

**KODIAK MANAGEMENT AREA
SAC ROE HERRING HARVEST STRATEGY, 1997**

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OVERVIEW

This document is intended to provide commercial fishermen and buyers with pertinent information that the Alaska Department of Fish and Game (ADF&G) will use to manage the Kodiak Management Area (KMA) commercial sac roe herring fishery. The 1997 KMA sac roe herring fishery overall guideline harvest level (GHL) is 3,435 tons.

The Alaska Board of Fisheries (BOF) met in Kodiak in November 1995 and new regulations were enacted concerning fishing periods, harvest strategies, and gear restrictions. The 1997 season will begin at 12:00 noon on April 15 and will close at 12:00 noon on June 30. Fishing periods for purse seines from April 15 through May 4 will be 13-hours in duration starting at 12:00 noon until 10:00 P.M. on odd-numbered days and from 9:00 A.M. until 12:00 noon on even-numbered days. From May 5 through June 30 the fishing periods for purse seines is 12:00 noon on odd-numbered days until 12:00 noon on even-numbered days, 24 hour periods. Fishing periods for gillnetters from April 15 through June 30 are 12:00 noon on odd-numbered days until 12:00 noon on even-numbered days. Depending on ADF&G's assessment of effort levels, harvest rates, and ability to monitor the fishery, the length of fishing periods for either or both gear groups may be increased or reduced.

The KMA sac roe herring fishery is currently managed within 81 management units. Historic herring harvests have occurred within 63 of these units and each unit is treated as an individual herring stock. There are 12 exploratory management units which potentially support sac roe herring stocks and 6 management units located offshore that lack suitable habitat for spawning. For the 1997 season 22 management units have been closed prior to the start of the season due to low stock abundance.

GHL's are established for 42 management units. Inseason emergency order closures will occur as the GHL for each management unit is achieved. Management unit closures may also be implemented prior to attaining the GHL if fishery performance indicates that stock abundance is weaker than expected.

All inseason emergency order closures or reopenings will be broadcast on 4.125 MHz following the daily marine weather broadcasts at 8:00 a.m. and 6:00 p.m., also from April 15- May 4 at 10:30 p.m. All permit holders and tender operators should monitor VHF channel 6 during fishing periods to ensure that they hear inperiod emergency closures by the ADF&G staff. Announcements will be made by ADF&G staff aboard state vessels, from field crews stationed in tent camps, or from state or chartered aircraft. News releases will be available both inside and outside the Kodiak ADF&G building. Additionally, the most current closure announcements will be available 24- hours a day on the ADF&G record-a-phone at 486-4559.

All herring buyers/processors and tender operators are required to register at the Kodiak ADF&G office before starting operations in the KMA. (Fishing vessels are not required to be registered.)

Permit holders are encouraged to check with their markets prior to fishing to determine acceptable minimum size/weight and roe percentages to prevent waste. All herring harvested

during the sac roe season which are sold as bait or discarded due to quality problems will be included as part of the total sac roe herring harvest.

INTRODUCTION

The Kodiak Management Area (KMA) sac roe herring fishery has occurred annually since 1964 and harvests have averaged 1,909 (short) tons (Table 1). This fishery was open-to-entry from 1964 to 1980, under a moratorium to new entries from 1981 to 1984, and has been designated a limited entry fishery since 1985.

From 1986-1995 the annual harvest has averaged about 3,261 tons and has ranged from 1,558 tons in 1986 to 5,893 tons in 1994. The 1996 harvest was 3,386 tons and the exvessel value of this fishery was estimated at record \$6.8 million dollars (Table 2).

This fishery targets on herring immediately prior to spawning to ensure the greatest roe development and maximum roe recovery. Annual roe recovery for this fishery averages 10%.

GENERAL HARVEST POLICY

This harvest strategy outlines the criteria used to manage the KMA sac roe herring fishery. The commercial fishery is intended to occur in an orderly fashion, with minimal waste of the resource and within conservation limits as determined by the ADF&G. Consequently, the ADF&G will manage the fishery per the statewide general herring guideline harvest policy which provides for catches in traditional inshore areas, for the greatest roe recovery, and not to exceed a 20% exploitation rate on the available spawning biomass. Roe recovery standards are determined by industry personnel.

FISHERY MANAGEMENT

Districts and Management Units

The KMA is divided into 13 districts which define geographical areas used in managing the sac roe herring fishery. Each district is then further divided into sections, (sections and management units have the same meaning for this fishery). Management units are intended to define the spawning area used by a stock of herring or to define a geographical harvest location. Statistical charts which illustrate districts and sections, (Figures 1-9), are available at the ADF&G Kodiak office.

Guideline Harvest Levels

Harvest projections or guideline harvest levels (GHL's) are established for all management units which have produced consistent herring harvests in previous sac roe seasons. These GHL's are not guaranteed quotas and the actual harvest may exceed or fall short of these projections. Criteria for establishing the GHL include; 1) 1996 expected biomass vs. actual biomass estimates, 2) average school size, 3) trends in age composition, and 4) spawn observations consisting of (extent, frequency and amount deposited). This information is supplemented by fishery performance information namely the expected vs. actual harvest timing, harvest duration, and harvest level. Some management units are designated "exploratory" and are assigned no GHL because these areas have had sporadic or no harvest of herring in past years. Inseason closures in these exploratory areas may occur depending on actual harvest levels.

Management Unit Closures

An evaluation of the KMA herring stocks over the last five years has revealed that several herring stocks have experienced a decline in abundance. In several cases the GHL's for these areas have been reduced over several years and yet the decline has continued. Therefore, the following sections will be closed for the entire 1997 season.

West Afognak District

(WA 10) Raspberry Strait
(WA 20) Malina Bay

South Afognak District

(SA10) Izhut Bay
(SA20) Kitoi Bay
(SA30) MacDonalds Lagoon
(SA40) Danger Bay
(SA50) Litnik
(SA60) Inshore Marmot

North Afognak District

(NA20) Delphin Bay
(NA30) Perenosa Bay
(NA40) Seal Bay
(NA50) Tonki Bay

Uyak District

(UY10) Offshore Uyak
(UY20) Harvester Island
(UY30) Inner Uyak Bay
(UY31) Larsen Bay
(UY32) Browns Lagoon
(UY40) Zachar Bay
(UY50) Spiridon Bay

Inner Marmot District

(IM20) Anton Larsen Bay
(IM30) Sharatin Bay
(IM40) Kizhuyak Bay

1997 Harvest Projections

The 1997 total sac roe herring fishery GHL for the KMA is approximately 3,435 tons. The preseason GHL's by management unit will be used as an aid in making inseason management decisions (Table 3).

The GHL's are distributed by district as follows: North Afognak District, (all sections closed except for the Shuyak Island management unit), 20 tons, West Afognak District 820 tons, South Afognak District closed, Uganik District 940 tons, Uyak District closed, Sturgeon/Halibut District exploratory, Aitak District 485 tons, Eastside District 900 tons, Northeast District 60 tons, Inner Marmot District (closed except for the Monashka-Mill Bay and Spruce Island management units), 10 tons, North Mainland District 25 tons, Mid Mainland District 80 tons, and the South Mainland District 95 tons. The forecasted harvest for the KMA is approximately 6.4% of the projected statewide sac roe herring harvest of 53,334 tons, (Table 4).

Season Dates and Fishing Periods

The 1997 sac roe herring season will run from April 15 through June 30. Depending on ADF&G's assessment of effort levels, harvest rates, and ability to monitor the fishery, the length of fishing periods for either or both gear groups may be increased or reduced inseason.

Because of the differential timing and abundance of Kodiak's various herring stocks, high gear levels relative to GHL's, and the competition between gear types, this fishery is best served by a fixed opening date, which opens all units of the KMA collectively prior to any significant herring buildups. Staggered days of fishing provide clearly defined closed periods. These periods allow staff time to collect, summarize, and update all harvest data. The closures also allow for comparisons between reported and actual harvests.

Purse Seine Fishing Periods

Unless modified by emergency order fishing periods for purse seines from April 15 through May 4 will be 13-hours in duration starting at 12:00 noon until 10:00 P.M. on odd-numbered days and from 9:00 A.M. until 12:00 noon on even-numbered days. From May 5 through June 30 the fishing periods for purse seines are 12:00 noon on odd-numbered days until 12:00 noon on even-numbered days, 24 hour periods. ADF&G may adjust the May 5 date earlier or later depending on the assessment of effort, harvest rate, and the departments ability to monitor the fishery.

Gillnet Fishing Periods

Unless modified by emergency order, fishing periods for gillnetters from April 15 through June 30 will be 24 hours in duration starting at 12:00 noon on odd-numbered days until 12:00 noon on even-numbered days.

INSEASON FISHERY MANAGEMENT

General Discussion

Inseason management of the sac roe herring fishery relies primarily on harvest data collected by ADF&G field crews stationed in management units where harvests are anticipated. During the 1997 season four ADF&G field crews, two ADF&G vessels R/V K-Hi-C and R/V Resolution, and the Alaska Department of Public Safety, Fish and Wildlife Protection (FWP) vessel M/V Trooper will monitor the fishery. ADF&G staff will be working jointly with FWP aboard the M/V Trooper to monitor the fishery.

