

**KODIAK MANAGEMENT AREA  
SAC ROE HERRING FISHERY HARVEST STRATEGY, FOR  
THE 2002 SEASON**

By

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## **ABSTRACT**

The Kodiak Management Area (KMA) has two commercial herring fisheries: a spring sac roe fishery and a fall food/bait fishery. This document provides permit holders, tender operators, and buyers with pertinent information that the Alaska Department of Fish and Game (ADF&G) will use to manage the KMA sac roe herring fishery. This fishery targets herring immediately prior to spawning to ensure the greatest roe development and maximum roe recovery. Roe recovery standards are established by the industry.

The 2002 KMA overall GHL is 1,860 tons, with 1,380 tons of the GHL allocated to the purse seiners and 480 tons of the GHL allocated to the gillnetters.

## **INTRODUCTION**

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 seine and gillnet. In 2000 an allocative harvest strategy was implemented to provide opportunities for gillnet permit holders to harvest approximately 25% and purse seine permit holders to harvest approximately 75% of the total preseason guideline harvest level (GHL). Separate gear areas were also established as a condition of the strategy.

The KMA sac roe herring fishery has occurred annually since 1964 and the harvest averaged 1,921 (short) tons (Table 1). From 1992-2001 the annual harvest averaged about 3,310 tons and ranged from 1,370 tons in 2000 to 5,893 tons in 1994. GHGs are established by the department and from 1992-2001 ranged from 1,495 tons in 1999 to 4,550 in 1994 (Table 2).

The 2001 fishery GHG was 1,540 tons and 33 purse seine and 9 gillnet permit holders participated in the fishery to harvest 1,694 tons. Purse seine gear harvested 1,412 tons (83%) and gillnet gear 282 tons (17%) of the total harvest, with a total exvessel value of \$847,000 dollars. The 2002 harvest forecast of 1,860 tons represents approximately 4.2% of the projected statewide sac roe herring harvest of 44,373 tons (Table 3).

## **FISHERY MANAGEMENT**

### *Districts and 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 further divided into smaller areas called sections with a total of 82 sections (Figures 2-8). Sections are intended to define the spawning area used by a stock of herring or to define a geographical harvest location. Since 1979 herring have been harvested within 63 sections. Statistical charts, which illustrate districts and sections, are available at the Kodiak ADF&G office.

### ***Guideline Harvest Levels***

After the annual review of stock status trends for the entire KMA, the department determines which sections will be open to commercial fishing. Each section's GHL is set based on the following information: 1) fishery performance during the preceding season or seasons, (e.g., harvest timing, harvest duration, average school size), 2) trends in age composition, 3) spawn and juvenile herring observations, 4) aerial surveys, and 5) hydroacoustic surveys.

For the 2002 season GHGs have been established for 35 sections and five sections have been designated exploratory. The remaining 42 sections will remain closed, based on either low stock abundance or no record of historical sac roe herring harvest. Guideline harvest levels are not guaranteed quotas, and the actual harvest may exceed or fall short of these projections.

### ***Inseason Fishery Management***

The department expects to more actively manage certain sections of the seine fishery in 2002 to slow harvest rates. This would most likely occur at the start of the season, when effort levels are the highest, in areas that are known to have early spawning stocks, such as the Paramanof Bay and Village Islands Sections. The department will need the industry's support to evaluate the available biomass and roe maturity prior to opening the fishery (based on aerial and hydroacoustic surveys and sample seine catches). The department will, as necessary, use its emergency order authority as a harvest control by limiting the duration of fishing periods and/or the specific portion of a section that may open, if overharvest concerns exist. Initial fishing periods in these sections may be short (i.e., 10 minutes) followed by a closed period, to allow the department to assess the harvest before allowing additional fishing time. If the department determines that the harvests can be controlled (low effort or small available biomass to harvest) then the fishery may be allowed to open as in previous seasons. There may also be the need to utilize this style of management in the Kiliuda and Outer Ugak Bay Sections if conditions warrant. Purse seine permit holders will need to be in contact with the department vessels (R/V Resolution in Paramanof Bay and the R/V K-Hi-C in Uganik Bay) and field crews to keep informed on potential "on the grounds" changes in fishing periods. The department will be requesting voluntary assistance from permit holders and spotters to make biomass surveys and test sets to evaluate biomass, age class, and roe maturity.

