

MEMORANDUM

TO: Council, SSC and AP Members

FROM: Clarence G. Pautzke
Executive Director



DATE: November 26, 1991

SUBJECT: Bycatch Management

ACTION REQUIRED

- a. Consider final action on Amendments 19/24 at the December meeting.
- b. Recommend that portions of Amendments 19/24 be implemented as soon as possible through an emergency interim rule.

BACKGROUND

At the September meeting, the Council approved the proposed Amendments 19/24 for public review. The Council also recommended an emergency rule to delay the start of all trawling for groundfish in the BSAI and GOA and to delay the start of the GOA rockfish trawl fishery.

The draft EA/RIR amendment package is presented as Amendment 19 to the Bering Sea/Aleutian Islands plan and Amendment 24 to the Gulf of Alaska plan. At the September Council meeting the SSC and AP requested minor changes to the EA/RIR. Staff incorporated these suggestions and released the EA/RIR for public review. It was sent to you the first week of November. Included in the amendment package are the following eight amendment topics:

1. Enhance the NMFS Regional Director's hotspot authority in the Bering Sea/Aleutian Islands, and extend it to the Gulf of Alaska.
2. Improve the current Vessel Incentive Program.
3. Delay all groundfish fishery opening dates for the BSAI/GOA.
4. Delay the Gulf of Alaska rockfish opening date.
5. Establish a BSAI halibut PSC limit for fixed gear fisheries.
6. Define new PSC apportionment categories and prohibit all trawling for species in the "Other Fishery" category when the bycatch allowance is reached.
7. Changes to Fishery Definitions.
8. Changes to Directed Fishing Standards.

Item D-1(b)(1) provides a detailed list of the alternatives analyzed in Amendment 19/24.

The Council needs to review public comments and take final action at the December meeting. The Council has already recommended emergency rule action on the season delay proposals to be effective at the start of the 1992 fisheries. At the September meeting the Council recommended that:

1. The groundfish opening for 1992 in the GOA and BSAI be delayed for trawling until January 20, 1992; and
2. The GOA rockfish fishery (excluding DSR) be delayed for all gear types except jigging machines until July 15, 1992.

In order to have the other elements of this amendment package in place at the start of the 1992 fisheries, the Council will need to consider emergency rule action on these items at this meeting. This includes proposed changes to: 1) the Hot Spot Authority, 2) the Vessel Incentive Program, 3) the halibut PSC limit for the non-trawl fisheries, 4) PSC allowances for BSAI trawl fisheries, 5) fishery definitions, and 6) the directed fishing standards.

Amendment 19/24 Alternatives

1. BS/AI and GOA Hot Spot Authority

Alternative 1: No hot spot closure authority exists for the GOA. The existing hot spot closure authority in the BS/AI would continue. This authority provides the Regional Director with substantial discretionary authority with respect to the specifics of a closure. As a result of this discretionary authority, a public comment period of up to 30 days is required before a proposed closure can be implemented.

Alternative 2.1: Hot spot authority would be established in the GOA that parallels a revised hot spot authority in the BS/AI. The hot spot authority in the GOA and BS/AI proposed under this alternative would eliminate the need for a public comment period prior to the implementation of a closure by making the hot spot authority specific with respect to the bycatch rate that would trigger a closure, the area and fisheries to which a closure would apply, and the length of the closure. This alternative would require an amendment to the GOA FMP and a regulatory amendment under the BS/AI FMP.

Alternative 2.2: The BS/AI and GOA FMPs would be amended to authorize the establishment, by regulatory amendment, of time/area closures to reduce bycatch rates of prohibited species. Any closure of an area to reduce prohibited species bycatch rates would require a determination by the Secretary, in consultation with the Council, that the closure is based on the best available scientific information concerning the seasonal distribution and abundance of prohibited species and bycatch rates of prohibited species associated with various directed groundfish fisheries or gear types.

2. Vessel Incentive Programs

2.1 BS/AI Vessel Incentive Programs

Alternative 1: The current vessel incentive program is limited to the following fisheries and bycatch species:

1. Pacific cod (halibut) and
2. rock sole and yellowfin sole/other flatfish (halibut in all areas and king crab in Zone 1).

Alternative 2: The expanded vessel incentive program would apply to the following fisheries and bycatch species:

1. Pacific cod (halibut),
2. rock sole and yellowfin sole/other flatfish (halibut in all areas and king crab in Zone 1),
3. pollock when the bottom trawl pollock fishery is closed (halibut),
4. all other trawl fisheries (halibut), and
5. all trawl fisheries (chinook salmon).

These five items are not sub-options, they are considered together as a set of proposed vessel incentive program fisheries. As with the current program, seasonal bycatch rate standards would be established for each of these fisheries and it would be a violation for a vessel to exceed a standard.

The BS/AI vessel incentive program can be changed with a regulatory amendment.

2.2 GOA Vessel Incentive Programs

Alternative 1: The current vessel incentive program is limited to the following fisheries and bycatch species:

1. Pacific cod (halibut) and
2. rockfish (halibut).

Alternative 2: The expanded vessel incentive program would apply to the following fisheries and bycatch species:

1. Pacific cod (halibut),
2. rockfish (halibut),
3. pollock when the bottom trawl pollock fishery is closed (halibut),
4. all other trawl fisheries (halibut), and
5. all trawl fisheries (chinook salmon).

These five items are not sub-options, they are considered together as a set of proposed vessel incentive program fisheries. As with the current program, seasonal bycatch rate standards would be established for each of these fisheries and it would be a violation for a vessel to exceed a standard.

The GOA vessel incentive program can be changed with a regulatory amendment.

3. Fishery Starting Dates

3.1 BS/AI Starting Dates

Alternative 1: January 1 would remain the starting date of all BS/AI groundfish fisheries except for the flatfish fisheries that start May 1.

Alternative 2: Six options are being considered with respect to a new starting date except for the flatfish fisheries that currently start May 1, they are as follows:

1. January 15 (all gear),
2. February 1 (all gear),
3. February 15 (all gear),
4. January 15 (trawl gear),
5. February 1 (trawl gear), and
6. February 15 (trawl gear).

In the BS/AI, fishing seasons can be changed with a regulatory amendment.

3.2 GOA Starting Dates

Alternative 1: January 1 would remain the starting date of all GOA groundfish fisheries, except the longline sablefish fishery that does not start until May 1.

Alternative 2: Six options are being considered with respect to a new starting date except the longline sablefish fishery, they are the same as the options for the BS/AI. The end of the fishing year would remain December 31. In the GOA, fishing seasons can be changed with a regulatory amendment.

3.3 Starting Date of the GOA Rockfish Fisheries

Alternative 1: January 1 would remain the starting date of GOA rockfish fisheries.

Alternative 2: Two options are being considered with respect to a new starting date for the GOA rockfish fishery. They are July 1 and July 15. The end of the fishing year would remain December 31. The season delay of the GOA rockfish fishery would be accompanied by a revision of the directed fishing standards for rockfish to reduce the allowable amount of rockfish that may be retained as bycatch in other target fisheries (see Alternative 2 under Section 2.7).

4. BS/AI Halibut PSC Mortality Limit for the Non-Trawl Fisheries

Alternative 1: There are halibut PSC limits only for trawl fisheries.

Alternative 2: A halibut PSC mortality limit for the non-trawl fisheries would be established. The 6 options being considered with respect to the level of the limit are:

1. 500 mt as part of the current 5,333 mt mortality limit,
2. 1,000 mt as part of the current 5,333 mt mortality limit,
3. 1,500 mt as part of the current 5,333 mt mortality limit,
4. 500 mt but not as part of the current 5,333 mt mortality limit,
5. 1,000 mt but not as part of the current 5,333 mt mortality limit, and
6. 1,500 mt but not as part of the current 5,333 mt mortality limit.

A plan amendment is required to establish a halibut PSC mortality limit for the non-trawl fisheries.

5. PSC Limit Allowances for BS/AI Trawl Fisheries

Alternative 1: There are currently 4 trawl fisheries that receive crab and halibut PSC limit allowances. They are:

1. Greenland turbot,
2. rock sole,
3. yellowfin sole/other flatfish, and
4. P cod, b.t. pollock, m-w pollock, rockfish, Atka mackerel, sablefish, arrowtooth flounder, and other.

When the PSC apportionment of group 4 is taken, only the cod and bottom trawl pollock fisheries close. The mid-water pollock fishery receives a separate herring PSC limit allowance.

Alternative 2: The crab and halibut PSC limit allowances would be received by the following trawl fisheries:

1. Greenland turbot and arrowtooth flounder,
2. yellowfin sole,
3. rock sole and other flatfish,
4. P cod, and
5. b.t. pollock, m-w pollock, rockfish, Atka mackerel, sablefish, and other.

When the PSC apportionment of group 4 is taken, the Atka mackerel and m-w pollock fisheries would be excluded from the closure because the bycatch rates are much lower in these two fisheries. The mid-water pollock fishery would continue to receive a separate herring PSC limit allowance.

These four items are not sub-options, they are considered together as a set of proposed PSC limit allowance fisheries.

In the BS/AI, the trawl fisheries that receive PSC limit allowances can be changed with a regulatory amendment.

6. BS/AI and GOA Fishery Definitions

Alternative 1: There are two separate sets of definitions of fisheries for the purposes of monitoring PSC limit allowances and the vessel incentive program.

For the purposes of the PSC allowance program, each trawler vessel is assigned to a fishery for a week and area based on the following definitions. The first set of criteria that are met determine the fishery to which the vessel is assigned. Retained catch is calculated in round weight equivalents.

1. DAP midwater pollock fishery, if pollock is at least 95 percent of the vessel's total groundfish catch.
2. DAP Greenland turbot fishery, if the retained catch of Greenland turbot and arrowtooth flounder, in the aggregate, is at least 20 percent of the total retained catch of all other groundfish.
3. DAP rock sole fishery, if the retained catch of rock sole is at least 20 percent of the total retained catch of all other groundfish.
4. DAP flatfish fishery, if the retained catch of yellowfin sole and "other flatfish," in the aggregate, is at least 20 percent of the total retained catch of all other groundfish.
5. DAP other fishery, if the vessel was in a DAP fishery but none of the above criteria were met.
6. JVP flatfish fishery means JVP fishing with trawl gear during any weekly reporting period which results in deliveries to foreign vessels of amounts of yellowfin sole, rock sole, and "other flatfish," in aggregate amounts, that are 20 percent or more of the total amount of groundfish delivered calculated in round weight equivalents.

For the purposes of the vessel incentive program, each vessel is assigned to a fishery for a week based on the following definitions. The first set of criteria that are met will determine the fishery to which the vessel is assigned. The BS/AI categories are:

1. Greenland turbot fishery, if Greenland turbot is at least 35 percent of the vessel's total groundfish catch, excluding non-allocated species.
2. Pacific cod fishery, if Pacific cod is at least 45 percent of the vessel's total groundfish catch, excluding non-allocated species.
3. Flatfish fishery, if yellowfin sole, rock sole, and other flatfish comprise at least 40 percent of the vessel's total groundfish catch, excluding non-allocated species.
4. Other non-pelagic trawl fishery, if pollock is less than 95 percent of the vessel's total groundfish catch, excluding non-allocated species.

