

# **Alaska Peninsula–Aleutian Islands Management Area Commercial Herring Fishery Management Strategy, 2020**

by

**Cassandra J. Whiteside**

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April 2020

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Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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***REGIONAL INFORMATION REPORT 4K20-06***

**ALASKA PENINSULA–ALEUTIAN ISLANDS MANAGEMENT AREA  
COMMERCIAL HERRING FISHERY MANAGEMENT STRATEGY, 2020**

by

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# ABSTRACT

A Pacific herring *Clupea pallasii* commercial sac roe fishery may occur in the Alaska Peninsula–Aleutian Islands Management Area (Area M) in 2020. This document is a guide for commercial herring harvesters, buyers, and tender operators and describes the management strategy, guideline harvest levels (GHLs), fishing industry requirements for participation, and provides Alaska Department of Fish and Game (ADF&G) contact information. Dates and times for possible commercial fishing periods will be established by emergency order and can be obtained from ADF&G.

The commercial food and bait fisheries for Pacific herring in the Alaska Peninsula–Aleutian Islands Management Area (Area M) can occur within the Unimak, Akutan, Unalaska, Umnak, and Adak districts. The Dutch Harbor food and bait herring fishery takes place from June 24 until February 28 and is allocated 7% of the Togiak sac roe herring total allowable harvest (minus the Togiak spawn-on-kelp fishery fixed allocation). The 2020 Dutch Harbor food and bait herring allocation is 2,917 tons with either purse seine or gillnet gear. The Adak food and bait herring fishery is allocated 500 tons that may be harvested from June 24 until February 28 with either purse seine or gillnet gear. This document describes how the fisheries will be managed, the industry requirements to participate in the fisheries, and how to contact and relay information to the Alaska Department of Fish and Game.

Key words: Pacific herring, *Clupea pallasii*, sac roe, Alaska Peninsula, Aleutian Islands, Alaska Peninsula–Aleutian Islands, Area M, North Peninsula, South Peninsula, Port Moller, Sand Point, management plan, Alaska Board of Fisheries, guideline harvest level, commercial food and bait fishery, Dutch Harbor herring fishery

# INTRODUCTION

This document provides commercial Pacific herring *Clupea pallasii* harvesters and buyers with guidelines that the Alaska Department of Fish and Game (ADF&G) will use to manage the Alaska Peninsula–Aleutian Islands Management Area (Area M) commercial herring sac roe and food and bait fisheries.

Area M (Figure 1; 5 AAC 27.600; ADF&G 2019) is divided into 3 herring management subareas: the North Alaska Peninsula, consisting of Bering Sea waters extending west from Cape Menshikof to Cape Sarichef (Figures 2–4); the South Alaska Peninsula, consisting of Pacific Ocean coastal waters extending west of Kupreanof Point to near Cape Lazaref, on the south side of Unimak Island, long 163°30'W (Figures 4 and 5); and the Aleutian Islands, consisting of Bering Sea waters extending west of Unimak Pass and Pacific Ocean waters extending west from a point near Cape Lazaref, on the south side of Unimak Island, long 163°30'W to the International Date Line (Figure 1 and Figures 6–8). The North Peninsula, South Peninsula, and Aleutian Islands fisheries will be managed independently of each other. Fishermen may only harvest food and bait herring in the Unimak, Akutan, Unalaska, Umnak, and Adak districts (Figures 6–8).

# PACIFIC HERRING SAC ROE FISHERY OVERVIEW

The North Alaska Peninsula sac roe herring fishery occurred annually from 1982 through 1996, and sporadically from 1998 through 2013 (Whiteside *In prep*). In 2014, 2015, and 2019, a commercial herring sac roe fishery did not occur in the waters of the North Alaska Peninsula due to lack of industry interest (Whiteside *In prep*). A commercial herring sac roe fishery did occur in 2016, 2017, and 2018 in the waters of the North Alaska Peninsula (Whiteside *In prep*).

The South Alaska Peninsula herring sac roe fishery occurred annually from 1979 through 1996, except in 1983 when the Alaska Board of Fisheries (BOF) allocated the herring harvest to a food and bait fishery. Since 1997, there has been little industry interest due to poor market conditions and no harvest has taken place (Whiteside *In prep*).

In 2004, the BOF established the *Alaska Peninsula-Aleutian Islands Herring Management Plan* (5 AAC 27.657). This plan sets a 500-ton herring guideline harvest level (GHL) in the Adak District for harvest as either sac roe or food and bait. In 2010, the BOF amended the plan to allow both purse seine and gillnet gear the ability to harvest the GHL. Season dates for the Adak sac roe fishery are from April 15 through June 24 (5 AAC 27.610(e)(1)). To date, no herring have been harvested in this fishery (Whiteside *In prep*).

## **PACIFIC HERRING FOOD AND BAIT FISHERY OVERVIEW**

There are 2 food and bait fisheries in Area M: the Dutch Harbor (Unimak, Akutan, Unalaska, and Umnak districts) and the Adak (Adak District) herring fisheries (Figure 1). In 2019, a food and bait fishery occurred in the Akutan District, with 4 vessels harvesting 1,805 tons of herring (Whiteside *In prep*).

In recent years, 3 management plans have been used to manage the Dutch Harbor herring fishery: (1) the *Bering Sea Herring Fishery Management Plan* (5 AAC 27.060) mandates that if any of the southwest Alaska herring stocks between Port Clarence and Togiak districts are below their minimum threshold, the Dutch Harbor food and bait fishery will be closed for the season; (2) the *Bristol Bay Herring Management Plan* (5 AAC 27.865) establishes a 7% allocation of the Togiak Districts sac roe herring harvest to the Dutch Harbor food and bait fishery; and (3) the *Dutch Harbor Food and Bait Herring Fishery Management Plan* (5 AAC 27.655) subtracts excess tonnage from the following year's allocation if the given year's fishery exceeds its current GHL. Additionally, the plan allows up to 100 tons of the allocation to be reserved for an experimental herring seine and pound fishery if a commissioner's permit is obtained.

At the March 2018 BOF meeting, the BOF made changes to the fishing seasons and periods for *Fishing seasons and periods for Alaska Peninsula-Aleutian Island Area* (5 AAC 27.610(e)(2)) and the *Dutch Harbor Food and Bait Herring Fishery Allocation Plan* (5 AAC 27.655). The opening date on June 24 for the food and bait gillnet fishery was unchanged. The date the purse seine fishery may open was changed from July 15 to July 1. The date at which the herring seine fishery may harvest any remaining herring gillnet allocation was changed from after July 20 to after July 5. After July 5, if the gillnet fishery has not harvested its allocation, the remaining allocation may be taken by either group. Additionally, if the seine group exceeds its allocation before July 5, then that amount shall be deducted from any remaining quota for that year after July 5. If the seine group exceeds the total allocation after July 5, then the seine group overage shall be deducted from the next years' seine allocation as stated in 5 AAC 27.655(b).

At the February 2019 BOF meeting, the BOF amended the *Dutch Harbor Food and Bait Herring Fishery Management Plan* (5 AAC 27.655) so that the season may open for purse seine and gillnet gear beginning on June 24. The BOF also amended this plan to remove the allocation of harvest between the purse seine and gillnet gear types. Both gear types may participate in harvesting herring until the total GHL is reached.

In 2004, the BOF created the *Alaska Peninsula-Aleutian Islands Herring Management Plan* (5 AAC 27.657), establishing a herring fishery in the Adak District (Figure 8) with a 500-ton allocation independent of the Dutch Harbor food and bait allocation. This plan was amended at the 2010 BOF meeting to allow both purse seine and gillnet gear to harvest the 500-ton Adak allocation. Season dates for the Adak food and bait fishery are June 24 through February 28 (5 AAC 27.610(e)(2)). Since the plan's inception in 2004, there has been no harvest in the Adak District (Whiteside *In prep*).



