

2010 Southeast Alaska Herring Spawn-On-Kelp Pound Fishery Management Plan

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Division of Commercial Fisheries



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Weights and measures (metric)		General		Measures (fisheries)	
centimeter	cm	Alaska Administrative Code	AAC	fork length	FL
deciliter	dL	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	mid-eye-to-fork	MEF
gram	g	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.	mid-eye-to-tail-fork	METF
hectare	ha	at	@	standard length	SL
kilogram	kg	compass directions:		total length	TL
kilometer	km	east	E		
liter	L	north	N	Mathematics, statistics	
meter	m	south	S	<i>all standard mathematical signs, symbols and abbreviations</i>	
milliliter	mL	west	W	alternate hypothesis	H _A
millimeter	mm	copyright	©	base of natural logarithm	<i>e</i>
		corporate suffixes:		catch per unit effort	CPUE
Weights and measures (English)		Company	Co.	coefficient of variation	CV
cubic feet per second	ft ³ /s	Corporation	Corp.	common test statistics	(F, t, χ^2 , etc.)
foot	ft	Incorporated	Inc.	confidence interval	CI
gallon	gal	Limited	Ltd.	correlation coefficient (multiple)	R
inch	in	District of Columbia	D.C.	correlation coefficient (simple)	r
mile	mi	et alii (and others)	et al.	covariance	cov
nautical mile	nmi	et cetera (and so forth)	etc.	degree (angular)	°
ounce	oz	exempli gratia (for example)	e.g.	degrees of freedom	df
pound	lb	Federal Information Code	FIC	expected value	<i>E</i>
quart	qt	id est (that is)	i.e.	greater than	>
yard	yd	latitude or longitude	lat. or long.	greater than or equal to	≥
		monetary symbols (U.S.)	\$, ¢	harvest per unit effort	HPUE
Time and temperature		months (tables and figures): first three letters	Jan, ..., Dec	less than	<
day	d	registered trademark	®	less than or equal to	≤
degrees Celsius	°C	trademark	™	logarithm (natural)	ln
degrees Fahrenheit	°F	United States (adjective)	U.S.	logarithm (base 10)	log
degrees kelvin	K	United States of America (noun)	USA	logarithm (specify base)	log ₂ , etc.
hour	h	U.S.C.	United States Code	minute (angular)	'
hour	h	U.S. state	use two-letter abbreviations (e.g., AK, WA)	not significant	NS
minute	min			null hypothesis	H ₀
second	s			percent	%
Physics and chemistry				probability	P
all atomic symbols				probability of a type I error (rejection of the null hypothesis when true)	α
alternating current	AC			probability of a type II error (acceptance of the null hypothesis when false)	β
ampere	A			second (angular)	"
calorie	cal			standard deviation	SD
direct current	DC			standard error	SE
hertz	Hz			variance	
horsepower	hp			population	Var
hydrogen ion activity (negative log of)	pH			sample	var
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

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**2010 SOUTHEAST ALASKA HERRING
SPAWN-ON-KELP POUND FISHERY MANAGEMENT PLAN**

by

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ABSTRACT

This plan provides an overview of the management approach and regulations for the 2010 herring spawn-on-kelp pound fisheries in Southeast Alaska. Spawn-on-kelp pound fisheries will occur in Craig-Klawock, Tenakee Inlet and Hoonah Sound in 2010. Staff biologists listed at the end of this document are available to answer questions regarding this plan. Pound operators are also advised to review the section of this plan that describes requirements of other agencies.

Key words: Pacific herring, *Clupea pallasii*, herring pound, *Macrocystis* kelp allocation, management plan, spawn on kelp.

INTRODUCTION

This plan provides an overview of the 2010 management approach, permit requirements, and regulations for the Southeast Alaska herring (*Clupea pallasii*) spawn-on-kelp fisheries. 5 AAC 27.185 MANAGEMENT PLAN FOR HERRING SPAWN ON KELP IN SOUTHEASTERN ALASKA establishes the regulatory framework for the Southeast Alaska spawn-on-kelp fisheries and provides for fisheries in Sections 3-B (Craig/Klawock), 12-A (Tenakee Inlet), and 13-C (Hoonah Sound), and in District 7 (Ernest Sound).

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.

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

The 2009–2010 Guideline Harvest Level (GHL) for the Craig/Klawock area is 2,074 tons. Forty percent (40%) or 830 tons is allocated to the spawn-on-kelp fishery plus any unharvested portion of the winter food and bait quota. The 2009–2010 winter food and bait harvest is confidential. In 2010, the GHL available to the spawn-on-kelp fishery in Craig/Klawock will allow for the maximum kelp allocation.

The 2009–2010 GHL for Ernest Sound herring stock is 297 tons. The GHL for the Ernest Sound spawn-on-kelp pound fishery is any remaining GHL that is not harvested by the winter food and bait fishery or the bait pound fishery. The 2009–2010 winter food and bait harvest is confidential. The remaining GHL for the Ernest Sound spawn-on-kelp fishery is less than 50 tons. The amount of remaining GHL does not allow for a directed spawn-on-kelp pound fishery in District 7 for the 2009–2010 season.

The 2009–2010 GHL for Hoonah Sound is 3,182 tons which will allow for the maximum kelp allocation.

The 2008–2009 GHL for Tenakee Inlet is 583 tons with 90% allocated to the winter food and bait fishery and 10% allocated to the bait pound fishery. After the close of the winter food and bait fishery and bait pound fishery any remaining GHL is available to the spawn-on-kelp fishery.

The 2009–2010 winter food and bait harvest is confidential and there are no active bait pound permits in the district. The remaining GHL for the Tenakee spawn-on-kelp fishery is in the 50+ ton range. At this GHL only an open pound spawn-on-kelp fishery is provided.

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 ADF&G Division of Commercial Fisheries Test Fishery Policy. The department conducted closed pound spawn-on-kelp (SOK) test fisheries in 2003, 2004, 2005 and 2008. In 2006, 2007 and 2009 carry-over test fish revenues and budget allocations provided adequate funding and no test fisheries occurred. In 2010 no test fisheries are planned to support management of any of the Southeast Alaska commercial SOK fisheries.

HERRING STOCK STATUS AND HISTORIC FISHERY PERFORMANCE

METHODS OF FORECASTING HERRING BIOMASS

The Biomass Accounting (BA) method of forecasting is used to determine the expected pre-fishery mature spawning biomass and to establish the fishery GHL in Hoonah Sound and Ernest 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 uses the estimated survival and maturity estimates from the age-structured analyses (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 Craig/Klawock and 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. The department 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 sliding harvest rate formula allows for a harvest rate of between 10 and 20% of the forecast of 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%.

CRAIG-KLAWOCK (SECTION 3-B)

Winter food and bait herring fisheries have occurred in Section 3-B (in the Meares Passage and Bocas de Finas area) since the 1960s. Seasonal landings from the 1960s through 1985 were small, averaging approximately 210 tons. From the start of the herring spawn-on-kelp fishery in 1992, the Craig/Klawock herring GHLs have averaged 1,358 tons, ranging from a high of 2,684 tons in 1992 to a low of 626 tons in 2000 (Table 1). Spawn-on-kelp fishing effort, harvest, spawning dates, fishery dates, and product values are summarized in Table 2.

Annual harvest levels are based on a graduated scale that allows for higher harvest rates as the herring population increases relative to the threshold level. No harvest is allowed if the biomass estimate for the stock is less than the threshold level. The established threshold level for the Craig/Klawock stock is 5,000 tons. The 2010 forecast for the the Craig area is 14,870 tons. The allowable 13.9% harvest rate will allow a combined quota of 2,074 tons for the winter food and bait and the spawn-on-kelp fisheries. The age class structure is anticipated to be predominantly older age herring, including 18% age 7 and 46% of age 8+.

