
D1 RKCSEA EXTENSION

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AND BEN DALY, DECEMBER 2021



BACKGROUND

- 2021 Trawl Survey data showed a continuing trend of decreasing Bristol Bay red king crab (BBRKC) abundance
 - Driven by a decrease in mature female BBRKC abundance
- The State estimation for abundance was **7.9 million** mature female BBRKC in 2021, which is below the threshold of **8.4 million** assigned to hold a directed fishery
 - First year since 1995 that abundance has fell below threshold required to hold a directed fishery
- As a result, the directed fishery was closed for 2021



BACKGROUND

- The Alaska Bering Sea Crabbers (ABSC) sent a letter to the Council requesting an emergency rule that would expand the RKCSA closure to bottom trawling to protect mature female BBRKC
- At the October 2021 NPFMC meeting, the Council passed the following motion:
 - The Council requests an analysis on the likely impacts of expanding the Red King Crab Savings Area through emergency rule to shift the northern boundary from 57° 00.0' N to 57° 30.0' N. This analysis should assess the immediate conservation benefits for female red king crab and whether an emergency rule would improve the likelihood of a directed red king crab fishery in the following year consistent with NOAA's emergency rule criteria. The analysis should include an evaluation of impacts this closure may have on red king crab and other PSC species and harvests of groundfish species to the extent possible and as needed to inform the Council.
- This analysis explores the best available science as it applies to this request.



EMERGENCY RULE POLICY AND CRITERIA

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PROPOSED CLOSURE AREA

- The area within the solid red line is the existing RKCSA and the dotted blue line is the proposed expansion area
- The proposed expansion area is an extension of 30 nm
- Expanding the RKSCA to the north would close this additional area to bottom trawling
- **500,000** mature female RKC need to be added to estimated abundance in order to hold a directed fishery in 2022

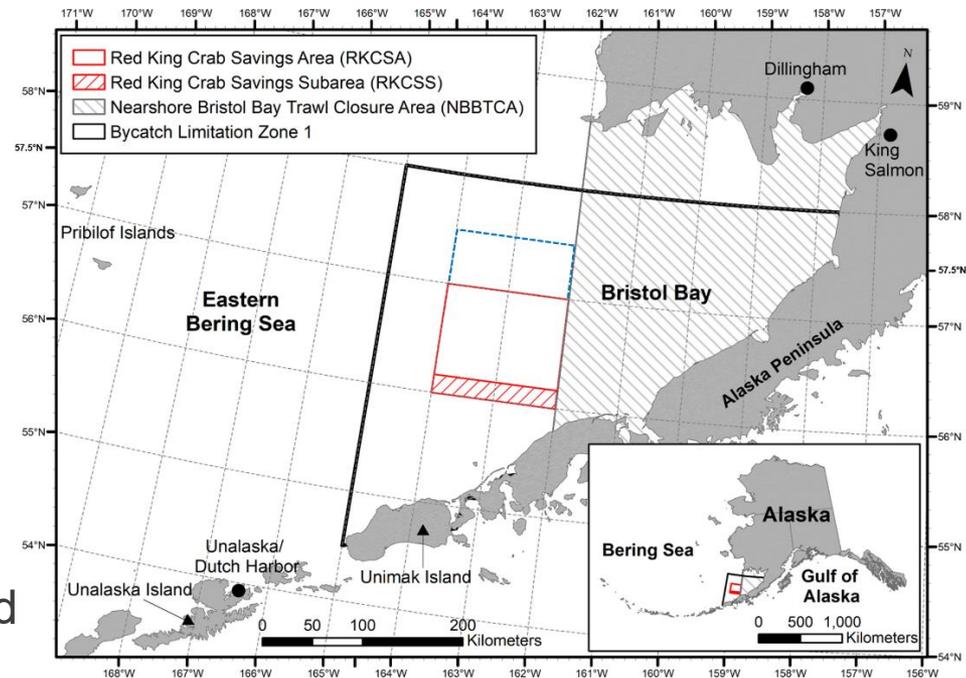


Figure 2. Proposed expansion of the Red King Crab Savings Area (RKCSA; red box) by one-half of a degree northward (blue box).



PROPOSED CLOSURE AREA

- ABSC recommended the additional area closure based on high density areas of mature female RKC
- Trawl survey shows high densities of mature female RKC to the north and to the northeast of the RKCSA
- High density area to the north of the RKCSA is the result of two survey stations

