

Submitted by the Alaska Department of Fish and Game at the request of Board Chairman Jensen
October 20, 2016

Proposal XX – 5 AAC 35.508. Bering Sea District *C. bairdi* Tanner crab harvest strategy.

Amend the Bering Sea District Tanner crab harvest strategy to remove the mature female Tanner crab biomass threshold for opening the fishery and remove provisions allowing a harvest in waters east of 166° W. long., as follows:

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

[(a) IN THE BERING SEA DISTRICT, THE COMMERCIAL *C. BAIRDI* TANNER CRAB FISHERY MAY OPEN ONLY IF AN ANALYSIS OF PRESEASON SURVEY DATA INDICATES THAT THE POPULATION AT THE TIME OF THE SURVEY IS AT OR ABOVE 40 PERCENT OF THE LONG-TERM AVERAGE (1975 - 2010) OF MATURE FEMALE CRAB BIOMASS IN THE EASTERN SUBDISTRICT.

(b) IF PRESEASON SURVEY DATA INDICATES THAT THE POPULATION AT THE TIME OF THE SURVEY IS AT OR ABOVE 40 PERCENT OF THE LONG-TERM AVERAGE OF MATURE FEMALE CRAB BIOMASS IN THE EASTERN SUBDISTRICT FOR THE SECOND CONSECUTIVE YEAR, THE DEPARTMENT SHALL ESTABLISH A SEPARATE TOTAL ALLOWABLE CATCH LEVEL FOR THAT PORTION OF THE BERING SEA DISTRICT THAT IS EAST OF 166 W. LONG. AND FOR THAT PORTION THAT IS WEST OF 166 W. LONG. UNDER THE PROVISIONS OF (C) AND (D) OF THIS SECTION. IF THE COMMERCIAL *C. BAIRDI* TANNER CRAB FISHERY IN THE BERING SEA DISTRICT DID NOT OPEN IN THE PREVIOUS SEASON BECAUSE THE THRESHOLD REQUIREMENTS SPECIFIED IN (A) OF THIS SECTION WERE NOT MET, THE TOTAL ALLOWABLE CATCH LEVEL FOR THAT PORTION OF THE BERING SEA DISTRICT THAT IS EAST OF 166 W. LONG. AND FOR THAT PORTION THAT IS WEST OF 166 W. LONG., AS COMPUTED UNDER (C) AND (D) OF THIS SECTION, SHALL BE REDUCED BY ONE-HALF.

(C) IN THAT PORTION OF THE BERING SEA DISTRICT THAT IS EAST OF 166 W. LONG., AND UNDER THE RESTRICTIONS OF (E) AND (F) OF THIS SECTION, THE TOTAL ALLOWABLE CATCH LEVEL SHALL BE ESTABLISHED AS FOLLOWS:

(1) IF B_E IS LESS THAN 25 PERCENT OF $B_{E,(1975-2010)}$, THE FISHERY WILL NOT OPEN;

(2) IF B_E IS AT LEAST 25 PERCENT BUT NOT GREATER THAN 100 PERCENT OF $B_{E,(1975-2010)}$, THE TOTAL ALLOWABLE CATCH WILL BE COMPUTED AS $(0.9) \times (B_E / B_{E,(1975-2010)}) \times C_{E,MSY}$; AND

(3) IF B_E IS GREATER THAN 100 PERCENT OF $B_{E,(1975-2010)}$, THE TOTAL ALLOWABLE CATCH WILL BE COMPUTED AS $(0.9) \times C_{E,MSY}$.]

(a)[(D)] In that portion of the Bering Sea District that is west of 166 W. long., and under the restrictions of **(b)**[(E)] and **(c)**[(F)] of this section, the total allowable catch level will be established as follows:

(1) if B_W is less than 25 percent of $B_{W,(1975-2010)}$, the fishery will not open;

(2) if B_W is at least 25 percent but not greater than 100 percent of $B_{W,(1975-2010)}$, the total allowable catch will be computed as $(0.9) \times (B_W / B_{W,(1975-2010)}) \times C_{W,MSY}$; and

(3) if B_W is greater than 100 percent of $B_{W,(1975-2010)}$, the total allowable catch will be computed as $(0.9) \times C_{W,MSY}$.

