

Fishery Management Report No. 05-07

**Alaska Peninsula - Aleutian Islands Management Area
Herring Sac Roe and Food and Bait Fisheries Annual
Management Report, 2004**

by

Switgard Duesterloh

and

Charles Burkey Jr.

February 2005

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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ABSTRACT

From 1998-2004, commercial Pacific herring *Clupea pallasii* sac roe harvests did not occur in South Alaska Peninsula, North Peninsula, and Aleutian Islands waters due to a lack of industry interest. The total South Peninsula herring biomass estimate from three aerial surveys in 2004 was 927 tons. In the North Peninsula three aerial surveys were conducted and no herring were observed. A 1,000 ton threshold is required by regulation to allow a commercial fishery in the Port Moller area. The department conducted three aerial surveys of Unalaska Bay and one aerial survey of Makushin Bay in the Aleutian Islands and an estimated total of 8,230 tons of herring were recorded. There were no reports to the department of industry-conducted surveys in 2004.

In 2004, commercial herring food and bait fishery harvests occurred in the Aleutian Islands during both gillnet and purse seine gear fishing periods in the Unalaska Bay Section. The Alaska Peninsula-Aleutian Islands Area Dutch Harbor herring food and bait gillnet harvest was 216 tons, which was 50 tons below the 266 ton allocation. Twelve gillnet permit holders formed a cooperative and used 7 of 9 registered vessels. The seine fishery harvest was 1,035 tons, which was 498 tons below the 1,533 ton allocation. Thirteen purse seine permit holders formed a cooperative, which limited the fishing effort and controlled the pace of the harvest. The price per ton for the fisheries ranged from \$100 to \$500, with a combined exvessel value of approximately \$375,000.

During the February 2004 Alaska Board of Fisheries meeting, the board established an exploratory pound fishery with a 100 ton allocation in the Dutch Harbor herring fishery and a gillnet herring fishery in the Adak District with a 500 ton allocation, in which herring could be harvested as sac roe or food and bait product.

Key words: Alaska Peninsula, Aleutian Islands, Adak, herring, harvest, age, length, weight, sex, sac roe, food, bait, cooperative

INTRODUCTION

The goals and objectives of this report are to present: (1) historical information pertaining to Alaska Peninsula-Aleutian Islands Management Area Pacific herring *Clupea pallasii* fisheries; (2) information from the commercial harvest in the Alaska Peninsula-Aleutian Islands Management Area during 2004; (3) estimates of the age, sex composition, and mean length and weight of herring harvested in Alaska Peninsula-Aleutian Islands commercial herring fisheries; and (4) biomass estimates of herring within the management area. This information helps the department evaluate harvest rates, recruitment events, and refine management of these fisheries. This report is intended as a reference document; interpretation and discussion of the data are therefore limited.

The Alaska Peninsula-Aleutian Islands Herring Management Area is designated Management Area M and is divided into three subareas: (1) the North Peninsula, consisting of Bering Sea waters extending west from Cape Menshikof to Cape Sarichef; (2) the South Peninsula, consisting of Pacific Ocean coastal waters extending west of Kupreanof Point to 163°30' W long. (the south side of Unimak Island near Cape Lazaref); and (3) the Aleutian Islands, consisting of Bering Sea waters extending west of Unimak Pass and Pacific Ocean waters extending west from 163°30' W long. (the south side of Unimak Island near Cape Lazaref) to the International Date Line (Figure 1).

The North Peninsula is composed of 3 districts and 23 statistical areas (Figures 2-4), the South Peninsula includes 3 districts and 45 statistical areas (Figures 2 and 5), and the Aleutian Islands Area includes 5 districts and 41 statistical areas (Figures 6-7).

HISTORY OF HERRING FISHERY

Herring have been reported throughout North and South Peninsula waters, and in Akutan, Unalaska, and Adak Island waters of the Aleutian Islands. In the past, major concentrations of herring have been documented (Table 1) and herring sac roe fishing effort has occurred in North Peninsula waters of Port Heiden, Port Moller, and Herendeen Bays, and along the Bering Sea coast in nearshore waters from Entrance Point to Cape Seniavin (Table 2). Herring sac roe fishing typically began in late May in both North Peninsula and South Peninsula waters and ended in mid to late June. In South Peninsula waters, most herring sac roe fishing effort occurred in the Shumagin Islands, and Stepovak, Pavlof, and Canoe Bays (Table 3). Herring sac roe fishing also occurred later in the season between Dolgoi Island and Lenard Harbor.

From 1981 to 1995, the ADF&G collected harvest data and monitored the commercial herring sac roe fishery utilizing field crews in many locations on the Alaska Peninsula including Stepovak Bay, Canoe Bay, Port Heiden, and Port Moller. Crews also collected herring samples, documented spawn areas, and mapped spawning substrate. Department personnel have conducted herring aerial surveys in Alaska Peninsula waters since 1976. These surveys have provided limited information primarily because of the large area involved, poor weather conditions, turbidity of the water, and the sporadic and unpredictable arrival of the herring. Due to budget constraints the number of aerial surveys has been limited. Because of these limitations, the management staff believes the surveys flown in 1989, 1991, and 1992 provide the best estimates of the total spawning biomass in peninsula waters. During these years, the number, timing and condition of the surveys allowed for better assessment of herring biomass.

NORTH PENINSULA

The first commercial North Peninsula herring sac roe harvest occurred in 1982 when 505.5 tons were harvested (Table 4). From 1993 to 2002, the harvests ranged from 0 to 3,969 tons and averaged 509.6 tons. Since 1982, the majority of the harvest has been taken from Herendeen Bay and Port Moller except in 1986, 1989, and 1998 when most of the harvest was taken along the Bering Sea coast between Entrance Point and Cape Seniavin (Table 5) and in 1992, when over 40% of the North Peninsula harvest came from Port Heiden.

Prior to 1982, fishing vessels destined for, or returning from, the Togiak herring fishery frequently surveyed for herring in the Port Moller and Port Heiden Districts, but no harvest occurred. During the 1986 to 1988 seasons, an average of 52 vessels were present in the Port Moller District, but only a few permit holders actually harvested herring. Starting in 1986, fishing effort increased, targeting the earlier arriving (May) biomass. From 1989 to 1990, the department delayed the opening of the Port Moller District until May 30 in an attempt to shift fishing pressure from the earlier arriving to the later returning, more abundant herring. The Port Moller District opened prior to May 30 from 1991 to 1995 and again in 1998 because the herring biomass was sufficient to warrant commercial harvests. There has been no commercial herring sac roe fishery in the North Peninsula since 1998.

SOUTH PENINSULA

The South Peninsula herring sac roe fishery harvest and fishing effort has fluctuated since it began in 1979 (Table 4). During years in which commercial herring sac roe fishery harvests occurred in the South Peninsula (1979 to 1996), landings have been reported from 18 geographical locations. Of these, only Canoe Bay (Figure 5) produced a consistent annual harvest (Table 3).

In South Peninsula waters, substantial harvest occurred in 1980 (453.8 tons), and harvest peaked in 1981 (797.6 tons, Table 4). The Alaska Board of Fisheries (BOF) closed the South Peninsula herring sac roe fishery in 1983, and changed the fishery to a winter herring food and bait fishery that, due to a lack of industry interest and herring biomass, failed to develop. From 1984 to 1991, the BOF allocated the harvest between the sac roe fishery (75% of the allowable harvest) and the food and bait fishery (25% of the allowable harvest). In 1992, the BOF allocated the entire harvest to the herring sac roe fishery (Burkey 2002a).

From 1981 to 2000, the herring fishing effort levels and harvests generally decreased in South Peninsula waters. Many bays may have had small harvestable quantities of herring but the cost of having fishing vessels, tenders, and airplanes available to harvest each section's guideline harvest level (GHL) discouraged fishers. Since 1997, no herring have been harvested in South Peninsula waters primarily because of a lack of industry participation.

ALEUTIAN ISLANDS

The Aleutian Islands herring food and bait season extends annually from June 24 through February 28. Actual fishing time is established by emergency order (Appendix A) and is based on inseason evaluation of the observed biomass, effort levels, and harvest (Table 6). In 2004, food and bait fisheries were conducted in Dutch Harbor and in Adak.

Dutch Harbor Area

Only the waters near Unalaska and Akutan Islands have been open during the gillnet and purse seine fisheries in the Dutch Harbor area during recent years (Figure 8). The department has implemented these area limitations while considering processing capabilities, herring concentrations, and logistical concerns with managing the fishery. 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); and (3) the Alaska Peninsula-Aleutian Islands Management Area Food and Bait Herring Management Plan (Duesterloh, 2004) have been used to manage the fishery.

A herring food and bait fishery occurred in the vicinity of Unalaska Island from 1929 to 1938 and in 1945 with harvests that ranged from 75 to 2,510 tons (Table 7). This early fishery consisted of gillnet and purse seine harvests. In an attempt to improve product quality, holding pounds were utilized by the numerous small, shore-based hand-packing operations. A large portion of the harvest was brined or frozen as a food or bait product. Purse seine gear provided the bulk of the harvest. From 1946 to 1980 commercial herring harvest did not occur.

From 1981 to 1986 and 1990 to 2000 only purse seine gear was used and harvests ranged from 820 to 3,578 tons (Tables 6 and 7). During the 1987 and 1988 seasons, one gillnet permit holder harvested herring and in 1989 two gillnet permit holders recorded landings. Purse seine vessels ranging up to 56 feet in length deployed seines up to 250 fathoms in length and usually 25 to 45 fathoms in depth. In 2001, the BOF adopted a regulation that allocated 7 percent of the total Dutch Harbor guideline harvest level to the gillnet fleet and 6 to 13 vessels participated in the fishery from 2001, 2002 and 2003 (Table 8-9). In 2004, the gillnet harvest allocation was increased to 14% and the CFEC registered 25 gillnet permit holders. Initial regulations limited gillnets to 150 fathoms in length and 2 1/8 to 2 1/2 inch mesh size, unless a permit for the use of larger mesh sizes (up to 3 inch) was obtained from the department. All fishers who participated in the Dutch Harbor gillnet fishery have obtained permits for the use of larger mesh size. In

2004, this regulation was changed to allow mesh sizes up to 3 ½ inch without a special ADF&G permit.

Prior to 1992 and during 1994 to 1996, purse seine fishing occurred at night using scanning sonar to locate herring schools. Fishers would conduct organized sonar searches over fairly large areas to find herring concentrations. In 1992 to 1993 and 1997 to 2003, the purse seine fishery occurred during daylight hours and spotter aircraft were used to locate herring. The change to daylight openings improved the department's ability to monitor and manage the fishery. During recent seasons, the number of spotter aircraft has ranged from a high of nine in 1997 to one in 2004. Historical harvest locations have extended over approximately 90 miles, from Tigalda Island to Makushin Bay on Unalaska Island. However, in most years, the majority of the harvest has occurred in Unalaska Bay. In 1991, the BOF changed the regulatory opening date of the fishery from August 15 to July 16 to reduce the chance of catching non-Togiak and North Alaska Peninsula herring stocks in the Dutch Harbor fishery. In 1998, the BOF changed the opening date again to NOON on July 15 because of aircraft safety concerns with the fishery being conducted in the dark.

Historically, quality concerns associated with feeding herring (i.e., belly burn) have occurred in the food and bait fishery. Feed problems were overcome in the past by using holding pounds, where seine caught herring were held in pens until their stomachs emptied. Gillnet caught herring required special handling to prevent spoilage. Most feed-related spoilage problems have been eliminated in recent years by using ice and chilled seawater in conjunction with rapid processing. However, in 2003, 7 of 23 gillnet deliveries contained spoiled herring and 19% of the total gillnet harvest was not purchased because of spoilage. This total was largely influenced by a single delivery, which accounted for 76% of the spoilage.

The fishery timing and availability of herring in the Dutch Harbor area has changed in recent years. Aleutian Islands herring were previously categorized into an early summer run (late June to late July) and a late summer run (late August to early September). Since 1980, herring have arrived in the Dutch Harbor area about July 1 and have been present through mid-September. Historical data of Dutch Harbor herring age composition are presented in Table 10.

From 1991 to 1998, permit holders were paid \$300 per ton. In 1999, a high demand for bait herring in longline and pot fisheries resulted in permit holders receiving \$400 per ton on the grounds and, at one processor, \$600 per ton for herring delivered to the dock. In 2000 and 2001, exvessel prices were between \$300 and \$500 per ton and in 2002 between \$300 and \$450 per ton (Table 11). In 2003, permit holders received \$300 to \$400 per ton until the last two days of the fishery, when prices dropped to \$50 per ton.

Adak Area

An Adak Island area herring gillnet fishery was allocated a 500-ton GHL by the BOF in 2004 (Figure 9). This GHL was independent of the Dutch Harbor allocation and could be harvested in either a sac roe or food and bait fishery. However, based on previous herring observations, it was not believed likely that herring in the area were of sac roe quality. The department has very little information on herring stocks in the Adak area.

HARVEST STRATEGY

Commercial herring fisheries are regulated by emergency order to achieve exploitation mandates by the BOF and to address problems with herring spoilage. Management plans and other BOF

directives enable managers to develop harvest strategies by which these fisheries are prosecuted (ADF&G 2001, Duesterloh, 2004).

DUTCH HARBOR FOOD AND BAIT ALLOCATION

The harvest strategy for the Aleutian Islands area Dutch Harbor herring food and bait fishery has changed since the fishery was re-established in 1981. During the 1981 and 1982 seasons, there were no harvest restrictions. From 1983 to 1985, the department implemented a harvest ceiling of 3,527 tons per year due to biological concerns over exploiting Eastern Bering Sea spawning stocks above 20%, specifically the Togiak, Nelson Island, and Port Moller stocks. Scale pattern analysis studies identified that most herring harvested during the Aleutian Islands herring food and bait fishery were part of the Eastern Bering Sea herring biomass (Rogers and Schnepf 1985). In 1986, the department reduced the Dutch Harbor fishery harvest allocation by 30% to 2,453 tons in response to the BOF concern for the possible lack of recruitment in the contributing stocks (primarily Togiak, which was estimated to be the main contributing stock to the Aleutian Island's fishery). This reduction corresponded with the percent reduction of the observed Togiak herring spawning biomass between 1985 and 1986. The 1987 herring harvest allocation was 2,332 tons, which was proportional to the 1985 to 1987 reduction of the observed Togiak spawning biomass.

