

M E M O R A N D U M

TO: Council Members
FROM: Jim H. Branson
Executive Director
DATE: September 19, 1983
SUBJECT: Bering Sea/Aleutian Islands Groundfish FMP, Amendment 1

ACTION REQUIRED

The Council is requested to review the language of Section 11 of Amendment 1 to the FMP.

BACKGROUND

The Council approved Amendment 1 to the FMP for Secretarial review at the May 1982 meeting. At that time the Council reviewed a version of Section 11 which contained significant changes which had been incorporated into Amendment 1 at the suggestion of the SSC at the same meeting.

After approval the staff prepared the amendment package and supporting documents for Secretarial review. Several editorial changes were made to the amendment by the staff on the advice of NOAA and NMFS staff. In general they include the "other species" and non-specified species category in Section 11, assure internal consistency with all parts of the FMP and approved amendments, and assure that the Regional Director will have the flexibility the Council intended when apportioning reserves.

Amendment 1 and supporting documents were submitted for Secretarial review on December 2, 1982. At the May 1983 meeting Mr. Jay Hastings said the editorial changes did not accurately reflect the Council's intent for Amendment 1 in Sections 11.3.1 and 11.5. He submitted a letter explaining his objections, dated July 14, which was included in the July Council briefing books.

In order to resolve the problems perceived by Mr. Hastings a meeting was held at NMFS offices in Juneau between he and Susan Salvesson, NMFS Regional staff, Jeff Povolny, Council staff, and Thorn Smith, NOAA General Counsel staff. It was agreed at the meeting that the amendment language reflects the Council's intent for Amendment 1, but that the implementing regulations would have to be changed to more accurately reflect the amendment language. A report to the Council from Mr. Hastings reflecting this view is expected prior to the Council meeting and will be included here under agenda item D-6A(a).

Because the Council had a version of Section 11 before it when it approved Amendment 1, Pat Travers, NOAA General Counsel believes it would be in the Council's best interest to review the version of Section 11 approved by the Secretary. Unless the Council has objections to this language, no further action is required. Included for your review is Section 11 as approved by NMFS, Washington D.C., item D-6A(b), and the version of Section 11 from the May 1982 meeting as item D-6A(c). All changes to the May 1982 version of Section 11 are italicized in the NMFS approved version.

Amendment 1 was approved on July 26, 1983. The proposed regulations should have been published in the Federal Register on September 16. Amendment 1 should become effective in January 1984.

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September 21, 1983

J

Mr. Jim H. Branson
Executive Director
North Pacific Fishery
Management Council
P.O. Box 3136DT
Anchorage, Alaska 99510

Re: Revisions to Section 11 of the Bering Sea Groundfish
FMP under Amendment #1

Dear Jim:

In July the Council postponed a review of revisions to Amendment #1 until September in order to give Council and NMFS staff members and myself an opportunity to resolve concerns I had raised in a letter to you dated July 14. These revisions consisted of wording changes to section 11 of the Amendment and the addition of an extended trawl closure in Petrel Bank. On September 8, I met with Council and NMFS staff members in Juneau to discuss these revisions. The purpose of this letter is to explain the understanding we have reached with respect to wording changes in section 11. The Petrel Bank issue is addressed by a separate letter.

As a result of the Juneau meeting, we have reached an understanding that the current provisions of section 11 as revised can be interpreted in a manner which properly reflects the intent of the Council. Our mutual understanding is outlined in two separate memorandums; one from Sue Salveson to the NMFS Bering Sea Groundfish FMP File dated September 12, 1983, and one from myself to participants in the meeting dated September 13, 1983. As a result of our understanding, I am now willing to withdraw my request to the Council to review the revisions to section 11 during its September meeting.

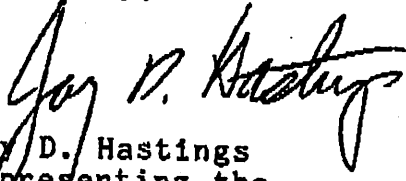
However, it was also understood at the Juneau meeting that the current proposed regulations are not properly worded to implement the Council intent underlying certain provisions of section 11. These proposed regulations were published in the Federal Register on Monday, September 19 for a 45-day comment period. To correct these proposed regulations, it may be

Mr. Jim Branson
September 21, 1983
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adviseable to request authorization from the Council for the Council staff to submit a comment upon the notice of proposed rulemaking in accordance with the understanding we reached at the Juneau meeting. I will consult with the Council and NMFS staff upon this point before taking the request before the Council.

I trust that our joint efforts to resolve this issue will be acceptable to the Council. The time and effort your staff has devoted to resolving our concerns has been sincerely appreciated.

Sincerely,


Jay D. Hastings
representing the
Japan Fisheries Association

BERING SEA/ALEUTIAN ISLANDS GROUND FISH FMP

AMENDMENT 1

SECTION 11

APPROVED SECRETARIAL VERSION

11.0 OPTIMUM YIELD (OY) and TOTAL ALLOWABLE CATCH (TAC)

11.1 Maximum Sustainable Yield (MSY) of the Groundfish Complex

The groundfish complex and its fishery are a distinct management unit of the Bering Sea. The complex has more than 10 commercially important species and many others of lesser or no commercial importance. This complex forms a large subsystem of the Bering Sea ecosystem with intricate interrelationships between predators and prey, between competitors, and between those species and their environment. Therefore, the productivity and MSY of groundfish should be conceived for the groundfish complex as a unit rather than for many individual species groups.

The MSY of the groundfish complex is the range of 1.7 to 2.4 million mt. This is calculated by summing the MSYs of each target species and of the "other species" category, as defined in Section 14.2.2 of this plan, that are derived from species-by-species analysis. A reasonable verification of the MSY for the groundfish complex is derived by averaging the 1968-1977 catches when the fishery went through periods of growth, peak, decline, and some stability (see Section 5.2 on History of Exploitation). The average catch was 1.8 million mt with a range of 1.1 to 2.4 million mt.

An ecosystem model of the Bering Sea developed by the Northwest and Alaska Fisheries Center (Laevastu and Larkins, 1981) shows that the mean exploitable biomass for the groundfish species covered by this FMP is about 9.3 million mt. This ecosystem model, the Prognostic Bulk Biomass (PROBUB) model, simulated the principal components of the ecosystem (mammals, birds, demersal fish, semi-demersal fish, pelagic fish, squid, crabs, and benthos) and considered their fluctuations in abundance caused by predation, natural mortality, environmental anomalies, and fishing. The magnitude of the mean exploitable biomass (9.3 million mt) suggests that the annual yield from it is probably much higher than the 1.7 to 2.4 million mt range estimated conservatively by the single species approach.

The ecosystem consideration also indicates that MSY of the groundfish complex may change if the present mix of species is altered substantially from the present period. Therefore, as changes take place, MSY for the complex may have to be re-examined.

