

# **Advisory Committee Comments for King and Tanner Crab Meeting**

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March 22-26, 2011

Seldovia AC1

Seward AC2

Whittier AC3

Pacific Northwest Crab Industry AC4

**Seldovia Fish & Game Advisory Committee  
Meeting Minutes for November 30, 2010**

*Att: Shannon  
BOF UCI  
AC Comments*

Members Present: Keith Gain, Paul Chissus, Warren Brown, Robert Purpura, Walt Sonen, Alvin Swick

Members Absent Excused: Michael Opheim, Dave Chartier, Bryan Chartier,

*AMD - BOF Crab mtg  
AC Comments*

Members Absent Unexcused: Tim Dillon

Public Present: Mary Klinger, Robert Rafferty, Layla Pederson, Tim Dillon

ADF&G Staff Present: Sherry Wright

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Meeting was called to order at 7:05 pm for the purpose of holding elections and discussion of Upper Cook Inlet proposals.

Elections were held with the following results: Warren Brown, Keith Gain, Mary Klinger for three year terms that expire 12/31/2013; Matt Gallien and Layla Pedersen one year alternates with terms that expire 12/31/2011.

Officer elections were held by unanimous consent with the following results: Robert Purpura as Chair; Walt Sonen as Vice Chair; Mary Klinger as Secretary.

Robert Purpura provided a report on the Lower Cook Inlet Board of Fisheries meeting and how the board voted on each proposal. This information is also available on the BOF website: [www.boards.adfg.state.ak.us](http://www.boards.adfg.state.ak.us)

**Upper Cook Inlet Proposal Comments**

Prop 116 0-8 Oppose  
Reduce mesh depth in the Central District.

Everybody has 45 mesh nets and having to re-gear for this fishery would cost a lot. You need 45 mesh depth in order to fish in this area and be competitive.

Prop 117 No action  
Modify amount of gear used by CFEC permit holder.

Discussed an amendment that an individual could only fish one statistical area.

This would allow a person to fish the east side in one part of the season, then fish the west side in another part of the season. Set net fishermen opposed this. If you put two permits on a boat you are only allowed to fish four shackles of gear, not six (in the drift fishery). If this allowed for four nets, it would be more reasonable. Drift net sites are more difficult to know who is fishing. One person

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could lease 15 sites. It may reduce some cost, but cause other problems. This seems like it would limit new people from entering the fishery. Economically, it makes sense as it cuts down cost. With children growing up, they are not always there to fish. Most people that fish have more than one permit. In Bristol Bay, this has been allowed and what has happened is people have hired deck hands and operate on a larger section of beach. There was concern expressed that the same time of thing would happen here. It goes against what the individual permit holder was established to create to be physically working their permit.

Prop 122 8-0 Support  
 Modify Upper Cook Inlet Central District Drift Gillnet Management Plan.  
 This is a reasonable conservation method for Upper Cook Inlet stocks.

Prop 123 No action  
 Revise the Central District Drift Gillnet Fishery Management Plan.  
 The Central Drift fleet is already restricted by regulation.

Prop 125 7-0-1 Support  
 Delete references to Areas 1, 2, 3, and 4.

Allows for current protections for fish bound to the Susitna River without unnecessarily restricting the drift fleet, creating over escapement to the Kenai and higher king salmon by-catch by harvesting the Kenai run in front of the Kenai River. Abstention is due to not knowing enough about the fishery.

Prop 179 8-0 Support  
 Open Kenai and Kasilof dipnet fisheries only after lower escapement goals will be achieved

The problem of the unregulated dip net fishery with little enforcement needs to be addressed. Degradation of the habitat is another problem faced by focusing the dip net fishery into one area. There are other proposals that try to spread out the effort (Prop 197 - 199) for example. A later start date is a step in the right direction for management. Over-escapement is the place that dipnetters are useful to protect the system from being overfilled.

Prop 193 No action  
 Prohibit dipnetting from boats in Kenai River personal use fishery.  
 There have been up to 400 boats seen out in the water during this fishery. It's like a 10,000 horse power meat grinder. Unregulated dip net fishery - both bag limit and enforcement issue. There was no environmental impact study done when the dipnet fishery was established. The committee spent some time trying to sort out which dipnet proposal will be the one that gets the most traction for people to discuss.

Prop 223 8-0 Support  
 Add a new section to increase emergency order authority flexibility to address invasive northern pike.

AC's have a long history of supporting reduction of pike. Would like to see allowance of commercial sale of pike to promote harvest. This is a step in the right direction.

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Prop 324 no action  
Allow for use of dual permits in Cook Inlet set gillnet fishery.

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Same comments as on Prop 117.

**King & Tanner Crab & Supplemental**

Prop 315 – Would allow for enforcement of charter / lodge owners  
There have been thousands of charter operators dumping their pots, and having clients pick up a crab permit (free from ADF&G) and giving crab to clients. The resource is being depleted by this practice. There was no personal use fishery several years ago, but the limit has already been reduced due to the amount of harvest. 8-0 Support

Prop 316 – Create a tanner crab season in Cook Inlet  
Committee thinks they were told they would open Cook Inlet after a season was opened in Kodiak. That was the justification of keeping the tanner crab closed. There is a season in Kodiak and they doubled their season this year, but Kamishak is still closed.

Prop 317 – Amends the season for personal use  
This will eliminate much of the problem of summer charter harvest and the depletion of the resource. A suggestion of changing it to September 1<sup>st</sup> was made as an alternative to the October 1 date. 8 – 0 Support

The committee approved to send Robert Purpura to represent them at the Upper Cook Inlet.

