AGENDA D-2
SEPTEMBER 1983

M E M O R A N D U M

TO: Council, SSC and AP Members

FROM: Jim H. Branson
Executive Director

DATE: September 16, 1983

SUBJECT: Herring FMP

ACTION REQUIRED

(1) Final approval of FMP and supporting documents
(2) Review Wespestad/Fried report

BACKGROUND

At the May meeting the Council directed the PDT and NMFS to prepare final drafts of two alternative Herring FMPs. The first alternative includes all the management measures already tentatively approved by the Council, including an Allowable Incidental Catch (AIC) provision for foreign fishermen. General Counsel has advised that AIC for foreigners is probably not legal and recommends that a Prohibited Species Catch (PSC) be established instead. NMFS and Council staff have prepared an alternative FMP which makes herring a prohibited species to foreigners and establishes a PSC for each nation. This is the primary difference between the two alternatives, but the OY definition was modified in the PSC version to clarify the distinction between foreign harvest and domestic harvest. A summary of each version has been provided as agenda item D-2(a).

The proposed implementing regulations must also be approved by the Council. These were provided at the July meeting and are included as item D-2(b) in the Council books only.

Council staff and NMFS recommend two changes to the FMP and regulations prior to approval. The first regards the timing of allocation of AIC and PSC. The FMP currently states that AIC and PSC are on a calendar year basis, but that they may not be released until April 1 if the previous year's AIC/PSC was

exceeded. We recommend that a standardized April 1 allocation date be approved in order to simplify the regulations regarding the Herring Savings Area closure. Also along this line, the closure of the savings area has been specifically limited to October 1 - March 31 as originally intended.

The second change is the addition of a weekly radio reporting requirement for fishermen who don't fill out an ADF&G fish ticket or sell to a joint venture processor. These reports will be used for in-season management so quotas are not exceeded

The line-by-line changes to the FMP and regulations are provided in agenda item D-2(c).

A Regulatory Issues Paper was prepared in July and included in the Supplemental File for the briefing books at the July meeting. This paper provides the socioeconomic analysis to be used in the RIR/RFA.

At the July meeting the Council and SSC received a report by Wespestad and Fried which provides a new analysis of allowable exploitation rates offshore and the probable impacts on discrete spawning stocks. The report suggests that the old ABC formula (i.e., without the arbitrary 50% reduction), combined with the 10,000 mt offshore harvest ceiling, would protect all known discrete stocks from overfishing. The SSC has recommended that the Council review this document and will be prepared to provide the Council with additional comments at this meeting. (Both FMP versions contain the 50% reduction.)

At the July meeting, Harold Lokken requested that Council staff and the appropriate agencies prepare a package of research proposals that could fill in the current data gaps on offshore stock distribution, stock size, and migrations. We received a package of research proposals from ADF&G regarding inshore stock assessment, migration and distribution, as well as a plan by NMFS regarding offshore stock identification and assessment. These are summarized as agenda item D-2(d)

If the Council wishes to approve the FMP at this meeting a motion similar to the following should be made:

> "Having reviewed the Regulatory Issues Paper, the EIS, and comments from the fishing and scientific communities, I move that the Bering Sea Herring FMP and its implementing regulations be approved and sent to the Secretary for implementation."

SUMMARY OF ALTERNATIVE HERRING FMPs

The Council received the two recent alternative versions of the Herring FMP prior to their July 1983 meeting. The first, dated July 1983, contains the measures already approved by the Council. The second, which is stamped "DRAFT with Prohibited Species Catch (PSC) Provisions" on the cover, is an alternative prepared by NMFS and Council staff. The provisions and differences of each are summarized below.

July 1983 version

A. Objectives

1. To conduct any harvest of herring in the FCZ in such a manner to insure:
   (a) maintenance of the herring resource at a spawning level that will provide the maximum production of recruits;
   (b) maintenance of the subsistence herring stocks and the subsistence fishery;
   (c) maintenance of the herring resource at a level that will sustain populations of predatory fish, birds and mammals; and
   (d) development and maintenance of the inshore commercial fisheries.

B. Determination of Allowable Biological Catch (ABC)

1. MSY - set at 48,712 mt
2. MSY biomass - set at 243,560 mt
3. $ABC = [\frac{\text{spawning biomass estimate}}{\text{MSY biomass}} \times 0.2] \times \text{spawning biomass estimate}$
   $= \text{exploitation rate} \times \text{spawning biomass estimate}$
4. Exploitation rate may not exceed 0.2

C. Optimum Yield (OY)

1. OY = Summer Apportionment + Winter Apportionment
2. Summer apportionment = 2,000 mt (includes inshore catch)
3. Winter apportionment = (ABC - Inshore commercial harvest - subsistence adjustment - AIC) ÷ 2
4. Limits on winter apportionment
   (a) may not be less than 2,000 mt or greater than 10,000 mt
   (b) is zero if spawning biomass is less than ½ MSY biomass (i.e., less than 122,000 mt)
   (c) may be reduced if stock problems are identified
5. Subsistence adjustment = 500 mt

6. Allowable incidental catch = 0.1% of the total Bering Sea groundfish allocations, on a nation-by-nation basis

7. AIC applies to U.S. fishermen as well as foreigners

8. AIC is part of Bering Sea groundfish OY, not herring OY

D. TALFF - No TALFF

E. Seasons and Areas

1. Summer season -

   (a) only south of 55°47'N latitude
   (b) July 1 - September 30

2. Winter season

   (a) entire FCZ
   (b) October 1 - March 31

3. AIC

   (a) entire FCZ where no directed fishing allowed
   (b) entire year (April 1 - March 31)
   (c) applies to both foreign and U.S. fishermen
   (d) may be retained

F. Herring Savings Area

1. Goal is to protect wintering herring concentrations

2. Size of area closed may be adjusted each year

3. Closes to any nation reaching its AIC

4. Applies till the end of the herring year (March 31)

5. Applies to U.S. fishermen also

6. Applies to trawl gear only

G. Reporting Requirements

1. ADF&G fish tickets and joint venture processors are the primary reporting system.

2. If a vessel catches herring and does not report within one week by the above methods, a weekly radio report will be required. (recommended by staff)

Prohibited Species Catch (PSC) version

A. Objectives - same

B. Determination of ABC - same

C. Optimum Yield (OY)

1. OY = Summer Apportionment + Winter Apportionment + AIC
2. Summer apportionment - same
3. Winter apportionment = (ABC - Inshore commercial catch - subsistence adjustment - AIC - PSC) ÷ 2
4. Limits on winter apportionment - same
5. Subsistence adjustment - same
6. AIC = 0.1% of the U.S. Bering Sea groundfish apportionment, thereafter prohibited species
7. AIC is not part of Bering Sea groundfish OY
8. PSC = 0.1% of each foreign nation's Bering Sea groundfish allocation - may not be retained

D. TALFF

1. No TALFF
2. No foreign retention of any herring
3. AIC herring may be purchased from U.S. fishermen

E. Seasons and Areas

1. Summer season - same
2. Winter season - same
3. AIC - same but for U.S. fishermen only
4. PSC - same as AIC but for foreign fishermen

F. Herring Savings Area

1. Closes to all U.S. fishermen when AIC reached
2. Closes to any foreign nation reaching its PSC
3. Applies to trawl vessels only

G. Reporting Requirements - same

D-2(b)
SEP 1983

PART 676 -- BERING-CHUCKCHI SEA HERRING

Subpart A -- General

Sec.

Subpart B -- Management Measures

Sec.

Subpart A -- General

§676.1 Purpose and scope

(a) Regulations in this Part govern fishing for herring by vessels of the United States within the fishery conservation zone in (1) the Chuckchi Sea lying south of Point Hope, (2) the Bering Sea, and (3) the North Pacific Ocean adjacent to the Aleutian Islands and west of 170° W. longitude, hereinafter referred to as the "management area". (See Figure 1)

(b) For regulations governing fishing for herring within the Bering-Chuckchi Sea management area by fishing vessels other than vessels of the United States, see 50 CFR §611.95.

(c) These regulations implement the Bering-Chuckchi Sea herring fishery management plan developed by the North Pacific Fishery Management Council.

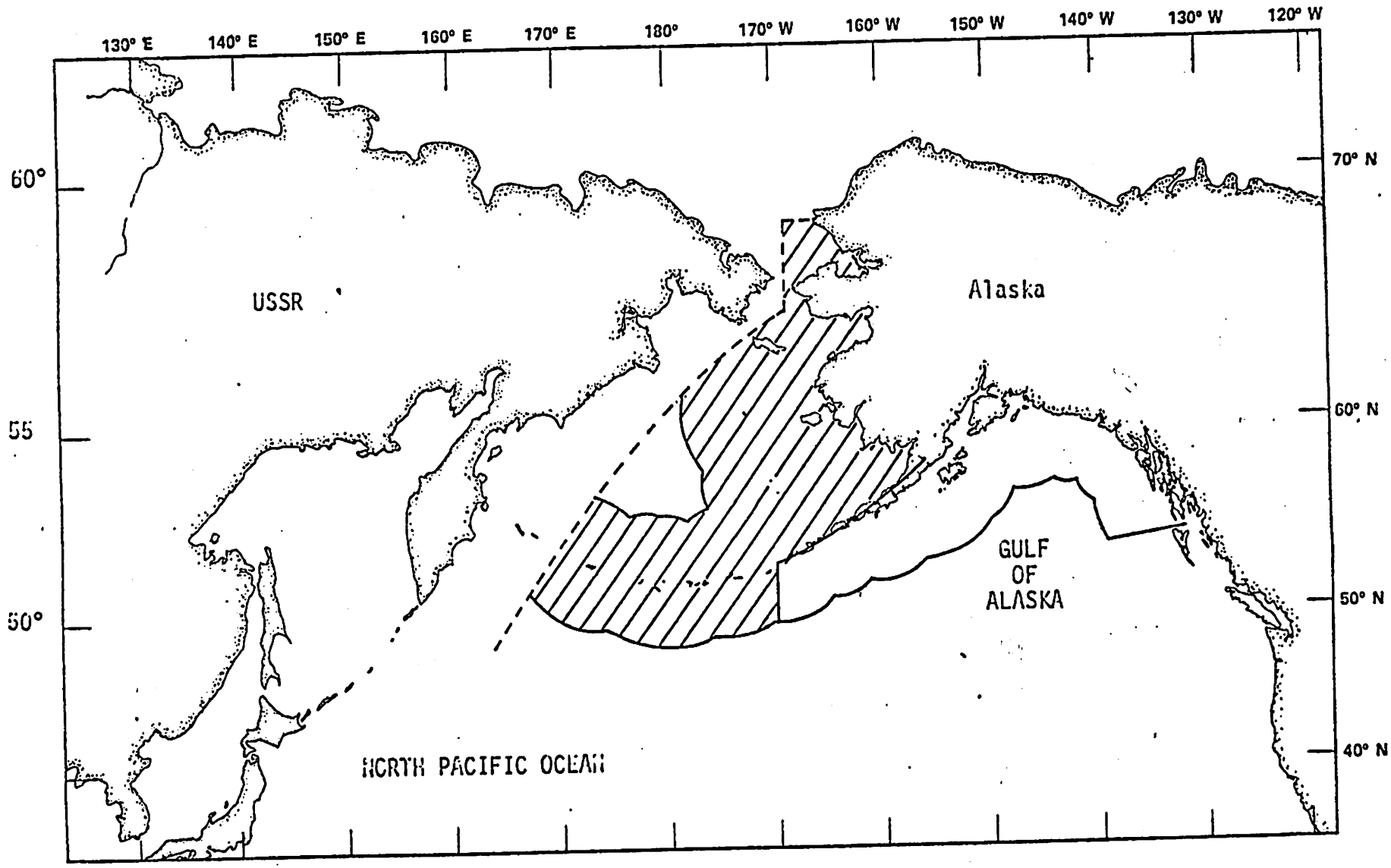

Figure 1. Area (diagonal lines) over which this Fishery Management Plan applies.

§676.2 Definitions

In addition to the definitions in the Act, and unless the context requires otherise, the terms used in this Part shall have the following meanings (some definitions in the Act have been repeated here to aid understanding of the regulations):

Act means the Magnuson Fishery Conservation and Management Act, Pub. L. 94-265, as amended, 16 U.S.C §§1801 et seq.

Acceptable biological catch (ABC) means a seasonally determined catch based primarily on the ratio of the annual biomass estimate to the MSY biomass level. ABC may be less than, equal to, or greater than MSY, depending on resource conditions. ABC applies to the combined state and federal management areas.

ADF&G means the Alaska Department of Fish and Game.

Allowable incidental catch (AIC) means that amount of herring allocated to be taken incidentally to the United States groundfish fishery. It is a part of the optimum yield (OY) for the fishery regulated by this Part, and is accounted for in the determination of the winter apportionment of OY.

Assistant Administrator means the Assistant Administrator for Fisheries, National Oceanic and Atmospheric Administration, United States Department of Commerce, or an individual to whom the Assistant Administrator for Fisheries has delegated the appropriate authority.

Authorized Officer means:

(a) Any commissioned, warrant, or petty officer of the United States Coast Guard;

(b) Any certified enforcement or special agent of the National

Marine Fisheries Service;

(c) Any officer designated by the head of any Federal or State agency which has entered into an agreement with the Secretary and the Commandant of the Coast Guard to enforce the provisions of the Act; or

(d) Any Coast Guard personnel accompanying and acting under the direction of any person described in paragraph (a) of this definition.

Fishery Conservation Zone (FCZ) means that area adjacent to the United States which, except where modified to accommadate international boundaries, encompasses all waters from the seaward boundary of each of the coastal States to a line on which each point is 200 nautical miles from the baseline from which the territorial sea of the United States is measured.

Fishing means any activity, other than scientific research activity conducted by a scientific research vessel, which involves:

(a) The catching, taking, or harvesting of fish;

(b) The attempted catching, taking or harvesting of fish;

(c) Any other activity which can reasonably be expected to result in the catching, taking or harvesting of fish; or

(d) Any operations at sea in support of, or in preparation for, any activity described in paragraphs (a), (b), or (c) of this definition.

Fishing vessel means any vessel, boat, ship, or other craft which is used for, equipped to be used for, or of a type which is normally used for: (a) fishing; or (b) aiding or assisting one or more vessels at sea in the performance of any activity relating to

fishing, including, but not limited to, preparation, supply, storage, refrigeration, transportation, or processing.

