

FISHERY INFORMATION PACKET FOR THE BERING SEA
COMMERCIAL SNOW CRAB FISHERY, 2004



by

Forrest R. Bowers

Regional Information Report¹ No. 4K03-67

Alaska Department of Fish and Game
Division of Commercial Fisheries
211 Mission Road
Kodiak, AK 99615

December 2003

¹ The Regional Information Report Series was established in 1987 to provide an information access system for all unpublished division reports. These reports frequently serve diverse ad hoc informational purposes or archive basic uninterpreted data. To accommodate timely reporting of recently collected information, reports in this series undergo only limited internal review and may contain preliminary data; this information may be subsequently finalized and published in the formal literature. Consequently, these reports should not be cited without prior approval of the author or the Division of Commercial Fisheries.

AUTHOR

Forrest R. Bowers is the Bering Sea and Aleutian Islands Area Shellfish Management Biologist, Alaska Department of Fish and Game, Division of Commercial Fisheries, P.O. Box 920587 Dutch Harbor, Alaska, 99692.

TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES	i
LIST OF FIGURES.....	i
LIST OF APPENDICES	i
ABSTRACT.....	1
INTRODUCTION	2
Description of Registration Area and Statistical Areas.....	2
Historic Fishery Perspective.....	2
REGULATIONS.....	3
Fishing Season.....	3
Pot Limits and Gear.....	3
Preseason Registration, Registration and Tank Inspections.....	5
Operation of Other Gear and Stand Down Provisions	6
Landing Requirements	6
Pot Storage Requirements.....	7
Size Limit.....	7
Onboard Observer Program.....	7
HARVEST STRATEGY.....	8
FISHERIES MANAGEMENT AND VOLUNTEER CATCH REPORTING.....	8
GUIDELINE HARVEST LEVEL AND OUTLOOK FOR THE 2004 FISHERY.....	9
DEPARTMENT CONTACTS.....	9
LITERATURE CITED.....	11
TABLE.....	12
FIGURES	13
APPENDIX.....	15

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Bering Sea District snow crab commercial harvest data, 1978/79 - 2003	12

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. Bering Sea District of Tanner crab Registration Area J showing subdistricts and sections.....	13
2. Statistical areas of the Bering Sea District of Tanner crab Registration Area J.....	14

LIST OF APPENDICES

<u>Appendix</u>	<u>Page</u>
A. List of contact persons, by agency and location.....	16

ABSTRACT

This fishery management packet provides a brief overview of the snow crab *Chionoecetes opilio* fishery occurring in the Bering Sea District of Tanner Crab Registration Area J. An area description, brief historic fishery review, and summary of current management practices and policies are included and should provide fishers and members of industry a better understanding of how the Alaska Department of Fish and Game (ADF&G) intends to manage the snow crab fishery. Supplemental information is provided on gear requirements, registration, stand down provisions, inseason reporting, the onboard observer program and the regulatory harvest strategy.

INTRODUCTION

Snow crab landings in the Bering Sea were first documented as bycatch in the Tanner crab *Chionoecetes bairdi* fishery in the 1977/78 season, when a total of 1.7 million pounds were harvested. Subsequently the fishery developed into the largest crab fishery in the nation, with some annual harvests exceeding 300 million pounds (Table 1). In 1999, the Bering Sea snow crab stock declined significantly in abundance and was declared overfished. In 2000, the Alaska Board of Fisheries (BOF) adopted a harvest strategy aimed at rebuilding the stock and preventing overfishing. In 2002, the BOF adopted a revised harvest strategy, reduced the minimum Guideline Harvest Level (GHL) threshold and adopted lower pot limits for GHLs of less than 25 million pounds.

Description of Registration Area and Statistical Areas

The snow crab fishery occurs in waters of the Bering Sea District west of 166° W. longitude of Tanner Crab Registration Area J and includes waters of the Bering Sea north of the latitude of Cape Sarichef at 54° 36' N lat., and east of the U.S.-Russia Maritime Boundary Agreement Line, as described in 5 AAC 35.500 DESCRIPTION OF REGISTRATION AREA J on page 183 of the 2003-2005 Commercial Shellfish Fishing Regulations booklet (CSRB) (ADF&G 2003) (Figure 1). The Bering Sea District is divided into the Eastern and Western Subdistricts at 173° W long.

The district is divided into statistical areas for catch reporting purposes. Each statistical area, with the exception of those bordering land, encompasses one degree of longitude by one half degree of latitude (Figure 2). All commercial removals of snow crabs (including deadloss) are reported to ADF&G at the time of landing, on fish tickets and in reference to these statistical areas.

