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**KODIAK MANAGEMENT AREA  
SAC ROE HERRING HARVEST STRATEGY, 1996**

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By

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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 1996 Kodiak sac roe herring fishery overall guideline harvest level (GHL) is 4,180 tons.

The Alaska Board of Fisheries met in Kodiak in November 1995 and new regulations were enacted concerning fishing periods, harvest strategies (Appendix A.1), and gear restrictions. The 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 1996 season 20 management units have been closed prior to the start of the season due to low stock abundance.

GHL's are established for 46 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 Kodiak Area. (Fishing vessels are not required to be registered.)

To prevent waste, permit holders are encouraged to check with their markets prior to fishing to determine acceptable minimum size/weight and roe percentages. 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 (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.

Since 1964, the harvest has averaged approximately 1,862 (short) tons. Since 1979 the annual harvest has averaged about 2,766 tons and has provided a stable fishery with harvests ranging from 1,558 tons in 1986 to 5,893 in 1994, (Table 2). In 1995 the ex-vessel value of this fishery was estimated at \$5.8 million dollars.

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) and several sections were new in 1995 or had new boundary lines. Management units are intended to define the spawning area used by a stock of herring or to define a geographical harvest location. Statistical charts are also available which illustrate districts and sections, (Figures 1-9).

### *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) 1995 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 four 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 1996 season.

#### *South Afognak District*

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

#### *North Afognak District*

NA10 Shuyak Island Section will be open.  
The following sections will remain closed;  
(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

### *1996 Harvest Projections*

The 1996 KMA sac roe guideline harvest level is approximately 4,180 tons. The actual harvest will depend on inseason fishery performance combined with ADF&G's ability to assess harvests in a timely manner. The 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, (closed except the Shuyak Island management unit), 20 tons, West Afognak District 1,180 tons, South Afognak District closed, Uganik District 935 tons, Uyak District closed, Sturgeon/Halibut District exploratory, Alitak District 530 tons, Eastside District 1,190 tons, Northeast District 80 tons, Inner Marmot District (closed except for the Monashka-Mill Bay and Spruce Island management units), 10

tons, North Mainland District 50 tons, Mid Mainland District 90 tons, and the South Mainland District 95 tons. The forecasted harvest for the KMA is approximately 8% of the projected statewide sac roe herring harvest of 50,454 tons, (Table 4).

### *Season Dates and Fishing Periods*

The 1996 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 group may be increased or reduced inseason.

Because of the differential timing and abundance of Kodiak's various herring stocks, high gear levels relative to GHLS, 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 fishery relies primarily on harvest data collected by ADF&G field crews stationed in management units where harvests are anticipated. During the 1996 season up to four ADF&G field crews, the 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.

Generally, once the preseason GHL has been achieved for a management unit, it is 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".**

If at any time during the season 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 1996.

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.

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. To date industry cooperation has been excellent in support of this fishery.

Individual code sheets will be provided to each tender operator or processor required to report catches on a daily basis. 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 fishermen contacts to collect data on harvest levels and rates, fleet movements, and fleet observations of herring concentrations, (Table 5).

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 will be used primarily for monitoring age composition, and when used with other stock performance indicators, will assist in determining stock status. Copies of historical age data by stock are available at the Kodiak ADF&G office.

ADF&G field crews will also monitor and map spawning activities, and solicit information on commercial sightings to supplement information gathered by ADF&G. Fishermen and spotter pilots are encouraged to provide biomass and spawning information, which will remain confidential. Past cooperation has been excellent and has helped evaluate stock status and gain critical management information.

### *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 emergency order; 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 are 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.

## REGULATORY SUMMARY

### *Regulation Booklet and Statistical Chart*

The 1996 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 has been updated for the 1996 season and lists the corrected legal descriptions of districts and sections or management units. Corrections to the descriptions have been made using the 1983 North America datum NOAA marine charts. **New:** The 1996 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.

Several new gear regulations were enacted during the November 1995 Alaska Board of Fisheries meeting held in Kodiak. The new regulations are shown in **bold print** as follows along with other pertinent regulations.

### *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. Waters closed to herring fishing. (a) During the period July 1 through October 31, herring may not be taken in waters described in 5 AAC 18.350 and 5 AAC 39.290. (Waters closed to salmon fishing). Following is a listing of closed water areas to herring fishing.

- (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*

#### Tenders and Processors

The tender registration procedure 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 their 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 harvest by gear type for the Kodiak sac roe herring fishery, 1964-1995.

| Year                   | Total Harvest | Seine Tons | Gillnet Tons | Number of Processors | Seine Permits | Gillnet Permits | Total |
|------------------------|---------------|------------|--------------|----------------------|---------------|-----------------|-------|
| 1964                   | 568           | 568        |              | 2                    | 5             |                 | 5     |
| 1965                   | 657           | 657        |              | 2                    | 8             |                 | 8     |
| 1966                   | 2,769         | 2,769      |              | 4                    | 11            |                 | 11    |
| 1967                   | 1,662         | 1,662      |              | 4                    | 5             |                 | 5     |
| 1968                   | 2,001         | 2,001      |              | 4                    | 10            |                 | 10    |
| 1969                   | 1,130         | 1,130      |              | 9                    | 21            |                 | 21    |
| 1970                   | 342           | 342        |              | 5                    | 13            |                 | 13    |
| 1971                   | 284           | 284        |              | 2                    | 4             |                 | 4     |
| 1972                   | 215           | 215        |              | 1                    | 4             |                 | 4     |
| 1973                   | 831           | 831        |              | 4                    | 11            |                 | 11    |
| 1974                   | 868           | 868        |              | 4                    | 26            |                 | 26    |
| 1975                   | 8             | 8          |              | 3                    | 2             |                 | 2     |
| 1976                   | 5             | 5          |              | 1                    | 1             |                 | 1     |
| 1977                   | 338           | 338        |              | 3                    | 11            |                 | 11    |
| 1978                   | 904           | 881        | 23           | 7                    | 28            | 7               | 35    |
| 1979                   | 1,735         | 1,457      | 278          | 8                    | 57            | 125             | 182   |
| 1980                   | 2,383         | 2,009      | 374          | 9                    | 92            | 109             | 201   |
| 1981                   | 2,065         | 1,596      | 469          | 9                    | 79            | 114             | 193   |
| 1982                   | 1,771         | 1,447      | 324          | 6                    | 45            | 67              | 112   |
| 1983                   | 2,319         | 1,797      | 522          | 7                    | 41            | 64              | 105   |
| 1984                   | 2,163         | 1,691      | 472          | 7                    | 39            | 69              | 108   |
| 1985                   | 1,968         | 1,244      | 724          | 7                    | 34            | 81              | 115   |
| 1986                   | 1,558         | 1,111      | 448          | 8                    | 31            | 71              | 102   |
| 1987                   | 2,146         | 1,591      | 555          | 8                    | 29            | 62              | 91    |
| 1988                   | 2,171         | 1,304      | 868          | 6                    | 33            | 76              | 109   |
| 1989                   | 2,249         | 1,513      | 736          | 6                    | 37            | 83              | 120   |
| 1990                   | 2,347         | 1,644      | 703          | 6                    | 27            | 63              | 90    |
| 1991                   | 2,432         | 1,697      | 735          | 6                    | 32            | 64              | 96    |
| 1992                   | 4,283         | 3,260      | 1,023        | 6                    | 40            | 74              | 114   |
| 1993                   | 4,929         | 4,203      | 726          | 8                    | 41            | 86              | 127   |
| 1994                   | 5,893         | 4,976      | 917          | 15                   | 66            | 57              | 123   |
| 1995                   | 4,604         | 3,837      | 767          | 19                   | 73            | 71              | 144   |
| Total<br>1991-<br>1995 | 59,598        | 48,936     | 10,664       |                      |               |                 |       |
| Average                | 4,428         | 3,595      | 834          | 11                   | 50            | 70              | 121   |