Fishing year means April 1 to March 31.

Herring means Clupea harengus palassi.

Groundfish means groundfish as defined in Part 675 of this title.

Herring savings area means the portion of the management area bounded by rhumb lines connecting the following points in the order listed:

North Latitude	West Longitude
59° 30'	179° 00'
59° 30'	171° 00'
57° 00'	171° 00'
57° 00'	175° 00'
57° 30'	175° 00'
57° 30'	176° 00'
58° 00'	176° 00'
58° 00'	177° 00'
58° 30'	177° 00'
58° 30'	179° 00'
59° 30'	179° 00'

Land means to offload fish on a facility located on the land or within the baseline from which the terrirorial sea of the United States is measured.

Management area means the FCZ in the Chuckchi Sea south of Point Hope, the Bering Sea, and the North Pacific Ocean adjacent to the Aleutian Islands and west of 170° 00' W. longitude.

Maximum sustainable yield (MSY) means an average, over a reasonable length of time, of the largest catch which can be taken continuously from a stock under current environmental conditions.

Operator, with respect to any vessel, means the master or

other individual on board and in charge of that vessel.

Optimum yield (OY) means that amount of the herring biomass which is available for harvest in the FCZ.

Owner, with respect to any vessel, means:

(a) Any person who owns that vessel in whole or in part;

(b) Any charterer of the vessel, whether bareboat, time, or voyage;

(c) Any person who acts in the capacity of a charterer, including but not limited to parties to a management agreement, operating agreement, or any similar agreement that bestows control over the destination, function or operation of the vessel; or

(d) Any agent designated as such by any person in paragraphs (a), (b), or (c) of this definition.

Person means any individual (whether or not a citizen or national of the United States), corporation, partnership, association, or other entity (whether or not organized or existing under the laws of any State), and any Federal, State, local, or foreign government or any entity of such government.

Prohibited species catch limit (PSC) means the maximum amount of herring mortality which fishing vessels of foreign nations may cause incidental to their trawl fisheries in the management area, before the herring savings area is closed to trawling by such vessels.

Regional Director means the Director, Alaska Region, National Marine Fisheries Service, P.O. Box 1668, Juneau, Alaska 99802, or an individual to whom the Regional Director has delegated appropriate authority.

Secretary means the Secretary of Commerce, or his or her

designee.

Trawling means fishing by use of a bag-shaped net dragged through the water to capture fish.

Vessel of the United States means:

(a) Any vessel documented under the laws of the United States;

(b) Any vessel numbered in accordance with the Federal Boat Safety Act of 1971 (46 U.S.C.§§ 1400 et seq.) and measuring less than 5 net tons; or

(c) Any vessel numbered under the Federal Boat Safety Act of 1971 (46 U.S.C. §§1400 et seq.) and used exclusively for pleasure.

United States fish processors means facilities located within the United States for, and vessels of the United States used or equipped for, the processing of fish for commercial use or consumption.

United States-harvested fish means fish caught, taken, or harvested by vessels of the United States within any fishery regulated by a fishery management plan or preliminary fishery management plan implemented under the Act.

§676.3 Relation to other laws

(a) Federal law. For regulations concerning fishing for groundfish in the Bering Sea and Aleutian Islands portion of the management area, see 50 CFR Part 675; for regulations concerning fishing for groundfish in the Gulf of Alaska, see 50 CFR Part 672; for regulations concerning fishing for Tanner Crab, see 50 CFR Part 671; for regulations governing permits and certificates of inclusion for the taking of marine mammals,

see 50 CFR §216.24.

(b) State law. This Part will be administered in close coordination with ADF&G's administration of the regulations of the State of Alaska governing the subsistence and roe fisheries for herring in the territorial sea and internal waters off Alaska. Certain responsibilities relating to data collection and enforcement may be performed by employees of the State of Alaska.

§676.4 Permits

(a) General. No vessel of the United States may fish for herring in the management area without first obtaining a permit under this Part. Such permits shall be issued without charge.

(b) Application. A fishing vessel owner may obtain a permit required under the preceding subsection by submitting to the Regional Director a written application containing the following information:

(1) The applicant's name, mailing address, and telephone number;

(2) The name of the vessel;

(3) The vessel's U.S. Coast Guard documentation number or state registration number;

(4) The home port of the vessel;

(5) The length of the vessel;

(6) The type of fishing gear to be used;

(7) The signature of the applicant.

The Regional Director may accept a completed State of Alaska commercial fishing license application in satisfaction of the

requirements of this paragraph.

(c) Issuance.

(1) Upon receipt of a properly completed application, the Regional Director shall issue a permit required by paragraph (a) of this section, except as otherwise required under paragraph (i) of this section.

(2) Upon receipt of an improperly completed application, the Regional Director shall notify the applicant of the deficiency in the application. If the applicant fails to correct the deficiency within 30 days following the date of notification, the application shall be considered abandoned.

(d) Notification of change. Any person who has applied for and received a permit under this section shall give written notification of any change in the information provided under paragraph (b) of this section to the Regional Director within 30 days of that change.

(e) Duration. A permit issued under this section shall authorize the permitted vessel to fish for herring in the management area during a single specified year, and shall continue in full force and effect therough December 31 of the year for which it was issued, or until it is revoked, suspended, or modified pursuant to 50 CFR Part 621.

(f) Alteration. No person shall alter, erase, or mutilate any permit issued under this section. Any such permit that has been intentionally altered, erased, or mutilated shall be invalid.

(g) Transfer. Permits issued under this section are not transferable or assignable. Each such permit shall be valid only

for the fishing vessel for which it is issued. The Regional Director must be notified of a change in ownership, pursuant to paragraph (d) of this section.

(h) Inspection. Any permit issued under this section must be carried aboard the permitted vessel whenever the vessel is fishing in the management area. The permit shall be presented for inspection upon request by any authorized officer.

(h) Inspection. Any permit issued under this section must be carried aboard the permitted vessel whenever the vessel is fishing for groundfish or herring in the management area. The permit shall be presented for inspection upon request of any authorized officer.

(i) Sanctions. Subpart D of 50 CFR Part 621 shall govern the imposition of permit sanctions against a permit issued under this section. As specified in that subpart D, a permit may be revoked, modified, or suspended with or without prejudice to the issuance of future permits, if the permitted vessel is used in the commission of an offense prohibited by the Act or these regulations; and such a permit shall be revoked if a civil penalty or criminal fine imposed under the Act and pertaining to a permitted vessel is not paid.

§676.5 Reporting requirements.

(a) Fishing vessel reporting requirements.

(1) Port of landing outside Alaska. The operator of any fishing vessel that harvests and retains herring under this Part, and lands such herring at a port outside the State of Alaska shall report that harvest to ADF&G on a completed State of Alaska fish ticket, or an equivalent document containing all of the information required on an Alaska fish ticket, within one week after that herring is landed. The address to which these documents must be sent is: Director, Division of Commercial Fisheries, Alaska Department of Fish and Game, P.O. Box 33-2000, Juneau, Alaska 99802.

(2) Sale, delivery, or consumption at sea.

(A) For each consumption or sale or delivery to a United States fish processor of herring harvested and retained under this Part, the operator of the fishing vessel performing that consumption, sale or delivery shall submit the following information to ADF&G:

(i) a completed State of Alaska fish ticket, or an equivalent document containing all of the information required on an Alaska fish ticket; and

(ii) a statement indicating whether or not the vessel to which any sale or delivery was made was a vessel of the United States.

(B) The information required by paragraph (a)(2)(A) of this section shall be submitted to ADF&G within one week of the first return of the vessel that harvested the herring to port following such sale, delivery, or consumption. Such information may be submitted by the United States fish processor to which the sale or delivery at sea was made, acting as the agent of the fishing vessel operator, but the

fishing vessel operator shall remain ultimately responsible for submission of the information.

(b) Processor reporting requirements. When requested by the Regional Director, but not more than four times a year, each United States fish processor who intends to process United States harvested herring taken in the management unit shall complete a written survey received from the Regional Director, to include the following information:

(1) the quantity of herring that the processor has the capacity to process during a designated period; and

(2) the quantity of herring that the processor expects to process from any areas of the management area at any time during the fishing year.

(c) Joint venture reporting requirements. When requested by the Regional Director, but not more than four times a year, each joint venture representative whose company or association intends to deliver herring harvested by United States fishermen from the management area to foreign processors shall complete a written survey received from the Regional Director. This survey shall state the quantity of United States - harvested herring that the joint venture operator expects to deliver to foreign processors from any areas of the management unit at any times during the fishing year.

§676.6 General prohibitions

It shall be unlawful for any person to:

(a) Fish for herring in the management area with a vessel of the United States which does not have aboard a valid permit issued pursuant to this Part;

(b) Possess, have custody or control of, ship, transport, import, export, offer for sale, sell, or purchase any fish taken or retained in violation of the Act, this Part, or any other regulation or permit issued under the Act;

(c) Refuse to permit an authorized officer to board a fishing vessel subject to such person's control for purposes of conduction any search or inspection in connection with the enforcement of the Act, this Part, or any other regulation or permit issued under the Act;

(d) Forcibly assault, resist, oppose, impede, intimidate, or interfere with any authorized officer in the conduct of any search or inspection described in paragraph (c) of this section;

(e) Resist a lawful arrest for any act prohibited by this Part;

(f) Interfere with, delay, or prevent, by any means, the apprehension or arrest of another person knowing that such person has committed any act prohibited by this Part;

(g) Forcibly assault, resist, impede, intimidate or interfere with an observer placed aboard a fishing vessel pursuant to this Part;

(h) Violate any other provision of this Part, the Act, or any other regulation or permit issued under the Act.

§676.7 Enforcement

(a) General. The owner or operator of any fishing vessel regulated under this Part shall immediately comply with instructions issued by an authorized officer to facilitate safe boarding and inspection of the fishing vessel, its gear, equipment, and catch for the purposes of enforcing the Act and this Part.

(b) Signals. Upon being approached by a Coast Guard cutter or aircraft, or other vessel or aircraft authorized to enforce the Act, the operator of a fishing vessel shall be alert for signals conveying enforcement instructions. The vessel may guard Channel 16, VHF-FM, or 2182 KH2, if equipped with suitable radios, to receive verbal instructions. The following visual signals extracted from the International Code of Signals are among those which may be used:

(1) "L", meaning "You should stop your vessel instantly,"

(2) "SQ3", meaning "You should stop or heave to; I am going to board you,"

(3) "RY CY", meaning "You should proceed at slow speed, a boat is coming to you," and

(4) "AA AA AA etc." is the call to an unknown station.

(c) Boarding. A vessel signaled to stop or heave to for boarding shall:

(1) Stop immediately and lay to or maneuver in such a way as to permit the authorized officer and his or her party to come aboard;

(2) If requested, provide a safe ladder for the authorized officer and his or her party;

(3) When necessary to facilitate the boarding, provide a man rope, safety line, and illumination for any ladder; and

(4) Take such other actions as necessary to ensure the safety of the authorized officer and his or her party and to facilitate the boarding.

§676.8 Penalties.

Any person or fishing vessel found to be in violation of this Part shall be subject to the civil and criminal penalty provisions and forfeiture provisions prescribed in the Act, in 50 CFR Parts 620 (Citations) and 621 (Civil Procedures), and in other applicable law.

Subpart B -- Management Measures

§676.20 Optimum Yield.

(a) Determination. The optimum yield (OY) for the fishery governed by this Part shall be the sum of three components: an allowable incidental catch (AIC), a summer apportionment, and a winter apportionment. These components shall be calculated as follows:

(1) Allowable incidental catch (AIC). AIC shall be 0.10 per cent of the domestic annual harvest (DAH) for target and other species in the groundfish fishery of the Bering Sea and Aleutian Islands area, as determined under 50 CFR §675.20.

(2) Summer apportionment. Subject to reduction as specified below, the summer apportionment of OY shall be 2,000 metric tons (mt). The Regional Director, after consultation with the Council and the State of Alaska, may by field order issued pursuant to §676.21(d) and (e) reduce the summer apportionment as necessitated by any of the following factors:

(A) The extent to which the subsistence and inshore commercial fisheries have harvested or exceeded the ABC;

(B) The condition of the spawning stocks of herring, with special focus on the subsistence stocks;

(C) The abundance of spawning herring and their spawning success;

(D) The age composition of the spawning hering;

(E) Recruitment to the spawning stocks of herring;

(F) Variation in exploitation rates between the spawning stocks; and

(G) Changes in the management of the inshore commercial fishery by the State of Alaska.

(3) Winter apportionment. The winter apportionment of OY shall be determined according to the following formula:

$$\text{Winter apportionment} = \frac{\text{ABC} - \text{Inshore Commercial Harvest} - \text{Subsistence Adjustment} - (\text{AIC} + \text{PSC})}{2},$$

where

(A) ABC is the acceptable biological catch calculated under Appendix I to this Part;

(B) Inshore commercial harvest is equal to the total harvest taken from State waters adjacent to the management area between April 1 and September 30, plus the harvest in that portion of the management area south of 55°47' N. latitude between April 1 and September 30;

(C) Subsistence adjustment equals 500 mt;

(D) AIC equals 0.10 per cent of the DAH for target and other species in the groundfish fishery of the Bering Sea and Aleutian Islands area, as determined under 50 CFR §675.20; and

(E) PSC is a Prohibited Species Catch calculated as 0.10 per cent of the Total Allowable Level of Foreign Fishing (TALFF) for target and other species in the groundfish fishery of the Bering Sea and Aleutian Islands Area, as determined under 50 CFR § 675.20.

In the event that the winter apportionment as so calculated is less than zero, the winter apportionment shall be equal to zero. Further

limitations on the winter apportionment are as follows:

(A) If the amount so calculated is less than 2,000 mt, the winter apportionment shall be zero.

(B) If the amount so calculated is greater than 10,000 mt, the winter apportionment shall be 10,000 mt.

(C) If the current herring spawning biomass is less than one-half of the MSY biomass as specified in Appendix I to this Part, the winter apportionment shall be zero.

The Regional Director, after consultation with the Council and the State of Alaska, may by field order issued pursuant to §676.21(d) and (e) further reduce the winter apportionment as necessitated by any of the following factors:

(A) The extent to which the subsistence and inshore commercial fisheries have harvested or exceeded the ABC;

(B) The condition of the spawning stocks of herring, with special focus on the subsistence stocks;

(C) The abundance of spawning herring and their spawning success;

(D) The age composition of the spawning herring;

(E) Recruitment to the spawning stocks of herring; and

(F) Variation in exploitation rates among the spawning stocks.