In 1988, the BOF implemented the Bering Sea Herring Fisheries Management Plan (5 AAC 27.060), which established the biological criteria for calculating the Dutch Harbor food and bait allocation (Burkey 2002a; Appendix B). To ensure conservation of herring stocks, the BOF adopted a regulation requiring that the overall exploitation of a herring stock should not exceed 20% of the spawning biomass. For the Togiak spawning stock, an allocation between the sac roe fishery, spawn on kelp fishery, and the Dutch Harbor food and bait fishery was established to prevent the harvest from exceeding 20% of the observed spawning biomass. The BOF also considered the number of fishermen involved and the value of the fishery when it established the allocations. The Dutch Harbor food and bait fishery was allocated 7% of the Togiak District's harvestable biomass after deducting 1,500 tons for the Togiak District spawn-on-kelp fishery.

In 2001, the BOF established a herring food and bait gillnet fishery by providing 7% of the total Dutch Harbor food and bait allocation to gillnet permit holders. Also, if the harvest by a fishery in a given year exceeded the amount allocated to that fishery, the excess tonnage was to be subtracted from the following year's allocation to that fishery (5 AAC 27.655 (b)). In 2002, the Dutch Harbor food and bait herring harvest by gillnet gear was 134 tons, 24 tons over the 110 ton allocation for this fishery. The seine fishery harvest was 2,617 tons, 1,149 tons over the 1,468 ton allocation. The BOF suspended the penalty provision for the 2003 season in response to an emergency petition by the Western Gulf of Alaska Fishermen. This resulted in 7% (116 tons) of the 2003 GHL (1,662 tons) being allocated to gillnet gear and 93% (1,546 tons) to seine gear (5 AAC 27.655; Table 12). To keep the harvest within the allocations, the BOF directed ADF&G to allow the commercial purse seine herring fishery only through the formation of a cooperative fishery, if more than 10 permit holders registered to fish. In 2003 and 2004, processors were interested in purchasing less herring than the GHL permitted. Processors advised the cooperative of how much herring they wished to purchase daily and the fishermen adjusted the pace of the fishery accordingly.

SAC ROE GUIDELINE HARVEST LEVELS

The GHL for the Port Moller District of the North Peninsula is determined inseason. It is based on the observed herring biomass from department aerial surveys. As established in the Bering Sea Herring Fishery Management Plan (5 AAC 27.060), a minimum herring biomass of 1,000 tons must be assured prior to the department opening the commercial fishery in the Port Moller District.

Prior to 2000, South Peninsula and Aleutian Islands waters were opened by emergency order with individual sections assigned either GHLS based on recent-year biomass estimation or set at 25 tons with the potential of additional harvest if warranted by department surveys (Witteveen et al. 1999). During 2000, South Peninsula and Aleutian Islands waters remained closed to commercial fishing in order to prevent overharvest of individual spawning stocks. Since 2001, the department has considered allowing harvest from individual stocks, if warranted, based on observed biomass.

CATCH DATA

Department personnel compiled the commercial harvest data, which were based on computer tabulations originating from individual sale receipts (fish tickets) given to permit holders at the time of delivery.

Commercial harvest samples were collected during the 2004 Dutch Harbor herring food and bait fishery. These samples provided age composition, weight-at-age, and length-at-age data from the commercial harvest (Tables 11 and 12). Age was determined by examining scales (Warner and Shafford 1979) taken from the preferred area located on the left side of the herring three scales posterior to the center of the operculum. One scale was taken from each herring, and the ages were recorded and entered into a database.

Standard length measurements (lower jaw to the hypural plate) and fish weight were collected and entered into the herring database. Mean lengths (mm) and weights (g) were calculated for each year class and data were recorded separately for purse seine and gillnet samples (Tables 11 and 12; Figures 10 and 11).

2004 FISHERY

SAC ROE FISHERY

Since 1998, no herring sac roe commercial harvest has occurred in the Alaska Peninsula-Aleutian Islands Management Area. Since 1996, because of poor market conditions, and or low observed herring biomass, herring harvests in the North Peninsula have been absent or minor (Table 5). From 1997 to 1999, poor market conditions and low observed herring biomass contributed to the absence of commercial harvest from the South Peninsula. Low herring biomass prompted the ADF&G to close the South Peninsula for the entire 2000 fishery season in order to prevent overharvest of stocks with insufficient biomass information.

Prior to 2000, and since 2001, in areas open for exploration (all districts of the Aleutian Islands, the Seal Cape-Wosnesenski Section of the Pavlof District, and General Sections of the King Cove and Sand Point Districts), fishing time may be allowed to give fishers the opportunity to harvest herring. In areas with a GHL, inseason fishing time may be based on department biomass

surveys. Since 2001, because of a lack of industry interest, South Peninsula waters were not opened to commercial herring fishing (Table 3).

North Peninsula

In 2004, no commercial herring sac roe fishery occurred in North Peninsula waters. There are three commercial herring fishing districts in North Peninsula waters: Port Heiden, Port Moller, and Amak Districts (Figures 5-7). Purse seine and gillnet gear are permitted in North Peninsula waters and both gear types share common time and open areas. The department normally provides a minimum of six hours advance notice prior to commercial fishing periods in the Port Moller and Port Heiden Districts.

Between June 2 and June 10, three aerial herring surveys were flown in the Port Moller Area. No herring were observed on any of these surveys. On June 2, Port Moller and Herendeen Bay were surveyed, on June 5 Port Moller was surveyed and on June 10 Port Moller and the coastline to Sandy River was surveyed. The 1994-2003 average estimated herring biomass was 911 tons (Table 1).

The 2005 North Peninsula sac roe herring GHL is 0 to 150 tons (Appendix C). Considering historical herring biomass estimates in North Peninsula waters, management of the North Peninsula sac roe herring fishery will again be conservative in 2005. Historically, the previous year's North Peninsula herring biomass estimate has been a poor indicator of herring returns in the following year. In 2005, the GHL will be adjusted inseason based on the observed stock size (Appendix C). Because no sac roe harvest has occurred in the North Peninsula since 1998, no age composition samples have not been obtained. Estimated age composition of North Peninsula commercial purse seine herring harvests by area for 1985 to 1998, and a test fishery in 2002, are available in previous reports (Duesterloh and Burkey 2003, Ford et al. 2003).

South Peninsula

In 2004, no herring fisheries occurred in South Peninsula waters because of a lack of industry interest. The Swedania Point-Balboa Bay, Point Aliaksin-Beaver Bay, and General Sections of the Sand Point District, the Pavlof Bay, Seal Cape-Wosnesenski and General Sections of the Pavlof District, and the King Cove District could have opened for exploratory fishing if biomass estimates warranted commercial fishing and there was industry interest in harvesting herring. Prior to 2000, and again in 2001 through 2004, exploratory herring sac roe fisheries in South Peninsula waters were open from April 15 through July 15. Fishing periods were established by emergency order and opened at NOON on odd number days of the month and closed at NOON on even number days of the month, followed by 24-hour closed periods.

On May 26, 2004 the department conducted an aerial survey in South Peninsula coastal waters from Granville in Stepovak Bay to Lefthand in Balboa Bay. The total estimated biomass was 413 tons. On June 5 an aerial survey was conducted in waters of the Shumagin Islands. During this survey, a total of 515 tons of herring were observed. Of these, 155 tons of herring biomass were observed around Nagai Island, 90 tons around Popof Island and 270 tons around Unga Island.

Other forage fish, possibly capelin *Mallotus villosus*, Pacific sand lance *Ammodytes hexapterus*, eulachon *Thaleichthys pacificus* and juvenile pollock *Theragra chalcogramma* were observed during these surveys. The total biomass for these species for both the South Peninsula mainland and the Shumagin Islands was estimated to be 1,841 tons (Table 13).

The historical age composition of South Peninsula commercial purse seine herring sac roe harvests by area and percent is presented in previous reports (Duesterloh and Burkey, 2003).

ALEUTIAN ISLANDS FOOD AND BAIT FISHERY

2001 and 2004 Regulatory Changes

In 2001, the BOF adopted regulations that allowed gillnet fishers a practical opportunity to harvest herring in the Dutch Harbor fishery. Prior to the regulation changes, gillnet gear was not practicable given the short (often less than one hour) open periods required to manage the purse seine fishery. Since 2001, the gillnet fishery has been allowed to open, by emergency order, beginning at NOON June 24 and may extend through the close of the food and bait season on February 28. The fishery was allocated 7% of the total Dutch Harbor herring food and bait GHl (5 AAC 27.655). This allocation was increased to 14% in 2004.

Prior to 2004, gillnet permit holders had to obtain a special permit from the department to use mesh sizes larger than 3 inches. Since 2004, in the Akutan and Unalaska Districts gillnet mesh sizes up to 3 ½ inches may be used.

Another regulation adopted in 2001 required that any herring harvest that exceeded the GHl during the Dutch Harbor fishery was deducted from the following year's allocation by gear type (penalty provision). If less than the herring allocation was harvested, the unharvested allocation was not added to the following year's GHl (5 AAC 27.655 (b)). In 2002, the total harvest in the Aleutian Islands Dutch Harbor commercial herring fishery exceeded the GHl of 1,578 tons by 77% (1,220 tons). Application of the penalty provision (5 AAC 27.655 (b)) would have reduced the total allowable harvest in 2003 to 397 tons for the purse seine fishery and 92 tons for the gillnet fishery. In response to an emergency petition, the BOF repealed the penalty provision for 120 days, from May 15 to September 12, 2003.

In the Dutch Harbor food and bait fishery the department may reserve up to 100 tons from the herring seine fishery allocation for the purposes of an experimental herring seine and pound fishery conducted in compliance with the terms of a commissioner's permit (5AAC 27.655 (c)).

Gillnet Fishery

The Dutch Harbor herring commercial gillnet fishery occurred from July 1 through July 13, with 12 gillnet permit holders (using 7 of the 9 registered vessels) and two processors participating. Gillnet permit holders formed a cooperative to limit the number of boats fishing and limit daily harvest to avoid exceeding processing capacity. At 8:00 AM on July 1, the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area opened to commercial herring fishing by gillnet gear for 6 hours (Appendix A). Daily, from July 1 through July 13, a 6-hour fishing period was allowed in the Unalaska Bay Section. Daily harvests ranged between 3 and 35 tons and averaged approximately 20 tons. Thirty-seven deliveries were made and the total harvest in the gillnet fishery was 216 tons of the 266 ton allocation. All permit holders delivered to the participating processors for an exvessel price of \$300 per ton, and a total exvessel value of approximately \$64,700.

A total of 403 herring were sampled from the gillnet harvest for length, weight, sex, and age composition. The most abundant age classes in the sample were age-8 (35.5%), age-11 (20.6%), and age-7 (13.9%; Table 11; Figure 11). The overall average herring length was 303 mm and the average weight was 397 g. The sex composition of the sample was 50% male and 50% female.

Purse Seine Fishery

A preseason meeting with fishermen, processors, and other interested parties was held on Wednesday, July 14, 2004 to discuss the ADF&G management strategy, exchange information, and register vessels, tenders, and processors for the purse seine fishery. The CFEC issued a total of 16 permits for the 2004 seine fishery.

Three purse seine fishermen, two processing companies' representatives, one tender operator and one spotter aircraft pilot attended the meeting. Two processing companies formed a cooperative and a total of 16 registered permit holders used only one purse seine vessel to harvest all the herring that these processors wished to buy. Two additional permit holders registered in association with separate markets, for a total purse seine fishery participation of three purse seine vessels and four processors.

In 2004, the department conducted three aerial surveys to assess herring biomass in the Dutch Harbor area. On July 14, with good visibility, 7,670 tons of herring were estimated in Unalaska Bay. On July 15 and 16 visibility was poor and herring biomass estimates were much lower: On July 15, 515 tons were recorded in Unalaska Bay and on July 16, 510 tons were recorded for a survey covering the Eastern shore of Unalaska Bay and Makushin Bay (Table 14).

The 2004 fishery occurred entirely within Unalaska Bay (Figure 4). At the preseason meeting the first 24-hour fishing period was announced to begin at NOON on Thursday, July 15. This period was extended 7 times for 24 hours each until NOON, July 23. Two vessels harvested 1,030 tons of herring from July 15-23. This was 503 tons below the 2004 allocation. On July 26 a new market developed and a 4-hour fishing period was allowed from NOON until 4:00 PM. With a large portion of the allowable harvest remaining, further fishing periods were allowed on July 27, 28, 29, 30 and August 2 on an as needed basis. These periods were each 7 to 8 hours long. One seine vessel and one buyer participated in the fishery after July 23. The department did not allow further fishing periods after August 31, because management staff in Dutch Harbor was assigned other duties and thus unavailable to monitor the herring fishery. Approximately 68% of the purse seine allocation was harvested in 2004. Exvessel prices ranged between \$100 to \$500 per ton and the total exvessel value of the 2004 purse seine fishery was an estimated \$308,700. Processors purchased most herring as bait, however, a small amount may be sold as food product.

A total of 404 herring were sampled from the commercial purse seine fishery. The most abundant age classes in the sample were age-8 (39.3%), age-7 (18.8%) and age-11 (14.6%) (Table 12; Figure 10). The average herring length in the sample was 297 mm, and the average weight was 400 g (Table 12). The sex composition of the sample was 49% male and 51% female.

Pound Fishery

In 2004, the BOF established a pound seine fishery in the Alaska Peninsula-Aleutian Islands Management Area with an allocation of 100 tons. In the pound fishery, seine-caught herring were transferred to a holding pound and retained for several days for gut clearance. The rationale for this was to minimize the risk of belly burn and achieve a high quality product suitable for food markets.