# **ALASKA PENINSULA–ALEUTIAN ISLANDS MANAGEMENT AREA HERRING SAC ROE MANAGEMENT STRATEGY**

In the Alaska Peninsula–Aleutian Islands Management Area herring sac roe fishery, the permit holder and buyer will be responsible for determining acceptable herring quality. The herring fishery will not be closed by ADF&G based on roe quality except in cases where excessive herring are expected to be wasted. Permit holders are encouraged to check with their buyer prior to fishing to determine industry standards for product quality and size. All herring harvested during the sac roe season that are sold as bait or discarded due to quality problems will be included as part of the total herring harvest.

GHLs are not established for any management units except for the Port Moller (Table 1) and Adak districts (5 AAC 27.657). The herring sac roe fisheries may open contingent upon (1) the industry notifying ADF&G of interest in harvesting herring from a specific area, (2) ADF&G documenting herring biomass, and (3) ADF&G establishing a GHL. ADF&G office locations and inseason news release broadcast frequencies are listed in Appendix A.

A global positioning system (GPS; North American Datum 1983<sup>1</sup>) will be used to determine latitude and longitude coordinates throughout all Alaska Peninsula and Aleutian Islands herring fisheries (5 AAC 27.606).

## **NORTH AND SOUTH ALASKA PENINSULA**

In the North Alaska Peninsula Management Area, the Port Heiden, Port Moller, and Amak districts (Figures 2–4) may be opened for commercial herring sac roe fishing from April 15 through July 15 (5 AAC 27.610(a)). In accordance with the *Bering Sea Herring Fishery Management Plan* (5 AAC 27.060(c)), herring fishing in the Port Moller District will be allowed only if ADF&G has documented a herring biomass threshold of at least 1,000 tons in the area. The GHL will be determined using a sliding scale exploitation rate in which the allowable exploitation rate increases with stock abundance (Table 1). A minimum of 6 hours advance notice will be given prior to any fishing period in the Port Moller area, unless it is an extension of a current fishing period. If effort decreases, the 6-hour notice may be reduced or eliminated. Purse seine and gillnet gear will have concurrent openings throughout the North Alaska Peninsula.

In the South Alaska Peninsula Management Area, the Sand Point, Pavlof, and King Cove districts (Figures 4 and 5) may be opened for commercial sac roe herring fishing from April 15 through July 15 (5 AAC 27.610(a)). Fishing openings will be contingent upon industry interest in harvesting herring from a specific area and ADF&G documentation of sufficient herring biomass. No more than a 25-ton harvest will be allowed from any section in each district unless ADF&G documents a herring biomass that would support a larger harvest. Little spawning herring biomass has been documented in South Alaska Peninsula waters, in part because of a limited number of aerial surveys. ADF&G plans to conduct aerial surveys and requests that any herring biomass observations be reported to ADF&G personnel in Sand Point.

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<sup>1</sup> <https://gisgeography.com/nad83-north-american-datum/>

## ALEUTIAN ISLANDS

All districts within the Aleutian Islands, which include the Unimak, Akutan, Unalaska, Umnak and Adak districts may open to commercial sac roe herring fishing from April 15 through noon June 24 (Figure 6; 5 AAC 27.610(e)(1)). Fishing periods and GHs in the Aleutian Islands will be contingent upon the industry expressing interest in harvesting herring in a specific area and ADF&G documenting sufficient herring biomass.

In the Adak District (Figure 8), up to 500 tons of herring may be taken during the periods established by emergency order from June 24 through February 28 (5 AAC 27.657).

## REGISTRATION REQUIREMENTS

### Fishing Vessels

All Alaska Peninsula–Aleutian Islands Area seine and gillnet commercial herring permit holders must register by contacting ADF&G in Dutch Harbor, Cold Bay, Sand Point, or Port Moller at least 48 hours before the sac roe season opens (Appendix A).

### Tenders and Processors

All herring tenders and processors must register with ADF&G prior to buying or tendering herring (5 AAC 27.662). North Alaska Peninsula buyers, processors, and tender agents may register with ADF&G staff in the Port Moller or Kodiak offices in person or through other means (e.g., radio, email, or phone; Appendix A). For the South Alaska Peninsula and Aleutian Islands districts, registration can be accomplished through the ADF&G offices in Cold Bay, Sand Point, Dutch Harbor, or Kodiak (Appendix A). Catch reporting instructions will be explained during the registration process.

## CATCH REPORTING

Processors and tender operators must report daily to ADF&G while involved in the herring sac roe fishery (Appendix A; 5 AAC 27.662). Daily reports must include the statistical area where the herring are caught, the weight of herring harvested by catcher boats and an accurate estimate of herring onboard tenders. Because the allowable harvest could quickly be exceeded, harvesters are encouraged to report harvests after each set, while tenders and processors are asked to report immediately upon completion of each delivery.

## FISH TICKETS

Permit holders must provide specific harvest locations (statistical area or a specific landmark) to buyers, so that locations can be recorded on fish tickets. **Fish tickets must be delivered to local ADF&G personnel prior to departure from the area, and no later than 10 days after termination of buying operations in the area, or as otherwise specified by local representatives of ADF&G** (5 AAC 27.662; Appendix A). Fish tickets must include the weight of harvested herring in either units of short tons (2,000 lb) or total pounds.

## GILLNET AND SEINE SPECIFICATIONS

The aggregate length of herring gillnets in use by a herring Commercial Fisheries Entry Commission (CFEC) permit holder may not exceed 150 fathoms and the gillnet mesh may be up to 2.5", except in the Akutan and Unalaska districts gillnet mesh may be up to 3.5"

(5 AAC 27.631(a)(d)). The permit holder must be present while gillnet gear is being fished (5 AAC 27.631(b)). A purse seine may not exceed 1,000 meshes in depth and 100 fathoms in length (5 AAC 27.632).

## **INDUSTRY COOPERATION**

Cooperation of harvesters, tender operators, spotter pilots, and processors is necessary when ADF&G personnel request herring samples from the commercial catch. Samples will be collected for monitoring age composition to assist in determining the health of a stock and to forecast the following year's run strength. ADF&G will also be monitoring spawning activities and will be soliciting information regarding herring sightings to supplement information gathered by ADF&G personnel. ADF&G's ability to monitor herring biomass is limited by aircraft availability and funding constraints. Industry cooperation in locating herring will enable ADF&G to more efficiently monitor Alaska Peninsula–Aleutian Islands Area herring stocks. Harvesters and spotter pilots are encouraged to provide herring biomass estimates and spawning information to ADF&G. Past cooperation has proven valuable when evaluating stock status and managing the fishery.

## **ALASKA PENINSULA–ALEUTIAN ISLANDS (DUTCH HARBOR) FOOD AND BAIT HERRING FISHERY**

### **FISHERY REQUIREMENTS**

For ADF&G to open Unimak, Akutan, Unalaska, or Umnak districts (Figure 6) to food and bait herring fishing, each southwest Alaska herring biomass projection must surpass its BOF-mandated district threshold (5 AAC 27.060). These biomass projections are for fisheries located in the Security Cove, Goodnews Bay, Cape Avinof, Nelson Island, Nunivak Island, Cape Romonzof, Togiak, and Norton Sound districts (Figure 1). Traditionally, ADF&G has used an age structured assessment (ASA) model to forecast the spawning biomass of Togiak herring. The ASA model requires estimates of the spawning biomass as well as estimates of the age composition of the spawning biomass and the harvest. The Pacific herring spawning biomass in the Togiak District is estimated to be 215,826 tons for 2020 (Appendix B).