(b) Procedures and availability. The three components of opimum yield shall be determined and made available for harvest as follows:

(1) Allowable incidental catch (AIC).

(A) Procedure. Prior to January 1 the Regional Director shall by rule-related notice determine the initial value of AIC for the new calendar year as defined in paragraph (a)(1) of this section, based upon the initial DAH for that year of target and other species

in the groundfish fishery of the Bering Sea and Aleutian Islands area. The determination of initial AIC and the publication of the value determined shall follow the procedure and schedule set forth at 50 CFR §675.20(a). Increases in AIC to accommodate apportionment of groundfish reserves to DAH shall be calculated as 0.10 per cent of each such apportionment. Determination and publication of such increases shall follow the procedure and schedule set forth at 50 CFR §675.20(b).

(B) Availability. AIC may be harvested and retained only by vessels of the United States, and only incidentally to the participation of those vessels in the groundfish trawl fishery within the management area. Foreign vessels permitted to purchase groundfish from vessels of the United States under regulations set forth at 50 CFR Part 611 may purchase, process, and retain such herring.

AIC shall be available for incidental harvest beginning January 1, unless the Herring Savings Area described in Appendix II to this Part has been closed after April 1 of the previous calendar year under §676.21 of this Part. If the Herring Savings Area has been so closed, herring shall remain a species prohibited to vessels of the United States until April 1 of the new calendar year, at which time the AIC shall become available for incidental harvest. When AIC is harvested within the calendar year for which it has been prescribed, all or a portion of the Herring Savings Area shall be closed to trawling for groundfish by vessels of the United States until April 1 of the following year, subject to the provisions at 50 CFR §676.21(d) and (e).

AIC shall be available for harvest in any part of the management area where another component of OY is not available for harvest.

All herring caught in areas closed to directed herring fishing shall be treated as AIC. All herring caught in areas open to directed herring fishing shall be considered to have been harvested under the summer or winter apportionment.

(2) Summer apportionment.

(A) Procedure. The summer apportionment shall be 2,000 mt unless the Regional Director determines that one or more of the factors set out at §676.20(a)(2) requires a reduction. Any such reduction shall be by field order, under the provisions of §§676.20(a)(2) and 676.21(e).

(B) Availability. The summer apportionment shall be available for harvest by vessels of the United States in that portion of the management area lying south of 55°47' N. latitude from July 1 (or the date on which a field order reducing the summer apportionment is filed with the FEDERAL REGISTER, whichever comes later) through September 30. Herring harvested in the territorial sea adjacent to the management area and south of 55°47' N. latitude between July 1 and September 30 shall also be considered to have been harvested under the summer apportionment. When the summer apportionment has been harvested, that portion of the management area south of 55°47' N. latitude shall be closed to directed fishing for herring by notice published in the FEDERAL REGISTER. This closure shall remain in effect until July 1 of the following year, or until a winter apportionment is finally determined, whichever comes earlier.

(3) Winter apportionment

(A) Procedure. Annually by July 1 the Regional Director shall by rule-related notice publish in the FEDERAL REGISTER estimate ABC in accordance with the formula set out in Appendix I to this Part.

In the same notice, he shall estimate the winter apportionment for the current fishing year.

Public comment shall be accepted on the values estimated for a period of at at least 45 days after the rule-related notice is published in the FEDERAL REGESTER. Any timely comments submitted in accordance with this paragraph shall be considered in reviewing those estimates and in establishing final values for ABC and the winter apportionment. Comments provided for in this paragraph shall be addressed to the Director, Alaska Region, National Marine Fisheries Service, P.O. Box 1668, Juneau, Alaska 99802. The Regional Director shall make available to the public during business hours the aggregate data upon which any estimated or final values for ABC and the winter apportionment are based at the National Marine Fisheries Service Alaska Regional Office, Federal Building, Room 453, 907 West Ninth Street, Juneau, Alaska. These data shall be available for a sufficient period to facilitate informed comment by interested persons.

Annually by October 1 or as soon thereafter as is practicable, the Regional Director shall by rule-related notice determine final values for ABC and for the winter apportionment under §676.20(a)(3) and Appendix I to this Part.

(B) Availability. The winter apportionment shall be available for directed harvest only by vessels of the United States throughout the management unit from October 1, or the date on which the final determination of the winter apportionment is filed with the FEDERAL REGISTER, whichever comes later, until March 31, the end of the fishing year. In the event that the winter apportionment is zero, the entire management area shall be closed to directed fishing for

herring until March 31 of the following year.

The Regional Director shall by notice published in the FEDERAL REGISTER close all or part of the Herring Savings Area described in Appendix II to this Part to vessels of the United States if:

(i) OY (including AIC) has been harvested; or

(ii) the amount of AIC remaining is likely to be harvested within one reporting period (one week).

This notice shall take effect upon its filing with the Office of the FEDERAL REGISTER.

(c) Prohibited species.

(1) Prohibited species, for purposes of this Part, means any species of fish caught while fishing for herring in the management area, the retention of which is prohibited by other applicable federal law; and herring whenever there is no OY available for harvest and retention under this Part.

(2) The operator of each vessel of the United States participating in the fishery regulated under this Part, or participating in any fishery in the management area when there is no OY available for harvest and retention under this Part, shall minimize that vessel's catch of prohibited species. Each such operator shall sort the catch of the vessel as soon as possible after retrieval of the catch and, after allowing for sampling by an observer (if any), shall return any catch of prohibited species or parts thereof to the sea immediately with a minimum of injury regardless of its condition.

(3) It shall be a rebuttable presumption than any prohibited species found onboard a fishing vessel participating in the fishery regulated under this Part, or in any fishery in the management area

when there is no OY available for harvest and retention under this Part, was caught and retained in violation of this subsection.

§676.21 Time and area limitations.

(a) Fishing year. The fishing year shall be April 1 through March 31.

(b) Management area.

(1) That portion of the management area north of 55°47' N. latitude shall be closed to directed fishing for herring by vessels of the United States between April 1 and either September 30 or the date on which the final determination of the winter apportionment is filed with the FEDERAL REGISTER, whichever is later. In the event that the winter apportionment is zero, this portion of the management area shall remain closed to directed fishing for herring through March 31.

(2) That portion of the management area south of 55°47' N. latitude shall be closed to directed fishing for herring from April 1 through June 30. In the event that the summer apportionment of OY is zero, this portion of the management unit shall remain closed to directed fishing for herring through March 31 or until the date on which the final determination of the winter apportionment is filed with the FEDERAL REGISTER, whichever is earier.

(c) Herring savings area.

(1) The Regional Director shall by notice published in the FEDERAL REGISTER close all or part of the Herring Savings Area described in Appendix II to this Part to trawling by vessels of the United States for the rest of the current fishing year if:

(A) OY (including AIC) has been harvested; or

(B) the amount of remaining AIC is likely to be harvested within one reporting period (one week).

This notice shall take effect upon its filing with the Office of the FEDERAL REGISTER.

(2) For the purposes of this Part all herring caught in a portion of the management area open to directed fishing for herring shall be considered to have been harvested under the summer or winter apportionment. All herring harvested in portions of the management area closed to directed fishing for herring shall be treated as AIC, if any AIC is available for incidental harvest. All herring harvested in the management area subsequent to the harvest of OY (including AIC) shall be treated as prohibited species.

(d) Modifications of time and area limitations, and of summer apportionment. The Regional Director may modify the time and area closures prescribed in this section, may open and close fishing areas or parts thereof, and may reduce the summer apportionment as provided by §676.20 of this Part, by issuing a field order in accordance with paragraph (e) of this section. Field orders shall be based on the best available scientific information, and upon any of the following considerations:

(1) the effect of overall fishing effort;

(2) the catch per unit of effort and rate of harvest;

(3) the relative abundance of herring in comparison with pre-season expectations;

(4) the performance of the subsistence and commercial roe fisheries;

(5) the proportion of immature or spawned-out herring and the age structure of the population;

(6) general information on the condition of herring;

(7) information pertaining to the optimum yield for herring;

(8) timeliness and accuracy of catch reporting by buyers to the extent that such timeliness or accuracy may reasonably be expected to affect proper management;

(9) the magnitude and distribution of incidental catch of herring in the groundfish trawl fisheries;

(10) any other information on herring distribution in the management unit; and

(11) any other factors necessary for the conservation and management of the herring resource.

Field orders reducing the summer apportionment shall be based on the best available scientific information and upon any of the factors set forth in §676.20(a)(2) of this Part.

(e) Field orders.

(1) Any field order issued by the Regional Director under this Part shall include the following:

(A) the reasons for the field order, as set out in paragraphs (c) and (d) of this section, and paragraphs (a) and (b) of §676.20 of this part.

(B) a description and order of the modification; and

(C) the effective dates of the modification.

(2) No field order issued under this section may take effect until:

(A) it has been filed for publication with the Federal Register;

(B) the foreign nations concerned and the designated representatives for affected foreign fishing vessels, if any, are notified. If practicable, notification shall be given at least 48 hours before the field order is to be effective;

(C) it has been broadcast at those time intervals, channels and frequencies customarily used by ADF&G to broadcast similar notices of closure, for 48 hours prior to its effective date; and

(D) the public has been offered the opportunity to comment upon the proposed field order for a period of at least thirty (30) days, unless the Regional Director finds that such prior opportunity for public comment would adversely affect the conservation and management of herring.

(3) If the Regional Director finds that prior opportunity for public comment on the field order would adversely affect the conservation and management of herring, he shall receive public comment on the field order for thirty (30) days after its effective date, making available to the public during business hours the aggregate data on which it was based. After considering the comments received, the Regional Director shall determine whether the field order should be changed.

(4) Any modification prescribed by a field order issued under this section shall remain in effect in accordance with the terms of the field order, or of any subsequent field order, rule-related notice, or regulation.

(f) Other regulations. Time and area closures imposed by or under Part 675 of this Title shall also apply to all fishing for

herring in the Bering Sea and Aleutian Islands portion of the management area, described at 50 CFR §675.1(d).

§676.22 Reporting requirements.

(a) Fishing vessel reporting requirements.

(1) Port of landing outside Alaska. The operator of any fishing vessel that harvests and retains herring under this Part, and lands such herring at a port outside the State of Alaska shall report that harvest to ADF&G on a completed State of Alaska fish ticket, or an equivalent document containing all of the information required on an Alaska fish ticket, within one week after that herring is landed. The address to which these documents must be sent is: Director, Division of Commercial Fisheries, Alaska Department of Fish and Game, P.O. Box 33-2000, Juneau, Alaska 99802.

(2) Sale, delivery, or consumption at sea.

(A) For each consumption or sale or delivery to a United States fish processor of herring harvested and retained under this Part, the operator of the fishing vessel performing that consumption, sale or delivery shall submit the following information to ADF&G:

(i) a completed State of Alaska fish ticket, or an equivalent document containing all of the information required on an Alaska fish ticket; and

(ii) a statement indicating whether or not the vessel to which any sale or delivery was made was a vessel of the United States.

(B) The information required by paragraph (a)(2)(A) of this section shall be submitted to ADF&G within one week of the first return of the vessel that harvested the herring to port following such sale, delivery, or consumption. Such information may be submitted by

the United States fish processor to which the sale or delivery at sea was made, acting as the agent of the fishing vessel operator, but the fishing vessel operator shall remain ultimately responsible for submission of the information.

(b) Processor reporting requirements. When requested by the Regional Director, but not more than four times a year, each United States fish processor who intends to process United States harvested herring taken in the management unit shall complete a written survey received from the Regional Director, to include the following information:

(1) the quantity of herring that the processor has the capacity to process during a designated period; and

(2) the quantity of herring that the processor expects to process from any areas of the management area at any time during the fishing year.

(c) Joint venture reporting requirements. When requested by the Regional Director, but not more than four times a year, each joint venture representative whose company or association intends to deliver herring harvested by United States fishermen from the management area to foreign processors shall complete a written survey received from the Regional Director. This survey shall state the quantity of United States - harvested herring that the joint venture operator expects to deliver to foreign processors from any areas of the management unit at any times during the fishing year.

§611.95 Bering Sea and Aleutian Islands Herring Fishery

(a) Purpose.

(1) This section regulates foreign fishing for herring within those portions of the fishery conservation zone located in (1) the Chuckchi Sea lying south of Point Hope, (2) the Bering Sea, and (3) the North Pacific Ocean adjacent to the Aleutian Islands and west of 170°00' W. longitude, over which the United States exercises exclusive fishery management authority (hereafter referred to in this section as the "management area").

(2) For regulations governing fishing for herring within the management area by vessels of the United States, see 50 CFR Part 676.

(3) These regulations implement the Bering-Chuckchi Sea herring fishery management plan developed by the North Pacific Fishery Management Council.

(b) Authorized fishery. Directed foreign fishing for herring or retention of herring incidentally harvested by foreign vessels is prohibited. Herring shall be treated as a prohibited species in accordance with §611.13 of this Part.

(c) Prohibited species catch limit (PSC).

(1) Determination. The prohibited species catch limit (PSC) shall be 0.10 per cent of the total allowable level of foreign fishing (TALFF) for target and other species in the groundfish fishery of the Bering Sea and Aleutian Islands area, as determined under 50 CFR §675.20.

(2) Procedure. Prior to January 1 the Regional Director shall by rule-related notice determine the initial value of PSC, as defined

in paragraph (c)(1) of this section, for the new calendar year. The determination of initial PSC and the publication of the value determined shall follow the procedures and schedule set forth at 50 CFR §675.20(a). Increases in PSC to accommodate apportionment of groundfish reserves to TALFF shall be calculated as 0.10 per cent of each such apportionment. Determination and publication of these values shall follow the procedures and schedule set forth at 50 CFR §675.20(b). PSC shall be assigned to foreign nations in proportion to their allocations of the TALFF for groundfish and other species in the groundfish fishery of the Bering Sea and Aleutian Islands area.

(3) Availability. PSC shall apply to the incidental harvest of herring by foreign vessels trawling for groundfish in the management area beginning January 1, unless the Herring Savings Area provided for by paragraph (d) of this section has been closed to trawl vessels of a nation after April 1 of the previous calendar year. If the Herring Savings Area has been closed to groundfish trawling by a nation after April 1 of the previous calendar year, it shall remain closed to trawling by that nation until April 1 of the new calendar year, at which time the PSC shall come into effect for the remainder of the new calendar year.

