

Flatfish Trawl Sector Recommendations – BSAI Crab Bycatch

Alaska Bycatch Review Task Force



Fishery Background



- 18 trawl C/Ps operating in the BSAI & GOA
- Flatfish, Atka mackerel, rockfish, Pacific cod
- Marine Stewardship Council & RFM Certified
- CDQ ownership & harvest partners
- All landings made in 11 Alaska ports
- \$60M in annual expenditures in AK

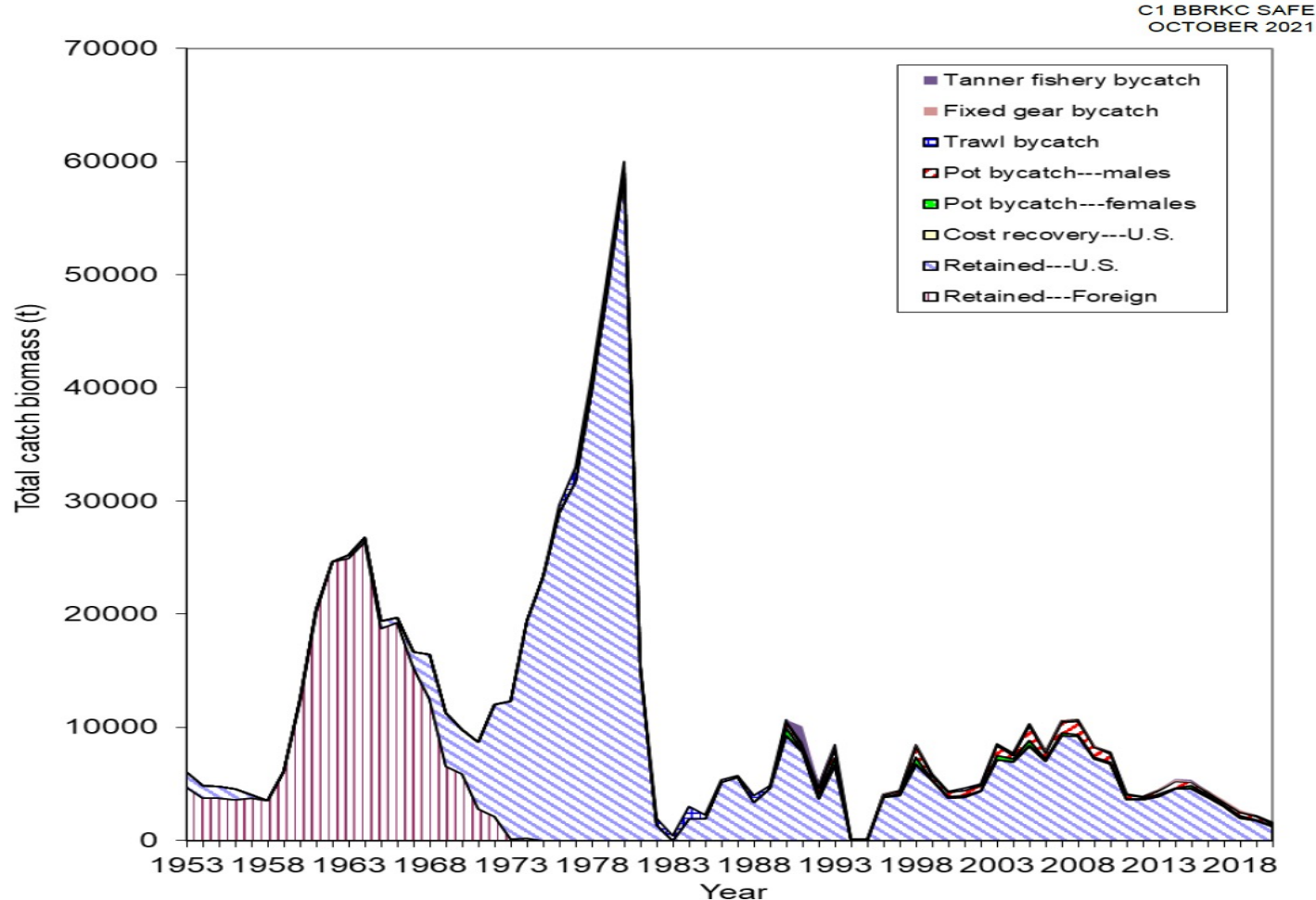


Presentation Road Map



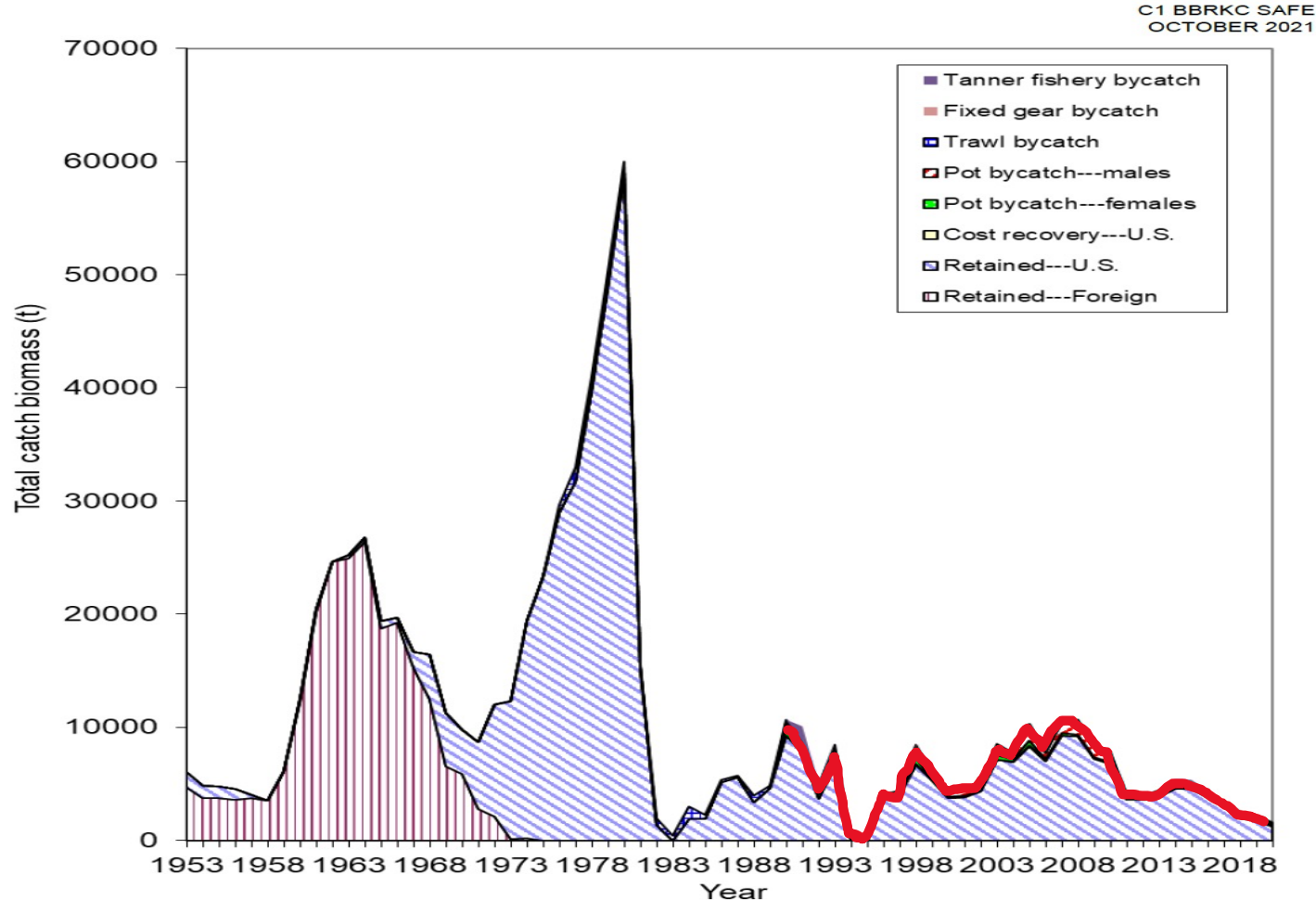
- Background on crab bycatch
- Describe trawl bycatch reduction measures
- Provide recommendations for future trawl bycatch reduction measures
- Lessons learned from trawl sector with applicability to the directed crab fishery

