

SOUTHEAST ALASKA SAC ROE HERRING FISHERY
2003 MANAGEMENT PLAN



Prepared by
Southeast Alaska Region Staff

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TABLE OF CONTENTS

| | <u>Page</u> |
|---|-------------|
| INTRODUCTION..... | 3 |
| REGULATIONS | 3 |
| VESSEL CHECK-IN, CHECK-OUT, AND REPORTING PROCEDURE | 3 |
| REPORTING PROCEDURES FOR FLOATING FISH PROCESSORS..... | 4 |
| ANNOUNCEMENT OF OPENINGS AND CLOSURES | 4 |
| MANAGEMENT STRATEGY | 4 |
| SLIDING SCALE HARVEST RATE..... | 6 |
| ROE QUALITY..... | 6 |
| GILLNET FISHERIES | 6 |
| REVILLA CHANNEL | 7 |
| SEYMOUR CANAL | 7 |
| HOBART/HOUGHTON | 8 |
| PURSE SEINE FISHERIES | 8 |
| LYNN CANAL | 8 |
| SITKA SOUND..... | 9 |
| LIST OF MANAGEMENT CONTACTS | 11 |

LIST OF TABLES

| | <u>Page</u> |
|---|-------------|
| Table 1. Southeast Alaska gillnet sac roe herring fisheries information summary, 1976–2002..... | 12 |
| Table 2. Southeast Alaska purse seine sac roe herring fisheries information summary, 1976–2002..... | 14 |

LIST OF FIGURES

| | <u>Page</u> |
|--|-------------|
| Figure 1. Southeast Alaska sac roe herring areas and preliminary GHs for 2003..... | 16 |
| Figure 2. Generalized harvest strategy for Southeast Alaska herring. | 17 |
| Figure 3. Harvest rate and formula for Sitka Sound under 20,000 ton minimum threshold level [5 AAC 27.160 (g)]. | 18 |

INTRODUCTION

Southeast Alaska commercial herring fisheries occur during the winter when herring are harvested for use primarily as bait and also during the spring when herring are harvested for their roe. The roe harvest includes the traditional sac roe fisheries (set gillnet and purse seine) and, in recent years, spawn-on-kelp pound fisheries. This management plan provides an overview of the 2003 sac roe herring fisheries for Southeast Alaska including expected harvest levels and management strategy. A separate management plan for the spawn-on-kelp pound fisheries will be available at local department area offices.

Southeast Alaska roe herring are commercially harvested by purse seine and set gillnet gear types, both of which are included in the limited entry system. There are currently five sac roe herring fishing areas in Southeast Alaska consisting of two exclusive purse seine and three exclusive gillnet areas (Figure 1).

Approximately 10,951 tons of herring were harvested in commercial sac roe herring fisheries conducted in Southeast Alaska during 2002. A harvest of approximately 8,770 tons is anticipated for the 2003 season.

REGULATIONS

Commercial herring fishing regulations are contained in the Commercial Herring Fishing Regulations booklet. Copies of the 2002–2003 edition may be obtained at any Department of Fish and Game office. The Sitka Sound Commercial Sac Roe Herring Fishery Management Plan adopted in January of 2002 is now included in this booklet [5 AAC 27.195]. Other new regulations adopted by the Alaska Board of Fisheries during the January 2003 meeting will not be in effect during the 2003 sac roe fisheries. These future regulations will include new alternating year gillnet and seine sac roe fisheries in the West Behm Canal area, and minor modifications of Buyer and Tender Reporting Requirements for Sac Roe [5 AAC 27.162]. Department staff listed at the conclusion of this plan are available to provide further details.

Vessel Check-In, Check-Out, and Reporting Procedure

Buyers or buyer's agents shall register all vessels employed in transporting and processing herring with the department prior to commencing with those activities and make daily reports of herring purchased from fishers as specified by a local representative of the department [5 AAC 27.162(a)]. The department requests that tenders and fishing vessels not previously registered through buyers or buyer's agents check-in and check-out of the fishing areas with department personnel located on the fishing grounds to facilitate timely and complete assessment of herring landings. Fish tickets must be provided to the CFEC permit holder at the time of delivery to the first buyer or buyer's agent [5 AAC 27.162(c)]. This means that there must be a separate fish ticket for each delivery to a tender before the tender leaves the fishing grounds to

make a delivery. At the request of the CFEC permit holder, on-the-grounds weight and roe content shall both be recorded on the fish ticket. Operators who will transport fish out of Alaska prior to processing must submit a fish ticket before departing the state [5 AAC 39.130(c)]. Fully completed fish tickets with updated accurate and final weights and roe percentages must be submitted to the department within 10 days after the termination of buying operations, unless otherwise specified by the department [5 AAC 27.162(a)(3)].

Reporting Procedures for Floating Fish Processors

Operators of floating fish processing vessels are required to report in person, by radio, or telephone, to the local department representative in the management area of intended operation before processing begins [5 AAC 39.130 (g)]. The report must include the location and date of intended operation.

ANNOUNCEMENT OF OPENINGS AND CLOSURES

Fishery openings and closures will be implemented via department emergency order. Announcements will be issued through normal news release channels and on the fishing grounds over VHF radio. The VHF radio frequency for receiving field announcements will be indicated on the fishing grounds. Harvesters should expect short notification of opening and closing times. This is necessary to provide fishing opportunities prior to major spawning and to maintain the harvest at desired levels.

The department will monitor herring in advance of the expected fishery opening dates. Fisheries will be placed on a two-hour notice prior to the first opening. During the Sitka fishery, the department will try to give the industry a 36-hour advance warning of a decision to place the fishery on two-hour notice. However, if spawning is either earlier or heavier than anticipated and waiting 36 hours could result in loss of fishing opportunity, this much advance notice will not be given. During the Seymour Canal gillnet fishery the department will provide the industry with a 12-hour advance notice of a decision to place the fishery on two-hour notice. The 12-hour notice helps limit the amount of time vessels must remain on the fishing grounds prior to the start of the fishery.