(d) Herring Savings Area.

(1) Description. The Herring Savings Area is described in Appendix II, to 50 CFR Part 676.

(2) Closure. When a nation harvests its share of the PSC for herring, or when the amount of its PSC remaining can be harvested within one reporting period (one week), the Regional Director shall by notice of closure published in accordance with §611.15(c) close

all or part of the Herring Savings Area to trawling by vessels of that nation until April 1 of the following calendar year. Any portion of a nation's PSC which is not harvested during a given calendar year shall not be reassigned or carried over to the following year.

(3) Field orders. The Regional Director may modify the time and area closures imposed upon the Herring Savings Area by field order in accordance with the procedures and criteria set forth at 50 CFR §676.21(d) and (e).

APPENDIX I

7.6.1 Maximum sustainable yield

Herring populations are subject to significant changes in abundance over relatively short periods of time. It appears that these changes may result from changing environmental conditions and/or be related to fishing pressure. Because of this aspect of herring population dynamics, the maximum sustainable yield (MSY) concept does not provide a good indicator of the level of harvest that should be allowed in a given fishing year. MSY is a measure of the average maximum annual yield of the fishery over a long period of time. An estimate of the MSY for eastern Bering Sea herring can be calculated by first estimating the average size of the virgin resource. Two methods have been used to do this: (1) estimates based on early Russian hydroacoustic trawl surveys and (2) ecosystem modeling. Each method has its limitations and at present, it is difficult to determine the accuracy of either. The following is a description of each method.

In 1963, three years after the fishery began, the eastern Bering Sea herring biomass was estimated to be 2.16 million mt based on a Soviet hydroacoustic survey of the wintering grounds (Shaboneev 1965). Using the same data, a recent paper by Kachina (1978) reduced this earlier estimate to 0.374 million mt by using a lower mean school density of 0.5 fish/m^3 compared to 3.38 fish/m^3 used for the original estimate.

According to Shaboneev, schools were surveyed at night and the area and height of schools were charted acoustically. School composition and age distribution were determined by trawling. The original density (3.38 fish/m^3) was determined by comparing acoustic echograms from the eastern Bering Sea to echograms of schools sampled by purse seines in western Bering Sea coastal waters. The revised density estimate of 0.5 fish/m^3 is based on observations from subsequent surveys of herring concentrations on the winter grounds northwest of the Pribilofs during 1969-71 (Fadeev, personal communication).[1/]

The densities derived are questionable but cannot be fully evaluated because few specific details regarding Soviet survey methods and accuracy are available. However, data reported in the literature and from individuals involved with herring hydroacoustic surveys indicate that the range of densities used by the Soviets may be extreme and an intermediate value may be more realistic.

There are also other sources of potential error in these estimates. The smaller herring stocks in northern areas may not have been included in the Soviet hydroacoustic survey and the age distribution data reported by Shaboneev indicate that age-1 fish were not included and age-2 fish only partially included in the survey. These factors would tend to bias the biomass estimate downward.

A numerical ecosystem model was applied to estimate biomass of eastern Bering Sea herring (Laevastu and Favorite 1978). This model simulated herring abundance based on the amount of herring needed to sustain the diet of herring predators at reported rates of consumption. Although the accuracy of

1/ Fadeev, N. Pacific Institute of Fisheries and Oceanography (TINRO), Vladivostok, USSR. Information presented at US - USSR Scientific meetings, Seattle, WA, June 5-8, 1979.

input parameters, such as size of predator populations and consumption rates, has not yet been sufficiently evaluated, this model estimated that a stock size of 2.75 million mt of herring is required to maintain components of the ecosystem including predators at a level observed in the mid-1960's prior to the start of intensive fishing.

Calculation of MSY from each estimate of virgin biomass can be accomplished by applying a method developed by Alverson and Pereyra (1967) for obtaining first approximation of yield from an unexploited biomass (MSY = 0.5 MB, where B = virgin biomass and M = natural mortality of 0.47). The resultant MSY values are provided in Table 7-6.

A third estimate of MSY can be derived by average annual catch data for the foreign fishery over the long term. The average long term catch is 48,712 mt. This figure was calculated using the total catches from 1962 after the fishery developed up to 1976, after which date the fishery was curtailed, and excluding 1967 when data were unavailable (Table 3-7). Data from 1977-79 were not used in this calculation because foreign fisheries were limited by low quotas established in the PMP. Assuming an exploitation rate of 0.2 (see Section 7.6.2.2) the estimated biomass would be 243,560 mt.

Table 7-6. Estimation of biomass and MSY

Estimated Biomass (million mt)	Estimated MSY (mt)	Biomass Data Source
2.750	194,000[1/]	Ecosystem Model (Laevastu and Favorite 1978)
0.374 - 2.16	88,000-507,000	Hydroacoustic Survey (Shaboneev 1965, Kachina 1978)
0.243[2/]	47,812	Average Catch 1962-76

new entry →

1/ Assumes 30% of biomass is available for exploitation.
2/ Assumes a 20% exploitation rate.

The actual performance of the foreign fishery from 1962-76 indicates that MSY estimates in excess of 100,000 mt may be too high. The overall abundance of herring decreased during this period. Some of the decrease may have been due

to environmental conditions, but the period over which the catch was averaged is relatively long (14 years), so that positive and negative environmental factors should have balanced to some degree.

It is difficult to determine which estimate of MSY is the best, since each method is based on different sets of assumptions which may or may not be valid. It is evident from all indices of stock abundance that herring stocks declined in the early 1970's and are now increasing. Choosing the appropriate level of MSY depends on whether declines were due to excessive fishing mortality or environmental factors causing poor survival. If the declines were due to overfishing then MSY is likely near the average catch. However, if declines were due to poor recruitment, then MSY may be greater than the average catch level but is dependent on the magnitude and frequency of population fluctuations.

Given the lack of definitive biomass data, it appears reasonable to use the long term average catch of 48,712 mt as an estimate of MSY. This figure is considered the best available and will apply until better data are available. It may be revised as additional research information and catch statistics become available.

7.6.2 Acceptable biological catch

Because the herring population of the Bering Sea fluctuates significantly, the Acceptable Biological Catch (ABC) in any given year must reflect current stock conditions to the maximum extent possible. Therefore, ABC shall be determined annually and may be adjusted during the year as new information becomes available. The ABC determined under this plan applies to the combined state and federal management areas. The method of determination is as follows:

7.6.2.1 Spawning biomass estimation

Since 1977, ADF&G has performed aerial surveys along the western Alaska coast during the spawning period. The purpose of these surveys is to count schools of herring which are then recorded according to total surface area. Estimates of the spawning biomass are then obtained by applying a density factor to the

total surface area of all schools recorded on the peak day in each spawning area. Using this technique, the spawning biomass in 1978 from Bristol Bay to Norton Sound was estimated to be 187,210-334,723 mt and estimates for 1979 were 258,079-637,583 mt (Barton and Steinhoff 1980). The estimate generated by ADF&G in 1982 (excluding Nelson Island) was 116,000 mt (Table 7-7).

The spawning biomass estimate does not include any data from the Aleutian Islands/Alaska Peninsula area or from the Port Clarence/Kotzebue Sound region. Reliable spawning biomass estimates do not presently exist for either of these areas. When spawning biomass estimates are available they will be included in the spawning biomass estimation used to determine ABC.

Despite the problems with the method, the spawning biomass estimates developed by aerial surveys are the best available. Until additional data become available through hydroacoustic surveys, spawn deposition surveys, or other sources, the aerial surveys shall be the basis for determining annual spawning biomass.

In the past, there have been times when ice and weather conditions have been such that aerial surveys could not be conducted to accurately assess spawning biomass. When spawning surveys are limited by these or other factors, the primary stock assessment tool will be virtual population analysis (VPA or cohort analysis). VPA is based on data generated from previous years' inshore and offshore surveys. The biomass of each year-class of herring is computed and subjected to an estimated annual mortality (a combination of natural and fishing mortality). An estimate of recruitment into the fishery is also computed. The current biomass estimate is then the sum of the computed biomass estimates for each year-class and the predicted recruit biomass.

If it is not possible to determine herring abundance by using aerial surveys or VPA, stock condition will be assessed by using commercial catch rates, the percentage of roe recovery, ratios of pre to post spawners from test net and commercial catches (both inshore and offshore), spawn deposition observations and any other available information.

When virtual population analysis or other methods are used to provide biomass estimates, those estimates must be reduced to a spawning biomass estimate before they may be used to determine ABC.

Table 7-7. Estimated biomass and commercial harvest of Pacific herring in eastern Bering Sea fishing Districts, Alaska, 1978-1982.

District		Biomass (m.t.)	Harvest (m.t.)	Roe %	Estimated Value (dollars)	% Biomass Harvested
1982						
	Togiak	88,800	19,556	8.8	6,174,300	22.0
	Security Cove	4,600	737	9.3	271,000	16.0
	Goodnews Bay	2,400	441	9.5	187,900	18.4
	Cape Romanzof	4,400	596	9.3	221,700	13.6
	Norton Sound	15,800	3,567	8.8	1,046,200	22.6
	Total	116,000	24,897	8.9	7,630,100	21.5
1981						
	Togiak	143,900	11,374	9.1	3,988,000	7.9
	Security Cove	7,500	1,064	8.1	347,070	14.2
	Goodnews Bay	3,900	596	7.7	196,170	15.3
	Cape Romanzof	4,400	653	8.0	211,260	15.0
	Norton Sound	22,800	3,965	8.8	1,500,000	17.3
	Total	182,500	17,652	8.9	6,242,500	9.7
1980						
	Togiak	62,300	17,774 1/	9.2	3,205,000	28.5
	Security Cove	1,100	632	8.2	151,000	57.4
	Goodnews Bay	1,100	406	9.5	97,000	36.9
	Cape Romanzof	2,700	554	9.8	132,000	20.5
	Norton Sound	7,600	2,224	8.1	500,500	29.3
	Total	74,800	21,590	8.8	4,085,500	28.9
1979						
	Togiak	216,800	10,115	8.6	6,700,000	4.7
	Security Cove	19,500	385	8.5	327,000	2.0
	Goodnews Bay	6,700	82	4.7	38,500	1.2
	Cape Romanzof	2,700	0	-	-	0.0
	Norton Sound	7,000	1,172	7.0	628,200	16.7
	Total	252,700	12,406	8.0	7,694,000	4.9
1978						
	Togiak	172,600	7,033	8.2	2,300,000	4.1
	Security Cove	1,200	259	-	-	21.6
	Goodnews Bay	400	0	-	-	0.0
	Cape Romanzof	2,700	0	-	-	0.0
	Norton Sound	4,800	13	-	-	0.3
	Totals	181,700	7,305	8.2	2,300,000	4.0

1/ Does not include an estimated 5,200 m.t. of waste.

7.6.2.2 Exploitation rates

Once an estimate of the spawning biomass has been established, the level at which ABC is set will depend on the exploitation rate that is applied. In other herring fisheries, several methods of determining an appropriate exploitation rate have been used. These are briefly summarized below.

In the northeastern Pacific, herring are generally managed for escapement (egg deposition). The rate of exploitation is set in the range of 10-30%. In British Columbia, escapement is set at a level that historically produced the greatest recruitment; herring that are surplus to escapement requirements are harvested. Using this method, Canadian biologists estimate that the rate of exploitation has averaged 20-30%. In Southeastern Alaska, optimum escapement is unknown but stock abundance is known to be low and only 10 percent of the estimated biomass is harvested in order to increase abundance. When a stock is below a determined minimum biomass, no fishing occurs, and if strong year classes are present, 20% of the biomass may be harvested.

In Washington, the herring exploitation rate has been determined to be 20 percent based on the assumption that at this rate, fishing mortality approximately equals the rate of natural mortality (Trumble, pers. comm.)[1/] Also it is assumed that at this level the stock will be protected from sharp reductions due to recruitment failures and that herring are maintained at a level that provides adequate forage for predators (i.e., salmon).

Exploitation of many Atlantic herring stocks is based on yield-per-recruit analysis (Beverton and Holt 1957). The yield-per-recruit model defines a point of maximum yield-per-recruit for a given age of entry into the fishery and rate of fishing mortality. However, herring do not generally have a maximum, but rather yield increases with increasing fishing mortality (Figure 7-12). Since the yield-per-recruit/F curve is rather flat, fishing mortality can be reduced from maximum without much loss in yield. At a lower than maximum rate of fishing mortality a larger stock size is maintained and

1/ Robert Trumble, Washington Dept. of Fisheries, Seattle, WA.

