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Options for Amounts Reasonably Necessary for Subsistence Uses of Tanner Crab in Prince William Sound

by

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and

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Revised, November 2021

Alaska Department of Fish and Game

Division of Subsistence



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Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft ³ /s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols

alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of) pH	
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

all commonly-accepted abbreviations
e.g., Mr., Mrs., AM, PM, etc.
all commonly-accepted professional
titles e.g., Dr., Ph.D., R.N., etc.

Alaska Administrative Code	AAC
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	\$, ¢
months (tables and figures):	first three letters (Jan.,...,Dec)
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations

alternate hypothesis	H _A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2 , etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	log ₂ , etc.
minute (angular)	'
not significant	NS
null hypothesis	H ₀
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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SUBSISTENCE USES OF TANNER CRAB IN PRINCE WILLIAM SOUND**

by

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BACKGROUND

This report was first prepared for the Alaska Board of Fisheries (board) for reference when considering Proposal 68 during its March 2021 meeting. Proposal 68 asks the board to consider adopting amounts reasonably necessary for subsistence for Tanner crab in the Prince William Sound (PWS) Area, outside the Valdez Nonsubsistence Area. In the interim period, when the meeting was delayed to November–December 2021, two additional years of data became available. In order to present the best available data, this report was revised in November 2021 to reflect ANS options that incorporate all available years of permit harvest data.

Under AS 16.05.258(a), the board is charged with identifying fish stocks, or portions of stocks, that “are customarily taken or used for subsistence” [a customary and traditional (C&T) use finding]. In March 2008, the board found that shrimp, Dungeness crab, Tanner crab, king crab, and miscellaneous shellfish of the PWS Area are customarily and traditionally used for subsistence (5 AAC 02.208(a)). Alaska Statute 16.05.258(b) directs the board to determine the amount of the harvestable portion of fish stocks that support C&T uses that is reasonably necessary for subsistence uses (ANS). “Reasonable opportunity” is defined in statute as “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” (AS 16.05.258 (f)).

Proposal 68 would provide an opportunity for the board and public to consider adopting an ANS for the Tanner crab stock in the PWS Area (outside of the Valdez Nonsubsistence Area described at 5 AAC 99.015(a)(5)). There are ANS amounts for the other shellfish stocks for which the board has found there are C&T subsistence uses, but not for Dungeness, king, or Tanner crab. The PWS Dungeness and red king crab stocks are not at an abundance level that would allow a subsistence fishery, and the fisheries have been closed for these stocks for a number of years. Therefore, the department does not recommend adoption of ANS findings for king or Dungeness crab at this time. Additionally, because golden king crab currently have a harvest limit of three crab per year per household, established in 2008, we recommend waiting at least one more board cycle to gather enough data for a determination.

In PWS, due to low abundance, subsistence, sport, and personal use fisheries for Tanner crab were closed in 1999 (Rumble et al. 2020). Commercial Tanner crab fisheries in PWS were closed due to low crab abundance from 1989 until 2016. Legal Tanner crab abundance levels have been high enough to allow a subsistence fishery since 2008. Following a test fishery, the board adopted a regulatory change in 2017 for ADF&G to open a limited commissioner’s permit fishery for Tanner crab in the Eastern and Western districts of PWS in 2018 and 2019. Department surveys to estimate Tanner crab abundance have been conducted since the early 1990s in PWS. Large-mesh trawl surveys were conducted annually from 1991 through 1995 and occurred on a biennial basis from 1996 through 2012, and annually since 2013, except in 2016 when no survey occurred (Rumble et al. 2020).

PRINCE WILLIAM SOUND AREA

The PWS Management Area includes waters of PWS and the Gulf of Alaska bounded by the 144°00’W longitude near Cape Suckling on the east, and Cape Fairfield (long 148°50.25’W) on the west. The PWS Management Area’s main geographical features are the Copper River, its tributaries, and PWS. It has a total land area of 38,000 square miles. The department manages all commercial shellfish fisheries within the territorial waters of PWS, or those waters from the shoreline to three nautical miles offshore.

