

Fishery Management Report No. 07-27

**Alaska Peninsula-Aleutian Islands Management Area
Herring Food and Bait Fishery Management Plan,
2007**

by

James Vincent Jackson

April 2007

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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ABSTRACT

The food and bait fishery for Pacific herring *Clupea pallasii* in the Alaska Peninsula-Aleutian Islands Herring Management Area (Area M) can occur within the Unimak, Akutan, Unalaska, Umnak, and Adak districts. This document describes how the fishery will be managed, the requirements for industry to participate in the fishery, and how to contact and relay information to the Alaska Department of Fish and Game (ADF&G). Historical harvests for the Dutch Harbor fishery, as well as the 2007 season guideline harvest levels and harvest projections, are presented. Guidelines for an exploratory herring food and bait fishery around Adak Island are presented. This document is intended as a guide for commercial herring harvesters, buyers, and tenders. Information regarding commercial herring fishing periods should be obtained from the ADF&G prior to fishing.

Key words: Pacific herring, *Clupea pallasii*, commercial food and bait fishery, Alaska Peninsula-Aleutian Islands, Dutch Harbor herring fishery, herring gillnet, herring seine, herring pound, Adak herring fishery, management plan.

INTRODUCTION

This document is intended to provide commercial herring harvesters and buyers with management information and guidelines for participating in the Alaska Peninsula-Aleutian Islands Management Area (Area M) Pacific herring, *Clupea pallasii* food and bait fishery.

The Alaska Peninsula-Aleutian Islands Herring Management Area consists of Bering Sea waters extending west of Cape Menshikof and Pacific Ocean state waters extending west of Kupreanof Point to the International Dateline (Figure 1; 5 AAC 27.600). In recent years, three management plans: (1) the Bering Sea Herring Fishery Management Plan (5 AAC 27.060), (2) the Bristol Bay Herring Management Plan (5 AAC 27.865 (b)), and (3) the Dutch Harbor Food and Bait Herring Allocation Plan (5 AAC 27.610) have been used to manage the herring food and bait fishery. Currently, the food and bait fishery is permitted only in the Unimak, Akutan, Unalaska, Umnak and Adak districts (Figure 1). Since the fisheries inception, most of the effort and harvest has occurred in the vicinity of Unalaska and Akutan Islands (Jackson *In prep*).

In 2004, the Alaska Board of Fisheries (BOF) enacted the Alaska Peninsula-Aleutian Islands Herring Management Plan (5 AAC 27.657), establishing a herring fishery in the Adak Island area with a 500 short ton^a allocation independent of the Dutch Harbor food and bait allocation (Figure 2). However, since the plans inception, there has been little harvest in the Adak District.

ALASKA PENINSUAL-ALEUTIAN ISLANDS FOOD AND BAIT FISHERY

The Alaska Peninsula-Aleutian Islands food and bait fishery began in 1929 (Rounsefell 1930) and occurred annually through 1938 with a total historical harvests averaging 1,474 tons (Table 1). During the years 1929-1938 catches ranged from 513 tons to 2,510 tons. No fishing occurred from 1939 through 1944 or from 1946 through 1980. From 1981 to 2005, catches ranged from 704 tons to 3,578 tons (Tables 1 and 2). Between 1996 and 2005 effort increased to an average of 20 purse seine vessels (Table 2). From 2001 to 2005, effort in the purse seine fishery decreased to an average of 16 registered purse seine vessels (Table 2).

In the past few years permit holders have harvested the seine herring allocation using vessels in a combine fishery (Jackson *In prep*). Negligible gillnet harvest occurred during the 2005 and 2006

^a 1 Short ton equals 2,000 pounds.

season due to the low numbers of herring in Unalaska Bay (Jackson *In prep*; Table 3). In 2001, the BOF established a herring gillnet fishery to allow gillnet fishermen a practical opportunity to harvest herring from the Dutch Harbor allocation given the short (usually less than one hour) open periods required to manage the purse seine fishery.

REQUIREMENTS AND HARVEST PROJECTION FOR THE 2007 FISHERY

The Alaska Department of Fish and Game (ADF&G) will manage the Dutch Harbor herring food and bait fishery according to the Bering Sea Herring Fishery Management Plan (5 AAC 27.060). Areas within Unalaska Bay that are closed to subsistence salmon fishing are also closed to herring fishing (5 AAC 27.650 and 5 AAC 01.375). Closed areas include waters between Unalaska and Amaknak Islands, from Agnes Beach to the “Bishops House”, and waters within 250 yards of any anadromous stream.

The department will attempt to manage the Dutch Harbor herring food and bait fishery so that the harvest remains within the allocated 7% of the allowable Togiak District herring sac roe harvest as determined under the provisions of both the Bering Sea and Bristol Bay Herring Management Plans (5 AAC 27.865). In order for the Unimak, Akutan, Unalaska, or Umnak Districts (Figures 1, 3 through 5) to open to herring food and bait fishing, each respective Western Alaska herring stock must surpass its respective BOF mandated spawning biomass threshold. These fisheries include the Port Moller, Togiak, Security Cove, Goodnews Bay, Cape Avinof, Nelson Island, Nunivak Island, Cape Romonzof, and Norton Sound districts (Figure 1; Appendix A2). Excluding the Port Moller District, which only conducts inseason estimates, the biomass of all the respective Bering Sea herring stocks are forecasted to be above their respective threshold levels and the outlook for a 2007 Dutch Harbor food and bait fishery is favorable (Appendix A2). However, processors and fishermen are advised that management of the 2007 fishery will be based on the estimated spawning biomass of each Bering Sea herring stock in 2007. The ADF&G will update biomass estimates for each stock as herring move into coastal waters during spawning migrations. The projected harvest allocation for the 2007 Dutch Harbor herring food and bait fishery is 1,779 tons (Table 4; Figure 6; Appendix A1). This allocation was derived using 7% of the remaining Togiak biomass according to the Bering Sea and Bristol Bay Herring Management Plans. The 2007 Togiak herring spawning biomass is projected to be 134,566 tons. The actual allocation will be established when the 2007 Togiak District herring spawning biomass is determined in April 2007.

The Dutch Harbor food and bait allocation is divided between gear groups according to the Dutch Harbor Food and Bait Allocation Plan (5 AAC 27.655); 86% to the seine fishery and 14% to the gillnet fishery. These allocations are considered independent of each other so that one gear group may not harvest herring allocated to the other gear group. Furthermore, 100 tons may be reserved from the purse seine allocation for an experimental herring pound fishery (5 AAC 27.655(d)). For the 2007 season, this results in projected harvest allocations of 1,430 tons for the purse seine fishery, 100 tons for the seine pound fishery, and 249 tons for the gillnet fishery (Table 4; Figure 6; Appendix A1).

A “rollover” provision was adopted during the 2001 BOF meeting (5 AAC 27.655 (b)), as an incentive to conduct a fishery that stays within the herring harvest allocation. During years when herring harvest surpasses the allocation, the amount of additional harvest shall be deducted from the next year’s allocation by gear group. If necessary, any excess herring harvested during the 2007 season will be deducted from the allocation for the 2008 season. Neither the gillnet or purse seine allocations were exceeded in 2006, thus there will be no deduction in the 2007 allocation.

In season emergency orders will be broadcasted on VHF channel 12 in Dutch Harbor. VHF channel 12 will be the designated department channel for conducting herring fishing communications during the fishery. Fishermen, tenders, and processors should monitor this channel.

The global positioning system (GPS; North American Datum 1983) will be used to identify district and section boundaries, closed waters, and regulatory fishing coordinates (5 AAC 27.606).

All processors must make daily reports of all herring purchased from fishermen, and other processing records as specified by local representative of the department (5 AAC 27.540 (a)(2)). These daily reports can be provided to the ADF&G by VHF, SSB, phone, fax, or e-mail. The following ADF&G local offices can be contacted for information concerning the Dutch Harbor and Adak herring food and bait fisheries:

Sand Point:

Alaska Department of Fish and Game
P.O. Box 129
Sand Point, AK 99661
Phone: (907) 383-2066
Fax: (907) 383-2606
Record: (907) 383-2334

VHF 6 & 73
Single Side Band 3.230 MHz
KWB 362

Dutch Harbor:

Alaska Department of Fish and Game
P.O. Box 920587
Dutch Harbor, AK 99692
Phone: (907) 581-1239
Fax: (907) 581-1572

VHF 12
Single Side Band 4.125 MHz
WIM 76

REGISTRATION REQUIREMENTS FOR PERMIT HOLDERS, TENDERS, AND PROCESSORS

Prior to catching, tendering, buying, or processing any herring, permit holders must register their vessel at the ADF&G office in Dutch Harbor. Even if no herring are harvested or vessels are not actively fishing, each permit holder, tender and processor must still report daily or until registration from the fishery is withdrawn. Permit holders and processors will be required to contact the ADF&G in Dutch Harbor upon harvest or delivery of herring. If conditions arise which require additional time for permit holders to report herring harvests the department shall be informed of the situation prior to fishing operations. Catch reporting instructions will be explained in detail during vessel and processor registration.

