


MEMORANDUM

TO: Council, AP, and SSC Members

FROM: Clarence G. Pautzke 
Executive Director

DATE: April 7, 1989

SUBJECT: Bering Sea/Aleutian Islands Groundfish Fishery Management Plan

ACTION REQUIRED

1. Receive report from NOAA Fisheries on Bering Sea bycatch management for 1989 and 1990.
2. Receive report from Ad Hoc Herring Bycatch Workgroup.
3. Receive report from NOAA Fisheries on the status of development of regulatory amendments approved by the Council in January.

BACKGROUND

Status of the Council's Bycatch Management Plan

The emergency rule to prohibit trawling in the Crab and Halibut Protection Zone took effect on March 15 and will extend at least through June 13, 1989. It can be extended for another 90 days until mid-September. The closed area covers 160° to 163° W., though the Regional Director may allow trawling between 162° and 163° W. pursuant to an approved scientific data gathering and monitoring program. The emergency rule is compared with the Council's recommendations in item D-2(c)(1).

Meanwhile, the Amendment 12a package fully implementing the Council's bycatch management recommendations was submitted to the Secretary on March 30. If approved, the regulations could be in place by late July with the APA 30-day cooling off period waived. A summary of the amendment is under D-2(c)(2).

Bycatch Management in 1990 and Beyond

In September of last year the Council requested that NOAA Fisheries prepare a more comprehensive bycatch management framework for 1990 and beyond. This framework was to be based on the recommendations of the Council's Bycatch Committee and Ad Hoc Bycatch Group and was to provide bycatch controls for C. bairdi, red king crab, and halibut for all groundfish fisheries operating in the Bering Sea/Aleutian Islands.

NOAA Fisheries will provide a status report on their development of bycatch management strategies for this year and the next, recognizing that in the absence of a comprehensive data collection program for monitoring bycatch it may be necessary to control bycatch using other management measures such as time/area closures.

Herring Bycatch Workgroup Update

The Ad Hoc Herring Bycatch Workgroup met on March 16 in Anchorage to discuss progress in developing a voluntary bycatch plan for Bering Sea herring. The plan consists of a scientific stock composition study, a communications system to notify trawl fishermen of the location of herring schools, an observer program in which local Alaskan fishermen can observe trawl operations, and an educational program in which trawl fishermen learn methods of identifying and avoiding herring. A summary report of the meeting is included in your notebooks as item D-2(d)(1).

Regulatory Amendment Update

Among the proposals chosen by the Council in January for development into groundfish amendments were three proposals which could be implemented by regulatory amendment. The Council requested that NOAA Fisheries prepare regulatory amendments and forward them to the Secretary for implementation.

The regulatory amendment proposals were:

- (a) To establish groundfish fishing season openings and/or closings at noon local time in the GOA and BSAI.
- (b) To require hook and line gear documentation in the GOA and BSAI.
- (c) To establish a single species rule in the GOA.
- (d) To redefine directed fishing in the GOA and BSAI.

A report on the last amendment, implementing a new definition of directed fishing, was under item D-2(b). NOAA Fisheries will brief the Council on the status of the other proposed regulatory amendments.

BYCATCH MANAGEMENT IN THE BERING SEA AND ALEUTIANS

Below is a status report on recent North Pacific Council actions on bycatch management in the Bering Sea and Aleutians and how they have fared over the past few months. The activities are broken down into four components:

- (1) The emergency rule to close 160° to 162° W. with seasonal extension to 163° W.
- (2) Bering Sea/Aleutian Islands Amendment 12a.
- (3) Interim management of bycatch by the Regional Director until 12a is implemented.
- (4) Inseason management actions.

Closed Area Emergency Rule

December 1988 Council Meeting. The Council gave final approval to Amendment 12a including the bycatch caps and the fisheries components to which they would apply, and the special areas that would close. The Council voted to extend the 160° to 162° W. closed area to 163° W. between March 15 and June 15 to protect molting king crab. This closure was to be part of Amendment 12a, then anticipated to be submitted to the Secretary by early February and implemented by June. The Council took no emergency action on the closure. Trawl industry representatives indicated they would voluntarily abide by the 160° to 162° W. closure until 12a was in place, but were less receptive to the extension to 163° W.

January 1989 Council Meeting. The Council reaffirmed its December action on Amendment 12a. Again the Council took no emergency action on the closure, however they were assured by NOAA GC that the Secretary was already preparing an emergency rule for the closed areas consistent with paragraphs 1 and 2 of the approach (attachment 1) drafted by Larry Cotter.

Emergency Rule. The emergency rule, published on March 20 and effective from March 15 to June 13, 1989, takes four actions:

- (1) Closes 160° to 162° W. to trawling with the exception of the 25 fm Pacific cod allowance.
- (2) Closes 162° to 163° W. except that the Regional Director may allow trawling pursuant to an approved scientific data collection and monitoring program.
- (3) Empowers the Regional Director to close areas and modify fishing gears in the Bering Sea subarea if he finds that harvests might result in excessive waste or biological harm to prohibited species, or in unfair allocation of fishery resources among different gear or user groups.
- (4) Notices the public of the guidelines that will be used to monitor and manage the fisheries until Amendment 12a takes effect. These guidelines are reviewed below.

Amendment 12a

Amendment 12a, embodying the closed areas, caps, designated fisheries, and special zones, was reaffirmed in January without revision from the plan passed in December. It was submitted to the Secretary on March 31 and could be in effect by late July if the APA 30-day cooling period is waived.

Interim Management

The remaining issue is interim management of the fisheries until Amendment 12a is implemented sometime this summer. The three management guidelines expressed by Craig O'Connor at the January meeting are in the emergency rule in priority order:

- (1) Not allow biological harm to the PSC species.
- (2) Attempt to allow full groundfish harvest.
- (3) Maintain bycatch within the Council's PSC limits.

The rule incorporates as guidelines, though not in the regulations, the numerical PSC limits for crab and halibut and the special zones approved by the Council. In January when the Council was considering the motion to reaffirm its December action on 12a, Craig O'Connor was asked if it would be viable to use an emergency rule to implement the PSC caps. He responded that NOAA was seeking guidance in preparing the emergency rule and that paragraph 4 of attachment 1 could serve in the interim until 12a was in place. The provisions of paragraph 4, paraphrased, are as follows:

- (1) Monitor PSC and groundfish harvest for each fishery group.
- (2) Use emergency action as necessary to allow OY attainment while ensuring PSCs are not exceeded.
- (3) Emergency measures could include, but are not limited to time/area closures, prescribing bycatch rates as prerequisite for continuing a fishery, observers or participation in a data gathering program, closure of the entire BSAI.
- (4) Monitor PSC attainment by comparing PSC attainment against target groundfish attainment. If a fishery will have difficulty harvesting its TAC within its PSC, the Secretary should take steps to control bycatch using the measures in #3 above.