There are four communities within PWS outside of Valdez (Figure 1): Chenega (formerly Chenega Bay), Whittier, Tatitlek, and Cordova. In 2019, Department of Commerce, Community, Economic Development

(DCCED)¹ population estimates for these communities were 61 residents in Chenega, 280 residents in Whittier, 98 residents in Tatitlek, and 2,343 residents in Cordova. Based on department household subsistence surveys in 2014, the Alaska Native households in Chenega, Tatitlek, and Cordova ranged from 23% in Cordova to 85% in Tatitlek. Since 2000, PWS has been accessible to vehicular traffic through the Anton Anderson Memorial Tunnel, which connects the port of Whittier with Alaska's highway system. From 1943 until 2000, the tunnel was maintained exclusively by the Alaska Railroad.

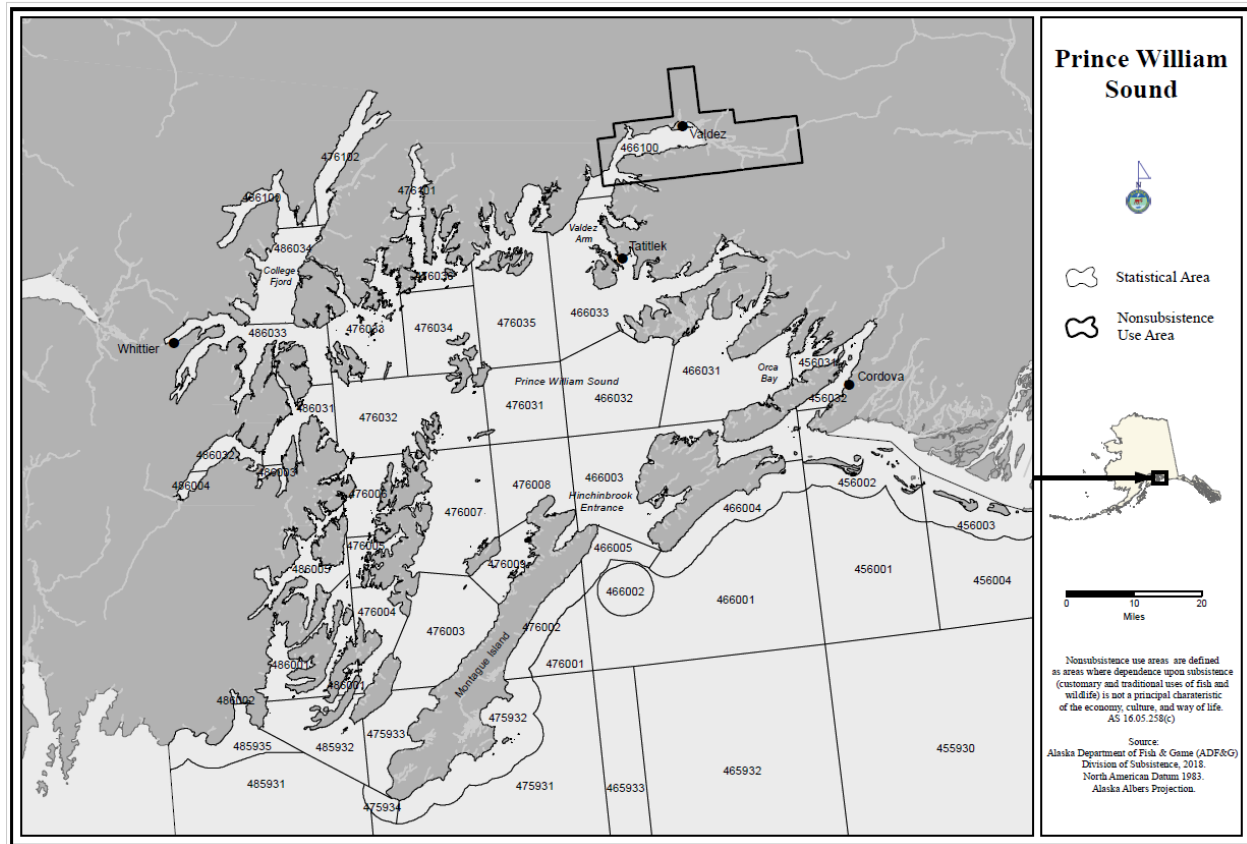


Figure 1.—Map of Prince William Sound showing the boundary of the Valdez nonsubsistence use area.