Seine permit holders, tender operators, and buyers must register their vessels at the ADF&G office in Dutch Harbor or at the purse seine pre-fishery meeting with processors, tenders, and fishermen in Dutch Harbor prior to catching, tendering, buying, or processing any herring. Registrations will be accepted in Sand Point. The purse seine pre-fishery meeting is tentatively scheduled for July 14 at 5:00 PM The actual time and location will be announced by early July. Permit holders are encouraged to check with their markets prior to fishing to determine which products are acceptable. A catch report must be provided to ADF&G by 10:00 AM daily by VHF, SSB, phone, fax, or e-mail.

GILLNET AND SEINE SPECIFICATIONS

Gillnet mesh sizes up to three and one-half inches with no depth restrictions may be used in the Akutan and Unalaska districts. The aggregate length of gillnets operated by a Commercial Fisheries

Entry Commission (CFEC) permit holder may not exceed 150 fathoms (5 AAC 27.631). Purse seines are restricted to a maximum of 250 fathoms in length with no depth restrictions (5 AAC 27.632).

FISHING PERIODS FOR GILLNET VESSELS

The herring gillnet fishery can open by emergency order beginning NOON June 24 and may be extended until the guideline harvest level (GHL) is reached, or the department decides that an additional fishing period might exceed the GHL, or until February 28 (5 AAC 27.610 (e)(2)(A)). The fishery will begin no later than July 1. In order to prevent harvests from exceeding available processing capacity and the GHL, the fishing periods may be restricted to six hours in length. In addition, effort levels and harvest rates will be considered when establishing time and area restrictions for gillnet harvesters. If possible, the fishery will be conducted in the waters of Unalaska Bay (Figure 4).

FISHING PERIODS FOR PURSE SEINE VESSELS

The initial purse seine herring fishing period may occur as early as NOON on July 15 (5 AAC 27.610 (e)(2)(B)). Unless harvesters form a combine, the department anticipates that purse seine fishing periods will be short in duration and the fishery will be conducted within portions of Unalaska Bay. Short openings over several days may be required to prevent exceeding the GHL. A catch report will be required from all registered CFEC permit holders and tender operators that details each vessel's harvest. Generally, there will be a 12-hour closure between fishing periods to allow permit holders the opportunity to deliver their catch and the ADF&G to assess the harvest and processing capacity. A shorter closed period may be allowed if the department receives harvest reports promptly from all permit holders. The department may cancel or extend a fishing period with little notice.

If the total GHL is less than 150 tons per registered vessel, the department will be conservative in the length of fishing periods and the size of the area open to commercial fishing. The department will be open to management options that will minimize the risk of exceeding the GHL the resource.

The department will try to assess herring biomass in the area prior to opening the fishery. Harvesters and spotter pilots are encouraged to relay biomass information to ADF&G personnel prior to the opening. Past cooperation has proven valuable in evaluating stock status and gaining management information.

GEAR TESTING

Prior to the opening of the fishery, purse seine gear may be tested during daylight hours until 5:00 PM July 14. Gear testing will only be allowed between Hog Island and Amaknak Island in view of the ADF&G Dutch Harbor office or within one-half mile of the Delta-Western fuel dock in Dutch Harbor. Permit holders must contact an ADF&G representative in Dutch Harbor on VHF channel 12 or in person prior to setting gear and must designate a specific set location and time. In addition, any fish caught during gear testing must immediately be released unharmed. After the fishery has been closed and all herring on the vessel have been offloaded, participants may, after notifying the department, set their net to straighten, clean, and organize their gear in the areas designated above.

HERRING POUND FISHERY

In 2004, the BOF established a herring seine pound fishery as part of the Dutch Harbor food and bait fishery (5 AAC 27.655(c)). One hundred tons of herring were allocated to this fishery. This allocation is deducted from the purse seine allocation. A person planning to operate a pound may be required to locate the pound within Unalaska Bay, and must provide the ADF&G detailed plans describing the design and operation of the pound, including exact location and timing of pound operation. These plans must be received by the department in a timely manner to allow preparation of a Commissioner's permit for pound operation. A permit holder intending to operate a pound is encouraged to register with the ADF&G in Dutch Harbor or Sand Point no later than 4:30 PM, June 30, 2007.

Herring for pounding may be harvested during purse seine fishery openings. In addition, the department may, by emergency order, establish separate fishing periods for the pound fishery as early as June 10 but no later than August 31, 2007. If the entire herring pound allocation is not utilized by the end of the seine fishery and there is no more interest by pound fishermen to harvest any remaining allocation, the remaining allocation will be reallocated to the purse seine fishery. If the allocation in the pound fishery is exceeded, the permit holders will be required to release excess herring unharmed before they are pounded. If the seine fishery exceeds the GHL, the penalty provision (5 AAC 27.655(b)) will be applied to the next year's seine GHL after the GHL for the pound fishery is allocated. If no pound fishery permits were requested, the pound fishery GHL will be available to the seine fishery. If two or more permit holders register for the pound fishery, the pound allocation is divided equally among them.

FISH TICKETS

Permit holders must provide specific harvest locations (statistical area and specific landmark) to buyers, so that they can be recorded on fish tickets. Fish tickets must be delivered, by mail or in person, to the Sand Point ADF&G office within 10 days after the closure of the fishery or delivered in person immediately following the fishery to the Dutch Harbor ADF&G office. If 10 days is insufficient time to submit fish tickets, other arrangements must be made by contacting the ADF&G in Sand Point.

COMMERCIAL HARVEST SAMPLING

Cooperation from harvesters, tender operators, and processors will be appreciated when ADF&G personnel request herring samples from the commercial catch. These samples will be used to monitor age, sex, and size composition of the stock.

TEST FISHING

ADF&G will attempt to conduct a test fishery in 2007. The test fishery will provide the department with valuable stock assessment information and help pay the associated costs of analyzing data and managing the fishery. In addition, the test fish program will provide age, weight, and length samples of herring present in the Dutch Harbor area. In the last four years the department has had to curtail management of this test fishery because of the lack of industry participation. The department will distribute test fish bid forms to processors in June and early July. Fishermen interested in test fishing are encouraged to contact their processors.

ADAK FISHERY

Beginning in 2004, the BOF authorized a fishery for herring around Adak Island using gillnet gear only with an allocation of 500 tons independent of the Dutch Harbor food and bait allocation (5 AAC 27.657; Figure 2). ADF&G has no information about the size, timing, or condition of herring stocks in the Adak area. The fishery is intended to provide the ADF&G with stock condition and age structure data and allow development of a fishery. Under this provision, both a food and bait fishery and a sac roe fishery are possible. The department may station a representative in Adak to manage the exploratory fishery and collect and process herring samples. A request for bids to conduct a herring test fishery may be put forth by the ADF&G. The general Alaska Peninsula-Aleutian Islands herring fishery regulations apply to the Adak exploratory fishery.

REGISTRATION REQUIREMENTS FOR PERMIT HOLDERS, TENDERS, AND PROCESSORS

Each permit holder, tender operator, and buyer must register and obtain a Commissioner's permit for the Adak herring fishery at the ADF&G office in Sand Point or Dutch Harbor prior to catching, tendering, buying, or processing herring. The buyer and tender reporting requirements are described in 5 AAC 27.662. Permit holders are encouraged to check with their markets prior to fishing to determine which products are acceptable. All crewmembers must have a valid crew member license or a CFEC permit card for any fishery.