### **ALLOCATION**

ADF&G will attempt to manage the Dutch Harbor food and bait herring fishery so that the harvest remains within the allocation (Table 2; Appendix B). A “rollover” provision was adopted during the 2001 BOF meeting (5 AAC 27.655(b)); during years when herring harvest exceeds the allocation, the amount of harvest over the allocation shall be deducted from the next year's allocation.

The 2020 GHF for the Dutch Harbor food and bait herring harvest is 2,917 tons. Furthermore, 100 tons may be reserved from the allocation for an experimental herring pound fishery (5 AAC 27.655(c)).

### **REGISTRATION REQUIREMENTS FOR PERMIT HOLDERS, TENDERS, AND PROCESSORS**

Prior to harvesting, buying, or processing any herring, permit holders must register at the ADF&G office in Sand Point or Cold Bay. Even if no herring are harvested or vessels are not actively

fishing, each permit holder, tender, and processor must still report daily by 10:00 AM or until registration from the fishery is withdrawn. If conditions arise that require additional time for permit holders to report herring harvests, ADF&G must be informed of the situation prior to fishing operations. Catch reporting instructions will be explained in detail during registration.

All processors must make daily reports of all herring purchased from fishermen and other processing records as specified by ADF&G (5 AAC 27.662(2)). These daily reports can be provided to ADF&G by phone, fax, or e-mail (Appendix A). Contact information for the region is in Appendix A.

## **FISH TICKETS**

Permit holders must provide specific harvest locations (statistical area and specific landmark) to buyers so that they can be recorded on fish tickets. **Fish tickets must be delivered, by mail or in person, to the Sand Point or Kodiak ADF&G offices within 10 days after the closure of the fishery** (5 AAC 27.662(3)). If 10 days are insufficient time to submit fish tickets, other arrangements must be made by contacting ADF&G in Sand Point (Appendix A).

## **FISHING PERIODS**

The food and bait herring fishery can open by emergency order as early as noon June 24 and may be extended until the allocation is reached, or until ADF&G decides that an additional fishing period might exceed the allocation, or the season reaches its end on February 28 (5 AAC 27.610(e)(2)(A)). It is the intention of ADF&G to begin the fishery no later than July 1. Effort levels and harvest rates will be considered when establishing fishery openings. If possible, the fishery will be conducted in the waters of Unalaska Bay (Figure 6).

Due to the harvest capabilities and competitive nature of the fleet, ADF&G anticipates that fishing periods will be short in duration, unless the harvesters form a combine. Short openings over several days may be required to prevent exceeding the allocation. Generally, there will be a 12-hour closure between fishing periods to allow permit holders an opportunity to deliver their catch and ADF&G to assess the harvest and processing capacity. The fishery may be extended until the allocation is reached if the harvesters form a combine and ADF&G receives harvest reports promptly from all permit holders. ADF&G may cancel or extend a fishing period with little notice.

In the past, widespread overharvesting has occurred in the Dutch Harbor food and bait fishery. To avoid potential overharvest issues, ADF&G instituted the policy that if the average allocation per vessel fished (total allocation/number of vessels registered) is less than 150 tons per registered vessel, ADF&G will drastically limit both the length of the fishing periods and the size of the area open to commercial herring fishing.

Harvesters and spotter pilots are encouraged to relay biomass information to ADF&G prior to the opening. Past cooperation between ADF&G and the fishing industry has proven valuable in gaining information critical to management of the fishery. ADF&G will make every attempt to assess herring biomass in the area prior to opening the fishery.

## **HERRING SEINE POUND FISHERY**

One hundred tons of herring may be allocated to the herring seine pound fishery, which will be deducted from the allocation (5 AAC 27.655(c)). A person planning to operate a pound must

check in with ADF&G and include detailed plans describing the design and operation of the pound, including exact location and timing of pound operation. These plans must be received by ADF&G in a timely manner to allow preparation of a commissioner's permit for pound operation. A permit holder intending to operate a pound is encouraged to register with ADF&G in Sand Point or Cold Bay no later than 5:00 PM June 22, 2020.

If the herring pound allocation is not harvested, it will then be rolled over into the remaining allocation. If more than 1 permit holder registers for the pound fishery, the pound allocation is divided equally among them.

## **GEAR TESTING**

Prior to opening the fishery, purse seine and gillnet gear may be tested during daylight hours until 5:00 PM June 23. Permit holders must contact ADF&G in Sand Point, Cold Bay, or Dutch Harbor prior to setting gear to establish a designated time and place for gear testing. In addition, any fish caught during gear testing must immediately be released unharmed. After the fishery has been closed and all herring on the vessel have been offloaded, participants may, after notifying ADF&G, set their net to straighten, clean, and organize their gear at a time and place designated by ADF&G.

## **COMMERCIAL HARVEST SAMPLING**

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

# **ALASKA PENINSULA-ALEUTIAN ISLANDS (ADAK) FOOD AND BAIT HERRING FISHERY**

Beginning in 2004, the BOF authorized a herring set gillnet fishery in the Adak District with a 500-ton allocation from June 24 through February 28 (5 AAC 27.657; Figure 8). However, in 2010, the BOF amended the regulations to include both seine and gillnet gear in the harvest of up to 500 tons within the waters around Adak Island (long 175°30'W and long 177°W; 5 AAC 27.657). This allocation is independent of the Dutch Harbor food and bait allocation. ADF&G has no information about the size, timing, or condition of herring stocks in the Adak area. ADF&G may station a representative in Adak to manage this fishery and collect herring samples.

## **COMMISSIONER'S PERMIT**

Each permit holder, tender operator, and buyer must register and obtain a commissioner's permit for the Adak herring fishery at the ADF&G office in Sand Point or Cold Bay prior to catching, tendering, buying, or processing herring. The buyer and tender reporting requirements are described in 5 AAC 27.662. Permit holders are encouraged to check with their markets prior to fishing to determine which products are acceptable.

## **FISHING SEASONS, AREA, AND GEAR OPERATION**

In that portion of the Adak District from long 175°30'W to long 177°W, herring may be taken in the food and bait fishery using purse seine or gillnet gear from June 24 through February 28 (5 AAC 27.657; Figure 8).

The permit holder must be physically present while the gillnet gear is being fished. Each drift gillnet in operation must have a buoy at one end and the opposite end must be attached to the fishing vessel. Each set gillnet in operation must be anchored and buoyed at both ends. Buoys must be plainly and legibly marked with the permanent vessel license plate number (ADF&G number) of the vessel operating the gear. Buoys may bear only a single number and this number must be that of the vessel used in operating the gear. The numbers must be painted on the top one-third of the buoy in numerals at least 4 inches in height, one-half inch in width, and in a color contrasting to that of the buoy. The buoy markings must be visible above the water surface. (5 AAC 27.631(b)(c)). A purse seine may not be more than 1,000 meshes in depth and 250 fathoms in length. (5 AAC 27.632).

## REFERENCES CITED

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## **TABLES AND FIGURES**

Table 1.—Port Moller District herring sac roe guideline harvest levels.

Stock size (tons)	Sliding scale exploitation rate <sup>a</sup>	Allowable harvest (tons) <sup>b</sup>
< 1,000	0%	0
1,001–1,500	10%	100–150
1,501–2,000	10%	150–200
2,001–2,500	15%	300–375
2,501–3,000	15%	375–450
> 3,001	20%	> 600

<sup>a</sup> The guideline harvest level (GHL) increases proportionally to spawning biomass observed by ADF&G. A sliding scale exploitation rate will be used to determine the GHL.

<sup>b</sup> Herring harvested along the Bering Sea coast (southwest of Cape Seniavin) will be allocated to the Port Moller and Herendeen bays guideline harvest level if it is determined that these herring were traveling into Port Moller or Herendeen bays.