11.2 Optimum Yield of the Groundfish Complex

The optimum yield (OY) of the groundfish complex is set equal to 85% of the MSY for the target species and the "other species" categories (1.4 to 2.0 million mt) to the extent this can be harvested consistently with the management measures specified in this FMP plus the actual amount of the nonspecified species category that is taken incidentally to the harvest of target species and the "other species" category. This deviation from MSY reflects the combined influence of biological and socio-economic factors. The important biological factors indicate that:

1. When considering condition of individual species within the complex, the OY range encompasses the summed Acceptable Biological Catches (ABC) of individual species for 1978-1981 (Low, et al. 1978; and Bakkala, et al. 1979, 1980, and 1981). This sum may be used as an indicator of the biological productivity of the complex, although it is not completely satisfactory, because multi-species/ecosystem interactions cannot be adequately taken into account. The 15% reduction of MSY reduces the risk associated with relying upon incomplete data and questionable assumptions in assessment models used to determine the condition of stocks.
2. When considering multi-species/ecosystem models, the OY range is probably a conservatively safe level for the groundfish complex. The mean exploitable biomass of 9.3 million mt for the species groups (Laevastu and Larkins, 1981) suggests that the harvest level can be considerably higher than the OY range.

Although the multi-species/ecosystem models suggest that the harvest level can be higher than 2.0 million mt, it would only be so if the proper combination of exploitation rates by individual species commensurate to the natural balance of the groundfish complex is applied. This combination may not be desirable to the fishermen because the industry prefers only certain species. The recent catch history indicates that the present mix of species is socioeconomically acceptable and that the groundfish complex should probably not be exploited at levels higher than 2.0 million mt at this time.

All of the socioeconomic considerations indicate that:

1. The OY range is not likely to have any significant detrimental impact on the industry. On the contrary, this range, when compared to the annual determination of OY, is more desirable because it creates a more stable management environment where the industry can consistently plan its activities with a minimum expectation of OY being equal to 1.4 million mt.

2. The OY range also covers actual catch levels during 1974-76 when the foreign fishery operated profitably before the MFCMA was implemented and is slightly higher than actual catches since then. It will allow the foreign fishery to operate near historic levels and yet offer considerable opportunities for domestic fishery expansion.

Therefore, the range of 1.4 to 2.0 million mt of the target species and "other species" categories, to the extent it can be harvested consistently with the management measures prescribed in this FMP, plus the incidental harvest of nonspecified species, will be the OY of the Bering Sea/Aleutian Islands groundfish complex covered by this FMP unless the plan is amended. An amendment will be made when the status of the groundfish complex changes substantially from the present condition or when socio-economic considerations dictate that OY should fall outside the present range. OY may also have to be re-examined if substantial change from the present mix of species occurs or is desired of the groundfish complex.

11.3 Total Allowable Catch (TAC)

The TACs for each target species and for the "other species" category will be determined by the Alaska Regional Director of NMFS by the end of the preceding fishing year. The sum of these TACs, or the TAC for the groundfish complex excluding nonspecified species shall be within the OY range of 1.4 to 2.0 million mt and is subject to the management measures prescribed in this FMP.

Prior to the Regional Director's determination, the Council will recommend to him TACs for each target species and the "other species" category based on the best available data concerning the stocks and the fisheries. The Regional Director shall make these recommendations together with proposed figures for DAP, JVP, and TALFF, available to the public for comment. If the Council does not recommend TACs by December 15, the TACs already established shall automatically constitute the Council's recommendation to the Regional Director.

The Council's recommendations shall be based upon the following types of information:

Biological condition of the stocks--resource assessment documents (RADs) will be prepared annually for the Council by July 1 by the Plan Maintenance Team with the assistance of the Northwest and Alaska Fisheries Center of NMFS, other agencies, or scientists. These documents shall provide information on:

- a. historical catch trend;
- b. estimate of MSY of the groundfish complex and its component species groups;

- c. *stock condition assessments of each target species and the "other species" category;*
- d. *assessments of the multi-species and ecosystem impacts of harvesting the groundfish complex at current levels given the assessed conditions of stocks including considerations of rebuilding depressed stocks; and*
- e. *alternative harvesting strategies and related effects on the component species groups.*

The Council's recommendation of TACs for each target species and the "other species" category shall also be based on socioeconomic considerations that are consistent with the goals of this FMP, including:

- a. *the need to promote efficiency in the utilization of fishery resources, including minimizing costs;*
- b. *the need to manage for the optimum marketable size of a species;*
- c. *the impact of groundfish harvests on prohibited species and the domestic target fisheries which utilize these species;*
- d. *the desire to enhance depleted stocks;*
- e. *the seasonal access to the groundfish fishery by domestic fishing vessels;*
- f. *the commercial importance of a fishery to local communities;*
- g. *the importance of a fishery to subsistence use; and*
- h. *the need to promote utilization of certain species.*

When the TACs for the complex and species groups are determined, Domestic Annual Harvest (DAH) and Total Allowable Level of Foreign Fishing (TALFF) are updated in accordance with Section 11.4 and Annex II and Annex III.

11.3.1 Reserves

The groundfish reserve at the beginning of each fishing year shall equal the sum of 15% of each target species and the "other species" category TAC. When the TAC for the groundfish complex is determined by the Council, 15% of the TAC is set aside as a reserve. This reserve is used for (a) unexpected expansion of the domestic fishery, (b) correction of operational problems of the domestic and foreign fishing fleets, promoting full and efficient use of groundfish resources, (c) adjustments of species TACs according to the condition of stocks during the fishing year, and (d) apportionments.

The reserve is not designated by species or species groups and will be apportioned to the fishery during the fishing year by the Regional Director in amounts and by species that he determines to be appropriate. The apportionment of the reserve to target species or to the "other species" category must be consistent

with the most recent assessments of resource conditions unless the Regional Director finds that the socioeconomic considerations listed above or specified fishery operational problems dictate otherwise. Except as provided for in the National Standard Guidelines for Fishery Conservation and Management (FR), the Regional Director must also find that the apportionment of reserves will not result in overfishing as defined in the guidelines. The Regional Director may withhold reserves for conservation reasons.

11.3.2 Apportionments to Fishery

When the TAC for each target species and the "other species" category is determined, it is reduced by 15% to form the reserve, as described above. The remaining 85% of each TAC is then apportioned to DAP, JVP, and TALFF (in that order) by the Regional Director as described in Section 11.4.

11.4 Derivation of DAH and TALFF Amounts

Amounts of DAH (= DAP + JVP) for each species or species group established for the beginning of the fishing year shall equal the amount of those species harvested by domestic fishermen during the previous year plus any additional amounts the Regional Director projects to be necessary to satisfy the needs of the growing domestic fishery during the coming year. These supplemental amounts will be based on projected increases in U.S. harvesting and processing during the coming year. In making these projections, the Regional Director shall rely upon the latest available information, including industry surveys and market data, that he finds to be sound. The initial TALFF amounts for each target species and the "other species" category will be established from the following equation: $TALFF = TAC - (DAH + Reserve)$ (see Table 22-1 for an example). The TALFF for the "nonspecified species" category is the amount of that category caught incidentally to the harvest of target species and the "other species" category. The Regional Director shall make proposed DAP, JVP and TALFF figures available for public comment, along with recommended TACs as stated in Section 11.3 above.