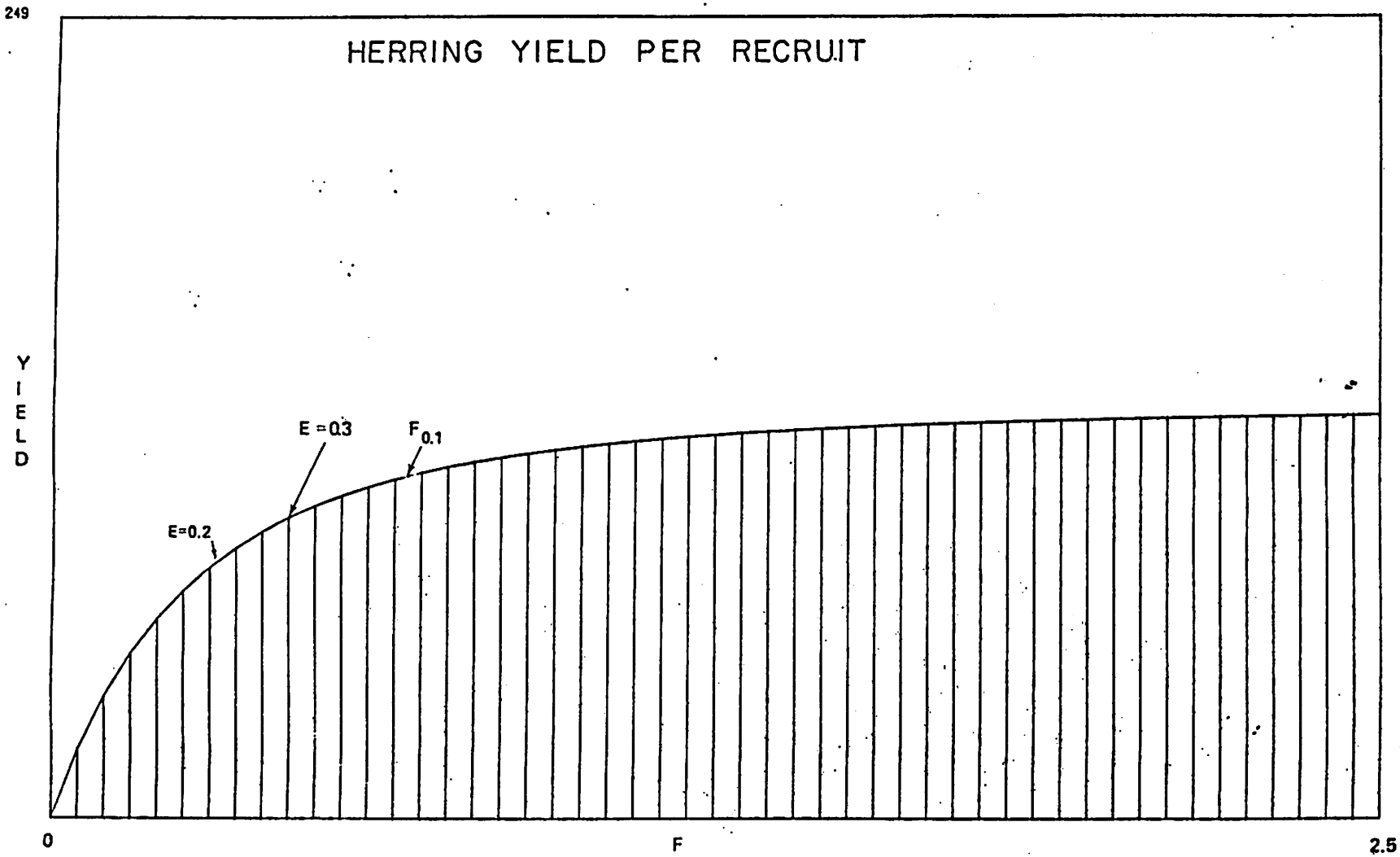

Figure 7-12. Herring yield per recruit at various levels of fishing mortality (F) (in 0.05 increments) and yield at 3 levels of exploitation (E). A & F 0.1 the E value = 0.39.

the fishery is more stable since more ages are in the fishery. The conventional lower rate of fishing mortality used is the $F_{0.1}$ level, which is the level at which the increase in yield-per-recruit from an additional unit of fishing mortality is 10% of what the yield would have been for a unit of fishing mortality on the virgin stock (ICNAF 1976). The $F_{0.1}$ rate for eastern Bering Sea herring occurs when F = 0.675 and the exploitation rate corresponding to this level of fishing mortality is 39%.

Thus, the range of exploitation rates which could be considered for the eastern Bering Sea herring fishery is 10-39%. There are a number of factors which indicate that a conservative rate within this range should be selected:

(1) The fishery in its present form has a very short history so that there is not a lengthy data base to analyze;
(2) the accuracy of biomass estimates is unknown;and
(3) biological relationships are little known.

Together, these factors indicate that under average conditions an exploitation rate of 20% would be appropriate in view of currently available data. If abundance indices were low, or if future recruitment was anticipated to be poor, then a rate less than 20% should be applied.

A method of determining the appropriate level of exploitation is to assume that MSY is obtained at an exploitation rate of 0.2 (E_{msy}). This means that the biomass level (B_{msy}) that produces MSY is equal to MSY/.2 or 48,712/.2 = 243,560 mt.

When stocks are at a level that will produce MSY, the exploitation rate is equal to .20. However, biomass will not always remain at MSY; rather, it will fluctuate around MSY in response to growth, recruitment and mortality. To adjust exploitation when the current biomass estimate is below the MSY biomass, the exploitation rate will be adjusted by the ratio of current biomass to MSY biomass, or:

$$E_t = \frac{B_t}{B_{msy}} \times E_{msy}$$

for example, if B_t = 200,000 mt, then

$$E_t = \frac{200,000}{243,560} \times .20 = .16$$

Until a better estimate of the current biomass becomes available the spawning biomass estimate (Section 7.6.2.1) will be used.

Because of the uncertainty in the determination of MSY it has been determined that the exploitation rate shall not exceed 20%. This limitation shall be reviewed when better data are available to determine MSY.

7.6.2.3 Determination of ABC

Annually by July 1, ABC shall be estimated by the Regional Director of the NMFS according to the procedure described below. This estimate shall be reviewed by the Council and its advisory groups. The Council shall provide for public comment on the estimated values and procedures.

The Council shall on October 1 recommend a final value of ABC to the Assistant Administrator or the Alaska Regional Director, NMFS, who will specify the final values. The ABC so specified will be for the current fishing year.

$$ABC = Et^{x\ B_t}$$

$$= \frac{\text{spawning biomass estimate}}{\text{MSY biomass}} \times 0.2 \times \text{spawning biomass estimate}$$

7.6.2.3.1 Spawning biomass estimate

Spawning biomass estimates will be determined in accordance with Section 7.6.2.1. The most current data available at the time of determination of ABC shall be used.

Spawning biomass estimates for Nelson Island will be excluded from the spawning biomass estimate. This exclusion is intended to provide an additional degree of protection for the subsistence fishery in this area.

7.6.2.3.2 MSY biomass

In accordance with Section 7.6.1 the best available estimate of MSY biomass is 243,560 mt.

7.6.2.3.3. Limitations on exploitation rate

In accordance with Section 7.6.2.2. the exploitation rate may not exceed 20 percent. If the spawning biomass estimate divided by the MSY biomass is greater than 1, then the exploitation rate (E_t) is set equal to 0.2.

APPENDIX II

8.3.2 Herring Savings Area

As was noted above, prior to 1982 the majority of trawl-caught herring was taken in U.S. Statistical Area II and only a small amount was taken in other areas of the eastern Bering Sea. The Council compared four options in determining which areas should be closed to protect herring. The four options are shown in Figure 8-1, and relative area comparisons are shown in Figure 8-2.

To compare the effectiveness of each closure for herring protection, data supplied to the U.S. by Japan were used. The Japanese data cover the years 1968 through 1978 and contain catches by species, month, 1° longitude by ½° latitude, and vessel class. Comparable data are not available from the Soviet fishery; therefore, it must be assumed that they operated in the same areas as the Japanese. U.S. surveillance reports indicate that the Japanese and Soviet herring fisheries did operate in the same general area, (see Tables 8-1, 8-2 & 8-3).

Area selection was based on the years 1968 and 1972. These years were selected because catches were high and most herring were taken as the target species. Also during these years, there were no catch quotas or regulations that would have influenced fishing. In subsequent years, catches have been low, influenced by declining stocks or quotas and regulations. The boundaries

8.3.1.3 Accounting for AIC

To simplify the accounting of herring harvested as DAH or AIC, all herring caught in an area open to directed herring fishing will be charged against DAH. All herring harvested in an area closed to directed herring fishing will be charged against AIC.

8.3.1.4 Exemptions

The Herring Savings Area applies to trawl gear only. Longline, pot or other gear which are not utilized to fish for herring or catch herring above trace amounts (less than 0.001% of total catch) are exempt from this time/area restriction.

8.3.2 Herring Savings Area

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Area selection was based on the years 1968 and 1972. These years were selected because catches were high and most herring were taken as the target species. Also during these years, there were no catch quotas or regulations that would have influenced fishing. In subsequent years, catches have been low, influenced by declining stocks or quotas and regulations. The boundaries

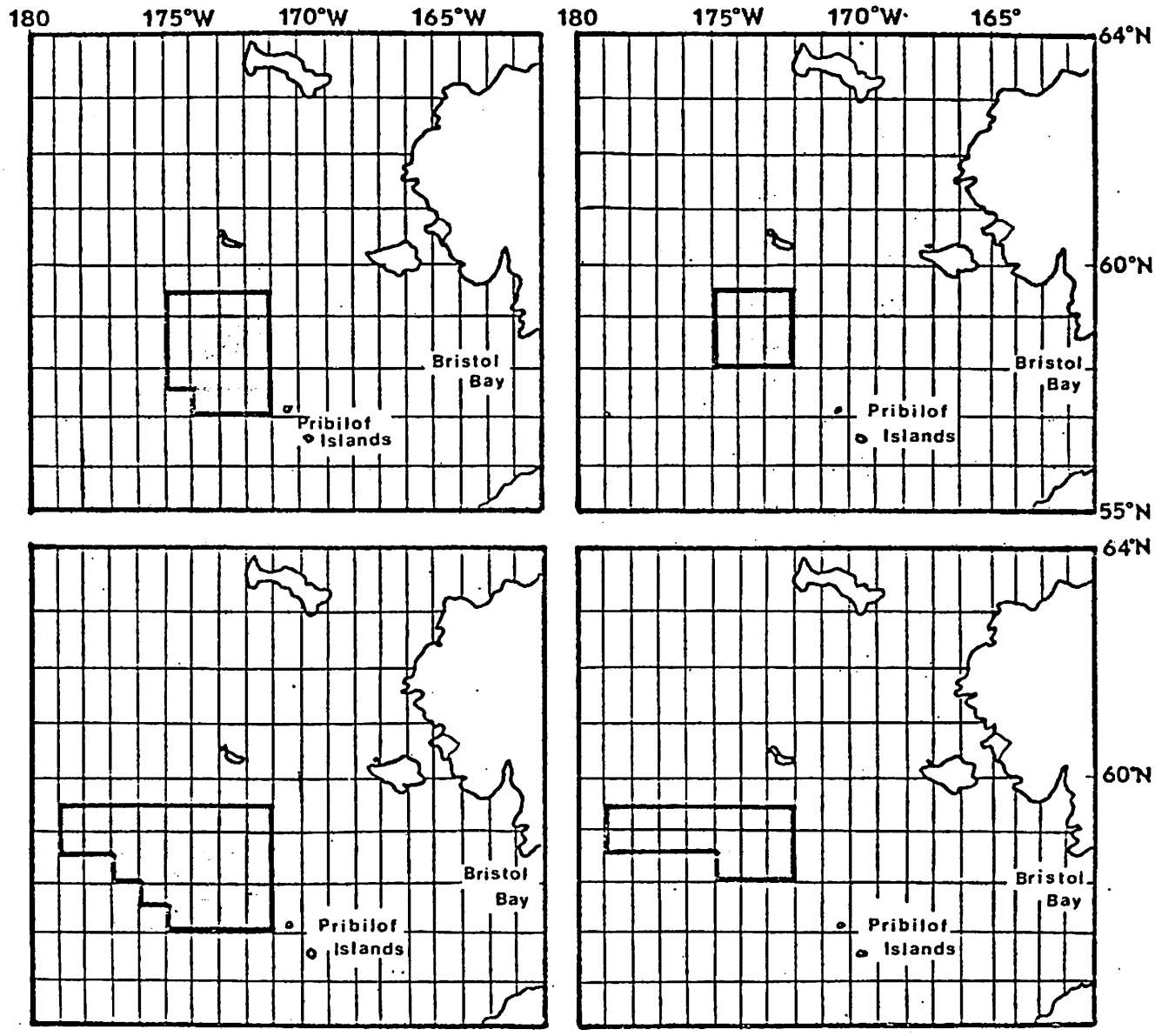

Figure 8-1. Options considered for the Herring Savings Area. Area C provides the maximum protection to the wintering herring populations.

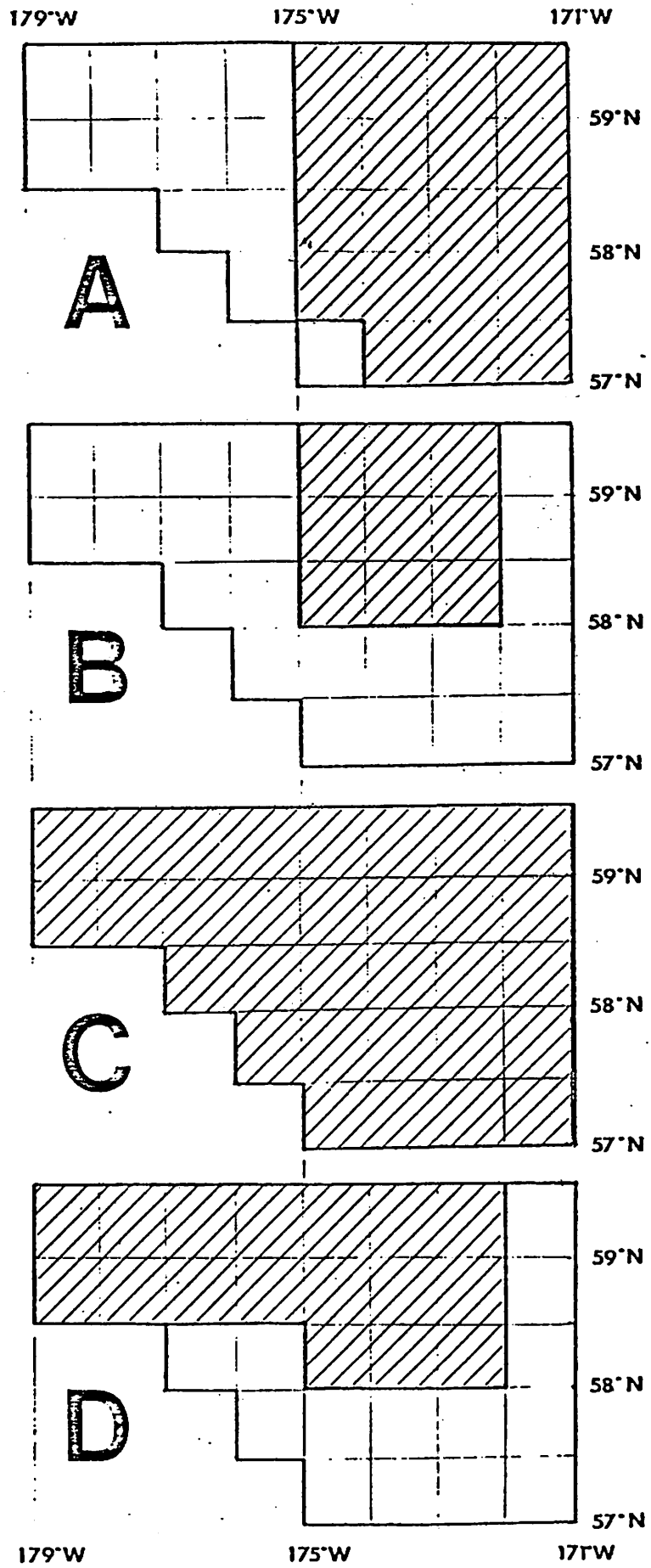

Figure 8-2. Herring savings area options = Relative area comparisons.

of the potential closure areas follow lines of latitude and longitude as much as possible to minimize future enforcement efforts, although, by doing so, some blocks are included in which herring have not been caught.