The department will delay the opening of some sections (seine and gillnet) that are known to have later spawning herring. These sections will likely include the Inner and Outer Ugak Sections and the sections within the Alitak District. These sections will be opened by emergency order when the department has a field crew available to station on the grounds to monitor the fishery.

The department will continue to rely on the industry to establish roe recovery standards. These changes in management style will create additional responsibilities for the department management staff, Fish and Wildlife Protection (FWP) staff, and fishery participants. Support and help from the industry are necessary for this style of fishery management to be successful. The management changes should result in a more manageable fishery, which will benefit the long-term health of the herring stocks.

Inseason management of the sac roe herring fishery relies primarily on harvest data collected by department field crews stationed in sections where harvests are anticipated to occur. During this season three field crews and staff on two department vessels will monitor the fishery.

Generally, once the preseason GHL has been achieved or approached for a section, it will be closed. Due to the rapid pace of harvest in certain locations, inperiod closures are likely. When inperiod closures are necessary there may be no more than five minutes advanced notice prior to the closure time, which will be announced on VHF channel 6. Other ways of receiving emergency order closures are referenced on page 3, "Getting the Word".

At any time during the season, if the department determines that preseason expectations of herring stock abundance are below expectations, sections may be closed prior to reaching their GHL.

The allocative harvest strategy allows the department to close an entire district by gear type once its gear specific district GHL has been achieved. The department may also make adjustments in the management of some sections based on inseason changes in fish behavior or harvest patterns.

Management sections closed because the GHL has been achieved will not reopen regardless of any additional herring biomass that arrives on the grounds.

### ***Catch Reporting***

Processors and independent tender operators are required to provide timely daily catch reports of herring deliveries by section. Herring catches onboard tenders that have not yet been delivered to the cannery must also be reported daily to department personnel. Tender operators are urged to monitor VHF channel 6 while participating in this fishery to remain aware of section closures. Timely and accurate harvest reports received from department field crews, permit holders, tender operators, spotters, and processors are critical in the assessment of herring harvests and guiding the management of the fishery. Inaccurate or late information could result in premature area closures or GHLs being greatly exceeded.

Tender operators and buyers are required to register with the department in Kodiak prior to starting operations and will be given a packet containing regulations and statistical charts. Reporting times and schedules will be specified at the time of registration.

### ***ADF&G Field Crew/Permit Holder Cooperation***

Department personnel aboard state vessels and personnel in remote tent camps (Table 4) will make frequent contacts with permit holders to collect harvest data, fleet movement information, spawn observations, and observations of juvenile and adult herring concentrations. 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 department field crews or management staff. Past cooperation has helped the department to evaluate stock status and gain critical management

information. This information will remain confidential. The department is particularly interested in any observations of herring in closed management sections and timely information will be used to direct department aerial or hydroacoustic surveys.

The department needs to collect samples from the commercial herring harvests. Cooperation by permit holders is greatly appreciated. Department personnel will also accept samples of juvenile herring. 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"***

All permit holders, tender operators, and processors are responsible for staying updated on section closures as they occur inseason. 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 department 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 for the latest Kodiak herring news release; 4) calling the department 24-hour recorded message phone at 486-4559; 5) listening for emergency order updates broadcast daily by ADF&G at 8:15 AM on the department SSB frequency 3.230 MHz; 6) obtaining a copy of the most recent emergency order, from outside the main entrance to the Kodiak ADF&G building; or 7) listening to the ADF&G reports broadcast over the local AM and FM radio stations (consult stations for broadcast times).

Inperiod emergency closure announcements for management sections may occur with short notification time (5 minutes or less). All permit holders and tender operators should monitor VHF channel 6 during fishing periods to ensure that they hear inperiod emergency closures announced by the department. Announcements will be made from department vessels, from field crews, or from department or chartered aircraft. Because of the numerous announcements associated with this fishery, it is recommended that fishermen document the latest emergency order announcement broadcast by either marking closed sections on a chart or making a tape recording of the broadcast.

### **GENERAL HARVEST POLICY**

This commercial fishery is intended to occur in an orderly fashion, with minimal waste of the resource and within conservation limits as determined by the department. The department 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.

