

KODIAK MANAGEMENT AREA
HERRING SAC-ROE HARVEST STRATEGY, 1992

By

Dave Prokopowich,

Kevin Brennan,

and

Dennis Gretsich

Regional Information Report No¹. 4K92-14

Alaska Department of Fish and Game
Division of Commercial Fisheries
211 Mission Road
Kodiak, Alaska 99615

March 1992

¹The Regional Information Report Series was established in 1987 to provide an information access system for all unpublished division reports. These reports frequently serve diverse ad hoc informational purposes or archive basic uninterpreted data. To accommodate timely reporting of recently collected information, reports in this series undergo only limited internal review and may be subsequently finalized and published in the formal literature. Consequently, these reports should not be cited without prior approval of the author or the Division of Commercial Fisheries.

TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES AND FIGURES.....	i
ABSTRACT.....	ii
INTRODUCTION.....	1
GENERAL HARVEST POLICY.....	1

REGULATORY ABSTRACT

New Regulations	2
Registration Requirements.....	2
Guideline Harvest Levels.....	2
Fishing Season.....	3
Fishing Periods.....	3
Closed Areas.....	3
Extra Time for Gillnetters.....	4
Airplanes.....	4
Size Limits.....	4

IN-SEASON STRATEGY DISCUSSION

General Discussion.....	5
Fishing Periods.....	5
Emergency Order Announcements.....	6
ADF&G Field Crews/Fisherman Cooperation.....	7
In-Season Catch Reporting.....	7
Guideline Harvest Levels.....	8

TABLES

<u>Table</u>	<u>Page</u>
1. Kodiak management area herring sac-roe guideline harvest levels by management unit, 1992.....	9
2. Kodiak management area herring sac-roe fishery industry summary, 1979-1991.....	13
3. Status of Kodiak herring sac-roe limited entry permits, 1987-1991.....	14
4. Residency status of the limited entry permit holders for the Kodiak herring sac-roe fishery, 1985-1991.....	15
5. Alaska Department of Fish And Game, Division of Commercial Fisheries 1992 management staff.....	16
6. Historical harvests of Kodiak herring sac-roe and food/bait, 1912-1991.....	17
7. Historical harvest and harvest by gear type for the Kodiak sac-roe herring fishery, 1964-1991.....	18
8. 1991 Alaska statewide herring harvest and preliminary 1992 harvest projections.....	19

FIGURES

<u>Figure</u>	<u>Page</u>
1. Map showing the new boundary separating the Paramanof Bay and Foul Bay management units.....	21
2. Reduced scale map of the 1991 Kodiak area herring management units, a full scale map can be obtained from the Kodiak ADF&G office.....	22

ABSTRACT

This document is intended to provide commercial fishermen and buyers with the pertinent management information and guidelines that are required to be adhered to when participating in the Kodiak, (AREA K), management area.

The 1992 Kodiak herring sac-roe fishery guideline harvest level is 2,720 tons. The season will begin at 12:00 noon on April 15 and will close at 12:00 noon on June 30. Fishing periods will be 24 hours in duration starting at 12:00 noon on odd numbered days and ending at 12:00 noon on even numbered days.

The Kodiak sac-roe fishery is currently managed by the use of 74 management units; herring within 53 of these units are treated as individual stocks and have a history of sac-roe harvests. Additionally, there are 14 exploratory management units which potentially support sac-roe stocks and 7 management units which occur offshore and are not perceived to have habitat suitable for spawning activity to occur.

Guideline Harvest Levels (G.H.L.) are provided for each of the 57 management units as shown in (Table 1) on page 9. In-season emergency order closures for each unit will occur as the G.H.L.'s for each unit are achieved. Closures may also result prior to attaining a G.H.L. if the fishery performance indicates that stock status is weaker than expected.

All in-season emergency order closures or reopenings will be broadcast on 4125 Khz by Peggy Dyson following her daily marine weather broadcasts at 8:00 a.m. and 6:00 p.m. 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/day on the ADF&G record-a-phone at 486-4559.

All herring buyers/processors and all tenders are required to register at the Kodiak ADF&G office prior to commencing operations in the Kodiak Area. There is no special vessel registration required for fishing vessels.

NEW>> The boundaries between the Paramanof Bay subsection and the Foul Bay subsection will be changed for the 1992 season, to provide for more accurate assignment of harvest to stock management unit. The boundaries are amended to read from regulation, 5 ACC 27.505, (1991 Commercial Herring Fishing Regulation, page 38). See (Figure 1), for map of this new boundary.

(A) Paramanof Bay subsection: all waters of Paramanof Bay east of a line from Cape Paramanof (59°18'20" N.lat., 153°03'30" W.long.) to the westernmost tip of Ban Island and south of the latitude of (58°19'15" N. lat.).

(B) Foul Bay subsection: all waters of Foul Bay east of a line from the westernmost tip of Ban Island to Black Cape (58°24'30" N. lat., 152°53'W. long.) and north of the latitude of (58°19'15" N.lat.).

INTRODUCTION

The Kodiak Area herring sac-roë fishery has occurred annually since 1964, (28 years). This fishery was an open-to-entry fishery from 1964 to 1980, and was under a moratorium to new entries from 1981 to 1984, and has been a limited entry fishery since 1985. Effort levels since 1979 are shown in Table 2. A listing of entry permits issued by gear type is shown in Table 3.