11.5 Reapportionment of Reserve and Unneeded DAH

As soon as practicable after April 1, June 1, August 1 and on any such other dates as he determines appropriate, the Regional Director may apportion to DAH any amounts from the reserve that are needed in order to prevent a closure of the domestic fishery and he shall assess the progress of the domestic and foreign fisheries and shall apportion to TALFF any portion of the DAH or the reserve (subject to the conditions in Sections 11.3.1 and 12.2) that he determines will not be harvested by United States fishing vessels during the remainder of the fishing year.

When the Regional Director determines that apportionment is required on dates other than those scheduled and that immediate

action is necessary to increase a TALFF or DAH amount, he may decide that such an adjustment is to be made without affording a prior opportunity for public comment. Public comments on the necessity for, and the extent of the apportionment, shall then be submitted to the Regional Director for a period of 15 days after the effective date of such action.

MAY 1982 COUNCIL MEETING

BERING SEA/ALEUTIAN ISLANDS GROUND FISH FMP REVISED AMENDMENT #1

11.0 OPTIMUM YIELD (OY)

11.1 Maximum Sustainable Yield (MSY) of the Groundfish Complex

The groundfish complex and its fishery are a distinct management unit of the Bering Sea. The complex has more than 10 commercially important species and many others of lesser or no commercial importance. This complex forms a large subsystem of the Bering Sea ecosystem with intricate interrelationships between predators and prey, between competitors, and between those species and their environment. Therefore, the productivity and MSY of groundfish should be conceived for the groundfish complex as a unit rather than for many individual species groups.

The MSY of the groundfish complex is the range of 1.7 to 2.4 million mt. This is calculated by summing the MSY's of individual species groups that are derived from species-by-species analysis. A reasonable verification of the MSY for the groundfish complex is derived by averaging the 1968-1977 catches when the fishery went through periods of growth, peak, decline, and some stability (see Section 5.2 on History of Exploitation). The average catch was 1.8 million mt with a range of 1.1 to 2.4 million mt.

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The ecosystem consideration also indicates that MSY of the groundfish complex may change if the present mix of species is altered substantially from the present period. Therefore, as changes take place, MSY for the complex may have to be re-examined.

11.2 Optimum Yield of the Groundfish Complex

The optimum yield (OY) of the groundfish complex is set equal to 85% of MSY or 1.4 to 2.0 million mt. This deviation from MSY reflects the combined influence of biological and socioeconomic factors. The important biological factors indicate that:

1. When considering condition of individual species within the complex, the OY range encompasses the summed ABC's of individual species for 1978-1981 (Low, et al. 1978; and Bakkala, et al. 1979, 1980, and 1981). This sum may be used as an indicator of the biological productivity of the complex, though not completely satisfactory, because multi-species/ecosystem interactions cannot be adequately taken into account. The 15% reduction of MSY further reduces the

risk associated with relying upon incomplete data and questionable assumptions in assessment models used to determine condition of stocks.

2. When considering multi-species/ecosystem models, the OY range is probably a conservatively safe level for the groundfish complex. The mean exploitable biomass of 9.3 million mt for the species groups (Laevastu and Larkins, 1981) suggests that the harvest level can be considerably higher than the OY range.

Although the multi-species/ecosystem models suggest that the harvest level can be higher than 2.0 million mt, it would only be so if the proper combination of exploitation rates by individual species commensurate to the natural balance of the groundfish complex are applied. This combination may not be desirable to the fishermen because the industry prefers only certain species. The recent catch history indicates that the present mix of species is socioeconomically acceptable and that the groundfish complex should probably not be exploited at levels higher than 2.0 million mt at this time.

All of the socioeconomic considerations indicate that:

1. The OY range is not likely to have any significant detrimental impact on the industry. On the contrary, this range, when compared to the annual determination of OY, is more desirable because it creates a more stable management environment where the industry can consistently plan its activities with a minimum expectation of OY being equal to 1.4 million mt.
2. The OY range also covers actual catch levels during 1974-76 when the foreign fishery operated profitably before the MFCMA was implemented and is slightly higher than actual catches since then. It will allow the foreign fishery to operate near historic levels and yet offer considerable opportunities for domestic fishery expansion.

Therefore, the range of 1.4 to 2.0 million mt will be the OY of the Bering Sea/Aleutian Islands groundfish complex covered by this FMP unless the plan is amended. An amendment will be made when the status of the groundfish complex changes substantially from the present condition or when socioeconomic considerations dictate that OY should fall outside the present range. OY may also have to be re-examined if substantial change from the present mix of species occurs or is desired of the groundfish complex.

11.3 Total Allowable Catch (TAC)

The TAC's for the groundfish complex and of its component species groups will be determined by the Alaska Regional Director of NMFS by the end of the preceding fishing year. The TAC for the complex shall be within the OY range of 1.4 to 2.0 million mt.

Prior to the Regional Director's determination, the Council will hold public hearings and recommend TAC's for the complex and its species groups to him based on the best available data concerning the stocks and the fisheries. The Council's recommendations shall be based upon the following types of information:

Biological condition of the stocks -- resource assessment documents will be prepared for the Council by July 1 by the Plan Development Team with the assistance of the Northwest and Alaska Fisheries Center of NMFS, other agencies, or scientists. These documents shall provide information on:

- a. historical catch trend;
- b. estimate of MSY of the groundfish complex and its component species group;
- c. estimates of ABC of the individual species groups and assessments on their condition of stocks;
- d. assessments of the multi-species and ecosystem impacts of harvesting the groundfish complex according to species ABC's, including considerations of rebuilding depressed stocks; and
- e. alternative harvesting strategies of the component species groups;

The Council's recommendation of TAC's for the complex and its' species groups shall also be based on socioeconomic considerations that are to the overall benefit of the nation, such as:

- a. the need to promote efficiency in the utilization of fishery resources, including minimizing costs;
- b. the need to manage for the optimum marketable size of a species;
- c. the impact of groundfish harvests on prohibited species and the domestic target fisheries which utilize these species;
- d. the desire to enhance depleted stocks;
- e. the seasonal access to the groundfish fishery by domestic fishing vessels;
- f. the commercial importance of a fishery to local communities;
- g. the importance of a fishery to subsistence use;
- h. the need to promote utilization of certain species; and
- i. any other factors deemed appropriate.

11.3.1 Reserves

When the TAC for the groundfish complex is determined by the Council, 15% of the TAC is set aside as a reserve. This reserve is used for (a) unexpected expansion of the domestic fishery, (b) correction of operational problems of the fishing fleet, (c) unexpected adjustments of species TAC's according to the condition of stocks during the fishing year, and (d) allocations.

