Fishery Management Report No. 14-25

Alaska Peninsula-Aleutian Islands Management Area Food and Bait Herring Fishery Management Plans, 2014

by

Nathaniel W. Nichols

May 2014

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat or long
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

FISHERY MANAGEMENT REPORT NO. 14-25

ALASKA PENINSULA-ALEUTIAN ISLANDS MANAGEMENT AREA FOOD AND BAIT HERRING FISHERY MANAGEMENT PLANS, 2014

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ABSTRACT

The commercial food and bait fisheries for Pacific herring C*lupea pallasii* in the Alaska Peninsula-Aleutian Islands Herring Management Area (Area M) occurs 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 2014 Dutch Harbor food and bait herring allocation is 2,099 tons, of which 294 tons (14%) is allocated to the gillnet fishery and 1,805 tons (86%) is allocated to the purse seine fishery. 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*, commercial food and bait fishery, Alaska Peninsula-Aleutian Islands, Area M, Dutch Harbor herring fishery, Togiak, herring gillnet, herring sac roe, herring seine, herring pound, Adak herring fishery, Fishery Management Plan.

INTRODUCTION

This document is intended to provide commercial herring harvesters and buyers with information and guidelines for participating in the Alaska Peninsula-Aleutian Islands Management Area (Area M) Pacific herring C*lupea pallasii* food and bait fisheries. Information on inseason management of the Alaska Peninsula-Aleutian Islands Management Area herring sac roe fisheries can be found in Nichols (2013).

The Alaska Peninsula-Aleutian Islands Herring Management Area consists of Bering Sea waters extending west of Cape Menshikof, and Pacific Ocean state waters extending west of Kupreanof Point, to the International Dateline (Figure 1; 5 AAC 27.600). Fishermen may only harvest food and bait herring in the Unimak, Akutan, Unalaska, Umnak, and Adak districts (Figures 1–4).

There are two food and bait fisheries in Area M, the Dutch Harbor (Unimak, Akutan, Unalaska, and Umnak districts) and the Adak (Adak District) herring fisheries. In recent years, three 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 Allocation Plan* (5 AAC 27.655) which divides the 7% allocation by gear type, 86% for the purse seine fishery and 14% for the gillnet fishery. At the February 2010 Alaska Board of Fisheries (BOF) meeting, the board amended language to 5 AAC 27.655. It was decided that after July 25, 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 25, then that amount shall be deducted from any remaining quota for that year after July 25. If the seine group exceeds the total allocation after July 25, then the seine group overage shall be deducted from the next years' seine allocation as stated in 5 AAC 27.655(b).

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 3) 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. Since the plan's inception in 2004, there has been no harvest in the Adak District.

THE ALASKA PENINSULA-ALEUTIAN ISLANDS (DUTCH HARBOR) FOOD AND BAIT HERRING FISHERY

FISHERY REQUIREMENTS

In order for Alaska Department of Fish and Game (ADF&G) to open Unimak, Akutan, Unalaska, or Umnak districts (Figure 2) 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). The biomass of all the Bering Sea herring stocks are forecasted to be above their threshold levels, and the probability of the 2014 Dutch Harbor food and bait herring fishery occurring is favorable (Appendix A1).

ALLOCATION

ADF&G will attempt to manage the Dutch Harbor food and bait herring fishery so that the harvest remains within the allocation (Table 1; Appendix B1). 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, by gear group.

Of the Dutch Harbor food and bait harvest, 86% is allocated to the seine fishery and 14% to the gillnet fishery (5 AAC 27.655(a)). These allocations are considered independent of each other so that one gear group may not harvest herring allocated to the other gear group. Furthermore, 100 tons may be reserved from the purse seine allocation for an experimental herring pound fishery (5 AAC 27.655(c)). After July 25, 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 25, then that amount shall be deducted from any remaining quota for that year after July 25. If the seine group exceeds the total allocation after July 25, then the seine group overage shall be deducted from the next year's seine allocation (5 AAC 27.655(b)). The 2014 harvest allocation is 294 tons for the gillnet fishery and 1,805 for the purse seine (Table 1). The 2013 harvest was below the GHL and therefore no overharvest penalty will be applied to the 2014 GHL.

Inseason news releases will be broadcasted on VHF channel 12 in Dutch Harbor, which will serve as the designated ADF&G channel for communications during the herring fishery. Fishermen, tenders, and processors should monitor this channel.