The GHL for the Section 3-B stock is allocated between both the winter food and bait fishery and the herring spawn-on-kelp fishery. Initially, the GHL allocation was 85% for the winter food and bait fishery and 15% for the spawn-on-kelp fishery. In 1998 the allocation was modified so that the winter food and bait fishery is allocated 60% of the GHL with the remaining 40% going to the herring spawn-on-kelp fishery. Therefore, for the 2010 season, the GHL for the winter food and bait fishery was 1,244 tons, and the GHL for the spawn-on-kelp fishery will be 830 tons plus the unharvested portion of the winter food and bait fishery GHL. The winter food and bait harvest is confidential. The 2010 herring allocation for the Section 3-B spawn-on-kelp fishery is more than 1,000 tons, therefore, the *Macrocystis* kelp allocation will be at the highest end of the allocation range.

Herring spawning normally occurs in the Craig/Klawock area between mid March and early April. The earliest spawning observed since the mid-1970s was March 9 and the latest date of initial spawning occurred April 9, 2005. Traditionally, herring spawn on Fish Egg, Wadleigh, Clam, and Abbess Islands. However, spawning has also been recorded in the area of Portillo Channel, Port Real Marina, the northern and southern shore of San Fernando Island, San Juan Bautista Island, Blanquizal Island, and along the Prince of Wales Island shore at San Christoval Channel and Shinaku Inlet. Figure 1 shows the open area for the Craig/Klawock spawn-on-kelp fishery.

ERNEST SOUND (DISTRICT 7)

Winter food and bait herring fisheries have occurred intermittently at Deer Island and other locations in District 7 since 1969. The major fishery in the district historically occurred near Deer Island throughout the 1970s with average season landings of around 500 tons. The fishery was then closed for a number of years until the 1992–1993 season. From 1992–1993 until 1998–1999, the fishery was opened five seasons and harvested less than 25% of the available GHL, averaging 88 tons.

The Board of Fisheries created the Ernest Sound spawn-on-kelp pound fishery in January of 2003. Additionally, the Board created a herring bait pound fishery that is allocated 10% of the area's GHL. The spawn-on-kelp fishery is similar to other herring fisheries in that its allocation is based upon the GHL remaining after the herring food and bait fisheries occur. Any remaining GHL from the winter food and bait fishery or the bait pound fishery after March 15 is allocated to the spawn-on-kelp fishery. The 2009–2010 winter food and bait fishery GHL was 267 tons and the herring bait pound fishery is 30 tons. To date there has been no interest in the bait pound fishery. The winter bait fishery closed on January 12, 2010. The remaining GHL from the 2009–2010 winter food and bait and bait pound fishery is below 50 tons. This remaining GHL is below the level required to allow for a spawn-on-kelp pound fishery to occur in District 7 for the 2009–2010 season.

TENAKEE INLET (SECTION 12-A)

The Tenakee Inlet stock has been utilized for the winter food and bait fishery since the 1978–1979 season. During seasons that the estimated spawning biomass was above the 3,000 ton threshold, the GHL has ranged from a low of 200 tons in the initial season to a peak of 1,700 tons in 1985–1986 (Table 3). Regulations adopted by the Alaska Board of Fisheries (BOF) in January 2003 provide for a spawn-on-kelp fishery in Tenakee Inlet if sufficient GHL remains at the close of the winter food and bait fishery. This fishery occurred for the first time in April 2003. Summary results of the Tenakee Inlet spawn-on-kelp fisheries are presented in Table 4.

ADF&G has been conducting aerial surveys in Tenakee Inlet since the early 1970s documenting the total miles of spawn each season to provide an indication of herring stock size or biomass. Aerial surveys were supplemented with hydroacoustic surveys from 1979 through 1986, and spawn-deposition dive surveys have been used since 1987 as the most reliable and accurate means to assess the spawning biomass.

The Tenakee spawning stock has historically exhibited cycles of abundance. After a decade of fisheries, the stock declined below threshold in the early 1990's and no fisheries took place until 1996. Good recruitment led to nearly a decade of harvestable surplus until the forecasted biomass again declined below threshold in 2006. Aerial spawn surveys and spawn deposition dive surveys conducted in 2008 indicated a significant increase in spawning biomass to the levels seen in 1997–1999, and surveys conducted in 2009 indicated a decrease in spawning biomass from 2008, but still above the threshold level necessary for commercial fisheries. The resulting GHL for the 2009–2010 season is 583 tons. The anticipated age structure in 2010 is 4% age 3; 1% age 4; 2% age 5; 10% age 6; 39% age 7, and 44% age 8+.

The Tenakee Inlet winter food and bait fishery closed on Feb 16, 2010 when the GHL was met. Specific harvest and effort data is confidential. Pending any harvest in the bait pound fishery there could be an open pound fishery in 2009-2010, however there is insufficient remaining GHL to provide for a closed pound spawn-on-kelp fishery in the spring of 2010.

Spawning in Tenakee Inlet has generally occurred between the last week in April and the first week in May (Tables 3 and 5). Traditionally, herring spawn primarily along the south shoreline of Tenakee Inlet between Saltery Bay and South Passage Point with the core areas centered east and west of Kadashan flats. In addition, spawn has been documented intermittently along the Chatham Straits shoreline from South Passage Point to Basket Bay. A total of 6.9 nautical miles of shoreline was mapped as receiving herring spawn in spring 2009.

HOONAH SOUND (SECTION 13-C)

Since the department first monitored the population in 1971, the Hoonah Sound herring spawning stock has averaged 7.8 nautical miles of spawn and 3,941 tons of spawning biomass. Since 1990, the year the spawn-on-kelp fishery started, the stock has averaged 11.4 nautical miles of spawn and 6,430 tons of spawning biomass (Table 6). The highest recorded spawning biomass occurred in 2008 with an estimated 14.5 nautical miles of spawn and an escapement of 19,975 tons based on the spawn deposition survey. In 2009, 10.3 nautical miles of spawn was documented with an estimated escapement of 15,829 tons. Age composition of the 2009 spawning herring was 0% age-3, 1% age-4, 10% age-5, 34% age-6, 29% age-7, and 26% ages-8+ (Table 7).

Due to the higher than expected return in 2008, the department assumed the 2009 return would be well above threshold and at a level that would provide for a maximum kelp allocation for the spawn-on-kelp fishery. This allowed the department to allocate biometric staff time to address other priorities. Therefore, the 2009 GHL in Hoonah Sound was set at 2,238 tons, the same level as in 2008. In 2009 the biomass accounting method was again used to estimate post fishery escapement and forecast the 2010 return. The 2010 forecast biomass is 15,912 tons which results in a GHL of 3,182 tons.

Herring spawning normally occurs in Hoonah Sound during the last two weeks of April (Tables 5 & 6). The earliest recorded spawning occurred on April 13, 1990, and the latest recorded spawning was on May 17, 1971. During the 2009 season, spawning occurred from April 23 through April 30. Comparative spawn timing for Hoonah Sound and Tenakee Inlet is shown in Table 5. 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 Deadman Reach to Point Benham. The open fishing area for Hoonah Sound is shown in Figure 2.

In Hoonah Sound during the 2009 season, a total of 101 permit-holders reported landings totaling 469,355 pounds (234.7 tons) of spawn on kelp (Table 8). The average price was \$4.97/pound for a total exvessel value of \$2,332,514.

CALENDAR OF EVENTS

The following is a calendar of events to be considered by pound operators for the 2010 fishing season.

