
ALASKA
DEPARTMENT OF FISH AND GAME

REGIONAL INFORMATION REPORT 4K17-01

ALASKA DEPARTMENT OF FISH AND GAME

STAFF COMMENTS ON STATEWIDE (EXCEPT SOUTHEAST AND YAKUTAT) KING AND TANNER CRAB AND SUPPLEMENTAL ISSUES

COMMERCIAL, PERSONAL USE, SUBSISTENCE, AND SPORT FISHERIES

ALASKA BOARD OF FISHERIES MEETING ANCHORAGE, ALASKA

MARCH 20-24, 2017

Alaska Department of Fish and Game
Division of Commercial Fisheries
333 Raspberry Road
Anchorage, AK 99518-1565

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ABSTRACT

This document contains Alaska Department of Fish and Game staff comments on commercial regulatory proposals for the Statewide King and Tanner crab meeting. These comments were prepared by the department for use at the Alaska Board of Fisheries meeting, March 20–24, 2017, in Anchorage, Alaska. The comments are forwarded to assist the public and board. The comments contained herein should be considered preliminary and subject to change, as new information becomes available. Final department positions will be formulated after review of written and oral public testimony presented to the board.

Key words: Alaska Board of Fisheries (board), Alaska Department of Fish and Game (department), staff comments, regulatory proposals, fisheries, commercial, groundfish, Tanner crab

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Proposal No.	Department Position	Issue
242	S	Correct an error in regulation to accurately specify the percentage of mature male blue king crab used in setting total allowable catch for Saint Matthew Section blue king crab.
243	S	Reduce the sport fishery minimum legal size for Tanner crab in the Alaska Peninsula and Aleutian Island Area from 5.5 inches carapace width to 4.8 inches carapace width.
244	N	Align sport crab fishery regulations and repeal methods and means and general provisions for shellfish for the North Slope, Kuskokwim-Goodnews, and Yukon areas.
245	N	Extend the closure line north for the Norton Sound Section commercial king crab fishery from 64° 10' N. latitude to 64° 15' N. latitude.
246	S	Add a definition for crab rakes and allow crab rakes as lawful subsistence shellfish gear north of Cape Newenham.
247	S	Repeal regulations that prohibit sport fishing for king or Tanner crab in the Kodiak Area14 days before and after a commercial Tanner crab fishery.
248	S	Repeal regulations that prohibit sport fishing for king or Tanner crab in the Alaska Peninsula and Aleutian Islands Area14 days before and after a commercial Tanner crab fishery.
249	N	Establish 20 pot gear limit for vessels participating in the South Peninsula District commercial Tanner crab fishery and cap the total number of pots allowed in the fishery at 1000 pots.
250	O	Allow full retention of legal male C. opilio crab incidentally harvested by vessels targeting C. bairdi crab in the Bering Sea District west of 166°W. long..
251	O	Change season closure date from March 31 to April 15 for C. bairdi Tanner crab in waters west of 166°W long.
252	N	Allow a vessel carrying an onboard observer to rig, bait, and set gear for a new crab fishery before fully exiting the crab fishery for which the observer was briefed.
253	N	Allow a vessel participating in a rationalized crab fishery to rig, bait, and set pot gear for a new crab fishery prior to fully exiting the crab fishery for which the vessel is validly registered
254	O	Amend the description of a hybrid Tanner crab so that hybrid designation is dependent upon the target Tanner crab fishery for which the vessel is validly registered.
255	O	Allow full retention of incidentally taken legal male C. opilio Tanner crab when a vessel is participating in the C. bairdi Tanner crab fishery east of 166°W. long.
256	O	Allow full retention of legal male C. bairdi Tanner crab incidentally harvested by vessels targeting Bristol Bay red king crab.

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Summary of department positions on regulatory proposals for Statewide King and Tanner Crab and Supplemental Issues (Except Southeast and Yakutat) – Anchorage, March 20–24, 2017 (Page 2 of 3).

Proposal No.	Department Position	Issue
257	N	Extend the Bering Sea District eastern boundary for retention of C. opilio crab from 166°W. long. to 165°W. long.
258	O	Extend the Bering Sea District eastern boundary for retention of C. bairdi crab from 163°W. long. to 162°W. long.
259	S	Specify that escape rings and mesh are placed on a vertical plane or side of the pot in the Saint Matthew Island Section blue king crab fishery
260	S	Adopt by reference the Alaska Department of Fish and Game Chionoecetes Crab Quick Reference Guide for C. bairdi and C. opilio Tanner crab
261	S	Allow C. opilio Tanner crab bycatch retention up to five percent in the Bering Sea District C. bairdi Tanner crab fishery, east of 166°W. long.
262	O	Develop a management plan for the Western Aleutian District Tanner crab fishery.
263	O	Reduce onboard observer coverage rates and change observer deployment periods for the Aleutian Islands golden king crab fishery.
264	S	Repeal provisions allowing concurrent harvest of red and golden king crab in Registration Area O.
265	S/N	Amend the noncommercial harvest strategy for Tanner crab in the Cook Inlet Area to allow limited fishing opportunity in the absence of abundance estimates.
266	NA/N	Allow a personal use fishery for Tanner Crab in Lower Cook Inlet with a bag limit of two crabs per person per day, pot limit of two pots per person and unspecified size restrictions on pots and season limits.
267	S/N	Create a harvest strategy and amend regulations for Tanner crab in PWS specifying conditions under which the commercial fishery may occur and reduce the legal size limit in the subsistence Tanner crab fishery.
268	N	Create a harvest strategy and amend regulations for Tanner crab in PWS specifying conditions under which the commercial fishery may occur and establish a sport fishery for Tanner crab in Prince William Sound.
269	N	Allow a commercial Tanner crab fishery in the Western District of PWS.
270	N	Allow a commercial Tanner crab fishery in the Eastern District of PWS.
271	N	Allow the department to issue commissioner permits for king and Tanner crab fisheries in PWS that have been closed for more than four years.
272	S	Reduce the legal male size limit in the PWS Subsistence Tanner crab fishery to five and three tenths inches or greater carapace width.
273	N	Increase the PWS subsistence Tanner crab daily bag and possession limit to 25 male Tanner crab.
274	N	Reduce waters closed for the protection of Steller seas lions during the parallel Pacific cod fishery in the Chingik Area.
275	N	Create a Tier II subsistence king salmon fishery in the Kuskokwim River.

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Summary of department positions on regulatory proposals for Statewide King and Tanner Crab and Supplemental Issues (Except Southeast and Yakutat) – Anchorage, March 20–24, 2017 (Page 3 of 3).

276	N/S	Establish a permit system for regulating the king salmon subsistence fishery during times of low king salmon runs
280	N	Decrease number of sockeye salmon that may be retained in the subsistence salmon fishery on Front Beach in the Unalaska Bay District.

N= Neutral, S = Support, O = Opposed

REGULATORY ALIGNMENT

PROPOSAL 242 – 5 AAC 34.917. Saint Matthew Island Section blue king crab harvest strategy.

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? Correct an error in regulation to accurately specify the percentage of mature male blue king crab used in setting total allowable catch.

WHAT ARE THE CURRENT REGULATIONS? The number of legal males available for harvest in the Saint Matthew Island blue king crab harvest strategy is currently specified as 100 percent of the current mature male abundance estimate multiplied by the fraction of the current mature male abundance estimate relative to the average of historic mature male abundance estimates when analysis of preseason survey data indicates that the population of blue king crab contains at least 1.609 million mature males. The average of historic mature male abundance estimate is specified to be 3.217 million mature males.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Correct an error in the Saint Matthew Island Section blue king crab regulatory harvest strategy that was inadvertently introduced during the 2014 board revision of the harvest strategy (Proposal 358) and adopted into regulation in 2015. The number of legal males available for harvest is currently specified as 100 percent of the current mature male abundance estimate multiplied by the fraction of the current mature male abundance estimate relative to the average of historic mature male abundance estimates; however, the number of legal males available for harvest was meant to be specified as 10 percent of the current mature male abundance estimate multiplied by that fraction. Proposed changes in text also clarify the regulation by replacing "estimated population number" with "preseason survey estimate of the number." In addition, the department proposes to replace the mature male abundance threshold for opening the fishery as well as for determining harvest rate with a formula for deriving the threshold and harvest rate calculation based on the most current estimate of the 1978–2012 average survey estimate of mature males, rather than a prescribed value based on the estimate from that time series that was available when the harvest strategy was first adopted. This change will allow the harvest strategy to stay current with respect to corrections and improvements subsequently made to survey estimates of mature males.

BACKGROUND: The Saint Matthew Island Section blue king crab regulatory harvest strategy was adopted by the board in 2000. Since the 2014 revision, the incorrect percentage has not been used during TAC computation and the intended 10 percent rate has been used in practice. In addition, rather than using the average mature male abundance estimate of 3.217 million mature males as specified in the current harvest strategy, the TAC has been calculated in recent years using the average abundance estimate of mature males from 1978–2012 as this time series has been accepted to most accurately represent fluctuations in stock abundance through directed harvest. Since the harvest strategy was adopted in 2000, the Saint Matthew Island Section blue

king crab fishery opened six out of 17 seasons. During open seasons, the TAC ranged from 2.4 million pounds (2011/12) to 411,000 pounds (2015/16; Table 242-1).

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal. TAC/GHL are a Category 2 management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.2.5). Category 2 management measures should be consistent with the criteria set out in the FMP and the National Standards (FMP Appendix B).

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 242-1.–Saint Matthew Island Section blue king crab fishery data, 1977–2015/16.

Season	Fishery	Number of Vessels	Number of Landings	GHL/TAC[a,b]	Harvest[c,d]	Number of crab[c]	Average Weight[d]	Average CPUE[e]
1977	General	10	24	-	1,202,066	281,665	4.3	16
1978	General	22	70	-	1,984,251	436,126	4.5	10
1979	General	18	25	-	210,819	52,966	4.0	5
1980	General	2	CF	-	CF	CF	CF	CF
1981	General	31	119	-	4,627,761	1,045,619	4.4	18
1982	General	96	269	-	8,844,789	1,935,886	4.6	12
1983	General	164	235	8,000,000	9,454,323	1,931,990	4.8	14
1984	General	90	169	2-4 million	3,764,592	841,017	4.5	11
1985	General	79	103	0.9-1.9 million	2,200,781	441,479	5.0	9
1986	General	38	43	0.2-0.5 million	1,003,162	219,548	4.6	10
1987	General	61	62	0.6-1.3 million	1,039,779	227,447	4.6	8
1988	General	46	46	0.7-1.5 million	1,325,185	302,098	4.4	30
1989	General	69	69	1,700,000	1,166,258	247,641	4.7	8
1990	General	31	38	1,900,000	1,725,349	391,405	4.4	15
1991	General	68	69	3,200,000	3,372,066	726,519	4.6	20
1992	General	174	179	3,100,000	2,475,916	545,222	4.6	10
1993	General	92	136	4,400,000	3,003,089	630,353	4.8	11
1994	General	87	133	3,000,000	3,764,262	827,015	4.6	14
1995	General	90	111	2,400,000	3,166,093	666,905	4.8	14
1996	General	122	189	4,300,000	3,078,959	660,665	4.7	7
1997	General	117	166	5,000,000	4,649,660	939,822	4.9	12
1998	TOTAL	132	CF	4,099,512	CF	CF	CF	CF
1999–2008/09		FC	FC	FC	FC	FC	FC	FC
2009/10	TOTAL	7	30	1,167,000	460,859	103,376	4.5	10
2010/11	TOTAL	11	70	1,600,000	1,263,982	298,669	4.2	10
2011/12	TOTAL	18	90	2,359,000	1,881,322	437,862	4.3	9
2012/13	TOTAL	17	92	1,630,000	1,616,054	379,386	4.3	10
2013/14		FC	FC	FC	FC	FC	FC	FC
2014/15	TOTAL	4	CF	655,000	CF	CF	CF	CF
2015/16	TOTAL	3	14	411,000	106,449	24,407	4.4	4

Note: NA = not available, CF = confidential, FC = fishery closed.

[a] Millions of pounds.

[b] Guideline harvest level (GHL), total allowable catch (TAC) began in 2005/06.

[c] Deadloss included.

[d] In pounds.

[e] Number of retained crab per pot lift.

PROPOSAL 243 – 5AAC 65.020. Bag limits, possession limits, annual limits, and size limits for Alaska Peninsula and Aleutian Islands Area.

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? Reduce the sport fishery minimum legal size limit for Tanner crab in Bering Sea waters from 5.5 inches carapace width to 4.8 inches carapace width.

WHAT ARE THE CURRENT REGULATIONS? In all waters of the AP-AIA, the bag and possession limit for Tanner crab is six male crabs with a minimum legal size limit of 5.5 inches carapace width.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This aligns sport fishing size limits for Tanner crab with current commercial Tanner crab regulations in the Bering Sea District of the Registration Area 'J' commercial fishing area, and provides greater harvest opportunity for the sport angler based on updated biological knowledge of this shellfish species. Harvest of Tanner crab in Bering Sea waters would likely increase by a small, but an unknown amount given current angler participation and harvest rates in the fishery.

BACKGROUND: The size limit regulations for Tanner crab in the Bering Sea District of the Registration Area 'J' commercial fishery were reduced from 5.5 inches carapace width to 4.8 inches as a result of an updated geographic analysis by the department of male Tanner crab size-at-maturity and associated population productivity. The AP-AIA is characterized by low sport fishing effort due to limited access, relatively low population density, and the remote nature of most sport fisheries in the area. Sport harvests of Tanner crab have averaged 239 crab from 2006–2015 for the AP-AIA according to the SWHS (Table 243-1). Harvest estimates specific to Bering Sea waters are not available due to low response rates in the SWHS. Size limits in the AP-AIA subsistence fishery are 5.5 inches carapace width. There are no size limits in the Bering Sea Tanner crab subsistence fishery.

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 243-1.–Sport harvest of Tanner crab and total saltwater effort in the AP-AIA from the statewide harvest survey, 2006–2015.

Year	Angler days	Harvest
2006	7,201	152
2007	11,944	0
2008	7,734	108
2009	7,303	796
2010	5,297	298
2011	4,616	358
2012	9,037	0
2013	5,241	0
2014	7,848	598
2015	7,768	78
2006–2015 Average	7,399	239

PROPOSAL 244 – 5 AAC 69.110. Seasons and bag, possession, and size limits for the North Slope Area; 5 AAC 69.135. Methods, means, and general provisions – Shellfish; 5 AAC 71.010. Seasons and bag, possession, annual, and size limits for the Kuskokwim – Goodnews Area; 5 AAC 71.035. Methods, means, and general provisions – Shellfish; and 5 AAC 73.010. Seasons, bag, possession, and size limits, and methods and means for the Yukon River Area.

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? This would repeal sport king and Tanner crab seasons and bag, possession, and size limits, and shellfish methods and means and general provisions in the North Slope Area; sport king crab seasons and bag, possession, and size limits, and shellfish methods and means and general provisions in the Kuskokwim-Goodnews Area; and seasons and bag, possession, and size limits, and amend shellfish methods and means and general provisions in the Yukon Area.

WHAT ARE THE CURRENT REGULATIONS? In the North Slope Area the sport bag and possession limit for Dungeness crab is 12 male crab with a 6.5 inch or larger carapace width. The bag and possession limit for blue and red king crab is six male crab with a 5.5 inch or larger carapace for blue king crab and a 4.75 inch or larger carapace for red king crab.

In both the North Slope and Kuskokwim-Goodnews areas the following apply: an operator of a commercially licensed and registered shrimp fishing vessel who uses the vessel for the sport taking of shrimp during a closed commercial shrimp season or within a closed commercial shrimp district or section may not possess more than 500 pounds of shrimp on the vessel; only male crab may be taken and a crab may not be mutilated or disfigured such that the carapace width may not be determined prior to processing for human consumption; and, a person may not possess a crab smaller than the legal size limit, and the sport bag and possession limit for crab is not in addition to the personal use and subsistence limits.

In the Kuskokwim-Goodnews Area, in waters south of 60 degrees north latitude, king crab may be taken only from June 1–January 1. The sport bag and possession limit for blue and red king crab is six male crab with a 5.5 inch or larger carapace for blue king crab and a 4.75 inch or larger carapace for red king crab. There are no season, bag, possession or size limits for Dungeness or Tanner crab.

In the Yukon Area shellfish may not be taken or possessed.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Sport shellfish regulations in these three management areas would be aligned to the background regulation of no bag, possession, or size limits, and methods and means would revert to the statewide sport shellfish regulations found in 5 AAC 75.035. This would simplify the shellfish regulations in these areas and reduce confusion by the public, since these species are not generally found in these areas.

BACKGROUND: Fishing for crab under sport regulations only occurs in the Northwestern Area of the Arctic-Yukon-Kuskokwim (AYK) Region. There is minimal suitable habitat for

these crab species in the nearshore marine waters of the Kuskokwim–Goodnews, Yukon, or North Slope areas, and no sport fisheries occur for these species. There has been no record of any of these crab species harvested under sport regulations from any of these areas in the Statewide Harvest Survey since 1996.

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal with modification to maintain alignment of sport and subsistence crab regulations south of 60 degrees north latitude. Substitute language will be submitted during the 2017 Statewide King and Tanner crab meeting. The department submitted this proposal as a means to simplify regulations and reduce confusion among users not familiar with the areas addressed in this proposal. Having regulations, including bag and size limits, for species that are generally not present in an area implies that those species are available for harvest, and that such a fishery may exist.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

ARCTIC-YUKON-KUSKOKWIM

PROPOSAL 245 – 5 AAC 34.935. Closed waters in Registration Area Q.

PROPOSED BY: Randy Takak.

WHAT WOULD THE PROPOSAL DO? Increase the area open in the Norton Sound summer commercial king crab fishery by moving the northern boundary five nautical miles closer to shore, near the village of Golovin, resulting in one continuous northern boundary line at 64° 15' N. latitude in northern Norton Sound.

WHAT ARE THE CURRENT REGULATIONS? Waters closed to the taking of king crab during the Norton Sound summer season are depicted in Figure 245-1.

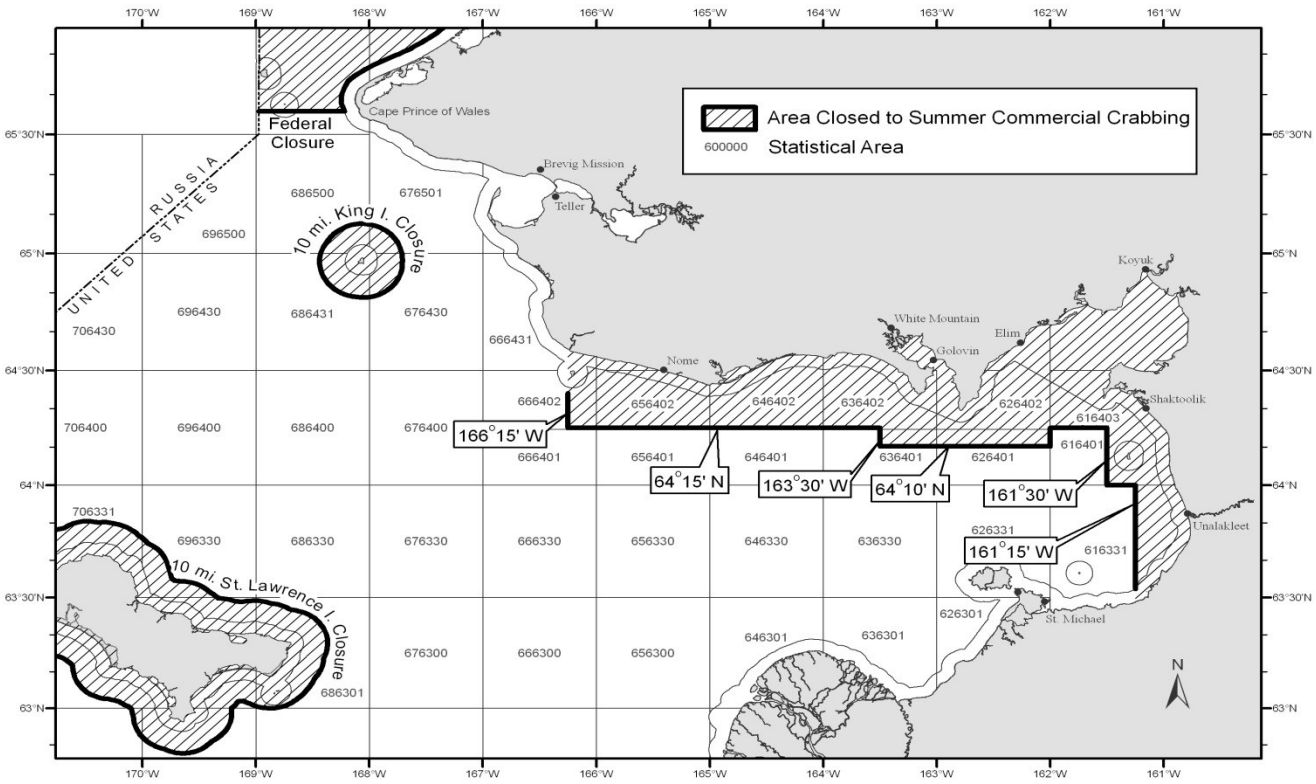

Figure 245-1.–Waters closed to commercial fishing in the Norton Sound summer commercial king crab fishery.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Commercial permit holders would be able to fish closer to shore in statistical areas 626401 and 636401 (Figure 245-1), which, in most years, have over half the Norton Sound summer commercial fishery crab harvest. Catch rates during the summer king crab fishery would likely increase. Changing the boundary may result in changes to commercial fishing effort and harvest location. Competition for crab resources between commercial and subsistence fishermen may occur.

BACKGROUND: In 2002 the area closed to commercial fishing for king crab was increased by moving the previous closure line five nautical miles south in statistical areas 626401 and 636401. The board adopted this change over concern with the shift in the summer commercial crab harvest being taken from statistical areas 626401 and 636401 and potential impact, competition, on subsistence crab fishing. Adoption of super-exclusive registration in the Norton Sound commercial red king fishery in 1994 resulted in numerous years where over half the harvest was taken from statistical areas 626401 and 636401. Previous to super-exclusive registration little harvest came from these statistical areas: only three years from 1977–1994 had more than 5% of the total Norton Sound summer commercial red king crab harvest from these two statistical areas combined. Super-exclusive registration resulted in increased participation by local permit holders using small vessels fishing closer to shore and since 1996 the majority of the summer commercial red king crab harvest in most years has come from statistical areas 626401 and 636401. Subsistence fishermen expressed concern that the commercial harvest in the nearshore waters in the Golovin area caused depletions of local crab populations. Since the boundary change in 2002, harvest from statistical areas 626401 and 636401 has comprised the majority of the Norton Sound summer commercial red king crab harvest in 10 of 15 years.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this allocative proposal. Although the Norton Sound red king crab resource is considered a single crab stock there is concern, primarily from the public, that local depletions would impact less mobile subsistence fishermen. There are no data to support whether local depletions occur due to fishing or whether changes in abundance nearshore occur because of natural fluctuations in abundance, migration and distribution. The board should consider whether reasonable opportunities for success in harvesting crab for subsistence uses would still be provided if this proposal were adopted.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

SUBSISTENCE REGULATION REVIEW:

1. Is this stock in a non-subsistence area? No.
2. Is the stock customarily and traditionally taken or used for subsistence? Yes, the board made a positive customary and traditional use finding for all shellfish in the Bering Sea, including those waters draining into the Bering Sea (5 AAC 02.610).
3. Can a portion of the stock be harvested consistent with sustained yield? Yes.
4. What amount is reasonably necessary for subsistence uses? The board adopted an administrative ANS finding in December 1997 for Norton Sound-Port Clarence Area shellfish of 52,323 to 87,205 pounds.
5. Do the regulations provide a reasonable opportunity for subsistence uses? This is a board determination.
6. Is it necessary to reduce or eliminate other uses to provide a reasonable opportunity for subsistence use? This is a board determination.

PROPOSAL 246 – 5 AAC 02.607. Subsistence fishing gear; and 5 AAC 39.105. Types of legal gear.

PROPOSED BY: Charles Lean.

WHAT WOULD THE PROPOSAL DO? Add rakes as a legal gear type that can be used by subsistence harvesters north of the latitude of Cape Newenham.

WHAT ARE THE CURRENT REGULATIONS? The legal types of gear for subsistence fishing:

(1) gear specified in 5 AAC 39.105; (2) jigging gear which consists of a line or lines with lures or baited hooks which are operated during periods of ice cover from holes cut in the ice and which are drawn through the water by hand; (3) a spear which is a shaft with a sharp point or fork-like implement attached to one end, used to thrust through the water to impale or retrieve fish and which is operated by hand; (4) a lead which is a length of net employed for guiding fish into a seine or a length of net or fencing employed for guiding fish into a fish wheel, fyke net or dip net.

Subsistence fishing by the use of a line attached to a rod or pole is prohibited except when fishing through the ice in the Bering Sea Area.

In that portion of the area north of the latitude of Cape Newenham, shellfish may only be taken by shovel, jigging gear, pots and ring net.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Rakes would be a legal gear type to harvest king crab. Subsistence king crab harvest may increase by an unknown amount. Mortality would likely be minimal because crab can be seen in shallow waters and those that are caught and not retained will likely be quickly returned to the water and not be injured.

BACKGROUND: During winter and early spring king crab are often found in nearshore areas and can be pulled up through an ice hole or from a boat by rake. Harvest of king crab using rakes has been reported in the Klikitarik area, south of Unalakleet, during the spring when crabs are in shallow water.

DEPARTMENT COMMENTS: The department **SUPPORTS** adding rakes as a legal gear type. Spears are a legal gear type south of Cape Newenham and a rake could be used similar to a spear to retrieve crabs in shallow waters with less injury or mortality than may occur with a use of a spear.

COST ANALYSIS: Approval of this proposal may result in an additional direct cost for a private person to participate in this fishery if they wish to purchase a rake to use this gear type.

SUBSISTENCE REGULATION REVIEW:

1. Is this stock in a non-subsistence area? No.
2. Is the stock customarily and traditionally taken or used for subsistence? Yes, the board made a positive customary and traditional use finding for all shellfish in the Bering Sea, including those waters draining into the Bering Sea (5 AAC 02.610).

3. Can a portion of the stock be harvested consistent with sustained yield? Yes.
4. What amount is reasonably necessary for subsistence uses? The board adopted an administrative ANS finding in December 1997 for Norton Sound-Port Clarence Area shellfish of 52,323 to 87,205 pounds.
5. Do the regulations provide a reasonable opportunity for subsistence uses? This is a board determination.
6. Is it necessary to reduce or eliminate other uses to provide a reasonable opportunity for subsistence use? This is a board determination.

KODIAK AND SOUTH PENINSULA TANNER CRAB

PROPOSAL 247 – 5AAC 64.022. Waters; seasons; bag, possession, annual, and size limits; and special provisions for the Kodiak Area.

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? Repeals seasonal restrictions in the sport fishery that prohibit the take of Tanner crab in waters deeper than 25 fathoms 14 days before and 14 days after a commercial Tanner crab season in this area.

WHAT ARE THE CURRENT REGULATIONS? Tanner crab may be taken from January 1–December 31, except that from July 15–February 10, a person may not take Tanner crab in waters 25 fathoms or greater in depth during the periods 14 days before and 14 days after the commercial red king crab, blue king crab, or Tanner crab season. The bag and possession limit is six male crab, with a minimum carapace size of 5.5 inches.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This would allow the sport harvest of Tanner crab with gear set at any depth, year round, regardless of commercial Tanner crab fishing seasons in the area. Bag, possession and size limits would remain the same. In years when a commercial fishery does occur, there would be increased angler opportunity and potential increased harvest of sport-caught Tanner crab.

BACKGROUND: The current restrictions before and after a commercial Tanner crab season are intended to prevent preseason "prospecting" and illegal sale of sport-caught crab following closure of the fishery. Current regulations in commercial king and Tanner crab fisheries prohibit commercial operators from participating in Tanner crab sport fisheries within 14 days of a commercial season. Regulations for the commercial fishery also discourage the illegal sale of sport-caught crab by commercial vessels as they require delivery of their entire catch to processors within as little as 24 hours and no later than 72 hours following the close of the season and preseason hold inspections.

Sport fishing for Tanner crab in the Kodiak Area is conducted throughout the Kodiak Archipelago by means of pots and fishing generally occurs in waters deeper than 25 fathoms. In years when Tanner crab fisheries have occurred, anglers have been forced to pull their pots or move them into shallower waters for at least a month long period.

DEPARTMENT COMMENTS: The department submitted this proposal and **SUPPORTS** it with modification to align sport fishing and subsistence fishing regulations in this area, where the seasonal restrictions on pre and postseason subsistence Tanner crab fishing are in effect. Substitute language will be submitted during the 2017 Statewide King and Tanner meeting.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

PROPOSAL 248 – 5 AAC 65.010. Fishing seasons for Alaska Peninsula and Aleutian Islands Area.

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? Repeals seasonal restrictions in the sport fishery that prohibit the take of Tanner crab in waters deeper than 25 fathoms 14 days before and 14 days after a commercial Tanner crab season in this area.

WHAT ARE THE CURRENT REGULATIONS? Tanner crab may be taken from January 1–December 31, except that from July 15–February 10, a person may not take Tanner crab in waters 25 fathoms or greater in depth during the periods 14 days before and 14 days after the commercial red king crab, blue king crab, or Tanner crab season. The bag and possession limit is six male crab, with a minimum carapace size of 5.5 inches.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This would allow the sport harvest of Tanner crab with gear set at any depth, year round, regardless of commercial Tanner crab fishing seasons in the area. Bag, possession and size limits would remain the same. In years when a commercial fishery does occur, there would be increased angler opportunity and potential increased harvest of sport-caught Tanner crab.

BACKGROUND: The current restrictions before and after a commercial Tanner crab season are intended to prevent preseason "prospecting" and illegal sale of sport-caught crab following closure of the fishery. Current regulations in commercial king and Tanner crab fisheries prohibit commercial operators from participating in Tanner crab sport fisheries within 14 days of a commercial season. Regulations for the commercial fishery also discourage the illegal sale of sport-caught crab by commercial vessels as they require delivery of their entire catch to processors within as little as 24 hours and no later than 72 hours following the close of the season and preseason hold inspections.

Sport harvests of Tanner crab are conducted sporadically throughout the Alaska Peninsula and Aleutian Islands by means of pots and fishing generally occurs in waters deeper than 25 fathoms. In years when Tanner crab fisheries have occurred, anglers have been forced to pull their pots or move them into shallower waters for at least a month long period. Since concerns about 'prospecting' and illegal sale of sport-caught crab are addressed in commercial fishing regulations, current sport fishing regulations are unnecessarily restrictive.

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

PROPOSAL 249 – 5 AAC 35.525. Lawful gear for Registration Area J.

PROPOSED BY: William Dushkin, Paul K. Gunderson, and Ben Mobeck.

WHAT WOULD THE PROPOSAL DO? Lower the pot limit for the South Peninsula District commercial Tanner crab fishery to 20 pots per vessel and cap the total number of pots allowed in the fishery at 1,000 pots. While not directly specified in the proposal, the department interprets that if more than 50 vessels register for the fishery the 1,000 pot limit would be divided by the total number of vessels registered which would result in a pot limit of lower than 20 pots per vessel.

WHAT ARE THE CURRENT REGULATIONS? When the GHL is 2,000,000 pounds or less, the pot limit is 30 pots per vessel. When the GHL is greater than 2,000,000 pounds, the pot limit is 50 pots per vessel.

A vessel must be validly registered with the department before it may be used to take Tanner crab (5 AAC 35.020) and buoy tags are issued by the department to aid enforcement of pot limits (5 AAC 35.526).

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Depending on participation, effort, and the number of pots registered, this could lower daily harvest rates which may result in longer seasons and aid inseason fishery management.

Some vessel operators may opt out of the South Peninsula District Tanner crab fishery and fish other Tanner crab fisheries that have higher pot limits. Smaller vessels may benefit from longer seasons and less competition, although displaced South Peninsula District Tanner crab vessels would increase competition in other Tanner crab fisheries outside of the South Peninsula District.

BACKGROUND: Harvest of Tanner crab in the South Peninsula District first occurred in 1967. The fishery grew quickly, and by 1978/79 annual harvest peaked at approximately 8.7 million pounds. Annual harvest declined after the 1978/79 season and the fishery closed following the 1988/89 season due to low abundance and poor recruitment. The fishery reopened for the 2004/05 season and remained open through the 2012/13. Prior to the 2013/14 season estimated abundance fell below minimum regulatory thresholds necessary for a fishery opening. The fishery has remained closed since that time.

From 2004/05 through 2012/13, annual participation ranged from six to 56 vessels with an average of 28 vessels participating each year. The pot limit was 30 pots per vessel in all years, except 2010/11 the pot limit was 75 pots per vessel. The total number of pots in the fishery exceeded 1,000 during four seasons. The current pot limits were adopted at the March 2011 board meeting and two Tanner crab seasons have been prosecuted since that time, both with 30 pot limits (2011/12 and 2012/13; Table 249-1).

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this allocative proposal. Should this proposal be adopted, the department would require a preseason registration deadline to allow staff adequate time to calculate and issue the appropriate number of buoy tags prior to the season opening. Recommended preseason registration regulatory language will be submitted at the meeting, if necessary.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 249-1.–South Peninsula District Tanner crab GHL, pot limits, effort, harvest in pounds, and exvessel value, by year, 2002/03–2016/17.

		Pot	Number				Exvessel
Season	GHL	limit	Vessels	Pots	Landings	Pounds	value
2002/03			No commercial fishery				
2003/04			No commercial fishery				
2004/05	300,000	30	42	1,260	68	295,741	$492,176
2005/06	290,000	30	15	450	47	287,749	$348,092
2006/07	200,000	30	6	180	15	165,811	$130,330
2007/08	250,000	30	9	270	42	236,241	$237,330
2008/09	275,000	30	12	360	66	265,560	$346,455
2009/10	500,000	30	41	1,230	72	583,202	$827,527
2010/11	2,300,000	75	51	3,825	134	2,866,041	$6,622,701
2011/12	1,620,000	30	56	1,680	117	1,875,277	$3,844,652
2012/13	230,000	30	24	720	44	343,293	$751,588
2013/14			No commercial fishery				
2014/15			No commercial fishery				
2015/16			No commercial fishery				
2016/17			No commercial fishery				
Average	662,778	35	28	1,108	67	768,768	$1,511,206

BERING SEA KING AND TANNER CRAB

PROPOSAL 250 – 5 AAC 35.506. Area J registration.

PROPOSED BY: Alaska Bering Sea Crabbers, Central Bering Sea Fishermen's Association, City of St. Paul.

WHAT WOULD THE PROPOSAL DO? Allow fishermen to retain all legal sized male *Chioneocetes opilio* (snow) crab incidentally harvested when participating in the western (west of 166°W long) *C. bairdi* (Tanner) crab fishery.

WHAT ARE THE CURRENT REGULATIONS? A vessel operator participating in the *C.bairdi* Tanner fishery west of 166°W long. (WBT) may retain Bering Sea snow crab *C. opilio* (BSS) as incidental harvest not to exceed five percent of the weight of WBT reported on the department fish ticket.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Fishermen participating in the WBT fishery would be permitted to retain all incidentally caught legal sized male BSS crab, as long as they hold BSS IFQ or CDQ and the BSS season is open. Allowing full retention of snow crab during the WBT fishery may increase efficiency for some vessels and could promote less handling of snow crab during some years. However, a vessel registered for WBT and using WBT configured gear could simultaneously target snow crab which could confound observer coverage rates and data collection standards across the two fisheries.

Currently, incidental harvest of BSS in the WBT fishery is calculated by individual landing report using an equation that compares percent harvested of each species on a fish ticket. Without a limitation on the percentage of an incidental species retained, accurate calculations of directed and incidental catch within a fishery would be confounded and nearly impossible.

Fishery dependent data (total harvest, size frequencies of retained crab) are used in annual stock assessment models, which determine federal overfishing levels, acceptable biological catch levels, and other indicators of stock status. Pot gear configured for Tanner crab contains larger escape rings and/or mesh than permitted for snow crab pot gear (Table 250-1). Unlimited incidental harvest of snow crab would likely bias these fishery dependent data because the larger escape mechanisms in the Tanner pots would retain more large male snow crabs than if snow crab pots were used. As such, the model estimates of retained catch size composition or fishing selectivity could be misleading, and may impact model fit and/or interpretation of recommended model scenarios as well as inflate estimates of large male abundance. Furthermore, fishery performance data (CPUE) would be useless if the targeted species is unclear, or if the proportion of the targeted versus incidental species varied throughout a fishing trip.

It is unknown if incidentally caught crab would be purchased by processors. Processors may be unable, or unwilling, to convert production lines to accommodate incidental species. Alternatively, if processors are willing and able to purchase incidental harvest, they may require large loads be delivered, which would compound the issues associated with targeting snow crab with gear designed for Tanner crab.

BACKGROUND: Although both snow and Tanner crabs occur in the same geographical area, the fisheries differ in season dates, gear configuration, and stock assessments. Tanner crab in the Bering Sea is considered to be a single stock but prosecuted as two distinct fisheries in the Bering Sea District; divided east and west of 166°W long. in order to distribute effort across the stock's expansive distribution area. Fishermen can prosecute eastern Tanner crab (EBT) between 163°W long. and 166°W long. and WBT westward of 166°W long. except in a closure area surrounding the Pribilof Islands put in place to protect Pribilof blue king crab populations (Figure 250-1). Both Tanner crab fisheries are open October 15 through March 31. Snow crab is prosecuted as a single fishery in the Eastern Subdistrict west of 166°W long and Western Subdistrict of the Bering Sea District except in a closure area surrounding the Pribilof Islands (Figure 250-2). BSS is open from October 15 through May 15 east of 173°W long. and through May 31 west of 173°W long.

In the most recent three seasons, very few WBT deliveries included retained incidental BSS crab and incidentally caught BSS attributed very little to the overall fishery harvest. Of the incidental BSS retained in WBT, the majority of it is sold to the processors, albeit in very small amounts. Over the past three seasons, an average of 1 percent of the WBT deliveries (averaging 5 deliveries per season) also delivered incidental BSS but the rate of retention has increased from 0.01 percent in 2013/14 to 0.42 percent in 2015/16 (Table 250-2). Very few vessels are currently taking advantage of incidental retention and it is unknown how many vessels would take advantage if the retention rate limitations were lifted or how much crab would potentially be retained.

Regulations adopted by the board in 2008 specify that crab fishermen may only use legal crab pot gear according to 5 AAC 34.050 and 5 AAC 35.535. Legal Tanner crab pot gear must have at least one-third of one vertical surface of the pot composed of not less than 6 ¼ in stretched mesh webbing or no less than four circular escape rings of no less than 4 ½ in installed on a vertical surface no higher than one full mesh from the bottom of the pot. Legal gear for snow crab must be configured with at least eight escape rings (four rings on two sides) with an inside diameter of no less than four in installed on the verticals surface no higher than the first full mesh up from the bottom of the pot or have one half of one side composed of not less than 5 ¼ in stretched mesh webbing (Table 250-1).

Stock assessment models for Bering Sea Tanner crab and BSS fisheries are reviewed by the North Pacific Fisheries Management Council's Crab Plan Team. Bering Sea Tanner crab are assessed using a model structured on size, sex, shell condition, and maturity using data on magnitude and size-composition from the NMFS trawl survey, landings and discards in the directed fisheries, bycatch in Bristol Bay red king crab and BSS fisheries, and bycatch in groundfish fisheries. Stock assessment for BSS is based on size and sex structured model in which crab are categorized by maturity and shell condition. The model is fitted to abundance and size frequency data from the NMFS trawl survey data, retained and discarded directed fishery catch data, groundfish bycatch data, Bering Sea Research Foundation survey data, and discards in other crab fisheries. Observer coverage for BSS, EBT, and WBT varies according to data needs of the stock assessments. By regulation in BSS, 30 percent of the harvest must be observed, while in EBT and WBT observer coverage varies from 30 percent to 100 percent, according to the needs of the department and stock assessment authors. In the last three seasons

observer coverage for EBT and WBT has averaged 25 percent, in BSS coverage has averaged 28 percent of the total weight of crab harvested (Table 250-3).

In 2008, the board adopted changes to 5 AAC 35.506 that limited the incidental harvest of BSS in the WBT fishery to five percent in response to a department submitted proposal. The concerns expressed by the department in 2008 focused on crab being harvested with gear not designed to harvest that species of crab and the confusion and difficulty in catch accounting for incidentally harvested and target stocks in the absence of limitations. Retention rates for BSS in the WBT fishery since the 2008 regulation change have been minimal and have never reached the five percent limit. For the last three seasons incidental harvest of BSS in WBT has averaged 0.16 percent of the amount of directed Tanner crab (Table 250-4). Estimated bycatch using observer sample pot data show that over 99 percent of the BSS brought onboard during WBT is discarded (Table 250-5), with an assumed discard mortality rate of 30 percent according to the BSS stock assessment model.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal. In addition to catch accounting issues, capturing snow crab using gear designed for the Tanner fishery would cause data quality problems and could subsequently increase assessment model uncertainty. Furthermore, it is unknown to what level vessel operators would retain snow crab during the EBT fishery which confounds the department's ability to understand the full magnitude of potential effects. Overall, these factors impede the department's ability to manage the fishery using best available science.

Bycatch limits are a Category 3 management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.3.6).

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 250-1.–Escapement requirements for pot gear in the Bering Sea snow crab (BSS) and western Bering Sea Tanner crab (WBT) fisheries.

	Escapement Webbing		Escapement Rings		
Fishery	Dimensions (in)		Number	Dimensions (in)	Placement
WBT	6 ¼	OR	4	4 ½	1+ sides
BSS	5 ¼	OR	8	4	2+ sides

Table 250-2.–Disposition of incidentally harvested Bering Sea snow crab (BSS) in the western Bering Sea Tanner crab (WBT) fishery, 2013/14–2015/16.

	Deliveries		BSS			Incidental Sold		Incidental Deadloss		Incidental Personal Use	
Season	WBT Total	>50 pounds incidental WBT	Directed Pounds	Incidental Pounds	Incidental Proportion	Pounds	Proportion	Pounds	Proportion	Pounds	Proportion
2013/14	393	3	53,978,074	5,212	0.010%	4,973	95.4%	239	4.6%	0	0.0%
2014/15	533	1	67,939,253	2,334	0.003%	2,234	95.7%	100	4.3%	0	0.0%
2015/16	388	11	40,593,777	16,937	0.042%	15,807	93.3%	677	4.0%	453	2.7%

Table 250-3.–Observer and dockside sampling coverage (lb) and proportion of total harvest sampled for eastern Bering Sea Tanner crab (EBT), western Bering Sea Tanner crab (WBT), and Bering Sea snow crab (BSS) fisheries, 2013/14–2015/16.

Eastern Bering Sea Tanner

	Observer		Dockside		Unsampled		
Season	Pounds	Proportion of total catch	Pounds	Proportion of total catch	Pounds	Proportion of total catch	Total Harvest
2013/14	372,876	28.5%	704,254	53.8%	232,936	17.8%	1,310,066
2014/15	1,962,781	25.8%	3,994,324	52.5%	1,645,554	21.6%	7,602,659
2015/16	2,750,086	24.4%	7,943,197	70.5%	570,279	5.1%	11,263,562
Average		25.2%		62.7%		12.1%	

Western Bering Sea Tanner

	Observer		Dockside		Unsampled		
Season	Pounds	Proportion of total catch	Pounds	Proportion of total catch	Pounds	Proportion of total catch	Total Harvest
2013/14	398,737	32.9%	651,627	53.8%	159,868	13.2%	1,210,232
2014/15	1,116,954	24.1%	3,095,591	66.7%	426,208	9.2%	4,638,753
2015/16	2,056,157	24.5%	5,291,086	63.1%	1,031,573	12.3%	8,378,816
Average		25.1%		63.5%		11.4%	

Bering Sea snow crab

	Observer		Dockside		Unsampled		
Season	Pounds	Proportion of total catch	Pounds	Proportion of total catch	Pounds	Proportion of total catch	Total Harvest
2013/14	15,745,055	32.4%	30,490,618	62.8%	2,349,135	4.8%	48,584,808
2014/15	14,805,777	24.2%	41,324,887	67.6%	5,015,908	8.2%	61,146,572
2015/16	10,302,188	28.2%	24,042,069	65.8%	2,206,091	6.0%	36,550,348
Average		27.9%		65.5%		6.5%	

Table 250-4.–Directed western Bering Sea Tanner crab (WBT) catch with respect to incidentally harvested Bering Sea snow crab (BSS) in the WBT fishery, 2008/09–2015/16.

Fishery Season	WBT Directed Pounds	WBT Directed Number	WBT Directed Effort	BSS Incidental Pounds	BSS Incidental Number	BSS Incidental Effort	% BSS Incidental Pounds	% BSS Incidental Crab
2008/09	CF	CF	CF	-	-	-	0%	0%
2009/10	FC	FC	FC	-	-	-	0%	0%
2010/11	FC	FC	FC	-	-	-	0%	0%
2011/12	FC	FC	FC	-	-	-	0%	0%
2012/13	FC	FC	FC	-	-	-	0%	0%
2013/14	1,308,701	722,469	23,062	5,212	3,390	6,369	0.40%	0.47%
2014/15	5,222,067	3,121,442	68,695	2,334	1,891	7,737	0.04%	0.06%
2015/16	8,312,120	4,817,144	84,933	16,937	11,154	14,528	0.20%	0.23%

Note: CF = confidential, FC = fishery closed.

Table 250-5.–Retention numbers and proportions of Bering Sea snow crab (BSS) incidentally harvested in western Bering Sea Tanner crab (WBT) fishery, 2013/14−2015/16, in observer sample pots. Proportion of legal retained is with respect to the total number of legal male BSS crab in the sample pots.

Fishery Season	Legal Retained	Legal Not Retained	Total Legal	% Legal Retained
2013/14	1	6,463	6,464	0.02%
2014/15	-	39,472	39,472	0.00%
2015/16	204	52,148	52,352	0.39%

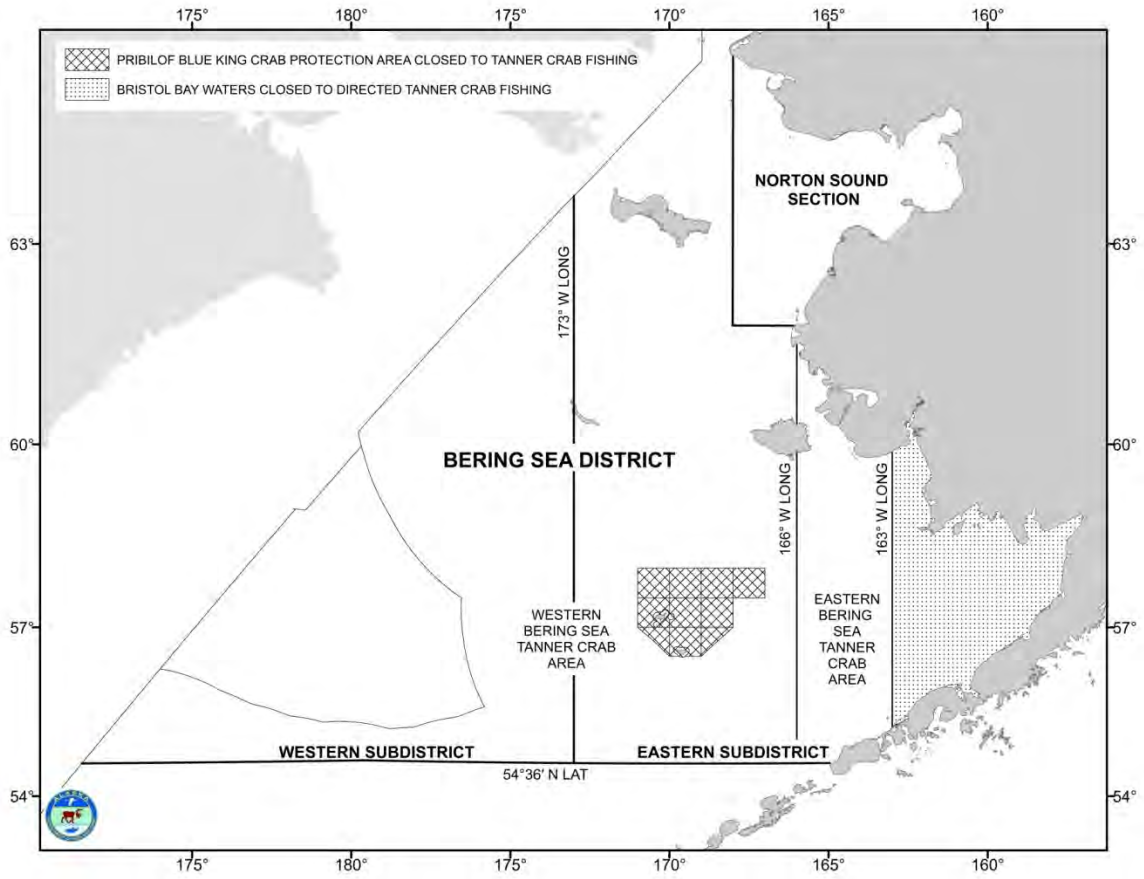

Figure 250-1.–Bering Sea District Tanner crab fishery management boundaries and 2016/17 Pribilof Islands blue king crab protection area.

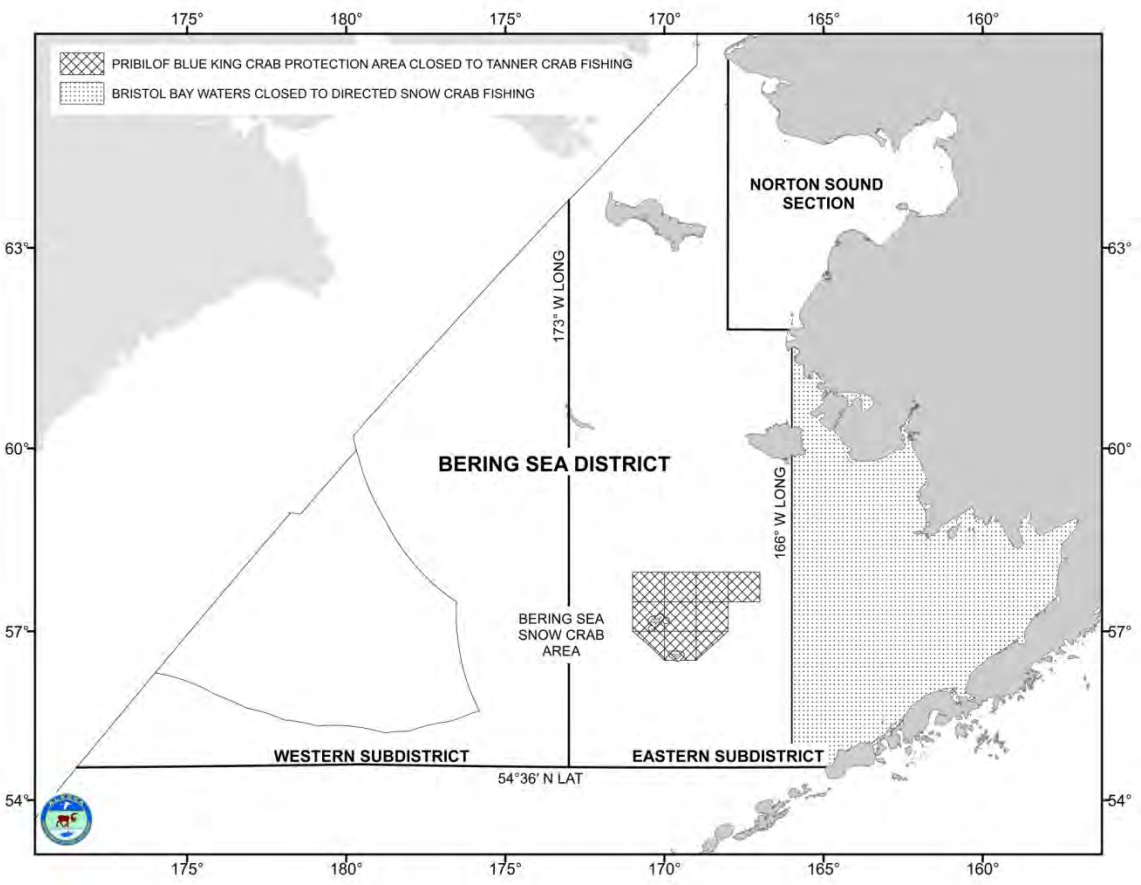

Figure 250-2.–Bering Sea District snow crab fishery management boundaries and 2016/17 Pribilof Islands blue king crab protection area.