Table 2. Kodiak Management Area sac roe herring fishery industry summary, 1979-1995.

| 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      |                       |                   |                       |                       |

Table 3. Sac roe herring fishery guideline harvest levels by stock, Kodiak Management Area, 1996.

| STAT. AREA                    | MGMT. UNITS       | 1996 GUIDELINE HARVEST LEVEL | REQUIRED SPawning BIOMASS |                   |
|-------------------------------|-------------------|------------------------------|---------------------------|-------------------|
|                               |                   |                              | @10% EXPLOITATION         | @20% EXPLOITATION |
| <b>NORTH AFOGNAK DISTRICT</b> |                   |                              |                           |                   |
| NA10                          | Shuyak Is.        | 20 Tons                      | 200 Tons                  | 100 Tons          |
| NA20                          | Delphin Bay       | CLOSED                       | -                         | -                 |
| NA30                          | Perenosa Bay      | CLOSED                       | -                         | -                 |
| NA40                          | Seal Bay          | CLOSED                       | -                         | -                 |
| NA50                          | Tonki Bay         | CLOSED                       | -                         | -                 |
| <b>DISTRICT TOTAL</b>         |                   | <b>20 Tons</b>               | <b>200 Tons</b>           | <b>100 Tons</b>   |
| <b>WEST AFOGNAK DISTRICT</b>  |                   |                              |                           |                   |
| WA10                          | Raspberry St.     | 300 Tons                     | 3,000 Tons                | 1,500 Tons        |
| WA20                          | Malina Bay        | 200 Tons                     | 2,000 Tons                | 1,000 Tons        |
| WA31                          | Paramanof Bay     | 500 Tons                     | 5,000 Tons                | 2,500 Tons        |
| WA32                          | Foul Bay          | 150 Tons                     | 1,500 Tons                | 750 Tons          |
| WA40                          | Devils Inlet      | 10 Tons                      | 100 Tons                  | 50 Tons           |
| WA40                          | Blue Fox          | 20 Tons                      | 200 Tons                  | 100 Tons          |
| WA50                          | Offshore W. Afog. | -                            | -                         | -                 |
| <b>DISTRICT TOTAL</b>         |                   | <b>1,180 Tons</b>            | <b>11,800 Tons</b>        | <b>5,900 Tons</b> |
| <b>SOUTH AFOGNAK DISTRICT</b> |                   |                              |                           |                   |
| SA10                          | Izhut Bay         | CLOSED                       | -                         | -                 |
| SA20                          | Kitoi Bay         | CLOSED                       | -                         | -                 |
| SA30                          | MacDonalds Lagoon | CLOSED                       | -                         | -                 |
| SA40                          | Danger Bay        | CLOSED                       | -                         | -                 |
| SA50                          | Litnik            | CLOSED                       | -                         | -                 |
| SA60                          | Duck Bay          | CLOSED                       | -                         | -                 |
| <b>DISTRICT TOTAL</b>         |                   | <b>CLOSED</b>                | <b>-</b>                  | <b>-</b>          |
| <b>UGANIK DISTRICT</b>        |                   |                              |                           |                   |
| UG10                          | Kupreanof         | 10 Tons                      | 100 Tons                  | 50 Tons           |
| UG20                          | Viekoda           | 50 Tons                      | 500 Tons                  | 250 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    | 40 Tons                      | 400 Tons                  | 200 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                | 900 Tons          |
| UG40                          | Offshore Uganik   | -                            | -                         | -                 |
| <b>DISTRICT TOTAL</b>         |                   | <b>935 Tons</b>              | <b>9,350 Tons</b>         | <b>4,675 Tons</b> |
| <b>UYAK DISTRICT</b>          |                   |                              |                           |                   |
| 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                       | -                         | -                 |
| <b>DISTRICT TOTAL</b>         |                   | <b>CLOSED</b>                | <b>-</b>                  | <b>-</b>          |

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Table 3. (page 2 of 3)

| STAT. AREA                       | MGMT. UNITS        | 1996 GUIDELINE HARVEST LEVEL | REQUIRED SPAWNING BIOMASS |                   |
|----------------------------------|--------------------|------------------------------|---------------------------|-------------------|
|                                  |                    |                              | @10% EXPLOITATION         | @20% EXPLOITATION |
| <b>ALITAK DISTRICT</b>           |                    |                              |                           |                   |
| AL10                             | Outer Alitak       | (Exploration)                |                           |                   |
| AL20                             | Inner Alitak       | (Exploration)                |                           |                   |
| AL21                             | Inner Deadman Bay  | 40 Tons                      | 400 Tons                  | 200 Tons          |
| AL22                             | Outer Deadman Bay  | 95 Tons                      | 950 Tons                  | 475 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                   |                    | 530 Tons                     | 5,300 Tons                | 2,650 Tons        |
| <b>STURGEON/HALIBUT DISTRICT</b> |                    |                              |                           |                   |
| SH10                             | Sturgeon/Halibut   | (Exploration)                |                           |                   |
| <b>EASTSIDE DISTRICT</b>         |                    |                              |                           |                   |
| 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.  | 275 Tons                     | 2,750 Tons                | 1,375 Tons        |
| EA24                             | Barling Bay        | 50 Tons                      | 500 Tons                  | 250 Tons          |
| EA30                             | E. Sitkalidak St.  | 300 Tons                     | 3,000 Tons                | 1,500 Tons        |
| EA31                             | Tanginak Anchorage | 15 Tons                      | 150 Tons                  | 75 Tons           |
| EA40                             | Outer Sitka.       | (Exploration)                |                           |                   |
| EA41                             | Boulder Bay        | (Exploration)                |                           |                   |
| 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          | 30 Tons                      | 300 Tons                  | 150 Tons          |
| District Total                   |                    | 1,190 Tons                   | 11,900 Tons               | 5,950 Tons        |
| <b>NORTHEAST DISTRICT</b>        |                    |                              |                           |                   |
| NE10                             | Womens Bay         | 50 Tons                      | 500 Tons                  | 250 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)                |                           |                   |
| District Total                   |                    | 80 Tons                      | 800 Tons                  | 400 Tons          |
| <b>INNER MARMOT DISTRICT</b>     |                    |                              |                           |                   |
| IM10                             | Monashka Bay       | (Exploration)                |                           |                   |
| 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. AREA                     | MGMT. UNITS    | 1996 GUIDELINE HARVEST LEVEL | REQUIRED SPAWNING BIOMASS |                    |
|--------------------------------|----------------|------------------------------|---------------------------|--------------------|
|                                |                |                              | @10% EXPLOITATION         | @20% EXPLOITATION  |
| <b>NORTH MAINLAND DISTRICT</b> |                |                              |                           |                    |
| NM10                           | Hallo Bay      | (Exploration)                | <sup>b</sup>              | <sup>b</sup>       |
| NM20                           | Inner Kukak    | 50 Tons                      | 500 Tons                  | 250 Tons           |
| NM30                           | Outer Kukak    | -                            |                           |                    |
| NM40                           | Missak Bay     | (Exploration)                | <sup>b</sup>              | <sup>b</sup>       |
| District Total                 |                | 50 Tons                      | 500 Tons                  | 250 Tons           |
| <b>MID MAINLAND DISTRICT</b>   |                |                              |                           |                    |
| MM10                           | Inner Katmai   | 50 Tons                      | 500 Tons                  | 250 Tons           |
| MM20                           | Outer Katmai   | -                            |                           |                    |
| MM30                           | Alinchak       | 40 Tons                      | 400 Tons                  | 200 Tons           |
| MM40                           | Puale Bay      | (Exploration)                | <sup>b</sup>              | <sup>b</sup>       |
| MM50                           | Portage Bay    | (Exploration)                | <sup>b</sup>              | <sup>b</sup>       |
| MM60                           | Outer Portage  | -                            |                           |                    |
| District Total                 |                | 90 Tons                      | 900 Tons                  | 450 Tons           |
| <b>SOUTH MAINLAND DISTRICT</b> |                |                              |                           |                    |
| SM10                           | Wide Bay       | 95 Tons                      | 950 Tons                  | 475 Tons           |
| SM20                           | Lower Shelikof | (Exploration)                |                           |                    |
| District Total                 |                | 95 Tons                      | 950 Tons                  | 475 Tons           |
| <b>GRAND TOTAL</b>             |                | <b>4,180 Tons</b>            | <b>41,800 Tons</b>        | <b>20,900 Tons</b> |

