Fishery Management Report No. 05-53

Kodiak Management Area Commercial Herring Food/Bait Fishery Harvest Strategy, 2005.

by

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and

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October 2005

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

Symbols and Abbreviations

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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)

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

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

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October 2005

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This document should be cited as:
Gretsch, D. and K. Brennan. 2005. Kodiak management area commercial herring food/bait fishery harvest strategy, 2005. Alaska Department of Fish and Game, Fishery Management Report No. 05-53, Anchorage.

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ABSTRACT

The 2005 Kodiak Pacific herring *Clupea pallasi* food/bait fishery may open, by regulation, on September 1, 2005. The fishery may occur on Kodiak herring stocks in that portion of the Uganik District south of the latitude of Miners Point with a 156 ton (short) guideline harvest level (GHL), the Eastside District with a 85 ton GHL, Uyak District with a 33 ton GHL, and the Alitak District with a 28 ton GHL. The remaining districts are either closed due to the low Kamishak herring biomass estimates, or are areas where the food/bait GHL would be less than 10 tons and therefore not manageable. The Alaska Department of Fish and Game is concerned that a competitive fishery, with all 9 permit holders participating, could result in an excessive harvest given the low GHLs in the entire Kodiak Management Area. Therefore, in addition to current regulations, stipulations for a potential cooperative (co-op) fishery are specified in the harvest strategy.

Key words: Kodiak, herring, harvest, food/bait fishery, Kamishak, cooperative

INTRODUCTION

The Kodiak Management Area (KMA) commercial Pacific herring *Clupea pallasi* food/bait fishery has a long history, dating back to 1912 (Gretsch 2001). Early harvests were primarily utilized for food and reduction products; during the peak years of the reduction fishery (1934 to 1950) the average harvest was 31,600 tons (short). Since the early 1960s the harvest has been utilized mainly as bait for crab and longline fisheries.

During the 1980s and 1990s, the majority of the harvest from the food/bait fishery occurred in the northeast Shelikof Strait of the KMA (Figure 1) with the fishery targeting a mix of Kodiak and Kamishak herring stocks (Johnson et al. 1988). The Kamishak Bay District Herring Management Plan (5 AAC 27.465) outlines criteria for the management of the Kamishak Bay sac roe fishery and provides for a harvest allocation for the Kodiak food/bait fishery, based on the Kamishak spawning biomass. The Kamishak management plan stipulates that when the Kamishak herring stock biomass is below threshold (6,000 tons), then the Kamishak Bay sac roe fishery and the Kodiak food/bait fishery in Shelikof Strait north of the latitude of Miners Point (57° 54.00’ N lat) will remain closed (Figure 2). For the remainder of the KMA, the Kodiak herring food/bait fishery is allowed to occur in districts that have strong spawning stocks. The Kamishak spawning biomass has been below the minimum threshold for a commercial harvest since 1998.

In the mid 1990s, market demands for fresh herring bait were strong, stocks were large enough to allow fairly large guideline harvest levels (GHLs), and up to 8 to 10 vessels participated in the fishery annually. Kodiak and Kamishak stock declines reduced the GHL in 1998 and, due to Alaska Department of Fish and Game (ADF&G) concern for manageability of a competitive fishery with small GHLs on highly aggregated stocks, the KMA herring food/bait fishery was closed for the 1999 and 2000 seasons.

In 2001, the Commercial Fisheries Entry Commission (CFEC) designated the KMA herring food/bait fishery a limited entry fishery. In July 2002, the CFEC issued limited entry permits to nine individuals based primarily on fishery participation in the 1994 to 1998 seasons. Five combination purse seine/gillnet and four trawl permits have been issued.

In 2001, due to ADF&G concerns of controlling the harvests in areas with relatively small GHLs, permit holders agreed to conduct a cooperative (co-op) fishery, with fewer boats participating and the proceeds split among all permit holders. This allowed the ADF&G to

provide more liberal fishing time and area during fishing periods. Co-op fisheries have occurred during the 2001 through 2004 herring food/bait seasons.

The KMA food/bait fishery is guided by a regulatory management plan (5 AAC 27.535). This harvest strategy will summarize current regulations and the management of the fishery for the 2005 season and specify stipulations for potential competitive or co-op fisheries.

