

KODIAK MANAGEMENT AREA
SAC ROE HERRING HARVEST STRATEGY, 1999

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OVERVIEW

This document is intended to provide permit holders, tender operators, 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 1999 KMA sac roe herring fishery overall guideline harvest level (GHL) is 1,495 tons.

The 1999 season will begin at 12:00 noon on April 15 and will close at 12:00 noon on June 30. Fishing periods for purse seiners from April 15 through May 4 will be 13-hours in total 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 seiners will be from 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 will be 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 13 districts and 82 management sections (Figures 1-8). Historic herring harvests have occurred within 63 of these sections. For the 1999 season 49 sections have been closed prior to the start of the season due to either low stock abundance or no record of historical sac roe herring harvest.

GHLs have been established for 32 management sections and one section has been designated exploratory. Inseason emergency order closures will occur as the GHL for each management section is achieved. Management section 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 by ADF&G staff on single side band radio frequency 4.125 MHz at 8:30 a.m. and 5:00 p.m. daily. From April 15-May 4 closure updates may also be broadcast at 10:30 p.m. All permit holders and tender operators should also 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 register.)

Permit holders are encouraged to check with their markets prior to fishing to determine acceptable minimum herring size/weight and roe percentage standards 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 KMA sac roe herring fishery has occurred annually since 1964 and harvests have averaged 1,951 (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. Gear for this fishery includes purse seines and gillnets. Both gear types fish the same areas.

From 1989-1998 the annual harvest has averaged about 3,542 tons and has ranged from 2,057 tons in 1998 to 5,893 tons in 1994. The 1998 harvest had an exvessel value of \$617,100 dollars, a record low value for the fishery (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 Sections

The KMA is divided into 13 districts, which define geographical areas used in managing the sac roe herring fishery (Figure 1). Each district is then further divided into smaller areas called sections (Figure 2-8).

Sections 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 are available at the Kodiak ADF&G office.

Guideline Harvest Levels

Harvest projections or GHGs are established for all management sections which have produced consistent herring harvests in previous sac roe seasons. These GHGs are not guaranteed quotas and the actual harvest may exceed or fall short of these projections. The establishing of the 1999 GHGs by section involved the evaluation of a variety of information to determine stock status trends. Conservative adjustments of GHGs reflect the following trends: 1) fishery performance during the preceding season or seasons, (i.e., harvest timing, harvest duration, average school size, roe recovery percentage), 2) trends in age composition, 3) spawn and juvenile herring observations, 4) industry and ADF&G aerial surveys, and 5) hydroacoustic surveys. Only one section has been designated "exploratory" in 1999: the Puale Bay Section of the Mainland District.

Management Section Closures

The following sections will be closed for the entire 1999 season.

North Afognak District

(NA10) Shuyak Island
(NA20) Delphin Bay
(NA30) Perenosa Bay
(NA40) Seal Bay

West Afognak District

(WA10) Raspberry Strait
(WA20) Malina Bay
(WA50) Offshore West Afognak

South Afognak District

(All sections closed within this district)

Uganik District

(UG10) Kupreanof
(UG40) Offshore Uganik

Uyak District

(All sections closed within this district)

Northeast District

(All sections closed within this district)

Inner Marmot District

(All sections closed within this district)

Eastside District

(EA31) Tanginak Anchorage
(EA40) Outer Sitkalidak

Alitak District

(AL10) Outer Alitak
(AL21) Inner Deadman Bay
(AL22) Outer Deadman Bay
(AL30) Sulua Bay
(AL40) Lower Olga\Moser
(AL41) North Olga Bay
(AL50) Upper Olga Bay

North Mainland District

(NM10) Hallo Bay
(NM30) Outer Kukak
(NM40) Missak Bay

Mid-Mainland District

(MM20) Outer Katmai
(MM50) Portage Bay
(MM60) Outer Portage

South Mainland District

(SM20) Lower Shelikof

1999 Harvest Projections

The 1999 total sac roe herring fishery GHL for the KMA is 1,495 tons. The preseason GHGs by management section will be used as an aid in making inseason management decisions (Table 3).

The GHGs are distributed by district as follows:

North Afognak District 15 tons	West Afognak District 365 tons
South Afognak District (closed)	Uganik District 485 tons
Uyak District (closed)	Sturgeon/Halibut Bay District (closed)
Alitak District 75 tons	Eastside District 415 tons
Northeast District (closed)	Inner Marmot District (closed)
North Mainland District 25 tons	Mid-Mainland District 65 tons
South Mainland District 50 tons	

The forecasted harvest for the KMA is approximately 3.4% of the projected statewide sac roe herring harvest of 43,488 tons (Table 4).

Season Dates and Fishing Periods

The 1999 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 GHGs, and the competition between gear types, this fishery is best served by a fixed opening date for all sections of the KMA 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 seiners from April 15 through May 4 will be 13-hours in total duration starting at 12:00 noon until 10:00 P.M. on odd-numbered days (10 hours) and from 9:00 A.M. until 12:00 noon on even-numbered days (3 hours). From May 5 through June 30 the fishing periods for purse seiners will be 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 department's 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 sections where harvests are anticipated. During the 1999 season three ADF&G field crews and staff on two ADF&G vessels (R/V K-Hi-C and R/V Resolution) will monitor the fishery.

Once the preseason GHL has been achieved for a management section, 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 7, "Getting the Word".**

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

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

Management sections 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 have 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 will be given prior to any management sections 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 1999.

All fishermen, spotter pilots, and processors are encouraged to provide the ADF&G management staff with any information on herring biomass estimates and spawn sightings to improve the management of the fishery. This information will remain confidential. The ADF&G is particularly interested in any observations of herring in closed management sections and timely information will be used to direct ADF&G aerial surveys.

Catch Reporting

Processors and independent tender operators are required to provide timely daily catch reports of herring deliveries by management section. 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 section 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 GHGs 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 Crew/Permit Holder 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 permit holders to collect harvest data, fleet movement information, spawn observations, and observations of juvenile and adult herring concentrations (Table 5). ADF&G field crews will also monitor and map herring spawning activities. Permit holders 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 ADF&G to evaluate stock status and gain critical management information.

Cooperation by permit holders will be appreciated when ADF&G personnel request herring samples from their commercial catch. ADF&G personnel will also accept samples of juvenile

herring inadvertently caught. 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) contact with the herring management staff in the Kodiak office, in person or by telephone at 486-1830, 2) contact with ADF&G field personnel and vessels, on VHF Channel 6, or on SSB frequency 3.230 MHz (call sign WON32 Kodiak Fish and Game), or SSB frequency 4.125 MHz (call sign WHM29 Kodiak Fish and Game); 3) contacting any local herring processor to 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 daily by ADF&G at 8:30 a.m. and 5:00 p.m. on SSB frequency 4.125 MHz (also from April 15- May 4 closure updates may also be broadcast at 10:30 p.m.); 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).

Inperiod emergency closure announcements for management sections 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 numerous 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.