For the GOA, a trawl vessel's observed GOA groundfish catch of the TAC species each week, excluding arrowtooth flounder, is used as a basis for assigning it to one of three fisheries for that week. Arrowtooth flounder is excluded because, although this species may comprise a large percentage of groundfish catch, it typically is not retained. The first set of criteria that a vessel meets will determine the fishery to which the vessel is assigned by NMFS.

1. Pacific cod fishery, if Pacific cod is at least 45 percent of the vessel's total groundfish catch, excluding non-allocated species and arrowtooth flounder.
2. Bottom rockfish fishery, if rockfish (Pacific Ocean perch, shortraker/rougheye rockfish, slope rockfish, demersal shelf rockfish, and thornyhead rockfish, in the aggregate) is at least 30 percent of the vessel's total groundfish catch, excluding non-allocated species and arrowtooth flounder.
3. Other non-pelagic trawl fishery, if pollock is less than 95 percent of the vessel's total groundfish catch, excluding non-allocated species and arrowtooth flounder.

Alternative 2: The two sets of definitions would be changed so that one set of definitions would be used for monitoring both the vessel incentive program and PSC limit allowances.

The definitions of fisheries for both the incentive program and the PSC limit allowances would be as follows:

1. Mid-water pollock if pollock is $\geq 95\%$ of the total groundfish catch, excluding non-allocated species.
2. Other targets determined by dominant TAC species in terms of the round weight equivalent of retained catch.
3. For the BS/AI, a flatfish fishery consisting of rock sole, yellowfin sole, and other flatfish (excluding Greenland turbot and arrowtooth flounder) will be defined and then subdivided into three fisheries. If yellowfin sole accounts for at least 70% of the retained flatfish catch, it is a yellowfin sole fishery. Otherwise, it is a rock sole or other flatfish fishery depending on which is dominant in terms of retained catch.

These definitions will continue to be applied by area, week, and gear for monitoring PSC allowances and applied by week and gear, but not by area, for monitoring the incentive program.

For both the BS/AI and GOA, estimates of total groundfish catch of the TAC species, not retained catch, would continue to be used to: (1) set bycatch rate standards for the incentive program and for hot spot authority closures; (2) monitor the standards; and (3) estimate total bycatch.

7. Directed Fishing Standards

Alternative 1: The directed fishing standards for Pacific cod in the BS/AI and groundfish in the GOA would remain at 20 percent when caught by vessels using any trawl gear, directed fishing by vessels using pelagic trawl gear for all groundfish would be allowed after the halibut PSC allowance had been reached, and non-pelagic trawls could still be maintained in a fishing condition by vessels fishing in areas closed to non-pelagic trawling for a particular target species category.

Alternative 2: The regulations would be amended to allow more effective enforcement of directed fishery closures and to further limit trawl bycatch amounts of halibut after a halibut PSC bycatch allowance specified for a BS/AI trawl fisheries or the halibut PSC limit specified for GOA trawl gear has been reached. Under this alternative, management measures would be incorporated into

BS/AI and GOA regulations that are similar to those implemented under an August 13, 1991, interim emergency rule (56 FR 38346). Furthermore, the definition of fishing trip for purposes of the directed fishing rule would be amended so that a trip terminates at the end of a weekly reporting period. Specifically, the following measures would be implemented under this alternative.

1. With one exception, trawling for groundfish in the GOA would be prohibited when the halibut prohibited species catch (PSC) limit or seasonal allowance thereof is reached. Directed fishing for pollock by vessels using pelagic trawls would be allowed.
2. Directed fishing standards would be specified for aggregate amounts of GOA and BS/AI groundfish other than pollock, that are caught while fishing for pollock with pelagic trawl gear. Two options for an aggregate directed fishing standard are proposed at five and seven percent. The aggregate directed fishing standard for groundfish would not preempt more conservative standards established for specific target fisheries.
3. Directed fishing standards for GOA rockfish species of the genera Sebastes and Sebastolobus would be reduced to 15 percent of the aggregate amounts of deepwater flatfish, flathead sole, arrowtooth flounder, and sablefish; plus 5 percent of the aggregate amount of all other fish species retained at the same time by a vessel during the same fishing trip.
4. Vessels would be required to render non-pelagic trawls unusable for fishing when conducting fishing operations in areas closed to the use of non-pelagic trawls for a particular target species category if that vessel retains proportions of that target species category equal to or greater than the applicable directed fishing standard.
5. For purposes of the directed fishing rule, the operator of a vessel is engaged in a single fishing trip, from the date when fishing commences or continues in an area after the effective date of a notice prohibiting directed fishing in that area, until the first date on which at least one of following occurs: (1) a weekly reporting period ends; (2) the vessel enters or leaves a reporting area for which an area specific TAC or directed fishing standard is established; or (3) any fish or fish product is offloaded or transferred from that vessel.

DRAFT REVIEW
AMENDMENT 19/24
PLAN TEAMS' BYCATCH WORK GROUP

In September, the Teams suggested that the current bycatch problems could probably be more effectively and efficiently addressed if a comprehensive approach was utilized that dealt with the actual cause of the problem as opposed to treating the symptoms as they appear in individual fisheries. As this still remains the Teams' position, it is necessary for us to point out that this amendment package is composed of a series of individual stop-gap measures, each of which may or may not be compatible with the more comprehensive solution. Individual measures should really be evaluated separately as to whether they contribute to solving part of the bycatch problem or not. Instead, although each is discussed separately, they are lumped into bundles of options under 2 alternatives and with a limited amount of quantitative analysis or discussion of the relative merits.

Indeed, it appears that a number of the proposed features are incorporated to "patch up" the previous year's solution to a particular bycatch concern (e.g. revision of hot spot authority, revisions of fishing definitions and enforcement standards).

The remainder of the review is on the individual sections of this proposed package.

1. Revise NMFS Hot Spot Authority.

The analysis states that the current authority, if used, could actually increase bycatch in some instances due to the lag between the time an area is identified as a problem and when the closure is made. This would suggest that, given the limitations in our understanding of what causes "hot spots", fishery managers are not able to respond effectively to problems that are not consistent over time. So in effect, we are not talking about a hot spot authority but really about the traditional time/area closure.

As the Council already can use this approach, it is unclear to the reviewers what one might gain from this additional authority being granted. Often, time/area closures are created with specific sunset dates to ensure, given the inherent variability in the fisheries, that a closed area is periodically evaluated to determine as to whether it is still a problem and remained closed or re-opened.

The analysis of this option did not provide any indication as to whether these closures would be for an indeterminate period of time nor does it suggest what an appropriate duration might be. What would be the grounds for re-opening it? As no actual areas/times are identified as potential problems in the analysis, nor are the criteria for establishing or removing a specific closure clear, it is hard to evaluate the effectiveness of this potential tool for actual application. If one accepts the assertion that this will allow the RD to respond quicker, when and if a consistent, prolonged problem occurs, then there could be some benefit to granting this authority.

2. Vessel Incentive Program.

The analysis appears to support the conclusion that it would be worthwhile to expand the scope of the current incentive program to deal with the concerns not incorporated in the original program.

The analysis could probably be improved by incorporating more discussion on how the appropriate new rate standards were set, and some acknowledgement of why this new program will still not fully

solve the externalities that are the source of our bycatch problems.

3. Fishery Starting Dates.

The current analysis indicates, even from a data set of less than 2 full years, that a given date might help one year in reducing rates and not in a following year. There certainly doesn't appear to be any compelling reason to prefer any one of the limited proposed dates over the status quo, with the possible exception of GOA rockfish, if the primary consideration is to reduce bycatch. There may be other reasons for delaying starting dates (e.g. safety, quality of roe, etc) but these are not fully incorporated into the justification. Even with GOA rockfish, although a delay appears to substantially reduce bycatch, it is unclear how much of a delay would be justified.

In addition, moving the date later into the year will also remove future observations on fishing activities prior to that date so that once the delay is set, it would be hard to evaluate or justify moving back to an earlier date if annual fishing conditions change with regards to bycatch rates (as they apparently do for the data presented). Because of that concern, one would not want to delay a fishery and concentrate it into a relatively short portion of the year, if a less severe delay would generate close to the same reductions.

In addition, by looking at the changes for all targets combined, the structure masks potential savings that could occur by moving individual fisheries. For example, bycatch of halibut may be lowered by a 4-week delay of the cod fishery but may increase in the rock sole fishery. The bottom line is that some fisheries may benefit from a delay and others may not.

The conclusions presented on page 31, paragraph 3 do not appear to be consistent with the numerical results presented in Table 9.

However, whatever date is chosen it should be consistent between regions to avoid conferring either advantages or disadvantages to vessels, who for safety or other reasons, may be limited to either the GOA or BSAI regions.

4. Halibut PSCs and Mortality Limits

On page 19, Section 2.4, the 5,333 mt halibut PSC limit should be referred to as a bycatch limit, not a mortality limit.

A typo exists on page 20, for alternative 2. Group 4 should be group 5.

Since PSC limits currently exist for trawl fisheries, there are equity arguments that PSC limits should probably be set for non-trawl fisheries as well. The analysis indicates the value of the bycatch to the non-trawl fleet is high, but similar analysis suggest that is also true for the trawl fleet, and we continue to maintain caps for other social reasons.

5. Revisions in BS/AI and GOA fishery definitions and directed fishing standards.

Clearly, since benefits exist in making the procedure more streamlined and compatible between programs, the revisions are a good idea. It is unclear from the discussion why midwater pollock should be defined differently than the criteria used for the other species (p55) and that rationale should be included in the discussion of this definition change.

Page 56, 1st paragraph should read "Such behavior may be less likely.."

Given the presentation, it was hard to evaluate the proposed directed fishing standards' changes.

6. Bycatch Simulation Model/Overall Analysis of Alternatives

If a bycatch model is going to continue to play a role in analyzing the proposed alternatives, we would hope that an expanded version would apply to the GOA as well as to the BS/AI region. However, the use of this model just underlines the fact that creating individual overall caps and apportioning them among fisheries, requires a good deal of information and accurate assumptions as to what the fleet are and will be doing.

The presentation of the model version used this year provided less information on what actual inputs were used than in previous years' presentation. This made it hard for an interested reviewer to assess what factors may be attributing to the actual results obtained.

§675.26. Program to reduce prohibited species bycatch rates.

(a) General.

(1) A vessel's bycatch rate, as calculated at the end of a fishing month under paragraph (d) of this section, while participating in the fisheries identified in paragraph (b) of this section, shall not exceed bycatch rate standards referenced in paragraph (c) of this section.

(2) Definitions for purposes of this section.

(i) Observed or observed data refers to data collected by observers who are certified under the NMFS Observer Program authorized under §675.25.

(ii) Bycatch rate refers to:

(A) the ratio of total round weight of halibut, in kilograms, to the total round weight, in metric tons, of groundfish for which a TAC has been specified under §675.20 while participating in the Pacific cod or flatfish fisheries, as defined in paragraph (b) of this section; and

(B) the ratio of number of red king crab to the total round weight, in metric tons, of groundfish for which a TAC has been specified under §675.20 while participating in the flatfish fishery, as defined in paragraph (b) of this section.

(iii) Fishing month refers to a time period calculated on the basis of weekly reporting periods as follows: each fishing month begins on the first day of the first weekly reporting period that has at least 4 days in the associated calendar month and ends on the last day of the last weekly reporting period that has at least 4 days in that same calendar month. Dates of each fishing month will be announced in the Federal Register notices published under paragraph (c)(2) of this section.