HISTORY OF C&T AND ANS FINDINGS ON SHELLFISH STOCKS IN PRINCE WILLIAM SOUND

In March 1999, the board's action on Proposal 350 closed subsistence, personal use, and sport fisheries for Tanner crab in the PWS Management Area due to lack of harvestable surplus. At the March 2008 meeting, the board made a positive C&T use finding for shrimp, Dungeness crab, Tanner crab, king crab, and miscellaneous shellfish in PWS in response to proposals 361–365 (ADF&G 2008) (5 AAC 02.208(a)). Although the board opened a subsistence fishery for Tanner crab at this meeting, it did not make an ANS determination because the fishery had been closed for ten years. The board preferred to postpone the finding until a harvest record through the permit system had been established.

1. Department of Commerce, Community, Economic Development. <https://live.laborstats.alaska.gov/pop/> Accessed August 11, 2020.

CURRENT SUBSISTENCE CRAB FISHING REGULATIONS FOR PRINCE WILLIAM SOUND

Subsistence, sport, and personal use Tanner crab and golden king crab fisheries have been authorized in the PWS Area since 2008. Following rising estimates of legal male Tanner crab abundance from trawl survey results, a subsistence Tanner crab fishery was opened to Alaska residents in 2008 with a bag and possession limit of 5 legal crab (5½ inches or greater in width of shell) per person. In 2017, the limit was increased to 12 legal crab per person (the bag and possession limits were 20 legal crab per person before the 1999 closure). The PWS subsistence golden king crab fishery was also opened in 2008 after a three-year pot survey for golden king crab in western PWS (2004–2006) indicated that golden king crab numbers were stable but not at levels high enough to sustain commercial harvest (Rumble et al. 2014).

The subsistence Tanner crab fishery is monitored through a mandatory permit system (5 AAC 02.206). The subsistence fisheries for Dungeness and red king crab remain closed due to low abundance levels (5 AAC 02.225(a)).

Season

Both Tanner crab and golden king crab may be taken for subsistence purposes only from October 1 through March 31 (5 AAC 02.220(1)) (5 AAC 02.225(b1)).

Gear

In the PWS Area, Tanner crab may be taken only with pots, ring nets, dip nets, diving gear, hooked or hookless hand lines, and by hand (5 AAC 02.207(1)). There are multiple specifications for a pot used to take Tanner crab: it must have a minimum of two escape rings that are at least four and three-eighths inches inside diameter (5 AAC 02.207((2a)), and it may not have any portion of the line attaching the pot to a buoy floating on the surface of the water at any time, except for that portion of the line connecting the main buoy to any auxiliary buoy or buoys (5 AAC 02.207((2b)). No more than two pots per person with a maximum of two pots per vessel may be used to take king or Tanner crab (5 AAC 02.207(3)).

Permit

A subsistence crab fishing permit from the department is required before harvesting crab within the PWS Area (5 AAC 02.206), as described in 5 AAC 02.015. Permits require harvest information, including date of harvest, area of harvest, number of pots fished, number of legal male Tanner crab harvested, number of legal male Tanner crab discarded, number of sublegal male Tanner crab caught, and the number of females captured. This harvest information must be recorded each time the crab pots are pulled and before concealing the crab from plain view or removing the crab from the fishing site. Permits must be returned by April 15 each season (see Appendix A for an example of the permit).

Bag and Possession Limits

For Tanner crab, only male Tanner crab five inches or greater in width of shell may be taken or possessed and the bag limit is 12 male Tanner crab (5 AAC 02.220(2-3)). Golden king crab currently have an annual household harvest limit of three male golden king crab (5 AAC 02.225(b)(4)), and only male golden king crab seven inches or greater in width of shell may be taken or possessed (5 AAC 02.225(b)(3)).

CURRENT SPORT FISHING REGULATIONS FOR PRINCE WILLIAM SOUND TANNER CRAB

Under the provisions of 5 AAC 55.022(b)(3), a sport fishery for Tanner crab in Prince William Sound may only take place if the estimated abundance requirements for a commercial fishery as described in 5 AAC 35.308(b) are met; if a commercial fishery is opened under these provisions, the sport fishery is also opened. No commercial fishery has occurred under these guidelines since the sport fishery was closed in 1999; therefore, the sport fishery has remained closed. If opened, the sport fishery for Prince William Sound

Tanner crab would operate under regulations similar to those of the subsistence fishery in terms of season, gear, and bag and possession limits (5 AAC 55.022(b)(3)). As for the subsistence fishery, a permit would be required, but the fisher would also need to obtain a sport fishing license.