Since 1964 the harvest has averaged about 1,425 tons. Since 1979 the harvest has averaged about 2,101 tons and has provided a stable harvest ranging from 1,559 tons in 1986 to 2,432 in 1991. The average roë recovery has approximated 10%.

This fishery targets on individual herring stocks immediately prior to spawning to ensure for the greatest roë development and resulting roë recovery.

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 Alaska Department of Fish and Game (ADF&G). Consequently, ADF&G will manage the fishery per the statewide general herring guideline harvest policy which provides for catches in traditional in-shore areas, for the greatest roë recovery, and not to exceed a 20% harvest rate on the available spawning biomass. However, roë recovery will not be a criteria for emergency openings or closures except in cases where documented excessive wastage is, or is expected to be, a factor.

Because of the differential timing and abundance of Kodiak's various herring stocks, relatively high gear levels to Guideline Harvest Levels (GHL's), and the competition between gear types for the same stocks, this fishery is best served by a fixed opening date, which is currently April 15. Generally the season will close for each stock by emergency order as their respective guideline harvest levels are achieved. When fishery and stock performance indicate that deviations from the guideline harvest level, (i.e. where actual harvests occur at lesser or greater levels than expected), these areas may be closed under low performance or additional harvest may be warranted if the spawning biomass is greater than expectations. Stocks which are considered to be under-exploited in-season will remain open for adequate exploitation to occur or until the regulatory closure of June 30. During the regulatory season, April 15 to June 30, stocks which have been closed to harvesting may be reopened if it is determined by ADF&G that "new" fish have increased the available spawning biomass to the point that the initial exploitation rate has dropped

below 10% for that stock, see Table 1. Any reopenings will require confirmation that the "new" fish are not juvenile herring, post spawners, or other forage fish and will require that ADF&G have the ability to monitor and regulate the reopening "on the grounds". At least 24 hours notice will be given prior to any reopenings.

REGULATORY SUMMARY

NEW REGULATIONS:

There are no new regulations for the 1992 season. A boundary change will be in effect and will be announced by emergency order prior to the first opening. The boundaries between the Paramanof Bay subsection and the Foul Bay subsection will be changed for the 1992 season, to provide for more accurate assignment of harvest to stock management unit. The boundaries are amended to read from regulation, 5 ACC 27.505, (1991 Commercial Herring Fishing Regulation, page 38). See (Figure 1), for map of this new boundary.

(A) Paramanof Bay subsection: all waters of Paramanof Bay east of a line from Cape Paramanof (59°18'20"N.lat., 153°03'30" W.long.) to the westernmost tip of Ban Island and south of the latitude of (58°19'15" N. lat.).

(B) Foul Bay subsection: all waters of Foul Bay east of a line from the westernmost tip of Ban Island to Black Cape (58°24'30" N. lat., 152°53'W. long.) and north of the latitude of (58°19'15" N.lat.).

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.

Registration will ensure that all tenders and processors know the proper reporting requirements needed by ADF&G to manage the herring sac-roe fishery.

- (See Regulation 5 AAC 27.540 of the Commercial Herring Regulations, for additional information. Note: This regulation will be strictly be enforced).

Fishing Vessels

There are no special registration requirements for either seine or gillnet vessels.

GUIDELINE HARVEST LEVELS:

For the 1992 sac-roe season, approximately 2,720 short tons are expected to be harvested from the entire management area. Harvest projections by management unit are listed in Table 1. These harvest projections are estimates of harvest levels for each stock based upon ADF&G evaluation of stock status. These harvest projections are not guaranteed quotas and the actual harvest may exceed or fall short of these projections.

In-season stock evaluation will be guided by the following criteria: 1) stock performance, based on biomass estimates and age compositions, 2) fishery performance including fishery timing and harvest duration.

FISHING SEASON

The fishing season will be from April 15 through June 30. Adjustments to the season will be announced by emergency order on a stock by stock basis. Closures will occur when desired harvest levels of each stock are either achieved or in jeopardy of being significantly exceeded. Closures may also result when unexpected weaknesses in stock strength become apparent.

FISHING PERIODS

Initial fishing periods will be 24 hours and will begin at 12:00 Noon on odd numbered days and end at 12:00 Noon on even numbered days. The first 24 hour period will begin at 12:00 Noon, April 15. Depending on effort levels, harvest rates, and ADF&G's ability to monitor the fishery, the length of fishing periods may need to be reduced. Reductions in time for the fishing periods, if necessary, will be announced by emergency order.

CLOSED AREAS:

Regulatory Closures

Browns Lagoon is closed at the seaward entrance of the lagoon.

Women's Bay is closed inside of a line from Shannon's Point to Nyman's Peninsula. The latitudes and longitudes of these points are described in regulation 5 AAC 27.530

(page 46 of the 1991 Commercial Herring Regulation Booklet).

1992 Emergency Order Closures:

All Uganik Island Lagoons will remain closed, due to the small and geographically confined stocks which are highly susceptible to over exploitation.

EXTRA TIME FOR GILLNETTERS

When the following conditions exist, herring gillnetters are allowed a **two hour** grace period before having to completely remove their gear from the water.

1. Herring gillnets may remain in the water up to **two hours** after the "primary closure time" for those fishing periods having fishing time of three hours or less.
2. Herring gillnets may remain in the water up to **two hours** after the announced "primary" closure time for those fishing periods greater than three hours in length, where the announcement occurs less than three hours before the scheduled "primary closure time" of the fishing period.