MANAGEMENT STRATEGY

The harvest strategy for Southeast Alaska herring sac roe fisheries is based on the availability of mature herring containing quality roe (at least 10% mature roe), total biomass, age structure, recruitment, growth

characteristics, and past spawning success. Southeast Alaska herring generally reach maturity at a standard length (tip of the snout to the end of the hypural plate) of 185 mm (8 inches), a size achieved by some three-, and most four-year-old fish.

Herring populations are assessed annually to determine whether individual spawning stocks are above threshold and to determine the appropriate harvest rate (see Sliding Scale Harvest Rate on next page). As specified in 5 AAC 27.190 HERRING MANAGEMENT PLAN FOR STATISTICAL AREA A, harvest of a particular spawning stock is not allowed unless an assessment of the abundance and general condition of that spawning stock has been conducted and the estimated biomass is above the minimum spawning biomass threshold level. The threshold level is the herring biomass needed to meet minimum spawning and/or allocation requirements. The established threshold levels for the herring sac roe fishing areas are:

| Fishing Area | Threshold Level |
|-----------------|-----------------|
| Seymour Canal | 3,000 tons |
| Revilla Channel | 6,000 tons |
| Lynn Canal | 5,000 tons |
| Sitka Sound | 20,000 tons |
| Hobart/Houghton | 2,000 tons |
| West Behm Canal | 6,000 tons |

A variety of methods have been used to assess the status of herring populations in Southeast Alaska. Prior to 1970, herring abundance was assessed through visual estimates made from vessels using depth sounders and sonar immediately prior to spawning or on wintering aggregations. In addition, miles of spawn were documented with aerial or skiff surveys. A computer-assisted hydroacoustic survey method was developed in the early 1970s and used extensively during the late 1970s to the mid-1980s. Spawn deposition surveys were first used in 1976 and continue to be a key component of current assessment methods. The spawn deposition method combines diver estimates of herring egg deposition on the spawning grounds along with estimates of total area receiving spawn and average fecundity, to yield an estimate of spawning biomass. The estimates of spawning biomass from one year may be used as a basis to forecast and to set harvest quotas for individual spawning stocks for the following year. This method was used to establish a forecast for the Hobart/Houghton spawning stock.

Beginning in 1994, the department began using age-structured analysis (ASA) to forecast abundance for selected spawning stocks with sufficient historic stock information. The ASA method relies on a time series of herring population assessment data (e.g., spawning biomass as determined by egg deposition surveys and fecundity, age composition and weight-at-age from samples of spawning herring, catch age composition and weight-at-age, and weight-at-age from winter test sampling) to forecast herring biomass for those spawning stocks. This method applies estimates of recruitment, growth, maturation, and natural mortality to an estimate of spawning escapement from one year to forecast biomass for the next year. This is an important development because gains in herring biomass due to recruitment and growth are often not equal to the loss of biomass due to natural mortality. The ASA method is currently used to forecast herring abundance for the Sitka, Revilla Channel, Seymour Canal, Craig/Klawock, and Tenakee Inlet fisheries.

Sliding Scale Harvest Rate

The allowable harvest is based on a graduated scale that allows for higher harvest rates as a herring population increases relative to the threshold level. This approach maintains annual harvest rates between 10 and 20% of the spawning stock in excess of established threshold levels. When the spawning stock biomass is at the minimum threshold level, a 10% harvest is allowed. The allowable harvest increases an additional 2% for every spawning stock biomass increase of an amount equal to the threshold level and reaches a maximum of 20% when the population is six-times the threshold level.

The percent harvest rate for any multiple of the threshold level from one to six can be estimated from Figure 2, or by performing the following calculation:

$$\text{Percent Harvest Rate} = 8 + 2 \left[\frac{\text{Spawning Population Size}}{\text{Threshold Level}} \right] \quad (1)$$

An exception to the harvest rate formula now applies to the Sitka Sound sac roe herring fishery based on Board of Fisheries action taken at the 1997 meeting in Sitka. For the Sitka fishery, the new harvest rate is calculated as follows using a 20,000-ton threshold (Figure 3):

$$\text{Percent Harvest Rate} = 2 + 8 \left[\frac{\text{Spawning Population Size}}{\text{Threshold Level}} \right] \quad (2)$$

Roe Quality

Sac roe herring fisheries are managed in compliance with regulation 5 AAC 27.059 MANAGEMENT GUIDELINES FOR COMMERCIAL HERRING SAC ROE FISHERIES. This regulation outlines ways the department can manage sac roe fisheries to enhance value. To determine the best time to fish, the department samples prespawning herring populations in cooperation with harvesters and trained industry technicians. All test-fishing activities must be authorized by department biologists on the fishing grounds.

GILLNET FISHERIES

There are three set gillnet sac roe fishing areas in Southeast Alaska; the Revilla Channel fishery in regulatory Section 1-F, the Seymour Canal fishery in Section 11-D, and the Hobart-Houghton fishery in District 10. During the 2003 Alaska Board of Fisheries meeting in Sitka the board adopted a new sac roe

gillnet fishery for West Behm Canal. The new gillnet fishery will operate on alternate years with a purse seine sac roe fishery. The board specified that the gillnet fishery would be implemented first but could not begin until 2004. A summary of historical harvest and fishing time information for each fishery is shown in Table 1. Gillnetters are reminded that regulations require identification tags, issued by the department, to be placed on one buoy at each end of a herring set gillnet. The department will charge five dollars for each buoy identification tag (ten dollars total) to recoup printing and administrative costs.

