

Fishery Management Report No. 06-72

**Alaska Peninsula-Aleutian Islands Management Area
Herring Sac Roe and Food and Bait Fisheries Report
to the Alaska Board of Fisheries, 2007**

by

James V. Jackson

and

Aaron D. Poetter

December 2006

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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James V. Jackson

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Aaron D. Poetter

Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak

Alaska Department of Fish and Game
Division of Sport Fish, Research and Technical Services
333 Raspberry Road, Anchorage, Alaska, 99518-1565

December 2006

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*James V Jackson
and
Aaron D. Poetter
Alaska Department of Fish and Game, Division of Commercial Fisheries,
211 Mission Road, Kodiak, AK 99615, USA*

This document should be cited as:

Jackson, J. V. and A. D. Poetter. 2006. Alaska Peninsula-Aleutian Islands management area herring sac roe and food and bait fisheries report to the Alaska Board of Fisheries, 2007. Alaska Department of Fish and Game, Fishery Management Report No. 06-72, Anchorage.

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ABSTRACT

From 2004 to 2006 the average total South Alaska Peninsula herring biomass estimate was 534 tons of Pacific herring *Clupea pallasii*. However, limited market interest kept the Alaska Department of Fish and Game (ADF&G) from conducting a fishery in 2004, 2005, and 2006.

From 2004 to 2006 the average total North Alaska Peninsula herring biomass estimate was 3,178 tons of herring. However, limited market interest kept ADF&G from conducting a fishery in 2004 and 2006. In 2005, the department observed an estimated 1,500 to 4,600 tons of herring. With a 1,000 ton threshold required by regulation to allow a commercial fishery in the Port Moller area, the department opened the first sac roe fishery on the North Alaska Peninsula since 1998. However, limited market interest kept the harvest to 351 tons. The exvessel price per ton for the fishery was \$300, with a combined exvessel value of approximately \$105,300.

In 2004, 216 tons of herring were harvested in the Alaska Peninsula-Aleutian Islands herring food and bait by the gillnet fleet. The 2004 seine herring food and bait fishery harvest was 1,035 tons, which was 498 tons below the 1,533 ton allocation. Thirteen permit holders formed a combine and used one vessel. The price per ton for the fisheries ranged from \$100 to \$500, with a combined exvessel value of approximately \$375,000.

In 2005, no herring were harvested in the Alaska Peninsula-Aleutian Islands by gillnet gear. Purse seine fishermen harvested 1,154 tons of food and bait herring, which was 20 tons below the 1,174 ton allocation. Eleven permit holders formed a combine and one additional permit holder registered in a separate market. The price per ton ranged from \$100 to \$500, with a combined exvessel value of approximately \$370,095.

In 2006, one ton of herring was harvested by gillnet gear in the Alaska Peninsula-Aleutian Islands herring food and bait fishery. The purse seine fleet harvest as 954 tons, which was 522 tons below the 1,437 ton allocation. Eleven permit holders formed a combine and one additional permit holder registered for a separate market. The price per ton ranged from \$100 to \$500, with a combined exvessel value of approximately \$384,175. In 2004 through 2006, no herring were harvested in the Adak Area.

Key words: Alaska Peninsula, Aleutian Islands, Adak, Pacific herring, *Clupea pallasii*, sac roe, food, bait, combine, 2006

INTRODUCTION

The purpose of this report is to present historical information pertaining to the Alaska Peninsula-Aleutian Islands Management Area Pacific herring *Clupea pallasii* fisheries, and provide commercial harvest information from the 2004-2006 seasons.

The Alaska Peninsula-Aleutian Islands Herring Management Area is designated Management Area M and is divided into three sub areas: (1) the North Alaska Peninsula, consisting of Bering Sea waters extending west from Cape Menshikof to Cape Sarichef, (2) the South Alaska 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; 5 AAC 27.605).

The North Alaska Peninsula is composed of 3 districts and 23 statistical areas (Figures 2, 3, and 4), the South Alaska Peninsula includes 3 districts and 45 statistical areas (Figures 4 and 5), and the Aleutian Islands Area includes 5 districts and 41 statistical areas (Figures 6 through 8).

HISTORY OF HERRING FISHERY

Herring have been reported throughout North and South Alaska Peninsula waters, and in Akutan, Unalaska, and Adak Island waters of the Aleutian Islands (Warner and Shafford 1979). Herring sac roe fishing has occurred in North Alaska Peninsula waters of Port Heiden, Port Moller, and

Herendeen Bays, and along the Bering Sea coast in near shore waters from Entrance Point to Cape Seniavin (Table 1). Typically, harvest of herring sac roe began in late May and ended in mid to late June, in both the North and South Alaska Peninsula waters. In South Alaska Peninsula waters, most herring sac roe fishing effort occurred in the Shumagin Islands, and Stepovak, Pavlof, Canoe and Balboa bays (Table 2).

From 1981 to 1995, the Alaska Department of Fish and Game (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 for age, weight, and length; documented spawning areas, and mapped spawning substrate. In 1996, this program ended due to budget cuts and herring have since been voluntarily collected, from the commercial catch, by fishermen and given to the ADF&G.

In addition to field samples ADF&G has also conducted herring aerial surveys in Alaska Peninsula waters since 1976. These surveys often had limited utility due to the large area involved, poor weather conditions, water turbidity, and the sporadic and unpredictable arrival of the herring.

North Alaska Peninsula Sac Roe

The first commercial North Alaska Peninsula herring sac roe harvest occurred in 1982 when 506 tons were harvested (Table 3). From 1982 to 2006, the harvests ranged from 0 to 3,969 tons, and the majority of the harvest has been taken from Herendeen Bay and Port Moller Bay sections (Table 4).

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 harvested herring. In 1986, fishing effort targeted 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.

South Alaska Peninsula Sac Roe

The South Alaska Peninsula herring sac roe fishery harvest and fishing effort has fluctuated since it began in 1979 (Table 1). During years in which commercial herring sac roe fishery harvests occurred in the South Alaska Peninsula (1979 to 1996), landings have been reported from 18 statistical areas. Of these, only Canoe Bay (Figure 5) produced a consistent annual harvest (Table 2).

In South Alaska Peninsula waters, substantial harvest occurred in 1980 (454 tons), and harvest peaked in 1981 (798 tons; Table 3). The Alaska Board of Fisheries (BOF) closed the South Alaska Peninsula herring sac roe fishery in 1983, and changed the fishery to a winter herring food and bait fishery that failed to develop due to a lack of herring biomass and fishing effort. From 1984 to 1991, the BOF allocated the harvest between the sac roe fishery (75 percent of the allowable harvest) and the food and bait fishery (25 percent of the allowable harvest). In 1992, the BOF allocated the entire harvest to the herring sac roe fishery (Jackson 2006a).

From 1982 to 2000, the herring fishing effort and harvest generally decreased in South Alaska Peninsula waters (Table 3). Many bays have small harvestable quantities of herring but the cost of having fishing vessels, tenders, and airplanes available to harvest each section's small guideline harvest level (GHL) has discouraged fishermen. Since 1997, no herring have been harvested in South Alaska Peninsula waters primarily because of a lack of industry participation.

Aleutian Islands

The Aleutian Islands herring food and bait season is established in regulation (5 AAC 27.655) and extends annually from June 24 through February 28. Fishing time is established by emergency order and is based on inseason evaluation of the observed biomass, effort levels, and harvest (Table 5).

Dutch Harbor Area

Commercial herring fishing has been restricted to the waters near Unalaska and Akutan Islands during recent years (Figure 9). ADF&G has implemented these area restrictions 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 (Jackson 2006b), 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 6). 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. Purse seine gear accounted for the bulk of the harvest. There was no commercial herring harvests from 1946-1980.

From 1981 to 1986 and 1990 to 2000 only purse seine gear was used and harvests ranged from 820 to 3,578 tons (Tables 5 and 6). During the 1987 and 1988 seasons, one gillnet permit holder harvested herring and in 1989 two gillnet permit holders recorded landings. In 2001, the BOF adopted a regulation that allocated seven percent of the total Dutch Harbor GHL to the gillnet fleet and six to 13 vessels participated in the fishery from 2001 to 2003 (Table 7 and 8). In 2004, the gillnet harvest allocation was increased to 14 percent and the CFEC registered 25 gillnet permit holders. Originally, gillnets could not exceed 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 fishermen who participated in the Dutch Harbor gillnet fleet have obtained permits for the use of larger mesh size. In 2004, this regulation was changed to allow mesh sizes up to 3 1/2 inch without a special permit (ADF&G 2005).

From 1994 to 1996, purse seine fishing occurred at night with the fleet using scanning sonar to locate herring schools. Fishers would conduct organized sonar searches over fairly large areas to find herring concentrations. In 1992, 1993, and 1997 to 2006, the purse seine fleet fished 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 a low of one in 2004. Historical harvest locations have extended approximately 90 miles, from Tigalda Island to Makushin Bay on Unalaska Island (Figure 7). 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 12:00 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. In 2003, seven of 23 gillnet deliveries had quality concerns and 19 percent of the total gillnet harvest was not purchased because of spoilage. This total was largely influenced by one large delivery, which accounted for 76 percent 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 characterized by 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 around July 1 and have been present through mid-September.

Prior to 1991, permit holders were paid between \$112 to \$300 per ton. From 1991 to 1998, permit holders were paid \$300 per ton (Table 6). In 1999, a high demand for bait herring in long line and pot fisheries resulted in permit holders receiving \$400 per ton on the grounds and up to \$600 per ton for herring delivered to the dock. In 2000 and 2001, exvessel prices were between \$300 and \$500 per ton. In 2002 they were paid between \$300-\$450 per ton. 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. In 2004, permit holders received between \$100-\$300 per ton. In 2005 and 2006, permit holders received between \$100 to \$500 per ton.