The reserve is not designated by species or species groups and will be apportioned to the fishery during the fishing year by the Regional Director in amounts and by species that he determines to be appropriate. The apportionment of the reserve must be consistent with the most recent assessments of resource conditions and should not be detrimental to various components of the groundfish complex unless the Regional Director can support his determination that the socioeconomic considerations listed in Section 11.3 or overall fishery operational problems dictate otherwise. The Regional Director may also withhold reserves for conservation reasons.

11.3.2 Allocations to Fishery

As described above when the TAC is determined, it is reduced by 15 percent to form the final reserve. The remaining 85 percent of the TAC is then apportioned to DAP, JVP, and TALFF (in that order) as deemed appropriate by the Regional Director, after consultation with the Council.

11.4 Derivation of DAH and TALFF Amounts

Amounts of DAH (= DAP + JVP) for each species or species group established for the beginning of the fishing year shall equal the amount of those species harvested by domestic fishermen during the previous year plus any additional amounts the Regional Director projects to be necessary to satisfy the needs of the growing domestic fishery. These supplemental amounts will be based on projected increase in (1) U.S. processing capacity and/or intention to process and (2) U.S. harvesting capacity and/or intention to harvest. The TALFF amounts for each species or species group will be established from the following equation: $TALFF = TAC - DAH - Reserve$ (see Table 23-1).

11.5 Reapportionment of Reserve and Unneeded DAH

At any time, the Regional Director may assess DAH and apportion to DAH any amounts from the reserve for domestic fishery expansion that are needed in order to prevent a closure of the domestic fishery. As soon as practicable after April 1, June 1, August 1, and on such other dates as he determines necessary, the Regional Director shall apportion to TALFF any portion of DAH or the reserve for domestic fishery expansion that he determines will not be harvested by United States fishing vessels during the remainder of the fishing year.

When the Regional Director determines that apportionment is required on dates other than those scheduled and that immediate action is necessary to increase a TALFF or DAH amount, he may decide that such an adjustment is to be made without affording a prior opportunity for public comment. Public comments on the necessity for, and the extent of the apportionment, shall then be submitted to the Regional Director for a period of 15 days after the effective date of such action.

D-CA
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Amendment I

2ND Version
Approved by Council
May 1982

6. Substitute the following for Section 12.2:

12.2 Expected Domestic Annual Harvest (DAH)

Expected domestic annual harvest (DAH) is the estimated portion of the U.S. groundfish harvest which will be utilized by domestic processors (DAP), which includes those amounts of groundfish "processed" for use as bait or for personal consumption, and the estimated portion, if any, delivered to foreign processors (JVP) which are permitted to receive U.S. harvested groundfish in the Fishery Conservation Zone and internal waters.

The estimate of DAP will be updated annually based upon the previous year's production and projected increases in U.S. processing. JVP is the U.S. harvested portion of the OY in excess of the estimated amount to be utilized by U.S. processors or for which actual domestic markets are not available, that will be delivered to foreign processors who are authorized to receive such U.S. harvested fish in the Fishery Conservation Zone and internal waters. Estimates of utilization in this category are updated annually based upon the previous year's catch and projected increases in catch anticipated by the various joint venture companies.

Estimates of future production by processors are difficult, if not impossible, to make accurately. It is generally recognized by those processors making the estimates that their figures are optimal and based on assumptions that sometimes do not materialize. Machinery or installation delays, changes in markets, better than normal alternative fisheries for the fishing fleets (or processors) may all affect their actual production. Therefore, a DAH reassessment system and release mechanism is established through this plan and by regulation to allow adjustments in DAH during the plan year.

Table 22.1 An example of the Total Allowable Catch (TAC), Domestic Annual Harvest (DAH) and Total Allowable Level of Foreign Fishing (TALFF) (metric tons)

Species Group	Areas ^{1/}	Example TAC ^{2/3/}	Reserve ^{4/}	Initial DAH ^{5/}	Initial TALFF ^{5/}
Target Species Category					
Pollock	I+II+III	1,200,000	180,000	74,500	945,500
	IV	100,000	15,000	-0-	85,000
Pacific Ocean Perch	I+II+III	1,000	150	850	-0-
	IV	2,600	390	1,380	830
Other Rockfish	I+II+III	11,000	1,650	775	8,575
	IV	11,000	1,650	775	8,575
Sablefish	I+II+III	2,000	300	700	1,000
	IV	900	135	700	65
Pacific Cod		168,000	25,200	43,265	99,535
Yellowfin Sole		214,500	32,175	31,200	151,125
Turbots		76,500	11,475	1,075	63,950
Other Flatfish		92,500	13,875	11,200	67,425
Atka Mackerel		24,800	3,720	14,500	6,580
Squid		10,000	1,500	50	8,450
Other Species Category					
		55,300	8,295	7,800	39,205
TOTAL		1,970,100	295,515	188,770	1,485,815

^{1/} Fishing areas of the Bering Sea/Aleutian region, unless stated otherwise. See Figure 26a for map.

^{2/} From Section 11.3. Figures are examples, based on the 1981 single species ABCs. See Bakkala, et al., 1981.

^{3/} The TAC for the "nonspecified species" category equals the amount of that category caught during the fishing year in the course of harvesting the TACs for the target species and "other species" categories.

^{4/} Reserves are 15% of the TACs.

^{5/} To be determined, figures are examples only.

Production by U.S. fishermen and processors shall be reassessed periodically based on:

1. catch and production to date during the year;
2. current fishing and production activity; and
3. projections for additional catch and production during the remainder of the year based on demonstrated capacity.

Releases from DAH to TALFF shall be made by the NMFS Regional Director as described in Section 11.5. No release or transfer shall be made if such release is likely to have a significant adverse biological, economic, or social consequence.

7. Replace Section 13, Allocations Between Foreign and Domestic Fishermen with the following:

13.0 ALLOCATIONS BETWEEN FOREIGN AND DOMESTIC FISHERMEN

13.1 Reserve

U.S. participation in the fishery in the near future is expected to consist of a relatively modest catch for crab bait, a growing Pacific cod fishery, expanding joint ventures for yellowfin sole, pollock, and Atka mackerel and limited efforts for other bottomfish production.

In order to prevent the TAC established for the target species and "other species" categories from being exceeded without preventing unexpected domestic fishery development; i.e., an unanticipated increase in U.S. catching or processing, 15% of the TAC established for these categories will be held in reserve, as described in Section 11.3.1.

The reserve will be released by the Regional Director in accordance with Section 11.5.

13.2 Total Allowable Level of Foreign Fishing (TALFF)

The initial TALFF for each species shall be determined by the equation:
Initial TALFF = TAC - (DAH + Reserves).

The final TALFF for each target species and for the "other species" category shall be determined as the fishery progresses and may be increased over the initial TALFF as described in Section 11.5

The procedure for deriving initial DAH and TALFF is prescribed in Section 11.4.