REGISTRATION REQUIREMENTS FOR PERMIT HOLDERS, TENDERS, AND PROCESSORS

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 VHF, SSB, phone, fax, or e-mail. The following ADF&G offices can be contacted for information concerning the Dutch Harbor and Adak food and bait herring fisheries:

Sand Point:

Alaska Department of Fish and Game
P.O. Box 129
Sand Point, AK 99661

Phone: (907) 383-2066
Fax: (907) 383-2606
VHF channels 6 and 72
Single Side Band 3.230 MHz
KWB 362 (call sign)

Dutch Harbor:

Alaska Department of Fish and Game
P.O. Box 920587
Dutch Harbor, AK 99692

Phone: (907) 581-1239
Fax: (907) 581-1572
VHF 12
Single Side Band 4.125 MHz
WIM 76 (call sign)

Prior to harvesting, tendering, buying, or processing any herring, permit holders must register at the ADF&G office in Dutch Harbor. Even if no herring are harvested or vessels are not actively fishing, each permit holder, tender, and processor must still report daily 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.

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 Dutch Harbor ADF&G office 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.

FISHING PERIODS

The herring gillnet fishery can open by emergency order beginning 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 ends 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 4).

The initial purse seine herring fishing period may occur as early as noon July 15 (5 AAC 27.610(e)(2)(B)). Unless harvesters form a combine, the department anticipates that purse seine fishing periods will be short in duration and the fishery will be conducted within designated portions of Unalaska Bay. 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 the department to assess the harvest and processing capacity. A shorter closed period may be allowed if 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 try 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 is deducted from the purse seine allocation. 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 Dutch Harbor or Sand Point no later than 5:00 PM, June 30, 2014.

Herring for pounding may only be harvested during purse seine fishery openings. If the herring pound allocation is not harvested, it will then be rolled over into the seine allocation. If two or more permit holders register for the pound fishery, the pound allocation is divided equally among them.

GEAR TESTING

Prior to opening the fishery, purse seine gear may be tested during daylight hours until 5:00 PM, July 14. Gear testing will only be allowed at a time and place designated by ADF&G. Permit holders must contact ADF&G in Dutch Harbor on VHF channel 12 or in person prior to setting gear. 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 nets 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) HERRING FISHERY

Beginning in 2004, the BOF authorized a herring set gillnet fishery in the Adak District (Figure 3) with a 500-ton allocation. 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. This allocation is independent of the Dutch Harbor food and bait allocation. Herring can be harvested in this fishery as either sac roe or food and bait (Nichols 2014). 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 Dutch Harbor prior to

catching, tendering, buying, or processing herring. The buyer and tender-reporting requirements are described in 5 AAC 27.662. Permit holders are encouraged to check with their markets prior to fishing to determine which products are acceptable.

FISHING SEASONS, AREA, AND GEAR OPERATION

In that portion of the Adak District from 175°30' W long to 177° W long, herring may be taken in the food and bait fishery from June 24 through February 28 (5 AAC 27.657; Figure 3).

The permit holder must be physically present while the set gillnet is being fished. Each set gillnet in operation must be anchored and buoyed at both ends. Each buoy must be plainly and legibly marked with the permanent vessel license plate number (ADF&G number) of the vessel operating the gear. The 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)).

REFERENCES CITED

Nichols, N. W. 2013. Alaska Peninsula-Aleutian Islands Management Area sac roe herring fishery management plan, 2013. Alaska Department of Fish and Game, Fishery Management Report No. 13-12, Anchorage.

Nichols, N. W. 2014. Alaska Peninsula-Aleutian Islands Management Area herring sac roe and food and bait fisheries annual management report, 2014. Alaska Department of Fish and Game, Fishery Management Report No. 14-19, Anchorage.

TABLES AND FIGURES

Table 1.–Harvest allocation of the 2014 forecasted Pacific herring run biomass, Togiak District, Bristol Bay.

	Biomass (Short Tons)	Harvest (Short Tons)
2014 Togiak District Forecasted Biomass Exploitation at maximum 20%	157,448	
Total Allowable Harvest		31,490
Togiak Spawn on Kelp Fishery (Fixed Allocation)		1,500
Remaining Allowable Harvest		29,990
Dutch Harbor Food/Bait Allocation [a]		2,099
Purse Seine Allocation (86%) [b]		1,805
Overharvest penality from previous year.		0
2014 Seine Allocation		**1,805**
Gillnet Allocation (14%) [c]		294
Overharvest penality from previous year.		0
2014 Gillnet Allocation		**294**

[a] The Dutch Harbor Food/Bait allocation is 7% of the remaining allowable harvest from the Togiak District.

[b] The purse seine allocation for 2014 is 86% of the Dutch Harbor allocation.

[c] The gillnet allocation for 2014 is 14% of the Dutch Harbor allocation.