- November 20 News Release announcing the 2010 Craig/Klawock, Ernest Sound, and Hobart Bay/Port Houghton GHLS.
- November 25 News Release announcing the 2010 Tenakee Inlet GHL
- December 3 News Release announcing the 2010 Hoonah Sound GHL.
- No Specific Deadline 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.
- January 12 News Release announcing closure of Ernest Sound winter bait fishery and no spawn-on-kelp fishery for 2010.
- February 16 News Release announcing closure of Tenakee Inlet winter bait fishery and no closed pound spawn-on-kelp fishery for 2010.
- March 4 Kelp permits will be available at department area offices; ADF&G will issue a news release announcing the actual harvest of the bait herring fisheries and kelp allocation for Craig/Klawock and Tenakee Inlet.
- March 15 2010 spawn-on-kelp Pound Fisheries Management Plan available at all Southeast Alaska area offices.
- March 17 The Craig/Klawock fishery will be open to seining of herring for placement in pounds effective 12:00 noon.
- April 6 The Tenakee Inlet and Hoonah Sound fisheries will open for open pounding or seining of herring for placement in pounds effective 12:00 noon.
- May 31 Pounds must be completely removed from the waters of the herring pound fishing area in Section 3-B and in District 7. This includes the area covered by extreme high tide.
- June 10 Pounds must be completely removed from the waters of the herring pound fishing area in Sections 12-A and 13-C. This includes the area covered by extreme high tide.

REGULATIONS

GENERAL SPAWN-ON-KELP REGULATIONS

The regulatory framework for the spawn-on-kelp fishery is found in 5 AAC 27.185. MANAGEMENT PLAN 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 Sitka on February 17–26, 2009 and adopted two regulatory changes to the management plan. These changes included; removing the requirement that a permit holder be present at the pound fishing site when kelp is being placed into the permit holder’s pound structure [5 AAC 27.185 (o)(1)], and the definition of “the first day” herring are introduced into a herring pound was clarified [5 AAC 27.185(q)].

Definition of a Closed Pound

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

<u>Surface square footage</u>	<u>Maximum depth</u>
Less than 400	30 feet
401–500	24 feet
501–600	20 feet
601–700	17 feet
701–800	15 feet

Herring Pound Marking Requirements

Permit holders are required to mark the pound with a sign that has on it the permit holder's first and last name and the five-digit CFEC permit number. The sign must be vertical and the markings must be clearly visible and above the surface of the water at all times (Figure 3). 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.

All lines or structures used to suspend kelp must have legible tags affixed above the water surface that state the number of blades or fronds on that line or structure along with the permit holder's first and last name. In a multiple permit pound, each permit holder must keep their kelp on lines or structures separate from lines or structures that support kelp belonging to other permit holders.

Placement and Release of Herring in Pounds

Herring may be placed in or added to a pound for four days starting with the initial placement of herring in a pound. After 11:59 p.m. on the fourth day, no additional herring may be added to the pound (5 AAC 27.185 (q)) and those herring in the pound must be released by 11:59 p.m. on the sixth day after the initial placement of herring in a pound (5 AAC 27.185 (s)). Under 5 AAC 27.185 (s) the “*first day*” is defined as the day herring are first placed into a pound. The “*first*

day” under 5 AAC 27.185 (q), is the day that herring are first put into the pound. During the Board of Fisheries meeting in Sitka, February 17–26, 2009, the board adopted language clarifying the definition of “*first day*” in this regulation. Once herring have been released or spawn-on-kelp product has been harvested no additional herring or kelp may be introduced into a pound (5 AAC 27.185 (q)). When releasing herring at least one full side of the pound's webbing must be lowered a minimum of six feet below the surface of the water (5 AAC 27.185 (s)). These 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 as this would be a violation of 5 AAC 27.185 (q).

Connection of Herring Pounds

After the last herring has been placed into the pounds and the permit holders have notified a department representative, two pounds of two or more permit holders may drop a wall of their respective pounds to allow herring to swim between two connected 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 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. Under this regulation only two pounds can be joined together.

Units of Gear

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.

The Northern Southeast Alaska area includes Sections 12-A and 13-C and the Southern Southeast Alaska area includes Section 3-B and District 7. Since Northern and Southern Southeast Alaska have different limited entry permits a permit holder may have gear in the water in both areas but a permit holder must still be physically present at those times that the pound is actively fished as defined in 5 AAC 27.185. While the permit holder may have gear in both the Northern area and the Southern area at the same time, they may not fish multiple units of gear in either area.

Presence of Permit Holders Required

A permit holder must be physically present at the permit holder’s pound site during the operation of the pound as defined in sections (o) and (p) of 5 AAC 27.185 **MANAGEMENT PLAN FOR HERRING SPAWN ON KELP IN POUNDS IN SOUTHEASTERN ALASKA AREA.**

Post Harvest Requirements

After a permit holder releases herring and harvests product from the pound, the permit holder must maintain the webbing in place for at least four weeks. To optimize hatching success, the permit holder 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).

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 all spawn on kelp produced in their pounds. A permit holder's fish ticket must report only the spawn on kelp they harvested from their pound. Each permit holder fishing a jointly 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 permit holders and any vessel carrying commercial spawn-on-kelp product from the fishing grounds must first contact the ADF&G with the estimated amount of spawn-on-kelp product harvested and indicate the intended time and location of the delivery. For any product that has been delivered on the grounds to a licensed processor, the processor (not the permit holder) will be required to contact 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 or directly to department area management biologists on the grounds before the start of processing operations in Southeast Alaska. These reporting requirements are specified by regulation 5 AAC 39.130 (f) and (g).

Other Regulations

Additional regulations pertaining to the Craig, Ernest Sound, Hoonah Sound and Tenakee Inlet pound fisheries can be found in the 2009–2010 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 permit holders to carefully review and follow these regulations.

SECTION 3-B REGULATIONS

Open Waters

The open waters for Section 3-B include: the waters of San Alberto Bay, Shinaku Inlet and San Christoval Channel north of a line from Entrance Point to the southernmost tip of Clam Island to the southernmost tip of Fern Point and East of 133° 20' W. longitude (Figure 1).

In Section 3-B (Craig/Klawock) herring may be captured for placement in closed pounds starting at 12:00 noon on March 17, 2010 until closed by emergency order.

Closed Waters

In Section 3-B certain areas are closed to the operation of herring pounds and seines for taking of herring for placement in pounds. Those areas are shown in Figure 1 and include:

- Klawock Inlet and Big Salt Lake
- Those waters of San Christoval Channel in the main channel enclosed by a line from 55° 35.62' N. latitude, 133° 20' W longitude to 55° 35.17' N. latitude, 133° 20' W longitude to 55° 33.37' N. latitude, 133° 17.52' W. longitude to 55° 33.50' N. latitude, 133° 17.28' W. longitude.
- Those waters of Fish Egg and Ballena Islands south of 55° 31' N. latitude and north of the southernmost tip of Cape Suspiro and east of the longitude of Ballena Island Shoal Light.

SECTION 12-A REGULATIONS

Open Waters

The open waters for Section 12-A include: the waters of Chatham Strait and Tenakee Inlet south of 57° 46.00' N. latitude, north of the latitude of Peninsular Point at 57° 30.30' N. latitude, and west of 134° 50.00' W. longitude. (Figure 2).

In Section 12-A (Tenakee Inlet) herring may be captured for placement in closed pounds after 12:01 a.m. April 6, 2010 until closed by emergency order.

SECTION 13-C REGULATIONS

Open Waters

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 2).

In Section 13-C (Hoonah Sound) herring may be captured for placement in closed pounds after 12:01 a.m. April 6, 2010 until closed by emergency order.

EXPERIMENTAL GEAR PERMITS

New regulations addressing the definition of a closed pound were adopted by the 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.

HARVEST AND ALLOCATION OF KELP FOR 2010

A permit issued by ADF&G 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 for harvest 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 and will be announced following closure of the winter food and bait fishery. The kelp allocations for the 2010 season are listed below. The Craig/Klawock allocation is based on a GHL greater than 1,000 tons remaining following the winter bait fishery; the Tenakee Inlet allocation is based on a GHL of 50 tons; and the Hoonah Sound allocation is based on a GHL greater than 800 tons.

Section 3-B (Craig/Klawock):

- Single permit closed pounds—600 blades of *Macrocystis* kelp;
- Double permit closed pounds—750 blades of *Macrocystis* kelp (per permit holder);
- Triple permit closed pounds—1,125 blades of *Macrocystis* kelp (per permit holder);
- Single permit open pounds—2,500 blades or 250 fronds of *Macrocystis* kelp;
- Multiple permit open pounds—7,500 blades or 750 fronds of *Macrocystis* kelp.