PROPOSAL 251 – 5 AAC 35.510. Fishing seasons for Registration Area J.

PROPOSED BY: Alaska Bering Sea Crabbers, Central Bering Sea Fishermen's Association, City of St. Paul.

WHAT WOULD THE PROPOSAL DO? Change the regulatory closure date for *C. bairdi* Tanner crab west of 166°W long. from March 31 to April 15.

WHAT ARE THE CURRENT REGULATIONS? Male Tanner crab in the Bering Sea District may be taken from noon October 15 through 11:59 p.m. March 31.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? A later closure date may provide additional late season harvest opportunity for vessels targeting Tanner crab west of 166°W long as well as increase efficiency for vessels that target both Tanner and snow crab in the same season by offering more overlap across seasons. This could result in a disruption of the mating period for Tanner crab and result in higher mortality for reproductive female Tanner crab.

BACKGROUND: Tanner crab are prosecuted in the Bering Sea District of Registration Area J which includes all waters of the Bering Sea north of Cape Sarichef at 54°36′ N lat. and east of the U.S.-Russia Maritime Boundary Line of 1990 (Figure 251-1). The Bering Sea District is divided into the Eastern and Western Subdistricts at 173°W long. Tanner crab in the Bering Sea are considered to be a single stock but prosecuted as two distinct fisheries; divided east and west of 166°W long. in order to distribute effort across the stock's expansive distribution area. Fishermen harvest EBT between 163°W long. and 166°W long. and WBT westward of 166°W long. except in a closure area surrounding the Pribilof Islands put in place to protect Pribilof blue king crab populations. Currently, both Tanner crab fisheries are open October 15 through March 31 (Table 251-1).

Late-winter through early-spring are known times for Tanner crab mating, molting, and hatching in Alaska. In-fishery data gathered from observer sample pots in WBT and BSS fisheries indicates mate timing for this stock occurs during February and March. Female and male crab move to common areas for mating and an increase in the amount of female bycatch in the fishery is an indicator of crab gathering to mate. Over the last three seasons that WBT has been open, female bycatch in the WBT fishery increases as the season progresses and is generally highest in March (Figure 251-2). Bycatch of female Tanner crab in the separate BSS fishery over the last three seasons also peaks in February and March (Figure 251-3).

In order to minimize mortality and maintain healthy stocks during times of molting, mating, and hatching, the stock should be protected from the potential impacts of commercial fishing activities. The federal *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP) establishes a cooperative structure deferring management of Bering Sea and Aleutian Islands king and Tanner crab fisheries to the State of Alaska with federal oversight. The FMP mandates that fisheries should be closed during sensitive biological periods to protect crab from mortality caused by handling and stress when shells are soft, and to maximize meat recovery by delaying harvest until the shells have filled out. According to the 2016 Crab SAFE, the mortality rate of discarded Tanner crab in crab fisheries is assumed to be 32.1%.

The season dates for Bering Sea Tanner crab were established by the board when the Bering Sea-Aleutian Islands crab fisheries were rationalized in 2004/05. Minimal research exists on the mating and larval hatching period of Bering Sea Tanner crab. Much of what is known about the mating and hatching timing for Tanner crab comes from field and laboratory studies done in Kodiak and southeast regions of Alaska. Research indicates that April and May are known sensitive mating and hatching times for Tanner crab in Alaska. Grasping marks on females and egg extrusion (the presence of un-eyed eggs) are a signs that mating has recently occurred. In southeast Alaska, the quantity of females with fresh grasping marks and with freshly extruded eggs increases from early April to mid-May, with 90–100% of females exhibiting one or both signs by mid-May. Kodiak Tanner crab egg incubation (egg extrusion to larval hatching) ranges from 397 to 489 days. This approximately year-long incubation period would have crab that mated in one year, hatching their broods at approximately the same time the following year. Tanner crab females in Kodiak form hatching aggregations beginning mid-April and hatch larvae at the beginning of May. Decreases in the number of females in southeast Alaska with eyed embryos (eggs with eye spots) decreased from mid-April to mid-May, also indicating that the females crab hatch their broods during this time. Even though research has not taken place directly on Bering Sea stocks, it is assumed that most Tanner crab stocks across Alaska behave similarly.

In the most recent years when WBT has been open (2013/14–2015/16), fishermen have been able to achieve the majority of the total allowable catch (TAC). In 2013/14 and 2014/15 80.9% and 79.3% of the respective TACs were realized. In 2015/16, the full TAC was harvested (Table 251-2).

Bering Sea Tanner crab was declared overfished in 1999 because spawning biomass estimate from NMFS trawl survey was below the minimum stock size threshold specified in the FMP. The rebuilding plan was accepted by the NPFMC on October 1999. WBT was closed from 1997/98–2004/05, 2009/10–2012/13, and for the current 2015/16 season (Table 251-3). The stock is not currently considered to be overfished (2016 Crab SAFE).

DEPARTMENT COMMENTS: The department is **OPPOSED** to this proposal. Existing biological seasons are broad and designed to provide maximum opportunity while still protecting crab stocks during sensitive molting and mating cycles. Because some biological processes such as molting may vary with annual regimes, a later season date could have differing effects on the stock across years, which confounds quantifying the effects of this proposal. Although the amount of data that informs the existing season dates is relatively limited, there is no new data to suggest a change is warranted at this time.

Fishing seasons are a Category 2 management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.2.5). Category 2 management measures should be consistent with the criteria set out in the FMP and the National Standards (FMP Appendix B).

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 251-1.–Bering Sea District commercial Tanner (*C. bairdi*) crab fishery season dates and closures, 1990/91–2016/17.

Season	Location	Season length		
		Open	Closed	Days
1990/91	Eastern subdistrict			
	East of 166°W long	11/20/90	03/25/91	125
	West of 166°W long	01/15/91	03/25/91	69
1991/92	Eastern subdistrict			
	East of 166°W long	11/15/91	03/25/92	131
	West of 166°W long	11/24/91	03/25/92	122
1992/93	Eastern subdistrict	11/15/92		
	East of 163°W long.		03/15/93	120
	West of 163°W long		03/31/93	136
	Western subdistrict	11/15/92	03/31/93	136
1993/94	East of 168°W long[a]	11/01/93	11/10/93	9
	163° to 173°W long	11/20/93	01/01/94	42
1994/95	163° to 173°W long	11/01/94	11/21/94	20
1995/96	163° to 173°W long	11/01/95	11/16/95	15
1996/97	East of 168°W long[a]	11/01/96	11/05/96	4
	163° to 173°W long	11/15/96	11/27/96	12
1997/98–2004/05		FC	FC	NA
2005/06	163° to 166°W long[b]	FC	FC	NA
	West of 166°W long	10/15/05	03/31/06	167
2006/07	163° to 166°W long[b]	10/15/06	03/31/07	167
	West of 166°W long	10/15/06	03/31/07	167
2007/08	163° to 166°W long[b]	10/15/07	03/31/08	168
	West of 166°W long	10/15/07	03/31/08	168
2008/09	163° to 166°W long[b]	10/15/08	03/31/09	167
	West of 166°W long	10/15/08	03/31/09	167
2009/10	163° to 166°W long[b]	10/15/09	03/31/10	167
	West of 166°W long	FC	FC	NA
2010/11	163° to 166°W long[b]	FC	FC	NA
	West of 166°W long	FC	FC	NA
2011/12	163° to 166°W long[b]	FC	FC	NA
	West of 166°W long	FC	FC	NA
2012/13	163° to 166°W long[b]	FC	FC	NA
	West of 166°W long	FC	FC	NA
2013/14	163° to 166°W long[b]	10/15/13	03/31/14	167
	West of 166°W long	10/15/13	03/31/14	167
2014/15	163° to 166°W long[b]	10/15/14	03/31/15	167
	West of 166°W long	10/15/14	03/31/15	167
2015/16	163° to 166°W long[b]	10/15/15	03/31/16	168
	West of 166°W long	10/15/15	03/31/16	168

Note: NA = Not available. FC = Fishery closed.

[a] Concurrent with Bristol Bay red king crab fishery.

[b] Directed fishery open between 163° and 166°W long. Incidental harvest allowed in entire area east of 166°W long during Bristol Bay red king crab fishery; however, no incidental harvest allowed when the directed fishery is closed.

Table 251-2.–Bering Sea District commercial Tanner (*C. bairdi*) crab fishery proportion of TAC harvested, 2013/14–2016/17.

Season	Location[a]	Number of Vessels	Number of Landings	GHL/TAC	Harvest[b,c]	% Harvested
2013/14	East of 166°W long	30	74	1,463,000	1,456,357	99.5%
	West of 166°W long	64	225	1,645,000	1,330,488	80.9%
	Bering Sea District Total	66	299	3,108,000	2,786,845	89.7%
2014/15	East of 166°W long	42	143	8,480,000	8,450,485	99.7%
	West of 166°W long	58	226	6,625,000	5,253,942	79.3%
	Bering Sea District Total	64	367	15,105,000	13,704,427	90.7%
2015/16	East of 166°W long	49	202	11,272,000	11,263,562	99.9%
	West of 166°W long	62	240	8,396,000	8,378,816	99.8%
	Bering Sea District Total	70	442	19,668,000	19,642,378	99.9%
2016/17	FC	FC	FC	FC	FC	FC

Note: FC = fishery closed, CF = confidential, NA = not available.

[a] From 2005/06 to current the fishery is divided east and west of 166°W long, and harvest east of 163°W long is only allowed as incidental catch during the Bristol Bay red king crab fishery.

[b] Deadloss included.

[c] In pounds.

Table 251-3.–Bering Sea District commercial Tanner (*C. bairdi*) crab fishery data, 1993/94–2016/17.

Season	Location[a]	Number of Vessels	Number of Landings	GHL/TAC	Harvest[b,c]	Pots Registered	Pots Lifted	Average Weight[c]	Average CPUE[d]
1993/94	East of 168°W	285	350	10,700,000	4,134,529	NA	250,826	2.4	7
	163°W to 173°W	261	515	9,100,000	12,776,371	NA	325,963	2.3	17
	TOTAL	296	862	19,800,000	16,910,900	116,039	576,789	2.3	13
1994/95	163°W to 173°W	183	349	7,500,000	7,766,886	38,670	249,536	2.3	13
1995/96	163°W to 173°W	196	256	5,500,000	4,233,061	40,827	247,853	2.3	8
1996/97	East of 168°W	192	195	2,200,000	994,776	38,300	75,753	2.5	5
	163°W to 173°W	135	152	6,200,000	811,301	59,910	73,522	2.4	5
	TOTAL	196	347	8,400,000	1,806,077	68,602	149,275	2.5	5
1997/98 - 2004/05		FC	FC	FC	FC	FC	FC	FC	FC
2005/06	West of 166°W	43	87	1,620,000	952,887	545	31,717	2.2	14
2006/07	East of 166°W long	37	63	1,875,000	1,401,743	NA	27,982	2.4	21
	West of 166°W long	39	74	1,094,000	720,846	NA	28,140	2.1	12
	Bering Sea District Total	52	136	2,969,000	2,122,589	3,969	53,514	2.3	17
2007/08	East of 166°W long	20	65	3,445,000	1,582,858	NA	33,515	2.3	20
	West of 166°W long	34	59	2,176,000	523,796	NA	21,938	2.2	11
	Bering Sea District Total	41	124	5,621,000	2,106,654	4,458	55,453	2.3	17
2008/09	East of 166°W long	21	65	2,763,000	1,830,019	1,933	35,957	2.4	22
	West of 166°W long	42	CF	1,537,000	CF	CF	CF	CF	CF
	Bering Sea District Total	49	CF	4,300,000	CF	CF	CF	CF	CF
2009/10	East of 166°W long	17	51	1,350,000	1,324,578	1,673	16,770	2.7	29
	West of 166°W long	30	58	FC	3,778	FC	25,236	NA	<1
	Bering Sea District Total	41	109	1,350,000	1,328,356	1,673	42,006	2.7	12
2010/11	East of 166°W long	1	1	FC	1	FC	CF	NA	CF
	West of 166°W long	49	91	FC	2,544	FC	39,114	NA	<1
	Bering Sea District Total	49	92	FC	2,545	FC	39,332	NA	<1
2011/12	East of 166°W long	0	0	FC	0	FC	0	NA	NA
	West of 166°W long	56	178	FC	4,612	FC	68,526	NA	<1
	Bering Sea District Total	56	178	FC	4,612	FC	68,526	NA	<1
2012/13		FC	FC	FC	FC	FC	FC	FC	FC
2013/14	East of 166°W long	30	74	1,463,000	1,456,357	3,063	26,468	2.1	27
	West of 166°W long	64	225	1,645,000	1,330,488	2,593	68,526	1.8	6
	Bering Sea District Total	66	299	3,108,000	2,786,845	5,656	157,992	1.9	9
2014/15	East of 166°W long	42	143	8,480,000	8,450,485	7,086	87,875	1.9	50
	West of 166°W long	58	226	6,625,000	5,253,942	5,313	142,820	1.7	22
	Bering Sea District Total	64	367	15,105,000	13,704,427	12,399	230,695	1.8	33
2015/16	East of 166°W long	49	202	11,272,000	11,263,562	10,163	139,171	1.9	43
	West of 166°W long	62	240	8,396,000	8,378,816	6,875	145,638	1.7	33
	Bering Sea District Total	70	442	19,668,000	19,642,378	17,038	284,809	1.8	38
2016/17		FC	FC	FC	FC	FC	FC	FC	FC

Note: FC = fishery closed, CF = confidential, NA = not available.

[a] From 1974/75 through 1984/85, Bering Sea Tanner crab subdistricts were: Southeastern, Pribilof, and Northern (includes the Norton Sound and General Sections). From 1987/88 through 1992/93 harvest subdistricts were divided east and west of 173°W long. From 1993/94 through 1996/97 fishery east of 168°W long. is concurrent with the Bristol Bay red king crab fishery and the fishery from 163°W long. to 173°W long. is a directed Tanner crab fishery. From 2005/06 to current the fishery is divided east and west of 166°W long., and harvest east of 163°W long. is only allowed as incidental catch during the Bristol Bay red king crab fishery.

[b] Deadloss included.

[c] In pounds.

[d] Number of retained crab per pot lift.

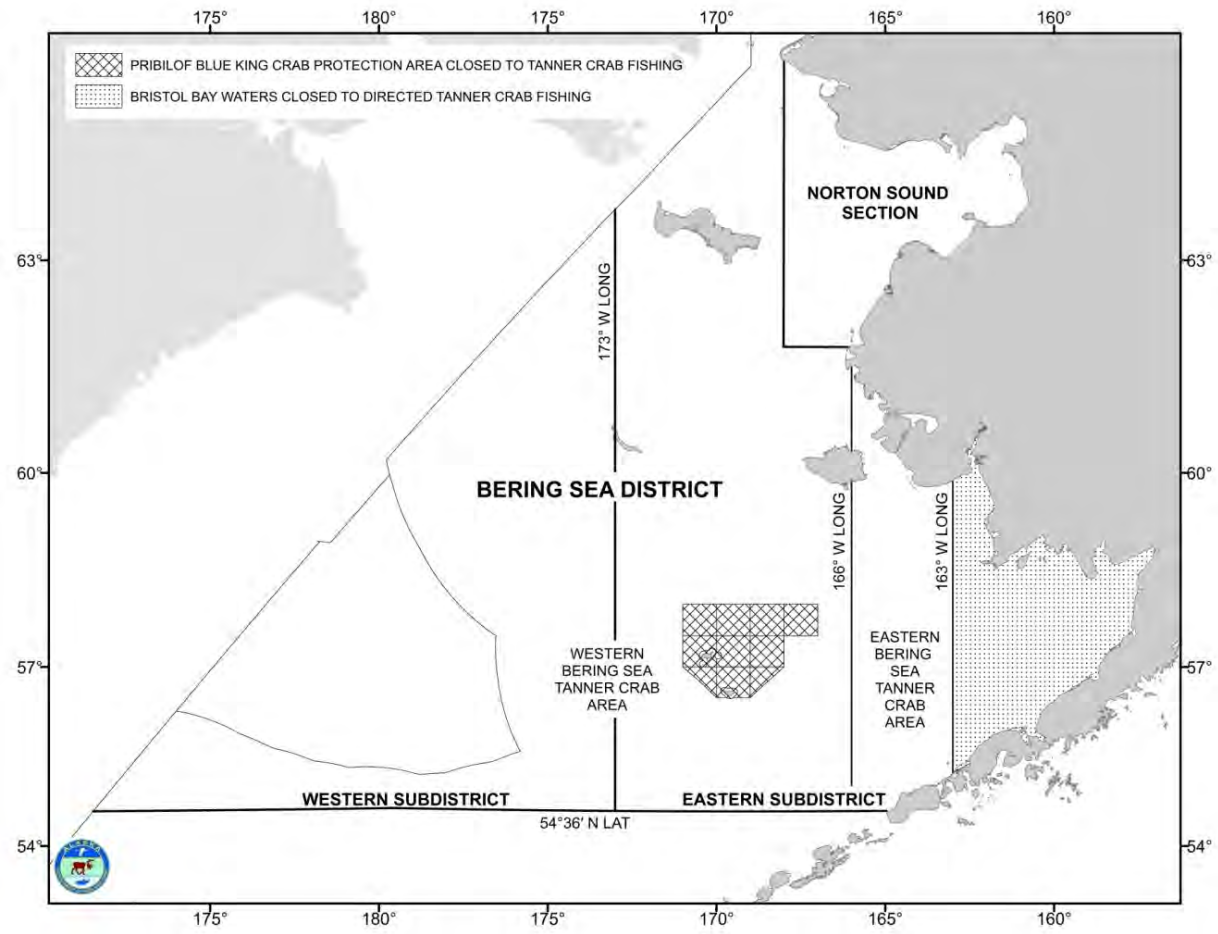

Figure 251-1.–Bering Sea District Tanner crab fishery management boundaries and 2016/17 Pribilof Islands blue king crab protection area.

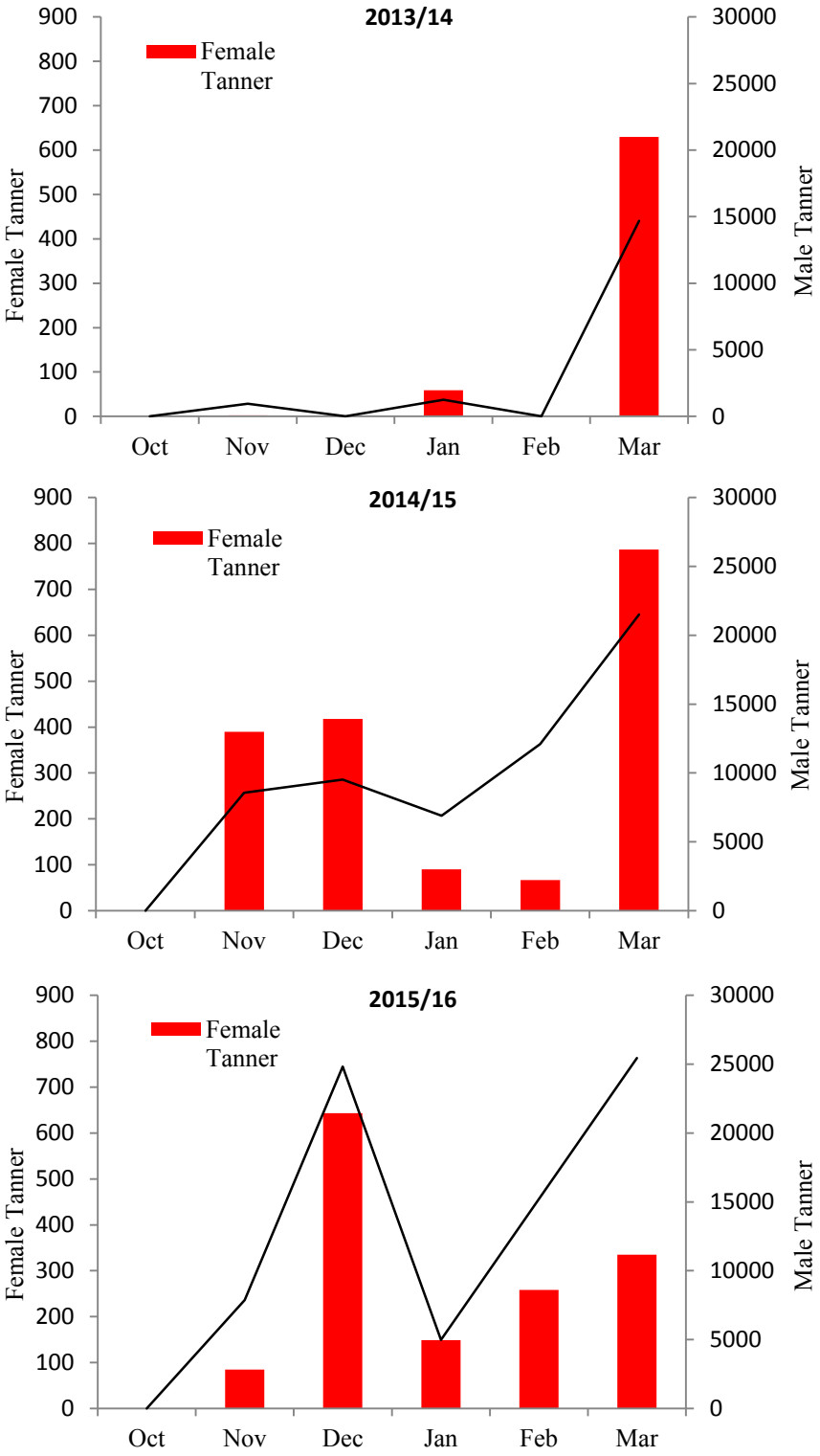

Figure 251-2.–Female Tanner crab bycatch (vertical bar) and legal male Tanner catch (solid line) by month in observer sample pots in the western Bering Sea Tanner crab fishery (WBT), 2013/14–2015/16. In 2013/14 the TAC was half of the calculated value.

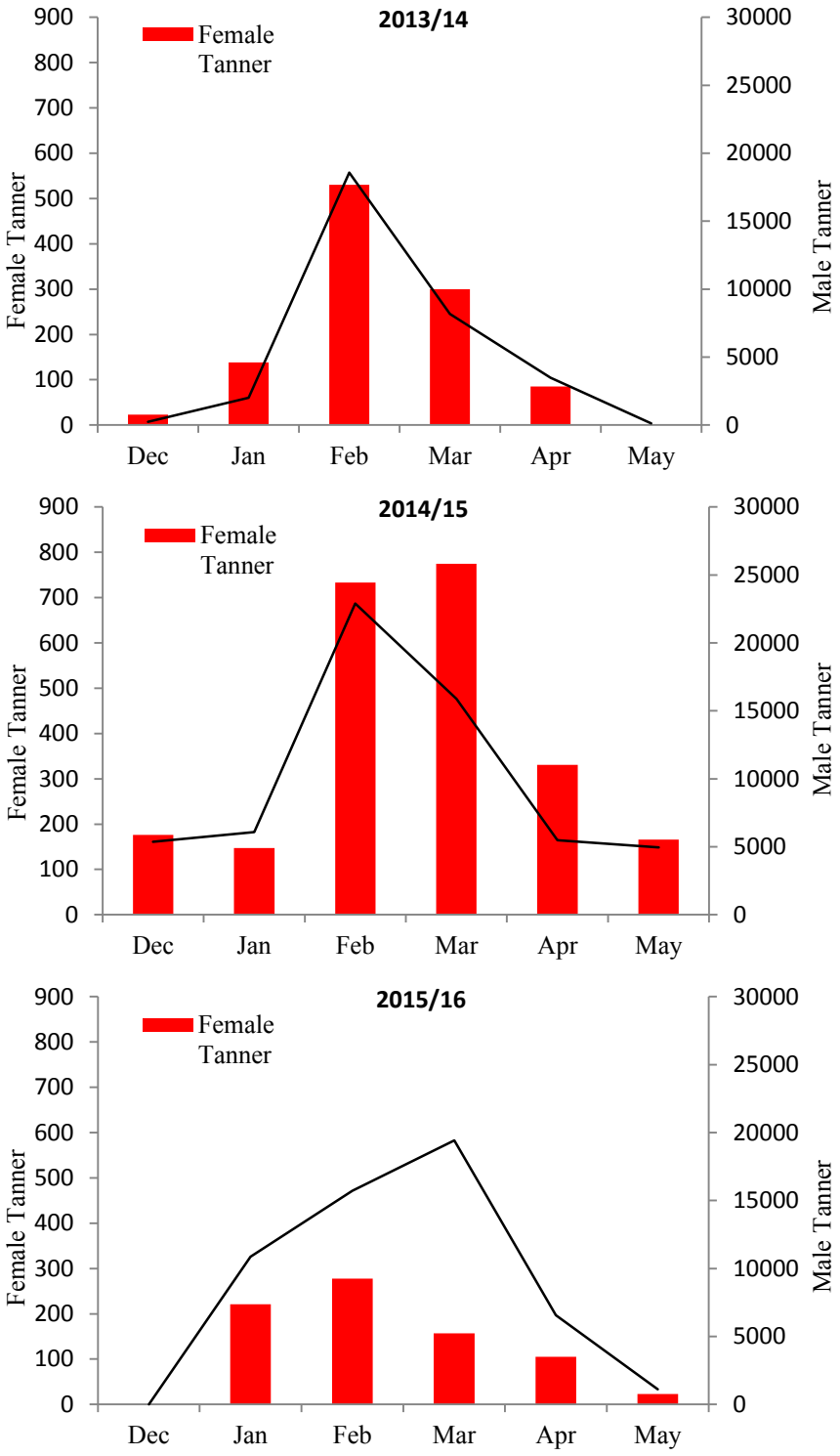

Figure 251-3.–Female (vertical bar) and male (solid line) Tanner crab bycatch by month in observer sample pots during the Bering Sea snow crab fishery (BSS), 2013/14–2015/16.

PROPOSAL 252 – 5 AAC 39.645 Shellfish onboard observer program.

PROPOSED BY: Alaska Bering Sea Crabbers.

WHAT WOULD THE PROPOSAL DO? Allow an observed catcher-vessel or catcher-processor participating in a rationalized crab fisheries to rig, bait, and set pot gear for a different rationalized crab fishery prior to fully exiting the fishery for which the vessel is currently registered and prior to registering for the fishery in which they are rigging and setting gear.

WHAT ARE THE CURRENT REGULATIONS? 5 AAC 39.670(3)(D) specifies that a vessel's crab pot gear may not be deployed unless the vessel is actively participating in harvesting the species in the applicable area. 5 AAC 39.670(3)(E) further specifies that in order to be considered active in an area, the vessels must be validly registered with the department and by VMS verification of the vessel in the registration area.

5 AAC 39.975 (22) defines "to operate fishing gear" as:

A. the deployment of gear or to have gear deployed in the waters of Alaska;
B. the removal of gear from the waters of Alaska;
C. the removal of fish or shellfish from the gear during an open season or period;

Additionally, 5 AAC 39.645(d)(1) and (4) state that for all vessels that process crab, an observer must be onboard for 100% of catcher-processor or floating processor activities in all areas of the Bering Sea (Area T, J, and Q) and Aleutian Islands (Area O). For the observer, 5 AAC 39.645(e) states that for catcher-processors, the observer must be briefed for the fishery in which the vessel is participating and that the observer must be onboard before the vessel obtains a tank inspection, before the vessel takes crab, and before the start and for the duration of all processing activities.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Increase efficiency and reduce costs for vessels that directly transition from one rationalized crab fishery to another rationalized crab fishery.

This proposal may result in increased observer sea days per trip to account for time spent switching gear to accommodate the subsequent fishery and time spent placing the gear in the new fishing location. Added sea days would have an associated increase in cost per trip at the given daily rate. Depending on the vessel type, this potential cost increase could result in an overall increase in federal and test-fish funding needed for observer coverage. This may result in delay or loss of coverage of another vessel due to a shortage in observer availability should an overall increase in observer sea days per trip occur.

There would be no known changes to the amount or quality of data collected.

BACKGROUND: This proposal would apply specifically to observed catcher-vessels the rationalized Bering Sea/Aleutian Islands crab fisheries. Rationalized crab fisheries are prosecuted with federal Individual Fishing Quota, Community Development Quota, Adak Community Development Quota.; a vessel must hold quota in order to participate. The fisheries affected by this proposal include:

- Bristol Bay red king crab;
- Aleutian Islands red king crab;
- Aleutian Islands golden king crab (east of 174°W long);
- Aleutian Islands golden king crab (west of 174°W long.);
- Saint Matthew Island Section blue king crab;
- Pribilof District red and blue king crab;
- Bering Sea snow crab;
- Bering Sea Tanner crab (east of 166°W long.);
- Bering Sea Tanner crab (west of 166°W long.).

For the last few seasons, fishermen have been requesting that on their last run through the gear for the fishery in which they are registered to be able to rig, bait, and reset their gear for the next fishery in which they plan to participate. This would allow for a 'town soak' while offloading the crab currently onboard, checking out of the fishery for which the vessel is currently registered, and registering for the next fishery. Allowing for a 'town soak' may save fishermen time and cost of fuel. They department has not allowed for this to happen to date since it is explicitly prohibited in regulation.

The department interprets that under provisions of this proposal a vessel would not be able to retrieve gear or retain any crab from the subsequent fishery prior to registering for and obtaining an observer briefed specifically for that fishery. Briefing an observer to collect data for two separate fisheries during the same trip would create significant logistical and data quality issues and the department would oppose this proposal should it allow vessels to do more than to rig, bait, and set pot gear.

Proposal 253 is a companion proposal and would provide the same opportunity for vessels without observers.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this proposal. Should the board approve this proposal the department recommends limiting its effects only to fisheries that have sufficient overlap to provide benefit.

Gear Placement and Removal is a Category 3 management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.3.2).

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

PROPOSAL 253 – 5 AAC 39.670. Bering Sea/Aleutian Islands Individual Fishing Quota (IFQ) Crab Fisheries Management Plan.

PROPOSED BY: Alaska Bering Sea Crabbers.

WHAT WOULD THE PROPOSAL DO? Allow a vessel participating in a rationalized crab fishery to rig, bait, and set pot gear for a different rationalized crab fishery prior to fully exiting the fishery for which the vessel is currently registered and prior to registering for the fishery in which they are rigging and setting gear.

WHAT ARE THE CURRENT REGULATIONS? 5 AAC 39.670(3)(D) specifies that a vessel's crab pot gear may not be deployed unless the vessel is actively participating in harvesting the species in the applicable area. 5 AAC 39.670(3)(E) further specifies that in order to be considered active in an area, the vessels must be validly registered with the department and by VMS verification of the vessel in the registration area.

5 AAC 39.975(22) defines "to operate fishing gear" as:

A. the deployment of gear or to have gear deployed in the waters of Alaska;
B. the removal of gear from the waters of Alaska;
C. the removal of fish or shellfish from the gear during an open season or period;

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Increase efficiency and reduce costs for vessels that directly transition from one rationalized crab fishery to another rationalized crab fishery.

BACKGROUND: This proposal would apply specifically to rationalized Bering Sea/Aleutian Islands crab fisheries. Rationalized crab fisheries are prosecuted with federal Individual Fishing Quota and Community Development Quota and a vessel must hold quota in order to participate. The fisheries affected by this proposal include:

- Bristol Bay red king crab;
- Aleutian Islands red king crab ;
- Aleutian Islands golden king crab (east of 174°W long.);
- Aleutian Islands golden king crab (west of 174°W long.);
- Saint Matthew Island Section blue king crab;
- Pribilof District red and blue king crab;
- Bering Sea snow crab;
- Bering Sea Tanner crab (east of 166°W long.);
- Bering Sea Tanner crab (west of 166°W long.).

For the last few seasons, fishermen have been requesting that on their last run through the gear for the fishery in which they are registered to be able to rig, bait, and reset their gear for the next fishery in which they will be participating. This would allow for a 'town soak' while offloading the crab currently onboard, checking out of the fishery for which the vessel is currently registered, and registering for the next fishery. Allowing for a 'town soak' may save fishermen

time and cost of fuel. They department has not allowed for this to happen to date since it is explicitly prohibited in regulation.

The department interprets that under provisions of this proposal a vessel would not be able to retrieve gear or retain any crab from the subsequent fishery prior to registering for and obtaining an observer briefed specifically for that fishery. Briefing an observer to collect data for two separate fisheries during the same trip would create significant logistical and data quality issues and the department would oppose this proposal should it allow vessels to do more than to rig, bait, and set pot gear.

Proposal 252 is a companion proposal and would provide the same opportunity for vessels carrying onboard observers.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this proposal. Should the board approve this proposal the department recommends limiting its effects only to fisheries that have sufficient overlap to provide benefit.

Gear Placement and Removal is a Category 3 management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.3.2).

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

PROPOSAL 254 – 5 AAC 35.521. Identification of Bering Sea Tanner crab.

PROPOSED BY: Alaska Bering Sea Crabbers.

WHAT WOULD THE PROPOSAL DO? For purposes of harvest and catch accounting, change the definition of a hybrid Tanner (*Chionoecetes spp.*) crab such that a hybrid crab, regardless of physical traits, would be attributed to whichever Tanner or snow crab fishery in which the vessel is actively registered.

WHAT ARE THE CURRENT REGULATIONS? Tanner crab are primarily identified as either a *Chionoecetes bairdi* Tanner or *C. opilio* snow crab according to 5 AAC 35.521 wherein a *Chionoecetes* crab with two red eyes and an 'M-shaped' epistomal margin is classified as a *C. bairdi* Tanner crab and all other *Chionoecetes* crab are considered *C. opilio* snow crab, including most hybrid *Chionoecetes* crab. Hybrid *Chionoecetes* crab are then accounted for in each respective fishery according to their primary legal identification and allowable retention in the corresponding fishery.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Retained hybrid *Chionoecetes* crab would be determined by the fishery in which the vessel is currently registered. Any hybrid *Chionoecetes* crab caught in the fishery would be counted toward the harvest in whichever fishery the vessel is registered such that there would be no 'biological' accounting for hybrids. Since hybrid crab would be lumped into a fishery's harvest with the Tanner and snow crab with no accounting, it would inflate fishery performance, potentially allowing for overestimating abundance which could lead to overharvesting.

Hybrids may be larger and heavier, or smaller and lighter, with respect to the target crab species. This size differentiation may influence assessment model retention curves used to set harvest limits. For example, in TAC calculations, when applying the selectivity curve to pure Tanner population abundance values by size class, the single selectivity curve (for both eastern and western Tanner, based on a common five in preferred size) represents the lower threshold of retention. Where this curve falls can change the proportion of crab subject to exploitation. There is a small gap in the east between legal (4.8 in) and preferred size (five in), but a larger gap in the west (4.4 in legal size and five in industry preferred size). If more hybrid crab within the 4.4 in to five in size group were retained in the west, it could shift the selectivity curve toward smaller crab and increase the exploitation rate overall by including a larger harvestable proportion of these crab to be used in TAC computation.

Current regulations define Tanner crab but lump all other *Chionoecetes* crab, including snow crab and hybrids, in to the snow crab legal definition. With no definition of snow crab in regulation, snow crab could be retained in the Tanner crab fishery under the umbrella of hybrid crab. Moreover, there is also an increased risk of retention of misidentified undersized Tanner crab in the snow crab fishery.

Fishermen targeting Tanner and snow crab often discard hybrids in an effort to comply with current regulations, avoid enforcement action, and increase efficiency. Reports from observers and vessel captains indicate large numbers of hybrid crab were rail-dumped over the past few seasons. Rail dumped crab are not recorded by fishery observers and therefore are not fully accounted for in the catch data. Moreover, discarding large numbers of hybrids selects for

hybrids in the Tanner and snow crab populations as hybrids are not being removed in the fishery. Over time this may result in more hybrid crab on the fishing grounds. This practice is in contrast to current regulations focused on protecting the pure Tanner and snow crab stocks and, in time, will decrease the effectiveness of stock assessments on pure Tanner and snow crab on which fishery management relies.

BACKGROUND: Both Tanner (*C. bairdi*) and snow (*C. opilio*) crabs are prosecuted in the Bering Sea District of Tanner crab Registration Area J which includes all waters of the Bering Sea north of Cape Sarichef at 54°36′ N lat. and east of the U.S.-Russia Maritime Boundary Line of 1990. The Bering Sea District is divided into the Eastern and Western Subdistricts at 173°W long. In 2008, the board modified regulations to split the single Tanner crab stock into two distinct fisheries in the Bering Sea District; divided east and west of 166°W long. in order to distribute effort across the stock's expansive distribution area. Fishermen harvest EBT between 163°W long. and 166°W long. and WBT westward of 166°W long. (Figure 254-1). BSS are prosecuted on the same grounds as WBT; westward of 166°W long. (Figure 254-2). There is no crab fishing in the closure area surrounding the Pribilof Islands established to protect Pribilof blue king crab populations.

Bering Sea Tanner crab (EBT and WBT) and BSS have overlapping distributions. Tanner crab was first harvested in 1968 incidental to red king crab in Bristol Bay. In 1974, a directed Tanner crab fishery began. In 1977/78 the first incidental catch of snow crab was reported incidental to Tanner crab directed harvest. Tanner population saw a sharp decline in 1978/79 that lasted several years leading to a closure of the Tanner crab fishery on 1986. As harvest of Tanner crab declined, effort increased in the snow crab fishery. The first directed harvest of snow crab occurred in the 1979/80 fishery. Hybrid *Chionoecetes* have been mentioned in nearly every Annual Management Report published since 1977. In January of 1992, the board adopted regulations that changed the legal definition of snow and Tanner crab in response to the courts dismissing a number of sublegal sized crab cases based unreliable identification based on eye color only regulations. The 1992 regulations stated that in addition to eye color, the shape of *Chionoecetes* mouth parts (epistomal margin) had been an effective characteristic in distinguishing Tanner, snow and *Chionoecetes* hybrid crab, and was therefore adopted.

Hybrid Tanner crab are assessed separately in the NMFS summer trawl survey although they are not classified in the same manner as the department; therefore NMFS trawl survey estimates and department sampling of hybrid crab are not comparable. Hybrid Tanner crab sampled by department personnel are first assessed according to 5 AAC 35.521, and are determined to be either a snow crab or Tanner crab; after the primary assessment, the crab are then evaluated for secondary hybrid characteristics. According to the NMFS summer trawl survey memo, "Tanner and snow crab hybrids are identified by a combination of characteristics including curve of the epistome margin, eye color, carapace shape, and space between or shape of the rostrum horns…". Additionally, in the NMFS survey assessment of Tanner crab, "…*Chionoecetes spp*. hybrid crab size classes for legal males and mature females are based on the size categories for snow crab…" which is ≥3.1 in (≥83 mm) CW. The size of legal male Tanner crab is ≥4.8 in CW in EBT and ≥4.4 in in WBT.

NMFS summer trawl survey over the last 4 years shows hybrids present at an average of 35% of the stations surveyed; average of 25% of the stations surveyed had legal males ≥3.1 in of those legal males approximate 61% of them were ≥4 in. Four-year average of estimated biomass of

male hybrids ≥3.1 in is approximately 17.6 million pounds (8,000 t). In the most recent 2016 survey, the estimated hybrid legal male biomass (males ≥3.1 in) was estimated to be 8.6 million pounds (3900 t; Table 254-1). Hybrid biomass, from the last four years of the trawl survey, is consistently spread throughout the Bering Sea mainly westward of 164°W long. (Figure 254-3). Even though hybrids have a wide expanse, they tend to be most concentrated around the Pribilof Islands (Figure 254-4).

Recent fishery data from the department's at sea observer and dockside sampling programs indicates hybrids in sample pots and in the retained catch are increasing overall. In the 2015/16 season, the highest rate of hybrid crab was observed in the BSS fishery at 4.65% of the total number of BSS crab sampled in the retained catch (Table 254-2).

Although hybrid Tanner crab are accounted for by their primary designation for the purposes of catch accounting and IFQ debiting, hybrid Tanner crab are not accounted for in any of the stock assessment models. Both department staff and North Pacific Fisheries Management Council crab plan team members have expressed concerns with targeting hybrid crab in the fisheries. Stock assessment authors noted that although hybrids are not accounted for in the stock assessments, they may represent a significant proportion of the overall snow and Tanner crab populations. If hybrids are retained but not accounted for in the stock assessment, which is used to set the ABCs and OFLs for these stocks, the productivity of the stock will be overestimated in the model.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal. The department acknowledges the difficulty of hybrid identification and supports a biologically applicable and consistent hybrid crab definition. To assist with this effort the department submitted and supports Proposal 260.

This proposal is classified as Other which is a Category 3 management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.3.8).

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 254-1.–Summary results for hybrid Chionoecetes crab in the NMFS summer trawl survey, 2013–2016.

Survey Year	No. of stations surveyed	No. stations with hybrids	Proportion of stations with hybrids	No. of stations with legal male hybrids (≥3.1 in)	Proportion of stations with legal male hybrids (≥3.1 in)	Est biomass legal male (≥3.1 in) (t ± 95% CI)	Proportion of legal sized males ≥4 in	Est biomass of legal sized male ≥4 in (t ± 95% CI)	Est biomass sublegal male (t ± 95% CI)	Est biomass mature females (t ± 95% CI)	Est biomass immature females (t ± 95% CI)
2013	376	145	39%	93	25%	9,898 ± 3,257	39%	5592 ± 1,930	2,512 ± 1,053	2,347 ± 899	56 ± 32
2014	376	146	39%	110	29%	12,408 ± 5,208	51%	8,557 ± 3,365	956 ± 751	2,454 ± 1,112	299 ± 380
2015	375	128	34%	88	23%	5,817 ± 1,851	76%	4,430 ± 1,579	NA	1,988 ± 1,175	104 ± 85
2016	375	102	27%	80	21%	3,894 ± 1,519	76%	2.977 ± 1,341	NA	1,356 ± 929	26 ± 17

Table 254-2.–Summary of in-fishery data dockside retained catch and at sea observer sample pots, 2013/14–2015/16. Upper panel shows data for hybrid Tanner crab in the EBT, WBT, and BSS fisheries. Center panel shows data for hybrid snow crab in the EBT, WBT, and BSS fisheries. Proportion of hybrids in the sample catch is with respect to the total number of sampled crab, by sampler type, in the respective fishery. Lower panel show number of individual crab measured in each respective fishery by sampler type.

Hybrid Tanner crab

	Eastern Bering Sea Tanner				Western Bering Sea Tanner				Bering Sea snow			
	Dockside		Observer		Dockside		Observer		Dockside		Observer	
Fishery	# hybrids	% hybrids	# hybrids	% hybrids	# hybrids	% hybrids	# hybrids	% hybrids	# hybrids	% hybrids	# hybrids	% hybrids
2013/14	0	0.00%	10	0.07%	0	0.00%	1	0.01%	8	0.05%	473	0.05%
2014/15	5	0.16%	33	0.03%	22	0.58%	87	0.13%	45	0.21%	329	0.05%
2015/16	39	0.39%	351	0.32%	56	1.02%	47	0.05%	24	0.15%	319	0.06%

Hybrid Snow crab

	Eastern Bering Sea Tanner				Western Bering Sea Tanner				Bering Sea snow			
	Dockside		Observer		Dockside		Observer		Dockside		Observer	
Fishery	# hybrids	% hybrids	# hybrids	% hybrids	# hybrids	% hybrids	# hybrids	% hybrids	# hybrids	% hybrids	# hybrids	% hybrids
2013/14	0	0.00%	1	0.01%	0	0.00%	6	0.03%	253	1.60%	1,300	0.15%
2014/15	1	0.03%	39	0.04%	90	2.29%	48	0.07%	1,058	4.60%	3,595	0.50%
2015/16	72	0.71%	17	0.02%	248	4.28%	4	0.00%	762	4.65%	1,251	0.23%

Total crab

	Eastern Bering Sea Tanner		Western Bering Sea Tanner		Bering Sea snow	
Fishery	Dockside	Observer	Dockside	Observer	Dockside	Observer
2013/14	1,203	15,023	979	18,685	15,769	884,114
2014/15	3,136	98,215	3,930	65,957	22,977	724,895
2015/16	10,083	109,815	5,792	88,135	16,395	535,170

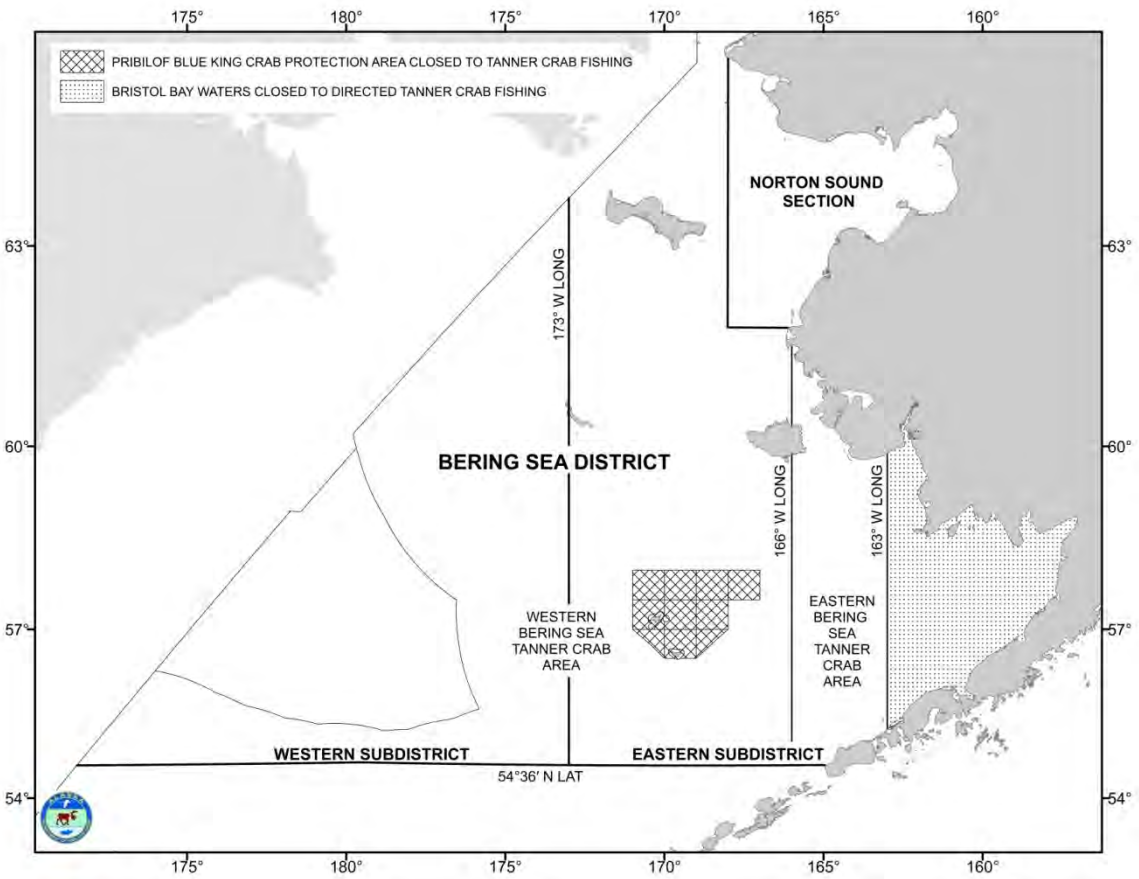

Figure 254-1.–Bering Sea District Tanner crab fishery management boundaries and 2016/17 Pribilof Islands blue king crab protection area.

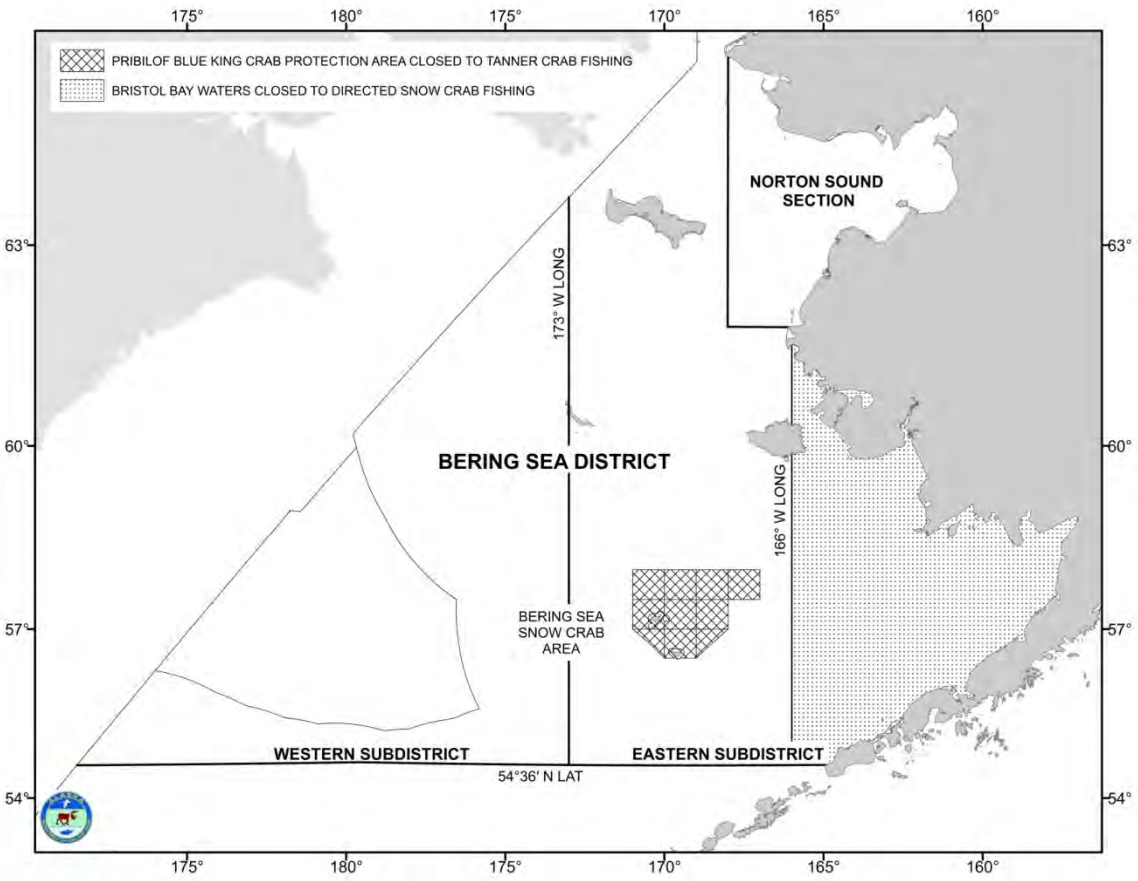

Figure 254-2.–Bering Sea District snow crab fishery management boundaries and 2016/17 Pribilof Islands blue king crab protection area.

