

M E M O R A N D U M

TO: Council, SSC and AP Members

FROM: Jim H. Branson
Executive Director

DATE: March 22, 1984

SUBJECT: Bering/Chukchi Sea Herring

ACTION REQUIRED

- (a) Consider approval of herring research RFP.
- (b) Consider establishing workgroup to study herring FMP options.

BACKGROUND

The Bering Sea Herring Workgroup has finished their preparation of the research fishery RFP [agenda item D-1(a)]. The Council should approve the RFP at this meeting if they wish the fishery to be conducted this coming winter.

We have received a memo from Pat Travers indicating the Herring FMP will not be approved as currently written. We have drafted a short summary of the Council's options and included Travers' memo under D-1(b).

We recommend that the Council set up a small workgroup to make a recommendation at the May meeting on how to proceed. The FMP is still in-house and should be held until that time.

FMP MANAGEMENT OBJECTIVES

The Council has determined that the priorities for fisheries which utilize the herring stocks which are covered by this plan are as follows:

1. subsistence fishery
2. inshore commercial fisheries
3. offshore domestic fisheries

Objectives

Based upon these priorities, the following specific objectives have been developed.

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.
 - (d) Development and maintenance of the inshore commercial fisheries.
2. Consistent with objective 1, promote full utilization of the herring resources by domestic offshore fisheries.
 3. Provide to the extent possible a unified management regime between federal and state jurisdictions.



UNITED STATES DEPARTMENT OF COMMERCE
 National Oceanic and Atmospheric Administration
 Office of General Counsel
 P.O. Box 1668
 Juneau, Alaska 99802
 Telephone (907) 586-7414
 March 11, 1984

TO: F/AKR - Bob McVey
 NPFMC - Jim Branson

FROM: GCAK - Pat Travers *Pat*

SUBJECT: Legal Considerations Concerning the Herring FMP

As we have discussed previously, our most recent legal review of the herring FMP preparatory to its final submission to the Secretary for approval has led me to raise certain questions for your consideration. The purpose of this memo is to record these issues to assist you in deciding upon a course of action.

During our latest legal review of the FMP, I discovered somewhat belatedly that, for three of the past four years, the State of Alaska has so managed the inshore herring fisheries that they have very substantially exceeded the acceptable biological catch (ABC) prescribed by the plan for the combined inshore and offshore herring fisheries. Of even greater significance is the fact that implementation of the FMP during these years would have had absolutely no necessary impact on these results. The primary reason for this is that the management unit or "fishery" covered by the plan is limited to herring, which is fished "predominately" within State waters, and thus is not subject even to the threat of Federal preemption under Magnuson Act §306(b) should State management interfere with the FMP's implementation as envisioned by the Council.

This situation gives rise to two parallel series of questions about the FMP. The first of these concerns the FMP's necessity under Magnuson Act §302(h)(1) and its cost effectiveness under Executive Order 12291. The second concerns the FMP's compliance with certain of the National Standards of Magnuson Act §301(a).

The questions about the FMP's necessity and cost effectiveness are quite straightforward: if, as a practical matter, the FMP will have no effect on the management of herring, can the herring fisheries truly be said to "require conservation and management" by the Federal Government? Do any benefits outweigh the substantial administrative costs of the FMP's approval and implementation under such circumstances? In the past, some of us have tended to assume that the FMP was necessary to permit and limit an offshore herring trawl fishery in those rare years when the



ABC was not fully taken by the inshore fisheries. This might indeed have been true before the January 1983 amendments to the Magnuson Act, when an approved FMP was necessary before even emergency regulations could be adopted for a fishery. Now, however, approval of an FMP is not a prerequisite for emergency regulations. Thus, in years when the Council and NOAA concluded that an offshore fishery was appropriate, it would now be possible for them to prescribe the conditions under which that fishery might take place by emergency regulation without first adopting an FMP. Emergency regulations might be similarly adopted to limit or forbid an offshore fishery in years when the ABC was fully taken by the inshore fisheries. I understand that the latter situation has thus far been precluded by the fact that the vessels that would take part in an offshore fishery are all arguably registered under the laws of the State of Alaska, which has imposed a ban on offshore herring fisheries north of 56° North latitude.

Assuming that the FMP were submitted for approval, the fact that it would have no effect on State management of the inshore fisheries at levels well above the ABC it prescribes would subject it to criticism under three requirements of the National Standards set forth in Magnuson Act §301(a). These are the requirement that FMP measures prevent overfishing (National Standard 1); the requirement that, to the extent practicable, an individual stock of fish be managed as a unit throughout its range (National Standard 3); and the requirement that allocation of fishing privileges among United States fishermen be fair and equitable to all such fishermen (National Standard 4). The objection under the third of these requirements, that of "fairness and equity", could probably be addressed adequately by strengthening the social and economic arguments in the FMP and its underlying record that support the preferential allocation of herring to the inshore fisheries. I have relied exclusively on biological arguments in my own past evaluation of this allocation. These tend to be undercut by the FMP's inability to assure that the herring saved by stringent limitations on offshore mixed-stock fisheries will not be taken by similar fisheries within three miles, especially the Aleutian summer fishery. They thus need to be supplemented by social and economic considerations that may be significant, but have not until now been articulated fully in the FMP and its record.

The other two objections, concerning prevention of overfishing and management throughout the range, could probably be put to rest fully only if herring were included in some larger management unit, such as one combining herring with all groundfish, that is fished "predominately" in and beyond the FCZ, making preemption of inconsistent State management possible under Magnuson Act §306(b). I am, of course, aware

that the Council would, in all likelihood, find such a change to be inconsistent with its policy of general favor towards the status quo of the herring fisheries as currently managed by the State of Alaska. I raise the suggestion here mainly to suggest the possibility that this policy might be carried out most effectively without an FMP.

