

April, 1980

MEMORANDUM

DATE: April 19, 1980

TO: Council Members, Scientific & Statistical Committee
and Advisory Panel

FROM: Jim H. Branson, Executive Director 

SUBJECT: Herring Fishery Management Plan

ACTION REQUIRED

A presentation is scheduled on the plan and significant issues. Then a decision on the options presented in the Herring Fishery Management Plan is scheduled.

BACKGROUND

The public comment period on the draft Herring Fishery Management Plan was from November 11th (Notice of Availability in the Federal Register) to March 15, 1980. In response to the numerous comments made by members of the public and government agencies, the plan drafting team has developed a series of reports on the most controversial issues which include supplementary management options in addition to those proposed in the plan.

The most controversial issues raised during the comment period were (a) the spawning biomass methodology, (b) the allocation procedure, (c) the allowable incidental catch, (d) the herring savings area, (e) the observer

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coverage and (f) the impact on marine mammals. Each of these issues have been addressed by the PDT: who have prepared additional options to deal with the issues. The options already present in the plan are also included as an issue paper.

A preferred management option must be selected for each issue. The Plan Drafting Team will then revise the plan accordingly and present the completed document to the Council for their final approval at the next meeting. It will then be forwarded to the Secretary of Commerce for a 60-day review: with implementation expected by January, 1981.

Attachments

MD

ISSUE PAPER - BERING SEA HERRING FMP

SUMMARY OF OPTIONS PROPOSED IN RESPONSE TO PUBLIC AND AGENCY COMMENTS

The following changes have been proposed in response to the comments raised by the public and other agencies.

1. Goals and Objectives

Changes were made to the wording of the goals and objectives for the herring plan as follows:

- To maintain the herring resource at a spawning biomass level that will provide the maximum production of recruits to the population on an annual basis.

- To maintain the herring resource at a level that will sustain populations of predatory fish, birds and mammals.

- To maintain the herring resource at a level that will enable the traditional subsistence fishery to harvest herring in the amounts necessary for subsistence purposes.

- To promote full utilization of the herring resource by domestic fisheries which includes the continued development of inshore fisheries in western Alaska.

- To provide, to the extent possible, a unified management regime between Federal and State jurisdictions.

Together these management goals require that priority should be given to the various herring fisheries in the following order: (1) domestic subsistence fishery, (2) domestic inshore roe fishery, (3) domestic offshore food and bait fishery, and (4) foreign offshore food and bait fishery. The importance of establishing the priority of the roe fishery over the food and bait fishery was reiterated because of the present emphasis of management on discrete stocks of herring, the sequential nature of the fishery, and the economic importance of the inshore fishery.

Also necessary to achieve these objectives on a long-term basis is the establishment of a conservative management regime for the near future. The rationale for supporting a conservative management regime is that the abundance of herring declined sharply in the early 1970's and only recently has an increase become apparent. Although several hypotheses could be advanced to explain the cause of the observed decline, data are insufficient to establish conclusively a casual factor. Also, present knowledge of the resource is rudimentary and inferences on many aspects of life history including population dynamics must be drawn from other more thoroughly studied populations. Since rapid, marked changes in abundance are expected to occur in the future, based on historic patterns in world herring fisheries, and management and research is at an embryonic stage, it is prudent to manage the resource conservatively until basic management data becomes available.

A goal recognizing the relationship of herring as an important forage species for predatory vertebrates was added. This goal was implied in the management regime and in other sections. If a strong predator-prey relationship exists between herring and a mammal, bird, or fish species, then managing herring to dampen strong stock fluctuation should also dampen fluctuations in the predatory species. Also, limiting yields to or below the $F_{0.1}$ level should insure an adequate amount of herring for use by other species.

It was decided not to reinstate the objective stated in the March 1979 draft of the plan to rebuild the herring resource because the former levels of resource abundance cannot be measured adequately and that stock abundance has risen sharply in recent years. There is also a problem in determining the present level of abundance with respect to the past condition of the resource. The revised goal reflects the recognition by herring biologists worldwide of the importance of maintaining a strong multi-age spawning biomass.

A specific goal defining the relationship of the herring plan to the groundfish plan was also rejected. This relationship is more appropriately defined elsewhere in the text of the plan. There was also a discussion whether the goals and objectives section should refer specifically to the priority status of the inshore fishery. This is discussed more appropriately in the section on priorities of the different fisheries.