8. Replace Section 14.0, MANAGEMENT REGIME, with the following:

14.0 MANAGEMENT REGIME

14.1 Management Objectives

Four priority objectives dictate the philosophy of management for the groundfish fishery in the region:

- A. Provide for rational and optimal use, in a biological and socio-economic sense, of the region's fishery resources as a whole;
- B. Minimize the impact of groundfish fisheries on prohibited species and continue the rebuilding of the Pacific halibut resource;
- C. Provide for the opportunity and orderly development of domestic groundfish fisheries, consistent with (A) and (B) above; and
- D. Provide for foreign participation in the groundfish fishery, consistent with all three objectives above, to take the portion of the TAC not utilized by domestic fishermen.

14.2 Area, Fisheries, and Stocks Involved

This Fishery Management Plan and its management regime governs:

- A. Fishing by foreign and United States vessels in the U.S. Fishery Conservation Zone of that portion of the North Pacific Ocean adjacent to the Aleutian Islands which is west of 170°W up to the U.S.-Russian Convention Line of 1867, and of the Eastern Bering Sea (See Figure 26).

The FMP area is divided into four fishing areas as shown in Figure 26a and described in Appendix III.

- B. All stocks of finfish and marine invertebrates except salmonids, shrimps, scallops, snails, king crab, Tanner crab, Dungeness crab, corals, surf clams, horsehair crab, lyre crab, Pacific halibut, and Pacific herring which are distributed or are exploited in the area described in 4.2.1, above.

Four categories of species groups (Annex V) that are likely to be taken by the groundfish fishery and to each of which the optimum yield concept is applied somewhat differently are:

1. Prohibited Species -- those species groups the harvest of which must be avoided and which must be immediately returned to the sea when caught and brought aboard, except when their retention by foreign vessels is authorized under other FMPs or PMPs, or their retention by United States vessels is not prohibited under other FMPs or Federal regulations. These include halibut, herring, salmonids, shrimps, scallops, snails, king crab, Tanner crab, Dungeness crab, corals, surf clams, horsehair crab, lyre crab.
2. Target Species -- species which are commercially important, targeted upon by the groundfish fishery, and for which a sufficient data base exists that allows each to be managed on its own biological merits. Accordingly, a specific TAC is

established annually for each target species. Catch of each species must be recorded and reported. This category includes pollock, Pacific cod, yellowfin sole, turbot, "other flatfishes," sablefish, Atka mackerel, Pacific ocean perch, "other rockfish," and squid.

3. Other Species -- species groups which currently are of slight economic value and not generally targeted upon. This category, however, contains species with economic potential or which are important ecosystem components, but sufficient data are lacking to manage each separately. Accordingly, a single TAC applies to this category as a whole. Catch of this category as a whole must be recorded and reported. The category includes sculpins, sharks, skates, eulachon, smelts, capelin, and octopus.
4. nonspecified Species -- species groups of no current or foreseeable economic value taken in the fishery only as an incidental by-catch to target fisheries. These include all finfish and marine invertebrates, except those listed in 1 through 3, above. Virtually no data exist which would allow population assessments, but occasional records from U.S. observers aboard foreign and U.S. vessels show no noticeable decline in abundance. The TAC for this category is the amount which is taken incidentally while fishing for target and other species, whether retained or discarded. If retained, records must be kept. (NOTE: If observer or enforcement records show that any species in this category is being actively targeted upon or that a conservation problem exists due to a substantial reduction in any species stock condition, that species will be transferred to another species category through amendment of the plan.)

14.3 Fishing Year

The fishing year shall be the calendar year (January 1 -December 31).

14.4 Management Measures -- Domestic Fishery

14.4.1 Permit Requirements

All U.S. vessels harvesting and retaining groundfish or engaging in support activities in that part of the fishery conservation zone governed by this FMP must have on board a current permit issued by the Secretary of Commerce, or, if considered acceptable by the Secretary, a State of Alaska vessel license.

14.4.2 Prohibited Species

United States vessels must minimize their incidental harvest of Pacific halibut, salmon, Tanner crab, and any other species the fishery for which in the area governed by this FMP is restricted by another FMP, and shall return those species to the sea promptly if they are taken.

14.4.3 Fishing Area Restrictions

14.4.3.1 General

None

14.4.3.2 Trawl Fishery

1. Area A -- "Bristol Bay Pot Sanctuary" (as described in Appendix III and Figure 27) -- Reserved.
2. Area B -- "Winter Halibut Savings Area" (as described in Appendix III and Figure 27):
 - a. December 1 - May 31 -- domestic trawling will be permitted on an experimental basis and closely monitored.
 - b. June 1 - November 30 -- no closures.

Rationale -- To measure incidental catches and mortality of juvenile halibut which are known to occur in winter concentrations in the Bristol Bay Pot Sanctuary and the Winter Halibut Savings Area while allowing some expansion in the traditional crab-bait trawl fishery and the development of a domestic groundfish fishery for human consumption.

3. Other Areas -- no closures

14.4.3.3 Longline Fishery -- no closures

14.4.3.4 Modification of Time and Area Limitations (Reserved)

14.4.4 Gear Restrictions

None

14.4.5 Statistical Reporting Requirements

1. Fishermen Reports

(This section is identical to Section 14.3.1.5(A), original FMP.)

2. Processor Reports

(This section is identical to Section 14.3.1.5(B), original FMP.)

3. Joint Venture Reports

(This section is identical to Section 14.3.1.5(C), original FMP.)

14.4.6 Limited Entry

(This section is identical to Section 14.3.1.6, original FMP.)

14.5 Management Measures -- Foreign Fisheries

14.5.1 Permit Requirements

All foreign vessels operating in this management unit shall have on board a permit issued by the Secretary of Commerce pursuant to the Magnuson Act.

14.5.2 Prohibited Species

A. General

The prohibited species listed in Section 14.2.B.1 and Annex VI may not be retained, and their taking must be minimized in the course of foreign groundfish fishing operations.

B. Conservation of Chinook Salmon

(This section is identical to Section 14.3.2.2, Amendment 5.)

14.5.3 Fishing Area Restrictions

1. General

(This section is identical to Section 14.3.2.3.1, Amendment 4.)

2. Trawl Fishery

1. (This section is identical to Section 14.3.2.3.2.1, Amendment 4.)

2. (This section is identical to Section 14.3.2.3.2.2, Amendment 4.)

3. (This section is identical to Section 14.3.2.3.2.3, Amendment 4.)

4. Area D -- No trawling from 7 days prior to the opening of the domestic king crab fishery through June 30 in the area known as Petrel Bank (as described in Appendix III and Figure 27). Trawling is permitted seaward of three nautical miles at other times of the fishing year.

Rationale -- To avoid gear conflicts during the conduct of the domestic king crab fishery and to avoid the incidental catch of king crab by trawling. Data available from the fishery in the Petrel Bank area indicate a substantial incidental trawl catch of red, blue and golden king crab. The crab savings effected by the trawl closure is a direct benefit to the domestic fleet by preserving harvestable crabs from the rigors of a trawl effort during the softshell or molting period.

5. (This section is identical to Section 14.3.2.3.2.5, Amendment 4.)