REGULATORY SUMMARY

Regulation Booklet and Statistical Chart

The 1998-99 Commercial Herring Fishing Regulation booklet along with the herring statistical chart is available at the Kodiak ADF&G Office. The Alaska Board of Fisheries (BOF) met in Kodiak in January 1999 and approved several new regulations pertaining to the sac roe herring fishery. These new regulations have not been signed into law at this time. The BOF approved changes in the section boundaries in the Uganik District will be implemented by an Emergency Order for the 1999 season (Figure 9).

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.

(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, buyer, and processor must register with the Kodiak ADF&G office either in person or through 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.

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, 1964-1998.

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 ^a	3,386	2,322	1,064	57	74	131	15
1997 ^a	3,235	2,629	606	64	59	123	10
1998 ^a	2,057	1,954	103	35	7	42	10
Average							
1964-1998	1,951	1,595	355	32	42	74	6 ^a

^a Approximately 15 additional purse seine vessels participated in the 1996-1998 fisheries but made no deliveries.

Table 2. Sac roe herring fishery summary of season length, guideline harvest level (GHL), harvest data by gear type, percentage of harvest by gear type, number of landings, and exvessel earnings, Kodiak Management Area, 1979-1998.

Year	Season Length (Days)	G-H-L (Tons)	Total Harvest (Tons)	Harvest by Gear Type		Percent Harvest by Gear Type		Number of Landings by Gear Type		Units of Gear Making Landings		Average Catch by Gear		Average Earnings		Price per Ton (\$)	Exvessel Total Value (\$)
				Seine (Tons)	Gillnet (Tons)	Seine	Gillnet	Seine	Gillnet	Seine	Gillnet	Seine (Tons)	Gillnet (Tons)	Seine (\$)	Gillnet (\$)		
1979	36	2,400	1,735	1,457	278	84%	16%	-	-	57	126	26	2	\$38,342	\$3,336	\$1,500	\$2,602,500
1980	35	2,400	2,383	2,009	374	84%	16%	-	-	92	109	22	3	\$15,068	\$2,368	\$690	\$1,644,270
1981	48	2,400	2,065	1,596	469	77%	23%	207	406	79	114	20	4	\$14,647	\$2,983	\$725	\$1,497,125
1982	59	2,400	1,771	1,447	324	82%	18%	138	191	45	67	32	5	\$17,886	\$2,660	\$550	\$974,050
1983	51	2,400	2,319	1,797	522	77%	23%	164	284	41	64	44	8	\$35,063	\$6,525	\$800	\$1,855,200
1984	54	2,400	2,163	1,691	472	78%	22%	138	212	39	69	43	7	\$34,687	\$5,472	\$800	\$1,730,400
1985	59	2,000	1,968	1,244	724	63%	37%	118	348	34	81	37	9	\$32,929	\$8,044	\$900	\$1,771,200
1986	61	1,690	1,558	1,110	448	71%	29%	132	385	31	71	36	6	\$34,016	\$5,994	\$950	\$1,480,100
1987	61	1,640	2,146	1,591	554	74%	26%	122	411	29	62	55	9	\$54,862	\$8,935	\$1,000	\$2,146,000
1988	59	2,065	2,171	1,304	867	60%	40%	169	555	33	76	40	11	\$51,370	\$14,830	\$1,300	\$2,822,300
1989	76	2,415	2,249	1,513	736	67%	33%	171	627	37	83	41	9	\$34,749	\$7,535	\$850	\$1,911,149
1990	75	2,375	2,347	1,644	703	70%	30%	156	544	27	63	61	11	\$51,756	\$9,485	\$850	\$1,994,950
1991	83	2,510	2,432	1,697	735	70%	30%	169	587	32	64	53	11	\$45,077	\$9,762	\$850	\$2,067,200
1992	77	2,720	4,283	3,260	1,023	76%	24%	185	706	40	74	82	14	\$40,750	\$6,912	\$500	\$2,141,500
1993	77	3,525	4,929	4,203	726	85%	15%	237	294	41	86	103	8	\$56,382	\$4,643	\$550	\$2,710,950
1994	71	4,550	5,893	4,976	917	84%	16%	285	485	66	57	75	16	\$60,315	\$12,870	\$800	\$4,714,400
1995	73	4,480	4,604	3,837	768	83%	17%	280	642	73	71	53	11	\$66,858	\$13,759	\$1,272	\$5,856,288
1996	69	4,180	3,386	2,322	1,064	69%	31%	202	890	57	74	41	14	\$81,474	\$28,757	\$2,000	\$6,772,000
1997	49	3,435	3,235	2,629	606	81%	19%	183	418	64	59	41	10	\$12,323	\$3,081	\$300	\$970,500
1998	50	2,030	2,057	1,954	103	95%	5%	110	26	35	7	56	15	\$16,749	\$4,414	\$300	\$617,100
Averages																	
1979-1998	61	2,701	2,785	2,164	621	77%	23%	168	401	48	74	48	9	\$39,755	\$8,118	\$874	\$2,413,959
Five Year																	
1994-1998	62	3,735	3,835	3,144	692	83%	17%	212	492	59	54	53	13	\$47,544	\$12,576	\$934	\$3,785,058
Ten Year																	
1989-1998	70	3,222	3,542	2,804	738	78%	22%	198	522	47	64	60	12	\$48,643	\$10,122	\$827	\$2,975,604

Table 3. Sac roe herring fishery guideline harvest levels by district and section with spawning biomass requirements, Kodiak Management Area, 1999.

STATISTICAL AREA	MANAGEMENT SECTION	1999 GUIDELINE HARVEST LEVEL (Tons)	REQUIRED SPAWNING BIOMASS	
			@10% EXPLOITATION (Tons)	@20% EXPLOITATION (Tons)
NORTH AFOGNAK DISTRICT				
NA10	Shuyak Island	CLOSED	-	-
NA20	Delphin Bay	CLOSED	-	-
NA30	Perenosa Bay	CLOSED	-	-
NA40	Seal Bay	CLOSED	-	-
NA50	Tonki Bay	15	150	75
DISTRICT TOTAL		15	150	75
WEST AFOGNAK DISTRICT				
WA10	Raspberry Strait	CLOSED	-	-
WA20	Malina Bay	CLOSED	-	-
WA31	Paramanof Bay	280	2,800	1,400
WA32	Foul Bay	75	750	375
WA40	Blue Fox/Devil's Inlet	10	100	50
WA50	Offshore W. Afognak	CLOSED	-	-
DISTRICT TOTAL		365	3,650	1,825
SOUTH AFOGNAK DISTRICT				
SA10	Izhut Bay	CLOSED	-	-
SA20	Kitoi Bay	CLOSED	-	-
SA30	MacDonalds Lagoon	CLOSED	-	-
SA40	Danger Bay	CLOSED	-	-
SA50	Litnik	CLOSED	-	-
SA60	Duck Bay	CLOSED	-	-
DISTRICT TOTAL		CLOSED	-	-
UGANIK DISTRICT				
UG10	Kupreanof	CLOSED	-	-
UG20	Viekoda	75	750	375
UG21	Terror Bay	100	1,000	500
UG30	Village Island	150	1,500	750
UG31	West Uganik Pass	20	200	100
UG32	NE Arm Uganik	10	100	50
UG33	E. Arm Uganik	30	300	150
UG34	S. Arm Uganik	100	1,000	500
UG40	Offshore Uganik	CLOSED	-	-
DISTRICT TOTAL		485	4,850	2,425
UYAK DISTRICT				
UY10	Offshore Uyak	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. (page2 of 3)