BIG PICTURE – BBRKC Mortality (Retained Catch & Bycatch)



- Graph Source: ADF&G Bristol Bay Red King Crab Stock Assessment, Oct 2021, p. 65
- Units: Biomass in Tons
- Heavy commercial exploitation from foreign & domestic fleets (1959–1980)
- Bycatch: DF fishery (male & female) discards, bycatch in other crab fisheries, fixed & trawl gear

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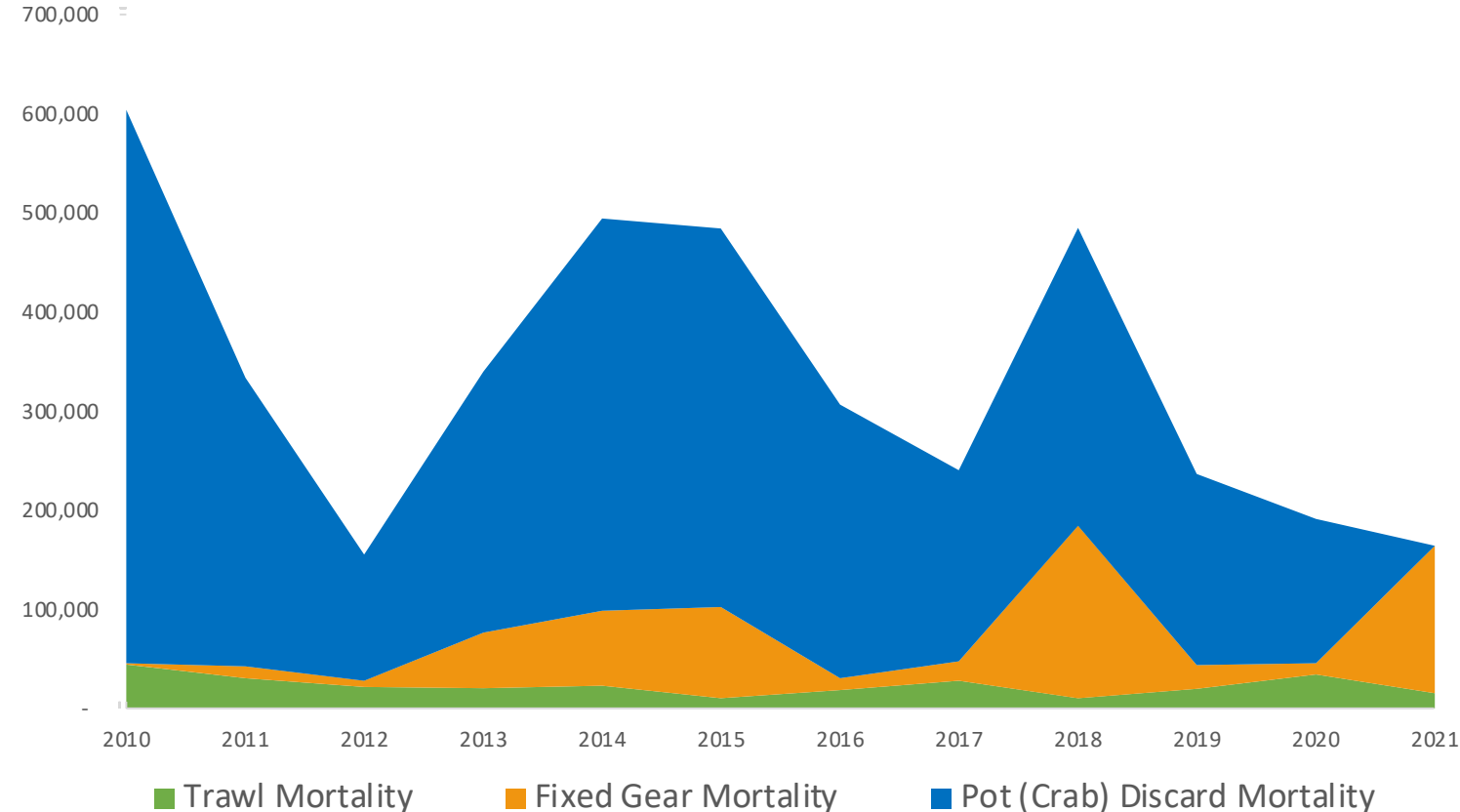


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NPFMC Data on BBRKC Bycatch Mortality

RKC Bycatch Mortality By Gear Type
(# of Animals)



- Source: NPFMC “Bristol Bay Red King Crab Information.” p. 17-18, Apr 2022.
- Fixed Gear Bycatch: NOAA AK Region.
- Unit of Measure: # of dead crab from bycatch (all gear types)
- Since 2010, largest source of bycatch mortality has been directed crab fishery (78%), fixed gear - primarily pot cod fishery (15%) & trawl gear (7%).



BBRKC Trawl Bycatch Management



- **PSC Limits:** Reduced by 20% at start of A80 program; 35% for cod trawl
- **Abundance Based Limits:** NOAA reduced trawl bycatch limits by ~66% in 2022 when abundance dropped
- **Hard-Capped:** BBRKC trawl bycatch limits are hard-capped (cannot exceed 32,000 animals)
- **Triggered Area Closures:** If hard cap is met in Zone 1, NMFS will close directed fishing to non-pelagic trawling for that sector or species (TLAS only)
- **Modified Trawl Sweeps:** Elevated trawl sweeps required since 2012 that minimize mortality on BBRKC