6. (This section is identical to Section 14.3.2.3.2.6, Amendment 4.)

3. Longline Fishery

(This section is identical to Section 14.3.2.3.3, Amendment 4.)

4. In-Season Adjustment of Time and Area Restrictions (Reserved)

14.6 Operational Needs and Costs (1000's dollars)

(This section is identical to Section 14.4, original FMP.)

9. Add the following to Section 18.0, REFERENCES:

- Granfeldt, E. 1979. Marine ecosystems simulation for fisheries management. U.S. Dept. Commerce, NOAA, NMFS, NWAFC processed Report 79-10, Seattle, WA. Unpubl. manusc.
- Laevastu, T. and H.A. Larkins. 1981. Marine Fisheries Ecosystem, Fishing News Book Ltd., Farnham, Surrey, England
- Laevastu, T. and F. Favorite. 1979. Ecosystem dynamics in the eastern Bering Sea. U.S. Dept. Commerce, NOAA, NMFS, NWAFC, Seattle, WA. unpubl. manusc.
- Otto, R.S., T.M. Armetta, R.A. MacIntosh, and J. McBride. 1979. King and Tanner Crab research in the eastern Bering Sea, 1979. U.S. Dept. of Commerce, NOAA, NMFS, NWAFC, Seattle, WA. Unpubl. manusc. (Submitted to INPFC)

10. Change the description of Area B, the Winter Halibut Savings Area in Appendix III, as follows:

Area B -- Winter Halibut-savings Area

That portion of the Fishery Conservation Zone encompassed by straight lines connecting the following points, in the order listed:

Cape Sarichef Light (54°36'N - 164°55'42"W)
52°48'N - 170°00'W
55°30'N - 170°00'W
55°30'N - 166°47'W
56°00'N - 167°45'W
56°00'N - 166°00'W
56°30'N - 166°00'W
56°30'N - 163°00'W
56°20'N - 163°00'W
55°16'N - 166°10'W
Cape Sarichef Light (54°36'N - 164°55'42"W)

11. Replace ANNEX I, Derivation of Acceptable Biological Catch, with the following:

ANNEX I, Content of Resource Assessment Documents

Resource Assessment Documents (RADs) will be prepared annually by the Council's plan maintenance team (PMT) with the assistance of the NMFS Northwest and Alaska Fisheries Center, other agencies, or other scientists noted for their expertise in groundfish biology. The RAD will provide the biological information base necessary to manage groundfish stocks under a multi-species ecosystem management regime.

The RAD will provide information on the historical catch trend, estimates of the MSY of the groundfish complex as well as its component species groups, assessments on the stock condition of individual species groups; assessments of the impacts on the ecosystem of harvesting the groundfish complex at the

current levels given the assessed condition of stocks, including consideration of rebuilding depressed stocks; and alternative harvest strategies and related effects on the component species groups.

Current estimates of individual species' and species groups' MSY, EY, and ABC can be found in Bakkala, et al., 1981. These estimates are updated annually as part of the stock assessments prepared by the National Marine Fisheries Service for the annual meeting of the International North Pacific Fisheries Commission.

The RAD will annually update the biological information base necessary for multispecies management. It will also provide readers and reviewers with knowledge of the factual basis for TAC decisions, and illustrate the manner in which new data and analyses are used to obtain individual species groups' estimates of MSY, EY, and ABC.

12. Eliminate ANNEX II.

13. Replace ANNEX III, Derivation of Total Allowable Level of Foreign Fishing (TALFF) with the following.

ANNEX II. Derivation of Total Allowable Level of Foreign Fishing (TALFF).

The initial TALFF for each target species and for the "other species" category will be determined annually by the following equation:

$$\text{TALFF} = \text{TAC} - (\text{DAH} + \text{Reserves})$$

The final TALFF for each target species and the "other species" category will equal the initial TALFF plus any Reserves or Unneeded DAH which are reallocated to TALFF during the fishing year as explained in Section 11.4

14. Renumber Annex IV and V as Annex III and IV.

15. Revise Annex VI to read as follows:

ANNEX V -- SPECIES CATEGORIES WHICH APPLY
TO THE BERING SEA/ALEUTIAN GROUND FISH FISHERY

Prohibited Species ^{1/}	Target Species ^{2/}	"Other" Species ^{3/}	Nonspecified Species ^{4/}
<u>Finfishes</u>			
Salmonids	Pollock	Sculpins	Eelpouts (family Zoarcidae)
Pacific Halibut	Cod	Sharks	Poachers (family Agonidae)
Pacific Herring	Atka Mackerel	Skates	and alligator fish
	Sablefish	Eulachon	Snailfish, Lumpfishes, Lumpsuckers
	Pacific Ocean Perch	Smelts	(family Cyclopteridae)
	Other Rockfishes	Capelin	Sandfishes (<u>Trichodon sp.</u>)
	Yellowfin Sole		Rattails (family Macrouridae)
	Turbots		Ronquils, Searchers (family
	Other Flatfishes		Bathymasteridae)
			Lancetfish (family Alepisanvidae)
			Pricklebacks, Cockscombs, Warbonnets,
			Shanny (family Stichaeidae)
			Prowfish (<u>Zaprora silenus</u>)
			Hagfish (<u>Eptatretus sp.</u>)
			Lampreys (<u>Lampetra sp.</u>)
			Blennys, Gunnels, (Various small
			bottom dwelling fishes of the
			family Stichaeidae and Pholidae)
<u>Invertebrates</u>			
King Crab	Squids	Octopus	Anemones
Tanner Crab			Starfishes
Coral			Egg Cases
Shrimp			Sea Mouse
Clams			Sea Slug
Horsehair Crab			Sea Potato
Lyre Crab			Sand Dollar
Scallops			Hermit Crab
Snails			Mussels
Dungeness Crab			Sea Urchins
			Sponge - unident.
			Jellyfishes
			Tunicates
			Sea Cucumber
			Sea Pen
			Isopods
			Barnacles
			Polychaetes
			Crinoids
			Crab - unident.
			Misc. - unident.

- 1/ Must be returned to the sea, no fee.
 2/ TAC for each item; fee as in fee schedule.
 3/ Aggregate TAC for group.
 4/ List not exclusive; includes any species not listed under Prohibited, Target, or "Other" categories; no fee charged.