Inseason Management Actions

NOAA Fisheries has taken the following inseason management actions in the Bering Sea and Aleutians since January 1:

- January 21: Closed directed joint ventures for Bering Sea pollock, leaving 43,415 mt for bycatch out of total pollock JVP of 93,415 mt.
- February 3: Closed directed sablefish fishing by all gear types in Bering Sea.
- February 11: Closed directed joint ventures for Bering Sea and Aleutians Pacific cod, leaving 7,000 mt for bycatch out of total cod JVP of 37,466 mt.
- February 21: Closed directed joint ventures for Bering Sea and Aleutians rock sole, leaving 2,000 mt for bycatch out of total rock sole JVP of 9,605 mt.
- March 1: Closed directed joint ventures for Bering Sea and Aleutians yellowfin sole, leaving 6,000 mt for bycatch out of total yellowfin sole JVP of 110,000 mt.
- March 8: Rock sole was designated as a prohibited species for joint ventures in the Bering Sea and Aleutians.
- March 12: Closed all joint ventures in Bering Sea and Aleutians because the JVP for yellowfin sole was exhausted.
- March 15: Emergency rule closed 160° to 163° W. longitude to trawls.

APPROACH TO 1989 BYCATCH MANAGEMENT (Jan. 89)

1. The North Pacific Fishery Management Council serves notice of its intent to review, at the April 1989 meeting, the prohibited species catch (PSC) numbers for C. bairdi Tanner crab, red king crab, and Pacific halibut and accompanying management approaches which it adopted at the December 1988 Council meeting. This review would not apply to the Closed Area (160 by 162 degrees W south of 58 degrees N, and the seasonal extension to 163 degrees W).

2. That portion of Amendment 12A to the BS/AI Groundfish FMP pertaining to the Closed Area would be submitted to the Secretary of Commerce for approval as rapidly as possible. In the interim, the Regional Director shall proceed with an Emergency Rule to implement the Closed Area.

3. The Council, at this meeting, shall adopt the PSC numbers adopted at the December meeting as an "advisory" to the industry and indicate that it is the Council's intent to manage the specific fishery groups identified by the Council at the December meeting in a manner which would maximize the directed groundfish harvest while keeping PSC removals at or below the advisory numbers.

4. In accordance with the Council's intent, the Secretary will:

a. Monitor the bycatch of prohibited species and directed harvest of groundfish for each fishery group;

b. Utilize emergency authority to the extent necessary to allow each fishery group's directed groundfish harvest to be accomplished while ensuring to the extent possible the fishery group's PSC allowance will not be exceeded.

c. The types of inseason emergency measures which would be utilized by the Secretary include, but are not limited to, time/area closures, the implementation of PSC bycatch rates which must be accomplished on a defined fishing period basis as a condition of continued participation in that fishery in the area or areas concerned, the requirement that vessels carry observers and/or otherwise participate in a verifiable data gathering program, and closure of the entire BS/AI to that fishery.

d. In order to monitor C. bairdi, red king crab, and halibut bycatch, the Council requests the Secretary to compare the percentage of bycatch PSCs by each fishery group on a weekly basis to the percentage of that fishery group's directed groundfish harvest. Should the percentage of the fishery group's directed harvest be at a level which indicates that fishery group will have difficulty taking its directed harvest within the boundary of its advisory PSC allowance, the Council requests that the Secretary implement regulatory actions as now provided in the FMP and as provided in (c.) above.

5.) NOAA Fisheries will have available to the Council at the April

meeting a draft bycatch management program which could be implemented for 1990. The draft bycatch management program will utilize the Bycatch Committee's Ad Hoc Recommendation as a base, and address the technical deficiencies in that program; however, NOAA Fisheries may offer additional bycatch management approaches not identified in the Ad Hoc Recommendations. The Council intends to review the NOAA Fisheries program in April, make modifications as appropriate, and send it out for public comment in preparation for final action at the June 1989 Council meeting.

AMENDMENT 12A TO THE FISHERY MANAGEMENT PLAN
FOR THE GROUND FISH FISHERY OF THE
BERING SEA/ALEUTIAN ISLANDS

This proposed rule will close specific groundfish "target fisheries" in particular areas when prohibited species catch (PSC) limits of C. bairdi Tanner crab, red king crab, and Pacific halibut are taken by trawl gear. Overall PSC limits recommended by the Council are:

<u>C. bairdi</u> Tanner crab:	1,000,000 crabs in Zone 1 for Zone 1 closure 3,000,000 crabs in Zone 2 for Zone 2 closure
Red king crab:	200,000 crabs in Zone 1 for Zone 1 closure
Pacific halibut:	4,400 mt catch in BSAI for Zones 1 and 2H closure 5,333 mt catch in BSAI for BSAI closure

Figure 1 outlines bycatch protection zones in relation to statistical management areas. Zone 2H includes that portion of Area 513 south of 56° 30' N. The Crab and Halibut Protection Zone (160° to 162° W., south of 58° N.), originally created under Amendment 10, will be expanded westward to 163° W. for the period March 15 to June 15 in order to provide additional protection to crab during molting. The associated exemption for domestic trawling for Pacific cod will also be extended to 163° W. during this period, along with existing requirements for approved data gathering programs and a 12,000 crab PSC limit for red king crab.

The bycatch limits will be apportioned to the following four fisheries in proportion to their anticipated bycatch "need": U.S. processed (DAP) flatfish fisheries (including yellowfin sole, rock sole, and other flatfish), other DAP groundfish fisheries, joint venture (JVP) flatfish fisheries, and other JVP groundfish fisheries. If a flatfish fishery attains one of its bycatch apportionments, then bottom trawling for flatfish (yellowfin sole, rock sole, and other flatfish) will be closed in the appropriate area (zone). If the other fisheries attain one of their bycatch apportionments, then bottom trawling for pollock and Pacific cod will be closed in the appropriate zone.