Once the preseason GHL has been achieved for a management unit, it is generally closed for the season. Due to the rapid pace of harvest in certain locations, inperiod closures are frequent. **Inperiod closures may occur with as little as 5 minutes advanced notice prior to the closure time which will be announced on VHF channel 6. Other ways of hearing emergency order closures are referenced on page 6, "Getting the Word".**

At any time during the season if it appears that preseason expectations are incorrect, GHL's can be adjusted above or below preseason levels. Consequently, units may be closed prior to reaching their GHL's or a harvest in excess of the GHL's could be allowed depending on observed stock abundance.

ADF&G may also make adjustments in the management of some units based on inseason changes in fish behavior or harvest patterns. In the event that a large single biomass of herring is identified which is moving or likely to move between immediately adjacent management units, and if a harvest has previously occurred on that biomass that exceeds 20% of the estimated tonnage of those herring, then the Department may close those management units through which these herring will likely move. This closure may occur regardless of any unharvested GHL's in the adjacent management units. Management units closed under these circumstances may be reopened once the protected biomass is no longer available to further exploitation.

Management units which have been closed because the GHL has been achieved, may be reopened if it is determined by ADF&G that additional herring arriving on the grounds has increased the available biomass to the point that the initial exploitation rate has dropped below 10 percent for that stock (Table 3). Any reopenings will require confirmation that juvenile herring, post spawners, or other forage fish are not present and that ADF&G has the ability to monitor and regulate the reopenings on the grounds. At least 24 hours advance notice shall be given prior to any management units being reopened. However, due to the imprecise method of determining specific biomass estimates within the KMA combined with the anticipated high seine gear effort, reopenings are unlikely to occur in 1997.

All fishermen, spotter pilots, and processors are encouraged in strict confidence to provide the ADF&G management staff with any information on stocks to improve the management of the fishery.

Catch Reporting

Processors and independent tender operators are required to provide timely daily catch reports of herring deliveries by management unit. Herring catches onboard tenders that have not yet been delivered to the cannery must also be reported daily. **Tender operators are urged to monitor VHF channel 6 while participating in this fishery to keep aware of management unit closures.**

Timely and accurate harvest reports from ADF&G field crews, fishermen, spotters, and processors are critical in order to assess herring harvests and guide the management of the fishery. Inaccurate or late information could result in premature area closures or GHL's being greatly exceeded.

Individual code sheets are available for those tender operators and processors who will report catches via VHF or SSB radio. **Tender operators and buyers are required to register with ADF&G in Kodiak prior to starting operations and will be given a packet containing regulations, statistical charts, etc. Reporting times and schedules will be specified at the time of registration.**

ADF&G Field Crews/Fisher Cooperation

The ADF&G personnel aboard the state vessels and seasonal personnel in remote tent camps will assist the Area Management Biologist, by making frequent contacts with fishers to collect harvest data, fleet movement information, spawn observations, and observations of juvenile herring concentrations (Table 5). ADF&G field crews will also monitor and map herring spawning activities. Fishers and spotter pilots are encouraged to provide biomass estimates, juvenile herring observations, and spawn observations to the ADF&G field crews or management staff, this information will remain confidential.

Past cooperation has been excellent and has helped to evaluate stock status and gain critical management information.

Cooperation by fishers will be appreciated when ADF&G personnel request herring samples from their commercial catch. Samples of juvenile herring inadvertently caught will also be accepted by ADF&G personnel. Samples are primarily used to monitor age composition, and when used with other stock performance indicators, will assist in determining stock status.

Emergency Order Announcements: "Getting the Word"

By regulation, both purse seine and gillnet gear are allowed to fish in any open area. This allows for a wide dispersion of gear throughout the management area. Consequently, it is important for the fleet to be aware of any changes in closures or reopenings. This can be accomplished by: 1) personal contact with the herring management staff in the Kodiak office, or telephone at 486-1830, or radio-telephone; 2) contact with ADF&G field personnel and vessels, on VHF Channel 6, SSB on 3.230 MHz call sign WON32 Kodiak Fish and Game, or 4.125 MHz call sign WHM29 Kodiak Fish and Game; 3) contacting any local herring processor and having them transmit the latest Kodiak herring news release; 4) calling the ADF&G 24-hour recorded message phone at 486-4559; 5) listening for any emergency order update which will be broadcast following the daily 8:00 a.m. and 6:00 p.m. marine weather

broadcasts, on 4.125 MHz or by ADF&G announcement at 10:30 p.m. from April 15 through May 4 on 4.125 MHz; 6) obtaining a copy of the most recent emergency order, which is posted outside the main entrance to the Kodiak Fish and Game building; or 7) listening to the Fish and Game reports broadcast over the local AM and FM radio stations (consult stations for broadcast times). No announcements will be given via VHF from the Kodiak Office due to the limited broadcast range, however special consideration may be given to the Chiniak Bay fishery.

Inperiod emergency closure announcements for management units do occur with short notification time. **All permit holders and tender operators should monitor VHF channel 6 during fishing periods to ensure that they hear inperiod emergency closures by the ADF&G staff. Announcements will be made by ADF&G staff aboard state vessels, from field crews stationed in tent camps, or from state or chartered aircraft.** Because of the extensive announcements associated with this fishery, it is recommended that fishermen document the latest E.O. announcement broadcast by either marking a chart or making a tape recording of the broadcast.

KODIAK HERRING TEST FISHERY PROGRAM

The ADF&G will be conducting a test fishery during the 1997 season to raise funds for herring research projects within the KMA. ADF&G is soliciting bids from herring processors interested in purchasing approximately \$48,000 worth of herring, which is anticipated to be approximately 50 tons. Information regarding the bid process is available at the Kodiak ADF&G office. Bids will be accepted through 4:30 P.M. April 14.

The funds generated from this test fishery will be used for increased aerial surveys of closed management units to assess stock status trends. It is also anticipated that a seine vessel will be chartered to help evaluate the Uyak District stock status along with collection of AWL samples to evaluate age composition trends in this district.

REGULATORY SUMMARY

Regulation Booklet and Statistical Chart

The 1996-97 Commercial Herring Fishing Regulation booklet along with the herring statistical chart are available at the Kodiak ADF&G Office. **Note: That regulation 5 AAC 27.505. Descriptions of Districts and Sections lists the correct legal descriptions of districts and sections or management units using the 1983 North America datum NOAA marine charts. The 1996-97 herring regulation book lists all descriptions of management units and closed water areas in latitude and longitude readings which are in decimals and are listed as degrees and minutes.**

Gear Regulations

5 AAC 27.515 Gear.

- (a) Herring may be taken only by seines, gillnets, and trawls, except that beach seines and trawls may not be used to take herring during the sac roe herring season.
- (b) A herring fishing vessel may operate or assist in operating, or have aboard it, only one legal limit of herring fishing gear in the aggregate, except that a herring fishing vessel may tow or transport other herring fishing vessels containing those vessels own gear.
- (g) The use of leads with any gear used for commercial herring fishing is prohibited during the herring sac roe season.

Seine Specifications and Operations

5 AAC 27.525. Seine specifications and operations.

- (a) From April 1 through July 31, no purse seine shall exceed 20 fathoms stretch measure in depth or 100 fathoms in length. The depth shall be determined by using a stretch measure of the web from the corkline to the bottom of the net including any lines that hang below the lead line. See: Regulation 5 AAC 39.975 (11) Definitions: for the definition of stretched measure.
- (d) From April 1 through July 31, an Area K CFEC sac roe seine permit holder may use, to take herring, only the vessel identified on the permit, unless the permit holder has registered, in person, at the Department's Kodiak office, to use a replacement vessel. Only one replacement seine vessel may be registered by a CFEC permit holder at a time.

Gillnet Specifications and Operations

5 AAC 27.520. Gillnet specifications and operations.

- (a) The aggregate length of herring gillnets in use by a CFEC permit holder may not exceed 150 fathoms. Gillnets may not exceed 230 meshes in depth. (Regulation 5 AAC 27.050 (c) describes gillnet mesh sizes as follows, "The mesh size of a herring gillnet may not be less than two and one-eighth inches or more than two and one-half inches.")
- (b) The interim-use or entry permit holder must be physically present while the gillnet is being fished.
- (c) Each drift gillnet in operation must have a buoy at one end and the opposite end must be attached to the fishing vessel. Each set net in operation must be anchored and buoyed at both ends. All buoys must be at least 10 inches in diameter and all buoys used on an individual gillnet must be of the same color. Each buoy must be plainly and legibly marked with the permanent vessel license plate number

(ADF&G number) of the vessel operating the gear. The buoy may bear only a single number and this number must be that of the vessel used in operating the gear. The number must be painted on the top one-third of the buoy in numerals at least four inches in height, one-half inch in width and in a color contrasting to that of the buoy. The buoy markings must be visible on the buoy above the water surface. Set gillnets must have a buoy spaced every 25 fathoms along the net and the buoys must be floating on the surface of the water.

Extra Time For Gillnetters

Additionally as stated in 5 AAC 27.520 (d) when the following conditions exist, herring gillnetters are allowed a four hour period before having to completely remove their gear from the water.

(d) Herring gillnets may remain in the water for four hours after the announced closing time for any opening of three hours or less of fishing time. No herring gillnet may be set or reset after a closure time. Herring gillnets may remain in the water up to four hours after an emergency closure if that closure is announced by the department less than three hours before the closure time. No herring gillnet may remain in the water past the 12:00 noon even-day closure time.

