April 2, 2021

Mr. Simon Kinneen, Chairman
North Pacific Fishery Management Council
1007 West Third, Suite 400
Anchorage, AK 99501

RE: Comment on Agenda Item B3 (EFH 2022 5-year Review Planning)

Dear Chairman Kinneen, Council Members, and SSC:

The Alaska Bering Sea Crabbers (ABSC) is a trade association representing independent crab harvesters who commercially fish for king, snow (opilio), and Tanner (bairdi) crab with pot gear in the Bering Sea and Aleutian Islands (BSAI) Crab Rationalization Program. As crab industry stakeholders, we support and work with the crab research foundation (BSFRF) on a variety of projects related to EFH research as noted below. We know crab EFH issues are complicated, blending research and best science to improve knowledge and resolution of habitat to improve management measures – but we see more attention to crab is needed. We appreciate the opportunity to comment on Agenda Item B3 – EFH 2022 5-year Review Planning.

Alaska's king crab stocks across the state are struggling with several stocks at historic lows. As one of Alaska's most iconic species, and also one of the highest value, we urge the Council to be proactive in helping king crab stocks recover, both for the stocks and for the fishing communities that rely on them. One way to help king and other crab stocks is through better understanding of essential fish habitat (EFH) for all life stages of crab and through protecting habitat, where needed.

The lack of recent EFH-related management actions for crab based on known and new information requires attention. The Council was alerted in October 2020 that Bristol Bay red king crab (BBRKC) may be approaching an overfished condition. Given that and given the EFH work since 2012 that flagged several concerns and protections for BBRKC that have not yet been addressed through management action, **we recommend that the Council expedite EFH considerations for BBRKC due to start in 2022 by starting now to update information and research available since the 2017 EFH Review, to prioritize any pending EFH research for BBRKC, and to bring that information forward for the Council's Crab Plan Team (CPT) to consider in September 2021, including updates on the recommendations from the 2012 discussion paper on BBRKC EFH and on the importance of fishing impacts in localized areas as flagged in the Fishing Effects (FE) model work.** We are aware of some parts of this through BSFRF and other research efforts we are attentive to, but Council efforts to focus this in a meaningful way for crab stocks in the EFH update are critical. We offer some comments at the end of our letter on the specific EFH components under consideration for the upcoming 2022 EFH Review.

The 2012 discussion paper on BBRKC EFH (Section 7.2, p.34-35) laid out specific and detailed recommendations to the Council to protect female BBRKC, spawning grounds, and molting crab. The CPT have voiced concern for fishing interactions with red king crab and red king crab habitat for over 10 years now, noting fishing interactions, bycatch, and unobserved fishing mortality could be playing a role.

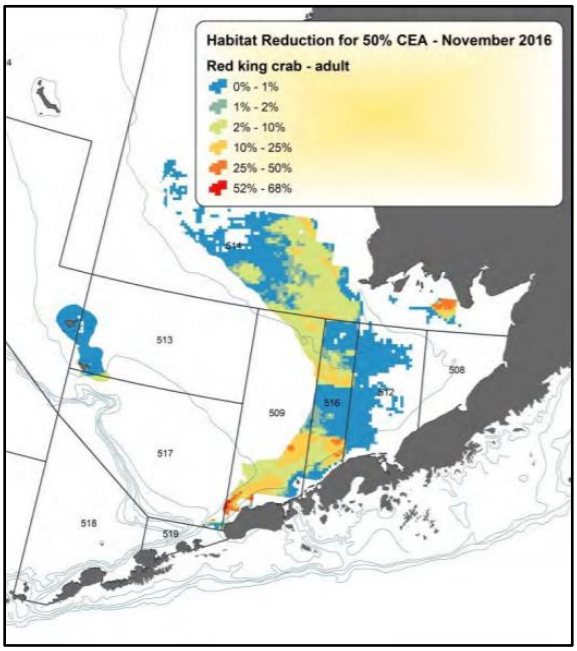
The discussion paper speaks to the importance of Southwestern Bristol Bay where larvae hatched from ovigerous females are thought to have a better chance of juvenile survival than larvae hatched from other parts of Bristol Bay. Noting in the B3 NMFS Report that the EFH Review Team is scheduled to update the CPT in September 2021, **ABSC asks for an update at that meeting on the specific bulleted items below that were recommended in the 2012 discussion paper.**