(b) Fisheries. A vessel will be subject to this section if the groundfish catch of the vessel is observed on board the vessel, or on board a mothership processor that receives unsorted codends from the vessel, at any time during a weekly reporting period; and the vessel is assigned under paragraph (d)(3) of this section to either the Pacific cod fishery or the flatfish fishery as defined in paragraphs (b)(2) and (b)(3) of this section. During any weekly reporting period, a vessel's observed catch composition of groundfish species for which a TAC has been specified under §675.20 of this part will determine the fishery to which the vessel is assigned, as follows:

(1) The Greenland turbot fishery means fishing with trawl gear during any weekly reporting period that results in an observed catch of Greenland turbot that is 35

percent or more of the total amount of groundfish caught during the week;

(2) The Pacific cod fishery means fishing with trawl gear during any weekly reporting period that:

(A) results in an observed catch of Pacific cod that is 45 percent or more of the total amount of groundfish caught during the week, and

(B) does not qualify as a "Greenland turbot fishery";

(3) The flatfish fishery means fishing with trawl gear during any weekly reporting period that:

(A) results in an observed catch of yellowfin sole, rock sole, and "other flatfish," in the aggregate, that is 40 percent or more of the total amount of groundfish caught during the week, and

(B) does not qualify as a "Greenland turbot" or "Pacific cod" fishery;

(4) The "other non-pelagic trawl fishery" means fishing with trawl gear during any weekly reporting period that:

(A) results in an observed catch of pollock that is less than 95 percent of the total amount of groundfish caught during the week, and

(B) does not qualify as a "Greenland turbot," "Pacific cod," or "flatfish" fishery.

(c) Bycatch rate standards.

(1) Establishment of bycatch rate standards.

(i) Prior to January 1 and July 1 of each year, the Regional Director will publish a notice in the Federal Register specifying bycatch rate standards for the fisheries identified in paragraph (b) of this section that will be in effect for specified seasons within the 6-month periods of January 1 through June 30 and July 1 through December 31, respectively. Bycatch rate standards will remain in effect until revised by a notice in the Federal Register. The Regional Director may adjust bycatch rate standards as frequently as he considers appropriate.

(ii) Bycatch rate standards for a fishery and adjustments to such standards will be based on the following information and considerations:

(A) Previous years' average observed bycatch rates for that fishery;

(B) Immediately preceding season's average observed bycatch rates for that fishery;

(C) The bycatch allowances and associated fishery closures specified under § 675.21;

(D) Anticipated groundfish harvests for that fishery;

(E) Anticipated seasonal distribution of fishing effort for groundfish; and

(F) Other information and criteria deemed relevant by the Regional Director.

(2) Procedure.

(i) Bycatch rate standards or adjustments to such standards specified under this section will not take effect until the Secretary has published the proposed bycatch rate standards or adjustments to such standards in the Federal Register for public comment for a period of 30 days unless the Secretary finds for good cause that such notice and public comment are impracticable, unnecessary, or contrary to the public interest.

(ii) If the Secretary decides, for good cause, that bycatch rate standards or adjustments to such standards are to be made effective without affording a prior opportunity for public comment, public comments on the necessity for, and extent of, bycatch rate standards or adjustments to such standards will be received by the Regional Director for a period of 15 days after the effective date of the notice.

(iii) During any such 15-day period, the Regional Director will make available for public inspection, during business hours, the aggregate data upon which bycatch rate standards or adjustments to such standards were based.

(iv) If written comments are received during any such 15-day period that oppose or protest bycatch rate standards or adjustments to such standards issued under this section, the Secretary will reconsider the necessity for the bycatch rate standards or adjustment to such standards and, as soon as practicable after that reconsideration, will either:

(A) Publish in the Federal Register a notice of continued effectiveness of bycatch rate standards or adjustment to such standards, responding to comments received; or

(B) Modify or rescind bycatch rate standards or adjustment to such standards.

(v) Notices of adjustments to bycatch rate standards issued by the Secretary under paragraph (c) of this section will include the following information:

(A) A description of the adjustment to one or more bycatch rate standards specified for a fishery;

(B) The reasons for the adjustment and the determinations required under paragraph (c)(1)(ii) of this section; and

(C) The effective date and any termination date of such adjustment. If no termination date is specified, the adjustment will remain in effect until revised by subsequent notice in the Federal Register under

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Changes to the FMP for the Groundfish Fishery
of the Bering Sea and Aleutian Islands Area

(Halibut PSC limits Specified in FMP)

On page 14-8, paragraph D of Section 14.4.2.2 is suspended through December 31, 1992. A new paragraph D is added, which will expire at the end of the 1992 fishing year, to read as follows:

During 1992, the primary and secondary PSC bycatch limits for trawl gear are 4,152 mt and 5,033 mt, respectively. A PSC mortality limit of 750 mt is established for non-trawl gear that is applicable to the BSAI management area.

Changes to the FMP for the Groundfish Fishery
of the Bering Sea and Aleutian Islands Area
and for
Groundfish of the Gulf of Alaska

Time/area closure authority

For the BSAI FMP -- on page 14-17, sections 14.4.9 and 14.4.10 are redesignated as 14.4.10 and 14.4.11 and a new section 14.4.9 Time/area closure authority is added.

For the GOA FMP -- On page 4-12, a new section 4.2.6 Time/area closures is added.

Time/area closure authority

The Secretary, after consulting with the Council, may identify and establish by regulatory amendment time/area closures to reduce bycatch rates of prohibited species. Closures of all or part of an area would require a determination by the Secretary that the closure is based on the best available scientific information concerning the seasonal distribution and abundance of prohibited species and bycatch rates of prohibited species associated with various directed groundfish fisheries or gear types. A time/area closure will be limited to the minimum size and duration, which the Secretary determines are reasonably necessary to accomplish the intent of the closure. Any time/area closure would be based upon a determination that it is necessary to prevent:

1. A continuation of relatively high bycatch rates of prohibited species within an area;
2. The take of an excessive share of PSC limits or bycatch allowances by vessels fishing within an area;
3. The closure of one or more directed fisheries for groundfish due to excessive prohibited species bycatch rates that occur in a specified fishery operating within an area; or
4. The premature attainment of specified PSC limits or bycatch allowances and associated foregone opportunity for vessels to harvest available groundfish.

Draft regulations for Amendment 19

In section 675.20, paragraphs (h)(1) and (i)(2) are amended as follows:

§ 675.20 General limitations.

* * * * *

(h) * * *

(1) Groundfish other than pollock caught with pelagic trawl gear. The operator of a vessel is engaged in directed fishing for groundfish, other than pollock, with pelagic trawl gear if he retains at any time during a trip an aggregate amount of groundfish other than pollock equal to or greater than [7] [5] percent of the amount of pollock retained on the vessel at the same time during the same trip.

* * * * *

(i) * * *

(2) Trip. For purposes of this paragraph, the operator of a vessel is engaged in a single fishing trip from the commencement of or continuation of fishing after the effective date of a notice prohibiting directed fishing until the end of a weekly reporting period, the vessel enters or leaves a subarea or reporting area(s) to which a directed fishing prohibition applies, or until any offload or transfer of any fish or fish product from that vessel, whichever occurs first.

(3) In section 675.21 paragraph (a) is redesignated as paragraph (a)(1), paragraphs (d) - (f) are redesignated as paragraphs (e) - (g), paragraph (a) is retitled, redesignated paragraphs (a)(1)(iv) and (a)(1)(v) are revised, and new paragraphs (a)(2) and (d) are added, as follows:

§ 675.21 Prohibited species catch (PSC) limitations

(a) PSC limits.

(1) Trawl fisheries.

* * *

(iv) The primary PSC limit of Pacific halibut caught while conducting and trawl fishery for groundfish in the Bering Sea and Aleutian Islands Management Area during any fishing year is an amount of halibut equivalent to 4,152 mt.

(v) The secondary PSC limit of Pacific halibut caught while conducting and trawl fishery for groundfish in the Bering Sea and Aleutian Islands Management Area during any fishing year is an amount of halibut equivalent to 5,033 mt.

(2) Non-trawl fisheries. The PSC mortality limit of Pacific halibut caught while conducting any non-trawl fishery for groundfish in the Bering Sea and Aleutian Islands Management Area during any fishing year is an amount of halibut mortality equivalent to 750 mt.

* * * * *

(b) * * *

(4) For purposes of this section the following domestic fishery categories are specified for purposes of allocating PSC limits.

(i) Trawl fisheries. Midwater pollock fishery, Greenland turbot/arrowtooth flounder/sablefish fisheries, rocksole/other flatfish fisheries, yellowfin sole fishery, Pacific cod fishery, rockfish fishery, and the Atka mackerel/bottom pollock/"other species" fisheries.

(ii) Non-trawl fisheries. Any fishery using non-trawl gear.

(5) Fishery Definitions. Fishery definitions for purposes of this section are as follows:

(i) Midwater pollock fishery means fishing with trawl gear during any weekly reporting period that results in a catch of pollock that is 95 percent or more of the total amounts of groundfish caught during the week.

(ii) Yellowfin sole fishery means fishing during any weekly reporting period that results in a retained catch of yellowfin sole that is 70 percent or more of the total amount of groundfish retained during that week in round weight equivalents.

(iii) All other target fisheries are determined by the dominant retained species (round weight equivalent) for which a TAC has been specified under section 675.20 of this part.

(c) Attainment of a trawl PSC allowance for red king crab, C. bairdi, or Pacific halibut.

(1) By the rock sole/other flatfish, yellowfin sole, Pacific cod, rockfish, or Greenland turbot/arrowtooth flounder/sablefish fisheries.

(i) If, during the fishing year, the Regional Director determines that U.S. fishing vessels using trawl gear will catch either of the PSC allowances or seasonal apportionment of the PSC allowances of red king crabs or C. bairdi in Zone 1 while participating in either the rock sole/other flatfish, yellowfin sole, Pacific cod, rockfish, or Greenland turbot/arrowtooth flounder/sablefish fisheries, as defined in paragraph (b)(5) of this section, the Secretary will publish a notice in the Federal Register closing Zone 1 to vessels engaging in that directed fishery for the remainder of the fishing year or for the remainder of the season.

(ii) If, during the fishing year, the Regional Director determines that U.S. fishing vessels using trawl gear will catch the PSC allowance or seasonal apportionment of the PSC allowance of C. bairdi in Zone 2 while participating in either the rock sole/other flatfish, yellowfin sole, Pacific cod, rockfish, or Greenland turbot/arrowtooth flounder/sablefish fisheries, as defined in paragraph (b)(5) of this section, the Secretary will publish a notice in the Federal Register closing Zone 2 to vessels engaging in that directed fishery for the remainder of the fishing year or for the remainder of the fishing season.

(iii) If, during the fishing year, the Regional Director determines that U.S. fishing vessels using trawl gear will catch the primary PSC allowance or seasonal apportionment of the PSC allowance of Pacific halibut in the Bering Sea and Aleutian Islands Management Area while participating in either the rock sole/other flatfish, yellowfin sole, Pacific cod, rockfish, or Greenland turbot/arrowtooth flounder/sablefish fisheries as defined in paragraph (b)(5) of this section, the Secretary will publish a notice in the Federal Register closing Zones 1 and 2H to vessels engaging in that directed fishery for the remainder of the fishing year or for the remainder of the fishing season.