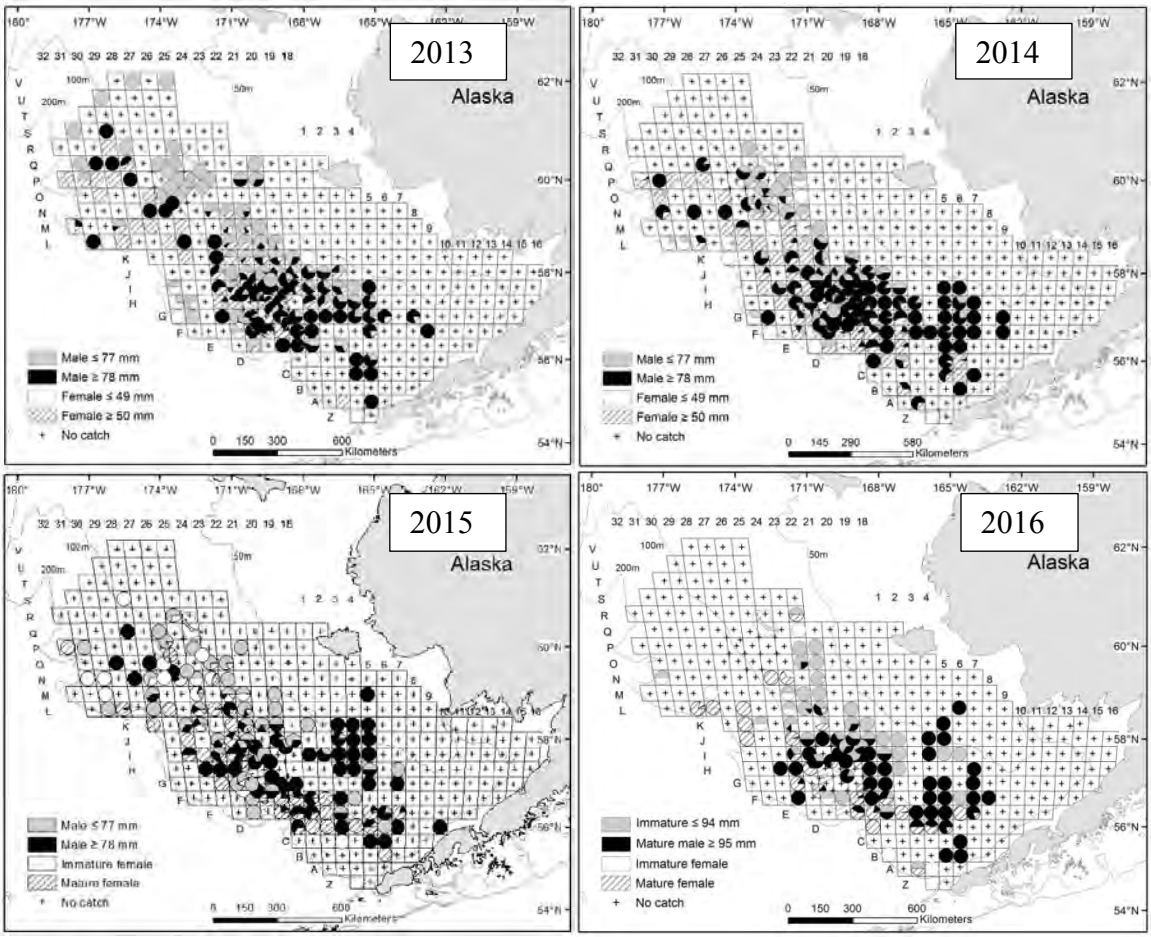

Figure 254-3.–Male, immature female, and mature female hybrid *Chionoecetes* crab distribution in the 2014 (upper left panel), 2014 (upper right panel), 2015 (lower left panel), 2016 (lower right panel) NMFS Bering Sea summer trawl survey. Maps excerpted from the respective NMFS trawl survey memos.

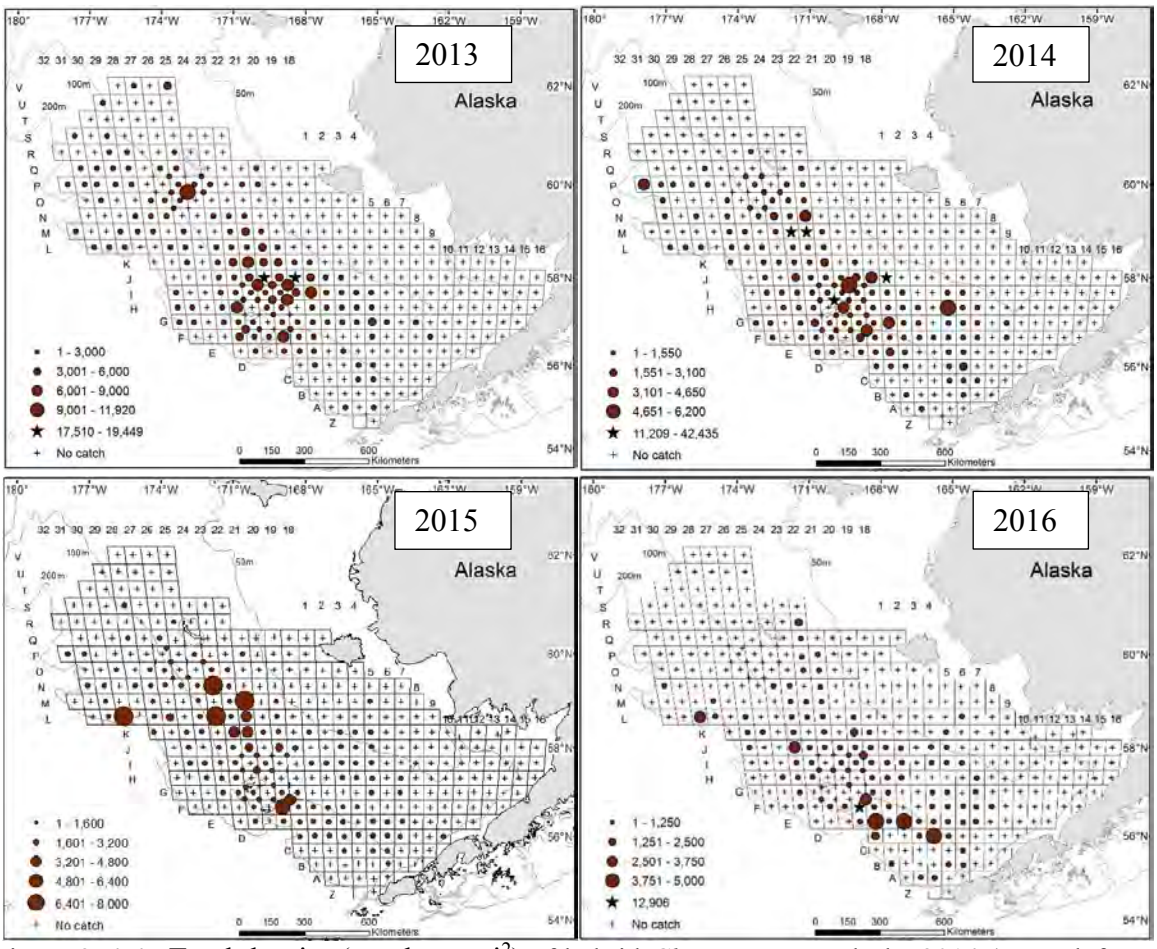

Figure 254-4.–Total density (number nmi^2) of hybrid *Chionoecetes* crab the 2014 (upper left panel), 2014 (upper right panel), 2015 (lower left panel), 2016 (lower right panel) NMFS Bering Sea summer trawl survey. Maps excerpted from the respective NMFS trawl survey memos.

PROPOSAL 255 – 5 AAC 35.506. Area J registration.

PROPOSED BY: Alaska Bering Sea Crabbers; Central Bering Sea Fisherman's Association; and the City of St. Paul.

WHAT WOULD THE PROPOSAL DO? Allow fishermen to retain all legal sized male *Chioneocetes opilio* (snow) crab incidentally harvested when participating in the eastern (east of 166°W long.) *C. bairdi* (Tanner) fishery.

WHAT ARE THE CURRENT REGULATIONS? Retention of incidentally taken snow crab in the eastern Bering Sea Tanner crab fishery (EBT; east of 166°W. long.) is not permitted per 5 AAC 39.670(c)(4) and 5 AAC 35.56(i) and (j) by omission.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Fishermen participating in EBT fishery would be permitted to retain all incidentally caught legal sized male snow crab, as long as they hold BSS IFQ or CDQ and the BSS season is open. Allowing full retention of snow crab during the EBT fishery may increase efficiency for some vessels and could promote less handling of snow crab during some years. However, a vessel registered for EBT and using EBT configured gear could simultaneously target snow crab which could confound observer coverage rates and data collection standards across the two fisheries.

Currently, incidental harvest of crab in a targeted fishery is calculated by individual landing report using an equation that compares at percent harvested of each species on a fish ticket. Without a limitation on the percentage of an incidental species retained, accurate calculations of directed and incidental catch within a fishery would be confounded and nearly impossible.

Fishery dependent data (total harvest, size frequencies of retained crab) are used in annual stock assessment models, which determine federal overfishing levels, acceptable biological catch levels, and other indicators of stock status. Pot gear configured for Tanner crab contains larger escape rings and/or mesh than permitted for snow crab pot gear (Table 255-1). Unlimited incidental harvest of snow crab would likely bias fishery dependent data as the larger escape mechanisms would disproportionally focus snow crab retention on the largest of the legal males As such, the model estimates of retained catch size composition or fishing selectivity could be misleading, and may impact model fit and/or interpretation of recommended model scenarios as well as inflate estimates of large male abundance. Furthermore, fishery performance data (CPUE) would be useless if the targeted species is unclear, or if the proportion of the targeted versus incidental species varied throughout a fishing trip.

In the fisheries that currently allow incidental retention, very few deliveries contained incidentally caught crab and those crab attributed very little to the overall fishery's harvest. Of the incidental crab retained, the majority is sold to processors, albeit in very small amounts. Very few vessels are currently taking advantage of incidental retention and it is unknown how many vessels would take advantage if retention of snow crab is allowed during the Tanner crab fishery or how much crab would potentially be retained, therefore the benefit to industry is unknown. Processors may be unable or unwilling to switch out their production lines to accommodate mixed stock loads. Alternatively, if processors are willing and able to purchase incidental harvest, they may require that large loads be delivered in order to make it worthwhile, which

would compound the issues associated with targeting snow crab with gear designed for Tanner crab.

BACKGROUND: Although both snow and Tanner crabs occur in the same geographical area, (Figure 255-1 and 255-2) the fisheries differ in season dates, gear configuration, and stock assessments. Tanner crab in the Bering Sea are considered to be a single stock but prosecuted as two distinct fisheries in the Bering Sea District; divided east and west of 166°W long. in order to distribute effort across the stock's expansive distribution area. Fishermen can prosecute EBT between 163°W long. and 166°W long. (Figure 255-1). Both Tanner crab fisheries are open October 15 through March 31 (Table 255-2). BSS is prosecuted as a single fishery in the Eastern Subdistrict west of 166°W long. and Western Subdistrict of the Bering Sea District except in a closure area surrounding the Pribilof Islands. BSS is open from October 15 through May 15 east of 173°W long. and through May 31 west of 173°W long.

Regulations adopted by the board in 2008 specify that crab fishermen may only use legal crab pot gear according to 5 AAC 34.050 and 5 AAC 35.535. Legal Tanner crab pot gear must have at least one-third of one vertical surface of the pot composed of not less than 6 ¼ in stretched mesh webbing or no less than four circular escape rings of no less than 4 ½ in installed on a vertical surface no higher than one full mesh from the bottom of the pot. Legal gear for snow crab must be configured with at least eight escape rings (four rings on two sides) with an inside diameter of no less than four in installed on the verticals surface no higher than the first full mesh up from the bottom of the pot or have one half of one side composed of not less than 5 ¼ in stretched mesh webbing (Table 255-1).

Bering Sea Tanner crab and BSS stock assessments are reviewed by the North Pacific Fisheries Management Council's Crab Plan Team. In part, each assessment is derived from fishery data collected from the unique fisheries. Bering Sea Tanner crab stock is assessed using a model structured on size, sex, shell condition, and maturity using data on magnitude and size-composition from the NMFS trawl survey, landings and discards in the directed fisheries, bycatch in Bristol Bay red king crab and BSS fisheries, and bycatch in groundfish fisheries. Stock assessment for BSS is based on size and sex structured model in which crab are categorized by maturity and shell condition. The model is fitted to abundance and size frequency data from the NMFS trawl survey data, retained and discarded directed fishery catch data, groundfish bycatch data, Bering Sea Research Foundation survey data, and discards in other crab fisheries. Observer coverage for BSS and EBT varies according to data needs of the stock assessments. By regulation, 30 percent of the BSS harvest must be observed, while in EBT observer coverage varies from 30 percent to 100 percent, according to the needs of the department and stock assessment authors. In the last three seasons observer coverage for EBT and WBT has averaged 25 percent, in BSS coverage has averaged 28 percent of the total weight of crab harvested (Table 255-2).

Data from observer sample pots in EBT, show an increasing trend in snow crab harvest in the Tanner crab fishery (Table 255-3). This could be due to changes in bottom conditions, movement of the snow crab population, increases in EBT TACs over the previous three seasons, or changes in fishing practices. Nearly all snow crab caught in EBT are discarded with an assumed discard mortality rate of 30 percent according to the 2016 crab SAFE. NMFS summer trawl survey snow crab data shows legal sized male crab are present just east of the 166°W long. boundary line (Figure 255-3) and that distribution has changed over the last three surveys. During the 2016

survey legal sized male snow crab were found much further south and in a much smaller area than the previous two surveys. Even though legal sized male snow crab are found east of 166°W long., the relative abundance with respect to the rest of the BSS stock, is fairly low (Figure 255-4).

While BSS is prosecuted in waters west of 166°W long., snow crab to the east of this boundary, on the EBT fishing grounds (between 163°W long. and 166°W long.), are not considered part of the BSS fishery (Figure 255-1 and 255-2).

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal. As with the other proposals addressing unlimited bycatch retention rates (Proposals 250 and 256), the department is concerned with crab being harvested with gear not designed to harvest that species of crab as well as accurate catch accounting for incidentally harvested and target stocks in the absence of limitations.

In the 2015/16 EBT fishery, there were several occurrences of illegally landed snow crab and many vessels received citations from AWT as a result. In an effort to assist fishermen in the identification Tanner and snow crab the department submitted Proposal 260 to better aid *Chionoecetes* crab identification. The department also submitted Proposal 261 to allow for retention of legal sized male snow crab up to five percent of the weight of EBT Tanner crab reported on the fish ticket. A five percent retention limit of legal sized males would allow some inadvertent incidental harvest during EBT without penalizing fishermen. The department is opposed to opening up the area east of 166°W long. which is currently closed by regulation to snow crab fishing in the directed fishery (i.e. moving the snow crab directed fishery boundary; proposals 257 and 258) however, it is recommended that an allowance for a small amount of incidental retention separate from the directed fishery be made, but counted towards the total BSS harvest.

Bycatch limits are a Category 3 management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.3.6). Should the board decide to move the snow crab boundary, it would be a TAC/GHL a Category 2 management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.2.4). Category 2 management measures should be consistent with the criteria set out in the FMP and the National Standards (FMP Appendix B).

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 255-1.–Escapement requirements for pot gear in the Bering Sea snow crab (BSS) and Bering Sea Tanner crab (WBT) fisheries.

	Escapement Webbing		Escapement Rings		
Fishery	Dimensions (in)		Number	Dimensions (in)	Placement
EBT/WBT	6 ¼	OR	4	4 ½	1+ sides
BSS	5 ¼	OR	8	4	2+ sides

Table 255-2.–Observer and dockside sampling coverage (lb) and proportion of total harvest sampled for eastern Bering Sea Tanner crab (EBT) and Bering Sea snow crab (BSS) fisheries, 2013/14−2015/16.

Eastern Bering Sea Tanner

	Observer		Dockside		Unsampled		
Season	Pounds	Proportion of total catch	Pounds	Proportion of total catch	Pounds	Proportion of total catch	Total Harvest
2013/14	372,876	28.5%	704,254	53.8%	232,936	17.8%	1,310,066
2014/15	1,962,781	25.8%	3,994,324	52.5%	1,645,554	21.6%	7,602,659
2015/16	2,750,086	24.4%	7,943,197	70.5%	570,279	5.1%	11,263,562
Average		25.2%		62.7%		12.1%	

Bering Sea snow crab

	Observer		Dockside		Unsampled		
Season	Pounds	Proportion of total catch	Pounds	Proportion of total catch	Pounds	Proportion of total catch	Total Harvest
2013/14	15,745,055	32.4%	30,490,618	62.8%	2,349,135	4.8%	48,584,808
2014/15	14,805,777	24.2%	41,324,887	67.6%	5,015,908	8.2%	61,146,572
2015/16	10,302,188	28.2%	24,042,069	65.8%	2,206,091	6.0%	36,550,348
Average		27.9%		65.5%		6.5%	

Table 255-3.–Observer sample pot data for legal sized male snow crab bycatch and total legal sized male Tanner crab sampled in eastern Bering Sea Tanner crab fishery (EBT), 2013/14–2015/16.

Fishery Season	Legal Snow Crab Retained	Legal Snow Crab Not Retained	Total Legal Snow Crab	Total Legal EBT
2013/14	-	97	97	12,885
2014/15	-	822	822	79,218
2015/16	15	28,192	28,207	81,216

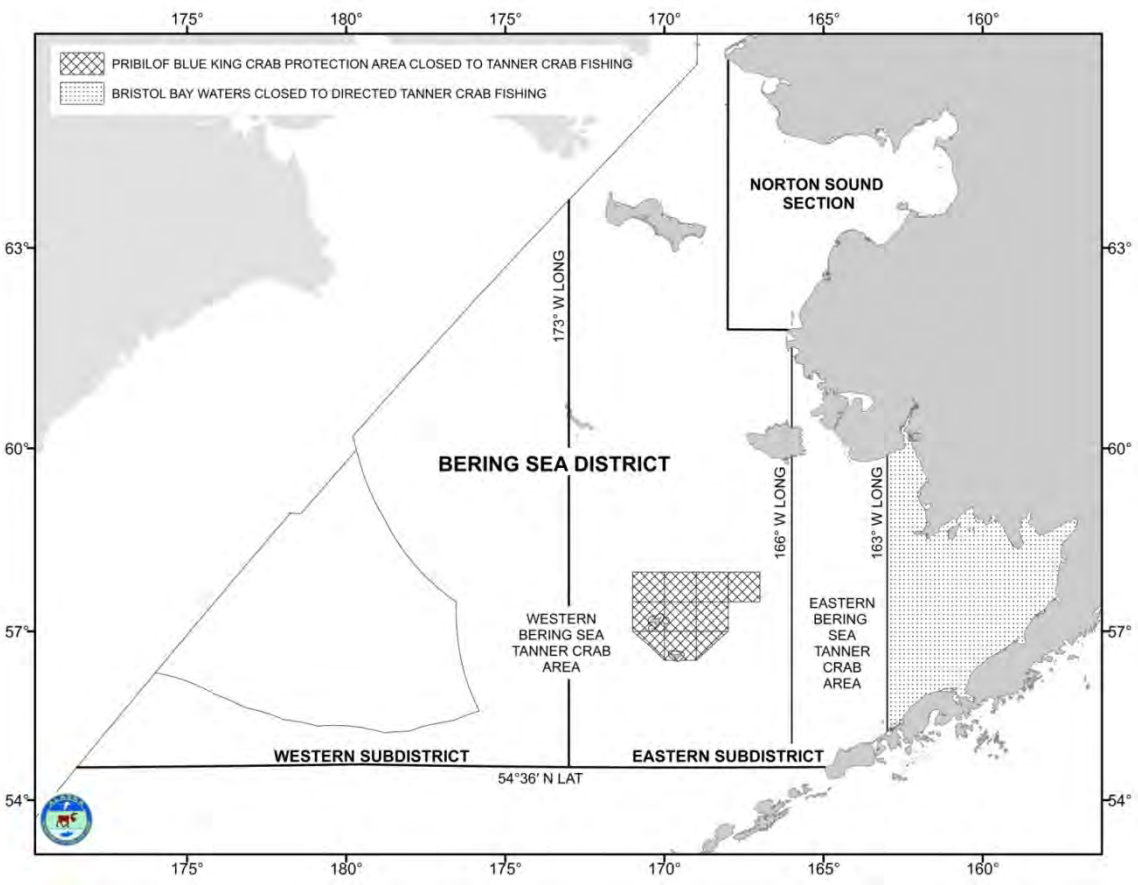

Figure 255-1.–Bering Sea District Tanner crab fishery management boundaries and 2016/17 Pribilof Islands blue king crab protection area.

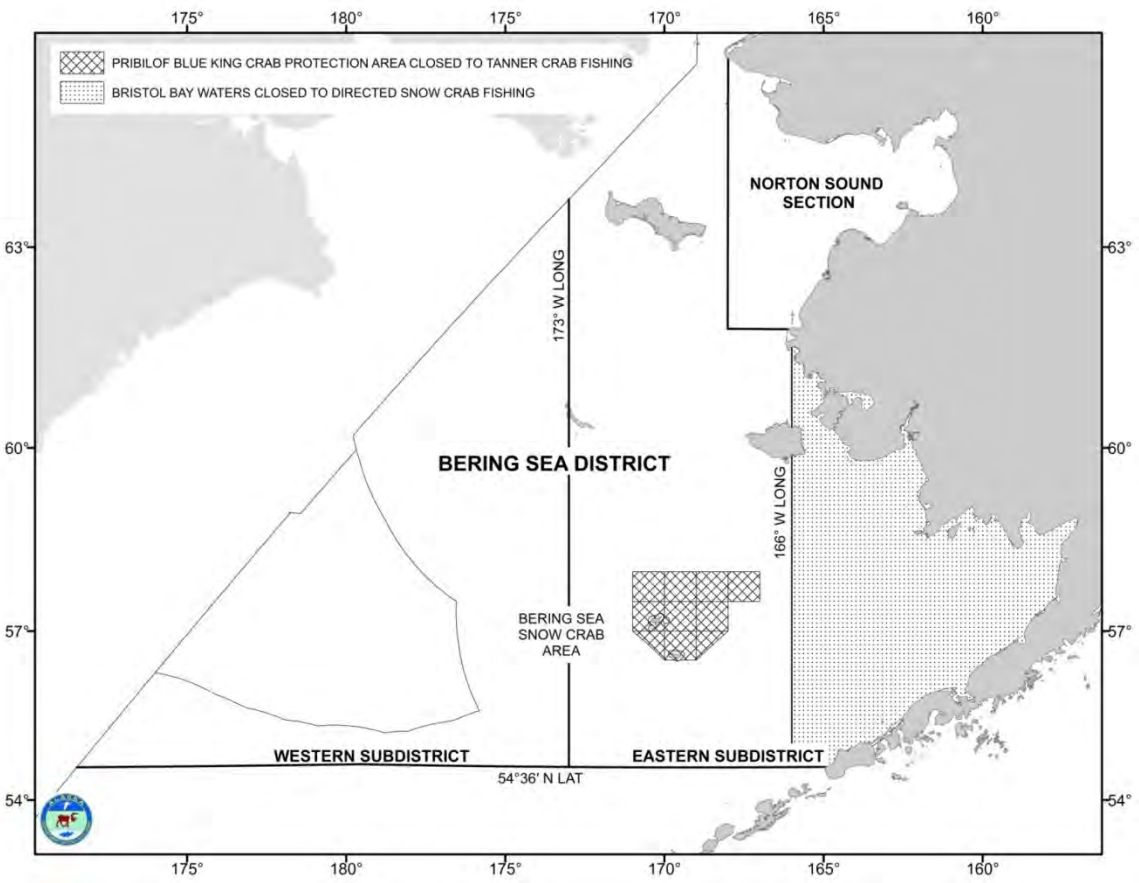

Figure 255-2.–Bering Sea District snow crab fishery management boundaries and 2016/17 Pribilof Islands blue king crab protection area.

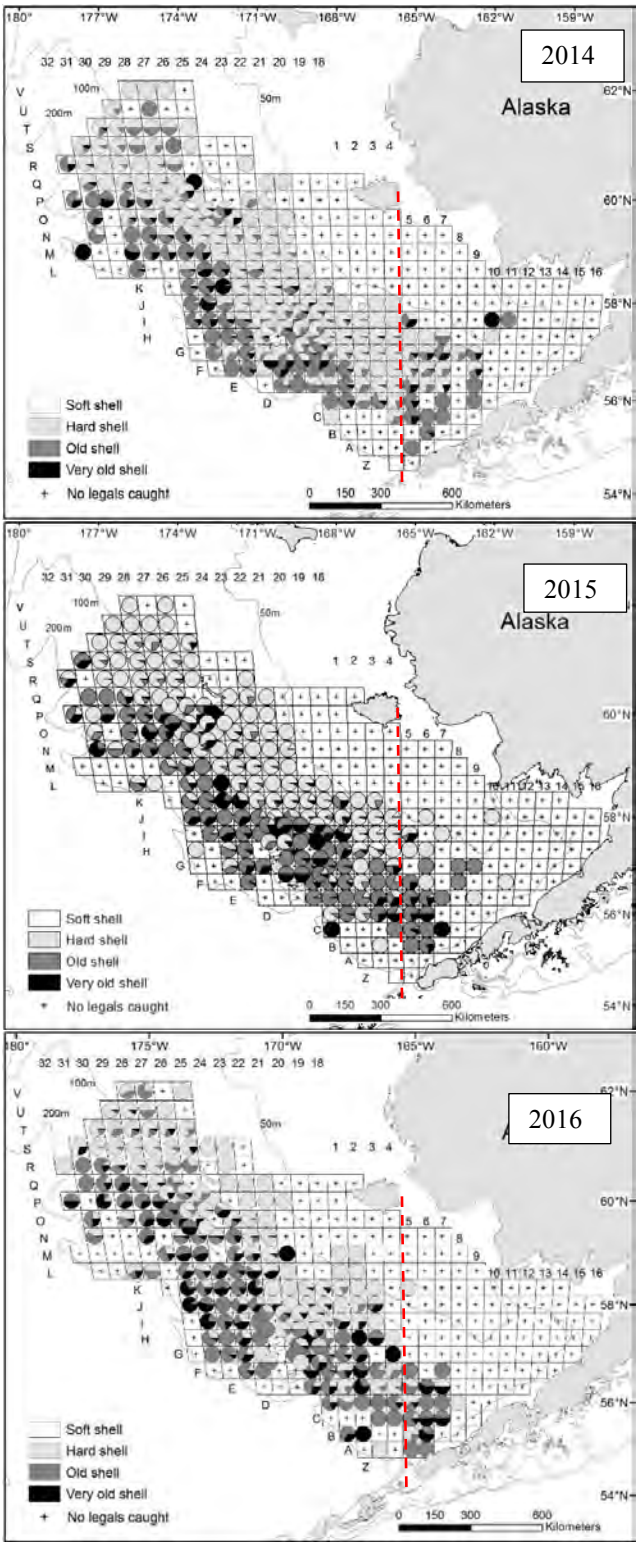

Figure 255-3.–Legal-sized male snow crab distribution in the 2014 (upper panel), 2015 (center panel), 2016 (lower panel) NMFS Bering Sea summer trawl survey. Maps excerpted from the respective NMFS trawl survey memos. The 166°W long. boundary shown by bold dashed line.

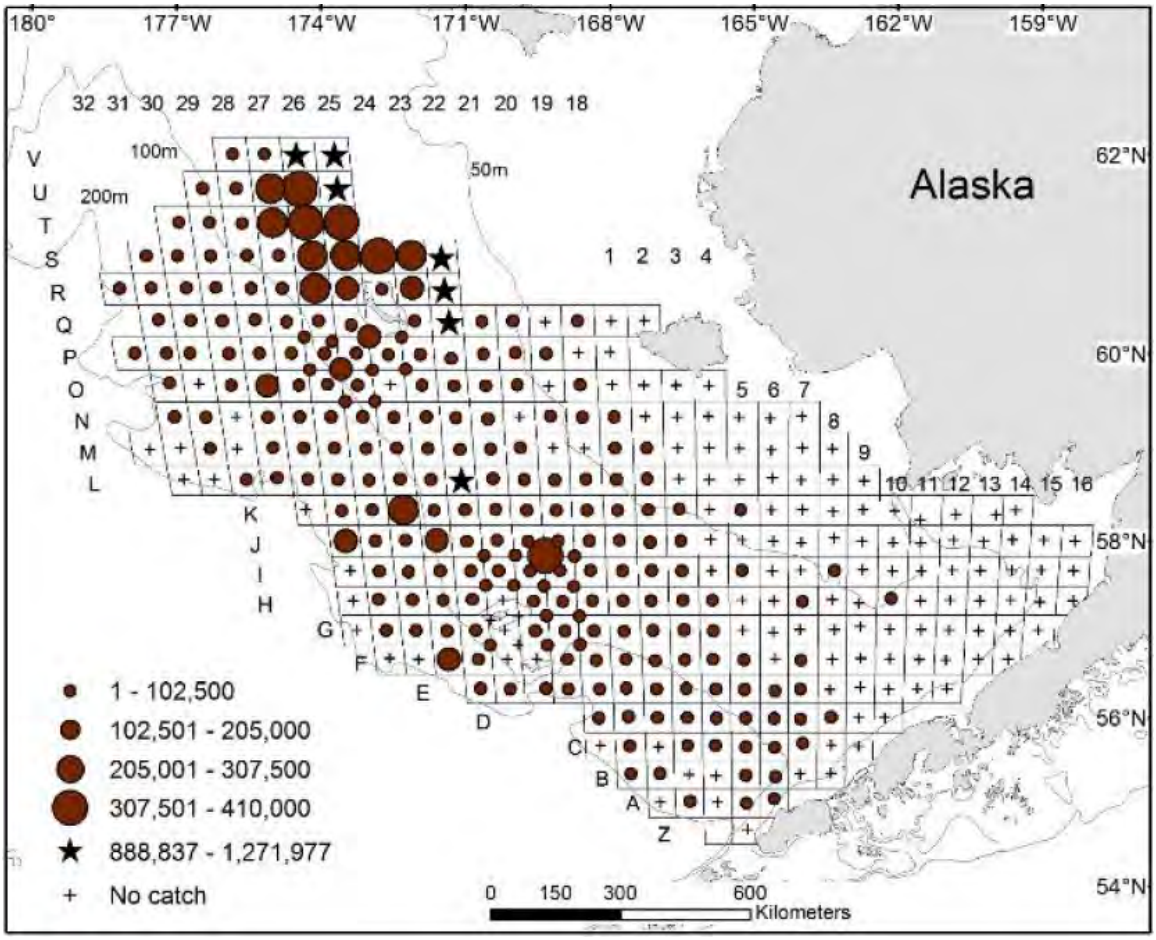

Figure 255-4.–Total density (number nmi^2) of snow crab for each survey station in the 2016 NMFS summer trawl survey. Taken from the 2016 NMFS summer trawl survey memo.

PROPOSAL 256 – 5 AAC 35.506. Area J registration.

PROPOSED BY: Alaska Bering Sea Crabbers, Central Bering Sea Fishermen's Association, City of St. Paul.

WHAT WOULD THE PROPOSAL DO? Allow fishermen to retain all legal sized male Tanner *Chioneocetes bairdi* crab incidentally harvested by vessels targeting Bristol Bay red king *Paralithodes camtschaticus* crab in the Bering Sea District east of 166°W long.

WHAT ARE THE CURRENT REGULATIONS? A vessel operator participating in the BBR fishery east of 166°W long. may retain eastern Bering Sea Tanner crab (EBT) as incidental harvest not to exceed five percent of the weight of BBR reported on the department fish ticket.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Fishermen participating in the BBR fishery would be permitted to retain all incidentally caught legal sized male EBT crab when fishing BBR between 163°W long. and 166°W long., as long as they hold EBT IFQ or CDQ and the EBT season is open. Allowing full retention of Tanner crab during the BBR fishery may increase efficiency for some vessels and could promote less handling of Tanner crab during some years. However, a vessel registered for BBR and using BBR configured gear could simultaneously target EBT crab which could confound observer coverage rates and data collection standards across the two fisheries.

Currently, incidental harvest of EBT in the BBR fishery is calculated by individual landing report using an equation that compares the weight ratio harvested of each species on a fish ticket. Without a limitation on the percentage of an incidental species retained, accurate calculations of directed and incidental catch within a fishery would be confounded and nearly impossible.

Fishery dependent data (total harvest, size frequencies of retained crab) are used in annual stock assessment models, which determine federal overfishing levels, acceptable biological catch levels, and other indicators of stock status. Pot gear configured for king crab contains larger escape rings and/or mesh than permitted for Tanner crab pot gear (Table 256-1). Unlimited incidental harvest of Tanner crab would likely bias fishery dependent data as the larger escape mechanisms would promote retention of large Tanner crab and would disproportionally focus the Tanner crab harvest on the largest of the legal males. As such, the model estimates of retained catch size composition or fishing selectivity could be misleading, and may impact model fit and/or interpretation of recommended model scenarios as well as inflate estimates of large male abundance. Furthermore, fishery performance data (CPUE) would be useless if the targeted species is unclear, or if the proportion of the targeted versus incidental species varied throughout a fishing trip.

In the most recent three seasons, very few BBR deliveries included retained incidental EBT crab and incidentally caught EBT attributed very little to the overall fishery harvest. Of the incidental EBT that is retained in BBR, the majority of it is sold to processors, albeit in very small amounts. Over the past three seasons, an average of three percent of the BBR deliveries (averaging six deliveries per season) also delivered incidental EBT but the rate of retention has decreased from six percent in 2013/14 to one percent in 2015/16 (Table 256-2). Very few vessels are currently taking advantage of incidental retention and it is unknown how many vessels would take advantage if the retention rate limitations were lifted or how much crab could potentially be

retained. Since the equipment and cook times used to process king crab are much different than used for Tanner and snow crab, processors may be unable, or unwilling, to switch out their production lines on a per delivery basis. Alternatively, if processors are willing, and able, to purchase incidental harvest, they may require that large loads be delivered in order to make it worthwhile, which would compound the issues associated with targeting Tanner crab with gear designed for king crab.

BACKGROUND: Both red king and Tanner crabs are prosecuted in Bristol Bay region of king crab Registration Area T. Registration Area T includes all waters of the Bering Sea south of Cape Newenham at 58°39′ N lat., north of Cape Sarichef at 54°36′ N lat. and east of 168°W long., including all waters of Bristol Bay. EBT are prosecuted in the Eastern Bering Sea District of Tanner crab Registration Area J which includes waters of the Bering Sea north of Cape Sarichef at 54°36′ N lat. and in between 163° N long. and 166° N long.(Figure 256-1). Within the BBR fishing grounds, Tanner crab can only be legally harvested between 163° N long. and 166° N long., incidental harvest of EBT crab outside of those boundaries is not permitted (Figure 256-1).

The first reported U.S. harvest of Tanner crab was reported in 1968, incidental to the Bristol Bay red king crab fishery. Both BBR (Table 256-3) and EBT (Table 256-4) fisheries have histories of closures due to low abundance. Currently, neither fishery is overfished. BBR opened for the 2016/17 season with a TAC of 8.469 million pounds. EBT is closed for the 2016/17 season due to low abundance. Thus, this proposal would only benefit fishermen during years when both the BBR and EBT fisheries are open.

Regulations adopted by the board in 2008 specify that crab fishermen may only use legal crab pot gear according to 5 AAC 34.050 and 5 AAC 35.535. Legal Tanner crab pot gear must have at least one-third of one vertical surface of the pot composed of not less than 6 ¼ in stretched mesh webbing or no less than four circular escape rings of no less than 4 ½ in installed on a vertical surface no higher than one full mesh from the bottom of the pot. Comparatively, legal red king crab crab pot gear must have at least one-third of one vertical surface of the pot composed of not less than nine inch stretched mesh webbing. Escape rings are not permitted in the BBR fishery. (Table 256-1).

In 2008, the board adopted changes to 5 AAC 35.506 that limited the incidental harvest of EBT in the BBR fishery to five percent in response to a department submitted proposal. The concerns expressed by the department in 2008 focused on crab being harvested with gear not designed to harvest that species of crab and the confusion and difficulty in catch accounting for incidentally harvested and target stocks in the absence of bycatch limitations. Retention rates for EBT in the BSS fishery since the 2008 regulation change have been minimal and have never reached the five percent limit (Table 256-5). Fishery data from the last eight seasons shows the highest retention rate of 0.25 percent the year following the regulation change. In the most recent three fishing seasons, retention of incidental EBT in the BBR fishery averaged 0.09 percent (Table 256-5). Estimation of EBT bycatch using observer sample pot data from the most recent three seasons show that, on average, 95 percent of the legal sized male EBT crab brought onboard during BBR is discarded; for 2015/16, 89 percent of the legal sized male EBT crab brought onboard during BBR was discarded (Table 256-6), with an assumed discard mortality rate of 50 percent according to the NPFMC Crab Plan Team Tanner crab stock assessment model.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal. In addition to catch accounting issues, capturing Tanner crab using gear designed for the red king crab fishery would result in data quality issues and could subsequently increase assessment model uncertainty. Furthermore, it is unknown to what level vessel operators would retain Tanner crab during the red king crab fishery which confounds the department's ability to understand the full magnitude of potential effects. Overall, these factors impede the department's ability to manage the fishery using best available science

Bycatch Limits are a Category 3 management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.3.6).

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 256-1.–Escapement requirements for pot gear in the Bristol Bay red king crab (BBR) and eastern Bering Sea Tanner crab (EBT) fisheries.

	Escapement Webbing		Escapement Rings		
Fishery	Dimensions (in)		Number	Dimensions (in)	Placement
BBR	9		Not Permitted		
EBT	6 ¼	OR	4	4 ½	1+ sides

Table 256-2.–Disposition of incidentally harvested eastern Bering Sea Tanner crab (EBT) in the BBR fishery, 2013/14–2015/16.

	Deliveries		EBT			Incidental Sold		Incidental Deadloss		Incidental Personal Use	
Season	BBR Total	>50 Pounds Incidental EBT	Directed Pounds	Incidental Pounds	Incidental Proportion	Pounds	Proportion	Pounds	Proportion	Pounds	Proportion
2013/14	134	8	1,442,420	13,937	1.0%	12,376	88.8%	335	2.4%	1,226	8.8%
2014/15	198	6	8,442,125	8,360	0.1%	7,919	94.7%	135	1.6%	306	3.7%
2015/16	270	3	11,260,586	2,976	0.0%	2,922	98.2%	54	1.8%	0	0.0%

Table 256-3.–Bristol Bay red king crab (*Paralithodes camtschaticus*) fishery data, 1990–2015/16.

		Number of				Number of Pots		Average	
Season	Fishery	Vessels	Landings	GHL/TAC[a]	Harvest[a,b]	Registered	Lifted	Weight[a]	CPUE[d]
1990	General	241	331	17,100,000	20,443,043	69,906	262,761	6.5	12
1991	General	300	322	18,000,000	16,971,365	89,068	227,555	6.5	12
1992	General	279	288	10,300,000	7,996,040	68,189	206,172	6.7	6
1993	General	291	360	16,800,000	14,534,504	58,881	253,794	6.5	9
1994-1995	General	FC	FC	FC	FC	FC	FC	FC	FC
1996	General	196	198	5,000,000	8,405,614	39,461	76,433	6.7	16
1997	General	256	265	7,000,000	8,756,490	27,499	90,427	6.7	15
1998	TOTAL	274	CF	16,400,000	CF	CF	CF	CF	15
1999	TOTAL	257	CF	10,660,000	CF	CF	CF	CF	13
2000[f]	TOTAL	244	CF	8,350,000	CF	CF	CF	CF	12
2001[f]	TOTAL	230	CF	7,150,000	CF	CF	CF	CF	19
2002[f]	TOTAL	242	CF	9,270,489	CF	CF	CF	CF	21
2003[f]	TOTAL	250	296	15,713,000	15,695,786	46,964	134,134	6.2	18
2004[f]	TOTAL	251	294	15,424,000	15,245,451	49,506	96,335	6.8	23
2005/06	TOTAL	89	300	18,329,000	18,309,335	15,713	114,949	6.7	24
2006/07	TOTAL	81	217	15,527,000	33,554,786	14,685	71,740	6.4	34
2007/08	TOTAL	74	285	20,383,000	20,366,065	11,885	113,214	6.5	28
2008/09	TOTAL	78	289	20,364,000	20,329,402	15,347	139,937	6.6	22
2009/10	TOTAL	70	233	16,009,000	40,695,467	14,977	118,521	6.3	21
2010/11	TOTAL	65	254	14,839,000	14,833,828	13,769	131,627	6.2	18
2011/12	TOTAL	62	161	7,834,000	7,833,594	12,090	45,166	6.1	28
2012/13	TOTAL	64	141	7,853,000	7,849,835	11,856	38,159	6.8	30
2013/14	TOTAL	62	156	8,600,000	8,600,476	11,269	45,927	6.9	27
2014/15	TOTAL	63	159	9,986,000	9,987,008	11,506	58,702	6.7	26
2015/16	TOTAL	63	152	9,974,000	9,969,964	12,470	48,008	6.7	31

[a] In pounds.

[b] Deadloss included.

[d] Number of retained crab per pot lift.

[e] Inseason revision to 4.7 million pounds.

[f] Includes American Fisheries Act (AFA) harvest data.

Table 256-4.–Bering Sea District commercial Tanner crab (*C. bairdi*) fishery data, 1993/94–2016/17.

Season	Location[a]	Number of Vessels	Number of Landings	GHL/TAC[c]	Harvest[b,c]	Number of Pots Registered	Number of Pots Lifted	Average Weight[c]	Average CPUE[d]
1993/94	East of 168°W	285	350	10,700,000	4,134,529	NA	250,826	2.4	7
	163°W to 173°W	261	515	9,100,000	12,776,371	NA	325,963	2.3	17
	TOTAL	296	862	19,800,000	16,910,900	116,039	576,789	2.3	13
1994/95	163°W to 173°W	183	349	7,500,000	7,766,886	38,670	249,536	2.3	13
1995/96	163°W to 173°W	196	256	5,500,000	4,233,061	40,827	247,853	2.3	8
1996/97	East of 168°W	192	195	2,200,000	994,776	38,300	75,753	2.5	5
	163°W to 173°W	135	152	6,200,000	811,301	59,910	73,522	2.4	5
	TOTAL	196	347	8,400,000	1,806,077	68,602	149,275	2.5	5
1997/98 - 2004/05		FC	FC	FC	FC	FC	FC	FC	FC
2005/06	West of 166°W	43	87	1,620,000	952,887	545	31,717	2.2	14
2006/07	East of 166°W long	37	63	1,875,000	1,401,743	NA	27,982	2.4	21
	West of 166°W long	39	74	1,094,000	720,846	NA	28,140	2.1	12
	Bering Sea District Total	52	136	2,969,000	2,122,589	3,969	53,514	2.3	17
2007/08	East of 166°W long	20	65	3,445,000	1,582,858	NA	33,515	2.3	20
	West of 166°W long	34	59	2,176,000	523,796	NA	21,938	2.2	11
	Bering Sea District Total	41	124	5,621,000	2,106,654	4,458	55,453	2.3	17
2008/09	East of 166°W long	21	65	2,763,000	1,830,019	1,933	35,957	2.4	22
	West of 166°W long	42	CF	1,537,000	CF	CF	CF	CF	CF
	Bering Sea District Total	49	CF	4,300,000	CF	CF	CF	CF	CF
2009/10	East of 166°W long	17	51	1,350,000	1,324,578	1,673	16,770	2.7	29
	West of 166°W long	30	58	FC	3,778	FC	25,236	NA	<1
	Bering Sea District Total	41	109	1,350,000	1,328,356	1,673	42,006	2.7	12
2010/11	East of 166°W long	1	1	FC	1	FC	CF	NA	CF
	West of 166°W long	49	91	FC	2,544	FC	39,114	NA	<1
	Bering Sea District Total	49	92	FC	2,545	FC	39,332	NA	<1
2011/12	East of 166°W long	0	0	FC	0	FC	0	NA	NA
	West of 166°W long	56	178	FC	4,612	FC	68,526	NA	<1
	Bering Sea District Total	56	178	FC	4,612	FC	68,526	NA	<1

-continued-

Table 256-4.–Part 2 of 2.

Season	Location[a]	Number of Vessels	Number of Landings	GHL/TAC[c]	Harvest[b,c]	Number of Pots Registered	Number of Pots Lifted	Average Weight[c]	Average CPUE[d]
2012/13	FC	FC	FC	FC	FC	FC	FC	FC	FC
2013/14	East of 166°W long	30	74	1,463,000	1,456,357	3,063	26,468	2.1	27
	West of 166°W long	64	225	1,645,000	1,330,488	2,593	68,526	1.8	6
	Bering Sea District Total	66	299	3,108,000	2,786,845	5,656	157,992	1.9	9
2014/15	East of 166°W long	42	143	8,480,000	8,450,485	7,086	87,875	1.9	50
	West of 166°W long	58	226	6,625,000	5,253,942	5,313	142,820	1.7	22
	Bering Sea District Total	64	367	15,105,000	13,704,427	12,399	230,695	1.8	33
2015/16	East of 166°W long	49	202	11,272,000	11,263,562	10,163	139,171	1.9	43
	West of 166°W long	62	240	8,396,000	8,378,816	6,875	145,638	1.7	33
	Bering Sea District Total	70	442	19,668,000	19,642,378	17,038	284,809	1.8	38
2016/17	FC	FC	FC	FC	FC	FC	FC	FC	FC

Note: FC = fishery closed, CF = confidential, NA = not available. Bold line denotes rationalization.

[a] From 1974/75 through 1984/85, Bering Sea Tanner crab subdistricts were: Southeastern, Pribilof, and Northern (includes the Norton Sound and General Sections). From 1987/88 through 1992/93 harvest subdistricts were divided east and west of 173°W long. From 1993/94 through 1996/97 fishery east of 168°W long. is concurrent with the Bristol Bay red king crab fishery and the fishery from 163°W long. to 173°W long. is a directed Tanner crab fishery. From 2005/06 to current the fishery is divided east and west of 166°W long., and harvest east of 163°W long. is only allowed as incidental catch during the Bristol Bay red king crab fishery.

[b] Deadloss included.

[c] In pounds.

[d] Number of retained crab per pot lift.

Table 256-5.–Directed catch of Bristol Bay red king crab (BBR) with respect to incidentally harvested eastern Bering Sea Tanner crab (EBT) in the BBR fishery, 2008/09−2015/16.

Season	BBR Directed (pounds)	BBR Directed (# crab)	BBR Directed Effort (# pot lifts)	EBT Incidental (pounds)	EBT Incidental (# crab)	EBT Incidental Effort (# pot lifts)	Retention Rate of Incidental EBT in BBR
2008/09	20,329,402	3,066,286	139,937	51,225	20,896	17,297	0.25%
2009/10	15,932,654	2,537,222	118,521	18,523	6,751	10,135	0.12%
2010/11	14,833,829	2,398,488	131,627	FC	FC	FC	NA
2011/12	7,833,594	1,279,054	45,166	FC	FC	FC	NA
2012/13	7,849,835	1,157,364	38,159	FC	FC	FC	NA
2013/14	8,600,476	1,242,705	45,927	13,937	5,842	9,835	0.16%
2014/15	9,987,006	1,498,537	57,060	8,360	3,691	15,107	0.08%
2015/16	9,969,964	1,497,783	48,008	2,976	1,386	8,859	0.03%
Total	95,336,760	14,677,439	624,405	95,021	38,566	61,233	0.10%

Note: FC = fishery closed, CF = confidential, NA = not available.

Table 256-6.–Retention rates of eastern Bering Sea Tanner crab (EBT) incidentally harvested in Bristol Bay red king crab (BBR) fishery, 2013/14−2015/16, in observer sample pots. Proportion of legal retained is with respect to the total number of legal sized male Tanner crab in the sample pots.

Fishery Season	Legal EBT Retained	Legal EBT Not Retained	Total Legal EBT	% Legal Retained
2013/14	94	2,765	2,859	3.3%
2014/15	45	1,861	1,906	2.4%
2015/16	212	1,713	1,925	11.0%

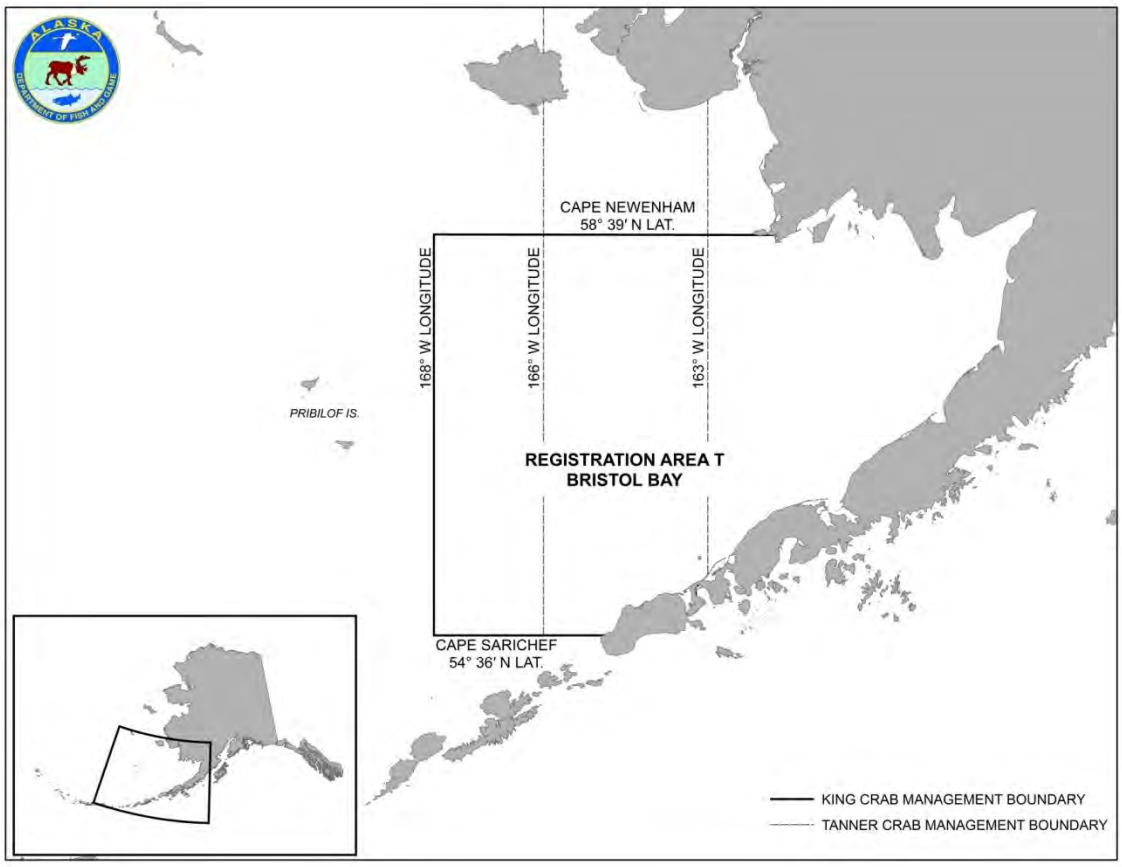

Figure 256-1.–Registration Area T Bristol Bay red king crab fishery and eastern Bering Sea Tanner crab fishery management boundaries. Eastern Bering Sea Tanner crab retention during the BBR fishery is allowed between 166° and 163°W long.

PROPOSAL 257 – 5 AAC 35.510. Fishing seasons for Registration Area J.

PROPOSED BY: Peter Liske.

WHAT WOULD THE PROPOSAL DO? Move the eastern boundary for Bering Sea snow crab *Chionoecetes opilio* from 166°W long. to 165°W long.

WHAT ARE THE CURRENT REGULATIONS? Currently, 5 AAC 35.510(f)(2) allows directed harvest of Bering Sea snow crab west of 166°W long.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Provide additional fishing grounds for fishermen participating in the Bering Sea snow crab fishery.

BACKGROUND: BSS is prosecuted as a single fishery in the Eastern Subdistrict west of 166°W long. and Western Subdistrict of the Bering Sea District except in a closure area surrounding the Pribilof Islands (Figure 255-1). BSS is open from October 15 through May 15 east of 173°W long. and through May 31 west of 173°W long. Both snow and Tanner *C. bairdi* crabs (Table 257-1) occur in the same geographical area of the Bering Sea. Tanner crab is considered to be a single stock but prosecuted as two distinct fisheries in the Bering Sea District; divided east and west of 166°W long. in order to distribute effort across the stock's expansive distribution area. Fishermen harvest EBT between 163°W long. and 166°W long. and WBT west of 166°W long. (Figure 255-2, Table 255-2). Both Tanner crab fisheries are open October 15 through March 31.

