

# Council Action on Crab PSC Limits

April 2020<sup>1</sup>

The Council is considering a change of regulations which would automatically set crab PSC limits to their lowest abundance-based level in the BSAI trawl CDQ and non-CDQ groundfish fisheries when the corresponding directed crab fishery (Bristol Bay red king crab, EBS Tanner, or EBS snow crab) is closed. In December 2019, the Council adopted the following alternatives:

Alternative 1: No action

Alternative 2: Reduced PSC limits for BSAI trawl CDQ and non-CDQ groundfish fishing when the corresponding directed crab fishery is closed.

When no Crab Rationalization Program individual fishing quota (IFQ) is issued in a season for BBRKC, bairdi, or opilio, set the crab PSC limit for that stock at the lowest abundance-based level. As described in regulation at 50 CFR 679.21(e)(1), the PSC limits for the groundfish fisheries would be as follows under this alternative when the directed crab fishery is closed:

- Bairdi Zone 1- 0.5% of total abundance minus 20,000 animals
- Bairdi Zone 2 – 1.2% of the total abundance minus 30,000 animals
- BBRKC Zone 1 - 32,000 red king crab
- Opilio - 4.350 million animals

The Council also requested that the analysis include source numbers for the crab abundance estimates used to calculate the PSCs and clearly state whether they are from raw numbers from the NMFS bottom trawl survey or from stock assessment model estimates

The purpose and need statement for this action is as follows:

*At present, most Bering Sea crab stocks are experiencing low productivity and small population sizes, leading to large reductions in directed harvest levels. These problems appear to be ongoing and lead the council to examine existing PSC limits to determine whether both directed harvest and bycatch measures are responsive to these adverse conditions. This action would increase the linkage between controls on crab bycatch in groundfish fisheries and the harvest controls on the directed crab fishery by establishing explicit reductions in allowable bycatch levels when the directed fishery is closed. This action is intended to ensure there is consistency in management measures between directed fisheries and bycatch in groundfish fisheries, making more explicit the balance of impacts to all the fisheries and communities that are affected by the status of depressed stocks.*

The Council and the Crab Plan Team have reevaluated the crab PSC limits in the groundfish fisheries many times in the past, including discussion papers in 2009, 2010, 2013, 2014, 2016 (specifically for snow crab) and an analysis on snow crab PSC in 2018. The CPT has made recommendations on the topic of crab PSC limits due to a number of motivations, including the disconnect between the BSAI Crab and

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<sup>1</sup> Prepared by: Sarah Marrinan and Sara Cleaver, NPFMC

BSAI Groundfish FMPs, questions over whether the closed areas accounted for enough of each stock, inclusivity of all gear types, and the levels of the PSC limits themselves. The present proposal is different from proposals in the past in its specific focus around dropping the crab PSC limits to their lowest abundance-based level when the corresponding directed crab fishery is closed.

An analysis to evaluate these alternatives is tentatively scheduled for Preliminary/Initial Review for the October Council meeting. Analysts are seeking CPT help in addressing analytical questions related to this proposed change,<sup>2</sup> in particular, characterizing the biological effects of trawl PSC limits that are more restrictive when the directed crab fisheries are closed. Analysts are interested in 1) what is known/ what is unknown at this time, 2) what could be investigated between now and September, and 3) what we would need more time to analyze.

Analysts are seeking the CPT's help in understanding:

- 1) What is the importance of bycatch in crab populations dynamics and its effect on fishery sustainability?
- 2) Is there a clear relationship between crab abundance and bycatch levels?
- 3) Is the level of unobserved mortality of crab in trawl fisheries important relative to observed bycatch?
- 4) What is else is known/ unknown about crab abundance and bycatch levels that would be important to make clear in this analysis?

The remainder of this document provides reference to the crab PSC limits in the groundfish fisheries and updated tables of PSC use relative to the limits.

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<sup>2</sup> Note that the CPT should have one more opportunity to comment on the proposed change once an analysis is complete (September CPT meeting).

## Background on Crab PSC Limits in the Groundfish Fisheries

This section of the document is intended to provide reference on crab PSC limits in the BSAI trawl CDQ and non-CDQ groundfish fisheries for BBRKC, EBS snow crab, and EBS Tanner crab, including what they are, where they apply, and how they are apportioned among fishing sectors. Information is also provided on PSC limits over time and trends on PSC use by fishing sector, gear type and target fishery.

### 1. Crab PSC Limits in the Groundfish Fisheries

The BSAI groundfish FMP specifies crab bycatch management measures for protection of BBRKC, EBS Tanner crab, and EBS snow crab stocks which include triggered or fixed time and area closures for trawl fisheries.<sup>3</sup> For BBRKC, snow and Tanner crab, triggered crab PSC limits exist for trawl fishing within specified areas. Trawl PSC accrues within these areas and these areas are closed to directed fishing in the fishery/sector that reaches its specified PSC limit. For instance, Zone 1 and Zone 2 areas are specified for BBRKC and Tanner (Figure 1). Limits exist for Zone 1 BBRKC and Tanner crab and limits exist in Zone 2 for Tanner crab. A closure for EBS snow crab is triggered if the groundfish trawl fisheries reach the PSC limit for the *C. opilio* Bycatch Limitation Zone (COBLZ). The limit accrues only for snow crab PSC taken within the COBLZ. No measures are currently in place for any fixed gear fisheries, nor are overall limits placed on bycatch of any crab species.