In 2004, the BOF established an experimental herring seine pound fishery with an allocation of 100 tons in the Alaska Peninsula-Aleutian Islands Management Area, that would be reserved from the purse seine allocation (5 AAC 27.655 (c)). In the pound fishery, seine-caught herring are transferred to a holding pound and retained for several days for gut clearance. The rationale for this was to minimize belly burn and achieve a high quality product suitable for food markets.

Adak Area

An Adak Island area herring fishery was created by the BOF in 2004 (5AAC 27.657; Figure 8). This fishery was allocated 500 tons, which could be harvested, by gillnet, in either a sac roe or food and bait fishery. ADF&G has limited 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 guide managers in developing harvest strategies by which fisheries are conducted (Jackson 2006b).

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 open seasons, there were no harvest restrictions. From 1983 to 1985, ADF&G implemented an annual harvest ceiling of 3,527 tons per year due to biological concerns of over exploiting Eastern Bering Sea spawning stocks above the 20 percent exploitation rate, specifically the Bristol Bay,

Nelson Island, and Port Moller stocks. Scale pattern analysis (SPA) studies identified that most herring harvested during the Aleutian Islands herring food and bait fishery are part of the Eastern Bering Sea herring stock biomass (Rogers and Schnepf 1985). In 1986, ADF&G reduced the Dutch Harbor fishery harvest allocation by 30 percent to 2,453 tons in response to the BOF concern for the possible lack of recruitment in the contributing stocks (primarily Togiak, which is 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 (Jackson 2006a). To ensure conservation of herring stocks, the BOF adopted a regulation requiring that the maximum exploitation of a herring stock should not exceed 20 percent 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 percent 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 seven percent of the Togiak District's harvestable biomass after deducting 1,500 tons for the Togiak District spawn-on-kelp fishery.

In 2001, the BOF adopted a regulation that allocated seven percent of the total Dutch Harbor food and bait allocation to gillnet gear (5 AAC 27.655). 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 or 24 tons over the 110 ton allocation. The seine fleet harvest was 2,617 tons, 1,149 tons over the 1,468 ton allocation. The BOF temporarily suspended the penalty provision for the 2003 season in response to an emergency petition by the Western Gulf of Alaska Fishermen. This resulted in the 2003 GHL (1,662 tons) being allocated seven percent (116 tons) for gillnet gear and 93 percent (1,546 tons) for seine gear. 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 combine fishery, if more than 10 permit holders registered to fish. In 2003 and 2004, fishing combines were formed in both the seine and gillnet fleets and processors indicated their markets were less than the total allowable herring GHL. Processors advised skippers that were fishing for the combines how much herring they wished to purchase daily and the department adjusted the pace of the fishery accordingly.

North and South Peninsula Sac Roe Guideline Harvest Levels

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

Prior to 2000, South Alaska Peninsula and Aleutian Islands waters were opened by emergency order with individual sections assigned GHGs based on recent-year biomass estimates or set at 10-25 tons with the potential of additional harvest if warranted by ADF&G surveys (Witteveen

et al. 1999). During 2000, South Alaska Peninsula and Aleutian Islands waters remained closed to commercial herring fishing in order to prevent over harvest of individual spawning stocks. Since 2001, the department has considered allowing harvest from individual stocks, if warranted, based on in season observed biomass.

2004 FISHERY

NORTH ALASKA PENINSULA SAC ROE

In 2004, ADF&G conducted three aerial surveys for herring in North Alaska Peninsula coastal waters from June 2 through June 10 (Table 9). Due to the timing of these surveys, the herring had moved through the area and subsequently were not observed. Due to the lack of industry interest no fishing occurred in 2004.

SOUTH ALASKA PENINSULA SAC ROE

In 2004, herring fisheries did not occur in South Alaska Peninsula waters due to of a lack of industry interest. ADF&G conducted aerial surveys in the South Alaska Peninsula in 2004 and documented 927 short tons of herring between Beaver Bay and Stepovak Bay (Table 10).

ALEUTIAN ISLANDS FOOD AND BAIT FISHERY

Allocation

Based on the 2004 forecasted Togiak District herring biomass of 143,124 tons, the 2004 Dutch Harbor herring food and bait allocation was 1,899 tons. The Dutch Harbor herring allocation was divided by gear type to allow a harvest of 14 percent (266 tons) for gillnet gear and 86 percent (1,533 tons) for seine gear (Table 8). In addition, 100 tons were allocated, from the seine allocation, to a seine pound fishery.

Gillnet Fleet

The 2004 Dutch Harbor herring commercial gillnet fleet fished from July 1 through July 13, with 12 gillnet permit holders (using seven of the nine registered vessels) and two processors participating. At 8:00 a.m. 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. Daily six-hour fishing periods were allowed in the Unalaska Bay Section from July 1-13. Gillnet permit holders agreed to limit the number of boats fishing and limit daily harvest to avoid exceeding processing capacity. Daily harvests ranged between three and 35 tons and averaged approximately 20 tons. Thirty-seven deliveries were made and the total harvest in the gillnet fleet was 216 tons of the 266 ton allocation (Table 8). All herring were harvested within Unalaska Bay. All vessels delivered to the participating processors for an exvessel price of \$300 per ton, and a total exvessel value of approximately \$65,000 (Table 7).

Purse Seine Fleet

A preseason meeting with fishermen, processors, and other interested parties was held on July 14 to discuss the ADF&G management strategy, exchange information, and register vessels, tenders.

Three purse seine fishermen, two representatives of processing companies, one tender operator and one spotter aircraft pilot attended the meeting. Two processing companies formed a combine and a total of 16 registered permit holders used only one purse seine vessel to harvest all the herring the processors requested. Two additional permit holders registered in association with

separate markets, for a total purse seine fleet participation of three purse seine vessels and four processors.

The fishery occurred entirely within Unalaska Bay. At the preseason meeting, the first 24-hour fishing period was announced to begin at 12:00 noon on Thursday, July 15. This period was extended seven times in 24 hour increments until 12:00 noon, July 23. Two vessels harvested 1,030 tons of herring from July 15-23. This was 503 tons below the allocation. On July 26 a new market developed and a 4-hour fishing period was allowed from 12:00 noon until 4:00 p.m. Further fishing periods were allowed on July 27, 28, 29, 30 and August 2. These periods were seven to eight hours in length. One seine vessel and one buyer participated in the fishery after July 23. ADF&G did not allow further fishing periods after August 31, because management staff in Dutch Harbor was not available to monitor the herring fishery. In all, the total seine harvest was 1,035 tons, 498 tons below the allocation (Table 9). The exvessel prices ranged from \$100 to \$500 per ton and total exvessel value from the purse seine fleet was approximately \$309,000 (Table 6).

Purse Seine Pound Fishery

One permit holder operated a purse seine pound. Two square pounds of 40 feet in length 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 six tons of live herring were put into a pound and later processed. No significant dead loss was reported.

Adak Gillnet Fleet

In 2004, the BOF established an experimental herring fishery, with an allocation of 500 tons, in the Adak District of the Alaska Peninsula-Aleutian Islands Management Area. 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.

2005 FISHERY

NORTH ALASKA PENINSULA SAC ROE

In 2005, a commercial herring sac roe fishery occurred in three commercial herring fishing districts in North Alaska Peninsula waters: Port Heiden, Port Moller, and Amak districts (Figures 3 and 4). Purse seine and gillnet gear are permitted in North Alaska Peninsula waters and both gear types share common time and open areas. ADF&G normally provides a minimum of six hours advance notice prior to commercial fishing periods in the Port Moller and Port Heiden districts.

The GHF for the Port Moller District was determined preseason and later adjusted based on ADF&G and industry aerial surveys. The observed herring biomass was determined to be 5,201 tons (Table 9). This was well above the minimum herring biomass threshold of 1,000 tons needed prior to the department opening the commercial fishery.

With limited processor interest and only two tenders, processing companies formed a combine and a total of seven permit holders used four seine vessels to harvest the herring. At 5:00 p.m. on May 10, the department opened the Port Moller District to commercial herring fishing by seine gear for 48 hours. Four seine vessels in Port Moller Bight harvested a total of 351 tons of herring (Table 4). The exvessel price was \$300 per ton and the total value of the 2005 sac roe fishery was estimated at \$105,300.

SOUTH ALASKA PENINSULA SAC ROE

In 2005, herring fisheries did not occur in South Alaska Peninsula waters because of a lack of industry interest.

On May 23, 2005 ADF&G conducted an aerial survey in South Alaska Peninsula coastal waters from Granville in Stepovak Bay to Lefthand in Balboa Bay. The total estimated biomass was 133 tons. On May 24 an aerial survey was conducted in waters of the Shumagin Islands. During this survey, a total of 8 tons of herring were observed (Table 10).

ALEUTIAN ISLANDS FOOD AND BAIT FISHERY

Dutch Harbor Food and Bait Allocation

The 2005 Dutch Harbor herring food and bait allocation of 1,365 tons was based on the 2005 estimated preseason Togiak District herring biomass of 105,029 tons (Table 5). The Dutch Harbor herring allocation was divided by gear type to allow a harvest of 14 percent (191 tons) for gillnet gear and 86 percent (1,174 tons) for seine gear (Table 8). From the seine allocation, 100 tons was reserved for a seine pound fishery.