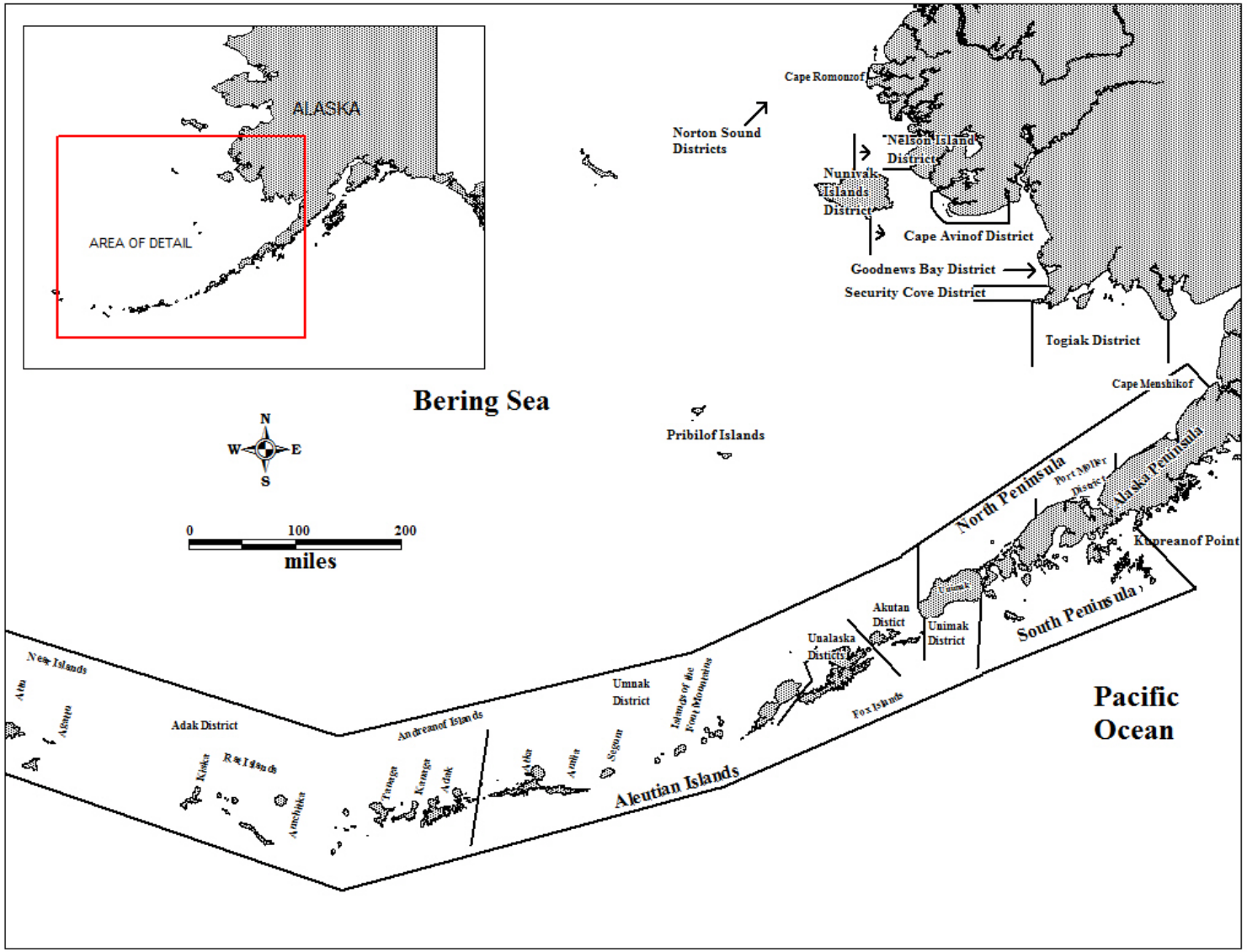

Figure 1.–Map of the Bering Sea Management Plan (5 AAC 27.060) commercial herring districts.