One permit holder participated in this fishery. Two square pounds of 40'x 40' were moored in the South Channel between Iliuliuk Harbor and Captains Bay. Fishing operations occurred during the purse seine fishing periods. On July 15, approximately 6 tons of live herring were put

into a pound. These herring were sold for an exvessel price of \$300 per ton on July 27. No significant dead loss was reported.

Adak Gillnet Fishery

In 2004, the BOF established a herring gillnet fishery in that part of the Adak District of the Alaska Peninsula-Aleutian Islands Management Area from 175° 30' W long. to 177° W long. with an allocation of 500 tons (Figure 9). Two permit holders and one processor registered for this fishery. From August 2 to September 15, nine 48-hour fishing periods occurred. No deliveries were made.

A sample of 31 herring was collected for the department and analyzed for weight, length, sex and age composition. The age of the herring ranged from 2 to 6 years; the most abundant age classes were age-5 (45.2%), age-3 (25.8%) and age-2 (19.4%). The average standard length was 262 mm and the average weight was 291 g. Fifteen of the 31 sampled herring were male and 16 were female (Table 15, Figure 12).

The Adak fishery is ongoing; by regulation, the season closes on February 28, 2005 and reopens at 12:00 NOON June 24, 2005. No effort has occurred in this fishery since September 15, 2004.

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TABLES AND FIGURES

Table 1.—North Peninsula herring biomass aerial surveys (tons), historical summary, 1984-2004.

Date	Port Moller District			Port Heiden District		Total Biomass Estimate	Aerial Survey Dates	
	Herendeen Bay	Port Moller Bay	Additional Biomass Harvested	Bear River to Strogonof Point	Port Heiden Bay Section		Begin	End
1984	2,000	1,500-1,900				3,500-3,900	May 9 -	July 31
1985	260	1,305		5,240		6,805	May 1 -	June 13
1986	1	28		0		29	May 16 -	June 7
1987	0	5,125		0		5,125	May 6 -	June 3
1988	1,737	442		8		2,187	May 17 -	June 15
1989	1,163	1,471				2,634	May 19 -	June 16
1990	155	387				542	May 21 -	June 14
1991	2,278 (250) ^a	4,651		1,471		8,400	May 17 -	June 26
1992	755	8,269		5,798	10,021	24,843	May 19 -	June 18
1993	775	2,878		33	0	3,686	May 4 -	June 9
1994	381	274	74	0		729	May 22 -	May 28
1995	60	477	200	0		737	May 13 -	June 2
1996	390 (390) ^a	986 (755) ^a		309	65	1,750	May 9 -	June 18
1997	160	45		0		205	May 22 -	June 12
1998	930	135		360 (200) ^a		1,425	May 11 -	June 3
1999	10	220		0		230	May 16 -	June 14
2000	115	350		0		465	May 15 -	May 28
2001	335	1,980		0	0	2,315	May 14 -	May 22
2002	85	255		0	0	340	May 15 -	May 28
2003	400	100		500		600-1000	May 17 -	May 29
2004	0	0					June 2 -	June 10
1994-2003								
Average	287	482	137	117	16	911		

^a Biomass estimates (tons) conducted by commercial spotter pilots are enclosed in parenthesis (); these estimates are included in the total biomass estimates. They may not be comparable to ADF&G estimates.

Table 2.-Alaska Peninsula herring sac roe fishery harvest, number of landings and permits fished by year, 1979-2004.

Year	North Peninsula			South Peninsula			Total		
	Tons	Landings	Permits	Tons	Landings	Permits	Tons	Landings	Permits
1979		No Harvest		10	a	a	10	a	a
1980		No Harvest		454	15	6	454	15	6
1981		No Harvest		797	93	56	797	93	56
1982	a	a	a	138	13	4	a	a	a
1983	627	47	23	0	0	0	627	47	23
1984	431	20	11	210	20	5	642	40	15
1985	710	31	17	288	8	5	998	39	20
1986	894	116	50	282	14	6	1,176	130	51
1987	514	46	27	319	8	a	833	54	27
1988	294	21	9	377	22	10	671	43	19
1989	729	24	10	310	31	13	1,039	55	19
1990	273	23	5	312	31	6	585	54	9
1991	1,313	59	11	157	26	10	1,470	85	18
1992	3,969	100	24	180	11	7	4,149	112	29
1993	536	44	16	a	a	a	a	a	a
1994	90	7	5	a	a	a	a	a	a
1995	337	37	12	a	a	a	a	a	a
1996	a	a	a	124	8	4	a	a	a
1997		No Harvest	0		No Harvest	0	0	0	0
1998	a	a	a		No Harvest	0	a	a	a
1999		No Harvest	0		No Harvest	0	0	0	0
2000		No Harvest	0		Closed	0	0	0	0
2001-2004		No Harvest	0		No Harvest	0	0	0	0
1994-2003									
Average	214	22	3	124	8	1	0	0	0

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^a Harvest numbers cannot be released due to state confidentiality requirements.

Table 3.-South Peninsula commercial herring sac roe fishery harvest by geographic area, 1979-2004.

Year	Area									Total
	Stepovak Bay ^a	Balboa Bay	Pavlof Bay	Canoe Bay	Volcano-Dolgoi	Belkofski Bay	Lenard Harbor	Dolgoi Harbor	Shumagin Islands	
1979	0.0	0.0	0.0	0.0	0.0	10.1	0.0	0.0	0.0	10.1
1980	196.0	132.0	113.8	12.0	0.0	0.0	0.0	0.0	0.0	453.8
1981	128.6	35.7	263.1	168.1	64.8	15.7	121.6	0.0	0.0	797.6
1982	0.0	5.0	0.0	171.2	0.0	0.0	0.0	0.0	0.0	176.2
1983 ^b	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	28.9	25.1	0.0	156.2	0.0	0.0	0.0	0.0	0.0	210.2
1985	10.9	0.0	38.0	238.8	0.0	0.0	0.0	0.0	0.0	287.7
1986	0.0	0.0	61.0	140.6	13.0	8.0	59.3	0.0	0.0	281.9
1987	0.0	0.0	91.7	117.7	0.0	37.8	59.5	12.3	0.0	319.0
1988	0.3	11.0	69.2	236.5	17.0	12.0	30.7	0.0	0.0	376.7
1989	39.2	17.7	52.8	148.3	0.0	0.0	8.6	5.2	38.5	310.3
1990	71.7	20.8	0.0	120.4	0.0	3.2	5.9	0.0	90.4	312.2
1991	19.3	19.3	0.0	77.5	0.0	0.0	0.0	0.0	41.4	157.4
1992	0.0	0.0	0.0	180.4	0.0	0.0	0.0	0.0	0.0	180.4
1993	4.6	0.0	0.0	92.4	0.0	0.0	0.0	0.0	0.0	97.0
1994	0.0	0.0	0.0	8.2	0.0	0.0	0.0	0.0	0.0	8.2
1995	0.0	9.8	0.0	52.9	0.0	0.0	0.0	0.0	0.0	62.7
1996	20.7	3.9	0.0	77.1	0.0	0.0	0.0	0.0	15.6	117.3
1997-2004	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994-2003										
Average	5.2	3.4	0.0	34.6	0.0	0.0	0.0	0.0	3.9	47.1

^a The 1984-88 catches came from Ramsey Bay, the 1989 and 1993 catch came from Granville Bay.

^b In 1983 the South Peninsula sac roe fishery was closed, all herring catches were allocated to a food and bait fishery that did not develop.

Table 4.-Alaska Peninsula area commercial herring sac roe fishery harvest by time period, 1979-2004.

Year	North Peninsula		South Peninsula		Total
	Harvest (Tons)	Harvest Time Period	Harvest (Tons)	Harvest Time Period	
1979	0.0	-	10.1	July 4- July 4	10.1
1980	0.0	-	453.8	May 18-July 14	453.8
1981	0.0	-	797.6	May 9-June 23	797.6
1982	505.5	May 31-June 12	176.2	May 31-June 14	681.7
1983	627.0	May 9-May 29	0.0	-	627.0
1984	431.2	May 24-June 8	210.2	May 13-June 1	641.4
1985	710.2	May 24-June 4	287.7	June 1-June 11	997.9
1986	894.4	May 18-May 30	281.9	June 7-June 14	1,176.3
1987	513.7	May 9-June 5	319.0	June 8-June 19	832.7
1988	294.3	May 17-June 15	376.7	May 31-June 20	671.0
1989	729.0	May 28-June 23	310.3	May 13-June 19	1,039.3
1990	272.8	June 4-June 19	312.2	May 14-June 14	585.0
1991	1,313.0	May 17-July 4	157.4	May 16-June 11	1,470.4
1992	3,969.0	May 23-June 17	180.4	June 4-June 7	4,149.4
1993	535.9	May 8-June 9	97.0	May 27-June 9	632.9
1994	89.8	May 21-June 7	8.2	June 2-June 3	98.0
1995	337.3	May 29-June 20	62.7	June 6-June 17	400.0
1996	^a	June 12-June 18	117.3	May 10-June 27	^a
1997	0.0	-	0.0	-	0.0
1998	^a	May 21-June 3	0.0	-	^a
1999-2004	0.0	-	0.0	^b	0.0
1994-2003 Average	106.8		31.4		124.5

^a This information cannot be released due to confidentiality requirements.

^b The South Peninsula exploratory sac roe herring fishery was closed during the 2000 season.

Table 5.-North Peninsula commercial herring sac roe fishery harvest by section, 1982-2004.

Year	Port Moller District				Port Heiden	Total
	Deer Island Mud Bay Section	Herendeen Bay Section	Port Moller Bay Section	Bear River Bering Sea Coast	Port Heiden Bay Section	
1982	0	280	180	46	0	506
1983	0	509	37	81	0	627
1984	0	181	250	0	0	431
1985	0	173	256	281	0	710
1986	0	156	255	484	0	894
1987	0	157 ^a	350	7	0	514
1988	0	8	286	0	0	294
1989	0	67	247	416	0	729
1990	0	156	117	0	0	273
1991	156	167	690	300	0	1,313
1992	18	0	2,351	0	1,600	3,969
1993	0	107	371	58	0	536
1994	7	0	83	0	0	90
1995	3	146	188	0	0	337
1996	0	b	b	0	0	b
1997	0	0	0	0	0	0
1998	0	0	b	b	0	b
1999-2004	0	0	0	0	0	0
1994-2003 Average	2	29	68	0	0	107

^a At least 11 tons were harvested in the Deer Island-Mud Bay Section.

^b This information cannot be released due to confidentiality requirements.

Table 6.-Aleutian Islands area, Dutch Harbor, commercial herring food and bait fishery summary, including landing date, days fished, preseason Togiak spawning biomass, guideline harvest level, harvest, and number of vessels fishing, 1981-2004.

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	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 ^e	20
2002	Jun 25	Jul 16	17	120,196	1,578	2,751 ^e	27
2003	Jun 24	Jul 19	7	126,213	1,662	1,487 ^e	19 ^d
2004	Jul 1	Aug 2	26	143,124	1,899	1,258 ^e	10 ^f
1994-2003 Average			8	134,981	1,785	2,137	22

^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 In 2003 the seine fishery was a cooperative.

^e Includes both gillnet and seine harvest.

^f Includes both gillnet and seine harvest. The gillnet fishery operated under a cooperative agreement with 12 permit holders using 7 of 9 registered vessels. Thirteen seine permit holders formed a cooperative using 1 vessel, in addition, 2 seine permit holders fished outside of the coop.

Table 7.-Aleutian Islands area, Dutch Harbor, herring food and bait fisheries historical summary for the purse seine fishery, 1929-2004.

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	24 ^b
2004	1,035	3 ^c	17	345 ^c	61	100-500	309	21 ^c
1929-1938								
Average	1,474							Information not Available
1993-2002								
Average	2,102	17	35	136	79	300	675	40

- ^a This information can not be released due to state confidentiality requirements.
- ^b Fishery was conducted by a cooperative fishery of 14 permit holders using 6 vessels. Exvessel values were calculated per permit holder.
- ^c Thirteen seine permit holders formed a cooperative using 1 vessel, in addition, 2 seine permit holders fished outside of the coop. Exvessel values are calculated per permit holder.

Table 8.-Aleutian Islands area, Dutch Harbor, herring food and bait fisheries historical summary for the gillnet fishery, 2001-2004.

Year	No. Vessels		Number Landings	Tons		Price Per Ton	Exvessel Value (Thousands)	Exvessel Value Per Vessel (Thousands)
	Harvest in Short Tons	Making 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 ^b	37	31	6	300	65	5 ^b
Average	141	10	31	17	5	367	52	5

^a 20 of 108 tons were not purchased because of spoilage.

^b 12 permit holders formed a cooperative and used 7 of 9 registered vessels. Exvessel value is calculated per permit holder.

Table 9.-Aleutian Islands area, Dutch Harbor, herring food and bait fisheries allocations, commercial harvest, and effort by gear type, 2001-2004.

Year	Preseason Togiak Spawning Biomass ^a	All Gear Types		Gillnet Fishery					Seine Fishery				
		Allocation ^a	Harvest ^a	Allocation ^a	Harvest ^a	Permits	Landings	Days Fished	Allocation ^a	Harvest ^a	Permits	Landings	Days Fished
2001	119,818	1,572	1,439	110	107	6	25	9	1,462	1,332	14	16	2
2002	120,196	1,578	2,751	110	134	13	37	16	1,468	2,617	16	14	1
2003	126,213	1,662	1,487	116	108	13	23	5	1,546	1,379	14 ^b	16	4
2004	143,124	1,899	1,258	266	216	12	37	13	1,533	1,035	15 ^c	17	13

^a Short tons.

^b Fourteen permit holders used 6 vessels in a cooperative fishery.

^c Thirteen permit holders used 1 vessel in a cooperative fishery.

Table 10.-Estimated age composition of Aleutian Islands commercial herring food and bait harvests, in percent, 1992-2004.