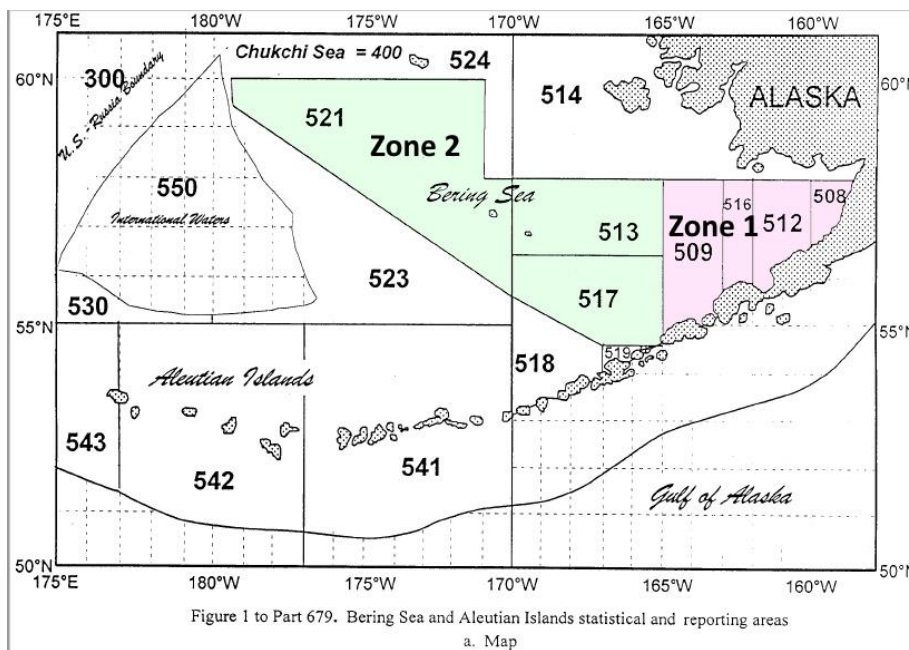
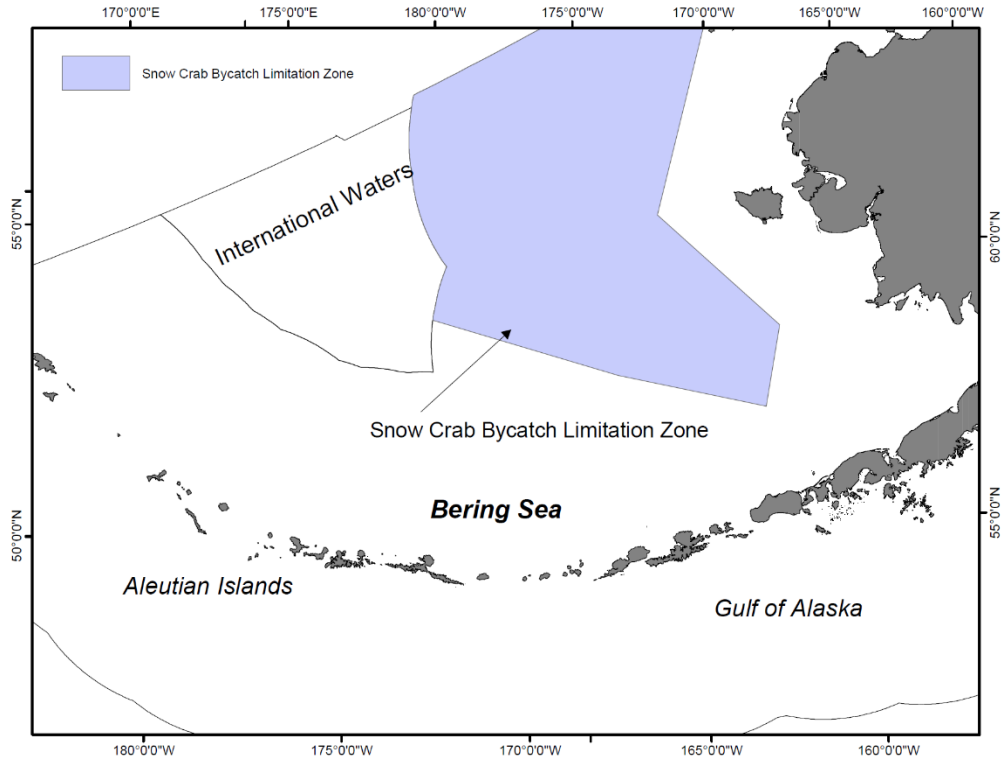


Figure 1 Zone 1 and 2 area for closures (BBRKC and EBS Tanner crab)

<sup>3</sup> See section 3.6.2 in the BSAI Groundfish Fishery Management Plan.



**Figure 2 *C. opilio* Bycatch Limitation Zone (COBLZ)**

**Bristol Bay Red King Crab Trawl PSC Limits in Zone 1**

Management measures to protect BBRKC stocks include a triggered time/area closure to trawling.<sup>4</sup> The stair step procedure for determining PSC limits for red king crab taken in Zone 1 trawl fisheries is based on modeled abundance of mature female BBRKC and effective spawning biomass (ESB) from the stock assessment. The following table refers to the PSC limits for red king crab for Zone 1:

<sup>4</sup> These limits are in addition to other area closures designed to protect BBRKC stock and habitat. For instance, nonpelagic trawling is prohibited year-round within the Red King Crab Savings Area. The exception is that a subarea of the Red King Crab Savings Area between 56E00' N. and 56E10' N. latitude and 162E00' W. and 164E00' W. longitude may be opened to nonpelagic by the NMFS Alaska Regional Administrator in consultation with the Council. This is done during the annual specifications process by the Council in December 2009. Additionally, all trawling is prohibited year-round in Bristol Bay east of 162E00' W. longitude, except the subarea that is open to trawling during the period April 1 to June 15 each year.

When the number of mature female red king crab is ...	The zone 1 PSC limit will be ...
(A) At or below the threshold of 8.4 million mature crab or the effective spawning biomass is less than or equal to 14.5 million lb (6,577 mt)	32,000 red king crab.
(B) Above the threshold of 8.4 million mature crab and the effective spawning biomass is greater than 14.5 but less than 55 million lb (24,948 mt)	97,000 red king crab.
(C) Above the threshold of 8.4 million mature crab and the effective spawning biomass is equal to or greater than 55 million lb	197,000 red king crab.

