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March 9, 2022

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: OPPOSE Proposals #171-174 Change Pot Shrimp Season to the Spring

Dear Chair Carlson-Van Dort and Board of Fisheries members,

Southeast Alaska Fishermen's Alliance (SEAFA) would like to question the shrimp and life history information provided by ADF&G (Dept) in the Commercial Shrimp Fisheries Oral report (tab 24) and RC2 staff comments supporting the change to a spring fishery. ADF&G support for a spring season has occurred starting in the 2017/2018 cycle, previously ADF&G was opposed to a spring fishery. What new information about the life history of spot or coonstripe shrimp particularly in Southeast Alaska justifies this change to the Dept's position. Life history of these species are all based on information from Washington, British Columbia and Prince William Sound. Alaska is at the very end of its range and the studies to date have all said that the lifecycle is probably different and more condensed, that the colder waters have an effect on the shrimp, both for growing bigger and for living longer. For example, British Columbia bases their shrimp management on a five-year longevity yet all believe that Alaska has a seven to eleven year[1] life cycle and that the females reproduce more than once[2].

While ADF&G is supporting the change in season dates in 2018 & in this cycle, it is in direct opposition to information provided by ADF&G to the Board at previous board meetings and where the Board did not vote to change the season date. This issue comes up periodically. For

[1] http://www.adfg.alaska.gov/index.cfm?adfg=spotshrimp.printerfriendly
[2] Southeast Alaska Region Shrimp Fisheries Management Report page 30

example, in 2002/2003 board cycle (meeting materials were handy on my shelf) there were proposals to change the season date also.

At that board meeting, staff comments RC2[3] the Dept wrote,
"DEPARTMENT COMMENTS: The department **opposes** this proposal because it would establish a fishing season for spot and coonstripe shrimp during times when more of the animals are soft-shell, may be more susceptible to handling mortality and may still be releasing larvae.

The egg retention period for pandalid shrimp in Southeast Alaska is approximately November through April, with egg hatch occurring in March through May, and the molt period appears to occur between May and November, with peak molting period occurring in May and June for growth and September to November for transition to females and "breed dress" and preparation for egg-bearing (Figure 250-1). As spring hatch appears to occur into mid-May during certain years, ***this proposal may result in handling of shrimp during the latter part of the spring egg hatch and early summer soft-shell periods, disrupting reproduction and increasing handling mortality*** (emphasis added). In addition, the quality of the product could be reduced if soft-shelled shrimp were harvested. Research conducted in British Columbia indicates that harvest should occur as late in the summer as possible to take advantage of the spring and summer growth, but not so late into the fall so as to allow the recruitment of younger, smaller shrimp to pots, increasing potential handling mortality (Broutillier,1993). Although there may be a window of time in the late summer or early fall between growth and egg extrusion period when the shrimp could be harvested with little biological impact, the timing of this period is likely to be quite variable between districts. At present, department research efforts are focused on assuring that current harvest levels are sustainable and additional staff and resources are not available to address the question of district-specific timing of this window."

The fall season fishery was established for both allocation and biology. The allocation aspects came from testimony at the 2000 Board meeting that the fishery had developed as a supplemental source of income for vessels that traditionally fished for salmon or halibut in the summer months. Biologically, the department testified in 2000 that summer harvest would disrupt spot shrimp during the egg-hatch, molt and growth phase of its life history.

It is our understanding through Board of Fish meetings and shrimp task force meetings when they were being held with industry that the growth phase in the summer months is critical for

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[3] RC 2 Staff Comments on Regulatory Proposals for all herring, all groundfish and subsistence finfish, and SE & Yakutat Dungeness Crab, Shrimp, and Miscellaneous Shellfish for the 2002/2003 Alaska Board of Fisheries Meeting January 20-29, 2003 by Region I Staff – Regional Information Report No. 1J02-48, page 207-208 proposal #231
Literature cited: Boutillier, J.A. 1996. 1993 Review of Experimental Prawn Fishing in Howe Sound in Hand, C.M. and B. J. Waddell [eds] Invertebrate Working Papers Reviewed by the Pacific Stock Assessment Review Committee (PSARC) in 1993 and 1994. Can. Tech. Rep. Fish. Aquat. Sci. 2089:303 p.

triggering the transition of males to females, and for providing for the energy necessary for extruding the eggs again in the fall.