(b)[(E)] Notwithstanding **(a)**[(B) - (D)] of this section, the total allowable catch for

[(1) THAT PORTION OF THE BERING SEA DISTRICT EAST OF 166 W. LONG. MAY NOT EXCEED 50 PERCENT OF THE ESTIMATED BIOMASS OF MALE *C. BAIRDI* TANNER CRAB, THAT ARE 127 MILLIMETERS (FIVE INCHES) OR GREATER IN CARAPACE WIDTH, INCLUDING THE LATERAL SPINES, DISCOUNTED BY FISHERY SELECTIVITY, THAT WOULD SURVIVE IN THE ABSENCE OF FISHING MORTALITY UNTIL THE ESTIMATED MEAN TIME OF MATING; AND

(2)] that portion of the Bering Sea District west of 166 W. long. may not exceed 50 percent of the estimated biomass of male *C. bairdi* Tanner crab that are 127 millimeters (five inches) or greater in carapace width, including the lateral spines, discounted by fishery selectivity, that would survive in the absence of fishing mortality until the estimated mean time of mating.

(c)[(F)] Notwithstanding **(a) and (b)**[(B) - (E)] of this section, in implementing this harvest strategy, the department shall consider the reliability of estimates of *C. bairdi* Tanner crab, the manageability of the fishery, and other factors the department determines necessary to be consistent with sustained yield principles, **(maintain consistency with the Policy on King and Tanner Crab Resource Management.)** and use the best scientific information available and consider all sources of uncertainty as necessary to avoid overfishing.

(d)[(G)] In this section,

[(1) "B_E" MEANS THE BIOMASS OF MALE *C. BAIRDI* TANNER CRAB IN THE PORTION OF THE BERING SEA DISTRICT EAST OF 166 W. LONG. THAT ARE

MORE THAN 112 MILLIMETERS IN CARAPACE WIDTH ESTIMATED FOR THE TIME OF THE PRESEASON SURVEY;

(2) " $B_{E,(1975-2010)}$ " MEANS THE MEAN VALUE OF THE BIOMASS OF MALE *C. BAIRDI* TANNER CRAB IN THE PORTION OF THE BERING SEA DISTRICT EAST OF 166 W. LONG. THAT ARE MORE THAN 112 MILLIMETERS IN CARAPACE WIDTH ANNUALLY ESTIMATED FOR THE TIME OF THE PRESEASON SURVEY FOR THE PERIOD 1975 - 2010;]

(1)[(3)] " B_W " means the biomass of male *C. bairdi* Tanner crab in the portion of the Bering Sea District west of 166 W. long. that are more than 102 millimeters in carapace width estimated for the time of the preseason survey;

(2)[(4)] " $B_{W,(1975-2010)}$ " means the mean value of the biomass of male *C. bairdi* Tanner crab in the portion of the Bering Sea District west of 166 W. long. that are more than 102 millimeters in carapace width annually estimated for the time of the preseason survey for the period 1975 - 2010;

[(5)] " $C_{E,MSY}$ " MEANS THE CATCH BIOMASS OF MALE *C. BAIRDI* TANNER CRAB IN THE PORTION OF THE BERING SEA DISTRICT EAST OF 166 W. LONG. THAT ARE 127 MILLIMETERS (FIVE INCHES) OR GREATER IN CARAPACE WIDTH, INCLUDING THE LATERAL SPINES, RESULTING FROM FISHING ON THE ESTIMATED MATURE MALE BIOMASS AT THE ESTIMATED MEAN TIME OF MATING AT THE FULL-SELECTION F_{MSY} RATE OR A PROXY FOR THE F_{MSY} RATE;]

(3)[(6)] " $C_{W,MSY}$ " means the catch biomass of male *C. bairdi* Tanner crab in the portion of the Bering Sea District west of 166 W. long. that are 127 millimeters (five inches) or greater in carapace width, including the lateral spines, resulting from fishing on the estimated mature male biomass of *C. bairdi* Tanner crab at the estimated mean time of mating at the full-selection F_{MSY} rate or a proxy for the F_{MSY} rate;

[(7)] "MATURE FEMALE CRAB" MEANS FOR

(A) THAT PORTION OF THE BERING SEA DISTRICT THAT IS EAST OF 166 W. LONG., A FEMALE *C. BAIRDI* TANNER CRAB THAT IS MORE THAN 84 MILLIMETERS IN CARAPACE WIDTH; AND

(B) THAT PORTION OF THE BERING SEA DISTRICT THAT IS WEST OF 166 W. LONG., A FEMALE *C. BAIRDI* TANNER CRAB THAT IS MORE THAN 79 MILLIMETERS IN CARAPACE WIDTH.]

What is the issue you would like the board to address and why? The Bering Sea Tanner crab stock frequently experiences large interannual changes in abundance and the commercial fishery targeting this stock was closed in 1986 and 1987, from 1997 – 2004, and from 2010 – 2012 due to low stock abundance. In addition the stock was considered overfished by the federal government from 1999 – 2006 and in 2010 and 2011. This proposal would potentially allow the Bering Sea District commercial Tanner crab fishery west of 166° W. long. to be opened at low levels of Tanner crab abundance.

PROPOSED BY: Alaska Board of Fisheries.