Table 8-4 contains the catch of herring within each area for the November-March period that the closures would be in effect, total Bering Sea herring catch for gear other than gillnet for the November-March period, and the annual herring catch for the year 1968-1969 and 1977-1978. Mean catches were computed for the entire data series and for the year 1968-1969 to 1971-1972. The latter series is believed to be more indicative of the amount of protection to herring stocks by each time-area closure, because in these years stocks were high, regulations did not exist, and herring was a target species to a greater degree than in later years.

The 1968-1969 to 1971-1972 data show that 90% of the Bering Sea herring catch occurs from November-March and that 88-95% of this catch is taken within the proposed herring time-area closure. Area C (the largest area) provides the greatest protection, accounting for 95% of the average November-March catch and 85% of the average annual catch. Area B (the smallest area) provides the least protection, accounting for 88% of the November-March catch and 79% of the average annual catch. The other two areas (A and D) are intermediate to B and C and account for 93% and 94% of the average November-March catch and 83% of the average annual catch, respectively.

The difference in herring protection afforded by the four areas is nonsignificant because of the variability in distribution of herring over the past years (1968 to 1978). Historically, the greatest proportion of herring harvest has been in Area B, the smallest area. However, there are significant differences in relation to the proportion of total groundfish catch and pollock in particular taken in these areas.

Table 8-5 shows that the November-March Bering Sea groundfish harvest averaged 16.5% of the annual harvest. The proportion of the winter harvest taken in the proposed time-area closures ranges from 24.3% in Area C to 6.3% in Area B. In relation to the Bering Sea annual harvest, the proportion harvested in the time-area closure ranges from 1% to 4%.

Table 8-4. Japanese herring catch in the proposed November-March time-area closures and the eastern Bering Sea and the mean catch and mean percentage of the Bering Sea annual and November-March catch for the years 1968-69 to 1971-72 and 1968-69 to 1977-78.

	Herring Catch (mt) by Area					
					Bering Sea	
	A	B	C	D	Nov.-March	Annual (Jul.-June)
1968-69	40316	40273	40479	40436	41875	50857
69-70	20925	17045	21085	17165	22274	23901
70-71	19415	19298	22978	22737	23717	24236
71-72	12301	11748	12534	11978	12889	13143
72-73	18	18	18	18	435	346
73-74	21	14	94	91	620	219
74-75	17	16	124	115	1569	2663
75-76	5	0	296	291	612	3119
76-77	4929	4858	8428	7873	12127	13413
77-78	4	5	431	375	1257	2703
Mean Catch:						
1968-69 to 71-72	23240	22091	24269	23581	25118	28034
1968-69 to 77-78	9795	9327	10647	10109	11737	13460
Mean(%) of Bering Sea November-March Catch:						
1968-72	93	88	97	94		
1968-78	84	80	91	86		
Mean(%) of Bering Sea Annual Catch:						
1968-72	83	79	86	84	90	
1968-78	73	69	79	75	87	

Table 8-5. Japanese total groundfish (including herring) catch in the proposed November-March time-area closures and the eastern Bering Sea and the mean catch and percentage of the Bering Sea annual and November-March catch for 1968-69 to 1977-78.

	Groundfish Catch (1000 mt) by Area					
					Bering Sea	
	A	B	C	D	Nov.-March	Annual
1968-69	44.5	44.4	44.7	44.6	160.0	878
69-70	31.3	20.7	32.5	20.9	180.4	1036
70-71	38.1	24.5	42.8	28.6	264.1	1447
71-72	34.2	16.7	53.6	34.2	305.3	1782
72-73	14.9	6.6	44.1	29.2	257.7	1844
73-74	6.6	6.7	109.1	95.2	245.0	1726
74-75	21.2	4.9	62.0	37.4	191.7	1487
75-76	14.0	0.8	32.2	13.2	297.1	1278
76-77	18.9	13.3	52.0	41.6	157.8	1062
77-78	2.7	1.2	69.4	57.2	174.1	957
Mean Catch:	22.6	14.0	54.2	40.2	223.3	1350
Mean (%) of Bering Sea November-March Catch:	10.1	6.3	24.3	18.0		
Mean (%) of Bering Sea Annual Catch:	1.7	1.0	4.0	3.0	16.5	

The pollock catch record is more meaningful than the total groundfish harvest, because it is the principle target species in the area proposed. Pollock comprised 77% of the average November-March Bering Sea catch, and pollock and herring combined averaged 83% of the Bering Sea winter groundfish harvest from 1968-1969 to 1977-1978.

The relationship of harvest between areas is the same for pollock as for groundfish, but the percentage of catch drops sharply in Areas A and B, primarily because herring, included in the total grounfish catch, was the major species, along with pollock, harvested in these areas. If a time-area closure is instituted, the greatest impact to existing fisheries would be in Area C which averaged 21.4% of the November-March catch during the period of record (Table 8-6). Area B would have the least impact with 1.8% of the November-March average pollock harvest, and Areas A and D are intermediate with averages of 5.7% and 15.7%, respectively. On an annual basis institution of an Area A closure would result in an average of a 0.8% reduction of the Japanese pollock harvest, 0.3% with Area B, 3.2% with area C, and 2.3% with Area D.

This analysis is based on Japanese data, and measures impact to Japanese fisheries only. The U.S.S.R. has also conducted a major fishery in the Areas analyzed. U.S. observer data and historical catch data show that much of the Soviet effort in these areas has been directed toward herring and that the ratio of herring to pollock and groundfish is much higher than for Japan. Therefore, if U.S.S.R. data had been available, the amount of herring protection would have been greater in each area and the overall impact to other fisheries would have been less.

Historically, Area B has contained the bulk of the herring found on the winter grounds. However, in the late 1970s, in response to different hydrological conditions, herring winter distribution shifted to the northwest corner of Area C. Since herring are known to winter in different locales over a large range and since it may be difficult to determine the specific area, it is prudent to select Area C, which covers most of the winter range, as the primary area closure for the November-March period.

Table 8-6. Japanese pollock catch in the proposed November-March time-area closures and the Eastern Bering Sea and the mean catch and percentage of the Bering Sea annual and November-March catch for 1968-69 to 1977-78.

	Pollock Catch (mt) by Area				Bering Sea	
	A	B	C	D	Nov.-March (1000 mt)	Annual (1000 mt)
1968-69	3317	3270	3364	3317	97.9	701
69-70	2416	592	2471	591	122.2	830
70-71	11601	1322	11655	1337	187.2	1231
71-72	18417	4598	35505	20348	242.6	1513
72-73	12820	5715	40089	26988	214.2	1651
73-74	5889	5191	102438	90713	201.7	1476
74-75	18923	4468	46942	34768	157.4	1253
75-76	11106	660	26103	11104	246.4	1137
76-77	10258	1156	37102	28586	113.9	913
77-78	2478	3483	60495	51011	125.1	869
Mean Catch:	9723	3046	36616	26876	170.9	1158
Mean (%) of Bering Sea November-March Catch:	5.7	1.8	21.4	15.7		
Mean (%) of Bering Sea Annual Catch:	0.8	0.3	3.2	2.3	14.8	

At the time AIC is attained the Regional Director will, using field order authority close the entire area or only the portion of Area C necessary to protect herring in a particular season using criteria specified under Section 12.5. If it occurs that AIC is exceeded prior to November or the amount of AIC remaining is so small that it could be exceeded within one reporting period (one week) prior to November and the specific wintering location of the herring population in that season cannot yet be determined, then that portion of Area C corresponding to Area A should be closed until November arrives. In November the Regional Director should reevaluate the closure and adjust as necessary to protect herring. This closure under the above set of conditions was selected because it provides the greatest savings of herring and the least impact to the pollock fishery based on the available data.

Since the primary purpose of the Herring Savings Area is to protect herring on the winter range, once closed to a nation, the Herring Savings Area should remain closed until April 1. At any time the Regional Director may reevaluate the closure using the criteria specified under Section 12.5.

8.4 Limited Entry

The Bristol Bay herring roe fishery is the only major herring fishery in Alaska which is not covered by a limited entry system. As the fishery develops and effort increases, management problems may arise and create a need for imposing limited entry. Once a need is perceived, entry into the inshore roe fishery will be regulated by the Alaska Commmerical Fisheries Entry Commission.

If an intensive high seas domestic herring fishery eventually develops, entry to this fishery could be regulated through an amendment to this FMP.

8.5 Offshore Petroleum Production

Most of the Bering and Chukchi Seas are scheduled for sale under the current five-year Outer Continental Shelf (OCS) Oil and Gas Leasing Schedule (Figure 8-3). Both the St. George Basin sale and the Norton Basin sale have already taken place but are being delayed by court actions. Further sales in

RECOMMENDED REVISION OF PSC VERSION OF FMP

Changes for AIC/PSC Year (i.e. no longer calendar year)
and HSA October 1 - March 31

Section	Page	Paragraph	Sentence	Change
1.3	1-5	5	4	"calendar year" to "herring fishing year"
1.4.2	1-8	3	1	"calendar year" to "herring fishing year"
1.5.2.2	1-9	6	1	Delete the first sentence and replace as follows: "AIC is part of the herring OY."
1.5.2.2	1-10	2	1	After "until April 1." add a new sentence as follows: "Any closure of the Herring Savings Area will occur only between September 30 and April 1."
1.5.5	1-10	5	1	Delete "or a State of Alaska commercial herring permit."
1.6.2	1-11	2	1	The sentence shall continue ", and is for the period April 1 to March 31."
1.6.2	1-11	4	1	Delete
1.6.2	1-11	5	1	Insert the following sentence at the beginning: "Any closure of the Herring Savings Area will occur only between September 30 and April 1."
8.1	8-1	5	3	Change "When" to "If"
8.3	8-5	1	2	Replace the last sentence with "If a nation reaches its PSC or AIC, all or part of the Herring Savings Area will be closed to that nation's trawling vessels from October 1 until March 31, which is the end of the herring fishing year."
8.3.1.4	8-11	3	3	After "automatically allocated" delete "with and" and replace with "for the period April 1 to March 31 and is"
8.3.2	8-20	1	1	In the first sentence (which began on the preceeding page), after "should be closed" delete "until November arrives" and replace it with "for the month of October."

Section	Page	Paragraph	Sentence	Change
10.1	10-1	3		Delete the entire paragraph and replace as follows: "AIC is apportioned for the herring fishing year. Thus, once AIC is reached herring becomes a prohibited species until April 1."
10.4	10-4	5	1-2	Replace "January 1" with "April 1" at the beginning and middle of the first sentence and delete the remainder of the sentence following the second "April 1." Also delete the following sentence.
12.2.2	12-4	3	2	Replace "calendar year" with "herring fishing year."
12.2.2	12-4	4		Delete the entire paragraph and replace with: "AIC is apportioned on April 1 for the fishing year."
12.3.2	12-6	4	1	Insert before the first sentence which begins "Once closed..." the following: "Any closure of the Herring Savings Area will occur only between September 30 and April 1."
12.3.5	12-8	2	1	Delete "or a State of Alaska commercial herring permit."
12.4.1	12-9	3		In Section 12.4.1(ii) add a new paragraph as follows: "Any closure of the Herring Savings Area will occur only between September 30 and April 1. Once closed, it shall remained closed until April 1."

Regulations: changing AIC year and HSA closure period

676.20(b)(1)(A), page B-3, change "January 1" to "April 1" change "calendar year" to "herring fishing year"

676.20(b)(3)(B), page B-7, (HSA closure by notice) is changed to read "This notice shall take effect on October 1 or upon its filing with the Federal Register, whichever is later, and shall remain in effect through the next March 31.

676.21(c)(1)(B), page B-9, (HSA closure) is changed to read "This notice shall take effect on October 1 or upon its filing with the Federal Register, whichever is later, and shall remain in effect through the next March 31.

611.95(c)(3) Availability, page F-2, the entire section is replaced by the following: "PSC shall apply to the incidental harvest of herring by foreign vessels trawling for groundfish in the management area for the period April 1 through March 31."

611.95(d)(2), page F-3, In the first sentence, after "by vessels of that nation" insert the following: "from October 1 or the date of filing of the notice with the Federal Register, whichever is later,". In the next sentence change "calendar year" to "herring fishing year".

676.4 Permits

(a) General. No vessel of the United States may fish for herring in the management area without first obtaining a permit under this Part. Such permits shall be issued without charge. Each permit shall have attached a unique code to be used by the vessel operator in the weekly radio/telephonic catch reports required under subsections 676.5(a) and 676.22(a), Reporting Requirements. The permit shall include the name of the person and/or agency to which the report shall be made, the appropriate telephone number, and the radio freqency which will be monitored for this purpose.

(b) Application. A fishing vessel owner may obtain a permit required under the preceding subsection by submitting to the Regional Director a written application containing the following information:

(1) The applicant's name, mailing address, and telephone number;

(2) The name of the vessel;

(3) The vessel's U.S. Coast Guard documentation number or state registration number;

(4) The home port of the vessel;

(5) The length of the vessel;

(6) The type of fishing gear to be used;

(7) The signature of the applicant.

The Regional Director may accept a completed State of Alaska commercial fishing license application in satisfaction of the requirements of this paragraph.

(c) Issuance.

(1) Upon receipt of a properly completed application, the Regional Director shall issue a permit required by paragraph (a) of this section, except as otherwise required under paragraph (i) of this section.

(2) Upon receipt of an improperly completed application, the Regional Director shall notify the applicant of the deficiency of the application. If the applicant fails to correct the deficiency within 30 days following the date of notification, the application shall be considered abandoned.

(d) Notification of change. Any person who has applied for and received a permit under this section shall give written notification of any change in the information provided under paragraph (b) of this section to the Regional Director within 30 days of that change.

(e) Duration. A permit issued under this section shall authorize the permitted vessel to fish for herring in the management area during a single specificied year, and shall continue in full force and effect through December 31 of the year for which it was issued, or until it is revoked, suspended or modified pursuant to 50 CFR Part 621.

(f) Alteration. No person shall alter, erase, or mutilate any permit issued under this section. Any such permit that has been intentionally altered, erased, or mutilated shall be invalid.