FISH TICKETS AND CATCH REPORTING

Permit holders must provide specific harvest locations (statistical area and specific landmark) to buyers, so that they can be recorded on fish tickets. Fish tickets must be received, by mail or fax, at the Sand Point ADF&G office within 10 days after the closure of the fishery. If 10 days is insufficient time to submit fish tickets, other arrangements may be made by contacting the ADF&G in Sand Point. Even if no herring are harvested or vessels are not actively fishing, permit holders and processors are required to report daily or until registration from the fishery is withdrawn. If conditions arise which require additional time for permit holders to report herring harvests, the department should be informed of the situation prior to fishing operations.

COMMERCIAL HARVEST SAMPLING

Cooperation by harvesters, tender operators, and processors will be appreciated when the ADF&G personnel request herring samples from the Adak area commercial catch. These samples will be used to monitor age composition and collect information about the herring stocks.

FISHING SEASONS, AREA, GEAR AND OPERATION

In that portion of the Adak District, 175° 30' W. long. (Figure 2) to 177° W long., herring may be taken in the sac roe fishery by gillnet gear only from April 15 through NOON June 24 and in the food bait fishery, from NOON June 24 through February 28 (Figure 2).

The permit holder must be physically present while the gillnet is being fished. Each set gillnet in operation must be anchored and buoyed at both ends. 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 numbers 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. Notwithstanding 5 AAC 27.050(c), gillnet mesh sizes up to three and one-half inches may be used.

REFERENCES CITED

- Jackson, J. V. *In prep.* Alaska Peninsula-Aleutian Islands Management Area herring sac roe and food and bait fisheries annual management report, 2006. Alaska Department of Fish and Game, Fishery Management Report, Anchorage.
- Rounsefell, G. A. 1930. Contribution to the biology of the Pacific herring, *Clupea pallasii*, and the condition of the fishery in Alaska. U.S. Bur. Fish. Bull. 45:227-320.

TABLES AND FIGURES

Table 1.-Alaska Peninsula-Aleutian Islands Area Dutch Harbor herring food and bait fisheries historical summary for the purse seine fishery, 1929-2006.

Year	Harvest in Short Tons	No. Vessels		Tons Per Boat	Tons Per Landing	Price Per Ton	Exvessel Value (Thousands)	Exvessel Value Per Vessel (Thousands)
		Making Landings	Number Landings					
1929	1,259							Information not Available
1930	1,916							Information not Available
1931	1,056	26						Information not Available
1932	2,510	30						Information not Available
1933	1,585	38						Information not Available
1934	1,533							Information not Available
1935	2,412							Information not Available
1936	1,379							Information not Available
1937	579							Information not Available
1938	513							Information not Available
1939-44	No Fishery							
1945	75							Information not Available
1946-80	No Fishery							
1981	704	a	16	352	44	300	211	a
1982	3,565	7	95	509	38	300	1,020	146
1983	3,567	8	96	446	37	232	828	104
1984	3,578	9	61	398	59	210	751	83
1985	3,480	6	78	560	45	162	564	94
1986	2,394	7	53	342	45	254	600	86
1987	2,503	8	45	373	56	300	751	94
1988	2,004	8	59	251	34	252	505	63
1989	3,081	9	69	342	45	283	873	97
1990	820	7	8	117	103	350	287	41
1991	1,325	8	18	166	74	300	398	50
1992	1,949	11	26	177	75	300	573	52
1993	2,790	13	32	215	87	300	837	64
1994	3,349	14	65	239	52	300	1,005	72
1995	1,748	14	24	125	73	300	524	37
1996	2,239	24	29	93	77	300	672	28
1997	1,950	26	63	75	31	300	585	23
1998	1,994	22	22	91	91	300	598	27
1999	2,398	21	71	109	34	400-600	1,038	49
2000	2,014	20	28	88	72	300-500	671	34
2001	1,332	14	16	95	83	300-500	406	29
2002	2,617	12	14	218	187	300-450	909	76
2003	1,379	6 ^b	16	230	86	50-400	342	57
2004	1,035	3 ^c	17	345 ^c	61	100-500	309	103 ^c
2005	1,154	3 ^d	7	385 ^d	165	100-500	370	123 ^d
2006	953	2 ^e	18	318 ^e	53	100-500	384	128 ^e

-continued-

Table 1.-Page 2 of 2.

1929-1938								
Average	1,474	Information not Available						
2001-2005								
Average	1,503	8	14	255	116	170-480	467	78
1996-2005								
Average	1,811	15	28	173	89	245-440	590	55

^a This information can not be released due to state confidentiality requirements.

^b Fishery was conducted by a combine fishery of 14 permit holders using 6 vessels. Exvessel values were calculated per permit holder.

^c Thirteen seine permit holders formed a combine using 1 vessel, in addition, 2 seine permit holders fished outside of the combine. Exvessel values are calculated per permit holder.

^d Eleven permit holders used 3 seine vessels in a combine fishery, 1 CFEC seine permit holder did not join the combine fishery.

^e Eleven permit holders used 1 vessel used in a cooperative fishery, 1 CFEC permit holder did not join the cooperative fishery.

Table 2.-Alaska Peninsula-Aleutian Islands Area Dutch Harbor commercial herring food and bait fishery, including fishing dates, days fished, preseason Togiak spawning biomass, guideline harvest level, harvest, and number of vessels fishing, 1981-2006.

Year	Landing Date		Days Fished	Preseason Togiak Spawning Biomass	GHLs Short Tons	Food & Bait Harvest Short Tons	Number Vessels Fishing
	First	Last		Short Tons		Tons	
1981	Aug 3	Aug 23	21	159,000	None	^a	^a
1982	Aug 5	Sep 12	39	98,000	None	3,565	7
1983	Jul 23	Sep 6	46	142,000	3,525 ^b	3,567	8
1984	Jul 17	Jul 27	11	115,000	3,525 ^b	3,578	9
1985	Jul 17	Aug 11	26	132,000	3,525 ^b	3,480	6
1986	Jul 16	Jul 28	13	96,000	2,453	2,394	7
1987	Jul 16	Jul 23	4	88,000	2,332	2,503	9
1988	Jul 16	Sep 18	21	132,000	3,100	2,004	8
1989	Jul 16	Aug 5	19	100,108	3,100	3,081	9
1990	Aug 15	Aug 15	<1	72,000	903	820	7
1991	Jul 17	Jul 17	<1	83,229	931	1,325	8
1992	Jul 16	Jul 28	5	60,214	1,940	1,949	11
1993	Jul 16	Jul 16	<1	164,135	2,193	2,790	13
1994	Jul 16	Jul 19	4	165,747	2,215	3,349	16
1995	Jul 16	Jul 16	<1	149,093	1,982	1,748	18
1996	Jul 16	Jul 16	<1	135,585	1,793	2,239	25
1997	Jul 15	Jul 19	5	125,000	1,645	1,950	26
1998	Jul 16	Jul 16	<1	121,054	1,590	1,994	22
1999	Jul 16	Jul 20	4	156,200	2,082	2,398	22
2000	Jul 15	Jul 15	<1	130,904	1,728	2,014	23
2001 ^c	Jun 25	Jul 16	10	119,818	1,572	1,439 ^d	20
2002	Jun 25	Jul 16	17	120,196	1,578	2,751 ^d	27
2003	Jun 24	Jul 19	7	126,213	1,662	1,487 ^d	19 ^e
2004	Jul 1	Aug 2	26	143,124	1,899	1,258 ^d	10 ^f
2005	Jul 1	Aug 26	11	105,029	1,365	1,154 ^d	5 ^g
2006	Jul 1	Aug 31	15	129,976	1,715	954 ^d	4 ^h
2001-2005 Average			14	122,876	1,615	1,618	16
1996-2005 Average			11	128,312	1,691	1,868	20

^a Number may not be released due to state confidentiality requirements.

^b Harvest ceiling of 3,525 established by Alaska Board of Fisheries.

^c In 2001 a gillnet fishery was established.

^d Includes both gillnet and seine harvest.

^e In 2003 the seine fishery was a combine.

^f In 2004, the gillnet fishery operated under a combine agreement and 13 seine permit holders formed a combine using 1 vessel.

^g In 2005, the gillnet fishery did not harvest any fish, and 11 seine permit holders formed a combine and used 3 seine vessels, 1 CFEC seine permit holder did not join the combine fishery.

^h In 2006, the gillnet fishery harvested only on ton of herring, and seine permit holders formed a combine and used 1 seine vessels, 1 CFEC seine permit holder did not join the combine fishery.