## ALLOCATIVE HARVEST STRATEGY

The BOF adopted an allocative harvest strategy for the KMA sac roe herring fishery in 2000. The harvest strategy provides the opportunity for gillnet permit holders to harvest approximately 25%, and purse seine permit holders approximately 75%, of the total preseason guideline harvest level for the management area. During the 2002 BOF meeting a change was made to the allocation plan concerning the Afognak Districts and this recent change is shown underlined as follows:

### 5 AAC 27.535. HARVEST STRATEGIES FOR KODIAK AREA.

- (e) The department shall manage the sac roe fishery to provide opportunities for gillnet permit holders to harvest approximately 25 percent and purse seine permit holders to harvest approximately 75 percent of the total preseason guideline harvest level for the management area as follows; the commissioner shall issue emergency orders as necessary:
- (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) except as provided in (4) of this subsection, the department shall 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 each year;
    - (A) except in districts where only one section is open to fishing, the department shall designate one legal gear type for each section with a guideline harvest level;
    - (B) in districts where only one section is open for fishing, the department will, in its discretion, assign a portion of the guideline harvest level to each gear type;
    - (C) for allocative purposes only, the North Mainland, Mid Mainland and South Mainland Districts will be considered one district and the North Afognak, West Afognak, and South Afognak Districts will be considered one district;
    - (D) each district having more than one section that is open for fishing will have approximately 20 to 30 percent of the guideline harvest level for the district allocated to the gillnet permit holders and 70 to 80 percent allocated to the purse seine permit holders;
  - (3) an individual section shall be closed to fishing once its guideline harvest level has been achieved; a district shall be closed to either gear type or both gear types once its gear specific district guideline harvest level has been achieved; the guideline harvest level for an individual section may be adjusted downward 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 designated as exploratory with no specified guideline harvest level; permit holders for either gear type may fish an exploratory section; a section listed as exploratory under this paragraph may be opened or closed, based on inseason information such as observed stock abundance, harvest levels, and changes in fish behavior or harvest patterns, including such changes in adjacent sections.

## **EXCLUSIVE GEAR SECTIONS**

The initial assignment of exclusive gear sections (purse seine versus gillnet) was made in 2000 by the department. The department examined historical harvest timing by district to give each gear group opportunities for harvesting early- and late-spawning herring stocks. Gear section assignments were also based on historical gear harvests by section, on fishery manageability concerns (smaller herring stocks and GHGs are often assigned to gillnetters), and other selections were based primarily on the mathematics of the allocation percents.

In 2001 three sections (Malina Bay, Danger Bay and the Raspberry Strait Sections) were reopened to fishing after being closed for several years due to low stock abundance. The stock status for these sections had improved and these sections were assigned small GHGs and were open to gillnetting only, so that harvest rates would remain small. Fishery performance, skipper interviews, and catch samples from these sections provided additional stock status information for the department. This information indicated that the stock status in the Raspberry Strait Section remains low, and this section will be closed for the 2002 season. Positive fishery results from the Malina and Danger Bay Sections confirmed the departments stock assessment. In 2002 the department is opening the Kizhuyak Bay and Upper Olga Bay Sections to gillnetting, based on recent years improvements in the stock status. The Kizhuyak Bay Section has been closed since 1996 and Upper Olga Bay since 1998.

For the 2002 season the department assigned GHGs by section (Table 5), and several sections had changes in the stock status that resulted in changes in section GHGs from the previous two years. Sections that had major reductions in GHGs include Terror Bay and East Arm Uganik Bay. Sections that had major increases in the GHGs include Village Islands, South Arm Uganik Bay, Inner Ugak Bay, Outer Ugak Bay, and Danger Bay. Also for the 2002 season the Tonki Bay and Geese/Two Headed Sections were changed from gillnet areas to seine areas and the Inner Alitak Section was changed from a seine to a gillnet section. The department has designated five sections that extend from Puale Bay south to Imuya Bay as exploratory for the 2002 season. These exploratory sections will be open to both gear types.

The allocation plan directs the department to assign for each district from 20-30% of the section GHGs to gillnet permit holders and 70-80% to purse seine permit holders. Due to the variable number of sections per district and the variable GHGs by section, the district allocation percents for purse seiners range as high as 75.4% for the West Afognak District to a low of 69.2% in the Alitak District. For allocation purposes the three Mainland Districts are considered one district, and the three Afognak Districts are also considered as one district. The Inner Marmot District has only the Kizhuyak Bay Section open, and 100% of the GHG (10 tons) is allocated to gillnet gear.