Year	Percent at Age (Years)																
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<i>Purse Seine</i>																	
1991	0.2	0.2	0.2	8.7	11.0	5.7	13.4	11.2	22.1	17.2	8.9	1.0	0.0	0.2	0.0	0.0	0.0
1992	0.0	0.3	0.2	0.3	23.3	25.0	4.8	15.2	8.9	10.0	9.4	2.5	0.2	0.0	0.0	0.0	0.0
1993	0.3	9.5	51.8	5.1	5.9	13.2	6.2	2.5	1.6	1.7	1.3	0.8	0.0	0.0	0.0	0.0	0.0
1994	0.2	1.7	24.3	36.7	3.8	4.0	13.3	6.5	3.6	3.3	1.0	0.9	0.9	0.0	0.0	0.0	0.0
1995	0.2	3.2	5.6	30.4	27.5	4.5	4.3	10.4	5.0	1.9	4.8	1.4	0.6	0.2	0.0	0.0	0.0
1996	0.0	0.7	8.2	16.1	35.8	25.8	3.3	2.9	2.7	1.6	1.5	0.8	0.4	0.2	0.0	0.0	0.0
1997	0.0	3.2	15.2	31.3	9.3	21.2	9.5	1.8	4.5	1.6	1.2	0.5	0.1	0.0	0.0	0.0	0.0
1998	0.0	6.5	7.9	25.3	26.0	8.5	14.6	8.4	0.5	1.4	0.3	0.0	0.1	0.1	0.0	0.0	0.0
1999	0.2	0.2	12.2	8.2	21.8	21.1	10.2	15.6	5.6	2.2	0.9	1.3	0.4	0.0	0.0	0.0	0.0
2000	0.0	0.0	0.7	19.8	16.6	12.4	14.5	10.8	12.4	8.2	2.3	1.3	0.5	0.0	0.0	0.0	0.0
2001	0.0	3.5	2.1	6.4	31.4	12.8	11.9	9.7	5.7	10.7	4.0	0.9	0.4	0.0	0.0	0.0	0.0
2002	0.0	0.0	3.0	6.3	4.3	25.3	11.6	9.3	12.3	9.0	12.0	5.0	0.0	3.0	2.0	0.0	0.0
2003	0.0	0.0	3.0	27.4	16.8	7.5	15.6	9.9	5.4	6.6	3.3	2.7	0.9	0.6	0.0	0.0	0.0
2004	0.0	0.0	0.0	18.8	39.3	8.4	3.9	14.6	3.4	5.9	1.9	0.7	1.4	1.2	0.0	0.0	0.0
<i>Gillnet</i>																	
2002	0.0	0.5	4.8	3.2	3.4	22.0	9.4	20.1	11.2	8.8	10.2	4.3	1.0	0.0	0.5	0.0	0.0
2003	0.0	0.0	3.3	30.7	5.9	4.8	23.3	8.1	10.0	4.4	2.5	4.0	2.2	0.0	0.3	0.0	0.0
2004	0.0	0.0	0.2	13.8	35.4	5.7	4.7	20.5	5.2	7.1	3.2	1.7	0.9	0.7	0.0	0.0	0.2

Table 11.-Age, sex, weight, and length of herring sampled during the Aleutian Islands area, Dutch Harbor, commercial gillnet herring food and bait fishery, 2004.

Age (Years)	Sex			Total	Percent of Total	Weight			Standard Length		
	Male	Female	Unknown			Mean (g)	Standard Dev.	Number Weighed	Mean (mm)	Standard Dev.	Number Measured
6	1	0	0	1	0.2	353	--	1	295	--	1
7	28	27	1	56	13.9	345	28.8	56	291	8.7	56
8	75	68	0	143	35.5	372	35.4	143	296	8.8	143
9	9	14	0	23	5.7	381	31.6	23	300	8.9	23
10	8	11	0	19	4.7	407	57.8	19	306	9.7	19
11	43	40	0	83	20.6	427	35.0	83	310	8.1	83
12	9	12	0	21	5.2	437	39.0	21	313	7.6	21
13	11	18	0	29	7.2	461	43.6	29	318	9.6	29
14	10	3	0	13	3.2	433	27.2	13	317	5.8	13
15	1	6	0	7	1.7	489	45.1	7	323	10.2	7
16	3	1	0	4	1.0	454	32.5	4	324	6.7	4
17	1	2	0	3	0.7	449	23.1	3	319	7.0	3
18	0	0	0	0	0.0	--	--	0	--	--	0
19	0	0	0	0	0.0	--	--	0	--	--	0
20	0	1	0	1	0.2	517	--	1	337	--	1
Total	199	203	1	403	100.0	397	52.4	403	303	12.7	403

Table 12.-Age, sex, weight, and length of herring sampled during the Aleutian Islands area, Dutch Harbor, commercial purse seine herring food and bait fishery, 2004.

Age (Years)	Sex			Total	Percent of Total	Weight			Standard Length		
	Male	Female	Unknown			Mean (g)	Standard Dev.	Number Weighed	Mean (mm)	Standard Dev.	Number Measured
6	0	0	0	0	0.0	--	--	0	--	--	0
7	35	41	0	76	18.8	363	45.9	76	288	9.7	76
8	76	82	1	159	39.4	372	45.6	159	291	9.2	159
9	19	15	0	34	8.4	378	52.5	34	293	11.7	34
10	6	10	0	16	4.0	440	49.0	16	303	9.3	16
11	27	32	0	59	14.6	440	69.7	59	307	10.2	59
12	7	7	0	14	3.5	460	69.0	14	311	6.2	14
13	16	7	1	24	5.9	478	65.3	24	313	9.2	24
14	4	4	0	8	2.0	479	65.0	8	313	7.0	8
15	2	1	0	3	0.7	499	117.1	3	312	7.2	3
16	1	5	0	6	1.5	487	49.5	6	314	6.5	6
17	2	3	0	5	1.2	531	59.2	5	323	11.8	5
18	0	0	0	0	0.0	--	--	0	--	--	0
19	0	0	0	0	0.0	--	--	0	--	--	0
20	0	0	0	0	0.0	--	--	0	--	--	0
Total	195	207	2	404	100.0	400	68.7	404	297	13.3	404

Table 13.-South Peninsula herring biomass aerial surveys, 2004.

Date	<u>Cold Bay</u>		<u>Pavlof Bay</u>		<u>Beaver/Balboa Bay</u>		<u>Stepovak Bay</u>		<u>Shumagin Is.</u>		Total (Tons)	Other Forage fish (st)	Surveyor
	Tons	Rating ^a	Tons	Rating ^a	Tons	Rating ^a	Tons	Rating ^a	Tons	Rating ^a			
May 26	Not Surveyed		Not Surveyed		137.5	2	275.0	2	Not Surveyed		412.5	215	Burkey, Duesterloh
June 05	Not Surveyed		Not Surveyed		Not Surveyed		Not Surveyed		514.5	2-3	514.5	1,019	Burkey, Duesterloh
Total Biomass Observed													
	0		0		137.5		275.0		514.5		927	1,234	
Estimated 2004 Biomass (Does not include herring observed during multiple surveys)													
					137.5		275.0		514.5		927	1,234	

^a Rating of survey: (1) Excellent, (2) Good, (3) Fair, (4) Poor, (5) Unsatisfactory

Cold Bay - Cold Bay to Volcano Bay/Dolgi Island

Pavlof Bay - Pavlof Bay to McGinty Point

Beaver/Balboa Bay - Beaver Bay to Dorenoi Bay

Stepovak Bay - Chichagof Bay to Kupreanof Point

Table 14.-Aleutian Islands area, Dutch Harbor, herring biomass aerial surveys, 2004.

Date	Unalaska Bay District				Makushin Bay District		
	Unalaska Bay East ^b (tons)	Unalaska Bay West ^c (tons)	Total Tons	Rating ^a	Tons	Rating ^a	Surveyors
July 14	7,670	not surveyed	7,670	2	not surveyed		Duesterloh, McCullough
July 15	135	380	515	3	not surveyed		Duesterloh, Bowers
July 16	not surveyed	330	330	3	180	3-4	Duesterloh, McCullough
Total Biomass Observed							
	7,805	710	8,185		180		
Estimated 2004 Biomass (Does not include herring observed during multiple surveys)							
							8,230

^a Rating of survey: (1) Excellent, (2) Good, (3) Fair, (4) Poor, (5) Unsatisfactory

^b From Ulakta Head eastward to Constatine Bay, incl. Dutch Harbor

^c From Ulakta Head westward to Cape Cheerful, incl. Captains, Nateekin, Broad and Wide Bays, Eider Pt.

Table 15.-Age, sex, weight, and length of herring sampled during the Aleutian Islands area, Adak, commercial gillnet herring food and bait fishery, 2004.

Age (Years)	Sex			Total	Percent of Total	Weight			Standard Length		
	Male	Female	Unk			Mean (gm)	Standard Dev.	Number Weighed	Mean (mm)	Standard Dev.	Number Measured
2	3	3	0	6	19.4	137	21.9	6	213	8.7	6
3	2	6	0	8	25.8	256	51.9	8	253	15.3	8
4	1	0	0	1	3.2	294	0.0	1	262	0.0	1
5	8	6	0	14	45.2	364	29.4	14	284	7.2	14
6	1	1	0	2	6.5	377	1.4	2	288	9.1	2
Total	15	16	0	31	100.0	291	95.5	31	262	29.4	31

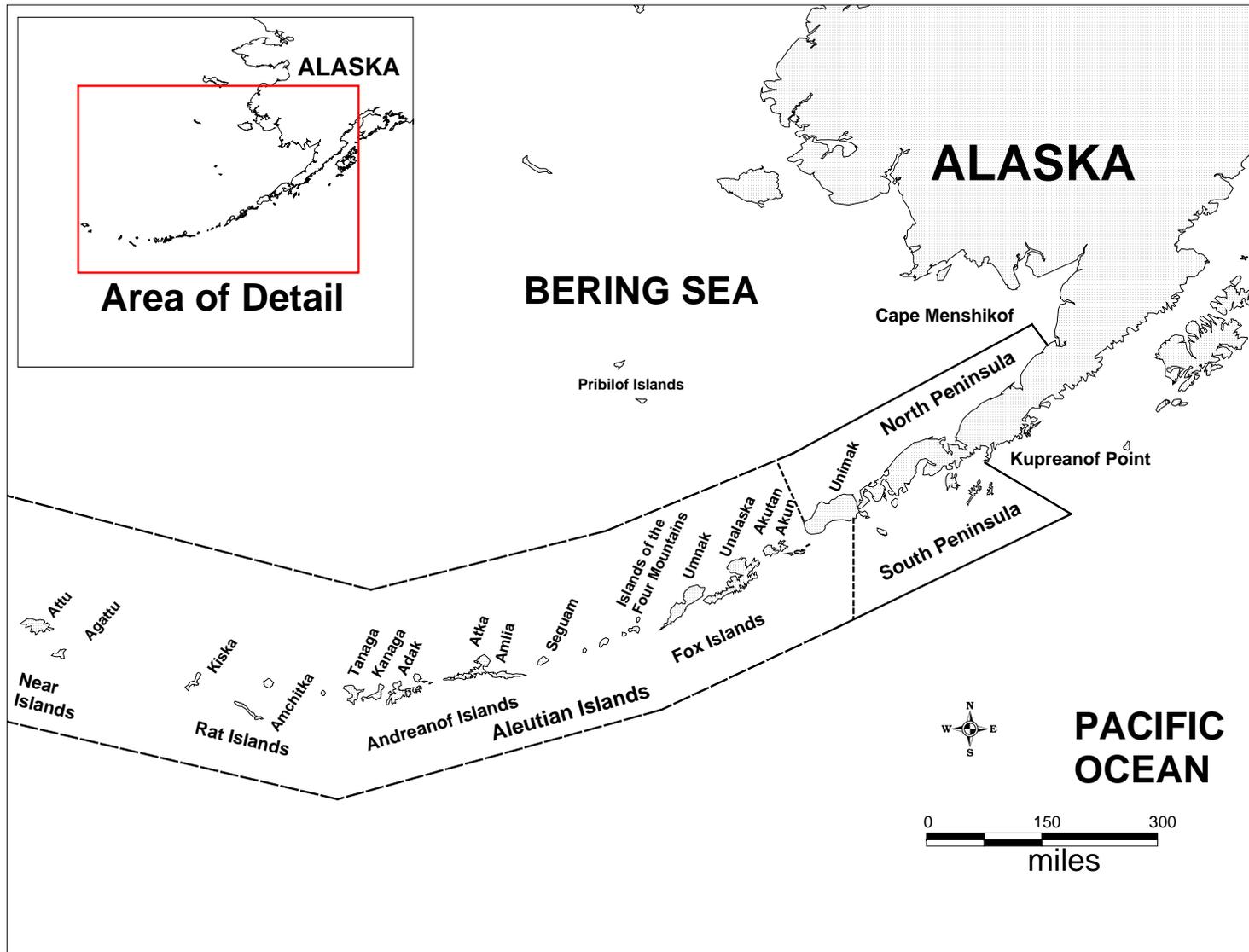


Figure 1.-Map of the Alaska Peninsula - Aleutian Islands Herring Management Area.