Section 12-A (Tenakee Inlet):

- Single permit open pounds—2,500 blades or 250 fronds of *Macrocystis* kelp;
- Multiple permit open pounds—7,500 blades or 750 fronds of *Macrocystis* kelp.

Section 13-C (Hoonah Sound):

- Single permit closed pounds—2,000 blades of *Macrocystis* kelp;
- Double permit closed pounds—3,000 blades of *Macrocystis* kelp (per permit holder);
- Triple permit closed pounds—1,500 blades of *Macrocystis* kelp (per permit holder);
- Single permit open pounds—3,000 blades or 300 fronds of *Macrocystis* kelp;
- Multiple permit open pounds—3,000 blades or 300 fronds of *Macrocystis* kelp.

FISHERY CONDUCT AND MANAGEMENT

Suitable sites for pounds in Craig/Klawock, Tenakee Inlet, and Hoonah Sound are limited. To avoid herring mortality and damage to the pounds, permit holders should locate their pounds in an area with minimal exposure to wind and wave action, and a relatively deep bottom. The distance between the locations where herring are captured and where the pound will be anchored should be minimized since long towing distances can cause stress induced spawning, egg loss, de-scaling and mortality of herring.

All permit holders involved in the operation of a pound, whether single or multiple permit pound, must be physically present at their pound fishing site at all times during the *operation of the pound*. *Operation of the pound* is defined as:

1. The capture and transfer of herring into the pound;

2. When an open pound is being moved;
3. The collection and sale of herring spawn-on-kelp product produced in the pound;
4. All permit holders must be present when two pounds are joined together.

For multiple permit closed pounds, all permit holders assigned to the pound must be present at their pound site when herring are introduced into the pound. If only one permit holder is present at this time then that pound must be operated for the remainder of the season as a single permit closed pound and no more than the number of blades of kelp allocated to a single closed pound may be harvested.

The ADF&G will be closely monitoring herring activity using vessel and aerial surveys. Prior to the onset of active fishing the results of aerial surveys will be announced by department news release or in fishery updates. This information will also be available by recorded message at 907-225-6870 (Ketchikan office) for Section 3-B (Craig/Klawock); 907-465-8905 (Juneau Office) for Section 12-A (Tenakee Inlet); and at 907-747-1009 (Sitka office) for 13-C (Hoonah Sound).

In 2010, 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. If a permit holder allows herring to swim out of their pound when they are adding fresh herring to their pound thereby exchanging spawned-out herring for fresh herring this is a violation of 5 AAC 27.185 (q). If any such cases are observed or reported in 2010, then the department will turn such cases over to the Alaska Wildlife Troopers (AWT) 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.

In Hoonah Sound the department will station a vessel and personnel on the grounds when herring are available for capture. In Craig/Klawock department personnel can be contacted through the ADF&G office in Craig. In Tenakee Inlet department personnel will be stationed in Tenakee Springs and will be available on the grounds. Department personnel will closely monitor all phases of the fishery. All fishery announcements, including updates of herring activities and fishery openings/closures, will be broadcast by VHF radio, channel 10. Permit holders are expected to have a VHF radio.

To avoid mortality, the transport of herring to the pound site should be done with the pound itself or a pushable/towable net pen. Towable net pens used only for transporting herring must be marked "Tow Pound". Transporting with a purse seine is discouraged except for very short distances. Pound operators should slowly push pounds or tow the pound alongside to avoid prop wash and prevent crushing herring against the net. Pound operators are also advised to minimize the distance herring are towed to avoid stressing the herring or causing egg loss, which can result in poorer quality product. Permit holders are asked to avoid making and holding large sets intended to fill multiple pounds to avoid herring mortality and stress. The department may close the fishery or limit fishing to daylight hours to minimize stress and mortality, to reduce potential set size, or to better monitor the fishery.

Although regulations determine 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. Other measures have successfully been used in the fishery that may be considered when trying to maximize spawn on kelp quality and value include the following:

- 1) Pound nets may be shaped with internal frames to provide the full net volume;
- 2) The kelp depths in the pound may be matched with the depth of active spawning by testing spawn deposition with a weighted string;
- 3) Fishing and transferring herring to pounds should only occur once herring are fully mature;
- 4) Small top-off sets may be added over a 2–3 day period;
- 5) The herring density in the net should be limited since spawning is retarded by excessive crowding;
- 6) Web depth adjustments may be adjusted (consistent with specifications under 5 AAC 27.130 (e)(1)(C)) to provide good water exchange;
- 7) Working in a small group of permit holders may help to provide adequate time for harvesting herring and tending pounds.

The Craig/Klawock, Tenakee Inlet, and Hoonah Sound areas are high-use recreational areas valued for their fish and wildlife resources as well as their 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. Following the fishery and post harvest requirements according to 5AAC 27.185 (t), all pounds and associated equipment used in these fisheries must either be removed from the water (as per 5 AAC 27.185 (w)) or stored in the upland areas under the terms of a required United States Forest Service conditional use permit.

OTHER AGENCY REQUIREMENTS

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

ALASKA DEPARTMENT OF NATURAL RESOURCES

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

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 U.S. 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 are not limited to): camping on National Forest land in conjunction with the commercial fishery, and storage of gear on the National Forest.

U.S. NATIONAL MARINE FISHERIES SERVICE

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

U.S. 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 U.S. Coast Guard permit and to install and maintain a light or other private aid to navigation if the U.S. 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:

Place two signs on opposite corners of the structure. These signs will be worded “Danger, Fish Pens” (Figure 4).

Place a single, all-points white light on one corner of structures less than 400 square feet in size.

Place a single, all-points white light on every corner of structures larger than 400 square feet in size.

Anchor fish pens within the boundary areas specified in ADF&G regulation 5 AAC 27.185 (f) (Figures 1 and 2).

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

PRIVATE LANDS

Some of the area in which pounds may be operated is adjacent to privately owned lands. Pound operators should contact the landowners if they intend to use any of that land above mean high tide. Private land owners in the Craig/Klawock area include the Klawock/Heenya Corporation, Shaan-Seet Corporation, and Sealaska Corporation and private individuals. Figure 5 shows the approximate areas of privately held lands in the Craig/Klawock area.

LIST OF MANAGEMENT CONTACTS

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

Name and Title	Address and Phone Number
Scott Kelley Region I Supervisor	P.O. Box 110024 Douglas, Alaska 99811-0024 (907) 465-4250
Bill Davidson Region I Management Biologist	304 Lake St., Rm. 103 Sitka, Alaska 99835 (907) 747-6688
Kyle Hebert Herring Research Biologist	P.O. Box 110024 Douglas, Alaska 99811-0024 (907) 465-4250
Scott Walker Area Management Biologist	2030 Sea Level Dr. Ste. 205 Ketchikan, Alaska 99901 (907) 225-5195
Bo Meredith or Justin Breese Assistant Management Biologists	
Troy Thynes Area Management Biologist	P.O. Box 667 Petersburg, Alaska 99833 (907) 772-3801
Kevin Clark Assistant Management Biologist	
Vacant Assistant Management Biologist	215 Front Street P.O. Box 200 Wrangell, AK 99929-0200 (907) 874-3822
Dave Gordon Area Management Biologist	304 Lake St., Rm. 103 Sitka, Alaska 99835 (907) 747-6688
Eric Coonrad Assistant Management Biologist	
Kevin Monagle Area Management Biologist	P.O. Box 110024 Juneau, Alaska 99811-0024
Dave Harris Assistant Management Biologist	(907) 465-4250

TABLES AND FIGURES

Table 1.–Craig/Klawock stock size and winter food and bait harvests, 1987–2009.