STATISTICAL AREA	MANAGEMENT SECTION	1999 GUIDELINE HARVEST LEVEL (Tons)	REQUIRED SPAWNING BIOMASS	
			@10% EXPLOITATION (Tons)	@20% EXPLOITATION (Tons)
ALITAK DISTRICT				
AL10	Outer Alitak	CLOSED	-	-
AL20	Inner Alitak	10	100	50
AL21	Inner Deadman Bay	CLOSED	-	-
AL22	Outer Deadman Bay	CLOSED	-	-
AL30	Sulua Bay	CLOSED	-	-
AL31	Portage Bay	50	500	250
AL40	Lower Olga/Moser	CLOSED	-	-
AL41	No. Upper Olga Bay	CLOSED	-	-
AL50	Upper Olga Bay	CLOSED	-	-
AL60	Geese/Twoheaded	15	150	75
DISTRICT TOTAL		75	750	375
STURGEON/HALIBUT DISTRICT				
SH10	Sturgeon/Halibut	CLOSED	-	-
EASTSIDE DISTRICT				
EA10	Kaiugnak	*Note: Sections EA10 and EA20 will be managed as one section, 10 ton ghl..		
EA20	SW. Sitkalidak	10	100	50
EA21	Three Saints Bay	15	150	75
EA22	Newman Bay	*Note: Sections EA22 and EA23 will be managed as one section, 50 ton ghl.		
EA23	W. Sitkalidak Strait	50	500	250
EA24	Barling Bay	40	400	200
EA30	E. Sitkalidak St.	30	300	150
EA31	Tanginak Anchorage	CLOSED	-	-
EA40	Outer Sitkalidak	CLOSED	-	-
EA41	Boulder Bay	10	100	50
EA42	Shearwater Bay	30	300	150
EA43	Outer Kiliuda Bay	60	600	300
EA44	Inner Kiliuda Bay	60	600	300
EA50	Outer Ugak Bay	40	400	200
EA51	Inner Ugak Bay	60	600	300
EA52	Pasagshak	10	100	50
DISTRICT TOTAL		415	4,150	2,075
NORTHEAST DISTRICT				
NE10	Womens Bay	CLOSED	-	-
NE20	Kalsin Bay	CLOSED	-	-
NE30	Middle Bay	CLOSED	-	-
NE40	Inshore Chiniak	CLOSED	-	-
NE50	Offshore Chiniak	CLOSED	-	-
DISTRICT TOTAL		CLOSED		
INNER MARMOT DISTRICT				
IM10	Monashka Bay	CLOSED	-	-
IM20	Anton Larsen Bay	CLOSED	-	-
IM30	Sharatin Bay	CLOSED	-	-

-Continued-

Table 3. (page 3 of 3)

STATISTICAL AREA	MANAGEMENT SECTION	1999 GUIDELINE HARVEST LEVEL (Tons)	REQUIRED SPAWNING BIOMASS	
			@10% EXPLOITATION (Tons)	@20% EXPLOITATION (Tons)
IM40	Kizhuyak Bay	CLOSED	-	-
IM50	Spruce Island	CLOSED	-	-
DISTRICT TOTAL		CLOSED		
NORTH MAINLAND DISTRICT				
NM10	Hallo Bay	CLOSED	-	-
NM20	Inner Kukak	25	250	125
NM30	Outer Kukak	CLOSED	-	-
NM40	Missak Bay	CLOSED	-	-
DISTRICT TOTAL		25	250	125
MID MAINLAND DISTRICT				
MM10	Inner Katmai	50	500	250
MM20	Outer Katmai	CLOSED	-	-
MM30	Alinchak	15	150	75
MM40	Puale Bay	EXPLORATORY	-	-
MM50	Portage Bay	CLOSED	-	-
MM60	Outer Portage	CLOSED	-	-
DISTRICT TOTAL		65	650	325
SOUTH MAINLAND DISTRICT				
SM10	Wide Bay	50	500	250
SM20	Lower Shelikof	CLOSED	-	-
DISTRICT TOTAL		50	500	250
GRAND TOTAL		1,495	14,950	7,375

Table 4. Alaska statewide average sac roe herring harvests for 1994-1998 and preliminary 1999 harvest projections.

Fishery Location	Average Harvest 1994-1998	1999 Harvest Projection
Southeast		
Kah Shakes	757	870
Sitka Sound	6,748	8,476
Seymour Canal	257	595
Hobart/Houghton	391	443
Total All Areas	8,153	10,384
Prince William Sound		
Total All Fisheries	1,700	3,649
Cook Inlet		
Kamishak District	2,100	Closed
Upper Cook Inlet	0	0
Total All Areas	2,100	0
Kodiak		
Total Area	3,835	1,495
Alaska Peninsula		
North Peninsula	118	150
South Peninsula	59	40
Total Area	177	190
Bristol Bay (Togiak)		
Seine	19,221	11,509
Gill Net	6,391	3,836
Total Area	25,612	15,345
AYK Area		
Security Cove	1,011	612
Goodnews Bay	991	602
Cape Avinof	615	533
Nunivak Island	72	664
Nelson Island	978	965
Cape Romanzof	671	650
Norton Sound		
Gillnet	3,721	7,410
Beach Seine	359	824
Port Clarence	0	165
AYK Total	8,418	12,425
Statewide Total Harvest	49,995	43,488

Table 5. Alaska Department of Fish and Game, Division of Commercial Fisheries management staff, 1999.