(iv) If, during the fishing year, the Regional Director determines that U.S. fishing vessels using trawl gear will catch the secondary PSC allowance or seasonal apportionment of the PSC allowance of Pacific halibut in the Bering Sea and Aleutian Islands Management Area while participating in either the rock sole/other flatfish, yellowfin sole, Pacific cod, rockfish, or Greenland turbot/arrowtooth flounder/sablefish fisheries as defined in paragraph (b)(5) of this section, the Secretary will publish a notice in the Federal Register closing the entire Bering Sea and Aleutian

Islands Management Area to vessels engaging in that directed fishery for the remainder of the fishing year or for the remainder of the fishing season.

(2) By the Atka mackerel, bottom pollock fisheries and "other species" fisheries.

(i) If, during the fishing year, the Regional Director determines that U.S. fishing vessels will catch either the PSC bycatch allowances or seasonal apportionment of bycatch allowances of red king crabs or C. bairdi in Zone 1 while participating in the Atka mackerel/bottom pollock/"other species" fisheries as defined in paragraph (b)(5) of this section, the Secretary will publish a notice in the Federal Register closing Zone 1 to directed fishing for pollock by trawl vessels using other than pelagic trawl gear for the remainder of the year or for the remainder of the fishing season.

(ii) If, during the fishing year, the Regional Director determines that U.S. fishing vessels will catch the PSC bycatch allowance or seasonal apportionment of the bycatch allowance of C. bairdi in Zone 2 while participating in the Atka mackerel/bottom pollock/"other species" fisheries as defined in paragraph (b)(5) of this section, the Secretary will publish a notice in the Federal Register closing Zone 2 to directed fishing for pollock by trawl vessels using other than pelagic trawl gear for the remainder of the year or for the remainder of the fishing season.

(iii) If, during the fishing year, the Regional Director determines that U.S. fishing vessels using trawl gear will catch the primary PSC bycatch allowance or seasonal apportionment of the bycatch allowance of Pacific halibut in the Bering Sea and Aleutian Islands Management Area while participating in the Atka mackerel/bottom pollock/"other species" fisheries as defined in paragraph (b)(5) of this section, the Secretary will publish a notice in the Federal Register closing Zones 1 and 2H to directed fishing for pollock by trawl vessels using other than pelagic trawl gear for the remainder of the year or for the remainder of the fishing season.

(iv) If, during the fishing year, the Regional Director determines that U.S. fishing vessels using trawl gear will catch the secondary PSC bycatch allowance or seasonal apportionment of the bycatch allowance of Pacific halibut in the Bering Sea and Aleutian Islands Management Area while participating in the Atka mackerel/bottom pollock/"other species" fisheries as defined in paragraph (b)(5) of this section, the Secretary will publish a notice in the Federal Register closing the Bering Sea and Aleutian Islands Management Area to directed fishing for pollock by trawl vessels using other than pelagic trawl gear for the remainder of the year or for the remainder of the fishing season.

(d) Attainment of a non-trawl PSC limit for halibut. If, during the fishing year, the Regional Director determines that U.S. fishing vessels using non-trawl gear will catch the halibut PSC mortality limit or seasonal apportionment of the mortality limit of Pacific halibut in the Bering Sea and Aleutian Islands Management Area while participating any non-trawl fishery for groundfish, the Secretary will publish a notice in the Federal Register closing the Bering Sea and Aleutian Islands Management Area to directed fishing for groundfish by vessels using non-trawl gear for the remainder of the year or for the remainder of the fishing season.

(e) Attainment of a PSC allowance for Pacific herring.

(1) By the midwater pollock fishery. If, during the fishing year, the Regional Director determines that U.S. fishing vessels using trawl gear will catch the PSC allowance, or seasonal apportionment of the allowance, of Pacific herring while participating in the midwater pollock fishery as defined in paragraph (b)(4) of this section, the Secretary will publish a notice in the Federal Register closing the Herring Savings Areas to directed fishing for pollock with trawl gear.

(2) By the rock sole/other flatfish fisheries, Greenland turbot/arrowtooth flounder fisheries, Pacific cod fishery or the Atka mackerel, rockfish, sablefish, and bottom pollock fisheries. If, during the fishing year, the Regional Director determines that U.S. fishing vessels using trawl gear will catch

a PSC allowance or seasonal apportionment of a PSC allowance of Pacific herring while participating in either the rock sole/other flatfish fisheries, Greenland turbot/arrowtooth flounder fisheries, Pacific cod fishery or the yellowfin sole fishery as defined in paragraph (b)(4) of this section, the Secretary will publish a notice in the Federal Register closing the Herring Savings Areas to directed fishing with trawl gear for rock sole/other flatfish, Greenland turbot/arrowtooth flounder, Pacific cod, or yellowfin sole.

(3) By the Atka mackerel, sablefish, rockfish, and bottom pollock fisheries. If, during the fishing year, the Regional Director determines that U.S. fishing vessels using trawl gear will catch a PSC allowance or seasonal apportionment of the PSC allowance of Pacific herring while participating in the Atka mackerel, sablefish, rockfish, and bottom pollock fisheries as defined in paragraph (b)(4) of this section, the Secretary will publish a notice in the Federal Register closing the Herring Savings Areas to directed fishing for (A) sablefish and rockfish by vessels using trawl gear, and (B) pollock by trawl vessel using non-pelagic trawl gear.

* * * * *

(4) In section 675.23, paragraph (a) is amended, paragraph (c) is redesignated as paragraph (d) and a new paragraph (c) is added as follows:

§ 675.23 Seasons.

(a) Fishing for groundfish in the subareas and statistical areas of the Bering Sea and Aleutian Islands is authorized from 00:01 a.m on January 1 through 12:00 midnight Alaska local time, December 31, subject to the other provisions of this part, except as provided in paragraphs (b), (c) and (d) of this section.

(b) * * *

(c) Directed fishing for groundfish with trawl gear is authorized from 12:00 noon A.l.t. January 20 through 12:00 midnight, A.l.t., December 31, subject to other provisions of this part.

* * * * *

5. In section 675.26, paragraphs (a)(2)(ii), (b), (c)(1)(i), (d)(3)(i)(B), and (d)(3)(i)(C) are revised, paragraph (c)(2) is redesignated as paragraph (c)(3), and a new paragraph (c)(2) is added as follows:

§675.26. Program to reduce prohibited species bycatch rates.

(a) * * *

(2) * * *

(ii) Bycatch rate refers to:

(A) The ratio of total round weight of halibut, in kilograms, to the total round weight, in metric tons, of groundfish for which a TAC has been specified under § 675.20 while participating in any trawl fishery for groundfish, as defined in paragraph (b) of this section;

(B) The ratio of number of red king crab to the total round weight, in metric tons, of groundfish for which a TAC has been specified under § 675.20 while participating in the flatfish fishery, as defined in paragraph (b) of this section.

(C) The ratio of number of chinook salmon to the total round weight, in metric tons, of groundfish for which a TAC has been specified under § 675.20 while participating in any trawl fishery for groundfish, as defined in paragraph (b) of this section.

* * * * *

(b) Fisheries. Any vessel using trawl gear will be subject to this section if the groundfish catch of the vessel is observed on board the vessel, or on board a mothership processor that receives unsorted codends from the vessel, at any time during a weekly reporting period. During any weekly reporting period, a vessel's observed catch composition of groundfish species for which a TAC has been specified under § 675.20 of this part will determine the fishery to which the vessel is assigned under the fishery definitions specified under paragraph 675.21(b)(5) of this part.

(c) Bycatch rate standards -- (1) Establishment of bycatch rate standards. (i) Prior to January 1 and July 1 of each year, the Regional Director will publish a notice in the Federal Register specifying bycatch rate standards for the fisheries identified in paragraph (c)(2) of this section that will be in effect for specified seasons within the 6-month periods of January 1 through June 30 and July 1 through December 31, respectively. Bycatch rate standards will remain in effect until revised by a notice in the Federal Register. The Regional Director may adjust bycatch rate standards as frequently as he considers appropriate.

* * *

(2) Fishery specific bycatch rate standards.

(i) Halibut and chinook salmon. Bycatch rate standards may be specified for the trawl fishery categories listed in paragraph 675.21(b)(4) of this part.

(ii) Red king crab. Bycatch rate standards may be specified for the yellowfin sole and rocksole/other flatfish fisheries as defined in paragraph 675.21(b)(5) of this part.

(d) * * *

(3) * * *

(i) * * *

(B) At the end of each fishing month during which an observer sampled at least 50 percent of a vessel's total number of trawl hauls retrieved while an observer was on board (as recorded in the vessel's daily logbook required under § 675.5 of this part), the Regional Director will calculate the vessel's bycatch rate based on observer data for each fishery described in paragraph (b) of this section to which the vessel was assigned for any weekly reporting period during that fishing month. Only observed data that has been checked, verified, and analyzed by NMFS will be used to calculate vessel bycatch rates for purposes of this section.

(C) The bycatch rate of a vessel for a fishery described under paragraph (b) of this section during a fishing month is a ratio of halibut to groundfish that is calculated by using the total round weight of halibut (in kilograms), total number of red king crab, or total number of chinook salmon in samples during all weekly reporting periods in which the vessel was assigned to that fishery and the total round weight of the groundfish (in metric tons) for which a TAC has been specified under § 675.20 in samples taken during all such periods.

* * * * *

Draft regulations for Amendment 24 to the GOA FMP

In section 672.20, paragraph (g)(3) is redesignated as paragraph (g)(5), redesignated paragraph (g)(5) and paragraph (h)(2) are revised, and new paragraphs (g)(3) and (g)(4) are added as follows:

§ 672.20 General limitations

* * * * *

(g) * * *

(3) Using trawl gear for rockfish. The operator of a vessel is engaged in directed fishing for rockfish if he retains at any particular time during a trip rockfish of the genera Sebastes and Sebastolobus caught using trawl gear in an amount equal to or greater than:

(i) 15 percent of the aggregate amount of deepwater flatfish, flathead sole, arrowtooth flounder, and sablefish retained at the same time by the vessel during the same trip; plus

(ii) 5 percent of the total amount of all fish species not identified under paragraph (g)(3)(i) of this section retained at the same time by the vessel during the same trip.

(4) The operator of a vessel is engaged in directed fishing for groundfish other than pollock with pelagic trawl gear if he retains at any time during a trip an amount of groundfish other than pollock equal to or greater than 7 percent of the aggregate amount of pollock retained at the same time by the vessel during the same trip.

(5) Except as provided under paragraphs (g)(1) - (g)(4) of this section, the operator of a vessel is engaged in the directed fishing for a specific species or species group if he retains at any particular time during a trip that species or species group in an amount equal to or greater than 20 percent of the amount of all other fish species retained at the same time by the vessel during the same trip.

(h) * * *

(2) Trip. For purposes of this paragraph, the operator of a vessel is engaged in a single fishing trip from the commencement of or continuation of fishing after the effective date of a notice prohibiting directed fishing until the end of a weekly reporting period, the vessel enters or leaves a subarea or reporting area(s) to which a directed fishing prohibition applies, or until any offload or transfer of any fish or fish product from that vessel, whichever occurs first.

* * * * *

7. In section 672.23, paragraph (a) is amended, paragraph (c) is redesignated as paragraph (d) and a new paragraph (c) is added as follows:

§ 675.23 Seasons.