2005 FISHERY

Due to the small GHLs available for the Kodiak food/bait fishery and the harvest capabilities of five purse seine vessels and four trawlers competing for the fish, the ADF&G is concerned that a competitive fishery with all permit holders participating would be difficult to manage. The season for this fishery extends from September 1, 2005 through February 28, 2006. The fishery will be opened by emergency orders, by district, in order to slow and control the harvests. At least 24 hours advance notice will be given prior to any herring food/bait fishing period. Individual CFEC permit holders must be registered with the department management staff in Kodiak before participating in this fishery.

OPEN DISTRICTS AND GUIDELINE HARVEST LEVELS

The herring food/bait fishery GHLs are based on the preceding herring sac roe fishery season GHLs, with 10% of the 2005 sac roe GHLs, by district, allocated to the 2005 food/bait fishery. The overall guideline harvest level for the 2005 Kodiak herring food/bait fishery is 302 tons.

The 2005 KMA herring food/bait fishery may occur on Kodiak herring stocks in that portion of the Uganik District south of the latitude of Miners Point with a 156 ton GHL (Figure 2), the Eastside District with a 85 ton GHL (Figure 3), the Uyak District with a 33 ton GHL (Figure 4), and the Alitak District with a 28 ton GHL (Figure 5). The remaining districts will remain closed.

MARKET CONCERNS

The Kodiak herring food/bait fishery harvest has been utilized mainly as bait for crab and longline fisheries. In recent years, only Kodiak based processing companies have participated in this fishery. From initial discussions with Kodiak Area processors it appears that there is a very limited market for bait in 2005. Any permit holder that intends to participate in the 2005 Kodiak herring food/bait fishery must have a market for any herring they catch during a food/bait fishery.

COMPETITIVE FISHERY

Lead time will be required for the ADF&G to prepare for a potential competitive fishery. Should permit holders wish to have a competitive fishery, the department would have to consider the number of participants registered, the amount and type of gear on the grounds, the available biomass in an area, and evaluate the potential for overharvest. A department management biologist may have to be on the grounds to assess the biomass and manage any potential fishery. Any fishery opening will likely be of short duration in a limited area, with fisheries occurring in only one district at a time. In the extreme, fishing may not be allowed if, in the opinion of department managers, there is a potential for overharvest due to the effort present.

COOPERATIVE FISHERY

In order to facilitate a fishery, several permit holders have begun discussions concerning a co-op fishery for the 2005 season. The ADF&G will consider a co-op fishery under the same guidelines required during previous seasons. All nine permit holders must notify the department that either they support a co-op fishery or they will not participate in the 2005 fishery. The department would require that only one catcher vessel be used and that a department management biologist be allowed onboard the fishing vessel during any fishery. The management biologist would monitor the harvest, close the fishery if the GHL is reached, and collect commercial catch samples for age composition data. Permit holders will be fully responsible for determining which vessel conducts the harvest, all marketing aspects, and all costs associated with harvesting and tendering the herring.

REGULATIONS

Consult the 2005-2006 Statewide Commercial Herring Fishing Regulations (ADF&G 2005) for a complete listing of applicable regulations.

REGISTRATION

Permit holders must be registered with the ADF&G managers in Kodiak before participating in the food/bait fishery (5 AAC 27.510. (3)(b)). Buyers and tender operators must also be registered prior to taking KMA herring (5 AAC 27.540).

SEASON DATES

The fishery may open by emergency order, between September 1, 2005 and February 28, 2006. The duration of fishing periods and areas opened to fishing will be determined by ADF&G management biologists and will be based on effort and availability of the herring. At least 24 hours advance notice will be given prior to any herring food/bait fishing period. The fishery will be closed when the GHL has been harvested for each district. News Releases will also be issued that announce the closure of each district.

In the event that CFEC permit holders agree to form a co-op for the 2005 food/bait fishery, the fishery may open without restrictions on the duration of fishing periods.

CLOSED WATERS

To protect salmon that may be holding near the head of Kodiak bays, through October 31 herring may not be taken in the closed waters described in the Chignik and Kodiak Commercial Salmon Fishing Regulations, 2005-2008 (5 AAC 18.350; pages 82-86; ADF&G 2005b). Closed waters may be reduced by ADF&G management staff, by emergency order, prior to October 31 if needed to access the herring.