<sup>a</sup> 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.)

<sup>b</sup> 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 1991-1995 and preliminary 1996 harvest projections.

| Fishery Location                   | Average Harvest<br>1991-1995 | 1996 Harvest Projection |
|------------------------------------|------------------------------|-------------------------|
| <b>Southeast</b>                   |                              |                         |
| Kah Shakes                         | 801                          | 871                     |
| Sitka Sound                        | 4,969                        | 8,144                   |
| Seymour Canal                      | 140                          | 0                       |
| <b>Total All Areas</b>             | <b>5,910</b>                 | <b>9,015</b>            |
| <b>Prince William Sound</b>        |                              |                         |
| <b>Total All Fisheries</b>         | <b>6,245</b>                 | <b>Closed</b>           |
| <b>Cook Inlet</b>                  |                              |                         |
| Kamishak District                  | 2,627                        | 2,250                   |
| Upper Cook Inlet                   | 0                            | 0                       |
| <b>Total All Areas</b>             | <b>2,627</b>                 | <b>2,250</b>            |
| <b>Kodiak</b>                      |                              |                         |
| <b>Total Area</b>                  | <b>4,373</b>                 | <b>4,180</b>            |
| <b>Alaska Peninsula</b>            |                              |                         |
| North Peninsula                    | 1,236                        | 750                     |
| South Peninsula                    | 111                          | 100                     |
| <b>Total Area</b>                  | <b>1,347</b>                 | <b>850</b>              |
| <b>Bristol Bay (Togiak)</b>        |                              |                         |
| Seine                              | 15,642                       | 17,868                  |
| Gill Net                           | 3,925                        | 5,956                   |
| <b>Total Area</b>                  | <b>19,567</b>                | <b>23,824</b>           |
| <b>Arctic Yukon Kuskokwim Area</b> |                              |                         |
| Security Cove                      | 545                          | 1,125                   |
| Goodnews Bay                       | 804                          | 569                     |
| Cape Avinof                        | 368                          | 484                     |
| Nunivak Island                     | 28                           | 839                     |
| Nelson Island                      | 552                          | 996                     |
| Cape Romanzof                      | 484                          | 696                     |
| Norton Sound                       |                              |                         |
| Gillnet                            | 3,329                        | 4,915                   |
| Beach Seine                        | 330                          | 546                     |
| Port Clarence                      | 0                            | 165                     |
| <b>AYK Total</b>                   | <b>6,440</b>                 | <b>10,335</b>           |
| <b>Statewide Total Harvest</b>     | <b>46,509</b>                | <b>50,454</b>           |

Table 5. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division management staff, 1996.

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**Office Staff:**

Regional Supervisor  
Regional Management Biologist

Pete Probasco  
Wayne Donaldson

Area Management Biologist  
Assistant Management Biologist  
Assistant Management Biologist  
Fishery Biologist  
Fishery Technician

Dave Prokopowich  
Dennis Gretsch  
Kevin Brennan  
Joan Brodie  
Joan Shaker

**R/V K-Hi-C:**

Boat Officer  
Fishery Biologist

Tom Emerson  
Dennis Gretsch

**R/V Resolution:**

Boat Officer  
Fishery Biologist

Ron Kutchick  
Kevin Brennan

**M/V Trooper:**

Fishery Technician:

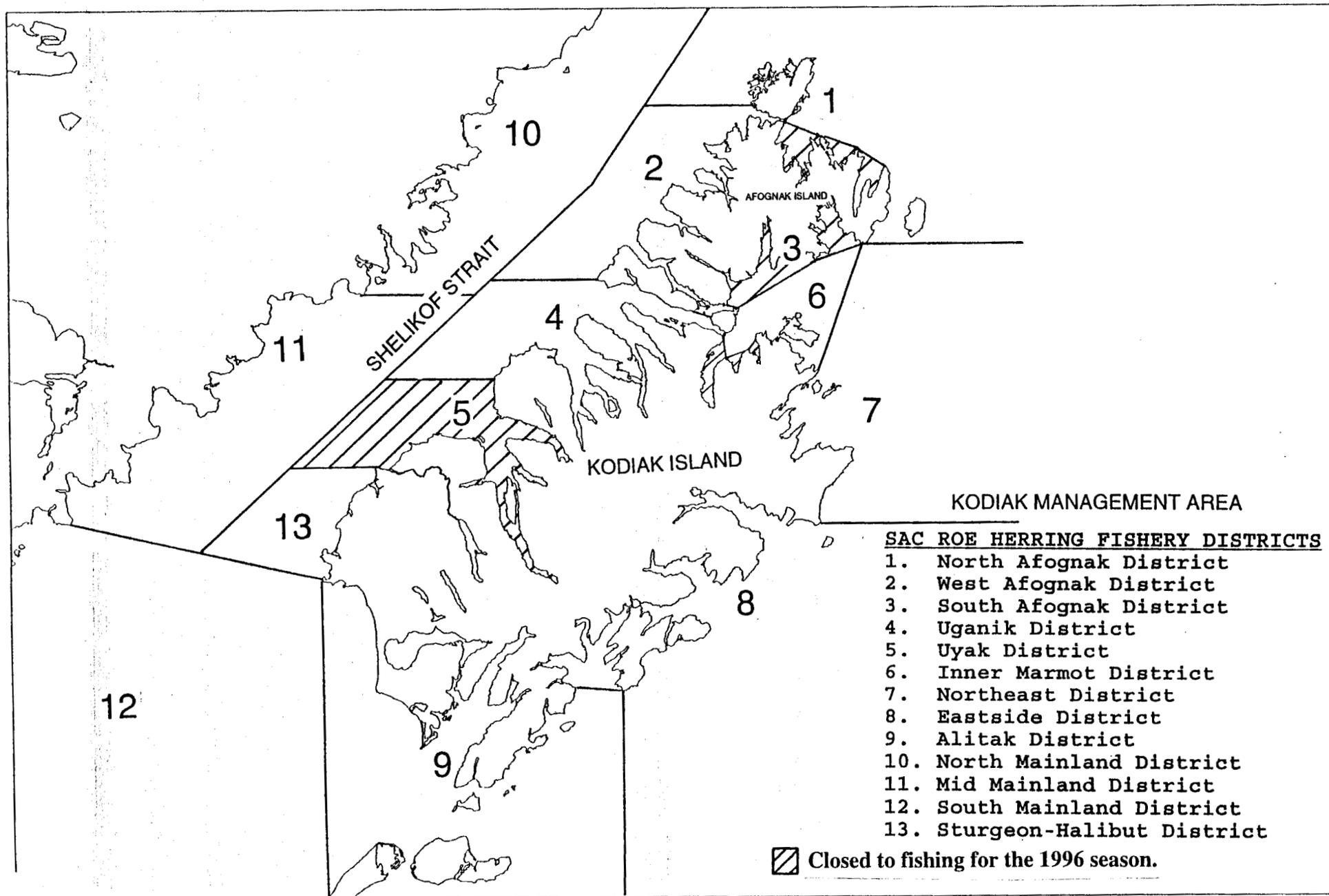
Paul Kuriscak

**Field Crews:**

Fishery Technician  
Fishery Technician

Mo Lambdin  
Jon Becker  
Ed Hajdys  
Matt Stone  
Mike Anderson  
Keith Wible  
Forrest Bowers  
Donna Higginbotham

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

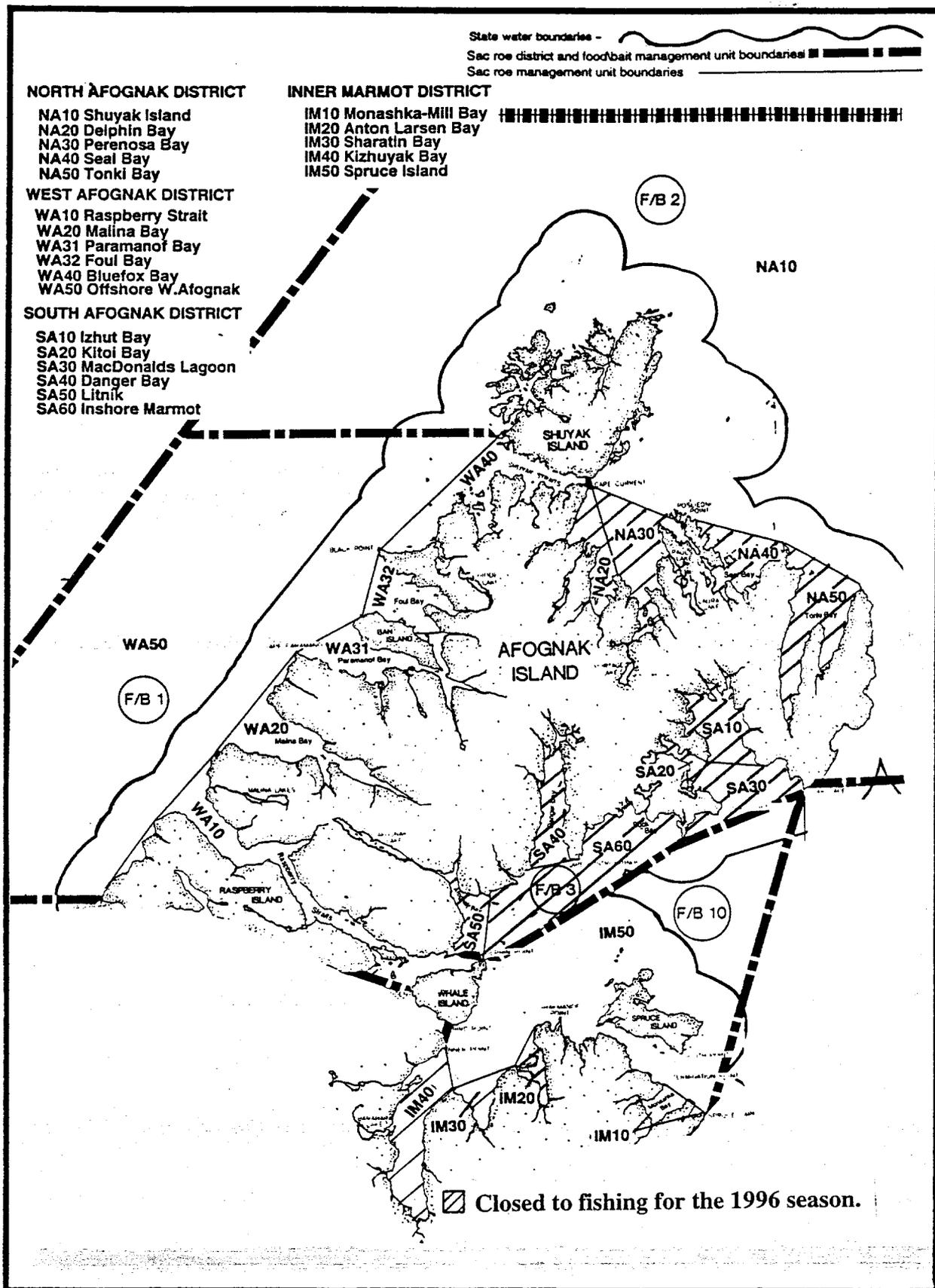


Figure 2. Statistical chart showing the North Afognak, West Afognak, South Afognak, and Inner Marmot Districts and Sections.