(a) Fishing for groundfish in the regulatory areas and districts of the Gulf of Alaska is authorized from 00:01 a.m on January 1 through 12:00 midnight Alaska local time, December 31, subject to the other provisions of this part, except as provided in paragraphs (b), (c) and (d) of this section.

(b) * * *

(c) Directed fishing for groundfish with trawl gear is authorized from 12:00 noon A.l.t. January 20 through 12:00 midnight, A.l.t., December 31, subject to other provisions of this part.

* * * * *

8. Section 672.26 is revised as follows:

§672.26 PROGRAM TO REDUCE PROHIBITED SPECIES BYCATCH RATES.

(a) * * *

(2) * * *

(i) Bycatch rate refers to:

(A) The ratio of total round weight of halibut, in kilograms, to the total round weight, in metric tons, of groundfish for which a TAC has been specified under § 672.20 while participating in any trawl fishery for groundfish, as defined in paragraph (b) of this section;

(B) The ratio of number of chinook salmon to the total round weight, in metric tons, of groundfish for which a TAC has been specified under § 672.20 while participating in any trawl fishery for groundfish, as defined in paragraph (b) of this section.

* * * * *

(b) Fisheries. Any vessel using trawl gear will be subject to this section if the groundfish catch of the vessel is observed on board the vessel, or on board a mothership processor that receives unsorted codends from the vessel, at any time during a weekly reporting period. During any weekly reporting period, a vessel's observed catch composition of groundfish species for which a TAC has been specified under §672.20 of this part, will determine the fishery to which the vessel is assigned, as follows:

(1) Midwater pollock fishery means fishing with trawl gear during any weekly reporting period that results in an catch of pollock that is 95 percent or more of the total amounts of groundfish caught during the week.

(2) All other target fisheries are determined by the dominant retained species for which a TAC has been specified under section 675.20 of this part, in round weight equivalents.

(c) Bycatch rate standards. (1) Establishment of bycatch rate standards. (i) Prior to January 1 and July 1 of each year, the Regional Director will publish a notice in the Federal Register specifying bycatch rate standards for the fisheries identified in paragraph (c)(2) of this section that will be in effect for specified seasons within the 6-month periods of January 1 through June 30 and July 1 through December 31, respectively. Bycatch rate standards will remain in effect until revised by a notice in the Federal Register. The Regional Director may adjust bycatch rate standards as frequently as he considers appropriate.

(2) Fishery specific bycatch rate standards. (i) Bycatch rate standards may be specified for the following trawl fisheries as defined in paragraph (b) of this section:

(i) Pacific cod;

(ii) Rockfish species of the genus Sebastes and Sebastolobus in the aggregate;

(iii) midwater pollock fishery when the directed fishing for pollock with non-pelagic trawl gear is prohibited; and

(iv) All other trawl fisheries not specified in paragraphs (c)(2)(i) - (iii) of this section.

(d) Vessel bycatch rates. (1) Observed data. For purposes of this section, observed data collected for each haul sampled during a day will include the date, position (Federal reporting area)

where trawl gear for the haul was retrieved, total round weight of groundfish, in metric tons, in the portion of the haul sampled by groundfish species or species group for which a TAC has been specified under §672.20 of this part, and total round weight of halibut, in kilograms, and total number of chinook salmon in the portion of the haul sampled.

* * *
(3) * * *

(i) * * *

(B) At the end of each fishing month during which an observer sampled at least 50 percent of a vessel's total number of trawl hauls retrieved while an observer was on board (as recorded in the vessel's daily logbook required under §672.5 of this part), the Regional Director will calculate the vessel's bycatch rate based on observed data for each fishery described in paragraph of this section to which the vessel was assigned for any weekly reporting period during that fishing month. Only observed data that has been checked, verified, and analyzed by NMFS will be used to calculate vessel bycatch rates for purposes of this section.

(C) The bycatch rate of a vessel for a fishery described under paragraph (b) of this section during a fishing month is a ratio of halibut to groundfish that is calculated by using the total round weight of halibut (in kilograms) or total number of chinook salmon in samples during all weekly reporting periods in which the vessel was assigned to that fishery and the total round weight of the groundfish (in metric tons) for which a TAC has been specified under §672.20 in samples taken during all such periods.

* * * * *

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INTERNATIONAL PACIFIC HALIBUT COMMISSION

ESTABLISHED BY A CONVENTION BETWEEN CANADA
AND THE UNITED STATES OF AMERICA

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January 4, 1991

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Dear Dick,

Thanks for your comments on the draft summary of trawl survey data on juvenile halibut, and for the 1990 estimates of numbers at length in the Bering Sea. I have incorporated both into the revised version, which I am enclosing.

Sincerely yours,

WGC
William G. Clark
Biometrician

encl.

WGC/cc

Trends in Abundance of Juvenile Halibut Indicated by Trawl Surveys

Bill Clark

Revised January 1991

Summary

IPHC and NMFS trawl surveys in the eastern Bering Sea indicate that juvenile abundance was low in the mid-1970's, rose to a peak around 1980 when the strong 1977 year-class was present, declined again to a moderately low level in the mid-1980's, and since then has increased. The apparent arrival of a strong 1987 year-class should maintain juvenile abundance at the present level or higher for the next two or three years.

Introduction

The staffs of IPHC and NMFS are preparing a joint report on estimates of halibut abundance derived from NMFS trawl surveys. This report will document the survey methods, present the estimates, compare the survey estimates with estimates from catch-at-age analysis, and attempt an estimate of the natural mortality rate of juveniles. The following summary of trawl survey data has been prepared for the information of IPHC Commissioners at the 1991 Annual Meeting. All of the information and interpretations are subject to revision in the joint report, which will be completed during 1991.

IPHC Trawl Surveys

The Commission carried out annual trawl surveys of juvenile halibut in the Gulf of Alaska west of Cape St. Elias and in Bristol Bay from 1966 through 1982, and once more in 1986. (The 1979 charter operations were not satisfactory, so data from that year are not reported here.) The program was discontinued after 1986 because IPHC has been able to rely on the regular NMFS trawl surveys.

Results of the IPHC surveys have been tabulated in terms of numbers of halibut <65 cm caught per 60 min tow (Fig.1). By this measure, juvenile abundance was high in the mid-1960's, declined to low levels in the mid-1970's, increased to a peak in the early 1980's, and declined again thereafter. Patterns in the Gulf and Bering Sea are similar, and in a general way the trends in juvenile abundance lead the observed trends in recruitment to the adult stock as expected. (The bulk of fish under 65 cm are juveniles aged 2-5; recruitment to the adult stock begins at age 8.)

NMFS Trawl Surveys

The large-scale NMFS trawl survey of the eastern Bering Sea shelf was performed first in 1975, and has been performed annually since 1979. (Operations in 1988 were not entirely consistent with other years. The 1988 data points are shown below, but no great reliance should be placed on comparisons with other years.) NMFS also began triennial trawl surveys of the Gulf of Alaska in 1984, but as that series is still short the results will not be shown here.

Results of the NMFS surveys are usually reported in terms of estimated total biomass of halibut (rather than numbers of fish <65 cm). By this measure, the NMFS surveys show a moderately increasing abundance of halibut in the Bering Sea since the mid-1970's (Fig. 2a). The biomass of halibut <65 cm, however, has been stable or slightly declining. (The very high biomass estimate in 1988 can be seen to result from an unusually large quantity of large fish in the survey; the estimate of biomass <65 cm in 1988 is unexceptional.)

The picture looks different if the NMFS survey results are presented in terms of estimated total numbers of halibut, the great majority of which are fish <65 cm (Fig. 2b). By this measure, juvenile abundance declined steadily through most of the 1980's, but has been increasing since 1987.

Combined IPHC-NMFS Juvenile Abundance Series

Although the IPHC surveys covered only a part of the NMFS survey area in the eastern Bering Sea, it is reasonable to suppose that the two would agree reasonably well when expressed in numbers of fish <65 cm, and that is true for the years of overlap. Both series show a major increase from the mid-1970's to about 1980 and a decline thereafter. It is therefore possible to splice the two series together by rescaling one of them so that they have the same average over the years when both were performed (1975, 1980, 1981, 1982, and 1986; as explained above, the IPHC value for 1979 is not considered reliable).

The combined series appears to show a trough in the early 1970's, a peak in the early 1980's, and a decline thereafter (Fig. 3), generally consistent with subsequent recruitment to the adult stock. Since 1987, juvenile abundance has again risen dramatically; the 1990 point nearly matches the maximum value in the series, reached in 1979.

NMFS Survey Length Frequencies

In some years it is possible to discern the appearance of an above average year-class at age 2 as a distinct mode at about 20 cm in the survey length frequency. In particular, the strong 1977 year-class was a standout at age 2 in 1979, and sustained the overall level of juvenile abundance for the next two or three years (Fig. 4). The 1984 year class, appearing in 1986, although not very abundant was noticeable mostly because there were few fish ahead of it in the length frequencies. The 1987 year-class made a strong showing in 1989, and in 1990 appeared as an enormous spike, head and shoulders above the spike representing the 1977 year-class in 1980. On the strength of the 1987 year-class alone, juvenile abundance can be expected to hold steady or increase for the next year or two (because fish do not appear to be fully recruited to the trawl survey until 50 cm or so).

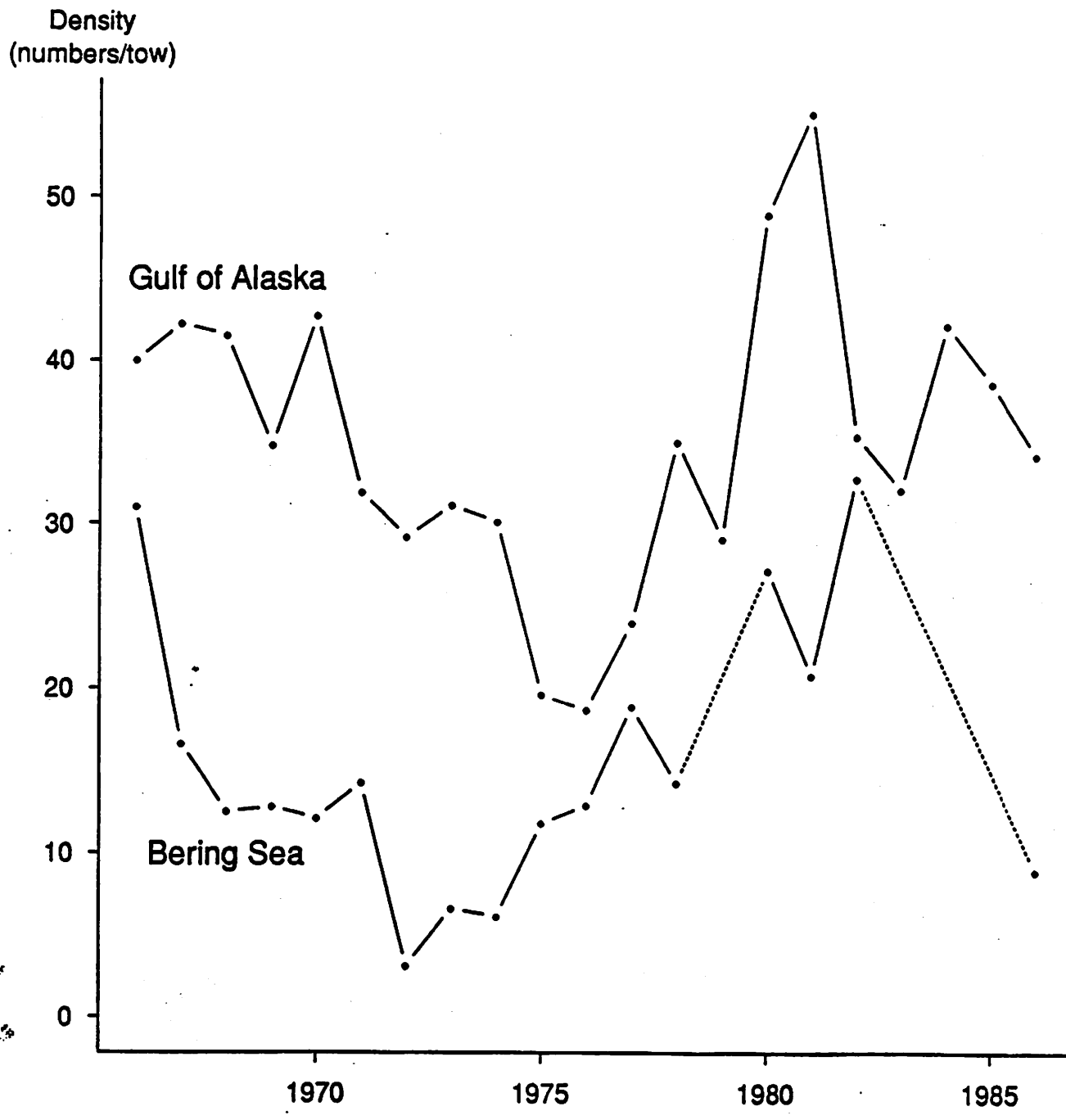


Figure 1. Density (catch in number per 60 min tow) of halibut <65 cm in IPHC trawl surveys.