Historic Fishery Perspective

Snow crab landings were first documented in the 1977 season. ADF&G initiated GHLs for snow crabs in 1981 using data collected during the 1980 National Marine Fisheries Service (NMFS) Eastern Bering Sea trawl survey. In 1981, the GHL range was 39.5 - 91.0 million pounds and the commercial harvest was 52.8 million pounds. For the next three years the commercial harvest was below 30 million pounds. The harvest increased to a peak of 328.6 million pounds in 1991. Subsequent to the record harvest in 1991, stocks decreased in abundance and by 1996 the harvest was 65.7 million pounds. During 1997 and 1998, the GHL increased. In 1998, the commercial harvest reached 243.3 million pounds, and for the first time a portion of the GHL was allocated to the Community Development Quota (CDQ) fishery.

In 1999, the estimate of large male snow crabs declined by 17% from the prior year's survey, resulting in a general fishery GHL of 186.2 million pounds. The estimated abundance of large male crabs declined an additional 63% in 2000 and the surveyed stock was at 60% of the minimum stock size threshold (one-half the long term average mature biomass). As a

conservation measure the department reduced the exploitation rate on four inch and larger male snow crabs from 58% to 22%, consistent with the NMFS guidelines for stock rebuilding (Restrepo et al. 1998). This reduction in exploitation rate resulted in a GHl of 28.5 million pounds for the 2000 season. Of this total, 2.1 million pounds (7.5%) were allocated to the CDQ fishery, resulting in a 26.4 million pound GHl for the 2000 general fishery and a harvest of 30.8 million pounds. The 2001 general fishery harvest was 23.4 million pounds, 30.3 million pounds in 2002 and 26.3 million pounds in 2003.

REGULATIONS

The Bering Sea District of Registration Area J is a nonexclusive registration district. A Tanner crab vessel or vessel operator (5 AAC 35.020 (h)) registered for a nonexclusive registration area may not be used to take Tanner crabs in a superexclusive registration area but may register to fish in other nonexclusive registration areas during the same registration year (5 AAC 35.005 REGISTRATION AREAS ESTABLISHED (c) on page 165 of the CSRB).

Regulations that apply to the Bering Sea snow crab fishery begin in Title 5, Chapter 35 of the Alaska Administrative Code (AAC) on page 165 of the CSRB. Some of the most frequently utilized regulations are summarized below. This section does not include all regulations pertaining to the Bering Sea District. Fishers may obtain a copy of the CSRB (tan in color for the 2003-2005 cycle) from any ADF&G office. For additional information on the Bering Sea snow crab fishery, contact the ADF&G office in Dutch Harbor or Kodiak.

Fishing Season

The annual regulatory opening for the Bering Sea snow crab fishery is noon on January 15 as specified in 5 AAC 35.510 FISHING SEASONS FOR REGISTRATION AREA J (f)(3) beginning on page 188 of the CSRB. The fishery is closed by emergency order when the GHl is achieved or when stock status indicators, such as poor fishery performance or excessive catch of undersized male or female crabs, indicate a closure is warranted to protect the long-term health of the stock. The biological closure date for this fishery is May 15.

Pot Limits and Gear

In 2002, the BOF adopted variable pot limits for the Bering Sea snow crab fishery based on GHl. Pot limits are specified in 5 AAC 35.525 LAWFUL GEAR FOR REGISTRATION AREA J (c)(4)(B) on page 192 of the CSRB.

Pot limits for the 2004 Bering Sea snow crab fishery are set at 70 pots for vessels 125 feet or less in overall length and 90 pots for vessels greater than 125 feet in overall length.

Each pot in a vessel's legal complement of gear must have an identification tag on the main or trailer buoy as specified in 5 AAC 35.526 TANNER CRAB POT MARKING REQUIREMENTS FOR REGISTRATION AREA J on page 193 of the CSRB. Buoy tags are available at the Dutch Harbor and Kodiak ADF&G offices for \$2.00 each. As part of the total allowable number of pots, vessels are allowed to fish a maximum of 20 groundfish pots to capture bait. Pots used for bait fishing must conform to the regulations in 5 AAC 35.525 LAWFUL GEAR FOR REGISTRATION AREA J (d) on page 192 of the CSRB. These pots must also be tagged with ADF&G issued buoy tags. Legal crabs captured in groundfish bait pots may be retained. All pots must be tagged at the time of tank inspection and remain tagged throughout the fishery. The vessel operator is responsible for all tagged gear and ensuring that tags are affixed to gear in a way to minimize tag loss.