The "primary closure time" is the time at which all seine gear must have completed fishing. When it applies, the "secondary closure time", i.e. at the end of the two hour grace period for gillnet gear, **ALL GILLNETS MUST BE COMPLETELY OUT OF THE WATER AND NO GILLNET GEAR MAY BE SET OR RESET AFTER THE "PRIMARY CLOSING TIME"**.

AIRPLANES:

There are no restrictions on the use of airplanes.

SIZE LIMITS:

No CFEC herring seine permit holder may sell or have aboard a vessel any herring that were taken during the herring sac-roe season if the number of individual herring per 50 lbs. of net weight exceeds 250 fish.

To prevent waste, permit holders are encouraged to check with their markets prior to fishing to find out minimum size/weight restrictions and roe percentages which are acceptable. All herring which are harvested during the sac-roe season which are sold as bait or are discarded due to quality problems will be included as part of the total sac-roe harvest.

IN-SEASON STRATEGY

General Discussion

Table 1 lists by district those management units in which historical harvests have occurred. These management units have been assigned guideline harvest levels. Those management units where sporadic or no harvests have occurred, have been designated "Exploratory" with no designated guideline harvest level. In-season closures will be used to ensure that excessive harvests are minimized in exploratory situations.

The guideline harvest levels established for each management unit, district and/or the entire management area are meant to reflect the stock status. This means that the previous season's stock performance has been evaluated and that trends have been identified and used to establish the current season's GHL's. Specifically, these criteria are 1) 1991 expected biomass vs. actual biomass estimates, 2) average school size, 3) trends in age composition, 4) level of recruitment (age 3), 5) proportion of the spawning population age 5 and younger, 6) level of age 2 fish in the spawning biomass (indicator of future recruit strength) and 7) spawn observations (extent, frequency, amount deposited). This information is supplemented by fishery performance information, namely the expected vs. actual harvest timing, duration, and level.

Guideline harvest level adjustments are subsequently made based upon stock performance. Adjustments to the GHL depends upon the degree remedial action which is required. Generally, adjustments are gradual, $\pm 25\%$ to $\pm 50\%$.

At any time in-season, closed area adjustments can be made when it appears that pre-season expectations were incorrect. Consequently there may be sections either closed prior to reaching their GHL's or allowed to harvest in excess of their GHL's if the assessed available spawning biomass warrants it.

Fishing Periods

Initially, fishing periods will begin at 12:00 Noon on the odd numbered days of each month beginning on April 15 and end at 12:00 Noon on the even numbered days, through June 30. Staggered days of fishing have the advantage of providing clearly defined closed periods which allow staff time to collect, summarize, and update all harvest data from previous fishing periods. The closures also allows for comparisons between reported and actual harvests. Since 1979, the occurrence of significant excessive harvests in this fishery

have been prevented by providing pre-established fishing periods. Towards the end of the season (usually early June) when fleet size and exploitable stocks are few in number, fishing periods may be modified to provide more continuous fishing time to facilitate adequately harvesting late occurring stocks. However, ADF&G's ability to monitor this fishery becomes very limited by late May and June, and this will be a major consideration in the nature of fishing period modifications.

In 1992, more restrictive adjustments in fishing periods may occur. In the event that active gear levels expand or become unexpectedly efficient to the point that a pattern of excessive harvests develop, deviations from the normal 24 hour fishing periods may be required.

Emergency Order, (E.O.), Announcements: "Getting the Word"

Because management strategy allows both gear types to fish all open areas during the fishing periods, there is considerable dispersion of gear throughout the management area. Consequently, it is important for the fleet to keep abreast of any changes in closures, potential short notice closures, and/or reopenings. This can be accomplished in the following ways: 1) personal contact with the Kodiak Herring Management staff in Kodiak via office visits, or telephone at 486-4791, or radio-telephone, 2) contact with ADF&G field personnel and the ADF&G vessel, the M/V K-Hi-C, which can be reached on VHF Channel 6, 3) contacting Peggy Dyson on 4125 mhz or 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 by Peggy Dyson following either the 8:00 A.M. or 6:00 P.M. weather broadcasts, 6) reading or collecting the most recent emergency order from the pouch posted outside the entrance to the Kodiak Fish and Game building, and 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 because of the limited broadcast range from the Kodiak office; however special consideration may be given to the Chiniak Bay fishery.

In-season closure announcements for management units which are not monitored by an ADF&G field crew normally occur at the end of a fishing period. However, short notice in-period closures may occur in management units not monitored by ADF&G field crews. Closures of this type will be announced by ADF&G management staff monitoring the area or initially announced on 4125 mhz following the weather broadcasts at 8:00 A.M. or 6:00 P.M. daily.

Because of extensive announcements associated with this fishery, it is recommended that fishermen document the latest E.O. announcement broadcast from Peggy Dyson by either marking a chart or making a tape recording of her broadcast.

ADF&G Field Crews/Fishermen Cooperation:

The crew on board the department's M/V K-Hi-C and seasonal biologists and technicians in remote tent camps will aid the Area Management Biologists by making frequent fishermen contacts in order to collect data on harvest levels and rates, fleet movements, and fleet observations of herring concentrations. Fishermen's cooperation will be appreciated when Department personnel request herring samples from their commercial catch. Samples from juvenile schools inadvertently seined-up will be gladly accepted by all ADF&G personnel. These samples will be used primarily for monitoring age composition, and when used with other stock performance indicators, will assist in determining the health of the stock. Copies of historical age data by stock are available at the Kodiak ADF&G office.