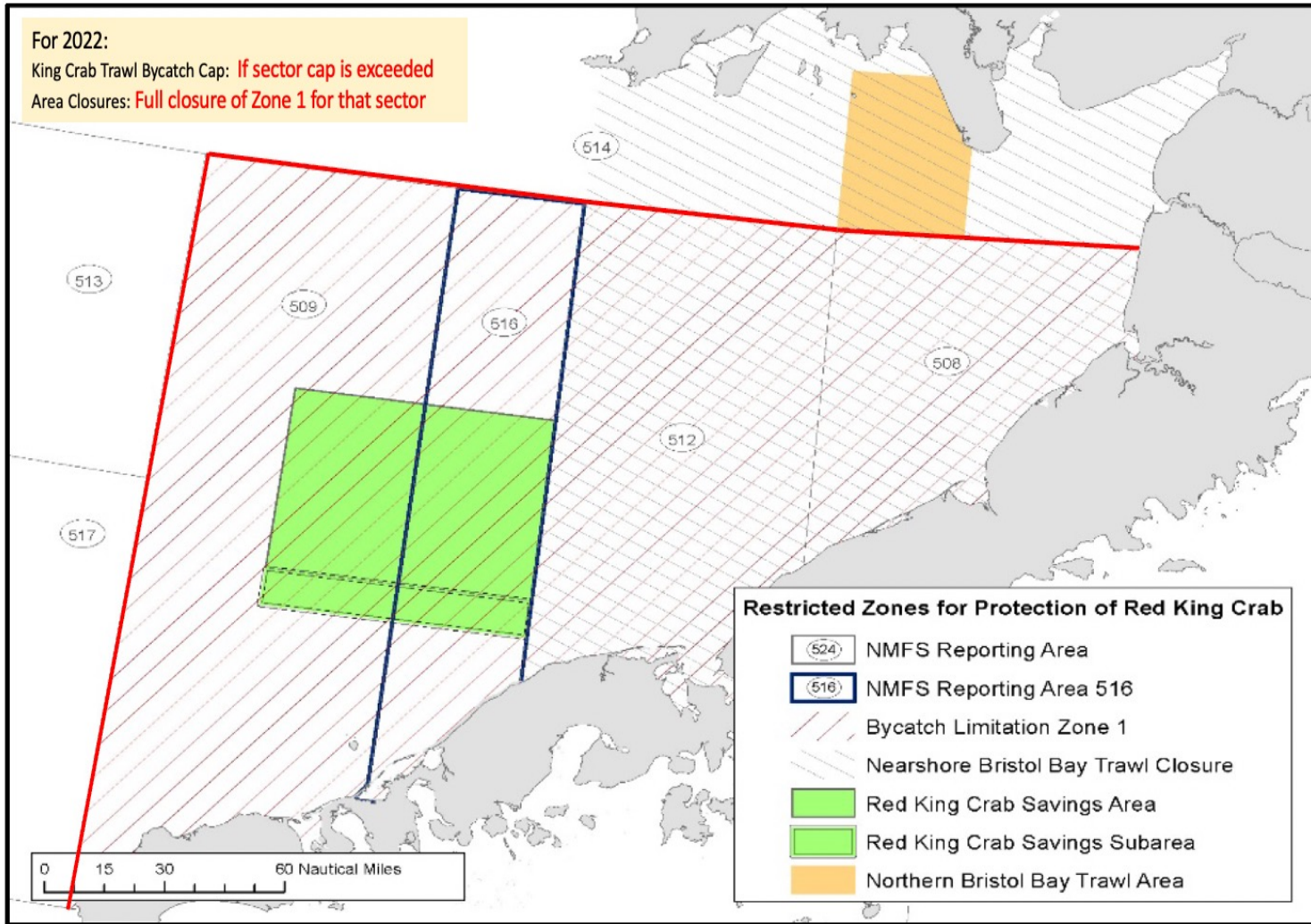


BBRKC Trawl Bycatch Management

For 2022:

King Crab Trawl Bycatch Cap: **If sector cap is exceeded**

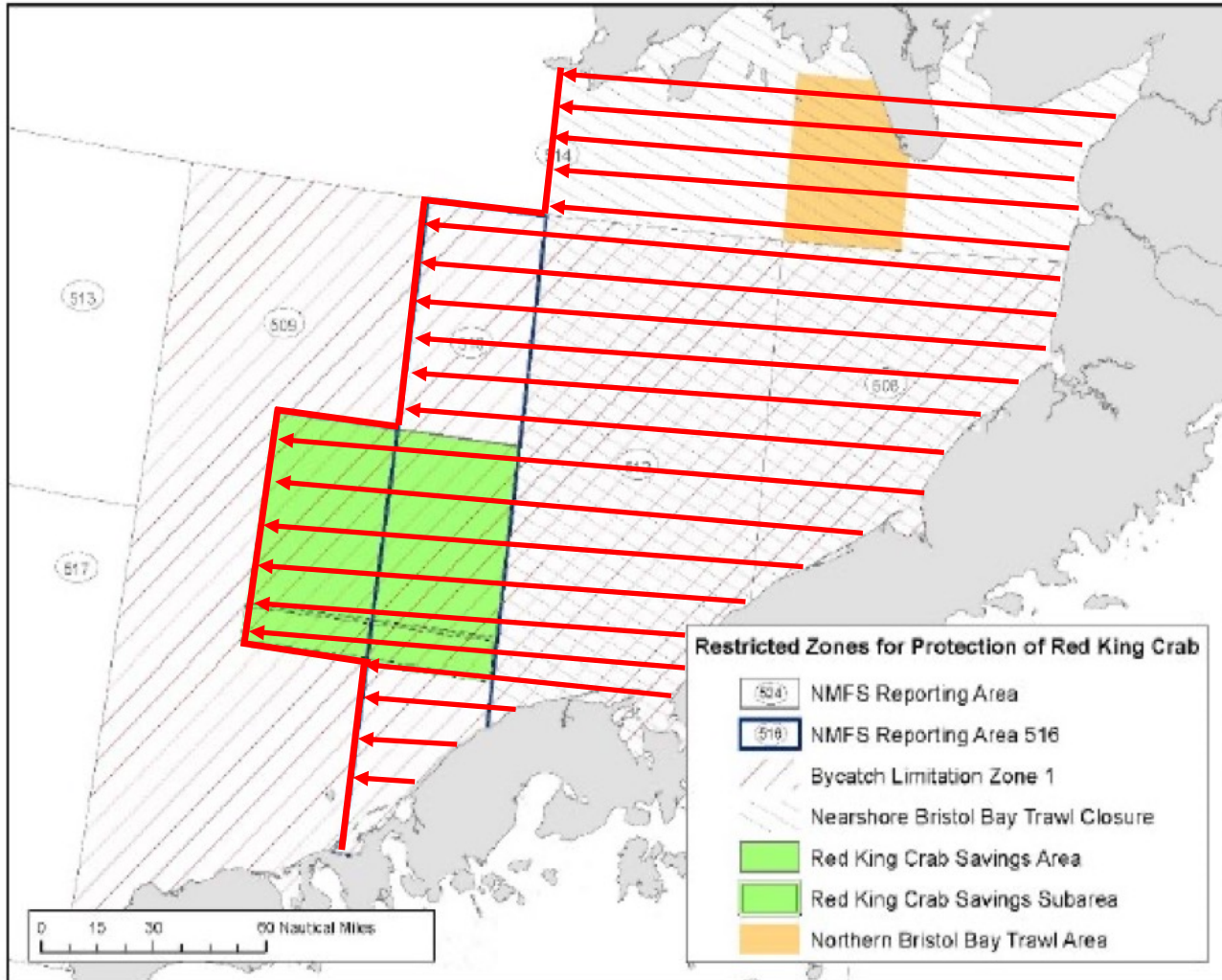
Area Closures: **Full closure of Zone 1 for that sector**



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- **Modified Trawl Sweeps:** Elevated trawl sweeps required since 2012 that minimize mortality on BBRKC



BBRKC Trawl Bycatch Management



Area Management: BBRKC management is dominated by vast fixed & seasonal area closures designed to protect RKC habitat & spawning grounds.