Revilla Channel

Set gillnet sac roe fisheries have occurred in the Revilla Channel area (Section 1-F) since 1976 (Table 1). Seasonal landings have ranged from a low of 171 tons in 1978 to a high of 3,250 tons in 1983. In 1990, 2000, 2001, and 2002 the minimum threshold level was not reached and no fishery was permitted. In 1999 a GHL of 870 tons was established. However, due to on-grounds concerns over the lack of herring located in state waters, no herring were harvested.

In the spring of 2002 the department mapped no spawn in state waters in the Kah Shakes/Cat Island area. Since there was no spawn the department was unable to establish a forecast for the 2003 season, and therefore no fishery will take place in 2003. The department will, however, continue to monitor the status of the Revilla Channel herring in 2003. Spawning will be mapped, samples will be taken for age class distribution, and dive surveys will be conducted to estimate the spawning biomass. The population estimate determined in 2003 will be used to set the harvest level for 2004.

Seymour Canal

Set gillnet fisheries have occurred intermittently in Seymour Canal (Section 11-D) since the fishery was changed from a seine area to a gillnet area in 1980. Annual landings during years fished by gillnets have ranged from a low of 302 tons in 1987 to a high of 1,066 tons in 2002.

The ASA forecast of the mature spawning biomass for the Seymour Canal herring spawning stock is approximately 11,113 tons. Using the sliding scale harvest rate, this biomass allows a harvest rate of 15.4% of the population and a GHL of 1,712 tons for the 2002–2003 fishing season.

Opening dates for the Seymour Canal gillnet fishery have ranged from April 26 to May 16. Since 1980, spawning has started as early as April 19 and as late as May 9. Department personnel will begin to monitor the Seymour Canal area in mid-April. Initially, monitoring will be limited to aerial surveys. Depending on observed herring activity, vessels with department personnel will be on the fishing grounds by late April or early May.

Set gillnet buoy stickers must be obtained and placed on buoys prior to fishing. Identification stickers will be available from the Douglas and Petersburg fish and game offices prior to the time the department's vessel is on the fishing grounds; thereafter, identification stickers can only be obtained from the

department's vessel. The stickers will only be issued to valid permit holders and proper picture identification will be required.

Legal gear for the Seymour Canal fishery is one, 50-fathom net, with a minimum mesh size of 2 1/8 inches stretched mesh and a maximum depth of 120 meshes. If, during the course of the fishery a buoy sticker is lost, a replacement sticker must be obtained from the department before fishing is resumed.

Regulations require a one-hour grace period for nets to be removed from the water following the announced closure time. No gillnet may be reset after the closure time. Additionally, the department has been given the authority to open the fishery for one hour or less without a grace period. An opening of this nature could occur if, after the initial opening, a small but manageable amount of herring is left on the GHL. The department will announce if a grace period will not be allowed due to an opening of one hour or less.

Hobart/Houghton

The Alaska Board of Fisheries adopted a regulation in January 1997 that allocates any unharvested portion of the guideline harvest level (GHL) for the Hobart/Houghton winter food and bait fishery to the sac roe gillnet fishery [5 AAC 27.160 (f)]. Sac roe harvests occurred in 1997 through 1999. In 2000 the GHL was harvested in the winter bait fishery (Table 1). No harvest occurred in 2001 or 2002. The forecast for the 2003 mature spawning biomass for the Hobart/Houghton herring spawning stock is 579 tons. This is below the minimum threshold level of 2,000 tons. Therefore, there will not be set gillnet sac roe or winter food and bait fisheries in 2003.

PURSE SEINE FISHERIES

There are two purse seine herring sac roe areas in Southeast Alaska: Lynn Canal and Sitka Sound. Commercial fishing will be allowed only in Sitka Sound during the 2003 season. A summary of harvest and fishing time information for each fishery is shown in Table 2. During the 2003 Alaska Board of Fisheries meeting in Sitka the board adopted a new sac roe purse seine fishery for West Behm Canal. The new seine fishery will operate on alternate years with a gillnet sac roe fishery. The board specified that the gillnet fishery would be implemented first but could not begin until 2004 so the first year a sac roe seine fishery could be initiated in West Behm Canal is 2005.

Lynn Canal

The Lynn Canal herring sac roe fishing area encompasses regulatory Sections 15-B, 15-C, and that portion of Section 11-A north of the Shrine of St. Therese.

The Lynn Canal fishery has not been open since 1982. Aerial and on-the-grounds surveys conducted in the Lynn Canal fishing area during the spring of 2002 indicated that the population was below the spawning threshold level of 5,000 tons. Therefore, this fishery will not open in 2003.

Sitka Sound

The Sitka Sound sac roe fishing area encompasses the waters of Section 13-B north of the latitude of Aspid Cape, excluding the waters of Whale and Necker bays.

The 2003 forecast of the mature spawning biomass for the Sitka Sound herring spawning stock is 39,319 tons. This biomass estimate is the result of applying the ASA model using weight-at-age data from a test fishery conducted in January 2003. The estimated spawning biomass results in a harvest rate of 17.7% and a preliminary GHL of 6,969 tons.

The ASA forecasting model indicates the 2003 spawning population will consist of 11% age-3, 27% age-4, 31% age-5, 18% age-6, 4% age-7, and 9% age-8+ herring. Applying expected age structure and 2003 winter weight-at-age measurements to the population forecast in numbers of fish yields an overall average weight of 124 grams. Observed winter weights-at-age are reflective of expected sizes the following spring.

Herring distribution and roe quality will be monitored prior to and during the fishing period. Monitoring methods for 2003 will include aerial surveys, hydroacoustic surveys, and test fishing. In 2003 the department will continue to work with a fishers selected among permit holders as the test boat program coordinator who will assign daily test fishing boats requested by the department. Prior to making test sets, the identified test boats will coordinate with department biologists on the grounds for collection and transport of herring samples to a central location for analysis by industry technicians. The areas open to fishing will depend on the distribution of herring, the need to provide for a fishery that will harvest good quality herring, and the need to provide a reasonable opportunity for subsistence.