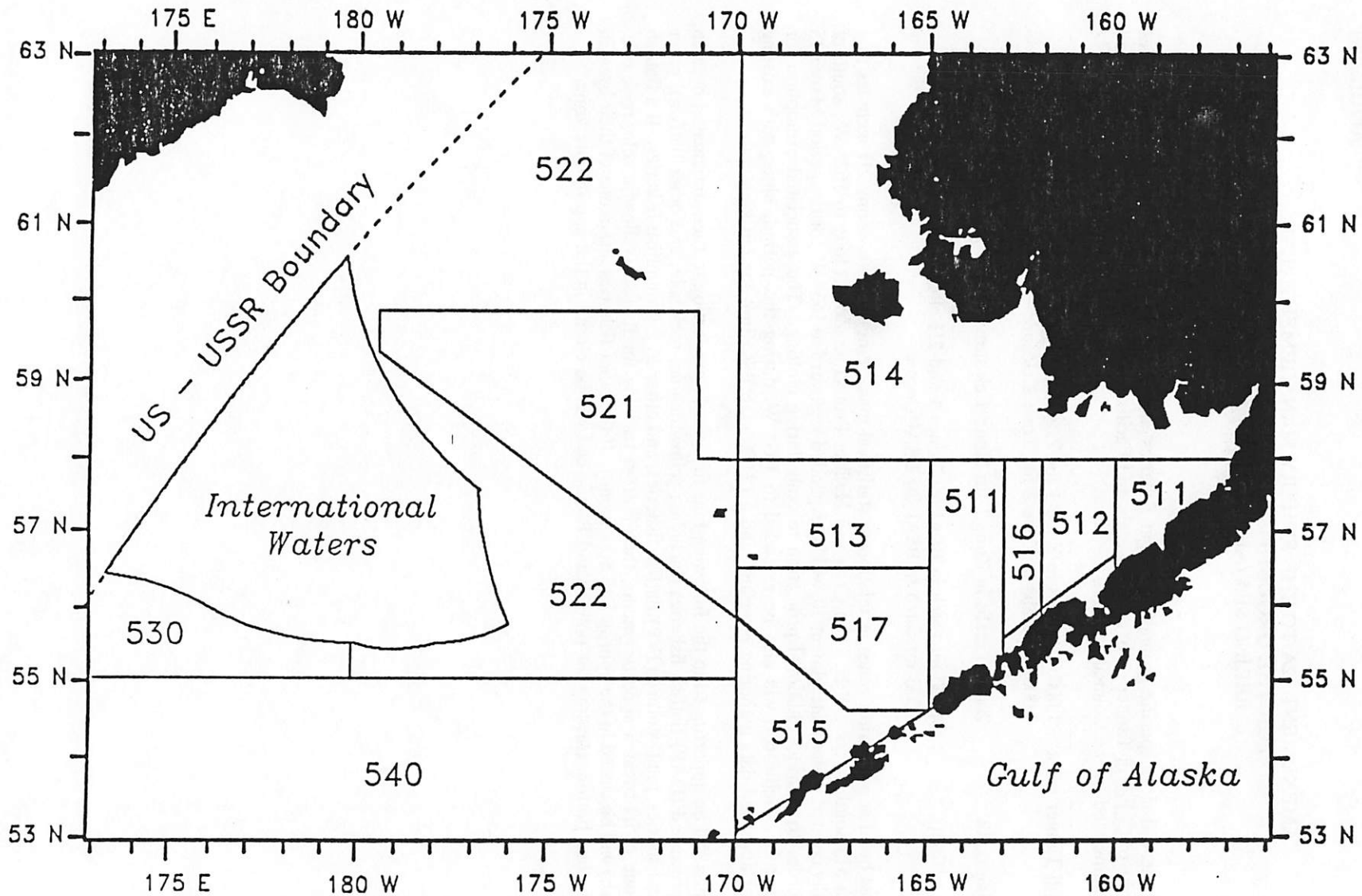


Figure 1. Statistical reporting areas in the BS/AI (Amendment 12A)

Bycatch protection zones: Zone 1 = 511 + 512 + 516
 Zone 2 = 513 + 517 + 521
 Zone 2H = 517

AD HOC HERRING BYCATCH WORKGROUP REPORT & RECOMMENDATIONS

The Ad Hoc Herring Bycatch Workgroup is composed of individuals representing Western Alaska communities and local fisheries, representatives of the domestic and joint venture trawl industry, and members of ADF&G Central and AYK staff. The workgroup has been assisted by Council staff.

The workgroup was formed in response to concerns raised by Western Alaska interests that the bycatch of herring by the domestic and joint venture trawl fleet was, or could be, adversely affecting Western Alaska herring stocks. The workgroup has met several times during the past few months to develop the following report and recommendations. The recommendations have the endorsement of all participants and the agreement that they will be implemented voluntarily.

OVERVIEW OF ISSUES AND CONCERNS

Trawl operations in the Bering Sea occasionally take herring as bycatch. Historically, the bycatch occurs by area during specific times of the year: during the spring in Bristol Bay; during May and early June in the Port Moller area; during mid-June through late August in the Unimak Pass area; and during the fall in the Central Bering Sea. This time/area trend provides the opportunity to address herring bycatch concerns on a localized basis.

The level of herring bycatch by joint venture trawl operations in the EEZ has declined dramatically during the past few years from 3764 MT in 1986 to 351 MT in 1988. Of this amount, 199.2 MT occurred in Area 514 (which includes Togiak) during 1988¹.

Generally, information on DAP bycatch in the EEZ is sketchy because there are no observers. Since there has been little spring DAP activity in the Togiak area, it can be assumed the level of bycatch in that area has similarly been low. There has been DAP herring bycatch in the Port Moller area. The total amount taken is confidential, however informal discussions with representatives of the DAP processors operating in the area suggest an upper range of 400 MT.

The largest amount of DAP herring bycatch has occurred in the Unimak Pass area during the summer by shorebased trawlers operating out of Unalaska. These vessels bring their total catch into port where the herring is sorted and hauled back out to sea for disposal. As a result, port sampling by ADF&G personnel has identified a estimated range of total bycatch by this component of the fleet of 1500 to 2000 MT during 1988. Because this number only reflects shoreside sampling and does not include at-sea discards, it is believed to be conservative.

The State of Alaska allows a directed food and bait herring fishery to take place in state waters during the late summer in the Dutch Harbor area. The upper range of the harvest level is approximately 7% of the Togiak herring harvest. In 1988, the Dutch Harbor directed fishery harvested 2004 MT of herring, about 1000 MT below the upper range. The 1989 preliminary harvest guideline provides for an anticipated Dutch Harbor fishery of 1006 MT². Arguably, if herring bycatch is a legitimate concern, then the directed fishery has to be viewed with concern as well.

¹ Source: Jerry Berger, NWAFC

² Source: Herman Savikko, ADF&G

Although the Council does not have jurisdiction over the state fishery, it has been proposed that provisions be made to allow the retention of bycatch taken in the EEZ and to have that amount deducted from the inshore food and bait fishery. The retained bycatch would be delivered to Dutch Harbor for processing and the proceeds would be used to fund the proposed Marine Fishery Technology Center. The workgroup took no action on this proposal since it requires attention from both the Board of Fish and the Council.

Representatives of the trawl industry indicated it is possible to avoid taking herring as bycatch if the skipper knows what to look for. One workgroup participant reported that 65% of his company's herring bycatch in the Port Moller area was taken in two tows, and 80% in three tows. This accentuates the concept of education as a means of avoidance.

Concern was also expressed regarding the impact on discreet herring stocks which are taken as bycatch, particularly for some stocks of low populations. If, after spawning and during their subsequent migration, they continue to move in aggregate schools, bycatch of those stocks could have substantial adverse impact. It is not known, however, whether the stocks disperse after spawning or continue to move in aggregations.