GEAR RESTRICTIONS

Following are the gear restrictions for purse seine/gillnet and trawl permit holders for the Kodiak food/bait fishery. Only one gear type may be fished at a time for the combination permit holders.

GEAR CODE

01 - Purse Seine
- Maximum length: 150 fathoms
- Maximum depth: 1,625 meshes. For Area K there are no web size restrictions.

34 - Gillnet
- Maximum length: 150 fathoms; mesh size: 2-1/8" to 2-1/2".
- No depth restrictions.

07 - Trawl
- No restrictions

FISH TICKETS

All fish tickets must be completed and sent to the Kodiak Fish and Game office within a week of each landing.

Send to: Alaska Department of Fish and Game
ATTN: Dennis Gretsch
211 Mission Road
Kodiak, Alaska 99615

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ADF&G (Alaska Department of Fish and Game). 2005a. Regulations of the Alaska Board of Fisheries for Commercial Herring Fishing in Alaska, 2005-2006. Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau.

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FIGURES

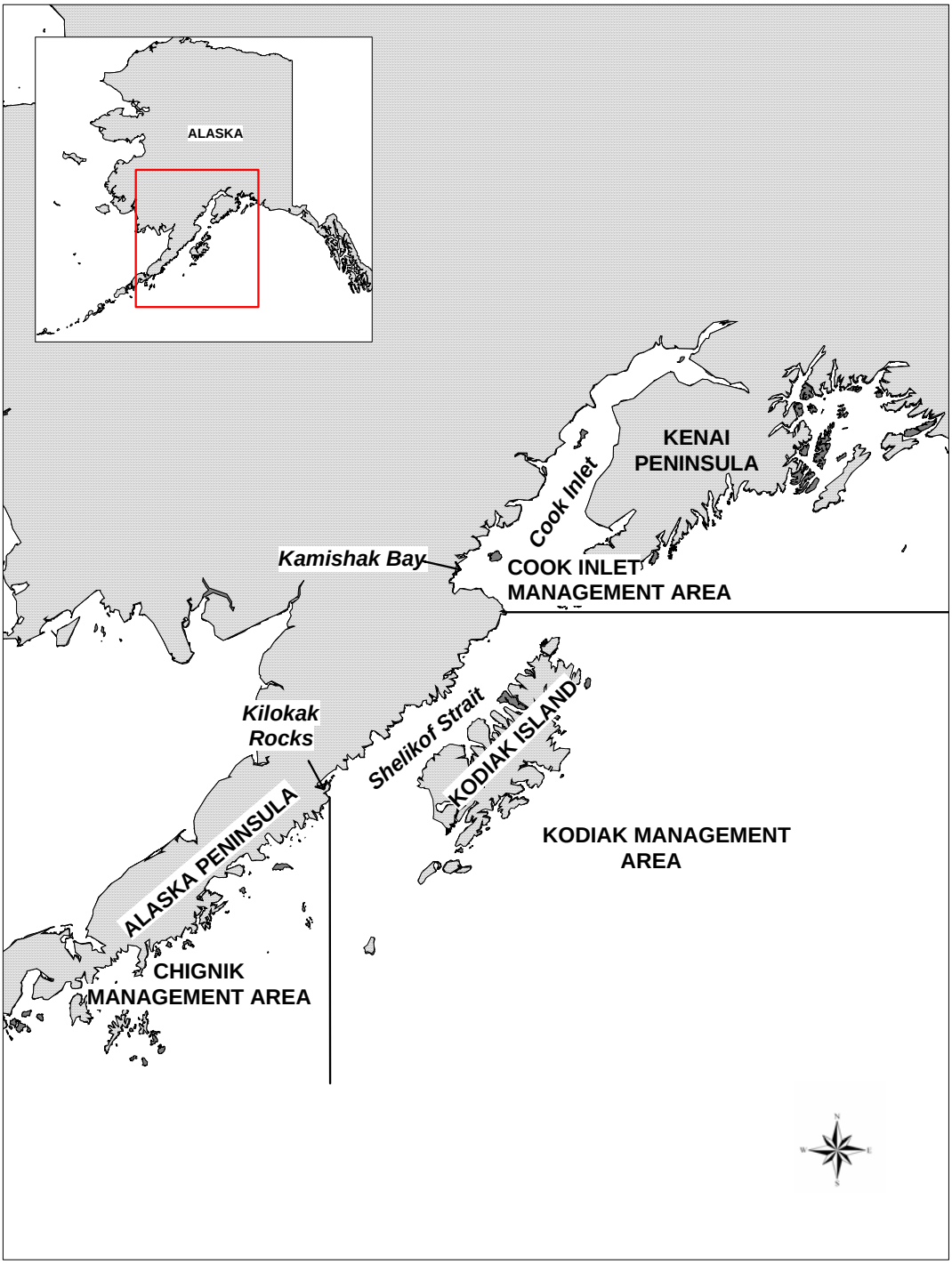

Figure 1.-Map of southwestern Alaska emphasizing the Kodiak Management Area and its relationship to surrounding management areas.