Gillnet Fleet

In 2005, the Dutch Harbor herring commercial gillnet fleet fished from July 1 through July 25, with 12 gillnet permit holders and two processors participating. At 8:00 a.m. on July 1, the Unalaska Bay opened to commercial herring fishing by gillnet gear for six hours. The fishery opened again for six hours on July 5. The fishery had three 12 hour openings on July 7, July 10, and July 12. Daily, from July 15 through July 17, fishing was allowed in the Unalaska Bay Section. On July 17, the department opened Kalekta Bay in the Unalaska District to gillnet gear. On July 18, ADF&G opened the Akutan District west of the longitude of Billings Head to gillnet gear. Between July 18 and July 25, the Unalaska and Akutan districts were opened to commercial herring fishing with gillnet gear. No herring were harvested with gillnet gear in the 2005 Aleutian Islands herring food and bait fishery. The herring in Unalaska Bay seemed to be in relatively small schools and either very deep or very shallow, so that gillnet and seine fishers spent much time searching for schools and no successful gillnet sets were made.

Purse Seine Fleet

A preseason meeting with fishermen, processors, and other interested parties was held on July 14 to discuss the ADF&G management strategy, exchange information, and register vessels, tenders, and processors for the purse seine fleet. Three representatives from the processing companies attended the meeting. However, no tender operators, seine fishermen, or spotter pilots attended. Three processing companies formed a combine and a total of 11 permit holders used three purse seine vessels to harvest herring. One additional permit holder registered with the department in association with a separate market, for a total purse seine fleet participation of four purse seine vessels and four processors. On July 15, the department conducted one aerial survey to assess herring biomass in the Dutch Harbor area. With poor visibility, no herring were sighted in the Unalaska District during this survey.

The 2005 Aleutian Islands food and bait seine fleet fished within the Unalaska and Akutan districts (Figures 7 and 9). At the preseason meeting the first 8-hour fishing period was announced to begin at 12:00 noon on July 15. This period was extended for four hours until MIDNIGHT, July 15. One vessel harvested 166 tons of herring in Unalaska Bay. On July 16, a 12-hour fishing period was announced from 12:00 noon until MIDNIGHT and then extended another

half hour. No herring were harvested during this opening. On July 17, a 24-hour fishing period was announced from 10:00 a.m. until 10:00 a.m. on July 18. No herring were harvested during this opening. With a large portion of the allowable harvest remaining, ADF&G also opened Kalekta Bay in the Unalaska District for 16 hours from 6:00 p.m. on July 17, until 10:00 a.m. on July 18. Again no herring were harvested. The department then opened up the Akutan District, west of Billings Head on the evening of July 18. For several consecutive 24-hour openings, Unalaska Bay, Kalekta Bay, and the Akutan District west of Billings Head, were open to commercial herring seine fishing from July 18-23. During these openings, 139 tons of herring were harvested in Kalekta Bay in the Unalaska District, and 849 tons were harvested in the Akutan District, for a total of 1,154 tons (Table 8). The department did not allow further fishing periods after July 25, because management staff in Dutch Harbor were unavailable to monitor the herring fishery. Approximately 98 percent of the purse seine allocation was harvested in 2005. Exvessel prices ranged between \$100 to \$300 per ton and the total exvessel value of the 2005 purse seine fleet was an estimated \$370,000 (Table 6). Processors purchased all the herring as bait.

Pound Fishery

One permit holder registered to operate a pound in 2005. One pound was moored in the South Channel between Iliuliuk Harbor and Captains Bay. Fishing operations occurred during the purse seine fishing periods. Due to the low abundance of herring in Unalaska Bay, no live herring were put into the pound.

Adak Gillnet Fleet

Due to lack of industry interest, no herring were harvested in the 2005 Adak gillnet fleet.

2006 FISHERY

NORTH ALASKA PENINSULA SAC ROE

On May 26 and 28, 2006 the department conducted aerial surveys in North Alaska Peninsula coastal waters from Herendeen Bay to Port Heiden and the estimated biomass was 6,235 tons (Table 9). However, due to the lack of industry interest no fishing periods occurred.

SOUTH ALASKA PENINSULA SAC ROE

In 2006, herring fisheries did not occur in South Alaska Peninsula waters due to the lack of industry interest. Due to the lack of industry interest no fishing periods have occurred in these areas since 1998. In 2006, the department did not conduct aerial surveys in South Alaska Peninsula coastal waters due to inclement weather (Table 10).

ALEUTIAN ISLANDS FOOD AND BAIT FISHERY

Dutch Harbor Food and Bait Allocation

Based on the 2006 estimated Togiak District herring biomass of 129,976 tons, the 2006 Dutch Harbor herring food and bait allocation was 1,715 tons (Table 5; Appendix A1). The Dutch Harbor herring allocation was divided by gear type to allow a 240 ton GH (14 percent) to gillnet gear and a 1,475 ton GH (86 percent) to seine gear. One hundred tons of the seine allocation was reserved for a seine pound fishery.

Gillnet Fleet

In 2006, the Dutch Harbor herring commercial gillnet fleet fished from July 1 through July 29, with two gillnet permit holders and two processors participating. There were 18 gillnet fishing periods between July 1 and July 30. Between July 1 and July 14 commercial herring fishery was open to gillnet gear for three 48-hour periods in the Unalaska District. At 12:00 noon on July 15, the department opened the Akutan District west of the longitude of Billings Head, the Unalaska Bay and Kalekta Bays (Figure 9) to commercial herring fishing by gillnet gear for 24 hours. The department extended the fishery for an additional 336 hours over the next 14 days. A total of two deliveries for 1 ton was harvested in this fishery (Table 8).

Purse Seine Fleet

A preseason meeting with fishermen, processors, and other interested parties was scheduled on July 14 to discuss management strategies, exchange information, and register vessels, tenders, and processors for the purse seine fleet. Representatives from two processors and several fishermen attended the meeting. Two processing companies formed a combine and a total of 11 CFEC registered permit holders used two registered purse seine vessels to harvest herring.

At 12:00 noon on July 15, the ADF&G opened the Akutan District west of the longitude of Billings Head, and in the Unalaska Bay Section and Kalekta bays to commercial herring fishing by seine gear for 24 hours (Figure 9). The ADF&G extended the fishery for an additional 336 hours over the next 14 days. Of the total 952 tons of herring harvested, 636 tons (66.7 percent) were caught in the Unalaska District while 317 (33.2 percent) tons were harvested in the Akutan District.

After July 30, due to low interest in herring, the department did not have any further fishing periods. The exvessel value ranged from \$100 to \$500 per ton with the total purse seine harvest estimated at \$384,00 (Table 6). Processors purchased most of the herring as bait with only a limited quantity going to the food fishery.

Pound Fishery

One permit holder registered to operate a purse seine pound. One pound was moored in the South Channel between Iliuliuk Harbor and Captains Bay. Fishing operations occurred during the purse seine fishing periods. Due to the low abundance of herring in Unalaska Bay, no live herring were put into the pound.

Adak Gillnet Fleet

In 2006, no CFEC permit holders or processors registered for this fishery.

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TABLES AND FIGURES

Table 1.-Alaska Peninsula herring sac roe fishery harvest, number of landings and permits fished by year, all gear combined, 1980-2006.

Year	North Peninsula			South Peninsula			Total		
	Permits	Landings	Tons	Permits	Landings	Tons	Permits	Landings	Tons
1980			No Harvest	6	15	454	6	15	454
1981			No Harvest	56	93	798	56	93	798
1982	^a	^a	^a	4	13	176	^a	^a	^a
1983	23	47	627	0	0	0	23	47	627
1984	11	20	431	5	20	210	15	40	641
1985	17	31	710	5	8	288	20	39	998
1986	50	116	894	6	14	282	51	130	1,176
1987	27	46	514	^a	8	319	27	54	833
1988	9	21	294	10	22	377	19	43	671
1989	10	24	729	13	31	310	19	55	1,039
1990	5	23	273	6	31	312	9	54	585
1991	11	59	1,313	10	26	157	18	85	1,470
1992	24	100	3,969	7	11	180	29	111	4,149
1993	16	44	536	^a	^a	^a	^a	^a	^a
1994	5	7	90	^a	^a	^a	^a	^a	^a
1995	12	37	337	^a	^a	^a	^a	^a	^a
1996	3	9	96	4	8	117	5	17	213
1997	0	0	0	0	0	0	0	0	0
1998	3	5	68	0	0	0	3	5	68
1999	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0
2005	4	12	351	0	0	0	4	12	351
2006	0	0	0	0	0	0	0	0	0
Averages									
1996-2005	1	3	51	0	1	12	1	3	63
2001-2005	1	2	70	0	0	0	1	2	70
2004-2006	1	4	117	0	0	0	1	4	117

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

Table 2.-South Peninsula commercial herring sac roe fishery harvest by geographic area, 1979-2006.

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	10	0	0	0	10
1980	196	132	114	12	0	0	0	0	0	454
1981	129	36	263	168	65	16	122	0	0	798
1982	0	5	0	171	0	0	0	0	0	176
1983 ^b	0	0	0	0	0	0	0	0	0	0
1984	29	25	0	156	0	0	0	0	0	210
1985	11	0	38	239	0	0	0	0	0	288
1986	0	0	61	141	13	8	59	0	0	282
1987	0	0	92	118	0	38	60	12	0	319
1988	0	11	69	237	17	12	31	0	0	377
1989	39	18	53	148	0	0	9	5	39	310
1990	72	21	0	120	0	3	6	0	90	312
1991	19	19	0	78	0	0	0	0	41	158
1992	0	0	0	180	0	0	0	0	0	180
1993	5	0	0	92	0	0	0	0	0	97
1994	0	0	0	8	0	0	0	0	0	8
1995	0	10	0	53	0	0	0	0	0	63
1996	21	4	0	77	0	0	0	0	16	117
1997	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0
Averages										
1996-2005	2	0	0	8	0	0	0	0	2	12
2001-2005	0	0	0	0	0	0	0	0	0	0
2004-2006	0	0	0	0	0	0	0	0	0	0

^a The 1984-88 catches came from Ramsey Bay, the 1989 and 1993 catch came from Granville Bay.^b In 1983 the South Alaska Peninsula sac roe fishery was closed, all herring catches were allocated to a food and bait fishery that did not develop.

