The Kodiak District Tanner Crab (*Chionoecetes bairdi*) Fishery, 1985 to 2001

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Abstract

This document reviews the Kodiak District Tanner crab fishery, emphasizing the years 1985 to 2001. It presents a summary of harvest and earnings data, participation data, vessel ownership, and vessel characteristics data. The report also reviews fishery regulations and ADFG management strategies. The Kodiak District Tanner crab fishery occurred every year from 1967 to 1994. Harvests over this time period averaged slightly more than 12 million pounds per year. Following several years of poor crab recruitment and harvests, the fishery was closed in 1995. The fishery re-opened in January 2001 in the Northeast and Eastside Sections of the Kodiak District, with a combined guideline harvest level of 500,000 pounds. One hundred fifty-five permit holders recorded landings in the 2001 fishery. Data for this report were derived primarily from the Commercial Fisheries Entry Commission's fish ticket, permit holder, and vessel license databases.

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Introduction

The Kodiak District Tanner (*Chionoecetes bairdi)* crab fishery occurred in every year from 1967 to 1994. In 1995, the fishery was closed after several years of poor crab recruitment and harvests. The fishery remained closed until January 2001, when the season was re-opened with a historically low guideline harvest level of 500,000 pounds.

On June 11, 2001, the Commercial Fisheries Entry Commission (CFEC) received a petition signed by twenty-three Kodiak vessel operators requesting a limited entry program for the Kodiak Tanner crab fishery. The petition cites several reasons for limiting the fishery: 1) the 2001 season allowed only a 20-hour fishing period in one of the management sections, yet harvests in that section exceeded the guideline harvest by nearly 40%; 2) the Federal government's limited entry programs have left fewer fishing opportunities for new or unqualified vessels, and these vessels may enter the Kodiak Tanner crab fishery; and, 3) low abundance of crab in other parts of Alaska may lead to fishery closures, and displaced vessels from those fisheries could enter the Kodiak fishery.

CFEC has a statutory responsibility to respond to petitions for limited entry within 30 days of having received them. Within that time frame, the Commission must either deny the petition or propose limited entry and schedule public hearings. Because of this time restriction, the Commission denied the petition but asked the CFEC research staff to collect information that would provide them and the public with facts to help determine if limited entry would be appropriate or desirable for the fishery.

This report will examine the status of the Kodiak Tanner crab fishery. The report provides information on fishery regulations, recent and historical participation levels, harvest and earnings data, and vessel ownership and vessel characteristics. The final section discusses the feasibility of limited entry in the Kodiak District Tanner crab fishery and reviews facts, options, and opinions that may be important to consider in determining the appropriateness of limited entry.

Overview of the Tanner Crab Fishery in the Kodiak District

The state of Alaska has five Tanner crab registration areas: Southeastern, Yakutat, Prince William Sound, Cook Inlet, and Westward. The Kodiak District is part of the Westward Registration Area, and is divided into eight management sections: Northeast, Eastside, Southeast, Southwest, Westside, North Mainland, South Mainland, and Semidi Islands (see Figure 1.) These sections are comprised of both the state of Alaska waters, which extend out to 3 nautical miles off the coast, and waters of the Federal Exclusive Economic Zone (EEZ).

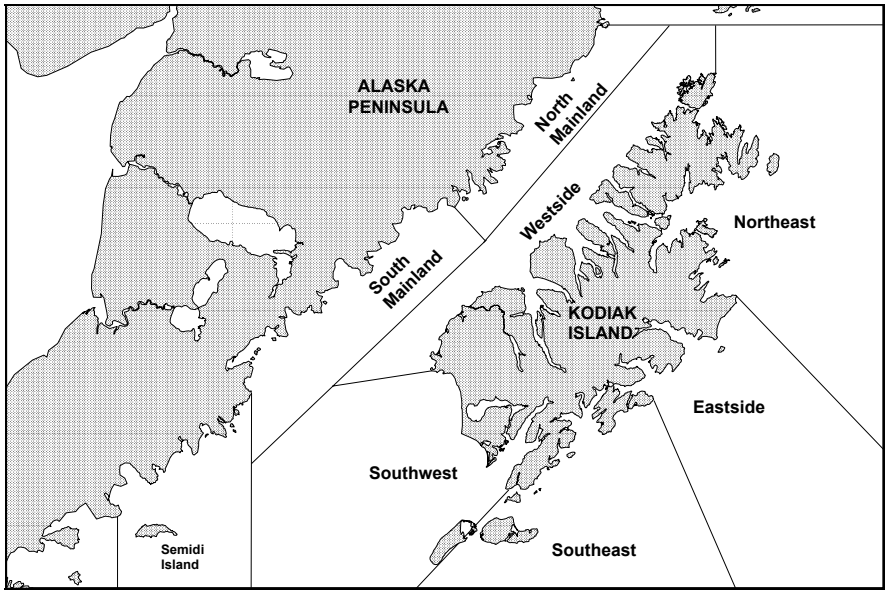

Figure 1. Kodiak District Tanner Crab fishing sections

Directed harvests of Tanner crab occurred in Kodiak in every year from 1967 through 1994. The peak harvest occurred in 1978, when 148 vessels landed 33.3 million pounds of crab. The crab resource - especially the number of legal-sized male crabs - declined in the 1980's, but prices continued to increase during that time and effort remained relatively high. The highest level of effort was in 1982, when 348 vessels recorded landings.[1] The number of legal Tanner crabs continued to decline through the early 1990's, and quotas and harvests decreased until the season was closed in 1995. (Figure 2.) This pattern of high crab abundance followed by declines in the 1980's and 1990's has also occurred in other places in the Gulf of Alaska. The Kodiak fishery remained closed until 2001, when it was re-opened in two of the eight management sections, with a combined guideline harvest level of 500,000 pounds.

[1] Jackson, Dave and M. Ruccio. *Status of Red King Crab and Tanner Crab Fisheries in the Kodiak and Alaska Peninsula Areas, A Report to the Board of Fisheries.* ADFG RIR No. 4K99-19. Feb. 1999

The Kodiak Tanner crab fishery has occurred primarily in January and February and has not overlapped calendar years since 1976. Crab meat recovery is high in the winter months, and the fishery ends before crabs begin to mate and molt in the early springtime.