Source: 50 CFR 679.21(e)(1)(i)

### EBS snow crab trawl PSC limits in COBLZ

EBS snow crab PSC limits are based on total abundance of snow crab as indicated by the NMFS standard trawl survey. The limit in COBLZ is set annually at 0.1133% of the snow crab abundance estimate from the NMFS standard trawl survey minus 150,000 crab, unless a minimum or maximum abundance threshold is reached.

- If 0.1133% multiplied by the total abundance is less than 4.5 million, then the minimum PSC limit will be 4.350 million animals.
- If 0.1133% multiplied by the total abundance is greater than 13 million, then the maximum PSC limit will be 12.850 million animals.<sup>5</sup>

Snow crab bycatch that occurs outside COBLZ does not accrue towards the COBLZ limit.

### EBS Tanner crab trawl PSC limits in Zone 1

The triggered area closures for trawl gear in Zone 1 for EBS Tanner crab are as follows:

When the total abundance of <i>C. bairdi</i> crabs is ...	The PSC limit will be ...
(1) 150 million animals or less	0.5 percent of the total abundance minus 20,000 animals
(2) Over 150 million to 270 million animals	730,000 animals
(3) Over 270 million to 400 million animals	830,000 animals
(4) Over 400 million animals	980,000 animals

Source: 50 CFR 679.21(e)(1)(ii)(A)

### EBS Tanner crab trawl PSC limits in Zone 2

The triggered area closures for trawl gear in Zone 2 for EBS Tanner crab are as follows:

<sup>5</sup> 50 CFR 679.21(e)(1)(iii)

When the total abundance of <i>C. bairdi</i> crabs is ...	The PSC limit will be ...
(1) 175 million animals or less	1.2 percent of the total abundance minus 30,000 animals
(2) Over 175 million to 290 million animals	2,070,000 animals
(3) Over 290 million to 400 million animals	2,520,000 animals
(4) Over 400 million animals	2,970,000 animals

Source: 50 CFR 679.21(e)(1)(ii)(B)

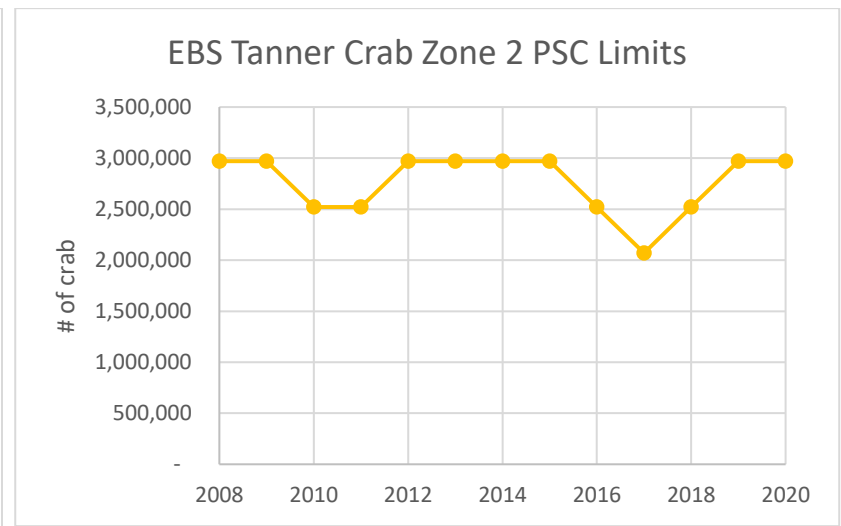
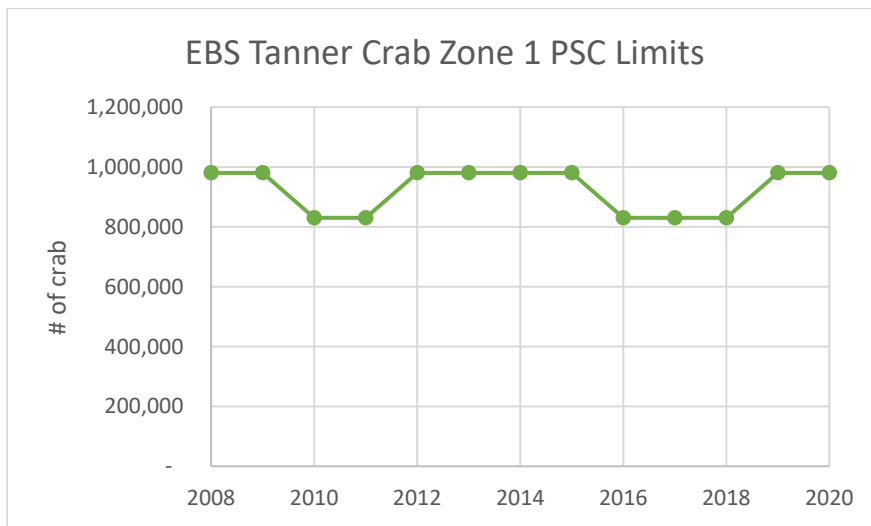
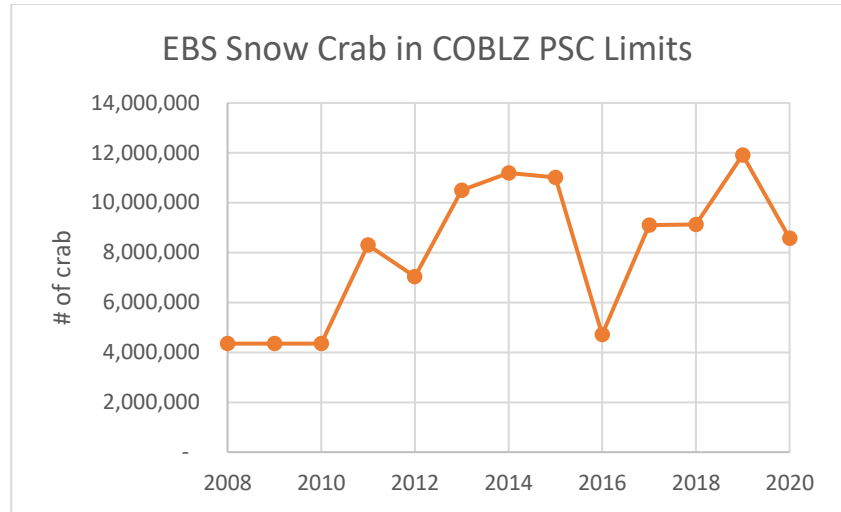
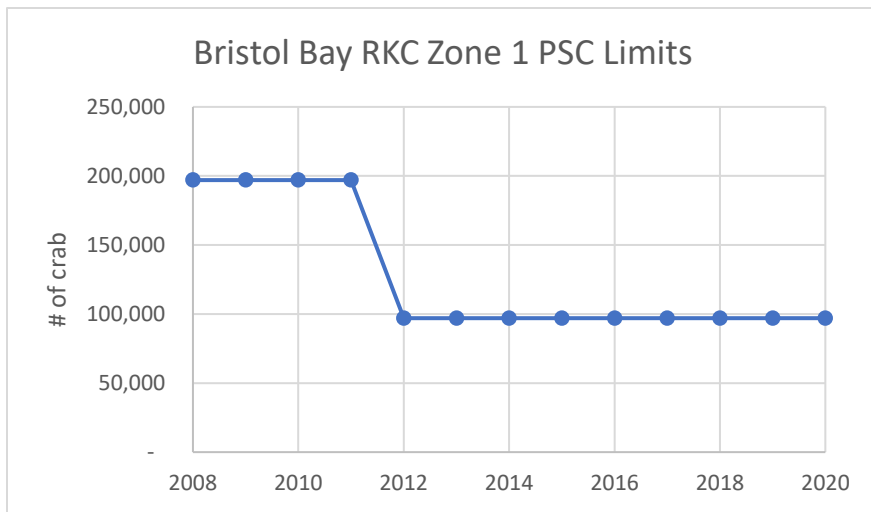
## 2. Historical Trawl PSC Limits