Pots that have lost tags should be placed on deck or set back into the water with all bait and bait containers removed and all doors secured open. Fishers should immediately report the exact location of any pot that has lost the ADF&G issued buoy tag to the Alaska Bureau of Wildlife Enforcement (ABWE). Pots that are no longer tagged cannot be fished. Lost tags should be replaced as soon as possible. Buoy tags lost during the season may be replaced according to provisions of 5 AAC 35.526 TANNER CRAB POT MARKING REQUIREMENTS FOR REGISTRATION AREA J (b) on page 193 of the CSRB. Replacement tags are only issued if the vessel operator and three crewmembers submit sworn affidavits in person at the ADF&G office in Dutch Harbor or to ADF&G personnel in Saint Paul, describing how tags were lost and listing the number of each lost tag. To facilitate tag replacement for the Bering Sea snow crab fishery, ADF&G staff in Saint Paul will, when available, accept and forward the required tag affidavits to the ADF&G office in Dutch Harbor for processing. It remains the responsibility of the vessel operator to make arrangements for payment, purchase and shipment of tags from Dutch Harbor. To facilitate the purchase of replacement tags during short fisheries, department personnel in Saint Paul will have replacement tags available. However, ADF&G personnel in Saint Paul will not be able to accept payment for tags. Payment must be made through the Dutch Harbor, or Kodiak ADF&G office prior to the release of tags in Saint Paul.

Legal snow crab pots can be no more than ten feet long by ten feet wide by 42 inches high, with rigid tunnel eye openings that individually are no more than 3 inches in one dimension with tunnel eye perimeters that individually are more than 36 inches, or pots that are no more than ten feet long by ten feet wide by 42 inches high and that taper inward from the base to a top that consists of one horizontal opening of any size. A more complete description of legal gear for the fishery is provided in 5 AAC 35.525 LAWFUL GEAR FOR REGISTRATION AREA J on page 192 of the CSRB. All pots used to take snow crabs in Tanner crab Registration Area J must be fitted with at least eight escape rings having an inside diameter of no less than four inches that are placed within one mesh measurement from the bottom of the pot. Pots must be configured so that four escape rings are provided on each of two sides of a four-sided pot. If the pot has no escape rings as specified in this paragraph, then one-half of one side of a four-sided pot must have a side panel composed of not less than five and one-quarter inch stretched mesh webbing. All Tanner crab pots must also be equipped with a biodegradable escape mechanism that is at least 18 inches in length and is laced, sewn, or secured together by a single length of untreated 100 percent cotton twine no larger than 30 thread. The escape mechanism must be located within

six inches of the bottom of the pot as described in 5 AAC 39.145 ESCAPE MECHANISM FOR SHELLFISH AND BOTTOMFISH POTS on page 54 of the CSRB.

Preseason Registration, Registration and Tank Inspections

Preseason vessel registration as described in 5 AAC 35.506 AREA J REGISTRATION (e)(1) on page 185 of the CSRB is used to select vessels that will carry an observer. The preseason registration form must be imprinted with a 2003 or 2004 Commercial Fisheries Entry Commission T91Q or T09Q interim use permit card prior to submission to ADF&G. Preseason vessel registrations may be submitted to ADF&G in Dutch Harbor or Kodiak, by fax, mail, or in person. The preseason registration deadline for the 2004 Bering Sea snow crab fishery is 5:00 PM December 24, 2003. ADF&G has established a web site for vessel operators and agents to verify receipt of preseason vessel registrations. ADF&G will post names of vessels that file preseason registrations on the web site, usually within two days of receipt. All vessel operators or agents are urged to verify the vessel preseason registration. If a vessel name fails to appear on the web site list within several days after submission of a preseason registration, the vessel operator or agent should contact ADF&G in Dutch Harbor immediately. The ADF&G web site for verification of vessel preseason registration for the 2004 Bering Sea snow crab fishery is http://www.cf.adfg.state.ak.us/region4/shellfish/crabs/04opilio_reg.pdf

In addition to vessel registration requirements with the Commercial Fisheries Entry Commission (CFEC) listed under 5 AAC 39.120 REGISTRATION OF COMMERCIAL FISHING VESSELS on page 41 of the CSRB, a vessel used to take snow crabs in the Bering Sea District must obtain a registration certificate from ADF&G as specified in 5 AAC 35.020 TANNER CRAB AREA REGISTRATION on page 165 of the CSRB. In order for a registration to be valid, a vessel must first have all holds and/or live tanks inspected by a department representative as specified in 5 AAC 35.030 INSPECTION REQUIREMENTS on page 167 of the CSRB. Tank inspections are required to ensure that vessels are not in possession of crabs prior to the start of a fishery. Vessels intending to participate in the Bering Sea snow crab fishery are required to register and have their holds inspected, beginning 48 hours prior to the start of the season in Dutch Harbor, Akutan, King Cove, or False Pass. ADF&G also provides tank inspections in Saint Paul harbor 24 hours prior to the start of the season.