ADF&G field crews will be monitoring and mapping spawning activities, and soliciting information on commercial sightings to supplement information gathered by ADF&G. Fishermen and spotter pilots are encouraged to provide biomass and spawning information, these reports will be treated confidentially. Past cooperation has been excellent and has proven valuable in evaluating stock status and in gaining critical management information.

In-Season Catch Reporting

With approximately 100+ limited entry permit holders expected to fish during the 1992 season, frequent aerial surveys and timely catch reports will continue to be an important management tool, particularly in areas that are not covered by field crews. Timely and accurate catch information provided by the processors and fishermen will be essential in managing the fishery. Processors and independent tender operators will be required to provide daily tallies of herring deliveries by statistical area and must provide accurate estimates of herring onboard tenders that have not yet delivered to the cannery. Inaccurate or untimely information could result in the closure of an area. Individual code sheets will be provided for each tender or processor that is required to report catches on a daily basis by radio. Each tender operator and buyer must register with the Department prior to fishing and will be given a packet containing regulations, statistical charts, etc.

Guideline Harvest Level

The 1992 GHL of 2,720 tons should result in a near record sac-roe herring harvest for the Kodiak Area. If recruitment is above average in several major stocks or if virgin stocks are exploited, the actual harvest may well exceed the GHL. If pre-season estimates of recruitment are incorrect area-wide and/or adverse weather conditions prevail throughout the season the actual harvest may be significantly less than the GHL.

Table 1, lists the Guideline Harvest Levels by Management Unit, (GHL's) and will be used as an aid in making in-season management decisions. These harvest levels are meant to reflect the status of each stock listed. Annual harvest levels for these stocks may fluctuate considerably until their status is fully understood. All fishermen, spotter pilots, and processors are encouraged to provide the ADF&G management staff with any information on stocks to improve the management of the fishery.

Table 1. Kodiak Management Area herring sac-roe herring guideline harvest levels by management unit, 1992.

STAT. AREA	MGMT. UNITS	1992 GUIDELINE HARVEST LEVEL	REQUIRED SPAWNING BIOMASS	
			@10% EXPLOITATION	@20% EXPLOITATION
AFOGNAK DIST.				
A010	Raspberry Sts.	165 TONS	1,650 Tons	825 Tons
A020	Malina Bay	45 TONS	450 Tons	225 Tons
A031	Paramanof Bay	50 TONS	500 Tons	250 Tons
A032	Foul Bay	20 TONS	200 Tons	100 Tons
A040	Devils Inlet	10 TONS	100 Tons	50 Tons
A040	Blue Fox	10 TONS	100 Tons	50 Tons
A050	Offshore W. Afog. ^{1/}	-	1/	1/
A060	Shuyak Is.	20 TONS	200 Tons	100 Tons
A070	Perenosa Bay	15 TONS	150 Tons	75 Tons
A071	Delphin Bay	10 TONS	100 Tons	50 Tons
A072	Seal Bay	10 TONS	100 Tons	50 Tons
A080	Tonki Bay	15 TONS	150 Tons	75 Tons
A090	Izhut Bay	20 TONS	200 Tons	100 Tons
A091	Kitot Bay	15 TONS	150 Tons	75 Tons
A092	MacDonalds Lagoon	10 TONS	100 Tons	50 Tons
A100	Danger Bay	15 TONS	150 Tons	75 Tons
A101	Litnik	10 TONS	100 Tons	50 Tons
A102	Duck Bay	10 TONS	100 Tons	50 Tons
District Totals		450 TONS	4,500 Tons	2,250 Tons

Table 1. (Page 2 of 4)

STAT. AREA	MGMT. UNITS	1992 GUIDELINE HARVEST LEVEL	REQUIRED SPAWNING BIOMASS	
			@10% EXPLOITATION	@20% EXPLOITATION
<u>UGANIK DIST.</u>				
UG10	Kupreanof	10 TONS	100 Tons	50 Tons
UG20	Viekoda	40 TONS	400 Tons	200 Tons
UG21	Terror	60 TONS	600 Tons	300 Tons
UG21	Uganik Is. Lagoon ^{2/}	CLOSED	2/	2/
UG30	Village Island	45 TONS	450 Tons	225 Tons
UG31	W. Uganik Pass	25 TONS	250 Tons	125 Tons
UG32	NE Arm Uganik	55 TONS	550 Tons	275 Tons
UG33	E. Arm Uganik	40 TONS	400 Tons	200 Tons
UG34	S. Arm Uganik	50 TONS	500 Tons	250 Tons
UG40	Offshore Uganik ^{1/}	-	1/	1/
District Totals		325 TONS	3,250 Tons	1,625 Tons
<u>UYAK DISTRICT</u>				
UY10	Offshore Uyak ^{1/}	-	1/	1/
UY20	Harvester Island	10 TONS	100 Tons	50 Tons
UY30	Inner Uyak	180 TONS	1,800 Tons	900 Tons
UY32	Browns Lagoon	20 TONS	200 Tons	100 Tons
UY31	Larsen Bay	10 TONS	100 Tons	50 Tons
UY40	Zachar Bay	100 TONS	1,000 Tons	500 Tons
UY50	Spiridon Bay	120 TONS	1,200 Tons	600 Tons
District Totals		440 TONS	4,400 Tons	2,200 Tons
<u>ALITAK DIST.</u>				
AL10	Outer Alitak	(Exploration)	3/	3/
AL20	Inner Alitak	(Exploration)	3/	3/
AL21	Deadman Bay	195 TONS	1,950 Tons	975 Tons
AL30	Sulua/Portage Bay	95 TONS	950 Tons	475 Tons
AL40	Lower Olga/Moser ^{4/}	15 TONS	150 Tons	75 Tons
AL40	No. Upper Olga B. ^{4/}	10 TONS	100 Tons	50 Tons
AL50	So. Upper Olga B. ^{4/}	145 TONS	1,450 Tons	725 Tons
AL60	Geese/Twoheaded	(Exploration)	3/	3/
District Totals:		460 TONS	4,600 Tons	2,300 Tons