2. Incidental catch control

In order to allow the offshore groundfisheries to harvest their quota of groundfish species, a certain amount of incidentally caught herring must be recognized as a loss. As this is a long term loss, and not available for allocation to the directed fisheries, an Allowable Incidental Catch (AIC) is subtracted from the Acceptable Biological Catch rather than the Optimum Yield as originally proposed in the plan.

The options discussed below all require a certain minimum level of observer coverage and an adequate enforcement program to ensure that the incidental catch level is not exceeded.

There are two mechanisms for regulating the incidental catch of herring:

Option 1: Herring as a prohibited species:

The offshore fishery must return the incidental catch to the sea. Two alternatives are proposed to control the amounts of discards:

- a) No quota.

Record the amount discarded. This alternative wastes fish and could result in high levels of incidental catch since it is less easily controlled and does not provide any incentive to reduce the level of incidental catch.

b) Quota.

Establish a maximum quota of fish to be taken and discarded. Establish a penalty fee based on the amount of herring taken (economic disincentive proposed for Bering Sea Groundfish Plan). This may encourage under or no reporting of catch, but with an efficient observer program may result in avoidance of herring.

Option 2: Allowable incidental catch:

The minimum amount of herring necessary for the efficient conduct of the groundfish fishery is determined using any one of three options. The offshore foreign fisheries are allowed to keep their allocated amount, although if the quota is exceeded the nation's fishery will be closed down.

This approach acknowledges the loss of herring in the normal operation of the groundfisheries, but it establishes a degree of control on the incidental catch.

There are three options for the calculation of the appropriate level of allowable incidental catch.

a) AIC as a fixed amount.

Using the methodology in the plan, the absolute amount of incidental harvest will be calculated. This is based on adequate observer coverage and best blend catch data by

month by nation. It may be desirable to calculate AIC on the basis of observed catch rates of several seasons instead of the previous season called for in the plan. This option is based on actual observation and sampling which can distinguish target from incidental catches.

b) AIC as a percentage

AIC is the percentage of herring in the total groundfish catch determined by nation in Statistical Area II during October to March. The analysis is based on the catch rate of herring by the large Japanese stern trawlers which take the largest catch of pollock and the smallest catch of herring. Analysis in other statistical areas will use data from all fleets. Initial analysis indicates an AIC of 0.8% or less. The AIC will be adjusted periodically depending on the changing herring stock status and changing relationships between herring and the groundfish stock and fishery.

c) AIC as a maximum quota.

The incidental catch is determined from the foreign fisheries quota during the last two years under PFMP management, equal to 8670 mt. This assumes that the foreign groundfish fisheries were not adversely impacted by this herring quota.

3. Offshore Allocation

After the estimation of the available surplus in September of each year, all or part of the amount can be allocated to the offshore domestic and foreign fisheries.

Option 1: Allocation of all the surplus.

This alternative presents some risk of overfishing the stocks and might inhibit the development of the inshore domestic fisheries. This is the least restrictive option.

Option 2: Partial allocation of the surplus:

The eastern Bering Sea herring population is composed of separate spawning stocks, some of which have lower levels of abundance and productivity than the general population. In the winter mixed stock fishery, a potential exists for overharvesting less productive smaller stocks, especially if the stocks are not evenly distributed. The distribution of individual stocks on the winter grounds is presently unknown and the overharvesting potential is largely speculative. In the absence of conclusive data to determine the potential for overharvest, it may be desirable to maintain the offshore harvest within a certain limit. Two options are proposed to calculate the reduction of allocation to the offshore fishery.

a) Reduced exploitation rate.

The exploitation rate on the offshore stocks would be calculated as a function of inshore harvest and available biomass. For example:

$$OY = (E_i) \text{ biomass} - AIC - \left[1 - \frac{E_o}{E_i} \right] (E_i) \text{ biomass} - DAH_i]$$

Where E_i = inshore exploitation rate (20%)
 E_o = offshore exploitation rate (15% is used as an example)
 DAH_i = actual inshore domestic catch
 AIC = allowable incidental catch

$$\begin{aligned} \text{For Example } & .20 (200k) - \left(1 - \frac{.15}{.2} \right) (.20 \times 200k - 10k) \\ & = 40 k - 2.5 \times 30k \\ & = 32.5 k \\ & - 10 k \end{aligned}$$

Offshore Allocation = 22.5 k

There are several other mechanisms for adjusting the exploitation rate on the offshore stocks including: (1) the use of a ceiling or maximum OY, (2) based on the MSY which would be the maximum total allowable catch of all herring fisheries including the inshore harvest.

b) Natural mortality adjustment.