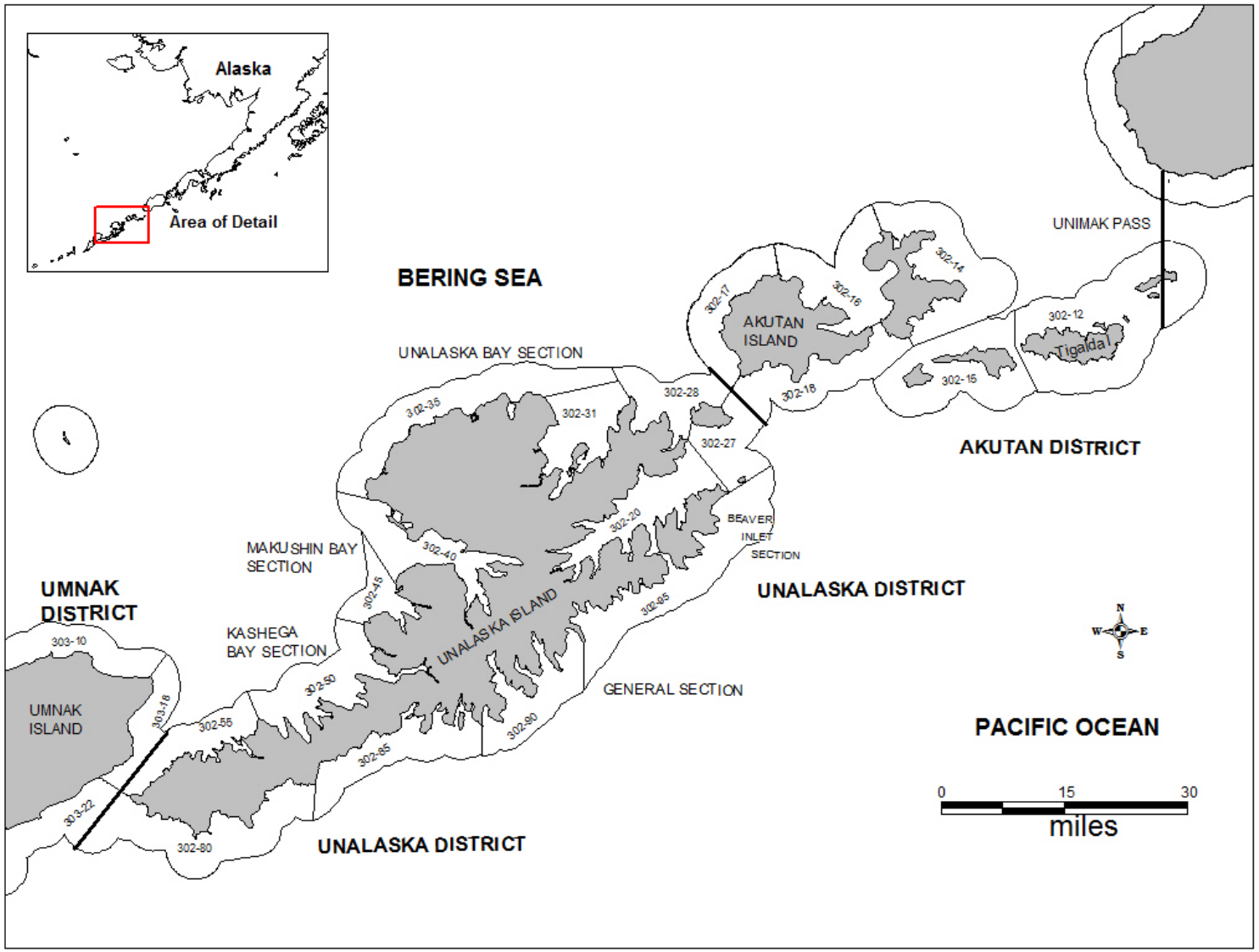

Figure 2.–Map of the Aleutian Islands from Tigalda Island to Umnak Island illustrating the herring fishing statistical areas.

