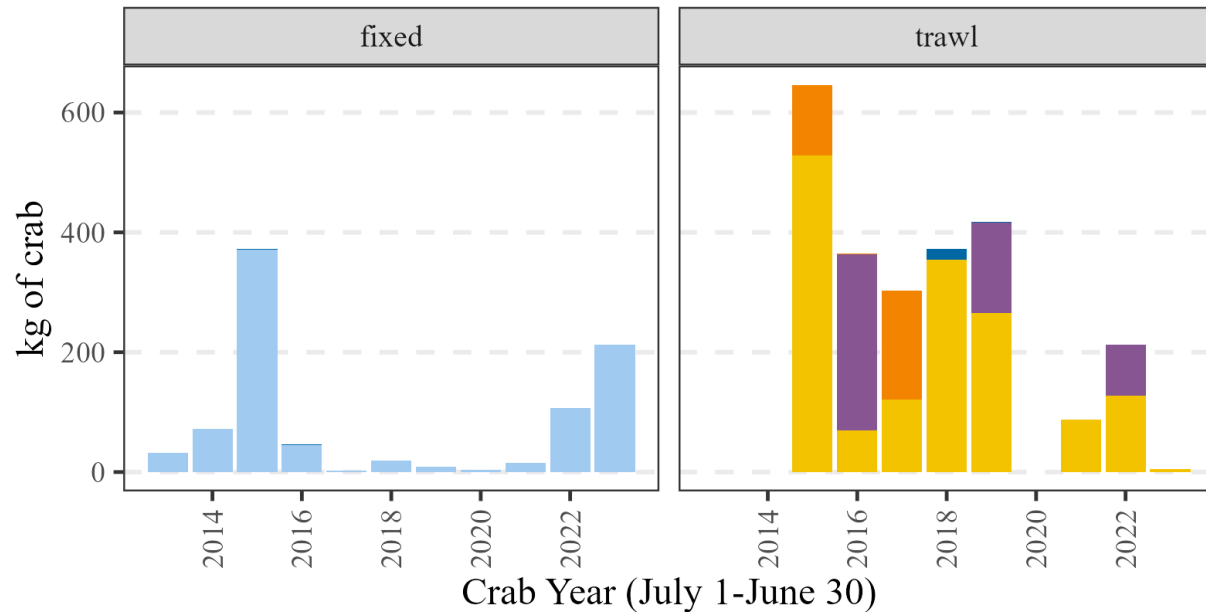


NOAA
FISHERIES



- Most trawl bycatch is occurring just outside the NE corner of the closure area.
- Decline in trawl bycatch in 2023/24 crab year.

Pribilof Islands BKC Incidental Catch by Trip Target

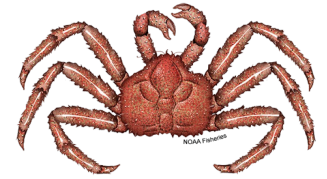


- Flathead Sole
- Other Species
- Pacific Cod
- Rock Sole
- Rockfish
- Yellowfin Sole

*Other species includes: Arrowtooth flounder, Atka mackerel, Greenland turbot, Kamchatka flounder, plaice, pollock, halibut, & sablefish



Norton Sound Red King Crab Incidental Catch in Groundfish Fisheries



- 2009–2017: no RKC bycatch in NSRKC stock area
- 2018: 8 kg of RKC bycatch (mortality applied)
- 2019: 24 kg of RKC bycatch (mortality applied)
- 2020: 4 kg of RKC bycatch (mortality applied)
- In 2021–2023: less than 1 kg of RKC bycatch



Thank you