Year	Miles Spawn^a	Forecasted Pre-fishery Biomass^b	Total GHL Bait and SOK^c(Tons)	Bait GHL (Tons)	Bait Harvest (Tons)
87–88 ^d	5	16,550	N/A	2,200	2,014
88–89	27	16,350	N/A	1,810	1,730
89–90	31.7	19,800	N/A	3,150	3,221
90–91	30	18,350	N/A	2,841	3,272
91–92	22	17,800	2,684	2,281	2,295
92–93 ^e	23	12,350	1,602	1,362	623
93–94	8.4	7,996	895	760	636
94–95	8	6,778	725	617	124
95–96	5.5	6,262	658	558	4
96–97	9.9	6,755	715	615	517
97–98 ^f	13.2	7,018	755	455	254
98–99	11	6,951	750	450	102
99–00	15.4	6,013	626	376	346
00–01	12.9	9,091	1,058	635	145
01–02	16.7	8,387	952	571	92
02–03	18	6,045	630	378	145
03–04	11.2	13,204	1,754	1,052	157
04–05	12	15,577	2,217	1,330	553
05–06	18	14,262	1,955	1,173	689
06–07	8.2	13,768	1,860	1,116	576
07–08	22.3	14,213	1,945	1,167	565
08–09	11.0	14,213	1,945	1,167	142
09–10	17.0	14,870	2,074	1,244	confidential
Average	15.5	11,852	1,358	1,187	827

^a Spawn year is beginning year of regulatory season listed in the adjacent year column

^b Forecasted pre-fishery biomass values were estimated with hydroacoustics for 86–87, spawn deposition surveys for 87–88 to 92–93, and age-structured models for 93–94 to 07–08.

^c Spawn On Kelp (SOK)

^d Reduced to 1,600 tons on the grounds.

^e First year bait quota was split between pound fishery 85%:15%.

^f Herring allocation changed to 60% for the winter food and bait fishery, 40% to the pound fishery.

Table 2.—Craig/Klawock herring spawn-on-kelp fishery summary, 1992–2009.

Statistic	1992	1993	1994	1995	1996	1997
Herring GHL (tons)	403	240	135	109	100	200
Total harvest SOK (tons)	25.7	5.7	16.5	25.4	37.3	21.9
Exvessel value	\$180,000	\$47,882	\$364,199	\$1,000,000	\$1,490,000	\$270,306
Average Price/lb	\$3.50	\$4.17	\$11.00	\$19.00	\$20.00	\$6.00
Average Income	\$784.00	\$2,081	\$4,388	\$5,107	\$9,700	\$1,890
Number of pounds	248	209	147	159	162	119
Number of landings	229	23	83	146	154	143
Blade allocation	310	292	233	174	156	^a
Total kelp harvest (tons)	7.8	3.7	3.0	3.0	2.6	3.2
Herring spawning dates	3/15–4/10	3/26–4/21	3/23–4/12	3/27–4/9	3/22–4/12	4/7–4/14
Miles of spawn	23.0	8.3	8.0	5.5	9.9	13.2
Forecasted Pre-Fishery biomass (tons)	17,800	12,350	7,996	6,778	6,262	6,755
	1998	1999	2000	2001	2002	2003
Herring GHL (tons)	500	650	280	914	852	528
Total harvest SOK (tons)	22.4	36.0	0.0	26.9	41.7	69.2
Exvessel value	\$152,203	\$212,121	\$0	\$146,859	\$218,700	\$423,000
Average Price/lb	\$3.39	\$2.94	\$0	\$2.70	\$3.10	\$3.00
Average Income	\$1,072	\$2,060	\$0	\$2,880	\$2,460	\$3,385
Number of pounds	112	70	50	31	50	61
Number of landings	148	103	0	51	89	118
Blade allocation	^b	^c	^d	^e	^e	^e
Total kelp harvest (tons)	3.5	2.9	2.0	3.2	8.2	7.5
Herring spawning dates	3/19–4/8	3/23–3/28	3/22–4/5	4/1–4/7	3/31–4/7	3/31–4/7
Miles of spawn	12.5	15.4	12.9	16.7	18.4	11.2
Forecasted Pre-Fishery biomass (tons)	7,018	6,951	9,951	8,042	8,387	6,045
	2004	2005	2006	2007	2008	2009
Herring GHL (Tons)	1,579	1,667	1,266	1,284	1,380	1,802
Total harvest SOK (tons)	50.0	115.2	28.9	44.5	148.5	137.3
Exvessel value	\$325,000	\$603,723	\$298,575	\$1,087,532	\$3,066,788	\$1,256,777
Average Price/lb	\$3.25	\$2.62	\$5.15	\$12.08	\$10.33	\$4.58
Average Income	\$3,420	\$9,011	\$8,782	\$23,139	\$25,138	\$9,107
Number of pounds	50	42	50	52	66	96
Number of landings	95	67	34	47	122	137
Blade allocation	^d	^f	^g	^g	^g	^g
Total kelp harvest (tons)	14.0	4.9	4.6	5.6	12.2	7.3
Herring spawning dates	3/26–4/7	4/9–4/14	3/30–4/3	4/3–4/12	4/3–4/12	4/3–4/10
Miles of spawn	12.0	18.0	8.2	22.3	11.0	17.0
Forecasted Pre-Fishery biomass (tons)	13,204	15,577	14,262	13,768	14,213	14,213

^a 100 blades for single-closed pound, 150 blades for multiple pound permit holder, and 300 blades for open pound permits.

^b 120 blades for a single closed pound, 180 blades for a multiple pound permit holder, 360 blades for single open pound.

^c 155 blades for a single closed pound, 235 blades for a multiple pound permit holder, 470 blades for a single open pound.

^d 70 blades for a single closed pound, 210 for a multiple pound permit holder.

^e 200 blades for a single closed pound, 600 blades for a multiple pound permit holder

^f 350 blades for a single closed pound, 750 blades for a double closed pound, 1,125 blades for a triple closed pound.

^g 600 blades for a single closed pound, 750 blades for a double closed pound, 1,125 blades for a triple closed pound.

Table 3.—Tenakee Inlet herring spawn deposition timing, location, biomass estimates, and food & bait harvests.

Season	Major Spawning Dates	Nautical Miles of Spawn (nm)	Spawning Biomass ^a (tons)	Food/Bait GHL (tons)	Food/Bait Harvest (tons)
1978–1979	5/9–5/11	3.3	2,500	200	0
1979–1980	4/28–5/2	3.9	4,485	400	504
1980–1981	4/27–5/5	9.3	7,500	750	847
1981–1982	4/25–5/7	11.1	6,650	650	654
1982–1983	4/25–5/6	13.1	8,870	875	799
1983–1984	4/20–4/26	8.3	12,100	850	619
1984–1985	4/24–5/1	9.9	11,000	1,400	1,406
1985–1986	4/27–5/1	8.3	12,500	1,700	2,040
1986–1987	4/22–4/30	7.9	6,600	800	1,275
1987–1988	4/22–4/27	9.1	6,000	1,450	1,577
1988–1989	4/26–4/29	10.3	5,360	720	655
1989–1990	4/25–5/6	2.9	2000	650	595
1990–1991	4/25–5/4	2.1	400	—No fishery—	
1991–1992	5/5	trace	200	—No fishery—	
1992–1993	4/21–4/23	6.4	904	—No fishery—	
1993–1994	4/24–4/26	0.25	400	—No fishery—	
1994–1995	4/26	0.05	200	—No fishery—	
1995–1996	5/4–5/14	18.1	4,560	—No fishery—	
1996–1997	4/26–5/7	14.4	9,926	300	97.5
1997–1998	4/24–4/29	12.4	10,419	825	692
1998–1999	4/25–4/28	11.0	11,049	1,023	835
1999–2000	4/26–5/3	13.8	9,425	542	494
2000–2001	4/21–5/1	12.2	7,576	906	775
2001–2002	4/23–4/27	15.4	4,084	840	393
2002–2003	4/25–4/28	12.2	3,529	528	328
2003–2004	4/28–5/3	13.0	4,728	399	confidential
2004–2005	4/26–5/2	8.9	5,825	476	0
2005–2006	5/2–5/6	5.9	5,110	—No fishery—	
2006–2007	4/23–4/26	4.4	3,346	—No fishery—	
2007–2008	4/30; 5/7–5/8	11.4	12,699	—No fishery—	
2008–2009	4/25–4/26; 4/29–4/30	6.9	5,283	788	254

^a Spawning biomass estimates were calculated from hydro-acoustical surveys from 1979 through 1986, from spawn deposition surveys from 1987 through 2009.