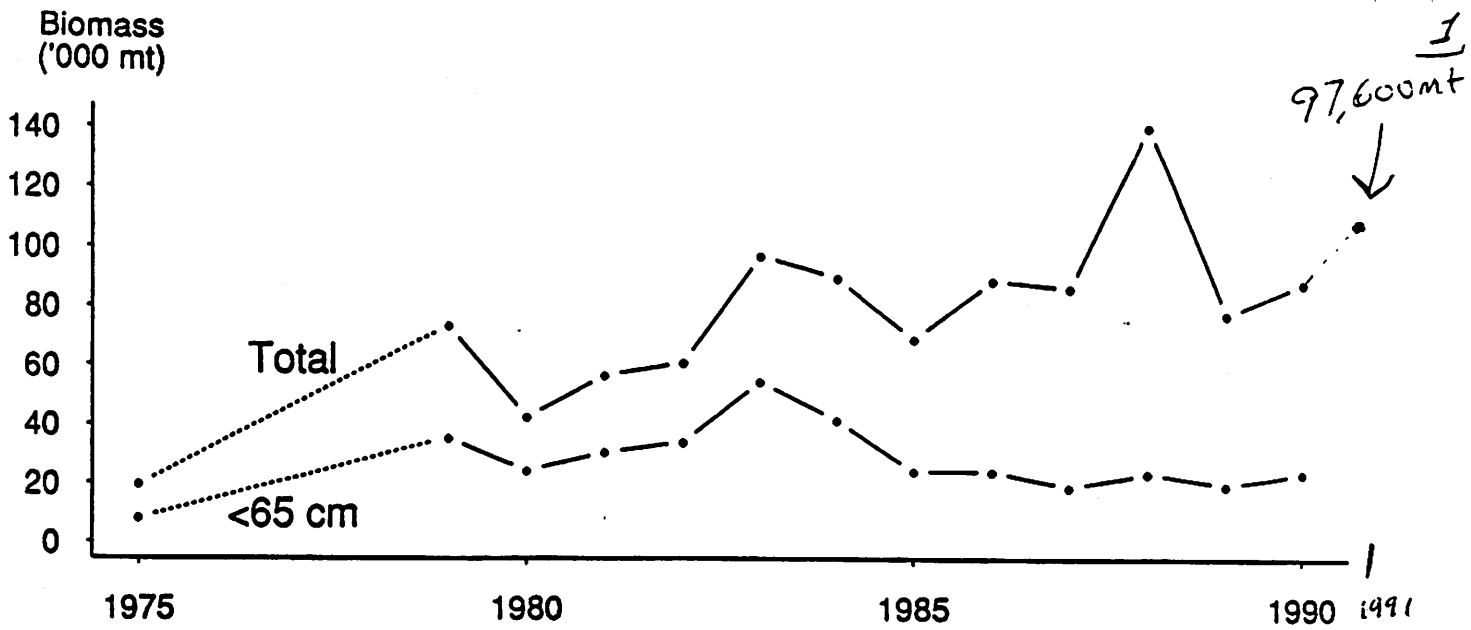


Figure 2a. Halibut biomass in the Bering Sea estimated by the NMFS trawl survey.

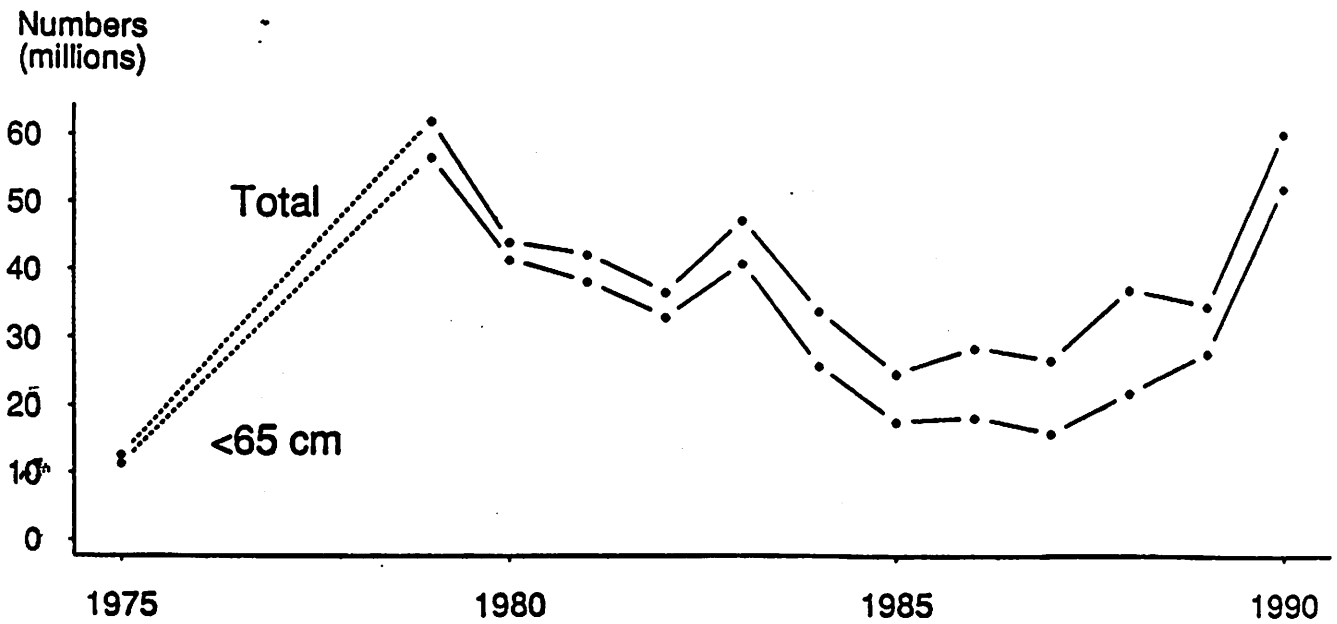


Figure 2b. Halibut numbers in the Bering Sea estimated by the NMFS trawl survey.

I) Dr Stauffer, NMFS, to Steve Hughes

Abundance
in number

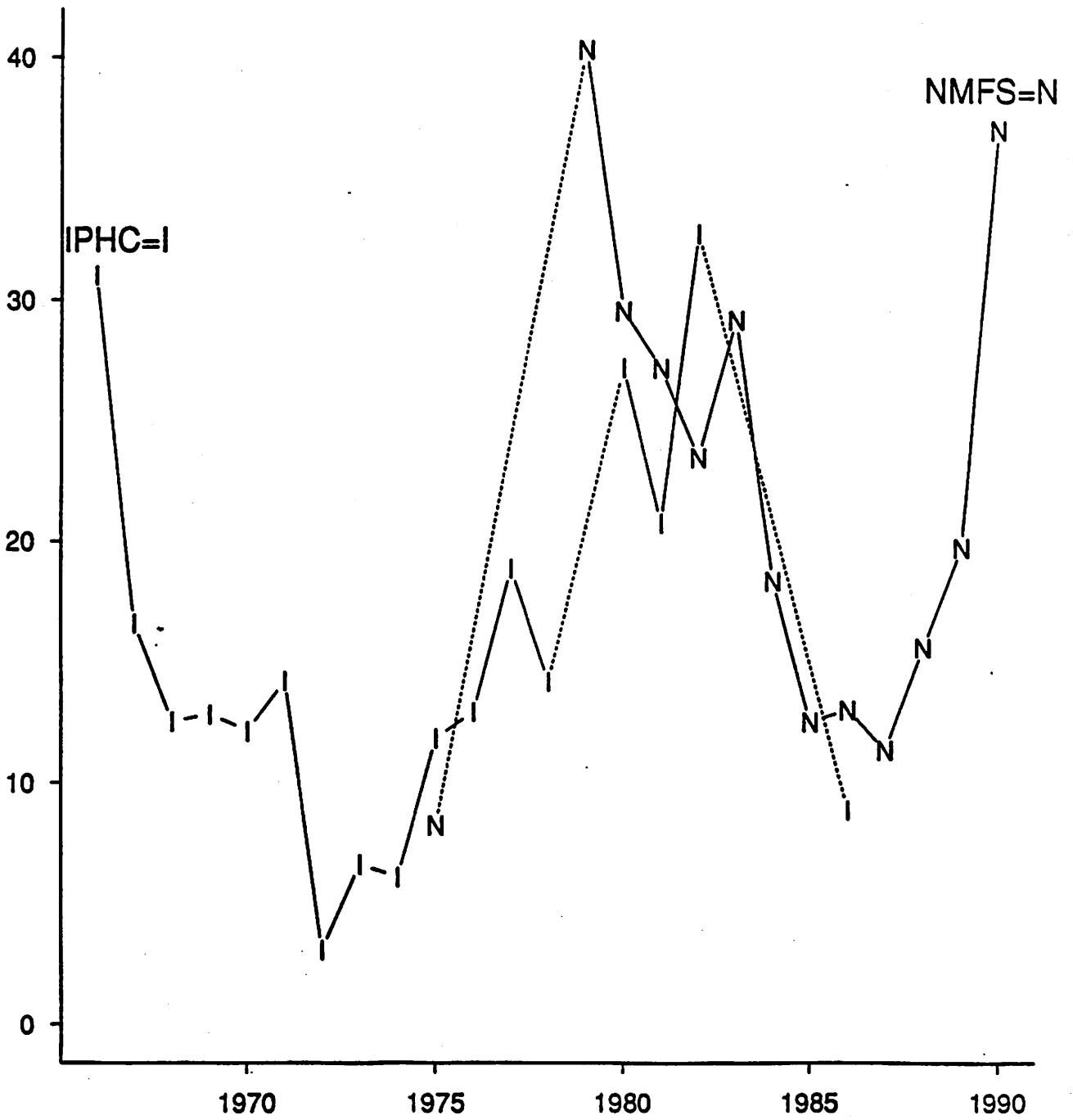


Figure 3. Splice of IPHC and NMFS indices of numerical abundance of halibut <65 cm in the Bering Sea. (NMFS values rescaled so that series have equal means for common years.)

