

**Southern Southeast Alaska Herring
Spawn-On-Kelp Pound Fishery: 2006 Management
Plan**

by

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March, 2006

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



Symbols and Abbreviations

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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		degrees of freedom	df
pound	lb	(for example)	e.g.	expected value	<i>E</i>
quart	qt	Federal Information Code	FIC	greater than	>
yard	yd	id est (that is)	i.e.	greater than or equal to	≥
		latitude or longitude	lat. or long.	harvest per unit effort	HPUE
Time and temperature		monetary symbols		less than	<
day	d	(U.S.)	\$, ¢	less than or equal to	≤
degrees Celsius	°C	months (tables and figures): first three letters	Jan, ..., Dec	logarithm (natural)	ln
degrees Fahrenheit	°F	registered trademark	®	logarithm (base 10)	log
degrees kelvin	K	trademark	™	logarithm (specify base)	log ₂ , etc.
hour	h	United States (adjective)	U.S.	minute (angular)	'
minute	min	United States of America (noun)	USA	not significant	NS
second	s	U.S.C.	United States Code	null hypothesis	H ₀
		U.S. state	use two-letter abbreviations (e.g., AK, WA)	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				

FISHERY MANAGEMENT REPORT NO. 06-10

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SPAWN-ON-KELP POUND FISHERY: 2006 MANAGEMENT PLAN**

by

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March 2006

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This document should be cited as:

Bergmann, W., J. Breese, P. Doherty, B. Meredith, and T. Thynes. 2006. Southern Southeast Alaska herring spawn-on-kelp pound fishery management plan:2006. Alaska Department of Fish and Game, Fishery Management Report No. 06-10, Anchorage.

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ABSTRACT

This plan provides an overview of the management approach and regulations for the 2006 spawn-on-kelp pound fisheries on the west coast of Prince of Wales Island near the communities of Craig and Klawock and in Ernest Sound in District 7, south of Wrangell in Southeast Alaska. 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: herring, spawn-on-kelp, management plan.

INTRODUCTION

This plan provides an overview of the management approach and regulations for the 2006 spawn-on-kelp pound fishery on the west coast of Prince of Wales Island near the communities of Craig and Klawock in Section 3-B, and in Ernest Sound in District 7 south of Wrangell in Southeast Alaska. The GHL available for the Section 3-B herring spawn-on-kelp fishery is 1,245 tons. In Ernest Sound, the forecast of 2,284 tons is below the threshold of 2,500 tons therefore there will be no fishery. Staff biologists listed at the end of this document (Table 4) 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.

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 has suspended kelp attached to the floating structure, but does not impound herring. The floating structure and kelp are placed in areas of active herring spawn.

In both of the southern 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 handling of herring, the Alaska Department of Fish and Game (ADF&G) 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 fishery. 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 ADF&G Division of Commercial Fisheries Test Fishery Policy. The department conducted a test fishery in Craig/Klawock in 2005. 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 (Table 4) 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 HISTORIC FISHERY PERFORMANCE

CRAIG-KLAWOCK (DISTRICT 3)

Winter food and bait herring fisheries have occurred in District 3 (Meares Passage and in the 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 Guideline Harvest Levels have averaged 1,198 tons, ranging from a high of 2,684 tons in 1992 to a low of 630 tons in 2003 (Table 1) This will be the 15th year that the Craig/Klawock herring spawn-on-kelp fishery has occurred. Fishing effort, harvest, spawning, and fishery dates, and product values are summarized in Table 2.

The estimated size of the Craig/Klawock herring population is based upon an age structured analysis (ASA) model. This model incorporates information on spawning biomass and escapement in prior years, annual mortality, growth, fecundity, and recruitment.

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 (Figure 1). The established threshold level for the Craig/Klawock stock is 5,000 tons. No harvest is allowed if the biomass estimate for the stock is less than the threshold level. The harvest rate is allowed to increase from 10% at the threshold level to a maximum of 20%. The 2006 forecast for the Craig area is 14,730 tons. The allowable 13.3% harvest rate will allow a combined quota of 1,955 tons for the bait and the spawn-on-kelp (SOK) fisheries. The biomass based on the ASA model will be the second largest guideline harvest level (GHL) since the 1991/92 season. The age class structure is anticipated to be predominantly older age herring, including 33% of age 6, 18% of age 7 and 15% of age 8+.

The allocation between the winter bait fishery and the spring pound fishery is 60% of the GHL allocated to the winter bait fishery and 40% of the GHL allocated to the herring spawn-on-kelp fishery. Therefore, for the 2006 season, the guideline harvest level for the winter fishery was 1,173 tons, and the GHL for the spawn-on-kelp fishery will be 782 tons plus the unharvested remainder of the bait fishery GHL. **The preliminary bait harvest is 750 tons or 423 tons below the GHL for bait. Therefore, the 2006 herring allocation for the Section 3-B SOK fishery is 1,205 tons.** The *Macrocystis* kelp allocation will be at the highest end of the allocation range as seen on page 4 of this report.