Snow crab fishing boundaries have been modified several times since the first directed landing of snow crab occurred in 1979/80. From 1977/78 to 1987, snow crab and red king crab boundaries were aligned with fishing grounds divided into three subdistricts spanning most of the Bering Sea. Starting in 1987, the department routinely closed the area east of 165°W long. to fishing due to concerns about declines in prerecruit and legal sized male Tanner crab. In 1988, new fishery boundaries were created in order to distribute effort across the snow crab stock dividing the fishery in to the Eastern and Western Subdistricts at 173°W long. Throughout the late-1980s and early-1990s, the department continued closures for fishing east of 165°W long. to protect the depressed Tanner crab stock. In the spring of 1991, the board closed all fishing after March 31 in the Eastern Subdistrict (east of 173°W long.) in order to protect molting king crab in the severely depressed Pribilof Islands blue king crab stock. The following year, facing large increases in snow crab GHLs, the board adopted regulations allowing emergency order closures of the BSS fishery west of 166°W long. while maintaining the March 31 closure in the Eastern Subdistrict for the Tanner crab fishery. During rationalization the easternmost boundary of BSS was solidified at 166°W long. (Figure 257-1) to give fishermen the ability to retain WBT as incidental bycatch to BSS.

Based on the NMFS summer trawl survey, legal sized male snow crab are distributed east of 166°W long. (Figure 257-2) although in comparably small densities to the overall snow crab population. Trawl survey data shows legal sized male snow crab are present just east of the 166°W long. boundary line (Figure 261-3) and that distribution has changed somewhat over the last three surveys. During the 2016 survey legal sized male snow crab were found further south and in a smaller area than the previous two surveys. Even though legal sized male snow crab are

found east of 166°W long, the relative abundance with respect to the rest of the BSS stock, is fairly low (Figure 261-4). The two main centers of distribution for snow crab density are to the north of St. Matthew Island and a lesser high density area northwest of the Pribilof Islands (Figure 257-3).

Similar to survey data, fishery data from the most recent three seasons, show the distribution of harvest is located mainly northwest of the Pribilof Islands. In the last two seasons, a significant portion of the harvest occurred in the southernmost portion of the fishing grounds around 167°W long (Figure 257-4). Data from observer sample pots in the EBT, show an increasing trend in snow crab abundance in EBT (Table 257-2). This trend could be due to changes in bottom conditions, movement of snow crab, increases in EBT TACs over the last three seasons, or changes in fishing practices. Nearly all snow crab caught in EBT are discarded with an assumed discard mortality rate of 30% according to the BSS stock assessment model.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this proposal.

Should the board adopt this proposal, the department recommends the board consider several issues concerning the alignment of EBT and WBT boundaries with the proposed boundary change:

1. If the BSS eastern boundary is moved to 165°W long., it will overlap with EBT fishery (prosecuted between 166°W long. and 163°W long.; Figure 257-5) where incidental retention of BSS with EBT, and the incidental retention of EBT with BSS, is prohibited. West of 166°W long., retention of WBT would be allowed but between 166°W long. and 165°W long. the retention of Tanner would be prohibited. According to the NPFMC Crab Plan Team Tanner crab stock assessment model Tanner crab have an assumed discard mortality rate of 50%. Proposal 255 is related to this issue.

2. If the board moves the WBT boundary to 165°W long. along with the BSS boundary change, it will narrow EBT by 60 nmi. Proposal 258 is related to boundary movements for EBT.

Districts, Subdistricts, and Boundaries are a Category 2 management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.2.4). Category 2 management measures should be consistent with the criteria set out in the FMP and the National Standards (FMP Appendix B).

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 257-1.–Bering Sea District commercial Tanner (*C. bairdi*) crab fishery data, 1993–2016/17.

	Number of				Number of		Pots		Average	
Season	Vessels	Landings	GHL/TAC[a]	Harvest[b,c]	crab[b]	Deadloss[c]	Registered	Lifted	Weight[c]	CPUE[d,e]
1993	254	1,835	207,200,000	230,754,253	169,535,617	1,573,952	65,081	970,646	1.4	175
1994	273	1,293	105,800,000	149,792,718	114,810,186	1,799,763	54,837	716,524	1.3	160
1995	253	870	55,700,000	75,309,187	60,658,899	1,289,169	53,707	659,051	1.2	120
1996	234	771	50,700,000	65,696,173	52,892,320	1,333,015	50,169	520,671	1.2	102
1997	226	1,127	117,000,000	119,543,024	100,013,816	2,351,555	47,036	754,140	1.2	133
1998	230	1,853	234,100,000	252,339,284	193,618,550	3,037,499	47,909	930,794	1.3	208
1999	241	1,734	196,000,000	194,363,869	151,183,798	1,926,497	50,173	945,533	1.3	160
2000	231	315	28,500,000	33,291,344	25,081,681	353,125	43,407	182,634	1.3	137
2001	207	322	27,300,000	25,256,384	18,612,605	452,781	40,724	191,200	1.4	97
2002	191	436	30,820,000	32,633,210	25,155,221	658,456	33,278	326,977	1.3	77
2003[f]	190	285	25,610,000	28,316,923	23,252,904	680,787	20,407	153,862	1.2	151
2004	189	265	20,831,000	23,940,924	18,669,591	248,576	14,444	123,709	1.3	151
2005	168	219	20,932,000	24,892,128	17,985,745	235,479	12,890	73,208	1.4	246
2005/06	78	350	37,184,000	36,974,131	24,552,158	357,441	13,948	121,039	1.5	203
2006/07	69	307	36,566,000	36,355,649	29,679,691	413,743	11,760	89,419	1.2	342
2007/08	78	513	63,034,000	63,028,036	50,457,513	551,429	14,187	144,112	1.3	349
2008/09	77	487	58,550,000	58,547,849	45,945,093	434,622	12,549	163,537	1.3	281
2009/10	69	354	48,017,000	48,014,089	35,289,023	536,688	11,316	137,292	1.4	257
2010/11	68	386	54,281,000	54,263,200	37,758,496	352,388	11,739	147,244	1.4	256
2011/12	72	724	88,894,000	88,830,652	60,555,105	637,432	12,310	270,602	1.5	224
2012/13	70	505	66,350,000	66,254,528	47,455,883	465,522	11,062	225,489	1.4	210
2013/14	70	450	53,983,000	53,983,286	41,926,542	405,129	11,344	231,614	1.3	181
2014/15	71	543	67,950,000	67,941,587	55,029,818	596,641	12,785	286,920	1.2	192
2015/16	74	390	40,611,000	40,611,446	29,614,529	379,167	11,942	216,178	1.4	137
2016/17			21,570,000							

Note: Bold line denotes rationalization.

[a] NA = not available.

[b] Guideline harvest level (GHL), total allowable catch (TAC) beginning in 2005/06.

[c] Deadloss included.

[d] In pounds.

[e] Number of retained crab per pot lift.

[f] Total harvest includes 30,919 pounds taken from an unidentified statistical area. Includes 181,457 pounds illegally taken in Russian waters.

Table 257-2.–Observer sample pot data for legal sized male snow crab bycatch and total legal sized male Tanner crab sampled in eastern Bering Sea Tanner crab fishery (EBT), 2013/14–2015/16.

Fishery Season	Legal Snow Crab Retained	Legal Snow Crab Not Retained	Total Legal Snow Crab	Total Legal EBT
2013/14	-	97	97	12,885
2014/15	-	822	822	79,218
2015/16	15	28,192	28,207	81,216

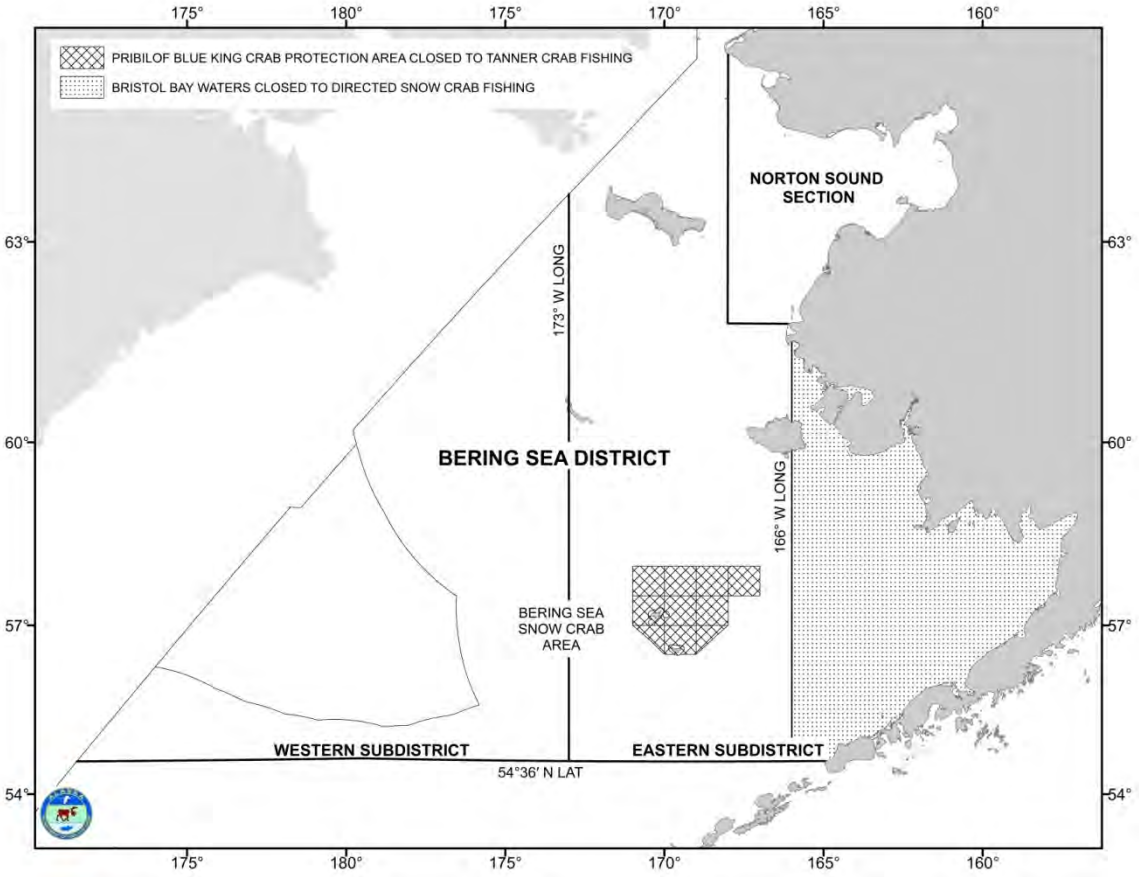

Figure 257-1.–Bering Sea District snow crab fishery management boundaries and 2016/17 Pribilof Islands blue king crab protection area.

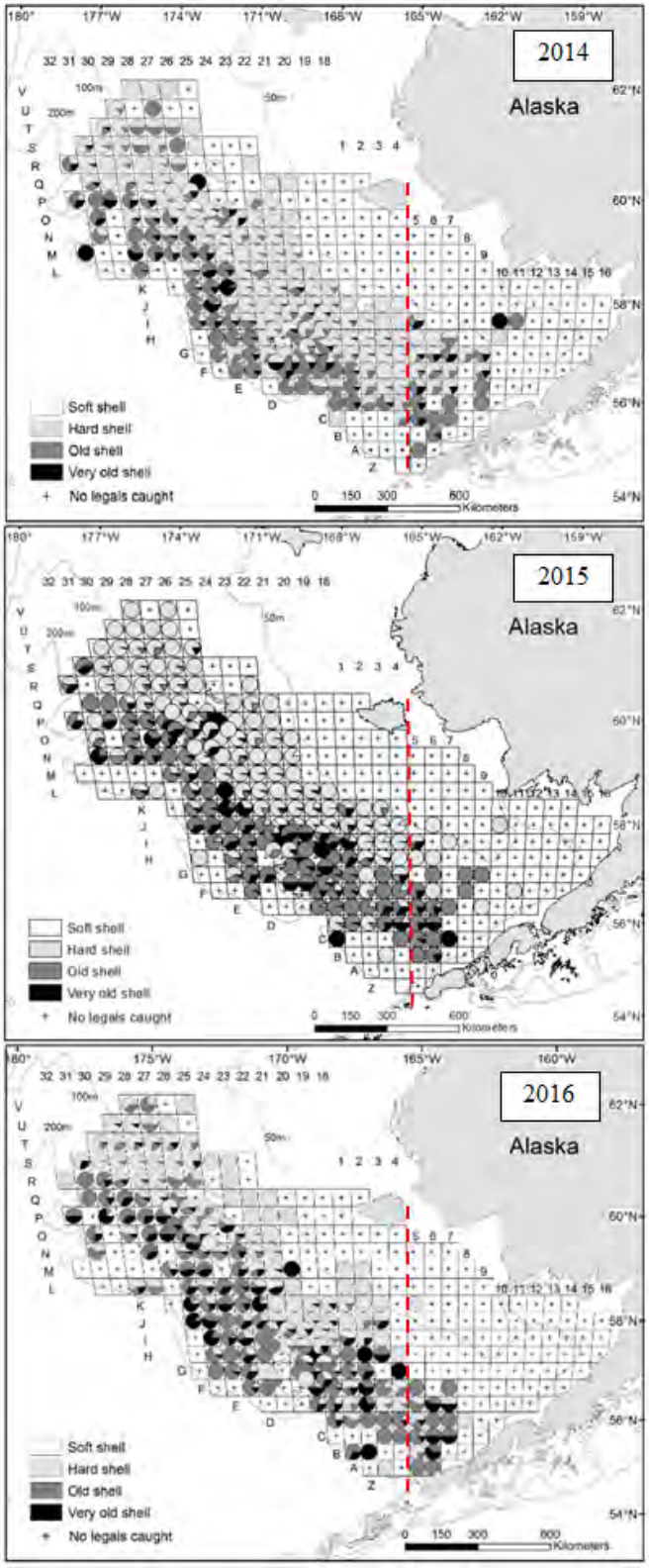

Figure 257-2.–Distribution of legal male snow crab with respect to shell condition in the 2014 (upper panel), 2015 (center panel), 2016 (lower panel) NMFS Bering Sea summer trawl survey. Maps excerpted from the respective NMFS trawl survey memos. The 166°W long. boundary line shown by bold dashed line.

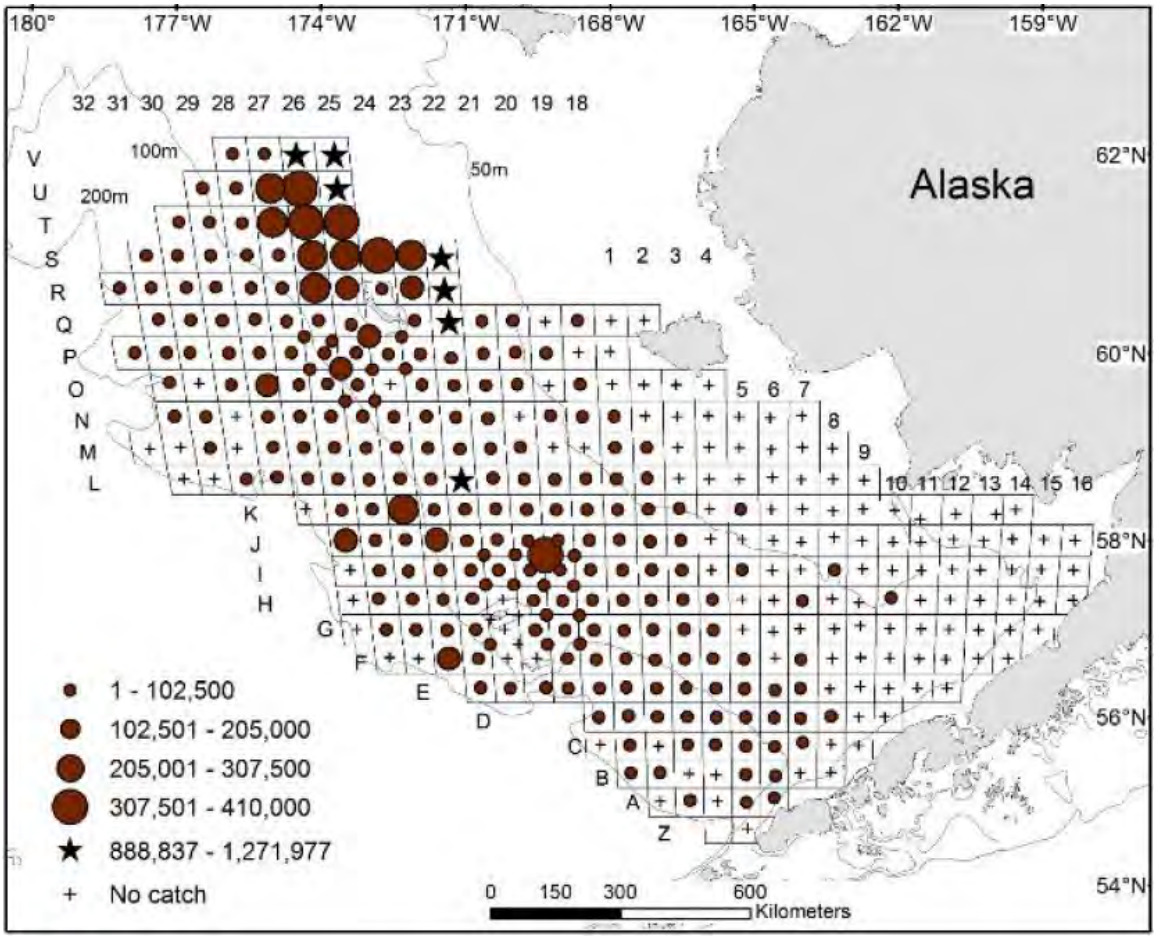

Figure 257-3.–Total density (number nmi^2) of snow crab for each survey station in the 2016 NMFS summer trawl survey. Taken from the 2016 NMFS summer trawl survey memo. Stars indicate densities higher than the established scale.

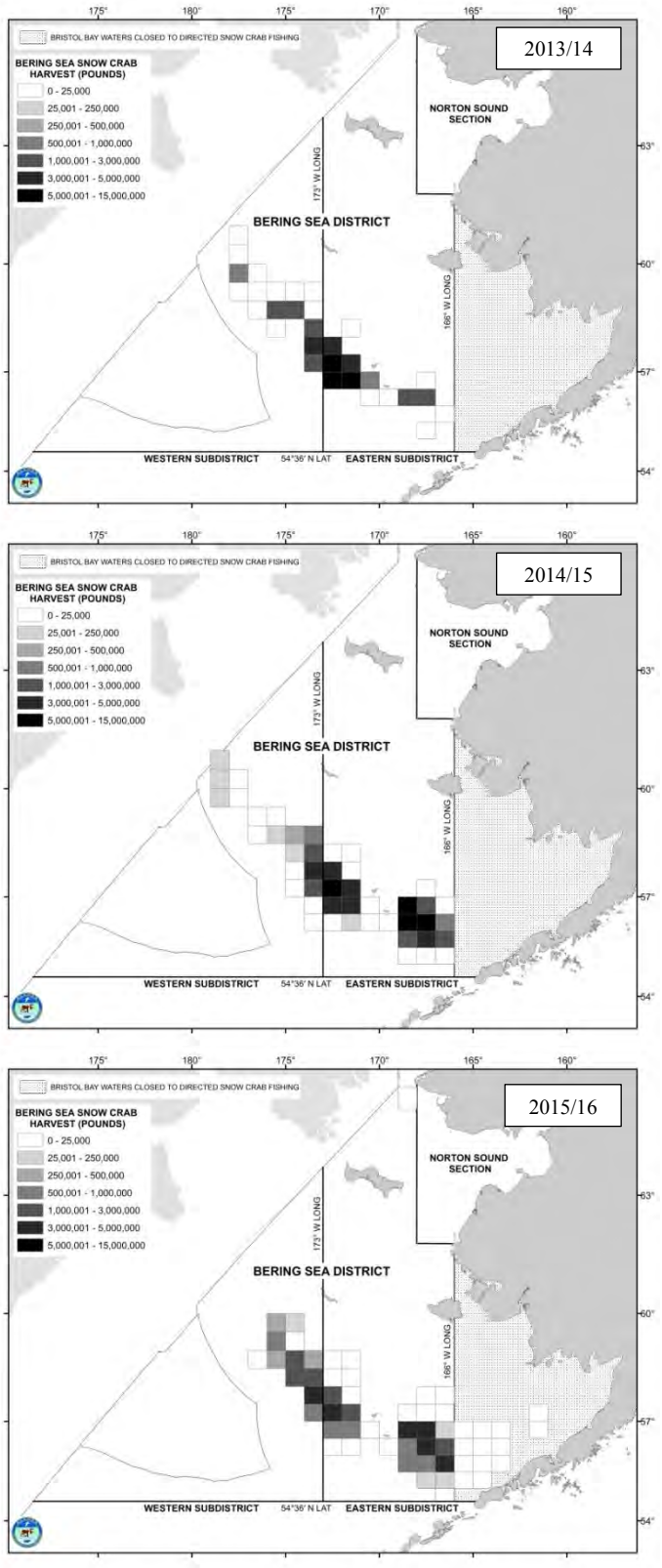

Figure 257-4.–Bering Sea snow crab harvest (pounds) distribution for the 2013/14, 2014/15, and 2015/16 fishing seasons.

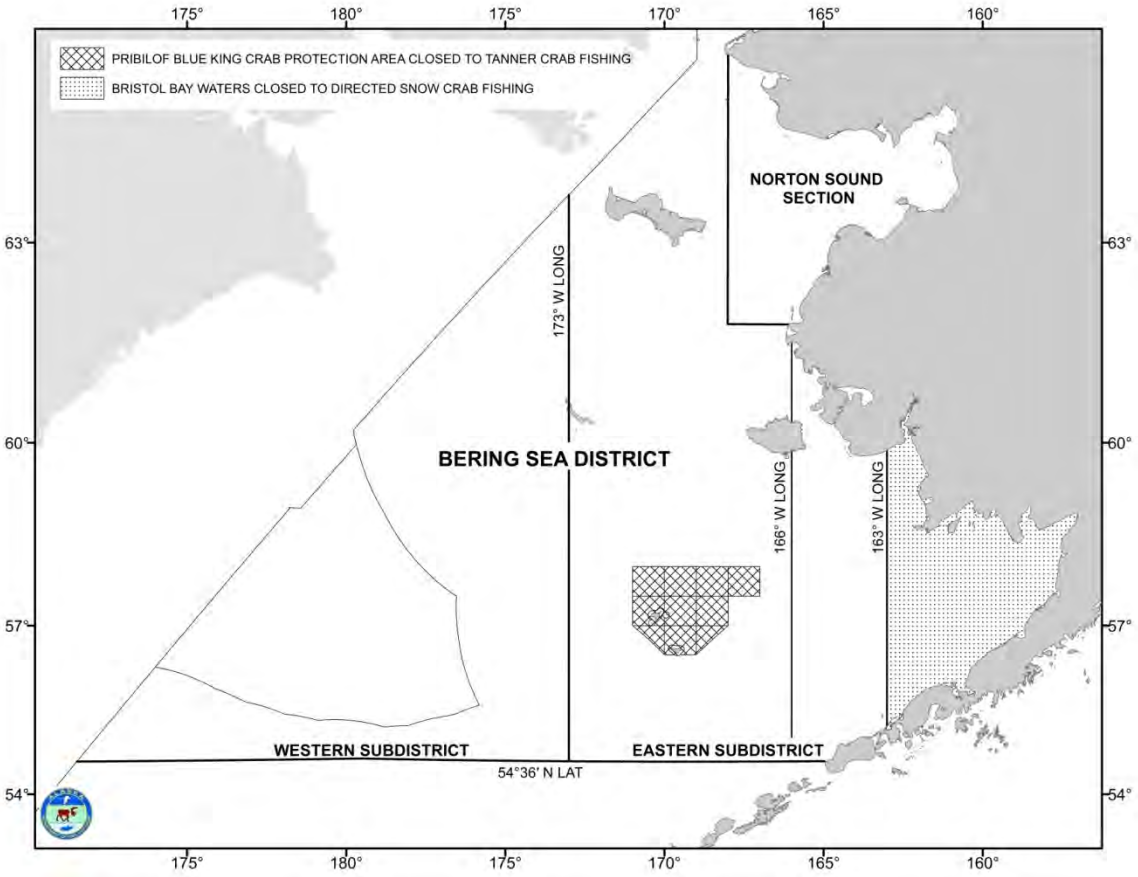

Figure 257-5.–Bering Sea District Tanner crab fishery management boundaries and 2016/17 Pribilof Islands blue king crab protection area.

PROPOSAL 258 – 5 AAC 35.506. Area J Registration.

PROPOSED BY: Peter Liske.

WHAT WOULD THE PROPOSAL DO? Move the eastern boundary for Bering Sea Tanner crab *Chionoecetes bairdi* from 163°W long. to 162°W long.

WHAT ARE THE CURRENT REGULATIONS? Directed harvest of eastern Bering Sea Tanner crab may occur between 166°W long. and 163°W long..

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Provide additional fishing grounds for fishermen participating in the Bering Sea Tanner crab fishery. This proposal could also result in increased mortality of sublegal and female red king crab caught as bycatch during the Tanner crab fishery.

BACKGROUND: Tanner crab fisheries are prosecuted in the Bering Sea District of Registration Area J which includes all waters of the Bering Sea north of Cape Sarichef at 54°36′ N lat. and east of the U.S.-Russia Maritime Boundary Line of 1990. The Bering Sea District is divided into the Eastern and Western Subdistricts at 173°W long. Tanner crab in the Bering Sea is considered to be a single stock but prosecuted as two distinct fisheries; divided east and west of 166°W long. in order to distribute effort across the stock's expansive distribution area. Fishermen harvest EBT between 163°W long. and 166°W long. and western Bering Sea Tanner crab westward of 166°W long. except in a closure area surrounding the Pribilof Islands put in place to protect Pribilof blue king crab populations (Figure 258-1). East of 163°W long. is closed to directed Tanner crab fishing.

Both EBT and Bristol Bay red king crab have overlapping distributions and are prosecuted in the overlapping areas of Bristol Bay. Tanner crab was first harvested in 1968 incidental to red king crab in Bristol Bay. In 1974, a directed Tanner crab fishery began. Tanner crab fishing boundaries have been modified several times since the first directed landing of Tanner crab. These changes generally reflected changes to management and fishing practices as the fishery matured over time. Since rationalization (2005) the directed EBT fishery occurs between 166°W long. and 163°W long (Figure 258-1).

The distribution of female and juvenile male red king crab for the last three NMFS summer trawl surveys (2014-2016) show differences in distribution of crab caught between 163°W long. and 162°W long. In 2014, most red king crab caught in the proposed area were sublegal (mature) males, and females (Figure 258-2, upper panel). The following year, 2015, most of the crab in that area were mature males (≥120 mm CL, includes sublegal and legal males) and females (Figure 258-2, center panel). The most recent survey year, 2016, shows mostly females and mature males (≥120 mm CL, includes sublegal and legal males) found between 163°W long. and 162°W long (Figure 258-2, lower panel). In the last two years of the survey, the majority of female red king crab were distributed east of 163°W long.

Prior to this proposal, the board specifically addressed the easternmost Tanner crab boundary line 1993 and 1998. Prior to 1993 there was no eastern boundary line specified in regulation. During the 1993 board meeting, observer data from 1991–1993 showed a significant amount of female and sublegal male red king crab bycatch in the directed Tanner crab fishery east of

163°W long (Figure 258-3). At that time, the department advocated for placing the Tanner crab boundary at 163°W long. to reduce bycatch of female and sublegal male red king crab during the Tanner crab fishery. The board agreed and placed 163°W long. in regulation as the easternmost boundary for directed Tanner crab fishing. In 1998 the board again deliberated a similar proposal seeking to move the of Tanner crab boundary east of 163°W long. The board did not adopt the proposal due to the associated red king crab bycatch concerns.

To reduce bycatch of red king crab in Bering Sea Tanner crab fisheries, 5 AAC 35.525 (d) prohibits tunnel eye openings in Tanner crab pots from being greater than 3 in high. Although small tunnel eye openings likely reduce king crab bycatch in Tanner pots, it does not eliminate red king crab bycatch (Figure 258-4). Observer sample pot data for the most recent three fishing season shows an average 2,251 female and 454 sublegal male red king crab were caught in observer sampled Tanner crab pots, with the highest bycatch of 4,804 female and 896 sublegal male red king crab in the most recent 2015/16 fishery (Table 258-1). NPFMC Crab Plan Team estimates handling mortality of red king crab in pot fisheries to be 20%.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal. If adopted, red king crab bycatch mortality could be disproportionally influenced by Tanner crab abundance and potentially high levels of bycatch could occur without regard to red king crab stock status. The board has historically supported actions to reduce bycatch of red king crab during other directed crab fisheries. No new biological data is available to suggest a change is warranted at this time.

Districts, Subdistricts, and Boundaries are a Category 2 management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.2.4). Category 2 management measures should be consistent with the criteria set out in the FMP and the National Standards (FMP Appendix B).

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 258-1.–Observer sample pot data summary for red king crab bycatch in eastern Bering Sea Tanner crab fishery, 2013/14–2015/16.

Fishery Season	Female	Sublegal	Legal Retained	Legal Not Retained	Total
2013/14	1,099	181	NA	142	1,422
2014/15	851	284	NA	159	1,294
2015/16	4,804	896	NA	394	6,094

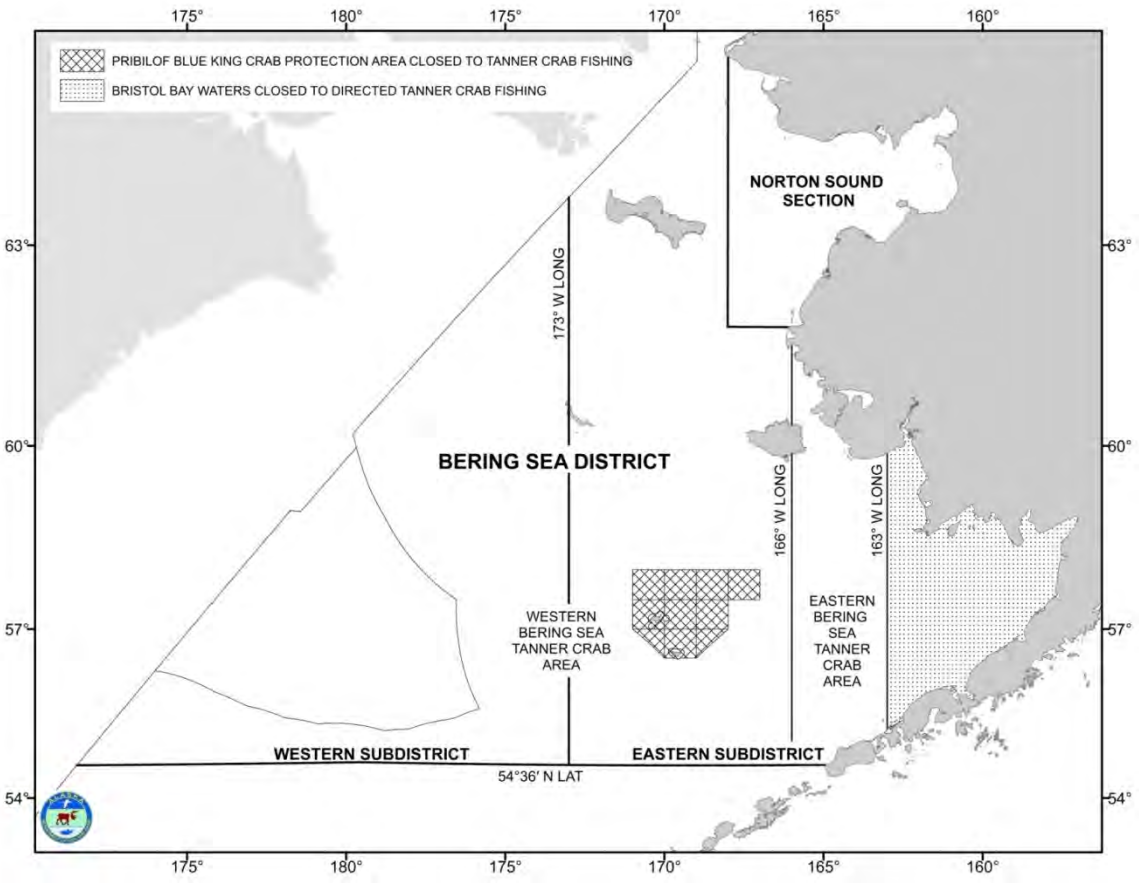

Figure 258-1.–Bering Sea District Tanner crab fishery management boundaries and 2016/17 Pribilof Islands blue king crab protection area.

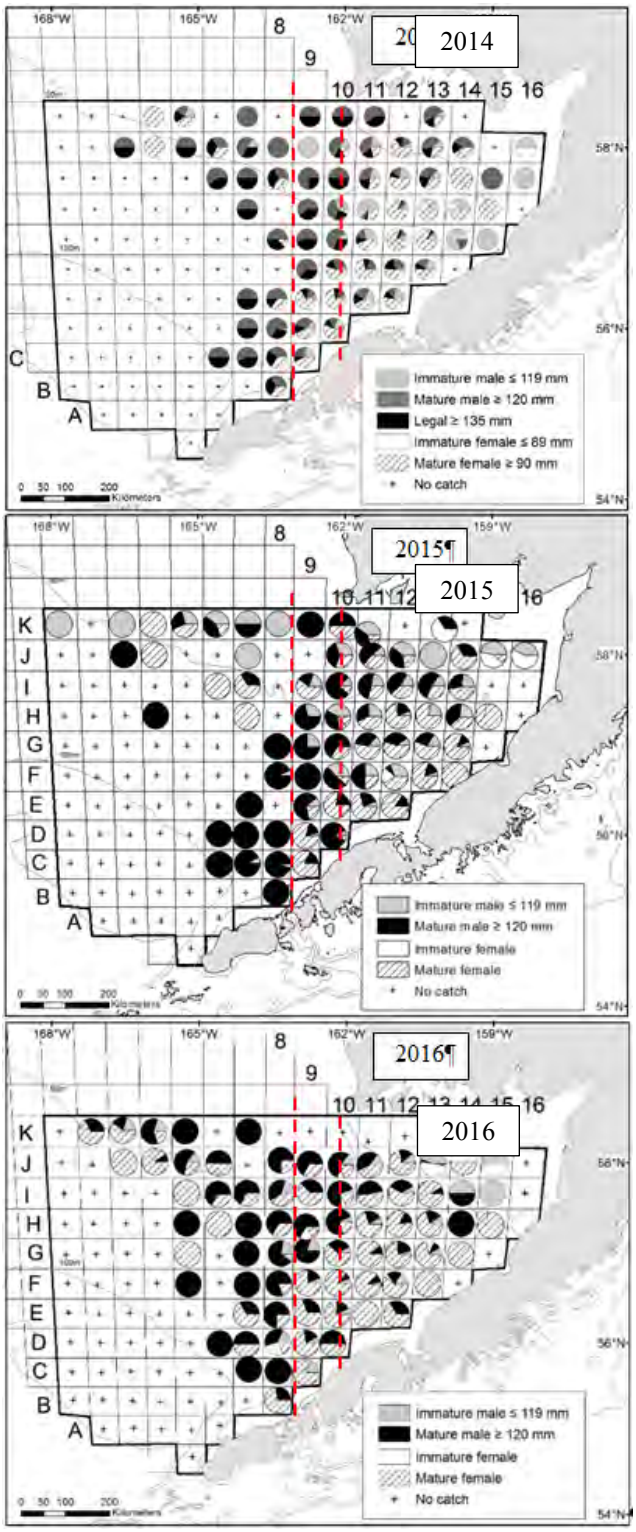

Figure 258-2.–Immature male, mature male, immature female, and mature female red king crab distribution in the 2014 (upper panel), 2015 (center panel), 2016 (lower panel) NMFS Bering Sea summer trawl survey. Maps excerpted from the respective NMFS trawl survey memos. The 162°W long. and 163°W long. boundary line are superimposed (bold dashed line).

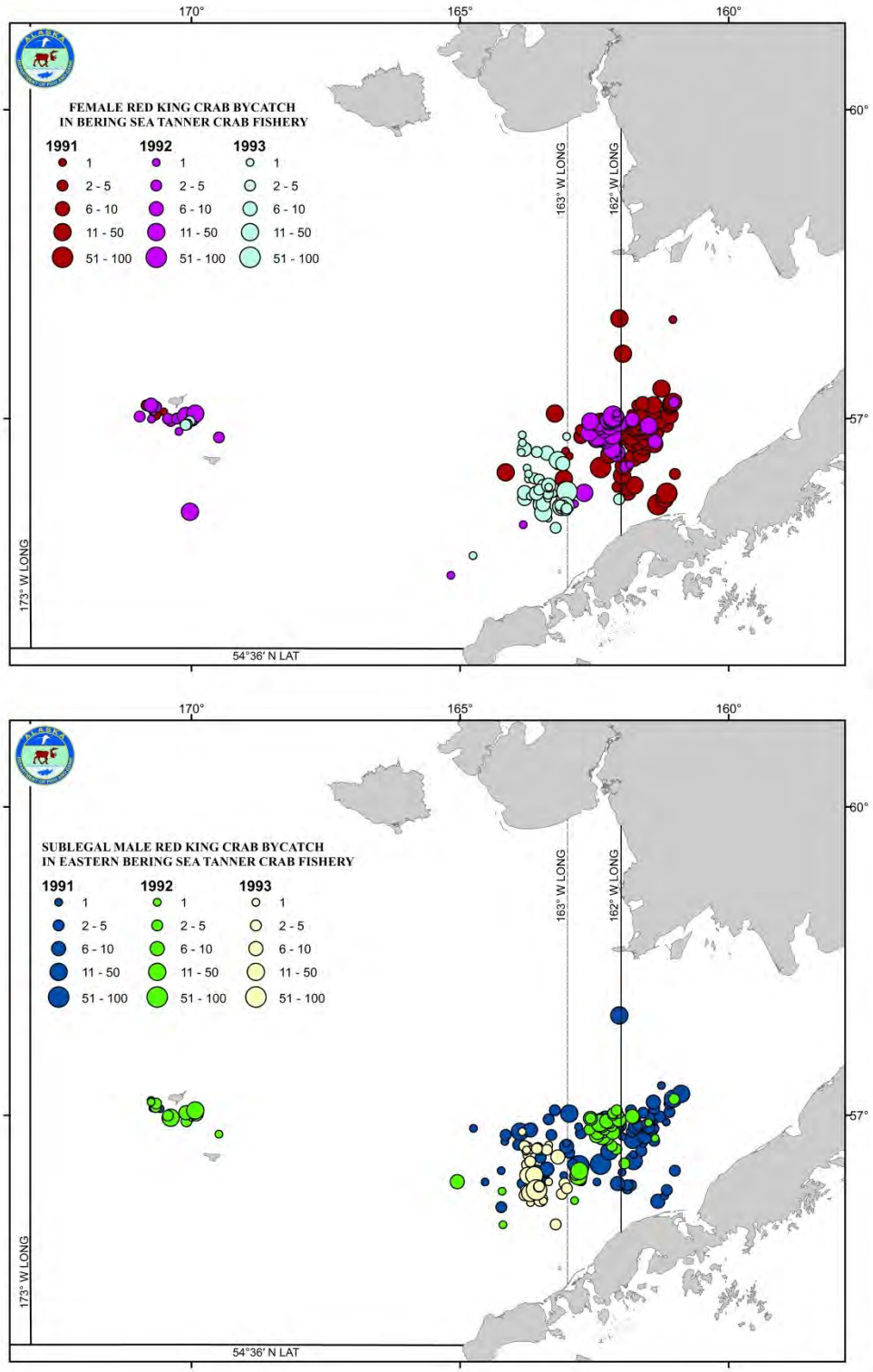

Figure 258-3.–Red king crab bycatch of females (upper panel) and sublegal males (lower panel) in the Bering Sea Tanner crab fishery observer sample pots, 1991–1993. The eastern most boundary (163°W long) for Tanner crab was established in regulation in 1993.

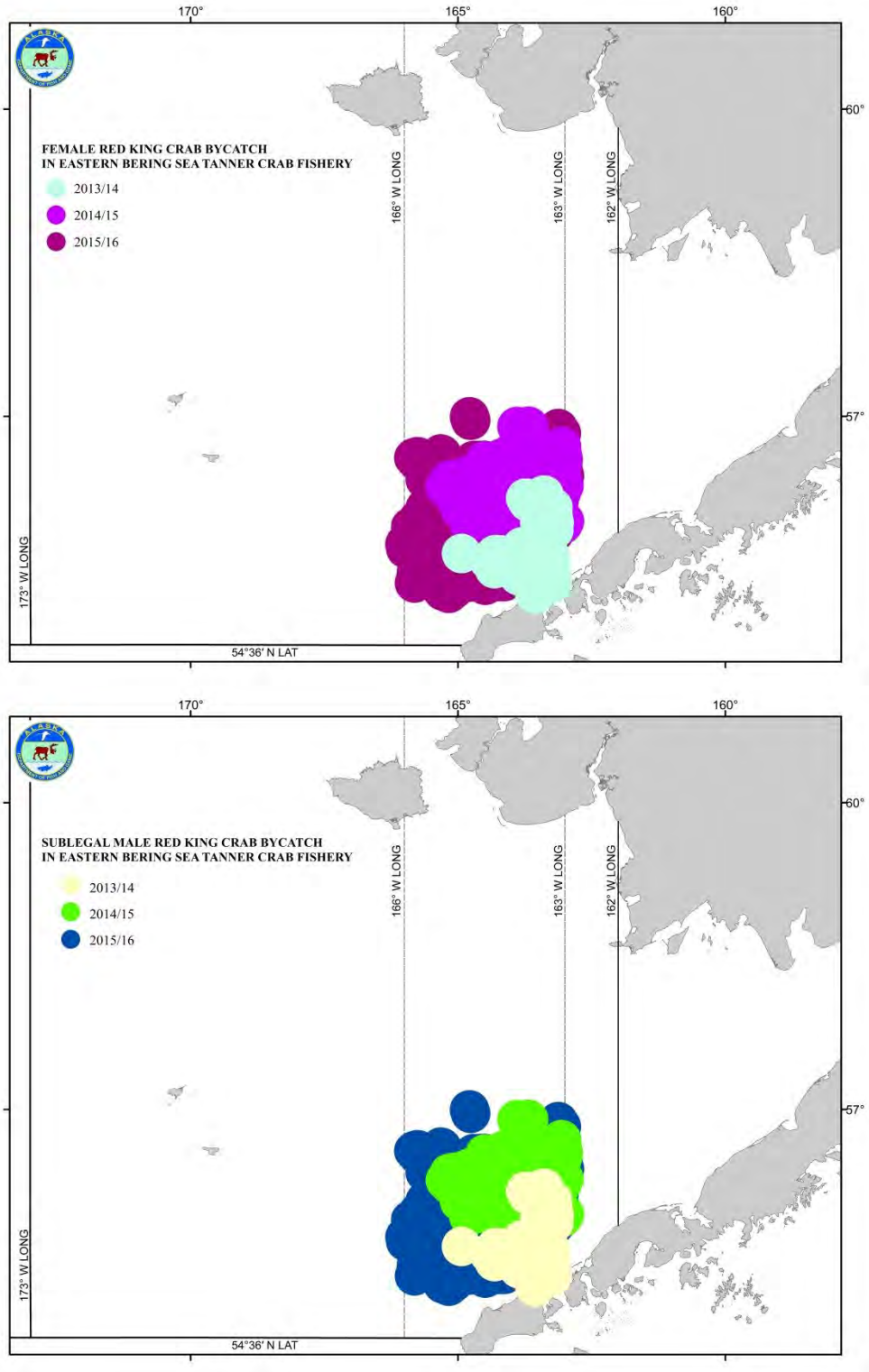

Figure 258-4.–Generalized red king crab bycatch distribution of females (upper panel) and sublegal males (lower panel) in the Bering Sea Tanner crab fishery observer sample pots, 2013/14-2015/16. Legal Tanner crab pot gear is modified so that tunnel eye openings are no more than 3 in to prevent the bycatch of red king crab.

PROPOSAL 259 – 5 AAC 34.925. Lawful gear for Registration Area Q.

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? Specify that escape rings and mesh are placed on a vertical plane or side of the pot in the Saint Matthew Island Section blue king crab fishery.

WHAT ARE THE CURRENT REGULATIONS? In the Saint Matthew Island Section of Registration Area Q, escape mesh or escape rings are required on king crab pots in order to allow for escapement of undersize male and female blue king crab. If escape rings are used, each pot must have eight rings with an inside diameter measure of 5.8 in placed within one mesh measurement from the bottom of the pot, with four rings on two sides of a four-sided pot. If escape mesh is used, one-half of one side of a four-sided pot must have a side panel composed of not less than eight-inch stretched mesh webbing (5 AAC 34.925(b)(2)).

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Bring the Saint Matthew Island Section pot gear escape mechanism regulation in alignment with other king crab pot gear regulations for the Bering Sea. Proper placement of escape rings and mesh allows for escapement of undersized male and female king crab as well as other crab species thereby reducing handling time on deck and associated mortality of non-retainable crabs.

BACKGROUND: Placement of escape mechanisms for undersize and female crab is specified on a vertical plane in other Bering Sea and Aleutian Islands king crab fisheries, but not in the Saint Matthew Island Section blue king crab fishery. This could result in escape mechanisms placed in suboptimal locations causing small male and female crab to be retained and brought to the surface in crab pots. The board approved current escape mechanism regulations for the Saint Matthew Island Section blue king crab fishery in March of 2000 (5 AAC 34.925(b)(2)). While the original intent was to stipulate that escape rings and escape mesh be placed on a vertical plane, this detail was never included in regulation.

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal.

Gear modifications are a Category 3 management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.3.5 Gear Modifications).

COST ANALYSIS: Approval of this proposal may result in an additional direct cost for a private person to participate in this fishery. The additional cost would be limited to the time needed to adjust escape ring or mesh placement if not already in the proposed configuration.

PROPOSAL 260 – 5 AAC 35.251. Identification of Bering Sea Tanner crab.

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? Adopt by reference the Alaska Department of Fish and Game *Chinocoecetes* Crab Quick Reference Guide for C. *bairdi* and *C. opilio* Tanner crab.

WHAT ARE THE CURRENT REGULATIONS? Tanner crab in the Bering Sea District are identified as either *C. bairdi* or *C. opilio* based on eye color and the shape of the labrum (5 AAC 35.521 (a)). Tanner crab that do not meet regulatory identification of *C. bairdi* are considered to be *C. opilio* (5 AAC 35.521 (c)).

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Provide additional regulatory detail for identification of hybrid Tanner crab as either *C. bairdi* or *C. opilio* (Figure 260-1).

BACKGROUND: The species range for *C. bairdi* and *C. opilio* Tanner crab overlap in the Bering Sea and these two species hybridize with resultant Tanner crab having morphological characteristics forming a continuum between the two species. A separate fishery for hybrid crab does not exist; however, hybrid Tanner crab are legally classified in regulation as either *C. bairdi* or *C. opilio* according to characteristics described in 5 AAC 35.521.

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal.

This proposal is a "Category 3 – Other" management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.3.8).

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

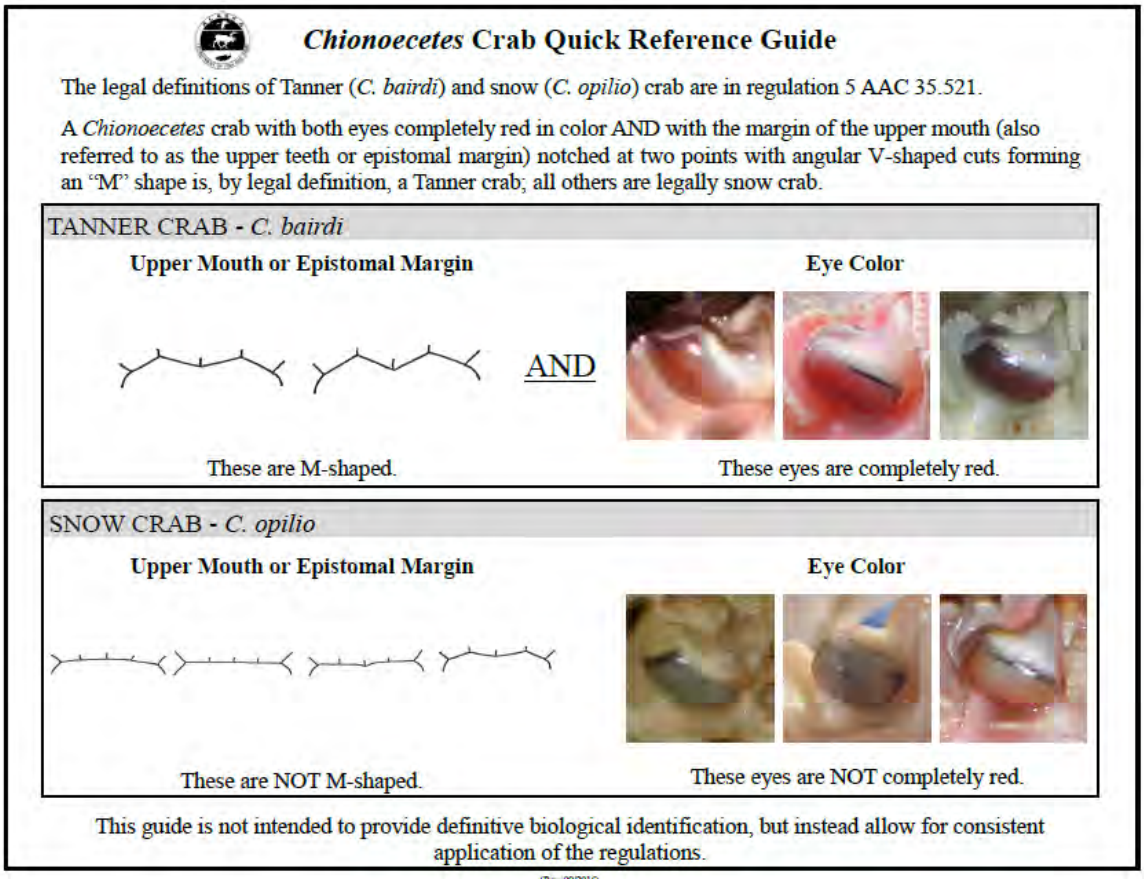

Figure 260-1.–Alaska Department of Fish and Game *Chionoecetes* Crab Quick Reference Guide

PROPOSAL 261 – 5 AAC 35.506. Area J registration.

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? Allow fishermen to retain legal sized male *Chioneocetes opilio* Tanner (snow) crab incidentally harvested up to five percent of the weight of Tanner crab on the fish ticket when participating in the eastern (east of 166°W long.) *C. bairdi* Tanner crab fishery.

WHAT ARE THE CURRENT REGULATIONS? Retention of incidentally taken snow crab in the EBT fishery is not permitted per 5 AAC 39.670(c)(4) and 5 AAC 35.506(i) and (j) by omission.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Fishermen participating in EBT would be allowed to retain legal sized male snow crab caught incidentally; up to five percent of the weight of eastern Bering Sea Tanner crab onboard the vessel, as long as they hold BSS IFQ or CDQ and the BSS season is open.

In the 2015/16 EBT fishery, there were several occurrences of illegally taken snow crab and many vessels received citations from AWT as a result. In an effort to assist fishermen in the identification Tanner and snow crab the department submitted Proposal 260 referencing a quick guide to *Chionoecetes* crab identification. The department also submitted this proposal which would allow for small amounts of legal sized male snow crab to be retained during the Tanner crab fishery. A five percent retention of legal sized male would continue to protect the stock but also allow for some unintentional incidental harvest during EBT without penalizing fishermen.

