Fishery Management Report No. 06-08

Northern Southeast Herring Spawn-on-Kelp Pound Fishery

by

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and

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Addendum, 3/30/2006

This document has been updated to correct the following text:

On page 9, the single permit closed pounds and double permit closed pounds in the table contain corrected numbers, again for Section 13-C.

On page 6, the original text for the Section 13-C kelp allocation transposed the words "blades" and "fronds" in the last two table rows. The corrected text appears in red.

March 2006

Alaska Department of Fish and Game **Divisions of 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)

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

FISHERY MANAGEMENT REPORT NO. 06-08

NORTHERN SOUTHEAST HERRING SPAWN-ON-KELP POUND FISHERY

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March 2006

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The Division of Sport Fish Fishery Management Reports series was established in 1989 for the publication of an overview of Division of Sport Fish management activities and goals in a specific geographic area. Since 2004, the Division of Commercial Fisheries has also used the Fishery Management Report series. Fishery Management Reports are intended for fishery and other technical professionals, as well as lay persons. Fishery Management Reports are available through the Alaska State Library and on the Internet: http://www.sf.adfg.state.ak.us/statewide/divreports/html/intersearch.cfm. This publication has undergone regional peer review.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

This report describes the Northern Southeast Alaska herring spawn-on-kelp fishery, regional regulations, areas, kelp harvest requirements, Guideline Harvest Levels for 2006. Management plans for the 2006 fishery are outlined, including procedures for announcing fishery openings and closures, and area Alaska Department of Fish and Game contacts. Spawn-on-kelp fisheries including Section 12-A (Tenakee Inlet) and Section 13-C (Hoonah Sound) are detailed.

Key words: herring, spawn-on-kelp, management, guideline harvest levels, commercial herring fishing regulations.

INTRODUCTION

This plan provides an overview of the 2006 management approach, permit requirements, and regulations for the Northern Southeast Alaska spawn-on-kelp fisheries. 5 AAC 27.185 MANAGEMENT PLAN FOR HERRING SPAWN ON KELP IN SOUTHEASTERN ALASKA establishes the regulatory framework for the Northern Southeast Alaska spawn-on-kelp fisheries and provides for fisheries in Section 13-C (Hoonah Sound) and in Section 12-A (Tenakee Inlet). In 2006, the guideline harvest level (GHL) in Hoonah Sound is 669 tons based on a forecast of 4,119 tons. In Tenakee Inlet, the forecast biomass of 2,238 tons is below the threshold of 3,000 tons, therefore there will be no bait or spawn on kelp fisheries in 2006.

A closed pound fishery involves releasing sexually mature herring into a net impoundment in which kelp is suspended. The herring are released from the pound after they spawn on the kelp, and the kelp with eggs is then sold. **An open-pound fishery** involves suspending kelp from a floating frame structure in an area where herring are spawning. The herring are not impounded by a net but instead are allowed to naturally spawn on the suspended kelp. The kelp blades with eggs are removed from the water then sold. Both types of fisheries have the type of product produced in common, which is spawn on kelp.

In both of the northern Southeast Alaska herring spawn-on-kelp fisheries, a closed or an open pound may be operated by a single Commercial Fisheries Entry Commission (CFEC) permit holder or a pound may be operated by two or more CFEC permit holders. To reduce the amount of gear on the fishing grounds and the associated handling and impoundment of herring the department has provided an incentive to multiple permit pound operators by giving them a larger allocation of *Macrocystis* blades or fronds.

The Alaska Board of Fisheries met in Ketchikan in January 2006 and modified the existing regulations for the herring spawn-on-kelp fisheries Southeast Alaska. Changes include modification of kelp allocations, definition of a closed pound, pound marking requirements, and allowing for removal of the pound structure but not the egg covered webbing immediately following the fishery. These regulatory changes will be addressed in the "REGULATIONS" section of this management plan.

The Alaska Board of Fisheries made a finding that the use of test fish revenues to develop new commercial herring fisheries is consistent with the Alaska Department of Fish and Game (ADF&G) Division of Commercial Fisheries Test Fishery Policy. ADF&G conducted its first

closed pound spawn-on-kelp test fishery in Hoonah Sound in 2003 (Table 7). The test fishery was continued in 2004 and included test pounds in both Hoonah Sound and Tenakee Inlet. Test fish revenue from the 2005 season was carried over providing adequate funding of management activities for the 2006 season. **No test fisheries are planned for the 2006 season.**

ADF&G biologists listed at the end of this document are available to answer questions concerning this management plan. Pound fishery participants are also encouraged to carefully review the section of this plan containing requirements of other agencies.

HERRING STOCK STATUS AND GUIDELINE HARVEST LEVEL

METHODS OF FORECASTING HERRING BIOMASS

The Biomass Accounting (BA) method of forecasting has been used to determine the 2006 season's guideline harvest level (GHL) in Hoonah Sound. The BA method uses the most recent year's spawn deposition estimate of eggs, the age composition of the spawning biomass, and weights-at-age to project the following year's return of mature herring. The Hoonah Sound projection also uses the average survival estimate from the age-structured analyses (ASA) from four other areas in Southeast Alaska, and maturation rates estimated by ASA for the nearby Sitka Sound herring stock. A median historical level of recruitment of age-3 herring specific to Hoonah Sound is also applied to forecast biomass.

This BA method is unlike the ASA method used for forecasting herring biomass for several of the larger stocks in Southeast Alaska, including Tenakee Inlet. The ASA method also uses the spawn deposition estimate of the eggs and the age composition to project the following year's return of mature herring. However, the ASA model calculates survival and maturation rates specific to the spawning stock. The ASA model utilizes a long time series of spawn deposition and age composition information to provide an estimate of the most recent biomass, from which the forecast biomass for the next year is determined. ADF&G will continue to consider converting to use of the preferred ASA method for forecasting once there is an adequate time series of data to do so.

Once a forecast of the season's biomass is calculated, a standard sliding harvest rate formula allows for a harvest rate of between 10 and 20% of the forecast mature spawning biomass. When the spawning biomass forecast for an area equals the threshold, the exploitation rate is 10% of the estimated spawning biomass. For each incremental increase in the spawning biomass equal to the threshold, the exploitation rate increases by 2%.

Hoonah Sound (Section 13-C)

A summary showing spawning dates, mileage of spawn, and spawning stock size is presented in Table 1. Since ADF&G first monitored the population in 1971, the Hoonah Sound herring spawning stock has averaged 7.2 nautical miles of spawn and 2,819 tons of spawning biomass. Since 1990, the year the spawn-on-kelp fishery started, the stock has maintained an average of 11.1 nautical miles of spawn and 4,739 tons of spawning biomass. The highest ever-recorded spawning biomass occurred in 2003 when 9,423 tons was observed.

In 2005, approximately 10.3 nautical miles of spawn was observed from April 18 through April 27. The spawning biomass estimate derived from dive surveys was 6,924 tons of herring. Age composition of the 2005 spawning herring was 1% age-3, 3% age-4, 7% age-5, 18% age-6, 18% age-7, and 54% age-8+ (Table 2).

Based on spawning age structure and biomass in 2005, the BA method forecast return for Hoonah Sound in 2006 is **4,119 tons.** This forecast is well above the threshold or minimum amount of herring spawning biomass of 1,000 tons necessary for a fishery. The GHL for 2006 is **669 tons** based on a 16.2% harvest rate. The expected age structure for 2006 is 2% age-3, 3% age-4, 4% age-5, 6% age-6, 17% age-7, and 68% ages-8+.

Herring spawning normally occurs in Hoonah Sound during the last two weeks of April. The earliest recorded spawning occurred on April 13, 1990, and the latest recorded spawning was on May 17, 1971. During the 2005 season, spawning occurred from April 18 through April 26. Traditionally, spawning occurs in Hoonah Sound around Vixen and Emmons Islands and the shoreline from Fick Cove to Ushk Point. Spawning has also been observed in Peril Strait along the Chichagof Island shoreline from Finger River to Broad Island, at False Island, and along the Baranof Island shoreline from Nismeni Point to Point Benham.