Herring spawning normally occurs in the Craig/Klawock area in mid to late March or early April. The earliest observed spawn since the mid-1970s was March 9 and the latest date of initial spawning has occurred as late as April 14, in 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 shore of San Fernando Island, the Blanquizal Island area, and along the Prince of Wales Island shore at San Christoval Channel and Shinaku Inlet. Figure 2 shows the open area for the Craig/Klawock spawn-on-kelp fishery.

ERNEST SOUND (DISTRICT 7)

The established threshold level for the Ernest Sound stock is 2,500 tons. No harvest is allowed if the biomass estimate for the stock is less than the threshold level. The 2006 forecast for Ernest Sound is 2,284 tons so there will be no fishery in 2006. Fishing effort, harvest, spawning, and fishery dates, are summarized in Table 3.

CALENDAR OF EVENTS

The following is a calendar of events for the 2006 fishing season:

- March 1 ADF&G will issue a news release announcing the actual harvest of the bait herring fisheries and kelp allocation for Craig/Klawock.
- March 15 Kelp permits will be available.
- March 17 The Craig/Klawock pound area will be open to seining of herring effective 12:00 noon.
- May 31 Pounds must be completely removed from the waters of the herring pound fishing area. This includes the area covered by extreme high tide.

REGULATIONS

The Alaska Board of Fisheries met in Ketchikan in January 2006 and modified the existing regulations for the Section 3-B and District 7 herring spawn-on-kelp fishery. The management framework can be found under 5 AAC 27.185 MANAGEMENT PLAN FOR HERRING SPAWN ON KELP IN POUNDS IN SOUTHEASTERN ALASKA AREA. **These newly adopted regulations will be in effect for the 2006 season.**

Regulations are outlined below pertaining to the changes made which specify kelp allocation, pounds of variable surface size and pound marking requirements, with newly adopted regulatory changes made by the Board of Fisheries in January of 2006 underlined in bold type:

1. The kelp allocation tables for the two Southern Southeast Alaska spawn-on-kelp fisheries may be found under **5 AAC 27.185 MANAGEMENT PLAN FOR HERRING SPAWN ON KELP IN POUNDS IN SOUTHEASTERN ALASKA AREA** but the Section 3-B kelp allocation table is summarized in the following table.

In Section 3-B, 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
200 – 599	200 blades	400 blades	550 blades	100 fronds or 1,000 blades	300 fronds or 3,000 blades
600 – 799	300 blades	450 blades	675 blades	150 fronds or 1,500 blades	450 fronds or 4,500 blades
800 – 999	400 blades	600 blades	900 blades	200 fronds or 2,000 blades	600 fronds or 6,000 blades
1, 000 or more	600 blades	750 blades	1,125 blades	250 fronds or 2,500 blades	750 fronds or 7,500 blades

For the 2006 season the following kelp allocation will be used:

Single Permit Closed Pound: 600 blades;

Double-Permit Closed Pound: 750 blades per permit;

Triple-Permit Closed Pound: 1,125 blades per permit;

Single Permit Open Pound: 250 fronds or 2,500 blades;

Multiple Permit Open Pound: 750 fronds or 7,500 blades per permit.

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**;

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

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, the markings must be clearly visible and above the surface of the water at all times**, 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**.

Other general regulations are summarized here; fishers are advised to familiarize themselves with the complete regulatory framework for these fisheries before commencing fishing operations.

- 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 ADF&G representative prior to joining their pounds. Additional herring may not be placed into the pounds once the two of them are joined.
- 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.
- 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 of the 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 all of the spawn-on-kelp product has been removed from the open pound structure.

ADF&G has received inquiries from permit holders wanting to transport pound structures immediately after fishing from one regulatory area to another in order to participate in two fishery locations without the added expense of a second pound structure. Regulation 5 AAC 27.185 (t), has now been revised to read:

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 **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 AAC27.185(k).**

These requirements can now be met with buoy bags or other material for floatation, and pipe or other rigid material to separate the sidewalls.

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

In 1995 the Commercial Fisheries Entry Commission placed all Southeast Alaska’s herring spawn-on-kelp pound fisheries under limited entry. For the Craig/Klawock and Ernest Sound fisheries 229 permits were issued. Questions regarding eligibility for this fishery should be directed at the Alaska Commercial Fisheries Entry Commission.

KELP HARVEST AND ALLOCATION

According to **5 AAC 37.100 PERMITS** a permit is required to harvest kelp to be used in the pounds. Kelp permits may be pooled and one or more individuals can harvest for a group of pound operators. Kelp permits may be obtained from ADF&G's offices in Ketchikan, Craig, Petersburg or Wrangell and must be completed and returned to the department by May 16, 2006.