Table 3.-Alaska Peninsula Area commercial herring sac roe fishery harvest by time period, 1979-2006.

Year	North Peninsula		South Peninsula		Total Harvest
	Harvest (Tons)	Harvest Time Period	Harvest (Tons)	Harvest Time Period	
1979	0	No Fishery	10	July 4- July 4	10
1980	0	No Fishery	454	May 18-July 14	454
1981	0	No Fishery	798	May 9-June 23	798
1982	^a	May 31-June 12	176	May 31-June 14	644
1983	627	May 9-May 29	0	No Fishery	627
1984	431	May 24-June 8	210	May 13-June 1	641
1985	710	May 24-June 4	288	June 1-June 11	998
1986	894	May 18-May 30	282	June 7-June 14	1,176
1987	514	May 9-June 5	319	June 8-June 19	833
1988	294	May 17-June 15	377	May 31-June 20	671
1989	729	May 28-June 23	310	May 13-June 19	1,039
1990	273	June 4-June 19	312	May 14-June 14	585
1991	1,313	May 17-July 4	157	May 16-June 11	1,470
1992	3,969	May 23-June 17	180	June 4-June 7	4,149
1993	536	May 8-June 9	^a	May 27-June 9	633
1994	90	May 21-June 7	^a	June 2-June 3	98
1995	337	May 29-June 20	^a	June 6-June 17	400
1996	96	May 21-June 7	117	May 10-June 27	213
1997	0	May 29-June 20	0	No Fishery	0
1998	68	June 12-June 18	0	No Fishery	96
1999	0	No Fishery	0	No Fishery	0
2000	0	No Fishery	0	^b	0
2001	0	No Fishery	0	No Fishery	0
2002	0	No Fishery	0	No Fishery	0
2003	0	No Fishery	0	No Fishery	0
2004	0	No Fishery	0	No Fishery	0
2005	351	May 11-May 12	0	No Fishery	351
2006	0	No Fishery	0	No Fishery	0
Averages					
1996-2005	52		12		67
2001-2005	70		0		70
2004-2006	117		0		117

^a This information cannot be released due to confidentiality requirements.^b The South Alaska Peninsula exploratory herring sac roe fishery was closed during the 2000 season.

Table 4.-North Alaska Peninsula commercial herring sac roe fishery harvest by section, 1982-2006.

Year	Port Moller District				Port Heiden	Total
	Deer Island Mud Bay Section	Herendeen Bay Section	Port Moller Bay Section	Bear River Bering Sea Coast	District 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	74	22	0	0	96
1997	0	0	0	0	0	0
1998	0	0	31	37	0	68
1999	0	0	0	0	0	0
2000	0	0	0	0	0	0
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	351	0	0	0	0	351
2006	0	0	0	0	0	0
Averages						
1996-2005	35	7	5	4	0	51
2001-2005	70	0	0	0	0	70
2004-2006	117	0	0	0	0	117

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

Table 5.-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, 1981-2006.

Year	Landing Date		Days Fished	Preseason Togiak Spawning Biomass	GHLs Short Tons	Food & Bait Harvest	Number Vessels Fishing
	First	Last		Short Tons		Short 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	1,467 ^d	19 ^e
2004	Jul 1	Aug 2	26	143,124	1,899	1,261 ^d	10 ^f
2005	Jul 1	Aug 26	11	105,029	1,365	1,154 ^d	5 ^g
2006	Jul 1	Aug 30	15	129,976	1,715	954 ^d	3 ^h
Averages							
1996-2005			8	128,312	1,691	1,867	20
2001-2005			14	122,876	1,615	1,614	16
2004-2006			17	126,043	1,660	1,123	6

^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 fleet was established.

^d Includes both gillnet and seine harvest.

^e In 2003 the seine fleet was a combine.

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

^g In 2005, the gillnet fleet 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 fleet harvested only 1 ton of herring, and seine permit holders formed a combine and used 2 seine vessels, 1 CFEC seine permit holder did not join the combine fishery.

Table 6.-Aleutian Islands Area Dutch Harbor herring food and bait fisheries historical summary for the purse seine fleet, 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	1,038	3 ^c	17	346 ^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	477 ^e	53	100-500	384	128 ^e

-continued-

Table 6.-Page 2 of 2.

Year	Harvest in Short Tons	No. Vessels Making Landings	Number Landings	Tons Per Boat	Tons Per Landing	Price Per Ton	Exvessel Value (Thousands)	Exvessel Value Per Vessel (Thousands)
1929-1938								
Average	1,474						Information not Available	
Averages								
1996-2005	1,812	15	28	173	89	100-500	590	55
2001-2006	1,504	8	14	255	116	100-500	467	78
2004-2006	1,049	3	14	402	93	100-500	354	118

^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.

^c A combine fishery of 13 permit holders used 1 vessel.

^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 in a combine fishery, 1 CFEC permit holder did not join the combine fishery.

Table 7.-Aleutian Islands Area Dutch Harbor herring food and bait fisheries historical summary for the gillnet fleet, 2001-2006.

Year	Harvest in Short Tons	No. Vessels		Tons Per Boat	Tons Per Landing	Price Per Ton	Exvessel	Exvessel Value
		Making Landings	Number Landings				Value (Thousands)	Per Vessel (Thousands)
2001	107	6	25	18	4	300-500	54	9
2002	134	13	37	10	4	400	54	4
2003	88	13	23	7	4	400	35 ^a	3
2004	216	7	37	31	6	300	65	9
2005	0	0	0	0	0	300	0	0
2006	1	2	2	1	1	^b	^b	^b
Averages								
2001-2005	109	8	24	13	4	350	41	5
2004-2006	72	3	13	11	2	367	22	3

^a Twenty of the 108 tons were not purchased due to spoilage.

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

Table 8.-Aleutian Islands Area Dutch Harbor herring food and bait fisheries allocations, commercial harvest, and effort by gear type, 2001-2006.

Year	Preseason Togiak Spawning			Gillnet Fleet					Seine Fleet				
	Biomass ^a	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
2005	105,029	1,365	1,154	191	0	9	0	11	1,174	1,154	12 ^d	7	9
2006	129,976	1,715	954	240	1	2	2	2	1,475	953	12 ^e	18	10
Averages													
2001-2005	122,876	1,615	1,618	159	113	11	24	11	1,437	1,503	14	14	6
2004-2006	126,043	1,660	1,122	232	72	8	13	9	1,394	1,047	13	14	11

^a Short tons.

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

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

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

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

Table 9.-North Alaska Peninsula estimated herring biomass based on aerial surveys (short tons), historical summary, 1984-2006.

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	0	0	0	3,500-3,900	May 9 -	July 31
1985	260	1,305	0	5,240	0	6,805	May 1 -	June 13
1986	1	28	0	0	0	29	May 16 -	June 7
1987	0	5,125	0	0	0	5,125	May 6 -	June 3
1988	1,737	442	0	8	0	2,187	May 17 -	June 15
1989	1,163	1,471	0	0	0	2,634	May 19 -	June 16
1990	155	387	0	0	0	542	May 21 -	June 14
1991	2,278 (250) ^a	4,651	0	1,471	0	8,400	May 17 -	June 26
1992	755	8,269	0	5,798	10,021	14,822	May 19 -	June 18
1993	775	2,878	0	33	0	3,686	May 4 -	June 9
1994	381	274	74	0	0	729	May 22 -	May 28
1995	60	477	200	0	0	737	May 13 -	June 2
1996	390 (390) ^a	986 (755) ^a	0	309	65	1,685	May 9 -	June 18
1997	160	45	0	0	0	205	May 22 -	June 12
1998	930	135	0	360 (200) ^a	0	1,425	May 11 -	June 3
1999	10	220	0	0	0	230	May 16 -	June 14
2000	115	350	0	0	0	465	May 15 -	May 28
2001	335	1,980	0	0	0	2,315	May 14 -	May 22
2002	85	255	0	0	0	340	May 15 -	May 28
2003	400	100	0	500	0	1,000	May 17 -	May 29
2004	0	0	0	0	0	0	June 2 -	June 10
2005	1,500 ^b	3,300	351	50	0	5,201	May 8-	May 24
2006	5,000	650	0	585	0	6,235	May 26-	May 28
Averages								
1996-2005	393	737	35	122	7	1,287		
2001-2005	464	1,127	70	110	0	1,771		
2004-2006	2,167	1,317	117	212	0	3,812		

^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.

^b Biomass estimates (tons) conducted by both commercial spotter pilots and ADF&G biologists.

Table 10.-South Alaska Peninsula estimated herring biomass based on aerial surveys (short tons), historical summary, 2001-2006.