Table 3.-Aleutian Islands area Dutch Harbor herring food and bait fisheries historical summary for the gillnet fishery, 2001-2006.

Year	No. Vessels			Tons		Price Per Ton (Thousands)	Exvessel Value (Thousands)	Exvessel Value Per Vessel (Thousands)
	Harvest in Short Tons	Making Landings	Number Landings	Per Boat	Per Landing			
2001	107	6	25	18	4	300-500	54	9
2002	134	13	37	10	4	400	54	4
2003	108	13	23	8	5	400	35 ^a	3
2004	216	7	37	31	6	300	65 ^b	9
2005	0	0	0	0	0	300	0	0
2006	confidential data							
2001-2005								
Average	113	8	24	13	4	350	41	5

^a Twenty tons were not purchased because of spoilage.

^b In 2004, 12 permit holders used seven of nine registered vessels; exvessel values are reported per permit holder.

Table 4.-Forecasted harvest allocation for Togiak sac roe and Dutch Harbor herring food and bait fisheries, 2007.

This forecast is for the “Dutch Harbor”: Unimak, Akutan, and Unalaska Districts and that portion of the Umnak District located east of Samalga Pass, and west of the Adak line at 177° W long, herring food and bait fishery.

Harvest Allocation of the 2007 Forecasted Pacific Herring Run Biomass, Togiak District, Bristol Bay		
	Biomass (Tons)	Harvest (Tons)
2007 Forecasted Biomass	134,566	
Exploitation at maximum 20%		
For Total Allowable Harvest		26,913
Togiak Spawn-on-Kelp Fishery (Fixed Allocation)		1,500
Remaining Allowable Harvest		25,413
<i>Dutch Harbor Food/Bait Allocation</i> ^a		<i>1,779</i>
<i>Purse Seine Allocation (86%)</i> ^b		<i>1,430</i>
<i>Pound Fishery Allocation</i>		<i>100</i>
<i>Gillnet Allocation (14%)</i> ^c		<i>249</i>

^a The Dutch Harbor Food/Bait allocation is 7% of the remaining allowable harvest.

^b The purse seine allocation for 2006 is 86% of the Dutch Harbor allocation minus the pound fishery allocation of 100 tons.

^c The gillnet allocation for 2006 is 14% of the Dutch Harbor allocation.

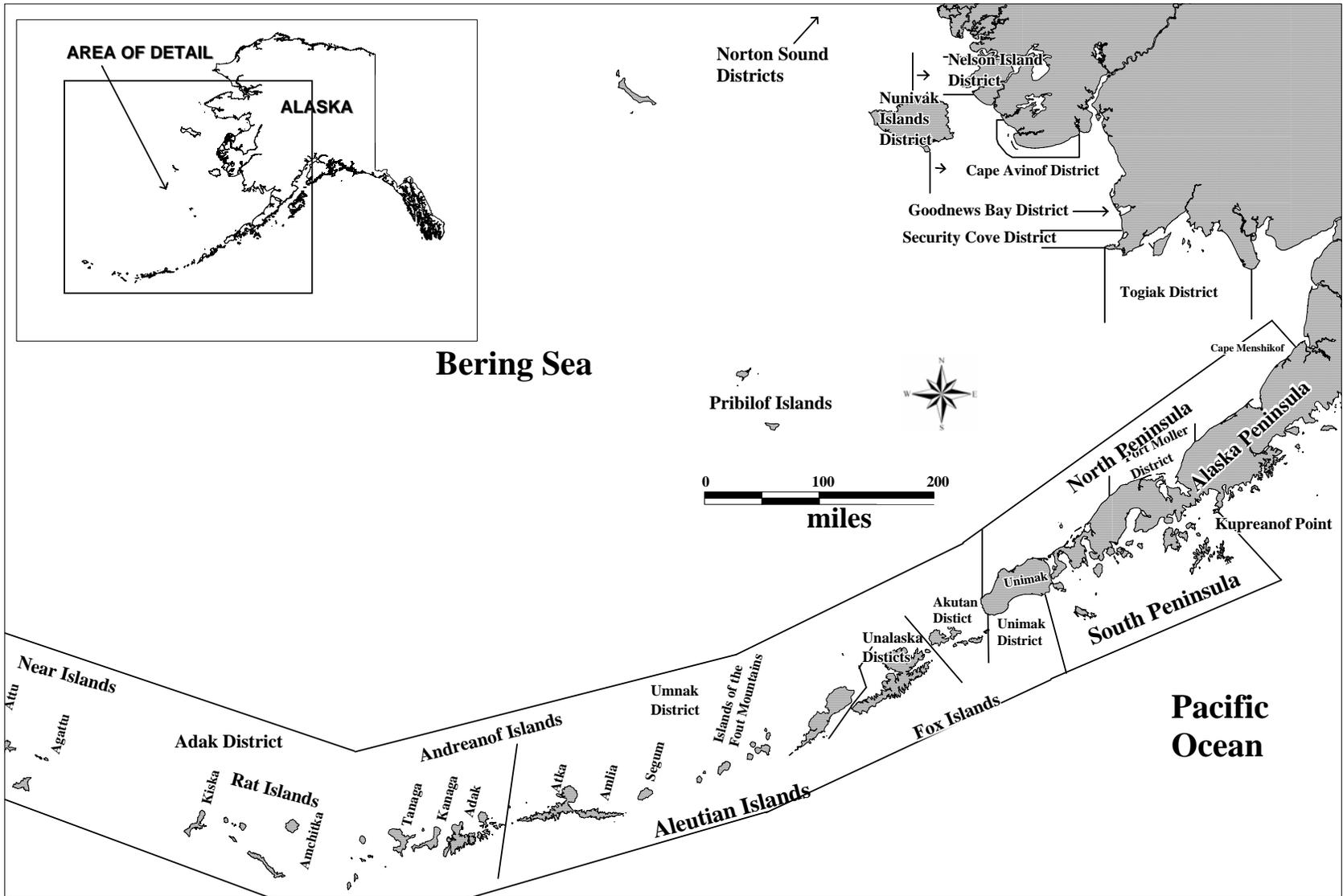


Figure 1.-Map of the Bering Sea Management Plan (5 AAC 27.060) commercial herring districts.

