



D1 Bristol Bay Red King Crab Info Paper

April 2022 Council Meeting

Action Memo

Council Staff: Sam Cunningham
Other Presenters: Dr. Kelly Cates (NMFS AKRO SF); Dr. Ben Daly (ADF&G)
Action Required: 1. Review discussion paper
2. Determine whether to initiate further action

Background

Staff has provided an informational discussion paper to aid the Council, other responsible agencies, and the public in considering actions related to an ongoing stock decline for Bristol Bay Red King Crab (BBRKC) in the context of preliminary evidence that may indicate seasonal or permanent stock redistribution. The 2021/2022 directed fishery for BBRKC was not open because the survey estimate of mature female abundance was below the regulatory threshold of 8.4 million crab. The most recent NOAA eastern Bering Sea summer trawl survey reflects an increased number of mature red king crab in areas just north of the survey units that are included in the BBRKC stock assessment.

In October and December 2021, the Council made a broad request for information on four topics (items), ordered below as they are addressed in the paper. The Council will consider the information provided but is not required to take action as this agenda item is not part of a mandatory program. Any action that relates to the management or stock assessment boundaries of BBRKC might require cooperative action by Alaska Department of Fish & Game and National Marine Fisheries Service. Among the issues addressed in this paper, the boundary over which the Council has the most direct authority is the trawl prohibited species catch (PSC) limitation zone in the eastern Bering Sea ("Zone 1"). Zone 1 is defined in both the BSAI Groundfish Fishery Management Plan (FMP) and Federal regulations.

1. Provide the best available information on Bristol Bay red king crab molting/mating annual cycle and how the seasonality of this overlaps with fisheries and the effects these interactions may have.
2. Evaluate boundaries used for the BBRKC survey, stock assessment, PSC limits, and directed fishery.
3. Provide the best available information on bottom contact by pelagic trawl gear and the impact it may have on BBRKC stocks.
4. Summarize mechanisms used in other council managed fisheries to create flexible, responsive spatial management measures for all gear types and how they might be applied to protect BBRKC.

Item 1 (Section 2) provides the best available information on the molt/mate cycle of BBRKC as it is currently understood. This section also summarizes what is known about the life-history cycle of BBRKC.

Item 2 (Section 3) illustrates the existing management and assessment boundaries for the BBRKC stock, highlighting where boundaries do not neatly align and how managers and scientists account for those discrepancies. This section includes historical data on Zone 1 red king crab bycatch in trawl fisheries and

the most recent information from ongoing crab tagging/logbook studies that are investigating where crab occur outside of the time period captured by the summer trawl survey.

Item 3 (Section 4) presents the best representation of pelagic trawl gear bottom contact that is available to the analysts. [Appendix 2](#) provides supplementary material for this section. Estimated bottom contact is mapped based on trawl-track Vessel Monitoring System (VMS) data that are modeled under the most recent gear performance parameters that have been established and reviewed as part of the Essential Fish Habitat process. This section references what is known about bottom contact by other gear types (trawl and non-trawl). The section also describes the state of knowledge about unobserved crab mortality from trawl gear, highlighting areas that will benefit from ongoing research and noting how unobserved mortality is currently incorporated into stock management (per the Council's Scientific & Statistical Committee).

Item 4 (Section 5) provides the Council with examples of flexible spatial management measures relating to bycatch. The focus is on existing measures in the Alaska region, but examples are provided from the west coast, New England, and the Western Pacific. Examples are generally categorized under Inseason Management authority, incentive programs, and time/area closures. Additional examples that could relate to crab bycatch management but are not spatial in nature are also included.

Upon review of the discussion paper, the Council may determine whether to initiate consideration of a future action through either a subsequent, more targeted, discussion paper or by establishing a Purpose and Need Statement and alternatives for analysis.