In Hoonah Sound during the 2005 season, a total of 94 permit holders made landings totaling 365,513 pounds of spawn-on-kelp (Table 3) with an exvessel value of approximately $1.1 million. Additionally, 15,696 pounds were landed from two pounds fished under the department's test fish program for a total harvest of 381,209 pounds (190.6 tons).

Tenakee Inlet (Section 12-A)

The Tenakee Inlet stock has been utilized for the winter food and bait fishery since the 1978/1979 season. The GHL for the winter food and bait fishery in Tenakee Inlet has ranged from a low of 200 tons in 1978/1979 to a peak GHL of 1,700 tons in 1985/1986 (Table 4).

ADF&G has been conducting aerial surveys in Tenakee Inlet since the early 1970s to define herring spawn deposition areas and to estimate the total miles of spawn to provide an indication of herring stock size or biomass. Aerial surveys were supplemented with hydroacoustic surveys from 1979 through 1986 to provide a more refined estimate for biomass of Tenakee Inlet herring. Starting in the spring of 1987, spawn deposition dive surveys were routinely used, in addition to aerial surveys, as the most reliable and accurate means to assess the spawning biomass.

In the early to mid-1990s, the Tenakee Inlet herring stock was at a depressed level due to a period of low recruitment beginning in 1988. It was not until 1996 that a strong recruitment of three-year-old herring entered into the population boosting the biomass to over 6,000 tons, up from 400 tons the previous year. The biomass peaked in 1998 at 13,000 tons and has since declined back down to an estimated 3,000 tons following a number of years of poor recruitment.

Dive surveys, conducted in the spring of 2005, estimated the Tenakee Inlet herring spawning biomass at 3,036 tons of herring. In Tenakee Inlet, the threshold biomass needed before a fishery can occur is 3,000 tons. The dive survey biomass estimate was used in conjunction with the ASA model to provide a return forecast for the 2005/2006 season of 2,238 tons of herring. The forecast, does not meet the 3,000-ton threshold biomass level allowing commercial fisheries to occur. **There will be no commercial herring fisheries on the**

Tenakee Inlet stock in the 2005-2006 season. The age composition of the 2005 spawning population was 2% age-3, 9% age-4, 12% age-5, 20% age-6, 17% age-7, and 40% age-8+. The expected age structure for 2005 is 22% age-3, 2% age-4, 9% age-5, 18% age-6, 18% age-7, and 31% ages-8+ (Table 5). The minimum allowable GHL for an open pound fishery to occur is 50 tons and the minimum GHL for a closed pound fishery is 100 tons

Spawning in Tenakee Inlet has generally occurred between the last week in April and the first week of May (Table 4). During the 1970s through the late 1980s, herring primarily spawned along the south shoreline of Tenakee Inlet between Saltery Bay and Trap Bay. The most frequented spawning grounds were along the east and west shoreline of Kadashan Bay. During the spring of 1989, aerial surveys revealed that herring had spawned in the East Point and Wachusetts Cove areas on the Chatham Strait shoreline north of Tenakee Inlet. Additional herring spawn was observed south of Tenakee Inlet between South Passage Point and Basket Bay in Chatham Strait. This was the first time herring had been recorded spawning in areas other than their more traditional spawning grounds inside Tenakee Inlet. The spring of 1996 was the only season that significant spawning was recorded on the north shore of Tenakee Inlet. This spawn occurred on the shoreline from Tenakee Springs to Cannery Point. A total of 18.1 nautical miles of spawn occurred during the spring of 1996.

From 1998 through 2005, spawning has occurred inside Tenakee Inlet along its southern shoreline from Saltery Bay to South Passage Point and on the Chatham Strait shoreline south of South Passage Point (Figure 1). Significant spawning has occurred between South Passage Point and Basket Bay six of the past eight seasons (1998–2005). In 2000 all of the spawn occurred in Chatham Strait between South Passage Point and Peninsular Point. A total of 8.9 nautical miles of shoreline was mapped as receiving herring spawn in spring 2005. Spawning inside Tenakee Inlet occurred discontinuously from Crab Bay to South Passage Point, and along the Chatham Straits shoreline south to Basket Bay.

Regulations adopted by the Alaska Board of Fisheries (BOF) in January 2003 provide for a spawn-on-kelp fishery in Tenakee Inlet that occurred for the first time in April 2003 with 55 participants. A second Tenakee Inlet fishery occurred in 2004 with 85 participants. In 2005, with no food and bait, or bait pound harvest, the entire 476 ton GHL was available to the SOK pound fishery. This provided a kelp allocation per permit holder of 300 blades for single closed pounds and 500 blades each for double and triple closed pounds. 98 permit holders participated, with 46 active pounds on the grounds. Because some of the fishers arrived late to the pounding grounds, three pounds did not receive any fish. Of the 43 pounds with fish introduced, one was fished as a single closed pound, 29 were double closed pounds, 13 were triple closed pounds, and three were ADF&G test pounds. 91 permit holders landed product to five buyers. A total of 202,864 pounds of SOK product were produced with an approximate ex-vessel value of $513,000. Summary results of the Tenakee Inlet spawn-on-kelp fisheries are presented in Table 6.

CALENDAR OF EVENTS

The following is a calendar of events to be considered by pound operators for the 2006 fishing season.

November 8	-	News Release announcing Tenakee Inlet forecast below threshold.
January 23	-	News Release announcing 2006 Hoonah Sound GHL of 669 tons.
Jan 22-Feb 1		Alaska Board of Fisheries meeting in Ketchikan.
February 15		2006 Management Plans available at all Southeast Alaska area offices.
No Specific Deadline/ Recommend March 1	-	U.S. Forest Service special-use permit applications (for use of National Forest land above mean high tide) must be submitted to obtain a special-use permit. Special-use permits are required to camp or store gear on National Forest land in conjunction with this fishery. Please contact the USFS directly for applications at (907) 747-4220.
April 3	-	Kelp permits will be available at department area offices.
April 6	-	The fisheries will open by regulation to the capture of herring to be transferred into pounds.
April 13–May 9	-	Inclusive dates of documented herring spawning in Section 13-C from 1990–2004.
April 21–May 14	-	Inclusive dates of documented herring spawning in Section 12-A from 1990–2004.
June 7	-	Pounds must be completely removed from the fishing grounds.

REGULATIONS

The regulatory framework for the spawn on kelp fishery is found in 5 AAC 27.185. MANAGEMENT PAN FOR HERRING SPAWN ON KELP IN POUNDS IN SECTIONS 3-B, 12-A, AND 13-C, AND DISTRICT 7. The Alaska Board of Fisheries met in Ketchikan in January 2006 and adopted several regulatory changes to the management plan including changes to the kelp allocation, the definition of a closed pound, pound marking requirements, and requirements for maintaining the egg-covered webbing in its original configuration after the fishery. These newly adopted regulations will be in effect for the 2006 season.