Table 1 and Figures 1-4 present the trawl PSC limits for BBRKC, snow crab and Tanner crab, 2008-2020. Within this time series, BBRKC and Zone 1 Tanner crab have never been set at their lowest PSC levels. Snow crab was set to its minimum PSC limit from 2008 through 2010. Technically the “lowest limit” for EBS Tanner is zero for both Zone 1 and 2 as the limits are based on the proportion of abundance. However, EBS Tanner in Zone 2 reached into the lowest fixed threshold in 2017, when the limit was set at 2.07 million crab.

**Table 1 Total trawl PSC limits by crab fishery (# of crab), 2008-2020**

	Bristol Bay RKC Zone 1 PSC Limits	EBS Snow Crab in COBLZ PSC Limits	EBS Tanner Crab Zone 1 PSC Limits	EBS Tanner Crab Zone 2 PSC Limits
2008	197,000	4,350,000	980,000	2,970,000
2009	197,000	4,350,000	980,000	2,970,000
2010	197,000	4,350,000	830,000	2,520,000
2011	197,000	8,310,480	830,000	2,520,000
2012	97,000	7,029,520	980,000	2,970,000
2013	97,000	10,501,333	980,000	2,970,000
2014	97,000	11,185,892	980,000	2,970,000
2015	97,000	11,011,976	980,000	2,970,000
2016	97,000	4,708,314	830,000	2,520,000
2017	97,000	9,105,477	830,000	2,070,000
2018	97,000	9,120,539	830,000	2,520,000
2019	97,000	11,916,450	980,000	2,970,000
2020	97,000	8,580,898	980,000	2,970,000

Source: NMFS, Alaska groundfish harvest specifications  
<https://www.fisheries.noaa.gov/alaska/sustainable-fisheries/alaska-groundfish-harvest-specifications>



**Figure 1-4 Trawl PSC limits by crab fishery, 2008-2020**

Source: NMFS, Alaska groundfish harvest specifications  
<https://www.fisheries.noaa.gov/alaska/sustainable-fisheries/alaska-groundfish-harvest-specifications>

### **3. Crab PSC Use in the Groundfish Fisheries by Sector**

To allocate the total groundfish harvest under the annually established PSC limits, crab PSC is apportioned among trawl fisheries during the annual specifications process. Initially, 10.7% of the PSC limit is taken off the top and allocated for use by the groundfish CDQ program as Prohibited Species Quota (PSQ). The remaining PSC is apportioned to the Amendment 80 sector and the BSAI trawl limited access (TLA) sector.

The percentages selected for PSC apportionment at the time of implementation of Amendment 80 were 62.48% for red king crab, 61.44% for snow crab, 52.64% for Zone 1 Tanner crab, and 29.59% for Zone 2 Tanner crab. In order to reduce the overall crab PSC removals from the BSAI, each PSC limit was reduced 5% per year until the apportionment for the Amendment 80 sector is at 80% of the initial allocation (Table 2). This reduction in PSC limits due to Amendment 80 also leaves an amount of the “total trawl PSC” (as demonstrated in Table 1) unallocated each year.