Meeting adjourned at 8:45 pm.

**Seward Fish & Game Advisory Committee  
Meeting Minutes of December 2, 2010**

*Attn: Shannon  
BOF - UCI p1-2  
BOF Crab p. 3-4  
AC Comments.*

Meeting began at 7:00 pm

Members Present: Jim McCracken, Robin Collman, Dianne Dubuc, Ezra Campbell, WC Casey, Bob White, Carl Locke, Doug McRae, Chris Bolton, Mark Clemens, Jim Hubbard, Arne Hatch

Members Absent Excused: Corey Hetrick, Arne Hatch, Dr. Matt Hall, John Flood

Members Absent Unexcused: Joe Cziglenyi

Public Present: Jim Herbert, Trent Foldager, Jeannette Hanneman, Tom Prochazka

ADF&G Staff: Dan Bosch, Sherry Wright

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Minutes of the previous meeting (October 14, 2010) were discussed and will be approved at the next meeting.

Public Comments – none

Dianne Dubuc gave a report on the Statewide finfish meeting last March and some proposals that were passed and then the Lower Cook Inlet meeting that was held in Homer in November.

Dan Bosch gave a sport fishery report.

Sherry Wright gave a report on Boards support new rules of funding for attendance at only 2 board meetings per year, due to budgets staying the same level, with costs rising. Also the Board of Game is going to one book per year beginning 2011. Deadline for BOF proposals will be April 8<sup>th</sup> and the BOG proposal deadline is going to be in May 2012 year, but 2011 it will be later in April. Keep an eye for the Call for Proposals. Also had a discussion of what Board meetings are coming up.

Old Business – none

**BOF Upper Cook Inlet Proposal comments**

The AC did discuss some of these at their October 14<sup>th</sup> meeting, but without the benefit of the local area biologist present, so they took them up again tonight.

**Seward Fish & Game Advisory Committee  
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Prop 156 0-9-2 Opposed  
Develop a management plan for the early Russian River sockeye run.

Oppose due to harvesting fish before you even know if you have any escapement. 10,000 fish could be taken before they even get out into the river. Educational harvest is an example of what is being discussed. This is a pretty vulnerable fishery - has had a reduced bag limit in the past. More economic benefit to the sport fishery than the few fish the commercial fishery might harvest.

Prop 172 0-11 Opposed  
Require users to complete a class and obtain a dipnet education card prior to receiving a dipnet permit.

Would be unneeded bureaucracy.

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~~Prop 173 0-11 Opposed  
Repeal sport fish license requirement to participate in Cook Inlet personal use fisheries.~~

Licenses ensure compliance with current regulations.

Prop 174 0-11 Opposed  
Allow nonresidents to participate in the Upper Cook Inlet personal use fishery.

This is only allowed for residents. This is in statute.

Prop 175 0-11 Opposed  
Establish a July 17 opening date for the Kenai River personal use fishery on runs under 2 million.

Dept has this fishery under control and there is proper enforcement. The PU fishery is residents and they should be able to harvest some of this resource. This issue comes up habitually and is a very contentious issue. This allows for home pack. Our recommendation is for status quo.

Prop 176 – 194 0-11 Opposed  
All dealing with Kenai and/or Kasilof River personal use fishery

Referenced comments on Prop 175

Prop 206 8-1-2 Support  
Align coho salmon bag limit with adjacent waters in the Russian River Sanctuary Area and Russian River.

This will help clarify regulations for bag limits in the area. The current regulations are confusing to the general public. Opposed doesn't think there is anything wrong with the current regulation. Abstention is not familiar enough to decide.

## Seward Fish & Game Advisory Committee Meeting Minutes of December 2, 2010

### Statewide Tanner/Crab BOF proposal comments

Prop 315

No action

Restrict charter, lodge owner from harvesting shellfish for clients

This proposal doesn't belong at this meeting, due to its reference to shellfish, not king or tanner crab. There is an undue burden on those utilizing this. The Seward AC submitted a shrimp proposal that was rejected as untimely. This is a serious problem in Southeast. Personal use is for residents. If a commercial enterprise is using items for clients, it is a commercial enterprise, not personal use. Buoys need to be marked. Sounds like the regulation is not working. Lodges are guaranteeing clients fish that they take out.

Prop 316

0-10-1 Oppose

Allows for a commercial crab harvest Jan 15<sup>th</sup>

Concern if there is enough crab for a commercial harvest. Kodiak has rebounded and some of the personal use catch is utilized in the information to determine harvestable surplus.

Prop 317

10-0-1 Support

Amends season dates from Oct 1 to April 15th

Crab are not full in August. Prefer later season when crab are at their fullest. This would also take this fishery out of the tourist season dates and allow harvest at the prime time. Abstention was due to not familiar enough.

Prop 318

Allow a three person gear limit for tanner crab per vessel

11-0 Support

Amendment is for North Gulf Coast area only

11-0

Two pots per person, two per boat limit is currently cost prohibitive for vessels to go out. The amendment will allow for this area only so other areas can determine what works best for them.

Authorize AC rep for UCI meeting - The committee feels very strongly about having representation at the Board meetings. If it is necessary for the AC to pay for their own travel, they still feel strongly to have someone attend. Ezra Campbell is willing to stand in for one time on the fish issues and will attend to testify (not charging the state) and was approved to represent the AC at the UCI meeting.

## **Seward Fish & Game Advisory Committee Meeting Minutes of December 2, 2010**

The committee moved to authorize Dianne Dubuc to represent Seward AC for the King/Tanner crab meeting.