Table 2.—Harvest allocation of the 2020 forecasted Pacific herring run biomass, Togiak District, Bristol Bay.

	Biomass (short tons)
2020 Togiak District forecasted biomass	215,826
Total allowable harvest (20% exploitation rate)	43,165
Togiak spawn on kelp fishery (fixed allocation)	1,500
Remaining allowable harvest	41,665
Dutch Harbor food and bait allocation <sup>a</sup>	2,917
Overharvest penalty from previous year	0
<b>2020 purse seine and gillnet allocation</b>	<b>2,917</b>

<sup>a</sup> The Dutch Harbor food and bait allocation is 7% of the remaining allowable harvest from the Togiak District.

Figure 1.—Map of the *Alaska Peninsula-Aleutian Islands Herring Management Plan*, *Dutch Harbor Food and Bait Herring Fishery Management Plan*, and *Bering Sea Herring Fishery Management Plan* commercial herring districts.

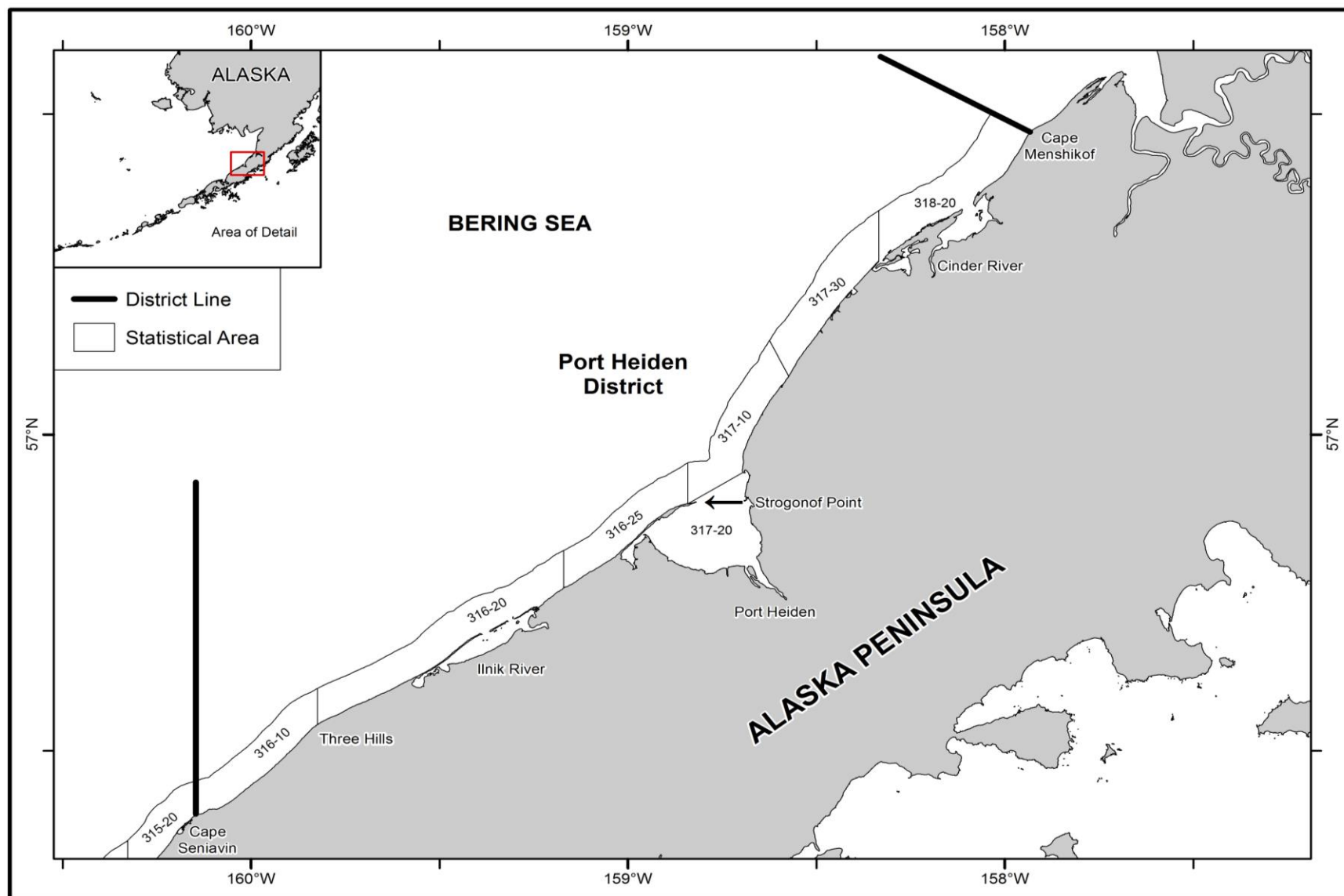


Figure 2.—Map of the North Alaska Peninsula, showing the Port Heiden District with commercial herring fishing statistical areas.

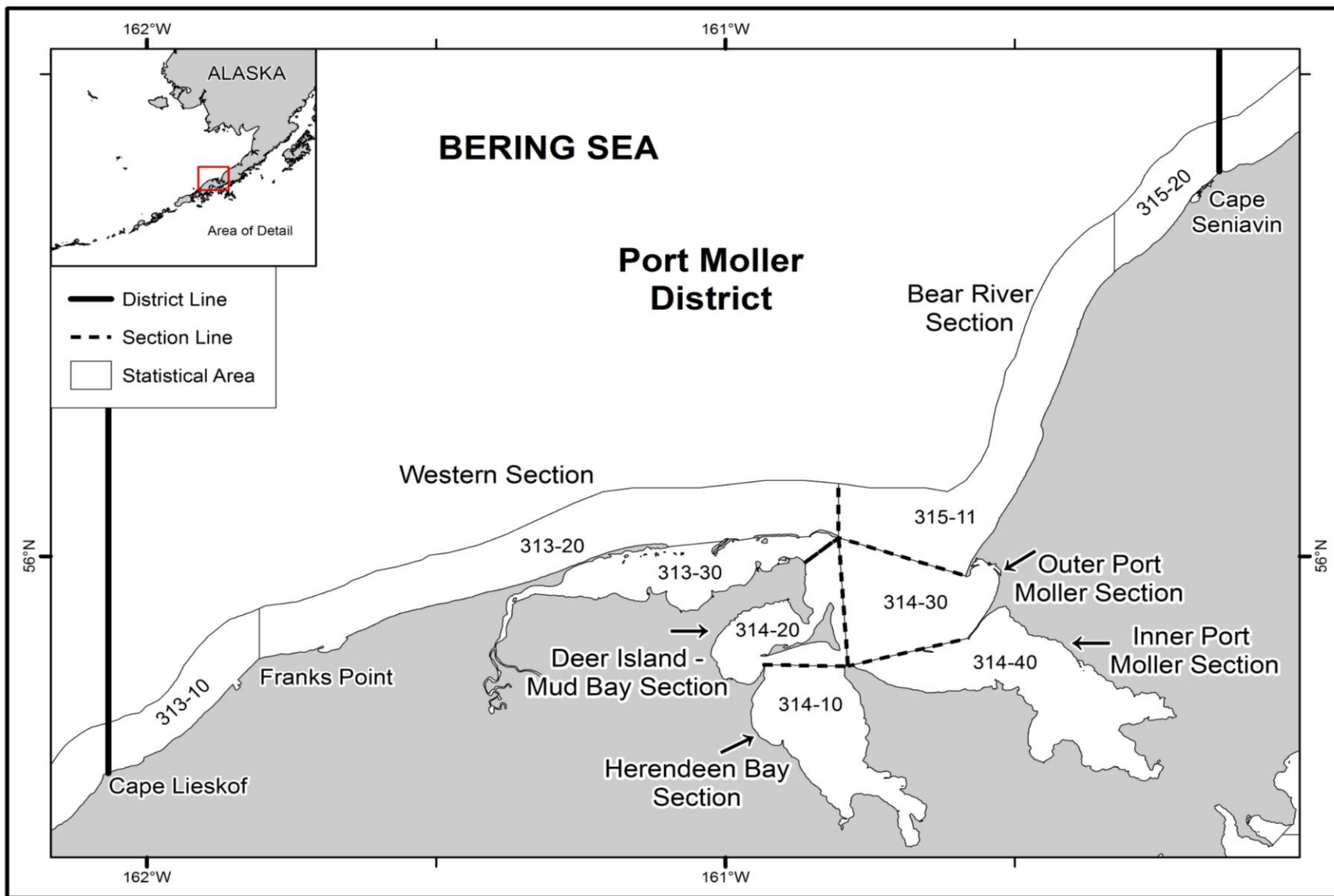


Figure 3.—Map of the North Alaska Peninsula, showing the Port Moller District with commercial herring fishing statistical areas.