Waters Closed to Herring Fishing

5 AAC 27.530. Following is a listing of closed water areas to herring fishing for the period April 15 through June 30.

- (1) Women's Bay: all waters enclosed by a line from Shannon's Point (57° 43.67' N. lat., 152° 31.73' W. long.) to Nymans Peninsula (57° 43.37' N. lat., 152° 31.55' W. long.).
- (2) Brown's Lagoon: all waters, beginning at the seaward entrance, are closed to herring fishing from April 15 through June 30.
- (3) Uganik Island: the lagoons of Uganik Island as follows:
 - (A) south and west of a line from 57° 51.10' N. lat., 153° 13.53" W. long., to 57° 52. 12' N. lat., 153° 15.20' W. long.;
 - (B) north of a line from 57° 49.37' N. lat., 153° 17.65' W. long., to 57° 49.47' N. lat., 153° 19.30' W. long.;
 - (C) east of a line from 57° 50.85' N. lat., 153° 19.18' W. long., to 57° 49.43' N. lat., 153° 19.20' W. long.

Registration Requirements

Tender and Processor Registration Requires:

- Each tender operator and processor must register with the Kodiak ADF&G office either in person or by an authorized agent for that tender or processor.
- Registration must occur prior to taking fish on board the tender or taking fish at the processing plant.
- See Regulation 5 AAC 27.540 of the Commercial Herring Regulations for additional information. Note: This regulation will be strictly enforced.

Details of tender and floating processor reporting requirements will be finalized at the time of registration.

Fishing Vessels

There are no special registration requirements for either seine or gillnet vessels unless a purse seine permit holder intends to use a different vessel than is listed on the permit card. (See regulation 5 AAC 27.525)

Herring Size Limits

As stated in 5 AAC 27.536, no CFEC herring seine permit holder may sell or have aboard a vessel any herring that were taken during the sac roe herring season if the number of individual herring per 50 lbs. of net weight exceeds 250 fish (approximately 91 grams average weight).

TO PREVENT WASTE, PERMIT HOLDERS ARE ENCOURAGED TO CHECK WITH THEIR MARKETS PRIOR TO FISHING TO DETERMINE THE ACCEPTABLE MINIMUM SIZE/WEIGHT AND ROE PERCENTAGES. ALL HERRING WHICH ARE HARVESTED DURING THE SAC ROE SEASON AND SOLD AS BAIT OR ARE DISCARDED DUE TO QUALITY PROBLEMS WILL BE INCLUDED AS PART OF THE TOTAL SAC ROE HARVEST.

Aircraft

There are no restrictions on the use of aircraft.

Table 1. Historical commercial harvest data and effort levels for the sac roe herring fishery Kodiak Management Area, 1964-1996.

Year	Total Harvest (Tons)	Harvest by Gear Type		Number of Vessels Making Landings			Number of Processors
		Seine (Tons)	Gillnet (Tons)	Seine	Gillnet	Total	
1964	568	568	0	5	0	5	2
1965	657	657	0	8	0	8	2
1966	2,769	2,769	0	11	0	11	4
1967	1,662	1,662	0	5	0	5	4
1968	2,001	2,001	0	10	0	10	4
1969	1,130	1,130	0	21	0	21	9
1970	342	342	0	13	0	13	5
1971	284	284	0	4	0	4	2
1972	215	215	0	4	0	4	1
1973	831	831	0	11	0	11	4
1974	868	868	0	26	0	26	4
1975	8	8	0	2	0	2	3
1976	5	5	0	1	0	1	1
1977	338	338	0	11	0	11	3
1978	904	881	23	28	7	35	7
1979	1,735	1,457	278	57	125	182	8
1980	2,383	2,009	374	92	109	201	9
1981	2,065	1,596	469	79	114	193	9
1982	1,771	1,447	324	45	67	112	6
1983	2,318	1,797	521	41	64	105	7
1984	2,163	1,691	472	39	69	108	7
1985	1,968	1,244	724	34	81	115	7
1986	1,558	1,111	447	31	71	102	8
1987	2,146	1,591	555	29	62	91	8
1988	2,171	1,304	867	33	76	109	6
1989	2,249	1,513	736	37	83	120	6
1990	2,347	1,644	703	27	63	90	6
1991	2,432	1,697	735	32	64	96	6
1992	4,283	3,260	1,023	40	74	114	6
1993	4,929	4,203	726	41	86	127	6
1994	5,893	4,976	917	66	57	123	15
1995	4,604	3,837	767	73	71	144	17
1996	3,386	2,322	1,064	57 ^a	74	131	15
Average							
1964-1996	1,909	1,553	366	30	43	74	6
Average							
1991-1996	4,428	3,595	834	50	70	121	10
Average							
1986-1995	3,261	2,514	748	41	71	112	8

^a Approximately 20 vessels participated in the fishery but made no deliveries.

Table 2. Sac roe herring fishery industry summary, Kodiak Management Area 1979-1996.

Year	Gear Type	Units of Gear	Number Landings	Harvest (Tons)	Harvest Percent	Est. Total Value	Est. Average Earnings	Average Tons/Boat	Average Tons/Landings	Average Landings/Boat
1979	Purse Seine	57	-	1457.2	84	\$2,185,788	\$38,347	25.6	-	-
	Gillnet	125	-	277.9	16	\$416,670	\$3,333	2.2	-	-
	TOTAL	182	-	1735.1	100	\$2,602,458	-	-	-	-
1980	Purse Seine	92	-	2009.0	84	\$1,377,987	\$14,978	21.8	-	-
	Gillnet	109	-	374.0	16	\$280,423	\$2,573	3.4	-	-
	TOTAL	201	-	2383.0	100	\$1,685,410	-	-	-	-
1981	Purse Seine	79	207	1596.2	77	\$1,137,764	\$14,402	20.2	7.7	2.6
	Gillnet	114	406	469.2	23	\$395,640	\$3,471	4.1	1.2	3.6
	TOTAL	193	613	2065.4	100	\$1,633,404	-	-	-	-
1982	Purse Seine	45	138	1447.0	82	\$801,840	\$17,819	32.2	10.5	3.1
	Gillnet	67	191	323.6	18	\$182,160	\$2,719	4.8	1.7	1.8
	TOTAL	112	329	1770.6	100	\$1,533,404	-	-	-	-
1983	Purse Seine	41	164	1796.9	78	\$1,437,520	\$35,061	43.8	11	4
	Gillnet	64	284	521.6	22	\$417,280	\$6,520	8.2	1.8	4.4
	TOTAL	105	448	2318.5	100	\$1,854,800	-	-	-	-
1984	Purse Seine	39	138	1691.2	78	\$1,352,960	\$34,691	43.3	12.3	3.5
	Gillnet	69	212	471.5	22	\$377,200	\$5,467	6.8	2.2	3.1
	TOTAL	108	350	2162.7	100	\$1,730,160	-	-	-	-
1985	Purse Seine	34	118	1244.2	63	\$1,119,780	\$32,935	36.6	10.5	3.5
	Gillnet	81	348	723.5	37	\$651,150	\$8,039	8.9	2.1	4.3
	TOTAL	115	466	1967.7	100	\$1,770,930	-	-	-	-
1986	Purse Seine	31	132	1110.8	71	\$1,054,310	\$34,010	35.8	8.4	4.3
	Gillnet	71	385	448.6	29	\$426,170	\$6,002	6.3	1.2	5.4
	TOTAL	102	517	1559.4	100	\$1,480,480	-	-	-	-
1987	Purse Seine	29	122	1591.3	74	\$1,591,300	\$54,872	54.9	13	4.2
	Gillnet	62	411	554.6	26	\$554,600	\$8,945	9	1.35	6.6
	TOTAL	91	533	2145.9	100	\$2,145,900	-	-	-	-
1988	Purse Seine	33	169	1303.6	60	\$1,694,550	\$51,350	39.5	7.7	5.1
	Gillnet	76	555	867.2	40	\$1,127,620	\$14,837	11.4	1.6	7.3
	TOTAL	109	724	2170.8	100	\$2,822,170	-	-	-	-

-Continued-

Table 2. (page 2 of 2)

Year	Gear Type	Units of Gear	Number Landings	Harvest (Tons)	Harvest Percent	Est. Total Value	Est. Average Earnings	Average Tons/Boat	Average Tons/Landings	Average Landings/Boat
1989	Purse Seine	37	171	1512.6	67	\$1,285,710	\$34,749	40.9	8.8	4.6
	Gillnet	83	627	736.0	33	\$625,600	\$7,537	8.9	1.2	7.6
	TOTAL	120	798	2248.6	100	\$1,911,310				
1990	Purse Seine	27	156	1644.0	70	\$1,397,400	\$51,724	60.9	10.5	5.8
	Gillnet	63	544	703.0	30	\$597,550	\$9,652	11.2	1.3	8.6
	TOTAL	90	700	2347.0	100	\$1,994,950				
1991	Purse Seine	32	169	1697.0	70	\$1,442,450	\$45,077	53.0	10	5.3
	Gillnet	64	587	735.0	30	\$624,750	\$9,762	11.5	1.3	9.2
	TOTAL	96	756	2432.0	100	\$2,067,200				
1992	Purse Seine	40	185	3260.0	76	\$1,630,000	\$40,750	81.5	17.6	4.6
	Gillnet	74	706	1023.0	24	\$511,500	\$6,912	13.8	1.4	9.5
	TOTAL	114	891	4283.0	100	\$2,141,500				
1993	Purse Seine	41	237	4203.0	85	\$2,312,000	\$56,380	102.5	17.7	4.3
	Gillnet	86	294	726.0	15	\$399,000	\$4,640	8.4	2.5	8.5
	TOTAL	127	531	4929.0	100	\$2,711,000				
1994	Purse Seine	66	285	4976.0	84	\$3,981,000	\$60,320	75.4	17.5	5.8
	Gillnet	57	485	917.0	16	\$733,000	\$12,860	16.1	1.9	3.4
	TOTAL	123	770	5893.0	100	\$4,714,000				
1995	Purse Seine	73	280	3837.0	83	\$4,873,000	\$66,850	52.6	13.7	3.8
	Gillnet	71	642	767.0	17	\$974,000	\$13,750	10.7	1.2	9.0
	TOTAL	144	922	4604.0	100	\$5,847,000				
1996	Purse Seine	57	202	2322.0	69	\$4,644,000	\$81,470	40.7	11.5	3.5
	Gillnet	74	890	1064.0	31	\$2,128,000	\$28,760	14.4	1.2	12.0
	TOTAL	131	1092	3386.0	100	\$6,772,000				

Table 3. Sac roe herring fishery guideline harvest levels by stock, Kodiak Management Area, 1997.

