

**ALASKA**
Bering Sea Crabbers

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Alaska Board of Fisheries
P.O. Box 115526
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January 10, 2017

Dear Members of the Board of Fisheries,

On behalf of its membership, approximately 70% of the Bering Sea crab harvesters, this letter is being submitted by the Alaska Bering Sea Crabbers (ABSC) to express our full support for Proposal 278 and to encourage its adoption by the Board. Based on the details below, it is our position that a conservative commercial fishery for *C. bairdi* can be prosecuted in the western district for the remainder of the 2016-2017 season without compromising the sustainability of the *C. bairdi* stock as a whole. We submit this letter as additional information the Board may want to consider as part of its decision-making on Proposal 278.

First, relative to the commercial closure based on the current female threshold contained in *C. bairdi* harvest strategy, newly available scientific information from the Bering Sea Fisheries Research Foundation relative to the NMFS survey and the definition of mature females appears to indicate that mature female biomass is underestimated in 2016. Using recent cooperative survey results to adjust the 2016 NMFS survey estimates of mature female *C. bairdi* would result in a mature female biomass estimate of 9.94 million lbs, exceeding the 9.832 million lb threshold by approximately +1%. A further review of the 2016 side by side results shows that survey stations with a higher abundance of mature female stations have lower selectivity values than survey-wide results. By applying these lower selectivity values across the *C. bairdi* survey area, the estimate of mature female biomass would be over the threshold by approximately +5%. Survey methods have changed across the early portion of the reference period, 1975-2010. Starting in 1982, modification of the trawl net used by NMFS for their annual surveys changed the selectivity of the survey for crab. The existing mature female biomass threshold is biased by higher survey selectivity in the early period (1975-1981) and lower survey selectivity in the later years (1982-2010).

Next, moving away from the current female threshold itself, the proposed change to the *C. bairdi* harvest strategy, as presented in Proposal 278, is not being promoted by industry as a long-term, permanent solution to the multiple concerns with the current harvest strategy that have been raised over the past several months. Proposal 278, as described by the Board last October, provides a mechanism to allow for a conservative western *C. bairdi* TAC for the remainder of the 2016-2017 commercial season with the understanding that the changes in the proposal, once adopted, would expire 120 days later. ABSC is committed to working with the Department towards the development of long-term adjustments to the *C. bairdi* harvest strategy (and the harvest strategies for the other major crab species) in time for the 2017-2018 season. To accomplish this task, and to accommodate ADF&G staff resources and time, we encourage the Board to schedule a summer meeting.

The harvesting sector understands and fully supports that thresholds in harvest strategies address Board policy to "Maintain an adequate brood stock to rebuild king or Tanner crab populations when they are depressed." However, *C. bairdi* is neither depressed nor is it in a rebuilding stage as it was when the female threshold was first adopted. According to the 2016-2017 federal stock status, the *C. bairdi* stock is projected at 177% of BMSY with a mature male biomass of 99.95 million lbs (5th highest throughout the survey time series) and an approved OFL of 56.46 million lbs and ABC/ACL of 45.17 million lbs. By comparison, the 2016-



2017 federal stock status for *C. opilio* snow crab is projected at 63% of BMSY with a mature male biomass of 201.9 million lbs and an approved OFL of 52.25 million lbs and ABC/ACL of 46.96 million lbs. Per the current ADF&G harvest strategy for *C. opilio*, a TAC of 21.57 million lbs was adopted for the 2016-2017 season.

The harvesting sector appreciates the use of productivity capacity of a stock as a measure of brood stock to establish fishery thresholds, as is able to be done with the model for Bristol Bay red king crab. Absent such a direct or proxy measure of productive capacity, the Department comments state that “mature female biomass provides a better and more direct proxy for spawning biomass or fertilized egg production for establishment of thresholds”. The Board should consider, however, that this differs from the harvest strategy for *C. opilio* snow crab, which utilizes both males and females in its threshold determination. Under the Bering Sea *C. opilio* snow crab harvest strategy, a spawning biomass threshold is used (from analysis of pre-season survey data and not a model) for opening the commercial fishery. Estimated spawning biomass is defined as the estimated biomass of all morphometrically mature male and all morphometrically mature female *C. opilio* crab. The threshold for opening a commercial *C. opilio* fishery is an estimated spawning biomass of at least 25% BMSY, which is defined as the population of mature male and female *C. opilio* crab that could produce maximum sustainable yield under environmental conditions.