The question of whether the AC could split out one day for BOG meeting attendance was brought up. It was the first thing Sherry asked when notified of this funding issue.

Dianne Dubuc will write a letter to Paul Seaton regarding the funding problem for AC's that are volunteers, spend a great amount of personal time assisting the Boards by providing local input and providing a local forum, have no costs associated with their regular AC meetings and are now being cut out of ability to be funded for a portion of their attendance at board meetings. Currently they are only funded for five days maximum and many board meetings are much longer than that.

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Election of members was held with the following results: WC Casey, Robin Collman, Jim McCracken, Jim Hubbard and Ezra Campbell for three year seats; Trent Foldager and Jim Herbert for one year alternate seats.

Officer elections will be held at the next meeting.

Public Comments – Jim Herbert – There is a bear forum being held by Larry Lewis (ADF&G Soldotna office) next week to address problem bears. Need better published local notice of the AC meetings. Need to aggressively pursue this funding issue.

Next meeting will be held January 20<sup>th</sup> at 7 pm at Seward City Council chambers. Agenda will be election of officer, board of game comment preparation and any other business that may properly come before the AC.

Meeting adjourned at 9:10 pm.

**Whittier Fish & Game Advisory Committee  
Meeting Minutes of November 27, 2010**

*Ath Shannon  
BOF 2011 Crab mtg  
AC comments*

Members Present: Jon Van Hyning, Brad Von Wichman, David Pinguoch, Gordon Scott, Steve Aberle, David Goldstein, Milton Stevens

Members Absent Excused: Ric Vrsalovic, Brian Lee, Dale Etheridge, Mike Durtschi

David Goldstein provided a web link that gives a place for people to comment on buoy locations.

<http://www.arh.noaa.gov/ob.locations.php>

Money for maintenance of the systems that are put in place is a continuous problem. Agencies get the funding to put the system out, people begin utilizing those to formulate their own pictures of the weather. When they go out, they need to be fixed promptly. Weather updates can be very sporadic also. For people familiar with the Sound, it might not be as critical, but with new people utilizing the Sound it becomes very dangerous. Getting past the "business as usual - this is the way we've always done it" mentality can be a challenge. A request to automate the Whittier observation could be made on this comment site. Gordon and David G are already involved in efforts on this.

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Minutes of the previous meeting were read.

**DEC 15 2010**

Question of what is coming up in regard to board meetings.

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Elections were discussed. The committee looked at the current membership. One alternate seat has been left vacant and may be filled at the next duly noticed meeting. Mike Durtschi was elected to fill one alternate seat. Jon Van Hyning, Brad Von Wichman and Ric Vrsalovic were elected for three year seats by unanimous consent. Members also voted to retain the current slate of officers which are: Jon Van Hyning, Chair; Steve Aberle, Vice Chair; and Ric Vrsalovic, Secretary.

**BOF King/Tanner Crab & Supplemental Issues Meeting Proposal Discussion**

Prop 315 - Clarify restrictions on use of sport, personal or subsistence caught shellfish by owner, operator or employee of a lodge, charter vessel, or other enterprise that furnishes food, lodging or sport fishing guide services.

Comments: This will not change the amount of shrimp that are harvested and creates an undue hardship on charter vessels. As a charter operator, they become responsible for every person they take. There was also concern of increased harvest as charter operators may actually have to check their pots more regularly. A better way would be to put a cap on the amount of harvest, and people can distribute it as they see fit. This seems like just a reason for another ticket. Charter operators have the ability to rent pots and include the information of the person fishing in the rental agreement. There are very few charter operators that drop pots. If it's a resource issue, there is no problem, if shrimp is open for commercial harvest, and there is an allowable harvest for sport fishermen, as well as limit of number of pots per vessel. Mainly, this just changes paperwork, increases workload for operators, as well as ADF&G. The committee

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agreed with the comments. If anything, having the charter operator providing the information was deemed to be a more accurate way to gather data.

Regulations for Southeast Alaska and Southcentral Alaska have been different in many fisheries. David Pinguoch plans to attend the meeting. Jon Van Hyning was approved to attend the BOF meeting to represent the AC on this issue.

The committee moved to adopt Prop 315 (moved by David Goldstein, 2<sup>nd</sup> by Steve Aberle)

Vote taken: 0-6-1                      Opposed

Abstention was due to needed more information to vote. Commercial vessels crew are required to have some type of license, he believes it follows along that same line.

The committee discussed proposals to submit for Prince William Sound for the April 8, 2011 deadline.

~~Steve Aberle spoke that the commercial fleet had a great season in salmon fishery. PWSAC allocation can be dealt with by its cost recovery. Steve will bring a report in the Spring.~~

Sport charter in July could limit out for silvers in 3-4 hours, until the seiner fleet was out in the water. David P has been waiting until the commercial fleet recovered to begin to make proposals on behalf of the sport fishery. Placement of the boundaries in Eshamy District was an issue that was one example. Preliminary catch reports would be a good indicator of what the actual harvest was. David observed seiner vessels in places that they haven't been in 10 years. David will be working on a proposal to address these concerns.

Black cod – extension of the season seems to be working. Longliners have had a hard time finding black cod. Not sure what the biomass is. Having the season lengthened out does offer more opportunity, especially when the season is slow.