The total 2002 KMA GHL is 1,860 tons, with 1,380 tons of the GHL (74.2%) assigned to purse seiners and 480 tons of the GHL (25.8%) assigned to the gillnetters (Table 5).

### **HERRING TEST FISHERY PROGRAM**

The department conducted a test fishery (revenue-gathering) program in 2001, and 72 tons of herring were harvested from the Village Islands Section of the Uganik District. The funds generated were used to charter two purse seine vessels with experienced crews to assist department staff with hydroacoustic surveys and make seine sets on herring concentrations to collect age composition data. Test sets were made on herring schools in the Uyak, West Afognak, South Afognak, Northeast, and Inner Marmot Districts. The primary emphasis of this project was to survey sections that have been closed to commercial fishing for several years to evaluate the spawning stock status and collect age composition samples. Surveys were also conducted in several sections that had already been closed to fishing to evaluate post-fishery age compositions and biomass. The Afognak Districts and Inner Marmot District were surveyed from May 7 to 12 and the Uyak District survey occurred from May 15 to 20. Thanks to industry support, including the processors, catcher, tender, and survey vessel crews, the program was successfully completed. Zachar and Spiridon Bays, within the Uyak District, were found to have the largest amounts of herring. An estimated 150 tons of herring were found in the head of Zachar Bay and age compositions consisted of primarily age-4 (60%), age-7 (12%), and age-8 (9%) herring. In Spiridon Bay the department estimated that 75 tons of herring were present and samples showed an even composition of age-4 (22%), age-5 (22%), and age-8 (22%) herring. The Inner Uyak Bay Section was extensively surveyed for a two-day period. Only small schools of herring were found, totaling 20 tons or less.

The department will not conduct a test fishery (revenue gathering) program in 2002. The department will try to utilize the department vessel R/V K-Hi-C to conduct hydroacoustic surveys in the Alitak District in late May. Most of the Alitak District has been closed to fishing since 1998 and only limited aerial surveys have been conducted since the closures to assess changes in the stock status. The department may attempt to contract a seine vessel on a daily basis to make sets on herring concentrations in the Alitak District to obtain age composition samples. Additionally, several research projects have begun focusing on the interactions between Stellar sea lions and herring in the KMA. Quantitative analysis of herring biomass within select KMA bays will be estimated as one objective of these studies, which may in turn be used for fisheries management. The department is working with the Cooperative Institute for Arctic Research and the Prince William Sound Science Center on one such project, which began in 2002. These projects will employ improved methods of herring biomass assessment that may result in better documentation and estimates of herring biomass.

## REGULATORY SUMMARY

### *Season Dates, Fishing Periods, and Emergency Order*

In most sections the 2002 season will begin at 12:00 NOON on April 15 and will close at 12:00 NOON on June 30. The initial opening date of the Inner and Outer Ugak Sections will be delayed until a department field crew can be stationed in the bay. Fishing periods occur on a staggered schedule for both gear types. Staggered days of fishing provide clearly defined closed periods which allow department staff time to collect, summarize, and update all harvest data. The closures also allow for comparisons between reported and actual harvests. The department will issue an Emergency Order prior to the start of the season that establishes open areas by gear type.

### *Purse Seine Fishing Periods*

Unless modified by emergency order, fishing periods for purse seiners from April 15 through May 7, are from 12:00 NOON until 9:00 PM on odd-numbered days, and from 9:00 AM until 12:00 NOON on even-numbered days if a harvestable surplus is available. From May 8 through June 30 fishing periods for purse seines are from 12:00 NOON until 10:00 PM on odd-numbered days, and from 9:00 AM until 12:00 NOON on even-numbered days if a harvestable surplus is available;

**As previously discussed, fishing periods in some sections may be reduced for seine gear prior to the initial opening on April 15 or inseason as needed by the department.**

### *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. There will be a 24 hour closure between fishing periods.

### *Seine Specifications and Operations*

Seine specifications were last changed at the 2000 BOF meeting.