In order to help the department to ensure that a reasonable opportunity is provided for subsistence a Memorandum of Agreement (MOA) was signed by ADF&G and the Sitka Tribe of Alaska (STA) on November 4, 2002 and witnessed by the Alaska Board of Fisheries on December 17, 2002. This agreement brings consideration of potential impacts of the commercial sac roe herring fishery on the subsistence herring fishery in Sitka Sound to the ADF&G fishery manager through an in-season consultation process. An in-season task force will provide recommendations concerning proposed management actions at a minimum prior to each announcement of a commercial opening after considering potential impacts on the subsistence fishery and the commercial fishery. The three task force members will include the in-season Tribal liaison from STA, a permit holder, and the Sitka Fish and Game Advisory Committee. The department will also consider any in-season recommendations from buyers or processing stakeholders, but no individual processing representative will be designated as a task force representative who may speak for other processors. Members would be available on short notice to review proposed decisions of the fishery manager. In the event of dissenting recommendations, the fishery manager would be the final arbiter after having considered all input from the task force. During or following each season the subsistence division would work cooperatively with the Sitka Tribe of Alaska to determine the amount and quality of the subsistence harvest, and would indicate whether the amount necessary for subsistence had been successfully harvested, and therefore, whether a reasonable opportunity for subsistence had been provided.

The department is requesting registration information for all fishing boats, tenders, and processors prior to the fishery. Registration is greatly simplified if coordinated and provided by each processing company. Processing companies should contact the Sitka fish and game office for a registration form. In addition, each processor should update the Sitka fish and game office with expected daily (24-hour) processing capacity and/or exporting plans. Company affiliations and processing capacities will be considered confidential.

The department held the annual Southeast Alaska sac roe fisheries pre-season planning meeting in Sitka on January 21, 2003. Invited to participate in this meeting were all permit holders, all buyers from the 2002 season, three representatives of STA, and the appropriate department biologists. Discussion considering a harvesting approach for the 2003 season indicated the department should plan to provide three open fishing periods inclusive of an early season opportunity, but the department must remain adaptable to the in-season situation. After processors have indicated their daily processing capacities and exporting plans to the department, and the department has considered the combined ability of processing companies to freeze the catch the department fishery manager will again review plans for the number of openings for the 2003 season. This will most likely take place at a general fishery planning meeting to be held in Sitka when the fishery has been placed on 2-hour notice. As during the 2002 season, a cooperative style fishery would be considered by fishers and the department as an option in the event that the final remaining GHL at the end of the season was less than 1,500 tons and above the uncertainty of the in-season harvest estimate. As always, this latter approach would require agreement between the 51 permit holders in the fishery. Mechanisms for dispersal may include the following: 1) considering recommendations from in-season task force members, 2) choosing dispersal of time and area by selecting appropriate in-season options, and 3) limiting harvest in the highest frequency spawning area along the Halibut Point Road in proportion to historical use patterns established by past commercial competitive fisheries (50–55% of the GHL). The general approach would be to act on opportunities for openings outside of the high frequency spawning area as they arise, yet recognize that fishing within this area is likely necessary in order to provide an opportunity for the commercial fishery to harvest and to reach the season's GHL. A final meeting to review and coordinate planning for the fishery will occur in Sitka when the fishery has been placed on two-hour notice.

During the pre-season planning meeting a representative of NMFS indicated that the Magnuson-Stevens Fishery Conservation and Management Act would be enforced in 2003. No fishing vessels may deliver and no foreign vessels may receive fish outside of internal waters and the port of Sitka. For details contact NMFS at (907) 747-6940.

Discussions at the 2003 Board of Fisheries meetings in Sitka brought into question an issue of the accuracy of reporting, both as hailed deliveries to tenders and as final landed weights. Outside of the context of these discussions the department has no indications to support that inaccurate reporting has in fact occurred. However, since the department believes that it is in the best overall interest of the fishery and of the public to ensure that reporting is exactly accurate, the department has held discussions with buyers to find a pro-active solution to this perceived problem. Therefore, for the 2003 season, the department is encouraging all buyers who export deliveries to Canada for landing to voluntarily utilize the services of an independent landing validation company such as are now required in Canada. After each day's catch and deliveries to tenders departing for Canada have been reported to the department manager on the grounds, buyers may then contact a landing validation company and arrange for that company's services to validate each tender's landing. The validation company may then report the validated landing information directly to the Sitka Fish and Game Department office. After the close of the season the department will compare validation information to hailed deliveries and landings as reported on fish tickets, and will evaluate any discrepancies to ensure that complete and accurate reporting has occurred.

LIST OF MANAGEMENT CONTACTS

The following ADF&G, Division of Commercial Fisheries personnel may be contacted regarding this management plan:

| | |
|--|--|
| Andy McGregor Region I Supervisor Douglas Regional Office | P.O. Box 240020 Douglas, Alaska 99824 (907) 465-4250 |
| Scott Kelley Region I Management Coordinator Douglas Regional Office | P.O. Box 240020 Douglas, Alaska 99824 (907) 465-4250 |
| Kevin Monagle and Scott Sloane Area Management Biologists Douglas Regional Office | P.O. Box 240020 Douglas, Alaska 99824 (907) 465-4250 |
| Kyle Hebert and Marc Pritchett Herring Research Biologists Douglas Regional Office | P.O. Box 240020 Douglas, Alaska 99824 (907) 465-4250 |
| Phil Doherty and Don House Area Management Biologists Ketchikan Area Office | 2030 Sea Level Dr., Suite 205 Ketchikan, Alaska 99901 (907) 255-5195 |
| William Bergmann and Troy Thynes Area Management Biologists Petersburg Area Office | P.O. Box 667 Petersburg, Alaska 99833 (907) 772-3801 |
| Bill Davidson and Dave Gordon Area Management Biologists Sitka Area Office | 304 Lake St. Rm. 103 Sitka, Alaska 99835 (907) 747-6688 |
| Scott Forbes Assistant Area Management Biologist Wrangell Area Office | P.O. Box 200 Wrangell, Alaska 99929 (907) 874-3822 |