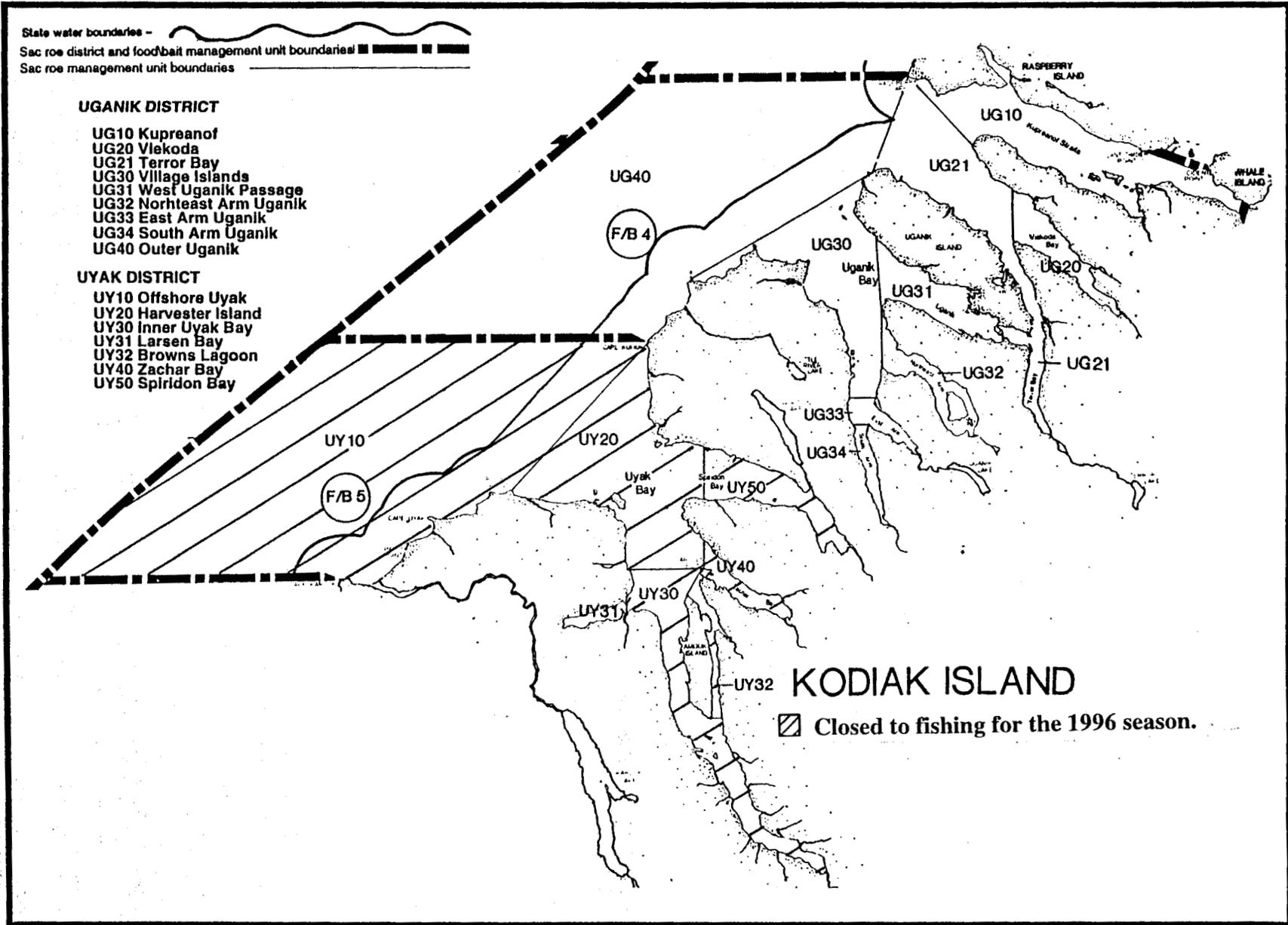


Figure 3. Statistical chart showing the Uganik and Uyak Districts and Sections.

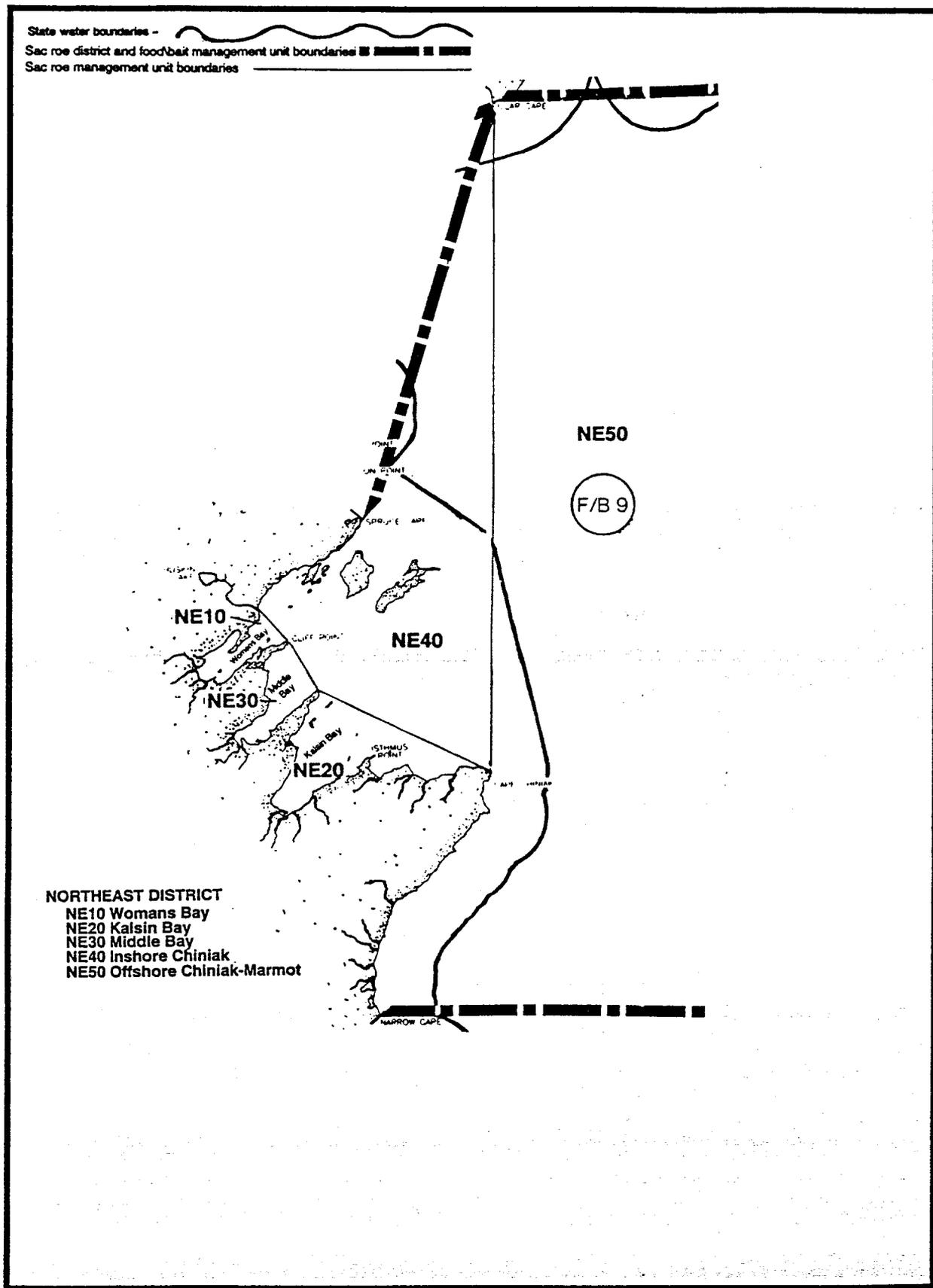


Figure 4. Statistical chart showing the Northeast District and Sections.