Fixed Closures:

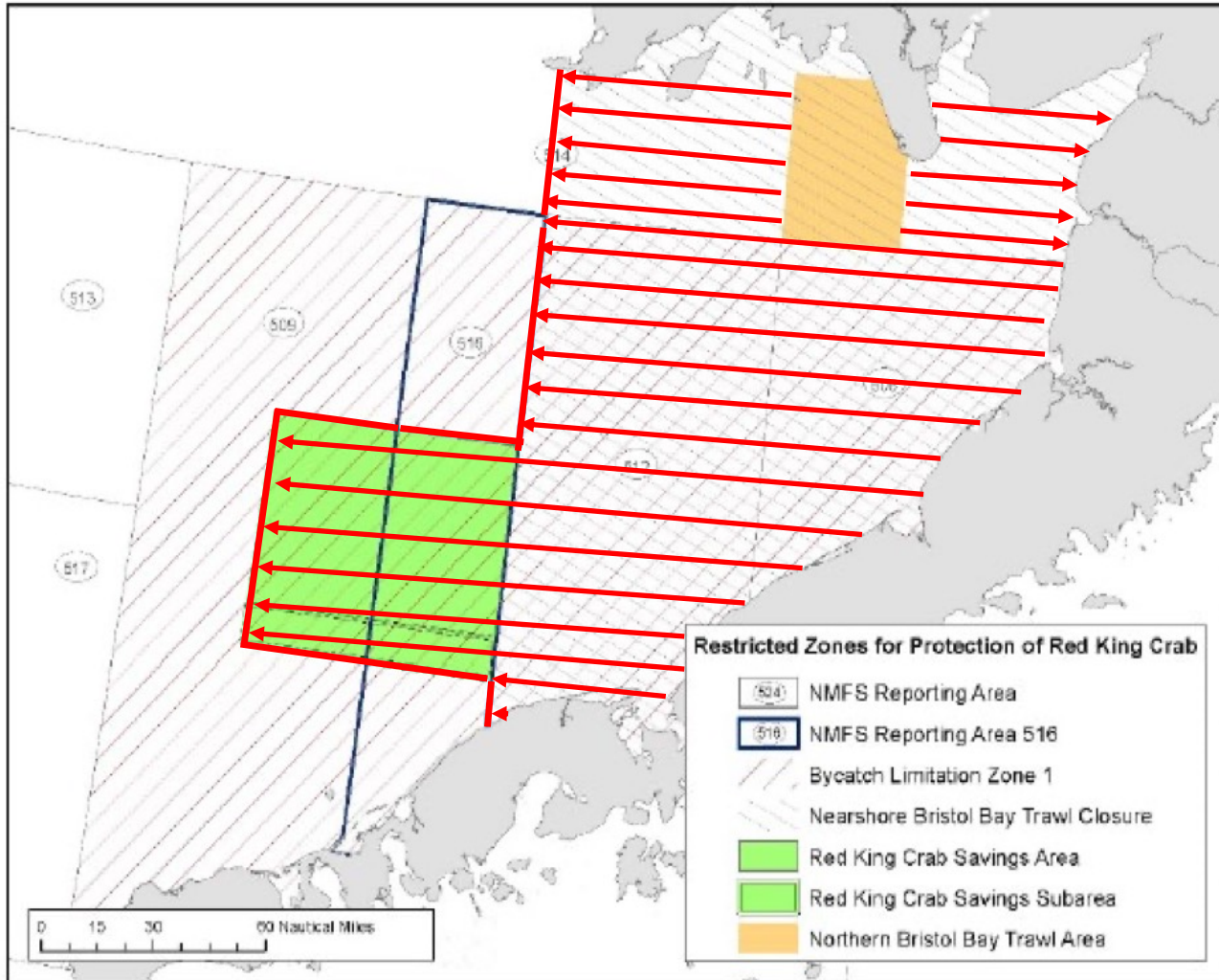
- Nearshore Bristol Bay Trawl Closure (all trawl)
- Red King Crab Savings Area (non – pelagic trawl)

Seasonal Openings:

- Northern Bristol Bay Trawl Area (1 Apr – 15 Jun)
- Area 516 (20 Jan – 15 Mar, 15 Jun – 31 Dec)



BBRKC Trawl Bycatch Management



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BBRKC Bycatch Management Scorecard

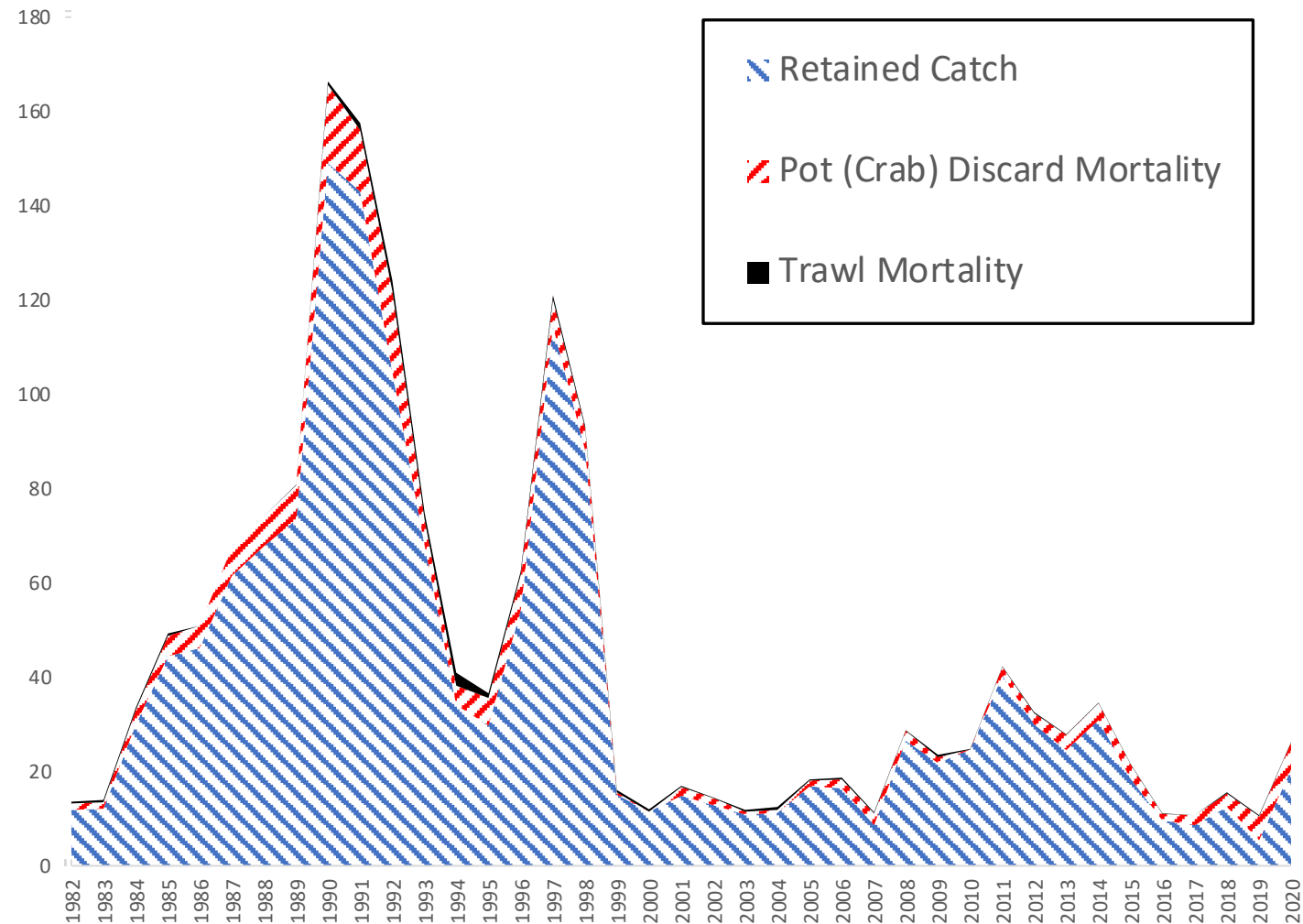


	Bycatch Mortality # Animals (2010 - 2021)	Bycatch Limits	Abundance Based Bycatch Limits	Bycatch Hard- Capped	Time & Area Closures	Gear Mods for Bycatch Reduction	Bycatch Management Agency
BBRKC Fishery Bycatch Mortality	3,126,362	N	N	N	N	Y – 1993	ADF&G
Fixed Gear (Pot) Bycatch Mortality	631,750	N	N	N	N	N	NOAA
Trawl Bycatch Mortality	275,854	Y	Y	Y	Y	Y - 2012	NOAA