Copies of this management plan may also be found at the following web site:

<http://www.cf.adfg.state.ak.us/region1/finfish/herring/herrhom1.htm>

Table 1. Southeast Alaska gillnet sac roe herring fisheries information summary, 1976–2002.

| Year | Seymour Canal ^a | | | | Revilla Channel | | | |
|------|--------------------------------|--------------|------------------------------------|----------------|--------------------------------|--------------|------------------------------------|---------------|
| | Guideline Harvest Level (Tons) | Catch (Tons) | Date Two Hour Notice Was Effective | Opening Dates | Guideline Harvest Level (Tons) | Catch (Tons) | Date Two Hour Notice Was Effective | Opening Dates |
| 1976 | 200 | 195 | | May 9 | 300 | 426 | March 23 | April 2 |
| 1977 | 500 | 485 | May 4 | May 9 | 800 | 820 | March 29 | April 1 |
| 1978 | 500 | 729 | May 2 | May 8 | 680 | 171 | March 26 | April 4 |
| 1979 | 250 | 269 | May 3 | May 3 | 585 | 528 | March 28 | March 29 |
| 1980 | -- | -- | Fishery Not Open | -- | 1,100 | 1,140 | March 25 | March 25 |
| 1981 | 600 | 615 | April 28 | April 28 | 1,550 | 1,840 | March 20 | March 20 |
| 1982 | -- | -- | Fishery Not Open | -- | 1,700 | 2,279 | March 20 | March 26 |
| 1983 | -- | -- | Fishery Not Open | -- | 2,500 | 3,250 | March 23 | March 24 |
| 1984 | 375 | 518 | April 20 | April 26 | 2,100 | 2,182 | March 20 | March 29 |
| 1985 | -- | -- | Fishery Not Open | -- | 2,300 | 2,161 | March 28 | March 29 |
| 1986 | 300 | 339 | May 5 | May 10 | 1,100 | 1,536 | March 29 | March 31 |
| 1987 | 419 | 302 | May 1 | May 5, 6 | 1,200 | 1,440 | March 24 | March 26, 27 |
| 1988 | 530 | 586 | April 20 | April 26-May 1 | 953 | 1,087 | March 24 | March 25 |
| 1989 | 332 | 547 | April 21 | April 28 | 647 | 592 | March 20 | March 20, 21 |
| 1990 | 312 | 359 | April 21 | April 28-29 | -- | -- | -- | -- |
| 1991 | -- | -- | Fishery Not Open | -- | 680 | 660 | March 28 | April 8-11 |
| 1992 | -- | -- | Fishery Not Open | -- | 1,200 | 1,256 | April 1 | April 3 |
| 1993 | -- | -- | Fishery Not Open | -- | 717 ^b | 737 | March 31 | April 10 |
| 1994 | 368 | 382 | April 28 | April 29 | 880 ^b | 749 | April 9 | April 9,11 |
| 1995 | 316 | 319 | April 30 | May 14 | 630 | 626 | April 11 | April 12 |
| 1996 | -- | -- | Fishery Not Open | -- | 871 | 605 | April 8 | April 10 |
| 1997 | - | - | Fishery Not Open | -- | 912 | 1,137 | April 6 | April 6 |
| 1998 | 633 | 585 | April 30 | May 1-4 | 620 | 616 | April 1 | April 1, 2 |
| 1999 | 595 | 706 | April 30 | April 30 | 870 | 0 | | |
| 2000 | 346 | 394 | May 3 | May 5 | 0 | 0 | | |
| 2001 | 474 | 620 | May 6 | May 11-12 | 0 | 0 | | |
| 2002 | 1,096 | 1,066 | May 12 | May 16-17 | 0 | 0 | | |

-continued-

Table 1. (page 2 of 2)

| Hobart Bay/Port Houghton ^c | | | | | |
|---------------------------------------|---|--------------|---------|--|-------------------------------------|
| Year | Guideline Harvest Level ^d (Tons) | Catch (Tons) | | Date Two Hour Notice Was Effective For Sac Roe | Opening Dates |
| | | Bait | Sac Roe | | Bait/Sac Roe |
| 1977 | 0 | 40 | 0 | | October 1 |
| 1978 | 0 | 0 | 0 | | Fishery Not Open |
| 1979 | 0 | 0 | 0 | | Fishery Not Open |
| 1980 | 0 | 0 | 0 | | Fishery Not Open |
| 1981 | 0 | 0 | 0 | | Fishery Not Open |
| 1982 | 0 | 0 | 0 | | Fishery Not Open |
| 1983 | 0 | 0 | 0 | | Fishery Not Open |
| 1984 | 0 | 0 | 0 | | Fishery Not Open |
| 1985 | 0 | 0 | 0 | | Fishery Not Open |
| 1986 | 0 | 0 | 0 | | Fishery Not Open |
| 1987 | 0 | 0 | 0 | | Fishery Not Open |
| 1988 | 0 | 0 | 0 | | Fishery Not Open |
| 1989 | 0 | 0 | 0 | | Fishery Not Open |
| 1990 | 0 | 0 | 0 | | Fishery Not Open |
| 1991 | 0 | 0 | 0 | | Fishery Not Open |
| 1992 | 200 | 0 | 0 | | January 13, 1992 |
| 1993 | 500 | 0 | 0 | | January 12, 1993 |
| 1994 | 230 | 140 | 0 | | October 17, 1993 |
| 1995 | 250 | 229 | 0 | | October 1, 1994 |
| 1996 | 700 | 230 | 0 | | October 15, 1995 |
| 1997 | 550 | 100 | 442 | April 19 | October 1, 1996-April 28 |
| 1998 | 260 | 0 | 351 | April 19 | October 1, 1997-April 20 |
| 1999 | 436 | 0 | 506 | April 25 | October 14, 1998-April 26 |
| 2000 | 418 | 432 | 0 | No Fishery | December 1, 1999-Gillnet not opened |
| 2001 | 0 | 0 | 0 | No Fishery | Fishery Not Opened |
| 2002 | 0 | 0 | 0 | No Fishery | Fishery Not Opened |

^a Seymour Canal was a purse seine fishing area prior to 1980.