Absolute frequency
(millions/cm)

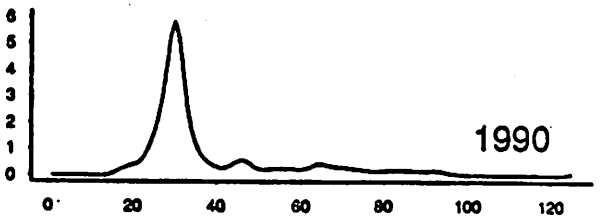
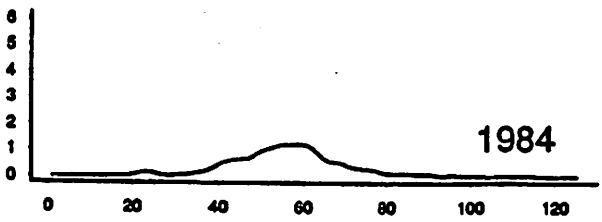
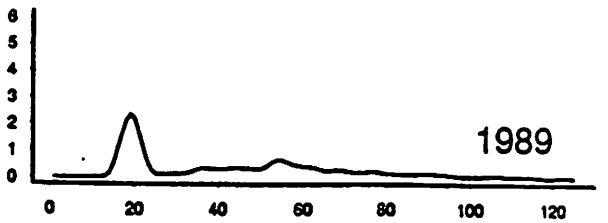
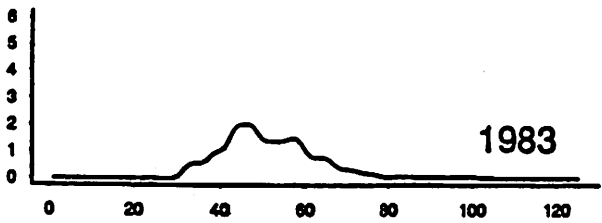
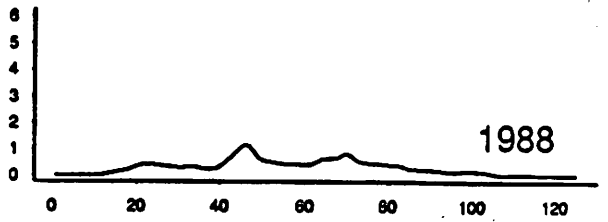
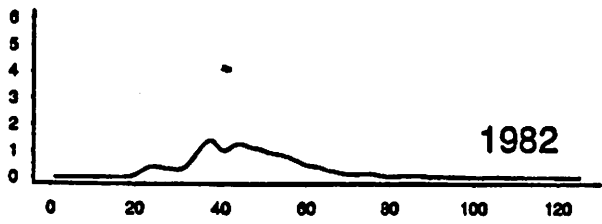
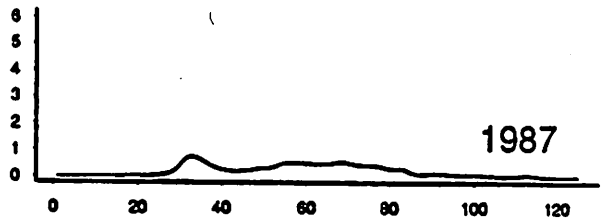
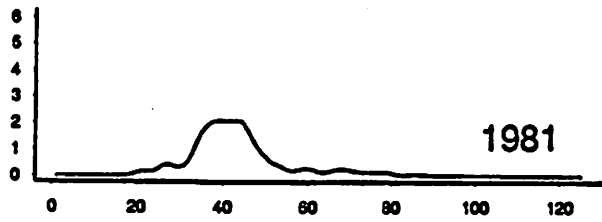
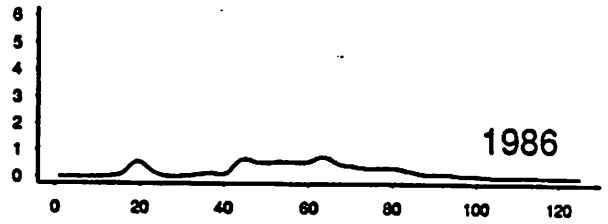
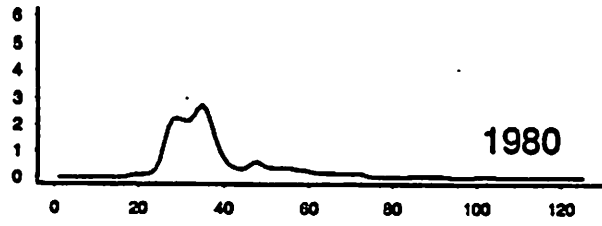
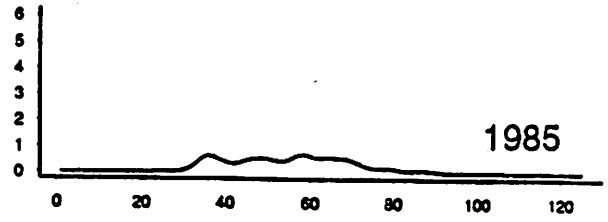
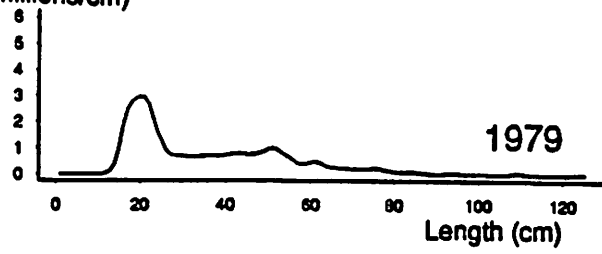


Figure 4. Length distributions of Bering Sea halibut estimated by the NMFS trawl survey.

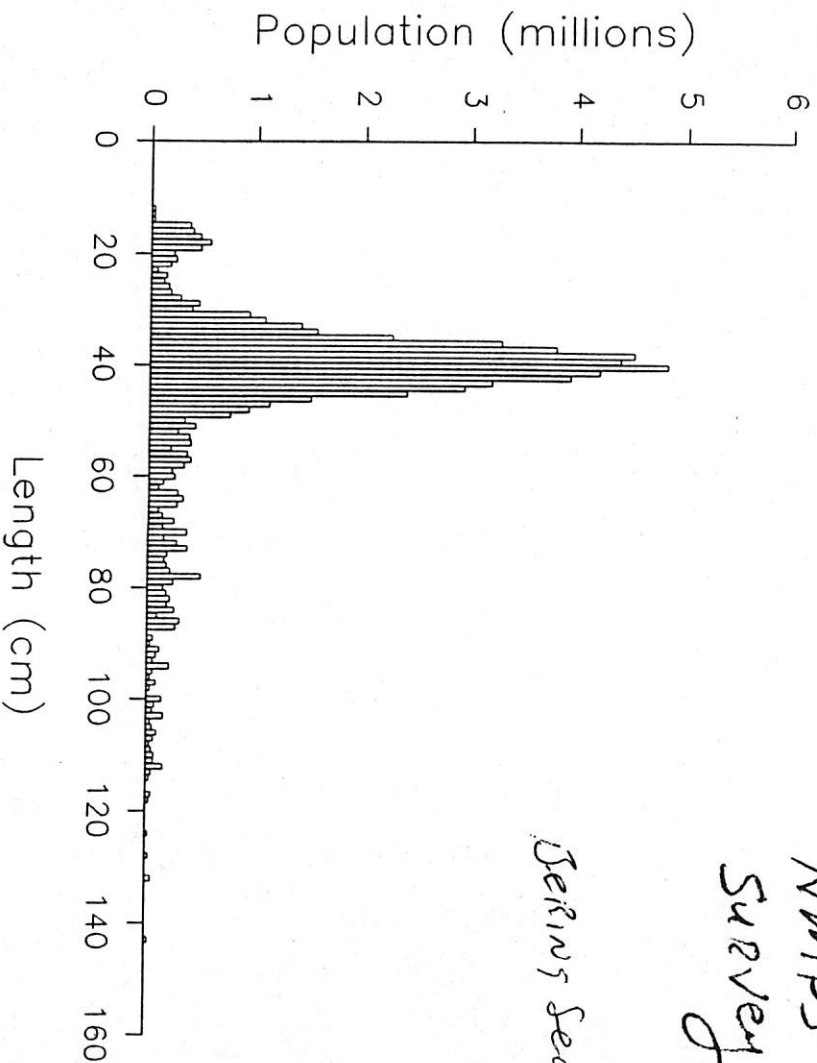
PACIFIC HALIBUT

(Standard Shelf Area) 1991

Steve (Hughes)
+ group

NMFS
Survey

Bering Sea



1991 STD Shelf
 N. Shelf
 slope

65,417,700
8,291,900
200,212
73,859,900

From Dr Stauffer, NMFS, Seattle

NORTH PACIFIC LONGLINE ASSOCIATION
720 West Blaine St.
Seattle, WA 98119
(206) 283-7700

November 27, 1991

Mr. Richard B. Lauber, Chairman
North Pacific Fishery Management Council
P.O. Box 103136
Anchorage, AK 99510

RE: BS/AI Halibut PSC Mortality Limit for the Non-Trawl Fisheries

Dear Mr. Lauber:

In June of this year the North Pacific Fixed Gear Coalition submitted a well-documented petition for reducing the incidental catch of prohibited species in the Bering Sea groundfish fishery through gear restrictions. The catch and bycatch data contained in that petition were updated in testimony offered at the September Council meeting, with data from NMFS and Fisheries Information Services (FIS). These analyses concluded that there are many advantages in the use of fixed gear for the harvest of certain demersal groundfish species, particularly in the reduction of prohibited species catch and mortality. We are happy to report that the EA/RIR for Amendments 19 and 24 to the BS/AI and GOA groundfish plans supports our earlier conclusions.

Having reviewed the EA/RIR analysis of the proposed halibut PSC mortality limit for the non-trawl groundfish fisheries in the BS/AI, we recommend that no immediate action be taken to cap the minimal halibut bycatch mortality now inflicted by the fixed gear fisheries. At a minimum, the EA/RIR analysis should be revised and completed before a decision is taken. If and when a cap is established, it should be a liberal one which encourages conservation-oriented fishing. Note that this latter approach is favored by the IPHC, which has recommended preferential allocation of halibut PSC to gear types or fisheries which demonstrate low halibut bycatch mortality. Please consider our reasoning, below, and the alternatives which we have proposed for Council consideration.

I. Fixed Gear Halibut Bycatch Mortality Is Minimal

According to data offered in the EA/RIR at Tables 2-4, BS/AI fixed groundfish gear halibut bycatch mortality is absolutely and comparatively minimal. In 1990, fixed gear fishermen caused only 338 mt of halibut mortality in all of

their target fisheries. This was only 6.2% of the total halibut mortality in the BS/AI groundfish fisheries. In the key fishery for Pacific cod, the longline halibut bycatch mortality rate was only 0.55%. By contrast trawlers caused 5,072 mt of halibut mortality, some 94% of the total. In the cod fishery, their halibut bycatch mortality rate was 1.92%, nearly four times that of the longliners. Some 49.2% of the total BS/AI halibut bycatch mortality occurred in the trawl fishery for cod.