**Table 2 Apportionment of crab PSC to Amendment 80 and BSAI trawl limited access sector, 2008-current**

Fishing sector	Year	Zone 1 PSC red king crab limit in the BSAI	C. opilio (snow) crab PSC limit (COBLZ)	Zone 1 Tanner crab (C. bairdi) PSC limit	Zone 2 Tanner crab (C. bairdi) PSC limit
		*As a percentage of the total BSAI trawl PSC limit after allocation as PSQ			
Amendment 80	2008	62.48	61.44	52.64	29.59
	2009	59.36	58.37	50.01	28.11
	2010	56.23	55.3	47.38	26.63
	2011	53.11	52.22	44.74	25.15
	2012, and all future years	49.98	49.15	42.11	23.67
BSAI trawl limited access sector		30.58	32.14	46.99	46.81

Source: NPFMC. 2010. Crab Bycatch in the Bering Sea/ Aleutian Islands Fisheries; Staff discussion paper. May 2010. Anchorage, AK.  
Table 35 CFR part 679

These apportionments of crab PSC limits are represented in Table 3 through Table 6 and can be compared to the PSC use for each sector. The relative use of BBRKC, snow crab and Tanner crab PSC has generally been orders of magnitude lower than the limits for the groundfish fisheries. The exceptions include the BSAI TLA sector exceeding the limits for snow crab in the 2010 and the Amendment 80 sector exceeding the limit for Zone 2 Tanner crab in 2011 (highlighted in blue in the following tables).

Moreover, if PSC limits for BBRKC and snow crab were set to their lowest limits (as demonstrated by Table 7), they would generally not be constraining for these fisheries based on past PSC levels. The exceptions to this include CDQ PQS use of BBRKC Zone 1 PSC in 2011 and 2017, Amendment 80 use of BBRKC Zone 1 PSC throughout most of the presented timeseries (2008-2014, 2016, 2017, 2019)



(highlighted green in Table 3), the BSAI TLA sector's use of COLBZ snow crab PSC in 2010, and the Amendment 80 sector's use of Zone 2 Tanner crab PSC in 2010.

**Table 3 BBRKC Zone 1 PSC limits and use by fishery (# of crab), 2008-2020**

Bristol Bay RKC Zone 1	CDQ PSQ limit	CDQ PSQ usage	A80 limit	A80 PSC Usage	BSAI TLA PSC Limit	BSAI TLA PSC Usage
2008	21,079	2,623	109,915	78,426	53,797	4,492
2009	21,079	2,187	104,427	59,428	53,797	4,664
2010	21,079	779	98,920	54,314	53,797	0
2011	21,079	3,630	93,432	31,003	53,797	3,336
2012	10,379	2,605	43,293	24,164	26,489	225
2013	10,379	2,425	43,293	22,524	26,489	224
2014	10,379	1,455	43,293	26,333	26,489	177
2015	10,379	62	43,293	12,615	26,489	77
2016	10,379	430	43,293	21,442	26,489	1,448
2017	10,379	3,722	43,293	27,143	26,489	4,167
2018	10,379	1,936	43,293	9,799	26,489	989
2019	10,379	2,044	43,293	20,775	26,489	2,141
2020	10,379	2,086	43,293	13,896	26,489	3,117

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive\_PSC  
The 2020 PSC use are current as of 4-17-20.

**Table 4 EBS Snow crab COBLZ PSC limits and use by fishery (# of crab), 2008-2020**

EBS Snow Crab in COBLZ	CDQ PSQ limit	CDQ PSQ usage	A80 limit	A80 PSC Usage	BSAI TLA PSC Limit	BSAI TLA PSC Usage
2008	465,450	10,998	2,386,668	601,773	1,248,494	64,590
2009	465,450	56,254	2,267,412	356,667	1,248,494	23,129
2010	465,450	11,530	2,148,156	266,102	1,248,494	1,379,131
2011	889,221	29,749	3,875,381	480,262	2,385,193	212,241
2012	752,159	26,600	3,085,323	326,335	2,017,544	239,451
2013	1,123,643	19,445	4,609,135	400,283	3,013,990	224,401
2014	1,196,890	34,958	4,909,594	329,062	3,210,465	81,796
2015	1,178,281	40,269	4,833,261	394,127	3,160,549	48,005
2016	503,790	12,189	2,066,524	145,705	1,351,334	2,711
2017	974,286	19,709	3,996,480	125,564	2,613,365	4,946
2018	975,898	291,314	4,003,091	1,216,259	2,617,688	68,722
2019	1,275,060	74,151	5,230,243	834,553	3,420,143	17,017
2020	918,156	6,382	3,766,238	278,652	2,462,805	53,253

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive\_PSC  
The 2020 PSC use are current as of 4-17-20.

**Table 5 EBS Tanner Zone 1 PSC limits and use by fishery (# of crab), 2008-2020**

EBS Tanner Crab Zone 1	CDQ PSQ limit	CDQ PSQ usage	A80 limit	A80 PSC Usage	BSAI TLA PSC Limit	BSAI TLA PSC Usage
2008	104,860	3,815	460,674	141,453	411,228	41,545
2009	104,860	7,203	437,658	167,340	411,228	17,518
2010	88,810	13,200	351,176	148,284	348,285	16,373
2011	88,810	9,635	331,608	221,988	348,285	21,358
2012	104,860	14,594	368,521	171,355	411,228	8,827
2013	104,860	20,603	368,521	239,861	411,228	16,929
2014	104,860	6,603	368,521	155,223	411,228	10,657
2015	104,860	3,088	368,521	71,616	411,228	17,657
2016	88,810	2,761	312,115	50,605	348,285	9,941
2017	88,810	4,812	312,115	95,674	348,285	53,859
2018	88,810	1,638	312,115	21,763	348,285	3,920
2019	104,860	1,719	368,521	23,181	411,228	4,041
2020	104,860	340	368,521	13,752	411,228	3,605

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive\_PSC  
The 2020 PSC use are current as of 4-17-20.