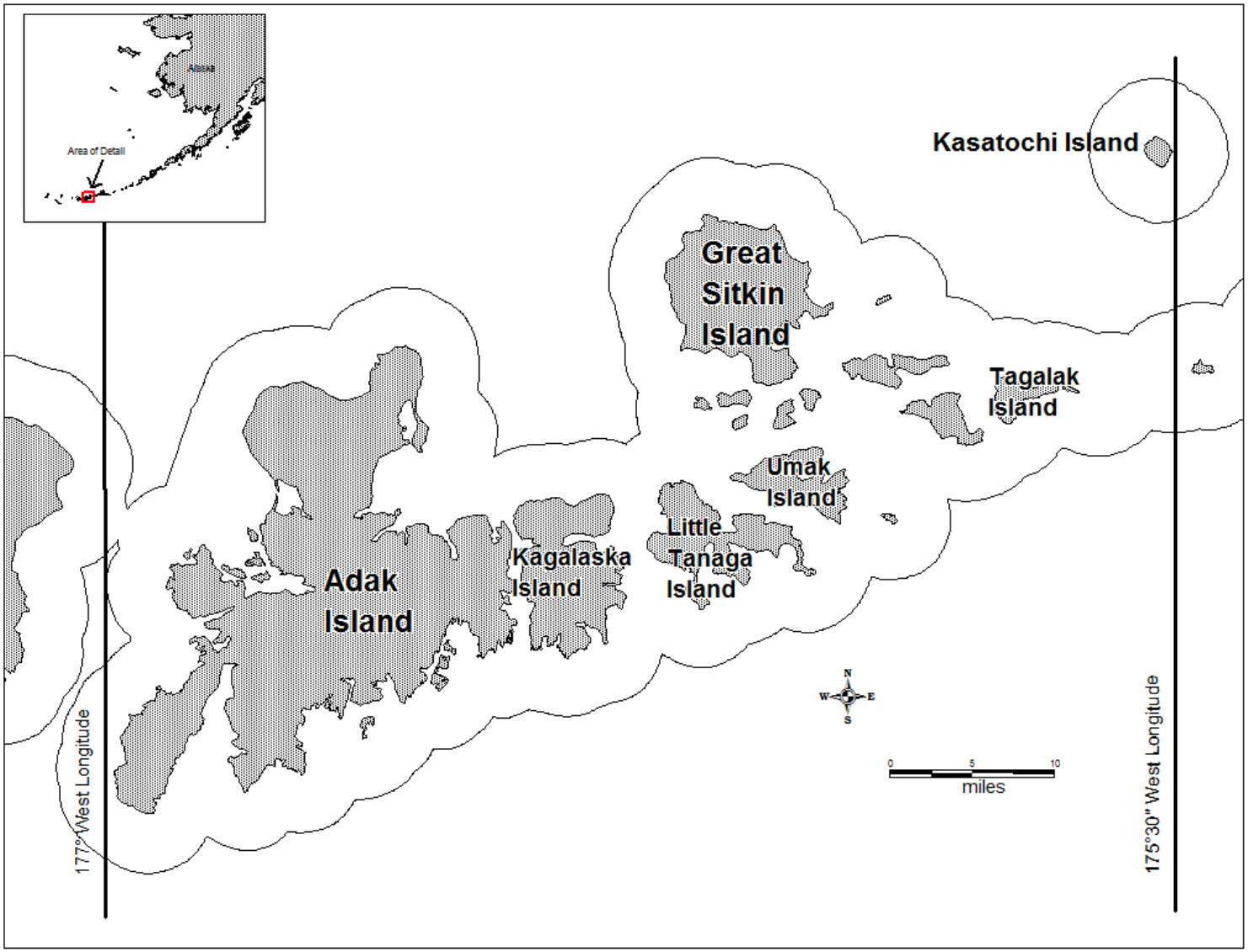

Figure 3.–Map of the Adak District illustrating the herring fishery boundaries.