STAT. AREA	MGMT. UNITS	1997 GUIDELINE HARVEST LEVEL	REQUIRED SPAWNING BIOMASS	
			@10% EXPLOITATION	@20% EXPLOITATION
NORTH AFOGNAK DISTRICT				
NA10	Shuyak Is.	20 Tons	200 Tons	100 Tons
NA20	Delphin Bay	CLOSED	-	-
NA30	Perenosá Bay	CLOSED	-	-
NA40	Seal Bay	CLOSED	-	-
NA50	Tonki Bay	CLOSED	-	-
DISTRICT TOTAL		20 Tons	200 Tons	100 Tons
WEST AFOGNAK DISTRICT				
WA10	Raspberry St.	CLOSED	-	-
WA20	Malina Bay	CLOSED	-	-
WA31	Paramanof Bay	700 Tons	7,000 Tons	3,500 Tons
WA32	Foul Bay	100 Tons	1,000 Tons	500 Tons
WA40	Blue Fox/Devil's In ^a	20 Tons	200 Tons ^a	100 Tons ^a
WA50	Offshore W. Afog.	-	-	-
DISTRICT TOTAL		820 Tons	8,200 Tons	4,100 Tons
SOUTH AFOGNAK DISTRICT				
SA10	Izhut Bay	CLOSED	-	-
SA20	Kittoi Bay	CLOSED	-	-
SA30	MacDonalds Lagoon	CLOSED	-	-
SA40	Danger Bay	CLOSED	-	-
SA50	Litnik	CLOSED	-	-
SA60	Duck Bay	CLOSED	-	-
DISTRICT TOTAL		CLOSED	-	-
UGANIK DISTRICT				
UG10	Kupreanof	10 Tons	100 Tons	50 Tons
UG20	Viekoda	75 Tons	750 Tons	375 Tons
UG21	Terror	250 Tons	2,500 Tons	1,250 Tons
UG30	Village Island	250 Tons	2,500 Tons	1,250 Tons
UG31	W. Uganik Pass	20 Tons	200 Tons	100 Tons
UG32	NE Arm Uganik	30 Tons	300 Tons	150 Tons
UG33	E. Arm Uganik	125 Tons	1,250 Tons	625 Tons
UG34	S. Arm Uganik	180 Tons	1,800 Tons ^a	900 Tons ^a
UG40	Offshore Uganik ^a	-	-	-
DISTRICT TOTAL		940 Tons	9,400 Tons	4,700 Tons
UYAK DISTRICT				
UY10	Offshore Uyak ^a	CLOSED	-	-
UY20	Harvester Island	CLOSED	-	-
UY30	Inner Uyak	CLOSED	-	-
UY32	Browns Lagoon	CLOSED	-	-
UY31	Larsen Bay	CLOSED	-	-
UY40	Zachar Bay	CLOSED	-	-
UY50	Spiridon Bay	CLOSED	-	-
DISTRICT TOTAL		CLOSED	-	-

-Continued-

Table 3. (page 2 of 3)

STAT. AREA	MGMT. UNITS	1997 GUIDELINE HARVEST LEVEL	REQUIRED SPAWNING BIOMASS		
			@10% EXPLOITATION	@20% EXPLOITATION	
ALITAK DISTRICT					
AL10	Outer Alitak	(Exploration)		b	b
AL20	Inner Alitak	(Exploration)		b	b
AL21	Inner Deadman Bay	40 Tons	400 Tons		200 Tons
AL22	Outer Deadman Bay	50 Tons	500 Tons		250 Tons
AL30	Sulua Bay	240 Tons	2,400 Tons		1,200 Tons
AL31	Portage Bay	75 Tons	750 Tons		375 Tons
AL40	Lower Olga/Moser	15 Tons	150 Tons		75 Tons
AL41	No. Upper Olga Bay	10 Tons	100 Tons		50 Tons
AL50	Upper Olga Bay	40 Tons	400 Tons		200 Tons
AL60	Geese/Twoheaded	15 Tons	150 Tons		75 Tons
District Total		485 Tons	4,850 Tons		2,425 Tons
STURGEON/HALIBUT DISTRICT					
SH10	Sturgeon/Halibut	(Exploration)		b	b
EASTSIDE DISTRICT					
EA10	Kaiugnak	20 Tons	200 Tons		100 Tons
EA20	SW. Sitkalidak	20 Tons	200 Tons		100 Tons
EA21	Three Saints Bay	40 Tons	400 Tons		200 Tons
EA22	Newman Bay	20 Tons	200 Tons		100 Tons
EA23	W. Sitkalidak St.	100 Tons	1,000 Tons		500 Tons
EA24	Barling Bay	50 Tons	500 Tons		250 Tons
EA30	E. Sitkalidak St.	200 Tons	2,000 Tons		1,000 Tons
EA31	Tanginak Anchorage	15 Tons	150 Tons		75 Tons
EA40	Outer Sitka	(Exploration)		b	b
EA41	Boulder Bay	(Exploration)		b	b
EA42	Shearwater Bay	90 Tons	900 Tons		450 Tons
EA43	Outer Kiliuda Bay	90 Tons	900 Tons		450 Tons
EA44	Inner Kiliuda Bay	90 Tons	900 Tons		450 Tons
EA50	Outer Ugak Bay	60 Tons	600 Tons		300 Tons
EA51	Inner Ugak Bay	90 Tons	900 Tons		450 Tons
EA52	Pasagshak	15 Tons	150 Tons		75 Tons
District Total		900 Tons	9,000 Tons		4,500 Tons
NORTHEAST DISTRICT					
NE10	Womens Bay	30 Tons	300 Tons		150 Tons
NE20	Kalsin Bay	10 Tons	100 Tons		50 Tons
NE30	Middle Bay	10 Tons	100 Tons		50 Tons
NE40	Inshore Chiniak	10 Tons	100 Tons		50 Tons
NE50	Off. Chiniak	(Exploration)		b	b
District Total		60 Tons	600 Tons		300 Tons
INNER MARMOT DISTRICT					
IM10	Monashka Bay	(Exploration)		b	b
IM20	Anton Larsen Bay	CLOSED	-		-
IM30	Sharatin Bay	CLOSED	-		-
IM40	Kizhuyak Bay	CLOSED	-		-
IM50	Spruce Island	10 Tons	100 Tons		50 Tons
District Total		10 Tons	100 Tons		50 Tons

-Continued-

Table 3. (page 3 of 3)

STAT.	MGMT.	1997 GUIDELINE	REQUIRED SPAWNING BIOMASS	
			@10% EXPLOITATION	@20% EXPLOITATION
AREA	UNITS	HARVEST LEVEL		
<i>NORTH MAINLAND DISTRICT</i>				
NM10	Hallo Bay	(Exploration)		b
NM20	Inner Kukak	25 Tons	250 Tons _a	125 Tons _a
NM30	Outer Kukak ^a	-		b
NM40	Missak Bay	(Exploration)		b
District Total		25 Tons	250 Tons	125 Tons
<i>MID MAINLAND DISTRICT</i>				
MM10	Inner Katmai	50 Tons	500 Tons _a	250 Tons _a
MM20	Outer Katmai ^a	-		
MM30	Alinchak	30 Tons	300 Tons _b	150 Tons _b
MM40	Puale Bay	(Exploration)		b
MM50	Portage Bay	(Exploration)		a
MM60	Outer Portage ^a	-		
District Total		80 Tons	800 Tons	400 Tons
<i>SOUTH MAINLAND DISTRICT</i>				
SM10	Wide Bay	95 Tons	950 Tons _b	475 Tons _b
SM20	Lower Shelikof	(Exploration)		
District Total		95 Tons	950 Tons	475 Tons
GRAND TOTAL		3,435 Tons	34,350 Tons	17,175 Tons

^a These are offshore management units which are not expected to yield herring of sac roe quality. These units are more applicable to the food/bait fishery. (See Herring Food/Bait Fishery Management Plan.)

^b These management units have adequate biomass to justify an "exploratory" harvest; the actual harvest should not exceed 20% of the available biomass.

Table 4. Alaska statewide average sac roe herring harvests for 1992-1996 and preliminary 1997 harvest projections.