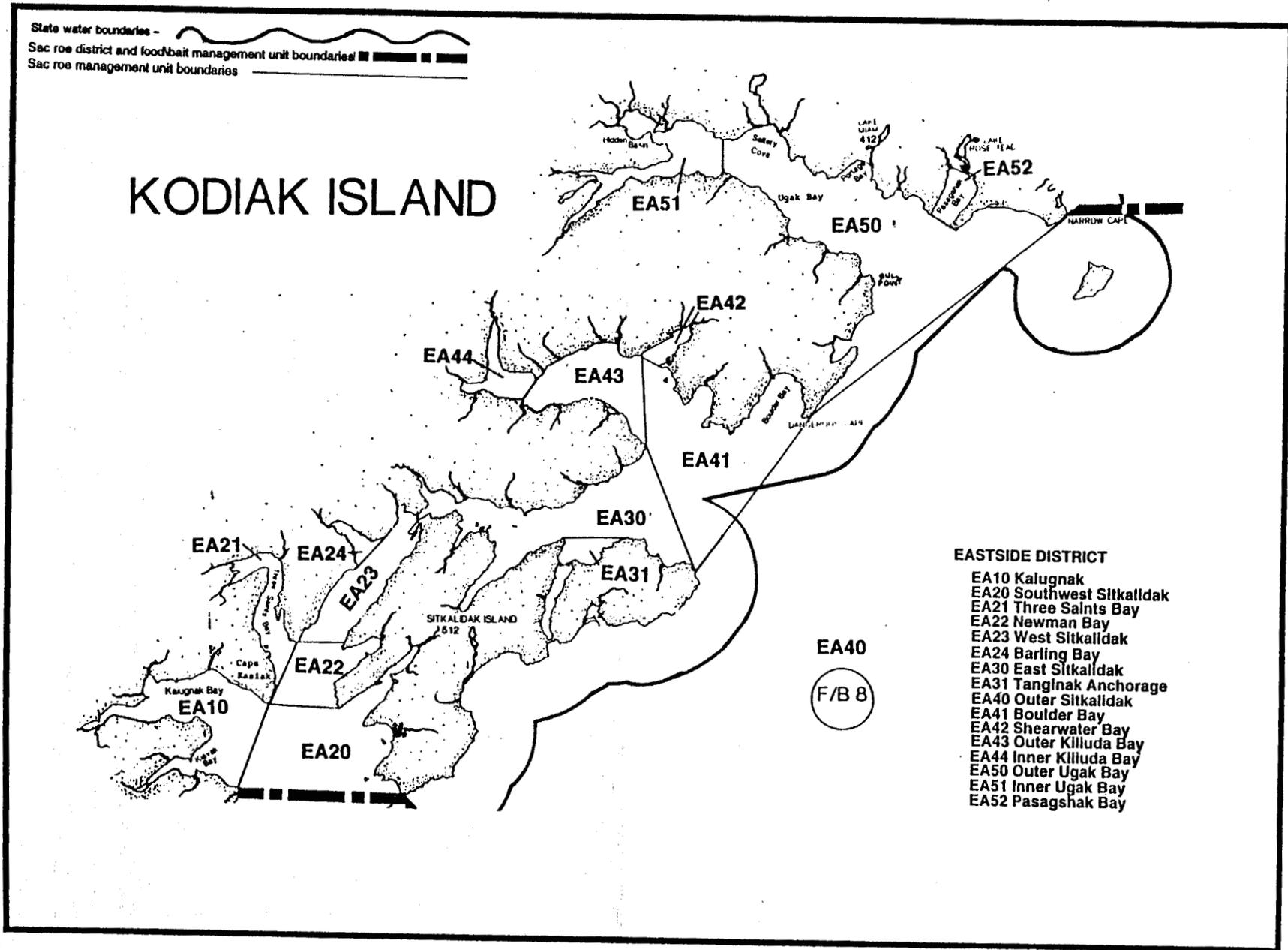


Figure 5. Statistical chart showing the Eastside District and Sections.

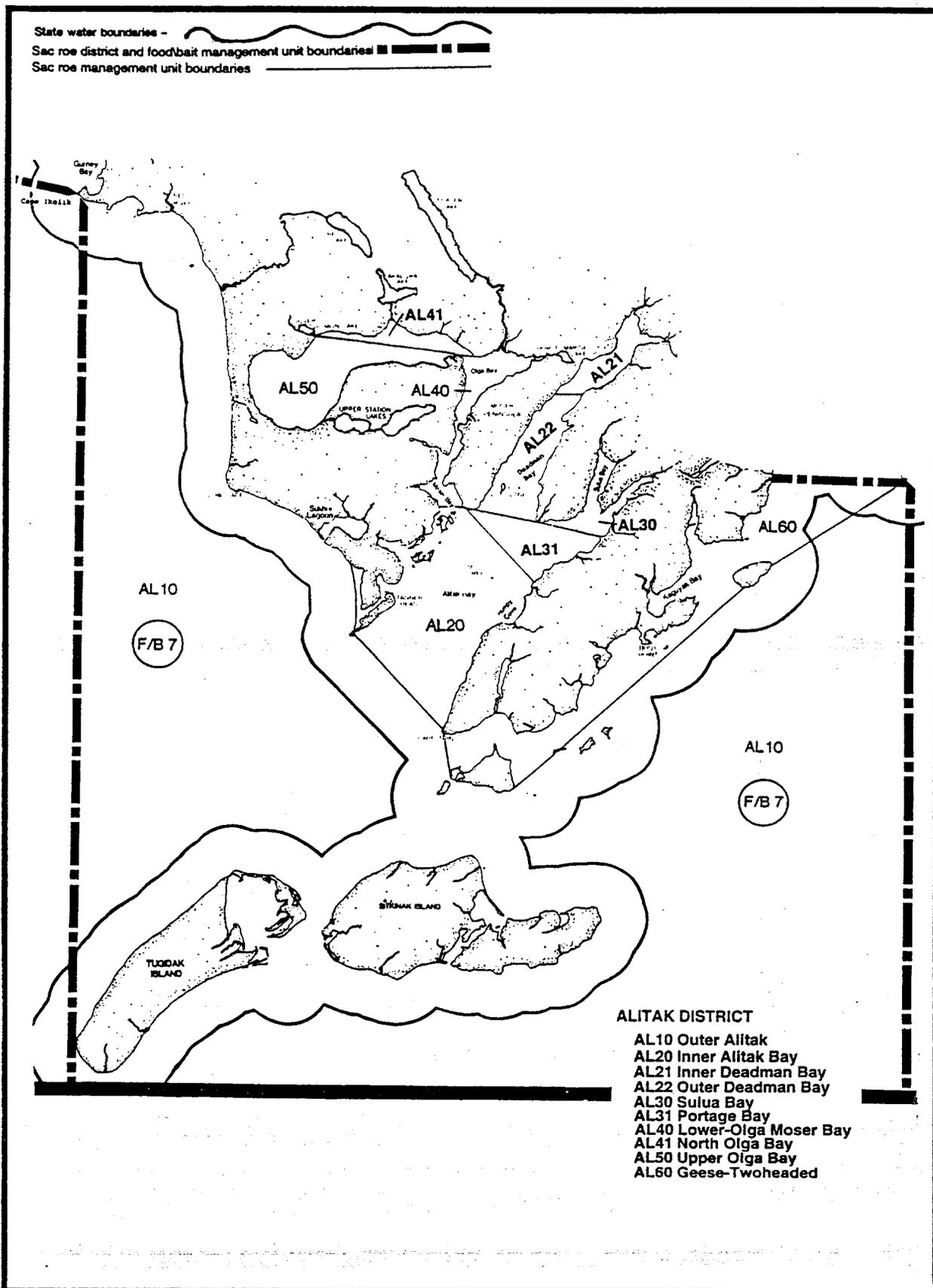


Figure 6. Statistical chart showing the Alitak District and Sections.