There seems to be an increased amount of rock fish, even on flat sandy bottomed areas. Perhaps it is time to have a directed fishery on the rock fish for a couple of years. Rock fish are eating squid more than shrimp. Squids tend to move in as the bottom is stirred up. Longliners are only allowed to keep 10% bycatch and they are tired of catching fish for the state. Jon Van Hyning will attempt to write a proposal on rock fish, to allow for public discussion of the issue. Sport fishermen are concerned about decline, commercial vessels are seeing an increase. It seems that it might be good to bring the issue to the table for discussion.

Shellfish issues – Test set study with funding provided by the Feds for tanner crab. David P asked if anyone has harvested any subsistence crab? Jon said there are more crab in PWS now than there was 20 years ago. They are around 200 fathoms deep. King crab tend to stay closer to the banks. Also commercial sized crab are out in the middle.

Gordon spoke about the restrictions on the number of buoys required for pots. The department's fear factor for allowing this fishery will take time to overcome. There is some discussion of allowing some fishery based on survey's and indexing ADF&G has been doing. The trend was downward both in number of shrimp caught, as well as the size. Sport harvest numbers should

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be available by February, to determine if there is enough biomass to allow some additional harvest. The amount of effort was considerably less, but the CPUE was close to ADF&G estimate. Not sure what to think about that. People seem generally happy with the harvest, both sport and commercial. There was a consistent harvest throughout the season. Some spots seemed dried up, but overall they were plentiful. Number of boats that register will be part of the determination of how many pots per vessel will be allowed. The 8 hour restriction which was changed to a 12 hour restriction, creates a great difficulty for harvest particularly for slower vessels. These regulations mirror Southeast. Gordon would like to prepare a couple of proposals regarding shrimp. The ability to allow harvest based on previous landings was another idea that was mentioned. A rolling change in season, so they are not weighing so heavily on number of permits was mentioned. Allowing more pots after June 1, based on actual participation makes sense. The same reason they are increasing sport pots, is the same reason they should increase commercial pots. What would be the chance of making a north and south area, rather than three areas? There is some test fishery and ongoing data collection that might make that difficult.

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~~Question of if the six inch cotton string is enough to allow for escapement as there have been lots of lost pots out there.~~

Trawl shrimp fishery only has one commercial vessel harvesting. Shrimp populations seem to vary, but there is a rock fish interference issue. The division of size groups seems to be different now with shrimp all of various sizes congregating. In the past, they seemed to disperse based on size. That makes it more difficult to target the larger shrimp. Moving effort makes for better recruitment of the fishery. No proposals on this, other than the rock fish issue. Increasing the rockfish bycatch from 10% to 25% would address that issue.

Next meeting will be March 19<sup>th</sup> at 6 pm at the Whittier Inn. (David P will confirm meeting location).

Meeting adjourned at 2:30 pm.

**PACIFIC NORTHWEST CRAB INDUSTRY ADVISORY  
COMMITTEE (PNCIAC)**  
120 Second Avenue South  
Edmonds, Washington 98020  
360 440 4737  
[steve@wafro.com](mailto:steve@wafro.com)

March 8, 2011

Jim Marcotte, Executive Director  
Boards Support Section  
ADFG  
Juneau, AK 99811

Dear Jim:

Attached are the revised PNCIAC comments, to supercede the comments submitted on March 7<sup>th</sup>. We found a few technical errors that we have corrected.

Please discard the previous comments submitted on March 7<sup>th</sup>, only these are submitted for the March 22<sup>nd</sup> BOF Shellfish Meeting.

Sincerely,



Arni Thomson  
Secretary  
PNCIAC

**PACIFIC NORTHWEST CRAB INDUSTRY ADVISORY  
COMMITTEE (PNCIAC)**

120 Second Avenue South  
Edmonds, Washington 98020  
360 440 4737  
[steve@wafro.com](mailto:steve@wafro.com)

March 8, 2011

**ATTN: BOARD OF FISHERIES COMMENT**

Alaska Department of Fish and Game  
Boards Support Section  
P.O. Box 115526  
Juneau, Alaska 99811-5526

**RE: Proposal #307, Size limits for Bering Sea District C. Bairdi Tanner crab harvest strategy, lower the minimum legal size limit.**

Dear Chairman Webster and Board of Fisheries Members:

The Pacific Northwest Crab Industry Advisory Committee (PNCIAC) represents a balance of harvesters and processors from the states of Washington and Oregon that are involved in the Bering Sea/Aleutian Islands King, C. Opilio (Snow) and Tanner crab fisheries. A current list of the members is attached to our comments. The PNCIAC was reappointed by the NPFMC at its December meeting in Anchorage for a two-year term. Two new committee members were appointed, Kirk Peterson and Elizabeth Wiley.

**The issue:** As Proposal #307 notes: "The current size limit of 5.5 inches (140 mm) carapace width (CW) was established for Tanner crab in the Bering Sea in 1976. It has never been changed. Zheng (2008) showed that mean size of maturity of male Tanner crabs declined from 120 mm CW in 1990 to 100 mm CW in 2006 in the Bristol Bay area. For females, a longer time series of maturity data show that female maturity size declined steadily since 1975 in both Bristol Bay and Pribilof areas."