Please let me know if I can be of any help as you decide how to proceed in light of these considerations.

cc: Thorn Smith
Dick Marshall
Jim Glock

FILE NO. 502-10.8(14)

OPTIONS FOR COUNCIL INVOLVEMENT IN HERRING MANAGEMENT

General Counsel (GC) has provided the Council with a memo (Appendix I) outlining several concerns they have with the current Bering/Chukchi Sea Herring FMP and with our approach to herring management in general. The primary problems are (1) the FMP will manage the fisheries on the resource only in the FCZ and not throughout the range of the resource, and, related to this, (2) the FMP does not empower the Secretary to prevent overfishing if it occurs within State waters. These two concerns have arisen because in three of the past four years the harvest in State waters has substantially exceeded the total harvest allowed by the FMP's ABC formula (Appendix II). This has led GC to the conclusion that either (1) an FMP is not needed because State management is adequate, or (2) the FMP is not cost effective for what it might accomplish. In either case, the chances of Secretarial approval are extremely slim. In the memo, Travers briefly discusses optional approaches which we have expanded and analyzed.

OPTIONS

The Council has two major options, each of which has sub-options. These options are:

1. Take an active role in herring management
 - (a) submit the FMP as currently written;
 - (b) change the FMP; and
 - (c) include herring in the BS/AI Groundfish FMP.

2. Have a greatly restricted or no role in herring management
 - (a) have no FMP and don't manage herring; and
 - (b) recommend a Secretarial plan (PMP or FMP).

1. Submit the FMP as currently written.

Travers provides a fairly compelling argument that submitting the FMP "as is" is futile, and that NMFS will reject it. Therefore, this does not appear to be a viable option.

2. Change the FMP.

Although the memo does not state it clearly, Travers has advised us that a "herring only" FMP could be acceptable (although no one can guarantee acceptability, of course). For example, an FMP authorizing an experimental fishery on an annual basis could be acceptable. An annual commercial quota offshore might be acceptable as well if the arguments were developed. And, an approach similar to the current one may be acceptable if a substantial economic analysis is included in the FMP. This approach may be less likely to succeed, however, because a major concern is that the FMP says that offshore fishing is allowed but makes it nearly impossible to occur, thereby raising the "cost effective" flag. However, restricting offshore herring fishing can be justified on socio-economic as well as biological grounds so there is no need to guarantee equal access to the resource by offshore fishermen. A somewhat more liberal approach may therefore be acceptable.

If the discrepancy between ABC and the inshore harvest were reduced the problem might not be so great. The Council could change the ABC formula or exploitation rate based on the Weststad-Fried analysis, for example. Or the Council could establish an OY range or exploitation rate range.

3. Include herring in the BS/AI Groundfish FMP.

Under this approach an annual commercial or experimental fishery quota would be established as for other groundfish species. Because the majority of the harvest of the groundfish complex occurs in FCZ waters, the Secretary would have a legal basis for preemption if overharvest occurs in inside fisheries. Thus the FMP would manage the resource throughout its range and prevent overfishing.

4. Have no FMP and don't manage herring.

If the Council believes that there is not a great enough need to allow off-shore fishing, or that the State's management program is sufficient, they could accept this option. Offshore fishing on an occasional basis by domestic operations could be allowed (or prevented) by Emergency Regulations (ER). However, ERs in the absence of a PMP or FMP are a NMFS function, not a Council function, and the Council would not necessarily have any role in herring management. Another shortcoming of this approach is that ERs could address domestic fishing only and joint ventures could not be permitted with this method.

5. Recommend a Secretarial Plan (PMP or FMP).

This option is contrary to the Council's philosophy of managing Alaskan fisheries. Any Secretarial plan would be along the lines of at least one option considered by the Council. However, with either type of plan in place the Council could request the Secretary to promulgate an ER to allow a domestic or joint venture fishery.

CONCLUSIONS

The main problem Travers has identified seems to be that the State does not feel any pressure to manage along the lines of the FMP. Many of the conservation constraints in the FMP were incorporated primarily to address the State's concerns and would not otherwise be there. However, even though they voted for the FMP, the State has chosen not to manage in accordance with the FMP's provisions, leading to the large discrepancy between ABC and the inside harvest. There are four ways to address this discrepancy:

1. convince the State to manage in accordance with the FMP as written and keep the same ABC approach;
2. change the ABC approach to echo State management more closely (i.e., liberalize the management approach);

3. table the issue of federal herring management until a greater need arises;
4. tell the Secretary to make the decision and manage the fishery himself.

North Pacific Fishery Management Council

James O. Campbell, Chairman
Jim H. Branson, Executive Director

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M E M O R A N D U M

TO: Council, SSC, and AP members

FROM: Bering Sea Herring Workgroup

DATE: March 7, 1984

SUBJECT: Bering Sea Herring Research

In December 1983 the workgroup submitted a report to the Council which concluded that herring research in the Bering Sea could be most expeditiously conducted by commercial vessels under contract to the Council. We further recommended that an allocation of herring be granted in exchange for vessel time. We have attached a copy of the December report for your convenience.

Also attached is a draft "Request for Proposal" (RFP) developed to acquire the vessel time necessary to carry out a detailed survey of herring on the Bering Sea wintering grounds. It should be noted that the RFP was written to support the collection of scientific data and not to support the development of an offshore fishery. Any decision on an offshore fishery should be made after the data are collected and analyzed.

The RFP survey estimates that it will take four vessels approximately 18 days each (or a total of 72 vessel days) to complete a 3,350-mile trackline through a 20,000 square mile area. Fewer vessels could not cover the required survey trackline and still have time to harvest the allotment after completion of the survey. Problems involved with coordinating the research and staffing vessels with qualified scientific personnel preclude the use of additional vessels.

Certain clarification will be needed before the RFP can be completed and released.

1. How will the Council or NMFS make the special allocation? The Council may wish to obtain a legal opinion on the procedure before releasing the RFP.
2. The proposal has been written so that the allocation would be made to domestic fishermen. This does not answer the question regarding joint ventures. Could a foreign processor be issued a permit to purchase herring? If not, the RFP should be modified to specify domestic processing only.
3. A commitment to support the scientific costs is needed before the RFP is released. A cost estimate for collecting, processing and analyzing the scientific data is attached to this memo.

If the Council wishes to proceed with the RFP, vessels should be selected as soon as possible. There are many details pertaining to survey operations which cannot be resolved until vessels are selected and meetings can be held between the scientific party and the vessel captains. A high degree of cooperation and coordination is needed to insure the safety of vessels and personnel and to minimize logistic problems. It must also be recognized that hiring properly trained scientific personnel to carry out the survey work may be a very difficult task.