The District 12 (Tenakee) herring stock is allocated such that the harvest limit for the bait pound fishery is be 10 % of the guideline harvest level for the Tenakee Inlet stock and the harvest limit for the winter food and bait fishery is 90 % of that guideline harvest level. The Tenakee spawn-on-kelp pound fishery is allocated any remaining herring quota that is not taken in the winter food and bait fishery. In addition, if there are no active herring bait pound permits on March 15 each year, the remainder of the seasonal GHL will be allocated to the herring spawn-on-kelp fishery. Any remaining GHL after the close of the spawn-on-kelp fishery in District 12 will be available for the bait pound fishery. **The forecast return of mature herring to Tenakee Inlet in the spring of 2006 is 2,238 tons, below the threshold of 3,000 tons and no fishery will occur in 2006.**

Regulations are outlined below with newly adopted regulatory changes made by the Alaska Board of Fisheries in January of 2006 underlined in bold type:

In Section 13-C, the kelp allocation is as follows:

Guideline Harvest Range for Herring (tons)	Single Permit Closed Pounds	Double-Permit Closed Pounds	Triple-Permit Closed Pounds	Single Permit Open Pounds	Multiple Permit Open Pounds
100 – 249	None	None	none	60 fronds or 600 blades	60 fronds or 600 blades
250 –399	200 blades	400 blades	500 blades	110 fronds or 1,100 blades	110 fronds or 1,100 blades
400 – 599	300 blades	500 blades	750 blades	160 fronds or 1,600 blades	160 fronds or 1,600 blades
600 – 799	1,000 blades	**2,500 blades**	1,500 blades	230 fronds or 2,300 blades	230 fronds or 2,300 blades
800 or more	**2,000 blades**	**3,000 blades**	1,500 blades	300 fronds or 3,000 blades	300 fronds or 3,000 blades

In Section 12-A, the kelp allocation is as follows:

Guideline Harvest Range for Herring (tons)	Single Permit Closed Pounds	Double-Permit Closed Pounds	Triple-Permit Closed Pounds	Single Permit Open Pounds	Multiple Permit Open Pounds
50 – 99	None	None	none	100 fronds or 1,000 blades	300 fronds or 3,000 blades
100 – 299	200 blades	400 blades	500 blades	150 fronds or 1,500 blades	450 fronds or 4,500 blades
300 – 499	300 blades	500 blades	500 blades	200 fronds or 2,000 blades	600 fronds or 6,000 blades
500 – 699	400 blades	500 blades	500 blades	250 fronds or 2,500 blades	750 fronds or 7,500 blades
700 +	1,000 blades	**2,000 blades**	1,000 blades	250 fronds or 2,500 blades	750 fronds or 7,500 blades

A closed pound is defined as a single, floating, rectangular structure with webbing and suspended kelp that is used to enclose herring for a period of time in order to produce spawn on kelp; webbing of a closed pound may not have a mesh size of more than one and one-half inches; the opening of a closed pound **must be rectangular** at the water surface and may not exceed **800** square feet in area, and neither the sewn vertical wall nor the near-vertical wall may exceed a depth below the water surface when the pound contains herring **as follows:**

Surface square footage	**Maximum depth**
Less than 400	**30 feet**
401-500	**24 feet**
501-600	**20 feet**
601-700	**17 feet**
701-800	**15 feet**

The requirement to "maintain six feet of surplus webbing gathered at the surface that may be lowered into the water when submerged webbing becomes saturated with eggs" has been removed from regulations.

Pound marking requirements have been changed such that the **sign must be vertical and the markings must be clearly visible and above the surface of the water at all times** (Figure 2), and **the sign must be left on the pound structure or the net support system the entire time any part of the pound system is in the water.**

After the last herring has been placed into the pounds, two pounds of two or more CFEC permit holders may drop a wall of their respective pounds to allow herring to swim between two connected pounds. The CFEC permit holders must notify the department representative prior to joining their pounds. Additional herring may not be transferred into the pounds once the two of them are joined. This does not change the definition of pounds as found in **5 AAC 27.130. LAWFUL GEAR FOR SOUTHEASTERN ALASKA AREA. (e)(1)** which, in part, states that webbing of a closed pound may not be part of the webbing of another closed pound. Therefore, after fishing operations have ended, two pounds may be joined, but they must remain up to that

point a single unit of gear. If two pounds are joined the regulation that allows for retention of herring for six days will be enforced on the pound which first had herring placed into the structure. Only two pounds can be joined together.

All lines or structures used to suspend kelp must have legible tags above the water surface that states the actual number of blades or fronds on that line or structure along with the permit holder's first and last name. A CFEC permit holder must keep that permit holder's kelp on separate lines or structures.

For the purpose of this fishery, a closed pound is considered to be fishing once herring have been introduced into the closed pound structure; a closed pound is considered to have stopped fishing once all of the herring have been released and all spawn-on-kelp product has been removed from the closed pound structure. For the purpose of this fishery, an open pound is considered to be fishing once kelp has been attached to the open pound structure; an open pound is considered to have stopped fishing once the entire spawn-on-kelp product has been removed from the open pound structure. A permit holder may only have one pound, open or closed, fishing at any given time. For a Northern Southeast spawn-on-kelp CFEC permit holder to operate a closed pound in both Section 13-C and 12-A all the herring must be released and the product harvested from one Section before a pound can be actively fished in another Section. Since the Northern Southeast herring spawn-on-kelp pound fishery is considered a single fishery, only one unit of gear (or pound) may be used at any one time.

After a permit holder releases herring and harvests product from a pound, the permit holder must maintain the webbing in place for at least four weeks. **To optimize hatching success, the person must position egg-covered webbing in the original size and configuration of the pound structure with adequate water circulation on all sides. The webbing support system must be above the surface of the water and clearly marked as per 5 AAC 27.185(k).**

The waters open for the northern spawn-on-kelp fisheries are defined in regulation. The open waters for Section 12-A include: the waters of Chatham Strait and Tenakee Inlet south of the latitude of 57°46.00' N. latitude and north of the latitude of Peninsular Point at 57°30.30' N. latitude and west of the longitude of 134°50.00' W. longitude. The waters open for the Hoonah Sound fishery include: the waters of Hoonah Sound north and west of a line from Point Marie to a point on the northern shore of Hoonah Sound at 57° 37.38’ N. latitude, 135° 27’ W. longitude (Figure 1).

Additional regulations pertaining to the Hoonah Sound and Tenakee Inlet pound fisheries can be found in the 2005–2006 Commercial Herring Fishing Regulations booklet under CHAPTER 27, ARTICLE 4, SOUTHEAST ALASKA AREA under the following sections: 5 AAC 27.110 FISHING SEASONS FOR SOUTHEASTERN ALASKA AREA(f), 5 AAC 27.130 LAWFUL GEAR FOR SOUTHEASTERN ALASKA AREA(d), and (e), and 5 AAC 27.185 MANAGEMENT PLAN FOR HERRING SPAWN-ON-KELP IN POUNDS(a) through (x), and 5 AAC 27.187 BUYER AND PROCESSORS REPORTING REQUIREMENTS FOR SPAWN ON KELP IN POUNDS FOR THE SOUTHEASTERN ALASKA AREA. Harvesting requirements for *Macrocystis* kelp are found in 5 AAC 37.100 PERMITS. AND 5 AAC 37.300 HARVESTING REQUIREMENTS FOR MACROCYSTIS.

It is the responsibility of fishers to carefully review and follow these regulations.

EXPERIMENTAL GEAR PERMITS

New regulations addressing the definition of a closed pound were adopted by the Board of Fisheries (BOF) during the January, 2006 meeting in Ketchikan. Experimental gear permits will not be required to operate rectangular pounds using the newly defined surface area and depth configurations. However, all pounds must be configured in a manner that is consistent with the new regulations specified in the "REGULATIONS" section of this management plan. The department's authority to provide experimental gear permits on a case-by-case basis, as authorized under AS 16.05.050(10), remains in effect. Experimental gear permits may be issued to those providing the department with a detailed plan that demonstrates innovation and the potential to increase spawn on kelp product quality and/or quantity without increasing the use of herring. In consideration of recent BOF action, the department will carefully consider the potential benefits of issuing further experimental gear permits before making a decision to proceed.

LIMITED ENTRY

On January 1, 1995, the Commercial Fisheries Entry Commission adopted a regulation placing the Southeastern Alaska herring spawn-on-kelp pound fisheries in the Hoonah Sound and Craig/Klawock areas under limited entry. By regulation, the maximum number of limited entry cards for the Northern Southeast area spawn-on-kelp fishery (L21A) is 109. Based on administration of the point system adopted in February of 1995 CFEC has now issued 106 limited entry permit cards for this fishery. Up to 2 interim-use permit cards may be issued during the 2006 season pending the outcome of hearings and administrative reviews now in progress. At most, 108 fishers will be eligible to participate in the Hoonah Sound and/or Tenakee Inlet fisheries during the 2006 season.