Both the Alaska Department of Fish and Game (ADFG) and the Federal government have managed the Kodiak Tanner crab fishery. State and Federal jurisdiction over crab fisheries in the Gulf of Alaska has been, at times, both confusing and controversial. Originally, the state of Alaska had control over the management of the fisheries, but in 1978, the North Pacific Fishery Management Council (NPFMC) implemented a crab Fishery Management Plan (FMP) for waters of the US Exclusive Economic Zone (EEZ), from 3 to 200 miles offshore, while the state of Alaska retained control of the fishery out to 3 nautical miles. Conflicting regulations over the use of pot limits and superexclusive management areas in state waters led to legal action that prevented the state from enforcing these laws in some areas. Eventually, after many years of changes and amendments to the Federal FMP, the NPFMC repealed the FMP in 1987, and the state once again had the sole responsibility for management of the Tanner crab fisheries in the Gulf of Alaska.[2]

In 1973, ADFG began population assessments of Kodiak Tanner crab using pot gear. Eventually, biologists developed trawl surveys as a method for gathering population data, and since the mid-1980's trawling has been the principal method for determining crab abundance. ADFG has developed the trawl surveys to the point where they can provide actual population estimates for Tanner crab. These population estimates are used as a basis for establishing guideline harvests for the fishery.

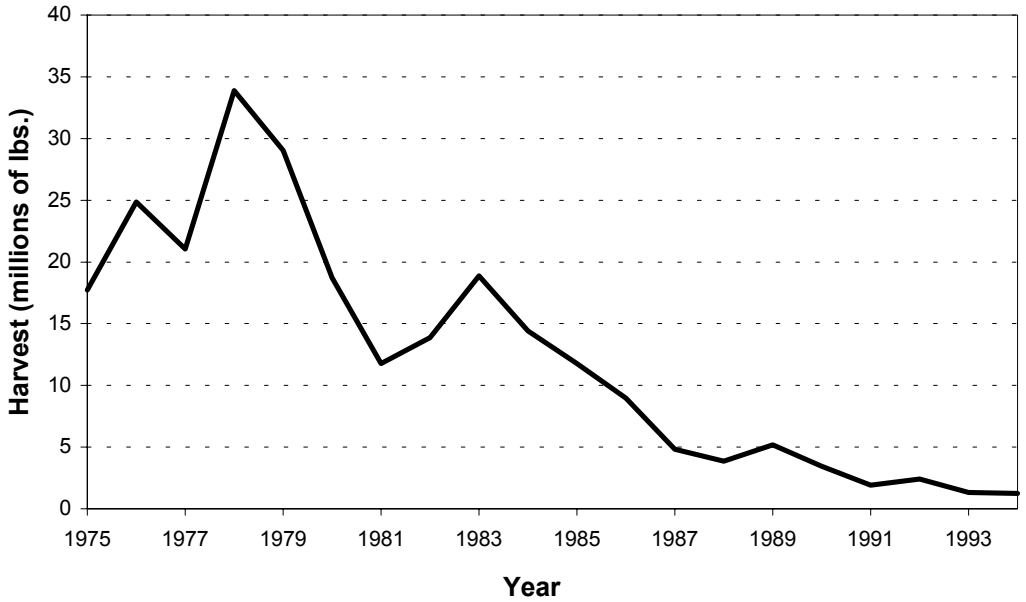

Figure 2. Kodiak District Tanner Crab Harvests, 1975 to 1994

[2] ibid.

Regulations

Introduction

In 1999, the Alaska Board of Fisheries (BOF) extensively restructured the regulations for the Kodiak Tanner crab fishery. The new regulations were developed mainly by ADFG and BOF working group committees, with the goal of creating opportunities to harvest Tanner crab in an orderly fashion but still allow adequate conservation and the rebuilding of crab stocks. The new regulations also put Kodiak Tanner crab management into compliance with the Board of Fisheries Policy on King and Tanner Crab Resource Management.[3]

Essentially, the new regulations establish minimum thresholds of crab abundance before fisheries can be opened, and also establish levels where crab populations are considered to be "rebuilding" or "rebuilt." The regulations lowered the harvest exploitation rates on crab, particularly when crab populations are "rebuilding", thereby making the current harvest strategies more conservative than in the past. The regulations established new pot limits and also contain provisions that should spread out and slow fishing effort. These provisions should help ADFG to keep harvests within guideline harvest levels, and are designed to help protect small areas from being overharvested.

Registration

All vessels must register with ADFG before participating in state Tanner crab fisheries. As mentioned above, the Kodiak District is part of the Westward Registration Area. The Tanner crab registration year is from August 1 to July 31.

The Westward Registration Area is a nonexclusive registration area, meaning that vessels and operators of vessels registered for this area may take Tanner crab only in other nonexclusive registration areas. Currently, Yakutat is the only other nonexclusive Tanner crab registration area. The other Alaska Tanner crab registration areas -- Southeast, Cook Inlet, and Prince William Sound -- are superexclusive registration areas. Vessels and vessel operators registered to superexclusive areas may not operate in any other Tanner crab area during the registration year.

A vessel registered to fish Tanner crab in the Kodiak District may not be registered to fish Tanner crab in the Chignik or South Peninsula Districts (Westward Area) for that year. At the time of registration, ADFG personnel inspect crab pots for regulatory compliance. They also inspect the tanks of vessels that have circulating seawater holds, to insure that no crabs are on board before the season begins.

[3] See Board of Fisheries, *Policy on King and Tanner Crab Resource Management;* 90-04-FB, March 23, 1990

Guideline Harvest Levels

ADFG conducts an annual trawl survey to estimate Kodiak Tanner crab populations. Annual estimates are evaluated based on the regulatory harvest strategy[4] to determine if thresholds are achieved and to determine the guideline harvest level (GHL).

If thresholds are achieved, guideline harvest levels (GHLs) are determined on the basis of abundance estimates for three classes of males that are defined in the harvest strategy: mature males (males ≥ 115-mm carapace width, CW), molting mature males (the number of mature-sized males after discounting a percentage of old-shelled animals), and legal males (males ≥ 5.5-in). ADFG regulations define distinct population thresholds of mature male crab for each Kodiak Section. If the current estimate of mature male crabs for a section exceeds the threshold, then a fishery may occur.

GHLs are determined by computing a targeted number of legal males to harvest and then applying an average weight of legal males to that number to express the GHL in pounds. When the current population of mature male crabs in a section is less than or equal to the long-term average of mature male crab abundance, the population is considered "rebuilding". In that case, the targeted number of legal males to harvest in the section is determined as the minimum of 10% of the molting mature males or no more than 30% of the legal males. But when a population of male crabs climbs to relatively high historical levels, and is greater than the long-term average of mature male crab abundance, the population is considered "rebuilt". In that case, the targeted number of legal males to harvest in the district is determined as the minimum of 20% of the molting mature males or no more than 30% of the legal males.