(g) Transfer. Permits issued under this section are not transferable or assignable. Each permit shall be valid only for the fishing vessel for which it is issued. The Regional Director must be notified of a change in ownership, pursuant to paragraph (d) of this section.

(h) Inspection. Any permit issued under this section must be carried aboard the permitted vessel whenever the vessel is fishing for groundfish or herring in the management area. The permit shall be presented for inspection upon request of any authorized officer.

(i) Sanctions. Subpart D of 50 CFR Part 621 shall govern the imposition of permit sanctions against a permit issued under this section. As specified in that subpart D, a permit may be revoked, modified, or suspended with or

without prejudice to the issuance of future permits, if the permitted vessel is used in the commission of an offense prohibited by the Act or these regulations; and such a permit shall be revoked if a civil penalty or criminal fine imposed under the Act and pertaining to a permitted vessel is not paid.

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676.5 Reporting requirements (also found at 676.22)

(a) Fishing vessel reporting requirements - The operator of any fishing vessel regulated under this Part shall be responsible for submission to the Alaska Department of Fish and Game (ADF&G) of accurate information required by a State of Alaska fish ticket for each sale or delivery of herring caught in the management area to (1) a domestic purchaser at sea, (2) a land-based port outside Alaska, or (3) retained for personal consumption or use as bait.

(i) At the election of the vessel operator, information required by the fish ticket shall be either:

(A) submitted by the vessel operator directly by radio to the ADF&G within a week after such fish are caught and brought on board; or

(B) submitted, at the request of the operator, by the purchaser at sea by radio to ADF&G within one week after such fish are received by the purchaser. For the purposes of paragraph (a) of this section, a "purchaser at sea" is any person who receives on board from a fishing vessel regulated under this part, herring caught in the management area.

(ii) The vessel operator or purchaser at sea shall make a radio report to the appropriate ADF&G representative according to procedures specified by ADF&G. To protect the confidentiality of the information contained in the report the operator, or at his request the purchaser, may make the radio report using a unique code that is available from ADF&G.

(b) Processor and purchaser reporting requirements - (1) Any U.S. fish processor or purchaser (i.e., any person who receives fish for a commercial purpose from a fishing vessel subject to this part), except: (i) Any fisherman purchasing fish for his own use as bait or (ii) any foreign fishing vessel permitted to receive U.S. harvested fish at sea, shall accurately complete each written survey authorized by this section and received by the processor or purchaser from the Regional Director.

(2) Surveys shall be conducted at those times considered necessary by the Regional Director but no more than twice during the fishing year.

(3) Each survey shall be designed to gather the following information:

(i) Changes in the number and capacity of U.S. vessels which harvest herring to be delivered to foreign fishing vessels at sea;

(ii) Changes in regulatory areas of operation;

(iii) Changes in capacity or operations of the foreign fishing vessel to which deliveries are being, or will be, made;

(iv) Changes in quantities and species of herring expected to be delivered in the subsequent 12-month period;

(v) Changes in alternative fishery opportunities available to the U.S. vessels; and

(vi) Changes in other factors the owner or operator believes relevant to the accurate determination of the amount of joint venture processing.

(4) Completed surveys shall be returned to the Regional Director at the address and by the date specified on the survey.

This replaces the reporting requirements included under this agenda item.

676.5 Reporting requirements (also 676.22)

(a) Fishing vessel reporting requirements - The operator of any fishing vessel regulated under this Part shall be responsible for submission to the Alaska Department of Fish and Game (ADF&G) of accurate information required by a State of Alaska fish ticket for each sale or delivery of herring caught in the management area to (1) a domestic purchaser at sea, or (2) a land-based purchaser or processor outside Alaska.

(i) Information required by the fish ticket shall be either:

(A) submitted by the vessel operator by radio to the ADF&G within seven days after such fish are caught; or

(B) submitted by the purchaser or processor at sea, by radio, to ADF&G within seven days after such fish are caught. For the purposes of paragraph (a) of this section, a "purchaser at sea" is any person who receives on board from a fishing vessel regulated under this part, herring caught in the management area.

(ii) The vessel operator or purchaser at sea shall make a radio report to the appropriate ADF&G representative according to procedure specified by ADF&G. To protect the confidentiality of the information contained in the report the operator, or at his request the purchaser, may make the radio report using a unique code that is available from ADF&G.

(b) Processor and purchaser reporting requirements - (1) Any U.S. fish processor or purchaser (i.e., any person who receives fish for a commercial purpose from a fishing vessel subject to this part), except any fisherman purchasing fish for his own use as bait, shall accurately complete each written survey authorized by this section and received by the processor from the Regional Director.

(2) Surveys shall be conducted at those times considered necessary by the Regional Director but no more than twice during the fishing year.

(3) Each survey shall be designed to gather the following information:

(i) Changes in processing plant capacity;

(ii) Changes in the availability of herring;

(iii) Changes in market demand;

(iv) Changes in expected utilization of processing capacity or expected purchases of herring for the subsequent 12-month period; and

(v) Changes in other factors which the purchaser or processor believes relevant to the accurate determination of the amounts of domestic annual processing (DAP).

(4) Completed surveys shall be returned to the Regional Director at the address and by the date specified on the survey.

(c) U.S. vessels delivering to foreign processing vessels - (1) The owner or operator of any fishing vessel regulated by this section or his representative who has delivered, or intends to deliver, herring to a foreign fishing vessel at sea shall accurately complete each written survey authorized by this section and received by the owner or operator from the Regional Director.

(2) Surveys shall be conducted at those times considered necessary to the Regional Director but no more than twice during the fishing year.

(3) Each survey shall be designed to gather the following information:

(i) Changes in the number and capacity of U.S. vessels which harvest herring to be delivered to foreign fishing vessels at sea;

(ii) Changes in regulatory areas of operation;

(iii) Changes in capacity or operations of the foreign fishing vessel to which deliveries are being, or will be, made:

(iv) Changes in quantities of herring expected to be delivered in the subsequent 12-month period.

(v) Changes in alternative fishery opportunities available to the U.S. vessels; and

(vi) Changes in other factors the owner or operator believes relevant to the accurate determination of the amount of joint venture processing.

(4) Completed surveys shall be returned to the Regional Director at the address and by the date specified on the survey.

This is an additional change to the regulations which addresses the AIC accounting year.

676.20(b)(1)(B) (Availability of AIC) The second paragraph is changed to read as follows:

AIC shall be available for the herring fishing year beginning April 1 and ending March 31. When AIC and the other apportionments of OY have been harvested within the fishing year for which they have been prescribed, herring shall become a prohibited species to vessels of the United States. In addition, the Herring Savings Area, described in Appendix II to this Part, shall be closed for the remainder of the fishing year after October 1, subject to the provisions at 50 CFR 676.21(d) and (e).

BERING SEA HERRING RESEARCH NEEDS

Harold Lokken requested that a package of research proposals be prepared which would address the major gaps in our knowledge of Bering Sea herring. We have included a brief history of research, mostly taken from the FMP. In general, the data gaps fall into three main categories: stock abundance, migration routes and rates, and offshore distribution and mixing.

HISTORY OF RESEARCH

Herring stocks have been extensively investigated in areas where they are commercially important (Cushing 1975). Research on Pacific herring has occurred primarily in Southeastern Alaska and British Columbia (Reid 1972, Taylor 1964). Much of the life history and population dynamics of Pacific herring have been developed for these areas. In contrast, research on herring in the Bering Sea has been limited, and most has occurred within the last three years.

United States Research

In the 1880's, exploratory surveys of the Bering Sea and western Alaska were begun by various departments of the Federal Government. These surveys, which continued into the early 20th Century, generally included a naturalist or fishery biologist who noted the occurrence of herring in the Bering Sea (Bean 1887, Cobb 1907, Gilbert 1895, Jordan and Gilbert 1899, Nelson 1887, Tanner 1890).

The first specific investigation of herring in the Bering Sea occurred in the late 1920's (Rounsefell 1930). Rounsefell collected samples from the catches from Unalaska and Golovin Bay in 1928, the year that commercial herring fisheries developed at Unalaska. The Bering Sea samples were included with samples from the Gulf of Alaska for investigation of the stock relationships of Alaska herring.

After 1928, there were no US herring investigations in the Bering Sea until the advent of the OCSEAP in 1975. There had been some sporadic sampling for biological statistics by the ADF&G in the 1960's and 1970's.

Intensive investigations of the distribution, relative abundance and biology of spawning stocks in addition to the determination of subsistence use levels were begun by ADF&G in 1975 under OCSEAP in an area from the Alaska Peninsula to Kotzebue Sound. Much of this research in addition to stock identification and biomass estimates of spawning fish is being continued by ADF&G through State and NPFMC funding. The NMFS, under OCSEAP, investigated herring in Norton Sound and the Chukchi Sea and also reported on the occurrence of herring in southeastern Bering Sea demersal fish surveys (Wolotira et al. 1977, Pereyra et al. 1976). A winter hydro-acoustic survey was conducted in 1978 and 1979, northwest of the Pribilof Islands by NMFS to estimate the distribution and abundance of herring on the winter grounds.

In recent years, NMFS, first through the International North Pacific Fisheries Commission (INPFC), and later under the Magnuson Act, has placed observers on foreign vessels to monitor catch rates and to collect biological samples. ADF&G also had observers on domestic processors in the Togiak region since 1977 to collect biological data from the fishery.

Foreign Research

When the Soviet Union began fishing for herring in the eastern Bering Sea in the early 1960's, they initiated investigations to determine the extent and distribution of the herring resource. Most of the present knowledge of the offshore distribution and behavior of eastern Bering Sea herring is based on the Soviet research. Specific investigations dealt with winter abundance and distribution (Shaboneev 1965), summer abundance, distribution and migration (Rumyantsev and Darda 1970) and with eastern-western Bering Sea stock relationships (Prokhorov 1968). The main purpose of these surveys was the determination of the extent and potential uses of resources prior to commercial exploitation by the Soviet fleet.

Japanese research in the eastern Bering Sea began in the mid-1950's with limited exploratory trawl fishing. Extensive and systematic surveys of eastern Bering Sea groundfish by the Japanese were begun in 1963 by the Japan Fishery Agency (JFA), and have continued annually with the exception of 1972 (Japan Fishery Agency 1977). These surveys have covered broad areas of the continental shelf, and in some years included the shelf edge and upper continental slope. Japanese research efforts have focused on pollock and other demersal species; herring have only been noted incidentally.

The Japanese have been collecting catch and effort statistics and occasionally length frequency data from their herring fisheries since 1964. These data have been provided to the US through the INPFC.

QUALITY OF RESEARCH

The overall quality of domestic research data is fair to poor. In coastal areas, recent intensive surveys have helped to define features of spawning behavior, relative abundance, and coastwise distribution. The data on early life history, which may be a period when year-class strength could be assessed, are very weak. Individual spawning stocks have been identified along the coast, but the relationship of these stocks to the offshore fisheries is unclear due to an absence of direct data on offshore distribution and migration patterns.

RESEARCH NEEDS (summarized from Section 12.7, FMP)

Research will be required to (1) develop means of reducing the incidental catch of herring in other fisheries, (2) refine estimates of abundance and biological characteristics of stocks through resource surveys, (3) improve the capability for predicting changes in resource abundance, composition, and availability, and (4) identify the origin and distribution of stocks in offshore waters.

For purposes of conservation and harvesting efficiency, fishing methods or gear should be modified or developed which will reduce the incidental catch of herring in groundfish trawl fisheries.

Estimates of biomass of specific groundfish resources have been obtained through resource surveys using bottom trawls. However, herring are not generally available to bottom trawls and other gear and methods must be used for assessing biomass. Hydroacoustic surveys, spawn deposition surveys and aerial surveys of schooled fish are some of the methods under consideration.

Hydroacoustic surveys in the nearshore areas just prior to or during spawning are difficult due to the many widely scattered schools that are constantly moving through shallow waters. Hydroacoustic surveys are probably best conducted when herring are relatively concentrated on the winter grounds. Results of surveys conducted during late winter - early spring could be applied in time for management of the inshore fisheries. Some increased ability to identify discrete spawning stocks in the offshore survey area would also be desirable.

Aerial surveys are one of the more cost effective tools for measuring the abundance of spawning herring. However, this method is limited due to weather conditions and narrow time-area coverage. Intensive testing should be made of school distribution within a limited area to determine if surveys are more effective at particular times and to investigate the variability of schools along sighting tracks. Also, aerial biomass estimation procedures and species identification procedures should be improved.

Long-term fisheries management requires reliable forecasting of stock conditions. Until now, forecasts have been based mainly on past events, such as trends in abundance indices (catch per unit effort) and size and age composition of specific resources without any consideration of the interactions of these resources with each other and the environment. Studies need to be continued to determine for predictive purposes those factors that have major influences on the abundance, composition, and distribution of resources. Monitoring certain oceanographic and climatological conditions (temperature, currents, etc.) in both the nearshore spawning-rearing grounds and the offshore wintering grounds may be very important in understanding fluctuations in herring abundance.

There is a critical need for annual pre-recruit surveys (i.e. of young fish before they enter the fisheries) so that a measure of their abundance can be used to forecast later contribution to the exploitable stock. Assessment of pre-recruit abundance could be made of juveniles in nearshore nursery areas or at a later age in more offshore waters. The major limitation for use of this method is the virtual absence of information relating to distribution of eastern Bering Sea herring during the first two or three years of their life cycle.

Current studies in inshore waters are emphasizing the assessment of stock condition through aerial survey observation of schooled fish and age composition data collected from commercial and test fishing catches. Age composition data when collected over a number of years are indicative of the relative

strength of various year classes including newly recruited fish, and may be used to a limited degree in adjusting quotas and formulating other management measures.

Basic biological research is needed to systematically investigate population parameters, such as age-specific mortality rates, growth rates, and recruitment rates. Investigations are also needed to establish the degree of utilization of herring in the diet of marine mammals, salmon, and other predators so ecological effects of harvesting can be better evaluated.

Lastly, stock identification needs to be refined so that the distribution of stocks within the eastern Bering Sea and their frequency of occurrence in each fishery can be established.

* * * * * * *

WHERE DO WE GO FROM HERE?

It is apparent that in many respects we are at square one in regards to herring data. Since no offshore fisheries have been allowed since 1980 we have very little current information about offshore herring distribution. This general information must be collected before any intensive herring research can be started. The cheapest way (in terms of federal and state research dollars) would be to allow some type of commercial fishery. The Council recently received a proposal of this type from Marine Resources Company and their request for a 10,000 mt joint venture allocation.