The methodology proposed in the FMP reduces the offshore allocation by an estimation of the natural mortality

factor on 3 year old fish and older. It is proposed that this factor apply to OY instead of reducing TALFF as originally suggested in the FMP.

4. Marine Mammals

Section 7 consultations have taken place with the Marine Mammal Laboratory of the NWAFC (NMFS). They are reviewing both the pertinent portions of the plan dealing with marine mammals and comments raised on marine mammal issues. A report will be sent to the Regional office for their recommendation, and to the Council when available.

5. Spawning Biomass

The response to the comments on the spawning biomass report was discussed. The need to adequately explain the rationale used in the methodology was stressed, particularly:

- a) Average density calculation of schools of fish.
- b) The 'other species' reduction factor.
- c) Differences in peak count estimations.

The final draft of the ADFG research report will be presented and discussed at the April meeting.

6. OY

Total allowable catch as defined in the plan more appropriately refers to the traditional definition of optimum yield. The concept of OY as a long term goal was recommended to be removed from the plan. Although a long term management strategy is supported, specific long term goals and objectives had not been discussed or prepared. OY as a long term concept as described in the plan is only appropriate if long term goals and objectives are also established.

9. Spawn on Kelp

The state's fishery management plan for spawn on kelp will be appended to the FMP.

10. TALFF

In response to the request to consider no allocation to the foreign fisheries, the option was included to have no TALFF. It is expected, however, that there will be a surplus in some years which would be available to the foreign fisheries.

11. Time/area closures during the inshore roe season:

During the inshore roe season, the plan proposes that the FCZ be closed to herring fishing from April 1 to July 1 south of 60° N. latitude and to August 1 north of 60° N latitude.

This closure is included because it is considered desirable to continue restricting the roe fishery to state waters where product quality and economic value would be higher. Management and regulation of the fishery would be simplified and biomass surveys are more easily performed in the coastal area. As it is not known whether or not the closure of the FCZ will adversely impact the food and bait fishery during this time, there are two options available to accommodate a food and bait fishery during the roe fishing period.

Option 1: Food and bait fishing could be restricted to west of 168° W. longitude.

Foreign fisheries are currently restricted west of 160° W. longitude under the terms of the preliminary fishery management plan. The line of 168° W. longitude is a hold-over from former International North Pacific Fisheries Commission regulations. This effectively excludes food and bait fishing from fishing close inshore or near Bristol Bay.

Option 2: Food and bait fishing could be restricted to south of 56° N. latitude.

This is the line above which the Board of Fisheries recommended no

trawling in the FCZ. Opening the area south of 56° N. latitude would direct the fishing effort towards the Aleutian Islands stocks which are not utilized in the roe fishery.

12. Domestic food and bait fishery; harvest of initial allocation surplus

If a harvestable surplus does not exist to allocate to the food and bait fishery after the roe fishery has taken place, then the food and bait fishery would be allowed to harvest its initial allocation, if any remained, either:

Option 1: Unrestricted

This implies that the food and bait fishery would be allowed to harvest their small initial allocation wherever they can find fishable schools of herring outside of three miles. However, if the food and bait fishery developed to where high seas effort could be deployed on the feeding stocks, there would be no protection for the stock during times of poor stock condition.

Option 2: South of 56° N.

If there was a small initial allocation remaining it would be harvested specifically for bait for the crab fishery only.

Option 3: Everywhere but in a Herring savings area

If a surplus did not exist, instituting a herring savings area would allow bait boats to take their catch anywhere off the coast while protecting the more vulnerable feeding stocks in winter from the more efficient high seas food fishery.

13. Herring Savings Area

A herring savings area was proposed in order to minimize the catch of herring during times of poor stock conditions by foreign or domestic offshore food and bait fisheries by prohibiting fishing on the more

concentrated schools of feeding herring during the winter months. Four areas are proposed (see attached diagram).

Option 1: Area A

Area A accounts for 85% of the annual (July to June) Japanese trawl herring harvest and 5.3% of the Japanese (November to March) pollock harvest.

Option 2: Area B

Area B accounts for 80% of the annual trawl herring harvest and 2% of the pollock harvest.

Option 3: Area C

Area C accounts for 89% of the trawl herring harvest and 19.1% of the pollock harvest.