5 AAC 27.525. Seine specifications and operations for Kodiak Area.

- (a) From April 1 through July 31, no purse seine shall exceed 18 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 for Kodiak Area.

(a) The aggregate length of herring gillnets in use by a CFEC permit holder may not exceed 150 fathoms. (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.

(e) From April 1-July 31, a herring gillnet may not exceed 230 meshes in depth.

### ***Extra Time For Gillnetters***

As stated in 5 AAC 27.520

(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. The following waters of Uganik Island are closed to herring fishing for the period April 15 through June 30:

- (d) Uganik Island: the lagoons of Uganik Island as follows:
- (1) 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.;
  - (2) 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.;
  - (3) 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**

- 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 THAT 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 AND MUST BE REPORTED.

Table 1. Historical harvest data for the commercial sac roe and food/bait herring fisheries and percent of the total annual herring harvest that occurs by fishery, Kodiak Management Area, 1964-2001.

Year	Sac Roe Fishery Harvest (Tons)	Food and Bait Fishery Harvest (Tons)	Total Herring Harvest (Tons)	Sac Roe Fishery Percent of Total Harvest (%)	Food Bait Fishery Percent of Total Harvest (%)
1964	568	310	878	65%	35%
1965	657	35	692	95%	5%
1966	2,769	198	2,967	93%	7%
1967	1,662	300	1,962	85%	15%
1968	2,001	15	2,016	99%	1%
1969	1,130	11	1,141	99%	1%
1970	342	8	350	98%	2%
1971	284	44	328	87%	13%
1972	215	50	265	81%	19%
1973	831	178	1,009	82%	18%
1974	868	40	908	96%	4%
1975	8	5	13	62%	38%
1976	5	0	5	100%	0%
1977	338	0	338	100%	0%
1978	904	399	1,303	69%	31%
1979	1,735	125	1,860	93%	7%
1980	2,383	381	2,764	86%	14%
1981	2,065	18	2,083	99%	1%
1982	1,771	326	2,097	84%	16%
1983	2,318	33	2,351	99%	1%
1984	2,163	123	2,286	95%	5%
1985	1,968	102	2,070	95%	5%
1986	1,558	213	1,771	88%	12%
1987	2,146	217	2,363	91%	9%
1988	2,171	340	2,511	86%	14%
1989	2,249	345	2,594	87%	13%
1990	2,347	313	2,660	88%	12%
1991	2,432	215	2,647	92%	8%
1992	4,283	312	4,595	93%	7%
1993	4,929	837	5,766	85%	15%
1994	5,893	677	6,570	90%	10%
1995	4,604	507	5,111	90%	10%
1996	3,386	651	4,037	84%	16%
1997	3,235	756	3,991	81%	19%
1998	2,057	127	2,184	94%	6%
1999	1,651	0	1,651	100%	0%
2000	1,370	0	1,370	100%	0%
2001	1,694	115	1,809	94%	6%
<b>Average 1964-2001</b>	<b>1,921</b>	<b>219</b>	<b>2,140</b>	<b>90%</b>	<b>10%</b>
<b>5 Yr. Avg. 1997-01</b>	<b>2,001</b>	<b>200</b>	<b>2,201</b>	<b>94%</b>	<b>6%</b>
<b>10 Yr. Avg. 1992-01</b>	<b>3,310</b>	<b>398</b>	<b>3,708</b>	<b>91%</b>	<b>9%</b>

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 estimated exvessel earnings, Kodiak Management Area, 1979-2001.

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 Fished <sup>a</sup>		Average Catch by Gear		Estimated Average Earnings		Price per Ton (\$)	Estimated 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	125	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	\$17,686	\$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
1999	38	1,495	1,651	1,589	62	96%	4%	94	16	31	5	51	12	\$23,732	\$5,741	\$463	\$764,413
2000 <sup>b</sup>	37	1,735	1,370	1,290	80	94%	6%	57	23	31	10	42	8	\$20,806	\$4,000	\$500	\$685,000
2001	47	1,540	1,694	1,412	282	83%	17%	67	37	33	9	43	31	\$21,394	\$15,667	\$500	\$847,000
<b>Averages</b>																	
1979-2001	58	2,556	2,626	2,068	558	79%	21%	161	385	46	65	48	10	\$37,436	\$8,164	\$824	\$2,198,939
Five Year																	
1996-2000	49	2,575	2,340	1,957	383	87%	13%	129	275	44	31	46	12	\$31,017	\$9,199	\$713	\$1,961,803
Ten Year																	
1991-2000	62	3,066	3,384	2,776	608	83%	17%	180	409	47	51	60	12	\$42,447	\$9,394	\$754	\$2,729,935

<sup>a</sup> From 1979-1998 fishery participation was based on vessels making landings, 1999-2001 data based on actual participation.