To facilitate and speed the tank inspection and registration process, the department utilizes a “quick registration” procedure. Department staff in all tank inspection ports inspect live tanks and gear on vessels up to seven days prior to the 48-hour tank inspection period. If all gear on a vessel at the time of the inspection complies with legal gear requirements and no live crabs are onboard, a preseason tank inspection certificate is issued to the operator of the vessel. Leaving port or placing gear on the vessel that is not in compliance with Bering Sea District gear requirements invalidates the preseason inspection certificate and the vessel is required to receive another tank inspection during the 48-hour tank inspection window. At any time during the 48-hour tank inspection window, operators of vessels that have received a preseason tank and gear inspection may proceed with preseason tank inspection certificate, vessel registration form and Bering Sea District Tanner crab interim use card to designated quick registration locations to have the registration validated.

Quick registration signing locations are announced during preseason tank inspections. Once a vessel registration has been validated, that vessel may proceed to the fishing grounds.

Operation of Other Gear and Stand Down Provisions

A person or vessel that operates commercial, subsistence, sport, or personal use pots, during the 14 days immediately before the opening of the commercial snow crab fishery in the Bering Sea, may not participate in the commercial snow crab fishery. A person or vessel that participates in the commercial snow crab fishery in the Bering Sea may not operate commercial, subsistence, sport, or personal use pots in the Bering Sea District during the 14 days after the close of the snow crab fishery.

A vessel or person may operate other commercial pots in the Bering Sea District after putting Tanner crab pots in storage. Storage specifications are listed in 5 AAC 35.052 TANNER CRAB GEAR STORAGE REQUIREMENTS (CSRB page 169) and 5 AAC 35.527 TANNER CRAB POT STORAGE REQUIREMENTS FOR REGISTRATION AREA J (4) (CSRB page 194). Vessels may participate in other commercial pot fisheries after invalidating the Tanner crab registration by contacting, in person, a local ADF&G representative, unless the registration is already invalidated under 5 AAC 35.020 (k) (CSRB page 165). Regulations addressing the operation of other pot gear in the Bering Sea District before and after the snow crab fishery are contained in 5 AAC 35.053. OPERATION OF OTHER POT GEAR on page 170 of the CSRB.

Landing Requirements

Vessels fishing in the Eastern Subdistrict of the Bering Sea District have a landing deadline that is 24 hours after the fishery closure. The vessel owner, or the owner's agent, of a vessel delivering to Adak, King Cove, or ports east of King Cove, may request additional time to deliver Tanner crabs to those ports by contacting a representative of the ADF&G office in Dutch Harbor within 24 hours of the closure and before leaving the registration area. A reasonable amount of additional time will be provided to allow the vessel to proceed directly to the processing location. From the Western Subdistrict of the Bering Sea the landing deadline is 72 hours if delivery is made to a floating or shore based processor in Dutch Harbor or Akutan. If delivering to Adak, King Cove, or ports east of King Cove, the same procedure must be followed as required for the Eastern Subdistrict of the Bering Sea. The landing deadline for vessels delivering to a floating or shore-based processor in the Pribilof Islands is 24 hours following the fishery closure from both the Eastern and Western Subdistricts. Additional information concerning landing requirements for vessels fishing for Tanner crabs in the Bering Sea can be found in 5 AAC 35.556 REQUIREMENTS FOR AREA J LANDING on page 196 of the CSRB.

Vessels desiring to place pot gear at a dry storage facility en route to a landing destination east of King Cove may make special arrangements with ADF&G at the time the vessel requests additional transit time and checks out of the Bering Sea District. In addition to vessel location, number of crabs on board, processing destination and estimated time of arrival, the vessel

operator will also be required to provide the estimated time of arrival and departure from the dry storage facility.

Pot Storage Requirements

Pots that are legally wet stored must have all doors secured open with all bait and bait containers removed. In the Bering Sea District, pots may be stored year-round in waters of the Eastern Subdistrict north of 57° N. lat., south of 58° N. lat., east of 166° W. long., and west of 164° W. long. In waters around the Pribilof Islands shoreward of the 25-fathom isobath, pots may be stored only from September 1 through May 31. Pots may also be stored in the waters around the Pribilof Islands at any depth within five nautical miles from the shoreline of St. Paul or St. George Islands, or in waters that are not more than 35 fathoms deep for 14 days before the scheduled opening date, and for 14 days after the closure of the snow crab season.

Pots may also be stored in waters deeper than 25 fathoms for 14 days following the closure of the commercial snow crab fishery. Within this 14-day period, validly registered groundfish vessels may have groundfish pots onboard or place them into the water before removing snow crab pots from the water or placing them in long term wet storage. Additional provisions of these regulations can be found in 5 AAC 35.527 TANNER CRAB POT STORAGE REQUIREMENTS FOR REGISTRATION J starting on page 194 of the CSRB .