Option 4: Area D

Area D accounts for 85% of the trawl herring harvest and 12.1% of the pollock harvest.

Option 5 - if No Talff - PDT would suggest this savings area?

14. Implementation of the Herring Savings Area

There are several options for the implementation of the Herring Savings Area.

Option 1: Close all fishing when there is no TALFF or when TALFF does not exceed AIC

If there is no TALFF, the stocks will be below a certain level of biomass needed for a directed offshore fishery or there will be other mitigating circumstances that might require additional protection to the resource by instituting a Herring Savings Area.

8

Option 2: When observer coverage is below a certain level whether
TALFF available or not

If adequate coverage of the offshore fisheries by observers is not available, there is no means of ensuring that incidental catch and directed catch are accurately recorded. Observer coverage is particularly important if an AIC only is allocated or if herring are designated a prohibited species. It is also important to expand the offshore data base, and observer data would be a valuable tool for gathering data on the winter feeding stocks. The minimum level would be established from previous year's experience for the months November to March, in Statistical Area II.

Option 3: Allow individual vessels with observers to fish

Similarly if an individual vessel had an observer on board, the boat would be allowed to fish in the Herring Savings Area, providing there was an allocation to the nation of that boat. This option has not been discussed in great detail and the mechanics of implementing such an option have not yet been developed.

Option 4: Variation in size of area depending on environment and resource

Each year the herring concentrate in a slightly different area depending on temperature, distribution of forage species, extent of ice cover, etc., the factors controlling distribution have not been determined. In-season distribution have not been determined. In-season determination of the Herring Savings Area would protect the greatest number of herring. This option would depend on timely offshore surveys.

Option 5: Exempt longlining from closure

In so far as the longline fisheries do not catch herring in their gear, a Herring Savings Area should not apply to the longliners.

HERRING MANAGEMENT PLAN ALLOCATION PROCEDURES

Time of Allocation & Events

Proposed Modifications

August, 1979 Draft

Sept. of
Prev. Year

Preliminary OY Estimate for next fishing year
 $OY = ABC - AIC(\text{Apr-Mar})$
 AIC for foreign groundfish operations (April-March)
 *Option - Herring a prohibited species
 with either: *1. No Quota
 or: *2. Quota & Disincentives
 *Option - AIC Quota can be based on:
 *1. Percentage of herring in reported catch
 *2. Formulate in existing plan using
 observer data
 *3. Maximum catch = 8670 mt quota

Prelim. TAC estimate
 $TAC = ABC - \text{Subsistence}$

Preliminary Allocations

AIC Allocation for
Apr-Sept.

- (1) Allocate to Spring-Summer domestic food and Bait Fishery in FCZ
- (2) Allocate remaining OY to domestic Roe and Subsistence fishery

Same

Same

April.

Fishing year starts; September AIC and Preliminary allocations implemented

Same

April-July

Roe-Subsistence fisheries and Spawning Biomass Surveys

Same

Same

Sept.

Final OY for current fishing year determined
 $ABC = \text{Spawning biomass} \times \text{Exploitation rate}$
 $\text{Surplus OY} = ABC - \text{roe harvest}$

Same

Same

Same

Final Allocations

- (1) Allocate surplus OY to domestic & foreign food & bait
 *Option: Allocate a portion of surplus OY using *1. A ratio of exploitation rates or percentage limit on surplus OY
 *2. Formula in existing plan
- (2) Allocate to domestic food & bait fishery
- (3) Allocate to TALFF
 *Option: No TALFF

Same

Same

- 1. All if good stock conditions
- 2. Reduce portion if poor stock condition

If no surplus OY for food & bait fisheries
 AIC allocations to foreign and domestic ground fisheries

HERRING MANAGEMENT PLAN REGULATIONS

August 1979 Draft

Proposed Modifications

April - July
(Aug.)

DOMESTIC FISHING

1. State Waters: Provides for roe fishery regulated by State of Alaska, fishing seasons range from April 15 - July 31 depending on district.
2. FCZ:
 - a. Closed during roe fishing period from April - July 1 south of 60° N. lat. and April - August 1 north of 60° N. lat., EXCEPT:
 - Open all or portion of FCZ by field order if ice conditions or other factors preclude full utilization by roe fishery.
 - if food/bait fishery impacted:
 - * Option 1 - Open FCZ west of 168° W. long.
 - * Option 2 - Open FCZ south of 56° N. lat.
 - b. trawling restrictions (area-time closures) in FMP for Bering Sea groundfish.