RECOMMENDATIONS

Herring Stock Composition Study

In order to address the question of impact upon discrete stocks of herring taken as bycatch, ADF&G and the Northwest Alaska Fishery Center have designed a herring stock composition study. Although the Center has agreed to instruct its observers to collect scale samples, there is concern that there will be insufficient observers to adequately cover the fleet. It is possible some vessels without observers may be willing to collect whole fish samples in accordance with the appropriate sampling guidelines.

ADF&G has agreed to perform the analysis -- if funding is available. Senator Binkley has included in his budget requests, funds to perform the analysis. The Legislature has not yet taken action on this item.

Communication System for Yellowfin Sole Trawlers Near Togiak

ADF&G has agreed to broadcast daily updates on the general location and migration patterns of herring in the Bristol Bay/Togiak area. The updates will be issued at 6:30 P.M., on UHF 7, single side band. More detailed information on stock location, etc., will be available on other frequencies.

The DAP trawl industry, which may be operating in that area, has voluntarily agreed to monitor the ADF&G reports and avoid areas and migration corridors where concentrations of herring are reported.

Local Observers Aboard Trawl Vessels in the Togiak Area

The DAP trawl industry has voluntarily agreed to accept Western Alaskans as observers on board their vessels when they are operating in the Togiak area to view their operations. The DAP vessels will provide reasonable transportation to and from their vessel. Western Alaska representatives have developed a list of people willing to serve as observers.

Education Program for Trawl Skippers

The Alaska Factory Trawlers Association has agreed to develop and provide a herring identification and avoidance education program for trawl skippers. The program will initially be available this spring. During the remainder of this year the program will be expanded so that a more comprehensive program can be offered next year.

Full Accounting of Herring Bycatch

The workgroup agreed there must be full accounting of all herring bycatch taken, regardless of area and vessel type. Those vessels which do not have observers on board must report the amount, area, and time of herring bycatch.

CONCLUSIONS

The program agreed to by the workgroup participates reflects a good faith effort to address the issue and impact of herring taken as bycatch. The workgroup expects all participants in the trawl fisheries to fully comply with each and every aspect of this program. Implementing details still remain to be resolved in some areas. The workgroup intends to monitor the program during the remainder of this year.

MINORITY REPORT ON HERRING BY CATCH COMMITTEE PLAN FOR 1989
FISHERY IN DUTCH HARBOR AREA by Harold Sparck,
representing Yukon-Kuskokwim Fisheries Task Force

The Herring fisheries in the Yukon Kuskokwim Delta area have asked me to file with the North Pacific Fisheries Management Council a minority statement to the Herring By Catch Committee report made by its Chairman Larry Cotter.

Our groups fish small discrete stocks of Eastern Bering Sea Herring. Our fisheries must wait for the herring to come to them as separate spawning biomasses. For these villages, herring comprise either their subsistence or commercial economy. These villages do not have commercial salmon fisheries. The conservation of these stocks are very important to these villages.

These villages are not satisfied with the lack of progress to reduce mixed stock ocean interception of these discrete herring stocks. Mr. Cotter has done a good job in his report explaining the biological unknowns, and conservation threat in these mixed stock herring fisheries.

These groups support the proposal by the Alaska Department of Fish and Game to develop stock identification for these herring.

However, these groups do not support the non-action that is being proposed for the 1989 Dutch Harbor herring by-catch. Their discrete stocks are being harvested in two fishery, a State authorized food and bait fishery, and a Federal trawl fishery. At the very minimum, 4,000 plus tons are being wasted. The upward projection is closer to 15,000 tons. There are no observers, no effective ceiling on by catch, and no mandatory time and area closure to limit the conservation risk.

Our groups propose that the Council:

- a. Set a herring by catch cap of 4,000 tons for the combined 1989 State and Federal Dutch Harbor fishery;
- b. Require statistically significant observer coverage to determine by catch rates of harvesters who discharge at sea, and monitor shore side deliveries;
- c. Once the 4,000 tons is taken in any form in Federal or State waters, a mandatory time and area closure be implemented to halt fishing until herring have left the region in late September.

File: YKTF3-4.89

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M E M O R A N D U M

S T A T E O F A L A S K A

To: Larry Nicholson *LN*
Westward Region Regional Supervisor
Commercial Fisheries-Kodiak

November 27, 1988

From: Leslie Watson *LW*
Fishery Biologist
Commercial Fisheries-Kodiak

Subject: Estimates of herring bycatch in the 1988 DAP pollock fishery adjacent to Unimak Pass

Summary: Documentation of herring bycatch on a subsample of fish tickets was used to derive an estimate of herring bycatch in the 1988 pollock fishery adjacent to Unimak Pass. The estimate obtained (1,500 - 2,000 metric tons) does not include any at-sea discards of herring.

Introduction

This memo provides an updated estimate of herring bycatch from the domestic pollock fishery in the Unimak Pass area. The domestic catch (DAP) of pollock in the Bering Sea has increased annually since 1978 to a record high 390,671 mt in 1988. To date, almost 50% of the total Bering Sea catch has been harvested from the Unimak Pass area. Herring bycatch in this fishery has long been recognized as an issue of concern to fishery managers. Although estimates of bycatch from the joint venture fisheries exist, no data have been available for the rapidly increasing domestic fishery. Further, in 1988 the joint venture pollock fishery occurred either before June or after early September while the domestic fishery peaked between June and September, a time of greater potential interaction with herring.

Methods

In June 1988, Bering Sea pollock processors were asked to monitor and report on their fish tickets any herring that were landed along with pollock catches. In this manner, bycatch data were obtained from 11 vessels (representing both shore-based and floating processor sectors) and were assumed to be representative of the rest of the fleet operating in the same area.

The Unimak study area was defined as all ADF&G statistical areas in which the 11 boats reported a bycatch of herring (Figure 1). Nearby statistical areas, which were also fished for pollock, were not included in our analyses. Data gathered from the 11 vessels represented 43% of the pollock harvest from the study area. Monthly pollock landings and herring bycatch for these vessels are shown in Table 1. During the months examined, these vessels made 267 landings of pollock, of which 77% of the fish

tickets listed a bycatch of herring in July, 29% in August, and 11% in September.

Results and Discussion

Estimates of the total herring bycatch were calculated in two ways. The first method was to assume that all herring caught were totally accounted for in all 267 landings of pollock by the 11 vessels. In other words, if a fish ticket did not list a bycatch of herring, it was assumed that none occurred. The July rate was applied to June and the September rate was applied to October to account for the periods when herring were expected to be in the Unimak area but were not monitored. The total removal of herring using this method was 1,498 mt (Table 2). This is clearly a conservative method of estimation because I could not determine whether or not each vessel and processor rigorously monitored every landing from the 11 vessels during July to September.

The second method is less conservative in that it assumes that all 11 vessels caught herring (whether or not herring were listed on their fish tickets) at the same rate as that reported by vessels that did report their herring bycatch. Assumed rates for June and October were determined as previously described. Data from the 78 landings that reported a herring bycatch were expanded to the whole pollock catch, producing a calculated herring removal of 1,974 mt (Table 2).