Office Staff:	
Regional Supervisor	Pete Probasco
Regional Management Biologist	Vacant
Area Management Biologist	Dave Prokopowich
Assistant Management Biologist	Dennis Gretsich
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 Gretsich
R/V Resolution:	
Boat Officer	Ron Kutchick
Fishery Biologist	Kevin Brennan
Field Crews:	
Fishery Technician	Jon "Fishhawk" Becker
Fishery Technician	Jim Catlin
Fishery Technician	Joey Lindberg
Fishery Technician	Aaron Holmes
Fishery Technician	Daryn Swisher
Fishery Technician	Carl Peterson

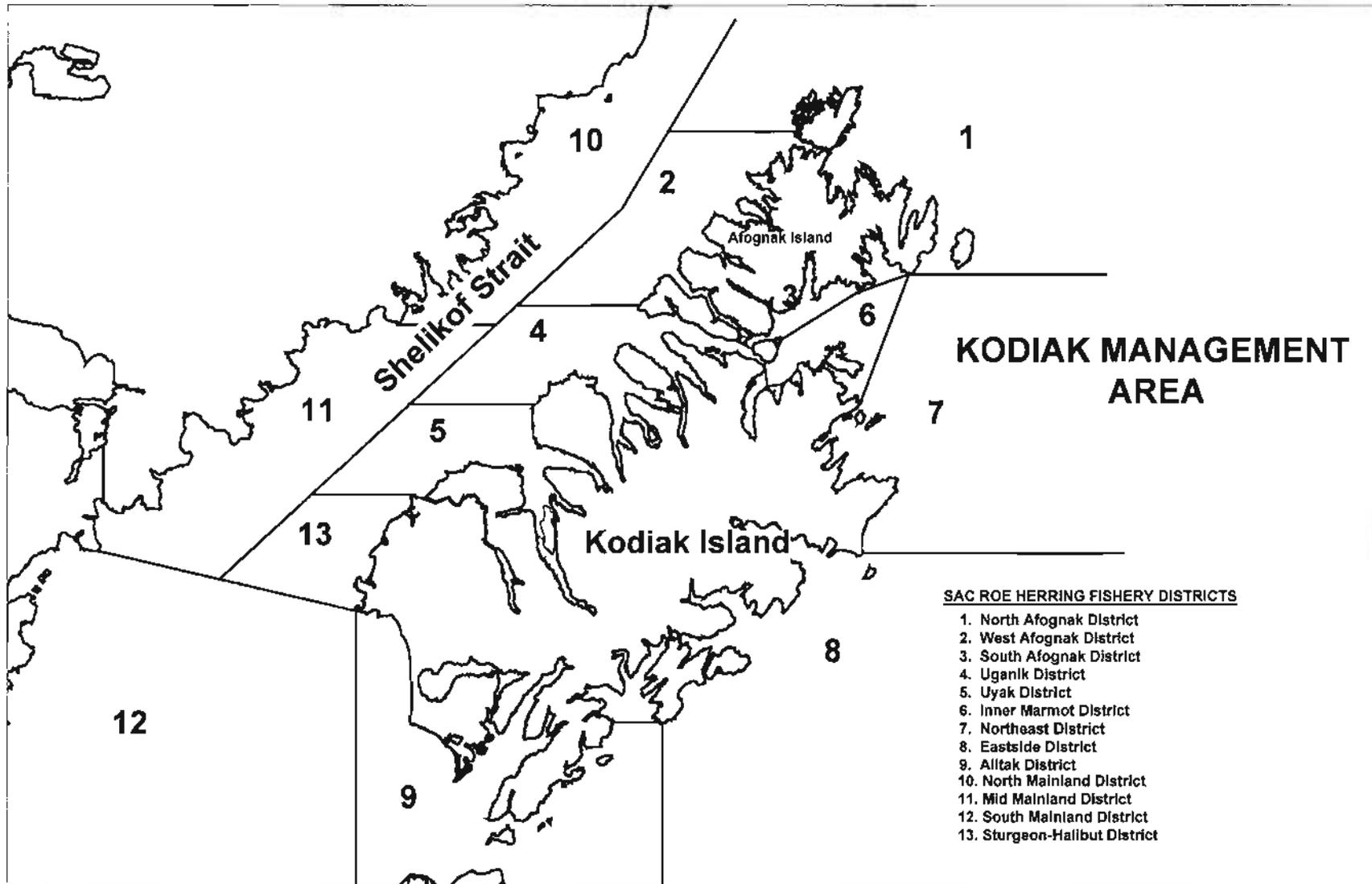


Figure 1. Map of the Kodiak Management Area illustrating the sac roe herring fishery districts.

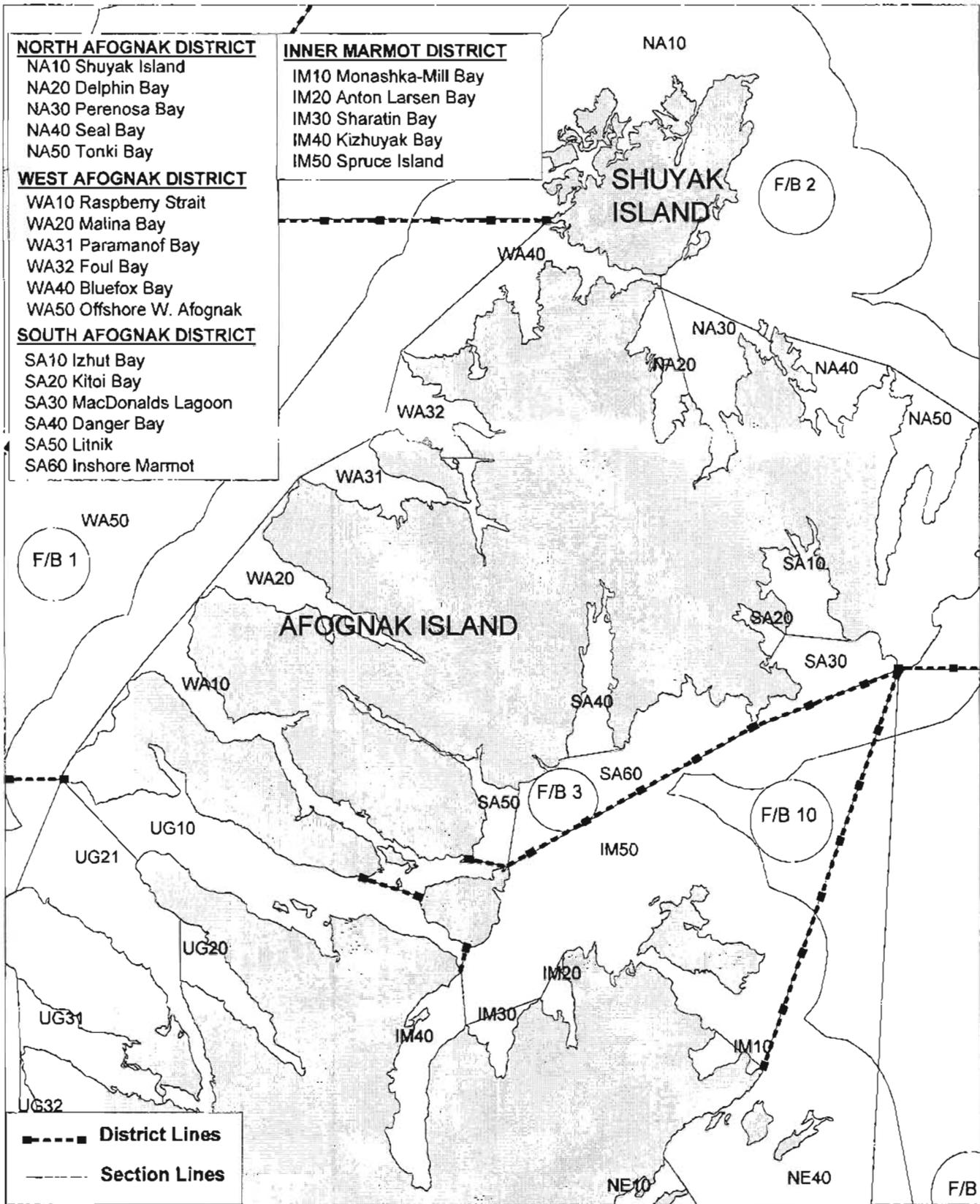


Figure 2. Map showing the North Afognak, West Afognak, South Afognak, and Inner Marmot Districts and Sections.