FOREIGN FISHING: Existing area closures including:

- a. No fishing for herring east of 168° W. long.
- b. No trawling in "Winter Halibut Savings Areas." during Dec. 1 - May 31.
- c. No trawling year-round in "Bristol Bay Pot Sanctuary."

DOMESTIC FISHING

1. State Waters: Same
2. FCZ: Same except as indicated below.
 - describe boundaries for portion of FCZ to be opened by field order.
 - consider gear restrictions

FOREIGN FISHING: Same except consider gear restrictions

Aug - March

DOMESTIC FISHING

1. State Waters: Closed except subsistence fishing
2. FCZ:
 - a. If only harvestable surplus from initial allocation, then allow food/bait fishery:
 - * unrestricted until quota taken
 - * unrestricted until quota taken except in "herring savings area"
 - * south of 56° N. lat. until quota taken.
 - b. If harvestable surplus in addition to a, above, then food and bait fishery is unrestricted until quota taken.
 - c. If no harvestable surplus or roe fishery closed due to poor stock conditions, then close fishing except provide for minimum incidental catch for groundfish fishery, a "Winter Herring Savings Area" will be enforced.

FOREIGN FISHING

1. Establish boundary for "Herring Savings Area." Options in Plan:
 - * Area A
 - * Area B
 - * Area C
 - * Area D
2. Close all fishing in "H.S.A." when:
 - a. there is no TALFF or
 - b. when TALFF does not exceed allowable incidental catch.
3. Existing area closures (above)

DOMESTIC FISHING

1. State Waters: Same except may extend fishing season by State emergency order to allow food/bait fishery if surplus remains after roe fishery.
2. FCZ:
 - a. Other options.
 - * No area restriction if small initial allocation (e.g. 2000 mt or less)
 - * area restriction if larger initial allocation (e.g. 2000 mt or more)
 - b. & c. same
 - d. Consider gear restrictions.

FOREIGN FISHING

- 1 & 2. Other options for closing fishing in "H.S.A.":
 - * Close when observer coverage is less than a specified percent during Nov. - March in Statistical Area II regardless if TALFF available or not.
 - * No closure for longlining
 - * Allow fishing by individual vessels with observers
 - * Vary size of closed area within "H.S.A." depending on seasonal changes in herring distribution, ice pack, etc.
3. Same.
4. Consider gear restrictions.

DECISION PAPER - HERRING FMP
LISTING OF PROPOSED OPTIONS

2.* Incidental Catch

Either Option 1 - Herring is designated as a prohibited species
either a) no quota
or b) a quota

Or Option 2 - An Allowable Incidental Catch (AIC) Quota is
applicable with
either a) AIC as a percentage
or b) AIC as a fixed amount from formula in plan
or c) AIC as a fixed amount from historic catch
levels

3. Allocations: The allocation of the surplus OY on September 31st to
offshore food and bait fisheries can be:

Either Option 1 - entirely allocated
or Option 2 - partially allocated by
either a) reduced exploitation rate
or b) upper limit on surplus OY
or c) natural mortality adjustment formula in plan

10. TALFF

Either Option 1 - No TALFF
or Option 2 - TALFF

*Numbers correspond to section in issue paper which discusses each option
in greater detail.

11. During the inshore roe fishery (April 1-July 1) the offshore domestic food and bait fisheries may be:

- Option 1 - closed in the FCZ to food and bait fisheries
- or Option 2 - open in the FCZ, all areas
- or Option 3 - open in the FCZ
 - a) West of 168° W. longitude or
 - b) South of 56° N. latitude

12. If any part of the initial offshore "food and bait" allocation remains after September 31st, the fishery may continue:

- Either Option 1 - unrestricted till quota taken
- or Option 2 - south of 56° N. latitude until quota taken
- or Option 3 - unrestricted until quota taken except in herring savings area
- or Option 4 - no area restriction if small initial allocation (e.g. < 2000 mt)
- or Option 5 - area restriction if large initial allocation (> 2000 mt)

14. Implementation of Herring Savings Area

- Either Option 1 - Close all fishing when there is no TALFF or when TALFF does not exceed AIC
- or Option 2 - When observer coverage below a minimal level during Nov-March in Statistical Area II, whether TALFF available or not.
- and/or Option 3 - Allow individual vessels with observers to fish
- and/or Option 4 - exempt longlining from closure

Vidar Westdal
4-25-80

HERRING INCIDENCE IN POLLOCK FISHERY IN AREA II
In January-March, November-December