Table 4.—Tenakee Inlet herring spawn-on-kelp fishery summary, 2003–2005 and 2009. .

Note: No fishery occurred in 2006–2008 since the biomass forecast was below the 3,000-ton threshold.

	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 (lbs)	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
	2009		
Tenakee Inlet GHL (tons)	875		
GHL Available for SOK (tons)	621		
SOK Harvest (tons)	64.1		
Exvessel Value	\$558,900		
Average Price/lb	\$4.36		
Average Income/permit	\$6,499		
Number of Permits participating	86		
Number of Pounds	11/27/7/0 ^a		
Number Permits Landing Product	86		
Kelp Allocation (blades)	400/500/500/0 ^a		
Kelp Blade Harvest (lbs)	42,600		
Fishery Open—Closed	4/6–5/5		
Fishing Occurred	4/28–5/1		
Harvest Occurred	5/2–5/5		

^a single/double/triple/test

^b single/double/triple/long line/test

Table 6.–Hoonah Sound herring spawning stock and fishery performance, 1971–2009.

Year	Spawn Dates	Nautical Miles	Estimated Escapement*	SOK Harvested (tons)
1971	5/10–5/17	2.5	833	--
1972	5/11–5/12	1.5	666	--
1973	N/A	1.0	333	--
1974	14-May	3.0	999	--
1975	N/A	N/A		--
1976	5-May	1.0	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	1.0	333	--
1984	4/26–5/01	3.0	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	5.0	1,665	--
1989	4/16–4/20	17.0	4,000	--
1990	4/13–4/28	10.0	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	9.0	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	4/18–4/25	10.3	6,924	190.6
2006	4/23–4/26	9.0	6,028	162.1
2007	4/46–5/2	16.5	10,946	159.4
2008	4/23–4/30	14.5	19,975	202.3
2009	4/23–4/30	10.3	15,829	234.7
Average	1971–2009	7.8	3,941	NA
Average	1990–2009	11.4	6,430	100.6

*Shaded estimated escapements are based on average spawn density from years 1989–2002.

Table 7.—Percent-at-age composition of spawning Hoonah Sound herring, 1991–2009.

Year	Age Class					
	Age 3	Age 4	Age 5	Age 6	Age 7	Ages 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	0	16	12	10	13	49
2007	1	12	29	26	12	22
2008	0	3	18	35	24	20
2009	0	1	10	34	29	26

Table 8.—Hoonah Sound herring spawn-on-kelp fishery summary, 1997–2009.

Statistic	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	\$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 ^a	115	96	46/2/0 ^a	42/3/1 ^a	106/0/2 ^a
Number Selling Product	112/12 ^b	115	86	84	87	98
Kelp Allocation (blades)	430/860 ^b	400/800 ^b	400/800 ^b	110/300 ^b	120/300 ^b	1,000/3,600
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	2006	2007	2008
Herring Quota (tons)	427	1,207	728	669	681	2,238
Harvest Quota (tons)	NA	NA	NA	NA	NA	NA
Harvest (tons)	141.6	237.4	190.6	162.1	144.5	223
Exvessel Value	\$1,922,500	\$2,071,347	\$1,117,568	\$1,943,422	\$4,491,070	\$5,115,459
Average Price/lb	\$6.79	\$4.36	\$2.93	\$6.00	\$14.09	\$11.47
Average Income/Landing	\$17,800	\$19,541	\$11,889	\$24,600	\$49,352	\$51,155
Number of Applicants	NA	NA	NA	NA	NA	NA
Number of Pounds	49/1/3 ^d	92/12/2 ^a	81/5/3 ^c	17/45 ^d	67/12 ^d	98/3 ^d
Number Selling Product	108	106	94	79	91	100
Kelp Allocation (blades)	500/300/75 0 ^d	1,000/1,000/ 3,000 ^a	1,000/1,000/ 1,500 ^d	2,500/1,000/ 1,500 ^d	2,500/1,000/ 1,500 ^d	3,000/2,000/ 1,500 ^d
Kelp Blade Harvest	60,301	126,000	118,450	136,698	122,565	201,262
Fishery Open—Closed	4/6–4/25	4/6–4/28	4/6–4/28	4/6–4/27	4/6–5/4	4/6–5/02
Fishing Occurred	4/19–4/24	4/20–4/25	4/19–4/28	4/18–4/23	4/23–4/29	4/22–4/27
Harvest Occurred	4/24–4/27	4/26–4/28	4/25–4/28	4/23–4/27	4/30–5/4	4/27–5/1
	2009	2010	2011	2012	2013	2014
Herring Quota (tons)	2,238					
Harvest Quota (tons)	NA					
Harvest (tons)	234.7					
Exvessel Value	\$2,332,514					
Average Price/lb	\$4.97					
Average Income/Landing	\$23,094					
Number of Applicants	NA					
Number of Pounds	99/4 ^d					
Number Selling Product	101					
Kelp Allocation (blades)	3,000/2,000/ 1,500 ^d					
Kelp Blade Harvest	196,492					
Fishery Open—Closed	4/6–4/30					
Fishing Occurred	4/22–4/25					
Harvest Occurred	4/26–4/29					

^a Double closed pounds/single closed pounds/open pounds.^b Closed pound/Open Pound.^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