**PNCIAC supports a change to the exploitation rate size for Tanner crab (TAC) to 5.0 inches carapace width (CW) in the Western subdistrict and to retain the exploitation rate size at 5.5 inches CW in the Eastern subdistrict (status quo).**

**PNCIAC supports the ADFG recommendation to reduce the minimum legal size limit for retention in the West, Pribilofs Area from 5.5 inches CW to 4.0 inches CW, to match the revised average size at maturity. PNCIAC also supports reducing the existing minimum legal size limit of 5.5 inches to 4.4 inches CW in the East, Bristol Bay area, to match the current average size at maturity.**

No alternative size limit was recommended in the proposal, the alternative is based on the results of the industry funded analysis by University of Alaska biologists and economists,

in conjunction with the Department's recommendations. In conversations with the ADFG this winter, industry understands that the department has analyzed size at maturity data for Tanner crab in the Bering Sea and that the ADFG will be recommending minimum legal size limits for retention equal to 4.4 inches CW in the area east of 166° W long and 4.0 inches CW in the area west of 166° W long.

Two different size limits are proposed as ADFG recognizes two separate stocks in the Bering Sea district, thus differing exploitation rates are also applied in the areas east and west of 166° W long. The rates are applied to the biomass of exploited legal males with exploited legal males defined as "males greater than or equal to 5.5 inches CW in the area east of 166° W long and greater than or equal to 5.0 inches in the area west of 166° W long". Reducing the size definition of exploitable legal males in the area west of 166° W long from 5.5 inches CW to 5.0 inches CW will allow for a larger portion of the mature biomass to consist of exploited legal males and would reduce the harvest rate on the larger, faster-growing males in that area. Lowering the minimum legal size for retention relative to the minimum legal size of exploited legal males will reduce the bycatch mortality of mature males.

PNCIAC supports ADFG's recommendation to lower the size limit to 4.0" in the Pribilof area and 4.4" in the Bristol Bay area. These size limits recommended by ADFG are intended to match the size limit with the average size at maturity. Although these size limits are lower than what is proposed in the analysis (5" in the Pribilof area with status quo in the Bristol Bay area), it would be appropriate to lower the size limit to match the average size of maturity.

Matching the legal size limit with average size of maturity is similar to what occurs in the opilio fishery where size of maturity is 3.1" as is the legal size limit. However, for market reasons, the industry standard size limit is 4.0". This 4.0" size limit for the opilio fishery is considered the "exploitable legal male" size for management purposes. It is expected that something similar would occur with the bairdi fishery and that the industry standard size limit would be higher than the legal limit for market reasons. This would provide industry the ability to adjust as needed to market demands as well as morphological changes while reducing the risk of fines to industry from delivery of undersize crab. At this time, industry is supporting an "exploitable legal male" size limit of 5.0" in the Pribilof area and 5.5" in the Bristol Bay area.

**Supporting information for reducing the minimum exploitable size limit (TAC) to 5.0 " in the Pribilof area while maintaining the 5.5" exploitable size limit (TAC) in the Bristol Bay area is contained in the "Analysis of the Minimum Size Limit for Eastern Bering Sea Tanner Crab Fisheries," by Bechtol, Kruse, Greenberg and Geier, University of Alaska, February 2011, hereafter referred to as "Analysis" in our comments below.**

**Chapter 1, Analyses of Catch, Discards, and Yield-per-Recruit notes:** "Proportions of large (>112 mm CW) males that were of legal size (>137 mm CW) have declined in both Bristol Bay and Pribilof Islands areas since 1975 (Zheng 2008). Such a reduction is

consistent with the notion that mean sizes of male maturity have declined in both areas, in concert with the trends for females. Because the maturity molt is the final or “terminal molt” during a tanner crab’s lifespan, a declining size at maturity causes a diminishing percentage of mature males to reach harvestable sizes.”

Chapter 1 of the Analysis also concurs with the proposal’s “consequences of the problem”, presented by the current size limit as it applies to the Western subdistrict, as noted further in the analysis: “The decline in size of maturity has had several consequences: (1) large-growing males experienced increased fishing mortality rates and many are removed before they have an opportunity to reproduce; (2) handling mortality of sublegal males increased with the increasing proportion of sublegal crab; (3) at-sea discards comprised a greater proportion of the total catch, thus increasing catch sorting time and costs; and (4) legal male catch-per-unit-effort (CPUE) and increased proportion of the catch to be discarded has reduced the economic profitability of the fishery. Additionally, decreased profitability has led the fishing industry to abandon fishing activity, resulting in foregone catch as the fishery no longer attains catch quotas (guideline harvest levels).” (Analysis, page 2).

#### **Analysis, Chapter 1 Recommendations:**

The Chapter 1 Analysis’ recommendations do not support a change in the minimum harvest rate (TAC) size limit for Tanner crab in the Bristol Bay area because the majority of the Tanner crab at one molt increment prior to the current legal size of 138-mm CW and smaller are immature in that area. (Analysis, page 17).

However, the Chapter 1 recommendations do support a reduction in the harvest rate size limit in the Pribilof Islands “as this would appear to balance the intent of providing for reproductive sustainability in the Pribilof Islands stock component with economic viability for the commercial fishing fleet.” (Analysis, page 17)

The recommendations in general are based on analysis of the effects of different potential minimum size limits on the:

1. relative effort needed to harvest the TAC/GHL
2. discard losses of immature and female crab;
3. proportion of mature crab that would be harvested;
4. proportion of crab that would have matured at one molt increment prior to a given legal size; and
5. economics of the fishing fleet.