DRAFT
REQUEST FOR PROPOSALS
RESEARCH VESSELS - HERRING SURVEY

INTRODUCTION

Pacific herring in the eastern Bering Sea have been fished continuously since 1959 first by Soviet and Japanese trawlers on the herring winter grounds northwest of the Pribilof Islands and in more recent years by domestic fishermen in coastal waters during the spawning season. While the trawl fishery was extant, monitoring of the resource was through the trawl catch per unit effort (CPUE). The CPUE series showed an increasing trend through the 1960s followed by a severe downward trend through the early 1970s and then signs of stock increase evident when directed herring trawl fisheries were ended in the late 1970s. As offshore trawl fisheries were restricted, inshore roe fisheries developed and a new monitoring methodology was established for fisheries located on the spawning grounds. This monitoring of herring abundance during the spawning season is accomplished by aerial enumeration of the total surface area of herring schools present with biomass obtained using estimates of the tons of herring per unit surface area. The method has been employed for only a few years, and the validity of the method as a measure of absolute abundance cannot be clearly established at this time. It is likely that the inshore fisheries during the spawning period will continue to be the dominant herring fishery in the eastern Bering Sea, and aerial assessment of the resource will be the primary stock monitoring tool.

It has been proposed that alternative assessment methods be examined. Of the various alternative methods, the North Pacific Fishery Management Council (NPFMC) has chosen to pursue hydroacoustic-trawl assessment on the winter grounds. However, previous attempts to survey herring on the winter grounds have indicated that an inordinant amount of research vessel time may be needed to obtain a reliable research vessel time may be needed to obtain a reliable biomass estimate. Consequently, better knowledge of the distribution and behavior of the resource is required before it will be possible to realistically evaluate the potential for implementing a hydroacoustic-trawl survey.

To provide needed background information, the Council is exploring the merits of using commercial fishing vessels to obtain data on the distribution, availability, and behavior of herring in the Bering Sea wintering grounds located northwest of the Pribilof Islands (Figure 1).

Because of limited financial resources the Council is considering providing a domestic allocation of herring in exchange for the required vessel time. This document was developed to solicit proposals from parties interested in participating in the survey in exchange for an allocation of herring. Receipt of proposals by the Council does not obligate the Council to proceed with the survey. The major factor in determining the importance of the scientific data to be gathered will be the amount of herring required to provided the vessel time.

PROGRAM OBJECTIVES

The objectives of the survey and subsequent observer program are to collect data required to:

1. Estimate the location and range of herring on the winter grounds.
2. Estimate the distribution of herring within the grounds.
3. Estimate the general size and age-length composition of herring schools.
4. Investigate the distribution and schooling behavior of herring schools within the water column during day and night.
5. Assess the amount of mixing with other species.
6. Collect data for studies of stock composition/origin, age composition, and sexual maturation.
7. Evaluate the feasibility of using standard research vessel survey techniques for assessing herring abundance including assessment of the vulnerability of herring to acoustic detection and trawl sampling.

SURVEY PROGRAM

The survey is not intended to produce an estimate of herring abundance, rather its primary purpose is to locate, delineate, and sample concentrations of herring on the winter grounds.

The survey will be conducted in a 21,000 square nautical mile area northwest of the Pribilof Islands (Figure 1). The area extends from 57°00'N to 60°00'N between the 100 m and 200 m isobaths. Survey operations will be carried out by four (4) vessels along a 3,350 nautical mile zig-zag trackline which has an average distance between adjacent transects of 7.0 miles (14 miles between consecutive transect end points on each side of the trackline).

Each of the vessels will be assigned to cover approximately one-fourth of the trackline during an 18-day period (approximately January 10-27). The basic vessel work day will be about 13 hours (0700 to 2000 hrs). The total of 18 vessel days specified for each vessel's survey work is based on the following: (1) 8 days (13 hour days) required to run an 837 (= .25 x 3,350) nautical mile trackline at 8 knots; (2) 4 days (13 hour days) required to complete trawl sampling while running trackline (assumes approximately 6 hours of trawl sampling and associated activities for each 13 hours spent running transects); and (3) 6 days for weather related and operational problems and to allow for possible opportunities for special sampling efforts.

Standardized echo sounder records will be collected continuously along the trackline. When fish echo sign is detected, midwater trawl sampling will be conducted to determine its species/biological composition. Previous experience suggests this sampling will be limited to between 2 and 3 hauls per day, except when major concentrations of fish are encountered.

Sampling outside the 0600-2000 hour time period will be conducted intermittently to obtain information on diel changes in the behavior and availability of herring. Some sampling will be done using bottom trawls, mainly in areas where off-bottom echo sign is infrequently observed. Because herring are likely to be very patchily distributed within most of the survey area, the amount of time devoted to trawl sampling is expected to vary significantly

between and within vessels. Sampling is likely to be most intensive near the shelf break where mixed schools of pollock and herring are expected to occur.

Completion of the echo sounder/trawl sampling survey of the pre-determined trackline is the first priority of the survey research. It is reasonable to expect that the trackline survey may be completed by one or more of the vessels in less than 18 days, particularly if herring are concentrated at only a few locations and/or if ice covers parts of the area. The use of vessel time in excess of that needed to complete the trackline survey will depend largely on the observed distribution of herring and subsequent judgment made by the scientific personnel in consultation with vessel captains. However, the entire 72 vessel days of survey research will be completed prior to beginning commercial fishing operations. It should be noted that although herring caught during the survey's research trawl sampling may be retained by the vessels as part of their allocation, this may only be done if it does not impede the survey operations.

OBSERVER PROGRAM

Upon completion of the survey program, vessels used in the survey will be allowed to fish commercially for herring. During this period one or more scientific observers will remain aboard the vessel. Data on effort, composition of catch, and location will be recorded. Scientific sampling of catch will occur.

PROGRAM TERMINATION

All fishing will terminate when the herring allocation is reached or on April 1, 1985, whichever comes first.

PREPARATION AND SUBMISSION OF PROPOSALS

The NPFMC wishes to engage four (4) U.S. fishing vessels between January 1 and Mach 31, 1985. The Council will consider an allocation of herring to those vessels in exchange for vessel time dedicated to herring research as specified in this document (see sections on survey program and observer program).