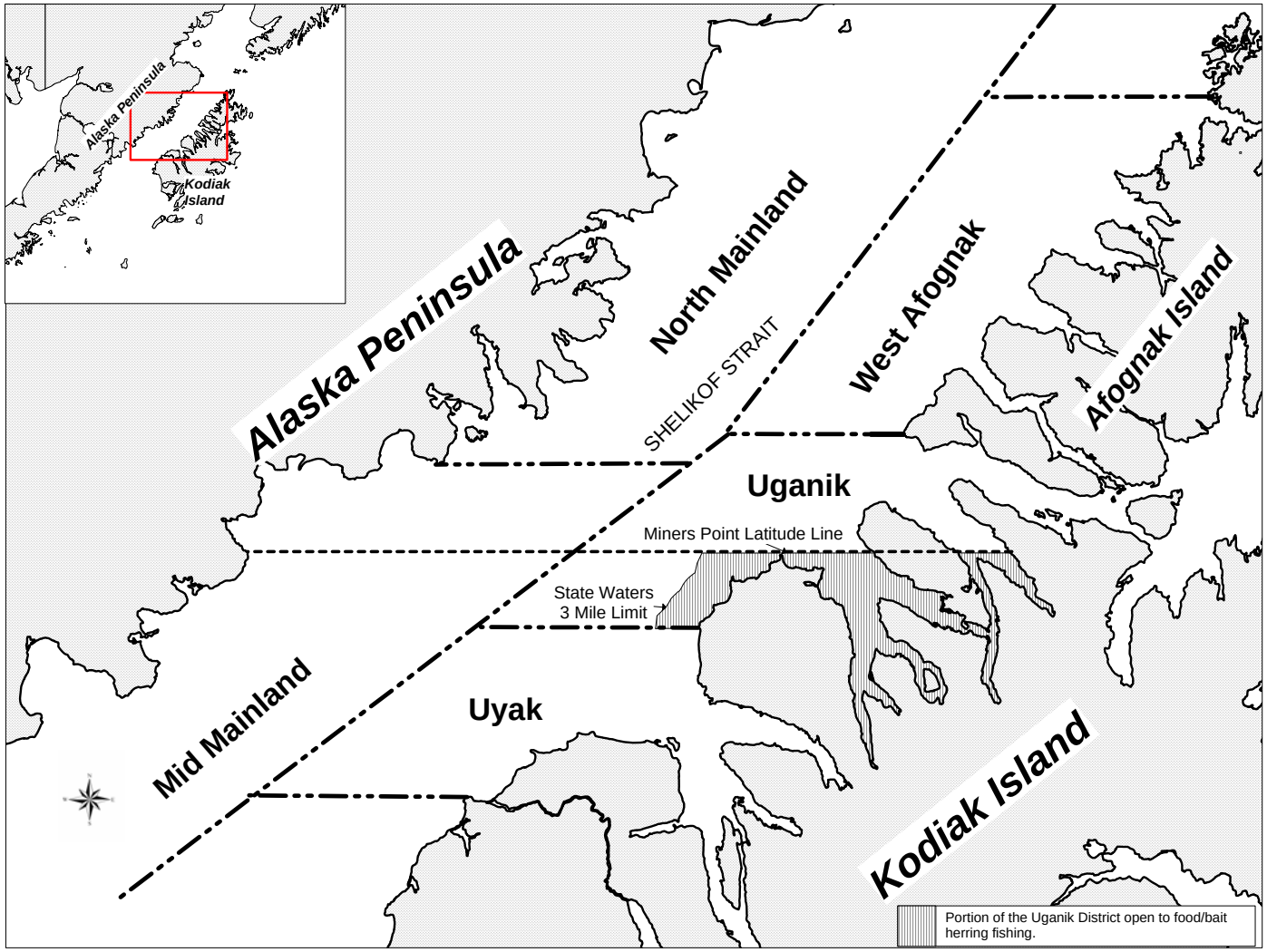

Figure 2.-Map of the North Shelikof Strait and the Uganik Food/Bait District (F/B4) showing that portion south of the latitude of Miners Point that