1978	Small Trawler	Medium Trawler	Large Trawlers		
			Japan	USSR	Korea
Herring	967	150	462	6,019	8
Pollock	11,154	192	111,811	88,368	9,699
% Herring	8.7	78.1	0.41	6.8	0.08
1979					
Herring	451	122	530	5,633	104
Pollock	14,528	915	100,570	46,744	25,834
%	3.1	13.3	0.53	12.1	0.40

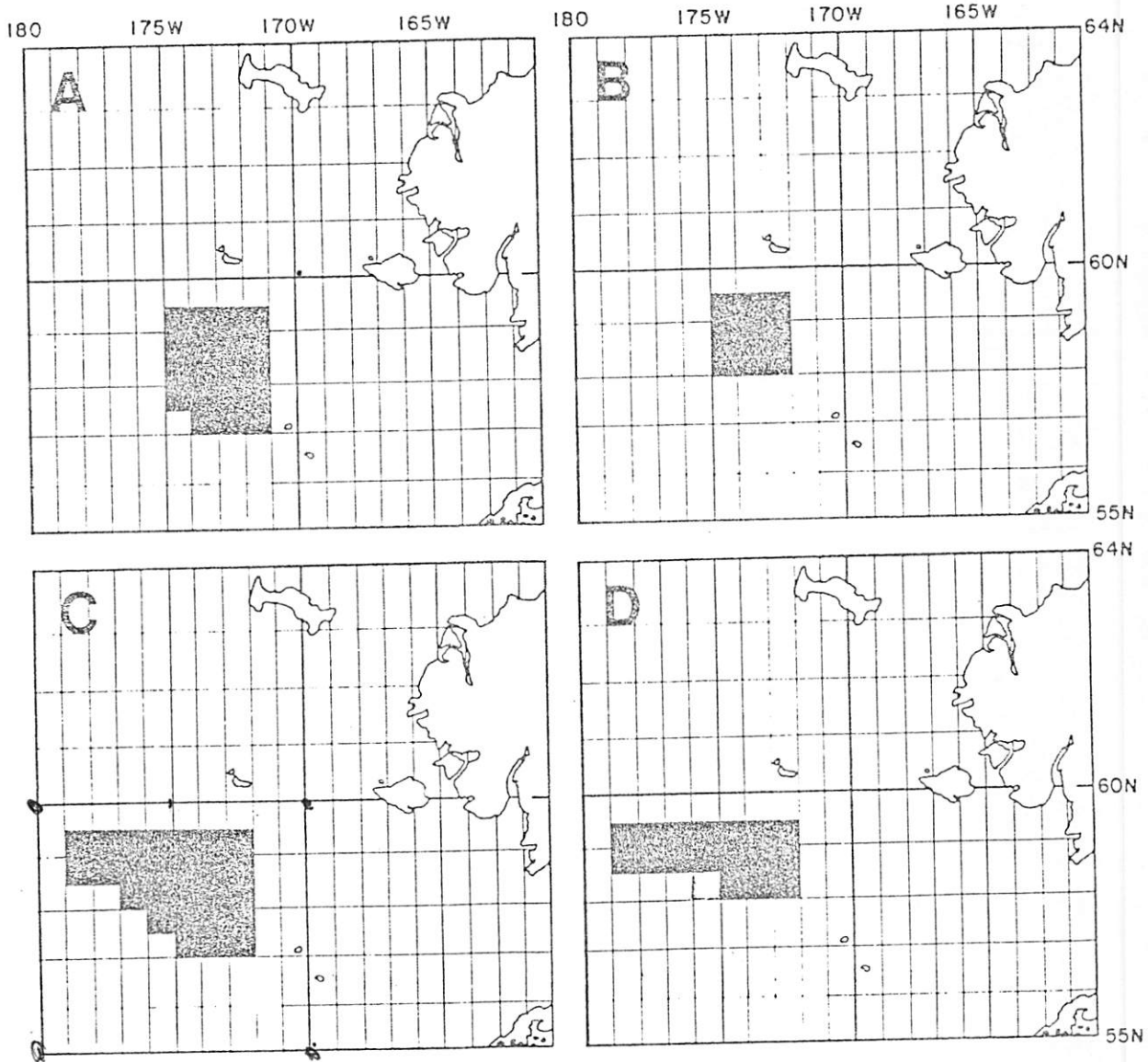


Figure 2 Herring savings area options.