Owners or operators of vessels wishing to participate in this fishery should submit to the North Pacific Fishery Management Council a written proposal stating the amount of herring in metric tons required to fish within the terms specified in this document. Vessels must conform to the basic vessel and crew requirements listed in Appendix A. Proposals will not be accepted from individual vessels. Only those jointly submitted by four (4) vessels will be considered.

Proposals should be submitted using the format provided in Appendix B.

Proposals are due at the offices of the North Pacific Fishery Management Council in Anchorage, Alaska by 1200 noon on _____, 1984. Proposals sent by U.S. postal service should be mailed in time to arrive by that date. The mailing address is as follows:

North Pacific Fishery Management Council
P.O. Box 103136
Anchorage, AK 99510
Attn: Herring Survey

PROPOSAL ACCEPTANCE OR REJECTION

Proposals will be accepted or rejected within _____ days of the due date. The Council reserves the right to reject any and all proposals.

EVALUATION FOR AWARD

The offer schedule, vessel specification, and any other pertinent information provided by the offeror will be considered in the evaluation. The following factors and their relative weights will be used to evaluate the proposals:

- | | |
|---|-----|
| 1. Amount of herring requested | 65% |
| 2. Qualification of vessels in excess of minimum requirements | 30% |
| 3. Optional items -- vessel possesses one or more of the following: | 5% |

Sonar - either "searchlight" sonar or electronic scanning sonar.
Cable type netsounder (as opposed to acoustic-link type).
Color scope interfaced to echo sounder.
Loran-C plotter.
Codend catch indicator system.

In the event the Council determines that the overall level of herring being requested is acceptable, the award will be made to the offeror whose proposal receives the highest overall score.

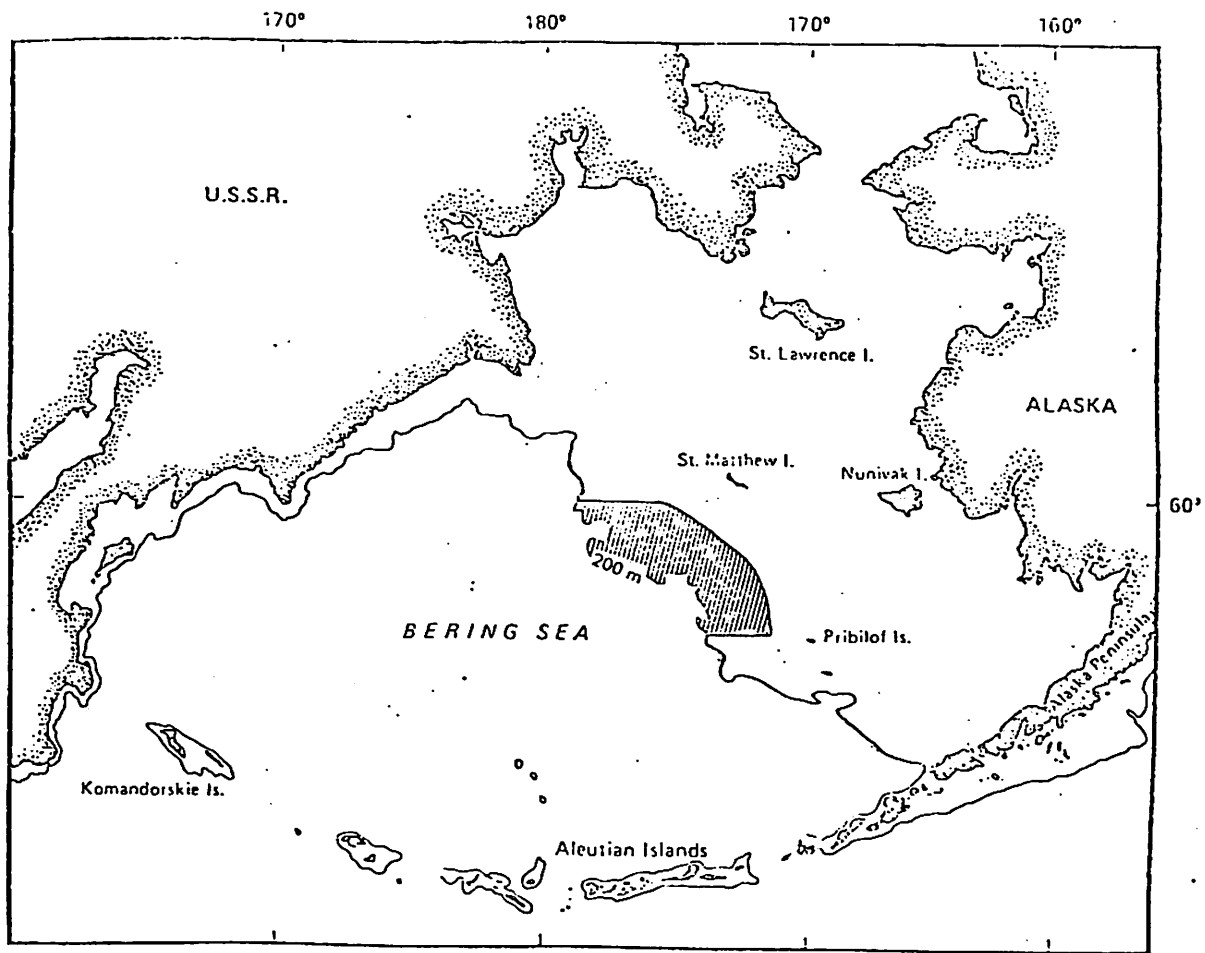
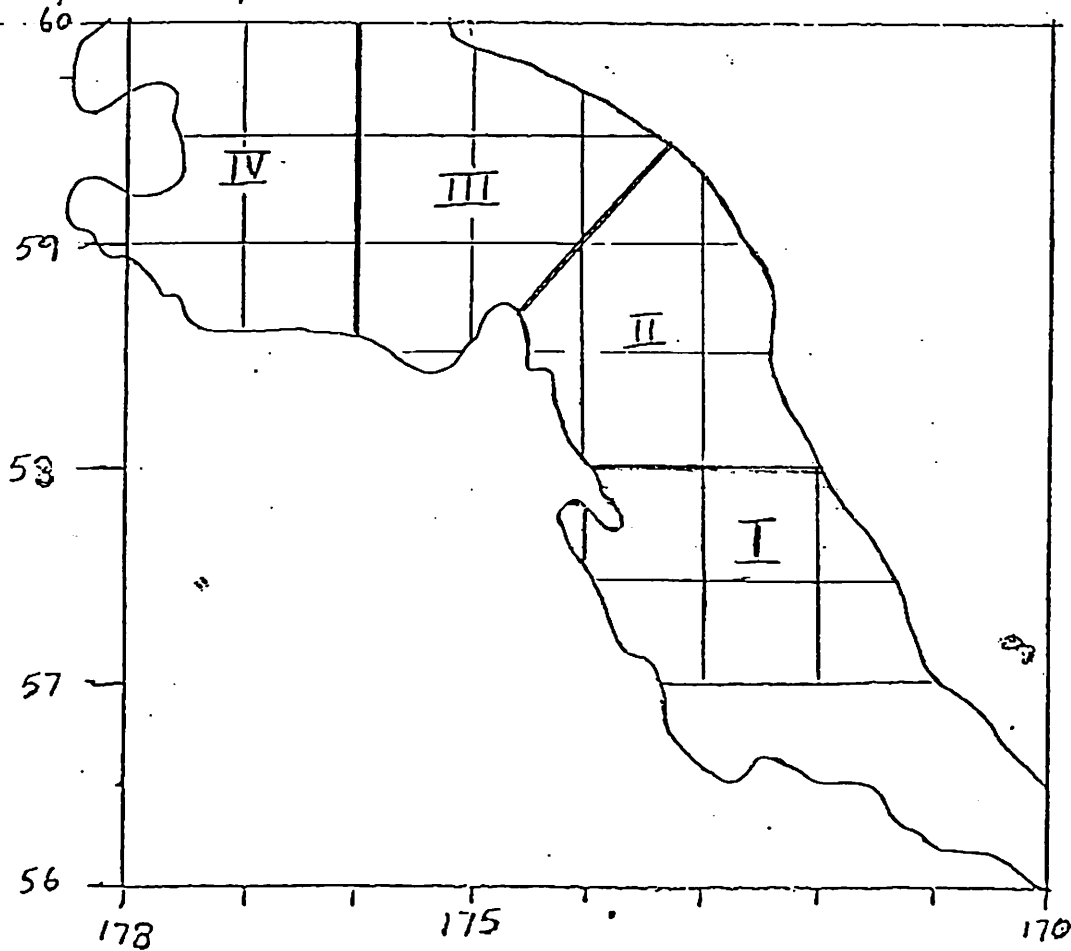