is open to herring food/bait fishing for the 2005 season.

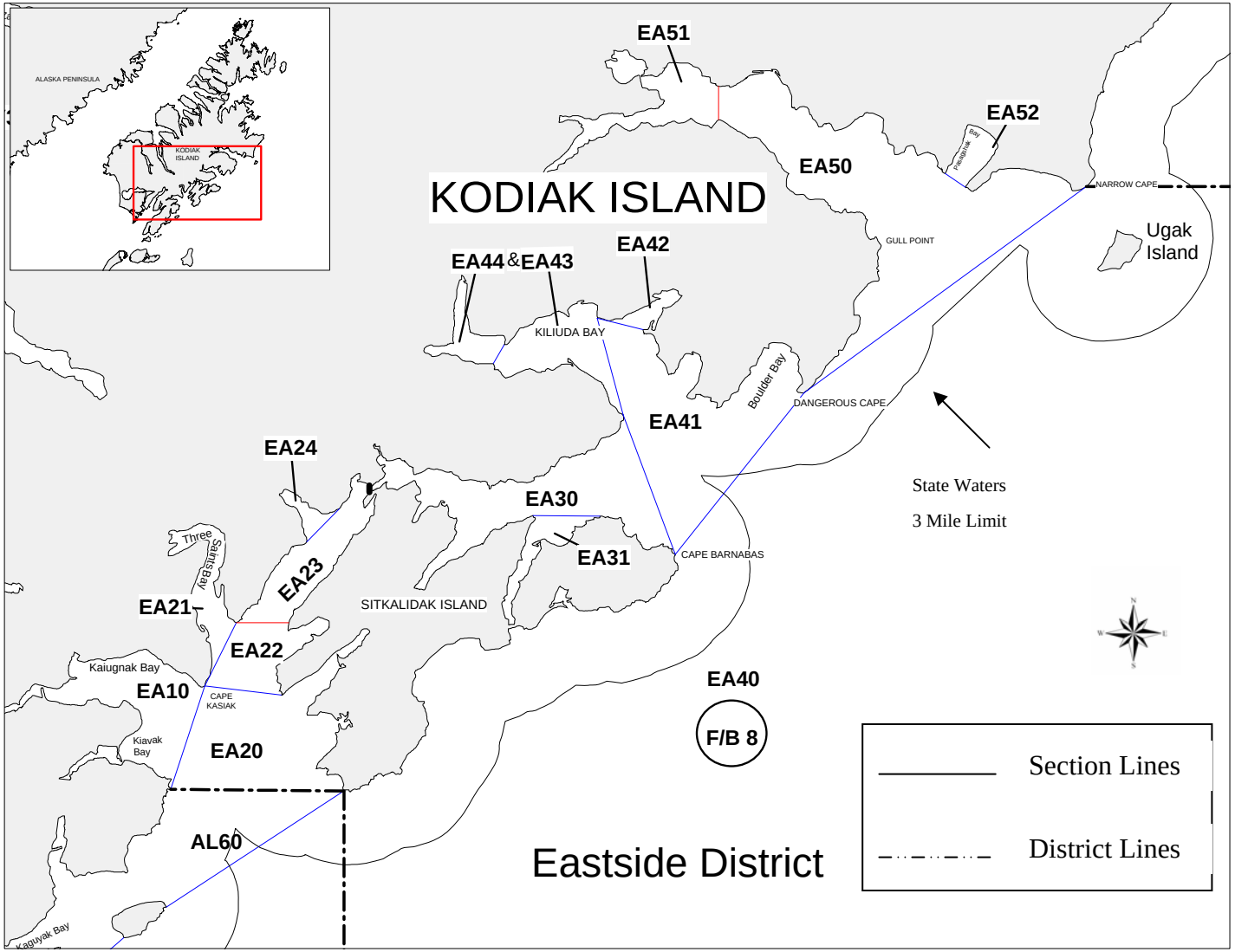

Figure 3.-Map showing the Eastside Food/Bait District (F/B 8) and management sections.