BIG PICTURE – Opilio Mortality (Retained Catch & Bycatch)



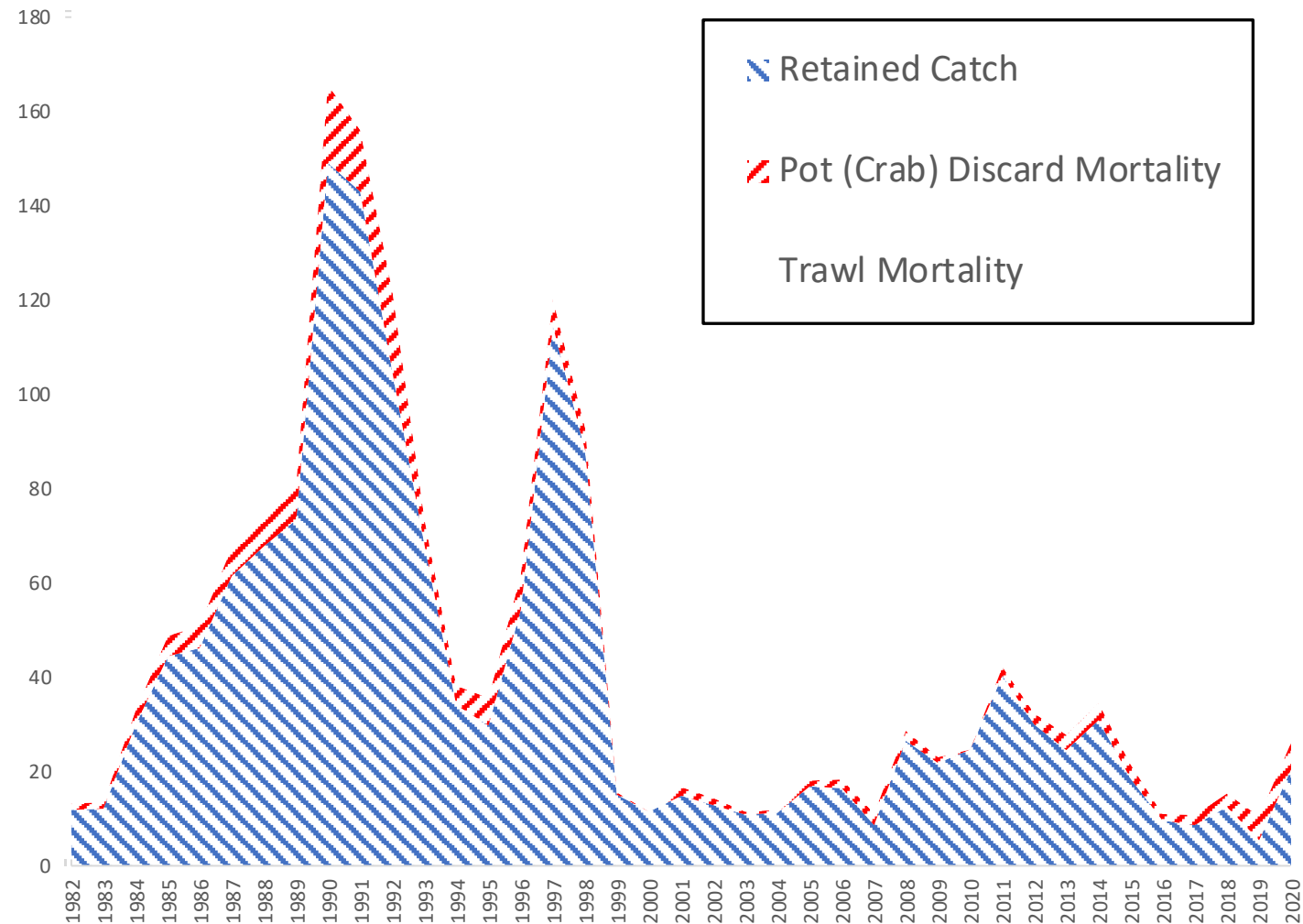
- Data Source: ADF&G, “An Assessment for Eastern Bering Sea Opilio Crab”, Sep 2021, Table 7, p. 33.
- Units: Biomass in Kilotons (kt)
- Time Series: 1982 – 2020.
- Heavy commercial exploitation from domestic fleet (1984 – 1999)
- Bycatch: directed fishery (male & female) & trawl bycatch.
- Fixed gear bycatch not included in this data source.



BIG PICTURE – Opilio Mortality (Retained Catch & Bycatch)