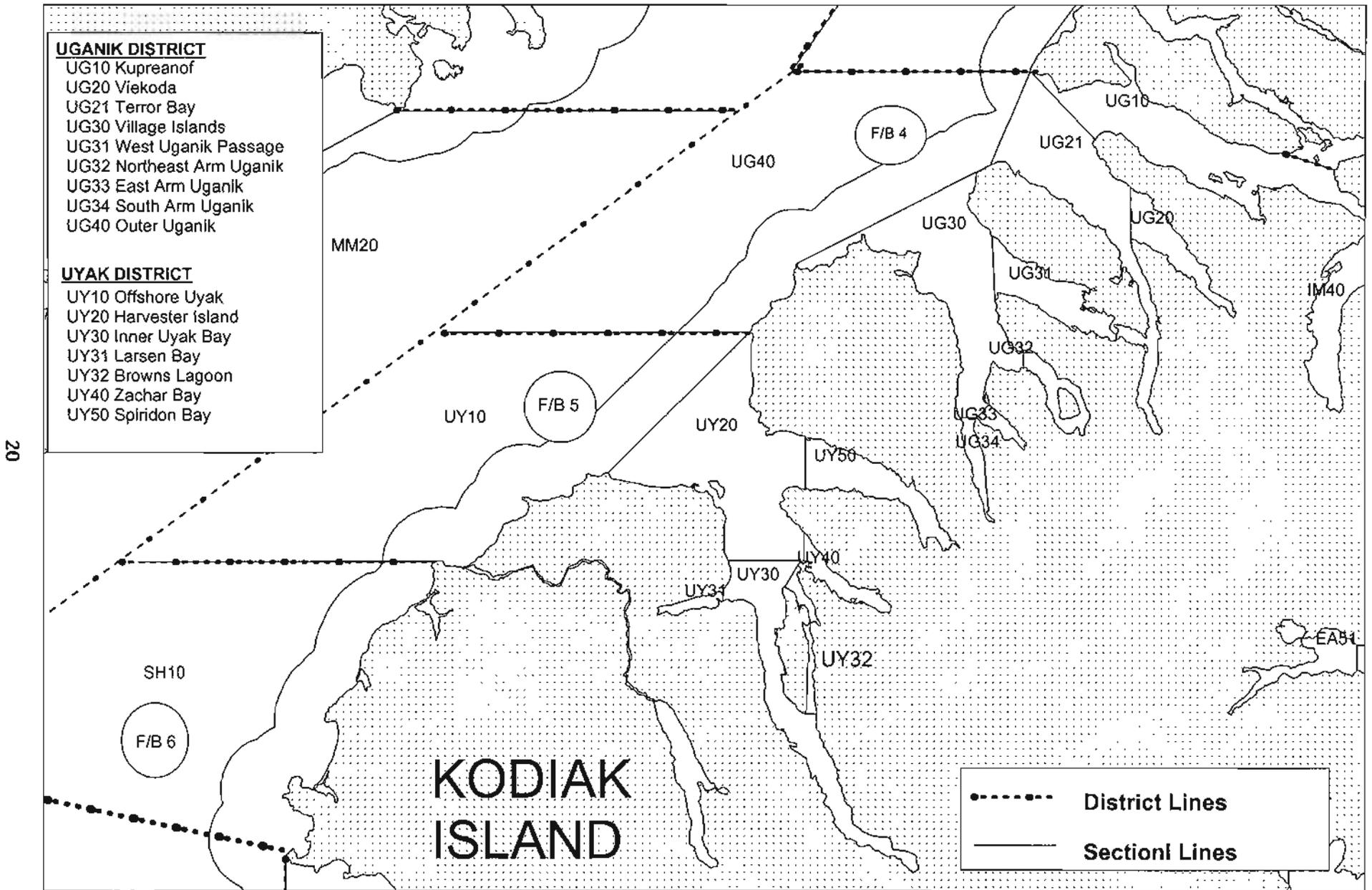


Figure 3. Map showing the Uganik and Uyak Districts and Sections.