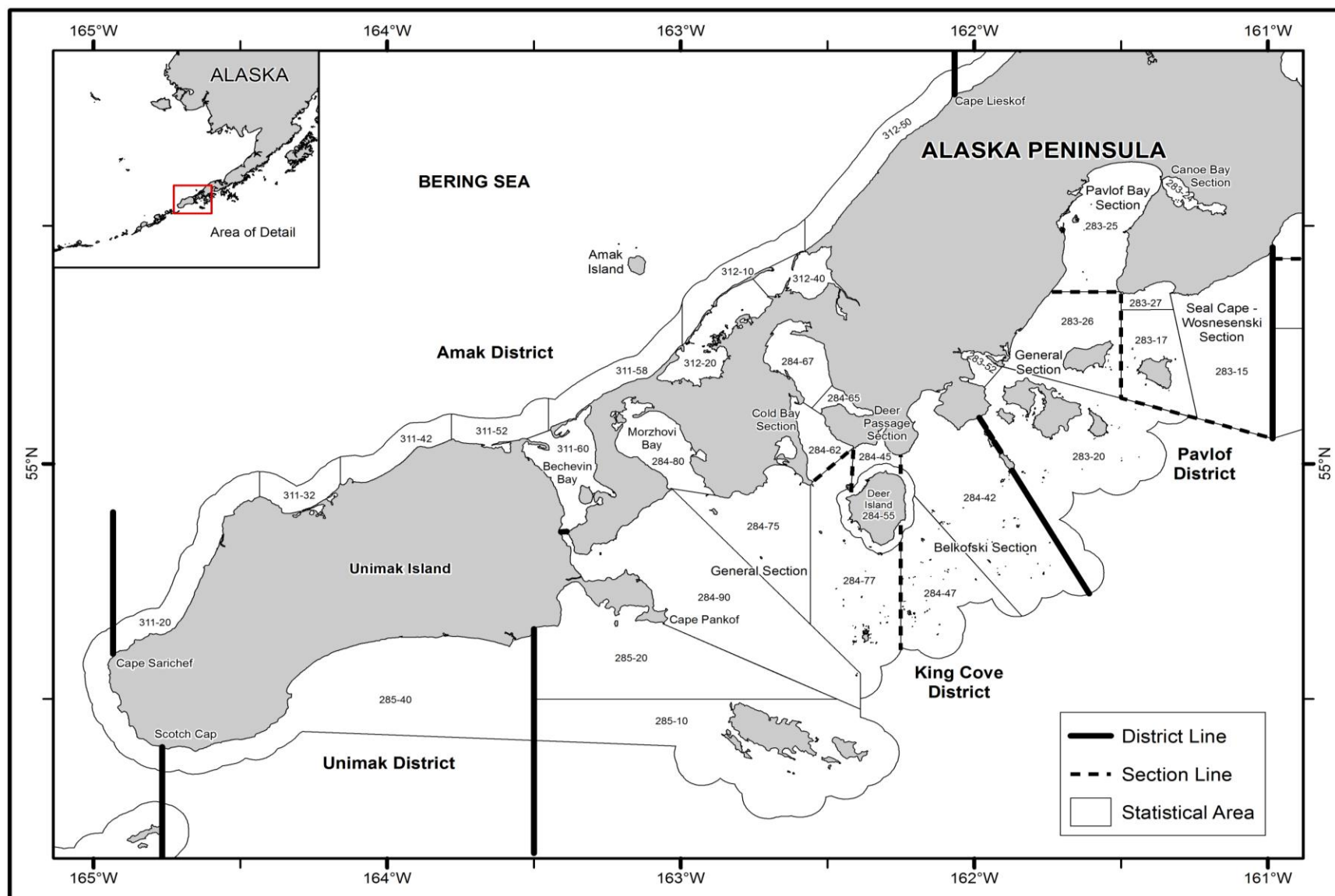


Figure 4.—Map of the Alaska Peninsula from Pavlof Bay to Cape Sarichef with commercial herring fishing districts and statistical areas.