Fig 1. Location of Proposed eastern Bering Sea herring winter Survey
 Fig 2. Survey Area subdivided for 4 vessels



APPENDIX A

CONTRACT SPECIFICATIONS

A. Period of Contract

The Council intends that the survey and subsequent fishery will begin on or about January 10, 1985, and continue not later than March 31, 1985. Although each Offeror is required to specify a proposed Starting Date, the actual Starting Date is a negotiable time, subject to some adjustment (approximately 5 days) if deemed significant to the Contract and/or the Council. Details regarding the division of the vessel time into survey and commercial fishing periods are described in the Request for Proposals under sections entitled "Survey Program" and "Observer Program".

B. Departure and Return Point

Point of departure and return for scientific party will be Dutch Harbor, Alaska. Travel times from Dutch Harbor to survey site (Figure 1) and return are not included in the 18-day survey period.

C. Payment

Payment under this contract shall be in the form of an allocation of herring within the eastern Bering Sea. This allocation shall be available for harvest by vessels participating in the program after the completion of the survey program (approximately January 28, 1985). All fishing must stop by April 1, 1985 regardless of the level of harvest. No guarantee of the harvest of the allocation is made. No carryover into future years of the allocation is allowed.

D. Minimum Vessel Requirements

1. Minimum overall length of 100 feet.
2. Minimum main engine continuous horsepower: 850.

3. Completely rigged and ready to fish midwater and bottom trawls, including dual net reels (or split net reel). Preference will be given to vessels able to utilize same doors for midwater and bottom trawling, or have the ability to rapidly interchange midwater and bottom trawl doors. Contractor will supply all trawl gear. This includes midwater trawls, net sounder, bottom trawls, and all accessory gear/equipment (doors, dandylines, rigging, hardware, web, twine, etc.) in sufficient quantity to be able to conduct survey without causing significant loss of time due to lack of spare gear/equipment. The Council will provide webbing material for small mesh (1-1/2 inch stretched measure) codend liners which will be used in all trawls throughout both the survey and commercial fishing periods.
4. Appropriate modern electronic navigation, communication, and fish detection equipment, including but not limited to: SSB and VHF radios, two automatic Loran-C's, two radars, and one or more echo sounders. An echo sounder with a paper recorder must be available for operation by the scientific party at all times during survey operations. The frequency of this echo sounder must be between 25 kHz and 75 kHz. Radio facilities/frequencies must be such as to enable contacts with coastal radio stations and efficient communication among the 4 survey vessels.
5. Clean flush deck area, including space for dumping (deck bin), sorting, and processing trawl catches. This includes space for a Council-owned catch sorting table (approximately 4' x 8').
6. Dry storage area of approximately 75 cubic feet in deck house for holding scientific equipment and supplies; desk counter or table space of about 15 square feet for data recording and analysis.
7. Potable fresh water supply adequate for vessel and personal use of about three weeks; laundry facilities; i.e., automatic washer and dryer.

8. Vessel must be ballasted to maintain sea-kindliness; if crab tanks are used to ballast or trim the vessel, overboard (not on-deck) discharge must be provided.

E. Crew Requirements

The crew shall be experienced in midwater and bottom trawl fishing. The minimum crew shall consist of (a) a Captain, (b) two fishermen, (c) cook-fisherman, and (d) engineer-fisherman. The Captain shall be competent in the use of modern electronic navigational and fish-detecting equipment. The Captain shall have a minimum of three (3) years fishing experience as a master of a comparable-sized trawler and at least five (5) years fishing experience as a master (not necessarily of a trawler) in Alaska coast waters. At least two crewmen shall have competent knowledge of a trawl construction and repair. The crew, when not required by the Captain for vessel operations, will assist the scientific staff in sorting the catch and obtaining biological data.