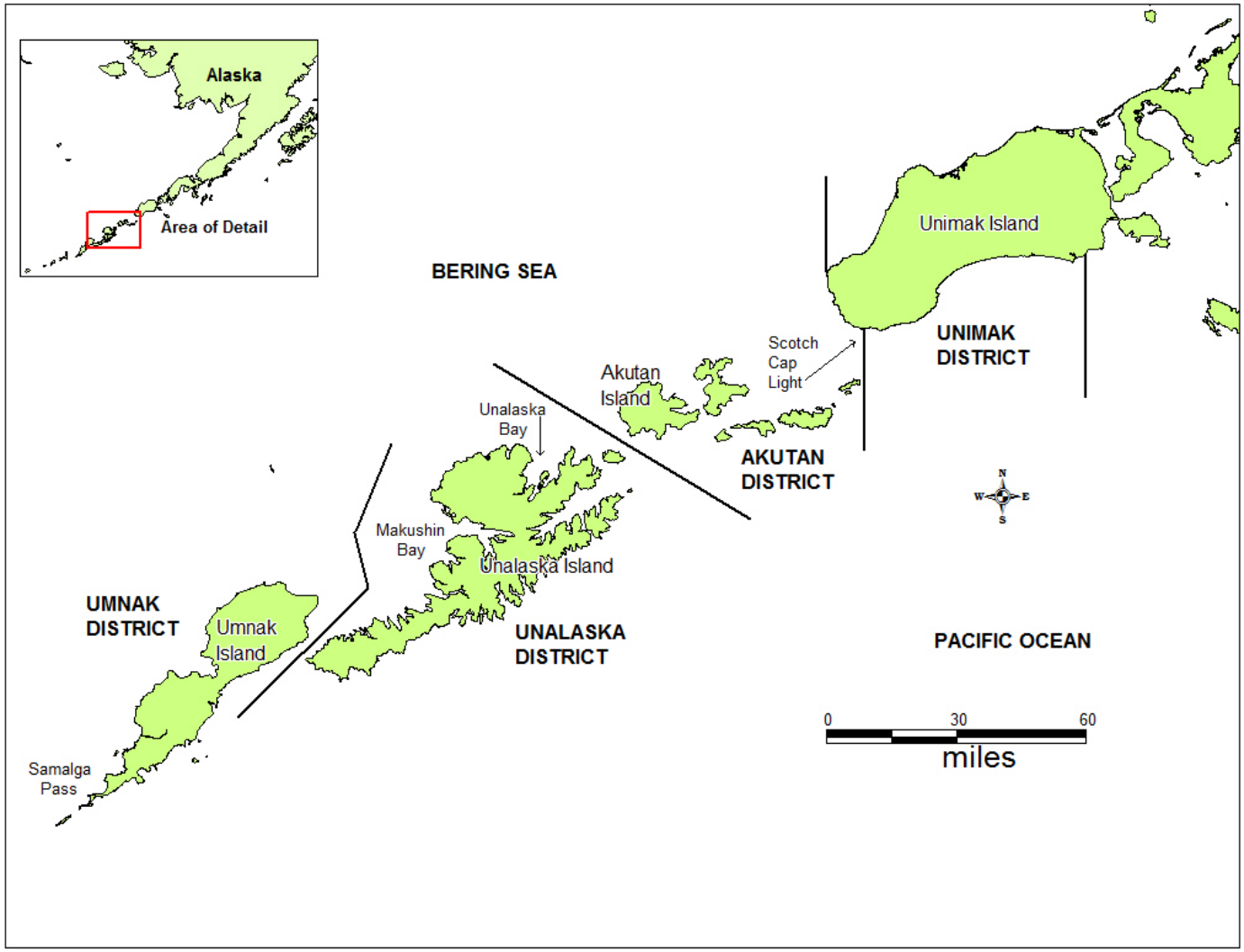

Figure 4.–Map of the eastern Aleutian Islands from Samalga Pass to Unimak Island illustrating the herring fishing district boundaries.

APPENDIX A: ARCTIC-YUKON-KUSKOKWIM HERRING OUTLOOK AND MANAGEMENT STRATEGY FOR 2014

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

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Anchorage Area Office
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Anchorage, AK, 99518
Date issued: April 16, 2014

2014 Arctic-Yukon-Kuskokwim Herring Outlook

The 2014 Arctic-Yukon-Kuskokwim herring forecast and guideline harvest levels (GHLs), given a maximum 20% exploitation rate of the projected biomass, are listed below for the northeastern Bering Sea herring stocks (Table 1).

Table 1. Projections of Pacific herring spawning biomass and GHLs for commercial fishing districts in the northeastern Bering Sea, Alaska, 2014.

District	Threshold	2013 Observed Biomass (tons)		2014 Projected Biomass (tons)	Exploitation Rate (%)	2014 Harvest Guideline (tons)
Security Cove	1,200	9,313		8,655	20	1,731
Goodnews Bay	1,200	7,945		7,844	20	1,569
Cape Avinof [b]	500	1,415	[a]	1,323	15	198
Nelson Island [c]	3,000	4,893		4,279	20	656
Nunivak Island	1,500	2,420	[a]	2,280	20	456
Cape Romanzof	1,500	3,159	[a]	2,904	20	581
Norton Sound	7,000	57,727	[a]	52,138	20	10,428
Port Clarence [d]	-	-		-	-	165
Totals		86,872		79,423	20	15,783

[a] 2013 model projected biomass and age composition was used because of no survey efforts in 2013.
[b] Cape Avinof commercial harvest is 15% of projected biomass (5 AAC 27.895(a)).
[c] Nelson Island commercial harvest is 20% of projected biomass minus 200 tons for subsistence harvest.
[d] Guideline Harvest of Port Clarence was set to 165 tons in 1984.

This news release is to inform fishermen of projected herring biomass and GHLs, along with the strategies employed if commercial fishing does occur. At this time, it is anticipated that some level of commercial herring fishing will occur in the AYK Region in 2014. Under the Bering Sea Herring Fishery Management Plan 5 AAC 27.060 commercial fishing will not open in a district unless the minimum threshold biomass is observed in that district.

-continued-

Based on projected estimates, the 2014 estimated spawning biomass for northeastern Bering Sea herring stocks (Security Cove to Norton Sound Districts) will be 79,423 tons. If the return is as anticipated, the total allowable harvest could be 15,783 tons. A harvest of this magnitude in the AYK herring fishery would be one of the largest on record.

The 2014 AYK Region biomass projection was based on age composition information, harvest data, and good aerial survey biomass estimates from Security Cove, Goodnews Bay, and Nelson Island in 2013. Due to a lack of aerial survey data collected in 2013, Cape Avanof, Nunivak Island, Cape Romanzof, and Norton Sound biomasses were assumed to be equivalent to their previously projected biomass estimates for 2013, minus harvest. Note biomass estimates for Security Cove and Goodnews Bay are reduced from the very high estimates in 2012. Herring samples collected from the test fishery at Goodnews Bay and Nelson Island in Kuskokwim Bay in 2013 and commercial and test fishery samples collected in Norton Sound through 2013 suggest that the forecasted population will be comprised primarily of herring ages 7, 8, and 9 (74.5%).

The actual biomass observed in 2014 may fall above or below the preseason projections based on variability in the quality of aerial biomass assessments, the lack of recent aerial surveys, and annual fluctuation of survival or recruitment rates.