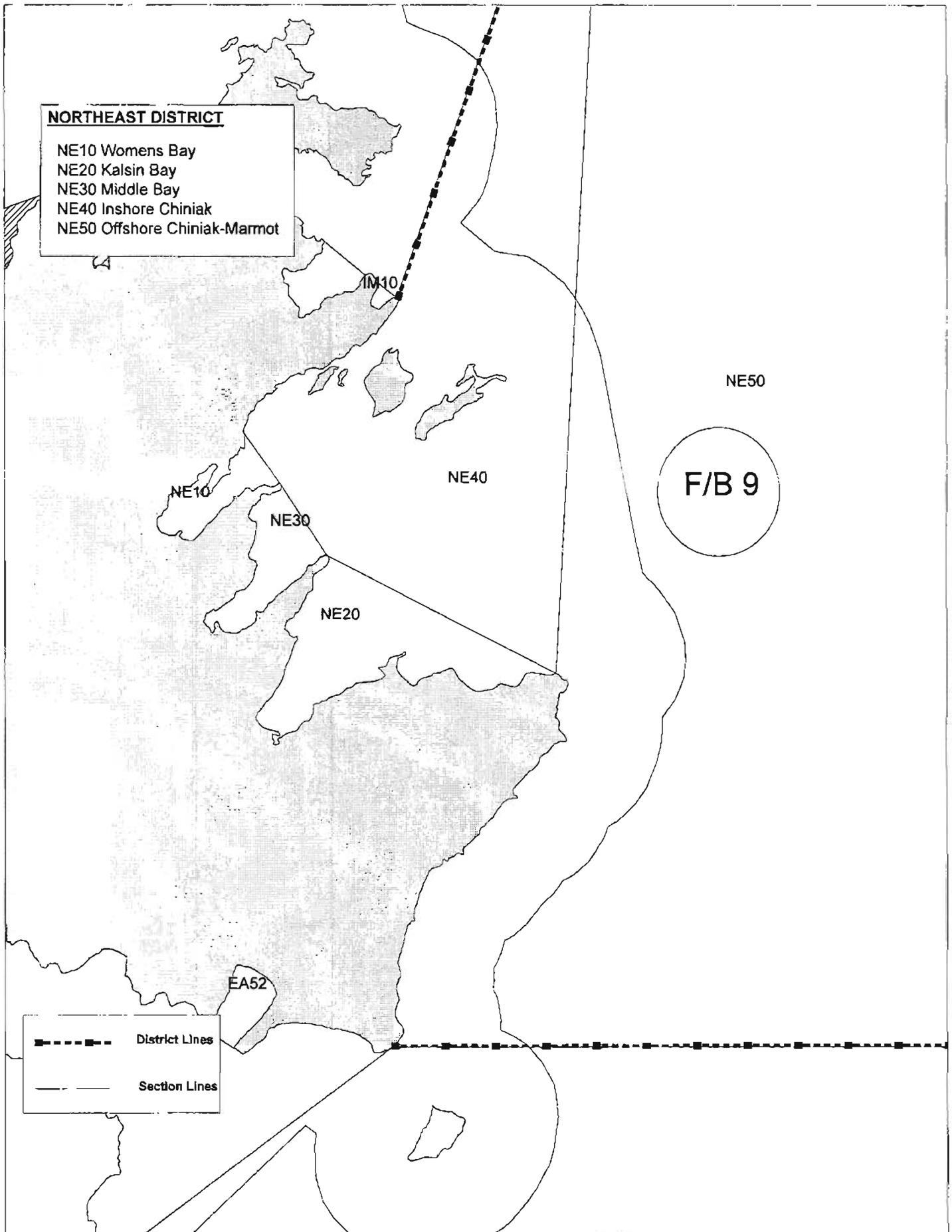


Figure 4. Map showing the Northeast District and Sections.

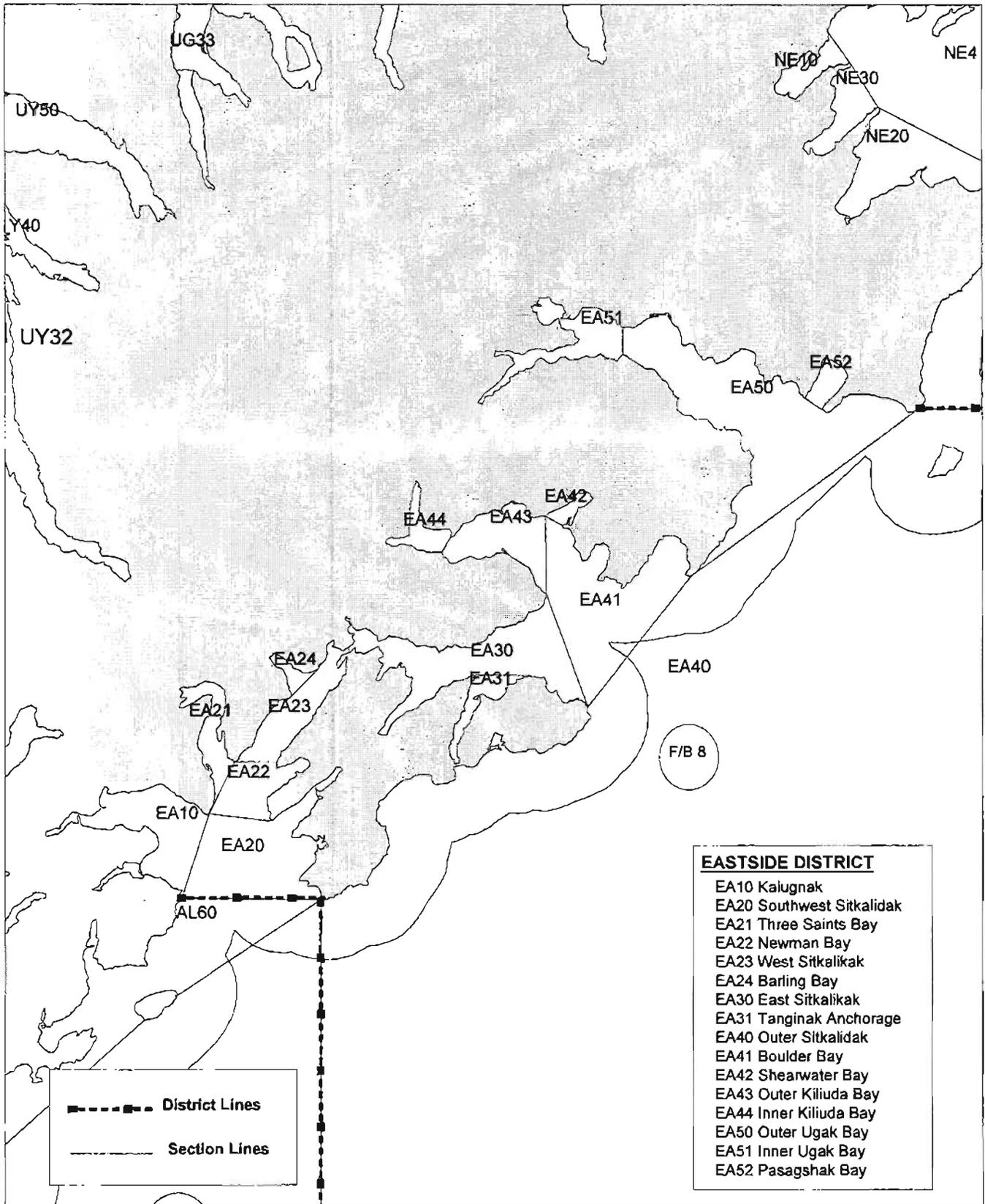


Figure 5. Map showing the Eastside District and Sections.