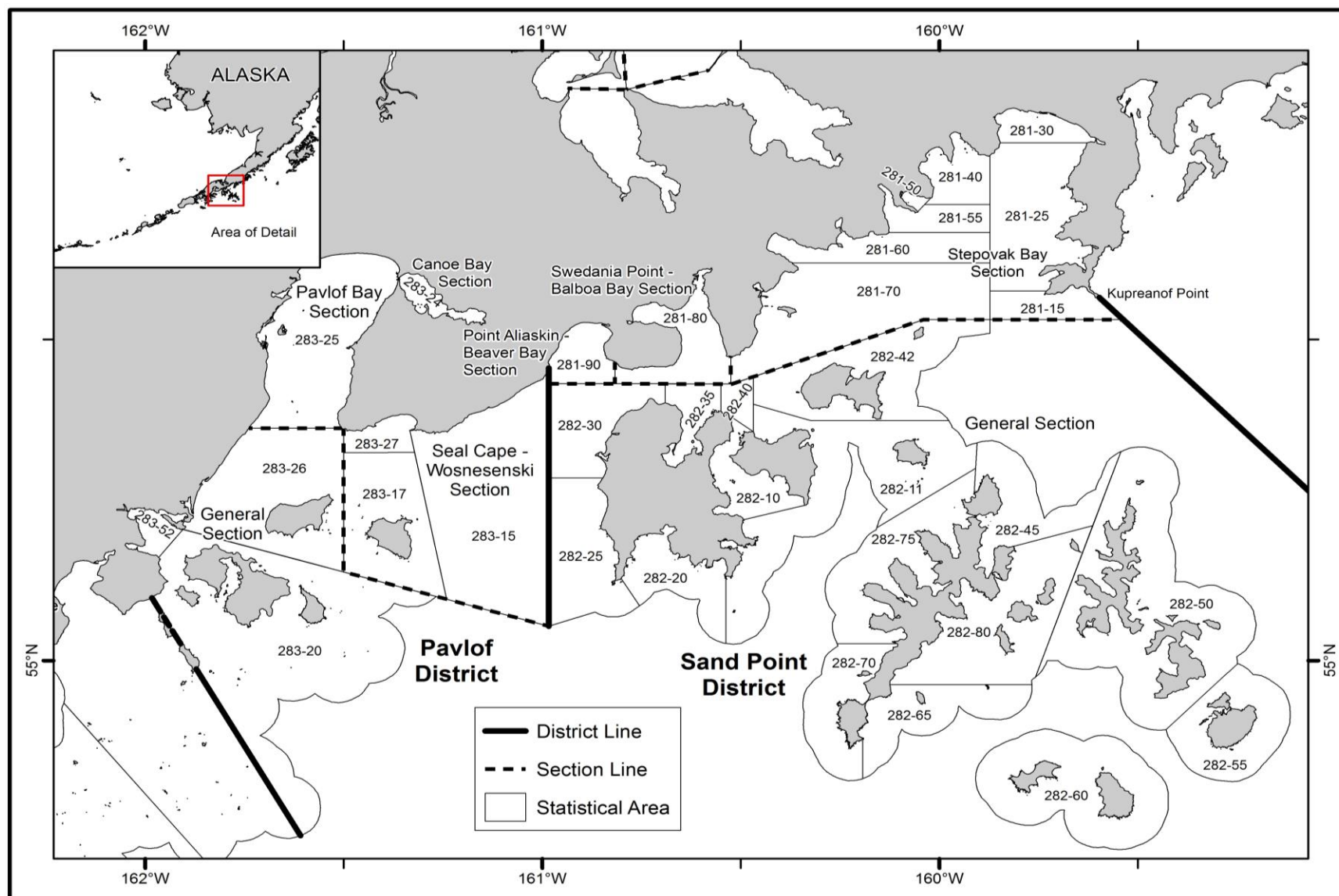


Figure 5.—Map of the South Alaska Peninsula from Kupreanof Point to Belkofski Bay with commercial herring fishing districts and statistical areas.

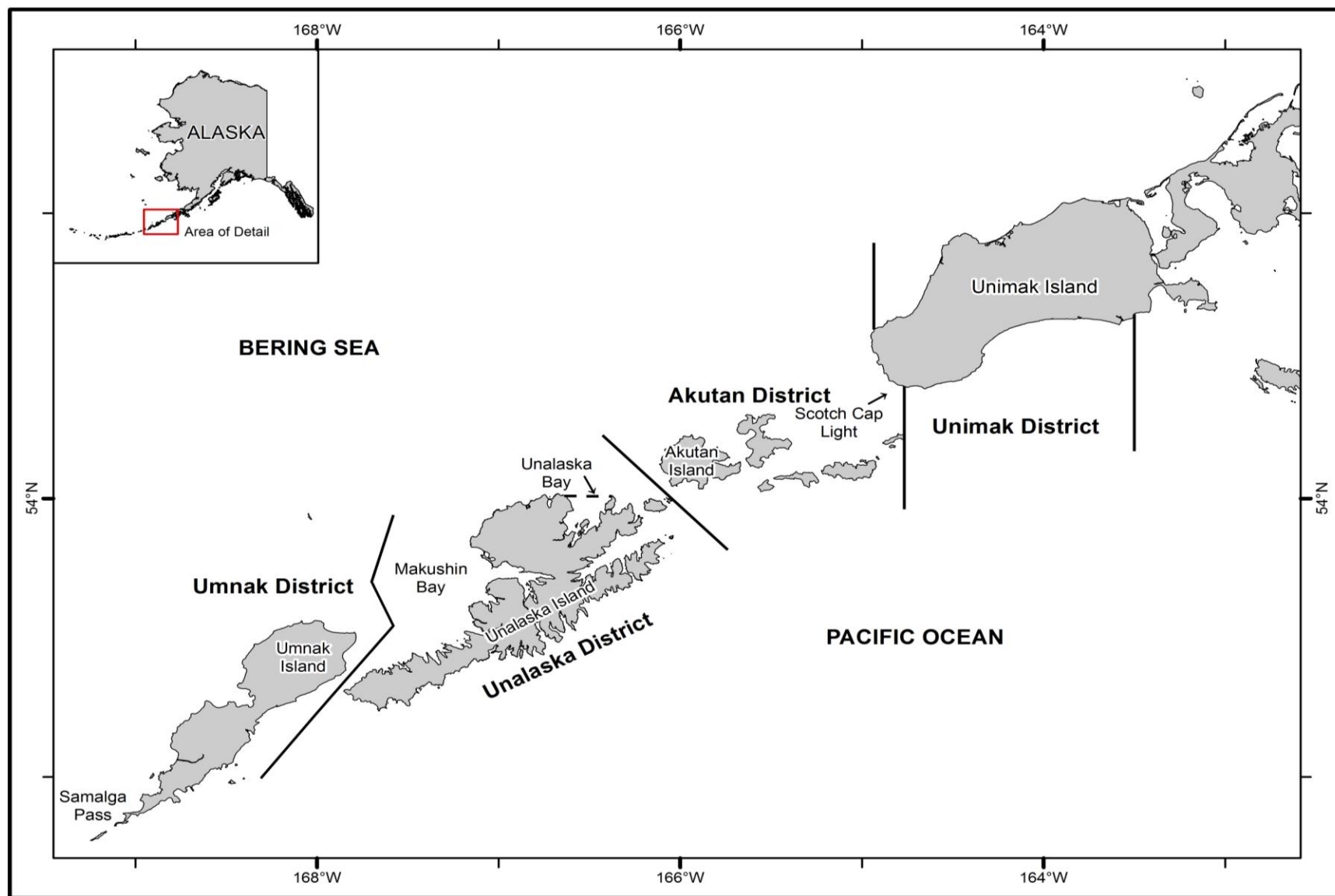


Figure 6.—Map of the Eastern Aleutian Islands from Samalga Pass to Unimak Island illustrating the herring fishing district boundaries.