ADF&G will manage the fishery based on a division of kelp blades or fronds between permit holders. The department recognizes that kelp management alone has not been effective in limiting the harvest of herring and staying within the herring GHLL set for the fishery. ADF&G has attempted to rectify this problem by allowing the use of multiple-permit pounds, thereby reducing the numbers of pounds on the grounds. This should lead to the reduction in the

harvesting, impounding, and the associated mortality of herring. ADF&G's method of encouraging multiple permit pounds and open pounds has been a kelp incentive, that is allowing a greater number of kelp blades per permit holder for multiple permit pounds and open pounds.

The kelp allocation for the various types of pounds was changed during the 2006 Board of Fisheries meeting in Ketchikan and is now defined in the new management plan. Permit holders can now determine their kelp allocation by looking at the kelp allocation table shown on page 4 of this plan and in a News Release issued on March 1, 2006. When the permit holder decides what type of pound they want to use they can determine the amount of kelp blades or fronds they can use in the fishery.

FISHERY CONDUCT AND MANAGEMENT

Suitable sites for pounds in the Craig/Klawock 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 from where the herring are captured and the pound site should also be considered since long towing distances can cause considerable stress and mortality of herring.

In past years, a completed closed pound had to be on the grounds by mid-March in order for the permit holder to participate in the Craig/Klawock fishery. For the 2006 season, there will not be a deadline when pounds have to be placed on the grounds at Craig/Klawock. Pounds must be operational by the time herring and kelp are introduced.

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 placement of kelp into the pound structure, 2) the capture and transfer of herring into the pound, 3) the collection and sale of herring spawn-on-kelp product produced in the pound, and 4) all permit holders must (the use of should implies that the permit holder is not required to do this, it would be clearer with 'must') be present when two pounds are put together.

For multiple permit closed pounds, all permit holders assigned to the pound must be present at their pound site when kelp and 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.

ADF&G will be closely monitoring herring activity in the Craig/Klawock area by vessel and aerial surveys. Kelp permits will be available starting Friday, March 17, 2006. **Herring for placement in closed pounds may be captured starting at 12:00 noon on March 17 in Section 3-B.** Daily fishing periods will be announced on the fishing grounds. ADF&G will give sufficient notice of the open fishing time so that all fishers are given a fair opportunity to capture herring. Limiting seining to daylight hours may be necessary to control the amount of herring available for harvest and reduce the amount of improper handling of herring that may occur during nighttime seine operations. ADF&G recommends that the size of the sets should be small with no more than 10 tons of herring harvested at one time.

Pound operators are advised to use extreme caution when towing herring from the capture site to the pound site since towing can be a source of significant mortality if not conducted properly. To avoid mortality, the transport of herring to the pound site must be done with the pound itself or a

towable net pen. Towable net pens used only for transporting herring must be marked “Tow Pound.” Transporting herring with a purse seine is discouraged due to increased mortality with the captured herring. Pound operators are also advised to push pounds or to tow alongside of the transfer pound to avoid crushing herring against the net in the prop wash.

Pound operators may change the type of pound they are using up to the time herring or kelp is introduced into the pound. They must inform ADF&G of the change.

All fishery announcements, including updates of herring activities and fishery openings, will be broadcast by VHF radio, Channel 10. Fishers are strongly encouraged to have a VHF radio.

In 2006, ADF&G will more closely 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. ADF&G has a concern, based on observations during past seasons that the practice of “top off fishing” is being 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 ADF&G will turn such cases over to the Alaska Bureau of Wildlife Enforcement for citation. Additionally, ADF&G 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. ADF&G 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 ADF&G.

ADF&G has received numerous inquiries from pounders planning on participating in the Craig pound fishery and the pound fisheries in northern Southeast Alaska. Pounders are advised that only one unit of gear or one pound may be fished by a permit holder at any given time. The Board of Fisheries provided regulatory language defining when a pound is fishing and when it is not (see “REGULATIONS” section of this document). Fishermen are also reminded that the permit holder must be physically present at the pound site at all times during operation of the pound as defined in Sections (o) and (p) of 5 AAC 27.185 MANAGEMENT PLAN FOR HERRING SPAWN ON KELP POUNDS IN SOUTHEASTERN ALASKA AREA. Since Northern and Southern Southeast Alaska have different limited entry permits a permit holder could have gear in the water in both areas but a permit holder still must be physically present at certain times as defined in 5 AAC 27.185.

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 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 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 pounders and any vessel carrying unlanded and unprocessed spawn-on-kelp product from the fishing grounds, must first contact ADF&G 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 pounders) will be required to hail ADF&G with delivery weight for each landing on board.

REQUIREMENTS FOR BUYERS

Buyers, permit holders, and processors of spawn-on-kelp product should read and become familiar with the requirements for the reporting of kelp product. These requirements can be found in 5 AAC 27.187 BUYER AND PROCESSORS REPORTING REQUIREMENTS FOR SPAWN ON KELP IN POUNDS FOR THE SOUTHEASTERN ALASKA AREA.

Operators of floating processing vessels will be required to report in person or by telephone, to the Alaska Department of Fish and Game office in Ketchikan before the start of processing operations in the Craig/Klawock fishery. These reporting requirements are specified by regulation 5 AAC 39.130 and persons involved in these fisheries should pay special attention to (f) and (g), regarding reporting of out of state transporting of unprocessed product, and reporting of operations and location.