^b Quota reduced by 150 tons as an allocation for the Annette Island sac roe harvest.

^c Hobart Bay was opened to Gillnet Sac Roe Fishing in 1997.

^d Gillnet quota is the portion left after the winter bait fishery is completed.

Table 2. Southeast Alaska purse seine sac roe herring fisheries information summary, 1976–2002.

| Year | Juneau ^a -Lynn Canal | | | | Sitka Sound | | | |
|------|---------------------------------|--------------|----------------------------------|---------------|--------------------------------|--------------|----------------------------------|---------------------------|
| | Guideline Harvest Level (Tons) | Catch (Tons) | Date 2-Hour Notice Was Effective | Opening Dates | Guideline Harvest Level (Tons) | Catch (Tons) | Date 2-Hour Notice Was Effective | Opening Dates |
| 1976 | 750 | 432 | Seine | April 26 | 780 | 800 | April 10 | April 16 |
| | | 124 | Gillnet | April 29 | | | | |
| 1977 | 875 | 709 | Seine | April 19 | -- | -- | Fishery Not Open | -- |
| | | 217 | Gillnet | April 20 | | | | |
| 1978 | 500 | 602 | Seine | April 19 | 250 | 175 | April 4 | April 5 |
| | 200 | 346 | Gillnet | April 21 | | | | |
| 1979 | -- | -- | Fishery Not Open | -- | 2,000 | 2,250 | April 7 | April 12 |
| 1980 | 600 | 975 | Seine | April 13 | 4,000 | 4,385 | April 4 | April 4, 5 |
| 1981 | 725 | 761 | Seine | April 17 | 2,700 | 3,506 | March 23 | March 24, 26 |
| 1982 | 375 | 551 | Seine | April 30 | 3,000 | 4,363 | March 26 | March 30 |
| 1983 | -- | -- | Fishery Not Open | -- | 5,500 | 5,463 | March 23 | March 26, 29 |
| 1984 | -- | -- | Fishery Not Open | -- | 5,000 | 5,711 | March 22 | March 26, 27, 28 |
| 1985 | -- | -- | Fishery Not Open | -- | 7,700 | 7,475 | March 24 | March 29, April 1, 5 |
| 1986 | -- | -- | Fishery Not Open | -- | 5,029 | 5,443 | March 28 | April 2, 8 |
| 1987 | -- | -- | Fishery Not Open | -- | 3,600 | 4,216 | March 23 | March 31 |
| 1988 | -- | -- | Fishery Not Open | -- | 9,200 | 9,573 | March 25 | April 4 - 14 |
| 1989 | -- | -- | Fishery Not Open | -- | 11,700 | 11,831 | March 23 | March 31 - April 8 |
| 1990 | -- | -- | Fishery Not Open | -- | 4,146 | 3,804 | April 4 | April 5, 6 |
| 1991 | -- | -- | Fishery Not Open | -- | 3,200 | 1,908 | March 29 | April 10 - April 13 |
| 1992 | -- | -- | Fishery Not Open | -- | 3,356 | 5,368 | March 30 | April 6 |
| 1993 | -- | -- | Fishery Not Open | -- | 9,691 | 10,186 | March 26 | March 27 - April 3 |
| 1994 | -- | -- | Fishery Not Open | -- | 4,432 | 4,753 | March 28 | March 29, 31 |
| 1995 | -- | -- | Fishery Not Open | -- | 2,609 | 2,908 | March 23 | March 25, 27 |
| 1996 | -- | -- | Fishery Not Open | -- | 8,144 | 8,144 | March 23 | March 23, March 31-Apr. 9 |

-continued-

Table 2. (page 2 of 2)

| Year | Juneau ^a -Lynn Canal | | | | Sitka Sound | | | |
|------|---------------------------------|--------------|----------------------------------|---------------|--------------------------------|--------------|----------------------------------|---------------------------------------|
| | Guideline Harvest Level (Tons) | Catch (Tons) | Date 2-Hour Notice Was Effective | Opening Dates | Guideline Harvest Level (Tons) | Catch (Tons) | Date 2-Hour Notice Was Effective | Opening Dates |
| 1997 | -- | -- | Fishery Not Open | -- | 10,900 | 11,147 | March 18 | March 18-March 23 |
| 1998 | -- | -- | Fishery Not Open | -- | 6,900 | 6,705 | March 16 | March 16, 18, 19 |
| 1999 | -- | -- | Fishery Not Open | -- | 8,476 | 9,136 | March 19 | March 22, 24, 26-27 |
| 2000 | -- | -- | Fishery Not Open | -- | 5,120 | 4,572 | March 13 | March 19, 22 |
| 2001 | -- | -- | Fishery Not Open | -- | 10,597 | 12,034 | March 15 | March 22, 26, 27 March 27, 29, 31, |
| 2002 | -- | -- | Fishery Not Open | -- | 11,042 | 9,885 | March 25 | April 2, April 12-15 |

^a The Juneau fishery was both a gillnet and seine area prior to 1980.