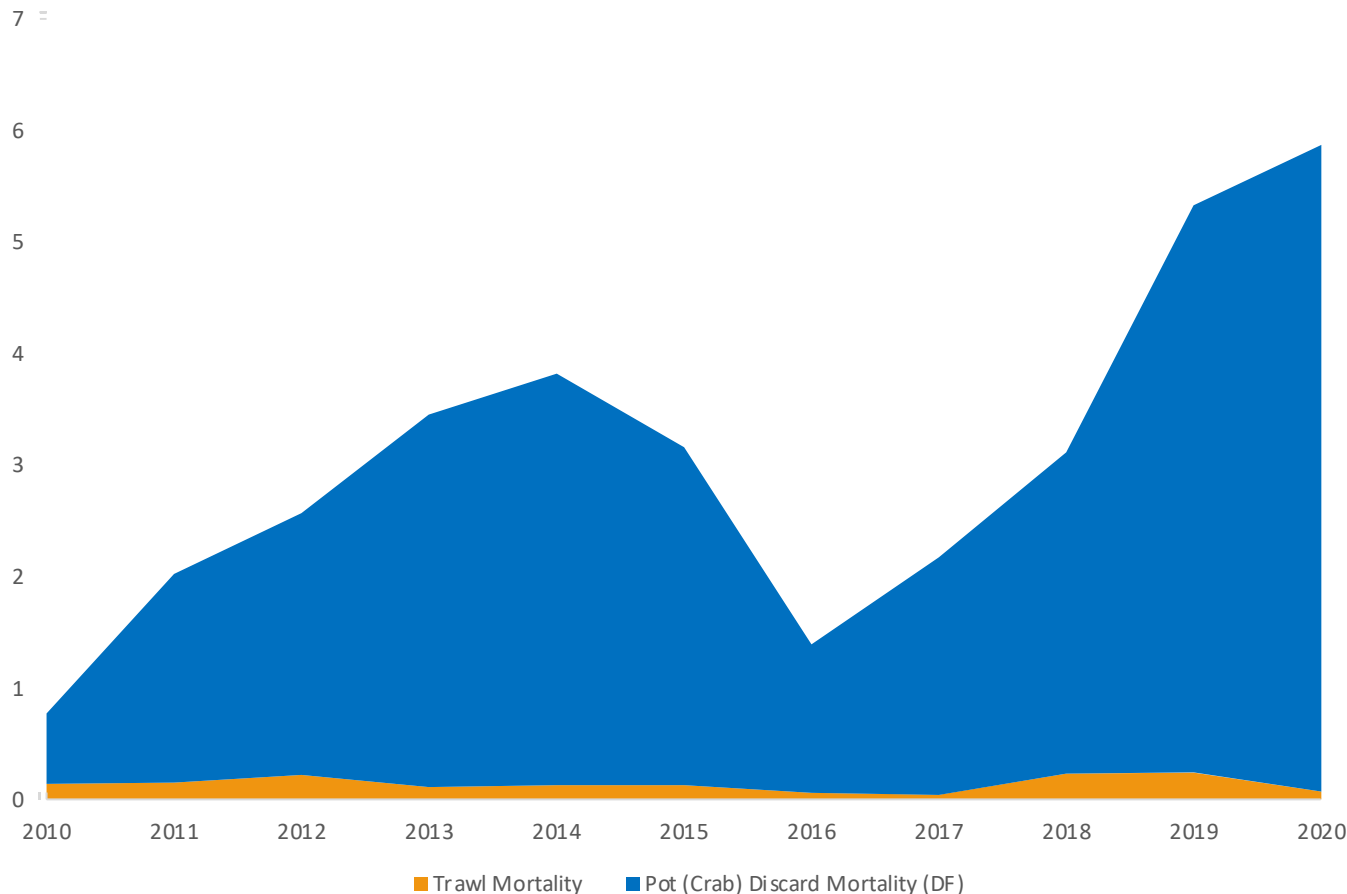


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ADF&G Data on Opilio Bycatch Mortality

Opilio Bycatch Mortality By Gear Type
(Kilotons)

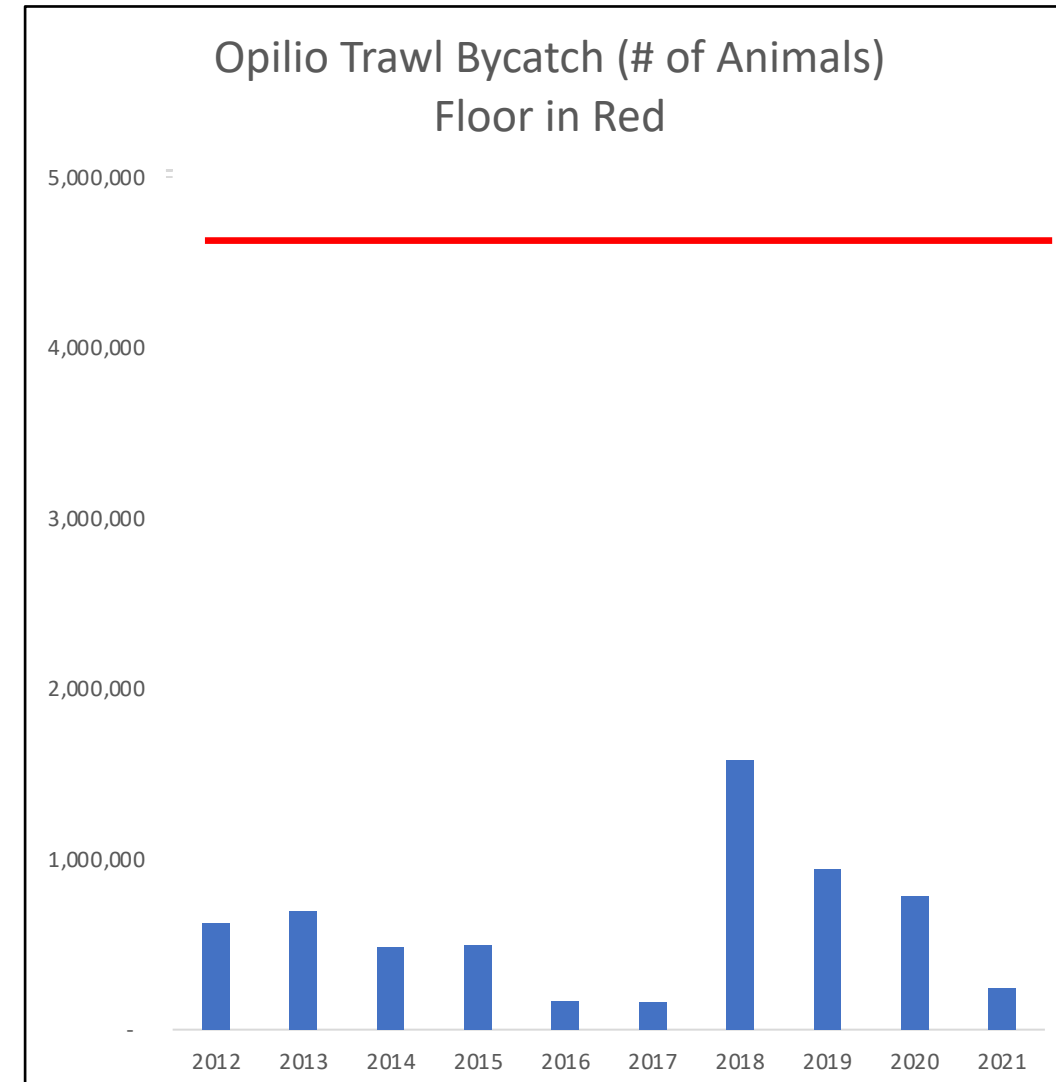


- Data Source: ADF&G, “An Assessment for Eastern Bering Sea Opilio Crab”, Sept 2021, Table 7, p. 33.
- Unit of Measure: Kiloton (kt)
- Since 2010, largest source of bycatch mortality has been directed crab fishery (95%), trawl gear (<5%), fixed gear (< 1%)
- Discard mortality in the directed fishery has been rising, whereas trawl discard mortality has been steady.

