

FINAL  
ENVIRONMENTAL ASSESSMENT OF AMENDMENT 9  
TO THE FISHERY MANAGEMENT PLAN FOR THE  
GROUNDFISH FISHERY OF THE BERING SEA AND ALEUTIAN ISLANDS AREA

ADOPTED BY  
THE NORTH PACIFIC FISHERY MANAGEMENT COUNCIL

PREPARED BY THE PLAN TEAM FOR THE  
GROUNDFISH FISHERY OF THE BERING SEA AND ALEUTIAN ISLANDS AREA

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FINAL  
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INTRODUCTION

The domestic and foreign groundfish fishery in the 3-200 mile fishery conservation zone of the eastern Bering Sea is managed under the Fishery Management Plan for the Groundfish Fishery of the Bering Sea and Aleutians Islands Area (FMP). This FMP was developed by the North Pacific Fishery Management Council (Council), approved by the Assistant Administrator for Fisheries, NOAA (Assistant Administrator), and implemented by a final rule on January 1, 1982 (46 FR 63295, December 31, 1981). A final environmental impact statement was prepared for the FMP and is on file with the Environmental Protection Agency. Since that time, the Council has adopted eight amendments to the FMP. The subject of this action is DRAFT Amendment 9. It contains five proposals, which are described below.

Prior to 1984, the Council would receive amendment proposals during any of its scheduled meetings. At its April 1984 meeting, the Council adopted a policy whereby proposals for amendments would be received only once a year. Proposals contained in Amendment 9 were requested by the Council in September 1984 with a deadline set at December 7, 1984. The Council then instructed its Plan Team to review and rank each proposal that was received. At its February 1985 meeting, the Council reviewed the recommendations of the Plan Team, Scientific and Statistical Committee, and Advisory Panel, and selected six proposals for inclusion in Amendment 9. Other proposals were identified for development and consideration in a future amendment. At their March meeting they deleted one of the six. At the May meeting two others were deleted, leaving three.

The three topics to be reviewed in this environmental assessment are: (1) Establish measures to reduce the incidental bycatch of fully utilized domestic species by foreign trawlers in the Aleutian Islands; (2) Establish a reporting system for catcher/processor vessels; and (3) Implementation of NMFS habitat policy. Each of these topics will be presented as chapters of this document.

This environmental assessment is prepared under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and its implementing regulations.

II. DESCRIPTION OF AND THE NEED FOR THE MANAGEMENT MEASURES

1. ESTABLISH MEASURES TO REDUCE THE INCIDENTAL BYCATCH OF FULLY UTILIZED DOMESTIC SPECIES BY FOREIGN TRAWLERS IN THE ALEUTIAN ISLANDS

U.S. fishing and processing companies operating in the Bering Sea and Aleutian Islands have expanded dramatically in recent years. For example, in 1981 joint ventures in the Aleutian Islands caught approximately 3,800 mt of groundfish (Table 1). This catch reached 19,000 mt in 1982 and climbed to over 50,000 mt in 1984. This rapid increase in domestic harvest has led

to full utilization of several groundfish species and greatly increased utilization of others. The Council has identified three species as fully utilized by U.S. fishermen: Pacific ocean perch, sablefish, and Atka mackerel. Pacific cod, while not yet fully utilized in the Aleutians, is also of great economic importance. These species have supported foreign directed fisheries in the past and, although directed fisheries have been curtailed due to reduced allocations, are still taken in varying quantities incidentally to normal groundfish trawl operations. Because these species are important to the development of the U.S. industry, reduction of foreign catches to a minimum is essential. Modification of fishing practices can reduce these incidental catches but elimination of bycatches by that method alone is doubtful.

Table 1. Joint venture and foreign trawl catches in the Aleutian Islands (INPFC Area 4), 1981-84.

|                      | <u>Pollock</u> | <u>Pacific<br/>cod</u> | <u>Atka<br/>Mackerel</u> | <u>POP</u> | <u>Sablefish</u> | <u>All<br/>Species</u> |
|----------------------|----------------|------------------------|--------------------------|------------|------------------|------------------------|
| <u>Joint Venture</u> |                |                        |                          |            |                  |                        |
| 1981                 | 145            | 1,749                  | 1,633                    | 0          | 156              | 3,769                  |
| 1982                 | 1,983          | 4,280                  | 12,429                   | 2          | 118              | 19,043                 |
| 1983                 | 2,547          | 4,700                  | 10,511                   | 10         | 70               | 18,051                 |
| 1984*                | 6,736          | 6,476                  | 35,927                   | 429        | 272              | 50,251                 |
| <u>Foreign Trawl</u> |                |                        |                          |            |                  |                        |
| 1981                 | 55,346         | 2,680                  | 15,027                   | 3,660      | 172              | 88,362                 |
| 1982                 | 55,745         | 1,520                  | 7,117                    | 1,732      | 147              | 77,252                 |
| 1983                 | 56,453         | 1,870                  | 1,097                    | 651        | 155              | 69,663                 |
| 1984*                | 71,452         | 437                    | 71                       | 390        | 115              | 75,473                 |

\*preliminary

Data from recent years indicate that a substantial portion of the foreign catch of these fully utilized species in the Aleutian Islands has been taken in the immediate vicinity of the islands themselves. In 1983 foreign trawlers harvested a total of 1,870 mt of Pacific cod, 155 mt of sablefish, 738 mt of Pacific ocean perch, and 1,097 mt of Atka mackerel in the Aleutian Islands (Statistical Area 4). Preliminary analysis of observer data for the 1983 fishing year indicates that approximately 92% of the trawl catches of Pacific cod, 88% of sablefish, 92% of rockfish and 66% of Atka mackerel came from within 20 miles of the islands in 1983. The Council feels that it is important to ensure that these valuable species be harvested entirely by U.S. fishermen and is investigating measures to achieve that goal.