170w
175w
N 55°

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Received 4-25-80
Norman Cohen.

ADDRESS, NORTH PACIFIC FISHERY ~~MANAGEMENT~~ MANAGEMENT COUNCIL, by Norman A. Cohen, representing the villages of the Yukon-Kuskokwim Delta participating in the case entitled: Napoleon v. Hodges. April 24, 1980.

Thank you, Mr. Chairman for this opportunity to address the Council on several issues affecting this Council's deliberations on eastern Bering Sea herring and the Fishery Management Plan which is presently under consideration. I will limit my remarks to the following areas: determination of biomass, allowable incidental catch and the herring savings area.

The Alaska Department of Fish and Game has recently completed its final contract report on herring biomass assessment. However, this report has not been made available to the general public at this time. Therefore, we are not able to make any comments on the biomass range estimates contained in that report. We do, though, ~~at this point~~, urge the Council to maintain its conservative approach to biomass estimates and choose the low point of the range as the management figure. We reserve the opportunity to comment upon this report when it is made public, ^{however} ~~and~~ due to the lack of biological information, stay at or below the low point of the range.

Presently, the Council is considering the concept of allowable incidental catch, or AIC. AIC is intended as the allocation to the high seas fishery before a determination of OY or TALFF is made. It appears that this concept is being used to 1) allow the foreign groundfish fishery to continue to harvest herring as an incidental catch during the spring and summer months and

2) to make a preliminary allocation to the groundfish fishery without having the legal problems of allocating to TALFF before determining whether the domestic fishery will be equal to or less than OY. It is our view that any of the AIC which is allocated to foreign fisheries is, in fact, TALFF, and cannot be disguised by calling it something different. As is plain from the language of Section 201(d) of the FCMA, TALFF is the total amount of fish that can be harvested by vessels other than vessels of the United States.

The question of whether to institute a herring savings area in the FMP has created a considerable amount of controversy. We feel that at this time, with the biological data available, a mandatory November 1 through March 31, time/area closure in the area of the greatest herring abundance is not only necessary for the protection of the smaller herring stocks located in the eastern Bering Sea, but also, the only management tool which can adequately regulate a mixed stock fishery which is being exploited at both ends of its range. In addition, the benefits of the herring savings area so outweigh the detriments, when all the factors are considered, that there should be no question of this Council adopting such a time/area closure.

To place this issue in perspective, it is necessary to consider the detriments caused by the closure of a portion of the Bering Sea to any fishing during the months of November, December, January, February and March. Using the most restrictive

area identified in the August draft FMP, the Japanese pollock harvest during those months in those areas amounted to a mean 2.8% of the yearly harvest for pollock in 1968-1977. For the year 1978, this amount increased to approximately 6%. Therefore, the detriment to be considered by the most restrictive time/area closure is only 3-6% of the entire yearly pollock fishery conducted by the Japanese between 1968 and 1978.

On the other hand, the ~~list of~~ benefits are as follows:

First, the largest portion of the eastern Bering Sea biomass is contained within the Bristol Bay stock. The exploitation of this stock, during its spawning period, virtually dictates the amount of herring which will be available for TALFF. The exploitation or non-exploitation of the Cape Romanzof, Nelson Island and Norton Sound stocks are, on the other hand, relatively insignificant in determining the ultimate amount allocated to TALFF. Therefore, if the Bristol Bay stock is exploited at the 20% rate, even if no herring are harvested from the other stocks, there will be little or no allocation to TALFF. However, if the Bristol Bay stock is not exploited and the smaller stocks are exploited at the 20% rate, there will be significant amounts of TALFF to allocate to the high seas mixed stock fishery. In that case, the smaller stocks will be hit again at a high rate of reduction, which if harvesting on the high seas is uniform for all the stocks, could be as high as 40% of the spawning biomass. If one smaller stock was hit particularly hard, it would likely

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be overfished. Since these smaller stocks are so important to the villagers who reside along the southwestern Alaska coast, not only would the commercial fisheries suffer, but also the subsistence fisheries. This Council must keep in mind that whether the commercial fishery in Norton Sound, Cape Romanzof and Security Cove are viable economic ventures or not, the subsistence fishery still needs the return of the smaller stocks. Therefore, even if the entire in-shore fishery fails, for reasons other than the health of the stocks, allocating the entire OY off-shore would place the smaller stocks in such jeopardy, that they would very likely cause the economic and social disruption that was felt along the coast in the early 1970's. Because of the lack of data on the commingling in the Bering Sea, the lack of information on whether separate stocks are distinct on their wintering grounds, and the inability to effectively manage on the high seas, a herring savings area to protect the small stocks during the winter is extremely important to the villagers of southwestern Alaska.