F. Coast Guard Inspection

The issuance of a notice to proceed will depend on the vessels passing a Coast Guard fire and safety inspection. Unless the Coast Guard inspection is performed earlier than two weeks before the vessel's scheduled departure and Coast Guard certification obtained no more than one week before scheduled departure, the Council may terminate this contract without any payment to the Contractor under this contract. Furthermore, the Contractor, in the event of such termination, may be liable to the Council for excess procurement costs.

G. Scientific Accommodations

The scientific party will consist of a minimum of two (2) people per vessel and may include females. Preference will be given to vessels which can accommodate up to three (3) scientific personnel. Suitable sanitary accommodations must be available. One double berth, private stateroom must be available for female employees if needed. The scientific party will provide its own bedding. Clean fitted mattresses and covers will be provided by the Contractor. Meals

shall be provided by the Contractor and will include three meals per day plus a between meal snack. Meals should be well balanced with a proper variety of nutritious foods.

F. Special Provisions

1. Although the overall conduct of the survey will follow pre-determined plan, the details of vessel operations during the survey program will be determined each day by the Chief Scientist in consultation with the vessel Captain. Trawl sampling done outside the basic (approximately 0600-2000 hr.) work day will be done in such a manner as to minimize work schedule problems for the crew.
2. The Chief Scientist has final authority during the survey program except for work stoppage resulting from uncontrollables such as unsafe weather and sea conditions and other safety-of-life-at-sea considerations as determined by the vessel Captain.
3. The Contractor shall provide all operating expenses of the vessel (including fuel) exclusive of echo sounder paper supplied by the scientific party.
4. The Contractor shall provide arctic-type survival suits for all vessel crewmen. Adequate dry storage space for all survival suits, including those belonging to Government personnel, will be provided.
5. Failure of a vessel to be available to begin work on its agreed on starting date and time may result in a reduction of the total herring allocation. The reduction would be equal to the fraction that the delay in station time represents of the total survey time. Also, vessel/equipment problems which cause survey operations to be terminated for more than one day may result in extension of the survey period.

6. The Contractor shall provide safe, efficient working conditions and accommodations to the scientific personnel working on board. The Contractor, its agents, subcontractors, and employees, including the Captain, and crews of the vessels, shall not harass, assault, oppose, impede, intimidate, interfere with, or make unwelcome advances toward any member of the scientific party. Violation of the Contractor's obligation under this Special Provision may result in termination of the contract and in consequent liability of the Contractor to the Council for any costs incurred. Violation of the Contractor's obligation under this provision may result in the criminal and/or civil prosecution of the person involved by either the Council or affected Scientific personnel, as provided by applicable law.

APPENDIX B
PROPOSAL FORMAT

The following general format should be used in the submission of proposals.

I. SCHEDULE

- A. Name and Address of Offeror
- B. Allocation of Herring Required in Metric Tons
- C. Proposed Departure Date from Dutch Harbor
- D. Special Conditions

II. VESSEL SPECIFICATIONS

- A. Vessel 1
 - 1. Vessel name
 - 2. Owner
 - 3. Length
 - 4. Main engine horsepower
 - 5. Rigging
 - 6. Navigation, communication, and fish detection equipment (list)
 - 7. Special item (see Evaluation of Award)
- B. Vessel 2
(same as above)
- C. Vessel 3
(same as above)
- D. Vessel 4
(same as above)

12/5/83

REPORT TO THE NORTH PACIFIC FISHERY MANAGEMENT COUNCIL
ON
BERING SEA HERRING RESEARCH

In September, the Council appointed a working group of SSC and Herring Plan Development Team members to address Bering Sea herring issues. The working group was instructed to:

- (a) Identify knowledge gaps, particularly in offshore stocks.
- (b) Look at experimental designs to fill these gaps.
- (c) Consider the utility of the North Pacific Fishing Vessel Owner's Association proposal in light of the above exercise, including costs of obtaining data.
- (d) Make recommendations concerning the proposal or a modification thereof, considering necessary phasing of research and the need for a multi-year project.

The working group met on November 1 and on December 5. A list of participants is attached (Appendix 1). This report presents the findings of the group.

The group concluded that the lack of knowledge of Bering Sea herring stocks fell into four general categories: abundance, identification of stocks, distribution of stocks and stock-recruitment relationships. Some of these topics were previously addressed in a document prepared by Council staff and the Herring Plan Development Team (PDT) entitled "Bering Sea Herring Research Needs" which was submitted at the September Council meeting (Appendix 2).

The group agreed that the goal of the research program is generation of information on the structural makeup of the herring population, its distribution and size to allow evaluation of alternative harvesting strategies.

Research to obtain basic information can be separated into inshore and offshore components because of differences in the objectives of the research and because of the logistics of research. Inshore waters, although remote, are more accessible than offshore areas. Further, individual stocks separate on the spawning grounds and can be sampled and quantified to some degree. Offshore aggregations are difficult to locate and assess and may be a mixture of many spawning stocks. Severe winter weather and sea ice also hampers the operation of research vessels.

Inshore Research

Recent research has been primarily focused on inshore waters because of a need to obtain basic resource data for management of the inshore fishery. The Draft Bering/Chukchi Sea Herring Fishery Management Plan gives priority to subsistence and domestic fisheries in inshore areas. Foreign and domestic offshore fisheries for herring are prohibited or severely restricted.

The Alaska Department of Fish and Game (ADF&G) has been using aerial surveys since 1978 to estimate the abundance of spawning stocks of herring. The resultant biomass estimates are used for in-season management and to set annual harvest guidelines. The surveys provide the best estimates of abundance possible under current budget and regulatory constraints and technological limitations. Further research is needed to determine the accuracy of the estimates.