Both estimates of herring bycatch are presumed to be conservative because there was no accounting of any at-sea discard of herring -- either as individual herring sorted from the catch or the dumping of entire codends which may have contained large numbers of herring.

cc: Ken Parker
Denby Lloyd
Fritz Funk
Linda Brannian
Dave Carlile
Peter Craig
Pete Probasco
Dana Schmidt
Mike Ward

AKJG
REPORT 1988

See Page 28-29
PT. MOLLER FISHERY
HERRING

Togiak District, Bristol Bay, Sac Roe and Spawn-on-Kelp Fisheries

By

Linda Brannian
Central Region Biometrician
Anchorage

and

Katherine Rowell
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The Togiak District of Bristol Bay extends from Cape Constantine to Cape Newenham and supports the largest spawning population of Pacific herring in the eastern Bering Sea. Though studies have yet to prove genetic variation between spawning populations of herring in the eastern Bering Sea, differences in growth due to environmental influences are apparent. Herring that spawn in the Togiak District are most similar to herring from the Security Cove and Goodnews Bay Districts but show significant differences in growth and timing from herring which spawn along the Alaska Peninsula and north of Kuskokwim Bay. Herring move into the Togiak District from their overwintering grounds near the Pribilof Islands in the spring to spawn. These herring then feed during their post spawning migration southward along the Alaska Peninsula, concentrate in the vicinity of Unalaska Island, and return to their overwintering grounds in the fall. The primary harvest of this herring stock occurs in the Togiak District by a sac roe fishery during the spring spawning migration. Lesser harvests are taken during the summer months in the Dutch Harbor food and bait fishery and as bycatch of the domestic pollock trawl fishery.

Beginning in late April the nearshore area of Togiak District is surveyed daily from small aircraft to determine relative abundance, distribution, and spawning success of Pacific herring. Biomass estimates are derived from the number and size of herring schools observed during these surveys. The current use of aerial surveys to estimate the Togiak herring spawning biomass began in 1978. Observed abundance has ranged from 242,298 tons in 1979 to 76,960 tons in 1980 (Figure 18). The 1980 biomass is believed to be an underestimate due to poor visibility and overall poor survey conditions experienced that season.

Year class strength represented by its abundance as 5-year-old herring was derived from aerial survey results and annual age composition estimates. In the Togiak District strong recruitment was last detected in 1982-83 when the 1977 and 1978 year classes joined the spawning biomass representing 197 and 189 million age-5 fish respectively (Figure 19). Recruitment has since averaged 12 million fish annually. The 1974 year class was the largest in this series and contributed 586 million 5-year-old recruits to the 1979 biomass.

A schedule of increasing natural mortality with age was used (Table 10) to project the 1989 population. An estimated 54% of the population (number of fish) will be 10 years or older in 1989 (Figure 21). The 1977 and 1978 year classes will continue to support the fishery and will appear as 11 and 12 years of age in 1989. Few herring cohorts have survived to these ages and estimates of mortality for age 10 and greater are based on very few observations. Therefore, considerable uncertainty concerning the survival of these older age classes remains. The potential exists for a lower survival of these fish to occur which would result in a return less than forecast. The older herring age classes in past years arrive on the fishing grounds before the younger or recruit age classes. The emphasis of the fishery and therefore biomass assessment is directed towards the older fish. This separation of older and younger age classes results in a paucity of information regarding the younger and later appearing age classes.

Projection of the youngest age classes (age 3 and 4) which are not fully recruited are difficult as few age-2 or -3 fish were detected in the Department's 1988 sampling program.

The 1989 spawning biomass of herring in the Togiak District is projected to be 80,100 tons (Tables 9, 10). The average size of an individual is expected to be 362 grams. An estimated 63% of the biomass will be age 10 or older (Figure 21). The performance of the forecast has been conservative since 1984 (Figure 22) with an average forecast error (1984-88) of 28%.

The Bristol Bay Herring Management Plan (AAC27.865) allows for a maximum 20% exploitation of the Togiak herring population. Before opening the sac roe fishery the Plan specifies that the department set aside approximately 1,500 tons to allow for the Togiak District herring spawn-on-kelp harvest followed by a 7% reduction of the remaining total allowable harvest for the Dutch Harbor food and bait fishery. The remaining harvestable surplus is allocated to the sac roe fishery and shall be managed for a removal of 25% by the gill net fleet and 75% by the purse seine fleet. A maximum guideline harvest level of 175 tons has been established for the spawn-on-kelp fishery. In years when circumstances prevent adequate biomass assessment, the fishery will be exploited on the pre-season projected return. Should a manageable separation of the year classes occur, a harvest of the younger age classes may transpire if a threshold of 20,000 tons of these younger fish are present on the grounds.

In 1989 the recommended total allowable harvest is 16,020 tons and represents 20% of the forecasted biomass. In accordance with the management plan the allocation would then be 1,500 tons of herring or 175 tons of product for the spawn-on-kelp fishery, 1,016 tons for the Dutch Harbor food and bait fishery, and 13,504 tons for the sac roe fishery.

Offered: 4/6/89
Referred: Rules

6-0772E

Original sponsors: Eliason, Rinkley,
Zharoff, et al.

1 IN THE SENATE BY THE RESOURCES COMMITTEE
2 HOUSE CS FOR SENATE JOINT RESOLUTION NO. 31 (Resources)
3 IN THE LEGISLATURE OF THE STATE OF ALASKA
4 SIXTEENTH LEGISLATURE - FIRST SESSION

5 Relating to the bycatch of halibut by
6 domestic fisheries and an on-board
7 observer program.

8 BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

9 WHEREAS Pacific halibut are caught incidentally and discarded by
10 fisheries targeting other groundfish and shellfish species and this inci-
11 dental catch is known as "bycatch"; and

12 WHEREAS the North Pacific Fishery Management Council has established
13 allowable levels of halibut bycatch for domestic fisheries, but it is
14 believed that these levels may be exceeded, particularly by trawlers in the
15 Bering Sea and the Gulf of Alaska; and

16 WHEREAS the Bering Sea and the Gulf of Alaska are nursery grounds for
17 Pacific halibut stocks; and

18 WHEREAS the bycatch of young halibut in the Bering Sea and the Gulf of
19 Alaska adversely affects stock levels for every commercial and recreational
20 halibut fishery from the Bering Sea to California; and

21 WHEREAS, in part, due to the excessive bycatch mortality of halibut in
22 the groundfish fishery, the International Pacific Halibut Commission re-
23 cently lowered the catch quota for the 1989 commercial halibut season,
24 which will result in a loss of millions of dollars of income to halibut
25 fishermen, processors, the recreational fishing community, related busi-
26 nesses, and coastal communities; and

27 WHEREAS the major threats to young halibut are the Bering Sea and Gulf
28 of Alaska trawl fisheries, although the developing Pacific cod trawl fish-
29 eries and, to a lesser extent, the longline fisheries pose major additional