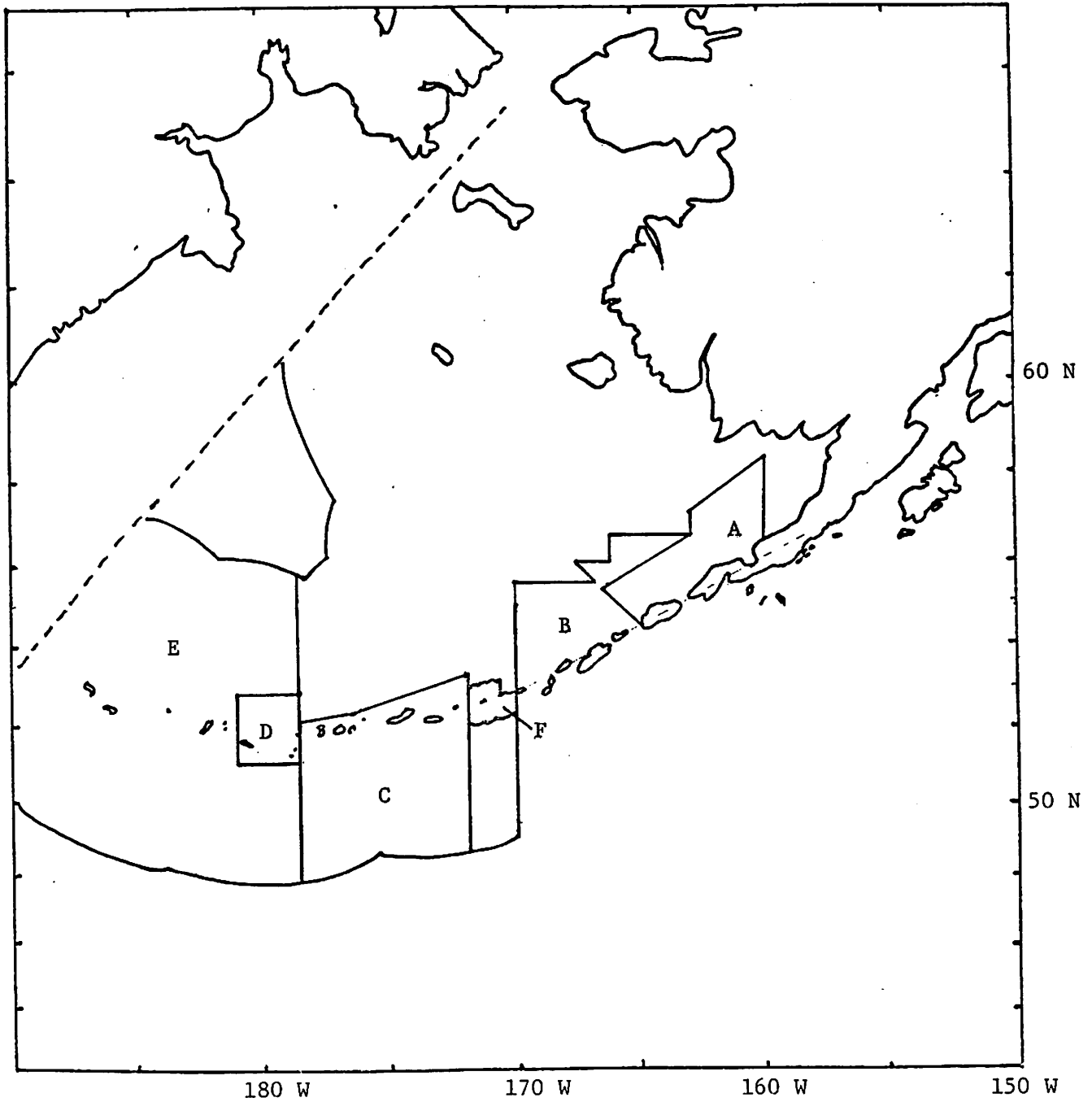
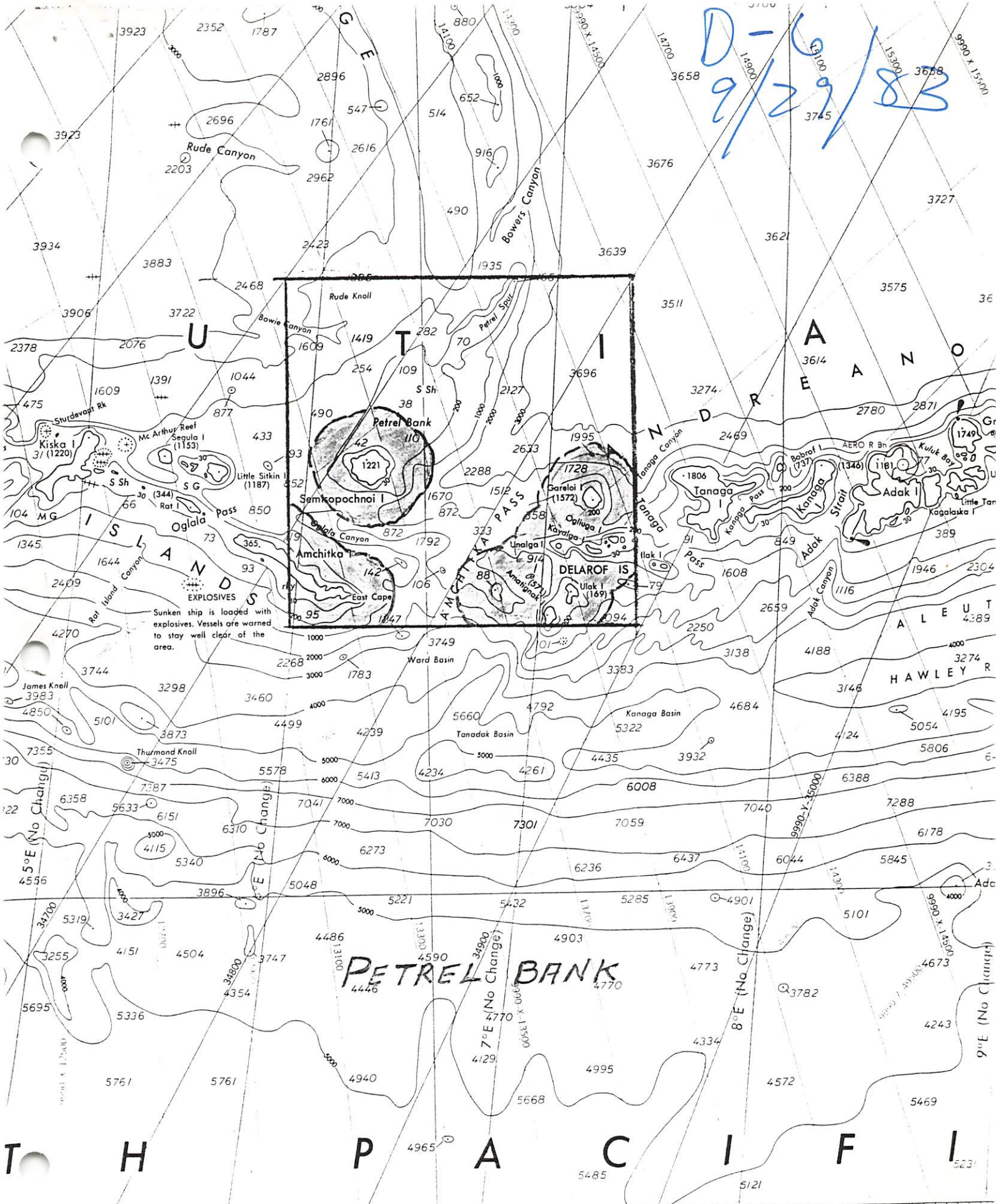


Figure 27 - Areas with special restrictions on foreign and/or domestic fisheries in the Bering Sea and Aleutian Islands Groundfish Plan area.