Year	Aerial Survey in Short Tons					Total South Peninsula	Dates Surveyed
	Cold Bay	Pavlof Bay	Beaver/Balboa Bay	Stepovak Bay	Shumagin Is.		
2001	Not Surveyed	Not Surveyed	442	441	395	1,278	May 29 - May 30
2002	0	361	1,597	1,591	1,905	5,454	May 15 - June 11
2003	196	441	279	80	2,913	3,909	May 21 - June 05
2004	Not Surveyed	Not Surveyed	138	275	515	927	May 26 - June 05
2005	Not Surveyed	Not Surveyed	93	40	8	141	May 23 - May 24
2006	Not Surveyed	Not Surveyed	Not Surveyed	Not Surveyed	Not Surveyed	Not Surveyed	May 29 - May 30
Avergaes							
2001-2005	98	401	510	485	1,147	2,342	
2004-2006	0	0	115	158	261	534	

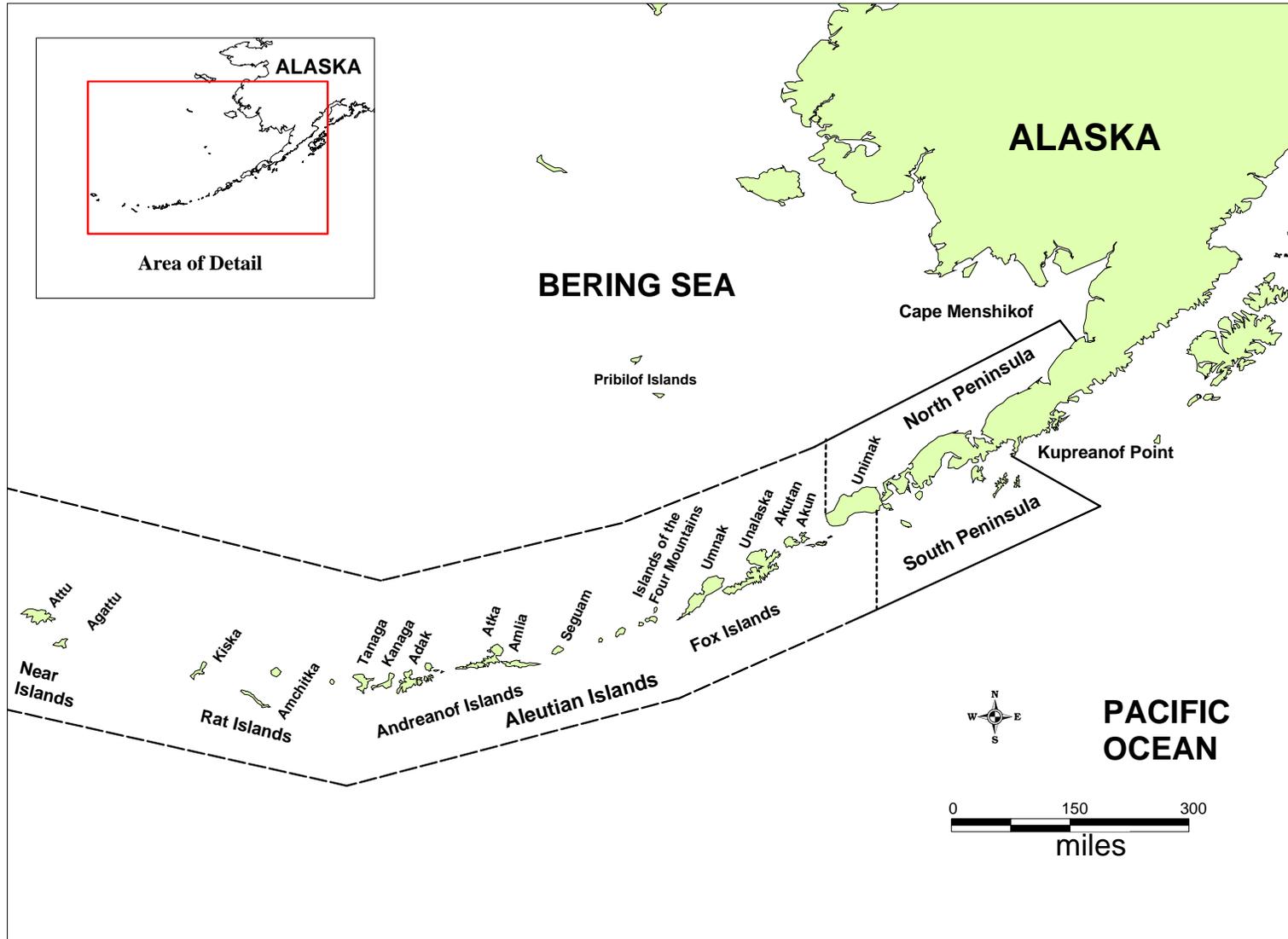


Figure 1.-Map of the Alaska Peninsula - Aleutian Islands Herring Management Area.

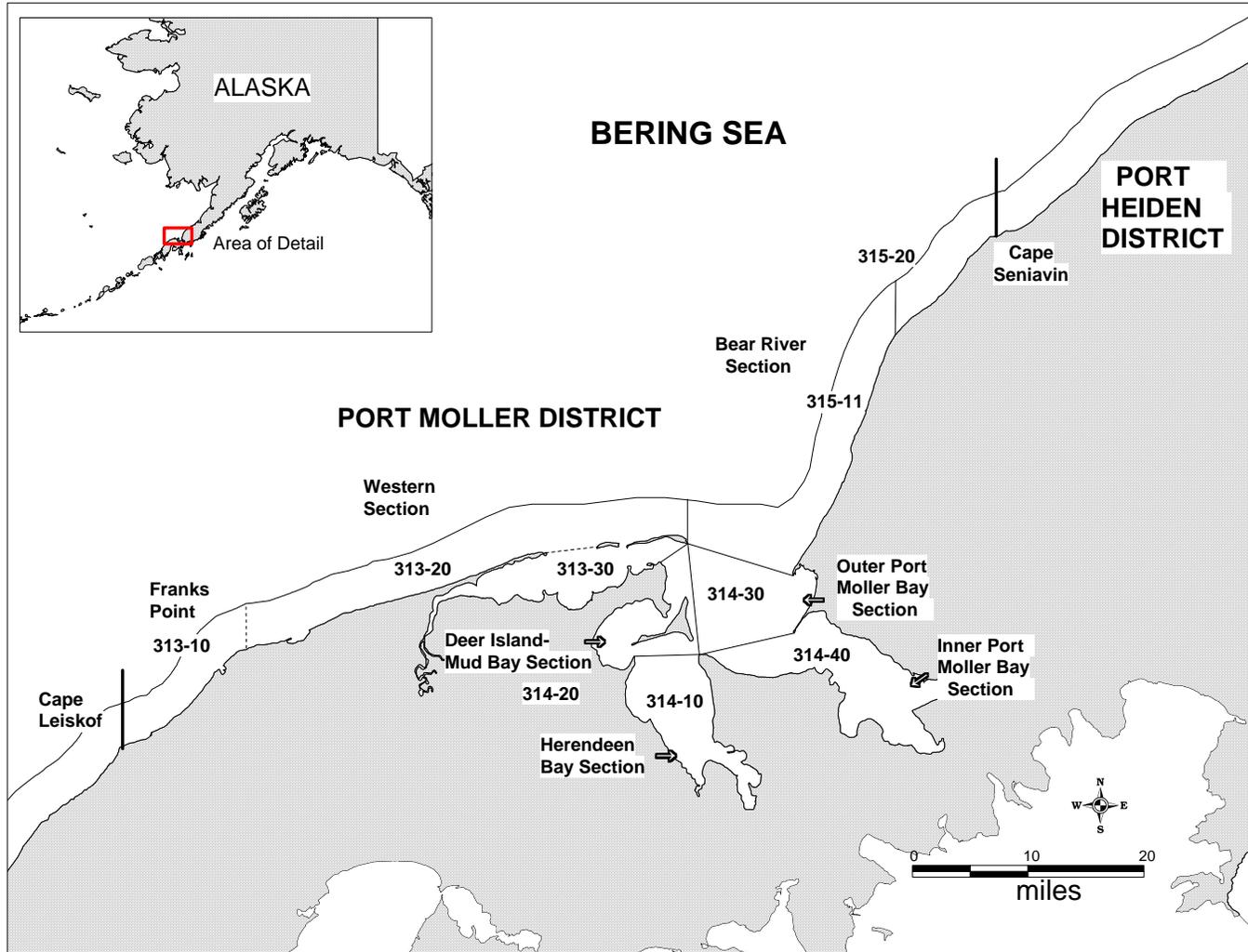


Figure 2.-Map of the Port Moller District with commercial herring fishing statistical areas shown.