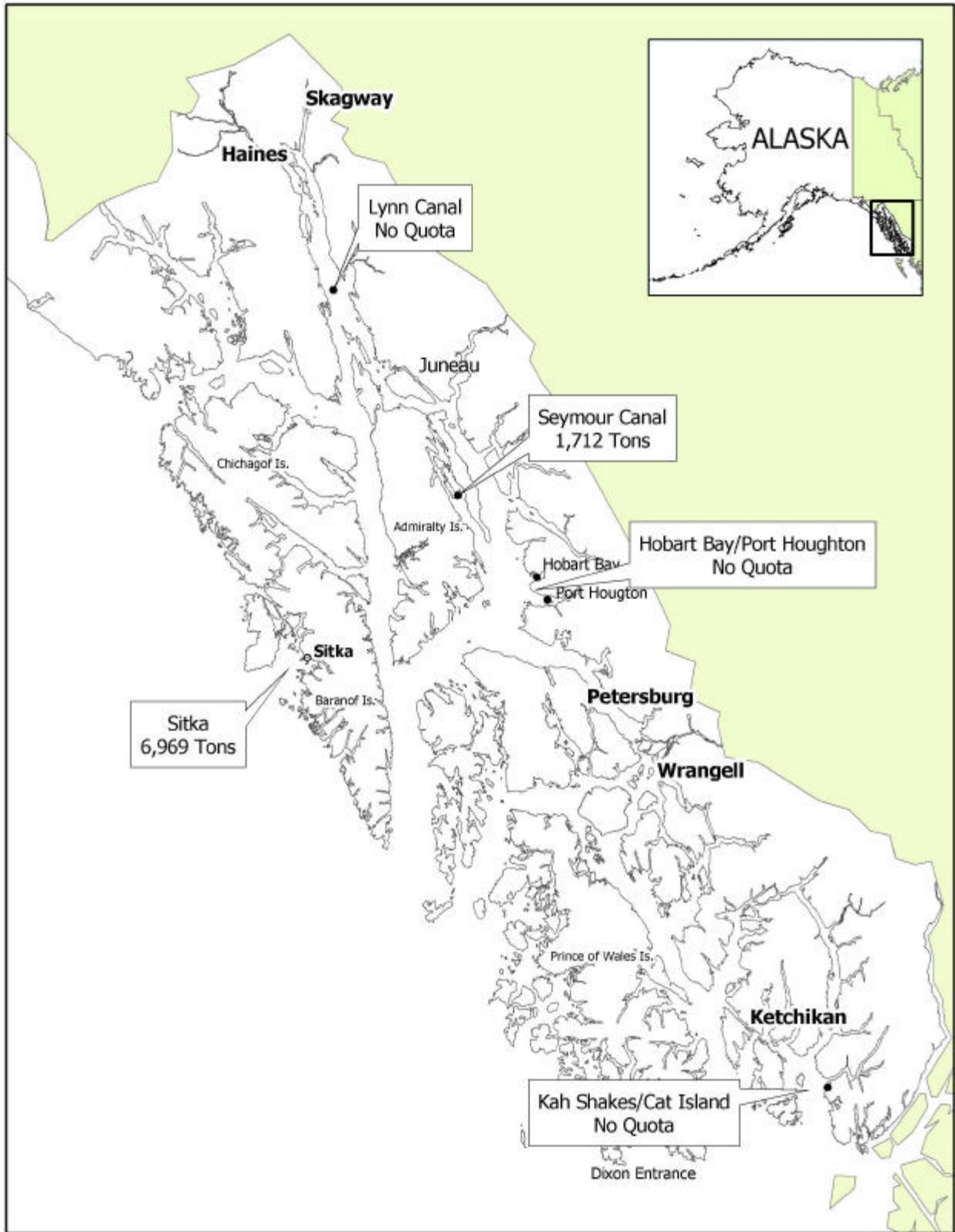


Figure 1. Southeast Alaska sac roe herring areas and preliminary GHLs for 2003.