Fishery Location	Average Harvest 1992-1996	1997 Harvest Projection
<i>Southeast</i>		
Kah Shakes	790	912
Sitka Sound	6,251	10,900
Seymour Canal	140	0
Hobart/Houghton	-	449
Total All Areas	7,181	12,261
<i>Prince William Sound</i>		
Total All Fisheries	3,712	3,140
<i>Cook Inlet</i>		
Kamishak District	2,872	3,420
Upper Cook Inlet	0	0
Total All Areas	2,872	3,420
<i>Kodiak</i>		
Total Area	4,562	3,435
<i>Alaska Peninsula</i>		
North Peninsula	1,005	150
South Peninsula	95	100
Total Area	1,100	250
<i>Bristol Bay (Togiak)</i>		
Seine	19,154	16,391
Gill Net	5,887	5,464
Total Area	25,041	21,855
<i>Arctic Yukon Kuskokwim Area</i>		
Security Cove	798	928
Goodnews Bay	1,003	950
Cape Avinof	480	561
Nunivak Island	37	760
Nelson Island	769	764
Cape Romanzof	530	902
Norton Sound		
Gillnet	3,361	3,549
Beach Seine	404	394
Port Clarence	0	165
AYK Total	7,382	8,973
Statewide Total Harvest	51,850	53,334

Table 5. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division management staff, 1997.

Office Staff:	
Regional Supervisor	Pete Probasco
Regional Management Biologist	Wayne Donaldson
Area Management Biologist	Dave Prokopowich
Assistant Management Biologist	Dennis Gretsck
Assistant Management Biologist	Kevin Brennan
Fishery Biologist	Joan Brodie
Fishery Technician	Joan Shaker
Field Staff:	
R/V K-Hi-C:	
Boat Officer	Tom Emerson
Fishery Biologist	Dennis Gretsck
R/V Resolution:	
Boat Officer	Ron Kutchick
Fishery Biologist	Kevin Brennan
M/V Trooper:	
Fishery Technician:	Paul Kuriscak
Field Crews:	
Fishery Technician	Mo Lambdin
Fishery Technician	Jon Becker
Fishery Technician	Joey Lindberg
Fishery Technician	Matt Stone
Fishery Technician	Mike Anderson
Fishery Technician	Keith Wible
Fishery Technician	Donna Higginbotham
Fishery Technician	Kim Rudge

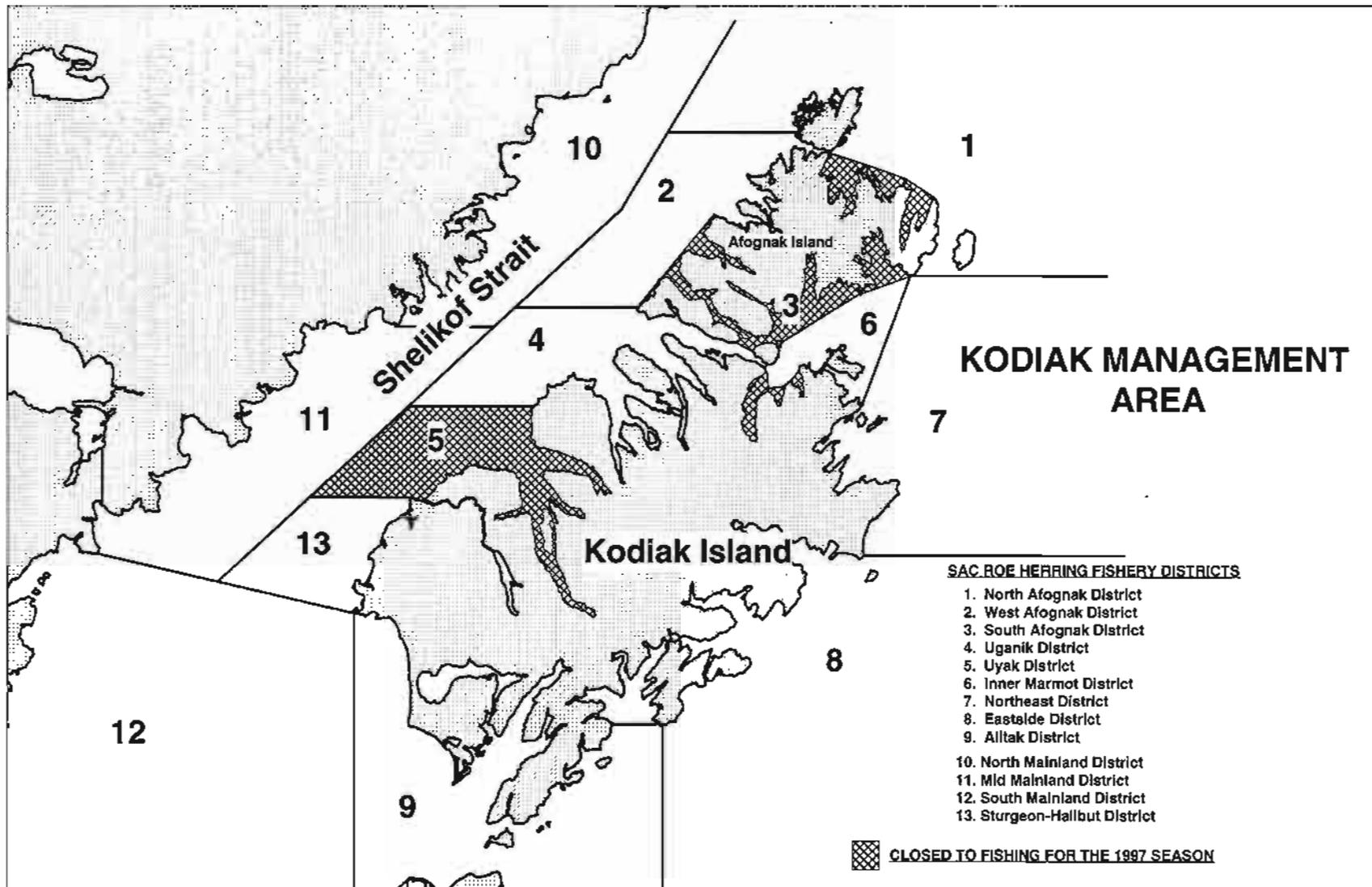


Figure 1. Map of the Kodiak Management Area illustrating the sac roe herring fishery districts and areas closed to fishing.

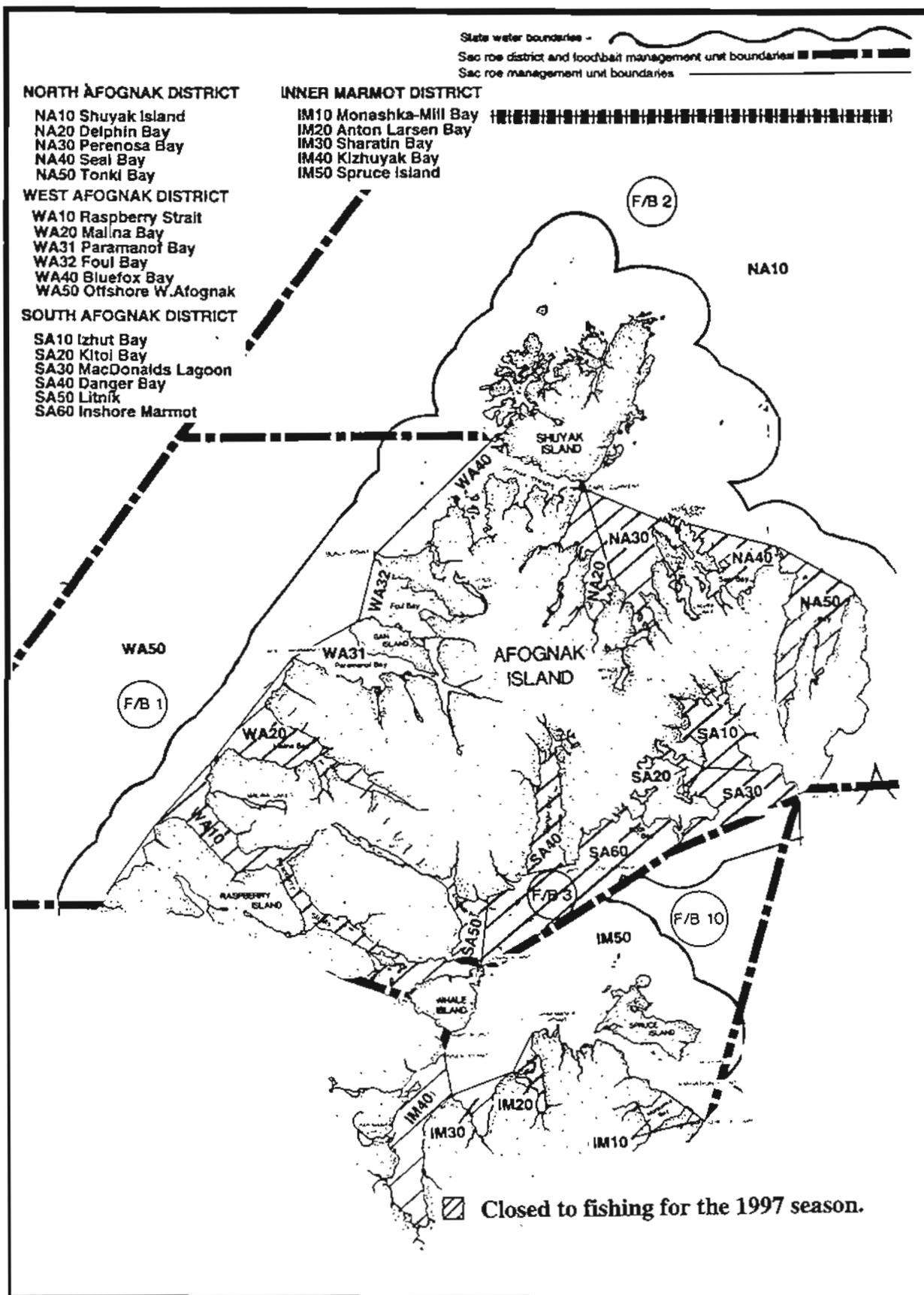


Figure 2. Statistical chart showing the North Afognak, West Afognak, South Afognak, and Inner Marmot Districts and Sections.