PRINCE WILLIAM SOUND TANNER CRAB SUBSISTENCE HARVEST DATA

Data on the subsistence harvest of Tanner crab in the PWS Area after the fishery reopened in 2008 are available through the department permit program. Prior to the 1999 closure of the Tanner crab fishery in the PWS Area, the ADF&G Division of Subsistence collected subsistence crab harvest data through comprehensive household harvest surveys (see Table 2). Aside from 2008 when 115 permits were issued, fewer than 100 permits were issued until 2012. Participation in the permit program then increased, with the number of permits issued averaging approximately 212 from the 2012/13 season through the 2020/21 season. While participation has remained steady since 2012, 50% or fewer of permit holders actually participated in the fishery in all seasons except the 2012/13 season when a high of 58% of permit holders participated. As shown in Figure 2, for the period 2008–2020, about 37.6% of the permit holders lived in PWS communities (mostly Cordova, but also Valdez, Tatitlek, Chenega, and Whittier); 40.0% were residents of the Anchorage Municipality; 11.3% lived in Kenai Peninsula Borough communities; 8.9% were from the Matanuska-Susitna Borough; and 2.2% lived in other Alaska communities.

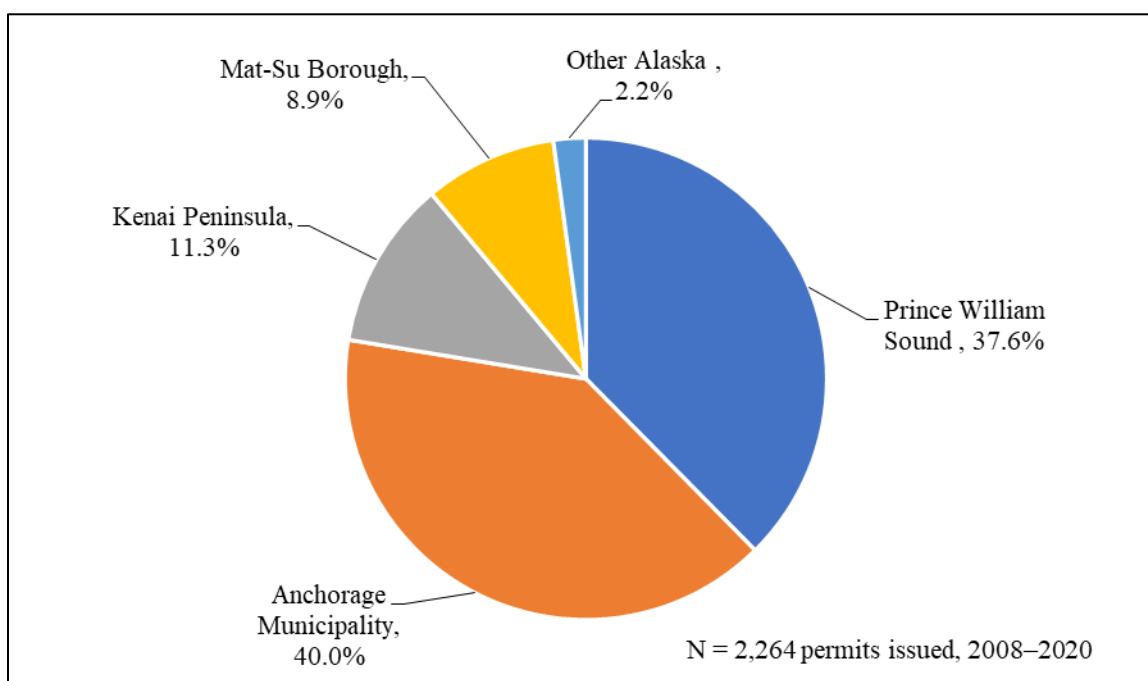


Figure 2.—Percentage of Prince William Sound subsistence Tanner crab permits issued by place of residence, 2008–2020.