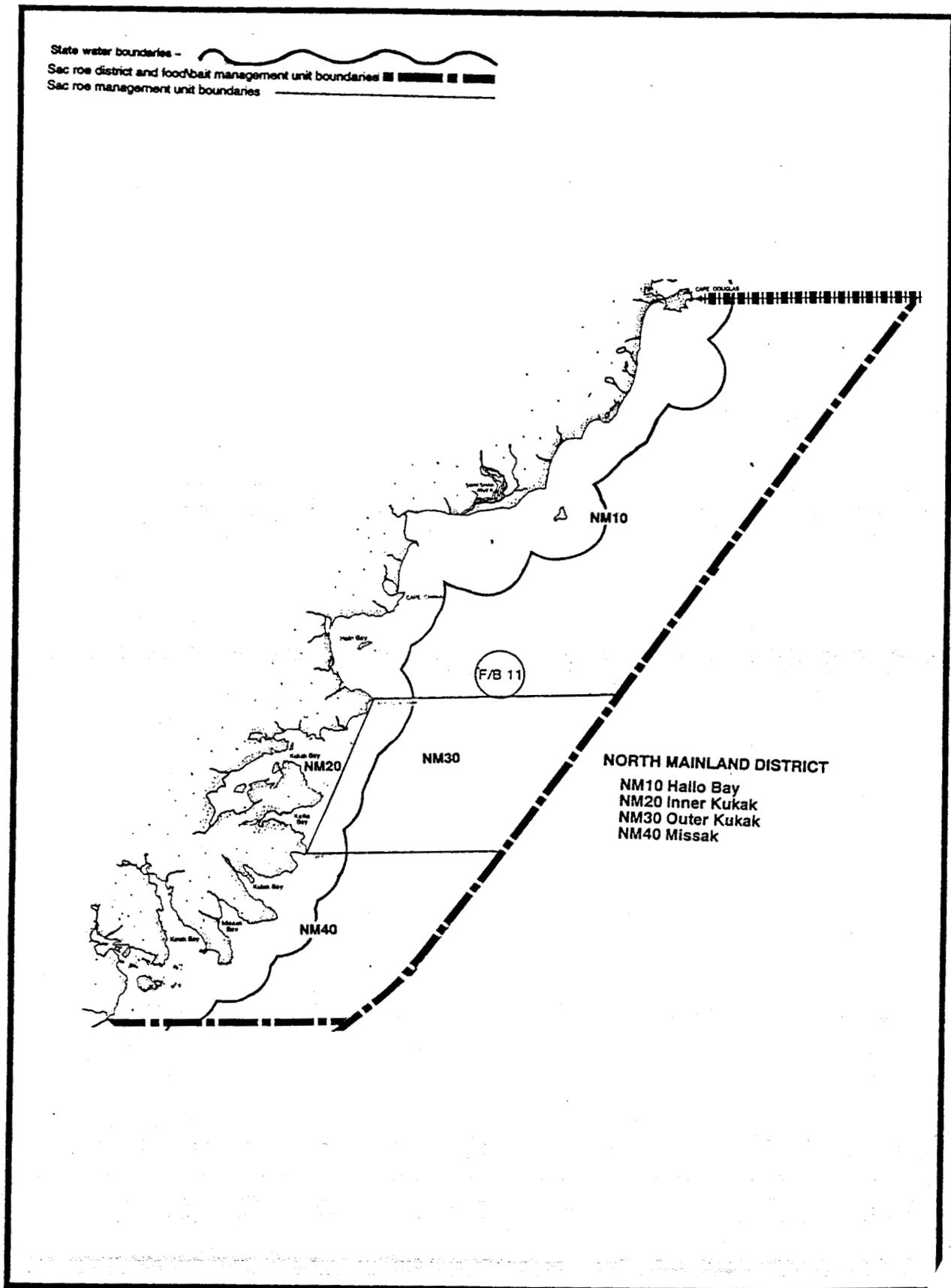


Figure 7. Statistical chart showing the North Mainland District and Sections.