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EXPLOSIVES
Sunken ship is loaded with explosives. Vessels are warned to stay well clear of the area.

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177° 178° 179° Longitude East from Greenwich 180° Longitude West from Greenwich 179° 178° 177° 17

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result, duri
foreign stern trawl effort in the Bering Sea/Aleutian
region, about three percent (3%) occurred in this longline
sanctuary area.

ation of the trawl
ipelago. As a
1978, of the total

- (iv) No trawling January 1 - June 30 in the area known as Petrel Bank on the north side of the Aleutian Islands comprising those waters bounded by lines drawn to include the following coordinates:

- 52-51'N - 178-30'W
- 51-15'N - 178-30'W
- 51-15'N - 179-00'E
- 52-51'N - 179-00'E
- 52-51'N - 178-30'W

between 178-30'W and 179-00'E landward of 12 nautical miles. Trawling is permitted seaward of the three nautical miles from July 1 - December 31.

To avoid gear conflicts during the conduct of the domestic king crab fishery and to avoid the incidental catch of king crab by trawling. Data available from the fishery in the Petrel Bank area indicates a substantial incidental trawl catch of red, blue and golden king crab. The crab savings effected by the trawl closure is a direct benefit to the domestic fleet in terms of potential catch and of long-range benefit in terms of conservation of crabs not subject to the rigors of a trawl effort during the softshell or moulting period.

- (v) No trawling January 1 - April 30 in other areas west of 178-30'W EXCEPT trawling is permitted seaward of three nautical miles from May 1 - December 31.
To avoid gear conflicts during the conduct of the domestic king crab fishery and the development of the domestic

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APPENDIX
III

Trawl Area Closures

A. Foreign trawling is prohibited from January 1 - June 1 in the area known at Petrel Bank on the north side of the Aleutian Islands between the following coordinates:

- 53-14'N - 172-00'W
- 52-13'N - 176-00'W
- 52-00'N - 178-30'W

B. Foreign trawling is prohibited from January 30 - June 1 in the area known at Petrel Bank on the north side of the Aleutian Islands between the following coordinates:

- 52-51'N - 178-30'W
- 51-15'N - 178-30'W
- 51-15'N - 179-00'E
- 52-51'N - 179-00'E
- 52-51'N - 178-30'W

EXCEPT that foreign trawling is permitted seaward of three nautical miles from the baseline from which the Territorial Sea is measured from July 1 - December 31.

C. Foreign trawling is prohibited from January 1 - April 30 in other areas west of 178-30'W EXCEPT that foreign trawling is permitted from May 1 - December 31 seaward of three nautical miles from the baseline from which the Territorial Sea is measured in other areas west of 178-30'W which are otherwise not described in (B) of this section.

AMENDMENT
I

B. Trawl Fishery

1. Area A -- ^{First Version} in the Bristol Bay Pot Sanctuary (as described in Appendix III and Figure 27).

Rationale -- To prevent conflicts between foreign mobile gear and concentrations of U.S. crab pots; to prevent incidental catch of juvenile halibut which are known to concentrate in this area.

2. Area B -- No trawling from December 1 to May 31 in the Winter Halibut Savings Area (as described in Appendix III and Figure 27).

Rationale -- To protect winter concentrations of juvenile halibut, and to protect spawning concentrations of pollock and flounders.

3. Area C -- No trawling year-round in the Longline Sanctuary Area (as described in Appendix III and Figure 27).

Rationale -- To provide a sanctuary for foreign and domestic longline fishing in recognition of the situation in which highly developed trawl fisheries in both the Bering Sea/Aleutian area and the Gulf of Alaska have tended to preempt grounds from the traditional longline fishing method.

(Prior to 1977, no Danish seiners, side trawlers, or pair trawlers operated in this area, and less than one percent of the foreign stern trawl effort occurred in this area. Because of the displacement of the Japanese land-based dragnet fleet from the Soviet 200-mile zone, that fleet has, since 1977, increased its utilization of the trawl grounds surrounding the Aleutian archipelago. As a result, during the first 7 months of 1978, of the total foreign stern trawl effort in the Bering Sea/Aleutian region, about three percent occurred in this longline sanctuary area.)

4. Area D -- No trawling January 1 - June 30 in the area known as Petrel Bank (as described in Appendix III and Figure 27). Trawling is permitted seaward of three nautical miles from July 1 - December 31.

Rationale -- To avoid gear conflicts during the conduct of the domestic king crab fishery and to avoid the incidental catch of king crab by trawling. Data available from the fishery in the Petrel Bank area indicate a substantial incidental trawl catch of red, blue and golden king crab. The crab savings effected by the trawl closure is a direct benefit to the domestic fleet by preserving harvestable crabs from the rigors of a trawl effort during the softshell or moulting period.

5. Area E -- No trawling January 1 - April 30 in Area E (as described in Appendix III and Figure 27) EXCEPT trawling is permitted seaward of three nautical miles from May 1 - December 31.

14.5.2 Prohibited Species

AMENDMENT
7

A. General

The prohibited species 1 retained, and their tak groundfish fishing operations.

2ND VERSION

1 and Annex VI may not be in the course of foreign

B. Conservation of Chinook Salmon

(This section is identical to Section 14.3.2.2, Amendment 5.)

14.5.3 Fishing Area Restrictions

1. General

(This section is identical to Section 14.3.2.3.1, Amendment 4.)

2. Trawl Fishery

1. (This section is identical to Section 14.3.2.3.2.1, Amendment 4.)

2. (This section is identical to Section 14.3.2.3.2.2, Amendment 4.)

3. (This section is identical to Section 14.3.2.3.2.3, Amendment 4.)

4. Area D -- No trawling from 7 days prior to the opening of the domestic king crab fishery through June 30 in the area known as Petrel Bank (as described in Appendix III and Figure 27). Trawling is permitted seaward of three nautical miles at other times of the fishing year.

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Rationale -- To avoid gear conflicts during the conduct of the domestic king crab fishery and to avoid the incidental catch of king crab by trawling. Data available from the fishery in the Petrel Bank area indicate a substantial incidental trawl catch of red, blue and golden king crab. The crab savings effected by the trawl closure is a direct benefit to the domestic fleet by preserving harvestable crabs from the rigors of a trawl effort during the softshell or molting period.

5. (This section is identical to Section 14.3.2.3.2.5, Amendment 4.)

6. (This section is identical to Section 14.3.2.3.2.6, Amendment 4.)

3. Longline Fishery

(This section is identical to Section 14.3.2.3.3, Amendment 4.)

4. In-Season Adjustment of Time and Area Restrictions (Reserved)

14.6 Operational Needs and Costs (1000's dollars)

(This section is identical to Section 14.4, original FMP.)