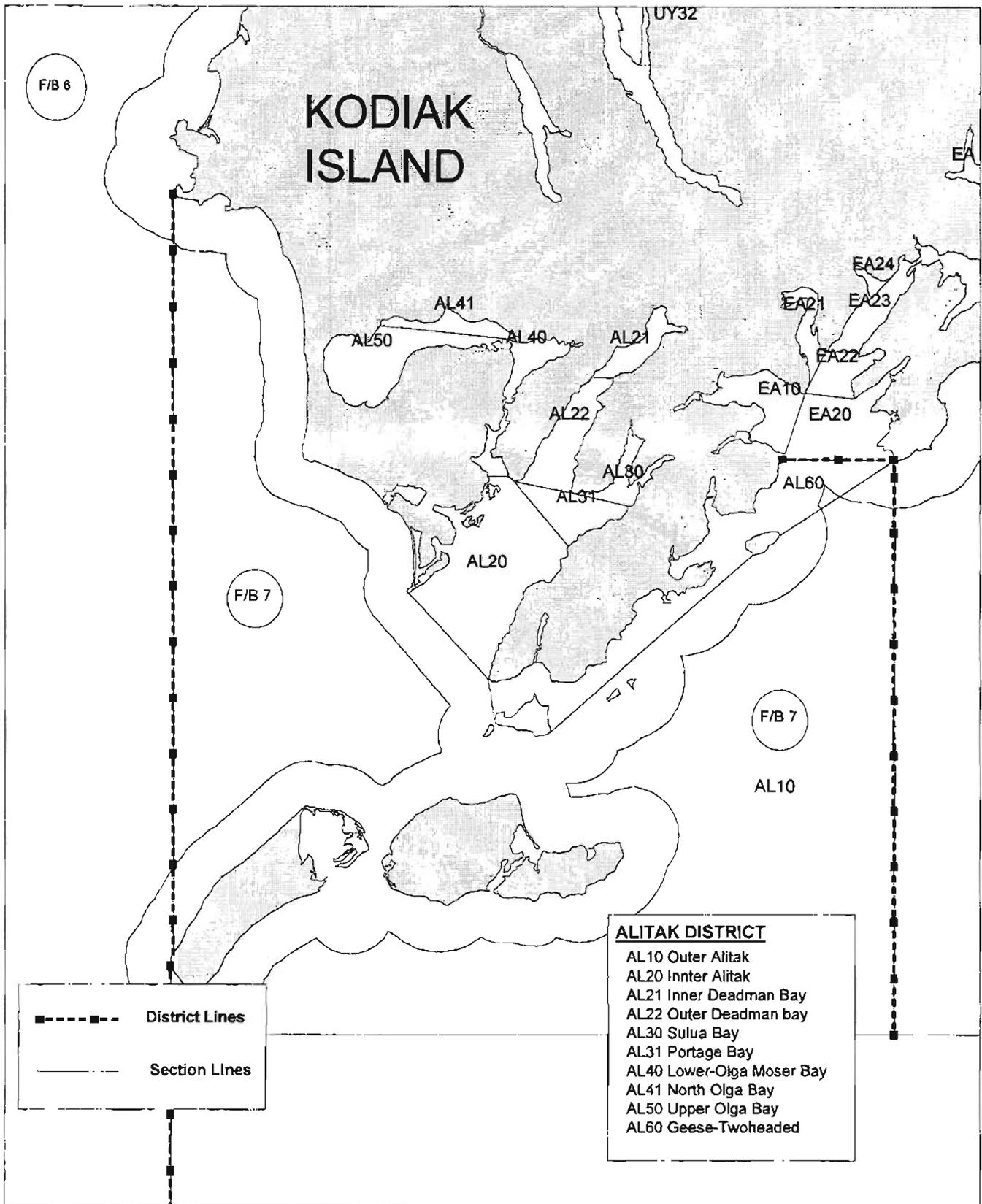


Figure 6. Map showing the Alitak District and Sections.

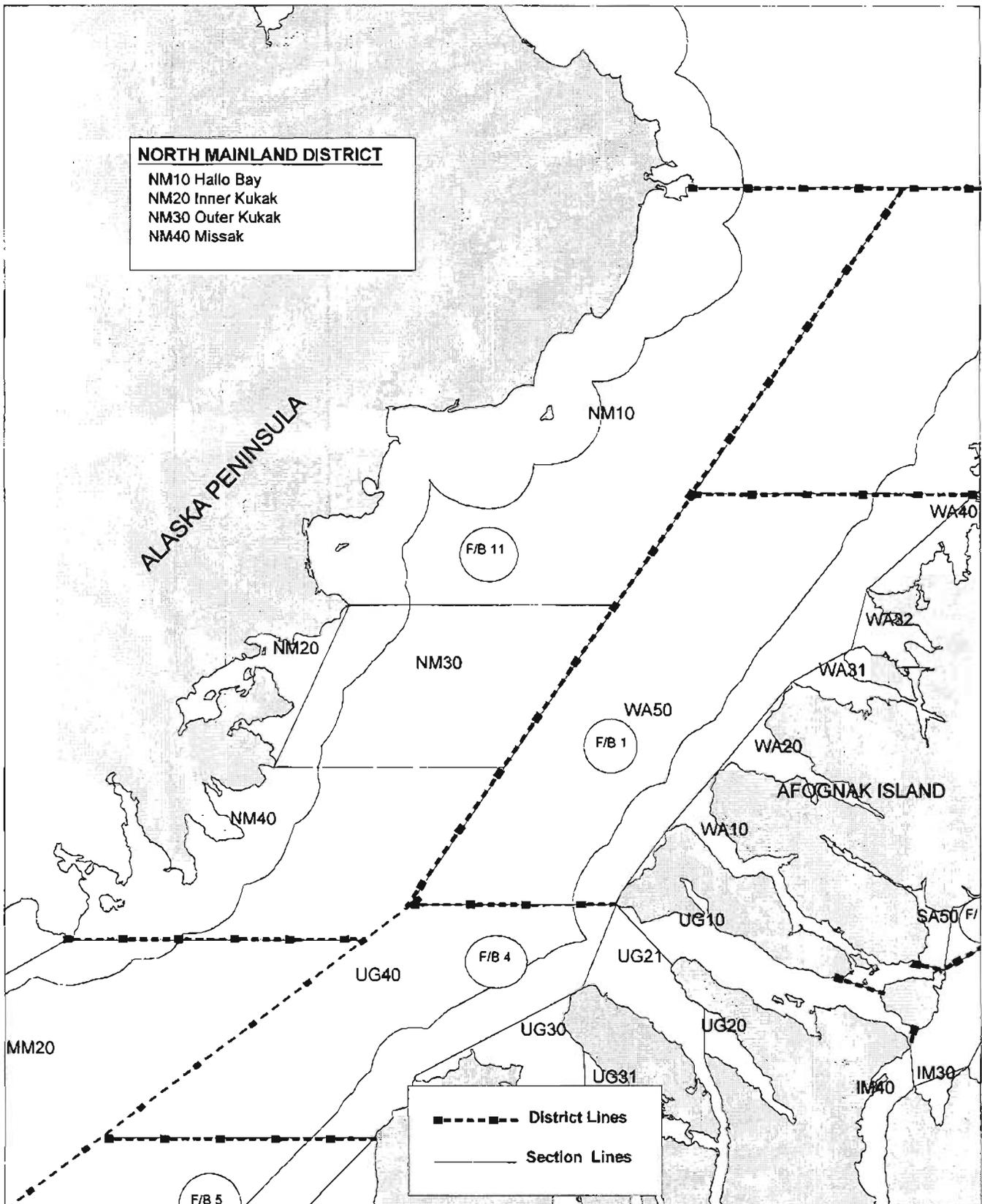


Figure 7. Map showing the North Mainland District and Sections.