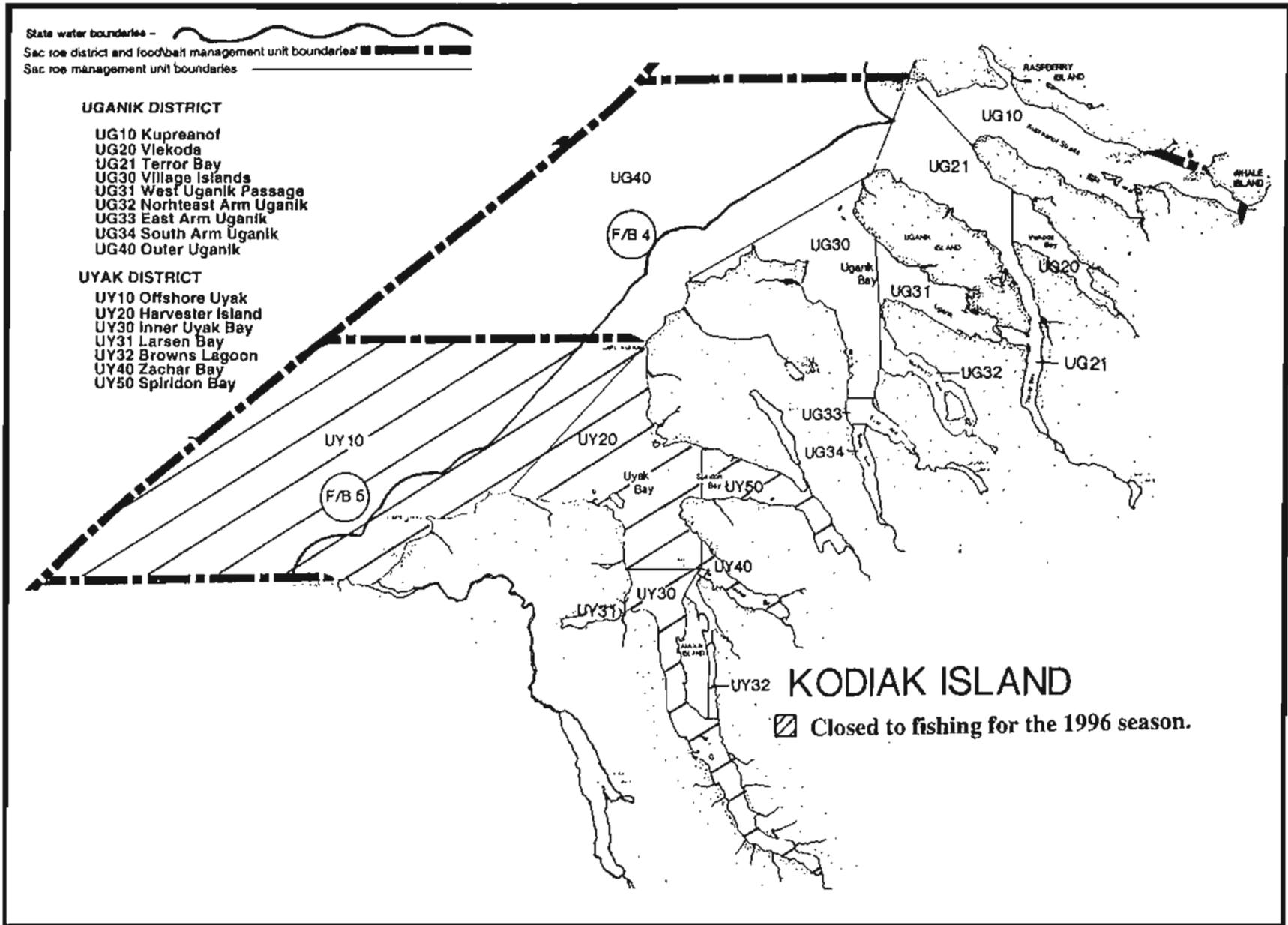


Figure 3. Statistical chart showing the Uganik and Uyak Districts and Sections.

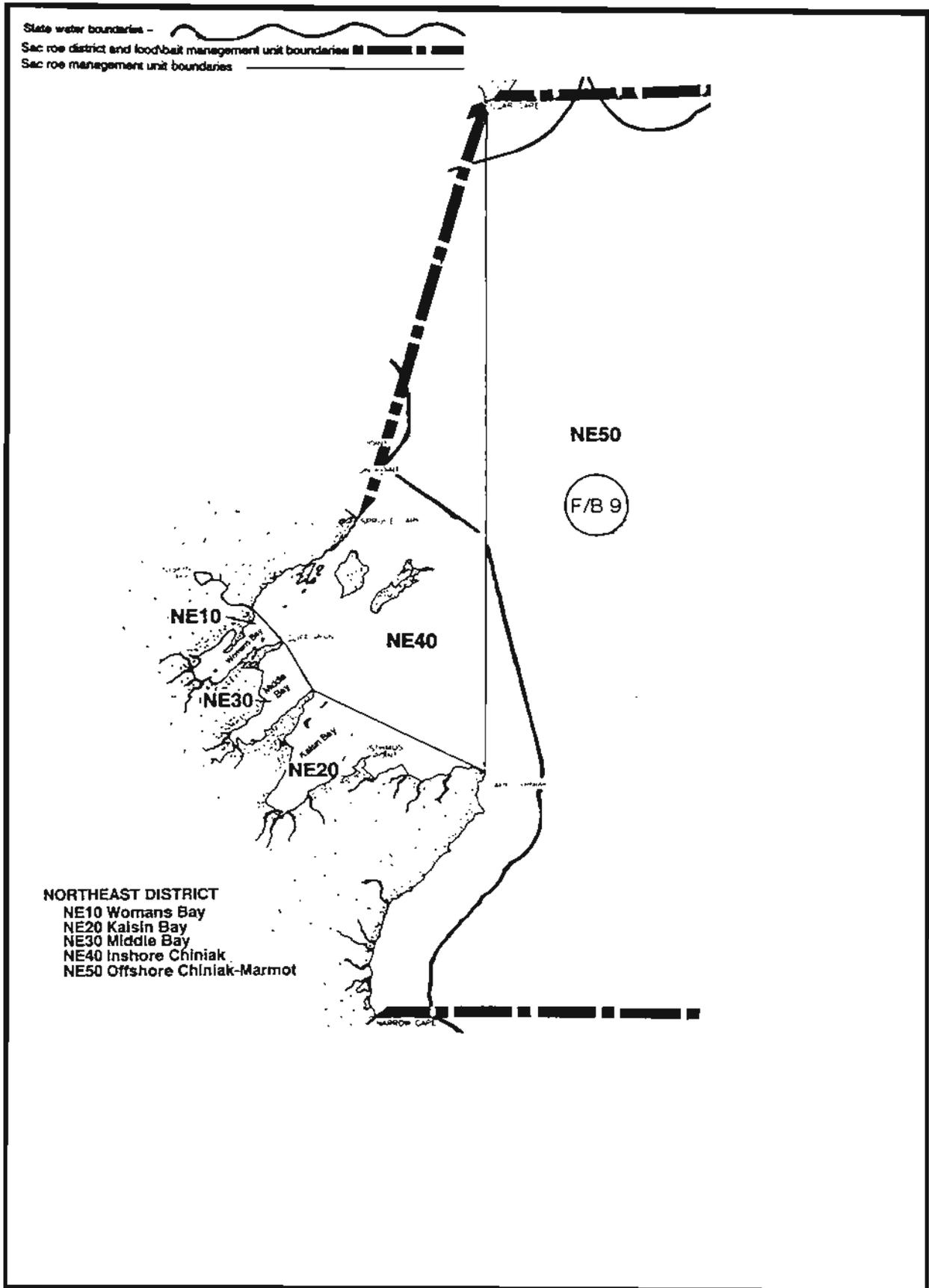


Figure 4. Statistical chart showing the Northeast District and Sections.