In the 2017/18 season, the legal male Tanner crab harvest increased from 548 crab in the 2016/17 season to 1,073 crab. This was associated with the 2017 board decision to increase the bag and possession limit from 5 legal crab per person to 12 legal crab per person due to an increase in abundance. However, the harvest in the 2018/19 season dropped back to 624 crab. The number of trips was relatively consistent over this three-year period: 192 in 2016/17, 196 in 2017/18, and 202 in 2018/19 (Table 1; Rumble et al. 2020). The number of trips decreased slightly in the most recent years, with 115 trips in 2019/20 and 133 trips in 2020/21.²

2. Janet Rumble, Lower Cook Inlet area management biologist, shellfish and groundfish, unpublished data, 2021.

Table 1.—Prince William Sound Area subsistence Tanner crab permits, permits fished, and harvest, 2008–2020 seasons.

Year	Permits		Harvest
	Permits	fished	
2008	115	40	44
2009	93	33	85
2010	73	29	78
2011	79	34	213
2012	151	87	2,067
2013	173	80	629
2014	211	91	793
2015	206	93	816
2016	183	91	548
2017	179	70	1,073
2018	192	96	624
2019	251	54	281
2020	358	70	428
Average 2008–2011	90	34	105
Average 2012–2020	212	81	807
Historical average 2008–2020	174	67	591

Source Rumble et al. 2020:36 for 2008–2018; J. Rumble, ADF&G, unpublished data for 2019 and 2020.

The ADF&G Division of Subsistence conducts household harvest surveys periodically to collect harvest data for an entire study year. Table 2 presents estimated harvest data for Tanner crab by residents of Chenega, Cordova, Tatitlek, and Whittier for available study years prior to the 1999 closure of the Tanner crab fishery in the PWS Area. Harvest survey data are also available for Chenega, Cordova, and Tatitlek for 2014, after the reopening of the subsistence fishery.

Table 2.—Historical subsistence Tanner crab harvests, Prince William Sound Area, 1984–2014.

Community	Study Year	Tanner crabs (numbers)		Total Tanner crab	95% CI for total Tanner
		Commercial removal	Other		
Chenega	1984	0	-	0	-
Chenega	1985	-	0	0	-
Chenega	1989	0	0	0	-
Chenega	1990	0	0	0	-
Chenega	1991	0	208	208	0.73
Chenega	1992	0	118	118	0.52
Chenega	1993	0	15	15	0.80
Chenega	1997	0	6	6	1.15
Chenega	2014	0	92	92	0.92
Cordova	1985	621	1,573	2,195	1.44
Cordova	1988	2,171	445	2,616	0.78
Cordova	1991	243	78	320	1.42
Cordova	1992	359	0	359	1.90
Cordova	1993	200	2,038	2,238	1.50
Cordova	1997	163	4,295	4,458	0.87
Cordova	2014	103	1,384	1,487	0.52
Tatitlek	1987	0	286	286	0.90
Tatitlek	1988	0	500	500	0.71
Tatitlek	1989	0	0	0	-
Tatitlek	1990	0	0	0	-
Tatitlek	1991	0	0	0	-
Tatitlek	1993	0	185	185	0.57
Tatitlek	1997	0	405	405	0.99
Tatitlek	2014	0	0	0	-
Valdez	1991	0	8,232	8,232	1.36
Valdez	1992	0	1,320	1,320	1.12
Valdez	1993	0	2,514	2,514	1.54
Whittier	1990	2	316	318	0.41

Source ADF&G CSIS <http://www.adfg.alaska.gov/sb/CSIS/>

Note "-" = data not available

ANS OPTIONS, PRINCE WILLIAM SOUND AREA TANNER CRAB

Following are options for the board to consider should it choose to adopt an ANS range for Tanner crab in the PWS Area (outside the Valdez nonsubsistence area) during its November–December 2021 meeting. Due to the lack of an ANS finding for this stock, the department submitted and supports reviewing the ANS options for Tanner crab so that the board has a metric to determine if the regulations are providing a reasonable opportunity for success in harvesting Tanner crab for subsistence uses in this area.