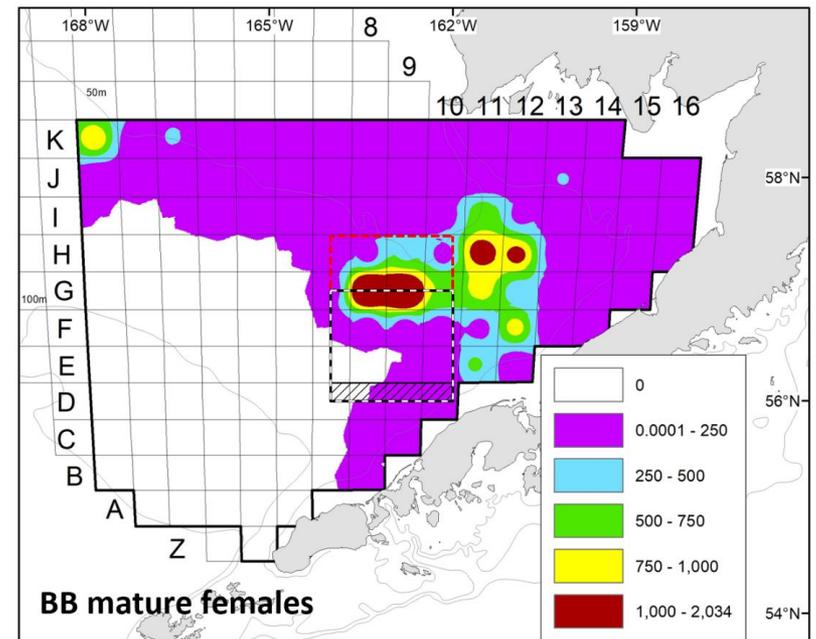


Figure 3. Red king crab mature female abundance (2021 NMFS Eastern Bering Sea trawl survey).



RED KING CRAB BYCATCH

- Total mature female RKC bycaught in 2021 in:
 - All federal commercial fisheries was **159,454 crab** (assuming 50% female bycatch ratio)
 - NPT commercial fisheries targeting flatfish was **10,403 crab** (assuming 30% female bycatch ratio)
 - NPT commercial fisheries targeting flatfish in the proposed expansion area was **2,266 crab** (assuming 32.7% female bycatch ratio)

Table 4. RKC bycatch from 2016-2021 in NPT flatfish fisheries in the entire Bering Sea and inside the RKCSA proposed expansion area.

Year	Entire Bering Sea			Inside RKCSA Proposed Expansion Area		
	Total NPT Flatfish Fisheries GF Catch	Total NPT Flatfish Fisheries RKC PSC	RKC PSC Rate	Total NPT Flatfish Fisheries GF Catch	Total NPT Flatfish Fisheries RKC PSC	RKC PSC Rate
2016	270,032	40,188	0.15	22,274	5,216	0.23
2017	253,273	58,779	0.23	29,268	11,831	0.40
2018	260,084	29,791	0.11	9,925	3,678	0.37
2019	246,430	67,144	0.27	18,154	9,922	0.55
2020	251,803	63,376	0.25	33,407	19,522	0.58
2021	189,645	34,677	0.18	22,540	6,931	0.31
Average	245,211	48,992	0.20	22,595	9,517	0.41



RED KING CRAB BYCATCH

- Rate of bycatch of RKC by NPT groundfish fisheries (all targets)
- Rate show both within and outside the proposed expansion area
- The average rate inside the expansion area (0.41) is higher than the rate for the entire Bering sea (0.20).
- NPT flatfish catch within proposed expansion area averages 10% of total BS catch