<sup>b</sup> An allocative harvest strategy was in effect starting in 2000.

Table 3. Alaska statewide average sac roe herring harvests for 1997-2001 and preliminary 2002 harvest projections.

<b>Fishery Location</b>	<b>Average Harvest 1997-2001</b>	<b>2002 Harvest Projection</b>
<b>Southeast</b>		
Kah Shakes	351	Closed
Sitka Sound	8,725	11,042
Seymour Canal	459	1,096
Hobart/Houghton	336	Closed
<b>Total All Areas</b>	<b>9,871</b>	<b>12,138</b>
<b>Prince William Sound</b>		
	1,696	Closed
<b>Cook Inlet</b>		
Kamishak District	415	Closed
Upper Cook Inlet	10	0
<b>Total All Areas</b>	<b>425</b>	<b>0</b>
<b>Kodiak</b>		
<b>Total Area</b>	<b>1,998</b>	<b>1,860</b>
<b>Alaska Peninsula</b>		
North Peninsula	118	150
South Peninsula	30	Closed
<b>Total Area</b>	<b>148</b>	<b>150</b>
<b>Bristol Bay (Togiak)</b>		
Seine	16,027	14,673
Gill Net	5,453	6,288
<b>Total Area</b>	<b>21,480</b>	<b>20,961</b>
<b>AYK Area</b>		
Security Cove	862	897
Goodnews Bay	614	1,106
Cape Avinof	498	524
Nunivak Island	49	1,084
Nelson Island	970	859
Cape Romanzof	555	457
<b>Norton Sound</b>		
Gillnet	3,095	3,755
Beach Seine	119	417
Port Clarence	0	165
<b>AYK Total</b>	<b>6,762</b>	<b>9,264</b>
<b>Statewide Total Harvest</b>		
	<b>42,380</b>	<b>44,373</b>

Table 4. Alaska Department of Fish and Game, Division of Commercial Fisheries management staff, 2002.

<b>Office Staff:</b>	
Regional Supervisor	Denby Lloyd
Regional Management Biologist	Rod Campbell
Area Management Biologist	Kevin Brennan
Assistant Area Management Biologist	Dennis Gretsck
Assistant Area Management Biologist	Jeff Wadle
Fishery Biologist	Joan Brodie
<b>Field Staff:</b>	
<b>R/V K-Hi-C:</b>	
Boat Officer	Tom Emerson
Assistant Area Management Biologist	Dennis Gretsck
<b>R/V Resolution:</b>	
Boat Officer	Ron Kutchick
Assistant Area Management Biologist	Jeff Wadle
<b>Field Crews:</b>	
Fishery Biologist	Paul Kuriscak
Fishery Technician	Jon Becker
Fishery Technician	Joey Lindberg
Fishery Technician	Carl Peterson
Fishery Technician	Chris Bond
Fishery Technician	Cedar Cussins

Table 5. List of districts and management sections, guideline harvest levels (GHLs), list of closed sections, and district allocation percentages for the Kodiak Management Area sac roe herring fishery, 2002.