Size Limit

Male snow crabs and male hybrid Tanner crabs conforming to the identification criteria described in 5 AAC 35.521 IDENTIFICATION OF BERING SEA TANNER CRAB (b) (CSRB page 192) must be 3.1 inches or greater in shell width to be retained. Legal size is measured at the widest point of the carapace. All female and undersize male crabs must be immediately returned unharmed to the sea, as outlined in 5 AAC 35.065 FEMALE AND UNDERSIZE TANNER CRAB on page 171 of the CSRB.

Onboard Observer Program

In addition to the pay-as-you-go mandatory observer coverage on at-sea processors, regulations implemented by the BOF in 1999 allow for placement of observers on catcher vessels. The department will be placing observers on approximately ten percent of the catcher vessels in the Bering Sea snow crab fishery. The cost of these observers will be paid with funds generated by cost recovery fishing for Bristol Bay red king crabs. Vessels will be selected at random after the preseason registration deadline and will be notified several days after the preseason registration deadline. Observers will not be placed on vessels less than 75 feet overall length. For additional information on the observer program contact the ADF&G observer program in Dutch Harbor.

HARVEST STRATEGY

The harvest strategy for Bering Sea snow crabs requires a minimum spawning biomass of 230.4 million pounds and a guideline harvest level of at least 15 million pounds for a commercial fishery to occur. The harvest strategy also specifies exploitation rates ranging from 10 to 22.5 percent of the mature male biomass. The exploitation rate increases as spawning biomass increases. The harvest is capped at a maximum of 58% of the exploited legal male abundance. Specifics of the Bering Sea snow crab harvest strategy are described in 5 AAC 35.517 BERING SEA C. *OPILIO* TANNER CRAB HARVEST STRATEGY on page 191 of the CSRB.

FISHERIES MANAGEMENT AND VOLUNTEER CATCH REPORTING

Prior to the 2000 season, the Bering Sea snow crab fishery was managed using weekly processor production reports. These reports were augmented by fishery performance data provided by observers onboard catcher processors and floating processors. Due to recent small GHLS, management of the fishery is now based on voluntary catch reports from fishers. These reports, sent every 24 hours by means of electronic mail, single side band radio, or telephone are processed daily by ADF&G in Dutch Harbor. Vessel operators report the number of pots hauled and the number of legal crabs harvested for a previously established 24-hour period. Inseason management allows the fishery manager to base decisions on actual, real-time fishery performance and weather conditions.

The 2004 snow crab fishery will be managed inseason, based on daily reports from fishers. Operators of all vessels are encouraged to participate in voluntary catch reporting. Reporting instructions and materials will be available at the time of tag purchase, registration and/or tank inspection. Inseason information will be used to monitor the daily harvest and to calculate daily catch rates used to project the date and time of the fishery closure. Advance notice for the fishery closure will be based upon actual and anticipated harvest rates. ADF&G will provide as much advance notice of a closure as possible, however, the fishery could close on as little as 24 hours advance notice. The closure will be announced on SSB radio frequency 4125 MHz, faxed and electronically mailed to the department's distribution list.

In some years, sea ice moves south and covers major portions of productive fishing areas in the Bering Sea. To achieve vessel safety, gear conflict, and biological conservation objectives, as provided in the Bering Sea/Aleutian Islands King and Tanner Crab Fishery Management Plan and to promote the safety of human life at sea as specified in National Standard 10 of the Magnuson-Stevens Fishery Conservation and Management Act, ADF&G could close areas where sea ice is a concern until conditions improve. In response to closure of an area due to sea ice, ADF&G has developed criteria to open or reopen the affected areas as follows:

1. The opening or reopening will occur, on a specified date, based on consultation with fishers and industry after the leading ice edge has retreated to a specified location;

2. ADF&G will review, on a weekly basis, the position of the ice edge and provide adequate notice of a reopening;
3. Other criteria for opening or reopening as deemed necessary for orderly fisheries management.

ADF&G may also temporarily delay the opening of the Bering Sea snow crab fishery if weather and sea conditions exist which could hamper the ability of the United States Coast Guard (USCG) to initiate and conduct search and rescue (SAR) operations for vessels which have become disabled or need emergency assistance while attempting to reach the fishing grounds and during the initial portion of the fishery. In the week prior to the scheduled fishery opening, staff from ADF&G, the National Weather Service and the USCG will confer and review daily wind and sea conditions, and the USCG SAR commander will determine if conditions allow for SAR operations. Weather delays will only be considered for fishery openings and would be implemented prior to tank inspections and reevaluated every 24 hours. Updates on fishery opening delays due to weather will be issued by department news release and announced on SSB radio frequency 4125 mHz, faxed and electronically mailed to the department's distribution list.