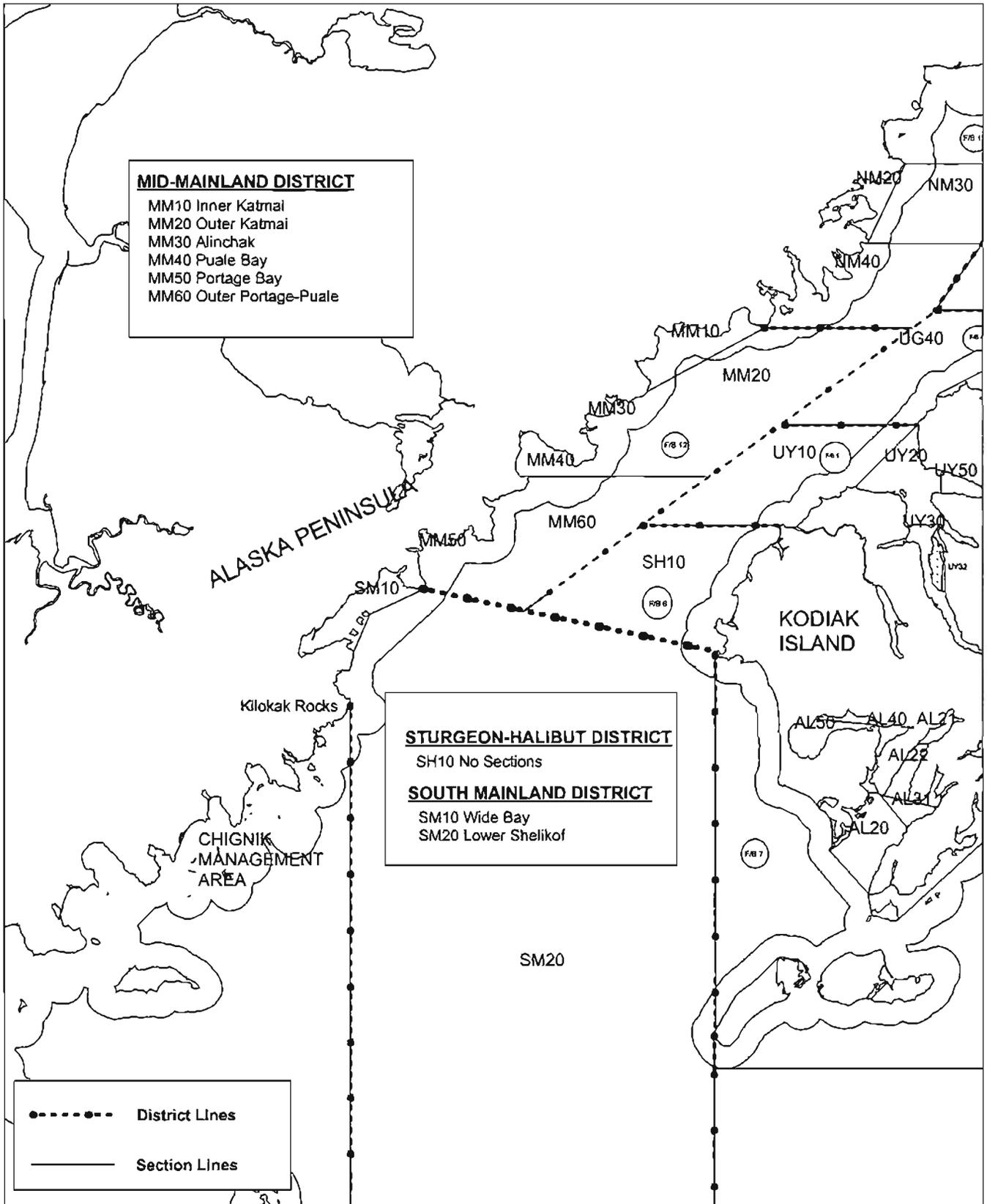


Figure 8. Map showing the Mid-Mainland, South Mainland and Sturgeon Districts and Sections.

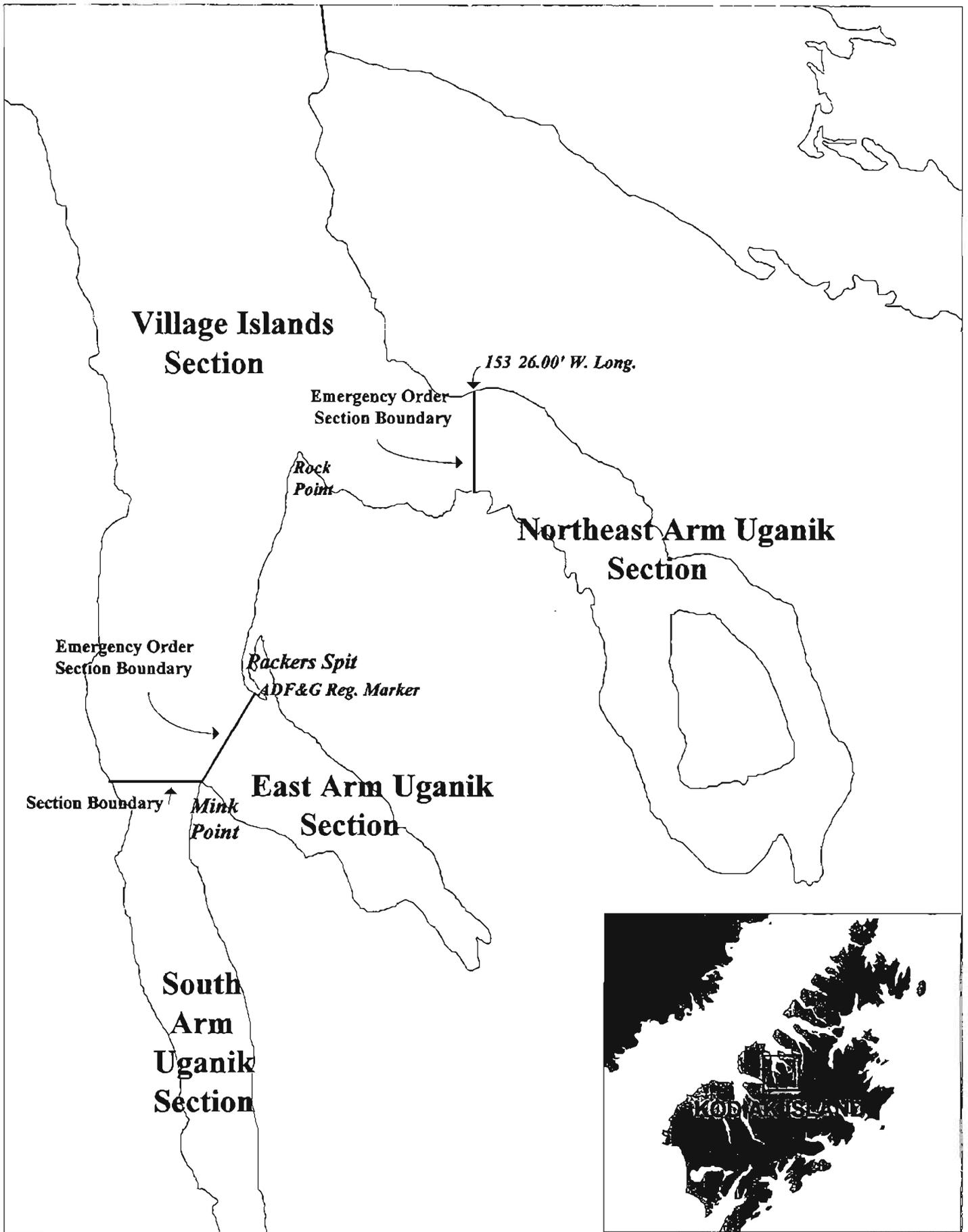


Figure 9. Map showing the emergency order section boundaries within the Uganik District.

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