LICENSE REQUIREMENTS

Operators must obtain a 2006 entry permit (L21C) from the CFEC. Individuals who do not have 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 ADF&G or they can be obtained by writing the Commercial Fisheries Entry Commission, 8800 Glacier Hwy #109, Juneau, Alaska 99801-8079. Fishers are reminded to apply for all licenses well in advance of the fishery. Crew member licenses may be obtained from local vendors in most communities.

REQUIREMENTS OF OTHER AGENCIES

Prospective pound operators are advised to consider the requirements that other agencies may have to construct and operate pounds in the Craig/Klawock fishery. Pound operators are urged to contact the Alaska Department of Natural Resources (DNR) (907-465-3400), the U.S. Forest Service (907-826-3271), the National Marine Fisheries Service (NMFS) (907-747-6940), and the United States Coast Guard (907-228-0340) to determine other requirements or restrictions.

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.

NATIONAL MARINE FISHERIES SERVICE

The National Marine Fisheries Service (907-772-2285) 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 6).
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 areas specified in ADF&G regulation 5 AAC 27.185 (f) (1) or (2).

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 463-2245.

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 include the Klawock/Heenya Corporation, Shaan-Seet Corporation, and Sealaska Corporation. Figure 6 shows the approximate areas of privately held lands in the Craig/Klawock area.

TABLES AND FIGURES

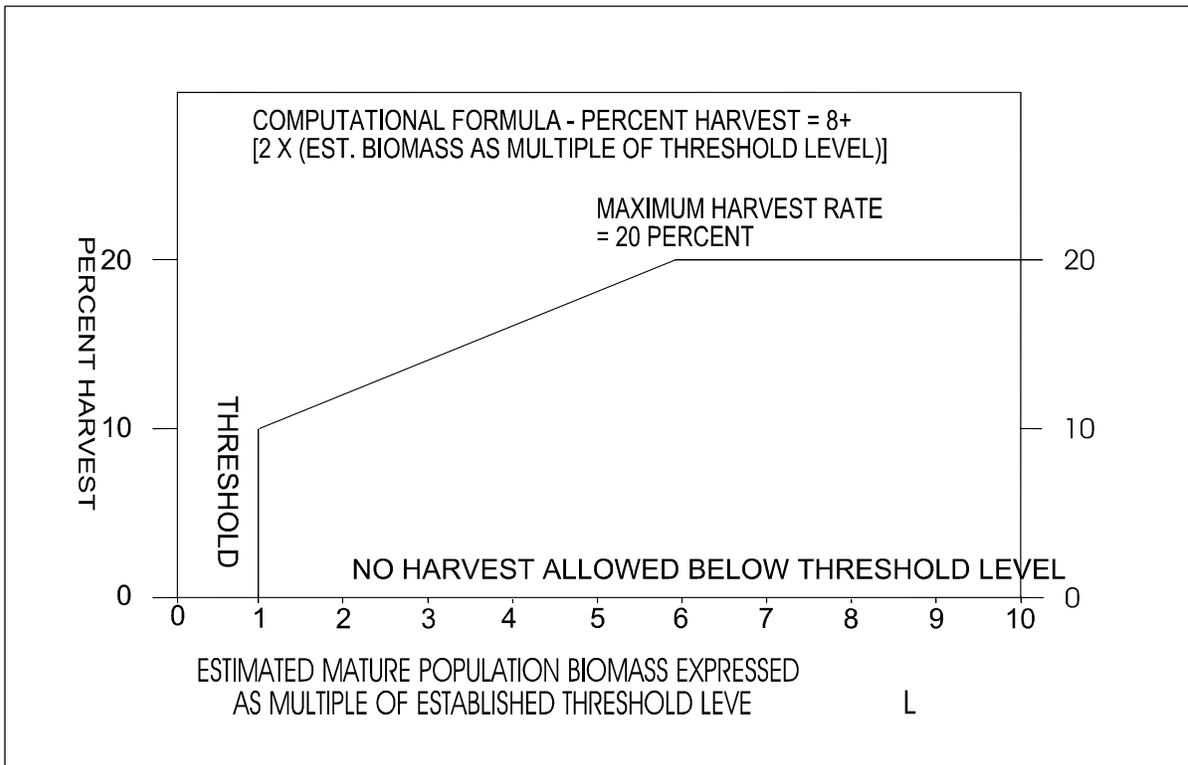


Figure 1.—Generalized harvest strategy for Southeast Alaska herring stocks showing allowable percent annual harvest related to estimated biomass of mature stock expressed as a multiple of the established harvest threshold level.