Continued

Table 1. (Page 3 of 4)

STAT. AREA	MGMT. UNITS	1992 GUIDELINE HARVEST LEVEL	REQUIRED SPAWNING BIOMASS	
			@10% EXPLOITATION	@20% EXPLOITATION
<u>STURGEON/HALIBUT DIST.</u>				
SH10	Sturgeon/Halibut	(Exploration)	3/	3/
<u>GENERAL DISTRICT</u>				
G010	Kaiugnak	10 TONS	100 Tons	50 Tons
G020	W. Sitkalidak St.	100 TONS	1,000 Tons	500 Tons
G020	S.W. Sitkalidak St.	(Exploration)	3/	3/
G021	Barling	40 TONS	400 Tons	200 Tons
G022	E. Sitkalidak St.	120 TONS	1,200 Tons	600 Tons
G023	Tanginak Anchorage	15 TONS	150 Tons	75 Tons
G030	Outer Sitkalidak	(Exploration)	3/	3/
G040	Outer Kiliuda	(Exploration)	3/	3/
G041	Inner Kiliuda	20 TONS	200 Tons	100 Tons
G042	Shearwater	50 TONS	500 Tons	250 Tons
G050	Pasagshak	25 TONS	250 Tons	125 Tons
G050	Outer Ugak	(Exploration)	3/	3/
G051	Inner Ugak	75 TONS	750 Tons	375 Tons
G060	Womens Bay	110 TONS	1,100 Tons	550 Tons
G070	Monashka/Mill B.	(Exploration)	3/	3/
G080	Anton Larsen	10 TONS	100 Tons	50 Tons
G081	Sheratin	10 TONS	100 Tons	50 Tons
G090	Kizhuyak	110 TONS	1,100 Tons	550 Tons
G100	Kalsin Bay	15 TONS	150 Tons	75 Tons
G101	Middle Bay	20 TONS	200 Tons	100 Tons
G102	Inshore Chiniak	10 TONS	100 Tons	50 Tons
G103	Spruce Island	10 TONS	100 Tons	50 Tons
<u>District Total</u>		<u>750 TONS</u>	<u>7,500 Tons</u>	<u>3,750 Tons</u>
<u>MAINLAND DIST.</u>				
M010	North Mainland	(Exploration)	3/	3/
M020	Inner Kukak	65 TONS	650 Tons	325 Tons
M030	Outer Kukak ^{1/}	-	1/	1/
M040	Inner Missak	(Exploration)	3/	3/

Table 1. (Page 4 of 4)

STAT. AREA	MGMT. UNITS	1992 GUIDELINE HARVEST LEVEL	REQUIRED SPAWNING BIOMASS @10% EXPLOITATION	REQUIRED SPAWNING BIOMASS @20% EXPLOITATION
<u>MAINLAND DISTRICT</u> (Continued)				
M040	Outer Missak ^{1/}	-	1/	1/
M050	Inner Katmai	65 TONS	650 Tons	325 Tons
M060	Outer Katmai ^{1/}	-	1/	1/
M070	Alinchak	40 TONS	400 Tons	200 Tons
M080	Puale Bay	(Exploration)	3/	3/
M090	Portage Bay	(Exploration)	3/	3/
M100	Outer Portage ^{1/}	-	1/	1/
M110	Wide Bay	125 TONS	1,250 Tons	625 Tons
M120	Lower Shelikof	(Exploration)	3/	3/
District Total		295 TONS	2,950 Tons	1,475 Tons
GRAND TOTAL		2,720 TONS	27,200 Tons	13,600 Tons

^{1/}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.)

^{2/}The Uganik Lagoon Unit refers to all lagoons on Uganik Island. Spawning biomasses associated with these lagoons appear to have been reduced to less than 50 tons, thus all waters of the lagoons located on Uganik Island will remain closed to commercial herring fishing.

^{3/}Adequate biomass to justify an "exploratory" harvest; the actual harvest should not exceed 20% of the available biomass.

^{4/}The following management units have been modified either in name or boundaries for the purpose of in-season management of the Olga/Moser Bay herring stocks. Each unit will be described by emergency order when closures are issued for these units.

- AL40 Lower Olga/Moser Unit: Formerly that portion of the Olga/Moser Bay Section south of the latitude of Stockholm Point.
- AL50 North Upper Olga Unit: Formerly that portion of the Olga/Moser Bay Section north of the latitude of Stockholm Point.
- AL50 South Upper Olga Unit: Formerly called the Upper Olga Bay Section.

Table 2. Kodiak Management Area herring sac-roe fishery industry summary, 1979-1991.

Year	Gear Type	Units of Gear	Est. Number Landings	Est. Harvest (Tons)	Est. Harvest Percent	Est. Total Value	Est. Average Earnings	Average Tons/Boat	Average Tons/Lndgs	Average Lndgs/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	\$330,423	\$2,573	3.4	-	-
	TOTAL	201	-	2383.0	100	\$1,688,410	-	-	-	-
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	-	-	-	-
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	-	-	-	-

Table 3. Status of Kodiak herring sac-roe limited entry permits, 1987-1991.