Opilio Crab Bycatch Management



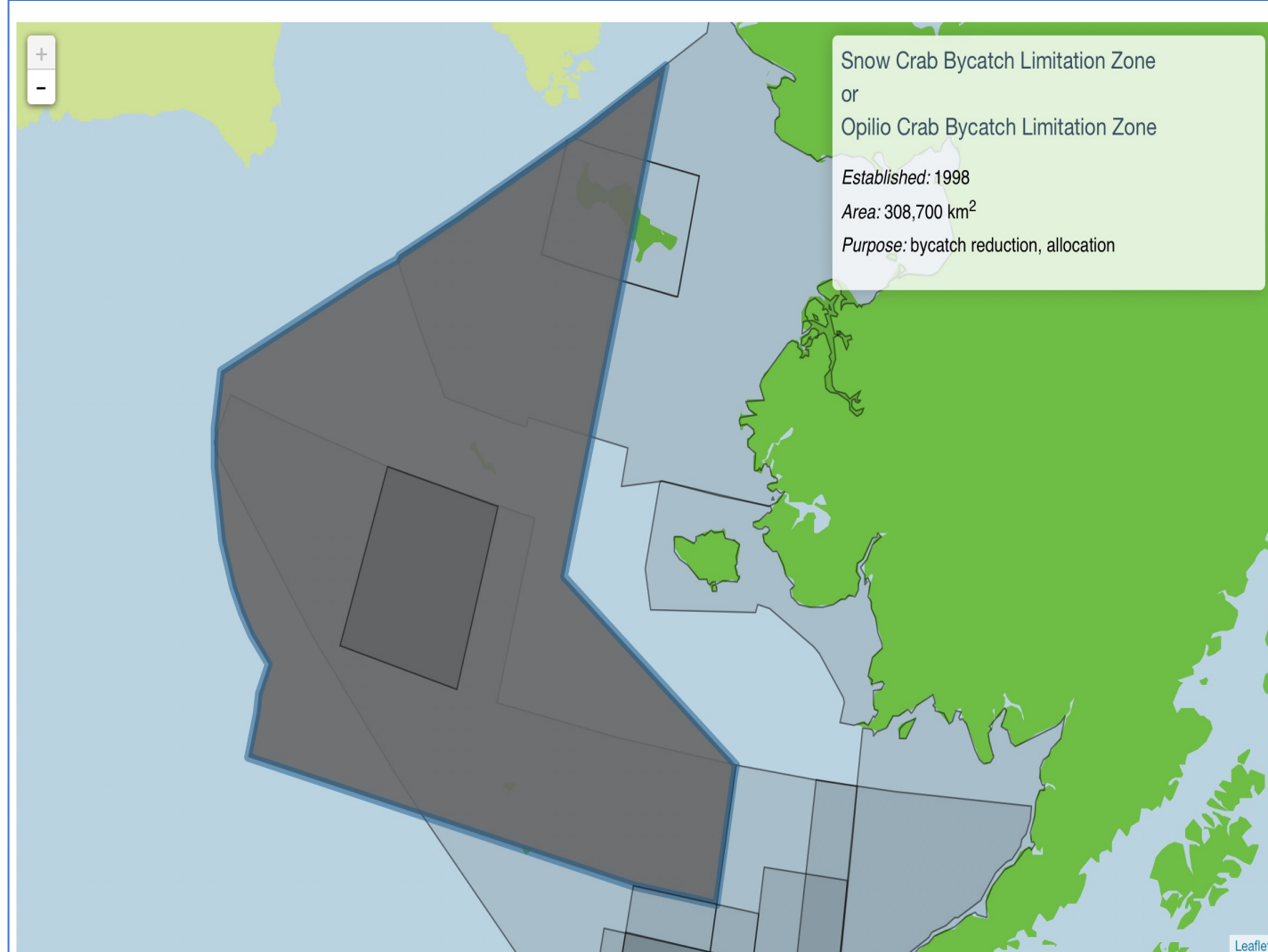
- **Bycatch Limits:** Reduced by 20% (over 4 years) at the start of the A80 program
- **Abundance Based Management:** Trawl bycatch limit fluctuates w/ abundance & NOAA reduced bycatch limits by 40% in 2022.
- **Hard-Capped:** Trawl bycatch limit is .1133% of total opilio abundance with a floor of 4.5M crab.
- **Triggers to Shift Effort:** If hard cap is met, the responsible sector must stop all fishing in the COBLZ.
- **Modified Trawl Sweeps:** Elevated trawl sweeps required since 2012 that minimize mortality on Opilio crab.



Opilio Crab Bycatch Management



- Area Management: Trawl bycatch limits are managed in the Opilio Crab Bycatch Limitation Zone (COBLZ).
- If bycatch limits are exceeded, a closure of the COBLZ is triggered.
- Bycatch limits & COBLZ closure only apply to the trawl sector.
- 95% of trawl bycatch occurs w/in the COBLZ.
- Bycatch taken outside COBLZ does not accrue to the bycatch limit.

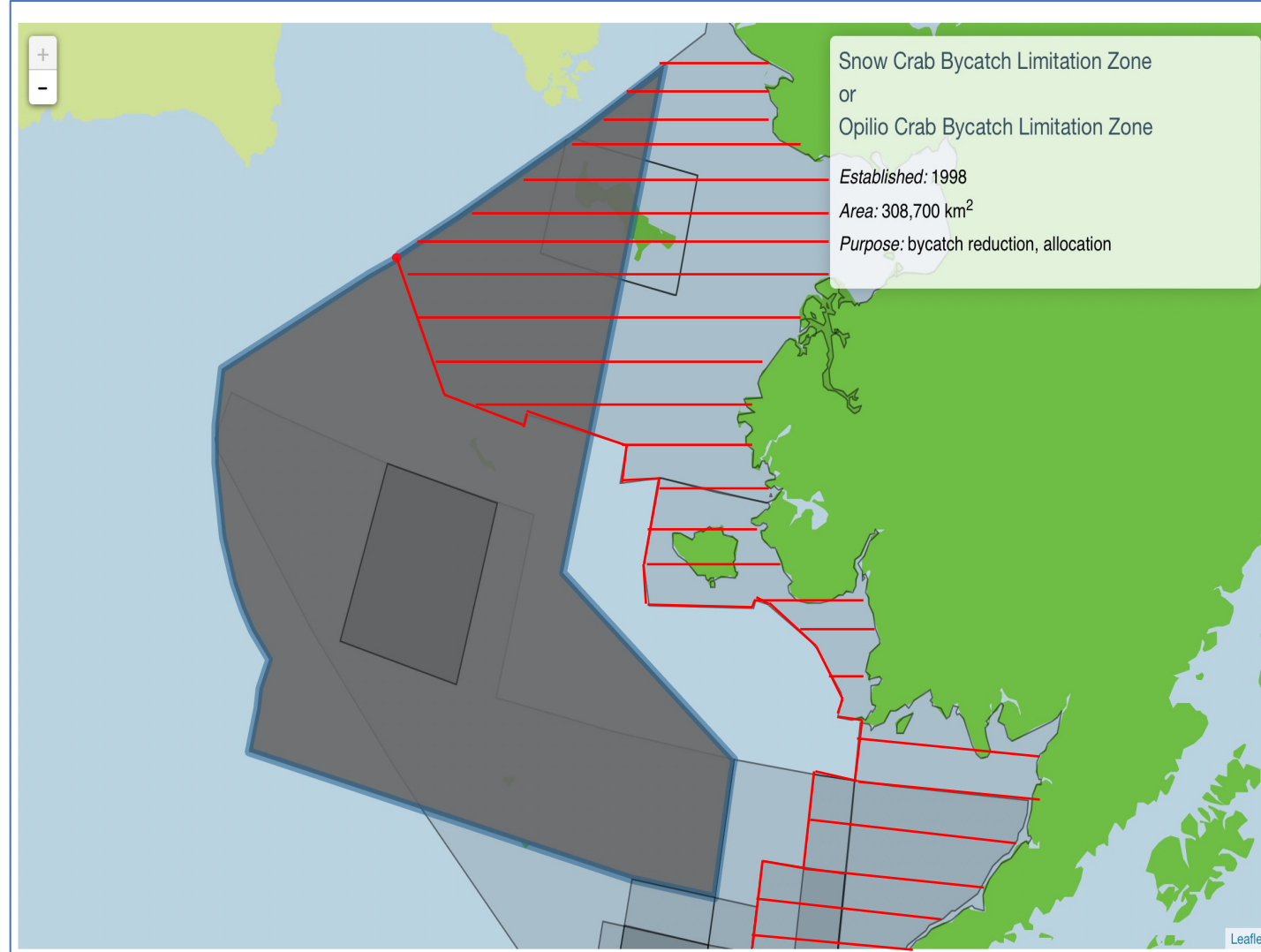


Opilio Crab Bycatch Management

GROUND FISH
FORUM



- Area Management: Trawl bycatch limits are managed in the Opilio Crab Bycatch Limitation Zone (COBLZ).
- If bycatch limits are exceeded, a closure of the COBLZ is triggered to that sector.
- Bycatch limits & COBLZ closure only apply to the trawl fishery.
- 95% of trawl bycatch occurs w/in the COBLZ.
- Bycatch taken outside COBLZ does not accrue to the bycatch limit.
- **NPFMC has limited the trawl flatfish fishery through a network of vast closure areas designed to protect fish & crab habitat, climate change response, & to reduce impacts to remote villages.**