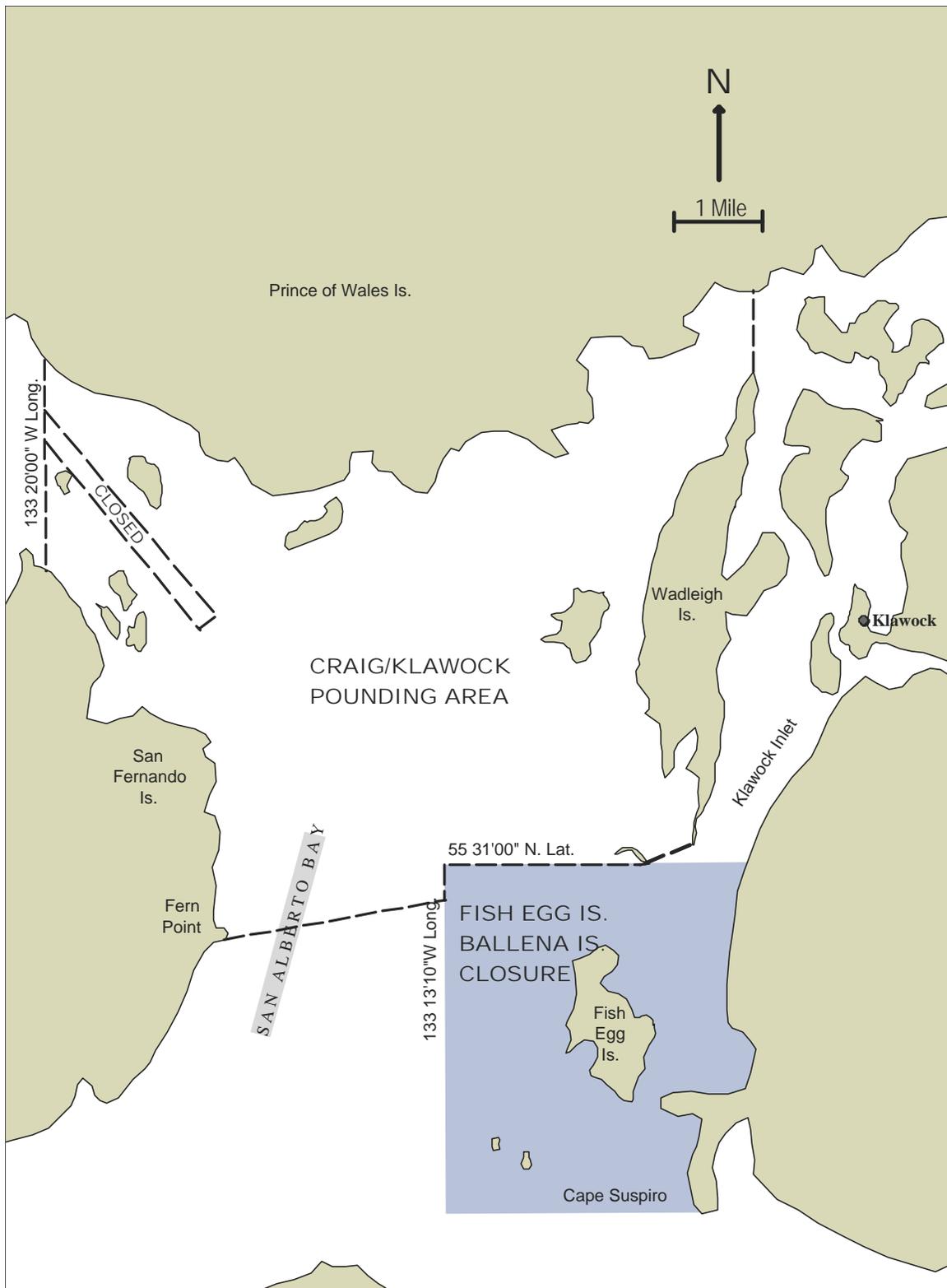


Figure 2.—Open area for Craig/Klawock pound fishery.