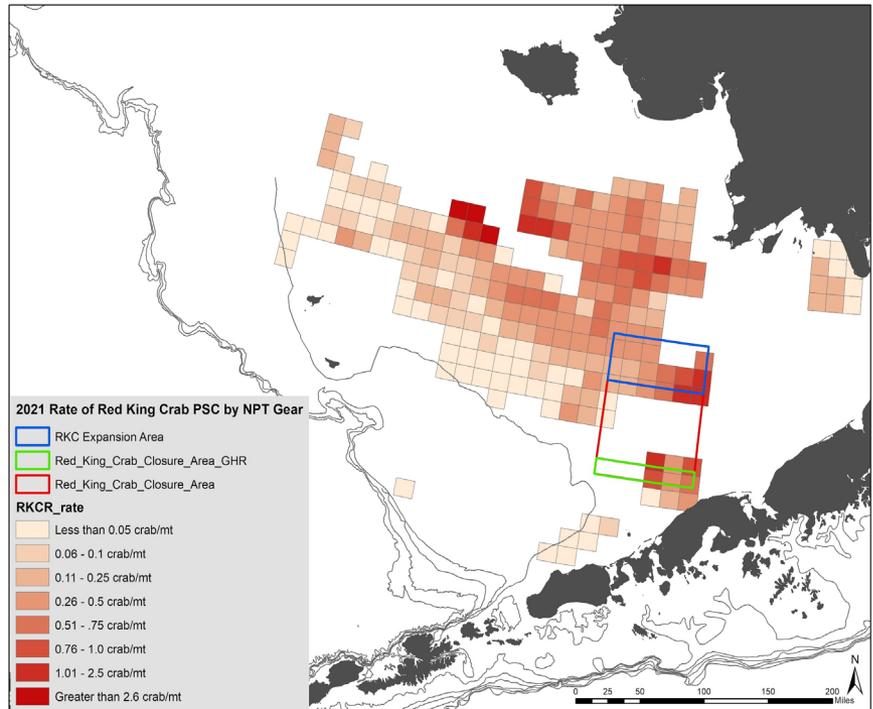
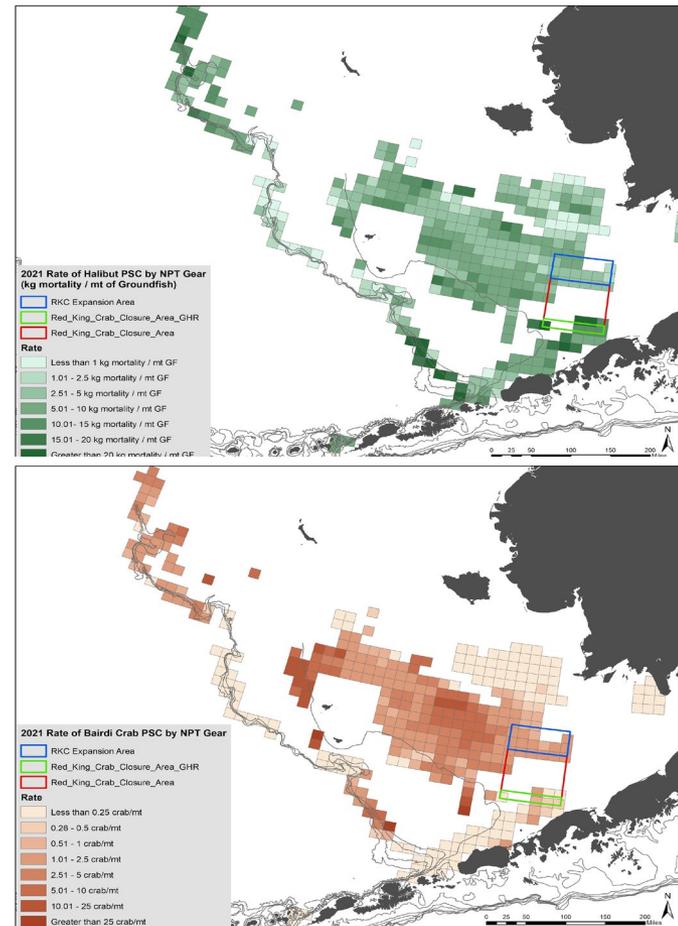


Figure 4. Rate of Red King Crab PSC by Non-Pelagic Trawling in the Bering Sea in 2021 (NMFS Catch Accounting System, November 5, 2021).



OTHER BYCATCH CONSIDERATIONS

- Total bycatch of mature female BBRKC in the directed fishery averaged **250,621** crab per year from 2016-2020
- Bycatch of halibut (top figure) is relatively low in proposed expansion area
- Similarly, Tanner crab bycatch (bottom figure) is relatively low in proposed expansion area
- Snow crab bycatch (figure not pictured) mainly occurs further to the northwest
- Herring, Chinook and non-Chinook salmon bycatch in NPT fisheries is relatively rare compared to halibut and crab bycatch



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EMERGENCY RULE POLICY AND CRITERIA

- While, the drop below the threshold to hold a directed fishery for BBRKC was unexpected, the decrease in mature female BBRKC abundance continued a downward trend that has been observed since 2010. The Council could consider that the closure of the BBRKC fishery meets criteria 1, as the drop in mature female BBRKC abundance below the threshold required to hold a fishery, and subsequent closure, is a recent event or a recently discovered circumstance. The Council could also consider that the case for meeting this criterion is countered by the fact that the eventual closure of the BBRKC fishery was not necessarily an unforeseen event due to the consistent downward trend observed in mature female BBRKC abundance since 2010.



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EMERGENCY RULE POLICY AND CRITERIA

- The Council could consider that this request meets criteria 2 as the continued decline of the mature female BBRKC biomass may present a serious conservation concern in the fishery. Alternatively, the Council could consider that the request meets this criterion because the closure of the fishery represents a serious management concern.



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EMERGENCY RULE POLICY AND CRITERIA

- It is clear that the Council could not recommend and NMFS could not implement an expansion of the RKCSA through the conventional notice-and-comment rulemaking process before the beginning of the 2022 groundfish fishing season (i.e., January 20, 2022). Typically, the process of Council analysis and rulemaking takes at least one year to implement. In this case, if NMFS received the request for regulatory change in December 2021, this process could not be accomplished before the majority of groundfish fishing activity occurs in 2022.



SUMMARY

- 2021 mature female BBRKC abundance fell below threshold of 8.4 million crab.
- Resulted in the immediate closure of the directed crab fishery
- ABSC requested emergency action by requesting that the RKCSA is expanded 30 nautical miles to the north
- Emergency action is requested as the normal Council process would not be able to address this issue before the majority of groundfish fishing activity occurs in 2022.
- The savings of crab as a result of the closure of the directed fishery (~**250,621**) and the crab that could be saved by expansion of the RKSCA (**2,266**) would not be enough crab to make up a deficit of the 500,000 crab necessary to reach the threshold of 8.4 million.
- However, while closing the area will not likely result in enough savings to open the directed fishery, it would close an area that has experienced a consistent rate of higher RKC bycatch than the rest of the BS.