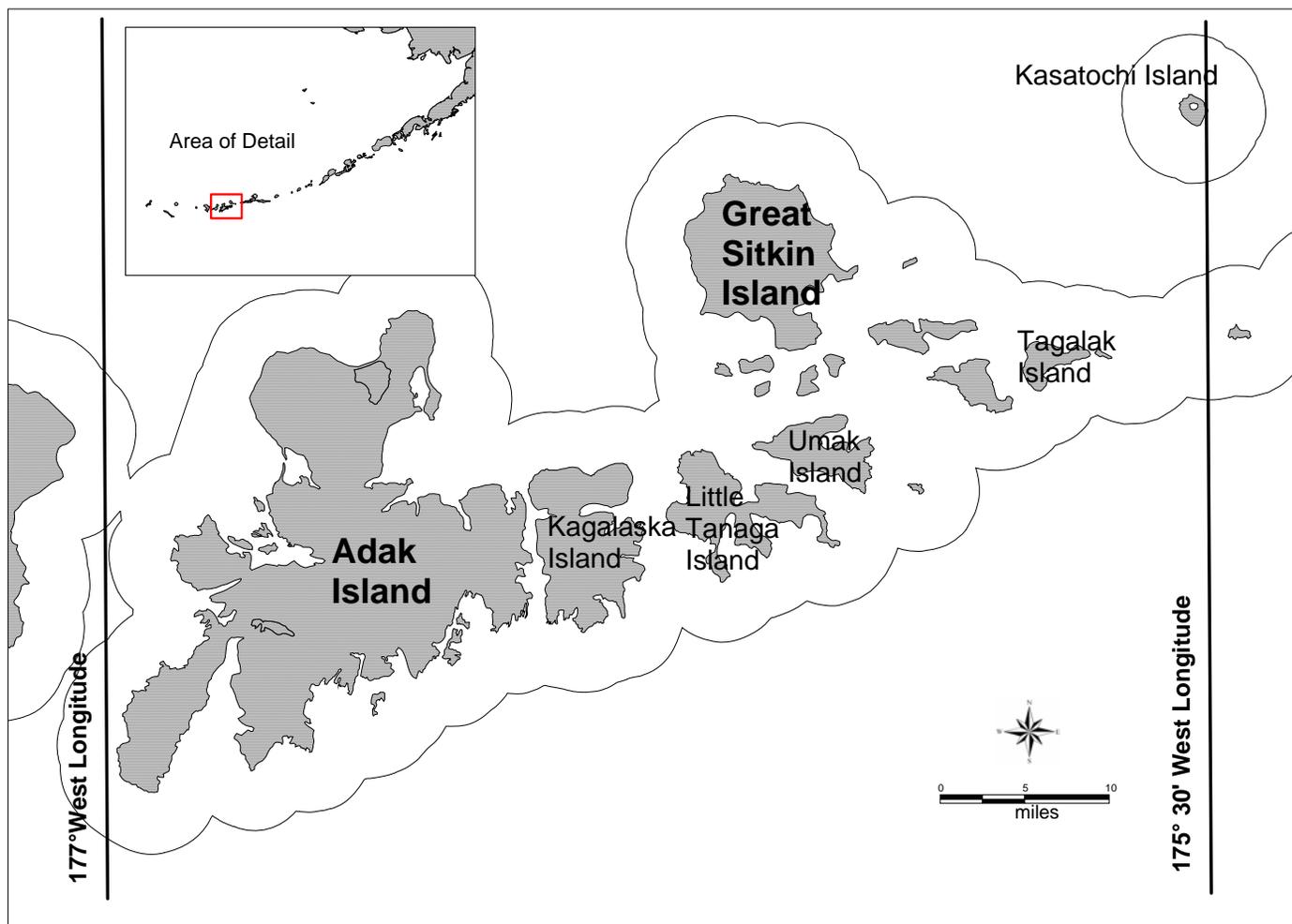


Figure 2.-Map of the Adak Island area illustrating the herring fishery boundaries.

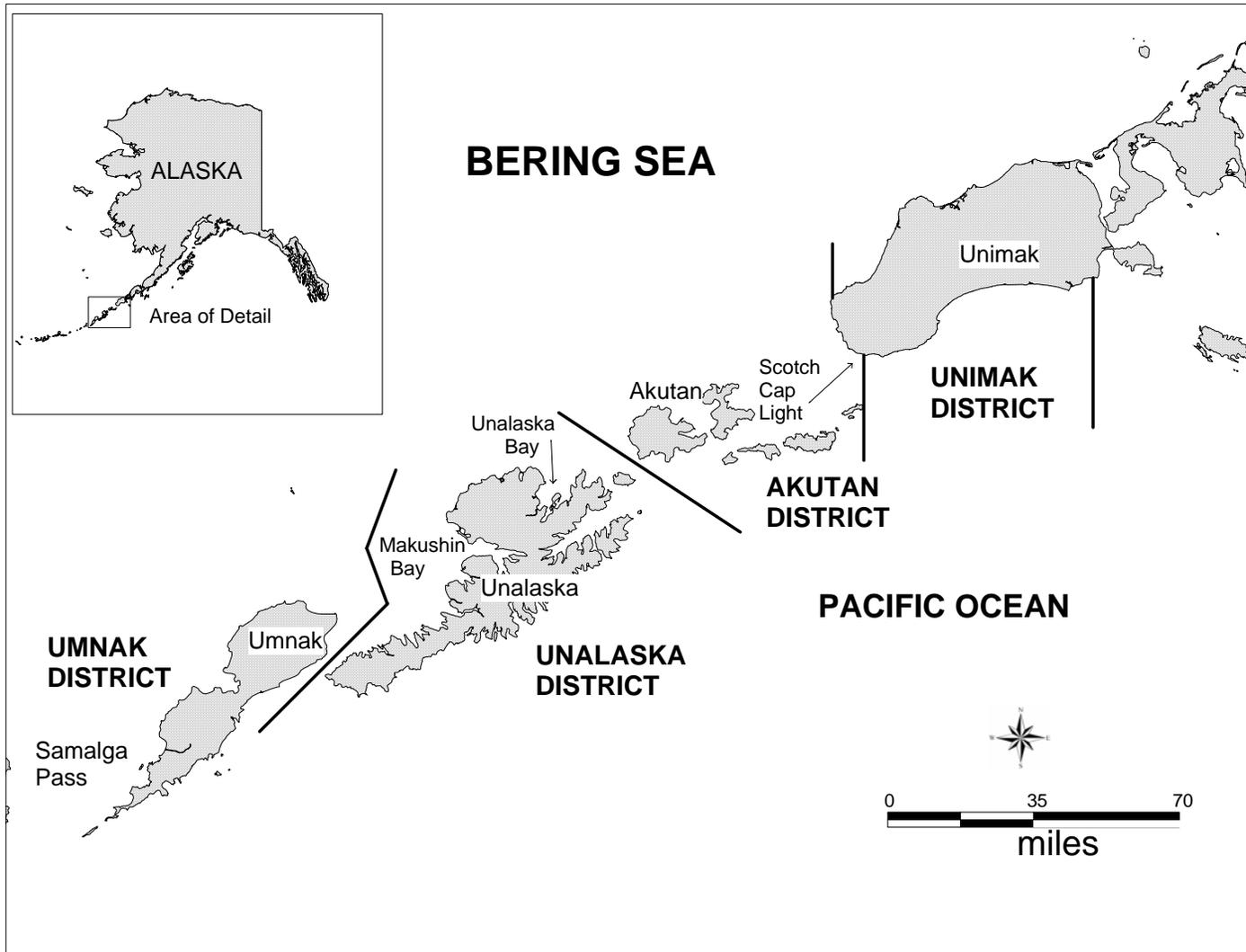


Figure 3.-Map of the eastern Aleutian Islands from Samalga Pass to Unimak Island illustrating the herring fishing district boundaries.