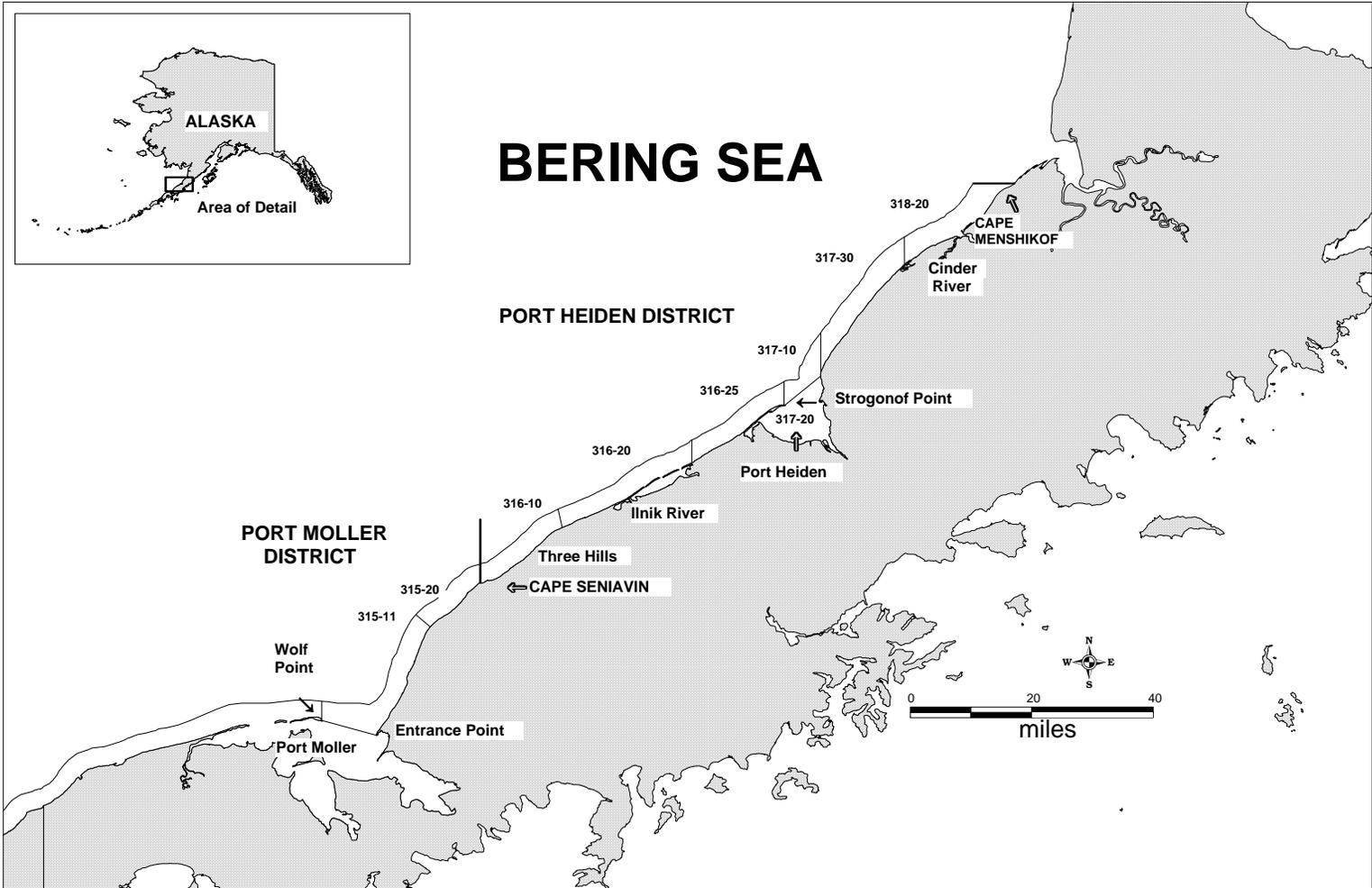


Figure 3.-Map of the Alaska Peninsula from Entrance Point to Cape Menshikof with commercial herring fishing statistical areas shown.

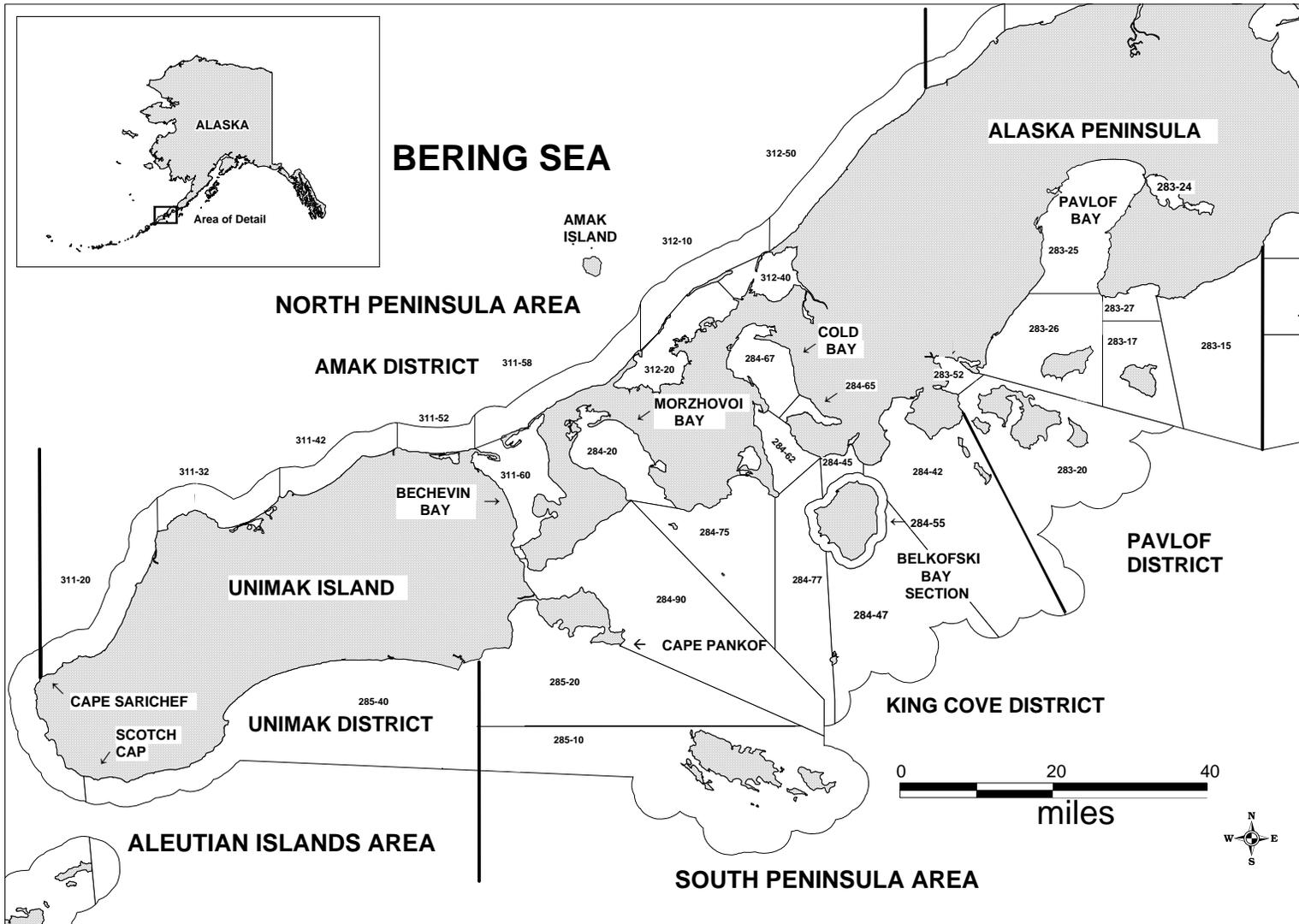


Figure 4.-Map of Alaska Peninsula from Cape Sarichef to Pavlof Bay with commercial herring fishing statistical areas shown.

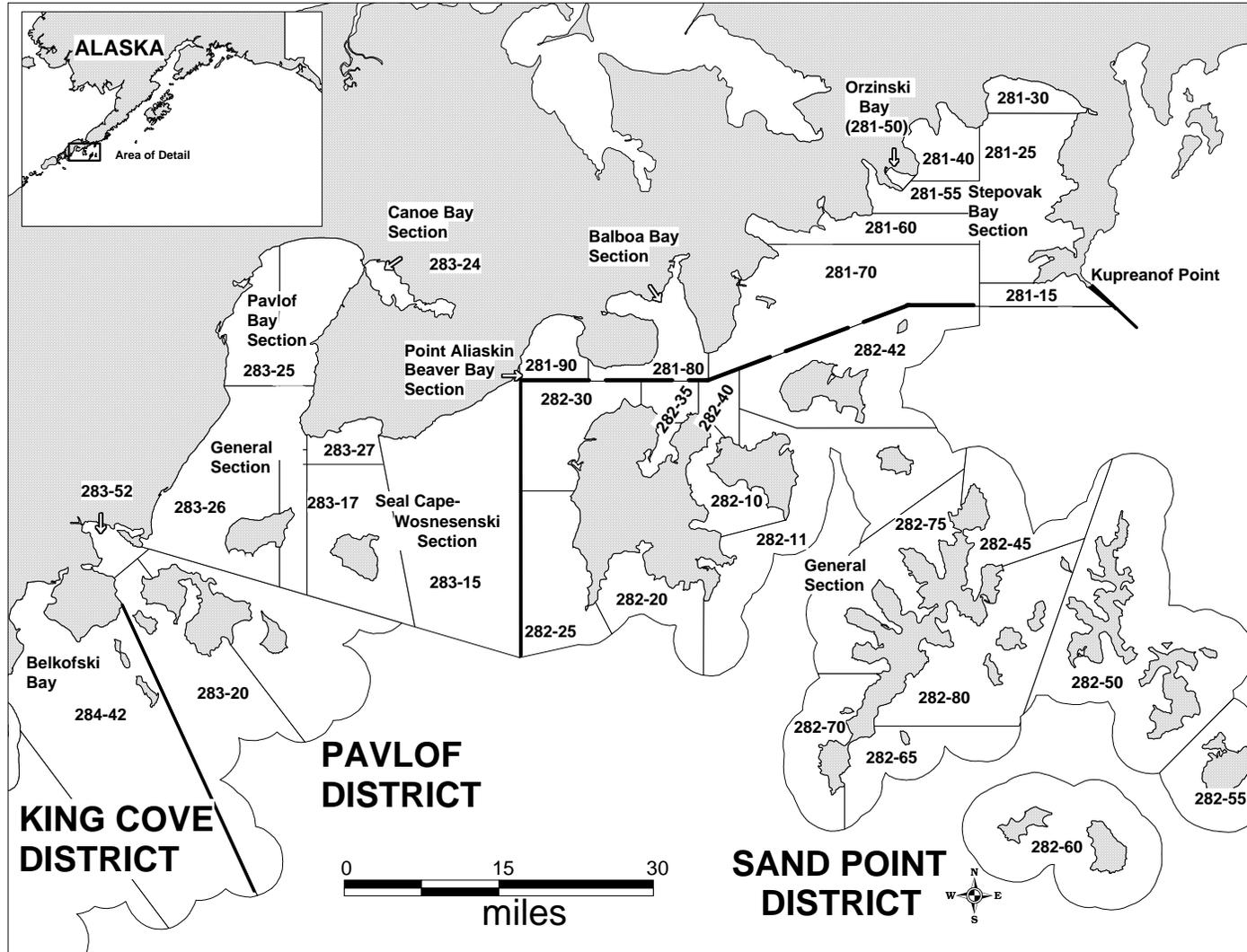


Figure 5.-Map of the South Alaska Peninsula from Belkofski Bay to Kupreanof Point with commercial herring fishing statistical areas shown.