- Better understand adult, juvenile and larval distribution and habitat usage
- Better understand shifts in the stock in warm versus cold years
- Consider EFH conservation measures to establish annual or seasonal closures in southwestern Bristol Bay, based on the probability that oceanographic currents along the peninsula provide essential pelagic habitat for larval and early juvenile stages of red king crab, and therefore ovigerous females upstream need to be protected.
    - Extend the range of the red king crab savings area to protect more of the stock.
    - Apply a seasonal closure to protect the adult female red king crab from March to May during molting and mating
    - Close area southwest of Amak Island
- Create a Habitat Area of Particular Concern (HAPC) priority for areas important for ovigerous red king crab and consider designating this area as a HAPC.
- Consider protection measures for red king crab and red king crab habitat on the basis of bycatch interactions of the groundfish fisheries with ovigerous female crab, and stock concerns.
    - Establish annual or seasonal closures in the southwestern Bristol Bay
    - Broadly reconsider existing red king crab closures throughout the range of red king crab

Updates on these items will help stakeholders better understand what is being done for research on crab EFH and how it should lead to more protective measures for crab stocks. In addition to the concerns and recommendations listed for BBRKC EFH in the 2012 discussion paper, the 2017 EFH Review flagged a concern with the approach used from the FE model to look at population level impacts rather than localized impacts. For BBRKC, localized impacts may have a disproportionate effect due to the biology of the stock, for example on ovigerous females as described above. Further work and interpretation of the dynamic of population level impact versus localized impact for specific crab stocks within FE efforts is warranted, particularly for crab stocks with identified sensitive areas that may require more precise definition. We are aware of some current research (collaboration between NMFS, ADFG, and BSFRF) to document seasonal movement of mature male and female Bristol Bay red king crab that may help with further spatial resolution, and updating FE modelling.

The FE model used in the 2017 EFH Review provides a useful tool to better understand the impacts of fishing on EFH. The FE model looked at Core Essential Areas for all stocks, including red king crab, to determine the percent of fishing impacts and habitat reduction. Thresholds below 10% warranted no further action. When taken as a whole at the population level, impacts from fishing on red king crab habitat were determined to be under 10%. However, for crab stocks with sometimes patchy spatial distribution, pod behaviors, and molting/mating locations, some localized habitat areas may be more important than others and may vary by times of year. Therefore, an analysis that pools the entire population level distribution together to look at impacts may not be appropriate for crab. Potentially important localized areas should remain isolated for protective consideration rather than lumped together with other areas as a matter of spatial resolution.

The BSAI Crab Fishery Management Plan (FMP) highlights this concern for fishing impacts to crab EFH in Appendix F Section 4.1.5.1 (p.170-171), stating concern for the use of the Core Essential Area approach for red king crab stocks. *"Some habitat is much more important for red king crab spawning success than others. Even though the habitat reduction for all red king crab habitat areas is less than ten percent, the most critical area for Bristol Bay red king crab spawning is southern Bristol Bay, where the habitat reduction is over ten percent."* The figure from the FMP at right shows the Southern Bristol Bay spawning area with impacts well over 10% and even over 50%. **ABSC asks for an update on the information available on localized areas important to BBRKC with high fishing impacts and habitat reduction.**



In the NMFS Report on 2022 EFH Planning under B3 at this Council meeting, several EFH components are highlighted on page 17 (excerpt in box) that the Council and SSC may prioritize for review and revision through the upcoming review. ABSC looks forward to the updated information on crab stocks and offers the following comments.

