

Alaska Board of Fish Submittal for Kodiak Meeting
RC 2 Bairdi Crab January 11, 2017
Submitted by Leonard Herzog
Crab Vessel Owner Operator

Chairman John Jensen and Board Members,

My name is Leonard Herzog and home is Anchorage Alaska. I own a crab vessel in Homer Alaska that is dependent on the Bairdi fishery to provide work for its crew. I have fished in Bristol Bay for salmon for over 30 years. I am testifying on my own behalf but I am a board member for the Bering Sea Research Foundation as well as the ICE and ABSC harvesting groups.

I strongly believe that there is a harvestable surplus of mature male bairdi in the Western district and that this board should temporarily suspend the minimum female requirement in the harvest strategy to allow an appropriate season this year. The federal estimate of mature male abundance is at 99 million pounds the fifth highest in history, the federal over fishing limit at 56.5 million pounds is higher than Opilio or Bristol Bay Red King Crab, the directed fishery has little impact on females, the females are impregnated, there appear to be good recruitment of smaller crab into the fishery. The large males taken in a directed fishery will soon die of natural mortality – they cannot be banked for the future – and will not be available to impregnate a future resurgence in the female population. In my opinion the large surplus of mature males may actually impede recruitment as they compete with smaller crab for food and are known to be cannibalistic.

My testimony today will focus on recent work by the Bering Sea Research Foundation that was not available to ADFG in October but has been shared more recently. Using Best Science and our understanding of catchability and net selectivity we are actually now over the minimum female threshold in the harvest strategy.

- 1) By using the 2016 side by side tow information to inform the NMFS survey we would be over the minimum threshold
- 2) Because the NMFS net changed in 1981 and was 30 to 35% more efficient in catching female bairdi from 1976 to 1981 adjusting those years would additionally lower the female threshold in the harvest strategy (A more detailed discussion is attached.)

Other elements specified in the in the harvest strategy that need to be updated lend confidence to allowing a season:

- 1) Best science shows that a significant proportion of the mature female biomass are below the 80mm and 85 mm cutoffs in the harvest strategy and thus not counted
- 2) Significant amount of mature female bairdi are found outside the harvest areas and therefore not counted
- 3) No fishing is allowed in the Pribilof Savings Area
- 4) Recent Research Foundation work suggests that selectivity of Bairdi is similar to Opilio – i.e. the NOAA net may only catch about one of three mature female bairdi and 7 out of ten large mature males.
- 5) Both the federal SSC and Crab Plan team have dropped the earlier time series years in the harvest strategy – in part because of environmental changes and in part because of the significant changes in their net after 1981.

The four bullets below provide a more in depth discussion:

- Using recent cooperative survey results to adjust 2016 NMFS survey estimates of mature female bairdi would reflect a mature female biomass estimate of 9.94 million lbs, exceeding the 9.832 mill lb threshold by about +1%. A further review of 2016 side by side results shows higher abundance mature female stations have lower selectivity values than survey-wide results. By applying these lower selectivity values across the bairdi survey area, the estimate of mature female biomass would be over the threshold by about +5%.
- There is significant difference in 2016 male (high) and female (low) mature bairdi abundance results relative to the 42-year NMFS survey time series. 2016 results are more similar to years with open seasons. Mature male bairdi abundance in 2016 is higher than any closed season year, and mature female bairdi abundance is the third highest in closed season years.
- Survey methods have changed across the early portion of the reference period, 1975-2010. Modification of the trawl net used by NMFS annual surveys starting in 1982 changed the selectivity of the survey for crab. The existing mature female bairdi biomass threshold is biased by higher survey selectivity in the early period (1975-1981) and lower survey selectivity in the later years (1982-2010).
- The time series estimates of mature female bairdi from the NMFS annual survey vary significantly depending on how maturity is determined. The actual mature female bairdi 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, is excluded from calculation of the biomass threshold, and significantly underestimate

Following is mostly just a common sense point about bairdi compared to the other two big stocks - when you look at MMB and then follow through OFL, ABC, and TAC for each here is what you get for 2016:

[all in millions of lbs]

BBRKC

MMB 52.9
 OFL 14.6
 ABC 13.2
 TAC 8.5

OPILIO

MMB 201.9
 OFL 52.2
 ABC 47.0
 TAC 21.6

BAIRDI

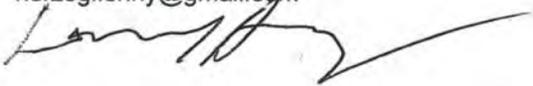
MMB 99.9
 OFL 56.5
 ABC 45.2
 TAC 0.0

Bairdi has the highest OFL of the three, and an MMB right in the middle (about twice BBRKC and half of snow crab). Regardless of other management measures or other scientific uncertainties for bairdi, it certainly shows at least a disconnect in the management process when looking at the "20,000 foot" view like this.

Understanding there are different precautionary principal with each species note from a two thousand foot perspective how allowing a reasonable directed fishery in the West is compatible with management of the other Bering Sea crab stocks

Respectfully Submitted,

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A handwritten signature in black ink, appearing to read 'Leonard Herzog', written over the printed name and contact information.