HARVEST AND ALLOCATION OF KELP

A permit is required to harvest kelp for use in pounds (5 AAC 37.900). Kelp harvest permits may be obtained from local department offices. Kelp blades will be allocated equally among permit holders fishing the same type of gear. The amount of kelp allowed to be harvested for each permit holder is based on the kelp allocation table as indicated under REGULATION 5 AAC 27.185 (d) plus an allowance for breakage and loss during transport. Specific allocation limits are for individual permit holders and are dependent upon the herring GHL and the type of gear to be used. The kelp allocations in Hoonah Sound for the 2006 season, based on a GHL of 669 tons, are as follows:

Section 13-C (Hoonah Sound):

- Single permit closed pounds **1,000** blades of *Macrocystis* kelp;
- Double permit closed pounds **2,500** blades of *Macrocystis* kelp (per permit holder);
- Triple permit closed pounds 1,500 blades of *Macrocystis* kelp (per permit holder);
- Single permit open pounds 2,300 blades or 230 fronds of *Macrocystis* kelp;
- Multiple permit open pounds 2,300 blades or 230 fronds of *Macrocystis* kelp.

FISHERY CONDUCT AND MANAGEMENT

Suitable sites for pounds in Hoonah Sound and Tenakee Inlet are limited. To avoid herring mortality and damage to the pounds, operators should locate their pounds in an area with minimal exposure to wind and wave action, and with a relatively deep bottom. The distance between the location where herring are captured and the pound will be anchored should be minimized since long towing distances can cause stress induced spawning, egg loss, de-scaling of herring, and mortality of herring. The area between Emmons Island and Vixen Island has been the main focus for anchoring pounds since herring normally spawn near this area.

ADF&G will be closely monitoring herring activity in Hoonah Sound and Tenakee Inlet by vessel and aerial surveys. Results of aerial surveys will be announced by recorded message at 907-747-1009 (Sitka office) or by department news release if findings have a significant bearing on when fishing activity should begin. Permit holders may begin catching and transferring herring at any time after 12:01 a.m., April 6, 2006, until closed by emergency order. If it appears spawning will occur earlier than this date, the fishery may be opened earlier to avoid loss of the fishery.

In Hoonah Sound, the department will station a state vessel and personnel on the grounds when herring are available for capture. Department personnel will closely monitor all phases of the fishery to assure compliance with regulations. All fishery announcements, including updates of herring activities and fishery openings/closures, will be broadcast by VHF radio, channel 10. Fishers are expected to have a VHF radio.

The capture and transfer of herring into pounds will be monitored to document any mortality or rough handling of herring. To avoid mortality, the transport of herring to the pound site should be done with the pound itself or a pushable/towable net pen. Transporting with a purse seine is discouraged except for very short distances. Pound operators should **slowly push pounds or tow alongside** of the transfer pound to avoid prop wash and crushing herring against the net. Pound operators are also advised to minimize the distance of towing of herring to avoid stressing the herring and egg loss which can result in poorer quality product. Fishers are asked to avoid making and holding large sets intended to fill multiple pounds in order to avoid mortality and stress of herring. The department may close the fishery or limit fishing to daylight hours only in order to minimize stress and mortality, to reduce potential set size, and to better monitor the fishery.

In 2006, the department will continue to monitor the practice of **"top off fishing."** This practice has been successfully used to stimulate new spawning in pounds and therefore to produce better spawn-on-kelp quality and quantity. The department has a concern, based on observations during the 2003 season, that the practice of "top off fishing" was abused by some fishermen. Regulations allow herring additions through the fourth day from when herring are first added to a pound, but neither kelp nor herring may be added to a pound after herring has been released or product has been harvested (5 AAC 27.185(q)). Herring may be retained in a pound for a maximum of six days from the day first placed into a pound and then must be released (5 AAC 27.185(s)). These two regulations are fundamental to the health of the herring spawning stocks and, along with gear size and kelp allocation limits, provide for sustainable use by limiting the harvest of herring by the fishery. **Fishermen must take responsibility to ensure that when adding herring to a pound that herring are not at the same time swimming out of the pound thereby exchanging spawned-out herring with fresh herring and harvesting more than one pound net full of herring during a season.** If any such cases are observed or reported

in 2006, then the department will turn such cases over to the Alaska Bureau of Wildlife Enforcement for citation. Additionally, the department will consider closure of the fishery to all further fishing by emergency order or limiting fishing to specific daylight hours only. Should the latter two measures become necessary, then such measures may have the unwanted consequence of preventing some permit holders from the capture of herring that season. The department is requesting the assistance of permit holders to ensure that additions of "top off fishing" are only conducted in compliance with regulations and that violations are reported.

Although ADF&G has determined a limitation on the number of kelp blades that can be harvested and placed in each permit holder's pound, fishers are encouraged to fish the number of blades which will maximize the overall quality and value of their product rather than simply to fish the total amount allowed by the department. Other measures that are already in general use in the fishery that might be considered in trying to maximize spawn-on-kelp quality and value include the following:

1. Pound nets shaped with internal frames to provide the full net volume;
2. Adjusting the kelp height in the pound to the depth of active spawning by testing with a weighted string;
3. Fishing and transferring herring to pounds when herring are fully mature;
4. Small top-off sets added over a 2-3 day period;
5. Limiting herring density in the net to a conservative amount since spawning is retarded by excessive crowding;
6. Web depth adjustments to provide good water exchange; and
7. Working in a smaller group to provide adequate time for tending pounds.

The Hoonah Sound area is a high-use recreational area that is valued for its fish and wildlife resources as well as its wilderness character. The department has received a number of public complaints regarding pound structures and other material that were either abandoned in the water or on the upland areas. All materials that are used in the fishery should either be removed from the area or stored in the upland areas under the terms of a required United States Forest Service conditional use permit (see page 13).

HARVEST AND PRODUCTION

Each permit holder's spawn-on-kelp blades must remain separate from other permit holder's spawn-on-kelp blades until after processing and grading is completed. Permit holders will be allowed to harvest <u>all</u> spawn-on-kelp product produced in their pounds. A permit holder's fish ticket must report only the spawn-on-kelp harvested from his/her own pound. Each permit holder fishing a <u>jointly</u> operated pound shall be issued a fish ticket and the **sum** of the weights of those tickets shall equal the total weight of product produced in the jointly operated pound. All fishers and any vessel carrying unlanded and unprocessed spawn-on-kelp product from the fishing grounds must first contact the department and hail the estimated amount of spawn-on-kelp product harvested and indicate the intended time and location where a landing will occur. For any product that has been landed on the grounds to a licensed processor, the processor (not the fishers) will be required to hail the department with delivery weight for each landing on board.

REQUIREMENTS FOR BUYERS

Reporting requirements for buyers and processors of spawn-on-kelp product from Southeast Alaska spawn-on-kelp fisheries can be found in **5 AAC 27.187 BUYER AND PROCESSORS REPORTING REQUIREMENTS FOR SPAWN ON KELP IN POUNDS FOR THE SOUTHEASTERN ALASKA AREA.**

Buyers, processors, and permit holders should read and become familiar with these reporting requirements.

Operators of floating processing vessels, tender vessels, and catcher-processors will be required to report in person, by VHF radio, or by telephone, to the Department of Fish and Game office in Sitka or directly to department area management biologists on the grounds before the start of processing operations in Hoonah Sound. These reporting requirements are specified by regulation **5 AAC 39.130 (g).**

LICENSE REQUIREMENTS

Operators must obtain a 2006 entry permit (L21A) from the CFEC. Individuals who do not have a CFEC permit but are assisting in the operation of the fishery in any manner, must have a 2006 crewmember license. All commercial vessels used in the fishery (including skiffs) are required to have a 2006 vessel license with the CFEC. Fishers are required to display the permanent vessel license plate (ADF&G number) on both sides of the hull, cabin, or mast in permanent symbols at least 12-inches high and with lines at least one-inch wide that contrast with the background.