"The loss of reproductive contribution by a given female is the same whether she is harvested before or during the spawning season"[4]. This quote is in direct contradiction to what the Dept provided in their materials for this Board of Fish meeting.

We believe that before the Board of Fish changes season dates that the following information needs to be considered as changing the dates has the potential for significant changes to the fishery, the sustainability of the resource and the timing in life history cycle of the shrimp.

- DATA: What new life history data is available compared to the past? Why has the Department done a complete 180 on their position? Based on what science? Colder waters provide for longer life spans and larger shrimp, so why are we comparing to the Puget Sound data in the Oral report (this may be answered in the commentary when the presentations are given). Why are we using data from Puget Sound which is 1000 miles away and 45 years old when at the same time we are saying we need more local research because we know there are differences even between the individual statistical areas. Why wasn't British Columbia research included in the reports since they are closer geographically to ours, much larger fishery in size, more robust fishery sampling and a long history. In the Oral report, slides 13-15, the molting periods should also be shown as a factor when the best time to fish would be. There is no question that more research needs to be conducted on the shrimp life history in Alaska.
  From the Canadian Dept of Fish and Oceans website[5], "Every season marks a new life stage with environmental conditions that influence prawn abundance. **Ocean currents, larval distribution and changes in water temperature and salinity all have an impact on survival and population strength**. When it comes to prawn fishing there is no such thing as "an average condition of abundance," which means you can count on catch success to vary – season to season, area to area, year over year, throughout the Pacific region."
- BIOLOGICAL DATA: The information provided by the Dept states that allowing the females carrying eggs in the fall to brood and hatch their eggs before being subject to fishing mortality, <u>may</u> enhance long term stock resilience. **This doesn't make sense, because once a shrimp has transitioned and become a female – the whole year is part**

[4] *Reviews in Fish Biology and Fisheries* 8, 117-176 (1998) entitled: **Crustacean resources are vulnerable to serial depletion - the multifaceted decline of crab and shrimp fisheries in the Greater Gulf of Alaska** by J.M. (Lobo) Orensanz, Janet Armstrong, David Armstrong and Ray Hilborn; School of Fisheries, Box 357980, University of Washington, Seattle, WA 98195, USA.

[5] https://www.bcprawns.ca/about

of their reproductive cycle so since the majority of the catch is female how do you enhance the resilience of the stock because you are taking a female out of the fishery no matter what time of the year you are fishing. The only effect would be the one year where you transition to the spring fishery where there is one extra year where there isn't a fishery. If this change is adopted, consideration and direction would need to be provided to the Dept on whether you hold a fishery in the fall and then again in the spring or after the last fall fishery you go a year in a half to the spring – going one year without a harvest and economic effect and cost to the fishery.

The late spring after egg hatch and molt is the shrimps growth period which is critical to the reproductive cycle in providing the nutrients to extrude and carry the eggs until the hatch. The Dept does not address the increased mortality you might have by handling the soft-shell shrimp after the molt nor does it address that you would be fishing on the shrimp just before the males transition to females, increasing the catch on males and again the disturbance to the shrimp during their growth period so they have the energy to transition.

As a former ADF&G shellfish biologist explained, slide 12 of the oral report (tab 24) implies a summer mortality of 20-25%, and of those that survive until fall, a very high percentage are remated. It does not imply the remated females produce full clutches of extruded eggs, or that they survive through the winter. Only when you know how many females are removed in the "spring" fishery, how many do not survive until fall, how many do not have full and fertile clutches, and how many die during the winter do you know what the reproductive potential of the stock is prior to the spring fishery. It probably does not matter when the fishery occurs, it is a matter of how many females are taken out of the population in the "blood year". It appears that the assumption is that egg-bearing female survival between fall and winter allows all egg-bearing females to hatch their eggs in spring is constant, which is unlikely. You could also assume that the 25 mortality is the older shrimp dying off if you assumed

- PERMIT LATENCY: Currently less than 50% of the permits are being actively fished (97 out of 273[6] in 2019/20 season and 107 out of 241 in 2020 (CFEC bit table). CFEC has finished adjudicating the permits in this fishery. If a spring/summer season was implemented how many of these latent permits would become active and fished with a Mid-May season, there is only halibut and trolling really competing. There are many shrimp permit holders who hold both shrimp and Dungeness crab permits. With a shrimp season starting in Mid- May they will no longer have to choose between the two fisheries in the fall putting more pressure on the stocks of both species. A change in

[6] Southeast Alaska Region Shrimp Fisheries Management Report page 37

season will increase the usage of permits in a fishery that is less than 50% utilized on a declining resource.