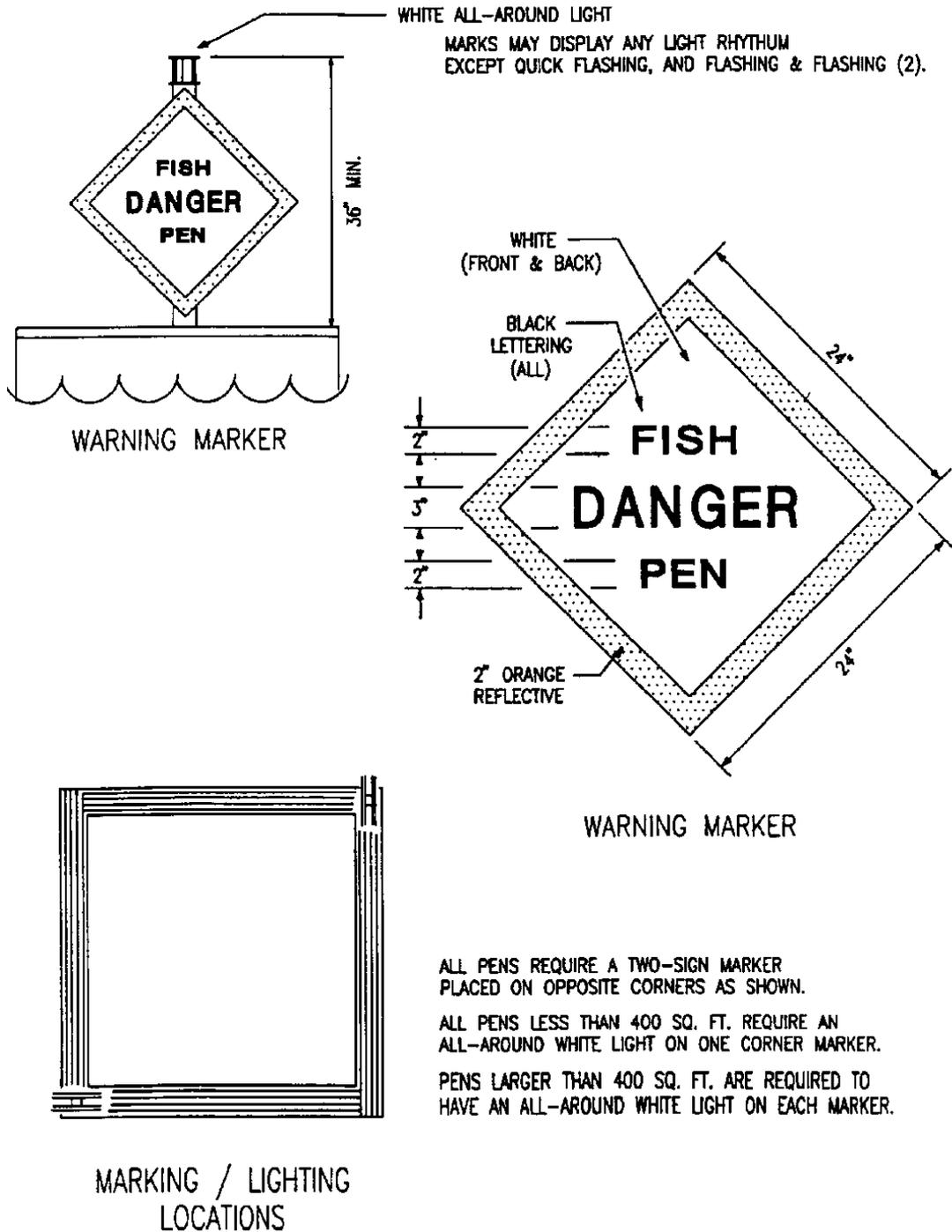


Figure 3.—Coast Guard requirements for marking ponds.



Figure 4.—Private lands in the Craig/Klawock area.

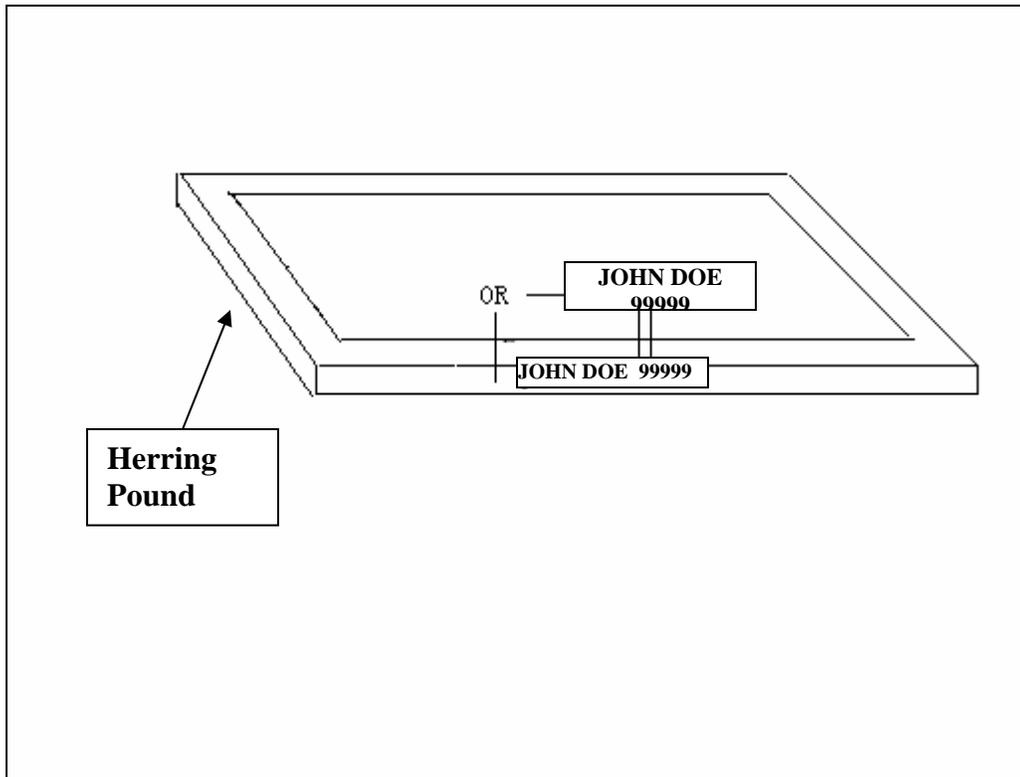


Figure 5.—Diagram of a herring pound showing two alternatives methods of marking herring pounds under new regulation requiring vertical signs with the permit holder’s first and last name and five-digit CFEC permit number (5 AAC 27.185(k)). Letters and numbers must be at least six inches high and at least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

Table 1.—Craig/Klawock stock size and bait harvests, 1987–2004.