In regards to the rationale for supporting the change in the harvest rate in the Pribilof Islands, the recommendations on page 17 note:

“Any reduction in the size limit reduces the annual pot lifts (i.e., effort) for the fleet with a corresponding decrease in vessel costs and also a reduction in discard mortality of female and sublegal crab. Although the reduced size limit also decreases the total

biomass for a given TAC/GHL (due to smaller mean crab size), this decrease is more than compensated against the status quo in the Pribilof Islands area where the GHL/TAC is not taken due to high discard rates and the overall low fishery productivity; i.e., low catches combined with few legal crab. **For the Pribilof Islands area, the majority of the Tanner crab at one molt increment prior to the alternative legal size of 125 mm CW and larger are mature. Under the longer-term maturity patterns for 1990-2006, 54.7% of the crab at one previous molt increment prior to 125 mm CW were mature compared to 78.1% under the 2005-2009 maturity schedule. Nonetheless, this implies more than half of the cohorts would have matured and ceased growing prior to molting to the 125 mm CW size (excluding spines, 127 mm CW or 5 inches, including spines)."**

### **Analysis, Chapter 2, Economic Considerations in the Analysis of Minimum Size Limit for the Bering Sea Tanner Crab Fisheries:**

Tanner crab fishery performance and productivity since the reopening of the fishery, coincident with the implementation of the BSAI crab cooperative program is adequately described in pages 49 – 58. Participation has greatly decreased since the program began in 2005-2006, compared to participation in the 1990s. The fishery reopened with the beginning of the rationalization program, which was instrumental in the reopening of the fishery, as individual quota shares insured no TAC overage, and it minimized impacts to the fishery stocks. The 2005 – 2006 fishing season was the first year the fishery had been open since 1996, when 196 vessels participated in a the last derby-style harvest of 1.8 million pounds. The fishery was closed for conservation and rebuilding from 1997 – 2004. Only 43 vessels participated in the 2005 – 2006 fishery, but most of the catch was taken by the top ten producing vessels. This pattern has persisted through 2008 – 2009. (Analysis, tables and discussion, pages 50 – 56).

The fishery was closed again for conservation in 2009 – 2010, but fishing effort and related bycatch impacts have been minimal. The closure appears to be an oceanographic related reproductivity issue. This is apparent in numerous observations in the discussion. Recent harvests have not approached the total allowable catch (TAC). Between 2005/06 and 2007/08 fishery harvests ranged from 37% to 70% of the TAC (Analysis, Table 2.5, page 55). This is precedental in crab fisheries and contrasts sharply with the fully utilized Bering Sea snow crab and Bristol Bay red king crab fisheries, where the entire TAC is taken. Fishery participants report low CPUEs and excessive bycatch of sublegal males at the current size limit makes the fishery uneconomical at current exvessel prices and fishing costs. (Analysis, page 55).

Interviewed fishery participants stated that the concentration of fishery harvest among a few vessels is consistent with the specialized nature of the Tanner crab fishery. They noted that the Tanner crab fishery is a more difficult fishery to prosecute than either the snow or king crab fishery. "The fishery was characterized as a "pocket fishery" in which crab are concentrated in localized areas rather than being more widely dispersed over the fishing grounds, requiring particular expertise to locate and harvest the crab. Fishery participants related that, at the current size limit, it is common to pull pots that while full

of crabs, but containing few crab of legal size. For example, crews were reported to sort through pots containing hundreds of crab to find 10-15 crabs of legal size. Sort time was reported to be extended by the presence of many crab of near legal size, requiring hand measurement. This extensive sorting process was reported to greatly reduce fishery productivity and increase the fishing costs. One fishery participant related hauling an average of 5-7 pots per hour in the Bering Sea tanner crab fishery in 2006 compared to an average of 12-15 pots per hour in the Bering Sea snow crab fishery. The extensive sort time may also contribute to higher handling mortality by extending the time that crab are exposed to cold temperatures prior to being discarded (Carls and O'Clair 1995)." (Analysis, pages 53-54).

In the section of the Analysis, "More Detailed Examination of Fishery Performance", the simulated fishery performance statistics under the variable size limits are presented in Tables 2.6 and 2.7 and illustrated in Figures 2.7 and 2.8. "As the size limit is lowered in the simulated fisheries, the average weight per harvested crab goes down. The simulated average Tanner crab harvest weight in the Pribilof Islands area is smaller than that of the Bristol Bay area. The declining average weight, coupled with an assumed harvest strategy that imposes a constant limit on the number of crab caught, results in a declining TAC when the TAC is expressed in weight. The decline is significant in each of the fisheries as the size limit is reduced. For example, focusing on the change that occurs between the 140 mm size limit and the 125 mm size limit for the 2007/2008 season, the TAC is lowered from 2.21 million lbs to 1.76 million lbs in the Pribilof Islands area and from 3.47 million lbs to 2.61 million lbs in the Bristol Bay area. However, lower size limits improve fishery productivity significantly. The number of crab caught per potlift (CPUE) increases sharply as the size limit is lowered across years and across most size limit reductions from 140 mm (Analysis, Figure 2.7). Again, focusing on the change that occurs between the 140 mm size limit and the 125 mm size limit for the 2007/2008 season, the CPUE jumps from 10.7 crab to 47.2 crab in the Pribilof Islands area and from 19.3 crab to 53.3 crab in the Bristol Bay area. Across the presented simulated seasons, CPUE increases range from 183% (2005/06) to 340% (2007/2008) for the Pribilof Islands area and 58% (2008/2009) to 176% (2007/2008) in the Bristol Bay area when the size limit is reduced from 140 mm size limit to 125 mm." (Analysis, pages 57-64).