1 potential threats to halibut stocks; and

2 WHEREAS observers on board fishing vessels greatly improve the col-
3 lection and reliability of fishery harvest data and improve compliance with
4 allowable catch limits; and

5 WHEREAS reliable estimates of halibut bycatch are available from the
6 foreign and joint venture fisheries as the consequence of a comprehensive
7 on-board observer program, implemented under the Magnuson Fishery Conserva-
8 tion and Management Act; and

9 WHEREAS this on-board observer program was instrumental in controlling
10 the halibut bycatch problem caused by the foreign and joint venture fisher-
11 ies; and

12 WHEREAS there has been a dramatic decrease in the level of foreign
13 fishing allowed in the Exclusive Economic Zone in the last few years which
14 has led to a substantial increase in the level of nonobserved domestic
15 fisheries and this has resulted in a dramatic increase in the mortality of
16 halibut off Alaska attributable to the domestic groundfish fisheries; and

17 WHEREAS on-board observers are not required in the vast majority of
18 domestic groundfish fisheries off Alaska; and

19 WHEREAS the State of Alaska opposes the waste of fish and game re-
20 sources and has enacted laws to prevent the waste of fish and game re-
21 sources; and

22 WHEREAS the Alaska State Legislature must object, as a matter of
23 principle, to the waste of excessive numbers of young halibut that are
24 being caught, killed, and discarded in the domestic Bering Sea and Gulf of
25 Alaska groundfish fisheries; and

26 WHEREAS responsibility for regulating the bycatch of halibut lies with
27 the U.S. Secretary of Commerce and the North Pacific Fishery Management
28 Council; and

29 WHEREAS the International Pacific Halibut Commission has determined

1 that resolution of the halibut bycatch problem is essential to the con-
2 tinued successful management of the halibut resource and has asked the
3 North Pacific Fishery Management Council to develop an on-board observer
4 program for domestic fishing fleets off Alaska; and

5 WHEREAS the North Pacific Fishery Management Council has requested the
6 U.S. Secretary of Commerce to implement an on-board observer program and to
7 provide the necessary funding for the program;

8 BE IT RESOLVED that the Alaska State Legislature respectfully requests
9 the U.S. Secretary of Commerce and the North Pacific Fishery Management
10 Council to implement a comprehensive mandatory observer program to place
11 sufficient on-board observers on all vessels that might cause incidental
12 mortality to halibut in order to guarantee collection of accurate data; and
13 be it

14 FURTHER RESOLVED that, if funding for an on-board observer program is
15 not available from any other source, the Alaska State Legislature would
16 support an assessment against the vessels involved in the nonhalibut fish-
17 eries in order to fund the program; and be it

18 FURTHER RESOLVED that the Alaska State Legislature encourages gear
19 research that will reduce the incidental mortality of halibut in all fish-
20 eries.

21 COPIES of this resolution shall be sent to the Honorable Robert A.
22 Mosbacher, U.S. Secretary of Commerce; the Honorable John Peterson, Chair-
23 man of the North Pacific Fishery Management Council; and to the Honorable
24 Ted Stevens and the Honorable Frank Murkowski, U.S. Senators, and the
25 Honorable Don Young, U.S. Representative, members of the Alaska delegation
26 in Congress.

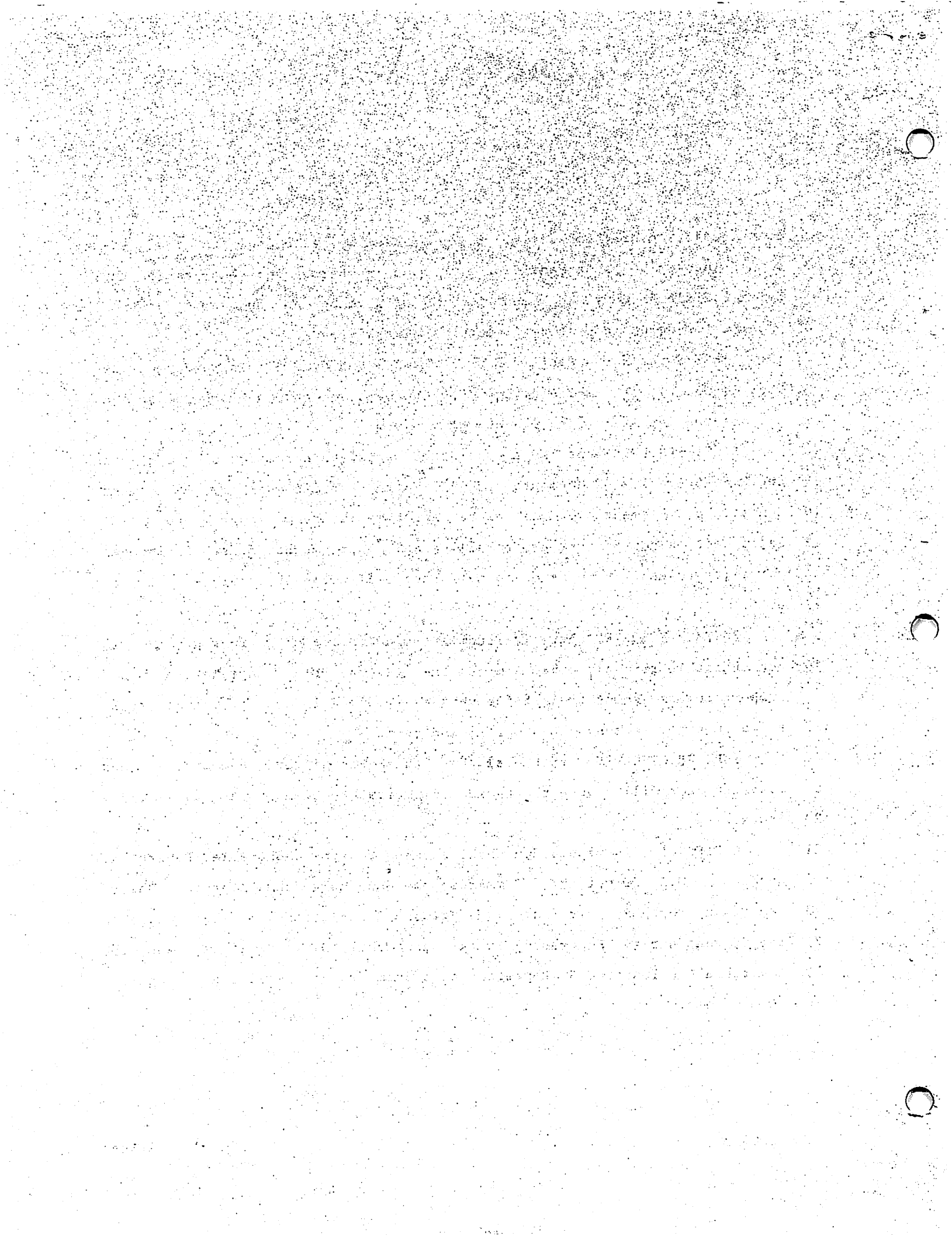


Table 1. Annual abundance estimates (millions of crabs) for red king crab (*P. camtschatica*) in Bristol Bay and the Pribilof District from NMFS surveys.