The department will conduct aerial surveys when possible and monitor catch statistics inseason if commercial fishing occurs. GHLs may be adjusted according to inseason aerial assessments of herring biomass. If aerial surveys are not adequate because of poor weather and water clarity conditions, stock abundance will alternately be assessed using projected biomass, test fishery catches, and spawn deposition observations. In accordance with the AYK Region harvest strategy, any operational commercial fishery will not target newly recruited age classes (age 2 through age 5 herring). The duration of fishing periods and harvests may vary in each district depending on inseason biomass estimates, roe quality, spawning activity, weather conditions, fishing effort, and processor input.

Security Cove District

The 2014 projected biomass for the Security Cove District is 8,655 tons and the minimum biomass threshold is 1,200 tons. A 20% exploitation rate would result in a harvest of 1,731 tons. Herring ages 7–9 (70%) are expected to dominate the return.

Goodnews Bay District

The 2014 projected biomass for the Goodnews Bay District is 7,844 tons and the minimum biomass threshold is 1,200 tons. A 20% exploitation rate would result in a harvest of 1,569 tons. Herring ages 7–9 are expected to comprise 70% of the returning biomass (19%, 23%, and 28%, respectively). Age 10 and older herring are expected to comprise 22% of the biomass.

Cape Avinof District

The 2014 projected biomass for the Cape Avinof District is 1,323 tons and the minimum biomass threshold is 500 tons. The exploitation rate will be no greater than 15% because of the limited database for this area and to ensure the subsistence fishing priority. Based on this exploitation rate, potential harvest could be 198 tons. Herring ages 7–10 are expected to comprise 84% of the returning biomass.

-continued-

Nelson Island District

The 2014 projected biomass for the Nelson Island District is 4,279 tons and the minimum biomass threshold is 3,000 tons. A 20% exploitation rate would result in a commercial harvest of 656 tons after accounting for 200 tons in subsistence harvest uses. Herring ages 7–10 are expected to make up 85% of the returning population, contributing 18%, 22%, 29%, and 16% respectively.

Nunivak Island District

The 2014 projected biomass for the Nunivak Island District is 2,280 tons and a minimum biomass threshold of 1,500 tons. A 20% exploitation rate would result in a harvest of 456 tons. Ages 7–10 are expected to comprise 84% of the returning biomass.

Cape Romanzof District

The 2014 projected biomass for the Cape Romanzof District is expected to be 2,904 tons and the minimum biomass threshold is 1,500 tons. A 20% exploitation rate would result in a harvest of 581 tons. Since water turbidity in the Cape Romanzof area generally prevents aerial observations of herring, spawn deposition and test fishery and commercial catch rates will be used to determine the timing and duration of commercial fishing periods if fishing occurs. Herring ages 7–9 are expected to comprise 75% of the returning biomass, 25%, 23%, and 27%, respectively.

Norton Sound District

The 2014 projected biomass for the Norton Sound District is 52,138 tons and a minimum biomass threshold of 7,000 tons. A 20% exploitation rate would result in a guideline harvest of 10,428 tons. A maximum of 320 tons of herring are reserved to allow for the pound fishery to harvest a maximum of 90 tons of product (combined weight of herring roe and kelp). This leaves 10,108 tons for sac roe harvest. The beach seine harvest is allocated 10% of the sac roe projected harvest, or 1,011 tons. The 2014 herring fishery will be opened by emergency order and the fishery will close by emergency order when up to 20% of the available herring biomass has been harvested. Varied harvest rates may be applied to individual subdistricts based on biomass distribution, roe quality, weather, and sea ice conditions. Herring ages 7–9 are expected to comprise 77% of the returning biomass, 26%, 22, and 30%, respectively. Herring age 10 and older are expected to comprise 13% of the biomass.

Port Clarence District

The department does not project an outlook for the Port Clarence fishery because of the lack of data and the limited scope of the fishery. A guideline harvest of 165 tons established by the Alaska Board of Fisheries in 1981 and will be the allowable harvest in 2014. This harvest guideline is based on 2 years of research conducted by the department in both the Port Clarence and Kotzebue Districts. Even though this guideline has not appeared in the regulation book since 1984, it still represents the best estimate of harvestable biomass.

APPENDIX B: FORECASTED HARVEST ALLOCATION FOR TOGIAK SAC ROE AND DUTCH HARBOR FOOD AND BAIT HERRING FISHERIES, 2014

Appendix B1.–Forecasted harvest allocation for Togiak sac roe and Dutch Harbor herring food and bait fisheries, 2014.