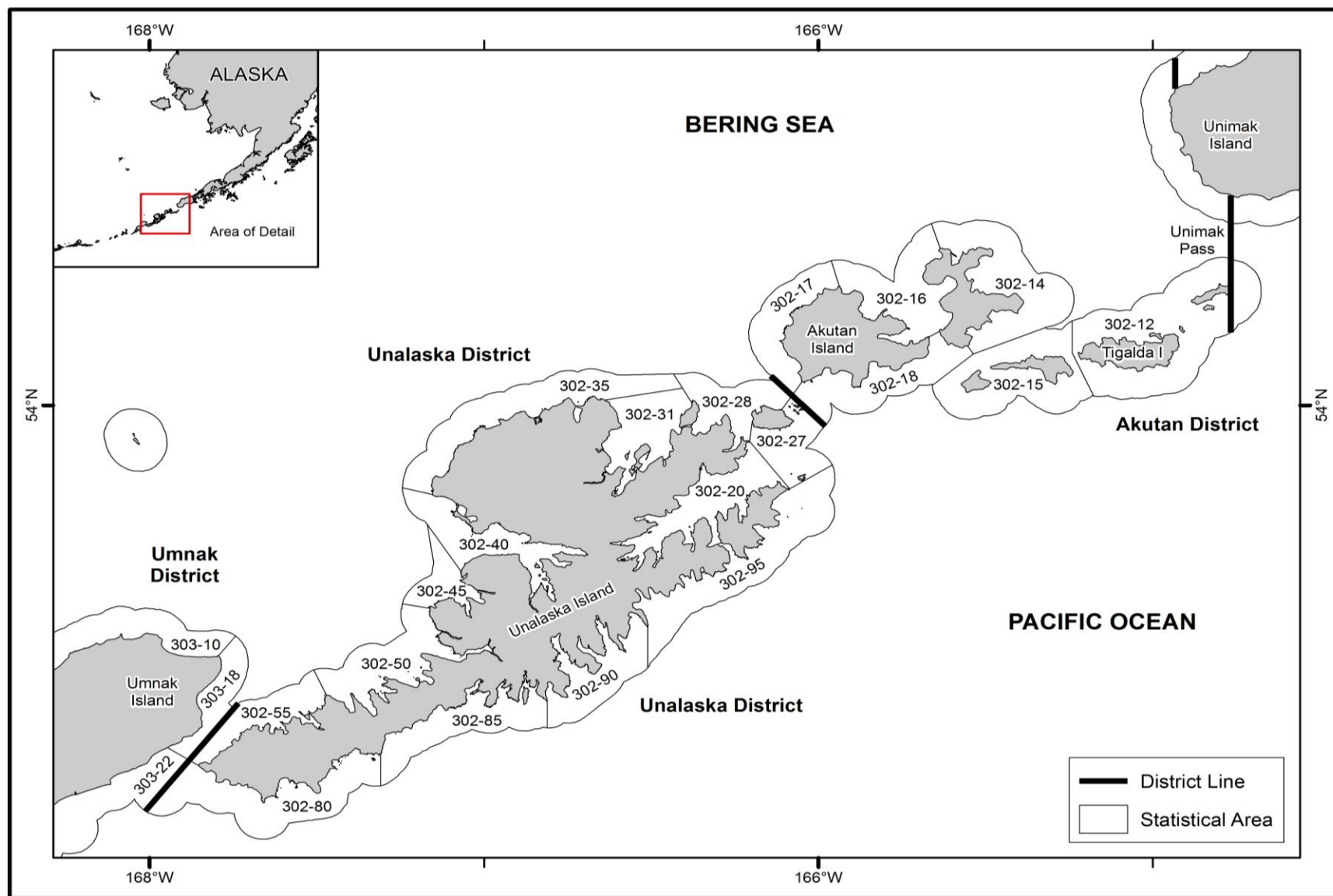


Figure 7.—Map of the Aleutian Islands from Tigalda Island to Umnak Island with commercial herring fishing districts and statistical areas.

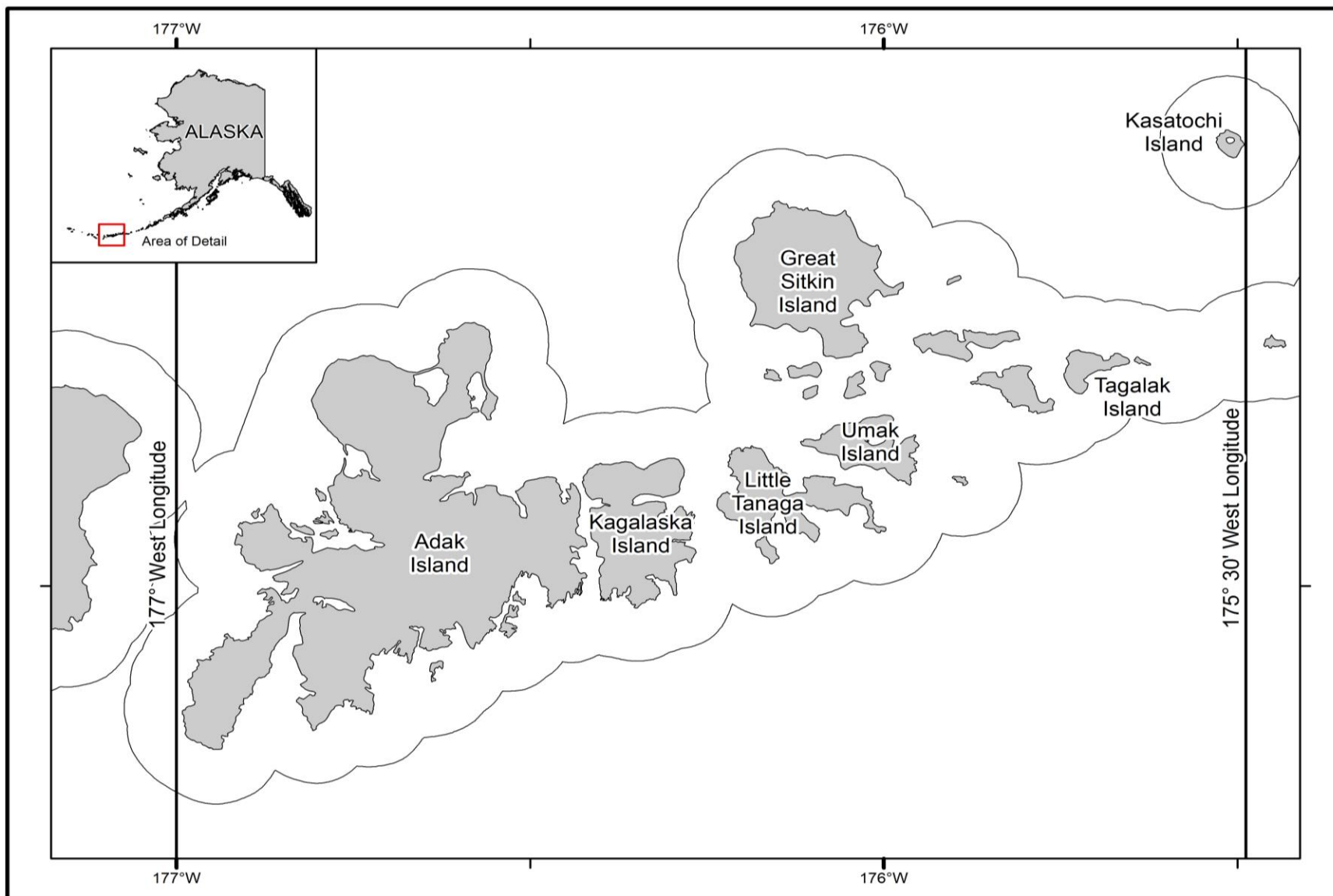


Figure 8.—Map of the Adak Island exploratory fishing area.

## **APPENDIX A. ADF&G OFFICE CONTACTS**

Appendix A.—Alaska Peninsula and Aleutian Islands Alaska Department of Fish and Game office information.

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## **APPENDIX B. 2020 TOGIAK HERRING FORECAST**

**Division of Commercial Fisheries**  
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**Alaska Department of Fish and Game**  
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## Advisory Announcement

*For Immediate Release:* December 6, 2019

**CONTACTS:** Greg Buck, Area Research  
Biologist, Sherri Dressel  
Statewide Herring Fisheries Scientist  
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## 2020 TOGIAK HERRING FORECAST

The 2020 Togiak herring forecast and harvest allocations are listed below for the Togiak District sac roe and spawn-on-kelp fishery, and the Dutch Harbor food and bait fishery (Table 1). At the 2018 Bristol Bay meeting of the Alaska Board of Fisheries, the gear group allocation found in the *Bristol Bay Herring Management Plan* 5AAC 27.865(b)(5) was changed from 70% purse seine and 30% gillnet to 80% purse seine and 20% gillnet. The following represents the allocations and quotas based on updated regulations and a 20% exploitation rate.

Table 1.—The 2020 Togiak District Pacific herring biomass and harvest forecast and allocation by fishery and gear.

	Biomass (Short Tons)	Harvest (Short Tons)
Biomass estimate	215,826	
Total allowable harvest (20% exploitation rate)		43,165
Togiak spawn-on-kelp fishery (fixed allocation)		1,500
Remaining allowable harvest		41,665
Dutch Harbor food/bait allocation (7% of remaining allowable harvest)		2,917
Togiak District sac roe fishery		38,749
Purse seine allocation (80%)		30,999
Gillnet allocation (20%)		7,750

## **2020 TOGIAC HERRING FORECAST SUMMARY**

The 2020 forecast uses a 20% exploitation rate because the department has greater confidence in the 2019 aerial survey biomass estimate than those of the last three years. The Togiak mature herring population biomass has been estimated with aerial surveys since the late 1970s.