**Table 6 EBS Tanner Zone 2 PSC limits and use by fishery (# of crab), 2008-2020**

EBS Tanner Crab Zone 2	CDQ PSQ limit	CDQ PSQ usage	A80 limit	A80 PSC Usage	BSAI TLA PSC Limit	BSAI TLA PSC Usage
2008	317,790	9,508	599,134	386,049	1,241,500	69,749
2009	317,790	5,652	745,536	226,578	1,241,500	52,978
2010	269,640	15,975	599,271	225,088	1,053,394	70,663
2011	269,640	14,706	565,966	566,190	1,053,394	61,437
2012	317,790	16,964	627,778	166,732	1,241,500	43,728
2013	317,790	16,753	627,778	344,658	1,241,500	70,504
2014	317,790	38,298	627,778	303,607	1,241,500	103,381
2015	317,790	9,055	627,778	196,608	1,241,500	25,527
2016	269,640	4,885	532,660	102,466	1,053,394	5,609
2017	221,490	5,630	437,542	157,924	865,288	27,350
2018	269,640	17,988	532,660	108,259	1,053,394	10,166
2019	317,790	15,580	627,778	249,557	1,241,500	7,007
2020	317,790	3,301	627,778	177,700	1,241,500	25,272

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive\_PSC  
The 2020 PSC use are current as of 4-17-20.

**Table 7 Apportionment of crab PSC based on the lowest PSC limit (# of crab)**

	lower PSC limit	CDQ PSQ limit	A80 limit	BSAI TLA PSC Limit
BBRKC Zone 1	32,000	3,424	14,282	8,739
EBS snow COBLZ	4,350,000	481,500	1,975,093	1,291,546
Tanner Zone 1*	730,000	78,110	274,511	306,323
Tanner Zone 2*	2,070,000	221,490	437,542	865,288

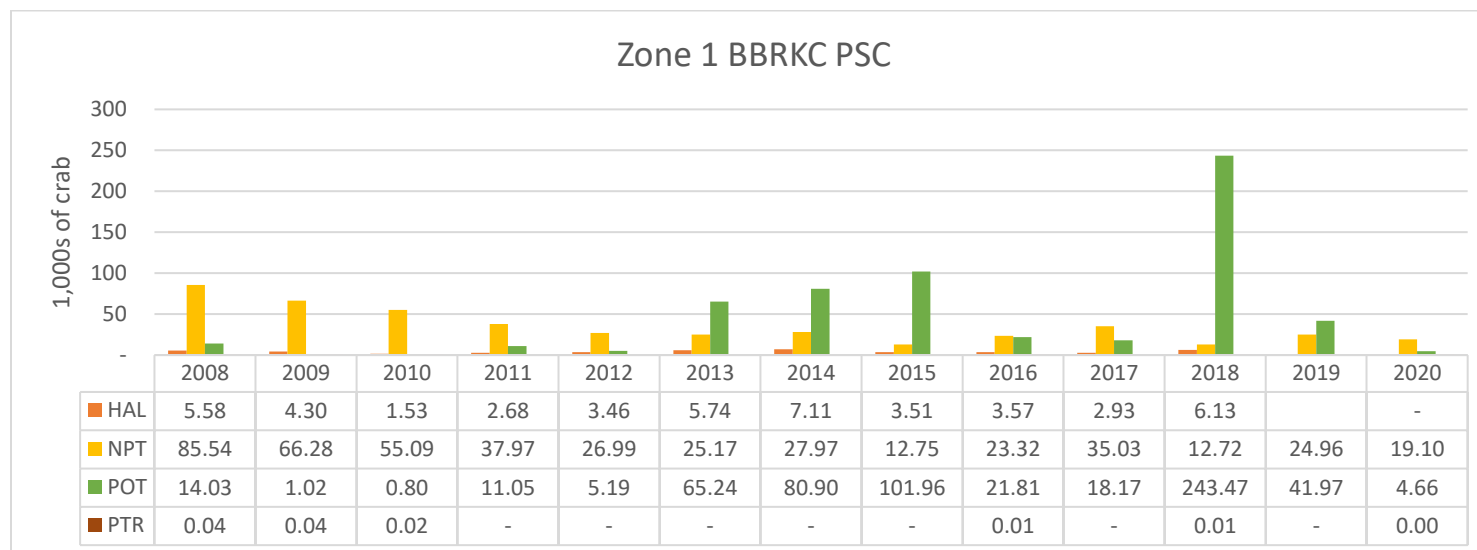
\*Technically Tanner PSC limits may be lower as they would be based on a proportion of abundance. Values listed are the lowest fixed amounts.

Apportionments as currently specified in Table 35 CFR part 679

#### **4. Crab PSC Use in the Groundfish Fisheries by Gear Type and Species Target**

Historically trawl fisheries have accounted for the greatest levels of BBRKC and snow crab PSC in Zone 1 and the COBLZ, respectively (Figure 5 and 6). In recent years, crab PSC in the fixed gear fisheries, in particular pots targeting Pacific cod, have produced spikes of BBRKC PSC in Zone 1 (Figure 5 and Table 7). Pot vessels have also contributed to the Tanner crab PSC in Zone 1 (Figure 7). Again, there are no measures currently in place for any fixed gear fisheries. This may be relevant to the proposed action if the intention is to minimize PSC in times when the directed crab fishery is closed. If the amendment drops the trawl fisheries to the lowest PSC limit, but fixed gear fisheries are still experiencing high PSC rates, these measures may not result in the PSC savings as intended.