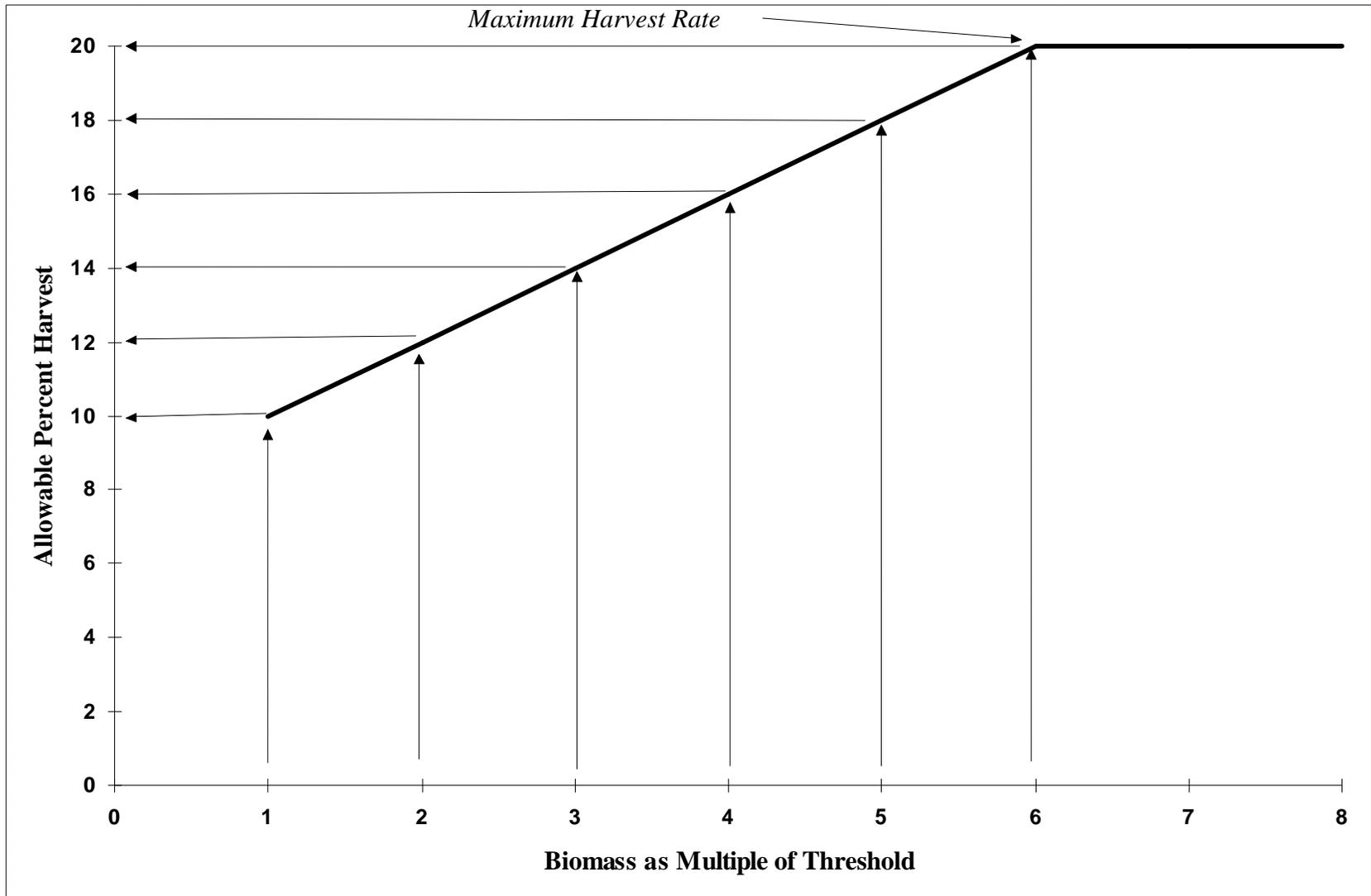


Figure 2. Generalized harvest strategy for Southeast Alaska herring. The allowable percent annual harvest is plotted against the estimated biomass of mature herring expressed as a multiple of the established harvest threshold level.

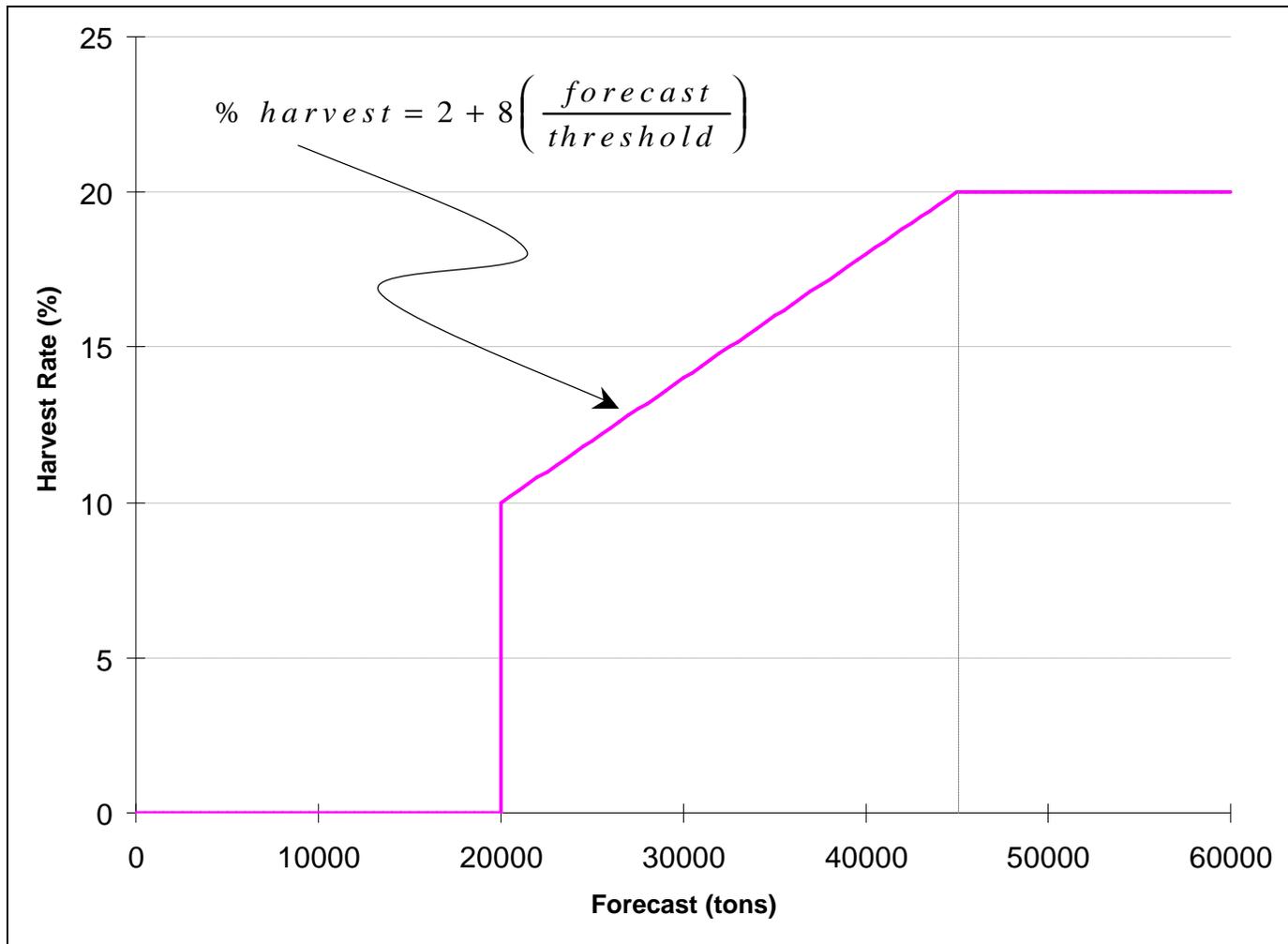


Figure 3. Harvest rate and formula for Sitka Sound under 20,000 ton minimum threshold level [5 AAC 27.160 (g)].

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