"As noted, the number of crabs allowed to be caught, (the TAC) remains constant across all size limits. Given the gains to CPUE, this then results in steep declines in the number of potlifts necessary to fully realize the TAC as the size limit is lowered from 140 mm. In both the Pribilof Islands and Bristol Bay areas, the number of potlifts initially declines sharply as the size limit is lowered from 140 mm, and then declines more gradually as the size limit is reduced further. For the Pribilof Islands area, potlifts declines range from 65% (2005/2006) to 77% (2007/2008) as the size limit is lowered from 140 mm to 125 mm. In the Bristol Bay area, for the same size limit reduction, declines in potlifts range from 37% (2008/2009) to 64% (2007/2008)". (Analysis page 64).

"The remaining fishery response to variable size limits presented in the tables and figures is discard mortality. A 20% discard mortality rate was used in this calculation. Fewer potlifts and greater crab retention result in substantial declines in discard mortality for

both fisheries across simulated seasons. Discard mortality for the Pribilof Islands area declines from 88% (2005/2006) to 92% (2007/2008) as the size limit is lowered from 140 mm to 125 mm. In the Bristol Bay area, the decline in discard mortality that accompanied this size limit reduction ranged from 72% (2006/2007) to 85% (2008/2009).” The authors note further that “while the current size limit may be considered a conservative harvest rule by limiting the retention of small crabs, it increases total stock mortality due to extensive capture and discard mortality of sublegal males.” (Analysis, page 64).

“In the tables, this direct conservation benefit of lower size limits is further illustrated through presenting discard mortality as a percentage of TAC. The TAC, given the assumption that it is fully taken, represents stock mortality from retained catch. Discard mortality represents fishing induced mortality, and their combined total represents stock mortality from fishing. At the 140 mm size limit, the contribution of discards to total fishing mortality is substantial across most years and areas. Discard mortality as a percentage of TAC (in weight) ranges from 38% to 83% and from 10% to 39% for the Pribilof Islands and Bristol Bay areas, respectively, for the simulated years 2006 through 2009. The relative contribution of discard mortality to total fishing mortality is, in general, greatly reduced at lower size limits. At the 125 mm size limit, discard mortality as a percentage of TAC ranges from 5% to 9% and from 2% to 8% for the Pribilof Islands and Bristol Bay areas, respectively for the simulated years, 2006 through 2009.” (Analysis, page 64).

## **Chapter 2, Recommendations:**

“In the simulated Bering Sea Tanner crab fisheries, lower size limits result in significant gains to fishery productivity even though the TACs (in weight) decline. As noted earlier, harvesters must average a certain amount of money per day to make a fishery economically viable. The size limit reduction increases the catch and weight per potlift and would be expected to increase the return to the vessel per fishing day, depending on the market response to smaller sized landed crabs on average. The market response to smaller crabs is addressed later in this report. Harvesters would also benefit from the steep declines in discard mortality reported here, which would translate to significantly reduced crab sorting time and, therefore, lower marginal fishing costs. There is also a positive benefit to the resource by significantly reducing discard mortality. (Analysis, page 64).

**In the long term, provided oceanographic conditions are favorable to Tanner crab reproductivity, the reductions to discard mortality induced by the reduction in size limit should result in increased male and female mature biomass, more robust harvests and improved economic benefits to all sectors of the industry.**

### **Addressing price concerns:**

“A concern of lowering the Bering Sea Tanner crab size limit is that it may have negative effects on Tanner crab exvessel prices and, therefore, fishery performance. Tanner crab,

as well as snow crab and red king crab, are graded and priced by size at the wholesale level. A lower size limit could reduce the average grade of crab, translating to lower average price and wholesale revenue. The effects of lower wholesale price would be passed on to harvesters in the form of lower exvessel price offers. Price concerns were raised in the analysis of lower size limits in the Bristol Bay red king crab fishery. (Kruse et al. 2000).”

“Historically, Tanner crab was a preferred product in Japanese markets, particularly filling a niche, in the high-valued premium Japanese market that included corporate events, high-end restaurants, and gift and tourist markets in the 1990s (J. Sackton, Seafood.com News, personal communication). This past premium Japanese market for Tanner crab was validated by other interviewed crab fishery participants. Interviewed fishery participants were also in agreement that this premium Japanese market was lost with the 1997 closure of the Bering Sea Tanner crab fishery. In part, the disappearance of the premium Japanese market is related to the economic downturn of the Japanese economy, which shrank the markets in the premium outlets. It was reported that price-conscious mass retailers now dominate much of the Japanese crab market and are unwilling to support a premium market for Tanner crab (J. Sackton, Seafood.com news, personal communication).”

“However, the loss of the premium Tanner crab market is also attributable to the long absence of Alaska Tanner crab from the market. This distinct market position has not reemerged since the reopening of the Bering Sea Tanner crab fishery. Japanese buyers are uncertain of Tanner crab quality and, more importantly, consistency of supply. Buyers must be assured a consistent supply of product before committing to a major sales campaign (J. Sackton, Seafood.com News personal communication). The inability of the fishery to harvest its TAC has added to the general uncertainty regarding future availability of Alaska Tanner crab and contributed to the lack of market commitment toward promoting Tanner crab. A processing company representative reported an inability to generate any interest in Japan for Tanner crab (P. Hanson, UniSea, Inc., personal communication). Attempts to develop a distinct domestic market for Tanner crab have also met with little success. Currently, much of the harvested Tanner crab is reported to go to the domestic market, where it is sold as large snow crab.” (Analysis, page 69).