Year	Miles Spawn (year)	Biomass (Tons)	Total GHL Bait and SOK	Bait Quota (Tons)	Bait Harvest (Tons)
87–88 ^a	5.0 ('87)	3,080	N/A	2,200	2,014
88–89	27.0 ('88)	16,350	N/A	1,810	1,730
89–90	31.7 ('89)	19,800	N/A	3,150	3,221
90–91	30.0 ('90)	18,350	N/A	2,841	3,272
91–92	22.0 ('91)	17,800	2,684	2,281	2,295
92–93 ^b	23.0 ('92)	12,350	1,602	1,362	629
93–94	8.4 ('93)	7,996 (ASA)	895	760	636
94–95	8.0 ('94)	6,778 (ASA)	725	617	124
95–96	5.5 ('95)	6,262 (ASA)	658	558	34
96–97	9.9 ('96)	6,755 (ASA)	715	615	517
97–98 ^c	13.2 ('97)	7,018 (ASA)	755	455	254
98–99	11.0 ('98)	6,951 (ASA)	750	450	254
99–00	15.4 ('99)	7,144 (ASA)	626	376	346
00–01	12.9 ('00)	9,091 (ASA)	1,058	635	144
01–02	16.7 ('01)	8,387 (ASA)	952	571	145
02–03	18.0 ('02)	6,045 (ASA)	630	378	144
03–04	11.2 ('03)	13,204 (ASA)	1,754	1,052	157
04–05	12.0 ('04)	15,577 (ASA)	2,217	1,330	550
05–06	18.0 ('05)	14,730 (ASA)	1,955	1,173	750

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

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

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

Table 2.–Craig/Klawock herring roe-on-kelp fishery summaries, 1992–2005.

FISHERIES INFORMATION	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Herring SOK Allocation (tons) + unharvested bait = SOK Herring for kelp allocation	403	240	135	109	100	100 + 100 200 tons	300 +200 500 tons	300 +350 650 tons	250 +30 280 tons	423 +491 914 tons	381 +471 852 tons	150 +378 528 tons	702 +895 1,579 tons	887 +780 1,667 tons
Product quota (tons)	32.3	19.2	10.8	8.7	8.0	8.0	40	52	22.4	N/A	N/A	N/A	N/A	N/A
Total harvest SOK (tons)	25.7	5.7	16.5	25.4	37.25	21.9	22.4	36	0	26,927.2	41.7	69.2	50	115.2
Exvessel value	\$180,000	\$47,882	\$364,199	\$1,000,000	\$1,490,000	\$270,306	\$152,203	\$212,121	\$0	\$146,859	\$218,700	\$423,000	\$325,000	\$603,723
Aver. Price/pound	\$3.50	\$4.17	\$11.00	\$19.00	\$20.00	\$6.00	\$3.39	\$2.94	\$0	\$2.70	\$3.10	\$3.00	\$3.25	\$2.62
Aver. Income/landing	\$784.	\$2,081	\$4,388	\$5,107	\$9,700	\$1,890	\$1,072	\$2,060	\$0	\$2,880	\$2,460	\$3,385	\$3,420	\$9,011
Number of pounds in fishery	248	209	147	159	162	119	112	70	50	31	50	61	50	42
Number of landings	229	23	83	146	154	143	148	103	0	51	89	118	95	67
Herring allocation (tons)	1.6	1.15	1	0.7	0.6	0.7	4.46	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blade quota (tons)	8.0	6.4	3.75	2.9	2.67	2.6	13	9.1	7.4	N/A	N/A	N/A	N/A	N/A
Blade allocation	310	292	233	174	156	^a	^b	^c	^d	^e	^e	^e	^f	^g
Total kelp harvest (tons)	7.8	3.7	3.0	3.0	2.6	3.2	3.47	2.9	2.0	3.2	8.2	7.5	14	4.6
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	3/19–4/8	3/23–3/28	3/22–4/5	4/1–4/7	3/31– 4/7	3/31– 4/7	3/26–4/7	3/23, 4/9–4/14
Miles of spawn	22.0 ('91)	23.0 ('92)	8.4 ('93)	8.0 ('94)	5.5 ('95)	9.9 ('96)	13.2 ('97)	12.5 ('98)	15.4 ('99)	12.9 ('00)	18.4	11.2	12.0	18
Spawning stock biomass (tons)	17,800	12,350	7,996	6,778	6,262	6,755	7,018	6,951	9,951	8,042	8,387	11,626	22,896	14,730
Seining opened/closed	3/18 – 3/23	4/17 – 4/28	4/5–4/18	3/28–4/14	3/28–4/14	3/17–4/20	3/17–4/20	3/17–4/21	3/17–5/1	3/17–4/24	3/17–5/20	3/17–5/15	3/17–7/15	3/17–6/01

^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, and 400 blades for a multiple permit 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, 520 blades for a multiple permit open pound.