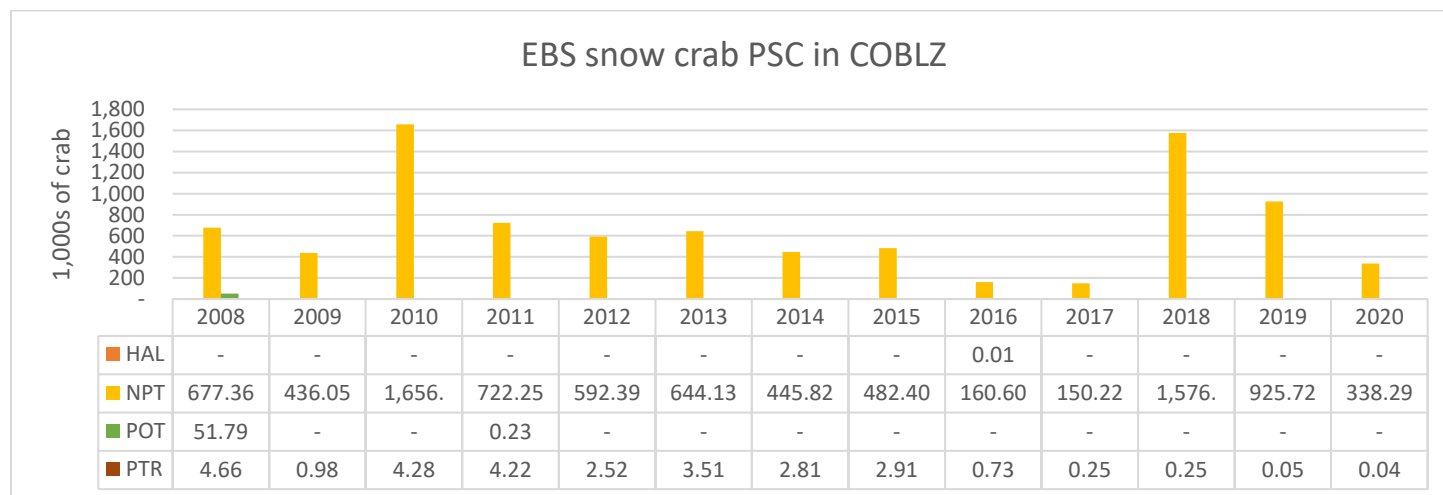
**Figure 5 and Table 7. Zone 1 BBRKC PSC usage by gear type and target species (# of crab), 2008-2020**



<b>Zone 1 BBRKC</b>	Target species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Hook-and-line	Pacific Cod	1,531	2,680	3,456	5,739	7,105	3,515	3,532	2,933	6,130	0
Nonpelagic trawl	Flathead Sole							52		778	-
	Pacific Cod	337	2,166		374	27	308	711	416	217	741
	Pollock - bottom	906						337	125	360	154
	Rock Sole - BSAI	36,465	29,531	22,585	17,307	24,310	8,978	12,644	6,679	3,488	2,826
	Yellowfin Sole - BSAI	17,184	5,549	4,185	6,947	2,995	3,468	9,391	27,763	7,882	21,099
Pot	Pacific Cod	804	11,046	5,188	65,244	80,896	101,956	21,814	18,175	243,467	39,300
Pelagic trawl	Pollock - bottom	4							-	-	-
	Pollock - midwater	16						6	-	-	25

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive\_PSC

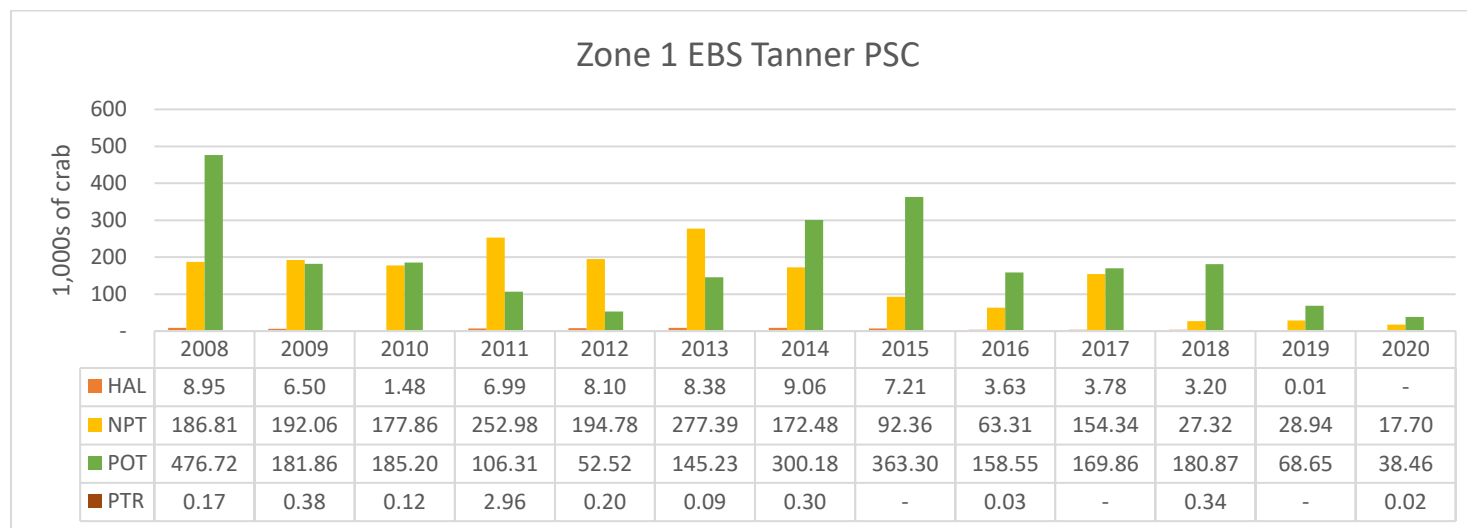
Figure 6 and Table 8. EBS snow crab PSC usage in COLBZ by gear type and target species (# of crab), 2008-2020



COBLZ EBS snow	Target species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Hook-and-line	Halibut							12	19	53	14
Nonpelagic trawl	Alaska Plaice - BSAI		913	2,098	7,258		21,117	2,519	140	5,279	1,906
	Arrowtooth Flounder		1,726	2,518	8,892	6,440	3,786	2,761	33,442	404	6,205
	Flathead Sole	79,580	52,168	17,166	67,239	79,887	20,802	10,537	30,510	279,286	217,793
	Greenland Turbot - BSAI							117	1,675	78	
	Kamchatka Flounder - BSAI										1,188
	Pacific Cod	63	3,969	415	6,170	6,657	4,464	1,869	900	-	11
	Pollock - bottom	1,125	160		1,888	15,301	5,296	190	3,058	4,866	6,006
	Rock Sole - BSAI	12,823	5,780		1,807	8,024	6,058	27,468	19,118	2,454	10,427
	Rockfish							17	-	14,408	652
Yellowfin Sole - BSAI	1,561,968	657,143	559,559	550,261	329,488	420,528	115,127	61,049	1,268,997	636,312	
Pot	Pacific Cod		220								
Pelagic trawl	Pollock - bottom	346	466	67	135			51	-		-
	Pollock - midwater	3,932	3,758	2,453	3,380	2,811	2,887	682	202	247	48