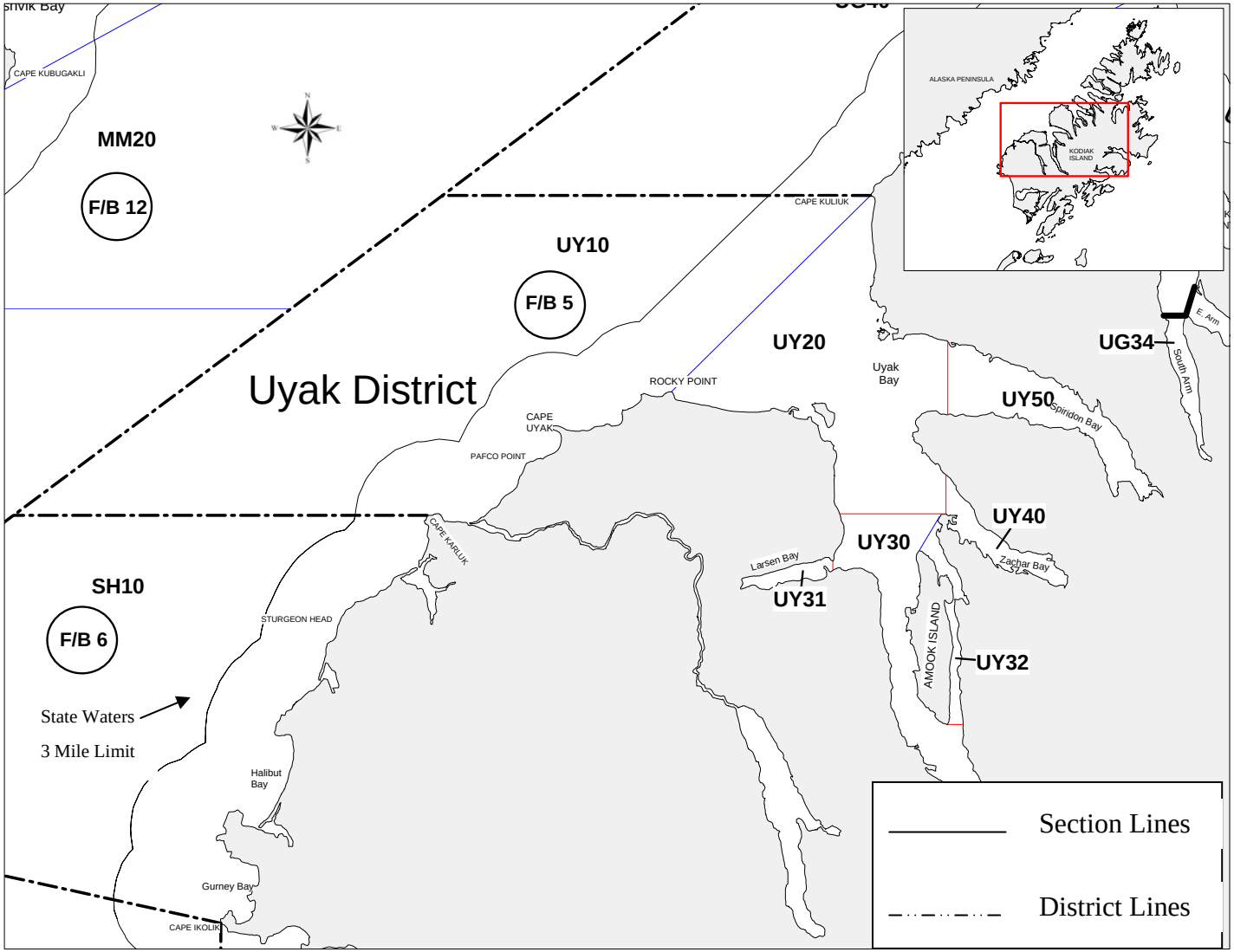

Figure 4.-Map showing the Uyak Food/Bait District (F/B5) and management sections.