Data are routinely collected by ADF&G to determine basic biological parameters including length, age, growth, mortality and stock identity. The Council has contracted the Fisheries Research Institute, University of Washington to conduct scale pattern analyses on individual spawning stocks of herring. Preliminary results of the two-year study suggest that some individual spawning stocks can be identified in a mixed stock fishery. If the final report supports this conclusion, scale analysis will be an essential part of offshore stock assessment.

The ADF&G has prepared research proposals designed to improve inshore stock assessment by tagging, through the use of hydroacoustic surveys and by utilizing ultrasonic transmitters. The objectives of these proposals are

outlined in Appendix 2. The complete proposals have been provided by ADF&G to the Council and SSC.

In general, the knowledge of spawning stocks in inshore areas has improved significantly in the last 5 years. Knowledge of abundance and location of spawning stocks, age distribution, etc., of herring during the inshore spawning season is much greater than information available on the total abundance and distribution of stocks in offshore areas.

Offshore Research

Most research in inshore waters relate to spawning stocks adjacent to spawning grounds and does not address information on total abundance, migration and stock distribution in offshore areas. Research in offshore waters is difficult because the herring aggregate in offshore waters only during the winter, costs for large research vessels needed during the winter months is high, adverse weather and ice conditions limit operating time, and the vast area involved imposes difficulties in the location and assessment of herring aggregations.

In the past it has been considered difficult if not impossible to identify individual stocks in a mixed-stock aggregation.

The working group concluded that the primary objectives of the offshore research program should be:

- (1) Determine the location and range of winter grounds.
- (2) Determine the distribution of herring within the grounds.
- (3) Obtain age, length, weight, maturity, abundance indices and scales for stock distribution studies.
- (4) Estimate the general size and age-length composition of herring schools.

- (5) Investigate the diurnal distribution and behavior of herring schools within the water column.
- (6) Assess the degree of mixing with other species.
- (7) Evaluate the results obtained to determine if they can be applied to herring management.

There are several means of collecting information required to accomplish the above objectives. The committee considered four methods. They are:

1. Research program using government or chartered research vessels.

The National Marine Fisheries Service has undertaken herring research in the Bering Sea during the winter with the R/V Miller Freeman. It was difficult to locate herring aggregations in the time allotted and weather conditions restricted operations. It may be possible to successfully achieve the above objectives if 3-4 months ship time is available. Minimum costs are estimated to be \$500,000-\$750,000 per year.

2. Research program using commercial fishing vessels.

If an offshore herring allocation is granted, commercial vessels may be willing to support the research program as a condition for obtaining fishing privileges. Costs of this approach might be limited to personnel, supplies, and data processing analysis.

3. Observer program on commercial vessels.

Observers can be placed aboard commercial vessels for a relatively small cost. However, data collected are limited to samples of the catch, effort, and area of catch. There could be no directed research and there could be no control over fishing activities.

4. Combination of commercial vessels and a research vessel.

A commercial fishery may be permitted with conditions as provided in 2 or 3 above. A government or chartered research vessel would be available for structured research when herring aggregations were located by the commercial fleet, but would conduct alternative research on other species until herring were located.

The working group concluded that a combination of commercial and research vessels has the greatest potential for success. However, if funding and scheduling problems preclude the use of a research vessel, a project using only commercial fishing vessels is a viable option. Valuable information on relative abundance, distribution, and behavior could be obtained as well as fish samples for scale pattern analyses and other biological data.

The proposal by the North Pacific Fishing Vessel Owners Association (Appendix 3) is an innovative and responsible approach to the problem of conduct of research in the eastern Bering Sea. It is an example of the fishing industry's interest in the status and future development of fisheries in the eastern Bering Sea. However, the proposal would require modification in order to provide maximum information.

Prior to implementing offshore fishing the Council must allocate tonnage and approve a conditional offshore fishery. At the present time the proposed herring FMP gives priority to inshore fisheries. An apportionment to a winter offshore fishery will occur only in the event a surplus exists after all other harvests are taken into account.

Given the uncertainties of funding, research vessel availability and costs of using commercial fishing vessels, we believe the Council should proceed with a request for proposal for herring research by commercial vessels. It is unlikely, however, that such a project could be executed in 1984 because fishing vessels need more time to program fishing schedules.

The group reviewed a draft request for proposal which included an experimental design for offshore research with commercial vessels. Further work is necessary before it is ready for Council consideration. A request for proposal will be submitted to the Council at the next meeting.

LIST OF PARTICIPANTS

Donald Bevan, SSC Member
Robert Burgner, SSC Member
John Burns, SSC Member
Barry Collier, NPFVOA
Al Didier, PMT Member
Steve Fried, PMT Member
Jim Glock, PMT Member
Steve Langdon, SSC Member
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Donald Rosenberg, SSC Member
Jeff Stephan, Council Member
Vidar Wespestad, PMT Member
John Winther, Council Member

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 Gluck
From: Vidar Weststad
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 FIF 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 addressed 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.

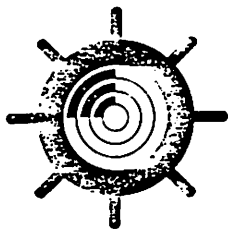
Quantification of the herring resource in off-shore waters may be rather simple and straight forward given the right conditions, but based on our general lack of knowledge of off-shore distribution and previous attempts to assess herring in the central Bering Sea this is presently not the case. Japanese 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 \$60,000-700,000. 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 conjunction 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 supplemental 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.

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
Anchorage, AK 99510

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.

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 opportunities 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.

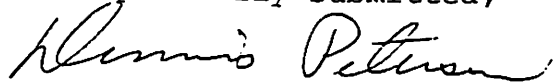
It is expected that 90 days of vessel time would be available in this fishery, unless the target of 10,000 metric tons was reached before hand. We have had preliminary discussions with some of the companies which operate shore processing facilities in the Bering Sea region. They have expressed an interest 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
President
NPFVOA

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



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Washington, D.C. 20230

THE ADMINISTRATOR

F/M11:PNE

March 23, 1984

TO: GCAK - Thorn Smith

FROM: F/M11 - William P. Jensen *William P. Jensen*

SUBJECT: Informal Comments on the Bering/Chukchi Sea Herring Fishery
Management Plan

We have completed our review of this draft of the Bering/Chukchi Sea Herring Fishery Management Plan (FMP). We understand that the North Pacific Fishery Management Council (Council) will be voting soon on withdrawing the FMP. If the Council decides to resubmit the FMP, we would like an opportunity to review another draft before it is submitted for Secretarial review. The FMP cannot be approved in its present form since the RIR and RFA are incomplete. We are providing you with our comments on the compatibility of the subject FMP and the requirements of the Regulatory Flexibility Act and Executive Order 12291. Additional comments that go beyond the scope of the RFA and the Executive Order and some comments from our Office of Protected Species and Habitat Conservation are also offered.