The 2020 mature herring biomass forecast is 215,826 tons (Table 1 and Figure 1). Under a 20% exploitation rate, the 2020 potential harvest is 43,165 tons in all fisheries and 38,749 tons in the Togiak sac roe fisheries (purse seine and gillnet). A harvest of this size would be ~188% of the recent 10-year average sac roe harvest. The 2020 forecasted biomass should be similar in size to the 2019 biomass and, like 2019, be dominated by partially mature age classes (age-6 and age-7 fish). These cohorts of young fish are projected to comprise an even larger portion of the population in 2020 due to increasing maturity (Figure 2). The forecast percentage composition of the mature population is comprised of mostly age-6 and age-7 fish by both number (39% and 27%, respectively) and biomass (33% and 27%, respectively). The projected average weight of a fish in the 2020 harvest is 329 g.

An age-structured assessment (ASA) model is used to forecast the Togiak herring population. The ASA model utilizes time series of catch, age composition of the purse seine harvest, age composition of the mature population, and aerial survey biomass estimates plus catch data from 1980 forward. Samples from the entire commercial purse seine harvest are used to estimate age composition of the seine harvest. Sample groups from the commercial purse seine and gillnet harvest that include the peak-run survey and the post-fishery survey as well as harvest prior to the peak are used to estimate age composition of the mature population biomass. Peak-run aerial survey biomass and post-fishery aerial survey biomass estimates are combined with pre-survey harvest to estimate mature biomass. The ASA model uses between-dataset weighting and variable weighting within the aerial survey dataset to reflect the confidence staff has in the respective datasets and the confidence staff has in the individual aerial survey estimates. Confidence in the individual aerial survey estimates is based on the number of surveys, timing of surveys, weather and water conditions. The forecasted average weight-at-age of herring for 2020 was calculated as the most recent two-year average from the purse seine fishery.

Herring are detected in our sampling effort when they recruit into the fishery; a process that begins around age-4 and may not be fully complete until approximately age-9. Large recruitments in this population generally occur every eight to ten years and typically last one or two years. Recent biological sampling suggests the 2013 and 2014 year-classes (age-5 and age-6 fish in 2019) may be a new large recruitment event. It should be noted that measuring contributions of younger age classes is difficult because these fish are not fully recruited (available) in the harvest and often arrive on the spawning grounds near the end of, or after, the fishery.

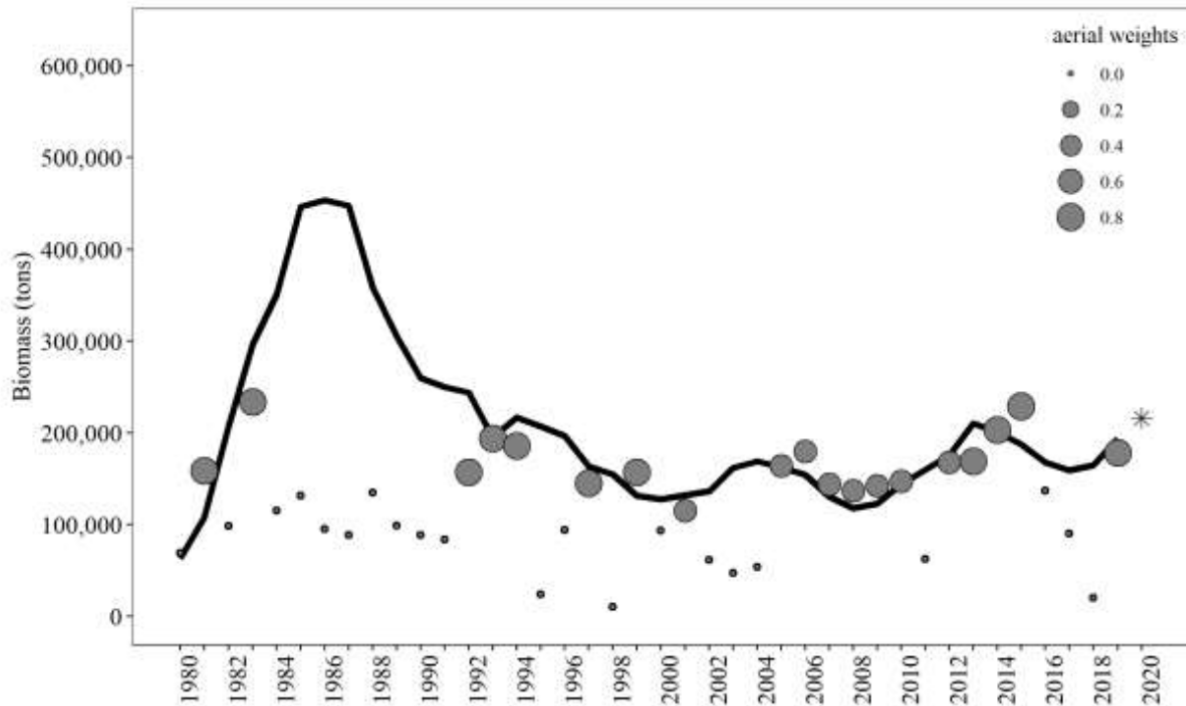


Figure 1. Model-estimated mature biomass (black line). Annual abundance estimates with confidence weighting (black dots) ranging from 0 (very low confidence) to 1 (full confidence). The estimated mature biomass forecast for 2020 is indicated by a black star.

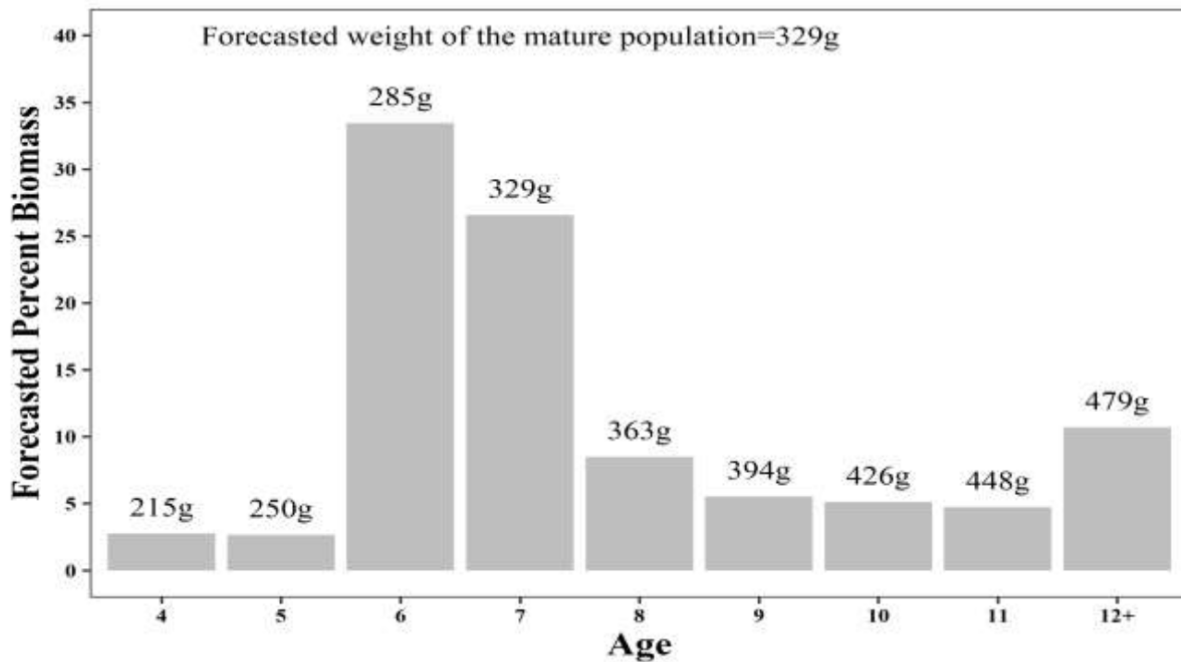


Figure 2.—Forecasted percent mature biomass by age with average weight (grams) for each age class as well as the average weight of the forecasted 2020 mature biomass as a whole (329 g).