Applications for vessel and CFEC permits are available from all offices of the Alaska Department of Fish and Game or they can be obtained by writing the Commercial Fisheries Entry Commission, 8800-109 Glacier Highway, Juneau, Alaska 99801-8079. Fishers are reminded to apply for all licenses well in advance of the fishery. Crewmember licenses may be obtained from local vendors in most communities.

OTHER AGENCY REQUIREMENTS

Prospective pound operators are advised to consider other agency requirements for constructing and operating pounds in Hoonah Sound and/or Tenakee Inlet. Pound operators are urged to contact the Alaska Department of Natural Resources, U.S. Forest Service, the National Marine Fisheries Service, and the United States Coast Guard to determine other regulations and requirements. For your convenience phone numbers for those agencies are listed below.

DEPARTMENT OF NATURAL RESOURCES

The Alaska Department of Natural Resources (907-465-3400) manages the use of tide and submerged lands seaward of mean high water (9.1 ft.).

U.S. FOREST SERVICE

In the Hoonah Sound and Tenakee Inlet areas, the U.S. Forest Service has jurisdiction over and manages most of the lands above mean high tide. People who plan to use National Forest land in connection with the fishery must apply for a special use permit from the Forest Service prior to any occupancy. Special use permit applications are available at the Sitka Ranger District Office, 204 Siginaka Way, Sitka, Alaska 99835, (907-747-6671). Completed applications should be

submitted to the Sitka Ranger District well in advance of operations to ensure that a permit is received in time for the fishery. Examples of use needing a permit include (but not limited to): camping on National Forest land in conjunction with the commercial fishery, and storage of gear on the National Forest.

NATIONAL MARINE FISHERIES SERVICE

The National Marine Fisheries Service (907-747-6940) regulates activities that might harm marine mammals.

UNITED STATES COAST GUARD

Structures such as floating fish pens are subject to the requirements of the Code of Federal Regulations, Title 33, Part 64. This regulation requires an owner to apply for a Coast Guard permit and to install and maintain a light or other private aid to navigation if the Coast Guard determines it to be necessary to protect maritime navigation.

Herring pounds used in the spawn-on-kelp pound fishery do not require permits for private aids to navigation at this time, provided the owners:

1. Place two signs on opposite corners of the structure. These signs will be worded “Danger, Fish Pens” (Figure 4).
2. Place a single, all-points white light on one corner of structures less than 400 square feet in size.
3. Place a single, all-points white light on every corner of structures larger than 400 square feet in size.
4. Anchor fish pens within the boundary area specified in ADF&G regulation 5 AAC 27.185 (f)(3) or (4) (Figure 1).

If all these conditions are not met, the permit holder must apply to the Coast Guard for an individual “Private Aids to Navigation Permit.” If you have questions, call the Coast Guard Aids to Navigation office, at (907) 463-2254.

LIST OF MANAGEMENT CONTACTS

Following are ADF&G Division of Commercial Fisheries contacts regarding this management plan:

Scott Kelley Region I Supervisor	P.O. Box 240020 Douglas, Alaska 99824 (907) 465-4250
Bill Davidson Region I Management Biologist	304 Lake St., Rm. 103 Sitka, Alaska 99835 (907) 747-6688
Marc Pritchett Herring Research Biologist	P.O. Box 240020 Douglas, Alaska 99824 (907) 465-4250
Phil Doherty Area Management Biologist Bo Meredith or Justin Breese Assistant Management Biologists	2030 Sea Level Dr. Ste. 205 Ketchikan, Alaska 99901 (907) 225-5195
William Bergmann Area Management Biologist Troy Thynes Assistant Management Biologist	P.O. Box 667 Petersburg, Alaska 99833 (907) 772-3801
Scott Forbes Assistant Management Biologist	215 Front Street P.O. Box 200 Wrangell, AK 99929-0200 (907) 874-3822
Dave Gordon Area Management Biologist Eric Coonradt Assistant Management Biologist	304 Lake St., Rm. 103 Sitka, Alaska 99835 (907) 747-6688
Kevin Monagle Area Management Biologist Dave Harris Assistant Management Biologist	P.O. Box 240020 Douglas, Alaska 99824 (907) 465-4250

TABLES AND FIGURES

Table 1.–Hoonah Sound herring spawning stock and fishery performance, 1971–2005.

Year	Spawn Dates	Nautical Miles Spawn	Estimated Escapement (tons)	SOK Harvested (tons)
1971	5/10-5/17	2.5	833	
1972	5/11-5/12	1.5	666	
1973	N/A	1	333	
1974	14-May	3	999	
1975	N/A	N/A		
1976	5-May	1	333	
1977	N/A	3.5	1,166	
1978	N/A	5.3	1,765	
1979	N/A	0.5	167	
1980	N/A	N/A		
1981	4/30-5/01	2.3	750	
1982	4/29-5/01	1.5	500	
1983	1-May	1	333	
1984	4/26-5/01	3	540	
1985	5/01-5/03	3.5	1,166	
1986	4/28-5/01	3.8	1,249	
1987	4/28-5/02	3.8	740	
1988	4/30-5/01	5	1,665	
1989	4/16-4/20	17	4,000	
1990	4/13-4/28	10	2,350	11.9
1991	4/19-4/24	8.7	2,175	13.3
1992	4/22-4/24	10.8	5,714	23.1
1993	4/27-4/29	5.7	1,099	14.0
1994	4/21-4/23	9	2,450	32.7
1995	4/20-4/21	4.5	274	27.4
1996	5/02-5/9	10.1	4,023	
1997	4/25-4/28	14.5	5,884	65.2
1998	4/23-4/27	14.5	6,472	85.6
1999	4/27-5/1	13.8	4,426	71.6
2000	4/27-4/30	13.0	3,635	35.7
2001	4/27-5/1	13.7	8,538	66.2
2002	4/25-4/27	11.9	4,936	136.6
2003	4/23-4/27	16.7	9,423	141.5
2004	4/22-4/29	11.1	7,502	237.4
2005	4/19-4/25	10.3	6,924	190.6
Average	1971-2005	7.2	2,819	NA
Average	1990-2005	11.1	4,739	72.0

Note: Shaded estimated escapements are based on average spawn density from years 1989-2002.

Table 2.–Percent-at-age composition of spawning Hoonah Sound herring, 1991–2005 and forecast age structure for 2006.

	Age Class					
Year	**3**	**4**	**5**	**6**	**7**	**8+**
1991	44	8	4	15	22	5
1992	7	55	6	4	14	11
1993	7	17	56	8	1	10
1994	3	10	35	42	5	6
1995	25	6	16	30	19	4
1996	83	13	1	1	2	1
1997	8	80	7	2	2	1
1998	2	13	77	7	1	1
1999	3	5	13	72	6	1
2000	23	10	10	24	31	2
2001	17	31	5	6	14	27
2002	4	27	24	6	7	31
2003	5	12	30	25	7	21
2004	1	6	13	26	26	30
2005	1	3	7	18	18	54
2006*	2	3	4	6	17	68

* Forecasted age composition.

Table 3.–Hoonah Sound herring spawn-on-kelp fishery summary, 1990–2005.