In either case, in the first year that a section is above the mature male threshold, the computed GHL is reduced by one-half; however, the minimum fishery GHL must still be achieved for a fishery to occur. This precautionary measure provides some insulation against statistical or sampling errors in the population estimates.

As stated, minimum thresholds of abundance must be achieved before a harvest can occur, and each management section within the Kodiak District has a distinct abundance threshold level. At least two sections must be above their minimum thresholds before a season can be opened in the Kodiak District. Additionally, for a harvest to occur, the combined GHL for all open sections must be greater than 400,000 pounds, and each section must have a minimum GHL of at least 100,000 pounds.

[4] See 5 AAC 35.020 and Appendix 1 of this document for regulations that specify how GHLs are determined in the Kodiak district.

Seasons and Hours for Operating Gear

The Kodiak District Tanner crab season opens by regulation on January 15 and closes on March 31; however, actual fishery closures may be adjusted by emergency order if special circumstances call for it. For example, managers may close the fishery before March 31 if they determine the GHL will be taken early, or if there are situations where continued fishing could threaten the long term health of the crab stock, such as when excessive bycatch of sublegal or female crab occurs.

There are special regulations for the South Mainland and Semidi Islands Sections which stipulate that seasons in adjacent sections determine the openings and closures in the South Mainland and Semidi Islands.

In 1999, the Board of Fisheries established new regulations specifying when fishing gear may be operated. Operation of gear, which includes setting or retrieving of pots, is prohibited from 8:00 pm until 7:59 am each day. This regulation is intended to help slow the pace of the fishery and to help ADFG with their in-season management.

Gear

Allowable gear during the Tanner crab fishery is limited to pots no greater than 10 feet long by 10 feet wide by 42 inches high. Regulations provide specific dimensions for escape mesh or ring openings in the pot to allow undersized crab and other animals to exit the pot.

Regulations provide limits on the number of pots. In the new regulations implemented in 1999, the Board of Fisheries decided that Kodiak pot limits will be based upon guideline harvest levels: when the Kodiak District GHL is less than 2.5 million pounds, no more than 30 pots may be used; when the GHL is between 2.5 and 5.0 million pounds, the pot limit is 40 pots; and when the GHL is greater than 5.0 million pounds, the pot limit increases to 60 pots.

To enforce the pot limits, each year ADFG issues buoy identification tags to permit holders. Each pot must have at least one buoy marked with an identification tag.

From 1993 until the regulatory changes in 1999, the pot limit was 75 pots. From 1990 through 1992, pot limits were on a sliding scale based upon the guideline harvest, and ranged from 75 pots to 150 pots.

Crab Minimum Size

Since 1976, regulations have allowed harvests only on male crab with a minimum carapace width of 5 ½ inches. This size limit was established based upon scientific evidence, and should allow male crabs to mate at least once before they are harvested.

Vessel Length

There are no limits on the lengths of vessels that may be used in the Kodiak Tanner crab fishery.

CFEC Permits

Since 1985, two different CFEC interim-use permits have been issued to persons who operate gear in the Kodiak Tanner crab fishery. Currently, a T09K permit applies to persons fishing from vessels less than 60 feet, and a T91K permit is required for persons fishing from vessels 60 feet or greater.

Harvests and Participation

The number of interim-use permit holders is the principal measure of participation in this report. A "participant" is defined as a permit holder who recorded a landing in the Kodiak Tanner crab fishery. In this section, there are tables and discussion of the numbers of participants by year. There also are tables that present the number of unique participants in the history of the fishery, and the number of permit holders from the 2001 season who also fished in previous years. In later sections of this report, the number of participating vessels is reported.

Harvest and participation data in this report may vary slightly from ADFG reports and prior CFEC reports. The data for this report come primarily from CFEC fish ticket and vessel license files. This data was edited for accuracy and certain selection criteria were imposed. Harvest data from fish tickets was limited to commercial *bairdi* Tanner crab catches (excluding deadloss and personal use) that were harvested in Kodiak statistical areas and landed on valid Kodiak Tanner crab permits (T09K and T91K). Other analysis resulted in edits to vessel ADFG numbers on fish tickets when the existing ADFG numbers did not match to the vessel license file. For these reasons, and also because the fish ticket and vessel license files continually change when errors are discovered and corrected, the figures in this report may vary slightly from other reports.

Harvests and Participation by Year

Table 1 shows the number of permit holders who made landings in the Kodiak Tanner crab fishery in each year from 1985 to 2001. The number of participants generally declined over the time period, as did the harvests and earnings from the fishery. A notable exception occurred in 1989, when the price for Tanner crab was high; combined with relatively high harvests, fishermen recorded the highest average earnings over the time period. The highest number of permit holders with landings was in the following year in 1990, when 237 persons recorded landings.

Table 1 also displays the average, median, and totals for pounds landed and earnings in the Kodiak Tanner crab fishery from 1985 through 2001. Earnings in the 2001 fishery are based upon an estimate of $2.30 per pound, which is an informal estimate made from fish ticket records and personal communication with ADFG biologists. CFEC will do a more formal price estimate for Tanner crab later in 2001; therefore, this price and the corresponding earnings estimates should at this time be considered preliminary.

As noted, earnings were highest in 1989 when prices were also the highest over the time period. The greatest number of pounds landed occurred in 1985, but it is important to note that harvests at that time were already in decline from the historically high harvests that occurred in the late 1970's. Also note that in many years there is a large difference between the average and median pounds, indicating a skewness toward small landings and suggesting there was a relatively small group of highliner fishermen who increased the averages.