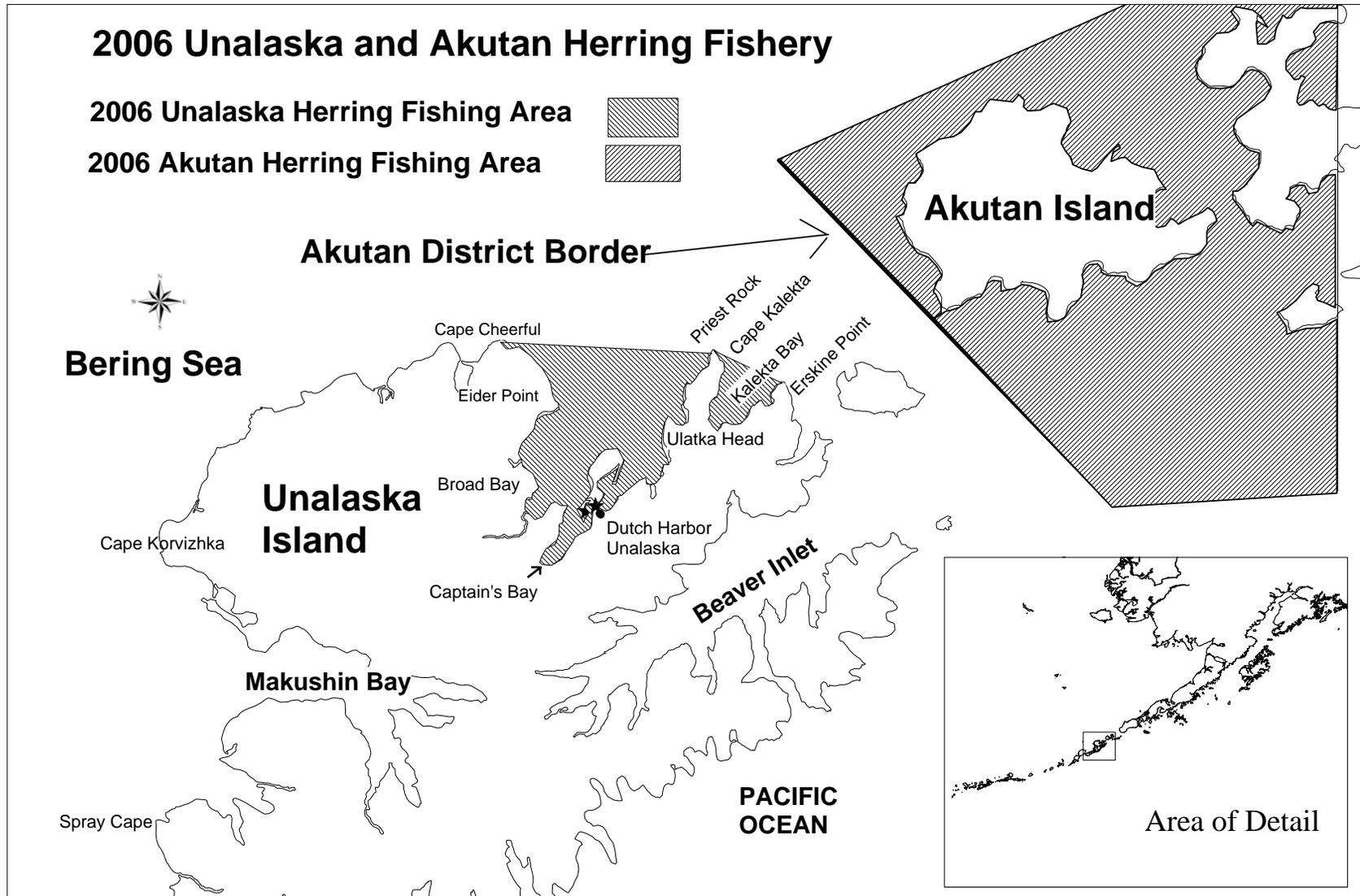


Figure 4.-Map of Akutan Island and Unalaska Island from Beaver Inlet to Makushin Bay, with the 2006 commercial herring fishery open area defined.

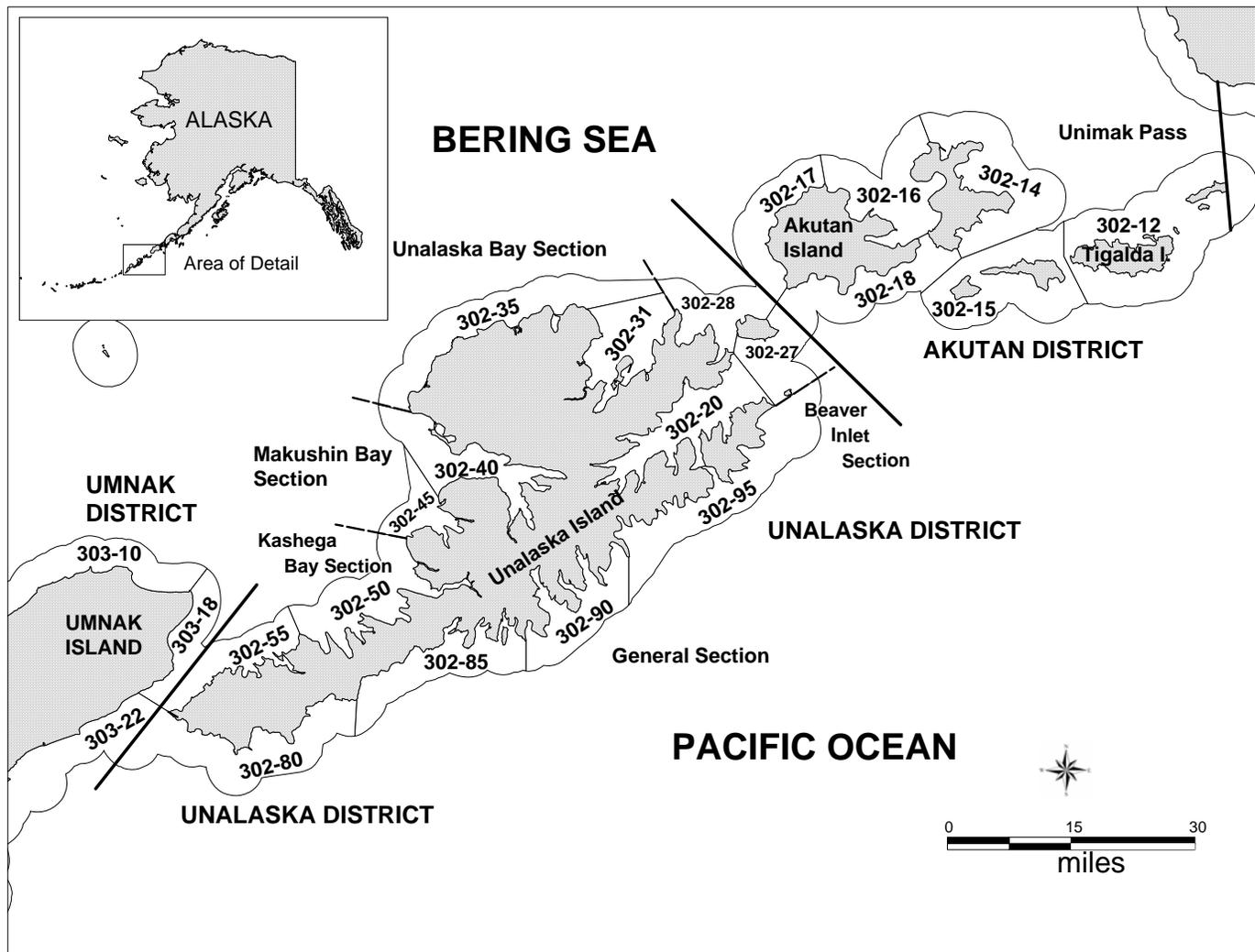


Figure 5.-Map of the Aleutian Islands from Tigalda Island to Umnak Island illustrating the herring fishing district boundaries and statistical areas.

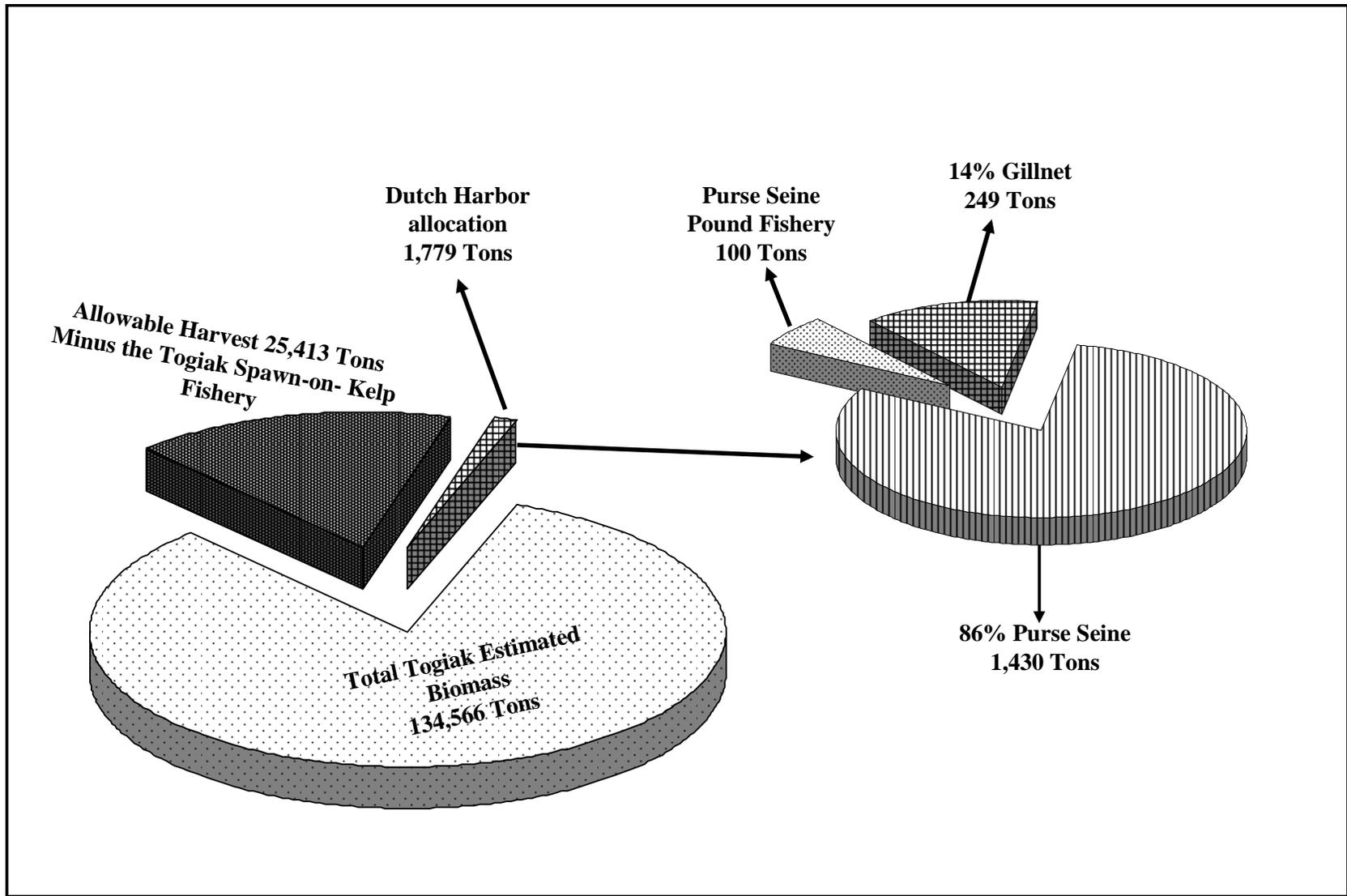


Figure 6.-Graphical representation of the Bering Sea, Bristol Bay, and Dutch Harbor Food and Bait Herring Fishery allocation plans.