Size ¹ (mm) Width(in)	Males				Females			Grand Total
	<110 <5.2	110-134 5.2-6.5	≥135 ≥6.5	Total	<90 <3.5	≥90 ≥3.5	Total	
1969	41.0	20.3	9.8	71.1	18.3	28.5	46.8	117.9
1970	9.5	8.4	5.3	23.2	4.9	13.0	17.9	41.1
1972 ²	14.1	8.0	5.4	27.5	7.0	12.1	19.1	46.6
1973 ³	50.0	25.9	10.8	86.7	24.8	76.8	101.6	188.3
1974 ³	59.0	31.2	20.9	111.1	37.7	72.0	109.7	220.8
1975	84.9	31.7	21.0	137.6	70.8	58.9	129.7	267.3
1976	70.2	49.3	32.7	152.2	35.9	71.8	107.7	259.9
1977	80.2	63.9	37.6	181.7	33.5	150.1	183.6	365.3
1978	62.9	47.9	46.6	157.4	38.2	128.4	166.6	324.0
1979	48.1	37.2	43.9	129.2	45.1	110.9	156.0	285.2
1980	56.8	23.9	36.1	116.8	44.8	67.6	112.5	229.3
1981	56.6	18.4	11.3	86.3	36.3	67.3	103.6	189.9
1982	107.2	17.4	4.7	129.3	77.2	54.8	132.0	261.3
1983	43.3	10.4	1.5	55.2	24.3	9.7	34.0	89.2
1984	81.8	12.6	3.1	97.6	57.6	17.6	75.1	172.7
1985	13.7	10.1	2.5	26.3	6.9	6.8	13.7	39.9
1986	11.8	12.3	5.9	30.1	4.5	5.4	9.8	39.9
1987	20.1	12.6	7.9	40.6	16.8	18.3	35.1	75.7
1988	8.5	6.4	6.4	21.3	2.7	15.7	18.4	39.7
Limits ⁴								

Lower	3.4	5.0	5.1	15.3	0.04	3.6	5.4	20.7
Upper	13.7	7.8	7.6	27.3	5.4	27.7	31.4	58.7
±%	60	22	20	28	98	77	71	48

1 Carapace length (mm).

2 Limited survey in 1971, not used for population estimate.

3 1973 and 1974 estimates considered unreliable.

4 Mean ± 2 standard errors for most recent year.

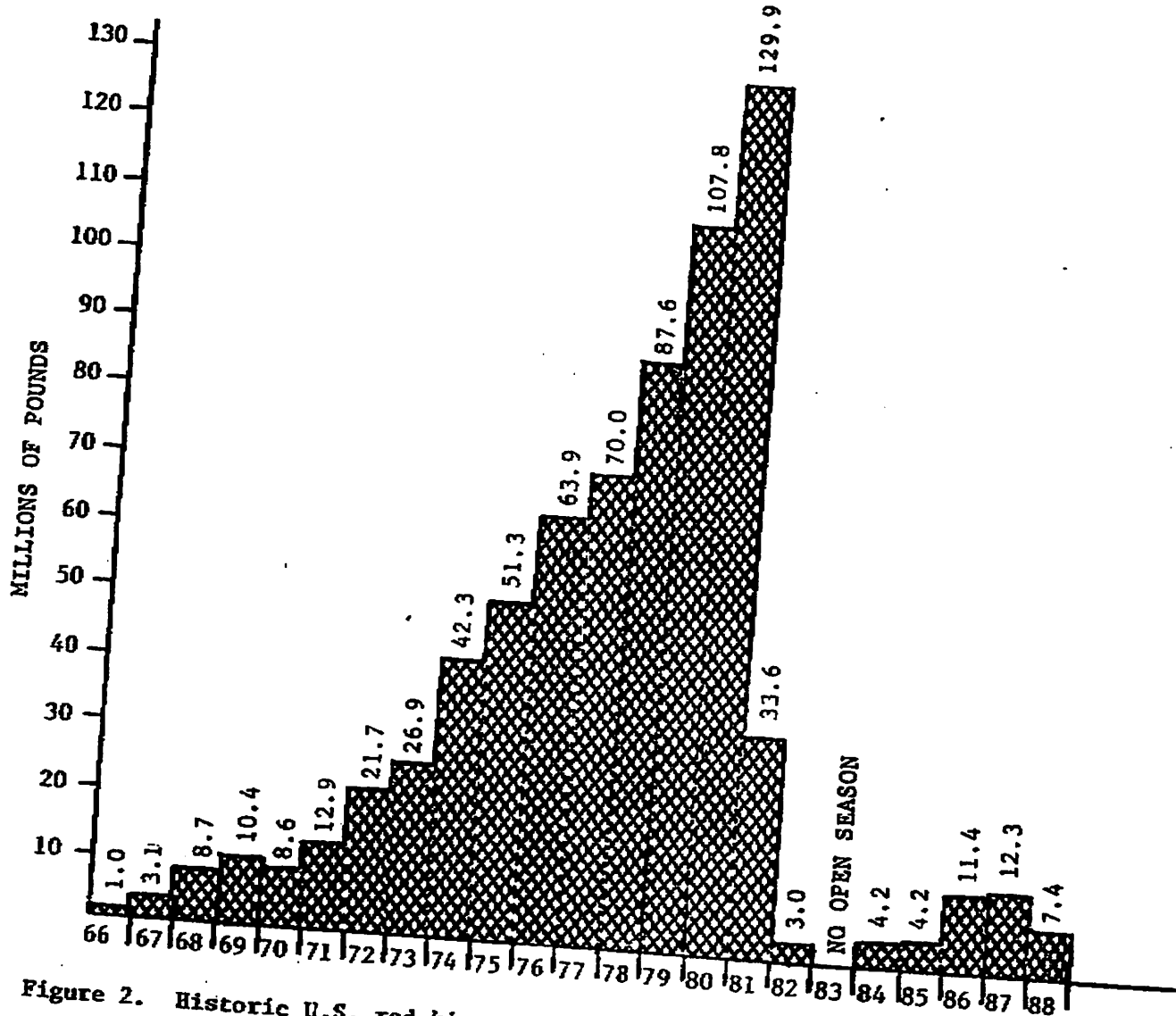
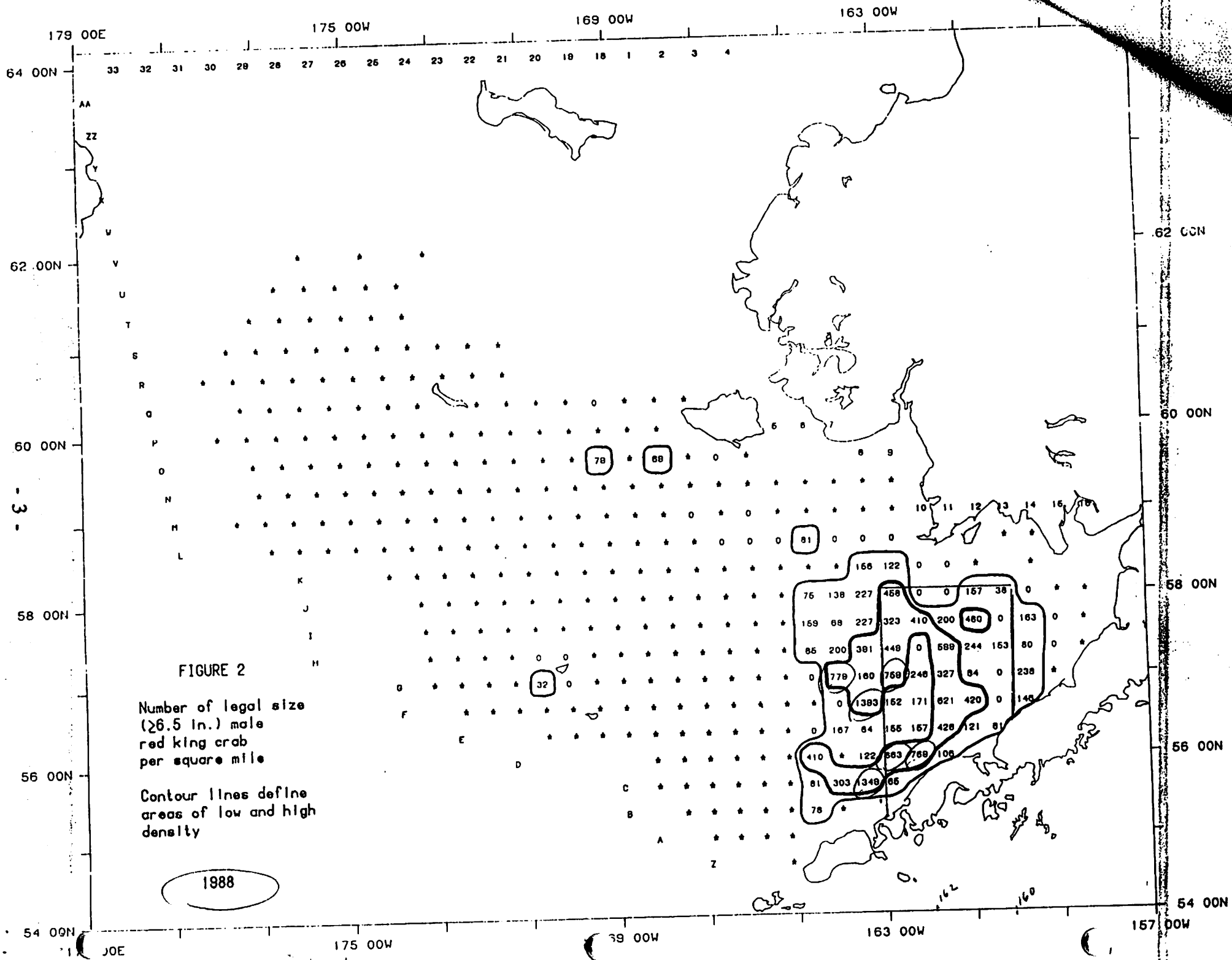