Table 1.
Kodiak Tanner Crab Commercial Catch
Total, Mean, and Median Pounds and Earnings per Individual

Year	*Persons*	*Average Pounds*	*Median Pounds*	*Total Pounds*	*Average Earnings*	*Median Earnings*	*Total Earnings*	*Ex-Vessel Price /Lb.*
1985	225	52,343	36,965	11,777,140	$ 81,708	$ 57,702	$ 18,384,342	$ 1.560
1986	239	37,546	28,886	8,973,394	$ 69,075	$ 53,150	$ 16,508,847	$ 1.840
1987	196	24,591	16,136	4,819,801	$ 60,341	$ 39,598	$ 11,826,866	$ 2.450
1988	178	21,727	11,289	3,867,381	$ 52,427	$ 27,239	$ 9,331,991	$ 2.410
1989	176	29,550	15,875	5,200,743	$ 90,310	$ 48,546	$ 15,894,474	$ 3.060
1990	237	14,523	10,410	3,441,860	$ 34,636	$ 24,828	$ 8,208,823	$ 2.380
1991	140	13,693	9,643	1,917,089	$ 22,581	$ 15,900	$ 3,161,280	$ 1.650
1992	147	16,299	10,429	2,396,003	$ 37,472	$ 23,976	$ 5,508,411	$ 2.300
1993	141	9,346	8,314	1,317,730	$ 19,701	$ 17,526	$ 2,777,775	$ 2.110
1994	132	9,200	5,502	1,214,414	$ 22,761	$ 13,611	$ 3,004,460	$ 2.470
2001	155	3,232	1,994	500,883	$ 7,432	$ 4,586	$ 1,152,031	$ 2.300

Number of Unique Participants

Table 2 shows the cumulative number of unique participants in the Kodiak Tanner crab fishery. The number of unique participants is shown for the 2001 season, and the cumulative number of unique participants is shown for each year going back to the 1985 season. The participants are counted in the first year in which they made landings, and each person is counted only once over the time period, regardless of how many years they made landings. Note again, there was no commercial Kodiak Tanner crab fishery from 1995 to 2000.

Table 2.
Cumulative Number of Unique Participants by Year

Year	*Cumulative Unique Individuals*
2001	155
1994	232
1993	265
1992	297
1991	337
1990	422
1989	447
1988	485
1987	520
1986	588
1985	623

The table indicates that from 2001 to 1985 there were 623 unique persons who recorded landings in the Kodiak Tanner crab fishery. From 2001 to 1992, which includes the most recent four years of the fishery, 297 unique persons recorded landings in the fishery. Certain years indicate relatively large increases in the number of first-time participants. For example, relatively large numbers of persons entered the fishery for the first time between the 1994 and 2001 seasons, and also between the 1990 to 1991 seasons.

Participation in Other Years by 2001 Permit Holders

Table 3 provides detail on the group of 155 individuals who made landings in 2001, showing how many of these persons also recorded landings over any of the seasons from 1991 to 1994. Slightly more than half of the permit holders (52.3%, or 81 individuals) with landings in 2001 did not record landings in any of the years from 1991 to 1994. Of the 74 individuals who had landings in both the 2001 season and the 1991 – 1994 period, 15 had landings in 1 of the 4 years between 1991 and 1994, 13 had landings in 2 of the 4 years, 20 in 3 of the 4 years, and 26 recorded landings in all 4 years.

Table 3.
Persons Who Fished in 2001, and the Number Who Fished 0 to 4 Seasons Over the 1991 - 1994 Period

Number of Seasons Fished 1991-1994	*Number of Persons*	*Percent*
0	81	52.3
1	15	9.7
2	13	8.4
3	20	12.9
4	26	16.8

Residency

Table 4 shows the number and percentage of Alaska residents and nonresidents who have participated in the Kodiak Tanner crab fishery. When an individual purchases a CFEC interim-use permit, they certify their residency on the permit application form. The data in Table 4 is based upon this information.

Since 1985, the vast majority of permit holders who have recorded landings in the Kodiak Tanner crab fishery have been Alaska residents. From 1985 through 2001, an average of 93.4% of the total participants resided in Alaska. The proportion of Alaska residents in the fishery has varied little over the time period.

Table 4.
Kodiak Tanner Crab Fishery
Number and Percentage of Alaska Residents and Non-Residents
As Determined by Residency Claim

	Residency				
	Nonresident		*Resident*		*Total*
Year	*People*	*Percent*	*People*	*Percent*	*People*
1985	18	8.0	207	92.0	225
1986	37	15.5	202	84.5	239
1987	14	7.1	182	92.9	196
1988	7	3.9	171	96.1	178
1989	4	2.3	172	97.7	176
1990	8	3.4	229	96.6	237
1991	1	0.7	139	99.3	140
1992	5	3.4	142	96.6	147
1993	5	3.5	136	96.5	141
1994	4	3.0	128	97.0	132
2001	19	12.3	136	87.7	155

Vessels

Harvest and Gross Earnings by Vessel

Over the eleven seasons from 1985 through 2001, the total number of vessels in the Kodiak Tanner crab fishery ranged from 233 in 1990 to 130 in 1994. These figures closely correspond to the number of persons in the fishery; however, in each year there are slightly less vessels than persons, indicating a small rate of multiple permit holders making landings from one vessel.

Harvest and earnings data by vessel are presented in Table 5. These data are similar to the harvest and earnings data reported by interim-use permit holder in Table 1.

Vessel Length

Table 6 summarizes vessels that have fished in the Kodiak Tanner crab fishery by year and vessel length. Vessels lengths are shown in 10-foot increments.

Vessels from 40 to 49 feet long make up the largest percentage of vessels fished in each year from 1985 through 2001. The proportion of vessels in this class tended to increase in each year until 2001. Vessels from 30 to 39 feet were the second most common classification, followed by 50 to 59 foot vessels.

In each year, a significant portion of the fleet is made up of vessels over 80 feet long. From 1985 through 1994, the use of large vessels appears to have decreased, but in 2001 the incidence of vessels 80 feet or over increased to 15.2%.

Table 5.
Kodiak Tanner Crab Commercial Catch
Total, Mean, and Median Pounds and Earnings per Vessel

Year	*Vessels*	*Average Pounds*	*Median Pounds*	*Total Pounds*	*Average Earnings*	*Median Earnings*	*Total Earnings*	*Ex-Vessel Price/Lb.*
1985	214	55,033	37,561	11,777,140	$ 85,908	$ 58,633	$ 18,384,342	$ 1.560
1986	232	38,678	29,358	8,973,394	$ 71,159	$ 54,018	$ 16,508,847	$ 1.840
1987	188	25,637	16,349	4,819,801	$ 62,909	$ 40,120	$ 11,826,866	$ 2.450
1988	176	21,974	11,305	3,867,381	$ 53,023	$ 27,279	$ 9,331,991	$ 2.410
1989	171	30,414	15,940	5,200,743	$ 92,950	$ 48,745	$ 15,894,474	$ 3.060
1990	233	14,772	10,457	3,441,860	$ 35,231	$ 24,940	$ 8,208,823	$ 2.380
1991	136	14,096	9,797	1,917,089	$ 23,245	$ 16,155	$ 3,161,280	$ 1.650
1992	143	16,755	11,233	2,396,003	$ 38,520	$ 25,825	$ 5,508,411	$ 2.300
1993	140	9,412	8,443	1,317,730	$ 19,841	$ 17,798	$ 2,777,775	$ 2.110
1994	130	9,342	5,603	1,214,414	$ 23,111	$ 13,862	$ 3,004,460	$ 2.470
2001	144	3,478	2,227	500,883	$ 8,000	$ 5,122	$ 1,152,031	$ 2.300