The following options use harvest estimates based on subsistence permit returns. Subsistence permits for this fishery have been required since 2008, when the fishery reopened after being closed since 1999. Participation increased from an average of 90 permits issued and 34 permits fished from 2008 through 2011, to 212 permits issued and 81 permits fished from 2012 through 2020. Therefore, options based on two time periods are offered: all years (2008–2020) and 2012–2020. Table 3 provides ANS options based on: 1) the low and high annual harvests rounded to the nearest 50 crab between 2008 and 2020; 2) the low and high annual harvests rounded to the nearest 50 crab between 2012 and 2020; 3) the mean harvest for the period 2008–2020 bounded by the standard deviation and rounded to the nearest 50 crab; 4) the mean harvest for the period 2012–2020 bounded by the standard deviation and rounded to the nearest 50 crab.

The department did not develop these ANS options based upon household harvest survey data. Only one year of survey data (2014) is available for three local communities (Chenega, Cordova, and Tatitlek) since the 2008 reopening of the fishery. When the fishery reopened in 2008, the department prepared an ANS option using household survey data for the five PWS communities for years before the regulatory closure in 1999 (see Table 2) and estimated harvests by nonlocal communities from the annual sport fish harvest survey. Based on annual averages, the ANS option was 6,400 \pm 25% Tanner crab (ADF&G 2008). These data suggest that local harvests of Tanner crab by residents of Chenega, Cordova, and Tatitlek were higher than harvests reported on permits. However, permit data likely provide a more comprehensive view of total Tanner crab harvest in PWS by all Alaska residents.³ As noted above, at its 2008 meeting, the board chose to postpone the ANS finding until a comprehensive and reliable harvest record based on subsistence permit data became available.

OPTION A: 50–2,050 TANNER CRAB

This option is based on the low and high annual harvests, rounded to nearest 50 crab, 2008–2020.

OPTION B: 300–2,050 TANNER CRAB

This option is based on the low and high annual harvests, rounded to nearest 50 crab, 2012–2020.

OPTION C: 50–1,150 TANNER CRAB

This option is based on the mean harvest for the period 2008–2020 (591 crab) bounded by the standard deviation (547 crab) and rounded to the nearest 50 crab.

OPTION D: 300–1,350 TANNER CRAB

This option is based on the mean harvest for the period 2012–2020 (807 crab) bounded by the standard deviation (525 crab) and rounded to the nearest 50 crab.

3. Alaska Department of Fish and Game Division of Subsistence, 2008, Deliberation Materials for the Alaska Board of Fisheries: Amounts Necessary for Subsistence Use Findings, Cook Inlet Tanner Crab, Prince William Sound Tanner Crab, RC7, Prince William Sound King Crab, King and Tanner Crab (Statewide, except Southeast/Yakutat) and Supplemental Issues, March 3–9, 2008 http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2007_2008/statewide/rc_all.pdf, pages 5–20.

OPTION E: TAKE NO ACTION

Option E is to maintain status quo by not adopting an ANS range for Tanner crab at this time due to the relatively short time series for the harvest data, as well as the 5 legal crab per person limit in place until 2017 (subsequently increased to 12 legal crab per person; before 1999, the limit was 20 legal crab per person). Data on subsistence harvests of Tanner crab in PWS will continue to be collected on an annual basis through the permit program and may provide a more robust dataset upon which to base an ANS finding than the 13 years of data presently available.

Table 3.—Tanner crab ANS Options, Prince William Sound Area.

Using high and low harvests			
Year	Low	High	ANS range option (rounded)
2008–2020	44	2,067	50 to 2,050 crab
2012–2020	281	2,067	300 to 2,050 crab

Using SD to establish range around mean			
Year	Low	High	ANS range option (rounded)
2008–2020	44	1,138	50 to 1,150 crab
2012–2020	281	1,332	300 to 1,350 crab

REFERENCES CITED

ADF&G

2008

Customary and traditional use worksheet, king crab and Tanner crab, Prince William Sound Management Area; and other background information. Alaska Department of Fish and Game Division of Subsistence, Special Publication No. BOF 2008-03: Anchorage. http://www.adfg.alaska.gov/specialpubs/SP2_SP2008-003.pdf