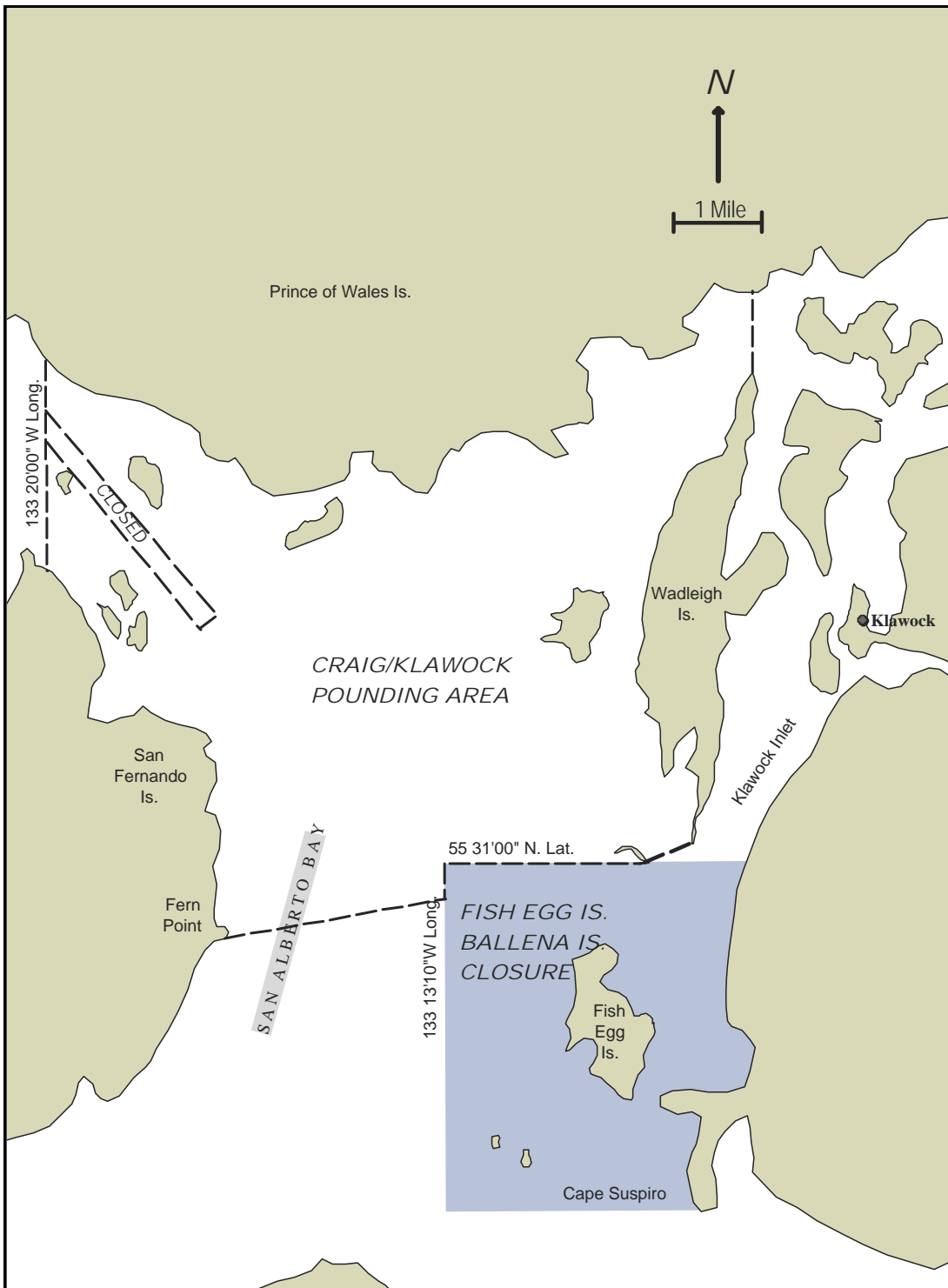


Figure 1.–Open area for Craig/Klawock pound fishery (Section 3-B).

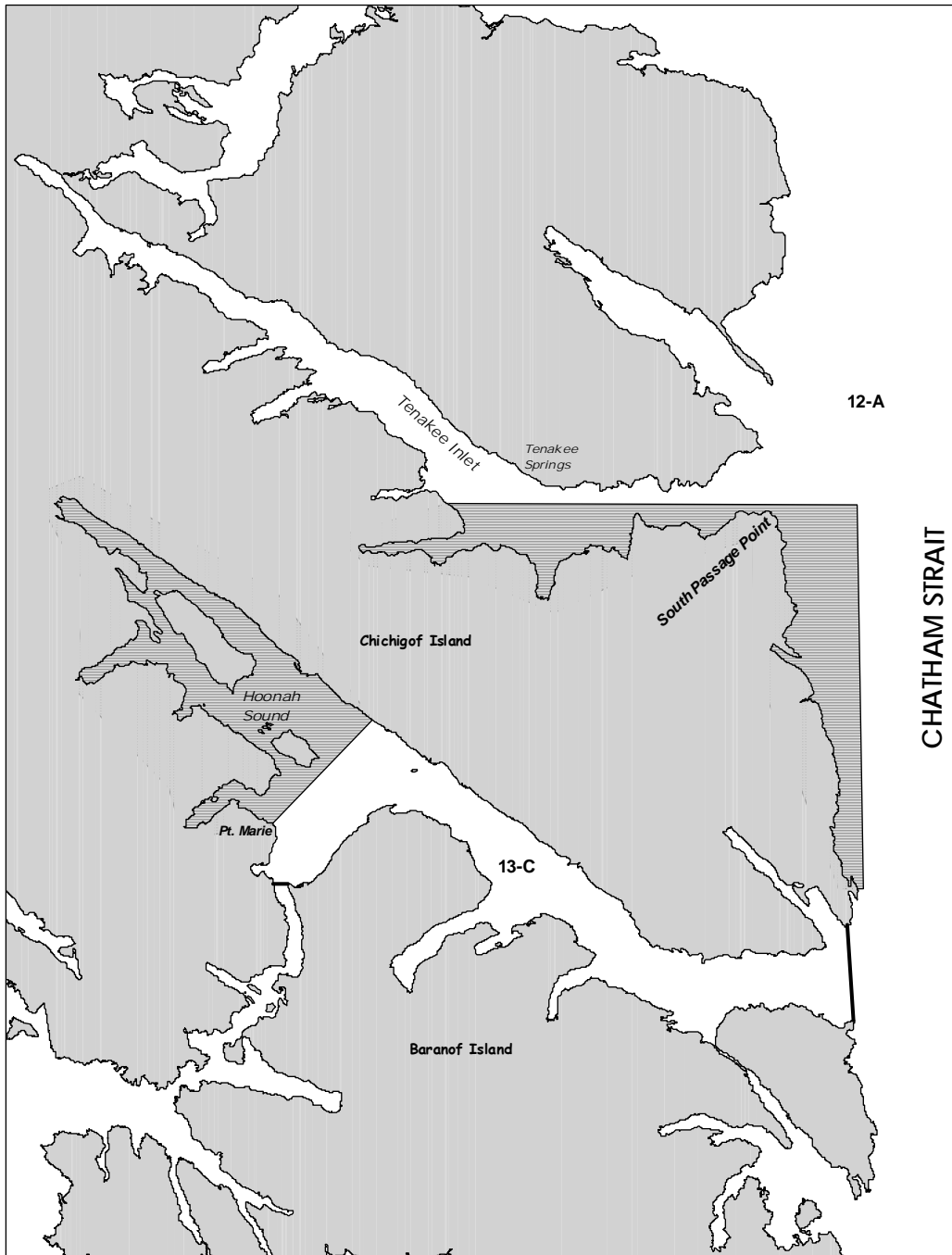


Figure 2.—Areas open (dark shade) to spawn-on-kelp fishery in Hoonah Sound and Tenakee Inlet.

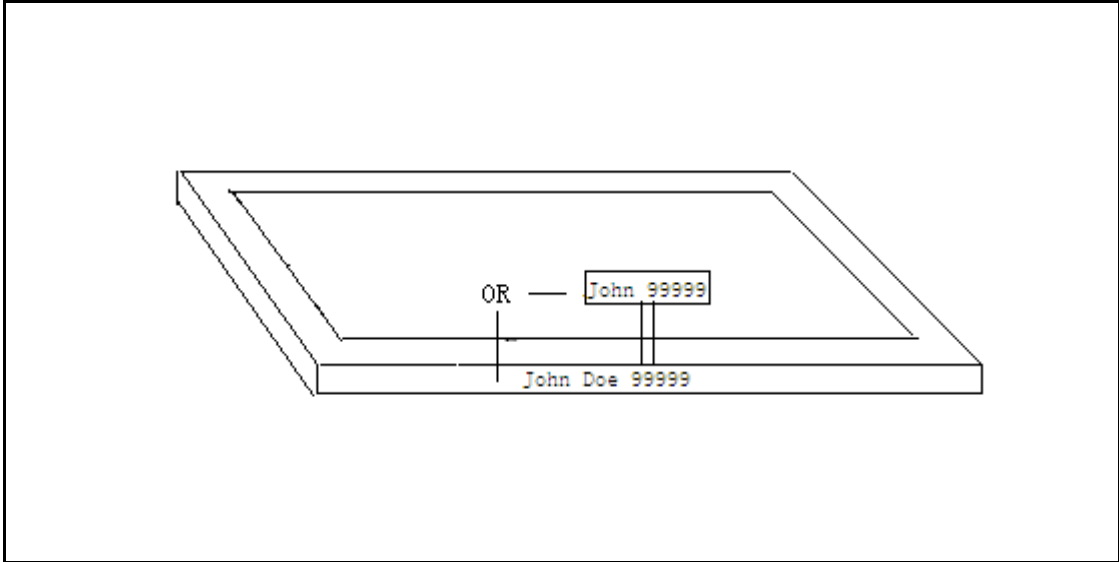


Figure 3.—Diagram of a herring pound showing two alternative methods of marking herring pounds. Note: Regulations require vertical signs with the permit holder’s first and last name and five-digit CFEC permit number (5 AAC 27.185(k)). Letters and numbers must be at least six inches high and at least one-half inch wide and must contrast with the background.