STATISTICAL AREA	MANAGEMENT SECTION	2002 GUIDELINE HARVEST LEVEL (Tons)	PURSE SEINE	GILLNET
			Tons	Tons
<b>NORTH AFOGNAK DISTRICT</b>				
NA10	Shuyak Island	CLOSED	CLOSED	CLOSED
NA20	Delphin Bay	CLOSED	CLOSED	CLOSED
NA30	Perenosa Bay	CLOSED	CLOSED	CLOSED
NA40	Seal Bay	CLOSED	CLOSED	CLOSED
NA50	Tonki Bay	10	10	CLOSED
<b>WEST AFOGNAK DISTRICT</b>				
WA10	Raspberry Strait	CLOSED	CLOSED	CLOSED
WA20	Malina Bay	15	CLOSED	15
WA31	Paramanof Bay	250	250	CLOSED
WA32	Foul Bay	30	CLOSED	30
WA40	Blue Fox/Devil's Inlet	10	CLOSED	10
WA50	Offshore W. Afognak	CLOSED	CLOSED	CLOSED
<b>SOUTH AFOGNAK DISTRICT</b>				
SA10	Izhut Bay	CLOSED	CLOSED	CLOSED
SA20	Kitoi Bay	CLOSED	CLOSED	CLOSED
SA30	MacDonalds Lagoon	CLOSED	CLOSED	CLOSED
SA40	Danger Bay	30	CLOSED	30
SA50	Litnik	CLOSED	CLOSED	CLOSED
SA60	Duck Bay	CLOSED	CLOSED	CLOSED
<b>TOTAL ALL AFOGNAK DISTRICTS</b>		<b>345</b>	<b>260</b>	<b>85</b>
<b>DISTRICT ALLOCATION PERCENTAGE</b>			<b>75.4%</b>	<b>24.6%</b>
<b>UGANIK DISTRICT</b>				
UG10	Kupreanof	CLOSED	CLOSED	CLOSED
UG20	Viekoda	80	80	CLOSED
UG21	Terror Bay	60	60	CLOSED
UG30	Village Island	400	400	CLOSED
UG31	West Uganik Pass	15	CLOSED	15
UG32	NE Arm Uganik	10	CLOSED	10
UG33	E. Arm Uganik	10	CLOSED	10
UG34	S. Arm Uganik	150	CLOSED	150
UG40	Offshore Uganik	CLOSED	CLOSED	CLOSED
<b>DISTRICT TOTAL</b>		<b>725</b>	<b>540</b>	<b>185</b>
<b>DISTRICT ALLOCATION PERCENTAGE</b>			<b>74.5%</b>	<b>25.5%</b>
<b>UYAK DISTRICT</b>				
UY10	Offshore Uyak	CLOSED	CLOSED	CLOSED
UY20	Harvester Island	CLOSED	CLOSED	CLOSED
UY30	Inner Uyak	CLOSED	CLOSED	CLOSED
UY32	Browns Lagoon	CLOSED	CLOSED	CLOSED
UY31	Larsen Bay	CLOSED	CLOSED	CLOSED
UY40	Zachar Bay	CLOSED	CLOSED	CLOSED
UY50	Spiridon Bay	CLOSED	CLOSED	CLOSED
<b>DISTRICT TOTAL</b>		<b>CLOSED</b>	<b>CLOSED</b>	<b>CLOSED</b>

-Continued-

Table 5. (page 2 of 3)