Gear Type	Year				
	1987	1988	1989	1990	1991
G.N. TRANSFERABLE	59	63	64	72	74
G.N. NON-TRANSFERABLE	<u>48</u>	<u>41</u>	<u>41</u>	<u>31</u>	<u>28</u>
G.N. TOTAL	107	104	105	103	102
G.N. FISHED	62	76	83	63	64
SEINE TRANSFERABLE	40	45	45	46	48
SEINE NON-TRANSFERABLE	<u>26</u>	<u>24</u>	<u>24</u>	<u>35</u>	<u>22</u>
SEINE TOTAL	66	69	69	71	70
SEINE FISHED	29	33	37	27	32
TOTALS					
TRANSFERABLE	99	108	109	118	122
NON-TRANSFERABLE	<u>74</u>	<u>65</u>	<u>65</u>	<u>56</u>	<u>50</u>
TOTAL	173	173	174	174	172
FISHED	91	109	120	90	96

Note: Data from February 1992.

Table 4. Residency status of the limited entry permit holders for the Kodiak herring sac-roe fishery, 1985-1991.

Year Status	PURSE SEINE		GILLNET		TOTALS	
	Number	%	Number	%	Number	%
1985 Residents	62	.89	114	.94	176	.92
Non-Resident	8	.11	4	.03	12	.06
Unknown	<u>0</u>	-	<u>3</u>	.03	<u>3</u>	.02
TOTAL	70		121		191	
1986 Residents	65	.90	115	.97	180	.95
Non-Resident	7	.10	3	.03	10	.05
Unknown	<u>0</u>	-	<u>0</u>	-	<u>0</u>	-
TOTAL	72		118		190	
1987 Residents	58	.88	101	.94	159	.91
Non-Resident	6	.09	2	.01	8	.05
Unknown	<u>2</u>	.03	<u>5</u>	.05	<u>7</u>	.04
TOTAL	66		108		174	
1988 Residents	62	.90	105	.96	167	.94
Non-Resident	6	.09	1	.01	7	.04
Unknown	<u>1</u>	.01	<u>3</u>	.03	<u>4</u>	.02
TOTAL	69		109		178	
1989 Residents	62	.86	107	.93	169	.90
Non-Resident	7	.10	4	.035	11	.06
Unknown	<u>3</u>	.04	<u>4</u>	.035	<u>7</u>	.04
TOTAL	72		115		187	
1990 Residents	59	.83	95	.92	154	.89
Non-Resident	9	.13	4	.04	13	.07
Unknown	<u>3</u>	.04	<u>4</u>	.04	<u>7</u>	.04
TOTAL	71		103		174	
1991 Residents	59	.84	94	.92	153	.89
Non-Resident	8	.11	4	.04	12	.07
Unknown	<u>3</u>	.05	<u>4</u>	.04	<u>7</u>	.04
TOTAL	70		102		172	

Table 5. Alaska Department of Fish and Game, Division of Commercial Fisheries 1992 Management Staff.

Office Staff:

Regional Supervisor: Larry Nicholson
Regional Finfish Cord.: Pete Probasco

Area Management Biologist: Dave Prokopowich
Asst. Management Biologist: Kevin Brennan
Fishery Biologist: Dennis Gretsch
Fishery Biologist: Joan Brodie
Clerk Typist: Sharon Theis

M/V K-Hi-C:

Boat Officer: Tom Emerson
Fishery Biologist: Dennis Gretsch

Field Crews:

Fishery Technician: Kim Rudge
Fishery Technician: Mo Lambdin
Fishery Technician: Jon Becker
Fishery Technician: Ed Hajdys
Fishery Biologist: Dave Sarafin

Table 6. Historical harvests of Kodiak sac-oe and food/bait herring, 1912-1991.