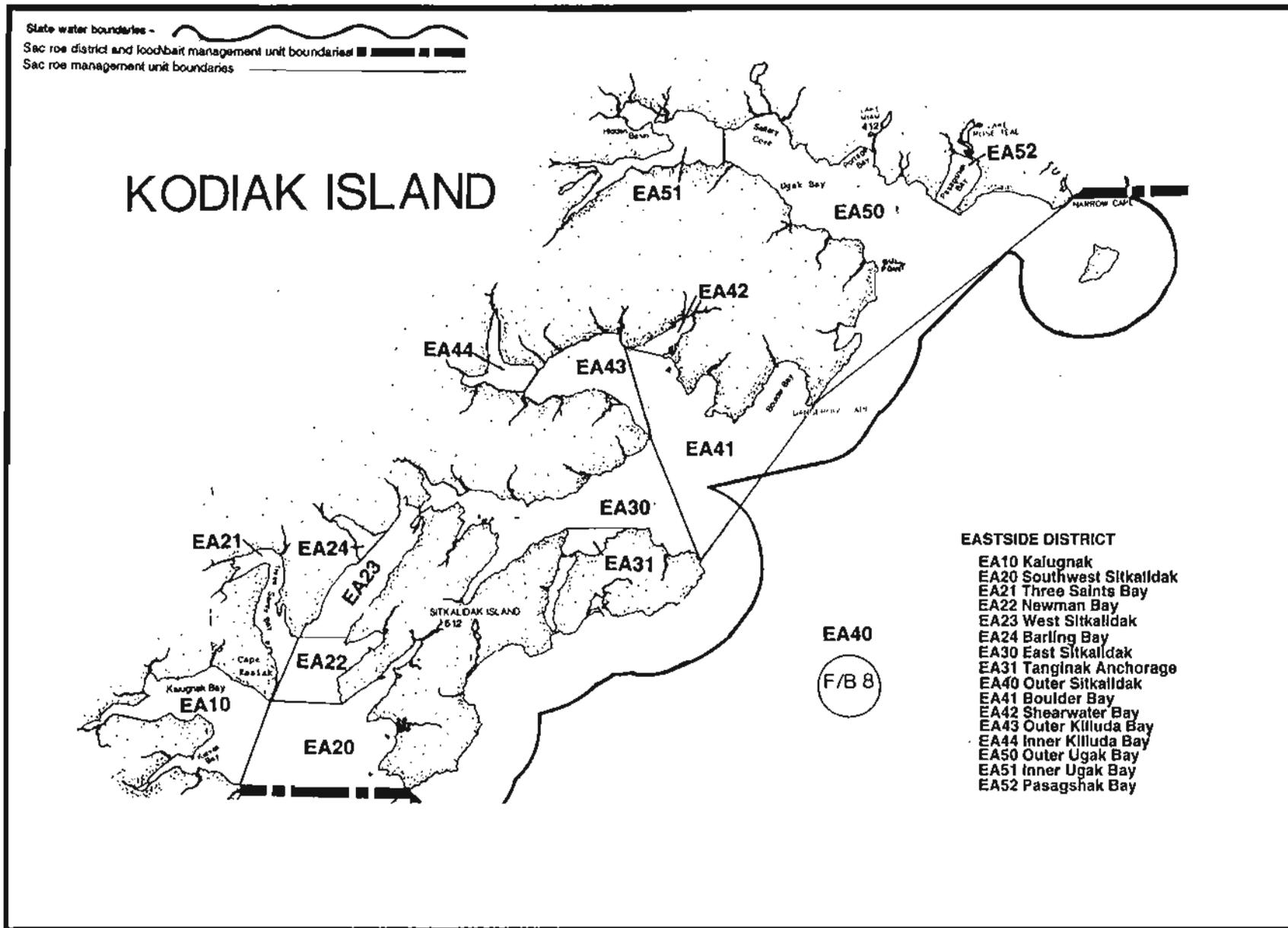


Figure 5. Statistical chart showing the Eastside District and Sections.

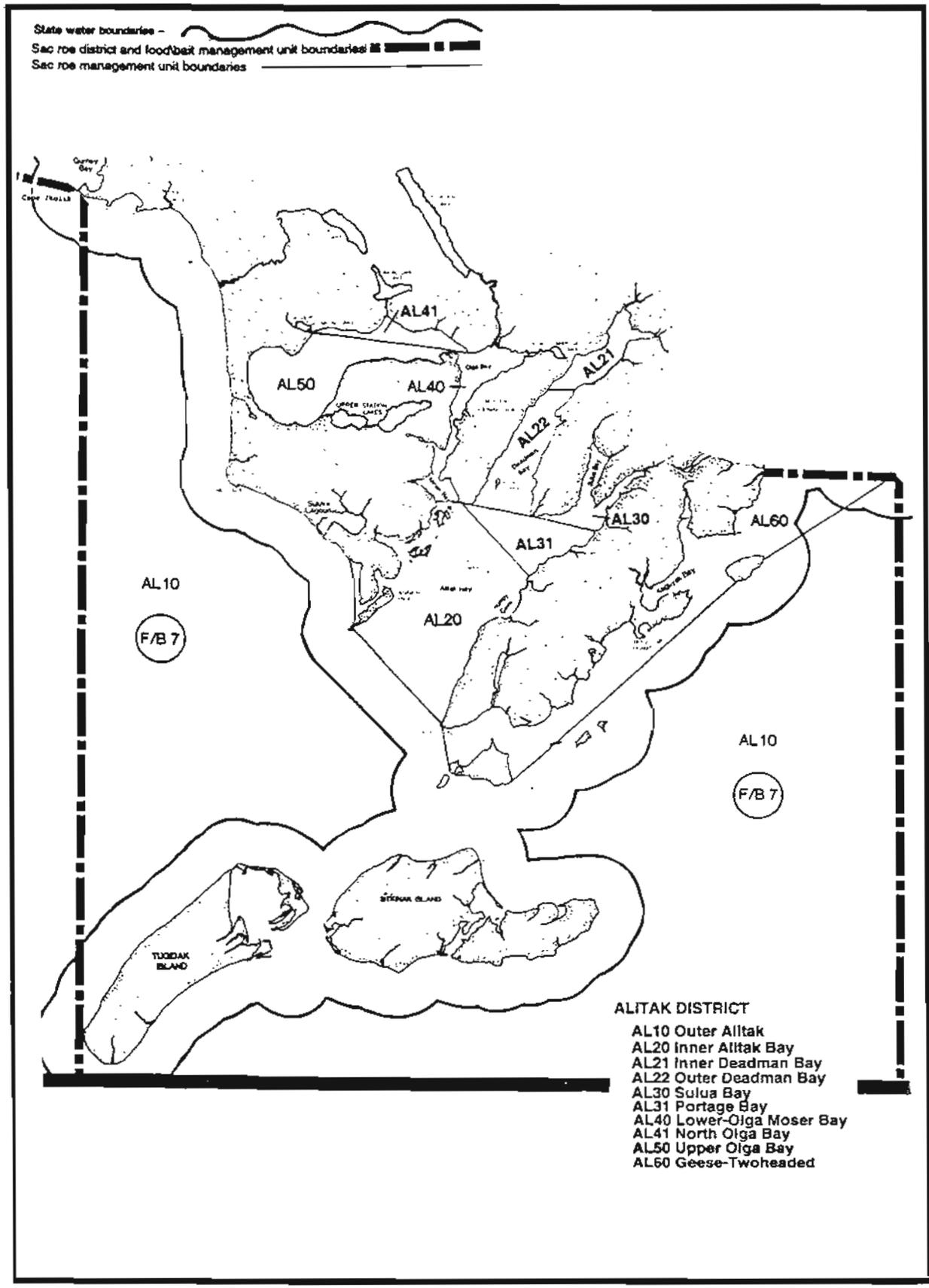


Figure 6. Statistical chart showing the Alitak District and Sections.