GUIDELINE HARVEST LEVEL AND OUTLOOK FOR THE 2004 FISHERY

Results of the NMFS 2003 trawl survey of the Eastern Bering Sea provide an estimated total mature snow crab biomass (TMB) of 306 million pounds, which is above the fishery threshold of 230.4 million pounds, but below the minimum stock size threshold of 460.8 million pounds. The 2003 survey estimate represents a decrease from the 2002 TMB estimate of 313 million pounds. The decrease in TMB was due largely to a sustained decrease in the mature male population. Mature male biomass decreased from 302 million pounds in 2001 to 223 million pounds in 2002 and 183 million pounds in 2003. Mature males continue to compose greater than 50% of the TMB. Given 2003 abundance estimates and harvest strategy requirements, an 11.5% exploitation rate was applied to the mature male biomass resulting in a 2004 Bering Sea snow crab GHF of 20.83 million pounds, a decrease from the 2003 GHF of 25.61 million pounds. Of this total, 1.56 million pounds have been allocated to the CDQ fishery and the remaining 19.27 million pounds will be available to the general fishery.

DEPARTMENT CONTACTS

Contacts for ADF&G in Dutch Harbor are Forrest R. Bowers, Area Management Biologist, Karla Granath, Assistant Area Management Biologist and Mary Schwenzfeier, Shellfish Observer Program Coordinator. The ADF&G phone number in Dutch Harbor is (907) 581-1239, and the fax number is (907) 581-1572.

Department contacts in Kodiak are Wayne Donaldson, Regional Shellfish/Groundfish Management Biologist; Mike Ruccio, Kodiak/Alaska Peninsula Area Shellfish/ Groundfish

Management Biologist; and Mike Cavin, Assistant Area Shellfish/Groundfish Biologist. The ADF&G phone number in Kodiak is (907) 486-1840, and the fax number is (907) 486-1824.

A complete listing of contact persons by agency and location is listed in Appendix A.

LITERATURE CITED

ADF&G (Alaska Department of Fish and Game). Commercial Shellfish Fishing Regulations, 2003-2005 edition. Division of Commercial Fisheries, Juneau.

Restrepo, V.R., G.G. Thompson, P.M. Mace, W.L. Gabriel, L.L. Low, A.D. MacCall, R.D. Methot, J.E. Powers, B.L. Taylor, P.R. Wade, and J.F. Witzig. 1998. Technical Guidance On the Use of Precautionary Approaches to Implementing National Standard 1 of the Magnuson-Stevens Fishery Conservation and Management Act. NOAA Technical Memorandum NMFS-F/SPO.

Table 1. Bering Sea District snow crab commercial harvest data, 1978/79-2003.

Year	GHL ^a	Number of			Harvest ^{b,c}	Pots Pulled	CPUE ^d	Deadloss ^e
		Vessels	Landings	Crab ^b				
1978/79		102	490	22,118,498	32,187,039	190,746	116	759,137
1979/80		134	597	25,286,777	39,572,668	255,102	99	228,345
1981	39.5-91.0	153	867	34,415,322	52,750,034	435,742	79	2,269,979
1982	16.0-22.0	122	803	24,089,562	29,355,374	469,091	51	1,092,655
1983 ^e	15.8	109	461	23,853,647	26,128,410	287,127	83	1,324,466
1984 ^e	49.0	52	367	24,009,935	26,813,074	173,591	138	798,795
1985 ^e	98.0	75	718	52,903,246	65,998,875	372,045	142	1,064,184
1986 ^e	57.0	88	992	76,499,123	97,984,539	543,744	141	1,378,533
1987 ^e	56.4	103	1,038	81,307,659	101,903,388	616,113	132	978,449
1988 ^e	110.7	171	1,285	105,716,337	135,354,637	776,907	136	3,260,020
1989 ^e	132.0	168	1,341	112,618,881	149,455,848	663,442	170	1,844,682
1990 ^e	139.8	189	1,565	128,977,638	161,821,350	911,613	141	1,796,664
1991 ^e	315.0	220	2,788	265,123,960	328,647,269	1,391,583	191	3,464,036
1992	333.0	250	2,763	227,376,582	315,302,034	1,281,796	177	2,325,852
1993	207.2	254	1,836	169,558,842	230,787,000	971,046	175	1,573,952
1994	105.8	273	1,293	114,779,014	149,775,765	716,524	160	1,799,323
1995	55.7	253	869	60,611,411	75,252,677	506,802	117	1,287,169
1996	50.7	234	766	52,912,823	65,712,797	520,651	102	1,333,014
1997	117.0	226	1,127	99,975,539	119,543,024	754,140	133	2,351,555
1998 ^f	225.9	229	1,767	186,543,734	243,341,381	891,268	207	2,893,945
1999 ^f	186.2	241	1,630	143,296,568	184,529,821	899,043	158	1,828,313
2000 ^f	26.4	229	287	23,265,802	30,774,838	170,064	137	338,057
2001 ^f	25.3	207	293	17,185,523	23,382,046	176,930	97	429,884
2002 ^f	28.5	189	403	23,303,975	30,252,501	307,666	76	582,589
2003 ^{f,g}	23.7	192	257	21,637,019	26,341,958	139,903	155	665,199