BACKGROUND: Although both snow and Tanner crabs occur in the same geographical area, the fisheries differ in season dates, gear configuration, observer deployment rates, and stock assessments. Tanner crab in the Bering Sea are considered to be a single stock but prosecuted as two distinct fisheries divided east and west of 166°W long. in order to distribute effort across the stock's expansive distribution area. Fishermen can prosecute EBT between 163°W long. and 166°W long (Figure 261-1). Both Tanner crab fisheries are open October 15 through March 31. Bering Sea snow crab (BSS) is prosecuted as a single fishery in the Eastern Subdistrict west of 166°W long. and Western Subdistrict of the Bering Sea District except in a closure area surrounding the Pribilof Islands (Figure 261-2). BSS is open from October 15 through May 15 east of 173°W long. and through May 31 west of 173°W long.

Regulations adopted by the board in 2008 specify that crab fishermen may only use legal crab pot gear according to 5 AAC 34.050 and 5 AAC 35.535. Legal Tanner crab pot gear must have at least one-third of one vertical surface of the pot composed of not less than 6 ¼ in stretched mesh webbing or no less than four circular escape rings of no less than 4 ½ in installed on a vertical surface no higher than one full mesh from the bottom of the pot. Legal gear for snow crab must be configured with at least eight escape rings (four rings on two sides) with an inside diameter of no less than four in installed on the verticals surface no higher than the first full mesh up from the bottom of the pot or have one half of one side composed of not less than 5 ¼ in stretched mesh webbing (Table 261-1).

Data from observer sample pots in EBT, show an increasing trend in snow crab abundance in EBT (Table 261-2). This could be due to changes in bottom conditions, movement of the snow crab population, increases in EBT TACs over the last three seasons, or changes in fishing practices. Nearly all snow crab caught in EBT are discarded with an assumed discard mortality rate of 30 percent according to the 2016 crab SAFE. NMFS summer trawl survey snow crab data shows legal sized male crab are present just east of the 166°W long. boundary line (Figure 261-3). Distribution has changed somewhat over the last three surveys and during the 2016 survey legal sized male snow crab were found much further south and in a much smaller area than the previous two surveys. Even though legal sized male snow crab are found east of 166°W long., the relative abundance with respect to the rest of the BSS stock, is fairly low (Figure 261-4).

While BSS is prosecuted in waters west of 166°W long., snow crab to the east of this boundary, on the EBT fishing grounds, are not considered part of the BSS fishery (Figure 261-2).

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal. In related Proposals 250, 255, and 256, the department expressed concerns regarding unlimited harvest of incidental species. While these concerns will still be present, this proposal will provide some flexibility to fishermen but also addresses stock conservation concerns.

Bycatch limits are a Category 3 management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.3.6).

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 261-1.–Escapement requirements for pot gear in the Bering Sea snow crab (BSS) and western Bering Sea Tanner crab (WBT) fisheries.

	Escapement Webbing		Escapement Rings		
Fishery	Dimensions (in)		Number	Dimensions (in)	Placement
WBT	6 ¼	OR	4	4 ½	1+ sides
BSS	5 ¼	OR	8	4	2+ sides

Table 261-2.–Observer sample pot data for legal sized male snow crab bycatch and total legal sized male Tanner crab sampled in eastern Bering Sea Tanner crab fishery (EBT), 2013/14–2015/16.

Fishery Season	Legal Snow Crab Retained	Legal Snow Crab Not Retained	Total Legal Snow Crab	Total Legal EBT
2013/14	NA	97	97	12,885
2014/15	NA	822	822	79,218
2015/16	15	28,192	28,207	81,216

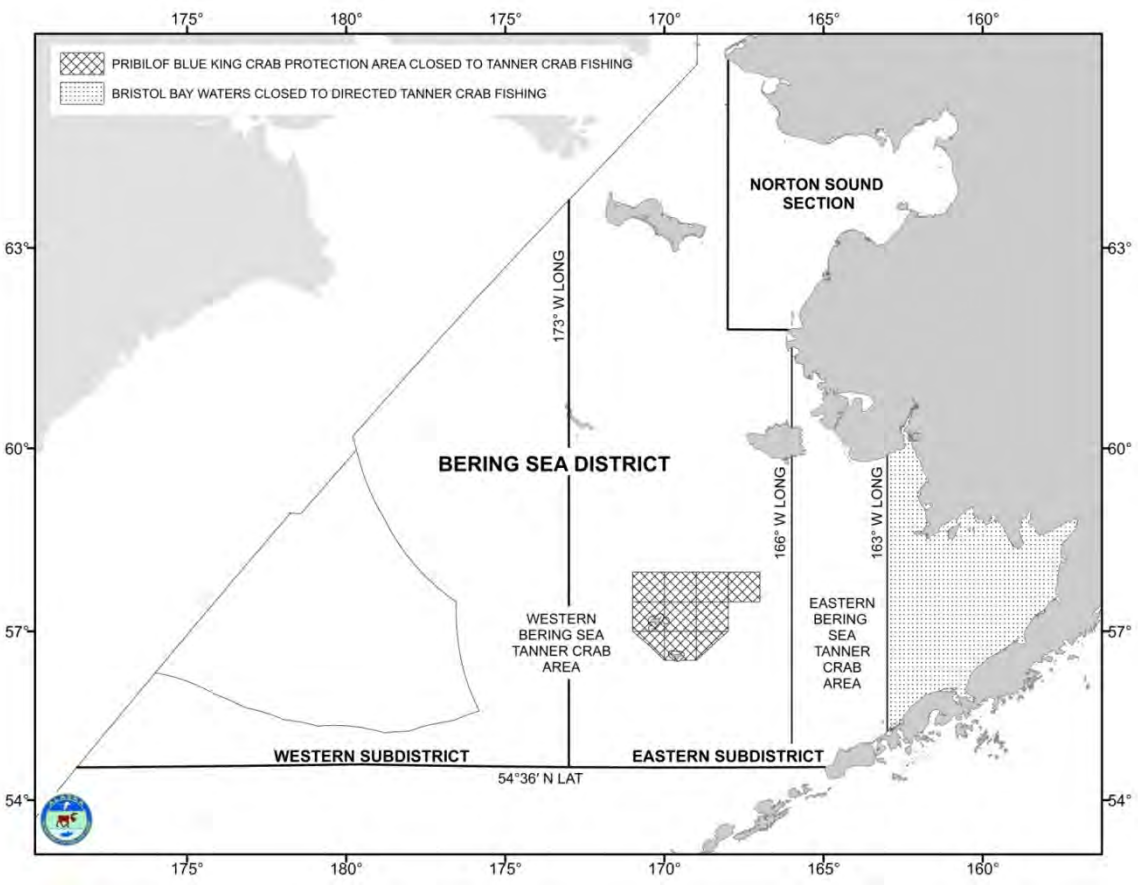

Figure 261-1.–Bering Sea District Tanner crab fishery management boundaries and 2016/17 Pribilof Islands blue king crab protection area.

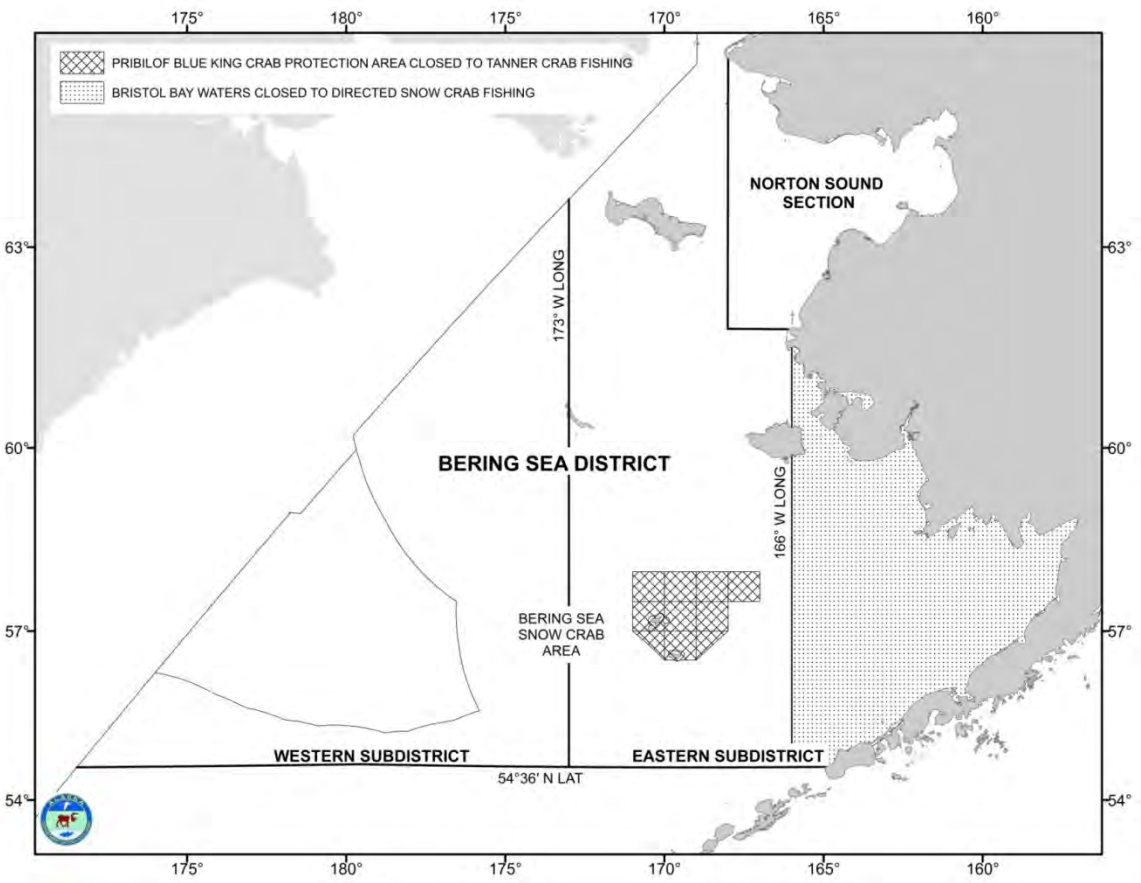

Figure 261-2.–Bering Sea District snow crab fishery management boundaries and 2016/17 Pribilof Islands blue king crab protection area.

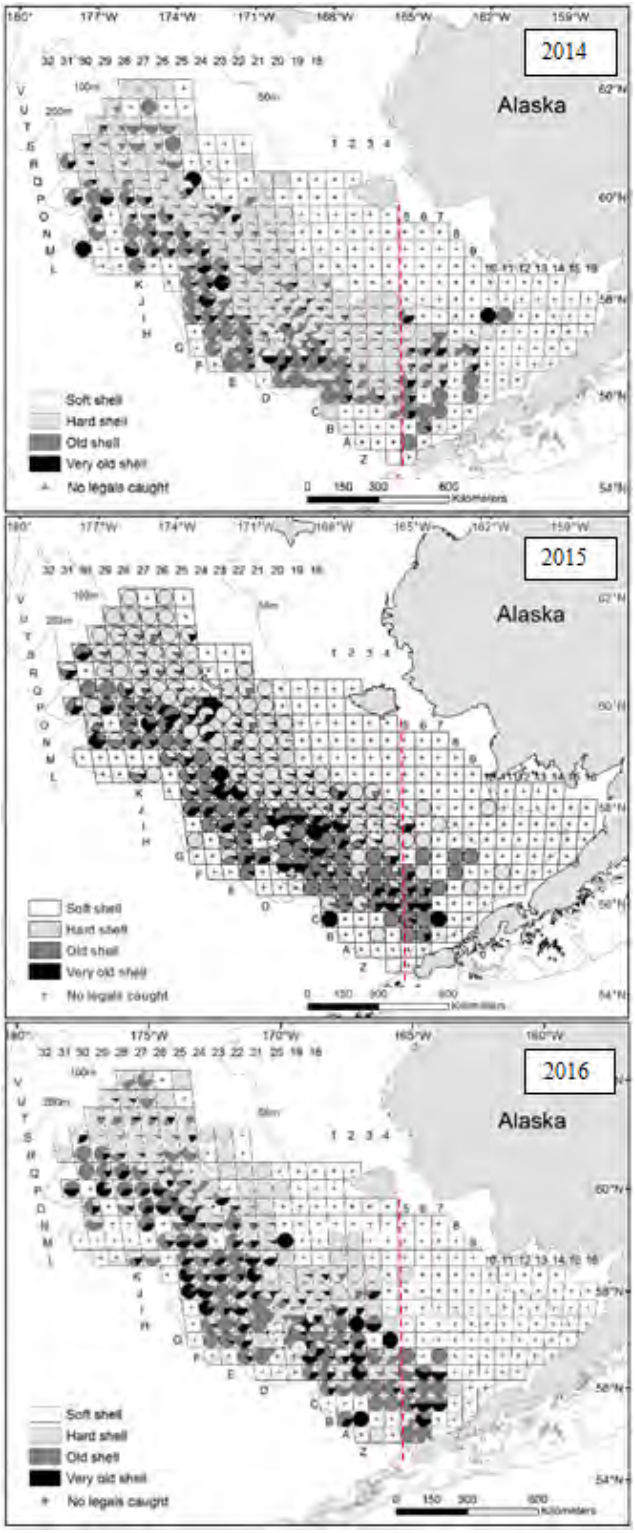

Figure 261-3.–Legal-sized male snow crab distribution in the 2014 (upper panel), 2015 (center panel), 2016 (lower panel) NMFS Bering Sea summer trawl survey. Maps excerpted from the respective NMFS trawl survey memos. The 166°W long. boundary shown by bold dashed line.

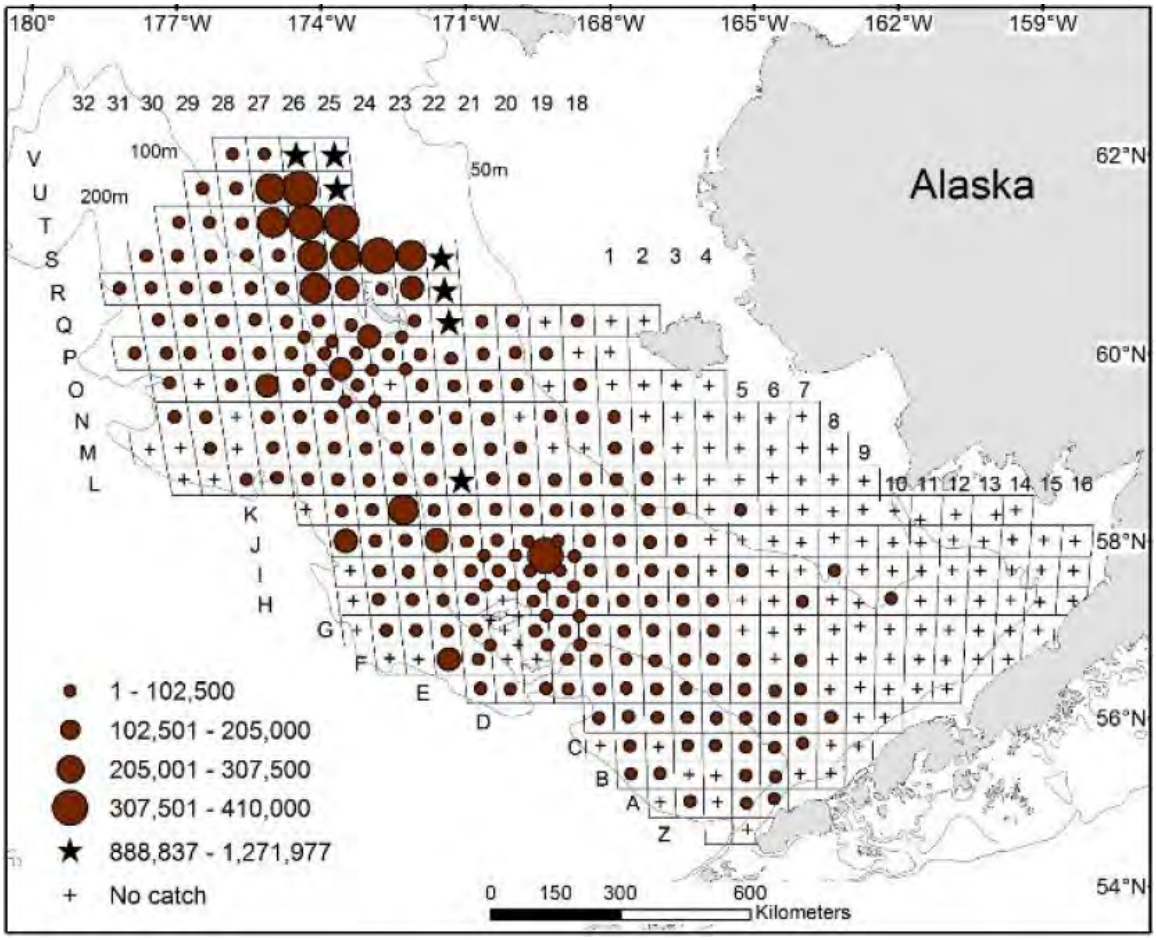

Figure 261-4.–Total density (number nmi^2) of snow crab for each survey station in the 2016 NMFS summer trawl survey. Taken from the 2016 NMFS summer trawl survey memo.

ALEUTIAN ISLANDS KING AND TANNER CRAB

PROPOSAL 262 – 5 AAC 35.505. Description of Registration Area J Districts; 5 AAC 35.506. Area J registration; 5 AAC 35.50X. Western Aleutian District Tanner crab harvest strategy; 5 AAC 35.510. Fishing seasons for Registration Area J; 5 AAC 35.525. Lawful gear for Registration Area J; 5 AAC 35.558. Reporting requirements for Registration Area J; and 5 AAC 35.590. Vessel length restrictions.

PROPOSED BY: Adak Community Development Corporation.

WHAT WOULD THE PROPOSAL DO? This would create a new harvest strategy as well as establish an Adak Section in the western Aleutian Islands, and implement new registration requirements, season dates, pot limits, and vessel length restrictions.

WHAT ARE THE CURRENT REGULATIONS? Current regulations provide for a fishery for Tanner crab in the Western Aleutian District by emergency order from November 1 through March 31. Fishing would be permitted under authority of a commissioner's permit where harvest limits, open waters, gear limits, fishing periods, reporting requirement, and other management measures could be detailed.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? The Western Aleutian District fishery would be more rigidly structured in regulation. Any future fishery would continue to be opened at the department's discretion based on best scientific information.

BACKGROUND: WAD of Registration Area J includes all waters west of 172° W long., east of the United States-Russia Maritime Boundary Line of 1990, and south of Cape Sarichef (54° 36′ N lat.). Area J encompasses territorial waters of Alaska (0–3 nautical miles) and waters of the Exclusive Economic Zone (3–200 nautical miles; Figure 262-1).

Most Tanner crab in the WAD have historically been harvested incidental to the directed red king crab fishery. Commercial harvest has ranged from a high of 839 thousand pounds during the 1981/82 season to less than eight thousand pounds in 1991/92 (Table 262-1). Most harvest has occurred within a few bays near Adak and Atka Islands. No commercial harvest of Tanner crab has occurred in the WAD since 1996/97 as the fishery has been closed due to low abundance. Stock status is currently unknown. Past fisheries were managed using GHLs set from commercial catch data. Legal size for male Tanner crab in this fishery is 5.5 in carapace width including spines.

The most recent fishery data available for legal sized males from the WAD is observer sample pot data from 1989-1992. During these years the fishery was multi-species fishery and focused on red and golden king crabs with Tanner crab retained as incidental catch. There is no location data available for the 1989 fishery and no legal sized male Tanner crab sampled during the 1992 fishery. The 1990 and 1991 fisheries data shows legal sized male crab in very small quantities and distributed north of Semisopochnoi Island and south of Agattu and Buldir Islands (Figure 262-2).

Regular stock assessment does not occur for Tanner crab in the WAD; thus no population estimates are available. Two surveys occurred in the WAD in 2002 and in 2015. Both surveys were designed to assess red king crab but also collected incidental Tanner information. The November 2002 survey occurred around Atka, Adak, and Amlia Islands using legal red king crab gear. Ten vessels participated, observers sampled every fifth pot hauled, and participants were permitted to retain and sell all legal sized red king crab that were caught. Tanner crab were found in all three survey areas and bycatch of Tanner crab during this survey accounted for approximately 33% of the total bycatch. Of all of the Tanner crab that were captured in this survey, approximately 9% were legal sized males. The majority of these legal males were distributed in two areas around western Atka and northern Adak Islands (Figure 262-3).

The recent 2015 Adak red king crab survey was not a random survey but an assessment of preferred habitat as determined by an experienced crab captain. One vessel participated and large pots were used with 5 ¼ in stretched mesh with no escape mechanisms. No retention of crab was permitted during this survey. Of the Tanner crab captured, 64% were legal sized males. Tanner crab were patchily distributed throughout the survey area (Figure 262-4) except for legal sized male Tanner crab which were located on the northwest side of Adak Island in Sitkin Sound (Figure 262-5). CPUE (number of legal sized crab per pot) for Tanner was extremely low throughout the survey area with exceptionally high variation (Table 262-2). Nearly all of the areas surveyed had CPUEs less than 1.0 crab per pot. Average CPUE for legal sized male Tanner was 2.16 ± 15.11 overall with a range of 0 to 6.07 ± 24.98 (Table 262-2).

In the absence of stock assessment information, the department is unable to determine stock abundance or set an informed harvest limit. This is in contrast to the Eastern Aleutian District Tanner crab for which an annual trawl survey is conducted each summer and stock abundance is calculated in order to determine fishery openings and closures. Even though a recent reconnaissance survey occurred around Adak, it was not sufficient to calculate stock abundance for Tanner crab in that area. Additionally, catch rates of legal sized male Tanner crab in the survey were extremely low, highly localized, and not sufficient to warrant a commercial fishery opening in the area surveyed. The department believes that adequate regulations currently exist to open a fishery in the WAD should conditions warrant in the future and is currently working with industry in an attempt to develop commissioners permit provision to allow for some limited exploratory fishing and data gathering.

In December 2007, the NPFMC amended the FMP by adopting new overfishing definitions for BSAI crabs, removing Aleutian Islands Tanner crab from the FMP, and providing the state of Alaska with sole jurisdiction over the fishery.

DEPARTMENT COMMENTS: The department **OPPOSES** this proposal because it confers no conservation or management benefit over status quo.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 262-1.–Western Aleutian District Tanner crab fishery data, 1973/74–2015/16.

	Number of					Average		Value	
Season	Vessels	Landings	Crab[a]	Pots lifted	Harvest[a,b]	Weight[b]	CPUE[c]	Exvessel[d]	Total
1973/74	7	12	31,079	2,390	71,887	2.3	13	NA	NA
1974/75	1	CF	CF	CF	CF	CF	CF	CF	CF
1975/76	2	CF	CF	CF	CF	CF	CF	CF	CF
1976/77	0	0	0	0	0	0	0	$0.00	0
1977/78	6	7	103,190	2,700	237,512	2.3	38	$0.38	$90,255
1978/79	6	9	84,129	4,730	197,244	2.3	18	$0.53	$104,539
1979/80	10	12	147,843	5,952	337,297	2.3	25	$0.52	$175,394
1980/81	9	23	95,102	7,327	220,716	2.3	13	$0.54	$119,187
1981/82	17	43	364,164	21,910	838,697	2.3	17	$1.30	$1,081,895
1982/83	61	125	225,491	40,450	488,399	2.2	6	$1.27	$610,536
1983/84	31	86	171,576	20,739	384,146	2.2	8	$0.95	$364,749
1984/85	31	41	75,009	13,416	163,460	2.2	6	$1.30	$211,198
1985/86	15	30	98,089	7,999	206,814	2.1	12	$1.40	$289,540
1986/87	8	24	19,874	10,878	42,761	2.1	2	$1.50	$63,842
1987/88	15	37	63,545	7,453	141,390	2.2	9	$2.10	$296,499
1988/89	36	77	69,280	18,906	148,997	2.1	4	$1.00	$148,764
1989/90	12	30	22,937	6,204	48,746	2.1	4	$1.00	$44,936
1990/91	5	21	6,901	1,309	14,779	2.1	5	$1.25	$18,318
1991/92	8	8	3,483	986	7,825	2.2	4	$1.00	$7,825
1992/93	2	CF	CF	CF	CF	CF	CF	CF	CF
1993/94–1994/95	0	0	0	0	0	0	0	$0.00	$0.00
1995/96	1	CF	CF	CF	CF	CF	CF	CF	CF
1996/97–2015/16	FC	FC	FC	FC	FC	FC	FC	FC	FC

Notes: NA = not available, CF = confidential. FC = fishery closed
[a] Deadloss included.
[b] In pounds.
[c] Number of retained crab per pot lift.
[d] Average price per pound.

Table 262-2.–Catch per unit effort (catch per pot; ±SD) for each size/sex class of red king and Tanner crabs by area. Average CPUE greater than 1.0 crab/pot are in bold. Excerpted from the 2015 survey results Fishery Data Series No. 16-18.

	Red King Crab				Tanner Crab			
Area	Legal Male	Prerecruit Male	Juvenile Male	Females	Legal Males	Prerecruit Males	Juvenile Males	Females
Adak Straight	0.10±0.47	0.48±2.37	**1.03±6.73**	0.65±4.19	0.17±1.02	**1.21±8.19**	0.94±3.72	0.37±1.83
S. Adak	0	0	0	0	0.01±0.09	0.03±0.16	0.10±0.87	0.03±0.22
S. Kagalaska	0	0	0	0	0	0	0.01±0.11	0
Sitkin Sound	0.07±0.76	0.29±2.62	0.29±4.42	0.64±9.69	**6.07±24.98**	0.75±4.32	**1.10±6.56**	0.85±4.70
Yoke Bay	0	0	0	0	0	0.01±0.12	0	0.01±0.12
Overall	0.32±0.47	0.10±1.71	0.19±3.29	0.28±6.05	**2.16±15.11**	0.38±3.53	0.49±4.09	0.34±2.87

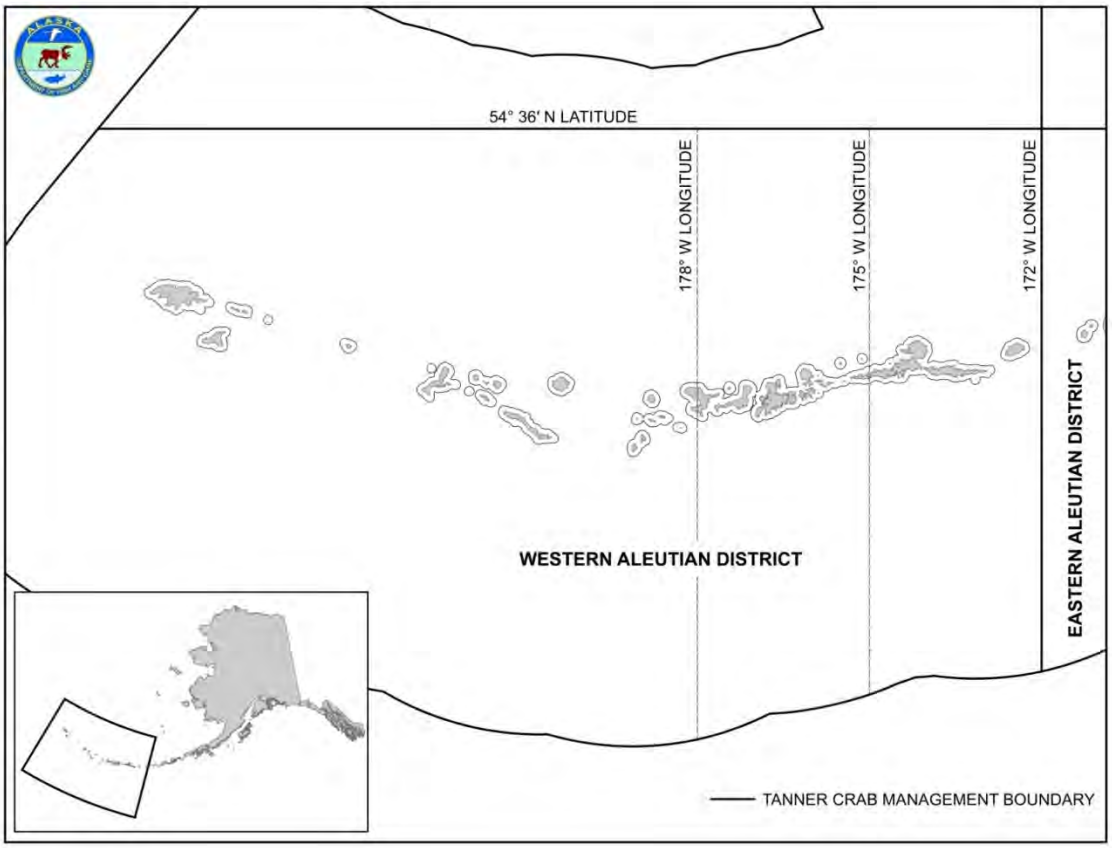

Figure 262-1.–Western Aleutian District Tanner crab fishery management area.

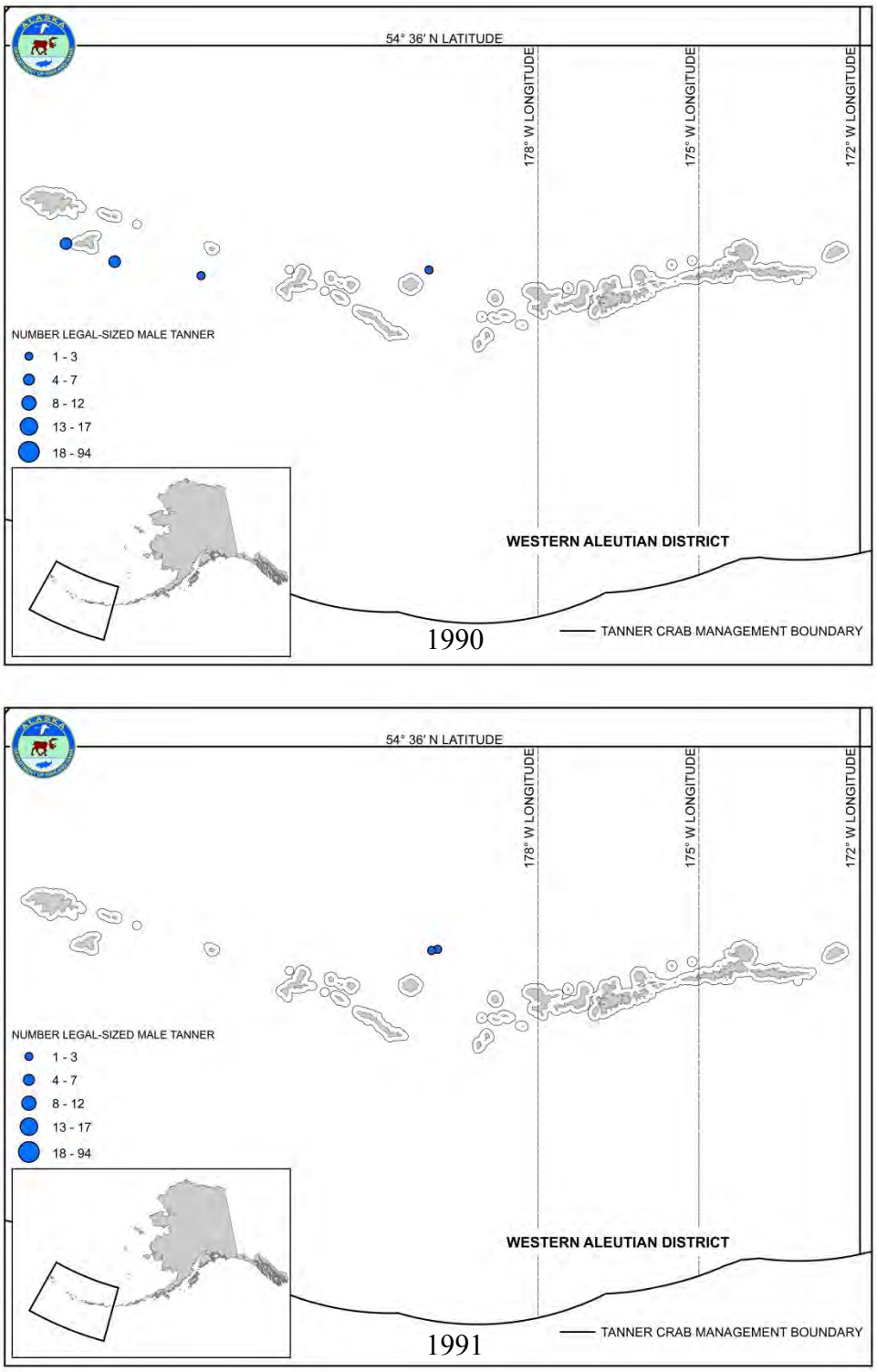

Figure 262-2.–Observer sample pot data for legal sized male Tanner crab distribution and proportional abundance from the 1990 (upper panel) and 1991 (lower panel) brown king, red king, and Tanner crabs fishery.

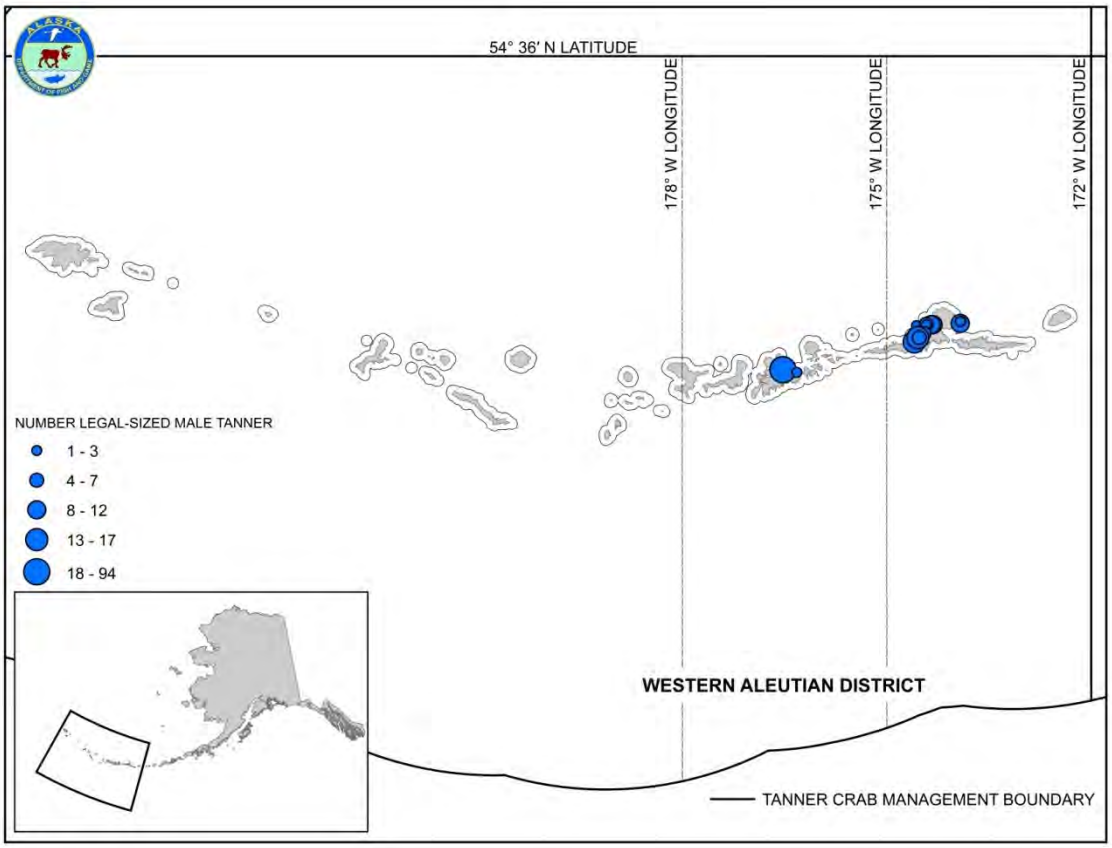

Figure 262-3.– Distribution and proportional abundance of legal sized male Tanner crab in the November 2002 Adak red king crab survey.

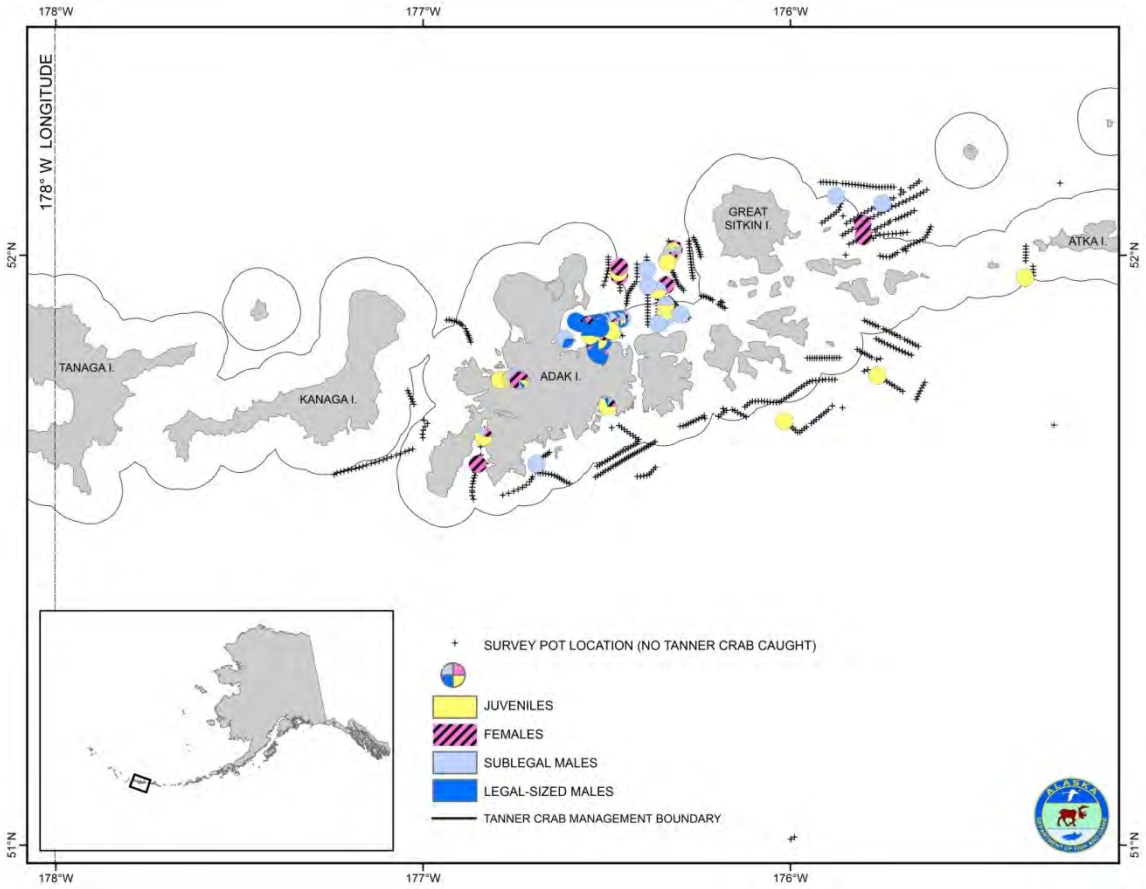

Figure 262-4.–Distribution and proportional abundance of Tanner crab in the 2015 Adak red king crab survey.

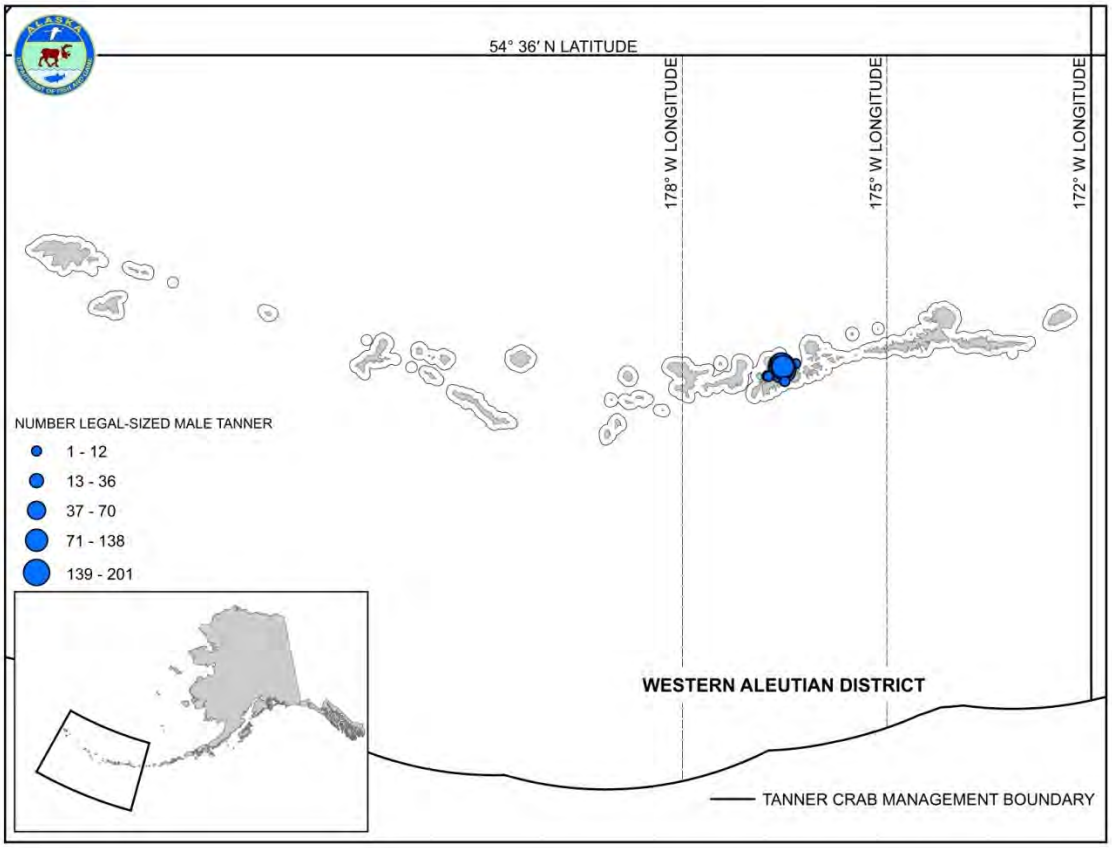

Figure 262-5.–Distribution and proportional abundance of legal sized male Tanner crab in the 2015 Adak red king crab survey.

PROPOSAL 263 – 5 AAC 39.645. Shellfish onboard observer program.

PROPOSED BY: Aleutian King Crab Research Foundation.

WHAT WOULD THE PROPOSAL DO? This would reduce observer coverage for the Aleutian Islands golden king crab fishery to 30–50% coverage with the actual coverage rate for each trimester determined by the fleet consulting annually with the department. The proposed shift in trimester dates for observer coverage is currently in regulation.

WHAT ARE THE CURRENT REGULATIONS? Current regulations require catcher vessels participating in the Registration Area O (Aleutian Islands) golden king crab fishery both east and west of 174°W. long. to carry an onboard observer for 50% of the total golden king crab weight harvested during each trimester from August 1 to April 30 during each registration year (Table 263-1). Current trimesters are August 1 through October 31, November 1 through January 31, and February 1 through April 30. (5 AAC 39.645 (d)(4)(A)(ii), 5 AAC 39.645 (d)(4)(A)(iii))

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Lowering observer coverage would increase uncertainty and reduce department's ability to monitor manage these fisheries. Increased uncertainty generally warrants a conservative management approach to ensure for the long-term viability of the stocks.

BACKGROUND: Golden king crab in the Aleutian Islands is currently managed as two stocks, east and west of 174°W. long. in a single registration area - Aleutian Islands, Area O (Figure 263-1). Since the 1996/97 season, the Aleutian Islands eastern and western golden king crab fisheries have been managed under a constant-catch harvest strategy with harvest in the most recent 10 years in both fisheries being remarkably consistent. A constant-catch harvest strategy continues to be used until an acceptable stock assessment model is approved by the CPT and SSC. In September 2016, the CPT endorsed a stock assessment model for management. Pending further review and modification, the department anticipates the SSC will formally adopt the model for use in 2017. Once adopted, department staff will initiate analysis and begin development of a regulatory harvest strategy that will be used to establish annual harvest limits. In the interim, observer data provides the only source of data to inform management.

Under the constant catch strategy, harvest in the eastern area averaged 3.2 million pounds between the 2005/06 and 2015/16 seasons with harvest in the west averaging 2.7 million pounds.

Observer coverage in the golden king crab fisheries has been required since 1995/96 season. From 1995/96 to 2004/05, each fishing vessel was required to carry an observer during 100% of fishing activity. Observer coverage was reduced with the implementation of rationalization; catcher-only vessels carry an observer for 50% of golden king crab harvest weight during each trimester of the 9-month season and catcher-processor vessels carry an observer for 100% of fishing activities (5 AAC 39.645 (d)). Catcher vessel operators have full discretion on when and what trips they carry observers provided they meet the 50% per trimester target. In most seasons, observer coverage exceeds 50% (Figure 263-1). This is in part occurs at the request of golden king crab vessel captains to have an observer placed onboard at the end of one trimester and then keeping the same observer into the next trimester in order to be able to extend their fishing operations. Annually, the department conducts a cost recovery test fishery for golden king crab.

Proceeds from the test fishery cover the costs associated with administering the observer program and vessel owners or operators are not responsible for paying the daily contract rate for deployed observers.

The current Aleutian Islands Golden king crab fishery is unique among other king crab fisheries. Rationalization resulted in dramatic changes of fishing practices for the Aleutian Islands golden king crab fisheries; most notably, reduced fleet size and increased average pot soak time. The eastern Aleutian Islands golden king crab fleet decreased from an average of 16 vessels prior to rationalization (1996/97–2004/05) to an average of four vessels during the most recent eleven seasons. In the western Aleutian Islands, fleet size decreased from an average of nine vessels prior to rationalization to two or three vessels during recent seasons. Since rationalization, fishermen have become highly proficient at targeting golden king crab on their preferred fishing grounds. Even though the number of pots per vessel increased dramatically over prerationalized fisheries, the number of pots lifts in the fishery decreased while accomplishing similar harvests pre- and postrationalization and improved efficiency is mainly attributed to increase in soak time and improved catch rates.

Soak times increased substantially with respect to pre- and postrationalization periods. In the east, average fishery soak time has increased from four days prerationalization to 15 days postrationalization (Table 263-2). Similarly, in the west, average fishery soak time increased from nine days to 24 days, pre- and postrationalization, respectively (Table 263-2). The use of escape mesh covering most of the pot coupled with increased soak time has enabled crab to "self-sort" on bottom, reducing both on-deck sorting time and bycatch of sublegal and female crab. These highly efficient fishing practices resulting from rationalization have led to hyperstable CPUE. However, as the fishery-dependent stock assessment model has yet to be approved by the SSC, CPUE is the primary tool available for assessing abundance trends in Aleutian Islands golden king crab stocks. Based on observer derived measures of CPUE, the department departed from the constant catch strategy and lowered the 2016/17 TAC in the west area based on stock conservation concerns.

DEPARTMENT COMMENTS: The department **OPPOSES** any action that would reduce observer coverage rates until adequate fishery independent data is available to inform stock status and management. The department supports continued dialog with the fleet regarding fishery dependent data collection. Department staff currently have the capability and regulatory authority to assist vessel operators with better achieving the target observer rate.

Observers are a Category 3 management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.3.7).
(FMP Appendix B).

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 263-1.–Aleutian Islands Golden king crab observer coverage.

Season	Location	Harvest[b,d]	Observed Harvest[b,d]	Percent Observed
2000/01	East of 174°W	3,134,079	3,134,079	100%
	West of 174°W	2,884,682	2,861,017	99%
2001/02	East of 174°W	3,178,652	3,178,652	100%
	West of 174°W	2,740,054	2,740,054	100%
2002/03	East of 174°W	2,821,851	2,821,851	100%
	West of 174°W	2,640,604	2,640,604	100%
2003/04	East of 174°W	2,977,055	2,977,055	100%
	West of 174°W	2,688,773	2,688,773	100%
2004/05	East of 174°W	2,886,817	2,886,817	100%
	West of 174°W	2,688,234	2,688,234	100%
2005/06	East of 174°W	CF	CF	66%
	West of 174°W	CF	CF	86%
2006/07	East of 174°W	CF	CF	68%
	West of 174°W	CF	CF	85%
2007/08	East of 174°W	2,989,997	1,877,612	63%
	West of 174°W	CF	CF	76%
2008/09	East of 174°W	3,144,423	1,914,007	61%
	West of 174°W	CF	CF	83%
2009/10	East of 174°W	3,150,474	1,768,808	56%
	West of 174°W	CF	CF	81%
2010/11	East of 174°W	3,148,188	1,876,097	60%
	West of 174°W	CF	CF	75%
2011/12	East of 174°W	3,150,374	2,056,978	65%
	West of 174°W	CF	CF	82%
2012/13	East of 174°W	3,315,115	1,888,336	57%
	West of 174°W	CF	CF	76%
2013/14	East of 174°W	3,302,061	2,081,366	63%
	West of 174°W	CF	CF	65%
2014/15	East of 174°W	3,307,016	1,933,634	58%
	West of 174°W	CF	CF	64%
2015/16	East of 174°W	3,302,480	2,306,609	70%
	West of 174°W	CF	CF	68%

Note: CF = confidential, NA = not available. Bold line denotes implementation of crab rationalization.

[a] Vessels fished both east and west of 174°W long.

[b] Deadloss included.

[c] Guideline harvest level (GHL), total allowable catch (TAC) from 2005/06 forward.

[d] In pounds.

[e] Number of retained crab per pot lift.

[f] Carapace length in millimeters.

Table 263-2.–Aleutian Islands Golden king crab fishery data, 2000/01–2015/16.

		Number of						Number of pots		Average			
Season	Location	Vessels[a]	Landings	Crab[b]	GHL/TAC[c]	Harvest[b,d]	Deadloss[d]	Registered	Lifted	Weight[d]	CPUE[e]	Length[f]	Soak time[g]
2000/01	East of 174°W	15	50	704,702	3,000,000	3,134,079	55,999	10,598	71,551	4.4	10	147	5
	West of 174°W	12	100	705,613	2,700,000	2,884,682	53,158	8,910	101,239	4.1	7	145	10
	TOTAL	17	150	1,410,315	5,700,000	6,018,761	109,157	19,508	172,790	4.3	8	146	NA
2001/02	East of 174°W	19	45	730,030	3,000,000	3,178,652	50,030	12,927	62,639	4.4	12	147	4
	West of 174°W	9	90	686,738	2,700,000	2,740,054	43,519	8,491	105,512	4.0	7	145	12
	TOTAL	21	134	1,416,768	5,700,000	5,918,706	93,549	21,418	168,151	4.2	8	146	NA
2002/03	East of 174°W	19	43	643,886	3,000,000	2,821,851	55,425	11,834	52,042	4.4	12	148	4
	West of 174°W	6	73	664,823	2,700,000	2,640,604	32,101	6,225	78,979	4.0	8	146	12
	TOTAL	22	116	1,308,709	5,700,000	5,462,455	87,526	18,059	131,021	4.2	10	147	NA
2003/04	East of 174°W	18	37	643,074	3,000,000	2,977,055	76,006	12,518	58,883	4.6	11	149	4
	West of 174°W	6	60	676,633	2,700,000	2,688,773	49,321	7,140	66,236	4.0	10	146	13
	TOTAL	21	96	1,319,707	5,700,000	5,665,828	125,327	19,658	125,119	4.3	11	147	NA
2004/05	East of 174°W	19	32	637,536	3,000,000	2,886,817	43,576	13,165	34,848	4.5	18	148	4
	West of 174°W	6	51	685,465	2,700,000	2,688,234	43,560	7,240	56,846	3.9	12	146	12
	TOTAL	22	83	1,323,001	5,700,000	5,575,051	87,136	20,405	91,694	4.2	14	147	NA
2005/06	East of 174°W	7	CF	CF	3,000,000	CF	CF	NA	CF	CF	CF	151	14
	West of 174°W	3	CF	CF	2,700,000	CF	CF	NA	CF	CF	CF	148	24
	TOTAL	8	CF	CF	5,700,000	CF	CF	CF	CF	CF	CF	149	NA
2006/07	East of 174°W	6	CF	CF	3,000,000	CF	CF	NA	CF	CF	CF	152	12
	West of 174°W	4	CF	CF	2,700,000	CF	CF	NA	CF	CF	CF	150	19
	TOTAL	7	CF	CF	5,700,000	CF	CF	CF	CF	CF	CF	150	NA
2007/08	East of 174°W	4	42	633,253	3,000,000	2,989,997	21,558	NA	22,653	4.7	28	153	17
	West of 174°W	3	CF	CF	2,700,000	CF	CF	NA	CF	CF	CF	149	22
	TOTAL	5	CF	CF	5,700,000	CF	CF	CF	CF	CF	CF	151	NA
2008/09	East of 174°W	3	37	666,946	3,150,000	3,144,423	25,525	NA	24,466	4.7	27	151	15
	West of 174°W	3	CF	CF	2,835,000	CF	CF	NA	CF	CF	CF	148	24
	TOTAL	5	CF	CF	5,985,000	CF	CF	CF	CF	CF	CF	149	NA

-continued-

Table 263-2.–Page 2 of 2.