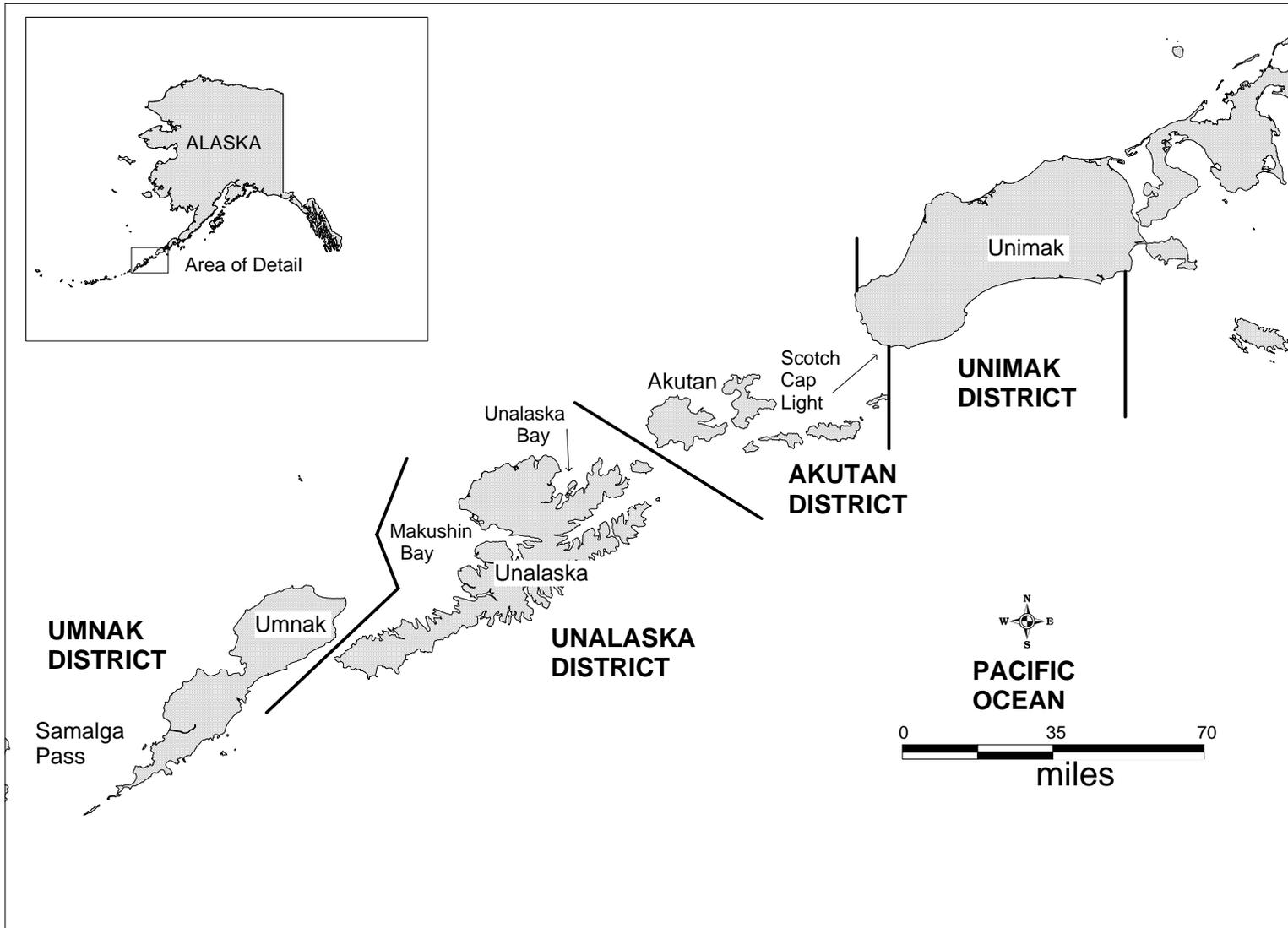


Figure 6.-Map of the eastern Aleutian Islands from Samalga Pass to Unimak Island with herring fishing districts shown.

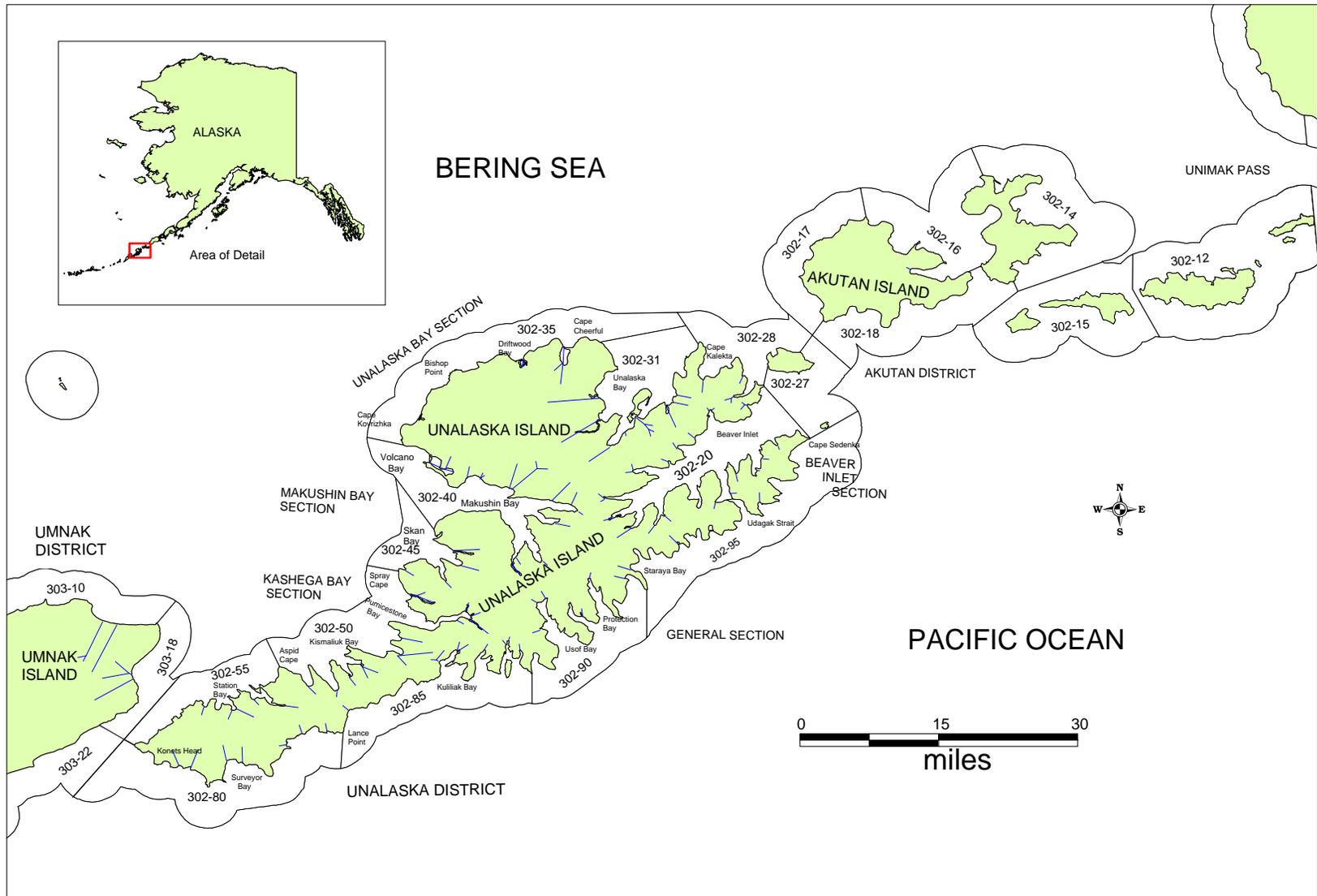


Figure 7.-Map of the eastern Aleutian Islands from Tigalda Island to Umnak Island with the statistical herring fishing areas shown.