^aGuideline harvest level in millions of pounds.

^bDeadloss included.

^cIn pounds.

^dDefined as catch of legal crabs per pot pull.

^ePartial district and subdistrict closures.

^fGeneral fishery only, does not include CDQ harvest.

^gIncludes 181,457 pounds illegally harvested in Russian waters.

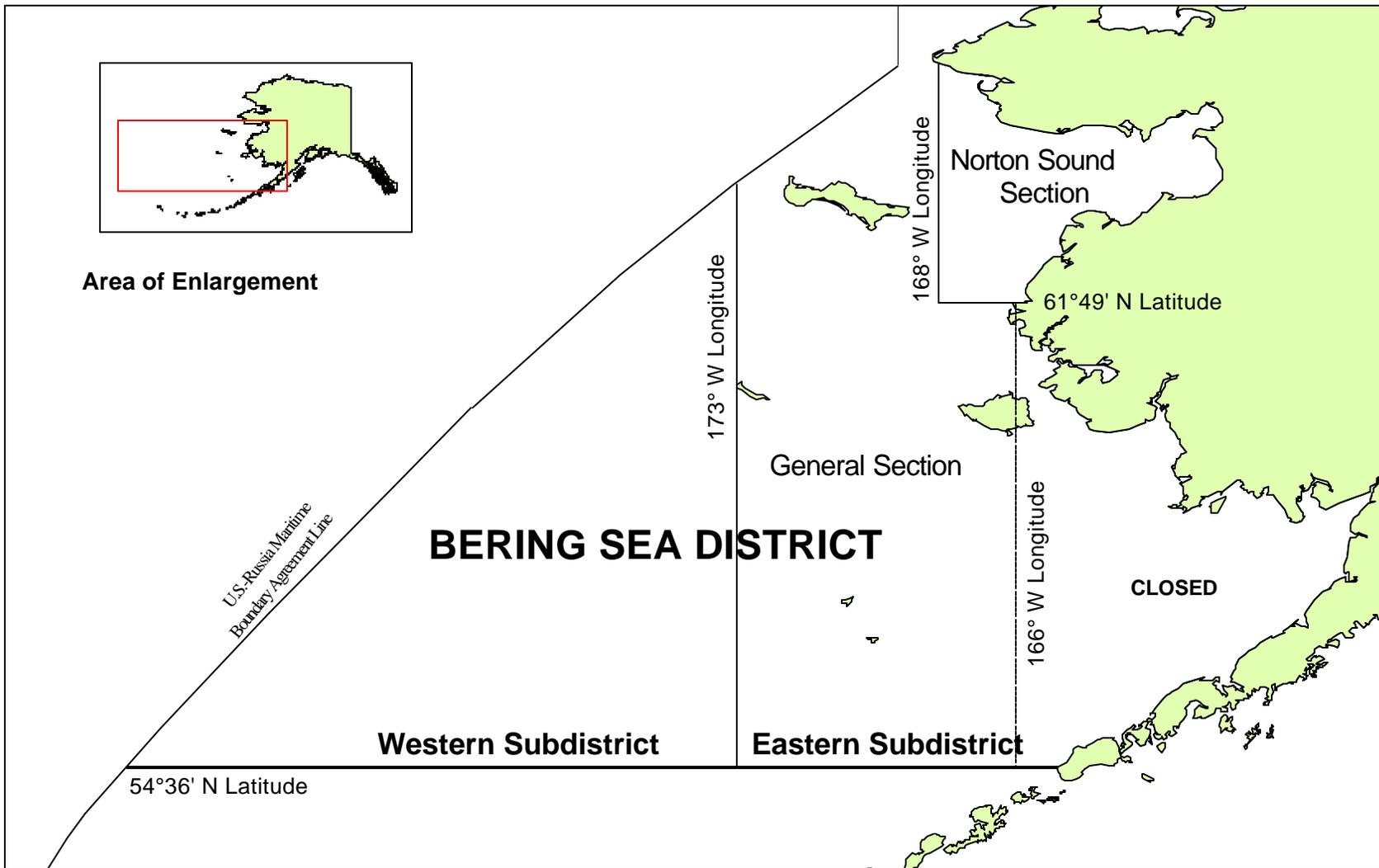


Figure 1. Bering Sea District of Tanner crab Registration Area J showing subdistricts and sections.