2009/10	East of 174°W	3	39	679,886	3,150,000	3,150,474	33,284	4,600	26,298	4.6	26	152	16
	West of 174°W	3	CF	CF	2,835,000	CF	CF	CF	CF	CF	CF	150	27
	TOTAL	5	CF	CF	5,985,000	CF	CF	CF	CF	CF	CF	150	NA
2010/11	East of 174°W	3	35	670,983	3,150,000	3,148,188	71,519	4,600	25,851	4.7	26	153	14
	West of 174°W	3	CF	CF	2,835,000	CF	CF	CF	CF	CF	CF	149	23
	TOTAL	5	CF	CF	5,985,000	CF	CF	CF	CF	CF	CF	151	NA
2011/12	East of 174°W	3	41	668,828	3,150,000	3,150,374	24,184	3,850	17,915	4.7	37	151	18
	West of 174°W	3	CF	CF	2,835,000	CF	CF	CF	CF	CF	CF	148	28
	TOTAL	5	CF	CF	5,985,000	CF	CF	CF	CF	CF	CF	149	NA
2012/13	East of 174°W	3	45	687,666	3,310,000	3,315,115	79,434	3,680	20,827	4.8	33	153	18
	West of 174°W	3	CF	CF	2,980,000	CF	CF	CF	CF	CF	CF	150	25
	TOTAL	5	CF	CF	6,290,000	CF	CF	CF	CF	CF	CF	151	NA
2013/14	East of 174°W	3	42	699,078	3,310,000	3,302,061	29,932	4,100	20,687	4.7	32	151	14
	West of 174°W	3	CF	CF	2,980,000	CF	CF	CF	CF	CF	CF	152	24
	TOTAL	5	CF	CF	6,290,000	CF	CF	CF	CF	CF	CF	151	NA
2014/15	East of 174°W	3	41	693,474	3,310,000	3,307,016	29,676	4,650	16,406	4.8	41	152	15
	West of 174°W	2	CF	CF	2,980,000	CF	CF	CF	CF	CF	CF	148	25
	TOTAL	5	CF	CF	6,290,000	CF	CF	CF	CF	CF	CF	150	NA
2015/16	East of 174°W	3	34	717,864	3,310,000	3,302,480	53,160	4,300	18,481	4.6	36	152	13
	West of 174°W	2	CF	CF	2,980,000	CF	CF	CF	CF	CF	CF	147	24
	TOTAL	5	CF	CF	6,290,000	CF	CF	CF	CF	CF	CF	150	NA

Note: CF = confidential, NA = not available. Bold line denotes implementation of crab rationalization.

[a] Many vessels fished both east and west of 174°W long, thus total number of vessels reflects the entire Aleutian Islands.

[b] Deadloss included.

[c] Guideline harvest level (GHL), total allowable catch (TAC) from 2005/06 forward.

[d] In pounds.

[e] Number of retained crab per pot lift.

[f] Carapace length in millimeters.

[g] Average pot soak time in days.

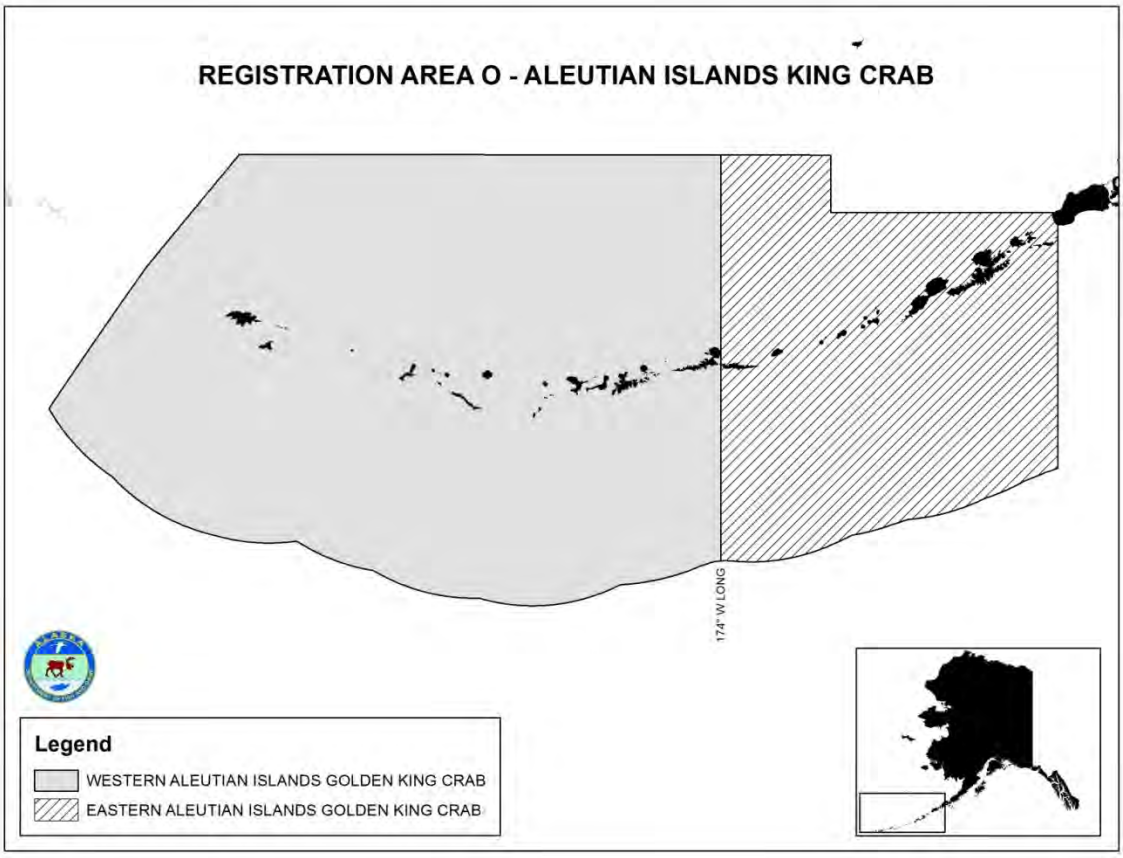

Figure 263-1.–Registration Area O, Eastern and Western Aleutian Islands Golden King Crab.

PROPOSAL 264 – 5 AAC 34.625. Lawful gear for Registration Area O.

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? Repeal provisions allowing concurrent harvest of red and golden king crab in Registration Area O.

WHAT ARE THE CURRENT REGULATIONS? 5 AAC 34.625(f) states that vessels may be concurrently registered for both red and golden king crab commercial fisheries in Registration Area O (Aleutian Islands Area). Only single line pots may be operated in areas open to red king crab fishing and only longline pots may be operated in areas open to golden king crab fishing.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This would repeal the outdated regulation allowing simultaneous harvest of red and golden king crab in Registration Area O (Aleutian Islands Area).

BACKGROUND: Aleutian Islands golden king crab are managed using IFQ and CDQ allocations in two separate fisheries, east and west of 174°W. long. Aleutian Islands red king crab are managed using IFQ and CDQ allocations only in the Petrel District (west of 179°W. long.). Red king crab in the Dutch Harbor District (east of 171°W. long.) and Adak District (171°W. long. to 179°W. long.) are managed for open access participants (Figure 264-1).

Concurrent Aleutian Islands red and golden king crab harvest would be problematic given two of the three Aleutian Islands red king crab district boundaries do not align with the Aleutian Islands golden king crab management boundaries. Allowing red king crab retention during golden king crab fishing would create concern with regard to red king crab harvest location. Prior to crab rationalization vessels were allowed under 5 AAC 34.625(f) to fish red king crab and golden king crab at the same time if both species were open. Regulation 5 AAC 39.670(c)(6), adopted with implementation of crab rationalization, does not allow a vessel to harvest IFQ and non-IFQ crab simultaneously; therefore this proposal would repeal the regulation allowing simultaneous harvest of red and golden king crab in the Aleutian Islands.

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal.

This proposal is a "Category 3 – Other" management measure under the *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP; FMP Section 8.3.8).

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in these fisheries.

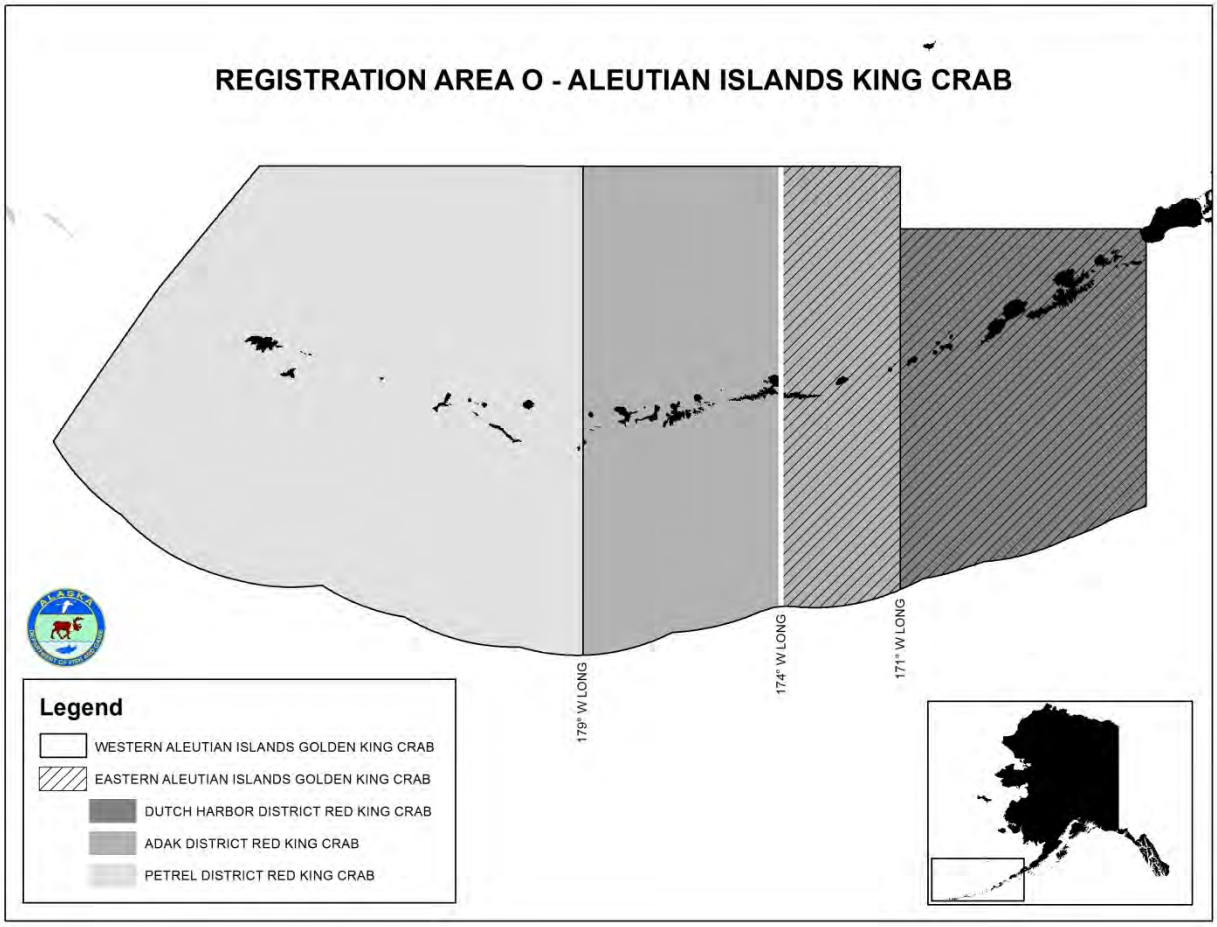

Figure 264-1.–Registration Area O – Aleutian Islands King Crab.

COOK INLET TANNER CRAB

PROPOSAL 265 – 5 AAC 35.408. Registration Area H Tanner crab harvest strategy.

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? Amend the current Tanner Crab harvest strategy in the Cook Inlet Management Area to allow noncommercial fisheries to remain open, in the absence of data to estimate abundance of legal male Tanner crab, or if department trawl surveys have not been conducted for three consecutive years, with a reduced bag and possession limit of three legal male Tanner crab, reduced season of October 1 through the last day of February, and reduced gear limit of one pot per person with a maximum of one pot per vessel.

WHAT ARE THE CURRENT REGULATIONS? Under 5 AAC 35.408 Registration Area H Tanner crab harvest strategy, Tanner crab abundance thresholds necessary to open Cook Inlet Area Tanner crab commercial and noncommercial fisheries are established. The Cook Inlet Area, or Registration Area H, is defined as waters north of the latitude of Cape Douglas and west of the longitude of Cape Fairfield (5 AAC 35.400) and corresponds to noncommercial fisheries areas designated A–E (Figure 265-1).

The strategy contains provisions that close the noncommercial fisheries based on the estimated abundance of legal male Tanner crab from the trawl surveys conducted in Kachemak and Kamishak bays. In areas A, B, and C, Tanner crab noncommercial fisheries are managed from the Kamishak Bay trawl survey. In areas D and E, noncommercial fisheries are managed from the Kachemak Bay trawl survey. Regulation 5 AAC 35.410 connects the areas outside of Kachemak Bay (A, B, and C) together for management of the noncommercial fisheries.

The harvest strategy limits the noncommercial Tanner crab GHL to no more than 10 percent of the recent three-year average of legal male stock abundance when legal male stock abundance is below the minimum stock threshold for a commercial fishery.

In areas D and E, or Kachemak Bay waters east of a line from Point Pogibshi to Anchor Point, the noncommercial Tanner crab fisheries will close when:

The recent three-year average stock abundance of legal male Tanner crab estimated from the Kachemak Bay trawl survey is less than 100,000 Tanner crab; or

Estimated stock abundance level of legal male Tanner crab is less than 50,000 Tanner crab in any given year;

In areas A, B and C, or all remaining waters of the Cook Inlet Area outside of Kachemak Bay, the noncommercial fisheries will close when:

The recent three-year average stock abundance of legal male Tanner crab estimated from the Kamishak Bay trawl survey is less than 50,000 Tanner crab; or

Estimated stock abundance level of legal male Tanner crab from the Kamishak Bay trawl survey is less than 40,000 in any given year.

Cook Inlet Area sport (5 AAC 58.022) and subsistence (5 AAC 02.325) regulations establish season dates for the noncommercial fisheries. In Kachemak Bay, areas D and E, the noncommercial Tanner crab season dates are September 1–December 31 and January 15–March 15, and for areas A–C, the season is open July 15–March 15. Bag and possession limits are five male Tanner crab with a size limit of five and one-half inches or greater in width of shell. Legal gear is restricted to no more than two pots per person with a maximum of two pots per vessel, except a maximum of six pots per vessel between the longitude of Gore Point and Cape Fairfield (Figure 265-1; Area C). A harvest permit is required and the catch information must be completed before concealing the Tanner crab from plain view or removing the Tanner crab from the fishing site (5 AAC 58.026, 5 AAC 77.507, and 5 AAC 02.325).

The board has found there are positive customary and traditional uses of shellfish stocks in Cook Inlet outside the nonsubsistence use areas (5 AAC 02.311). The board has not made an ANS finding for Tanner crab.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? In the absence of data to estimate legal male Tanner crab abundance, or when department trawl surveys have not been conducted for three consecutive years, this proposal would provide Tanner crab harvest opportunity in the noncommercial fisheries in the Cook Inlet Management Area (Figure 265-1; areas A–E), with a limited season and under a reduced bag, possession, and gear limit. When trawl survey data is not available, an EO would need to be issued consistent with the new provision in the harvest strategy to supersede current sport, personal use, and subsistence regulations governing Tanner crab fisheries.

BACKGROUND: The Cook Inlet Area Tanner crab harvest strategy (5 AAC 35.408) allows commercial or noncommercial fisheries to occur when specific legal male Tanner crab abundance thresholds are met. Since the strategy was adopted in 2002, commercial thresholds have not been attained; there has been no commercial fishery since 1994. Abundance levels of legal male Tanner crab have not been assessed in Kachemak Bay since 2013 and in Kamishak Bay since 2012. The noncommercial Tanner crab fishery in Kachemak Bay (areas D and E) has been closed since September 6, 2011 and the fishery in the remainder (areas A–C) of the Cook Inlet Area has been closed since March 15, 2012.

The department conducted large mesh bottom trawl surveys from 1990–2013 in Kachemak Bay (Table 265-1) and through 2012 in Kamishak Bay (Table 265-2). These surveys provided estimates of legal male Tanner crab required by regulation to open commercial and noncommercial fisheries. The most recent three surveys in Kachemak Bay were conducted in 2011, 2012, and 2013. Those three surveys all resulted in estimates of legal male Tanner crab abundance below 50,000 crab, which is the single-year threshold required to keep the fishery open in conjunction with a recent three-year average of 100,000 crab or greater. The 2011, 2012 and 2013 abundance estimates of legal male Tanner crab (140 mm or greater) from the Kachemak Bay trawl survey (Table 265-1; 42,660, 20,512 and 38,077 crab, respectively) were the lowest estimates of abundance in the history of the trawl survey. However, the total abundance of male Tanner crab estimated from the Kachemak Bay survey reached record high levels in 2011 and 2012 although many of the crab had reached terminal molt status and would never recruit to legal size. The most recent Kamishak Bay trawl survey in 2012 resulted in an abundance estimate of zero legal male Tanner crab. Cook Inlet Area trawl surveys were discontinued after 2013 because of reduced research budgets. Cook Inlet Area Tanner crab and

Southeastern Alaska Area Section 11-A red king crab are the only noncommercial crab fisheries in Alaska managed with regulatory harvest strategies.

Most of the Cook Inlet Area noncommercial fisheries harvest occurred in Kachemak Bay (areas D and E; Table 265-3). During the three most recent full seasons that the noncommercial fishery was open (2008/09 season through 2010/11 season), the average harvest was 16,600 crab under a scenario with bag and possession limits of five male Tanner crab with a size limit of 5.5 inches or greater in width of shell (reduced to four crab in the 2010/11 season), and legal gear of no more than two pots per person with a maximum of two pots per vessel, except a maximum of six pots per vessel between the longitude of Gore Point and Cape Fairfield. An average of 92% of effort and 93% of harvest occurred in Kachemak Bay. Noncommercial fisheries exceeded the GHL in Kachemak Bay waters during the 2008/09 and 2009/10 seasons. In response to exceeding the GHL, bag and possession limits were reduced by EO from five to four crab in the Cook Inlet portion (reporting areas A, B, D, and E) of the management area during the 2010/11 season (Figure 265-1). Harvest for the 2010/11 season was approximately 30% below the GHL and therefore the five crab bag and possession limit was restored for the 2011/12 (last) season.

Commercial Tanner crab fishing seasons in Alaska are structured to avoid biologically sensitive mating and molting periods and are typically prosecuted in late fall through early spring. Noncommercial Tanner crab fishing seasons are year-round except in PWS and Cook Inlet areas; the Southeastern Alaska Area has a two-week closure in June but is otherwise open the reminder of the year. In 2014, based on department Tanner crab shell hardness study in Kachemak Bay, the board adopted a new season opening date for the noncommercial fishery of September 1 (instead of July 15).

The department recently completed an analysis of Cook Inlet Area Tanner crab data, using harvest and trawl survey information, and results indicate a high percentage of terminally molted male crab in the population. Due to terminal molt, only a small proportion of males reach the current legal size which could potentially lower the overall yield and be detrimental to the population genetically over time. The analysis recommends a reduction in the legal harvest size of male Tanner crab from 5.5 inches (140 mm) to 4.4 inches (112 mm) in Kachemak Bay (noncommercial areas D and E) and 4.3 inches (108 mm) for Kamishak Bay (noncommercial areas A, B, and C).

Household harvest surveys documented subsistence crab fishing activity in Cook Inlet outside the nonsubsistence use areas. In 2014, no subsistence harvest of crab occurred in Port Graham or Nanwalek. In 2013, Tyonek residents harvested zero Tanner Crab in a subsistence fishery. In 2014, Seldovia residents harvested a combined total of seven Tanner crab using subsistence methods.

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal. The department recommends a size limit reduction to 4.5 inches for noncommercial fisheries in all districts in the Cook Inlet Area; 4.5 inches rather than 4.4 inches is recommended in order to facilitate the public's ease of compliance and aid enforcement by providing a size that can be measured easily in simple increments. Currently, there are no ANS findings for Tanner crab in Cook Inlet waters outside the nonsubsistence area. The department has no recommendation at this time because the fisheries have been closed for at least five years, and thus harvest would not reflect an amount reasonably necessary for customary and traditional uses of Tanner crab. The department is **NEUTRAL** on the allocative aspects of this proposal. The department recommends the board determine whether adoption of the proposal continues to provide a

normally diligent person a reasonable opportunity for success in harvesting Tanner crab for customary and traditional uses.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

SUBSISTENCE REGULATION REVIEW:

1. Is this stock in a nonsubsistence area? The majority of these stocks are outside the Anchorage-Matsu-Kenai Nonsubsistence Area as described at 5 AAC 99.015(a)(3).

2. Is the stock customarily and traditionally taken or used for subsistence? Yes, the board made a positive customary and traditional use finding for shellfish stocks in that portion of the Cook Inlet Area outside of the Anchorage-Matsu-Kenai Nonsubsistence Area (5 AAC 02.311).

3. Can a portion of the stock be harvested consistent with sustained yield? Yes.

4. What amount is reasonably necessary for subsistence uses? The board has not made a finding of amounts reasonably necessary for subsistence uses of Tanner crab.

5. Do the regulations provide a reasonable opportunity for subsistence uses? This is a board determination.

6. Is it necessary to reduce or eliminate other uses to provide a reasonable opportunity for subsistence uses? This is a board determination.

Table 265-1.–Male Tanner crab abundance estimates from trawl surveys in Kachemak Bay, 1990–2013 (no survey since 2013).

		Prerecruits	Prerecruit - 1	Legal Males (>140 mm[b])		Total Males	
Year	Tows	<115 mm[a]	115–139 mm[a]	Number of crabs	Confidence Interval	Number of crabs	Confidence Interval
1990	14	1,833,518	492,692	388,422	403,617	2,714,634	1,145,882
1991	15	1,374,334	848,159	499,815	226,608	2,722,308	879,693
1992	15	817,250	902,459	1,055,855	734,287	2,775,565	1,097,301
1993	16	803,527	325,507	518,498	254,074	1,647,532	430,628
1994	16	655,314	158,590	193,199	106,304	1,007,104	451,486
1995	16	1,311,654	506,325	278,365	296,245	2,096,344	1,299,465
1996	16	753,957	601,084	101,322	69,836	1,456,364	1,174,485
1997	16	582,870	325,897	143,111	80,729	1,051,879	323,965
1998	16	368,687	195,049	205,808	190,004	771,087	373,615
1999	16	2,769,416	200,663	104,282	91,894	3,074,360	2,743,906
2000	16	1,357,938	380,557	82,374	72,974	1,820,868	754,144
2001	16	2,594,805	392,469	96,951	61,266	3,084,224	1,995,590
2002	14	3,802,680	211,036	88,010	69,895	4,101,726	2,098,934
2003	16	3,127,302	288,894	48,717	52,980	3,464,914	1,726,501
2004	16	2,828,432	683,921	110,930	75,834	3,623,284	1,875,763
2005	15	1,416,662	347,339	45,676	41,786	1,809,679	1,083,062
2006	17	1,414,422	226,338	224,530	286,932	1,865,289	1,828,893
2007	16	608,349	373,061	162,504	238,989	1,143,914	1,252,423
2008	16	936,349	239,726	105,440	130,955	1,281,516	787,437
2009	15	2,496,411	554,785	143,882	141,993	3,195,079	2,338,396
2010	No Survey						
2011	37	4,309,072	94,797	42,660	40,810	4,447,159	1,983,355
2012	37	4,751,552	57,085	20,512	20,105	4,829,149	1,796,356
2013	37	2,996,961	141,245	38,077	34,026	3,179,046	975,058

Note: sizes are in carapace width.
[a] 115 mm=4.5 inches.
[b] 140 mm=5.5 inches.

Table 265-2.–Male Tanner crab abundance estimates from trawl surveys in Kamishak Bay, 1990–2012 (no survey since 2012).

		Prerecruits	Prerecruit - 1	Legal Males (>140 mm[b])		Total Males	
Year	Tows	<115 mm[a]	115–139 mm[a]	Number of crabs	Confidence Interval	Number of crabs	Confidence Interval
1990	24	4,006,883	3,521,907	878,119	908,963	8,406,909	5,347,618
1991	17	1,266,048	2,422,733	633,072	861,578	4,321,853	3,683,036
1992	25	1,631,083	1,633,143	255,690	261,499	3,519,915	2,627,080
1993	15	2,371,325	1,299,662	217,974	297,377	3,888,960	2,786,986
1994	17	4,632,078	2,745,826	313,137	248,129	7,691,041	6,782,889
1995	24	2,690,869	2,245,803	300,676	191,956	5,237,347	3,281,458
1996	18	2,384,265	3,705,260	653,725	854,499	6,743,250	4,360,052
1997	18	1,498,356	2,588,459	634,540	550,799	4,721,354	2,650,767
1998	22	576,954	467,926	155,707	130,260	1,200,587	758,395
1999	19	3,302,743	517,297	104,686	98,278	3,924,726	5,203,674
2000	24	828,083	209,916	18,906	18,248	1,056,905	601,950
2001	24	5,085,008	140,415	48,739	32,206	5,274,162	5,714,424
2002	19	15,484,901	211,513	36,244	41,245	15,732,658	17,351,538
2003	17	4,139,259	337,583	61,798	82,649	4,538,640	4,014,458
2004	22	7,539,743	630,002	15,991	18,263	8,185,736	4,298,470
2005	21	9,754,890	2,100,083	60,810	59,265	11,915,783	11,300,835
2006	27	6,533,067	2,387,932	508,114	358,459	9,429,112	4,346,765
2007	24	1,008,039	278,816	54,864	53,871	1,341,717	701,198
2008	No Survey						
2009	No Survey						
2010	23	679,348	813,496	321,871	489,159	1,819,863	2,625,747
2011	No Survey						
2012	23	1,993,259	98,449	0	0	2,091,708	2,022,469

Note: sizes are in carapace width.
[a] 115 mm=4.5 inches.
[b] 140 mm=5.5 inches.

Table 265-3.–Noncommercial Tanner crab total harvest and effort (fishing days) from permits for the Cook Inlet Area, GHLs and proportion of harvest and effort by areas corresponding to Kamishak Bay (Areas A–C) and Kachemak Bay (Areas D–E) trawl surveys, and percent of harvest in Areas D–E (Kachemak Bay).

			Areas A–C			Areas D–E			Area Unknown		
Season	Total Harvest	Total Effort	GHL	Harvest	Effort	GHL	Harvest	Effort	Harvest	Effort	% Harvest Areas D–E
2008/09	17,173	5,108	16,212	832	271	13,373	16,185	4,783	156	54	94%
2009/10[a]	18,827	5,288	20,797	1,581	490	14,860	17,141	4,775	105	23	91%
2010/11[a]	13,745	4,723	28,984	685	242	18,284	12,676	4,296	384	185	92%
Average[b]	*16,582*	*5,040*	*21,998*	*1,033*	*334*	*15,506*	*15,334*	*4,618*	*215*	*87*	*93%*
2011/12[a,c]	8,979	2,863	18,058	441	132	11,709	8,271	2,663	267	68	92%
2012/13						closed					
2013/14						closed					
2014/15						closed					
2015/16						closed					

[a] Harvest numbers adjusted for non-respondent harvest.
[b] Averages from the three full open seasons.
[c] Season closed 9/6/11 in Areas D and E, remained open in Areas A–C, but no additional harvest occurred.

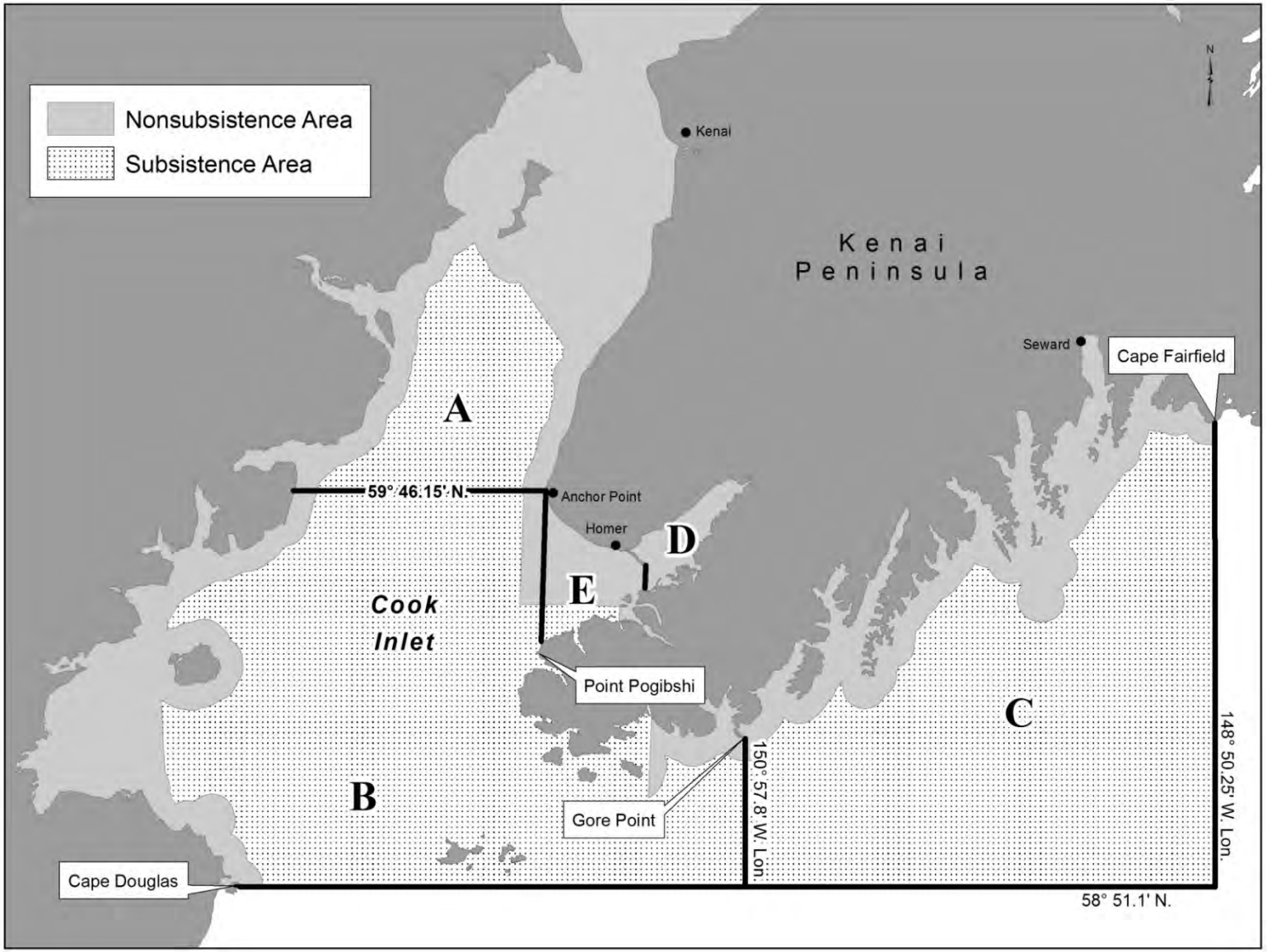

Figure 265-1.–Noncommercial Tanner crab area codes for the Cook Inlet Management Area.

PROPOSAL 266 – 5 AAC 77.516. Personal Use Tanner Crab Fishery.

PROPOSED BY: Joseph Hanes.

WHAT WOULD THE PROPOSAL DO? Allow a personal use Tanner crab fishery in the Cook Inlet Area with a reduced bag limit of two Tanner crab per day and a legal gear allowance of two pots per person.

WHAT ARE THE CURRENT REGULATIONS? Under 5 AAC 35.408 *Registration Area H Tanner crab harvest strategy*, Tanner crab abundance thresholds necessary to open Cook Inlet Area Tanner crab commercial and noncommercial fisheries are established.

The strategy contains provisions that close the noncommercial fishery based on the estimated abundance of legal male Tanner crab from the trawl surveys conducted in Kachemak Bay and Kamishak Bay. In areas A, B, and C the Tanner crab noncommercial fisheries are managed from the Kamishak Bay trawl survey. In areas D and E, the noncommercial fisheries are managed from the Kachemak Bay trawl survey. Regulation 5 AAC 35.410 connects the areas outside of Kachemak Bay (A, B, and C) together for management of the noncommercial fishery. The harvest strategy limits the noncommercial Tanner crab GHL to no more than 10 percent of the recent three-year average of legal male stock abundance when legal male stock abundance is below the minimum stock threshold for a commercial fishery.

In areas D and E, or Kachemak Bay waters east of a line from Point Pogibshi to Anchor Point, the noncommercial Tanner crab fisheries will close when:

The recent three-year average stock abundance of legal male Tanner crab estimated from the Kachemak Bay trawl survey is less than 100,000 Tanner crab; or

Estimated stock abundance level of legal male Tanner crab is less than 50,000 Tanner crab in any given year;

In areas A, B and C, or all remaining waters of the Cook Inlet Area outside of Kachemak Bay, the noncommercial fisheries will close when:

The recent three-year average stock abundance of legal male Tanner crab estimated from the Kamishak Bay trawl survey is less than 50,000 Tanner crab; or

Estimated stock abundance level of legal male Tanner crab from the Kamishak Bay trawl survey is less than 40,000 in any given year.

Cook Inlet Area sport (5 AAC 58.022), and subsistence (5 AAC 02.325) regulations establish season dates for the noncommercial fisheries. In Kachemak Bay, areas D and E, the noncommercial Tanner crab season dates are September 1–December 31 and January 15–March 15, and for areas A–C the season is open July 15–March 15. Bag and possession limits are five male Tanner crab with a size limit of five and one-half inches or greater in width of shell. Legal gear is restricted to no more than two pots per person with a maximum of two pots per vessel, except a maximum of six pots per vessel between the longitude of Gore Point and Cape Fairfield (Figure 265-1; Area C). A harvest permit is required and the catch information must be completed before concealing the Tanner crab from plain view or removing the Tanner crab from the fishing site (5 AAC 58.026, 5 AAC 77.507, and 5 AAC 02.325).

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This proposal would allow Alaskan residents to participate in a personal use Tanner crab fishery in the Cook Inlet Management Area (Figure 265-1; areas A–E) with a reduced bag limit. It would also increase regulatory complexity since personal use regulations were recently repealed and any new regulations would need to be aligned with the sport and subsistence fisheries. Tanner crab harvest in Cook Inlet would likely increase by an unknown amount.

BACKGROUND: The board has found there are positive customary and traditional uses of shellfish stocks in Cook Inlet outside the nonsubsistence personal use area (5 AAC 02.311). The board has not made an ANS finding for Tanner crab in the Cook Inlet Area.

Cook Inlet personal use regulations were repealed effective August 27, 2016 in accordance with the Administrative Procedure Act (AS 44.62) to eliminate redundancies in existing regulations.

The department conducted large mesh bottom trawl surveys from 1990–2013 in Kachemak Bay (Table 265-1) and through 2012 in Kamishak Bay (Table 265-2). These surveys provide estimates of legal male Tanner crab required by regulation to open commercial and noncommercial fisheries. The most recent three surveys in Kachemak Bay were conducted in 2011, 2012, and 2013. Those three surveys all resulted in estimates of legal male Tanner crab abundance below 50,000 crab, which is the single-year threshold required to keep the fishery open in conjunction with a recent three-year average of 100,000 crab or greater. The 2011, 2012 and 2013, abundance estimates of legal male Tanner crab (140 mm or greater) from the Kachemak Bay trawl survey (Table 265-1; 42,660, 20,512 and 38,077 crab, respectively) were the lowest estimates of abundance in the history of the trawl survey. However, the total abundance of male Tanner crab estimated from the Kachemak Bay survey reached record high levels in 2011 and 2012 although many of the crab had reached terminal molt status and would never recruit to legal size. The most recent Kamishak Bay trawl survey in 2012 resulted in an abundance estimate of zero legal male Tanner crab. Cook Inlet Area trawl surveys were discontinued after 2013 because of reduced research budgets.

Cook Inlet Area Tanner crab and Southeastern Alaska Area Section 11-A red king crab are the only noncommercial crab fisheries in Alaska managed with regulatory harvest strategies. Most of the Cook Inlet Area noncommercial fisheries harvest has occurred in Kachemak Bay (areas D and E; Table 265-3). During the three recent full seasons that the noncommercial fishery was open (2008/09 season through 2010/11 season), an average of 92% of effort and 93% of harvest occurred in Kachemak Bay. Noncommercial fisheries exceeded the GHL in Kachemak Bay waters during the 2008/09 and 2009/10 seasons. In response to exceeding the GHL, bag and possession limits were reduced by EO from five to four crab in the Cook Inlet portion (reporting areas A, B, D, and E) of the management area during the 2010/11 season (Figure 265-1). Harvest for the 2010/11 season was approximately 30% below the GHL and therefore the five crab bag and possession limit was restored for the 2011/12 (last) season.

Commercial Tanner crab fishing seasons in Alaska are structured to avoid biologically sensitive mating and molting periods and are typically prosecuted in late fall through early spring. Noncommercial Tanner crab fishing seasons are year-round except in PWS and Cook Inlet areas; the Southeastern Alaska Area has a two-week closure in June but is otherwise open all year. Unrestricted season dates have the potential to negatively impact the health of the Tanner crab resource in Cook Inlet because of molt timing and high harvest potential. In 2014, based on

department Tanner crab shell hardness study in Kachemak Bay, the board adopted new season opening date for the noncommercial fishery of September 1 (instead of July 15).

The department recently completed analysis of Cook Inlet Area Tanner crab data, using harvest and trawl survey information, and results indicate a high percentage of terminally molted male crab in the population. Due to terminal molt, only a small proportion of males reach the current legal size which could potentially lower the overall yield and be detrimental to the population genetically over time. The analysis recommends a reduction in the legal harvest size of male Tanner crab from 5.5 inches (140 mm) to 4.4 inches (112 mm) in Kachemak Bay (noncommercial areas D and E) and 4.3 inches (108 mm) for Kamishak Bay (noncommercial areas A, B, and C). As discussed in Proposal 265, the department recommends a size limit reduction to 4.5 inches for noncommercial fisheries, while considering the requirements of the subsistence law, in all districts in the Cook Inlet Area in order to allow the public's ease of compliance and aid enforcement by providing a size that can be measured easily in inch increments.

Household harvest surveys were conducted in communities located in the Cook Inlet outside the nonsubsistence use areas. In 2014, no subsistence harvest of crab occurred in Port Graham or Nanwalek. In 2013, Tyonek residents harvested zero Tanner crab, and in 2014, Seldovia residents harvested seven Tanner crab using subsistence methods.

DEPARTMENT COMMENTS: The department recommends **NO ACTION** on this proposal. Cook Inlet personal use Tanner crab regulations were repealed effective August 27, 2016 in accordance with the Administrative Procedure Act (AS 44.62) to eliminate redundancies in existing regulations. New regulations have been proposed by the department to establish a noncommercial Tanner crab fishery in the absence of department trawl surveys. The department is **NEUTRAL** on the allocative aspects of this proposal. The department recommends the board determine whether adoption of the proposal continues to provide a normally diligent person a reasonable opportunity for success in harvesting Tanner crab for customary and traditional uses.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

PRINCE WILLIAM SOUND TANNER CRAB

PROPOSAL 267 – 5 AAC 5 AAC 02.220. Subsistence Tanner crab fishery; 5 AAC 35.306. Area E registration; 5 AAC 35.310. Fishing seasons for Registration Area E; 5 AAC 35.320. Size limits for Registration Area E; 5 AAC 35.325. Lawful gear for Registration Area E; 5 AAC 35.327. Tanner crab pot storage for Registration Area E; 5 AAC 35.340. Registration Area E inspection points; 5 AAC 35.345. Inspection requirements for Registration Area E; 5 AAC 35.3XX. Operation of other gear in Registration Area E; 5 AAC 35.3XX. Logbooks; 5 AAC 35.3XX. Reporting requirements for Registration Area E; and 5 AAC 35.3XX. Prince William Sound Tanner Crab Harvest Strategy.

PROPOSED BY: Alaska Department of Fish and Game.

WHAT WOULD THE PROPOSAL DO? Create a harvest strategy and amend regulations for Tanner crab in the PWS area, specifying conditions under which a commercial fishery may occur, and reduce the legal size limit in the commercial and subsistence Tanner crab fisheries.

WHAT ARE THE CURRENT REGULATIONS? The board has found there are positive customary and traditional uses of shrimp, Dungeness crab, Tanner crab, king crab, and miscellaneous shellfish in the PWS area. The board has not made an ANS finding for crab.

Currently, there is a subsistence Tanner crab fishery in PWS (outside the Valdez Nonsubsistence Area) with season dates of October 1–March 31, a size limit of 5.5 inches or greater in shell width, and a bag and possession limit of five male Tanner crab (5 AAC 02.220). Lawful gear is defined; this includes pot requirements and a pot limit of two pots per person with a maximum of two pots per vessel (5 AAC 02.207). Permits are required to participate in the king and Tanner crab subsistence fisheries (5 AAC 02.206 and 5 AAC 02.015), with specific reporting requirements. The waters of Port Valdez, Galena Bay, Port Fidalgo, and Port Gravina are closed to subsistence crab fishing because those areas are either within a nonsubsistence area or are considered key areas for reproductive adults and young crab (5 AAC 02.236).

Regulation 5 AAC 35.310 states the commercial harvest of Tanner crab in the PWS Area is closed until the board adopts a harvest strategy; there are no season dates in regulation.

In accordance with 5 AAC 35.080, the department shall establish an annual harvest strategy for each Tanner crab stock that is consistent with the board's Policy on King and Tanner Crab Resource Management. If adequate data are available, the department should establish a threshold level of abundance of each stock and may not allow fishing on any stock that is below its threshold level of abundance. Data used to determine GHLs and harvest rates may include estimates of exploitable biomass, estimates of recruitment, estimates of threshold level of abundance, estimates of acceptable biological catch, historical fishery performance data, estimates of reproductive potential, and market or other economic considerations.

Additional regulations designate Registration Area E as a superexclusive registration area for Tanner crab (5 AAC 35.306), restrict harvest to male crab 5.3 inches or greater in shell width (5

AAC 35.320), restrict gear to no more than 75 king and Tanner pots per vessel, require buoy tags, and require pots have a minimum of four escape rings no less than 4 and three-quarters inches inside diameter installed on the vertical plane of the pot (5 AAC 35.325).

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This would set a new minimum male legal size limit of 5.0 inches or greater for subsistence and commercial fisheries. Also, it would establish commercial fishery registration requirements, gear hauling hours, and set a maximum pot limit of 30 pots. Pot storage and inspection requirements would be established by these regulations along with preseason fishing restrictions, logbooks, and reporting requirements. The proposed PWS Tanner Crab Harvest Strategy establishes male abundance thresholds that must be met in order to open commercial and noncommercial fisheries; estimates of abundance are produced from the department PWS Tanner crab trawl survey. Adoption of this proposal would not result in opening the commercial Tanner crab fishery in PWS unless harvest strategy abundance thresholds are met.

BACKGROUND: Commercial harvest of Tanner crab within PWS began in 1968 when 1.2 million pounds of crab were landed. The fishery peaked during the 1972/73 season when more than 13.9 million pounds were landed. In 1976, a minimum size limit of 5.3 inches in carapace width was implemented. After this, harvest decreased during the late 1970s and early 1980s, followed by large area closures during the 1984 and 1985 seasons. Stable harvests of around 500,000 pounds occurred during the 1986, 1987, and 1988 seasons before the fishery was closed due to lack of recruitment documented by the annual stock assessment pot survey. The commercial Tanner crab fishery in PWS has been closed since 1989 (Table 267-1; Figure 267-1). The decline of Tanner crab abundance in the early years of the commercial fishery was likely due to overharvest of reproductive males and females prior to implementation of the legal male size limit and prohibition of harvesting females.

The department has assessed Tanner crab abundance in PWS since 1977, using a pot survey until 1991 and a trawl survey from 1991 to the present. The pot survey provided relative abundance indices of legal Tanner crab and was used to set GHLs for the commercial fishery. The trawl survey has occurred annually from 1991–1995 and 2013–2015, and biennially from 1997–2011; data from this survey are used to estimate abundance of all male recruit classes and females (Table 267-2; Figure 267-2). Legal male estimates declined from 121,184 crab in 1993 to the lowest level of 3,677 crab in 1999. Since then, estimates of Tanner crab gradually increased until peaking in 2011. The 2011 and 2013 trawl surveys produced legal male estimates at historical high levels of 186,422 and 184,993 crab, respectively. Surveys were conducted in both 2014 and 2015 and legal male abundance estimates had decreased: 134,929 legal male crab in 2014 and 102,789 crab in 2015. Prerecruit-1 size class includes male crab between 113 mm–134 mm carapace width, and if these crab molt one additional time they will reach legal size. Estimates of prerecruit-1 males were above 300,000 crab for the past five surveys; the lowest abundance estimate for that size class was 16,792 crab in 1999. Abundance estimates of prerecruits less than 113 mm have been over 1 million for the past six surveys, reaching a peak of over 7 million in 2013.

A test fishery was conducted in November 2016 to assess PWS Tanner crab CPUE based on the historical department index of abundance pot surveys. To compare the historical pot surveys and recent test fishery, only the CPUE from traditional survey stations were used. For Northern and Hinchinbrook districts combined there was a CPUE of 4.8 legal male Tanner crab per pot in

2016, compared to 4.1 legal crab per pot in 1988, the last year historical Tanner crab pot survey data are available (Table 267-3; Figure 267-1). The results in 2016 and 1988 represent the two lowest years of CPUE for the period of the pot survey; the highest CPUE was 37.5 legal crab per pot in 1977, the first year of the pot survey. Due to weather and other limiting factors in 2016, there were no pots set in traditional survey stations (PWS outside waters) of the Western or Eastern districts.

At the March 2008 meeting the department prepared deliberation materials for the board to consider finding an ANS for Tanner crab and king crab in PWS. At that time, noncommercial harvests of these stocks had been suspended for nine years and 10-year-old harvest data were used in drafting one ANS option. Another ANS option presented by the department was to wait at least three years for harvest data. The board adopted Proposal 363 with substitute language that created a subsistence Tanner crab fishery in PWS (5 AAC 02.220), but no ANS was adopted.

Noncommercial fisheries for Tanner crab historically remained open year-round throughout PWS until 1999, when they were closed by regulation due to steady declines in both overall Tanner crab and legal male abundance, as well as a lack of regular noncommercial fishery harvest information. Harvest in the first year of the recent subsistence fishery, 2008/09, was 44 legal male crab, the lowest since the permit fishery began (Table 267-4; Figure 267-3). Harvest and effort (number of trips) increased and peaked in the 2012/13 season with 2,177 legal male Tanner crab harvested in 368 trips with 80 permits that fished. Following this spike in harvest and effort, both legal males harvested and number of trips has decreased. For the recent three seasons, from 2013/14 through 2015/16 seasons, harvest was fewer than 900 crab with about 200 trips per season. The number of permits fished stayed relatively level during the 2012/13 through 2015/16 seasons, averaging 80 permits each season. The number of permits fished by community of residence is shown in Table 267-5.

Harvest by PWS residents have been estimated using household harvest survey data in Chenega Bay and Cordova. In 2014, Cordova residents harvested an estimated 1,384 Tanner crab using subsistence methods; Chenega Bay residents harvested 92 Tanner crab.

In 2016, an analysis of PWS Tanner crab using the following information was completed by the department: 1) commercial fishery harvest information, 2) noncommercial fishery information from the required permit and SWHS, and 3) fishery-independent trawl survey data.

The current legal size is 5.3 inches carapace width including spines, or 135 mm. Legal sizes are typically one or two molts above the male mature sizes. However, due to terminal molt, at the current legal size a majority of males will not reach legal size and will never be available for harvest. Leaving more of the fast growing, larger males in the population and harvesting some of the smaller males will benefit the population genetically over the long term. Based on this reasoning, the legal size for EBS Tanner crab was lowered.

Based on the male maturity size, the analysis recommends redefining the legal size to a smaller size similar to that implemented in the EBS Tanner crab harvest strategy (Zheng and Pengilly 2011). The new proposed Tanner crab harvest strategy recommends reducing the minimum legal size to 5.0 inches or 127 mm.

DEPARTMENT COMMENTS: The department submitted and **SUPPORTS** this proposal. The commercial harvest of Tanner crab in the PWS area is closed by regulation until the board

adopts a harvest strategy; the department is submitting this harvest strategy based on quantitative analysis. The department is **NEUTRAL** on the allocative aspects of this proposal. The department recommends the board determine whether adoption of the proposal continues to provide a normally diligent person a reasonable opportunity for success in harvesting Tanner crab for customary and traditional uses.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

SUBSISTENCE REGULATION REVIEW:

1. Is this stock in a non-subsistence area? Yes. Portions of the stocks are located in the Valdez Nonsubsistence Area as described at 5 AAC 99.015(a)(5).

2. Is the stock customarily and traditionally taken or used for subsistence? Yes. In 2008 the board made positive customary and traditional use findings for shrimp, Dungeness crab, Tanner crab, king crab and miscellaneous shellfish in PWS (5 AAC 02.208).

3. Can a portion of the stock be harvested consistent with sustained yield? Yes.

4. What amount is reasonably necessary for subsistence uses? There is no ANS for crab in PWS.

5. Do the regulations provide a reasonable opportunity for subsistence uses? This is a board determination.

6. Is it necessary to reduce or eliminate other uses to provide a reasonable opportunity for subsistence use? This is a board determination.

Table 267-1.–Commercial Tanner crab harvests from the PWS Management Area, 1968–2016.

Season	Vessels	Landings	Harvest by Area (lb)					Mean Weight (lb/crab)	Number of crab
				Inside	Outside		Total		
1968/69							1,235,613		
1969/70							1,284,597		
1970/71							4,159		
1971/72							7,788,498		
1972/73							13,927,868		
1973/74				1,658,000	8,500,000		10,158,000		
1974/75				1,187,000	2,667,000		3,854,000		
1975/76				3,322,482	3,810,262		7,132,744		
			Northern	Hinchinbrook	Western	Eastern	Total		
1976/77[a]	23	316	782,048	766,650	701,725	70,925	2,321,348		
1977/78	38	591	994,721	1,161,831	2,079,549	570,573	4,806,674	2.2	2,184,852
1978/79	51	783	649,977	708,562	2,248,545	3,443,471	7,050,555	2.1	3,357,408
1979/80	49	561	140,228	332,583	1,462,059	4,057,847	5,992,717	2.0	2,996,359
1980/81	30	304	152,196	812,352	1,561,207	250,076	2,775,831	2.1	1,321,824
1981/82	29	216	351,139	722,834	1,503,253	288,425	2,865,651	No Data	
1982/83	40	304	471,422	31,447	921,663	45,308	1,469,840	2.1	699,924
1984[b]	0	0	Closed	Closed	Closed	No Effort	0		
1985	0	0	Closed	Closed	No Effort	No Effort	0		
1986	14	35	137,720	236,241	160,829	587	535,377	2.1	254,941
1987	23	65	152,834	222,052	196,246	0	571,132	2.1	271,968
1988	21	46	55,929	226,509	191,654	0	474,092	2.1	225,758
1989–2016	0	0	Closed	Closed	Closed	Closed	0		

[a] New districts and minimum legal size established.
[b] Calendar year season established.