APPENDIX A: 2007 TOGIAK HERRING FORECAST

Appendix A1.-Forecasted harvest allocation for Togiak sac roe and Dutch Harbor herring food and bait fisheries, 2007.

**ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE**



*McKie Campbell, Commissioner
Denby S. Lloyd, Director*



<p>Contacts: Chuck Brazil & Fred West, Asst. Area Research Biologists Tim Baker, Area Research Biologist Phone: (907) 267-2355 Fax: (907) 267-2442</p>	<p>Anchorage Regional Office 333 Raspberry Road Anchorage, AK 99518 Date Issued: 11/9/2006 Time: 1:00 p.m.</p>
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2007 TOGIAK HERRING FORECAST

The 2007 Togiak herring forecast and harvest allocation is listed below for the Togiak District sac roe fishery and the Dutch Harbor food and bait fishery, given a maximum 20% exploitation rate of the projected run biomass:

Harvest Allocation of the 2007 Forecasted Pacific Herring Run Biomass, Togiak District, Bristol Bay

	Biomass (Short Tons)	Harvest (Short Tons)
Forecasted Biomass for 2007	134,566	
Exploitation @ maximum 20% for Total Allowable Harvest		26,913
Togiak Spawn-on-Kelp Fishery (Fixed Allocation)		1,500
Remaining Allowable Harvest		25,413
Dutch Harbor Food/Bait Allocation (7.0% of the remaining allocation)		1,779
Remaining Allowable Harvest for Togiak District Sac Roe Fishery:		23,634
Purse Seine Allocation 70.0%		16,544
Gill Net Allocation 30.0%		7,090

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2007 Togiak Herring Forecast Summary

The Pacific herring population is forecast to be 134,566 tons in the Togiak District during 2007 (Figure 1). Herring returning from the 1996, 1997 and 1998-year classes (Age-11, -10 and -9, respectively) are expected to comprise 59.6% of the biomass. Age-10 herring are expected to make up 28.5% of the biomass, followed by age-9 (16.6%) and age-11 (14.5%; Figure 2). The remainder of the herring population is expected to be comprised of ages 4-5 (13.7%), ages 6-8 (22.9%) and ages 12-15 (3.9%) fish. The forecasted individual average weight of herring in the harvest biomass is 390 g.

We used an age-structured analysis (ASA) model to forecast the Togiak herring population using catch and age composition data and aerial survey biomass estimates. The ASA model integrated data from purse seine fishery age compositions (1978-2006), total run age compositions (1978-1995, 1997, 1999, 2001, 2005, and 2006), and aerial survey biomass estimates (1981, 1983, 1992-1994, 1997, 1999-2001, 2005, and 2006). Model estimates were generated and compared to observed data. Samples from non-selective gear (commercial purse seine and test purse seine) were used to assess the age composition of the total run biomass. Commercial purse seine catch and test fish samples ranged from age-3 to age-18. Age-4 herring abundance and weight was predicted using the recent four year average. Simple linear regression models were used to forecast the weight of age-5 through age-15 herring based on their weight the previous year.

A temporal change in age composition from older to younger herring typically occurs in the fishery. Age-8, -9, and -10 herring predominated, comprising 66.0% of the total commercial purse seine harvest. As the season progressed younger age-4 and -5 herring began to comprise a larger portion of the daily commercial purse seine harvest. This may signify the beginning of a recruitment event. However, assessing younger age classes of herring is difficult as they typically do not show up until the later part or after the fishery. In addition, we no longer conduct post-fishery sampling that occurred during the 1980's.

The Togiak District herring biomass was estimated to be 176,288 tons in 2006. This was the sum of the peak biomass aerial survey estimate of 124,711 (tons) observed 13 May, and the aerial biomass estimate of 51,577 (tons) observed 26 May. Herring were first reported in the district on 9 May, when approximately 202 tons were documented. The peak biomass was observed on 13 May with a majority of the estimated 124,711 tons concentrated in Hagemeister and Togiak sections. Biomass of the Togiak herring spawning population has been estimated with aerial surveys since the late 1970's, concurrent with the development of the sac-roe fishery. Large recruitment events have been observed approximately every eight to ten years in the Togiak herring population with the most recent events occurring from the 1996 and 1997-year classes.

There is always uncertainty in forecasting the Togiak District herring biomass and predicting the 2007 return is no different than previous years. Since its inception in 1993, the performance of the ASA model has had a tendency to be biased low. The mean percent error (MPE) was -28% for years with reliable total run biomass estimates (Figure 1). The accuracy or mean absolute percent error (MAPE) of the ASA model has been 25%. We are currently looking into why the forecasts from the ASA model have a tendency to be biased low. In addition, we will continue to work on improving our ability to forecast the Togiak herring population. We consider the Togiak herring population to be healthy and sustainable.

Chuck Brazil, Fred West and Tim Baker
Bristol Bay Fishery Research Staff
Anchorage

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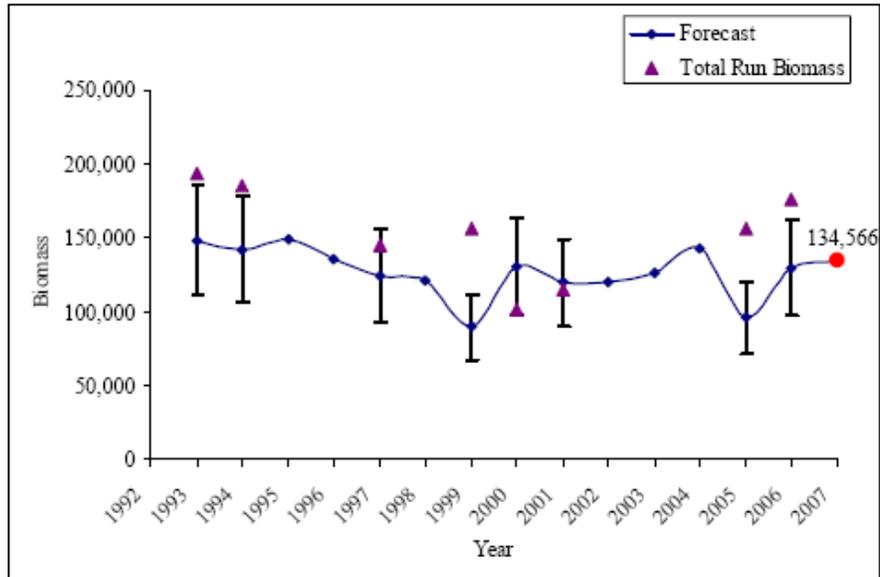


Figure 1- Observed Togiak herring total run biomass estimates and previous preseason forecasts based on the ASA model. Mean absolute percent error (MAPE) of 25% around the forecast is also shown for years with a reliable total run biomass estimate.