Table 6.
Kodiak Tanner Crab Fishery
Vessels With Landings, by Vessel Length and Year

Year	*under 20 ft.*		*20 – 29 ft.*		*30 - 39 ft.*		*40 - 49 ft.*		*50 - 59 ft.*		*60 – 69 ft.*		*70 – 79 ft.*		*80 - 89 ft.*		*90 – 100 ft.*		*Over 100 ft.*		*Unknown*		*Total*
	Vessels	*%*	*Vessels*	*%*	*Vessels*	*%*	*Vessels*	*%*	*Vessels*	*%*	*Vessels*	*%*	*Vessels*	*%*	*Vessels*	*%*	*Vessels*	*%*	*Vessels*	*%*	*Vessels*	*%*	*Vessels*
1985	1	0.5	7	3.3	43	20.1	59	27.6	18	8.4	17	7.9	17	7.9	20	9.3	20	9.3	12	5.6	0	0	214
1986	0	0	4	1.7	49	21.1	64	27.6	21	9.1	19	8.2	22	9.5	18	7.8	13	5.6	21	9.1	1	0.4	232
1987	0	0	5	2.7	49	26.1	61	32.4	15	8.0	13	6.9	16	8.5	16	8.5	11	5.9	2	1.1	0	0	188
1988	0	0	7	4.0	59	33.5	60	34.1	13	7.4	8	4.5	9	5.1	13	7.4	5	2.8	2	1.1	0	0	176
1989	0	0	5	2.9	53	31.0	65	38.0	14	8.2	8	4.7	8	4.7	12	7.0	5	2.9	1	0.6	0	0	171
1990	0	0	7	3.0	45	19.3	93	39.9	23	9.9	16	6.9	16	6.9	22	9.4	9	3.9	2	0.9	0	0	233
1991	0	0	4	2.9	33	24.3	57	41.9	21	15.4	6	4.4	9	6.6	4	2.9	1	0.7	1	0.7	0	0	136
1992	0	0	1	0.7	31	21.7	64	44.8	18	12.6	7	4.9	11	7.7	9	6.3	1	0.7	1	0.7	0	0	143
1993	0	0	1	0.7	31	22.1	61	43.6	22	15.7	9	6.4	12	8.6	3	2.1	0	0	1	0.7	0	0	140
1994	0	0	1	0.8	29	22.3	61	46.9	24	18.5	3	2.3	7	5.4	4	3.1	0	0	1	0.8	0	0	130
2001	0	0	4	2.8	24	16.7	43	29.9	42	29.2	4	2.8	5	3.5	11	7.6	10	6.9	1	0.7	0	0	144

Vessel Ownership

Table 7 presents three categories of ownership for vessels that recorded landings in the Kodiak Tanner crab fishery: owner operated vessels, corporate owned vessels, and all other vessels (neither corporate owned nor owner operated). A vessel is considered owner operated if any of the permit holders who recorded landings from the vessel were also the vessel owner. Corporate owned vessels are those that indicate a corporate ID number as the vessel owner. "Other vessels" are those where none of the permit holders who made landings from the vessel was the vessel owner, nor is the vessel listed as corporate owned.

Over all years going back to 1985, 69.7% of the vessels that made landings in the fishery were owner operated. Corporate entities or partnerships owned 12.9% of the vessels that recorded landings in the fishery since 1985.

The percentage of vessel owner/operators may be under-estimated in the table because it is uncertain which individuals own corporate vessels. In many instances, the vessel operator may hold a degree of ownership in the corporation or partnership. Corporations may be owned by a single person, or the permit holder may hold a majority interest in the corporation.

Table 7.
Kodiak Tanner Crab Fishery Vessels
Number and Percentage of Owner Operated, Corporate-Owned, and All Other Vessels

Year	*Total Vessels*	*Total Owner / Operated*	*% Owner / Operated*	*Total Corporate*	*% Corporate*	*Total Other*	*% Other*
1985	214	132	61.7	31	14.5	51	23.8
1986	232	142	61.2	35	15.1	55	23.7
1987	188	136	72.3	21	11.2	31	16.5
1988	176	134	76.1	21	11.9	21	11.9
1989	171	126	73.7	18	10.5	27	15.8
1990	233	157	67.4	30	12.9	46	19.7
1991	136	112	82.4	10	7.4	14	10.3
1992	143	103	72.0	18	12.6	22	15.4
1993	140	100	71.4	16	11.4	24	17.1
1994	130	104	80.0	11	8.5	15	11.5
2001	144	84	58.3	35	24.3	25	17.4
All Years Average			67.7		12.9		17.4

Issues Surrounding Limited Entry

Opening the Kodiak Tanner crab fishery in 2001 was controversial. ADFG's population estimates indicated increases in the number of crabs, and increases in multiple age classes of juvenile crabs. These increases put the estimated number crab over the regulatory thresholds for having a fishery.

However, many fishermen were concerned that the resource was still not strong enough to sustain a harvest and the fishery was opening too soon. Fishermen were also concerned that effort would be high -- that ADFG would be unable to keep harvests within the limits of the quota and that financial returns to individual fishermen would be too small. Some persons speculated that effort would be high because fishermen would be anticipating limited entry and would take part in the fishery only to establish a record of participation. Another concern came from fishermen who use pot gear for Pacific cod in the January federal season. By regulation, persons or vessels that fish in the Kodiak Tanner crab fishery may not operate pot gear in other fisheries in Kodiak for 14 days before and after the Tanner fishery.[5]

By regulation, ADFG population estimates must exceed established thresholds before a fishery can occur. The new regulations also lowered exploitation rates on legal crab. Additonally, the regulations contain conservative adjustments to GHLs when fisheries are opened for the first time after being closed. Furthermore, ADFG biologists point out that strategies for "stockpiling" legal crab are not always valid; legal crab in one year are not necessarily available for harvest in subsequent years.