YEAR	FOOD & BAIT	SAC ROE	TOTAL	YEAR	FOOD & BAIT	SAC ROE	TOTAL
1912	20.0	0.0	20.0	1953	725.0	0.0	725.0
1913	0.0	0.0	0.0	1954	0.0	0.0	0.0
1914	0.0	0.0	0.0	1955	0.0	0.0	0.0
1915	0.0	0.0	0.0	1956	13524.0	0.0	13524.0
1916	70.0	0.0	70.0	1957	21218.5	0.0	21218.5
1917	137.9	0.0	137.9	1958	1711.0	0.0	1711.0
1918	118.4	0.0	118.4	1959	3831.0	0.0	3831.0
1920	45.9	0.0	45.9	1961	0.0	0.0	0.0
1921	944.9	0.0	944.9	1962	0.0	0.0	0.0
1922	1482.6	0.0	1482.6	1963	0.0	0.0	0.0
1923	321.5	0.0	321.5	1964	309.8	568.0	877.8
1924	4823.0	0.0	4823.0	1965	35.0	657.0	692.0
1925	9997.0	0.0	9997.0	1966	198.0	2769.0	2967.0
1926	2680.9	0.0	2680.9	1967	300.3	1662.0	1962.3
1927	2592.9	0.0	2592.9	1968	15.4	2001.0	2016.4
1928	625.0	0.0	625.0	1969	11.0	1130.0	1141.0
1929	NO DATA	0.0	0.0	1970	7.5	342.0	349.5
1930	622.0	0.0	622.0	1971	44.2	284.0	328.2
1931	1000.0	0.0	1000.0	1972	49.8	215.0	264.8
1932	3594.0	0.0	3594.0	1973	178.0	831.0	1009.0
1933	2312.5	0.0	2312.5	1974	40.1	868.0	908.1
1934	60000.0	0.0	60000.0	1975	5.2	8.0	13.2
1935	NO DATA	0.0	0.0	1976	N/A	5.0	5.0
1936	24748.0	0.0	24748.0	1977	N/A	338.0	338.0
1937	27659.3	0.0	27659.3	1978	398.9	904.0	1302.9
1938	24522.0	0.0	24522.0	1979	124.8	1736.0	1860.8
1939	38600.5	0.0	38600.5	1980	380.7	2384.0	2764.7
1940	22677.0	0.0	22677.0	1981	18.0	2063.0	2081.0
1941	40083.5	0.0	40083.5	1982	326.0	1771.0	2097.0
1942	16791.0	0.0	16791.0	1983	33.4	2319.0	2352.4
1943	35352.0	0.0	35352.0	1984	123.0	2163.0	2286.0
1944	26835.0	0.0	26835.0	1985	102.0	1968.0	2070.0
1945	31114.0	0.0	31114.0	1986	213.0	1558.0	1771.0
1946	47505.9	0.0	47505.9	1987	217.1	2146.0	2363.1
1947	50743.0	0.0	50743.0	1988	340.2	2171.0	2551.2
1948	46428.0	0.0	46428.0	1989	315.8	2248.6	2564.4
1949	0.0	0.0	0.0	1990	312.6	2347.0	2659.6
1950	44132.5	0.0	44132.5	1991	215.3	2432.0	2647.3
1951	4299.0	0.0	4299.0				
1952	1389.0	0.0	1389.0				

Table 7. Historical harvest by gear type for the Kodiak herring sac-roë fishery, 1964-1991.

Year	Total Harvest	Seine	Gillnet	Number of Companies	Number of Vessels		Total
	Tons	Tons			Seine	Gillnet	
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
Total	39,889	32,660	7,231				
Average	1,425	1,166	517				

Table 8. 1991 Alaska statewide herring harvests and preliminary 1992 harvest projections.

Fishery	1991 Actual		1992 Projections			Stock Status/Trend
	Opening or First Harvest	Harvest (s. tons)	Harvest (s. tons)	Expl. Rate	Mean Wt.(g) Spawning Biomass (s. ton)	
Southeastern						
Kah Shakes	4/08	660	1,200	11.5%	10,450	Moderate/Increasing
Sitka	4/10	1,938	3,356	14.3%	23,450	Moderate/Increasing
Seymour Canal	Closed		0		2,100	Depressed/Increasing
Lynn Canal	Closed		0		Unknown	Depressed/Stable
Hoonah Snd. Pound	4/05	13	11 ^a	6%	2,700	High/Stable
Food and Bait	1/14	3,273	2,732	15%	12,500	Moderate/Stable
Prince William Sound						
Seine	4/09	11,923	14,100			
Gillnet	4/18	792	825			
Pound Kelp	4/07	160	276 ^a			
Wild Kelp	5/11	108	243 ^a			
Food/Bait	10/01	4,259	3,956 ^b			
Total			19,400 ^c	20%	121,342	High/Stable
Lower Cook Inlet						
Eastern & Outer Districts	5/10		0			
Southern Dist.	.....No Fishery.....		Exploratory Only		Unknown	Unknown
Kamishak Dist.	4/26	1,992	1,479	10% ^d	214 16,431	Increasing
Upper Cook Inlet						
Sac-Roe	5/10	27	30		Unknown	Depressed/Declining
Food and Bait	5/23	16	100		Unknown	Depressed/Increasing
Kodiak						
Sac-Roe	4/15	2,432	2,700		Unknown	Moderate/Stable
Food and Bait						
Eastern Shelikof	8/01	100	164	1%	16,431	Moderate/Increasing
Other Kodiak	8/01	115	270		Unknown	Moderate/Stable
Chignik Sac-Roe	.....No Fishery.....		50		Unknown	Unknown
Alaska Peninsula						
Port Moller	5/17	1,313	500	6%	8,400	High/Stable
South Peninsula	5/28	157	300		Unknown	Moderate/Stable
Dutch Harbor						
Food and Bait	7/17	1,325	738			
Bristol Bay (Toqtlak)						
Seine	5/10	11,788	7,354			
Gill Net	5/10	3,182	2,451			
Spawn on Kelp	5/13	174 ^a	175 ^a			
Total		14,627 ^f	10,954 ^f	20%	60,214	Depressed/Declining
Kuskokwim Area						
Security Cove	5/13	570	608	20%	3,042	Moderate/Declining
Goodnews Bay	5/22	267	596	20%	2,478	Moderate/Declining
Cape Avinof	5/26	267	207	15%	1,382	Moderate/Declining
Nunivak Island	5/20	60	337	15%	2,249	Depressed/Stable
Nelson Island	.....No Harvest.....		0		1,555	Depressed/Stable
Cape Romanzof	5/21	526	400	15%	2,672	Depressed/Declining
Norton Sound						
Gillnet	5/29	5,400	4,680			
Beach Seine	5/23	522	520			
Total		5,922	5,200	20%	26,069	High/Stable
Port Clarence	.....No Harvest.....		165		Unknown	
TOTALS						
Sac Roe Harvest Total ^h		43,732	41,859			
Food and Bait Harvest Total:		9,243	7,889			
Total Herring Harvest:		57,491	49,748			
				Total Known Biomass	282,334	

FOOTNOTES ON NEXT PAGE

FOOTNOTES

^aHarvest of spawn-on-kelp product in short tons.