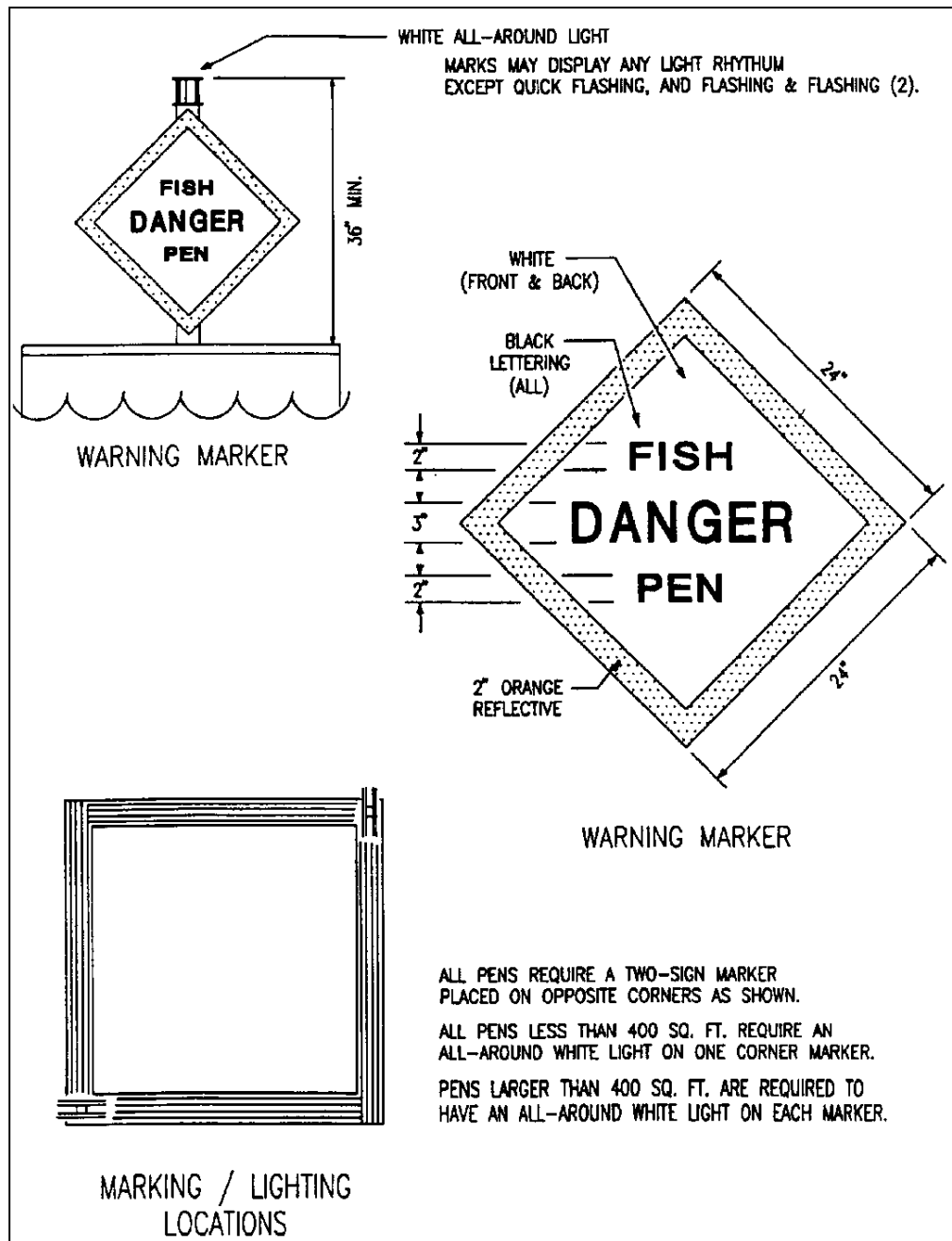


Figure 4.-Coast Guard Requirements for marking ponds.

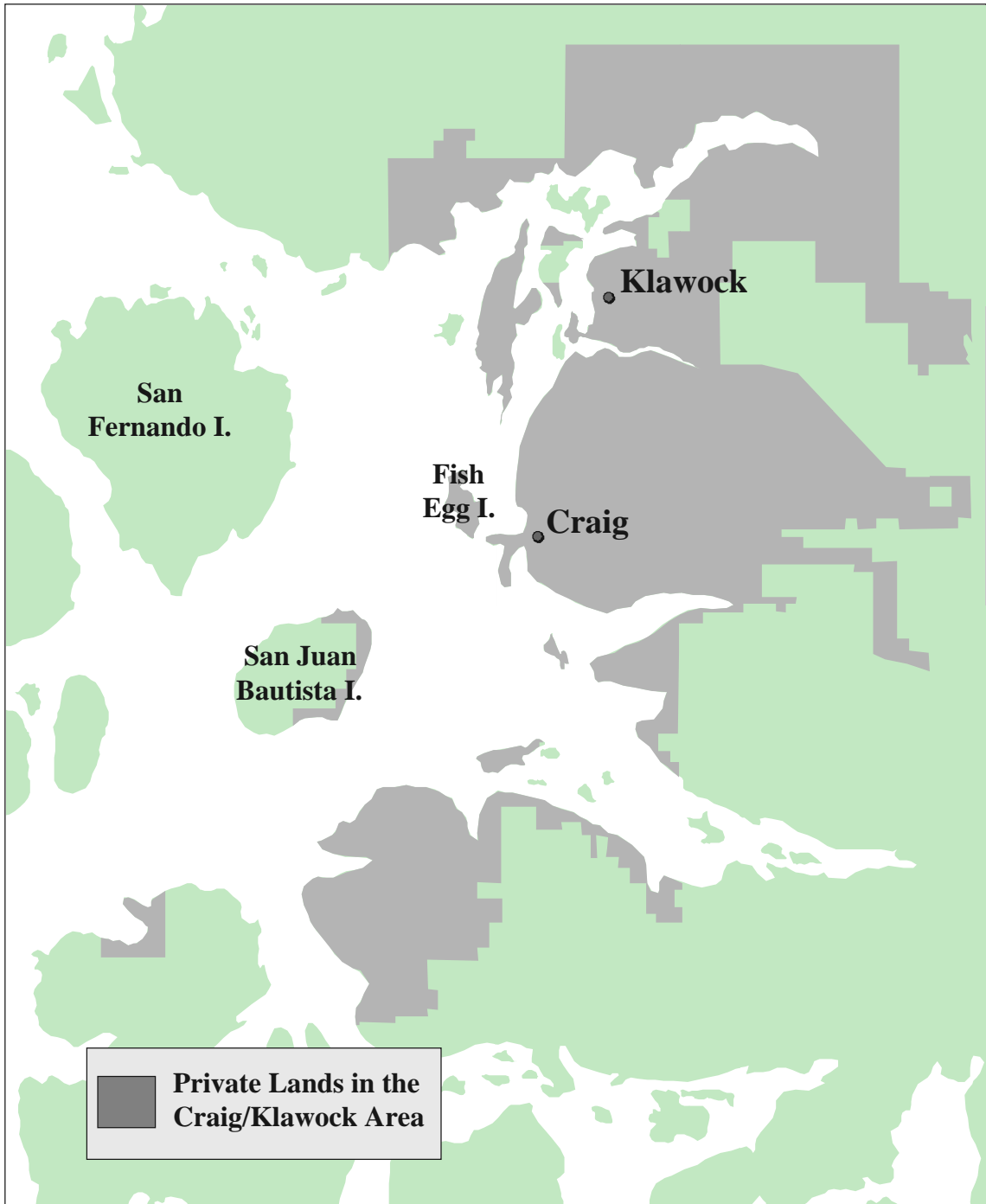


Figure 5.—Private lands in the Craig/Klawock area.