The 2001 fishery lasted 20 hours in the Eastside section, and slightly more than 4 days in the Northeast section. Harvests exceeded quotas in the Eastside section by approximately 100,000 pounds; however, ADFG managers did not express serious concern for this overharvest. They pointed out that the overall district harvest was very close to the GHL, and regulatory conservation measures combined with a 10% exploitation rate likely protected crab stocks. They also mentioned that the population contained a relatively high population of mature male crabs that were not harvested because they were not yet legal-sized.

Table 8.
2001 Kodiak Tanner Crab Fishery,
GHLs and Harvests by Management Section

Management Section	*GHL (lbs.)*	*Harvest*
Northeast	225,000	128,527
Eastside	275,000	372,356
Total	500,000	500,883

It has been reported that before the season there was significant discussion among fishermen about recording landings to establish a record of participation in the event that the fishery becomes limited. Also mentioned was that a few fishermen – particularly those who fished the Eastside section – did fairly well in the fishery, and recorded good catches. Other fishermen did poorly, and were hampered by the weather, the low quotas, and the short duration of the fishery.

[5] See 5 AAC 35.053

The Alaska Board of Fisheries (BOF) is scheduled to hear proposals for the Kodiak Tanner crab fishery in March of 2002. There are several proposals to change regulations to help slow the pace of the fishery and to make it easier to control. ADFG has submitted two proposals that directly affect in-season management: one is to shorten the allowable hours for operating gear from 12 hours to 10 hours daily. ADFG also proposed pre-season registration for management sections, which would give them estimates of effort in each section before the season opens. The proposal asks for a check-in and check-out procedure for vessels, so ADFG can track vessel movement and effort in-season.

Three other significant proposals have come to the BOF from the public. The first proposal seeks to move the fishery opening date to be the same as the federal trawl fishing season for pollock and cod, which is currently January 20. Another proposal asks to move the fishery opening date to March 15, when the weather is better. A third proposal would do three things: establish superexclusive registration for the entire Kodiak District; require vessels to register and to fish in only one section within the Kodiak District; and change the way pot limits are calculated. The proposed pot limit formula is complicated; the proposal links the number of registered boats and GHLs with estimates of catch per unit effort. The proposal seeks to slow the pace of the fishery and reduce the number of pot lifts, especially when guideline harvests are low and the number of participating boats is relatively high. The proposed sliding scale could reduce the allowable number of pots per vessel to less than the current lower limit of 30. The maximum number of pots would be 60, which is the same as the current maximum.

Three more current proposals may affect the Kodiak Tanner crab fishery. Each proposal seeks to change the *opilio* Tanner crab season in the Bering Sea. The current Bering Sea opening date is January 15, but the proposals would move the date to either March 15 or April 1. Along with the Kodiak District, the Bering Sea District is in the Westward Tanner crab registration area. Under current regulations, a boat may be registered in only one district at a time; however, no state regulations prevent a boat from moving between the Bering Sea and Kodiak.[6] If the Kodiak Tanner crab opening remains at January 15, and district superexclusive regulations are not implemented, then changing the Bering Sea opening to a later date could make Kodiak crab fishing more feasible and/or attractive for more boats.

The BOF expects to receive a petition from Kodiak fishermen requesting an agenda change to hear Kodiak Tanner crab proposals earlier than the scheduled March meeting. This could allow regulatory changes to be in effect before a Tanner crab season begins in 2002. If the BOF receives the letter, they will examine the petition at their October work session meeting, and at that time they will decide if a schedule change is appropriate.

At this writing, summer surveys of Tanner crab populations are still ongoing. Preliminary observations suggest record high numbers of small, immature crab in the population, but ADFG biologists have indicated that the number of legal and mature male crab they observed was below

[6] A federal fishery management plan (FMP) for the Bering Sea king and Tanner crab fisheries delegates management of these fisheries to the state Department of Fish and Game; however, under the FMP, the federal government retains jurisdiction over limited access in the fisheries. Both fisheries are currently under a federal license limitation program.

levels observed in 2000. They are unsure whether the population estimate will exceed thresholds and that there will be enough crab for a fishery in 2002. Before the October Board of Fisheries work session, ADFG plans to work through their survey data to provide population estimates and to determine if a fishery will be held in 2002. If there will not be a 2002 fishery, then there will not be a need to reschedule proposals for Kodiak regulation changes.

Whereas ADFG managers have a responsibility primarily for conservation and the sustained yield management of the resource, under AS 16.43 the Commercial Fisheries Entry Commission also has a duty to promote the economic well being of Alaska's fisheries:

> *"... the purpose of this chapter is to promote the conservation and the sustained yield management of Alaska's fishery resource and the economic health and stability of commercial fishing in Alaska by regulating and controlling entry into the commercial fisheries..."*[7]

If effort grows to the point where ADFG needs to keep the fishery closed to protect the resource from large overharvests, then economic returns to fishermen are lost for that period. Furthermore, high numbers of vessels will likely result in short fishery openings, especially when guideline harvests are relatively low and despite conservative pot limits. Short, intense fisheries are often economically inefficient and wasteful, and large portions of the fleet often record poor harvests, primarily because they are unable to locate good fishing during the limited fishing time. Short fisheries also make it harder for ADFG to manage for a GHL and thereby increase the likelihood they will need to keep the fishery closed to protect the resource from overharvest.

However, when CFEC issues limited entry permits, it must also take into account each fisherman's economic dependency on the fishery.[8] It may be hard to judge dependency in this fishery where only one season has occurred since 1995 and where roughly 50% of the participants in the 2001 fishery had no prior history of landings since 1991.

Forecasting the potential growth for harvests in this fishery can only be very speculative. It is conceivable that harvests as high as 30 million pounds could occur if one uses historical harvests as an upper bound for the extent to which the fishery could grow. In the past (1973), as few as 105 boats recorded harvests at this level, albeit with no limit on the number of pots that could be fished. Average harvests in the declining fishery over the 1970-1994 period were approximately 13.3 million pounds. Again, it is unknown whether crab populations will rebound and harvests will ever again reach that level, especially with the new lower exploitation rates.

If the fishery continues on an annual basis and prices stay relatively high, at least some growth in effort will probably occur; however, it is difficult to estimate the extent to which effort will increase. Poor salmon prices and declining harvests in other fisheries will likely result in interest in the Kodiak Tanner crab fishery. However, large crab boats may not be attracted to the Kodiak

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[7] See AS 16.43.010.
[8] See AS 16.43.250 (1) and AS 16.43.250 (1) (b)

fishery because pot limits in the fishery are small, and it may not be economical for them to operate under those conditions.