^bPreliminary 1990 food/bait guideline. The 1991 guideline will be set after 1991 sac-roe season.

^cIncludes mortality allowances of 2,730 and 1,550 tons for pound and wild spawn on kelp fisheries.

^dKamishak District exploitation rate includes the eastern Shelikof food and bait harvests.

^eTogiak total harvest includes an allowance for 1,500 tons mortality for the spawn-on-kelp fishery.

^fProjected biomass below minimum for commercial harvest; fishery will be opened if threshold biomass observed.

^gSac-roe statewide total harvests do not include allowances for spawn-on-kelp fishery mortality.

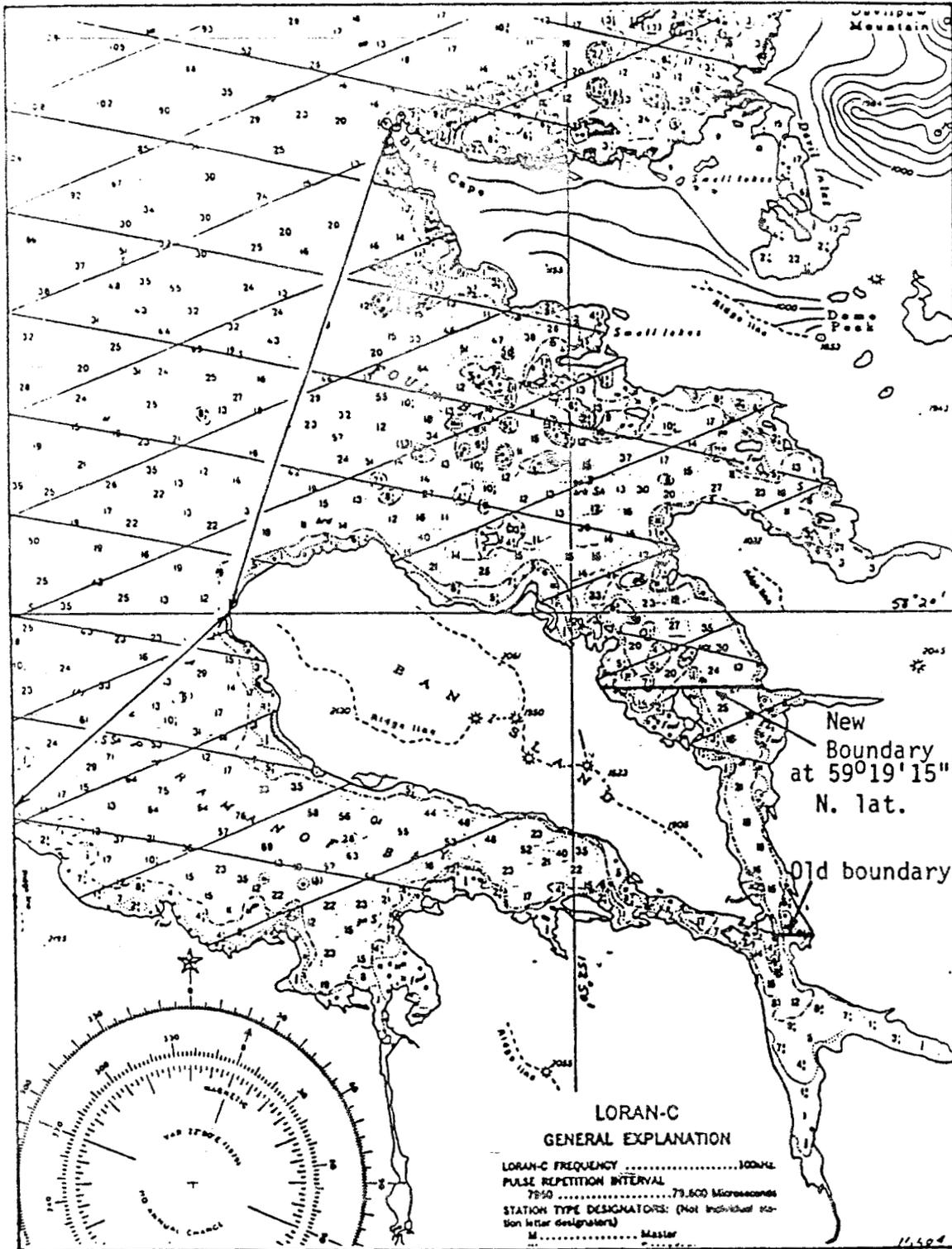


Figure 1. Map showing the new boundary separating the Paramanof Bay and Foul Bay management units.

The Alaska Department of Fish and Game administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The department administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972.

If you believe you have been discriminated against in any program, activity, or facility, or if you desire further information please write to ADF&G, P.O. Box 25526, Juneau, AK 99802-5526; U.S. Fish and Wildlife Service, 4040 N. Fairfax Drive, Suite 300 Webb, Arlington, VA 22203 or O.E.O., U.S. Department of the Interior, Washington DC 20240.

For information on alternative formats for this and other department publications, please contact the department ADA Coordinator at (voice) 907-465-6077, (TDD) 907-465-3646, or (FAX) 907-465-6078.