Analysis of Alternatives. The draft RIR does not analyze the same set of alternatives as the EIS. The RIR examines the Council's recommendation, managing via a PMP (which is reasonably close to a "no action alternative," except for administrative costs of preparing a new PMP), and a procedural alternative of combining the Herring FMP with Bering Sea Groundfish FMP. The last alternative probably does not merit public discussion because it does not involve issues of substance to the public but only administrative efficiency. In contrast, the EIS discusses alternatives that the Council has considered and that affected user groups have advocated. The set of alternatives in the EIS is the set that we recommend be discussed in the RIR. The RIR can not meet the criteria of E.O. 12291 and the RFA until these other alternatives are analyzed. The FMP should not be acted upon by the Council until after the RIR is completed and the public has opportunity to review it in conjunction with the FMP.

Impact on incidental catches of other prohibited species. The RIR, for the preferred alternative, provides a thoughtful, well written analysis of the measures and the rationale for their inclusion. The EIS mentions one area of potential impact that is not in the RIR. That is the impact of closing the Herring Savings Area on the incidental catch of salmon. Perhaps the Low Lee Low model used to analyze closures in the Bering Sea FMP could be applied to the Herring Savings Area.



Adequacy of data. Some of the data in the FMP is not current. I realize that there are always lags but the gap is great in the FMP. The incidental catch of herring uses 1981 as the latest data. Given the importance of this parameter to the plan, the 1982 and 1983 data should be included. More current data on exvessel/wholesale prices, ABC, and inshore catch should be included.

Other comments, not necessarily RIR related

<u>PAGE</u>	<u>COMMENTS</u>
1-10	Why does the FMP state that the Herring Savings Area will be closed to a nation's trawling vessels from October 1 through March 31 but the EIS (P. 13) states that the area will be closed to any nation which reaches its AIC or PSC prior to January 1?
7-42	In Table 7-7, the following groups of number are incorrect. For 1979 harvest the total should be \$11,754 and the estimated value (dollars) should be \$7,693,700. For 1982 - the estimated value in (dollars) should be \$7,901,100.
8-10 - 8-11	Section 8.3.1.2 - <u>Apportionment of AIC</u> - There is some confusion in the discussion of this apportionment. The FMP states that AIC will automatically be apportioned with and inseparable from the groundfish DAH. The Bering Sea Groundfish FMP requires that unused portions of DAH be released to TALFF. The herring FMP does not clearly state how the remainder of the herring AIC will be affected by the Bering Sea Groundfish reserve releases particularly since the herring FMP states that the remainder of the AIC that is not harvested will not be reallocated.
8-11	Why do the PSC measures only allow a new country to enter the fishery between January 1 - April 1 of any year (except outside the herring saving area)?
8-11	Does "employ trawls" mean have on board or use? Can it be assumed that these vessels can use herring gillnets?

- 9-4 Having the capacity to harvest DAH is not a sufficient condition to set DAH to OY.
- 10-4 The apportionments of OY follows formulas. It seems unnecessary to have an involved procedure to make the summer and winter apportionments.
- 11-1 TALFF - See comment on DAH = OY.
- 12-4 Why is PSC limited to 0.10 percent?
How do you arrive at this percentage?

The AIC measures could put the Region in the uncomfortable position of shutting the domestic industry out of the herring saving area while foreign fishing is allowed to continue?

The FMP policy of constraining the development of the offshore herring fishery does not seem to be consistent with the intent of the Magnuson Act.

Are there any legal problems with the retention of the incidental catch of herring by foreigners (RIR p. 20)?

We received the following comments from the Office of Protected Species and Habitat Conservation.

- 1-3 Objectives (1)(c) is supported by a rationale in section 12.1 but is not mentioned in sections 12.3 or 12.4.
- 8-20 Section 8.5 Offshore Petroleum Production - We would like to see a description of any ongoing State and Federal programs.

The FMP does not mention permit requirements for marine mammals. There is no mention of any protected species takes. If there are any, they should be identified.

BS/AI HERRING

MSY = 48,712

MSY Biomass (Bmsy) = 243,560

Spawning Biomass (Bs)

$$ABC = \left(\frac{Bs}{Bmsy} \times 0.20 \right) \times Bs$$

OY has three components:

1) AIC/PSC

2) Summer Apportionment (SA)

3) Winter Apportionment (WA) formula:

$$WA = \frac{ABC - \text{Inshore Commercial Harvests (including SA and State bait**) - Subsistence Adjustment (500 mt) - AIC/PSC (2,000 mt)}}{2}$$

2

These figures represent an average of the foreign offshore harvest; 20% exploitation rate.

Determined annually by ADF&G aerial surveys.

0.20 is the optimal exploitation rate, where Bs = Bmsy; no higher exploitation rate is allowed. If Bs < 1/2 Bmsy, or 121,780 mt, WA = 0*.

Calculated as 0.1% of groundfish OY for BS/AI; maximum 2,000 mt.

2,000 mt available July 1; RD has FO authority to reduce.

**State allows a 3,500 mt food and bait fishery in Aleutians, in addition to commercial roe harvests; State harvest counted against Summer Apportionment (SA)

RH = Roe Harvest

Commercial roe harvest in State waters.

TH = Total Harvest

Summation of deductions from ABC in numerator above; includes SA/State bait, subsistence, AIC/PSC.

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>
ABC	23,150 mt	11,500	27,400	4,650
RH	30,750; 18%	24,900; 22%	17,650; 10%	21,600; 29%
TH	36,750	30,900	20,800	24,100
WA	<u>-13,600</u>	<u>-19,750</u>	+ 6,600	<u>-19,450</u>
Bs	167,800	116,000*	182,500	74,800*