

Unobserved Mortality Working Group Supplemental

Crab unobserved mortality (UM) has been discussed through many of the Council committees, advisory bodies, and Council given the recent collapse of the BBRKC and EBS snow crab stocks. Table 1 highlights the recent timeline of events when UM has discussed, and the outcome of those discussions, while recognizing that these events may not have been the sole arena for discussions surrounding UM. The Council supported forming an UM working group at the December 2022 meeting ([motion](#)).

However, given the paucity of research on UM estimates, the working group has yet to be formed and at this time staff is seeking additional direction from the SSC and Council to clarify the objectives of the working group. Additional SSC/Council instruction on the duration of time expected to meet the objectives may be beneficial in resource allocation for meeting planning purposes.

At the May 2023 Crab Plan Team (CPT) meeting, the Plan team discussed the need for continued research on UM and identified the SSC's and Council's objective of incorporating UM estimates into stock assessments. The Plan team discussed that this may not be the sole objective of the working group. **Staff is requesting input from the SSC and Council to see if there is utility in additional objectives for the working group, such as assessing UM estimates based on interactions with trawl gear as noted in the 2022 [December Crab Workplan](#).** To utilize a working group most effectively, a clear set of objectives would be beneficial to aid in better defining the research necessary to inform UM estimates for use in BSAI crab assessment models and potential management decisions. Any additional objectives identified by the SSC and Council may be useful in informing the UM Working group membership, and tasks as well as highlighting areas of research to be incorporated in the CPT research priorities that are scheduled for discussion in January 2024.

Additionally, the Plan team discussed the utility of an inter-agency working group versus a public participating workshop and identified that it may be useful to start with an initial working group to examine areas of current research and recommend future research, followed by a workshop that allows for stakeholder engagement, but additional input from the SSC and Council is appreciated.

Table 1: A summary of when unobserved mortality has been discussed in the Council process, and the outcome of the discussions

Date & Meeting	Report/motion link	Outcome
May 2022 CPT	May 2022 CPT report	<ul style="list-style-type: none"> • BSFRF presented recent research efforts related to UM- Results are not publicly available yet • Craig Rose presented work on his UM estimations • CPT encourages studies designed to improve mortality estimates and quantify long-term, delayed mortality following interactions with trawl gear.
October 2022 SSC	October 2022 SSC Report	<ul style="list-style-type: none"> • SSC recommends the formation of a working group to develop a framework for how to estimate the magnitude of unobserved mortality for crab stocks and how these estimations may be utilized in BSAI crab stock assessments. • Following the presentation on the Fishing effects model used in the EFH 5-year review, the SSC supported <ol style="list-style-type: none"> 1) Assessing the potential for pelagic trawl bottom contact based on trawl nets and fishing behavior that may be correlated to actual bottom contact, and 2) Using the Fishing Effects model to identify potential pelagic fishing efforts relative to closed areas.
October 2022 Council	<ul style="list-style-type: none"> • Request for Information (RFI) on BBRKC and EBS Snow • Summary Table of RFI submissions 	<ul style="list-style-type: none"> • RFI for input from industry on a description of the research that would inform the development of more flexible and effective spatial management measures; gear modifications to reduce impacts on the BBRKC and/or EBS snow crab stocks, or to evaluate UM in the trawl sector.
December 2022 Council	<ul style="list-style-type: none"> • D2 Crab Conservation Workplan • D2 Council motion 	<ul style="list-style-type: none"> • Council motion supporting the formation of a UM working group to incorporate UM estimates into stock assessments. • <u>Are there additional objectives the Council would like to include?</u>
May 2023 CPT	May 2023 CPT report	<ul style="list-style-type: none"> • The current UM working group objective is gaining information on UM estimates to incorporate into assessment models. • Pending research (2024) from the Kodiak Lab utilizing the FE model to examine fishing effects relative to the location of crab and molt timing.
January 2024 CPT	N/A	<ul style="list-style-type: none"> • Research priorities scheduled for discussion • Additional Council objectives may aid in establishing research priorities to better gain information on UM.