	1990	1991	1992	1993	1994	1995
Herring Quota (tons)	150	150	150	150	150	150
Harvest Quota (tons)	11	12	12	12	12	12
Harvest (tons)	11.9	13.25	23.12	14.0	32.7	27.4
Exvessel Value	$201,348	$193,715	$453,152	$542,080	$1,683,396	$1,175,460
Average Price/lb	$8.46	$7.31	$9.80	$19.36	$25.74	$21.45
Average Income	$2,034	$2,334	$4,196	$8,470	$15,444	$9,715
Number of Applicants	400	185	199	230	195	153
Number of Pounds	128	104	120	115	123	132
Number Selling Product	99	83	108	64	109	121
Kelp Allocation (blades)	240	280	240	160	140	100
Kelp Blade Harvest	31,260	28,355	27,255	16,260	18,340	15,195
Fishery Open - Closed	4/13-4/22	4/6-4/25	4/6-4/26	4/6-5/3	4/6-4/25	4/6-4/22
Fishing Occurred	4/13-4/22	4/15-4/25	4/17-4/26	4/26-5/2	4/21-4/24	4/17-4/22
Harvest Occurred	4/18-4/27	4/22-4/29	4/22-4/30	4/25-5/2	4/25-4/27	4/22-4/26
	1997	**1998**	**1999**	**2000**	**2001**	**2002**
Herring Quota (tons)	1421	700	778	359	366	1,264
Harvest Quota (tons)	114	56	62	29	NA	NA
Harvest (tons)	65.2	85.9	71.6	35.7	66.2	136.6
Exvessel Value	$920,000	$1,160,523	$1,005,529	$587,568	$1,006,000	$1,970,000
Average Price/lb	$7.05	$6.75	$7.02	$8.23	$7.60	$7.32
Average Income/Landing	$6,694	$10,092	$11,692	$6,251	$11,559	$20,408
Number of Applicants	139	133	106	106	NA	NA
Number of Pounds	0/113/18[b]	115	96	46/2/0[b]	42/3/1[b]	106/0/2[b]
Number Selling Product	112/12[a]	115	86	84	87	98
Kelp Allocation (blades)	430/860[a]	400/800[a]	400/800[a]	110/300[c]	120/300[c]	1,000/3,600[a]
Kelp Blade Harvest	68,755	54,275	42,025	29,820	29,966	113,713
Fishery Open - Closed	4/6-4/29	4/6-4/27	4/6-5/3	4/6-5/3	4/6-5/3	4/6-5/1
Fishing Occurred	4/22-4/29	4/18-4/26	4/29-5/2	4/27-4/29	4/25-4/28	4/24-4/27
Harvest Occurred	4/27-5/3	4/25-4/27	5/3-5/5	5/2-5/4	4/30-5/2	4/28-5/1
	2003	**2004**	**2005**			
Herring Quota (tons)	427	1,207	728			
Harvest Quota (tons)	NA	NA	NA			
Harvest (tons)	141.6	237.4	190.6			
Exvessel Value	$1,922,500	$2,071,347	$1,117,568			
Average Price/lb	$6.79	$4.36	$2.93			
Average Income/Landing	$17,800	$19,541	$11,889			
Number of Applicants	NA	NA	NA			
Number of Pounds	49/1/3[d]	92/12/2[b]	81/5/3[c]			
Number Selling Product	108	106	94			
Kelp Allocation (blades)	500/300/750[d]	1,000/1,000/ 3,000[b]	1,000/1,000/ 1,500[d]			
Kelp Blade Harvest	60,301	126,000	118,450			
Fishery Open - Closed	4/6-4/25	4/6-4/28	4/6-4/28			
Fishing Occurred	4/19-4/24	4/20-4/25	4/19-4/28			
Harvest Occurred	4/24-4/27	4/26-4/28	4/25-4/28			

[a] Closed pound/Open Pound.

[b] Double closed pounds/single closed pounds/open pounds.

[c] Single-permit closed pound/double-permit closed pound/triple-permit closed pounds.

[d] Double closed pounds/single closed pounds/triple closed pounds

Note: No fishery occurred in 1996 since the biomass forecast was below the 1,000-ton threshold.

Table 4.–Tenakee Inlet herring spawn deposition timing, location, biomass estimates, and food & bait harvests.

Winter & Spring of the Year	Major Spawning Dates	Nautical Miles of Spawn (nm)	Spawning Biomass Forecast[a](tons)	Food/Bait Quota(tons)	Food/Bait Harvest (tons)
1979	5/9-5/11	3.3	2,500	200	0
1980	4/28-5/2	3.9	4,485	400	504
1981	4/27-5/5	9.3	7,500	750	847
1982	4/25-5/7	11.1	6,650	650	654
1983	4/25-5/6	13.1	8,870	875	799
1984	4/20-4/26	8.3	12,100	850	619
1985	4/24-5/1	9.9	11,000	1,400	1,406
1986	4/27-5/1	8.3	12,500	1,700	2,040
1987	4/22-4/30	7.9	6,600	800	1,275
1988	4/22-4/27	9.1	6,000	1,450	1,577
1989	4/26-4/29	10.3	5,360	720	655
1990	4/25-5/6	2.9	2000	650	595
1991	4/25-5/4	2.1	400	No fishery.	
1992	5/5	trace	200	No fishery.	
1993	4/21-4/23	6.4	904	No fishery.	
1994	4/24-4/26	0.25	400	No fishery.	
1995	4/26	0.05	200	No fishery.	
1996	5/4-5/14	18.1	4,569	No fishery.	
1997	4/26-5/7	14.4	10,000	300	97.5
1998	4/24-4/29	12.4	10,419	825	692
1999	4/25-4/28	11.0	11,049	1,023	835
2000	4/26-5/3	13.8	9,149	542	494
2001	4/21-5/1	12.2	7,575	906	775
2002	4/23-4/27	15.4	4,366	840	393
2003	4/25-4/28	12.2	3,262	528	328
2004	4/28-5/3	13.0	3,274	399	confidential
2005	4/26-5/2	8.9	4,362	476	0

[a] Spawning biomass estimates were calculated from hydro-acoustical surveys from 1979 through 1986, from spawn deposition surveys from 1987 through 1996, using biomass accounting from 1997 through 1999, and using ASA modeling from 2000 to present.

Table 5.–Percent-at-age composition of spawning Tenakee Inlet herring, 1982–2006.

Year	Age 3	Age 4	Age 5	Age 6	Age 7	Age 8
1982	24	7	48	21	0	0
1983	49	7	3	12	27	2
1984	17	38	6	13	22	4
1985	2	31	45	7	9	6
1986	3	8	42	34	4	10
1987	30	14	16	28	10	3
1988	1	41	18	12	16	12
1989	9	12	53	15	8	2
1990	10	10	20	38	13	10
1991*						
1992*						
1993	20	11	61	2	2	4
1994*						
1995*						
1996*						
1997	5	88	5	1	1	0
1998	3	9	81	7	1	0
1999	3	4	11	78	2	1
2000	16	8	8	23	42	3
2001	15	19	5	7	20	33
2002	14	28	18	7	7	27
2003	13	10	24	18	5	31
2004	1	15	22	20	20	22
2005	2	9	12	20	17	40
2006**	22	2	9	18	18	31

* No sampling was performed during 1991 & 1992, and 1994-1996.
** 2006 Forecast Age Composition

Table 6.–Tenakee Inlet herring spawn-on-kelp fishery summary, 2003–2005.

	2003	2004	2005
Tenakee Inlet GHL (tons)	528	399	476
GHL Available for SOK (tons)	180	360	476
SOK Harvest (tons)	47.6	95	101.4
Exvessel Value	$580,500	$981,464	$512,900
Average Price/lb	$6.10	$4.68	$2.53
Average Income/permit	$10,555	$11,684	$5,636
Number of Permits participating	55	85	91
Number of Pounds	1/15/8/0[a]	1/32/6/2/2[b]	1/29/13/3[a]
Number Permits Landing Product	55	85	91
Kelp Allocation (blades)	200/400/550/0[a]	300/500/500/2000[a]	300/500/500/2000[a]
Kelp Blade Harvest	35,375	39,000	53,850
Fishery Open - Closed	4/6 -5/6	4/6 - 5/6	4/6 - 5/5
Fishing Occurred	4/25-4/28	4/28 - 5/1	4/27 - 4/30
Harvest Occurred	4/30-5/4	5/3 -5/6	5/2 - 5/4

[a] single/double/triple/test

[b] single/double/triple/longline/test

Table 7.–Summary of herring spawn-on-kelp pounds contracted under the department's test fishery program, 2003-2005.