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive\_PSC

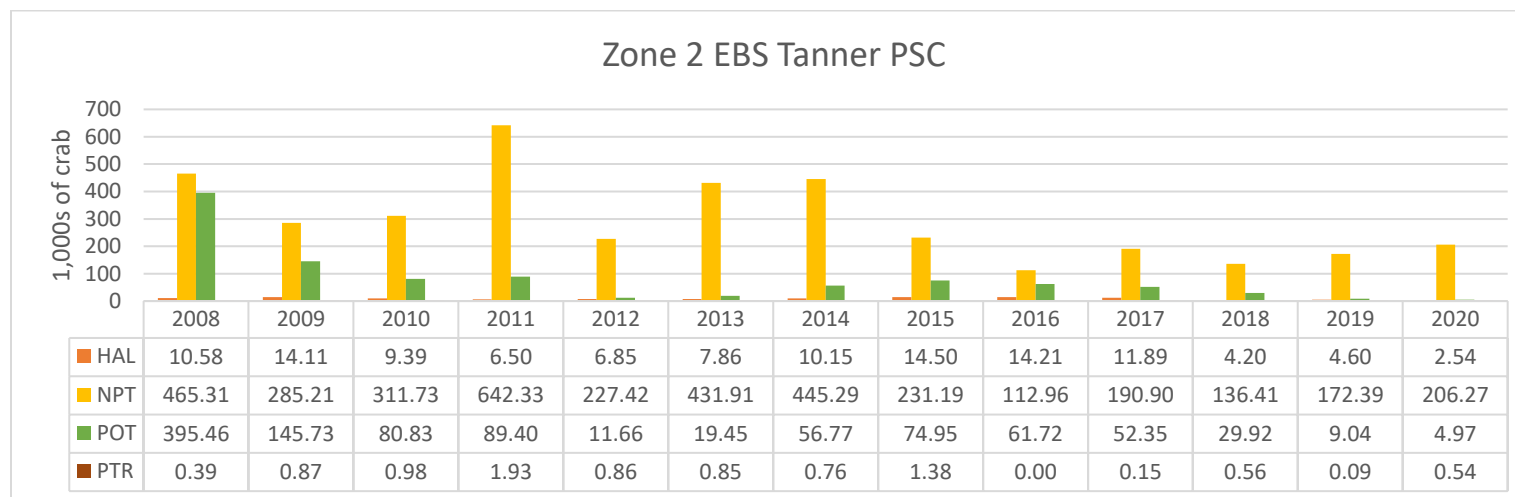
**Figure 7 and Table 9. Zone 1 EBS Tanner PSC usage by gear type and target species (# of crab), 2008-2020**



<b>Zone 1 EBS Tanner</b>	<b>Target Species</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Hook-and-line	Pacific Cod	1,483	6,994	8,099	8,359	9,059	7,209	3,613	3,779	3,199	3
Nonpelagic trawl	Alaska Plaice - BSAI		626								
	Flathead Sole	10,728	5,318		2,829	8,688	2,259	3,291		491	150
	Pacific Cod	19,640	10,504	3,809	4,098	10,489	5,495	9,049	8,314	2,045	3,580
	Pollock - bottom	5,226	4,719	1,389	5,689	2,947	4,820	631	1,127	109	479
	Rock Sole - BSAI	70,706	53,516	72,238	32,884	93,272	45,311	12,024	8,657	6,551	1,542
	Yellowfin Sole - BSAI	70,176	178,298	116,836	231,893	55,713	33,770	36,793	136,212	18,125	22,957
Pot	Pacific Cod	185,198	106,308	52,520	145,231	300,177	363,300	158,554	169,857	180,870	9,677
Pelagic trawl	Pollock - bottom	58	1,697		58	177			3	-	-
	Pollock - midwater	174	1,267	192		121		28	-	217	31

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive\_PSC  
 The 2020 PSC use are current as of 4-17-20.

**Figure 8 and Table 10. Zone 2 EBS Tanner PSC usage by gear type and target species (# of crab), 2008-2020**



<b>Zone 2 EBS Tanner</b>	Target species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Hook-and-line	Pacific Cod	1,483	6,994	8,099	8,359	9,059	7,209	3,613	3,779	3,199	3
Nonpelagic trawl	Alaska Plaice - BSAI		626								
	Flathead Sole	10,728	5,318		2,829	8,688	2,259	3,291		491	150
	Pacific Cod	19,640	10,504	3,809	4,098	10,489	5,495	9,049	8,314	2,045	3,580
	Pollock - bottom	5,226	4,719	1,389	5,689	2,947	4,820	631	1,127	109	479
	Rock Sole - BSAI	70,706	53,516	72,238	32,884	93,272	45,311	12,024	8,657	6,551	1,542
Pot	Yellowfin Sole - BSAI	70,176	178,298	116,836	231,893	55,713	33,770	36,793	136,212	18,125	22,957
	Pacific Cod	185,198	106,308	52,520	145,231	300,177	363,300	158,554	169,857	180,870	9,677
Pelagic trawl	Pollock - bottom	58	1,697		58	177			3	-	-
	Pollock - midwater	174	1,267	192		121		28	-	217	31

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive\_PSC  
 The 2020 PSC use are current as of 4-17-20.