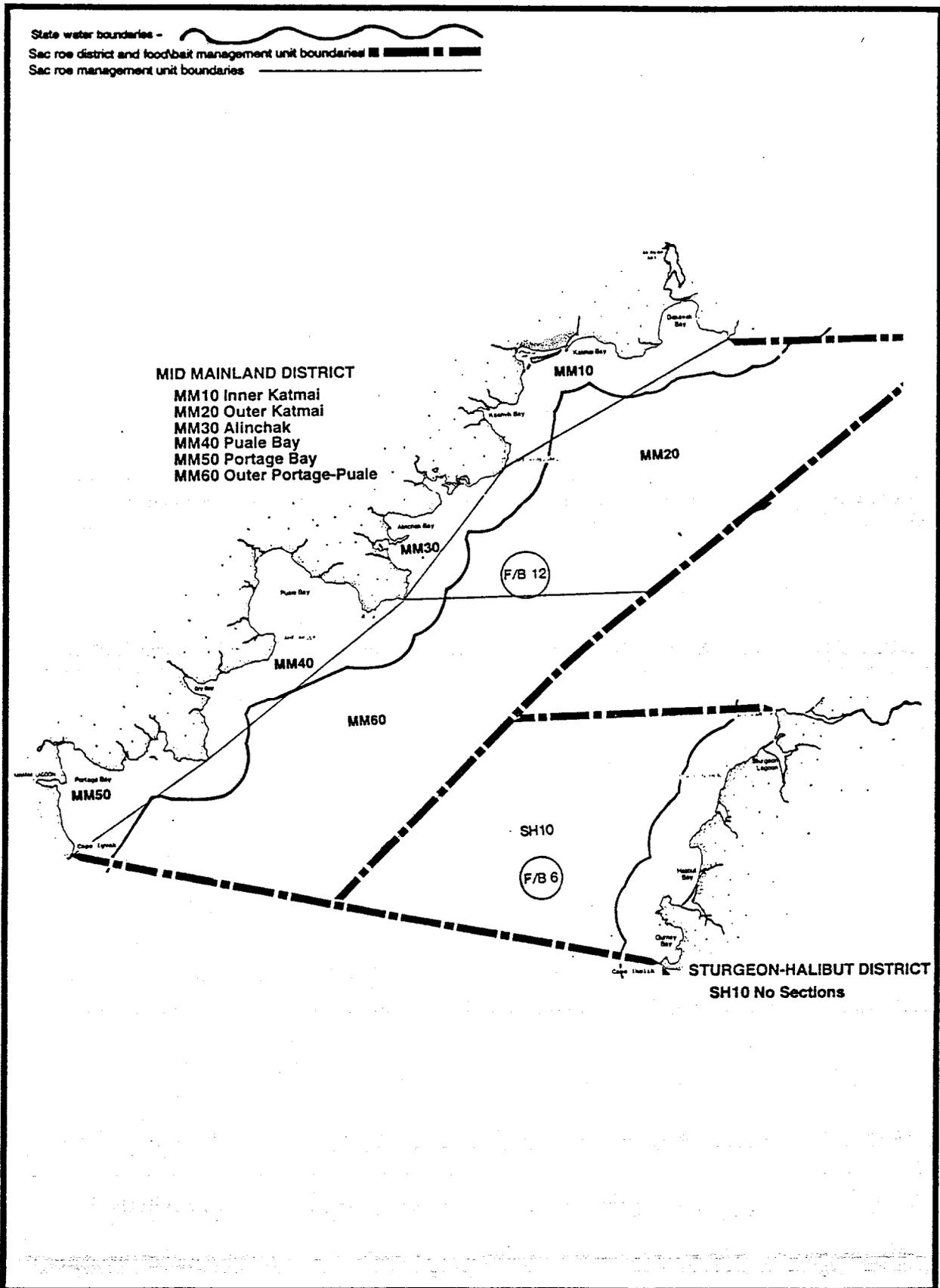


Figure 8. Statistical chart showing the Mid Mainland and Sturgeon-Halibut Bay Districts and Sections.

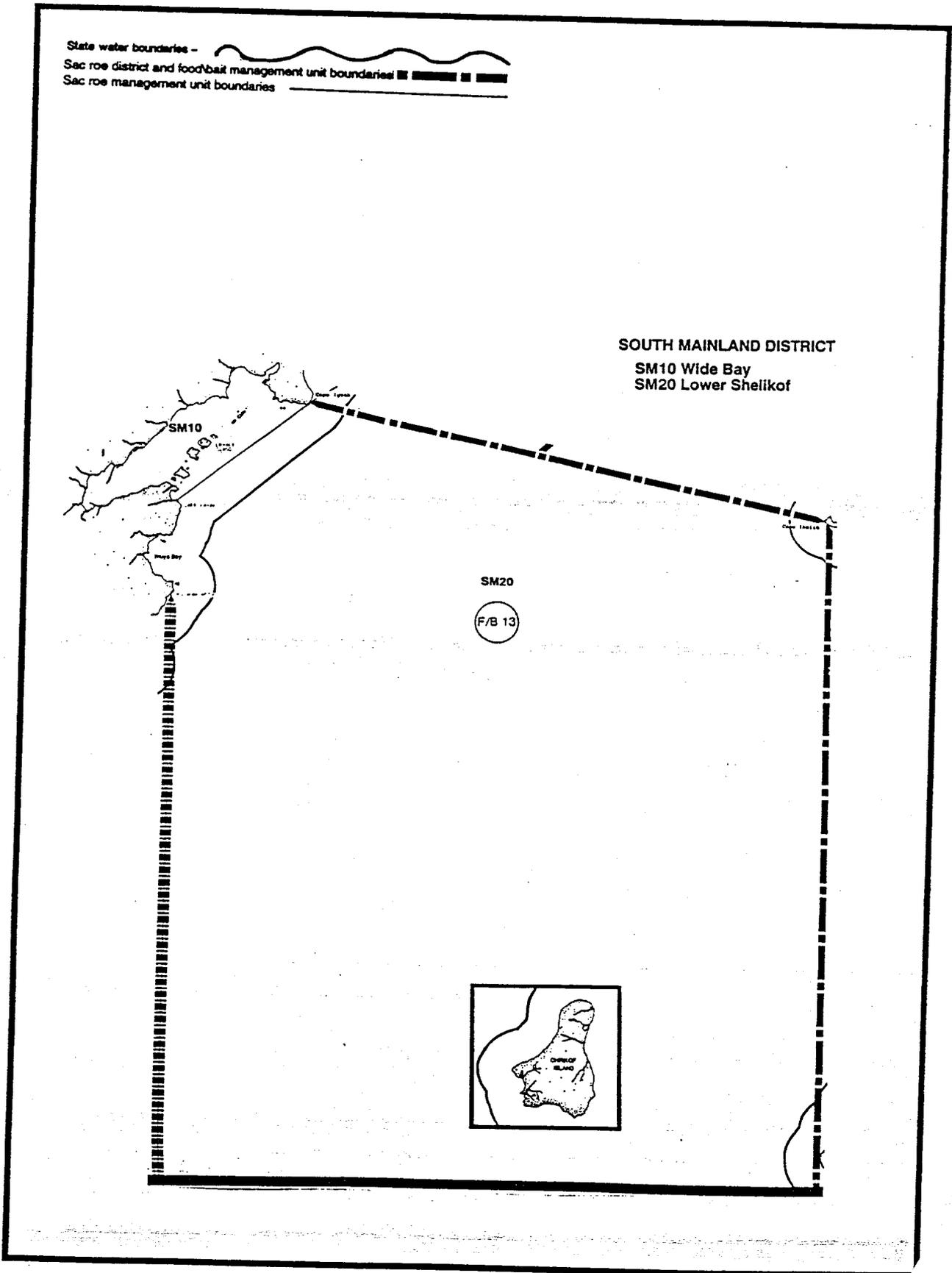


Figure 9. Statistical chart showing the South Mainland Distr' and Sections.

**APPENDIX**

Appendix A.1. Kodiak Management Area Sac Roe Herring Fishery Management Plan.

This management plan was approved by the Alaska Board of Fisheries in November 1995.

5 AAC 27.535 is amended by adding a new subsection (e) to read:

5 AAC 27.535. Harvest Strategies.

(e) The department shall manage the sac roe herring fishery as follows:

(1) depending on the department's assessment of effort levels, harvest rates, and its ability to monitor the fishery, the length of the fishing periods for either or both gear groups may be increased or reduced;

(2) the department will establish guideline harvest levels by section based on information such as historical data, current and past fishery performance, sampling of commercial catches, and aerial surveys;

(3) an individual section will be closed to fishing once its guideline harvest level has been achieved; the guideline harvest level for an individual section may be adjusted up or down inseason depending on observed stock abundance; the department may make adjustments in the management of a section based on inseason changes in fish behavior or harvest patterns; these changes may result in an adjacent section closure;

(4) a section that does not have an extensive history of sac roe production may be listed as exploratory with no designated guideline harvest level; a section listed as exploratory under this paragraph may be opened or closed, by emergency order based on inseason information such as observed stock abundance, harvest levels, and changes in fish behavior or harvest patterns, including changes in adjacent sections;

(5) a section that has been closed because its guideline harvest level has been achieved, may be reopened, by emergency order, if the department has determined 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; any reopenings will require information indicating that juvenile herring, post spawners, or other forage fish are not present and that the department has the ability to monitor and regulate the reopenings on the grounds; at least 24 hours advance notice shall be given by the department before a section is reopened under this paragraph;

(6) the Kodiak sac roe herring fishery is intended to occur in an orderly fashion, with minimal waste of the resource and within conservation limits as determined by the department; roe recovery standards will be determined by industry personnel;

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