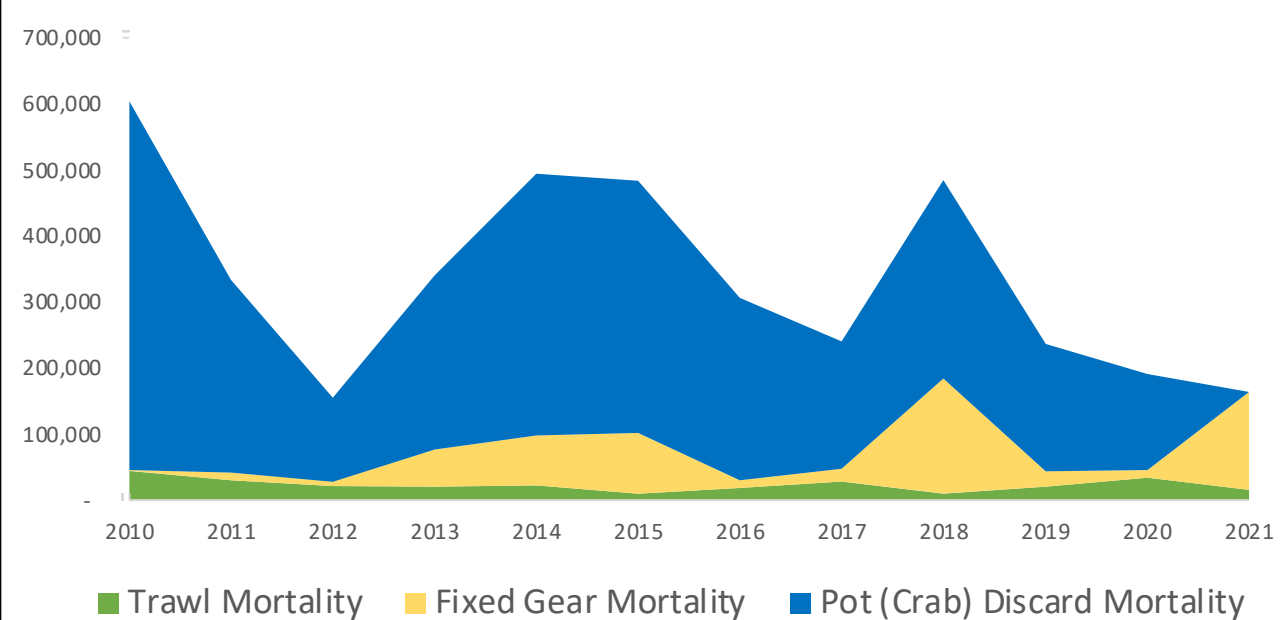


Opilio Bycatch Management Scorecard

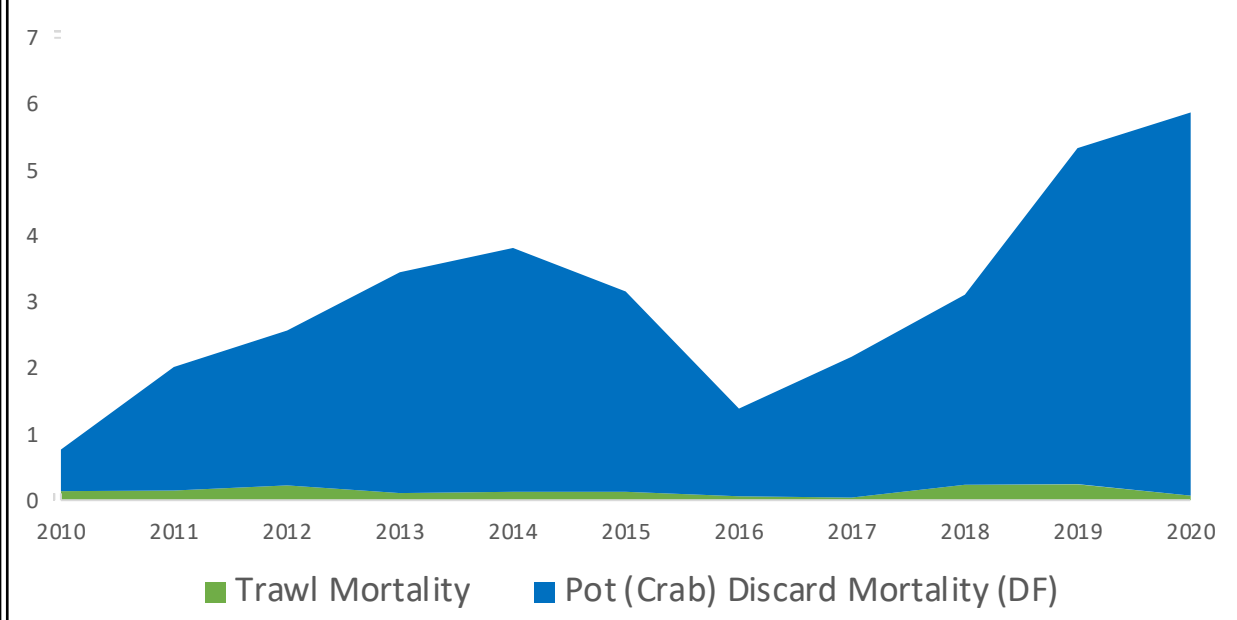
	Bycatch Mortality (2010 - 2021)	Bycatch Limits	Abundance Based Bycatch Limits	Bycatch Hard- Capped	Time & Area Closures	Gear Mods for Bycatch Reduction	Bycatch Management Agency
Opilio Fishery Bycatch Mortality	32,140 (t)	N	N	N	N	Y – 2001	ADF&G
Trawl Bycatch Mortality	1,570 (t)	Y	Y	Y	Y	Y - 2012	NOAA
Fixed Gear Bycatch Mortality	235 (t) Estimate	N	N	N	N	?	NOAA

Conclusions

**RKC Bycatch Mortality By Gear Type
(# of Animals)**



**Opilio Bycatch Mortality By Gear Type
(Kilotons)**



- Low crab bycatch after trawl fishery rationalization is due to a regulatory framework specifically designed to reduce bycatch. This has been necessary for the groundfish fishery participants to achieve these results.
- Discards of male & female crab from the directed crab fisheries are the vast amount of bycatch removals & discard mortality has been increasing – especially in opilio.
- Crab fleet is rationalized, but their bycatch management lacks the teeth & incentives to be effective.



A80 Recommendations for Future Bycatch Reductions

Bering Sea Crab & Fixed Gear Sector

- (Crab Sector) Count all crab catch (retained & discards) towards quota allocations, establish retention standards
- (Both) Reduce unobserved bycatch mortality through 100% observer coverage in crab, fixed gear & AK State water fishery
- (Both) Implement closure areas for known concentrations of juvenile & female crab (East of Amak Island / Area 508 & 512)
- (Fixed Gear) Set bycatch limits (PSC caps) for fixed gear (pot cod) sector

Bering Sea Trawl Sector

- Support research that would inform development of flexible spatial management measures.
- Collaborate w/ Bering Sea Fisheries Research Foundation (BSRF) to conduct surveys to understand winter location of BBRKC in order to avoid.
- Develop EFP to allow for deck sorting of live BBRKC crab bycatch from A80 vessels.
- Support NPFMC motions from April 2022 and June 2022.

A photograph of a fishing vessel's deck at dusk. A large black crane is positioned on the right side of the deck. In the foreground, there are large spools of yellow and green fishing nets. Several workers wearing hard hats are visible on the deck. The background shows a calm body of water reflecting the twilight sky, with mountains visible in the distance. The word "Questions?" is overlaid in white text on the right side of the image.

Questions?