STATISTICAL AREA	MANAGEMENT SECTION	2002 GUIDELINE HARVEST LEVEL (Tons)	PURSE SEINE	GILLNET
			Tons	Tons
<b>ALITAK DISTRICT</b>				
AL10	Outer Alitak	CLOSED	CLOSED	CLOSED
AL20	Inner Alitak	10	CLOSED	10
AL21	Inner Deadman Bay	CLOSED	CLOSED	CLOSED
AL22	Outer Deadman Bay	CLOSED	CLOSED	CLOSED
AL30	Sulua Bay	CLOSED	CLOSED	CLOSED
AL31	Portage Bay	30	30	CLOSED
AL40	Lower Olga/Moser	CLOSED	CLOSED	CLOSED
AL41	No. Upper Olga Bay	CLOSED	CLOSED	CLOSED
AL50	Upper Olga Bay	10	CLOSED	10
AL60	Geese/Twoheaded	15	15	CLOSED
<b>DISTRICT TOTAL</b>		<b>65</b>	<b>45</b>	<b>20</b>
<b>DISTRICT ALLOCATION PERCENTAGE</b>			<b>69.2%</b>	<b>30.8%</b>
<b>STURGEON/HALIBUT DISTRICT</b>				
SH10	Sturgeon/Halibut	CLOSED	CLOSED	CLOSED
<b>EASTSIDE DISTRICT</b>				
EA10	Kaiugnak	*Note: Sections EA10 and EA20 will be managed as one section, 10 ton GHL.		
EA20	SW. Sitkalidak	10	10	CLOSED
EA21	Three Saints Bay	15	CLOSED	15
EA22	Newman Bay	*Note: Sections EA22 and EA23 will be managed as one section, 50 ton GHL.		
EA23	W. Sitkalidak Strait	50	50	CLOSED
EA24	Barling Bay	40	40	CLOSED
EA30	E. Sitkalidak St.	50	50	CLOSED
EA31	Tanginak Anchorage	CLOSED	CLOSED	CLOSED
EA40	Outer Sitkalidak	CLOSED	CLOSED	CLOSED
EA41	Boulder Bay	10	CLOSED	10
EA42	Shearwater Bay	30	CLOSED	30
EA43	Outer Kiliuda Bay	80	80	CLOSED
EA44	Inner Kiliuda Bay	80	80	CLOSED
EA50	Outer Ugak Bay	160	160	CLOSED
EA51	Inner Ugak Bay	90	CLOSED	90
EA52	Pasagshak	10	CLOSED	10
<b>DISTRICT TOTAL</b>		<b>625</b>	<b>470</b>	<b>155</b>
<b>DISTRICT ALLOCATION PERCENTAGE</b>			<b>75.2%</b>	<b>24.8%</b>
<b>NORTHEAST DISTRICT</b>				
NE10	Womens Bay	CLOSED	CLOSED	CLOSED
NE20	Kalsin Bay	CLOSED	CLOSED	CLOSED
NE30	Middle Bay	CLOSED	CLOSED	CLOSED
NE40	Inshore Chiniak	CLOSED	CLOSED	CLOSED
NE50	Offshore Chiniak	CLOSED	CLOSED	CLOSED
<b>DISTRICT TOTAL</b>		<b>CLOSED</b>	<b>CLOSED</b>	<b>CLOSED</b>
<b>INNER MARMOT DISTRICT</b>				
IM10	Monashka Bay	CLOSED	CLOSED	CLOSED
IM20	Anton Larsen Bay	CLOSED	CLOSED	CLOSED
IM30	Sharatin Bay	CLOSED	CLOSED	CLOSED
IM40	Kizhuyak Bay	10	CLOSED	10
IM50	Spruce Island	CLOSED	CLOSED	CLOSED
<b>DISTRICT TOTAL</b>		<b>10</b>	<b>CLOSED</b>	<b>10</b>
<b>DISTRICT ALLOCATION PERCENTAGE</b>			<b>CLOSED</b>	<b>100%</b>

-Continued-

Table 5. (page 3 of 3)

STATISTICAL AREA	MANAGEMENT SECTION	2002 GUIDELINE HARVEST LEVEL (Tons)	PURSE SEINE	GILLNET
			Tons	Tons
<b>NORTH MAINLAND DISTRICT</b>				
NM10	Hallo Bay	CLOSED	CLOSED	CLOSED
NM20	Inner Kukak	25	CLOSED	25
NM30	Outer Kukak	CLOSED	CLOSED	CLOSED
NM40	Missak Bay	CLOSED	CLOSED	CLOSED
<b>MID MAINLAND DISTRICT</b>				
MM10	Inner Katmai	50	50	CLOSED
MM20	Outer Katmai	CLOSED	CLOSED	CLOSED
MM30	Alinchak	15	15	CLOSED
MM40	Puale Bay	EXPLORATORY	EXPLORATORY	EXPLORATORY
MM50	Portage Bay	EXPLORATORY	EXPLORATORY	EXPLORATORY
MM60	Outer Portage	EXPLORATORY	EXPLORATORY	EXPLORATORY
<b>SOUTH MAINLAND DISTRICT</b>				
SM10	Wide Bay	EXPLORATORY	EXPLORATORY	EXPLORATORY
SM20	Lower Shelikof	EXPLORATORY	EXPLORATORY	EXPLORATORY
<b>MAINLAND DISTRICTS TOTAL</b>		<b>90</b>	<b>65</b>	<b>25</b>
<b>DISTRICT ALLOCATION PERCENTAGE</b>			<b>72.2%</b>	<b>27.8%</b>
<b>GRAND TOTAL</b>		<b>1,860</b>	<b>1,380</b>	<b>480</b>
<b>ALLOCATION PERCENTAGE ALL DISTRICTS</b>			<b>74.2%</b>	<b>25.8%</b>

**Maps Are Not Available Electronically**

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