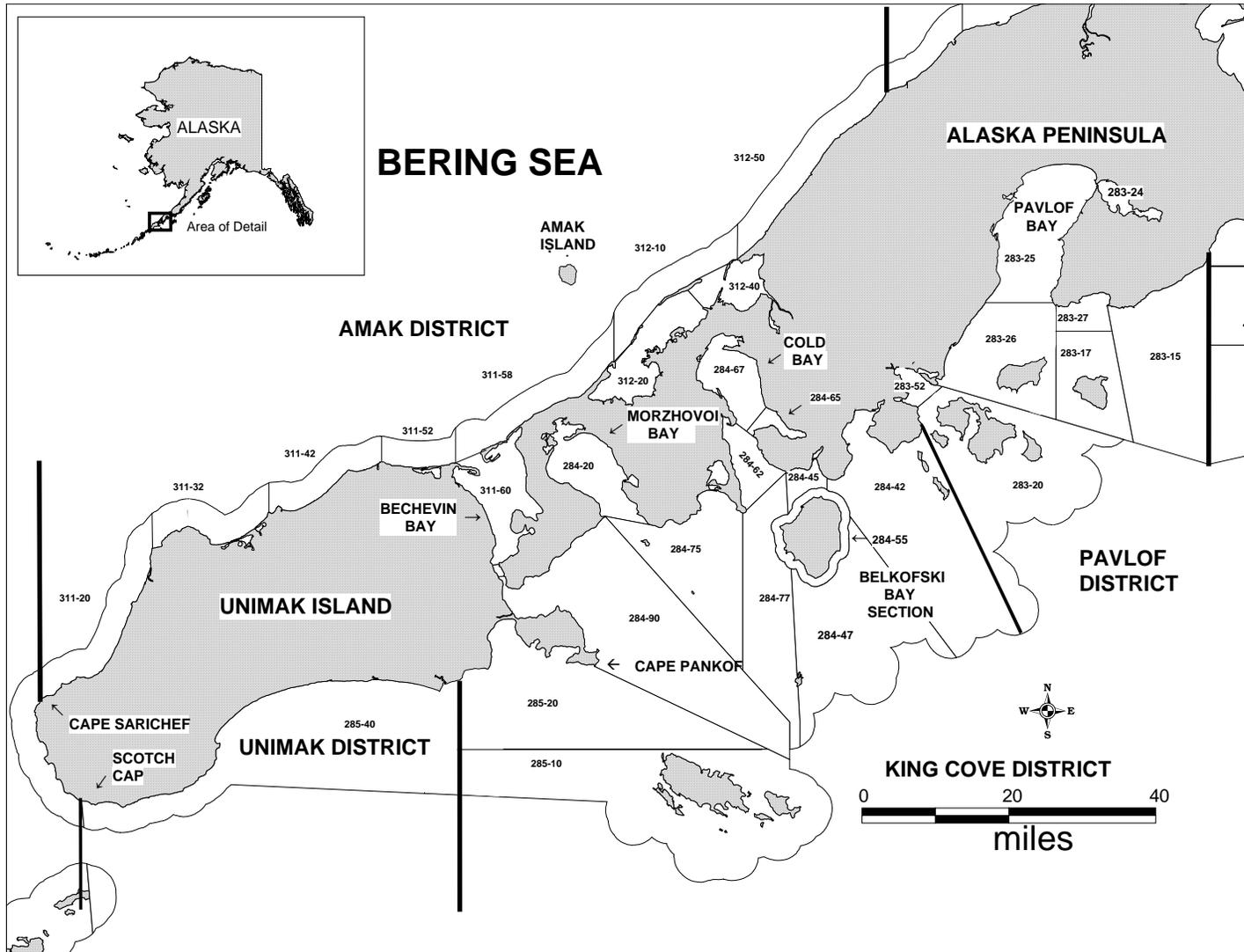


Figure 2.-Map of western Alaska Peninsula from Cape Sarichef to Pavlof Bay with commercial herring fishing statistical areas shown.

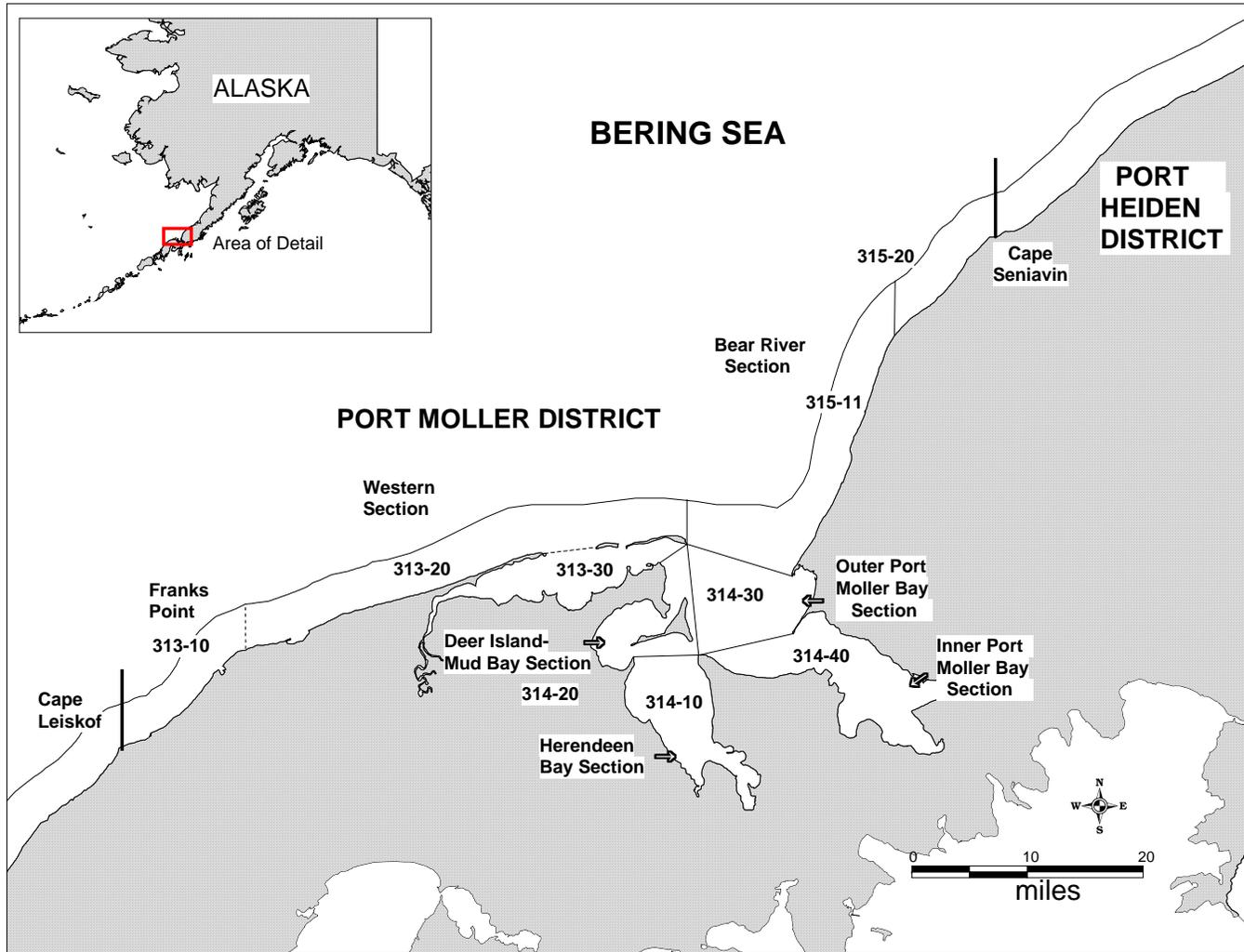


Figure 3.-Map of the Port Moller District with commercial herring fishing statistical areas shown.

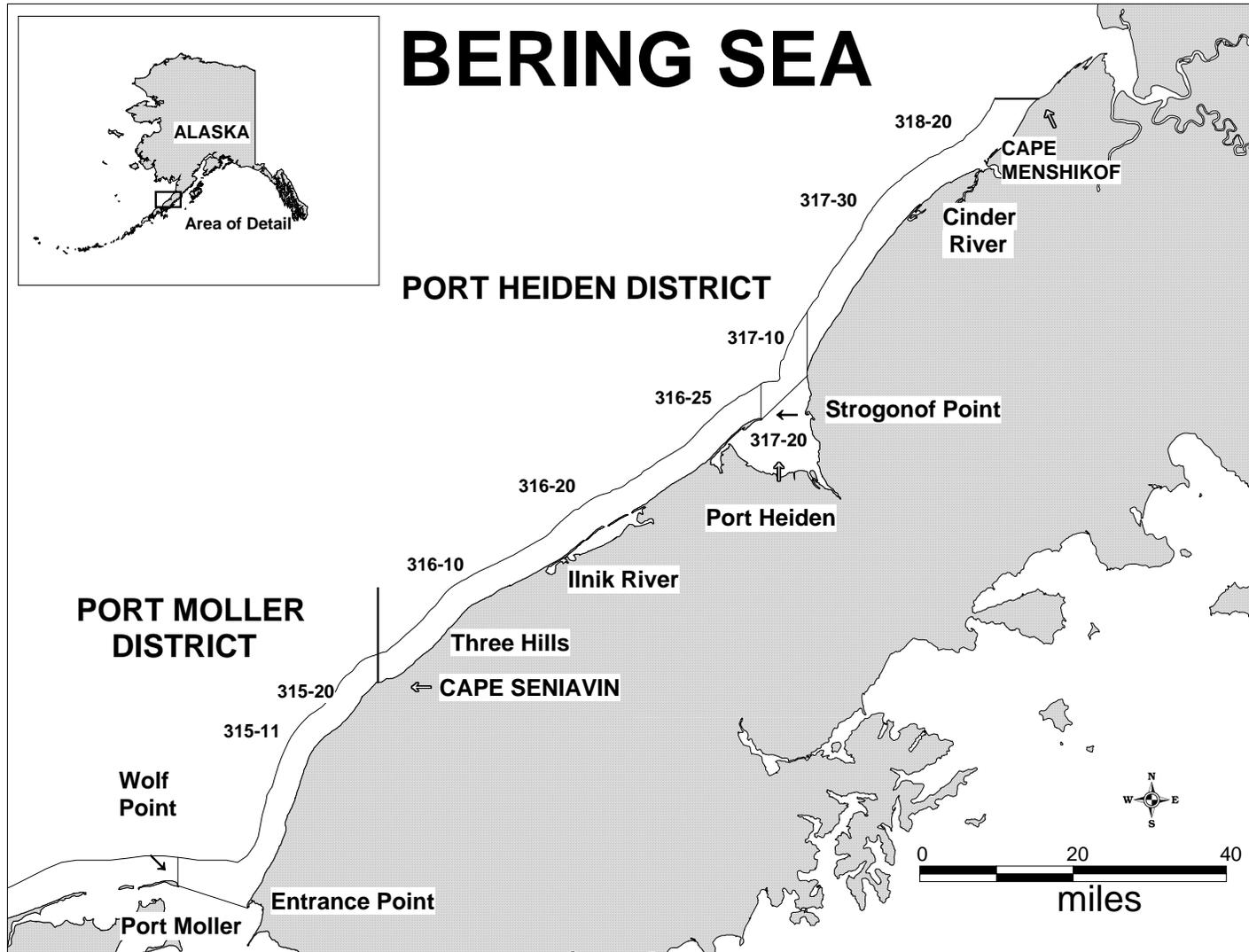


Figure 4.-Map of the Alaska Peninsula from Entrance Point to Cape Menshikof with commercial herring fishing statistical areas shown.

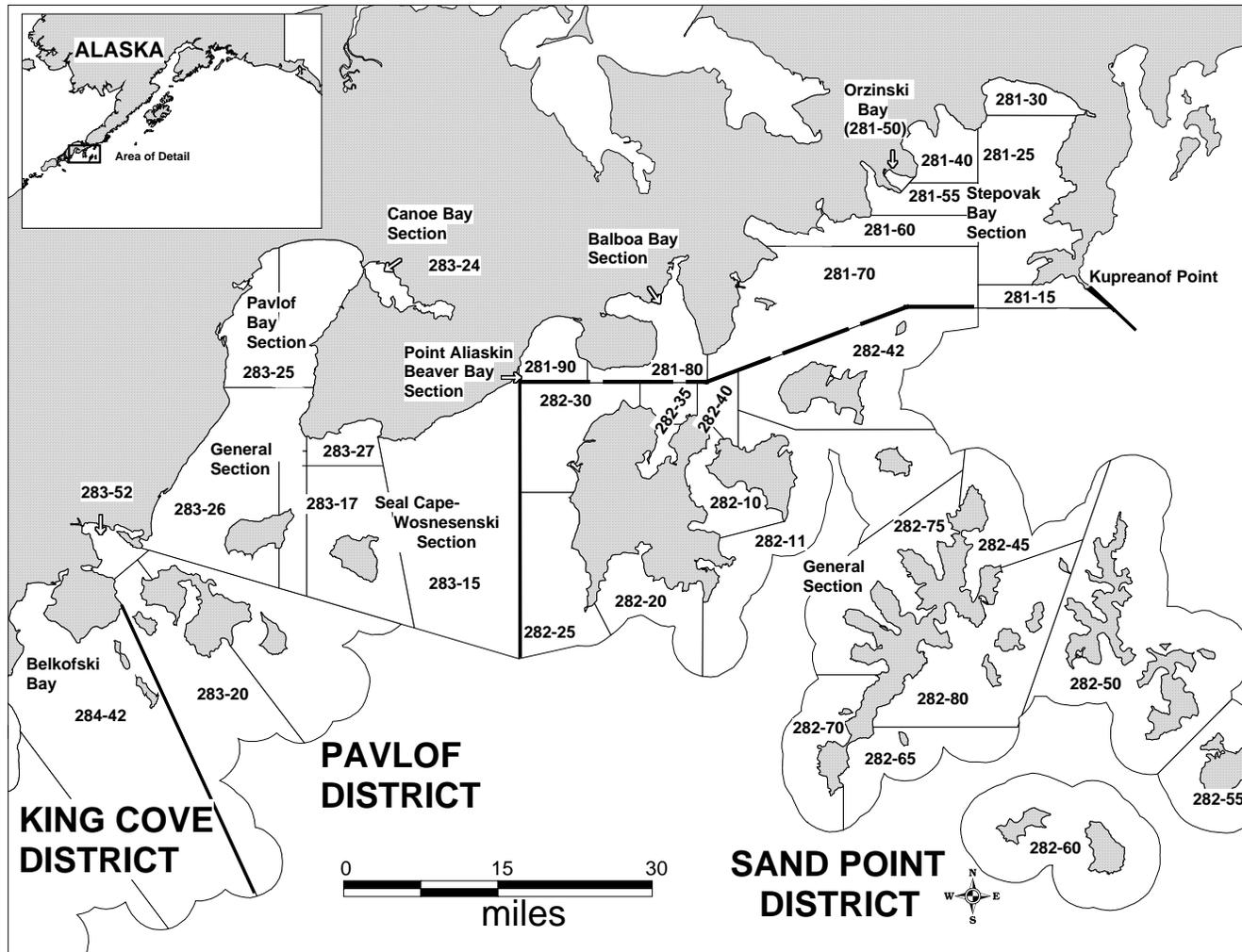


Figure 5.-Map of the South Alaska Peninsula from Belkofski Bay to Kupreanof Point with commercial herring fishing statistical areas shown.