Table 267-2.–Male Tanner crab abundance estimates from bottom trawl surveys in PWS, 1991–2015.

Year	Tows	Prerecruit <113 mm	Prerecruit-1 (113–134 mm)	Legal	Legal CI	Total Males	Total CI
1991	29	1,856,802	275,497	134,820	106,043	2,267,119	1,420,647
1992	37	1,409,381	318,010	68,119	39,590	1,795,511	606,398
1993	38	816,548	266,073	121,184	39,588	1,203,805	433,640
1994	38	872,375	182,595	55,544	23,511	1,110,513	484,107
1995	32	407,159	100,786	24,820	15,535	532,765	171,825
1996	No Survey						
1997	39	316,785	34,283	11,336	11,048	362,403	158,018
1998	No Survey						
1999	40	152,217	16,792	3,677	3,574	172,686	64,516
2000	No Survey						
2001	40	1,994,339	59,143	6,626	6,655	2,060,109	784,610
2002	No Survey						
2003	40	804,693	94,758	15,882	17,969	915,333	360,036
2004	No Survey						
2005	40	502,834	117,450	28,940	25,743	649,224	291,641
2006	No Survey						
2007	32	1,168,957	225,888	17,749	14,290	1,412,595	423,048
2008	No Survey						
2009	43	1,775,164	337,161	43,836	30,505	2,156,161	883,720
2010	No Survey						
2011	43	1,926,016	574,852	186,422	87,727	2,687,291	1,732,997
2012	No Survey						
2013	43	7,440,730	322,264	184,993	74,780	7,947,986	2,332,125
2014	41	1,873,285	329,437	134,929	80,188	2,337,652	647,317
2015	43	1,686,919	302,250	102,789	46,797	2,091,958	882,128
2016	No Survey						

Table 267-3.–Catch per unit effort (CPUE) in legal male Tanner crab per pot from traditional survey stations in the combined Northern and Hinchinbrook districts of PWS from the department index of abundance pot survey 1977–2016.

1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	2016[a]
37.5	25.4	14.2	30.5	30.0	11.9	14.1	15.4	10.8	11.1	11.1	4.1	4.8

[a]There were 84 pot sites (21 stations with 4 pots each); all traditional stations from Northern and Hinchinbrook districts were completed.

Table 267-4.–Subsistence Tanner crab harvest and effort in the PWS Management Area, permits, from the 2008/09–2015/16 seasons.

					Harvest (count)				
Year	Permits Issued	Permits Fished	Permits Returned	Total Trips Made	Legal Males Harvested	Total Legal Males released	Total sublegal crab released	Total female crab released	Average Harvest per Permit Fished
2008/09	130	39	39	80	44	5	130	18	1
2009/10	95	28	29	71	85	16	265	55	3
2010/11	74	25	27	58	78	11	223	18	3
2011/12	82	34	34	88	268	41	468	77	8
2012/13	152	80	82	368	2,177	1,447	5,989	750	27
2013/14	173	67	71	176	638	274	1,641	185	10
2014/15	227	83	87	203	863	1,364	1,794	204	10
2015/16	214	89	92	219	842	1,466	1,593	219	9

Table 267-5.–Prince William Sound Tanner Crab subsistence permits fished, community of residence, by season.

Community	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016
Anchorage	21	11	13	13	10	13	19	21
Valdez	4	0	1	4	2	0	0	3
Mat-Su	1	5	4	4	4	4	6	9
Kenai Peninsula	5	3	1	3	3	2	2	9
Whittier	4	0	0	0	0	11	6	2
Cordova	1	5	6	7	62	42	47	42
Chenega Bay	0	1	2	0	1	1	1	1
Other	3	0	0	0	1	1	4	5

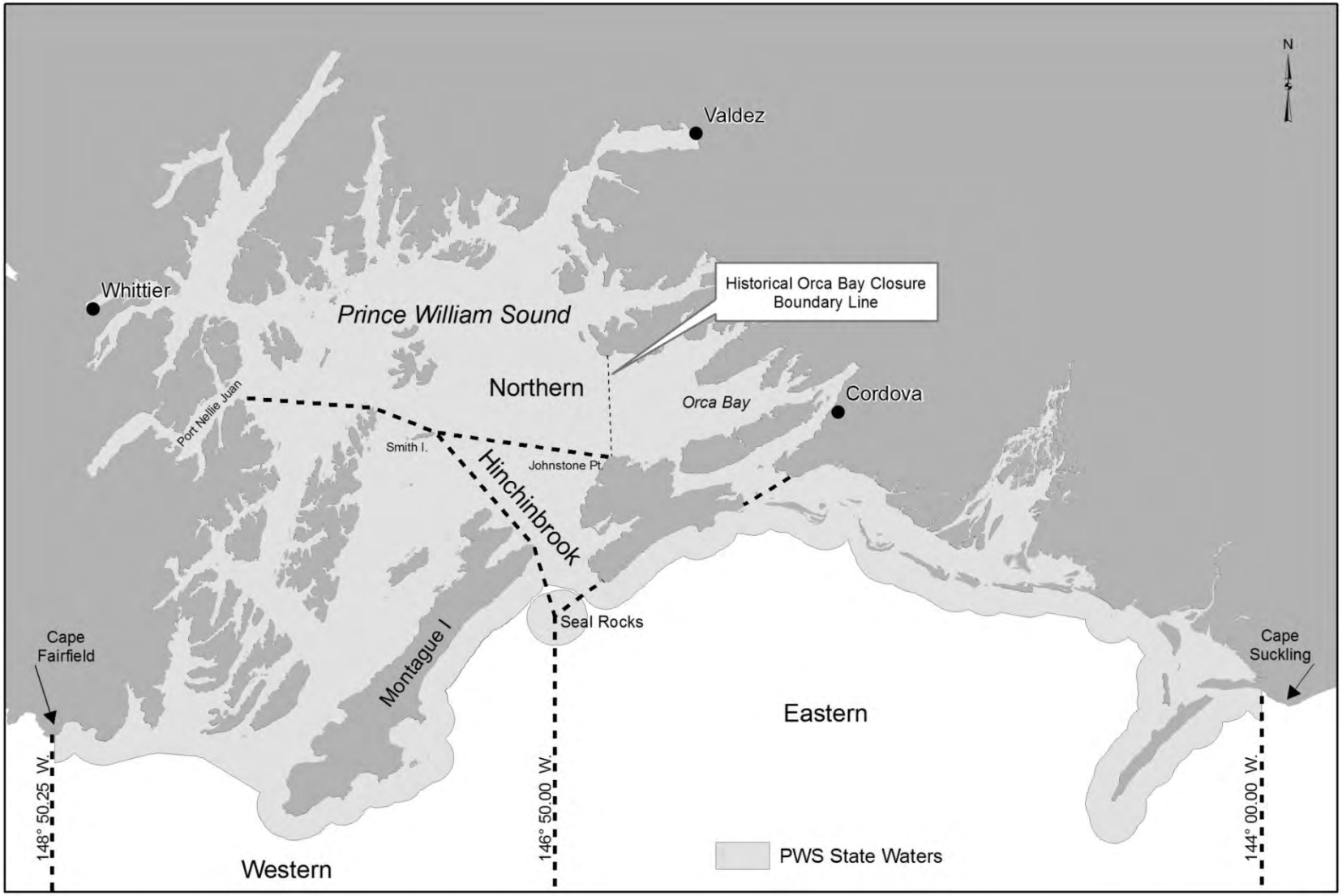

Figure 267-1.–Prince William Sound Area commercial Tanner crab fishery districts.

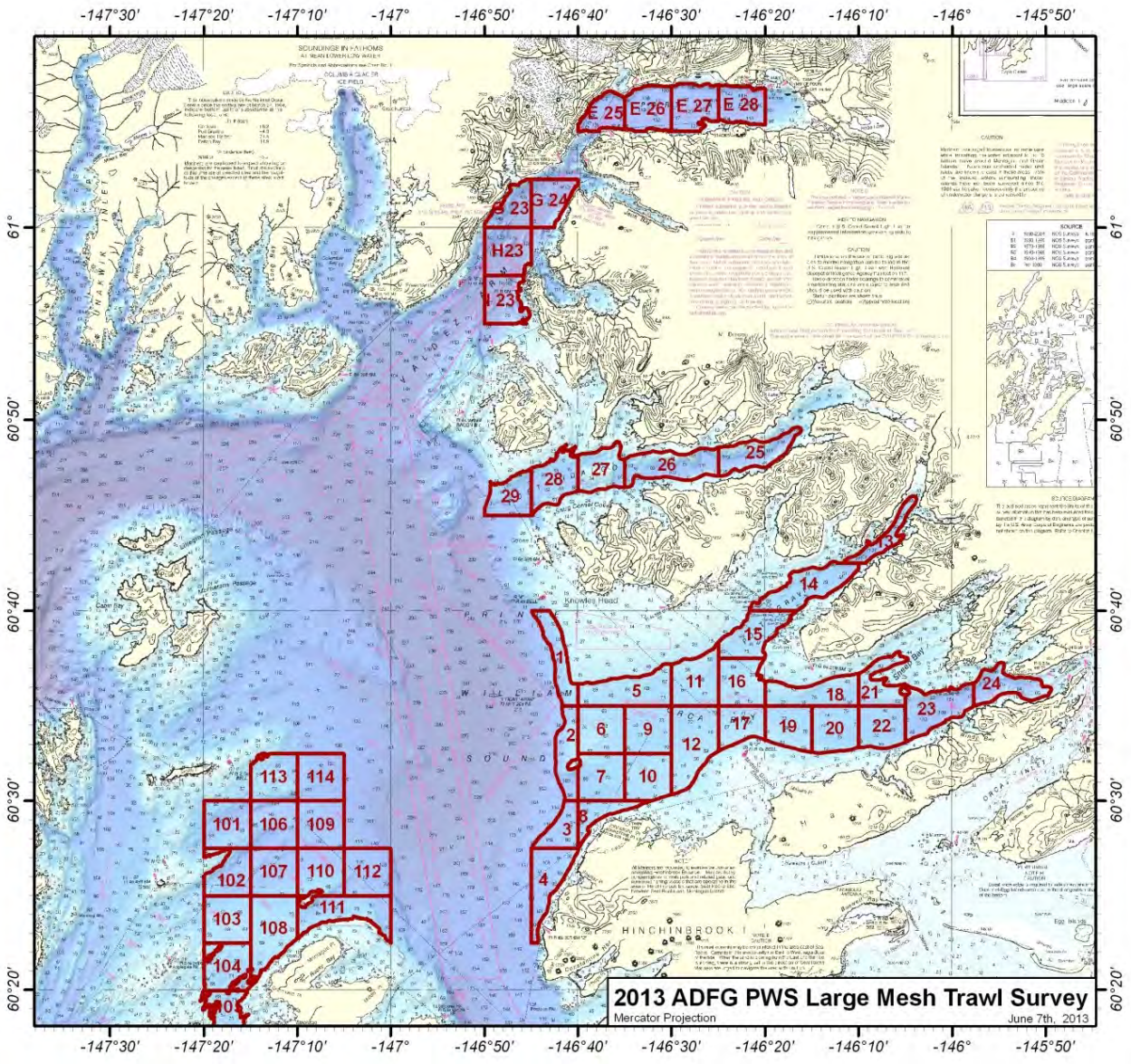

Figure 267-2.–Prince William Sound bottom trawl survey locations grid.

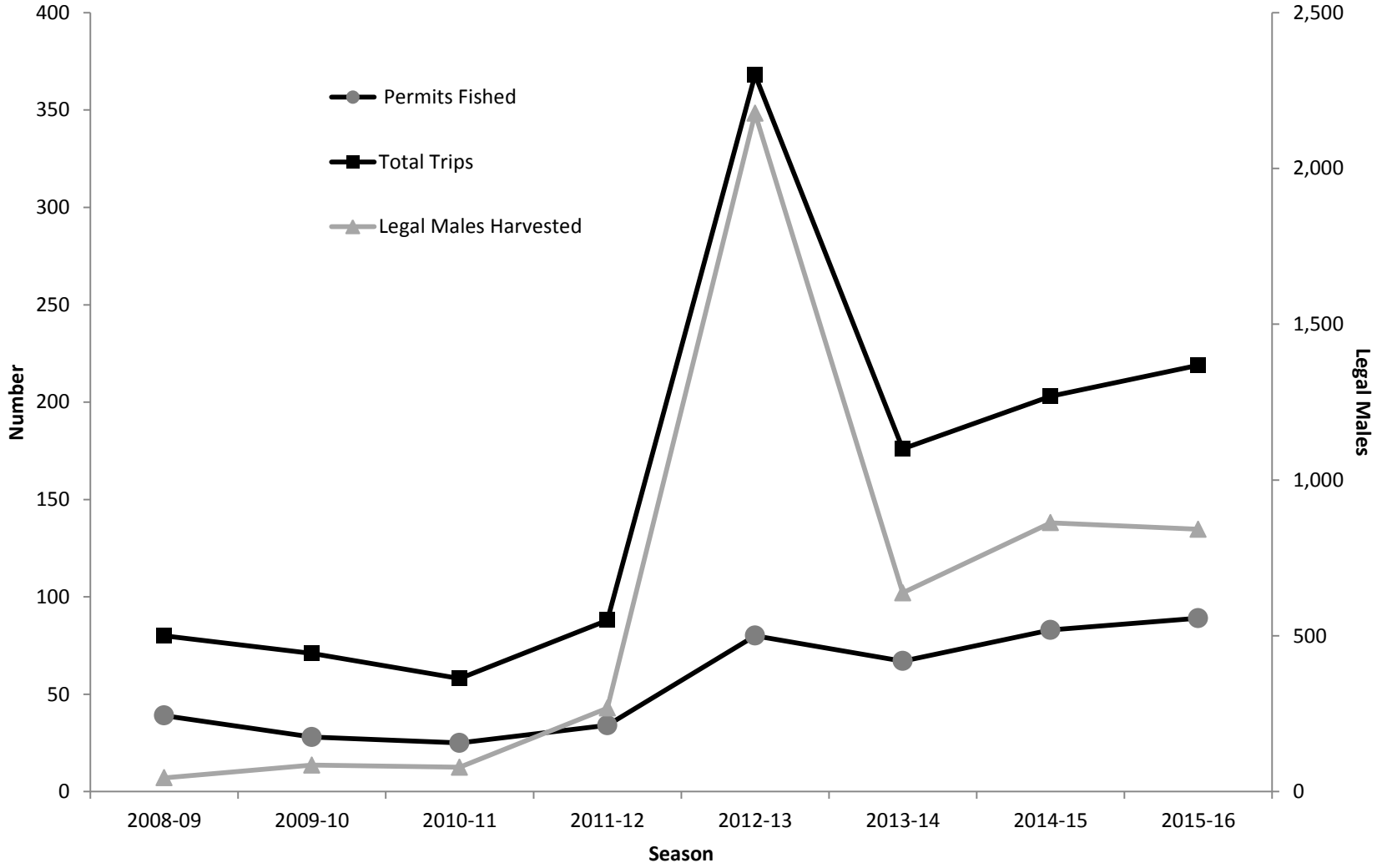

Figure 267-3.–PWS subsistence Tanner crab fishery statistics: permits fished, total trips, and legal male crab harvested from 2008/09–2015/16 seasons.

PROPOSAL 268 – 5 AAC 35.310. Fishing seasons for Registration Area E; 5 AAC 35.31X. Registration Area E Tanner crab harvest strategy; 5 AAC 35.325. Lawful gear for Registrations Area E; 5 AAC 35.35X. Reporting requirements for Registration Area E; and 5 AAC 55.022. General provisions for seasons, bag, possession, and size limits, and methods and means for the Prince William Sound Area.

PROPOSED BY: Cordova District Fisherman United (CDFU).

WHAT WOULD THE PROPOSAL DO? Create a harvest strategy and amend regulations for Tanner crab in PWS specifying conditions under which a commercial fishery may occur and establish a sport fishery for Tanner crab in the PWS Area.

WHAT ARE THE CURRENT REGULATIONS? The board has found there are positive customary and traditional uses of shrimp, Dungeness crab, Tanner crab, king crab, and miscellaneous shellfish in the PWS area. The board has not made an ANS finding for crab.

Currently, there is a subsistence Tanner crab fishery in PWS (outside the Valdez Nonsubsistence Area) with season dates of October 1–March 31, a size limit of 5.5 inches or greater in shell width, and a bag and possession limit of five male Tanner crab (5 AAC 02.220). Lawful gear is defined: this includes pot requirements and a pot limit of two pots per person with a maximum of two pots per vessel (5 AAC 02.207). Permits are required to participate in the king and Tanner crab subsistence fisheries (5 AAC 02.206 and 5 AAC 02.015), with specific reporting requirements. The waters of Port Valdez, Galena Bay, Port Fidalgo, and Port Gravina are closed to subsistence crab fishing (5AAC 02.236) because those areas are either within a nonsubsistence area or are considered key areas for reproductive adults and young crab.

Regulation 5 AAC 35.310 states that the commercial harvest of Tanner crab in the PWS Area is closed until the board adopts a harvest strategy; there are no season dates in regulation.

In accordance with 5 AAC 35.080, the department shall establish an annual harvest strategy for each Tanner crab stock that is consistent with the board's *Policy on King and Tanner Crab Resource Management*. If adequate data are available, the department should establish a threshold level of abundance of each stock and may not allow fishing on any stock that is below its threshold level of abundance. Data used to determine GHLs and harvest rates may include estimates of exploitable biomass, estimates of recruitment, estimates of threshold level of abundance, estimates of acceptable biological catch, historical fishery performance data, estimates of reproductive potential, and market or other economic considerations.

Additional regulations designate Registration Area E as a superexclusive registration area for Tanner crab (5 AAC 35.306), restrict harvest to male crab 5.3 inches or greater in shell width (5 AAC 35.320), restrict gear to no more than 75 king and Tanner crab pots per vessel, require buoy tags, and require that pots have a minimum of four escape rings no less than 4 and three-quarters inches inside diameter installed on the vertical plane of the pot (5 AAC 35.325).

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? It would create a PWS Tanner crab harvest strategy in regulation and specify conditions under which a commercial fishery would occur. A sport fishery for Tanner crab would also be established. The

harvest strategy would include male Tanner crab thresholds and associated harvest rates for a commercial fishery; crab abundance estimates would be generated from the PWS trawl survey. In addition, regulations would be established for legal gear, pot limits, reporting requirements, season dates, size limits, bag limits, and gear requirements for the commercial fishery.

If adopted, this proposal would establish a sport fishery with the same regulations as the current subsistence fishery, including season dates, bag and possession limits, legal size limit, pot limits, legal gear, and a permit requirement. The number of participants and harvest would likely increase since the sport fishery would allow participation by nonresidents; the subsistence fishery is open to Alaska residents only.

BACKGROUND: Commercial harvest of Tanner crab within PWS began in 1968 when 1.2 million pounds of crab were landed. The fishery peaked during the 1972–1973 season when more than 13.9 million pounds were landed. In 1976, a minimum size limit of 5.3 inches in carapace width was implemented. After this, harvest decreased during the late 1970s and early 1980s, followed by large area closures during the 1984 and 1985 seasons. Stable harvests of around 500,000 pounds occurred during the 1986, 1987, and 1988 seasons before the fishery was closed due to lack of recruitment documented by the annual stock assessment pot survey. The commercial Tanner crab fishery in PWS has been closed since 1989 (Table 267-1; Figure 267-1). The decline of Tanner crab abundance in the early years of the commercial fishery was likely due to overharvest of reproductive males and females prior to implementation of the legal male size limit and prohibition of harvesting females.

The department has assessed Tanner crab abundance in PWS since 1977, using a pot survey until 1991 and a trawl survey from 1991 to the present. The pot survey provided relative abundance indices of legal Tanner crab and was used to set GHLs for the commercial fishery. The trawl survey has occurred annually from 1991–1995 and 2013–2015, and biennially from 1997–2011; data from this survey are used to estimate abundance of all male recruit classes and females (Table 267-2; Figure 267-2). Legal male estimates declined from 121,184 crab in 1993 to the lowest level of 3,677 crab in 1999. Since then, estimates of Tanner crab gradually increased until peaking in 2011. The 2011 and 2013 trawl surveys produced legal male estimates at historical high levels of 186,422 and 184,993 crab, respectively. Surveys were conducted in both 2014 and 2015 and legal male abundance estimates had decreased: 134,929 legal male crab in 2014 and 102,789 crab in 2015. Prerecruit-1 size class includes male crab between 113–134 mm carapace width, and if these crab molt one additional time they will reach legal size. Estimates of prerecruit-1 males were above 300,000 crab for the past five surveys; the lowest abundance estimate for that size class was 16,792 crab in 1999. Abundance estimates of prerecruits less than 113 mm have been over 1 million for the past six surveys, reaching a peak of over 7 million in 2013.

A test fishery was conducted in November 2016 to assess PWS Tanner crab CPUE based on the historical department index of abundance pot surveys. To compare the historical pot survey and recent test fishery, only the CPUE from traditional survey stations were used. For Northern and Hinchinbrook districts combined there was a CPUE of 4.8 legal male Tanner crab per pot in 2016 compared to 4.1 legal crab per pot in 1988, the last year historical Tanner crab pot survey data are available (Table 267-3; Figure 267-1). The results in 2016 and 1988 represent the two lowest years of CPUE for the period of the pot survey; the highest CPUE was 37.5 legal crab per pot in 1977, the first year of the pot survey. Due to weather and other limiting factors in 2016,

there were no pots set in traditional survey stations (PWS outside waters) of the Western or Eastern districts.

At the March 2008 meeting the department prepared deliberation materials for the board to consider finding an ANS for Tanner crab and king crab in PWS. At that time, noncommercial harvests of these stocks had been suspended for nine years and 10-year-old harvest data were used in drafting one ANS option. Another ANS option presented by the department was to wait at least three years for harvest data. The board adopted Proposal 363 with substitute language that created a subsistence Tanner crab fishery in PWS (5 AAC 02.220), but no ANS was adopted.

Noncommercial fisheries for Tanner crab historically remained open year-round throughout PWS until 1999, when they were closed by regulation due to steady declines in both overall Tanner crab and legal male abundance, as well as a lack of regular noncommercial fishery harvest information. Harvest in the first year of the recent subsistence fishery, 2008/09, was 44 legal male crab, the lowest since the permit fishery began (Table 267-4; Figure 267-3). Harvest and effort (number of trips) increased and peaked in the 2012/13 season with 2,177 legal male Tanner crab harvested in 368 trips with 80 permits that fished. Following this spike in harvest and effort, both legal males harvested and number of trips has decreased. For the recent three seasons, from 2013/14 through 2015/16 seasons, harvest was fewer than 900 crab with about 200 trips per season. The number of permits fished stayed relatively level during the 2012/13 through 2015/16 seasons, averaging 80 permits each season. The number of permits fished by community of residence is shown in Table 267-5.

Harvest by PWS residents have been estimated using household harvest survey data in Chenega Bay and Cordova. In 2014, Cordova residents harvested an estimated 1,384 Tanner crab using subsistence methods; Chenega Bay residents harvested 92 Tanner crab.

In 2016, an analysis of PWS Tanner crab information available to the department was completed in order to develop a PWS Tanner crab harvest strategy. The analysis used: 1) commercial fishery harvest information, 2) noncommercial fishery information from the required permit and SWHS, and 3) fishery-independent trawl survey data.

DEPARTMENT COMMENTS: The department supports adoption of Tanner crab harvest strategy for PWS and prefers the approach presented in Proposal 267. The department is **NEUTRAL** on the allocative aspects of this proposal. A PWS Tanner crab harvest strategy, including abundance thresholds and associated harvest rates to prosecute a commercial fishery, and additional regulations governing season, lawful gear, and legal size has been proposed by the department. The department recommends the board determine whether adoption of the proposal continues to provide a normally diligent person a reasonable opportunity for success in harvesting Tanner crab for customary and traditional uses.

PROPOSALS 269 and 270 – 5 AAC 35.310. Fishing seasons for Registration Area E.

PROPOSED BY: Robert A. Smith.

WHAT WOULD THESE PROPOSALS DO? Open a commercial Tanner crab fishery in the Western (Proposal 269) and Eastern (Proposal 270) districts of PWS. Season dates would be January 1–March 15 with a 500,000 lb GHL in each district. Vessels would be limited to fishing 25 pots.

WHAT ARE THE CURRENT REGULATIONS? The board has found there are positive customary and traditional uses of shrimp, Dungeness crab, Tanner crab, king crab, and miscellaneous shellfish in the PWS area. The board has not made an ANS finding for crab.

Currently, there is a subsistence Tanner crab fishery in PWS (outside the Valdez Nonsubsistence Area) with season dates of October 1–March 31, a size limit of 5.5 inches or greater in shell width, and a bag and possession limit of five male Tanner crab (5 AAC 02.220). Lawful gear is defined; this includes pot requirements and a pot limit of two pots per person with a maximum of two pots per vessel (5 AAC 02.207). Permits are required to participate in the king and Tanner crab subsistence fisheries, (5 AAC 02.206 and 5 AAC 02.015) with specific reporting requirements. The waters of Port Valdez, Galena Bay, Port Fidalgo, and Port Gravina are closed to subsistence crab fishing (5AAC 02.236) because they are either in a nonsubsistence area or are considered key areas for reproductive adults and young crab.

Regulation 5 AAC 35.310 states that the commercial harvest of Tanner crab in the PWS Area is closed until the board adopts a harvest strategy; there are no season dates in regulation.

In accordance with 5 AAC 35.080, the department shall establish an annual harvest strategy for each Tanner crab stock that is consistent with the board's *Policy on King and Tanner Crab Resource Management*. If adequate data are available, the department should establish a threshold level of abundance of each stock and may not allow fishing on any stock that is below its threshold level of abundance. Data used to determine GHLs and harvest rates may include estimates of exploitable biomass, estimates of recruitment, estimates of threshold level of abundance, estimates of acceptable biological catch, historical fishery performance data, estimates of reproductive potential, and market or other economic considerations.

Additional regulations designate Registration Area E as a superexclusive registration area for Tanner crab (5 AAC 35.306), restrict harvest to male crab 5.3 inches or greater in shell width (5 AAC 35.320), restrict gear to no more than 75 king and Tanner pots per vessel, require buoy tags, and require pots have a minimum of four escape rings no less than 4 and three-quarters inches inside diameter installed on the vertical plane of the pot (5 AAC 35.325).

WHAT WOULD BE THE EFFECT IF THESE PROPOSALS WERE ADOPTED? A PWS commercial fishery would be opened in the Eastern and Western districts without new survey information indicating a harvestable surplus of legal male Tanner crab is available. The fishery would be conducted with a GHL that is arbitrary and static and likely set at a level so high it presents a threat to the long-term health and viability of the PWS Tanner crab resource.

BACKGROUND: Commercial harvest of Tanner crab within PWS occurred as early as 1968 when 1.2 million pounds of crab were landed. The fishery peaked during the 1972/73 season when more than 13.9 million pounds were landed. In 1976, a minimum size limit of 5.3 inches in carapace width was implemented. After this, harvest decreased during the late 1970s and early 1980s, followed by large area closures during the 1984 and 1985 seasons. Low harvests averaging approximately 500,000 pounds occurred during the 1986, 1987, and 1988 seasons before the fishery was closed due to lack of recruitment documented by the annual stock assessment pot survey. The commercial Tanner crab fishery in PWS has been closed since 1989 (Table 267-1; Figure 267-1). The decline of Tanner crab abundance in the early years of the commercial fishery was likely due to overharvest of reproductive males and females prior to implementation of the legal male size limit and prohibition of harvesting females.

Four commercial Tanner crab districts were established prior to the 1976/77 season: Northern, Hinchinbrook, Western, and Eastern (5 AAC 35.305). When the commercial fishery was open from the 1976/77 season to the 1982/83 season, the percentage of the total harvest from the Western District ranged from 24% to 63% (Table 269-1). However, that maximum percentage (63%) during the 1982/83 season was the second lowest harvest in pounds from the Western District for the period and also corresponded with the lowest harvests in the Hinchinbrook and Eastern districts. In the Eastern District for the same period, the percentage of the total harvest ranged from 3% to 68%. The total harvest in the Western District peaked at 2,248,545 lb during the 1978/79 season and hit its low at 160,829 lb in 1986, just a couple of years prior to closing in 1989. For the Eastern District, harvest peaked at 4,057,847 lb during the 1979/80 season and had its low at 587 lb in 1986; there was no effort for four seasons when it was open, including the two years prior to the 1989 closure of the fishery in all districts.

The department has assessed Tanner crab abundance in PWS since 1977, using a pot survey until 1991 and a trawl survey from 1991 to the present. The pot survey provided relative abundance indices of legal Tanner crab and was used to set GHLs for the commercial fishery. The trawl survey has occurred annually from 1991–1995 and 2013–2015, and biennially from 1997–2011; data from this survey are used to estimate abundance of all male recruit classes and females (Table 267-2; Figure 267-2). Legal male estimates declined from 121,184 crab in 1993 to the lowest level of 3,677 crab in 1999. Since then, estimates of Tanner crab gradually increased until peaking in 2011. The 2011 and 2013 trawl surveys produced legal male estimates at historical high levels of 186,422 and 184,993 crab, respectively. Surveys were conducted in both 2014 and 2015 and legal male abundance estimates had decreased: 134,929 legal male crab in 2014 and 102,789 crab in 2015. Prerecruit-1 size class includes male crab between 113–134 mm carapace width, and if these crab molt one additional time they will reach legal size. Estimates of prerecruit-1 males were above 300,000 crab for the past five surveys; the lowest abundance estimate for that size class was 16,792 crab in 1999. Abundance estimates of prerecruits less than 113 mm have been over 1 million for the past six surveys, reaching a peak of over 7 million in 2013.

A test fishery was conducted in November 2016 to assess PWS Tanner crab CPUE based on the historical department index of abundance pot survey. To compare the historical pot survey and recent test fishery, only the CPUE from traditional survey stations were used. For Northern and Hinchinbrook districts combined there was a CPUE of 4.8 legal male Tanner crab per pot in 2016 compared to 4.1 legal crab per pot in 1988, the last year historical Tanner crab pot survey data are available (Table 267-3; Figure 267-1). The results in 2016 and 1988 represent the two

lowest years of CPUE for the period of the pot survey; the highest CPUE was 37.5 legal crab per pot in 1977, the first year of the pot survey. Due to weather and other limiting factors in 2016, there were no pots set in traditional survey stations (PWS outside waters) of the Western or Eastern districts.

At the March 2008 meeting the department prepared deliberation materials for the board to consider finding an ANS for Tanner crab and king crab in PWS. At that time, noncommercial harvests of these stocks had been suspended for nine years and 10-year-old harvest data were used in drafting one ANS option. Another ANS option presented by the department was to wait at least three years for harvest data. The board adopted Proposal 363 with substitute language that created a subsistence Tanner crab fishery in PWS (5 AAC 02.220), but no ANS was adopted.

Noncommercial fisheries for Tanner crab historically remained open year-round throughout PWS until 1999, when they were closed by regulation due to steady declines in both overall Tanner crab and legal male abundance, as well as a lack of regular noncommercial fishery harvest information. Harvest in the first year of the recent subsistence fishery, 2008/09, was 44 legal male crab, the lowest since the permit fishery began (Table 267-4; Figure 267-3). Harvest and effort (number of trips) increased and peaked in the 2012/13 season with 2,177 legal male Tanner crab harvested in 368 trips with 80 permits that fished. Following this spike in harvest and effort, both legal males harvested and number of trips has decreased. For the recent three seasons, from 2013/14 through 2015/16 seasons, harvest was fewer than 900 crab with about 200 trips per season. The number of permits fished stayed relatively level during the 2012/13 through 2015/16 seasons, averaging 80 permits each season. The number of permits fished by community of residence is shown in Table 267-5.

Harvest by PWS residents have been estimated using household harvest survey data in Chenega Bay and Cordova. In 2014, Cordova residents harvested an estimated 1,384 Tanner crab using subsistence methods; Chenega Bay residents harvested 92 Tanner crab.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on these allocative proposals. The harvest levels provided in these proposals represent a conservation concern for PWS Tanner crab. A PWS Tanner crab harvest strategy, including abundance thresholds and associated harvest rates to prosecute a commercial fishery, and additional regulations governing season, lawful gear, and legal size has been proposed by the department in Proposal 267. The department recommends the board determine whether adoption of the proposal continues to provide a normally diligent person a reasonable opportunity for success in harvesting Tanner crab for customary and traditional uses.

COST ANALYSIS: Approval of these proposals is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 269-1.–Commercial Tanner crab harvest and percentages by district(s) in the PWS Management Area, 1976–2016.

	Harvest by District (lb)					Percentage of Harvest		
	Northern	Hinchinbrook	Western	Eastern	Total	Northern & Hinchinbrook	Western	Eastern
1976/77[a]	782,048	766,650	701,725	70,925	2,321,348	67%	30%	3%
1977/78	994,721	1,161,831	2,079,549	570,573	4,806,674	45%	43%	12%
1978/79	649,977	708,562	2,248,545	3,443,471	7,050,555	19%	32%	49%
1979/80	140,228	332,583	1,462,059	4,057,847	5,992,717	8%	24%	68%
1980/81	152,196	812,352	1,561,207	250,076	2,775,831	35%	56%	9%
1981/82	351,139	722,834	1,503,253	288,425	2,865,651	37%	52%	10%
1982/83	471,422	31,447	921,663	45,308	1,469,840	34%	63%	3%
1984[b]	Closed	Closed	Closed	No Effort	0	Closed		
1985	Closed	Closed	No Effort	No Effort	0	Closed		
1986	137,720	236,241	160,829	587	535,377	70%	30%	0%
1987	152,834	222,052	196,246	0	571,132	66%	34%	0%
1988	55,929	226,509	191,654	0	474,092	60%	40%	0%
1989–2016	Closed	Closed	Closed	Closed	0	Closed		

Note: Commercial harvest occurred before 1976/77 with different districts (see Table 267-1).

[a] New districts and minimum legal size established.

[b] Calendar year season established.

PROPOSAL 271 – 5 AAC 34.2xx. Commissioner's permits for king crab in Prince William Sound and 5 AAC 35.3xx. Commissioner's permits for Tanner crab in Prince William Sound.

PROPOSED BY: Robert A. Smith.

WHAT WOULD THE PROPOSAL DO? Allow the department to issue commissioner's permits for king and Tanner crab fisheries in the PWS Area.

WHAT ARE THE CURRENT REGULATIONS? The commercial harvest of king and Tanner crab in PWS is closed until the board adopts a harvest strategy and there are no provisions for issuance of commissioner's permits for these fisheries.

The board has found there are positive customary and traditional uses of shrimp, Dungeness crab, Tanner crab, king crab, and miscellaneous shellfish in the PWS area. The board has not made an ANS finding for crab. Currently, there are subsistence fisheries for Tanner and golden king crab in PWS; these fisheries have a permit requirement.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? A person could apply for a commissioner's permit to participate in a commercial king or Tanner crab fishery in PWS Area. If permits were issued by the department, this would increase the harvest of Tanner Crab in PWS by unknown amount depending on the number of permits issued and abundance of Tanner Crab. Commissioner's permits would not be issued unless the department determined a harvestable surplus of king or Tanner crabs were available to support all users of the resource.

BACKGROUND: Commercial harvest of Tanner crab within PWS occurred as early as 1968 when 1.2 million pounds of crab were landed. The fishery peaked during the 1972/73 season when more than 13.9 million pounds were landed. In 1976, a minimum size limit of 5.3 inches in carapace width was implemented. After this, harvest decreased during the late 1970s and early 1980s, followed by large area closures during the 1984 and 1985 seasons. Stable harvests of around 500,000 pounds occurred during the 1986, 1987, and 1988 seasons before the fishery was closed due to lack of recruitment documented by the annual stock assessment pot survey. The commercial Tanner crab fishery in PWS has been closed since 1989 (Table 267-1; Figure 267-1). The decline of Tanner crab abundance in the early years of the commercial fishery was likely due to overharvest of reproductive males and females prior to implementation of the legal male size limit and prohibition of harvesting females.

The department has assessed Tanner crab abundance in PWS since 1977, using a pot survey until 1991 and a trawl survey from 1991 to the present. The pot survey provided relative abundance indices of legal Tanner crab and was used to set GHLs for the commercial fishery. The trawl survey has occurred annually from 1991–1995 and 2013–2015, and biennially from 1997–2011; data from this survey are used to estimate abundance of all male recruit classes and females (Table 267-2; Figure 267-2). Legal male estimates declined from 121,184 crab in 1993 to the lowest level of 3,677 crab in 1999. Since then, estimates of Tanner crab abundance gradually increased until peaking in 2011. The 2011 and 2013 trawl surveys produced legal male estimates at historical high levels of 186,422 and 184,993 crab, respectively. Surveys were conducted in

both 2014 and 2015 and legal male abundance estimates had decreased: 134,929 legal male crab in 2014 and 102,789 crab in 2015. Prerecruit-1 size class includes male crab between 113–134 mm carapace width, and if these crab molt one additional time they will reach legal size. Estimates of prerecruit-1 males were above 300,000 crab for the past five surveys; the lowest abundance estimates for that size class was 16,792 crab in 1999. Abundance estimates of prerecruits less than 113 mm have been over 1 million for the past six surveys, reaching a peak of over 7 million in 2013.

A test fishery was conducted in November 2016 to assess PWS Tanner crab CPUE based on the historical department index of abundance pot surveys. To compare the historical pot surveys and recent test fishery, only CPUE from traditional survey stations were used. For Northern and Hinchinbrook districts combined there was a CPUE of 4.8 legal male Tanner crab per pot in 2016 compared to 4.1 legal crab per pot in 1988, the last year historical Tanner crab pot survey data are available (Table 267-3; Figure 267-1). The results in 2016 and 1988 represent the two lowest years of CPUE for the period of the pot survey; the highest CPUE was 37.5 legal crab per pot in 1977, the first year of the pot survey. Due to weather and other limiting factors in 2016, there were no pots set in traditional survey stations (PWS outside waters) of the Western or Eastern districts.

At the March 2008 meeting the department prepared deliberation materials for the board to consider finding an ANS for Tanner crab and king crab in PWS. At that time, noncommercial harvests of these stocks had been suspended for nine years and 10-year-old harvest data were used in drafting one ANS option. Another ANS option presented by the department was to wait at least three years for harvest data. The board adopted Proposal 363 with substitute language that created a subsistence Tanner crab fishery in PWS (5 AAC 02.220), but no ANS was adopted.

Harvest by PWS residents have been estimated using household harvest survey data in Chenega Bay and Cordova. In 2014, Cordova residents harvested an estimated 1,384 Tanner crab using subsistence methods; Chenega Bay residents harvested 92 Tanner crab.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on the allocative aspects of this proposal. The department is concerned with issuing commissioner's permits unless a harvestable surplus is available. A PWS Tanner crab harvest strategy, including abundance thresholds and associated harvest rates to prosecute a commercial fishery, and additional regulations governing seasons, lawful gear, and legal size has been proposed by the department. The department recommends the board determine whether adoption of the proposal continues to provide a normally diligent person a reasonable opportunity for success in harvesting Tanner crab for customary and traditional uses. If the board were to adopt this proposal, 5 AAC 35.310 would need to be amended so that the Tanner crab fishery could be opened by commissioner's permit.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

PROPOSAL 272 – 5 AAC 02.220. Subsistence Tanner crab fishery.

PROPOSED BY: Warren Chappell.

WHAT WOULD THE PROPOSAL DO? Reduce the legal male size limit in the PWS Area subsistence Tanner crab fishery to five and three tenths inches or greater in carapace width.

WHAT ARE THE CURRENT REGULATIONS? The board has found there are positive customary and traditional uses of shellfish stocks in PWS outside the nonsubsistence use areas (5 AAC 02.311). The board has not made an ANS finding for subsistence uses of Tanner crab.

In the PWS subsistence fishery, only male Tanner crab five and one-half inches or greater in width of shell may be taken or possessed. The season is open from October 1–March 31 and participants in the subsistence fishery must obtain a permit under 5 AAC 02.206. Tanner crab may only be taken with pots, ring nets, dip nets, diving gear, hooked or hookless hand lines, and by hand (5AAC 02.207). Lawful gear is defined including pot requirements and a pot limit of two pots per person with a maximum of two pots per vessel (5 AAC 02.207). There is a bag and possession limit of five legal male Tanner crab per permit holder fishing (5 AAC 02.220). Waters closed to the subsistence harvest of Tanner crab include Port Valdez, Galena Bay, Port Fidalgo, and Port Gravina (5 AAC 02.236).

A permit is required to participate in the subsistence Tanner crab fishery (5 AAC 02.206) and harvest information that must be reported includes date of harvest, area of harvest, number of pots fished, number of legal male Tanner crab harvested, number of legal male Tanner crab released, number of sublegal male Tanner crab released, and the number of female Tanner crab released. This harvest information must be recorded each time the crab pots are pulled. The permit must be returned by April 15 following each season even if the permit was not fished.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? By reducing the legal size limit, additional male Tanner crab would likely be harvested for customary and traditional uses than under the current size limit. Due to terminal molt, at the current legal size, a majority of males will not reach legal size and never be available for harvest. This proposal could potentially increase long-term overall yield and stock productivity, and it is likely that less sublegal male Tanner crab would be handled and released and subject to handling reduced stress and mortality.

BACKGROUND: Noncommercial fisheries for Tanner crab historically remained open year-round throughout PWS until 1999, when they were closed by regulation due to steady declines in both overall Tanner crab and legal male harvest.

At the March 2008 meeting the department prepared deliberation materials for the board to consider finding an ANS for Tanner crab and king crab in PWS (5 AAC 02.208). At that time, noncommercial harvests of these stocks had been suspended for nine years and 10-year-old harvest data were used in drafting one ANS option. Another ANS option presented by the department was to wait at least three years for harvest data. The board adopted Proposal 363 with substitute language that created a subsistence Tanner crab fishery in PWS (5 AAC 02.220), but no ANS was adopted.

The subsistence fishery reopened in 2008, with a permit requirement. The permits are used to collect information on participants, harvest, and effort. In addition, concurrent with the opening of the subsistence fishery, results from the PWS trawl survey indicated increasing estimates of legal male Tanner crab abundance.

Since the permit fishery began in 2008, the number of permits issued has ranged from a low of 74 permits in the 2010/11 season to a high of 227 permits in the 2014/15 season. However, actual participation has been considerably lower, ranging from 25 permits fished during the 2010/11 season to 89 permits fished during the 2015/016 season. Harvest has also varied widely, from a low of 44 legal male Tanner crab harvested in the 2008/09 season to a high of 2,177 crab harvested in the 2012/13 season (Table 267-4). This spike in harvest was mirrored by the amount of trips taken by permit holders, with a high of 368 trips taken in the 2012/13 season, down to a low of 58 trips in the 2010/11 season (Figure 267-3).

Harvest by PWS residents have been estimated using household harvest survey data in Chenega Bay and Cordova. In 2014 Cordova residents harvested an estimated 1,384 Tanner crab using subsistence methods; Chenega Bay residents harvested 92 Tanner crab.

During the first four seasons that permits were required, 2008/09 through 2011/12, the majority of legal male Tanner crab were harvested from statistical areas in the Northwest and Southwest sections of PWS (Table 272-1; Figure 272-1), with a high of 91% from Northwest and Southwest locations combined in the 2008/09 season. Following the 2011/12 season, areas of harvest and effort shifted over the next four seasons, with the majority of legal male Tanner crab harvest taken from the Orca Bay area, ranging from 89% in the 2012/13 season and declining to 67% in the 2015/16 season. Northwest section harvest has increased the past three years with 20% taken from that area during the 2015/16 season; while harvest from Southwest and Northern locations has remained low.

In 2016, an analysis of PWS Tanner crab information available to the department was completed in order to develop a PWS Tanner crab harvest strategy. The analysis used: 1) commercial fishery harvest information, 2) noncommercial fishery information from the required permit and SWHS, and 3) fishery-independent trawl survey data.

The current legal size is 5.3 inches or greater in carapace width including spines, or 135 mm. Legal sizes are typically one or two molts above the male mature sizes. However, due to terminal molt, at the current legal size a majority of males will not reach legal size and will never be available for harvest. Leaving more of the fast growing, larger males in the population and harvesting some of the smaller males will benefit the population genetically over the long term. Based on this reasoning, the legal size for EBS Tanner crab was lowered.

Based on the male maturity size, the analysis recommends redefining the legal size to a smaller size similar to that implemented in the EBS Tanner crab harvest strategy (Zheng and Pengilly 2011). The new proposed Tanner crab harvest strategy, recommends reducing the minimum legal size to 5.0 inches or 127 mm.

DEPARTMENT COMMENTS: The department **SUPPORTS** reducing the minimum legal size to 5.0 inches. A harvest strategy including a new legal size of 5.0 inches has been proposed by the department for PWS Tanner crab.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

SUBSISTENCE REGULATION REVIEW:

1. Is this stock in a non-subsistence area? Yes. Portions of the stocks are located in the Valdez Nonsubsistence Area as described in 5 AAC 99.015(a)(5.

2. Is the stock customarily and traditionally taken or used for subsistence? Yes. In 2008 the board made positive customary and traditional use findings for shrimp, Dungeness crab, Tanner crab, king crab and miscellaneous shellfish in PWS (5 AAC 02.208).

3. Can a portion of the stock be harvested consistent with sustained yield? Yes.

4. What amount is reasonably necessary for subsistence uses? There is no ANS for crab in PWS.

5. Do the regulations provide a reasonable opportunity for subsistence uses? This is a board determination.

6. Is it necessary to reduce or eliminate other uses to provide a reasonable opportunity for subsistence use? This is a board determination.

Table 272-1.–Subsistence Tanner male legal crab percentage of harvest by location in PWS from the 2008/09 through 2015/16 seasons.

	Season							
Location	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Orca Bay [a]	0%	0%	6%	12%	89%	82%	83%	67%
Northwest [b]	61%	53%	33%	16%	4%	12%	10%	20%
Northern [c]	0%	7%	32%	36%	0%	2%	1%	1%
Southwest [d]	30%	34%	28%	35%	1%	1%	2%	5%
Hinchinbrook [e]	0%	0%	0%	0%	1%	0%	4%	6%
Other Stat Areas	0%	0%	0%	0%	0%	1%	1%	0%
No Reported Stat Area	9%	6%	0%	1%	5%	3%	0%	1%
Northwest and Southwest	91%	87%	62%	50%	5%	13%	12%	24%

[a] Statistical areas 456031, 456032, 466031, and 466032.
[b] Statistical areas 476033, 486031, 486033, and 486034.
[c] Statistical areas 466033, 476034, 476035, 476036, and 476101.
[d] Statistical areas 476004, 476005, 476006, 476007, 486001, and 486005.
[e] Statistical area 466003.

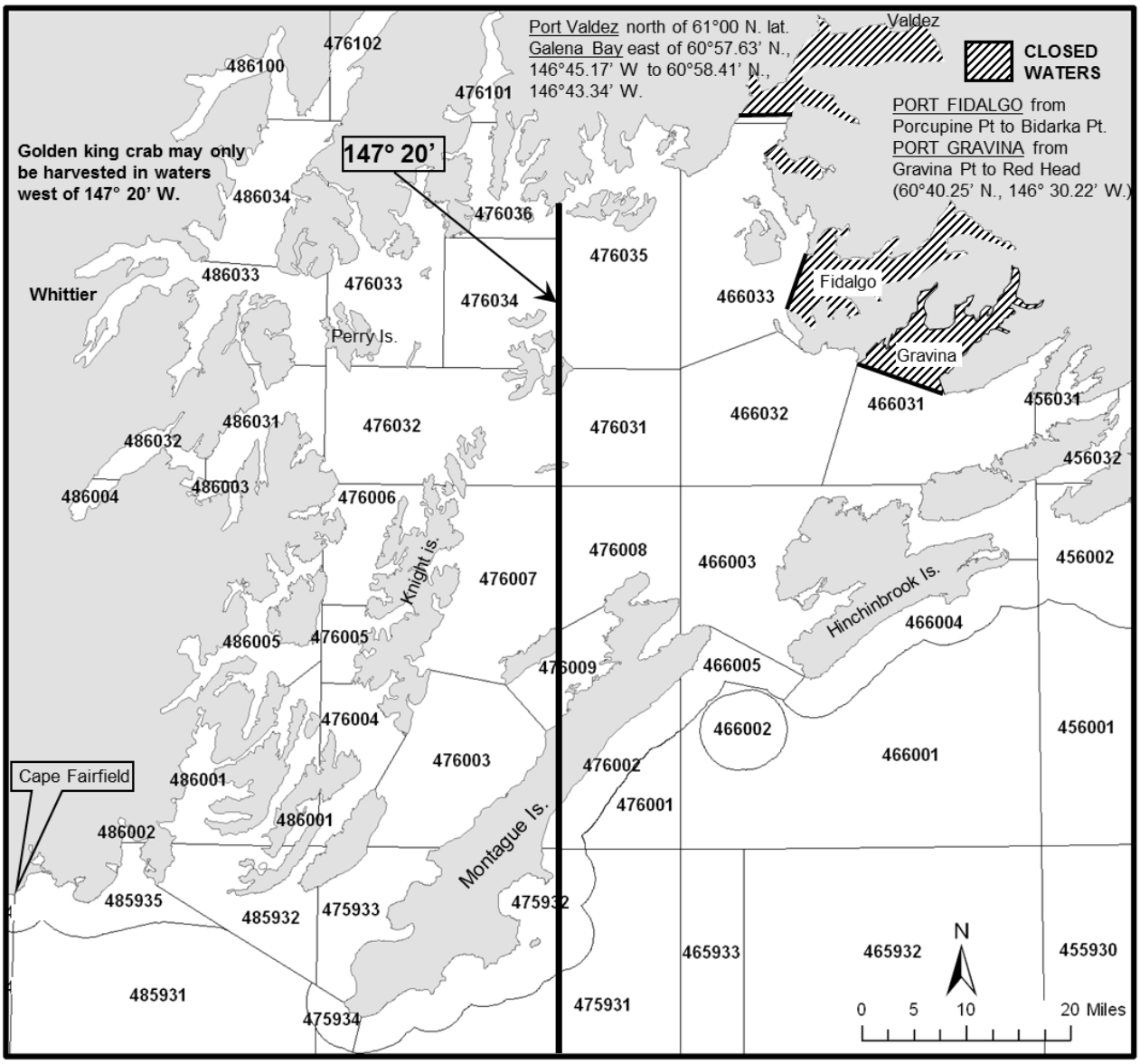

Figure 272-1.–PWS Tanner crab subsistence permit map with statistical areas and closed waters.

PROPOSAL 273 – 5 AAC 02.220. Subsistence Tanner crab fishery.

PROPOSED BY: Warren Chappell.

WHAT WOULD THE PROPOSAL DO? Increase PWS subsistence Tanner crab bag and possession limit to 25 male Tanner crab.

WHAT ARE THE CURRENT REGULATIONS? The board has found there are positive customary and traditional uses of shrimp, Dungeness crab, Tanner crab, king crab, and miscellaneous shellfish in the PWS area. The board has not made an ANS finding for crab. A permit is required, and there is a bag and possession limit of five legal male Tanner crab per permit holder fishing (5 AAC 02.220). Only male Tanner crab five and one-half inches or greater in width of shell may be taken or possessed. The season is open from October 1–March 31. Tanner crab may only be taken with pots, ring nets, dip nets, diving gear, hooked or hookless hand lines, and by hand (5 AAC 02.207). Lawful gear is defined, including pot requirements and a pot limit of two pots per person with a maximum of two pots per vessel (5 AAC 02.207). Waters closed to the subsistence harvest of Tanner crab include Port Valdez, Galena Bay, Port Fidalgo, and Port Gravina (5 AAC 02.236).