Once basic distribution information is obtained, any number of specific sampling programs could be initiated to collect stock assessment, tag recovery, scale sample or other data.

To determine the distribution of discrete inshore stocks and the degree of mixing offshore, some form of stock identification-mark is needed. Scales provide a general identifier and may prove adequate for our immediate needs. Tags, either coded wires or external, would yield more precise data but at a far greater cost. The cost is related to the recovery or sampling program as well as the physical marking. If tags could be recovered from a commercial fishery the cost would be much less than from a directed research-type sampling survey.

The coded wire tag proposal by ADF&G does not include an offshore sampling program. That would have to be added to the $600,000 tagging and inshore recovery cost.

Currently FRI is analyzing herring scales taken from the summer fishery near Dutch Harbor and comparing these to samples of scales from discrete inshore spawning populations. We are waiting for the results of this study and would recommend that additional studies be postponed until we review these results and determine what questions remain.

In response to Mr. Lokken's request we have prepared the following summary of studies proposed by ADF&G and NMFS. The SSC has received the complete proposals which are also available to Council members on request.

POTENTIAL PROGRAM TO FULFILL HERRING RESEARCH NEEDS

1. Allow a commercial fishery to occur offshore in such a way as to gain the maximum amount of distribution and abundance data possible. A maximum total catch could be established. This could be a 1-, 2- or 3-year program.

2. During that period attempts should be made to improve stock assessments and identification inshore.

3. A scale pattern study, using scales collected from offshore commercial catches or from fish recovered in research surveys, should be conducted to improve the precision of scale analysis techniques and to identify the contribution of discrete stocks to the offshore fishing grounds.

4. If scale analysis does not provide detailed enough information, an intensive inshore tagging program should be initiated. Tagging would probably have to occur over a period of at least two years due to the short period of availability of spawning stocks and their geographic separation.

5. Tag recovery programs, either through monitoring commercial catches, research cruises, or a combination of the two, should be initiated immediately after tagging and continue for at least two years after tagging was completed.

Research Proposals - Inshore

I. Stock Assessment

A. Coded Wire Tags

1. Objectives

(a) determine size of Togiak stock
(b) determine fishing mortality
(c) determine homing and stock integrity

2. Cost $607,500

B. Hydroacoustic and aerial surveys (inshore)

1. Objectives

(a) estimate density of herring schools for use with aerial estimates
(b) determine relationship between density and several environmental factors
(c) harvest and estimate volume and tonnage of several schools and compare to hydroacoustical and aerial estimates

2. Cost $100,000

C. Ultrasonic transmitters

1. Objectives

(a) determine migration routes of herring entering and exiting spawning grounds
(b) estimate residence time in the fishing district
(c) determine environmental effects on movement

II. Migration

A. External Tags

1. Objectives

(a) determine feasibility of large scale tagging program
(b) determine short-term movements within spawning areas
(c) determine distribution of tagged herring within other spawning/fishing areas
(d) provide information on migration routes and rates

2. Cost $86,300

Research Proposals - Offshore

To: Jim Glock
From: Vidar Wespestad
Subject: Resource assessment of herring in the Bering Sea.

In response to the Council's request for information on what research activities could be conducted to quantitatively assess herring in off-shore waters and identify the stock composition of these herring I am submitting the following potential projects and cost projections. Prior to preparing this memo I reviewed the section on research requirements (12.7) in the herring FMP and found that most of the information contained therein is still relevant. In the 5 years since this section was prepared some of the research suggested has been done or is being conducted. However, research directed toward quantifying the abundance of herring has not progressed to any great degree primarily due to the high costs and logistics involved.

The problem of stock identification is currently being adressed although not as rapidly as desired. The original proposals for stock separation called for a stepwise progression from the least cost option,electrophoretic biochemical studies,to more costly scale pattern studies and then to yet more expensive tagging studies if necessary. To date electrophoretic studies have been carried out on major stocks with the results that stocks within the Bering Sea are indistinguishable. Scale pattern analyses are now in progress and preliminary results indicate that the method may prove adequate for stock separation. If the scale pattern analysis does not prove to be feasible then tagging studies are the only remaining option for stock identification. It should be noted that a tagging study to determine off-shore stock composition will require some form of directed off-shore commercial or research fishing effort.

Quantification of the herring resource in off-shore waters may be rather simple and straight forward given the right conditions ,but based on our general lack of knowledge of off-shore distribution and previous attempts to assess herring in the central Bering Sea this is presently not the case. Japanese and Soviet fishery data indicate that herring concentrate in a relatively small area northwest of the Pribilof Islands during the winter months. It is during this time period that the best estimates of herring abundance can be made. However,the poor weather conditions,remoteness from ports and the large area that must be surveyed requires the use of large vessels for periods of 2-3 months to insure that enough survey days are obtained to adequately cover the entire winter range of herring. Current cost estimates for a winter hydroacoustic survey are between $600,000-700,000. The largest part of this cost is vessel charter.

The costs of a winter hydroacoustic survey can be reduced through the use of less vessel time. This could occur through fortuitous good weather coupled with the rapid discovery of major herring concentrations. Unfortunately,the likelihood of this occurring is remote as past attempts at winter herring assessment were unsuccessful due to many survey days being lost to weather.

Vessel days and costs can also be reduced by conducting preliminary studies into the distribution and behavior of herring on the winter grounds. Such studies are needed to ascertain whether or not a hydroacoustic survey is even feasible. Questions that need answering are what is the diurnal behavior of schools, what is the variation in school sizes, what is the distribution of schools and/or concentrations within the winter grounds, are concentrations purely herring or are schools associated with other species such as pollock. Acquisition of this information could lead to survey designs which would utilize less vessel time.

Preliminary biological and distribution studies could be conducted in two ways, either using a research vessel or utilizing time on a commercial fishing vessel in conjuction with a fishery. Employing a research vessel would require a minimum of 30 survey days with an associated minimum cost of $150,000-200,000. Additional to the monetary costs of the survey would be the diversion of funds or vessel time from other projects such as Bering Sea pollock unless supplimental funding is granted. Costs involved in preliminary studies conducted on a fishing vessel would be limited to personnel and equipment costs and possibly some charter or fuel costs for major diversions of the fishing vessel from fishing.

This replaces the reporting requirements included under this agenda item.

676.5 Reporting requirements (also 676.22)

(a) Fishing vessel reporting requirements - The operator of any fishing vessel regulated under this Part shall be responsible for submission to the Alaska Department of Fish and Game (ADF&G) of accurate information required by a State of Alaska fish ticket for each sale or delivery of herring caught in the management area to (1) a domestic purchaser at sea, or (2) a land-based purchaser or processor outside Alaska.

(i) Information required by the fish ticket shall be either:

(A) submitted by the vessel operator by radio to the ADF&G within seven days after such fish are caught; or

(B) submitted by the purchaser or processor at sea, by radio, to ADF&G within seven days after such fish are caught. For the purposes of paragraph (a) of this section, a "purchaser at sea" is any person who receives on board from a fishing vessel regulated under this part, herring caught in the management area.

(ii) The vessel operator or purchaser at sea shall make a radio report to the appropriate ADF&G representative according to procedure specified by ADF&G. To protect the confidentiality of the information contained in the report the operator, or at his request the purchaser, may make the radio report using a unique code that is available from ADF&G.

(b) Processor and purchaser reporting requirements - (1) Any U.S. fish processor or purchaser (i.e., any person who receives fish for a commercial purpose from a fishing vessel subject to this part), except any fisherman purchasing fish for his own use as bait, shall accurately complete each written survey authorized by this section and received by the processor from the Regional Director.

(2) Surveys shall be conducted at those times considered necessary by the Regional Director but no more than twice during the fishing year.

(3) Each survey shall be designed to gather the following information:

(i) Changes in processing plant capacity;

(ii) Changes in the availability of herring;

(iii) Changes in market demand;

(iv) Changes in expected utilization of processing capacity or expected purchases of herring for the subsequent 12-month period; and

(v) Changes in other factors which the purchaser or processor believes relevant to the accurate determination of the amounts of domestic annual processing (DAP).

(4) Completed surveys shall be returned to the Regional Director at the address and by the date specified on the survey.

(c) U.S. vessels delivering to foreign processing vessels - (1) The owner or operator of any fishing vessel regulated by this section or his representative who has delivered, or intends to deliver, herring to a foreign fishing vessel at sea shall accurately complete each written survey authorized by this section and received by the owner or operator from the Regional Director.

(2) Surveys shall be conducted at those times considered necessary to the Regional Director but no more than twice during the fishing year.

(3) Each survey shall be designed to gather the following information:

(i) Changes in the number and capacity of U.S. vessels which harvest herring to be delivered to foreign fishing vessels at sea;

(ii) Changes in regulatory areas of operation;

(iii) Changes in capacity or operations of the foreign fishing vessel to which deliveries are being, or will be, made:

(iv) Changes in quantities of herring expected to be delivered in the subsequent 12-month period.

(v) Changes in alternative fishery opportunities available to the U.S. vessels; and

(vi) Changes in other factors the owner or operator believes relevant to the accurate determination of the amount of joint venture processing.

(4) Completed surveys shall be returned to the Regional Director at the address and by the date specified on the survey.

This is an additional change to the regulations which addresses the AIC accounting year.

676.20(b)(1)(B) (Availability of AIC) The second paragraph is changed to read as follows:

AIC shall be available for the herring fishing year beginning April 1 and ending March 31. When AIC and the other apportionments of OY have been harvested within the fishing year for which they have been prescribed, herring shall become a prohibited species to vessels of the United States. In addition, the Herring Savings Area, described in Appendix II to this Part, shall be closed for the remainder of the fishing year after October 1, subject to the provisions at 50 CFR 676.21(d) and (e).

SEP 26 1983

North Pacific
Fishing Vessel
Owners' Association

September 21, 1983

Jim Branson
Executive Director
North Pacific Fisheries Mgmt. Council
P.O. Box 3136 DT
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NPFVOA HERRING PROPOSAL

Recent evidence from the annual NMFS Bering Sea bottom trawl survey demonstrates that the abundance of herring has increased to higher than recent levels of abundance. Analysis of the trawl survey data produced a biomass estimate of that portion of the herring resource available to this bottom trawl gear of 33,000 metric tons to 110,000 metric tons. Considering that herring is an off-bottom species and therefore is not completely available to bottom trawls, the actual biomass of herring in the eastern Bering Sea must be substantially greater than the above estimate generated by the trawl survey.

Based upon the information cited above, it seems reasonably clear that the Bering Sea herring resource is presently underutilized. The North Pacific Fishing Vessel Owners' Association feels strongly that an offshore food herring fishery is justified. Therefore we request that the North Pacific Fishery Management Council and the National Marine Fisheries Service authorize an offshore winter Herring Research/Experimental Production Project at the level of 10,000 metric tons for the period January to April 1984 in the eastern Bering Sea.

We would propose that the project be organized along the following lines:

A) A project committee should be established comprised of NPFVOA executives, owners of U.S. harvesting vessels, Pribilof Islands interests representatives of domestic processors who will process and market the herring, and fishery research and management specialists from State and Federal agencies. This committee would be responsible for establishing the experimental design, delineating the logistical responsibilities and cooperatively developing a research format so that the objectives of the project can be accomplished.

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B) This will undoubtedly be a totally domestic operation, U.S. harvesters, U.S. catcher-processors, and U.S. shore-based processing facilities will be engaged. The primary objectives of the project will be to:

1. More equitably allocate and more fully utilize for food purposes the herring resource of the eastern Bering Sea and the U.S.A. Fishery Conservation and Management Zone;

2. Expand market opportunites to U.S. fishermen for underutilized species such as Pacific herring and allow the domestic industry to itself test the economic viability of an offshore fishery for food herring;

3. Begin to provide the management agencies with additional and critically needed information on the abundance, distribution, age composition, and behavior of Pacific herring.

Biologists of State and Federal agencies as well as biologists from the private sector have suggested the types of useful information to be generated from such a research/experimental production project and how that information could be used. They include:

1. Age composition and population structure of the eastern Bering Sea herring stocks;

2. Relative abundance indices of the various year classes presently comprising the population;

3. Relative abundance and maturity data on younger age groups which are only partially recruited to the roe fishery;

4. Distribution data on the herring resource and stockmixing or segregation, including possible mixing with western Bering Sea stocks;

5. Spatial relationship between herring and the other pelagic resources in this area;

6. Oceanographic factors influencing the offshore distribution of herring during winter;

7. Schooling behavior of herring;

8. Acoustic signatures of herring relative to other midwater species in this area at this time;

9. Food habits of wintering herring concentration for use in Bering Sea biomass modeling efforts.

We would expect that an agreement would be signed within the project committee whereby the boats in our Association would obligate themselves to provide the specified services and vessel time as agreed upon with the research personnel. A primary vessel offered within the context of this project will be the AMERICAN NO. 1. As a catcher/processor this

ship will be able to maximize its time on the fishing grounds. The AMERICAN NO.1 together with the other vessels participating in this project would accept for use the various sampling and testing equipment such as XBT, CDT and hydroacoustic assessment equipment as requested by the biologists.

It is expected that 90 days of vessel time would be available in this fishery, unless the target of 10,000 metric tons was reached beforehand. We have had preliminary discussions with some of the companies which operate shore processing facilities in the Bering Sea region. They have expressed an interest in developing a winter food herring fishery. We would expect them to join this project with enthusiasm.

No funding of any sort is being requested for this project. The various survey and sampling efforts would be pursued as an integral part of our experimental production fishery. The various research agencies themselves would be responsible for supporting their own personnel, including their specific catch sampling and data analysis requirements.

The design of this research/experimental production project incorporates many of the thoughts and requirements expressed by agency biologists who participate in the management of the Bering Sea herring resource. Our Association is confident that we and the fishermen who join the operation could cooperatively and successfully work with the biologists responsible for the details of design and implementation of the research program.

We are ready to begin work on this project immediately. We seek Council endorsement. If it is granted, we firmly believe that the additional steps necessary to implement this cooperative venture can be and will be accomplished to the benefit of all concerned with the rational management and utilization of the Bering Sea herring resource.

Respectfully submitted,

Dennis Petersen

Dennis Petersen
President
NPFVOA

cc: Lucy Sloan, National Federation of Fishermen
Bob McVey, National Marine Fisheries Service
William Gordon, National Marine Fisheries Service