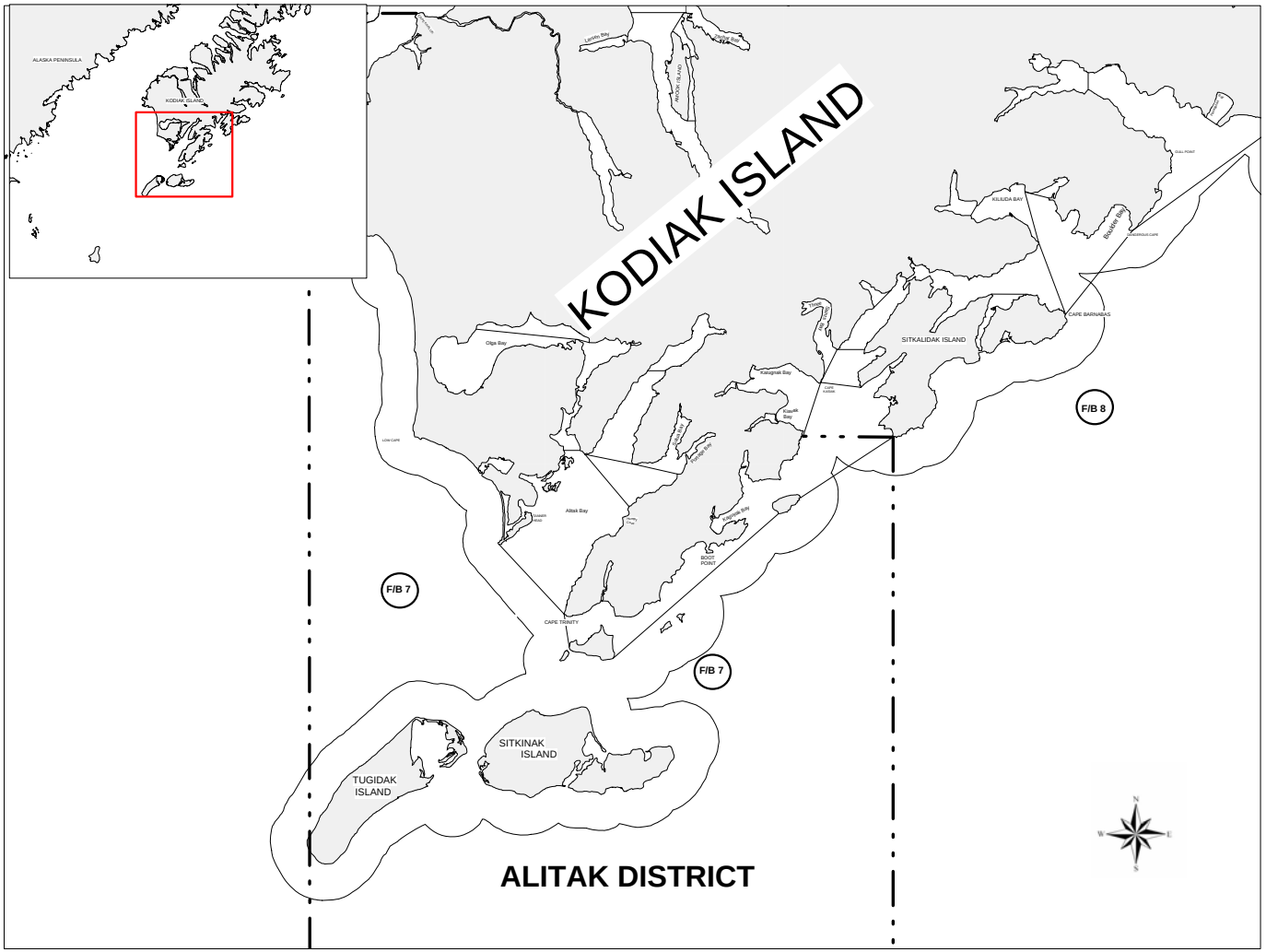

Figure 5.-Map showing the Alitak Food/Bait District (F/B 7) and management sections.