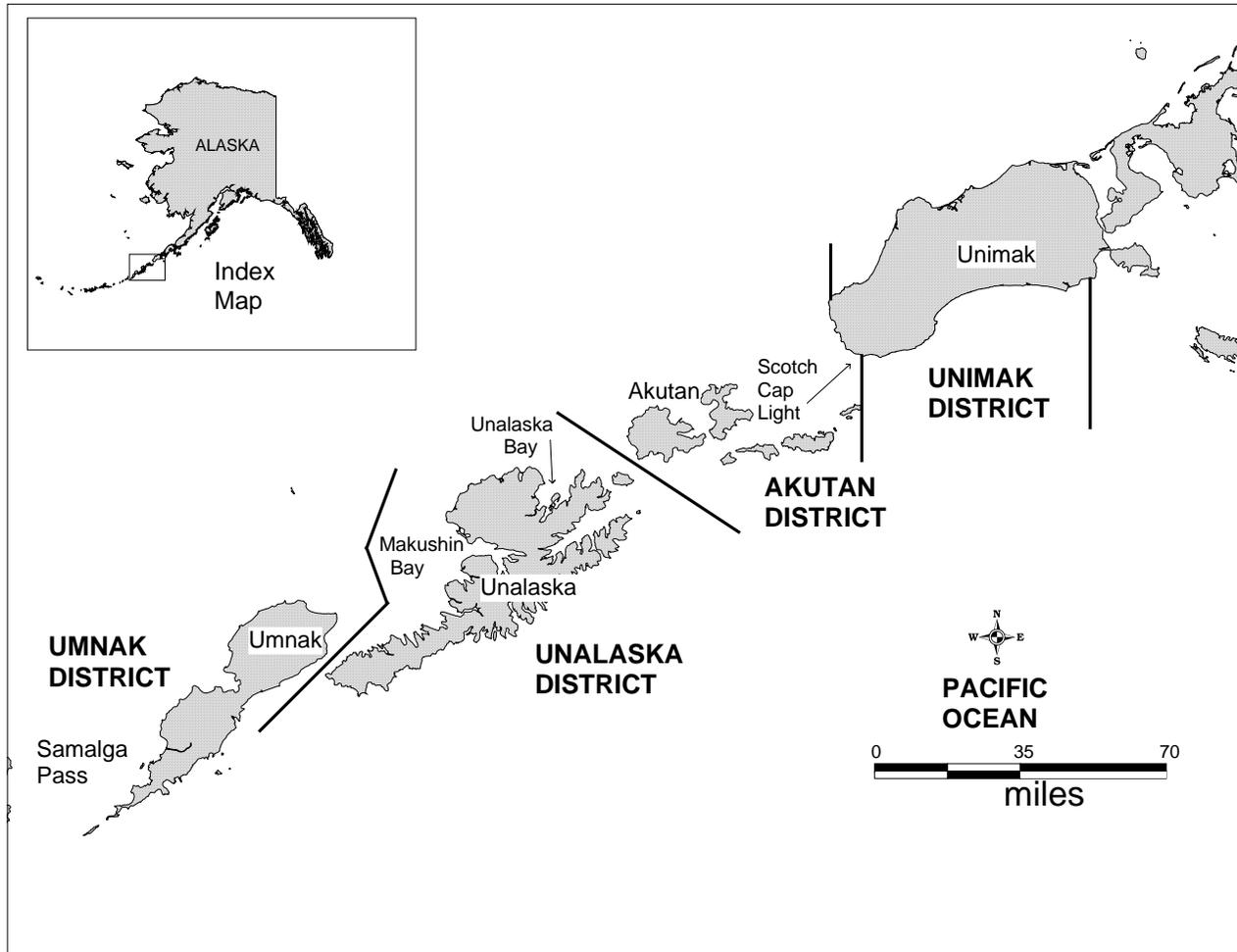


Figure 6.-Map of eastern Aleutian Islands from Samalga Pass to Unimak Island with herring commercial fishing districts shown.

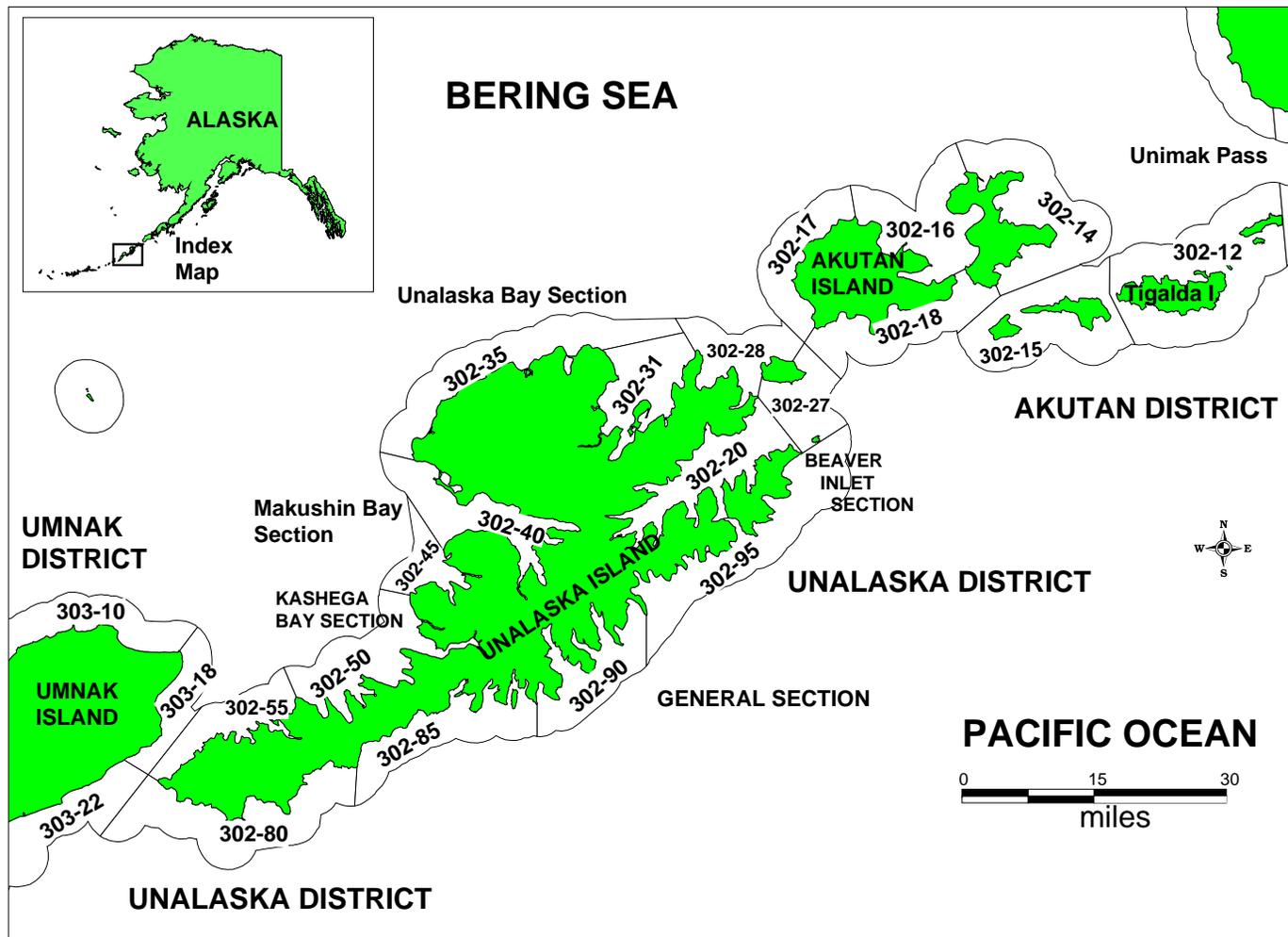


Figure 7.-Map of the eastern Aleutian Islands from Tigalda Island to Umnak Island with herring commercial fishing statistical areas shown.

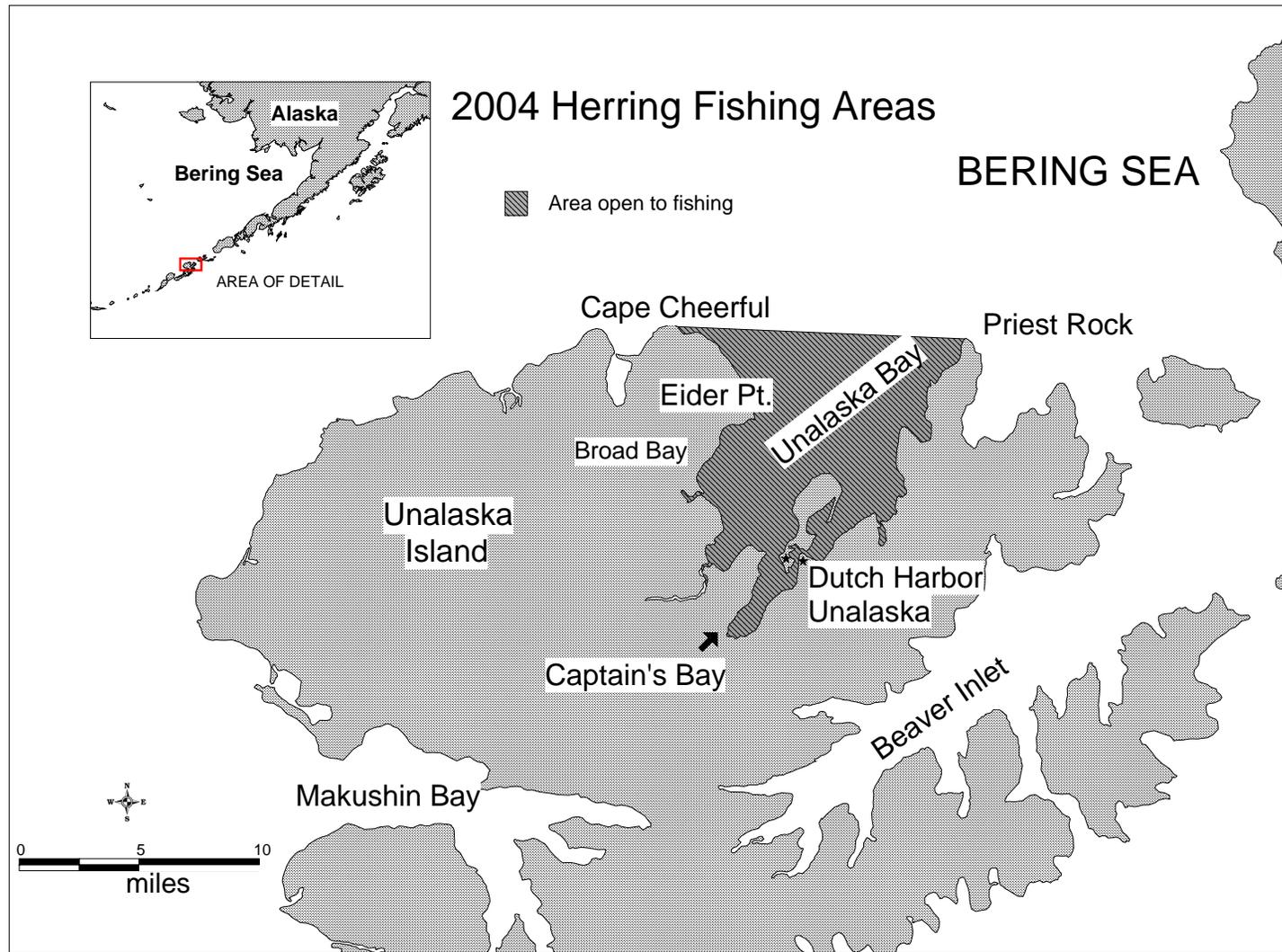


Figure 8.-Map of Unalaska Island from Beaver Inlet to Makushin Bay, with the 2004 commercial herring fishery open area defined.

