

## **PROPOSAL 287**

### **5 AAC 35.508. Bering Sea District *C. bairdi* Tanner crab harvest strategy.**

Amend definition of preferred sized males in the commercial Bering Sea District Tanner crab harvest strategy, as follows:

**5 AAC 35.508. Bering Sea District *C. bairdi* Tanner crab harvest strategy.** Revise the harvest strategy definition of “ELME” and “ELMW” to allow for flexibility in the size of exploited legal males to be set each season, as follows (additions noted with bold and underlining, deletions in caps and brackets):

...

(e) In this section,

(6) "ELME" means 100 percent of the new-shell male *C. bairdi* Tanner crab in the portion of the Bering Sea District that is east of 166° W. long. that are at least **legal size** [127 MM (FIVE INCHES) CARAPACE WIDTH], including lateral spines, plus a percentage of old-shell male *C. bairdi* Tanner crab that are at least **legal size** [127 MM CARAPACE WIDTH] estimated at the time of the preseason survey; the percentage of old-shell male *C. bairdi* Tanner crab will be based on the expected fishery selectivity for old-shell versus new-shell male *C. bairdi* Tanner crab; **ELME size will be based on landing sizes from the previous open season's fishery harvest;**

...

(9) "ELMW" means 100 percent of the new-shell male *C. bairdi* Tanner crab in the portion of the Bering Sea District that is west of 166° W. long. that are at least **legal size** [127 MM (FIVE INCHES) CARAPACE WIDTH], including lateral spines, plus a percentage of old-shell male *C. bairdi* Tanner crab that are at least **legal size** [127 MM CW] estimated at the time of the preseason survey; the percentage of old-shell male *C. bairdi* Tanner crab will be based on the expected fishery selectivity for old-shell versus new-shell male *C. bairdi* Tanner crab. **ELMW size will be based on landing sizes from the previous open season's fishery harvest.**

**What is the issue you would like the board to address and why?** The basic framework of the Bering Sea bairdi crab harvest strategy applies an exploitation rate to the estimated mature male biomass or a percentage of exploited legal males (i.e., industry-preferred size) to establish annual harvest limits. Currently, the legal minimum size for Bering Sea bairdi crab (*C. bairdi* Tanner crab) is 4.8 inches east of 166° longitude and 4.4 inches west of that line. However, the fishing industry generally targets a larger preferred size of 5-inch male crab both east and west of 166° (defined as ELME and ELMW in the harvest strategy for “exploited legal males” east (E) and west (W)). Retaining crab at the industry preferred size provides for better product recovery and market yield relative to smaller sized legal crab. Several factors highlight the possible need to consider a smaller industry preferred size and build flexibility into the harvest strategy.

During the TAC setting process, harvest limits are scaled to the abundance of exploitable legal males to avoid overharvest of the largest crab in the population. Recent information shows that some *Chionoecetes* crab may reach maturity and terminal molt at smaller sizes. For bairdi, the crab in the west are more likely to be affected by colder water temperatures affecting size at

maturity. *Chionoecetes* crab are being impacted, in part, by the effects of climate change and growing environmental uncertainties. To the extent it is causing a shift in the size at maturity, the harvest strategy should be flexible enough to adapt between years while also maintaining safeguards to prevent the overharvest of large males in the population. Further, bairdi is not consistently marketed as a distinct crab species in US markets. It is often sold to consumers in US markets as snow crab alongside smaller snow crab that include Canadian product at 95 millimeters (3.74 inches).

Revising the definitions of “ELME” and “ELMW” to anything above the legal size as the industry preferred size in the harvest strategy creates interannual flexibility that can be more responsive to the biology of the resource and to markets. Each year, ADFG could define ELME and ELMW during TAC setting by using information from landed sizes from the previous open season’s fishery harvest. This revision is expected to result in benefits to the Alaskan bairdi crab resource consistent with Magnuson-Stevens Act National Standards and the *Board’s Policy on King and Tanner Crab Resource Management*. Specifically, these benefits include but are not limited to: 1) increased abundance of exploited legal males available to the fishery resulting in higher TACs in some years, and potentially reduced inter-annual variation in TAC levels; 2) improved vessel harvest efficiency; 3) reduced discard mortality of legal bairdi crab (adding to conservation of the stock); and 4) harvest pressure distributed among multiple cohorts of legal bairdi crab. Reducing the size of exploited males and, therefore, re-directing some current exploitation pressure away from larger bairdi crab is consistent with the Board’s policy that seeks to maintain crab stocks comprised of various age classes and sizes of mature animals to maintain long-term stock reproductive potential and reduce inter-annual dependency on annual recruitment pulses.

**Did you develop your proposal in coordination with others, or with your local Fish and Game Advisory Committee? Explain.**

**PROPOSED BY:** Alaska Bering Sea Crabbers

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