Figure 2. Historic U.S. red king crab catch in the Bristol Bay Registration Area "T" of the Bering Sea.



1988 REL KII - CRAB PERING
 SEA CATCH BY STAT AREA
 (TOTAL CATCH EQUALS 7,387,795 #)

		164		162		160
		TRAWLERS		PROPOSE		
7%		6,617	15,425	15,428	16,091	
		TO OPEN THIS AREA				
18.5%	48,733	425,466	362,487	215,153	207,141	48,520
		OF ZONE 1				
36.7%		TO TRAWLING				
	84,895	325,534	1,457,860	712,000	48,905	
		NO TRAWL ZONE				
32%		OUTSIDE 25-FATHOMS				
	3383	421,181	1,348,729	586,792		
10.4%	20,790	379,145	373,411			
		NO TRAWL ZONE BOUNDARY = IS ZONE 1 BOUNDARY				
		2%	21%	48%	22.3%	3.5%
						5%

is No TRAWL ZONE BOUNDARY
 = IS ZONE 1 BOUNDARY

7. 1988 CATCH FROM 160° - 163°W = 26.3%
 SOUTH OF 58°N

7. 1988 CATCH FROM WEST OF 163°W ≥ 71%
 SOUTH OF 58°N



To:
 From:

Joint Venture Representatives
 Pat Peacock
 National Marine Fisheries Service, Alaska Region
 20-Mar-89

BEST-BLEND JOINT VENTURE CATCH FOR WEEK ENDING MARCH 11, 1989

ALL	BERING SEA TOTAL	9510.9	241252.4	295211.0	53958.6	82%
ALL	BERING SEA SQUID	0.0	2.7	25.0	22.3	NODF
ALL	BERING SEA YELLOWFIN SOLE	1984.8	118476.0	110000.0	-8476.0	NODF
ALL	BERING SEA FLOUNDER W/ YFS	3414.6	8930.1	40000.0	31069.9	NODF
ALL	BERING SEA POLLOCK	3125.7	65632.1	93415.0	27782.9	NODF
ALL	BERING SEA PACIFIC COD	477.1	33772.0	37466.0	3694.0	NODF
ALL	BERING SEA SABLEFISH	0.0	0.4	0.0	-0.4	PSC
ALL	BERING SEA ATKA HACKEREL	0.0	0.6	0.0	-0.6	PSC
ALL	BERING SEA POP	0.0	0.2	0.0	-0.2	PSC
ALL	BERING SEA ROCKFISH W/ POP	1.4	9.6	0.0	-9.6	PSC
ALL	BERING SEA ARROWTOOTH FL	1.8	193.6	700.0	504.4	NODF
ALL	BERING SEA OTHER FISH	124.6	1596.3	4000.0	2403.7	NODF
ALL	BERING SEA TURBOTS	0.0	0.1	0.0	-0.1	PSC
ALL	BERING SEA ROCKSOLE	380.9	12636.7	9605.0	-3031.7	PSC
ALL	BERING SEA TOTAL	9510.9	241252.4	295211.0	53958.6	82%
ALL	BERING SEA RED KING CRAB			171,263 crabs		
ALL	BERING SEA B. TAUNDER			228,193 crabs		
ALL	BERING SEA HALIBUT			504 mt		
Zone 1	RED KING CRAB			169,055 crabs		

169,055 crabs

From JVP

9,000 mt rocksole Z1 DAF @ 3 RKC/MT = 27,000 3-6-89

John Berger

169,000
 27,000
 196,000

Z1 DAF