From January 1 through September 29, 1991, fixed gear groundfish fishermen caused only 311 mt of halibut mortality, 4.8% of the total halibut mortality in the BS/AI groundfish fisheries. The longline halibut bycatch mortality rate in the cod fishery was only 0.50%. Trawlers caused 6,114 mt of halibut mortality, 95% of the total, during the same time period. In the trawl fishery for cod, the halibut bycatch mortality rate was 2.01%; 37.9% of the total halibut bycatch mortality for the BS/AI groundfish fisheries occurred in this fishery. Since the halibut mortality rate in the longline fishery for cod is only 25% of that in the trawl cod fishery, it may be estimated that 1,828 of the 2,437 mt of halibut mortality caused by the trawl fishery could have been saved if longline gear had been used ($0.75 \times 2,437 = 1,828$). This is 34% of the 5,333 mt BS/AI halibut mortality cap!

Fixed gear accounts for only 5 or 6 per cent of the overall halibut bycatch mortality in the BS/AI groundfish fisheries. This amount is minimal, and does not call for immediate action. Even if it were to double it would remain relatively insignificant.

II. Considerable Savings of Other Prohibited Species and Other Discards Can be Achieved by Using Fixed Gear in the Key Fishery for Pacific Cod

The primary fixed gear fishery in the BS/AI is for Pacific cod. Tables 2 and 4 at pages 4 and 8 of the EA/RIR show that in the BS/AI area, fixed gear bycatch of crab and salmon are substantially less in the cod fishery than are trawl bycatches of the same species - expressed in absolute numbers, or as rates. One exception was the pot fishery for cod in 1990, in which a high number of crab was intercepted. This situation was reversed in 1991.

Discard of other species is minimal in the BS/AI fixed gear cod fishery. Table 17 on page 52 of the EA/RIR shows that for 1990 and 1991 combined, fixed gear cod fishermen retained 91.8% of their catch, discarding only 9,004 mt. Trawlers engaged in the cod fishery at the same time retained only 70.6% of their catch, discarding 76,415 mt - largely pollock.

Substantial amounts of crab and salmon can be saved in the BS/AI through the use of fixed gear in the key fishery for Pacific cod. Other discards can be reduced dramatically. Fixed gear can achieve OY while meeting the Council's bycatch reduction goals. These factors should be taken into consideration with regard to any PSC limit which would curtail conservation-oriented fishing. Please note that an attempt to incorporate these additional savings has been made in the analysis of the "tradeoff" between the alternative uses of halibut - EA/RIR, p. 50)

III. Product Value Is Greater in the Fixed Gear Cod Fishery

Because line-caught fish are generally of the highest quality, they generally command the highest prices. Table 17 on page 52 of the EA/RIR indicates that the market value of cod taken in the fixed gear fishery is greater than that of cod taken in the trawl fishery - \$865/mt v. \$702/mt gross, \$329/mt v. \$267/mt net. Whether on a gross or net basis, the return from fixed-gear cod is 23% higher than that of trawl-caught cod. Line-caught cod are also delivered throughout the year, a fact which is very important to buyers.

Cod taken with fixed gear commands a substantially higher price than cod taken with trawl gear. It is delivered throughout the year. These facts should be taken into account in considering any PSC limit which would curtail the fixed gear fishery.

IV. Curtailing the Fixed Gear Fishery through Halibut PSC Limits Causes Greater Loss than Curtailing the Trawl Fishery

Analysis of the proposed non-trawl halibut PSC limits at pages 44-54 of the EA/RIR suggests that in general, reducing groundfish catch to reduce bycatch results in greater costs than benefits. The analysis also concludes that the costs of curtailing fixed gear fisheries through halibut bycatch limitations are far greater than the costs of curtailing trawl fisheries.

In order to assure one ton of catch in the future halibut fishery, at least 122 tons of groundfish must be foregone in the 1991 fixed gear groundfish fishery. This figure is probably low, because the halibut growth rate factor employed is too high. The corresponding tradeoff for the 1991 Pacific cod longline fishery is about 126 tons of groundfish catch per 1 ton of catch in the halibut fishery. By contrast, in order to assure one ton of catch in the future halibut fishery only 57 tons of groundfish must be foregone by the 1991 trawl fishery for groundfish. The corresponding tradeoff for the 1991 Pacific cod trawl

fishery is only 31 tons. In the key cod fishery, longliners would have to give up more than four times as much cod as would trawlers to assure a given harvest in the future halibut fishery.

This disparity is borne out in the estimated benefit-cost ratios, and in estimated regional economic activity tradeoffs (EA/RIR pages 51-54). While costs exceed benefits where either gear group is obliged to forego cod catch to save halibut, the damage is about five times worse where the reductions are borne by the fixed gear sector (comparison of gross and net benefit-cost ratios for cod, Table 17, p. 52). Changes in household income and total community impacts due to increases in landings of cod also reflect this differential. The negative economic impacts of the loss of 126 tons of cod to the freezer-longline industry, both in Alaska and the Pacific Northwest, are dramatically greater than the negative impacts of the loss of 31 tons of cod to the trawl industry. (see Table 18, p. 54)

The negative economic impacts of halibut PSC limits which reduce the halibut bycatch in fixed gear fisheries are far greater than the corresponding impacts on the trawl fisheries.

V. A Halibut PSC Limit of 500 MT Would Constrain the Fixed Gear Fleet in 1992

The EA/RIR states that the non-trawl BSAI fisheries took 57,200 mt of groundfish in 1990, and had taken 60,500 mt through September 29 of 1991. Assuming continuation of the catch rate, the non-trawl fisheries will harvest 80,700 mt of groundfish in 1991. We estimate that the current non-trawl fleet has the capacity to harvest 100,000 mt, and it is growing. Interestingly enough, trawlers are now installing longline systems with the intention of longlining after the trawl fisheries are closed - a positive development, which should be encouraged. At page 49 of the EA/RIR it is stated that a halibut PSC limit of 500 mt for the non-trawl fisheries would permit catch of about 97,300 mt - some 3,000 mt less than current estimated capacity.

As the IPHC has stated, preferential access to halibut PSC should be given to low-mortality fisheries and gear types. If we are to achieve full utilization and bycatch reduction goals, it does not make sense to limit the non-trawl halibut PSC to 500 mt.

VI. Further Analysis Is Required

The EA/RIR provided for this proposal presents a wealth of relevant information, but the data was compiled in a hurry and analysis is incomplete. The costs and benefits associated with each of the six alternatives proposed are

not clearly identified in the text of the analysis. No analysis has been performed on the impacts of a distribution of cod catch between gear groups which would result from a decrease in the 5,333 mt cap now devoted to the trawl fishery (EA/RIR, p. 53). Further, new information has become available since the analysis was performed, which will change its results. Of particular significance is the revised estimate of Pacific halibut discard mortality in the BS/AI trawl fishery. A November, 1991 paper by the IPHC and NMFS suggests that the figure be reduced from 100% to 75%. Since the EA/RIR assumed 100% mortality, this change affects the magnitude if not the thrust of the bycatch analysis and associated biological and economic impacts. Likewise, the "growth factor" for halibut killed in the longline fishery is too large, and the "tradeoff" would be more than 122 tons of groundfish catch by the longline fishery per 1 mt of catch in the halibut fishery. (EA/RIR, p. 49) Biological trade-offs, benefit/cost ratios, regional economic impacts, etc., will all be affected by these necessary revisions.

No decision should be made with regard to a BS/AI halibut PSC mortality limit for the non-trawl fisheries until the Council and the public have an opportunity to review a complete and revised analysis incorporating new data and assessing the costs and benefits of each alternative proposal.

VII. Alternatives

It is not at all clear that the Council should be required to select 500, 1,000, or 1,500 mt as a non-trawl halibut mortality cap in the BS/AI, or that any immediate action is necessary. Other alternatives are listed below for Council consideration.

A. Take No Immediate Action

This is our preferred alternative. The fixed gear fisheries do not pose an immediate threat. In 1990 the fixed gear groundfish fisheries in the BS/AI killed only 338 mt of halibut bycatch. Through September 29 of 1991, the fixed gear groundfish fisheries had killed only 311 mt of halibut. Halibut bycatch rates diminish in the later part of the year, and the total halibut mortality will not be significantly greater in 1991 than it was in 1990. There is time to have a thorough analysis prepared, and to make a careful and rational decision on this important issue.

B. Set a Temporary Fixed Gear Cap

Another possibility would be to establish a cap for one year, to allow time for a better-reasoned and adequately documented decision. This would require all of the paperwork for a plan amendment and perhaps an emergency rule

(though there is no emergency). Since there is no threat of an explosion of halibut mortality caused by fixed gear operators, a temporary cap hardly seems worth the administrative effort.

C. Divide the Halibut PSC Associated with the Pacific Cod and Sablefish Fisheries Equally between Fixed and Mobile Gear

If the Council's objectives are to reduce bycatch mortality for halibut and other prohibited species and to maximize product value in the Pacific cod fishery, it should take care not to constrain the fixed gear fisheries with a halibut cap. We feel that it would be unfair to require fixed gear fishermen to achieve lower bycatch rates than their competitors. A straightforward way to assure fairness while reducing bycatch mortality would be to divide the relevant part(s) of the overall cap equally. In keeping with the recommendation of the IPHC, such a division would encourage conservation through the use of low halibut bycatch mortality gear.

D. Divide the 5,333 MT Cap to Maintain the Status Quo

Amendment 16 established 5,333 mt as the halibut PSC bycatch cap in the BS/AI. It is implied if not explicit that this is a mortality cap - note repeated references to the 100% mortality assumption in the EA/RIR. It is now suggested that BS/AI trawl halibut bycatch mortality is only 75%. If that is the case, trawlers need only 4,000 mt of halibut PSC (mortality) to prosecute their fisheries as in the past ($0.75 \times 5,333 = 4,000$). This would leave 1,333 mt of halibut PSC (mortality), which could be apportioned to the fixed gear fisheries. If an overall reduction in halibut PSC mortality is required, each apportionment could be reduced by perhaps 10%. This approach would maintain the status quo for the trawl sector, without constraining the fixed gear sector in the foreseeable future.

E. Establish a Liberal Fixed Gear Cap, Reapportion All or Part of Excess to Trawl Fishery During the Fishing Year

The Council might choose to establish a liberal halibut PSC cap for fixed gear, and reapportion all or part of any excess to the trawl fishery during the fishing year. This would allow the conservation-oriented fishery to proceed unconstrained, and would provide the option of increasing halibut PSC available to trawlers or of reducing halibut PSC mortality by withholding all or part of it. If an adequate mechanism could be established to allow in-season PSC apportionment, this alternative would allow some flexibility to deal with in-season developments.

Conclusion

Because fixed gear does not pose an immediate threat of greatly increased halibut bycatch mortality, and because the EA/RIR analysis of this issue is incomplete and in need of revision, we recommend that no action be taken at this time to establish a halibut PSC cap for non-trawl fisheries in the BSAI. Staff should be allowed to complete a thorough analysis of relevant options. Several alternatives are suggested for consideration by the Council - they might be implemented with or without the specific PSC levels addressed in the EA/RIR. Their purpose is to encourage the use of conservation-oriented gear, as recommended by the IPHC.

It is our sincere hope that the Council will not rush to judgment on this complex issue.

Yours,

Thorn Smith
Executive Director