People have questioned the appropriateness of current CFEC limited entry statutes in other fisheries. In some fisheries, hired skippers operate a high proportion of the vessels. In these situations, people have raised concerns over the fairness of issuing permits to skippers who may have recorded substantial landings, but who did not own the vessels. Data for the Kodiak Tanner fishery indicates that since 1985, slightly more than two-thirds of the vessels have been owner operated. Since 1991, the data indicates that 72.4% of the vessels are owner operated. However, the data likely under-estimates owner/operator situations. Since 1991, 13.0% of the vessels in the fishery appear to be corporate owned. But many of the vessels listed as corporate owned on the vessel license file are likely one-owner corporations, or they are majority owned by permit holders from the fishery. The data also indicates that 14.4% of the vessels since 1991 have been neither corporate owned nor owner operated.

The Commission should also address the issue of state and federal management jurisdiction before considering limited entry in a fishery that occurs in both state and federal waters. Currently, the state manages the Kodiak Tanner crab fishery and will continue to do so in the absence of a federal crab fishery management plan. The federal government has no current plans to implement a fishery management plan for Tanner crab in the Gulf of Alaska. However, if this were to change, the state would continue to regulate vessels - including limiting access - in the federal waters off Kodiak only if the federal management plan delegated that authority.

Appendices

The following appendices provide background information for the Kodiak Tanner crab fishery.

Appendix 1: ADFG regulations for the Kodiak Tanner crab fishery.

Appendix 2: Petition to CFEC to limit the Kodiak Tanner crab fishery.

Appendix 1.

5 AAC 35.507 KODIAK, CHIGNIK, AND SOUTH PENINSULA DISTRICTS C. BAIRDI TANNER CRAB, HARVEST STRATEGIES.

(a) In the Kodiak, Chignik, and South Peninsula Districts, a commercial C. bairdi Tanner crab fishery may open only if analysis of preseason survey data indicates that the subject population

(1) meets or exceeds the threshold level of mature male abundance specified in (b) of this section for the district or sections of a district, which is one-half the long-term average of mature male abundance; and

(2) in the Chignik or South Peninsula Districts, is sufficient to provide a guideline harvest level of 200,000 pounds or more as calculated under (d) of this section; or

(3) in the Kodiak District, is sufficient to provide a guideline harvest level of 400,000 pounds or more as calculated under (d) of this section; or

(4) in a section of the Kodiak District, is sufficient to provide a guideline harvest level of 100,000 pounds or more as calculated under (d) of this section.

(b) The threshold levels of mature male abundance, in numbers of crab, for the following districts and sections of a district are:

(1) Kodiak District:	
(A) Northeast Section	1,123,000
(B) Eastside Section	1,552,000
(C) Southeast Section	733,000
(D) Southwest Section	1,236,000
(E) Westside Section	764,000
(F) North Mainland Section	1,469,000
(2) Chignik District:	973,000
(3) South Peninsula District:	1,375,000

(c) In the Kodiak District, at least two sections of the Kodiak District must meet or exceed the threshold level requirements in (a) of this section before a fishery may be opened in the district. In the South Mainland Section, the fishery will open when at least two adjacent sections are open and will close when both of the adjacent sections are are closed. In the Semidi Island Section, the fishery will open when the Southwest Section and the Chignik District are open and will close when both the Southwest Section and Chignik District are closed.

(d) If the commercial C. bairdi Tanner crab fishery in the Chignik District, South Peninsula District, or a section of the Kodiak District is opened under (a) or (c) of this section and the threshold level of abundance

(1) is equal to or less than the long-term average of mature male abundance, the guideline harvest level will be no more than 10 percent of the molting mature male abundance and no more than 30 percent of the legal size male abundance;

(2) exceeds the long-term average of mature male abundance, the guideline harvest level will be no more than 20 percent of the molting mature male abundance and no more than 30 percent of the legal size male abundance.

(e) If the commercial fishery in any district or section of a district is not opened because it did not meet the threshold level requirements of (a) of this section, the fishery will reopen the following season only if an analysis of preseason survey data indicates that the population is sufficient to provide a guideline harvest level that is twice or more the poundage of the guideline harvest levels listed in (a)(2) - (4) for the district or section, and only half of the season's calculated guideline harvest level may be harvested. If any district or section remains closed for an additional season only because the increased guideline harvest level requirements of this subsection are not met, the fishery may open the following season if the threshold level requirements of (a) are met.

(f) In implementing this harvest strategy, the board directs the department to consider the reliability of the estimates of abundance of C. bairdi Tanner crab, the manageability of the fishery, and other factors deemed necessary to be consistent with sustained yield principles, and to use the best scientific information available.

(g) The long-term average of mature male abundance, in numbers of crab, for each of the following districts and sections of districts are:

(1) Kodiak District:

(A) Northeast Section	2,246,000
(B) Eastside Section	3,104,000
(C) Southeast Section	1,466,000
(D) Southwest Section	2,472,000
(E) Westside Section	1,528,000
(F) North Mainland Section	2,938,000
(2) Chignik District:	1,946,000
(3) South Peninsula District:	2,750,000

(h) For the purposes of this section,

(1) "long-term average of mature male abundance" means the long-term average of the estimated abundance of male C. bairdi Tanner crab greater than 114 millimeters in carapace width;

(2) "molting mature male abundance" means the estimated abundance of 100 percent of newshell, and 15 percent of oldshell C. bairdi Tanner crab that are more than 114 millimeters in carapace width.

History - Eff. 8/8/99, Register 151; am 3/11/2001, Register 157

Authority - AS 16.05.251
5 AAC 35.508

Appendix 2.

Venturess, Inc.
James R. Horn
1776 Mission Road
Kodiak, Alaska 99615

RECEIVED
JUN 11 2001
CFEC

June 4, 2001

Bruce Twomely
State of Alaska
Commercial Fisheries Entry Commission
8800 Glacier Hwy, #109
Juneau, Alaska 99801

Dear Commissioner,

We the undersigned Kodiak Tanner Crab fishermen request the Entry Commission limit the Kodiak Tanner Crab fishery with a cut-off prior to the 2002 fishery. The Tanner fishery reopened in 2001 after being closed since 1994. The fishery was reopened after a pot limit of 30 pots and a 8 a.m. to 8 p.m. daily fishing period was established by the Board of Fish, and minimum thresholds were observed by ADF&G. Two sections of the Island were opened, and even with a reduced pot limit the Eastside Section closed after 20 fishing hours and exceeded the harvest forecast by 104,763 lbs. The season closed prior to the 8 a.m. opening and ADF&G required fishermen to deliver the crab on board before we could clean out pots and unbait gear leaving gear fishing, and adding to fuel expenses because we couldn't take a load of pots to town. Leaving baited gear on the grounds, we had 7 days to return and retrieve our gear, added to crab mortality.