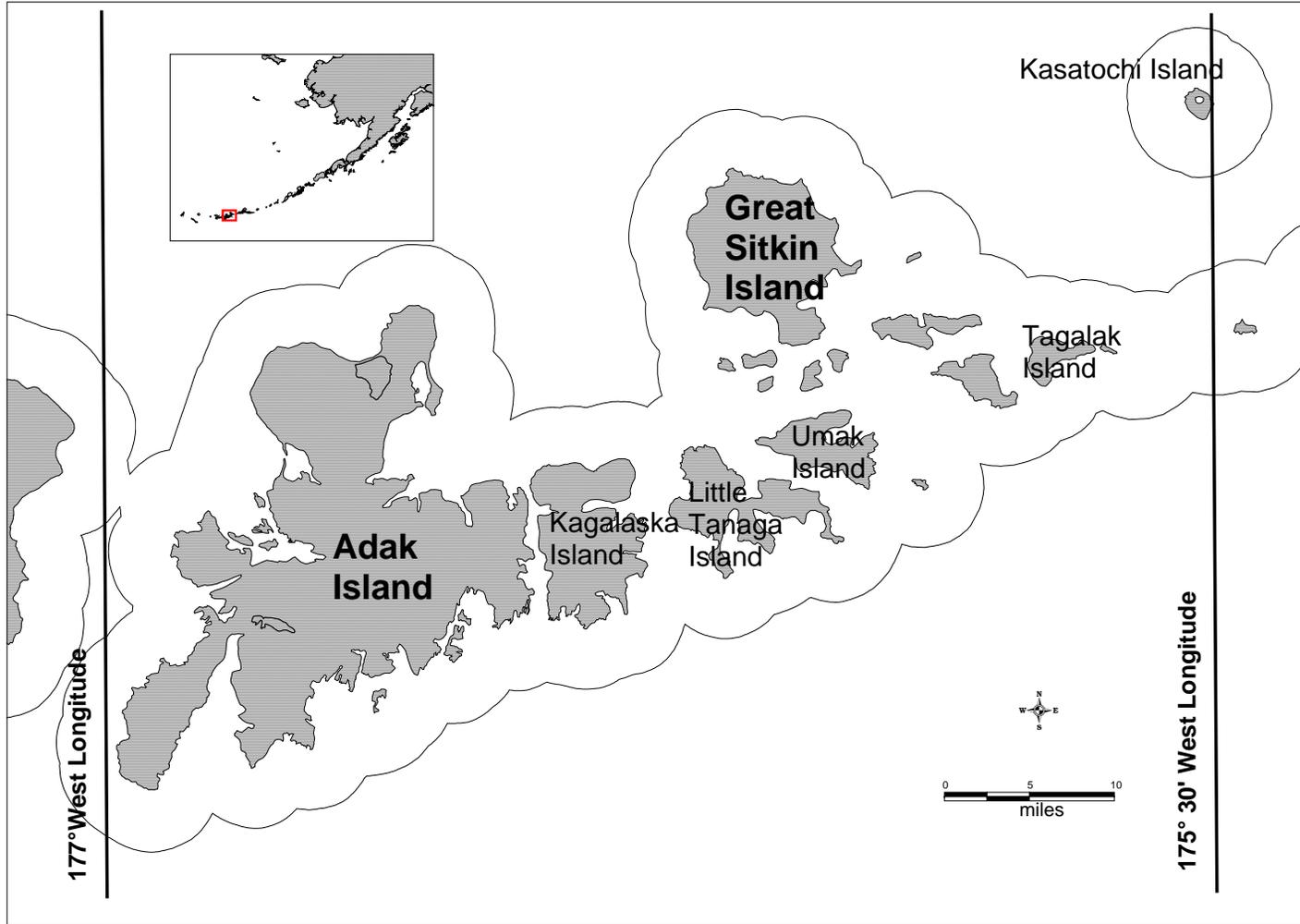


Figure 9.-Map of Adak Island area with boundaries of exploratory herring fishery defined.

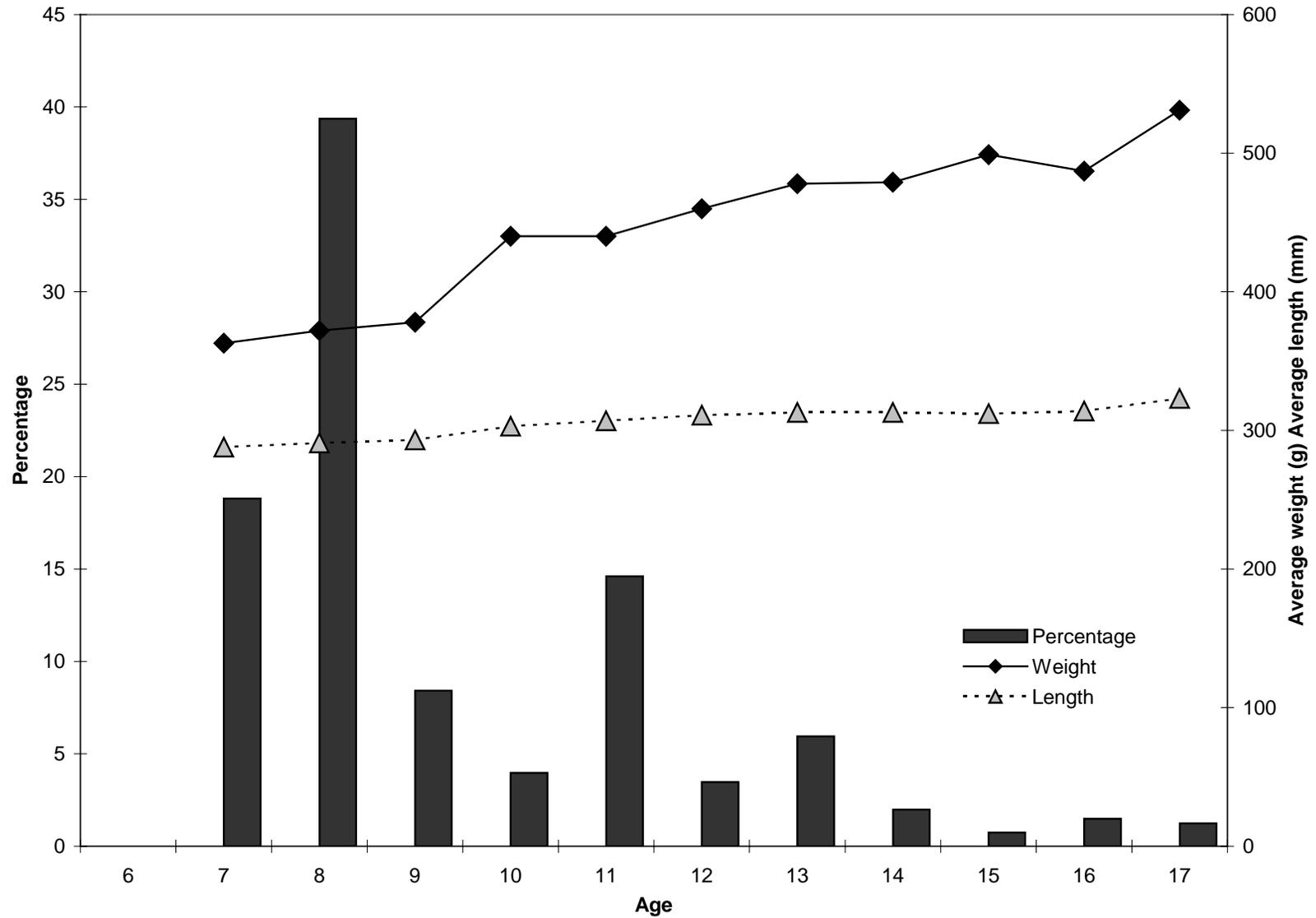


Figure 10.-Average length at age (mm), average weight at age (g), and age composition of herring harvested in the Aleutian Islands Management area, Dutch Harbor, purse seine food and bait fishery, 2004. Sample size n = 404.

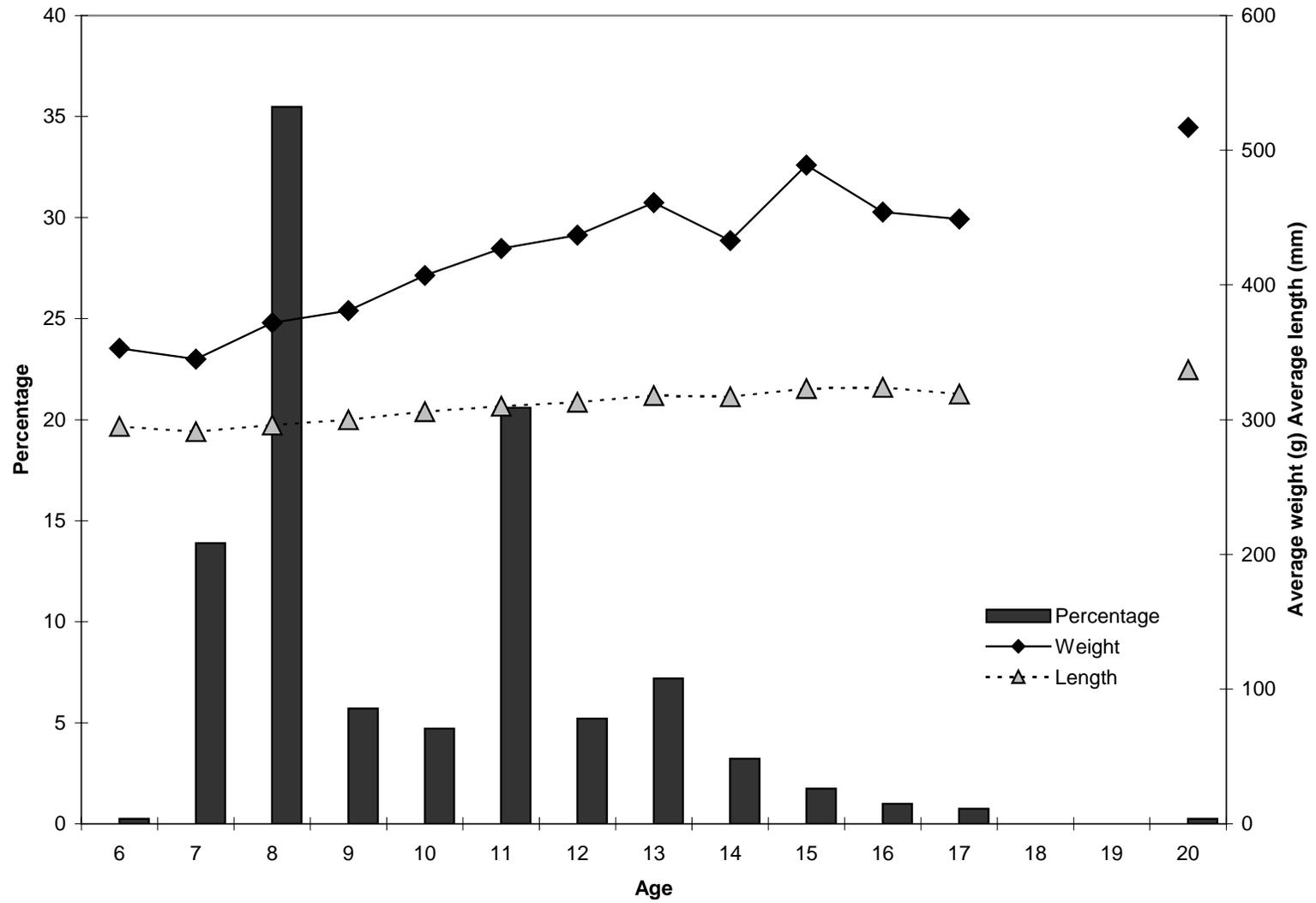


Figure 11.-Average length at age (mm), average weight at age (g), and age composition of herring harvested in the Aleutian Islands Management area, Dutch Harbor, gillnet food and bait fishery, 2004. Sample size n = 403.

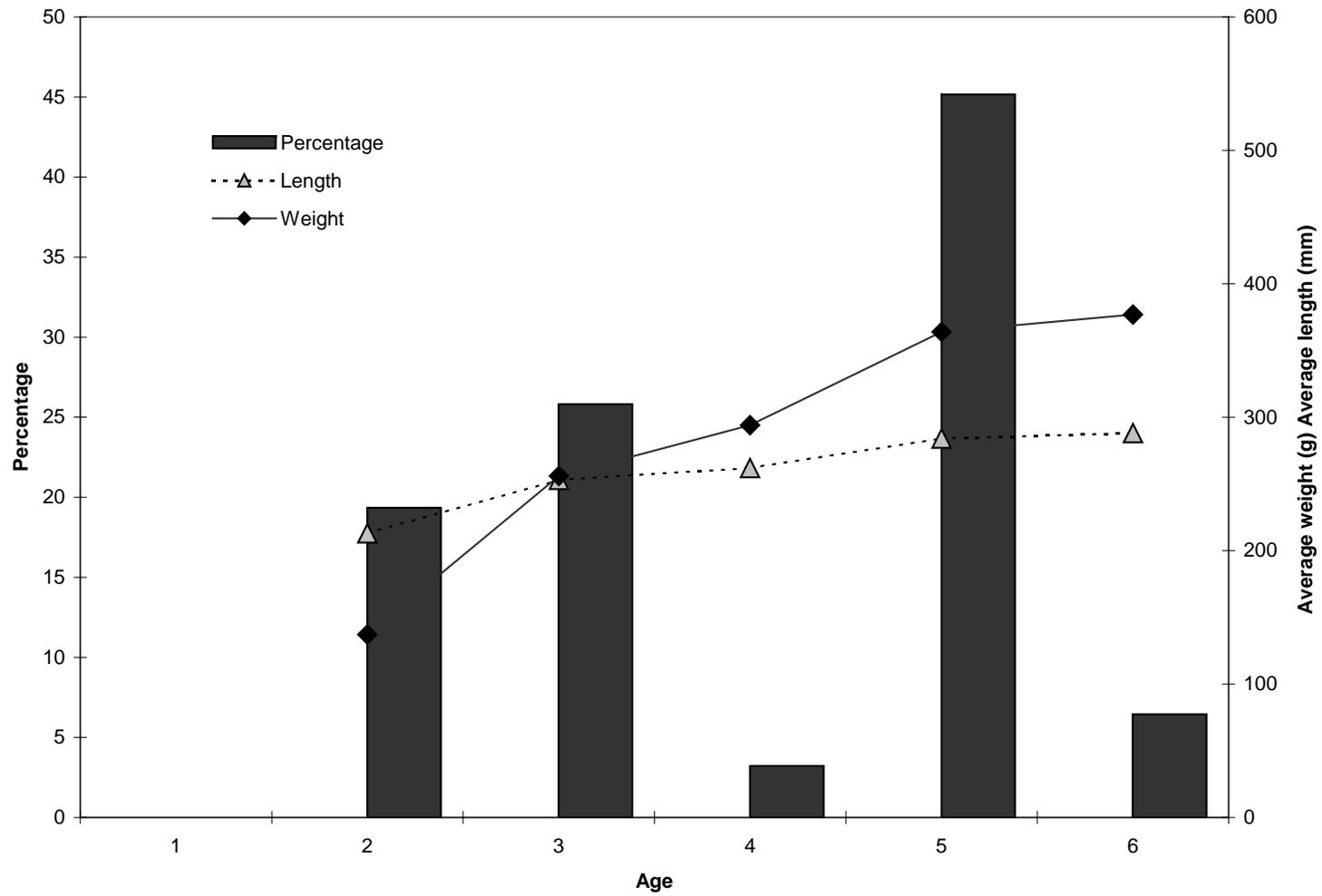


Figure 12.-Average length at age (mm), average weight at age (g) and age composition of herring harvested in the Aleutian Islands Management area, Adak, gillnet food and bait fishery, 2004. Sample size n = 31.