3 Council action

The proposed approach for the 2022 EFH Review is based on direction received from the Council during the 2017 EFH Review and the initial approach and draft timeline presented in April 2019. Here, we have broadly identified which of the EFH components the Council may wish to update. Staff are seeking input from the Council and SSC on specific components currently prioritized for review and revision:

- Develop and present new data, methods, SDM, maps, and habitat information (component 1);
- Run Fishing Effects model with updated fishing data and new maps (component 2);
- Provide updated EFH conservation recommendations and analysis for non-fishing impacts to EFH (component 4 and 6);
- Provide refined prey habitat information in the groundfish FMPs (component 7);
- Update research priorities and information needs (component 9).

Additionally, the Council may wish to identify priorities for HAPC consideration and request proposals for specific sites for HAPC inclusion.

- **Component 1 – new data:** We look forward to seeing the new data and publications available for crab stocks incorporated into the EFH work, including but not limited to, seasonal movement data on BBRKC, importance of protected areas like the Red King Crab Savings Area and other no trawl zones, and larval advection. In addition, we look forward to Level 1 information (distribution) on EFH for larval and early juvenile snow, bairdi, and golden king crab and Level 2 descriptions (habitat-related density or abundance) for all life stages of crab.
- **Component 2 – FE Model:** We encourage further consideration of localized versus population level fishing impacts on habitat reduction and the importance that they may play for various life stages and spawning/reproductive success for crab. In addition, we ask that a description be provided from the FE model of the estimated time on bottom in totality as well as by percentage of overall tow time used in the model for pelagic gear and what parts of the gear are coming in contact with the bottom.
- **Components 4 and 6 – EFH Conservation Recommendations and Non-Fishing Impacts:** Given the growing focus on climate-resilient fisheries and ocean acidification, we look forward to the upcoming EFH Review highlighting how best to conserve fish habitat and ecosystem connectivity to be ready for the challenges ahead. We see the need for an adaptive management approach

that can better respond in real-time to changing conditions. BBRKC is a perfect example of the need for a faster, more proactive management response. It has been on a downward trajectory for over a decade. The management system has focused on needed research but with little tangible management actions to date. We need a more responsive system to keep crab fisheries in Alaska viable.

- **Component 7 – Prey Habitat Information**: The NMFS Report notes a priority to provide refined prey habitat information in the groundfish FMP. We would expect that refined prey habitat information should also be provided for the crab FMP if not already included.
- **Component 9 – Update Research Priorities & Needs**: We urge the Council to include more crab-related research, particularly for commercially important stocks like BBRKC on the verge of overfished status. We are attentive to crab research strategies through BSFRF, CPT/Council, NPRB et. al efforts and would note that, in light of the collective stocks' status, higher priority and more attention overall is warranted.
- **HAPC** – We encourage the Council to consider new HAPC priorities and designations as part of the upcoming EFH Review.

In closing, a habitat focus, EFH conservation measures, and adaptive spatial-temporal management, is more important now than ever for crab given changing ocean and climate conditions. For BBRKC, EFH and habitat protections for different life stages is doubly important given it may be approaching an overfished status – a status that is especially troubling because Alaska's king crab stocks show little resilience and historically have been very difficult to build back from low levels. Crab stocks that may have been more resilient to fishing impacts before and as previously assessed under EFH may be less so now under changing ecosystems, changing climate, and ocean acidification. We need to proactively consider areas that help build their resilience.

ABSC asks that the Council and the Council's SSC be proactive to help slow the decline of BBRKC which may be approaching an overfished status. We recommend that the highest priority actions for BSAI crab stocks in the Council arena focus on adaptive spatial-temporal management and EFH conservation, building on work and recommendations highlighted in recent EFH work and with a priority on BBRKC. The Council should be leading to build more resilient crab stocks in the face of climate change and ongoing fishing impacts. We have enough information to act now and start helping Alaska's crab stocks. Let's help this commercially and culturally important iconic species for Alaska rebound using the tools and information we have. We look forward to the scheduled update to the CPT in September 2021 on the EFH Review and hope you will consider adding updates to the items that we have highlighted in this letter from the 2012 discussion paper, crab FMP, and FE model. As part of the upcoming EFH Review, we hope the Council will also consider new HAPC priorities and designations.

Thank you for your consideration.

Sincerely,

Jamie Goen
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