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2020

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2014

Cook Inlet and Prince William Sound area management report for Tanner and king crab fisheries through 2013. Alaska Department of Fish and Game Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 14-08: Anchorage. <http://www.adfg.alaska.gov/FedAidPDFs/FMR14-08.pdf>

**APPENDIX A: PRINCE WILLIAM SOUND
SUBSISTENCE TANNER CRAB PERMIT**

ALASKA DEPARTMENT OF FISH AND GAME DIVISION OF COMMERCIAL FISHERIES
2019/20 PRINCE WILLIAM SOUND SUBSISTENCE GOLDEN KING AND TANNER CRAB PERMIT



☐ Replacement for lost original

MUST BE AN ALASKA RESIDENT

Names of other household members who may fish with this permit _____ Vessel Name: _____
 Mark "None" if you fish from someone else's vessel _____
 Permit holder signature: _____ Date _____

Send this portion to: ADF&G PWS Subsistence Crab Permits, PO Box 669 Cordova, AK 99574

Cut here

ALASKA DEPARTMENT OF FISH AND GAME DIVISION OF COMMERCIAL FISHERIES
WILLIAM SOUND SUBSISTENCE GOLDEN KING AND TANNER CRAB PERMIT



Name (including household members)

*This permit is valid during the PWS subsistence crab season which is **October 1, 2019 through March 31, 2020.***

- 1) This permit must be in your possession while taking or transporting golden king or Tanner crab in the Prince William Sound Area.
- 2) One permit may be used by all household members (persons having the same residence) named on the permit.
- 3) Each person fishing may only harvest his or her individual bag or annual household limit.
- 4) Only whole crabs may be removed from a vessel.
- 5) Information must be recorded in ink in the spaces below prior to leaving the fishing site or concealing the crab from view.
- 6) If more than one permit holder is aboard the vessel, only one should report the number of crab released.
- 7) You must return your completed permit to the address below by April 15, 2020, even if you did not fish.

Failure to return your completed permit is a violation and in addition to being cited, you may be ineligible to receive a permit the next year.

Record every day you fish, even if you don't catch anything. ☐ Check here if no one named on this permit fished this season.

Tanner Crab Catch Log **Daily Bag and Possession Limit = 12**
 Legal male Tanner crab per household member fishing

[illegible]

Golden King Crab Catch Log Annual Household Limit = 3 legal males

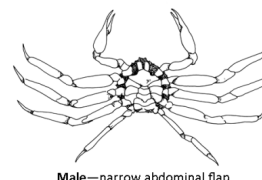
Date Pulled	#of Pots	(same as above)					

Please continue on another piece of paper if you need more lines for the Tanner crab catch log.

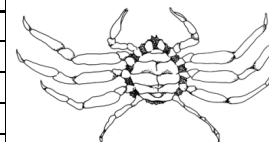
Return this permit no later than April 15, 2020 to:

ADF&G PWS Subsistence Crab Permits - P.O. Box 669 Cordova, AK 99574

Tanner crab



Male—narrow abdominal flap



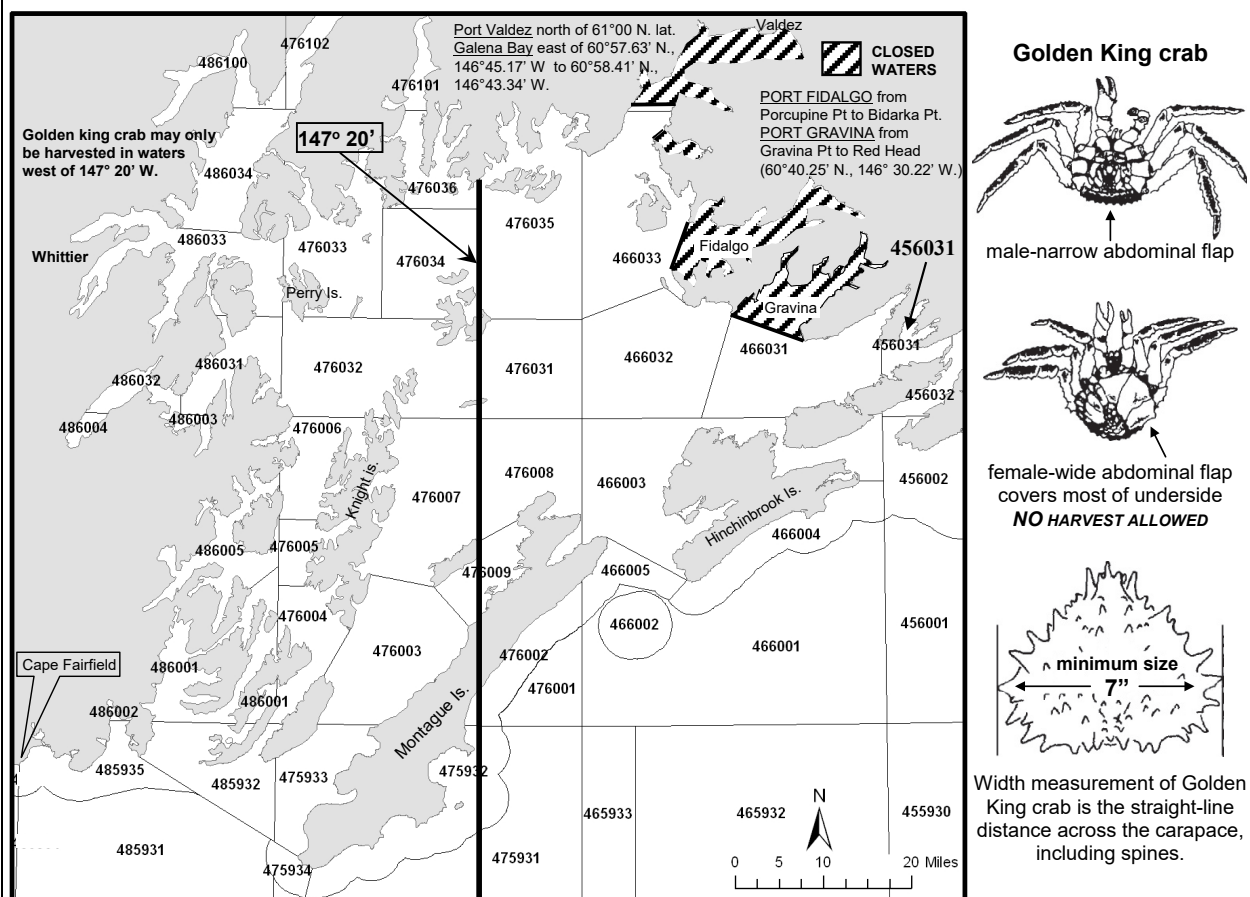
Female—wide abdominal flap covers most of underside (females usually smaller than 5")

NO HARVEST ALLOWED



Width measurement of Tanner crab is the straight-line distance across the carapace, including spines.

Send this portion to: ADF&G PWS Subsistence Crab Permits, PO Box 669 Cordova, AK 99574



ONLY Alaskan Residents may participate in this fishery.

Individual daily bag and annual harvest limits - 12 legal male Tanner crab (5 inches or greater in carapace width) may be harvested per person, per day. There is an annual household limit of 3 legal male golden king crab (7 inches or greater in carapace width) per year. Golden king crab may only be harvested in those waters west of 147° 20' W. longitude (see map).

Season dates - October 1 through March 31.

Buoy requirements - On a keg or buoy attached to each pot, the fisherman shall plainly and legibly inscribe his or her first initial, last name, home address, and the name or the Division of Motor Vehicles boat registration number (AK number) of the vessel used to operate the pot.

Crab pot limits and escapement requirements - 1) No more than two pots per person with no more than two pots per vessel may be fished. 2) Each pot must have a biodegradable escape mechanism (defined in 5 AAC 39.145). A mesh sided pot must have an opening at least 18 inches long that is laced closed with 100% cotton twine that is no larger than 30 thread. The cotton twine may only be knotted at each end. A rigid sided pot must have an opening that is at least 12 by 8 inches and covered with a single panel that is tied to the pot with no more than four single loops of 100% cotton twine no larger than 30 thread. 3) Each pot must also contain two escape rings no less than 4 3/4 inches in diameter.

Questions? consult <http://www.adfg.alaska.gov/index.cfm?adfg=ByAreaSubsistencePWS.fishingInfo#shellfishor> call ADF&G at (907) 235-8191.