APPENDIX A. EMERGENCY ORDER SUMMARY, 2004

Appendix A1.—Emergency order summary, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-01-04

EFFECTIVE DATE: 8:00 AM Thursday, July 1, 2004

EXPLANATION: This emergency order allows a 6-hour commercial herring gillnet fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM until 2:00 PM Thursday July 1, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-02-04

EFFECTIVE DATE: 8:00 AM Friday, July 2, 2004

EXPLANATION: This emergency order allows a 6-hour commercial herring gillnet fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM until 2:00 PM Friday July 2, 2004

EMERGENCY ORDER NO. 4-FH-M-SP-03-04

EFFECTIVE DATE: 8:00 AM Saturday July 3, 2004

EXPLANATION: This emergency order allows a 6-hour commercial herring gillnet fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM until 2:00 PM Saturday July 3, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-04-04

EFFECTIVE DATE: 8:00 AM Sunday July 4, 2004

EXPLANATION: This emergency order allows a 6-hour commercial herring gillnet fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM until 2:00 PM Sunday July 4, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-05-04

EFFECTIVE DATE: 8:00 AM Monday July 5, 2004

EXPLANATION: This emergency order allows a 6-hour commercial herring gillnet fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM until 2:00 PM Monday July 5, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-06-04

EFFECTIVE DATE: 8:00 AM Tuesday July 6, 2004

-continued-

EXPLANATION: This emergency order allows a 6-hour commercial herring gillnet fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM until 2:00 PM Tuesday July 6, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-07-04

EFFECTIVE DATE: 8:00 AM Wednesday July 7, 2004

EXPLANATION: This emergency order allows a 6-hour commercial herring gillnet fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM until 2:00 PM Wednesday July 7, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-08-04

EFFECTIVE DATE: 8:00 AM Thursday July 8, 2004

EXPLANATION: This emergency order allows a 6-hour commercial herring gillnet fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM until 2:00 PM Thursday July 8, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-09-04

EFFECTIVE DATE: 8:00 AM Friday July 9, 2004

EXPLANATION: This emergency order allows a 6-hour commercial herring gillnet fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM until 2:00 PM Friday July 9, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-10-04

EFFECTIVE DATE: 8:00 AM Saturday July 10, 2004

EXPLANATION: This emergency order allows a 6-hour commercial herring gillnet fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM until 2:00 PM Saturday July 10, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-11-04

EFFECTIVE DATE: 8:00 AM Sunday July 11, 2004

EXPLANATION: This emergency order allows a 6-hour commercial herring gillnet fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM until 2:00 PM Sunday July 11, 2004.

-continued-

EMERGENCY ORDER NO. 4-FH-M-SP-12-04

EFFECTIVE DATE: 8:00 AM Monday July 12, 2004

EXPLANATION: This emergency order allows a 6-hour commercial herring gillnet fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM until 2:00 PM Monday July 12, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-13-04

EFFECTIVE DATE: 8:00 AM Tuesday July 13, 2004

EXPLANATION: This emergency order allows a 6-hour commercial herring gillnet fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM until 2:00 PM Tuesday July 13, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-14-04

EFFECTIVE DATE: 12:00 NOON Tuesday August 31, 2004.

EXPLANATION: This emergency order allows a commercial herring pound fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 12:00 NOON Saturday July 10 until 12:00 NOON Tuesday August 31, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-15-04

EFFECTIVE DATE: 12:00 NOON Thursday July 15, 2004

EXPLANATION: This emergency order allows a 24-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 12:00 NOON Thursday July 15 until 12:00 NOON Friday July 16, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-16-04

EFFECTIVE DATE: 12:00 NOON Friday July 16, 2004

EXPLANATION: This emergency order allows a 24-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 12:00 NOON Friday July 16 until 12:00 NOON Saturday July 17, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-17-04

EFFECTIVE DATE: 12:00 NOON Saturday July 17, 2004

-continued-

EXPLANATION: This emergency order allows a 24-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 12:00 NOON Saturday July 17 until 12:00 NOON Sunday July 18, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-18-04

EFFECTIVE DATE: 12:00 NOON Sunday July 18, 2004

EXPLANATION: This emergency order allows a 24-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 12:00 NOON Sunday July 18 until 12:00 NOON Monday July 19, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-19-04

EFFECTIVE DATE: 12:00 NOON Monday July 19, 2004

EXPLANATION: This emergency order allows a 24-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 12:00 NOON Monday July 19 until 12:00 NOON Tuesday July 20, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-20-04

EFFECTIVE DATE: 12:00 NOON Tuesday July 20, 2004

EXPLANATION: This emergency order allows a 24-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 12:00 NOON Tuesday July 20 until 12:00 NOON Wednesday July 21, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-21-04

EFFECTIVE DATE: 12:00 NOON Wednesday July 21, 2004

EXPLANATION: This emergency order allows a 24-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 12:00 NOON Wednesday July 21 until 12:00 NOON Thursday July 22, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-22-04

EFFECTIVE DATE: 12:00 NOON Thursday July 22, 2004

-continued-

EXPLANATION: This emergency order allows a 24-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 12:00 NOON Thursday July 22 until 12:00 NOON Friday July 23, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-23-04

EFFECTIVE DATE: 12:00 NOON Monday July 26, 2004

EXPLANATION: This emergency order allows a 4-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 12:00 NOON Monday July 26 until 4:00 PM Monday July 26, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-24-04

EFFECTIVE DATE: 9:00 AM Tuesday, July 27, 2004

EXPLANATION: This emergency order allows a 7-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 9:00 AM Tuesday July 27 until 4:00 PM Tuesday July 27, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-25-04

EFFECTIVE DATE: 8:00 AM Wednesday, July 28, 2004

EXPLANATION: This emergency order allows an 8-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM Wednesday July 28 until 4:00 PM Wednesday July 28, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-26-04

EFFECTIVE DATE: 9:00 AM Thursday, July 29, 2004

EXPLANATION: This emergency order allows a 7-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 9:00 AM Thursday July 29 until 4:00 PM Thursday July 29, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-27-04

EFFECTIVE DATE: 8:30 AM Friday, July 30, 2004

EXPLANATION: This emergency order allows a 7.5-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:30 AM Friday July 30 until 4:00 PM Friday July 30, 2004

-continued-

EMERGENCY ORDER NO. 4-FH-M-SP-28-04

EFFECTIVE DATE: 8:00 AM Monday, August 2, 2004

EXPLANATION: This emergency order allows an 8-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM Monday August 2 until 4:00 PM Monday August 2, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-29-04

EFFECTIVE DATE: 8:00 AM Monday, August 2, 2004

EXPLANATION: This emergency order allows an 8-hour commercial herring seine fishing period in the Unalaska Bay Section of the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM Monday August 2 until 4:00 PM Monday August 2, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-30-04

EFFECTIVE DATE: 8:00 AM Saturday, August 24, 2004

EXPLANATION: This emergency order allows a 48-hour commercial herring gillnet fishing period in that part of the Adak District from 175°30' W. long. to 177° W. long. in the Alaska Peninsula-Aleutian Islands Herring Management Area from 8:00 AM Saturday August 14 until 8:00 AM Monday August 16, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-31-04

EFFECTIVE DATE: 6:00 PM Tuesday, August 17, 2004

EXPLANATION: This emergency order allows a 48-hour commercial herring gillnet fishing period in that part of the Adak District from 175°30' W. long. to 177° W. long. in the Alaska Peninsula-Aleutian Islands Herring Management Area from 6:00 PM Tuesday August 17 until 6:00 PM Thursday August 19, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-32-04

EFFECTIVE DATE: 6:00 PM Thursday, August 19, 2004

EXPLANATION: This emergency order allows a 48-hour commercial herring gillnet fishing period in the Adak District of the Alaska Peninsula-Aleutian Islands Herring Management Area from 6:00 PM Thursday August 19 until 6:00 PM Saturday August 21, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-33-04

EFFECTIVE DATE: 12:00 NOON Tuesday, August 24, 2004

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EXPLANATION: This emergency order allows a 48-hour commercial herring gillnet fishing period in the Adak District of the Alaska Peninsula-Aleutian Islands Herring Management Area from 12:00 NOON Tuesday August 24 until 12:00 NOON Thursday August 26, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-34-04

EFFECTIVE DATE: 10:00 AM Monday, August 30, 2004

EXPLANATION: This emergency order allows a 48-hour commercial herring gillnet fishing period in the Adak District of the Alaska Peninsula-Aleutian Islands Herring Management Area from 10:00 AM Monday August 30 until 10:00 AM Wednesday September 1, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-35-04

EFFECTIVE DATE: 10:00 AM Wednesday, September 1, 2004

EXPLANATION: This emergency order allows a 48-hour commercial herring gillnet fishing period in the Adak District of the Alaska Peninsula-Aleutian Islands Herring Management Area from 10:00 AM Wednesday September 1 until 10:00 AM Friday September 3, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-36-04

EFFECTIVE DATE: 6:00 PM Friday, September 3, 2004

EXPLANATION: This emergency order allows a 48-hour commercial herring gillnet fishing period in the Adak District of the Alaska Peninsula-Aleutian Islands Herring Management Area from 6:00 PM Friday September 3 until 6:00 PM Sunday September 5, 2004.

EMERGENCY ORDER NO. 4-FH-M-SP-37-04

EFFECTIVE DATE: 4:00 PM Monday, September 13, 2004

EXPLANATION: This emergency order allows a 48-hour commercial herring gillnet fishing period in the Adak District of the Alaska Peninsula-Aleutian Islands Herring Management Area from 4:00 PM Monday September 13 until 4:00 PM Wednesday September 15, 2004.

**APPENDIX B. ALEUTIAN ISLANDS AREA DUTCH HARBOR
HERRING FOOD AND BAIT FORECAST, 2004**

Appendix B1.-Aleutian Islands area Dutch Harbor herring food and bait forecast, 2004.

The 2004 Togiak herring forecast and harvest allocation is listed below for the Togiak District sac roe fishery and the Dutch Harbor food and bait herring fishery, given a maximum exploitation rate of the projected run biomass: (Frederick West, ADF&G, Anchorage, memo December 05, 2003).

**Harvest Allocation of the 2004 Forecasted Pacific
Herring Run Biomass, Togiak District, Bristol Bay**

	Biomass (Short Tons)	Harvest (Short Tons)
2004 Forecasted Biomass	143,124	
Exploitation @ Maximum 20% for Total Allowable Harvest		28,625
Togiak Spawn-on-Kelp Fishery (Fixed Allocation)		1,500
Remaining Allowable Harvest		27,125
Dutch Harbor Food/Bait Allocation		
(7.0% of the remaining allocation)		1,899
Purse seine Allocation (86%)		1,533
Gillnet Allocation (14%)		266
Remaining Allowable Harvest for Togiak District Sac Roe Fishery		25,226
Purse Seine Allocation 70.0%		17,658
Gillnet Allocation 30.0%		7,568

**APPENDIX C. ALASKA PENINSULA HERRING SAC ROE
FISHERY FORECAST, 2005.**

Appendix C1.-Alaska Peninsula herring sac roe fishery forecast, 2005.

This forecast is for North and South Alaska Peninsula areas with guideline harvest levels, excluding those areas open for exploration such as the General Section of the Sand Point District, Seal Cape-Wosnesenski Section, the General Section of the King Cove District, Amak District, and the Western Section of the Port Moller District. This forecast does not include the Aleutian Islands Management Area, which has no history of sac roe herring harvests, or the Port Heiden District, which had a commercial harvest only during 1992.

The 2005 North Peninsula Port Moller District harvest forecast is between 0 and 150 tons. This forecast is based on the 2004 biomass estimate. A sliding scale exploitation rate is applied to the estimate while considering historic harvests in the district. In three aerial surveys in 2004 (only one of these covered the entire area) no herring were observed. Adjustments to the guideline harvest level will be made inseason once herring biomass is quantified. The following table shows the sliding scale allowable harvest on the estimated mature biomass when the threshold of 1,000 tons is assured.

Stock Size (Short Tons)	Sliding Scale	
	Allowable Exploitation Rate	Harvest
Less than 1,000	0%	0
1,001-1,500	10%	100-150
1,501-1,999	10%	150-200
2,000-2,500	15%	300-375
2,501-3,000	15%	375-450
> 3,000	20%	> 450

At low biomass levels, a conservative approach will be taken to allow the local stocks to rebuild and to account for North Peninsula herring that may contribute to the Dutch Harbor food and bait fishery. Rowell et. al. (1990) estimated that up to 22% of the Dutch Harbor food and bait harvest may be non-Togiak herring. Based on estimated travel time of eastern Bering Sea herring stocks to Dutch Harbor and the fishery opening date of July 16, North Peninsula stocks may compose a portion of the non-Togiak component. During periods when large biomass levels are observed a higher harvest rate will be allowed. Based on Alaska Board of Fisheries findings, exploitation rate may not exceed 20% of the mature biomass of those stocks. The forecast does not include the Port Heiden District where commercial fishing occurred only during 1992.

Confidence in the North Peninsula forecast is only fair. In the Port Moller District, a 1,000 ton threshold of mature herring is required before the department may allow a commercial harvest in that district.

The 2005 South Peninsula forecasted sac roe harvest is 0 tons, based on the belief that industry will not be interested in harvesting herring in South Peninsula waters in 2005. Two aerial surveys in 2004 resulted in an observed biomass estimate of 927 tons. No age class data were available in 2004, so it is unknown what age classes will dominate the 2005 stocks.