The Analysis pages 70 through 74 goes on to show that the proposed reduction in size limit for Tanner crab, due to its corresponding relationship to snow crab prices, “at smaller size limits, Tanner crab should enter the market at the 8 up size (D. Wells, C/P Baranov, personal communication).” If true, then the lowering of the size limit should not have a major effect on wholesale prices (and, in turn, exvessel prices) given the current market conditions. There is relatively little variation in recent wholesale prices between the larger size categories of snow crab presented in Figure 2-12, page 71. The analysis goes on to say “that in the current market setting, Tanner crab are presented simply as large snow crab, and not differentiated in crab markets. There is no reason to expect that Tanner crab prices will fall below that of snow crab. Even at a reduced size limit, retained Tanner crab on average will be larger than retained snow crab. Average

snow crab size has "...remained fairly constant over time ranging between 105 mm and 118 mm, and most recently about 110 mm to 111 mm (Turnock and Rugolo)." (Analysis, page 72).

**Conclusions:**

The Analysis shows that concerns that lower size limits could negatively affect prices for Tanner crab at both the wholesale and exvessel levels do not appear to be warranted in the current market setting. Tanner crab are reported to have lost their premium market due to the protracted closure from 1997 through 2005, uncertain supplies and quality, and changing market conditions in Japan. It has also been reported that Tanner crab currently enters the domestic market as large snow crab. Increased harvests of Tanner crab would have a small affect on total world supplies when Tanner crab is aggregated with snow crab. Furthermore, the Tanner crab's market position as large snow crab would remain intact even at a range of lower size limits. Accordingly, lower size limits would not be expected to result in significant declines in wholesale or exvessel prices.

The more immediate market concern is to establish a consistent supply of Tanner crab in which buyers have confidence of future product availability. A lower size limit could improve buyer certainty of future availability by leading to a fishery in which the TAC is fully realized. (Analysis, page 74).

Steve Minor, Chairman  
Pacific Northwest Crab Industry Advisory Committee

Attachment: PNCIAC membership list

**PACIFIC NORTHWEST CRAB INDUSTRY ADVISORY COMMITTEE  
(PNCIAC)**

**January 2011 through December 2012**

**Keith Colbern**

F/V Wizard  
3117 E Ames Lake Dr NE  
Redmond WA 98053

206 850 4212 Cell  
425 880 4312 Fax  
[keith@crabwizard.com](mailto:keith@crabwizard.com)

**Lance Farr**

F/V Kevleen K  
8941 179 Place SW  
Edmonds WA 98040

206 669 7163 Cell  
425 776 9894 Fax  
[fffish@hotmail.com](mailto:fffish@hotmail.com)

**Kevin Kaldestad**

Kaldestad Fisheries  
5470 Shilshole Avenue NW  
Seattle WA 98107

206 783 3018  
206 498 9606 Cell  
206 783 3145 Fax  
[kfld@msn.com](mailto:kfld@msn.com)

**Garry M Loncon**

Royal Aleutian Seafoods  
PO Box 12708  
Mill Creek WA 98080

206 276 3406 Cell  
[gloncon@hotmail.com](mailto:gloncon@hotmail.com)

**Steve Minor (Chair)**

North Pacific Crab Association  
120 Second Avenue South  
Edmonds, WA 98020

360 440 4737 Cell  
[steve@wafro.com](mailto:steve@wafro.com)

**Gary Painter**

F/V Trailblazer  
PO Box 1027  
Newport OR 97365

541 574 0256  
541 961 8137 Cell  
541 574 0380 Fax  
[GPainter@midnitepacific.com](mailto:GPainter@midnitepacific.com)

**Kirk Peterson**

UniSea Inc.  
15400 NE 90<sup>th</sup>  
Redmond, WA 98073

425 861 5240  
425 246 1412 Cell  
[kirk.peterson@unisea.com](mailto:kirk.peterson@unisea.com)

**Rob Rogers (Vice Chair)**

General Mgr Floating Production  
Icicle Seafoods  
PO Box 79003  
Seattle WA 98119

206 281 5365  
206 601 7311 Cell  
206 281 0322 Fax  
[robr@icicleseafoods.com](mailto:robr@icicleseafoods.com)

**Vic Scheibert**

Trident Seafoods Corporation  
5303 Shilshole Avenue NW  
Seattle WA 98107

206 783 3818  
206 331 0708 Cell  
206 782 7230 Fax  
[vics@tridentseafoods.com](mailto:vics@tridentseafoods.com)

**Dale Schwarzmiller**

Peter Pan Seafoods Inc  
2200 6<sup>th</sup> Avenue 10<sup>th</sup> Floor  
Seattle WA 98121 1820

907 497 2234  
206 369 4875 Cell  
907 497 2242 Fax  
[dalesc@ppss.com](mailto:dalesc@ppss.com)

**Gary Stewart**

F/V Polar Lady  
12700 7<sup>th</sup> NW  
Seattle WA 98177

206 784 0092  
206 619 7333 Cell  
206 784 8750 Fax  
[polarlady1@gmail.com](mailto:polarlady1@gmail.com)

**Tom Suryan (President, PNCIAC)**

Skippers For Equitable Access (SEA), President  
4756 34<sup>th</sup> Avenue NE  
Seattle WA 98105

206 915 6607 Cell  
206 525 7311 Fax  
[tomsuryan@aol.com](mailto:tomsuryan@aol.com)

**Elizabeth Wiley**

Westward Seafoods Inc.  
2101 Fourth Avenue, Suite 1700  
Seattle, WA 98121

206 682 5949

**Arni Thomson (Secretary, non-voting)**

Alaska Crab Coalition  
3901 Leary Way NW Suite 6  
Seattle WA 98107

206 547 7560  
206 547 0130 Fax  
206 769 3474 Cell  
[accrabak@earthlink.net](mailto:accrabak@earthlink.net)