^d 70 blades for a single closed pound, 210 for a multiple pound permit holder, 700 blades for a single open pound, 2,100 blades for a multiple permit open pound.

^e 200 blades - single closed pound, 600 blades – per permit holder multiple closed pound, 200 fronds or 2,000 blades – single open, 600 fronds or 6,000 blades for multiple permit open pound.

^f 350 blades – single closed pound, 750 blades – per permit holder double closed pound, 1,125 blades – triple closed pound.

^g see 5 AAC 27.185 (c)

Table 3.—Ernest Sound miles of herring spawn, stock size, and harvests, 1969–2004.

Season	Date of first spawn ^a	Nautical miles of spawn	Spawning Biomass (tons) ^b	Guideline Harvest Level (tons)	Bait harvest (tons)	SOK Harvest (lbs)	Sac Roe Harvest	Remaining GHL	Minimum Threshold Level (tons)
1969–70		--		--	17	--	--		
1970–71		3			206	--	--		
1971–72		--	13,100		967	--	--		
1972–73		--	3,550		711	--	--		
1973–74		--	450		535	--	--		
1974–75		--	400		593	--	--		
1975–76		3	2,900	580	708	--	--		
1976–77		3	4,350	870	901	--	49		2,500
1977–78	5/3	--	3,035	455	340	--	--		2,500
1978–79	4/16	2.6	1,505	--	--	--	--	--	2,500
1979–80	5/2	4	255	--	--	--	--	--	2,500
1980–81		3.5	410	--	--	--	--	--	2,500
1981–82		--	160	--	--	--	--	--	2,500
1982–83		--	1,640	--	--	--	--	--	2,500
1983–84	4/11	--	1,000	--	--	--	--	--	2,500
1984–85		4.5	1,000	--	--	--	--	--	2,500
1985–86	-	--	1,000	--	--	--	--	--	2,500
1986–87		1	--	--	--	--	--	--	2,500
1987–88	4/21	2	--	--	--	--	--	--	2,500
1988–89	4/17	2.4	500	--	--	--	--	--	2,500
1989–90		2.1	1,000	--	--	--	--	--	2,500
1990–91		ns	3,000	--	--	--	--	--	2,500
1991–92	4/16	9.1	2,650	--	--	--	--	--	2,500
1992–93	4/23	9	684	200	8	--	--	192	2,500
1993–94	4/24	8.4	2,544	0	--	--	--	--	2,500
1994–95	4/23	6.5	2,744	255	111	--	--	144	2,500
1995–96	4/16	6.9	4,852	280	220	--	--	60	2,500
1996–97	4/16	0	-No survey-	577	6	--	--	571	2,500
1997–98	4/9	11	5,381	0	--	--	--	--	2,500
1998–99	4/5	2.4	No survey--	662	96	--	--	566	2,500
1999–00	4/8	9.1	894	0	--	--	--	--	2,500
2000–01	4/10	6.9	2,051	0	--	--	--	--	2,500
2001–02	4/15	4.8	2,407	0	--	--	--	--	2,500
2002–03	4/10	8.5	6,592	0	--	--	--	--	2,500
2003–04	4/11	6.8	2,412	875	--	112,286	--	--	2,500
2004–05	4/22	10.1	1,906	0	--	--	--	--	2,500
2005–06			2,284	0	--	--	--	--	2,500

^a Since 1997–98 the first spawn and the major spawn have been within 4 days of each other.

^b 1970 through 1990 biomass estimates were based on hydro-acoustic surveys. 1991 through 2001 biomass estimates were calculated from spawn deposition estimates or biomass accounting calculations. 1973–74, 1974–75, 1976–77 also include harvests from Fools and Menefee Inlets 1975–76 & 1976–77 GHL's are based upon 20% of the acoustical estimate. 1977–78 GHL is based upon 15% of the acoustical estimate (11/28/77 memo by WB. 1996–97 No survey, fish all spawned (7.5 miles) along Ship Island, 1998–99 No survey, only 2.4 miles of spawn observed, probably missed main spawn, 2003–04 Quota includes 90 tons from the bait pound fishery.

Table 4.–Division of Commercial Fisheries contacts for this management plan

LIST OF MANAGEMENT CONTACTS

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

Note: During the herring spawn-on-kelp pound fishery information may also be obtained from the Fish and Game Office in Craig, Alaska, located at Suite 302 Westwind Plaza, telephone number 1-907-826-2563.