Year	Area	Number of Pounds	Maximum Kelp	Kelp Used	Pounds of SOK	Percent of Value Bid	ADF&G Revenue	Comments
2003	Hoonah Sound	1	600	600	1,190	46.5%	$ 3,515	
2003	Hoonah Sound	1	1,200	1,200	5,100	46.5%	$ 12,811	
2004	Hoonah Sound	1	2,000	1,500	7,055	75.0%	$ 7,559	
2004	Hoonah Sound	1	2,000	2,000	6,307	75.0%	$ 6,303	
2004	Hoonah Sound	1	2,000	1,500	4,777	60.0%	$ 7,844	
2004	Hoonah Sound	1	2,000	1,600	3,745	65.0%	$ 4,036	
2004	Hoonah Sound	1	2,000	2,000	4,766	65.0%	$ 5,138	
2004	Tenakee Inlet	1	2,000	2,000	7,521	72.0%	$ 7,119	
2004	Tenakee Inlet	1	500	500	1,613	72.0%	$ 1,867	Double Pound
2004	Tenakee Inlet	1	2,000					Pound not successful
2005	Hoonah Sound	1	2,000	0	0	50.52%	$ 0	
2005	Hoonah Sound	1	2,000	2,000	6,452	36.0%	$ 6,456	
2005	Hoonah Sound	1	2,000	2,000	9,243	35.1%	$ 11,777	
2005	Tenakee Inlet	1	2,000	2,000	2,100	35.1%	$1,391	Peel
2005	Tenakee Inlet	1	2,000	2,000	9,382	36.0%	$10,021	
2005	Tenakee Inlet	1	2,000	2,000	3,874	50.5%	$4,388	

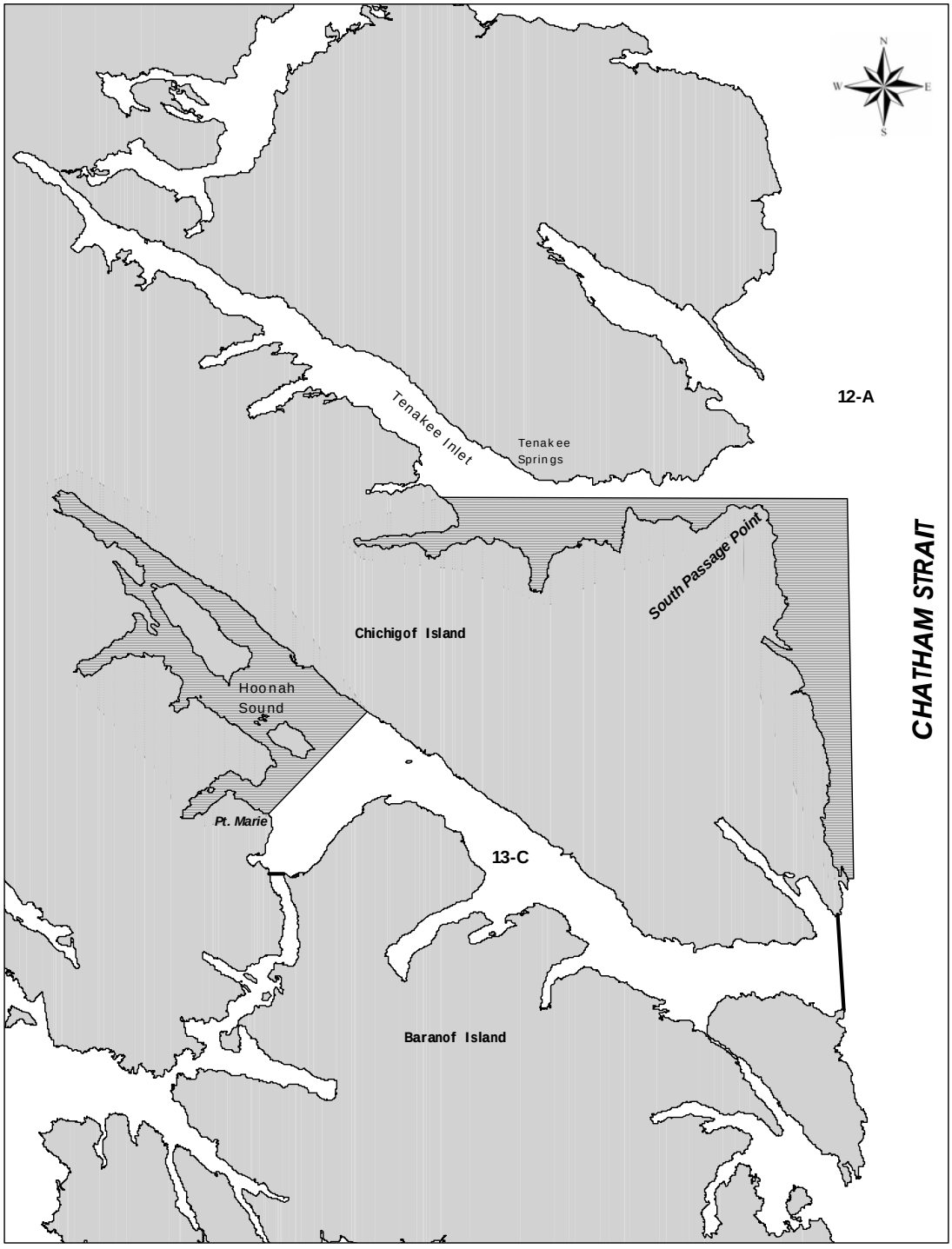

Figure 1.–Areas open (dark shade) to spawn-on-kelp fishery in Hoonah Sound and Tenakee Inlet.

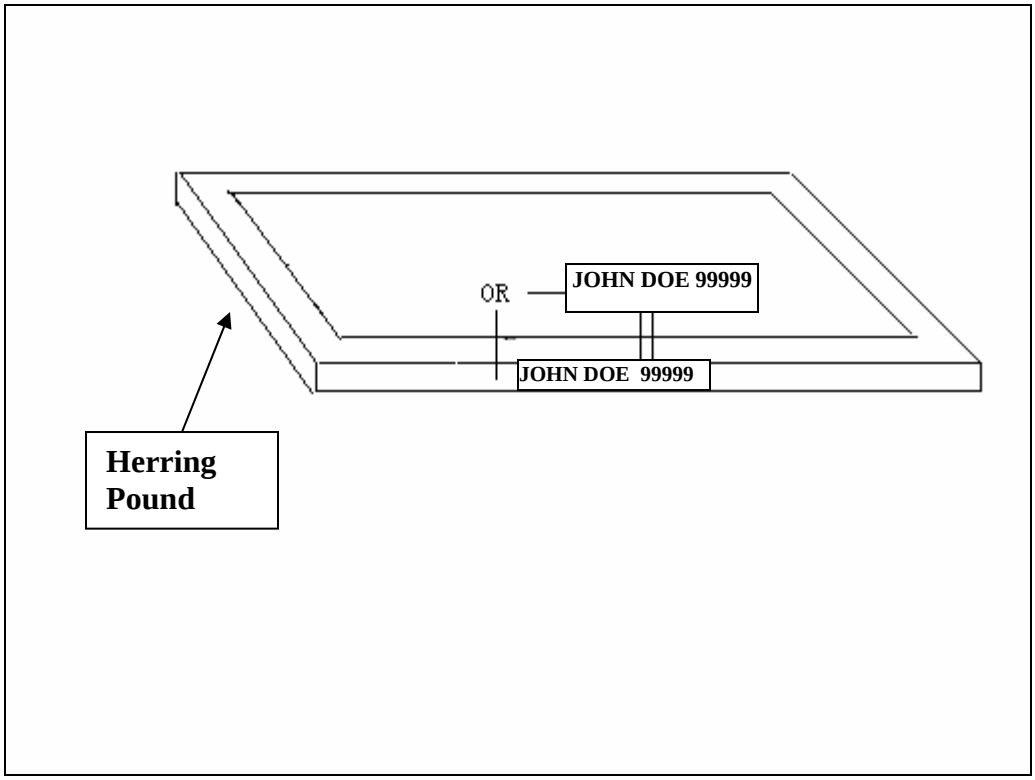

Figure 2.–Diagram of a herring pound showing two alternatives methods of marking herring pounds under new regulation requiring vertical signs with the permit holder's first and last name and five-digit CFEC permit number (5 AAC 27.185(k)). Letters and numbers must be at least six inches high and at least one-half inch wide and must contrast with the background.