Second, the institution of the most restrictive time/area closure for herring will likewise have the effect of conserving western Alaskan Chinook Salmon. These salmon, which migrate up the Yukon and Kuskokwim River systems are the most valuable resource from both a subsistence and a commercial perspective. The more chinooks that return to the rivers will mean that there will be more cash available without decreasing the dependence of the villagers upon the chinooks for subsistence purposes. While the exact number of chinook salmon that are taken in the most restrictive time/area closure is not known and may vary from year to year, it is clear that many are taken and lost to western Alaska. In his paper of June 22, 1979, Dr. Low estimates that within the most restrictive herring savings area a total of 14,856 chinook salmon are taken during the months of January and February. However, in a report to the SSC for its August 1979 meeting, it is reported that a greater percentage of salmon are harvested during the months of November and December than in January and February. Further, the unacceptably low observer coverage puts into question any conservative estimate of the figures actually taken incident to the groundfish fishery. ~~This Council, when considering the~~
~~information~~ A further report summarizing the information for the 1979-1980 winter fishery should be made available to the Council prior to its dismissing the significance of the ~~chinese~~
~~and~~ incidence of chinook salmon in conjunction with a herring savings area.

~~Adding this factor to the protection of the smaller stocks would, alone, seem ample justification for a mandatory herring savings area. But~~ there are ~~even~~ more benefits than these. Next, there are the marine mammals. Ribbon and spotted seals feed on herring during the winter months. Harbor seals feed on herring during the summer months and, as reported during the years when the herring did not return to Nelson Island, ^{they} also did not return, adding to the economic and social disruption experienced by the villages of southwestern Alaska. Finally, there are the shorebirds that forage on the herring. These waterfowl depend on the herring during the spring and are an important resource. Both the seals and the shorebirds will not return to these areas if the herring do not return.

So again, a careful consideration of the merits of a mandatory November through March herring savings area points out that the benefits to the people who depend on the herring, the seals, and shorebirds for their livelihood far outweigh the inconvenience of 3-6% of the groundfish fishery. Further, in 1979, as reported in the Summaries of Provisional 1979 Foreign Groundfish Catches in the Northeastern Pacific Ocean and Bering Sea, only 6% of the entire herring catch took place during the months of April to October, while 94% of the harvest on the high seas occurred in November through March.

A mandatory herring savings area is needed to protect the smaller stocks. As mentioned previously, the subsistence fishery

does not depend upon the economics of the in-shore commercial fishery, but the availability of the smaller stocks at convenient locations. The protection of the subsistence fishery should be the priority of this Council. A TALFF or OY reduction formula, a herring savings area instituted when TALFF is below the true incidental catch, do not get to the real threat to the subsistence fishery. The real threat is that the smaller stocks will be exploited at a high rate both in-shore and off-shore. While this may be totally irrelevant to what happens to the major Bristol Bay stock, it could spell disaster. The Council has the ability of instituting a mandatory herring/salmon savings area and should do so in the final draft of the FMP.

Thank you for your consideration of these views.

HERRING SAVINGS AREA AND OY REDUCTION PROPOSALS BEFORE THE
NORTH PACIFIC FISHERIES MANAGEMENT COUNCIL

<u>METHOD</u>	<u>GOALS</u>	<u>DATES OF INSTITUTION</u>	<u>AREA</u>
1. Mandatory Herring Savings Area	Protects Subsistence Fishery Protects Small Stocks North of Cape Newenham Forage for Marine Mammals Food for Shore Waterfowl Protects Western Alaska Chinook Salmon Prevents Underlogging	November 1-March 31	C
2. TALFF below Incidental Catch Herring Savings Area	Prevents Underlogging of Herring Protects Smaller Stocks Which Have Been Exploited In-Shore	November 1-March 31	A-E
3. TALFF or OY Reduction When Stocks Are Not Healthy	Lowers TALFF and Protects Smaller Stocks from Overfishing		
4. TALFF Reduction When Stocks Are Healthy, Smaller Stocks Are Exploited, but Bristol Bay Stock is Under-Harvested	Lowers TALFF and Protects the Smaller Stocks from Being Reduced at High Rate of Exploitation		