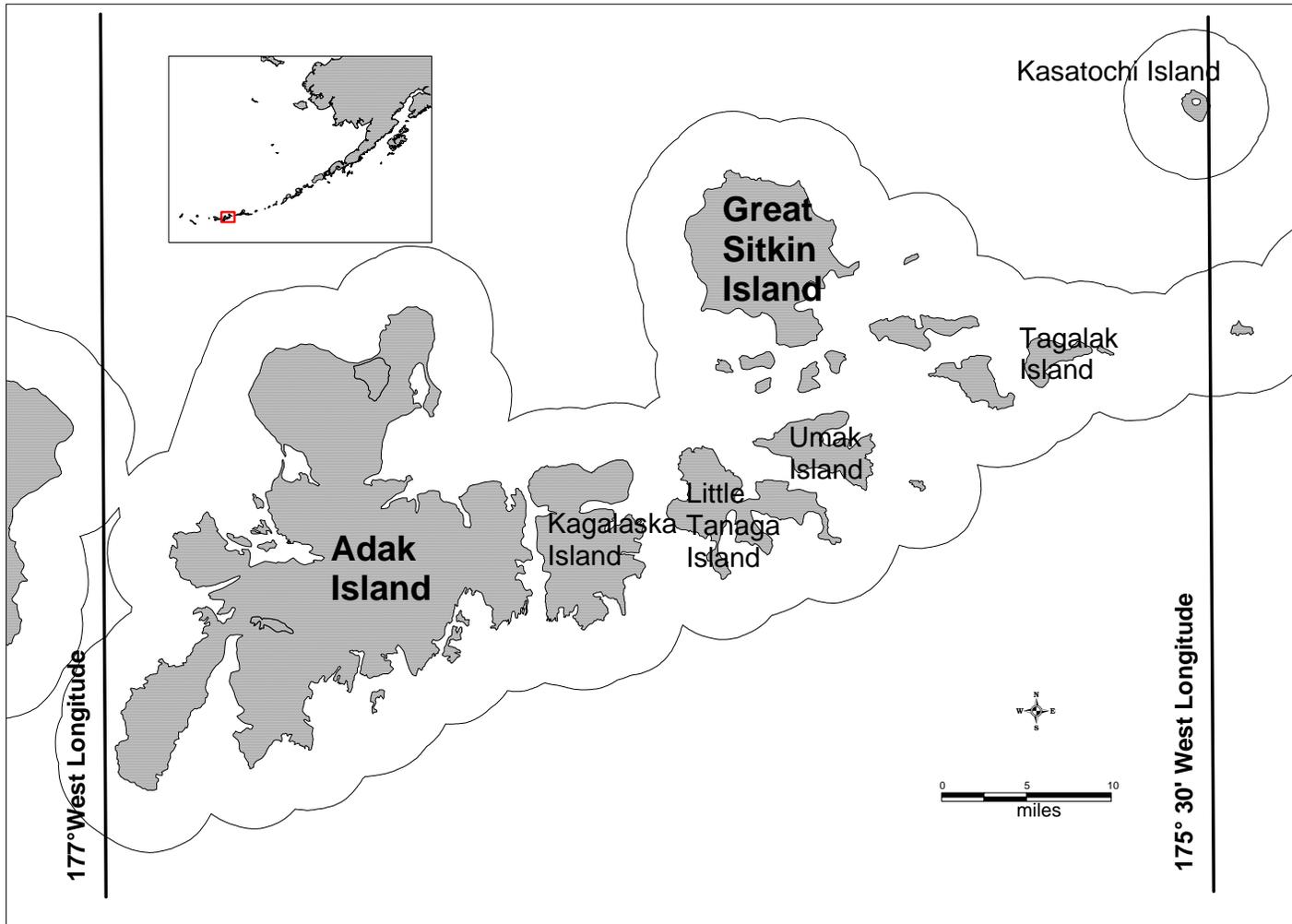


Figure 8.-Map of the Adak Island Area with boundaries of exploratory herring fishery defined.

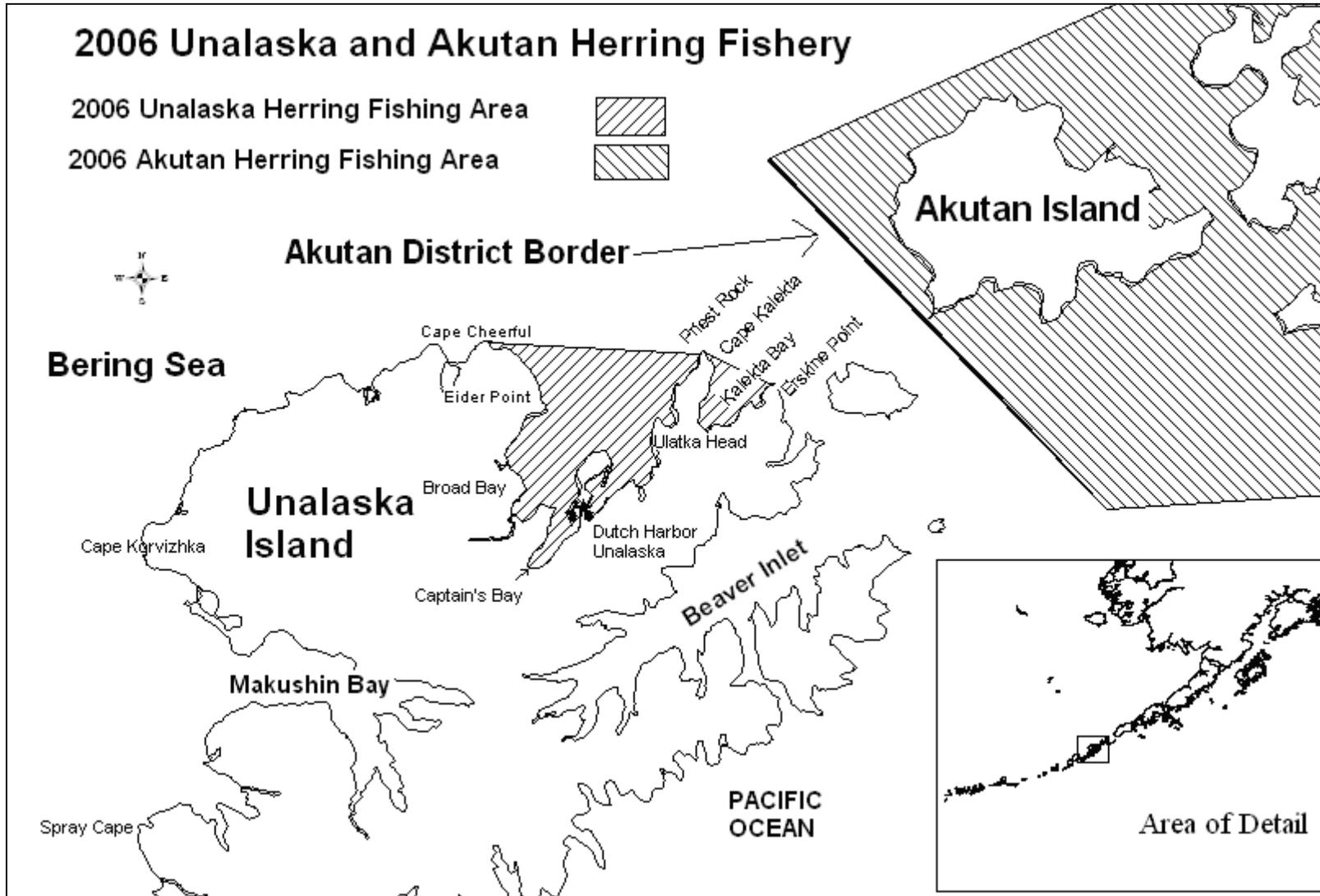


Figure 9.-Map of Akutan Island and Unalaska Island, with the 2006 commercial herring fishery open areas defined.

**APPENDIX A: ALEUTIAN ISLANDS AREA DUTCH HARBOR
HERRING FOOD AND BAIT FORECAST, 2006**

Appendix A1.-Aleutian Islands Area Dutch Harbor herring food and bait forecast, 2006.

The 2006 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 percent exploitation rate of the projected run biomass: (Frederick West, ADF&G, Anchorage, memo January 10, 2005).

Harvest Allocation of the 2006 Forecasted Pacific Herring Run Biomass, Togiak District, Bristol Bay

	Biomass (Short Tons)	Harvest (Short Tons)
2005 Forecasted Biomass	129,976	
Exploitation @ Maximum 20 percent For Total Allowable Harvest		25,995
Togiak Spawn-on-Kelp Fishery (Fixed Allocation)		1,500
Remaining Allowable Harvest		24,495
Dutch Harbor Food/Bait Allocation (7.0 percent of the remaining allocation)		1,715
Purse seine Allocation (86 percent)		1,475
Gillnet Allocation (14 percent)		240
Remaining Allowable Harvest for Togiak District Sac Roe Fishery		22,780
Purse Seine Allocation 70.0 percent		15,946
Gillnet Allocation 30.0 percent		6,834

**APPENDIX B. ALASKA PENINSULA HERRING SAC ROE FISHERY
FORECAST, 2006.**

Appendix B1.-Alaska Peninsula herring sac roe fishery forecast, 2006.

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 herring sac roe harvests, or the Port Heiden District.

The 2006 North Alaska Peninsula herring sac roe GHL is 0 to 150 tons. Considering historical herring biomass estimates in the North Alaska Peninsula waters, management of the North Alaska Peninsula herring sac roe fishery will again be conservative in 2006. Historically, the previous year's North Alaska Peninsula herring biomass estimate has been a poor indicator of herring returns in the following year. In 2006, the GHL will be adjusted inseason based on the observed stock size. 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	Sliding Scale	
(Short Tons)	Exploitation Rate	Harvest
Less than 1,000	0 percent	0
1,001-1,500	10 percent	100-150
1,501-1,999	10 percent	150-200
2,000-2,500	15 percent	300-375
2,501-3,000	15 percent	375-450
> 3,000	20 percent	> 450

At low biomass levels, a conservative approach will be taken to allow the local stocks to rebuild and to account for North Alaska Peninsula herring that may contribute to the Dutch Harbor food and bait fishery. Rowell et. al. (1990) estimated that up to 22 percent 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 Alaska 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. The Alaska Board of Fisheries has established a maximum exploitation rate of 20 percent of the spawning biomass of those stocks. The forecast does not include the Port Heiden District where commercial fishing occurred only during 1992.

Confidence in the North Alaska 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. Prior to 1996, aerial surveys were conducted but there was no threshold requirement.

The 2006 South Alaska Peninsula forecasted sac roe harvest is 0 tons, based on the belief that industry will not be interested in harvesting herring in South Alaska Peninsula waters in 2006. Two aerial surveys in 2005 resulted in an observed biomass estimate of 140 tons. No age class data were available in 2005, so it is unknown what age classes will dominate the 2006 stocks.