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

Cora Campbell, Commissioner
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2014 TOGIAK HERRING OUTLOOK

This notice is intended to provide information to participants in the 2014 Togiak herring fishery. The 2014 herring biomass in Togiak District is forecast to be 157,448 tons, a 7% decrease from 2013 but 20% above the recent 10 year average. The 2014 forecast is based on an age-structured analysis (ASA) model that has been used since 1993. Age -6 herring are expected to comprise 11% of the projected biomass, ages -7 and -8 comprising 35%, ages 9-11 are expected to make up 48% while the remaining 6% will be age 12+ fish. Average weight for age-7 and older herring should exceed 300 grams. The forecasted individual average weight of herring in the harvested biomass is 372 grams.

The commercial fishery and spawn timing is related to water temperatures experienced by herring on the spawning grounds and also appears related to sea surface temperature and sea ice trends across the southeastern Bering Sea in the weeks prior to spawning. We track the average sea surface temperature in late February and early March, as we consider this time window a useful index of conditions encountered by maturing herring ultimately bound for spawning grounds in and around the Togiak District. Currently the Unalaska sea surface temperature is approximately 1.8 ^{o} C above the average for this date and at a level most similar to 2003 when the first harvest occurred on 25 April. Sea ice extent in the Bering Sea is currently 5% below recent years (2006-present) suggesting a slightly earlier harvest than that seen in recent years (e.g. earlier than 10 May; Follow current ice map information at http://nsidc.org/).

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The Bristol Bay Herring Management Plan (**5 AAC 27.865**) sets a maximum 20% exploitation rate for the Togiak District stock. Based on a forecasted run of 157,448 tons, up to 31,490 tons of herring will be available for harvest in 2014. Harvest allocation, in accordance with the management plan will be:

Fishery	Harvest Allocation
Spawn-on-Kelp	1,500 tons
Dutch Harbor Food and Bait	2,099 tons
Togiak Sac Roe	27,890 tons
Purse Seine (70%)	19,523 tons
Gillnet (30%)	8,367 tons

SAC ROE FISHERY

The management strategy for the Togiak herring fishery is designed to provide for maximum sustained yield while affording the greatest economic benefit to fishermen and processors.

In 2014, sac roe fisheries will again be managed to maximize product quality through long openings, allowing permit holders to make smaller sets and harvest the best fish available. Processors will also have more flexibility to control harvest volume so that holding time between harvest and processing is optimal. Available processing capacity is expected to be approximately 3,365 tons per day based on a preseason poll. This represents a significant increase from the 2013 daily capacity of 2,500 tons per day. The preseason poll also indicates there will be 7 processing companies participating in the Togiak sac roe herring fishery and fleet size is expected to be 38 gillnet and 29 purse seine vessels. For the last few seasons, the department has opened the herring fishery as soon as threshold biomass has been documented and anticipates using this strategy again in 2014 to maximize fishing time. The department believes this strategy allows individual companies to maximize their processing capacity and decide what quality is suitable for their individual market.

Purse Seine

For at least the last decade, the seine fishery has operated as individual processor controlled fleets. Indications are that this will be the case again in 2014 and therefore, fishing time and area will be very liberal. This should allow purse seine vessels to locate high quality herring and fill their company's daily processing capacity. This approach should result in fresher, higher quality roe, thereby maximizing product quality and value.

The department will not be coordinating any test fishing efforts. As always, the department will work with companies that want to make test sets prior to the threshold biomass being documented.

Gillnet

Management of the gillnet fishery will be similar to past years. Ample fishing time and area will be allowed in an effort to take the entire harvest guideline of 8,367 tons, while maintaining the specified 70/30 purse seine/gillnet ratio. Product quality will be a priority throughout the gillnet fishery.

In 2014, the department will primarily focus the gillnet fleet in the area east of Right Hand Point. The department will consider opening areas west of Right Hand Point to the gillnet fleet if

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weather conditions are unfavorable in the eastern section. As in 2013, the plan is to open the gillnet area to fishing when threshold biomass is present. Individual companies and fishermen can organize their own test fishing scheme once the area is open and make decisions on when to begin fishing for production. Until it is determined that commercial quality fish are present, participants should test cautiously with a small portion of gear.

ADF&G OPERATIONS 2014

Beginning in late April or early May, current fishery information will be available by calling the telephone recorder in Dillingham at (907) 842-5226. Recordings will be updated regularly throughout the season as information becomes available. The department will conduct regular aerial surveys of Togiak District beginning in late April or early May, depending on weather conditions. The department will not relocate to a field office in Togiak for 2014. The department will monitor marine VHF channel 7 from Dillingham and be available at the phone number listed at the top of this document. Fishing announcements and regular fishery updates will be communicated directly to each processor, published on the web and distributed by fax and email.

Visit: http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main to subscribe to herring fax and/or email updates and announcements. Harvest and fishery opening information will also be available at the Commercial Fisheries website:
http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.herring_announcements.