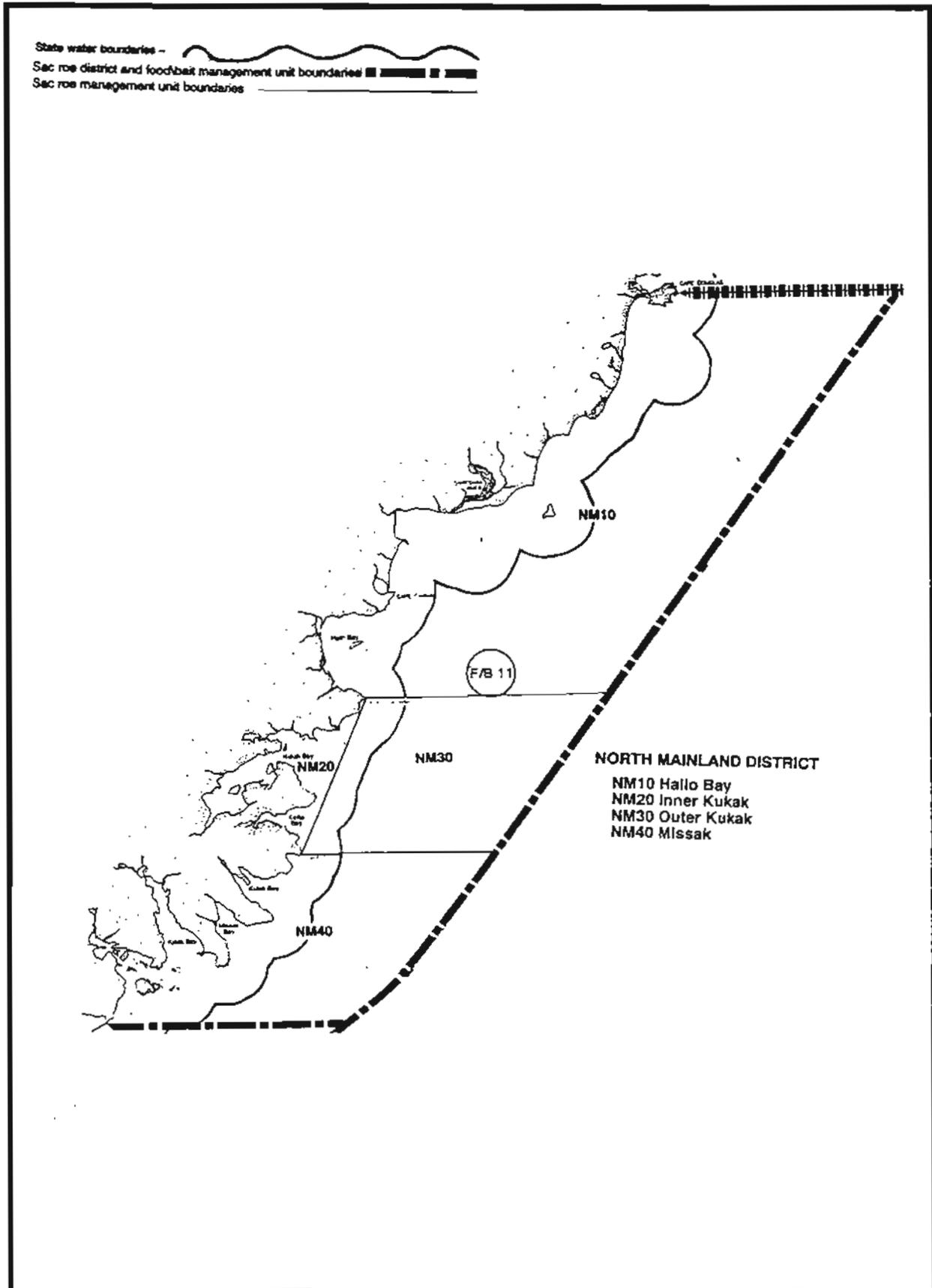


Figure 7. Statistical chart showing the North Mainland District and Sections.

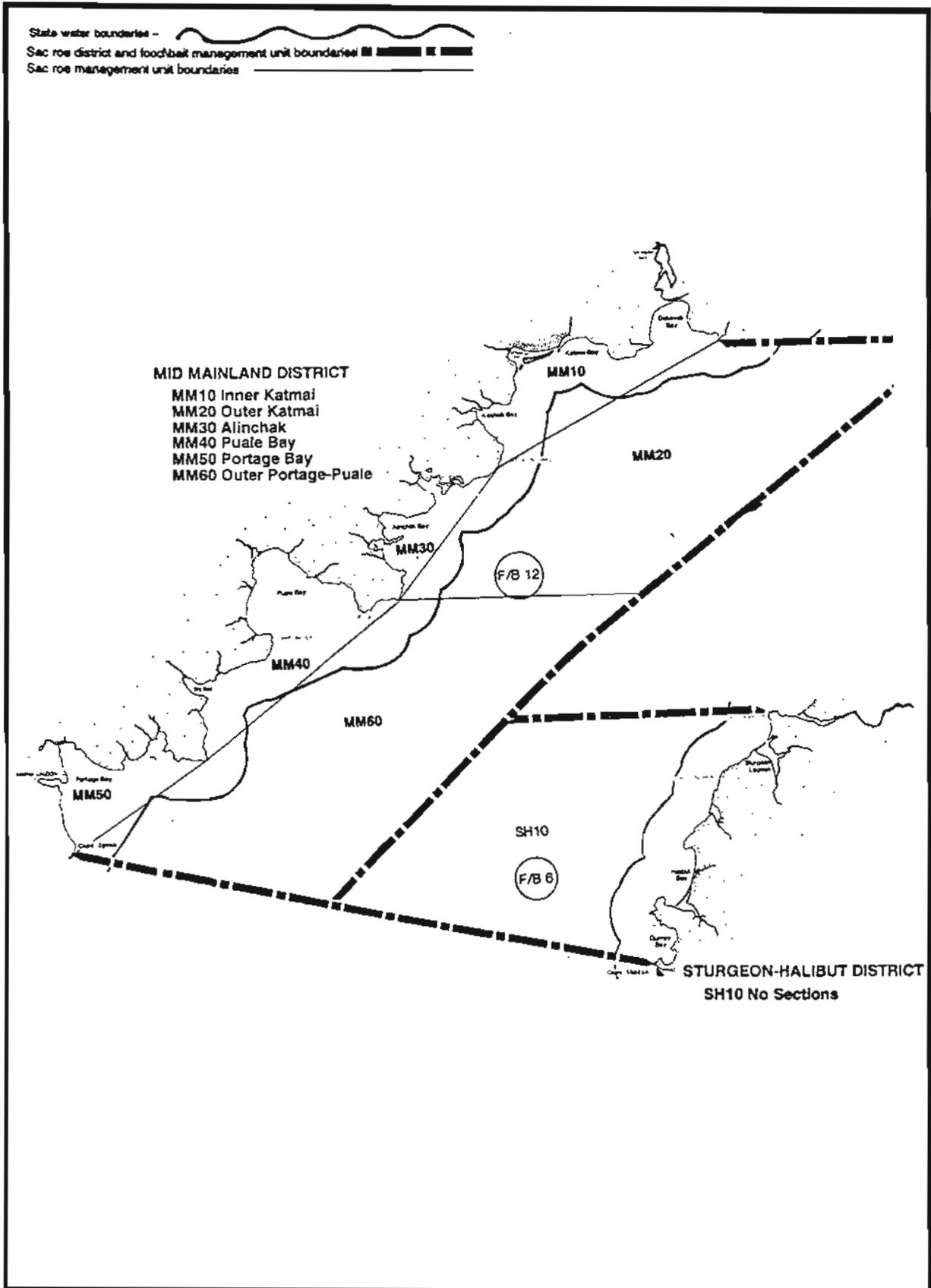


Figure 8. Statistical chart showing the Mid Mainland and Sturgeon-Halibut Bay Districts and Sections.

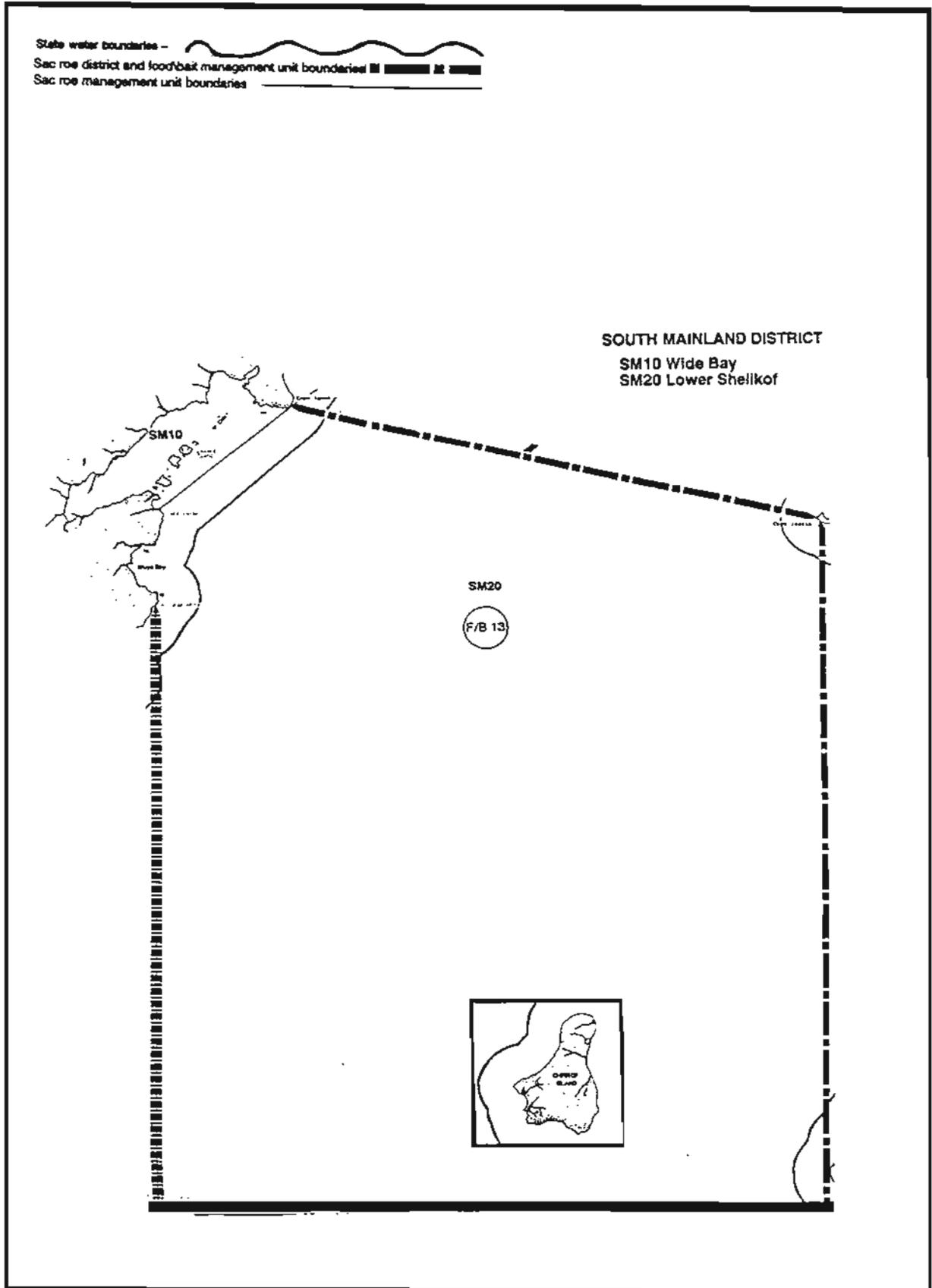


Figure 9. Statistical chart showing the South Mainland District and Sections.

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