- MARKET FACTORS: A mid-May spring shrimp fishery will have less desirable quality of shrimp (i.e. mushier). In mid-may, they have just released their eggs and molted. The molting process meets two needs, for growth and for reproductive needs. The shrimp when growing will take in water until the shell hardens allowing for room to grow but also providing for a mushier shrimp than a shrimp that has gone through their growing stage with a hard shell. On the other hand there are some markets that will prefer a shrimp but no visible eggs.
- MARKET CONDITIONS: The market conditions have played a big role in the amount of active permit fishing and price paid. What are the current market conditions? How much is being processed onboard and exported?
- HISTORY: The October 1st fishery was established in 1997 and was a combination of biological and societal choices made by the Board of Fish with ADF&G and industry input. Many of the fishermen that participate in this fishery will be impacted by the change in start time and with other fisheries that they participate in as well as the latent shrimp permits becoming active for those that aren't involved in spring fisheries and the more permits that will become active in the Dungeness crab fishery in the fall because they are no longer choosing which fishery to participate in.
- TIMING: In RC2 staff comments, they state that the survey is temporally confined by the summer molt and fishery opening October 1st and therefore the survey data can't be used until the following year**. So why is the survey confined by the end of the summer molt in mid-August, wouldn't that be a problem for the commercial fishery**. Yet with a switch to a spring summer fishery you will now be fishing before the survey occurs which will change the survey data set because the factors and assumptions that you have been using with a survey in the fall for next years fishery will be changed for over 20 years will not be comparable. Exactly when is the summer molt starting if it ends in mid-August. Long time shrimp fishermen say that in Clarence strait on May 15 the quality of the shrimp was better than May 1st but June 1st would be better and the coonstripe shrimp were still muddy and unmarketable on May 15th.
- FISHERY CONFLICTS: Not only do you need to consider the fisheries the shrimp permit holder participates in, but if you move to a May 15th start date, how long would the fishery be open for? What fisheries will be impacted by the gear in the water. Shrimp and Gillnet areas overlap as well as other fisheries and would be a large conflict (ripped up nets and lost pots from the gillnet gear displacing them) or is the season only going to be a month long, even though the fishermen that fished year round in the past before limited entry and all the regulations say the shrimp harvest is much slower in the

summer than the fall needing at least a couple of month long fishery.
Another conflict will be between the personal use, subsistence and sport fisheries that mainly fish May-September.

In discussions with long-time shrimp fishermen who fished when the season was year-round, in the fall fishery, shrimp are faster to the pot than they are during the summer season and the shrimp in the early summer are softer and mushier, creating less desirable quality of shrimp for sale which matches the information from the Dept in the 2002/2003 staff comments quoted above.

Another major consideration that the Department does not mention is the management in District 7 is handled differently from other districts with an in-season program based on fishermen's data that is very appreciated and a successful collaboration between industry and ADF&G. Changing the season to late spring and summer would be moving to a less successful management program for district 7. In the Dept oral presentation (tab 24) page 5 the District 7 GHL should actually show the in season adjusted GHL's vs the pre-season GHL that is listed in the slide since the fishery is managed in season with a changing GHL based on current conditions.

Maybe before changing the whole fishery, the Dept should look at moving their assessment surveys to the spring and do a comparison analysis of the conditions between the two times of the year including the difference between catch in the spring and catch in the fall at the same stations to see what the results are.

The simple truth is that we don't know enough about the life history of spot and coonstripe shrimp particularly regarding SE Alaska, that we need to manage the fishery conservatively and be sure that you understand the dynamics of what a major change to the fishery will do and that you really do have all the information to make an informed decision. **The fishery has stayed viable for over 20 years with the current management program in place**.

Sincerely,

Kathy Hansen
Executive Director