Further expanding upon the productive capacity of the Tanner crab stock, the harvesting sector recognizes that there will be periods where mature female biomass is lower than that of mature male biomass, which can be relatively high. We appreciate ADF&G’s precautionary approach, as illustrated in the staff comments, that places emphasis on preserving mature male biomass until such a time when mature female biomass increases and the stock as a whole is no longer considered in a period of low recruitment; however, the current population of large, mature males that are available now will most likely not be available into the future. Unlike king crab, *C. bairdi* (and *C. opilio*) do not continue to grow throughout their lifespan. These animals have a terminal molt to maturity. Large male *C. bairdi* crab that do not molt (old shell) are important in reproduction, but only in the immediate term. Natural mortality of these large, old shell male Tanner crab will most likely prevent them from being available to the mature female population when it increases. Thus, a significant portion of the current population of mature male crab will be incapable of contributing to the future productive capacity of the stock (when the mature female population increases) while also being unavailable to the commercial fishery under a complete closure. Regarding the delineation of mature females necessary for productive capacity, it should be highlighted that the time series estimates of mature female *C. bairdi* from the NMFS annual survey vary significantly depending on how maturity is determined. The actual mature female biomass, as observed onboard the survey based on the condition of the abdominal flap, is significantly higher than the estimate of female maturity defined by terms in the current ADF&G harvest strategy, which uses size cut off values (80 mm and 85 mm). A significant proportion of actual mature females is below these cut off values, and therefore excluded from calculation of the harvest strategy biomass threshold, which significantly underestimates the actual mature female biomass.

Finally, without an available TAC for *C. bairdi*, zero retention of the species is allowed, which will have significant negative consequences upon the 2016-2017 *C. opilio* fishery and upon future stock assessments for *C. bairdi*. Populations of *C. opilio* and *C. bairdi* overlap and interact with one another. A zero retention limit on *C. bairdi* will result in substantial sorting and discarding during the targeted *C. opilio* fishery. Aside from the inefficiency that will be experienced during the *C. opilio* fishery, a discard handling mortality rate of 32% will be applied to all discards of *C. bairdi* in future stock assessments for this species, which will negatively impact future OFL, ABC/ACL, and allowable catch projections for this stock. Such impacts are being felt by a directed fishery that has negligible impact upon the female portion of the population. By



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comparison, the recently adopted 2017 *C. bairdi* prohibited species catch (PSC) allowance for all trawl gear is 2.9 million animals. And unlike the selective harvesting that occurs with directed pot gear, this trawl PSC allowance encompasses the indiscriminate take of males, females, and juveniles of both sexes).

In summary, ABSC thanks ADF&G for their willingness to communicate and engage with stakeholders throughout this process, but we affirm our belief that a demonstrable conservation concern within the *C. bairdi* stock has not been established that warrants a complete closure of the commercial fishery for 2016-2017. As long-time participants in the Bering Sea king and Tanner crab fisheries, our members are actively concerned with and have a significant stake in the long-term health of the resource. We are also actively concerned with future access to the important crab stocks upon which we depend. We encourage the Board of Fisheries to consider all biological and socio-economic factors and to do what is in the best interest of both the resource and the stakeholders. ABSC believes that a conservative TAC for western Tanner crab can be established without threatening either the near- or long-term sustainability of the stock. For all of these reasons, ABSC strongly encourages the Board of Fisheries to adopt Proposal 278.

Thank you for your time and consideration.

Sincerely,

Tyson Fick, Executive Director
Alaska Bering Sea Crabbers