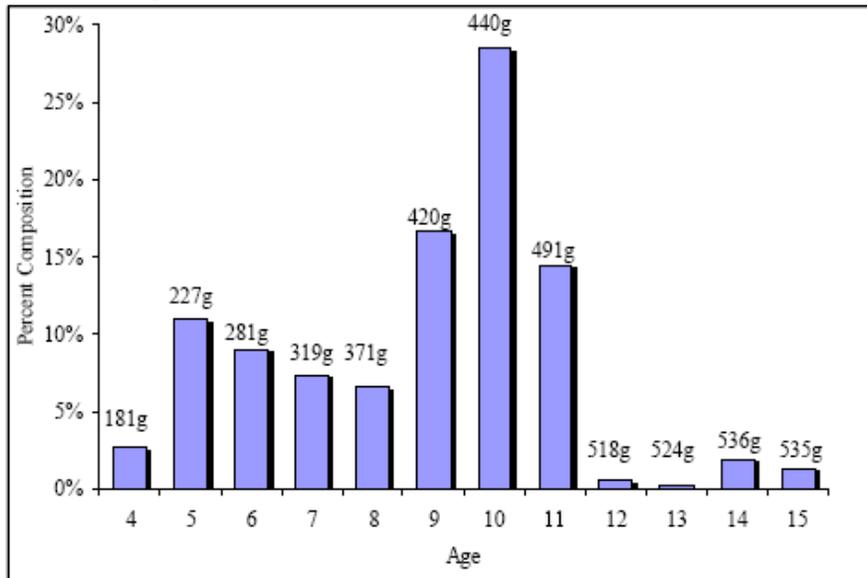


Figure 2- Forecasted age composition by weight for the 2007 Togiak herring return. Forecasted average weight (grams) by age is also presented.

**APPENDIX B: ARCTIC-YUKON-KUSKOKWIM HERRING
OUTLOOK AND MANAGEMENT STRATEGY FOR 2007**



**ALASKA DEPARTMENT OF
FISH & GAME**
DIVISION OF COMMERCIAL FISHERIES
Arctic-Yukon-Kuskokwim Region

NEWS RELEASE

November 17, 2006

Arctic-Yukon-Kuskokwim Herring Outlook and Management Strategy for 2007

Projections from postseason escapement estimates suggest that the 2007 spawning biomass for northeastern Bering Sea herring stocks (Security Cove to Norton Sound Districts) will be 62,214 tons, with an anticipated allowable harvest of 12,364 tons. If the return is as expected, only a very small reduction in biomass will be observed in most districts. The most abundant age classes expected to occur in the herring biomass are age 10 (30%), age 5 (29%) and age 11 (13%). Age 9 and older herring are expected to comprise 57% of the returning biomass.

Variability in the quality of aerial survey assessments of biomass and deviations from the assumed survival or recruitment rates may result in the observed biomass being either above or below these projections. Therefore, guideline harvest levels may be adjusted during the season according to observed herring spawning biomass. If determining herring abundance using aerial survey methods is not possible, stock abundance will be assessed using information from the projected biomass, test and commercial catches and spawn deposition observations. In addition, in accordance with the AYK Region harvest strategy, the commercial fishery will not target newly recruited age classes (age 2 through age 5 herring). In all districts, the Department will work cooperatively with fishers and buyers to optimize roe recovery during the 2007 season. In each district, the occurrence and length of fishing periods and harvests will depend on inseason abundance estimates, roe quality, spawning activity, weather conditions, fishing effort and processor interest.

Security Cove District

The 2007 projected return to the Security Cove District is 7,081 tons. A 20% exploitation rate would result in a harvest of 1,416 tons. Commercial fishing will not be allowed until the observed biomass reaches 1,200 tons, or significant spawning activity is observed. Ages 5, 6 and 10 are expected to comprise 69% of the returning biomass (33%, 12% and 24%, respectively). Age 9 and older herring are expected to comprise 49 % of the biomass.

Goodnews Bay District

The management strategy for the Goodnews Bay District will be similar to that planned for Security Cove. The season will open and close by emergency order when a biomass of 1,200 tons or significant spawning activity is observed. The 2007 projected return of herring to the Goodnews Bay

-continued-

District is 3,683 tons. A 20% exploitation rate would result in a harvest of 737 tons. Ages 10, 9, and 5 herring are expected to comprise 64% the biomass (28%, 15%, and 21% respectively). Age 9 and older herring are expected to comprise 59% of the biomass.

Cape Avinof District

Either significant spawning activity or a biomass of 500 tons must be observed before the commercial herring season can be opened. The 2007 projected biomass for the Cape Avinof District is 878 tons. The exploitation rate will be no greater than 15% because of the limited database for this area and to ensure the subsistence fishing priority. A 15% commercial exploitation rate would result in a harvest of 132 tons. Ages 5, 6, and 10 are expected to comprise 69% of the returning biomass (33%, 12%, and 24% respectively). Age 9 and older herring are expected to comprise 49% of the biomass.

Nelson Island District

In the Bering Sea Herring Fishery Management Plan, the Alaska Board of Fisheries set a minimum biomass threshold of 3,000 tons for the Nelson Island District. The inseason estimate of herring biomass must exceed the threshold level before a commercial fishery can be allowed. The spawning biomass projected to return in 2007 to the Nelson Island District is 3,614 tons. At a total exploitation rate of 20%, minus 200 tons (6%) for subsistence harvest, the commercial harvest guideline will be 523 tons. Ages 5, 6, and 10 are expected to constitute 77% of the returning population, contributing 43%, 12% and 22%, respectively. Age 9 and older herring are expected to comprise 40% of the biomass.

Nunivak Island District

The biomass of herring projected to return to the Nunivak Island District in 2007 is 4,054 tons. A 20% exploitation rate would result in a harvest of 811 tons. The commercial season will open when the biomass reaches 1,500 tons or when significant spawning is observed. Ages 5, 6, and 10 are expected to comprise 69% of the returning biomass (33%, 12% and 24%, respectively). Age 9 and older herring are expected to comprise 49% of the biomass.

Cape Romanzof District

The projected biomass of herring to return to Cape Romanzof District in 2007 is expected to be 4,489 tons. At a 20% exploitation rate, the allowable harvest is expected to be 898 tons and will be based on inseason indicators of abundance. Since water turbidity in the Cape Romanzof area generally prevents aerial observations of herring, spawn deposition and test and commercial catch rates will be used to determine the timing and duration of commercial fishing periods. Ages 10, 9, and 5 are expected to comprise 64% of the returning biomass (27%, 15% and 22%, respectively). Age 9 and older herring are expected to comprise 55% of the biomass.

Norton Sound District

-continued-

The biomass of herring projected to return in 2007 to Norton Sound is 38,415 tons. A 20% exploitation rate would result in a harvest guideline of 7,683 tons. A maximum of 320 tons of herring are reserved to allow for the pound fishery to harvest a maximum of 90 tons of product (combined weight of herring roe and kelp). This leaves 7,363 tons for sac roe harvest. The beach seine harvest is, by regulation, 10% of the sac roe projected harvest, or 736 tons. The 2007 herring fishery will be opened by emergency order and the fishery will close by emergency order when up to 20% of the available herring biomass has been harvested. Varied harvest rates may be applied to individual subdistricts based on biomass distribution, roe quality, weather, and sea ice conditions. Ages 10, 11 and 5 are expected to dominate the returning population, contributing 33%, 17% and 28%, respectively. Age 9 and older herring are expected to comprise 61% of the biomass.

Port Clarence District

Generally, the Department does not project an outlook for the Port Clarence fishery because of the lack of data for Port Clarence herring and the limited scope of the fishery. The guideline harvest of 165 tons established by the Board of Fisheries in 1981 will determine the allowable harvest in 2007. This harvest guideline is based on two years of research conducted by the Department in both the Port Clarence and Kotzebue Districts. Even though this guideline has not appeared in the regulation book since 1984, it still represents the best estimate of harvestable biomass.

Table 1. Projections of Pacific herring spawning biomass and harvest guideline for commercial fishing districts in the northeastern Bering Sea, Alaska, 2007.

District	Threshold	2006 Observed Biomass (tons)	2007 Projected Biomass (tons)	Exploitation Rate (%)	2007 Harvest Guideline (tons)
Security Cove	1,200	7,477 ^a	7,081	20	1,416
Goodnews Bay	1,200	4,111 ^a	3,683	20	737
Cape Avinof	500	916	878	15	132
Nelson Island ^b	3,000	3,809 ^a	3,614	14	523
Nunivak Island	1,500	4,260 ^a	4,054	20	811
Cape Romanzof	1,500	4,813	4,489	20	898
Norton Sound	7,000	41,257	38,415	20	7,683
Port Clarence	-	-	-	-	165
Totals			62,214	20	12,364

^a Represents the projected biomass for 2006. Aerial surveys were incomplete or adversely affected by weather.

^b Nelson Island commercial harvest is 20% of projected biomass minus 200 st for subsistence harvest.