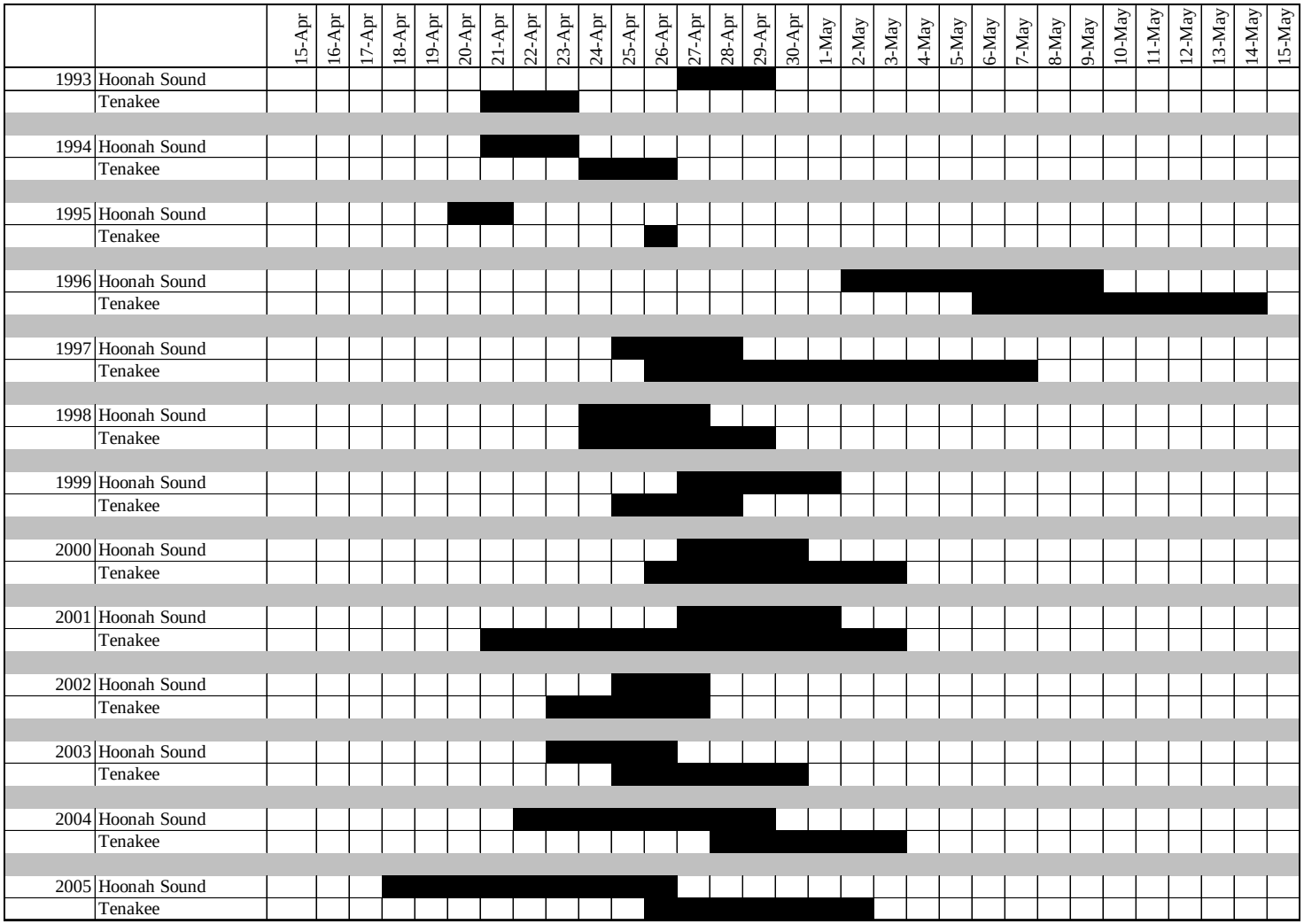

Figure 3.–A Comparison of Hoonah Sound and Tenakee Inlet herring spawning dates for years 1993–2005. Black bar indicates dates of active spawning.

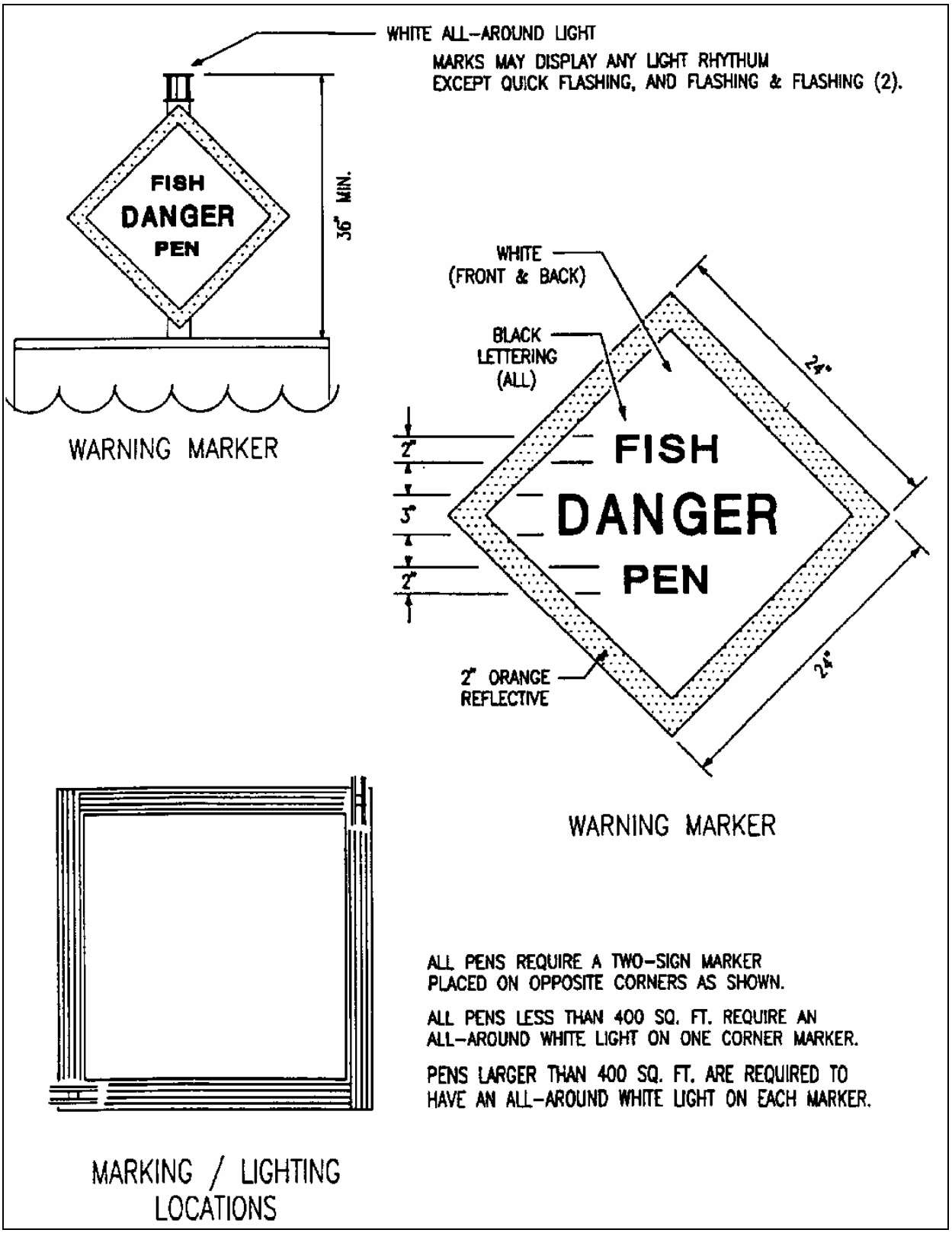

Figure 4.–Coast Guard requirements for marking pounds.