Considering the American Fisheries Act, IFQ program, the proposed Federal Buy-Back program in the Bering Sea and other programs nationwide to rationalize fisheries and end the race for fish, it would be irresponsible to leave this fishery unprotected. The very real possibility of no Bering Sea Opilio season, and the threat of the ESA closing down, or severely limiting fisheries, the potential for many more entrants in this fishery exist.

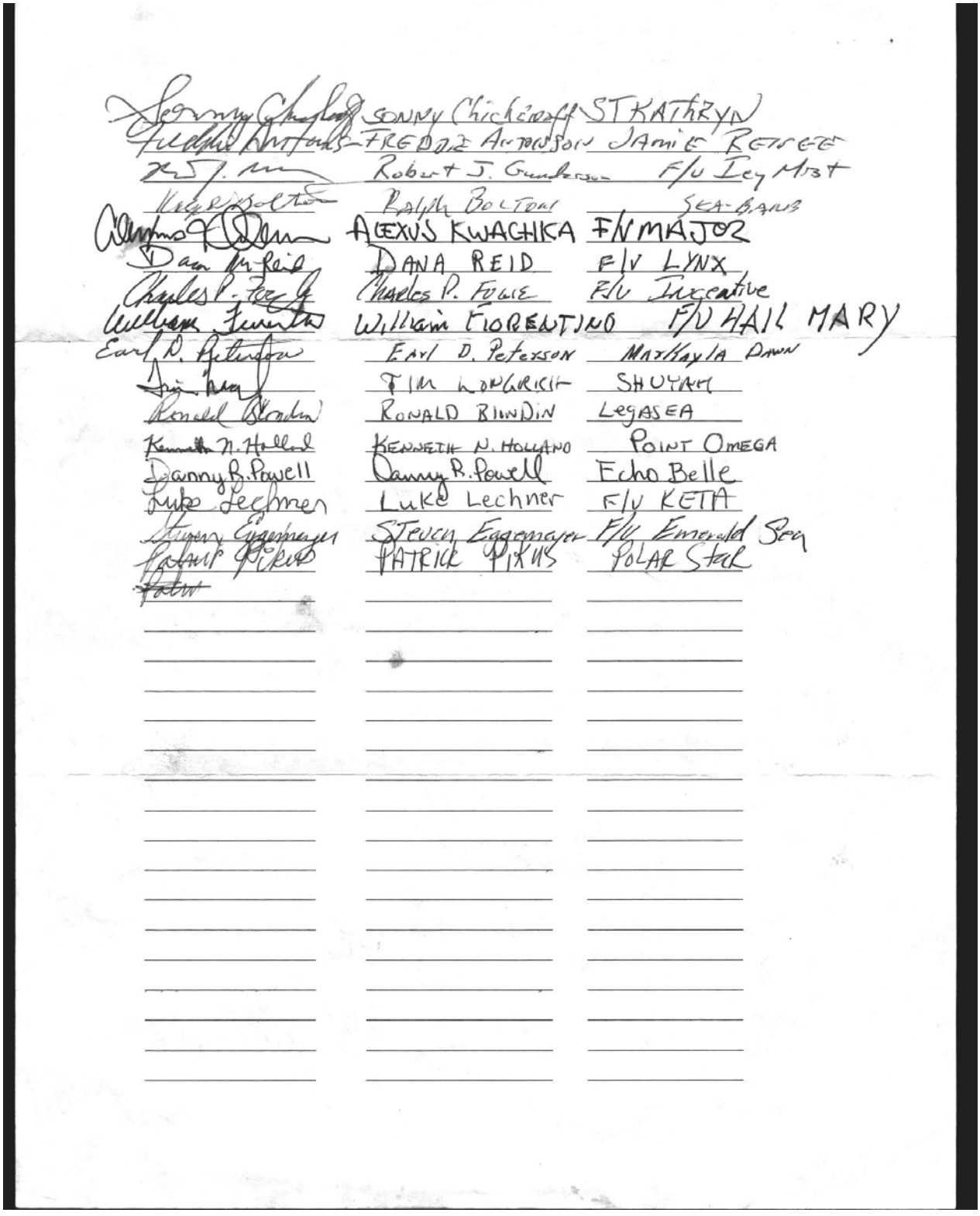
Pot limits without vessel limits are ineffective . . . The number of vessels fished in the previous 4 years including 1994 remained relatively constant, 137 in '91, 143 in '92, 141 in '93, and 129 in '94. 144 vessels fished in '01, with 246 interim permits purchased.

The Tanner Crab fishery is depressed and rebuilding. Limiting the number of entrants will help insure it remains open while it rebounds. We don't want to see it close for another 6 years. Thank you for your consideration.

Sincerely,

James R. Horn — F/V VENTURESS
Steven E Horn — F/V GALLANT GIRL
Walter Sargent — F/V Ladyhawk
Bruce Schactler — F/V NATALIA
Sam Mutch — Jamboree
Mitch Keplinger — Tiburon
Howard Peterson — F/V Raven
Thorvold Olsen — F/V Viking Star

Appendix 2.



Sonny Chichenoff	SONNY Chichenoff	ST KATHRYN
Freddie Anderson	FREDDIE ANDERSON	JAMIE RENEE
[illegible]	Robert J. Gunderson	F/V Ivy Mist
[illegible]	Ralph Bolton	Sea-Bands
[illegible]	ALEXUS KWACHKA	F/V MAJOR
[illegible]	DANA REID	F/V LYNX
[illegible]	Charles P. Fogle	F/V Tuscative
[illegible]	William FIORENTINO	F/V HAIL MARY
[illegible]	Earl D. Peterson	MarKayla Dawn
[illegible]	TIM LONGRICH	SHUYAK
[illegible]	RONALD RINDIN	LEGASEA
[illegible]	KENNETH N. HOLLAND	POINT OMEGA
[illegible]	Danny R. Powell	Echo Belle
[illegible]	Luke Lechner	F/V KETA
[illegible]	STEVEN Eggemeyer	F/V Emerald Sea
[illegible]	PATRICK PIKUS	POLAR STAR
[illegible]		