APPENDIX

Appendix A. Listing of contact persons, by agency and location.

Alaska Department of Fish and Game

Web site: <http://www.cf.adfg.state.ak.us/region4/finfish/shllfish/shlhom4.htm>

Dutch Harbor office

<i>Mail address:</i>	PO Box 920587 Dutch Harbor, Alaska 99692	<i>Physical address:</i>	2315 Airport Beach Rd. Suite 207 Dutch Harbor, Alaska 99692	Phone: (907) 581-1239 FAX: (907) 581-1572
----------------------	---	--------------------------	--	--

Forrest R. Bowers	Bering Sea/Aleutian Islands Area Biologist	forrest_bowers@fishgame.state.ak.us
Karla Granath	BSAI Assistant Area Management Biologist	karla_granath@fishgame.state.ak.us
Barbi Failor-Rounds	BSAI Groundfish/CDQ crab Management Biologist	barbi_failor@fishgame.state.ak.us
Mary Schwenzfeier	Shellfish Observer Program Coordinator	mary_schwenzfeier@fishgame.state.ak.us

Kodiak office

<i>Mail address:</i>	211 Mission Rd. Kodiak, Alaska 99615	<i>Physical address:</i>	211 Mission Rd Kodiak, Alaska 99615	Phone: (907) 486-1840 FAX: (907) 486-1824
----------------------	---	--------------------------	--	--

Wayne Donaldson	Westward Region Shellfish/Groundfish Biologist	wayne_donaldson@fishgame.state.ak.us
Mike Ruccio	Kodiak, Chignik, Alaska Peninsula Area Shellfish/Groundfish Biologist	mike_ruccio@fishgame.state.ak.us
Mike Cavin	Kodiak, Chignik, Ak. Pen. Assistant Area Shellfish/Groundfish Biologist	michael_cavin@fishgame.state.ak.us

Alaska State Troopers Bureau of Wildlife Enforcement

Web site: <http://www.dps.state.ak.us>

Dutch Harbor Post

<i>Mail address:</i>	PO Box 920848 Dutch Harbor, Alaska 99692	<i>Physical address:</i>	2315 Airport Rd. Suite 106 Dutch Harbor, Alaska 99692	Phone: (907) 581-1432 FAX: (907) 581-1407
----------------------	---	--------------------------	--	--

Robin Morrisett	robin_morrisett@dps.state.ak.us
-----------------	---------------------------------

Kodiak Post

<i>Mail address:</i>	2921 A Mill Bay Road Kodiak, Alaska 99615	<i>Physical address:</i>	2921 A Mill Bay Road Kodiak, Alaska 99615	Phone: (907) 486-4761 FAX : (907) 486-1707
----------------------	--	--------------------------	--	---

Lonnie Gonzalez	Sergeant	lonnie_gonzalez@dps.state.ak.us
-----------------	----------	---------------------------------

-Continued-

Appendix A. (page 2 of 2)

National Marine Fisheries Service

Web site: <http://www.fakr.noaa.gov/>

Dutch Harbor enforcement office

Mail address: PO Box 920368
Dutch Harbor, Alaska 99692

Physical address: 2315 Airport Beach Rd Suite 103
Dutch Harbor, Alaska 99692

Phone: (907) 581-2061
FAX : (907) 581-2064

Michael Mahaffey Assistant Special Agent in Charge

mike.mahaffey@noaa.gov

Dutch Harbor management office

Mail address: P. O. Box 920225
Dutch Harbor, Alaska 99692

Physical address: 2315 Airport Beach Rd. Suite 103
Dutch Harbor, Alaska 99692

Phone: (907) 581-2062
FAX : (907) 581-3356

Rance Morrison Fisheries Biologist

rance.morrison@noaa.gov

The Alaska Department of Fish and Game administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The department administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972.

If you believe you have been discriminated against in any program, activity, or facility, or if you desire further information please write to ADF&G, P.O. Box 25526, Juneau, AK 99802-5526; U.S. Fish and Wildlife Service, 4040 N. Fairfax Drive, Suite 300 Webb, Arlington, VA 22203 or O.E.O., U.S. Department of the Interior, Washington DC 20240.

For information on alternative formats for this and other department publications, please contact the department ADA Coordinator at (voice) 907-465-6077, (TDD) 907-465-3646, or (FAX) 907-465-6078.