Harvest information that must be reported on the permit includes date of harvest, area of harvest, number of pots fished, number of legal male Tanner crab harvested, number of legal male Tanner crab released, number of sublegal male Tanner crab released, and the number of female Tanner crab released. This harvest information must be recorded each time the crab pots are pulled. The permit must be returned by April 15 following each season even if the permit was not fished.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? By increasing the bag limit as proposed, harvest of legal male Tanner crab for customary and traditional uses could increase by 500%. In the last four seasons, an average of 242 trips have been made annually with 50% of the trips achieving their bag limit (Table 267-4). Under the proposed bag limit, if this effort level continued with the same level of success, about 3,000 crab would be harvested annually, which is around 50% greater than harvest in any other fishing season. An increase in bag limit will likely generate increased interest in the fishery, resulting in increased effort and harvest by an unknown amount above 3,000 crab. The department is uncertain if an increase in harvest of this magnitude is sustainable during years of low abundance.

BACKGROUND: Noncommercial fisheries for Tanner crab historically remained open year-round throughout PWS until 1999, when they were closed by regulation due to steady declines in both overall Tanner crab and legal male harvest.

At the March 2008 meeting, the department prepared deliberation materials for the board to consider finding an ANS for Tanner crab and king crab in PWS (5 AAC 02.208). At that time, noncommercial harvests of these stocks had been suspended for nine years and 10-year-old harvest data were used in drafting one ANS option. Another ANS option presented by the department was to wait at least three years for harvest data. The board adopted Proposal 363 with

substitute language that created a subsistence Tanner crab fishery in PWS (5 AAC 02.220), but no ANS was adopted.

The subsistence fishery reopened in 2008, with a permit requirement. The permits are used to collect information on participants, harvest, and effort. In addition, concurrent with the opening of the subsistence fishery, results from the PWS trawl survey indicated increasing estimates of legal male Tanner crab abundance.

Since the permit fishery began in 2008, the number of permits issued has ranged from a low of 74 permits in the 2010/2011 season to a high of 227 permits in the 2014/15 season. However, actual participation has been considerably lower, ranging from 25 permits fished during the 2010/11 season to 89 permits fished during the 2015/16 season. Harvest has also varied widely, from a low of 44 legal male Tanner crab harvested in the 2008/09 season to a high of 2,177 crab harvested in the 2012/13 season (Table 267-4). This spike in harvest was mirrored by the amount of trips taken by permit holders, with a high of 368 trips taken in the 2012/13 season (Figure 267-3), down to a low of 58 trips in the 2010/11 season. Under the current bag and possession limit, harvest has been steady over the past four seasons with half of the participants reaching their bag limit annually, with a harvest increase in 2012/13 season; which was mirrored in the department trawl survey.

Harvests by PWS residents were estimated using household harvest survey data from Chenega Bay and effort has become more focused on the Orca Bay area near Cordova. In 2014, Cordova residents harvested an estimated 1,384 Tanner crab in the past eight years, since the opening of the subsistence methods; Chenega Bay residents harvested 92 Tanner crab fishery.

During the first four seasons that permits were required, 2008/09 through 2011/12, the majority of legal male Tanner crab were harvested from statistical areas in the Northwest and Southwest sections of PWS (Table 272-1; Figure 272-1), with a high of 91% from Northwest and Southwest locations combined in the 2008/2009 season. Following the 2011/12 season, areas of harvest and effort shifted over the next 4 seasons, with the majority of legal male Tanner crab harvest taken from the Orca Bay area, ranging from 89% in the 2012/13 season and declining to 67% in the 2015/16 season. Northwest section harvest has increased the past three years with 20% taken from that area during the 2015/16 season, while harvest from Southwest and Northern locations remained low.

Before permits were required, there was no consistent mechanism to monitor effort or harvest of Tanner crab in historical noncommercial fisheries within PWS. SWHS data indicated an annual sport fishery harvest range of between 137 to 537 crab, with an average annual harvest of 300 Tanner crab from 1994–1998 (Table 272-1). There was no recorded harvest between 1999–2008, when the noncommercial fisheries were closed by regulation.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on the allocative aspects of this proposal; under the current bag and possession limit, harvest has been steady over the past four seasons with half of the participants reaching their bag limit annually, with a harvest increase observed in 2012/13 season; which was mirrored by an increase in abundance estimated by the department trawl survey. It is likely the PWS Tanner crab stock could sustain a subsistence fishery with a bag and possession limit greater than five legal males, but less than the proposed 25 legal males.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

SUBSISTENCE REGULATION REVIEW:

1 Is this stock in a non-subsistence area? Yes. Portions of the stocks are located in the Valdez Nonsubsistence Area as described at 5 AAC 99.015(a)(5).

2. Is the stock customarily and traditionally taken or used for subsistence? Yes. In 2008, the board made positive customary and traditional use findings for shrimp, Dungeness crab, Tanner crab, king crab and miscellaneous shellfish in PWS (5 AAC 02.208).

3. Can a portion of the stock be harvested consistent with sustained yield? Yes.

4. What amount is reasonably necessary for subsistence uses? There is no ANS for crab in PWS.

5. Do the regulations provide a reasonable opportunity for subsistence uses? This is a board determination.

6. Is it necessary to reduce or eliminate other uses to provide a reasonable opportunity for subsistence use? This is a board determination.

CHIGNIK PACIFIC COD

PROPOSAL 274 – 5 AAC 28.087. Management measures in parallel groundfish fisheries for protection of Steller sea lions.

PROPOSED BY: Aaron Anderson.

WHAT WOULD THE PROPOSAL DO? This proposal was initially reviewed by the board as Proposal 9 during the 2015 Alaska Peninsula / Chignik / Aleutian Islands-Bering Sea Pacific Cod meeting, November 30–December 1, 2015. As written, Proposal 9 sought to open all SSL haulout no fishing zones within the Chignik Area to pot gear vessels participating in the Chignik Area parallel Pacific cod fishery. During the 2015 meeting the proposal was amended (RC30) and tabled pending further analysis.

As amended in December 2015, Proposal 274 would reduce the no fishing zone around the SSL haulout at Sutwik Island, from 20 to 3 nmi, for pot gear vessels participating in the Chignik Area parallel Pacific cod fishery.

5 AAC 28.087. Management measures in parallel groundfish fisheries for protection of Stellar sea lions.

…

(b) Notwithstanding (a) of this section, during a parallel season for Pacific cod

…

(**4) in the Chignik Area, statewaters within the 20 nautical mile Steller sea lion haul out at Sutwik Island (56° 31.05′ N. lat., 157° 20.47′ W. long.) shall be open to pot gear, except for those waters within three nautical miles of the Steller sea lion haul out at Sutwik Island (56° 31.05′ N. lat., 157° 20.47′ W. long.).**

WHAT ARE THE CURRENT REGULATIONS? No fishing zones for protection of SSL applicable to the Chignik Area parallel Pacific cod pot gear fishery include state waters (0 to 3 nmi from shore) around Mitrofania, Sutwik, Spitz, Kak, and Chowiet Islands, and Lighthouse Rocks (Figure 274-1). All pot gear vessels participating during the parallel Pacific cod fishery are required to have onboard an activated VMS to aid enforcement of the closure areas. SSL no fishing zones and VMS requirements are not applicable to vessels using jig gear.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? Relaxing closed waters near Sutwik Island would provide additional fishing grounds for pot gear fishery participants during the parallel Pacific cod fishery. However, under current federal regulation only pot gear vessels that *do not* possess a Federal Fisheries Permit (FFP) would be able to fish within the proposed area (3–20 nmi from the SSL haulout at Sutwik Island). Pot gear vessels that *do* possess an FFP would be required as a condition of their FFP to observe the status quo 20 nmi no fishing zone.

BACKGROUND: The Chignik Area parallel Pacific cod pot gear fishery is established by the state to coincide with the adjacent federal CGOA Pacific cod pot gear fishery. During the parallel

fishery, the state adopts most federal fishing regulations including season dates, gear, area closures, bycatch limits, or other regulations reasonably necessary to accommodate federal fishery management measures in state waters. Federal area closures, including closures for SSL protection, are in effect during parallel fisheries. In 2001, the NPFMC established no fishing zones around many SSL haulouts and rookeries in response to declining SSL populations and their listing as an endangered species under the ESA. The State of Alaska subsequently adopted most federal SSL closure areas for parallel Pacific cod, walleye pollock, and Atka mackerel fisheries under 5 AAC 28.087. Management measures in parallel groundfish fisheries for protection of Steller sea lions.

The Chignik Area parallel Pacific cod pot gear fishery is divided into two seasons. The A season opens January 1 and the B season opens September 1. Most parallel Pacific cod effort occurs during the A season prior to the start of the Chignik Area state-waters Pacific cod season. Effort during the Chignik parallel fishery is generally low. From 2007 through 2016, an average of three pot vessels harvested approximately 771,000 pounds of Pacific cod annually during the parallel fishery (Table 274-1).

The Chignik Area state-waters Pacific cod pot gear season opens after closure of the parallel pot gear A season. With exception of the 3 nmi no transit zone on Chowiet Island, SSL no fishing zones applicable to the parallel pot gear fishery do not apply to the state-waters pot gear fishery (Figure 274-1). From 2007 to 2016, 47 percent of all vessels that participated in the state-waters pot gear fishery targeted Pacific cod in statistical areas fully or partially within the Sutwik Island SSL no fishing zone established for the parallel fishery (Table 274-2). On average, 43 percent of all Pacific cod harvested by pot gear vessels during the state-waters Pacific cod fishery were taken in statistical areas fully or partially within the Sutwik Island SSL no fishing zone. The amount of state-waters Pacific cod vessel effort and harvest exclusively within the Sutwik Island SSL closure area is unknown.

Modifying waters closed to fishing for protection of SSL requires NMFS to conduct an ESA Section 7 consultation to determine the effects of Gulf of Alaska groundfish fisheries on the SSL western district population segment. In a letter dated January 12, 2016, the board formally requested that NMFS review Proposal 9 (as amended by RC 30) and offer the results of the Section 7 consultation prior to the board taking any action. NMFS responded in a letter dated September 30, 2016, determining that for pot gear vessels without FFPs "the proposed action may affect, but is not likely to adversely affect, the SSL WDSP or designated SSL critical habitat."

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this proposal.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

Table 274-1.–Chignik Area parallel Pacific cod pot gear fishery effort and harvest, 2007–2016.

Year	Vessel count	Harvest (pounds)
2007	2	CF
2008	1	CF
2009	3	239,584
2010	3	564,567
2011	3	258,963
2012	1	CF
2013	3	395,052
2014	4	1,729,086
2015	6	1,053,533
2016[a]	4	1,154,775
Average	3	770,794

Notes: CF = confidential data.

[a] Through November 30, 2016; parallel pot season closed February 1, additional harvest is not anticipated.

Table 274-2.–Chignik Area state-waters Pacific cod pot gear fishery effort and harvest, and the percentage of state-waters Pacific cod pot gear fishery effort and harvest that occurred in statistical areas fully or partially within the Sutwik Island SSL no fishing zone, 2007–2016.

Year	Total pot vessel count	Total pot harvest (pounds)	Pot vessel count in Sutwik I. SSL no fishing zone	Pot harvest in Sutwik I. SSL no fishing zone (pounds)	Percentage of pot vessels that fished in Sutwik I. SSL no fishing zone	Percentage of total pot harvest taken in Sutwik I. SSL no fishing zone
2007	16	5,700,861	11	3,410,002	69%	60%
2008	23	6,741,090	12	3,438,228	52%	51%
2009	11	5,679,676	9	3,975,440	82%	70%
2010	16	8,491,185	7	4,840,474	44%	57%
2011	23	9,370,870	7	4,042,747	30%	43%
2012	20	10,229,969	6	3,164,677	30%	31%
2013	19	8,712,190	9	2,901,568	47%	33%
2014	12	9,150,276	5	3,074,327	42%	34%
2015	17	10,248,382	8	3,587,201	47%	35%
2016[a]	10	8,482,544	4	2,848,523	40%	34%
Average	17	8,280,704	8	3,528,319	47%	43%

[a] Through November 30, 2016; additional harvest is not anticipated.

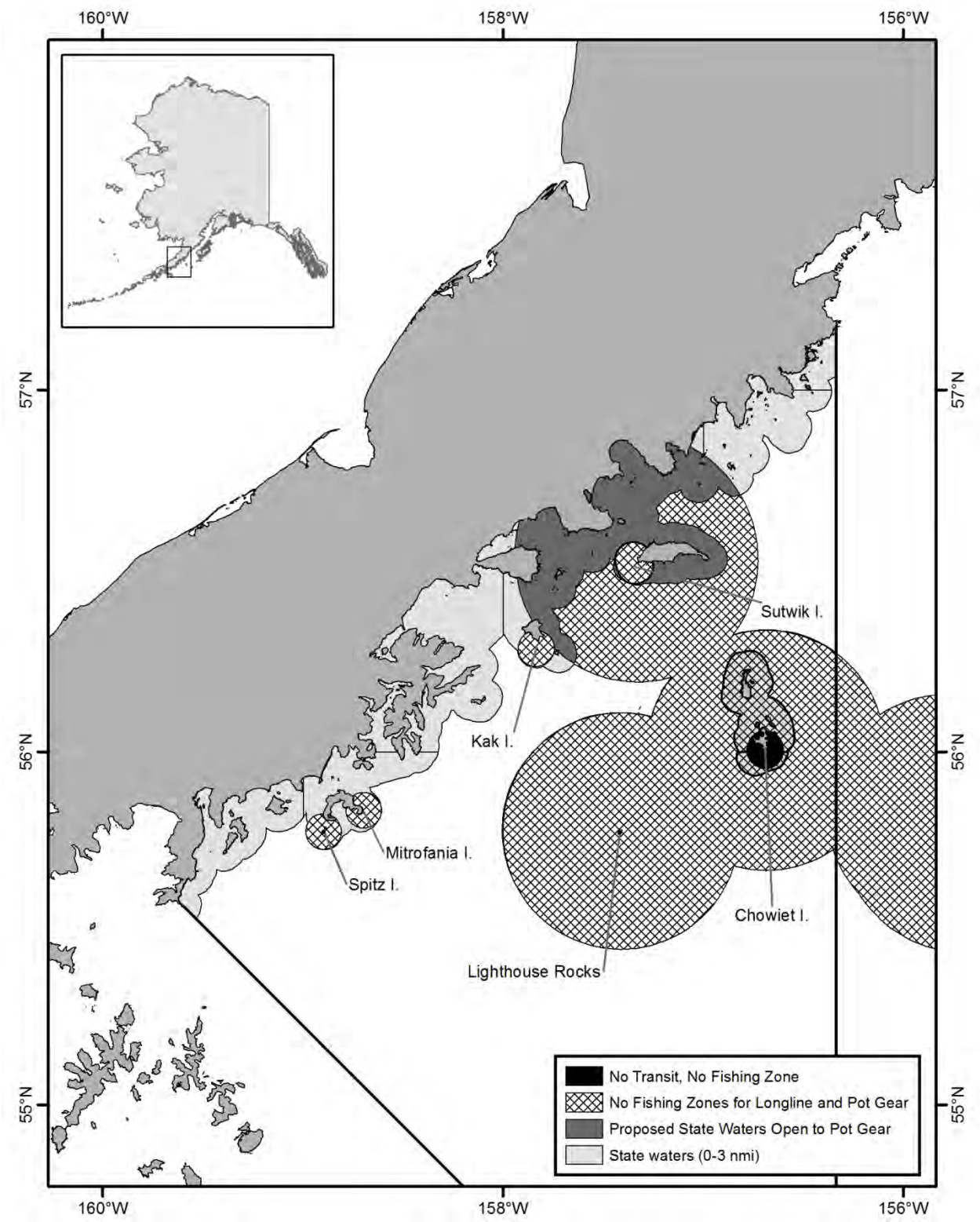

Figure 274-1.–Steller sea lion no fishing zones and state-waters applicable to the Chignik Area parallel Pacific cod pot gear fishery.

KUSKOKWIM AND ALEUTIAN ISLANDS SUBSISTENCE SALMON

PROPOSAL 275 – 5 AAC 01.286. Customary and traditional subsistence uses of fish stocks and amounts necessary for subsistence uses; and 5 AAC 01.2xx. Tier II subsistence salmon fishing permits for the Kuskokwim River fishery.

This proposal was tabled from the January 2016 Arctic-Yukon-Kuskokwim Board of Fisheries meeting.

PROPOSED BY: Grant Fairbanks.

WHAT WOULD THE PROPOSAL DO? This would eliminate nonsubsistence uses of Kuskokwim River king salmon and distinguish among subsistence users by establishing a Tier II subsistence king salmon fishery. Alternatively, this seeks an effective system to equitably distribute limited harvestable surpluses of king salmon throughout the drainage when ANS cannot be met.

WHAT ARE THE CURRENT REGULATIONS? See below for current C&T and ANS findings. Fish may be taken for subsistence purposes without a subsistence fishing permit (5 AAC 01.280). Salmon may be taken at any time from the Kuskokwim River, except that the commissioner may, by EO, close subsistence fishing periods and restrict fishing gear to conserve king salmon (5 AAC 01.270). There are no harvest limits or annual possession limits for subsistence king salmon fishing, except in that portion of the Aniak River drainage upstream of Doestock Creek, from June 1 through August 31, when subsistence fishing with a hook and line attached to a rod or pole, the bag and possession limit for king salmon is two fish (5 AAC 01.295).

At the 2016 AYK meeting, the board adopted a proposal to close directed subsistence fishing for king salmon in the Kuskokwim River through June 11. The board also adopted a proposal clarifying the specifications for beach seines: they may not exceed 50 fathoms in length or 100 meshes in depth, with the maximum mesh size being three and one half inches.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? All Alaska residents wanting to subsistence fish for king salmon in the Kuskokwim River drainage would need to apply for a Tier II subsistence fishing permit. Individuals, or individual households, would have to answer a series of questions, developed by the board pursuant to AS 16.05.258(b)(4), to distinguish among Alaskans based on 1) their customary and traditional direct dependence upon Kuskokwim River king salmon by the subsistence user for human consumption as a mainstay of livelihood; and 2) the ability to obtain food if subsistence use is restricted or eliminated).[1] Applications would be scored by the department, and then ranked, and the highest ranking applicants would receive a subsistence king salmon fishing permit to participate in any subsistence king salmon fishing opportunity provided. The amount of king

[1] The second criteria at AS 16.05.258(b)(4)(B)(ii), proximity of the domicile of the subsistence user to the stock or population, has been ruled invalid by the Alaska Supreme Court; thus, no Tier II opportunity may consider proximity of a resource to a person's domicile.

salmon made available for subsistence harvest would depend upon the annual forecasted harvestable surplus of Kuskokwim River king salmon.

BACKGROUND: Since 2010, the Kuskokwim River has experienced poor king salmon returns. Total run estimates for Kuskokwim River king salmon in 2010, 2012, and 2013 are the three lowest on record. From 2010 through 2013 the majority of tributary escapement goals were not achieved and the recently established Kuskokwim River drainagewide escapement goal was not achieved in 2013. In 2012, 2014, and 2015, the department closed the subsistence salmon fishery for approximately 32 days each year.

The 2014 and 2015 Kuskokwim River king salmon runs were expected to be similar or slightly better than the 2013 run. In anticipation of low runs, management actions were taken to close the subsistence and sport king salmon fisheries with the intent of reducing king salmon harvest to a level that would allow for achievement of escapement goals. Commercial fishing remained closed until the majority of the king salmon run had passed upriver to minimize potential incidental king salmon harvest. Due to these restrictive actions, the drainagewide escapement goal was met in 2014 and 2015 and the majority of tributary escapement goals were achieved in these recent years. Additionally, USFWS enacted Special Actions (SAs) in 2014 and 2015 to limit the harvest of king salmon to federally qualified individuals within the boundaries of the Yukon Delta National Wildlife Refuge and implement a community permit system to provide a limited allocation of king salmon for harvest by federally qualified subsistence users.

In 2016, the early season subsistence fishing closure was initiated on May 20 from the mouth of the Kuskokwim River to the Holitna River, and upstream of the Holitna River beginning June 1. With the closure came additional restrictions, including tributary closures and live release of Chinook salmon requirements.

The preliminary Kuskokwim River total run estimate is approximately 186,400 king salmon (95% CI: 141,300–245,800). The 2016 Kuskokwim River drainagewide escapement goal was likely achieved but has not been fully assessed. Postseason subsistence harvest survey results are also still being analyzed.

At AS 16.05.258(b)(4), the board is instructed that if the harvestable portion of a stock or population is not sufficient to provide a reasonable opportunity for subsistence uses, the board shall adopt regulations eliminating consumptive uses, other than subsistence uses, and then distinguish among subsistence users (i.e., adopt Tier II). While Kuskokwim River king salmon subsistence harvest has fallen below the lower end of the ANS range since 2011 (Figure 275-1), ANS is one way for the board to measure if reasonable opportunity is being provided. "Reasonable opportunity" is defined in state law (AS 16.05.258(f)) and "means an opportunity, as determined by the appropriate board, that allows a subsistence user to participate in a subsistence hunt or fishery that provides a normally diligent participant with a reasonable expectation of success of taking of fish or game." The board may base its determination of reasonable opportunity on information regarding past subsistence harvest levels of fish in the specific area, and the bag limits, seasons, access provisions, and means and methods necessary to achieve those harvests, or on comparable information from similar areas.

The Kuskokwim Subsistence Salmon Panel was established at the board work session in October 2014 to seek public input on how to ensure an equitable distribution of subsistence salmon resources throughout the Kuskokwim River drainage and potential tools for equitable

distribution in times of low abundance. The panel met in Bethel in January and August 2015 to discuss and develop options for consideration by the board. The panel was unanimously opposed to the Tier II aspect of this proposal.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this proposal. As an alternative to Tier II management, the proposal suggests the board could implement community permits or quotas to equitably distribute limited subsistence king salmon harvestable surpluses throughout the Kuskokwim River drainage.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

SUBSISTENCE REGULATION REVIEW:

1. Is this stock in a nonsubsistence area? No.

2. Is the stock customarily and traditionally taken or used for subsistence? Yes, the board made a positive customary and traditional use finding for king salmon in the Kuskokwim River drainage (5 AAC 01.286(a)(3)).

3. Can a portion of the stock be harvested consistent with sustained yield? Yes.

4. What amount is reasonably necessary for subsistence uses? The board revised the amount reasonably necessary finding for Kuskokwim River king salmon in January 2013 to be 67,200–109,800 king salmon (5 AAC 01.286(b)(1)).

5. Do the regulations provide a reasonable opportunity for subsistence uses? This is a board determination.

6. Is it necessary to reduce or eliminate other uses to provide a reasonable opportunity for subsistence uses? This is a board determination.

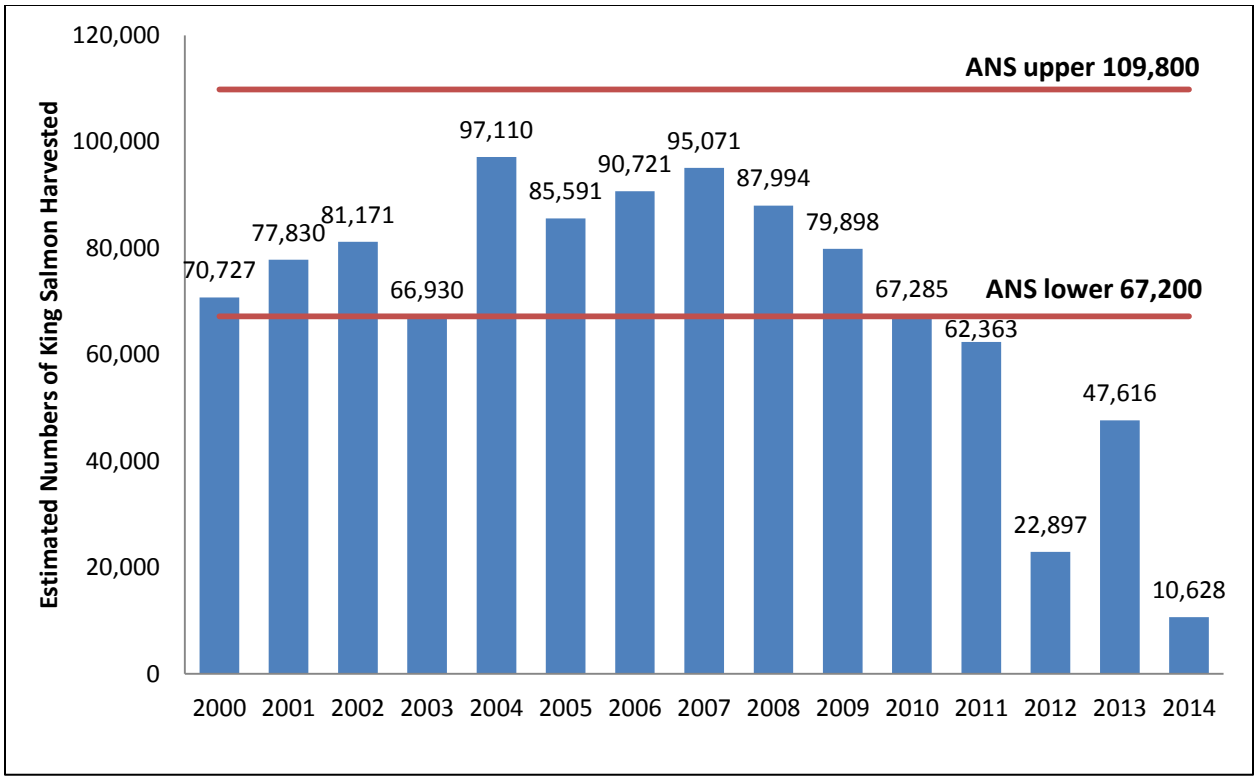

Figure 275-1.–Kuskokwim river king salmon subsistence harvest, 2000–2014.

PROPOSAL 276 – 5 AAC 01.280. Subsistence fishing permits.

This proposal was tabled from the January 2016 Arctic-Yukon-Kuskokwim Board of Fisheries meeting.

PROPOSED BY: Alaska Board of Fisheries.

WHAT WOULD THE PROPOSAL DO? Create a limited subsistence permit program that would apply only during times of king salmon conservation for the Kuskokwim River drainage and would provide for either community harvests of king salmon as described in a board finding, or household harvests of king salmon; the permit program would also sunset after an undetermined date. Annual permit limits, season dates, and recording and reporting requirements for each permit fishery would also be adopted.

WHAT ARE THE CURRENT REGULATIONS? Fish may be taken for subsistence uses without a subsistence fishing permit (5 AAC 01.280). There are no harvest limits or annual possession limits for subsistence king salmon fishing, except in that portion of the Aniak River drainage upstream of Doestock Creek: from June 1 through August 31, when subsistence fishing with a hook and line attached to a rod or pole, the bag and possession limit for king salmon is two fish (5 AAC 01.295).

At the 2016 AYK meeting, the board adopted a proposal to close directed subsistence fishing for king salmon in the Kuskokwim River through June 11. The board also adopted a proposal clarifying the specifications for beach seines: they may not exceed 50 fathoms in length or 100 meshes in depth, with the maximum mesh size being three and one half inches.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? During times of king salmon conservation, either a community or a household permit would be required to subsistence fish for king salmon within the Kuskokwim River drainage. Permits may provide estimates of the number of king salmon taken for subsistence uses by place of residency. Harvest limits would provide the department more management flexibility to maximize subsistence opportunity while ensuring escapement goals are achieved.

BACKGROUND: Subsistence fishing permits have not been required in the Kuskokwim Area. Since 1989 the department, in partnership with local Tribal organizations, has conducted postseason surveys to estimate Kuskokwim Area subsistence salmon harvest. Postseason surveys document subsistence harvest by household using a stratified sampling design that results in an estimate of total subsistence harvest by community. Kuskokwim River subsistence users annually harvest approximately 80,000 king salmon on average, which is the largest king salmon harvest in the state. The community of Bethel harvests a larger number of king salmon than other Kuskokwim River communities, which is likely attributable to Bethel's larger population (Figure 276-1).

Since 2010, the Kuskokwim River has experienced poor king salmon runs. Total run estimates for Kuskokwim River king salmon in 2010, 2012, and 2013 are the three lowest on record. From 2010 through 2013 the majority of tributary escapement goals were not achieved and the recently established Kuskokwim River drainagewide escapement goal was not achieved in 2013. In 2012, 2014, and 2015, the department closed the subsistence salmon fishery for approximately 32 days.

The 2014 and 2015 Kuskokwim River king salmon runs were expected to be similar or slightly better than the 2013 run. In anticipation of low runs, management actions were taken to close the subsistence and sport king salmon fisheries with the intent of reducing king salmon harvest to a level that would allow for achievement of escapement goals. Due to these restrictive actions, the drainagewide escapement goal was met in 2014 and 2015 and the majority of tributary escapement goals were achieved. Additionally, USFWS enacted special actions to limit the harvest of king salmon to federally qualified individuals within the boundaries of the Yukon Delta National Wildlife Refuge and implement a community permit program to provide a limited allocation of king salmon for harvest by federally qualified subsistence users. King salmon subsistence harvest from the Kuskokwim River has fallen below the lower end of the ANS range since 2011.

In 2016, the early season subsistence fishing closure was initiated on May 20 from the mouth of the Kuskokwim River to the Holitna River, and upstream of the Holitna River beginning June 1. With the closure came additional restrictions, including tributary closures and live release of Chinook salmon requirements.

The preliminary Kuskokwim River total run estimate is approximately 186,400 king salmon (95% CI: 141,300–245,800). The 2016 Kuskokwim River drainagewide escapement goal was likely achieved but has not been fully assessed. Postseason subsistence harvest survey results are also still being analyzed.

The Kuskokwim Subsistence Salmon Panel (panel) was established at the board's October 2014 work session to seek public input on how to ensure an equitable distribution of subsistence salmon resources throughout the Kuskokwim River drainage, and potential tools for equitable distribution in times of low abundance. Membership was comprised of four board members, representatives of several Kuskokwim River drainage organizations and entities, and several at-large members of the public.

The panel held two-day meetings in Bethel in January 2015 and August 2015. In June 2015, board members also held a public meeting in Aniak, and met with stakeholder groups in Bethel. During the panel meetings, testimony was given regarding the growing population trend in Bethel and its impact on fishing opportunities for smaller villages, particularly those upriver. The panel also heard testimony from panel members in support of a limited permit program that would allow for the harvest of king salmon during times of conservation. The Bethel Fish and Game AC presented the panel with several recommendations, including a permit program that incorporated customary and traditional use criteria conditions and potential harvest limits, among other suggestions. The panel was also presented with an example of discretionary permit conditions for a community subsistence hunt. And finally, the panel was presented with a draft concept proposal for incorporating the customary and traditional use pattern involved with air drying and smoking of king salmon including, but not limited to, the following:

1. Long-term drying racks with a smokehouse established for processing quantities of fish and significant time/effort required for participation in this pattern of use;
2. Salvage/preservation of the majority of the king salmon carcass (excluding viscera) for human consumption;
3. Extended sharing of activities involving harvest, processing, and preservation in processing activities, and extended sharing of harvest within the community;

4. A pattern of use dependent on earlier season harvest for preservation due to more favorable weather conditions that reduce waste and spoilage concerns; and recognizes conflict with later seasonal subsistence activities that are also dependent on, and/or limited to, short periods for effective harvest due to weather factors, etc., inherent to the seasonal round aspect of subsistence activities;

Panel input into this proposal suggested other community permit aspects could include preseason registration; a range of harvest limits as determined by preseason run forecasts and observed surplus inseason; start date of the approximate first quartile of the run (June 10–16); and requiring an affidavit and/or physical location of drying racks and smokehouses associated with the permit.

The panel tied the community permit to traditional king salmon patterns of use, including sharing, use of a drying rack, and use of a smokehouse to cold smoke fish. The panel tied the household permit to a pattern of use by individual households, including freezing, canning, and more contemporary uses.

In 2009–2014, the department conducted studies on subsistence salmon use patterns in Kuskokwim River drainage communities, including Bethel. Household surveys were completed in 1,349 Kuskokwim households, department staff visited more than 18 fish camps, and conducted ethnographic interviews with 194 Kuskokwim residents.

One reason for the importance of king salmon to subsistence economies along the Kuskokwim River drainage is their early arrival, which helps fill gaps in winter and spring food supplies and provides fresh food for immediate consumption. Families in the lower Kuskokwim River normally begin harvesting and processing king salmon in early June. The early arrival of king salmon is significant because traditional and preferred methods of preservation—making "cold smoke" strips—work best at this time of year, when the fish can be more easily dried and preserved for winter use. King salmon are sliced into lengthwise strips, which are then brined, hung to dry in covered, outdoor fish racks for a few days to a week, then hung in a smokehouse to dry more completely. This process is referred to as a cold-smoke process because drying occurs at temperatures sufficiently low to prevent cooking of the fish. Cold-smoking of strips is one of the preferred processing methods for king salmon in many parts of the Kuskokwim River because king salmon tend to be very large, and if processed into fillets, the fillets will not dry thoroughly and will spoil.

King salmon harvested at the end of the run, or other species of salmon that arrive after king salmon, are more difficult to process and preserve using traditional methods because the weather later in the summer is wetter, and there are more insects, which make it difficult to preserve fish properly to keep them from spoiling.

Kuskokwim River drainage residents prepare and preserve salmon in many different ways, often using every part of the fish, including heads, hearts, and eggs. Preservation methods include freezing, salting, drying, smoking, and fermenting. Many preservation methods of the past continue to strongly influence how people along the river process and prepare their salmon today. Subsistence fishing, processing, and preparing of king salmon continue to be key elements of Kuskokwim River Yup'ik and Athabascan cultures and identity, and key to passing knowledge and experience from one generation to the next, especially at fish camp.

The 2009–2014 studies also found that going to fish camp is an important part of subsistence activities for some families, while other families prefer to fish in Bethel. Increasing obligations to employment have restricted many survey respondents' ability to travel away from permanent communities for the time typically required to fish from a seasonal camp. With the recent rise in gasoline costs, fuel conservation strategies have included staying longer at fish camps (particularly for retired or unemployed individuals), eliminating short trips between permanent residences and fish camps, and fishing as close to permanent communities as possible, purchasing more fuel-efficient boat motors, and finding ways to cooperate with other families and share the cost of fishing. Some people said that they preferred to fish at fish camp because they could be away from daily life in town and enjoy quality time as a family. They said it is easier to make a good quality smoke fish in fish camp, and that fishing at fish camp is an important part of cultural and family traditions.

Other people said they preferred to fish in Bethel because it is more convenient. People who are employed and elders who cannot easily travel can participate in fishing and processing. They said when fish are not abundant and there are more restrictive regulations, fishing in Bethel is more efficient than going to fish camp.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on allocative aspects of this proposal. The department **SUPPORTS** the intent of this proposal. Permits, or harvest records, could be an effective way of more precisely determining subsistence harvest and provide an effective means of managing the harvest of king salmon through permit limits, when run strength only allows for a limited harvest. However, an inseason harvest reporting requirement (permit) for all salmon species, independent of the need for conservation from year to year is better suited to the department's management and administrative capabilities. Implementation of a permit program for king salmon only and only during times of king salmon conservation would still require annual postseason surveys to estimate harvest of remaining species. This would result in a duplication of effort, increased costs to the department, and possibly affect comparability of harvest estimates between species and among years based on differing harvest assessment methodologies. The department would incur additional costs to oversee and administer a permit program from issuing, collecting, and entering harvest information from the permits and from increased public education and outreach efforts to facilitate permit program implementation. Reporting of all subsistence salmon harvests through a permit program may also increase the accuracy of harvest estimation, which would improve run-reconstruction estimates and forecasting abilities.

However, if permits are only required during years of king salmon conservation, the department would **SUPPORT** a community or group permit program over a household permit system. The administrative requirements needed to implement a community or group permit program are better aligned with the department's existing capacity.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

SUBSISTENCE REGULATION REVIEW:

1. Is this stock in a nonsubsistence area? No.

2. Is this stock customarily and traditionally taken or used for subsistence? Yes. The board found that king, chum, sockeye, coho, and pink salmon in the Kuskokwim River drainage are customarily and traditionally taken or used for subsistence (5 AAC 01.286(a)(3)).

3. Can a portion of the stock be harvested consistent with sustained yield? Yes.

4. What amount is reasonably necessary for subsistence uses? The board established a range of 67,200–109,800 Kuskokwim River king salmon are reasonably necessary for subsistence ((5 AAC 01.286(b)(1)).

5. Do the regulations provide a reasonable opportunity for subsistence uses? This is a board determination.

6. Is it necessary to reduce or eliminate other uses to provide a reasonable opportunity for subsistence uses? This is a board determination.

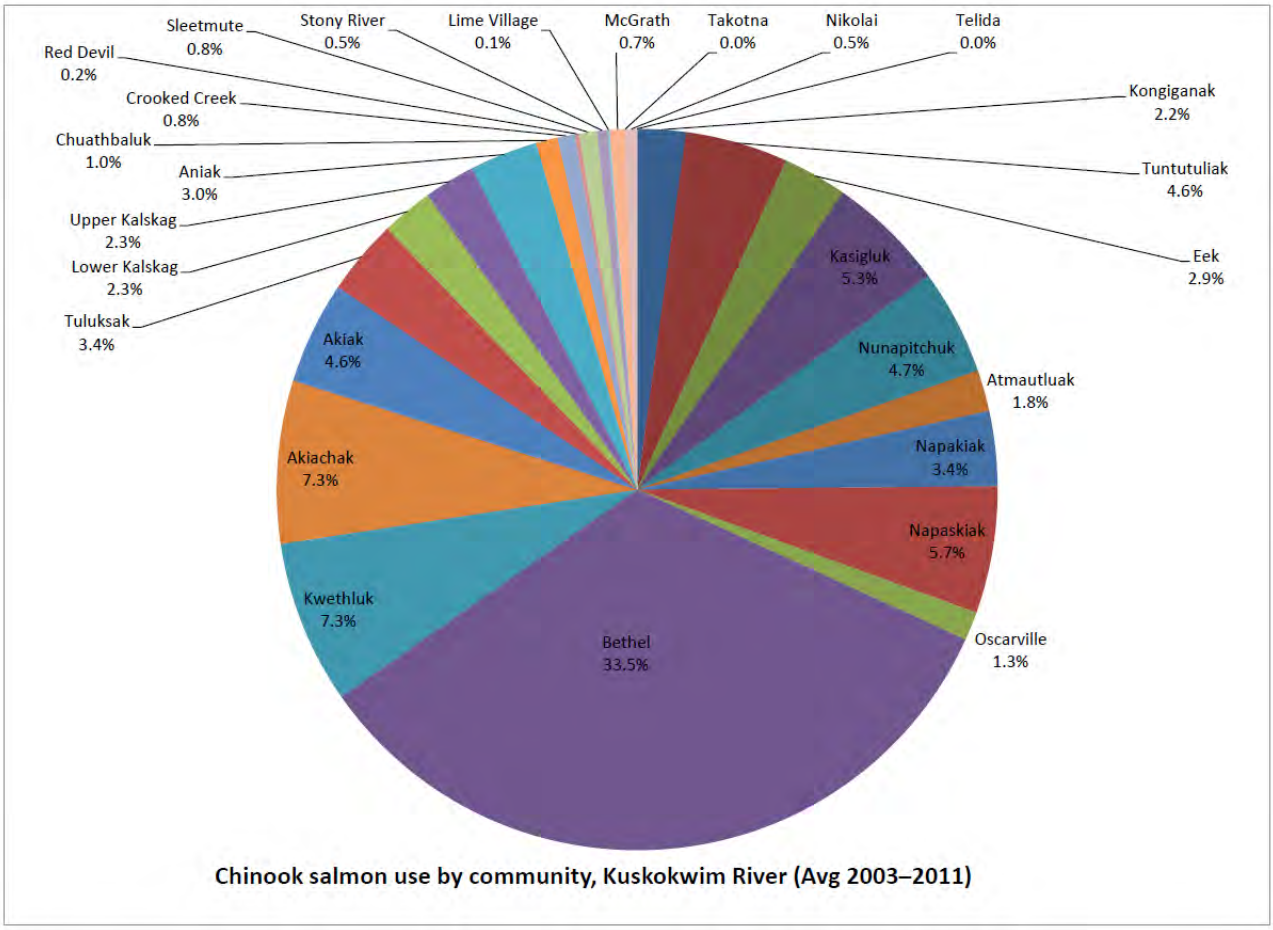

Figure 276-1 –Average percentage of Kuskokwim River king salmon use by community, 2003–2011.

PROPOSAL 280 – 5 AAC 01.380. Subsistence fishing permits.

PROPOSED BY: Unalaska/Dutch Harbor Fish and Game Advisory Committee.

WHAT WOULD THE PROPOSAL DO? This would decrease the number of sockeye salmon that may be retained in the subsistence salmon fishery on Front Beach in the Unalaska Bay District (Figure 280-1) to no more than 10 fish per permit holder plus no more than an additional 10 fish per each member of the same household listed on the permit. An additional permit from the department may not be issued to harvest more salmon from Front Beach in Unalaska Bay.

WHAT ARE THE CURRENT REGULATIONS? No more than 250 salmon may be taken for subsistence purposes unless otherwise specified on the subsistence permit, except that in the Unalaska and Adak districts (5 AAC 01.380 (b)(1)) the holder of a subsistence salmon fishing permit may take no more than 25 salmon plus an additional 25 salmon for each member of the same household whose name is listed on the permit; and (2) a permit holder may obtain an additional permit from the department to harvest more salmon. The Iliuliuk River drainage is closed to sport fishing for sockeye salmon.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL WERE ADOPTED? This would reduce subsistence harvest of sockeye salmon by some amount and reduce subsistence opportunity. This may increase sockeye salmon escapement to Iliuliuk Lake.

BACKGROUND: For the purposes of this proposal Front Beach consists of all Unalaska Bay waters south of a line running from a point near the Bishop's House at 53° 52.64' N. Lat., 166° 32.30' W. Long. to a point on the Unalaska Bay shore at 53° 52.68' N. Lat., 166° 30.91' W. Long. Sockeye salmon escapement is not monitored in the Iliuliuk River drainage, is believed to be relatively low, and there is no escapement goal for this drainage. It is likely that escapement has decreased over time due to population growth in Unalaska since the mid-1990s and associated increases in harvest, and the loss of spawning and rearing habitat due to local development. With no escapement information for Iliuliuk Lake it is unknown whether the current subsistence limits present a fishery conservation issue. The number of subsistence salmon permits issued to both Unalaska local community residents and to Alaska residents residing outside of Unalaska has increased substantially since 1985 (Figure 208-2). The average reported subsistence sockeye salmon harvest in the Unalaska Lake vicinity from 2005–2014, which includes Front Beach, was 235 sockeye salmon (Table 280-1).

The sport fishery bag limit for sockeye salmon in Unalaska Bay is two fish, although it is likely that very few sockeye salmon are harvested by anglers in the Front Beach area or Iliuliuk River drainage. Sockeye salmon are also taken in relatively small numbers during periodic commercial fishing periods targeting pink salmon in Unalaska Bay.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on the allocative aspects of this proposal.

COST ANALYSIS: Approval of this proposal is not expected to result in an additional direct cost for a private person to participate in this fishery.

SUBSISTENCE REGULATION REVIEW:

1. Is this stock in a non-subsistence area? No, there are no non-subsistence areas in the Aleutian Islands.

2. Is the stock customarily and traditionally taken or used for subsistence? Yes, the board has found that, in the Aleutian Islands area and in waters surrounding the Pribilof Islands, halibut and all other finfish are customarily or traditionally taken or used for subsistence (5 AAC 01.366 (a)).

3. Can a portion of the stock be harvested consistent with sustained yield? Yes.

4. What amount is reasonably necessary for subsistence uses? The board has found that 13,500 – 23,000 salmon are reasonably necessary for subsistence in the Aleutian Islands area (5 AAC 01.366 (b)(1)).

5. Do the regulations provide a reasonable opportunity for subsistence uses? This is a board determination.

6. Is it necessary to reduce or eliminate other uses to provide a reasonable opportunity for subsistence use? This is a board determination.

Table 280-1.–Estimated number of subsistence sockeye salmon harvested in the Unalaska Lake vicinity.

Year	Number of sockeye salmon
2005	202
2006	103
2007	344
2008	344
2009	267
2010	181
2011	179
2012	142
2013	209
2014	382
10-Year Average	235

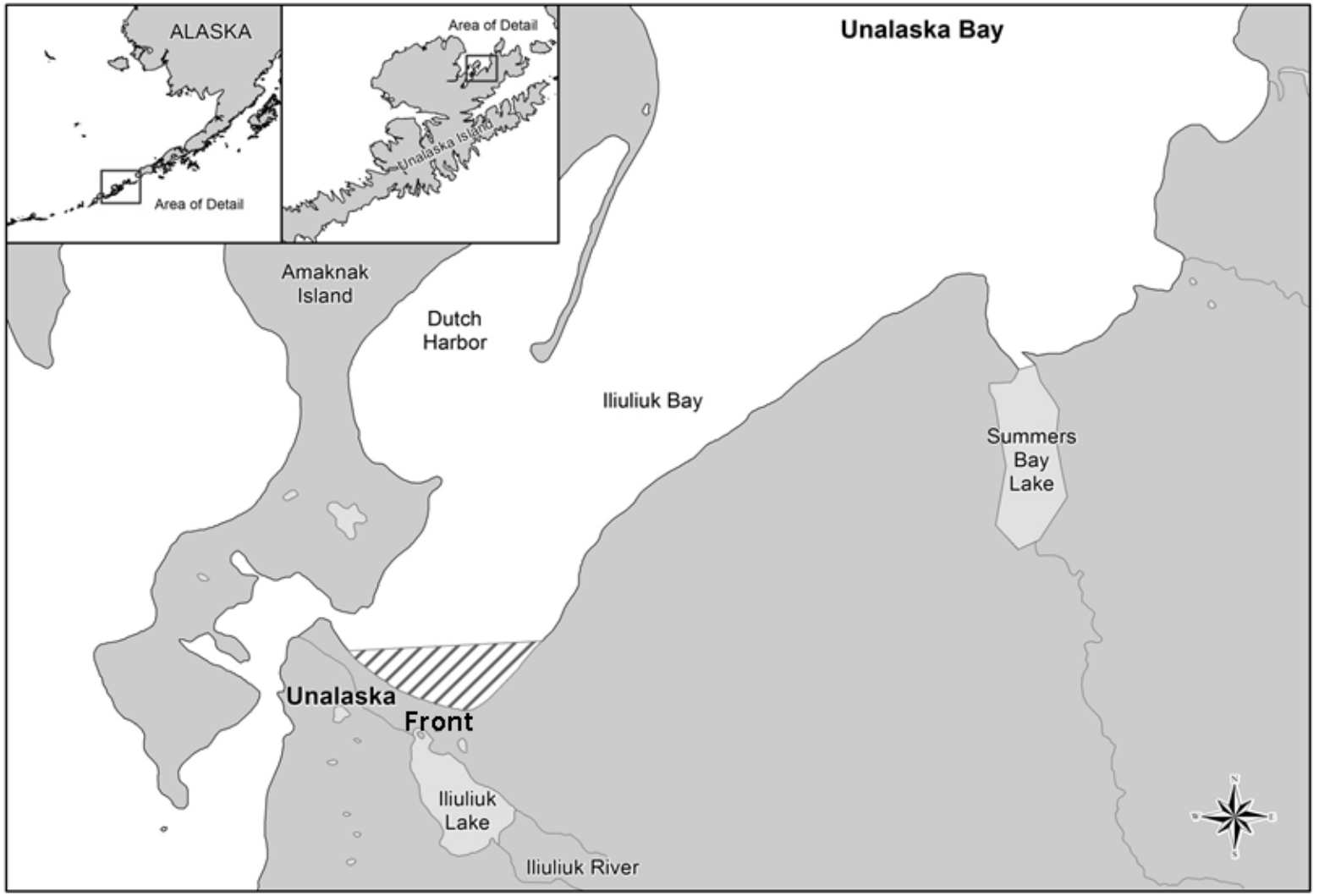

Figure 280-1.–Map of Unalaska Bay and the proposed area of reduced subsistence harvest limits.

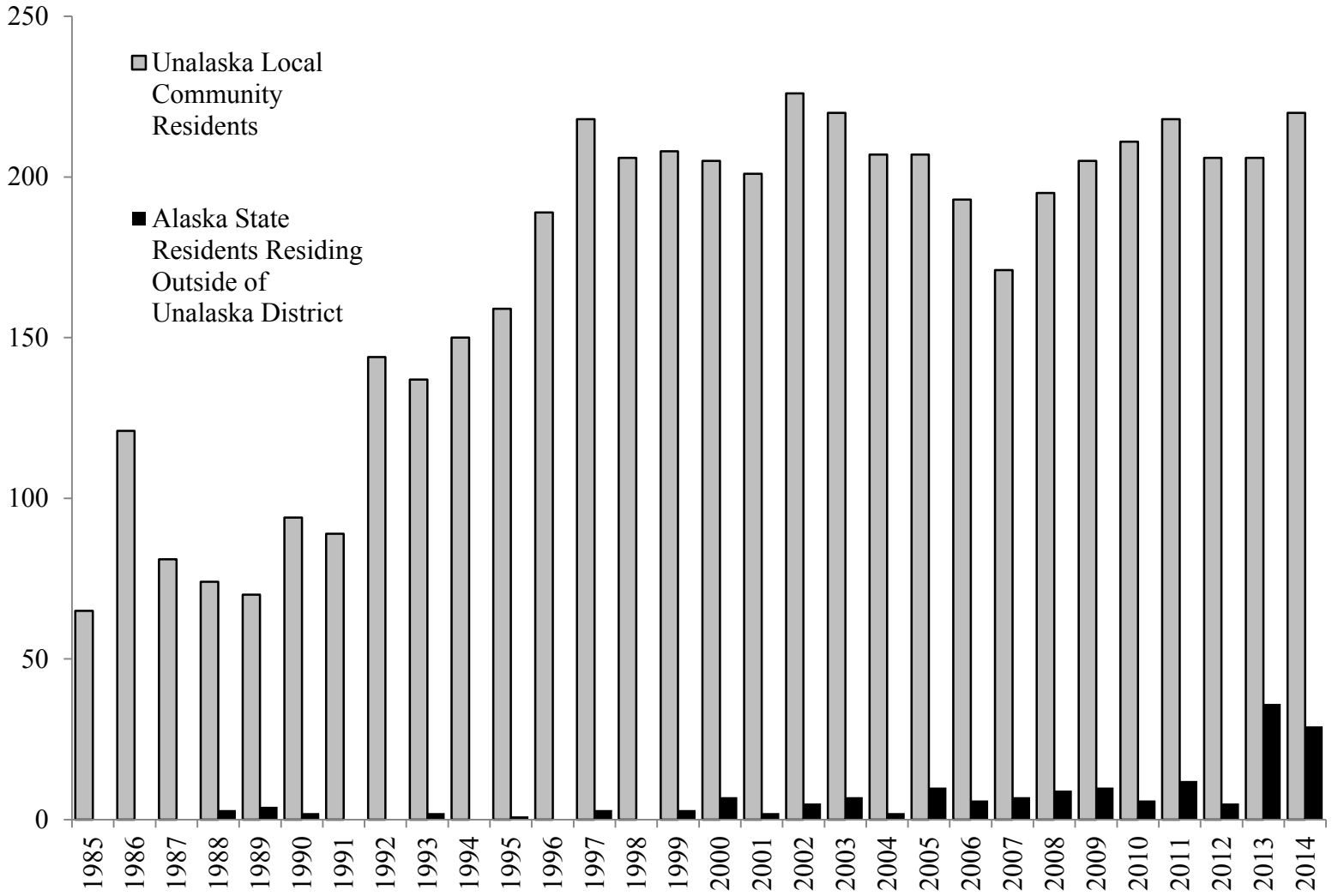

Figure 280-2.–Number of permits issued to Unalaska local community residents and Alaska residents living outside of Unalaska.