## 2. ESTABLISH A REPORTING SYSTEM FOR CATCHER/PROCESSOR VESSELS

The objective of this proposal is to ensure that fishery managers receive timely estimates of catch by all domestic vessels so that fishery closure notices can be promptly issued when OY's are achieved. With the rapid recent growth of the domestic fishing fleet, increasing importance is being placed on timely reporting of domestic harvests in order to ensure that OY's are not

exceeded. Vessels which deliver their catch to shore-based processors land their catch frequently enough to allow timely estimation of total catch under existing regulations. However, vessels which process their catch at sea can remain on the fishing grounds for extended periods of time. Catch reports submitted by these vessels at the time of landing as required under existing regulations are not timely enough to prevent OY's from being seriously exceeded. The resulting overharvests could seriously damage future production from groundfish stocks.

Current fishing regulations implementing the Gulf of Alaska and Bering Sea Fishery Management Plans require fishing vessels to submit a State of Alaska fish ticket or equivalent document to the Alaska Department of Fish and Game for any commercial groundfish harvest in the Gulf of Alaska or Bering Sea within 7 days of the date of landing the catch. Vessels which preserve their catch by non-freezing refrigeration or icing methods must land their catch within a maximum of 10-12 days from the time of harvest in order to ensure product quality. The catch from these vessels, when delivered to shore-based processors, can be reported on a timely basis under existing regulations. If existing regulations are properly enforced, fishery managers can estimate harvests by these vessels with sufficient precision to ensure that OY's are not exceeded.

However, vessels which freeze or salt their catch aboard frequently remain at sea for trips of several months duration and are not currently required to report their catch until the time of landing and offloading. For the purposes of this amendment, a catcher/processor is any vessel which holds its catch or any portion thereof for more than 14 days. At least twenty-two catcher/processor vessels will be operating in the Gulf of Alaska and Bering Sea areas in 1985. Based on past catcher/processor landing records the combined hold capacity of these vessels will be approximately 13,000 metric tons. Therefore these vessels are capable of harvesting significant portions or even entire OY's in a single trip. Under existing fishing regulations, fishery managers have no knowledge of the catch aboard these vessels until the time of landing. In addition, domestic groundfish fishing vessels are not required to notify fishery managers when beginning fishing operations. Domestic groundfish fishing vessels are not marked for identification from enforcement overflights, so the number of catcher/processor vessels actually fishing in a given management area is not known until the time of landing. Without knowledge of effort levels, fishery managers are not able to make projections of catch aboard based on past performance.

Delayed catch reporting is also a problem for fully domestic mothership operations. In these operations small catcher vessels without processing capability deliver their catch, usually by cod-end transfers, to a mothership/processor vessel. Current regulations require that an ADF&G fish ticket be filled out each time a catcher vessel delivers to the mothership/processor and that these fish tickets be forwarded to ADF&G within 7 days of the date that fish were delivered. Domestic mothership and floating processor operations thus far have all occurred in sheltered waters with at least periodic access to U.S. mail service so that regulations requiring filing of fish tickets with ADF&G within 7 days could have been complied with and enforced. However, there is a potential for these mothership operations to occur at sea, with no method of filing the fish tickets with ADF&G within the 7 day period required by law.

With such large processing capacities and increasing numbers of catcher/processor and mothership/processor vessels the risks of overharvesting groundfish resources under the current system are high. Because of the time delays involved in catch reporting under current regulations, groundfish resources could be drastically overharvested before fishery managers had even discovered that OY's had been exceeded. Since many of the groundfish species concerned are slow growing and long-lived, overharvesting can have considerable impacts on future production.

### 3. IMPLEMENTATION OF THE NMFS HABITAT POLICY

The proposed action amends the FMP by modifying and adding certain sections specifically to address the habitat requirements of individual species in the Bering Sea/Aleutian Islands groundfish fishery. The amendment describes the diverse habitat types within the Bering Sea, delineates the life stages of the species, identifies potential sources of habitat degradation and the potential risk to the fishery, and describes existing programs, applicable to the area, that are designed to protect, maintain, or restore the habitat of living marine resources. The amendment responds to the Habitat Conservation Policy of the National Marine Fisheries Service, which advocates emphatic consideration of habitat concerns in the development or amendment of FMP's, and the strengthening of NMFS' partnerships with states and the councils on habitat issues.

### III. ALTERNATIVE MANAGEMENT MEASURES INCLUDING THOSE PROPOSED

#### 1. REDUCE THE INCIDENTAL BYCATCH OF FULLY UTILIZED DOMESTIC SPECIES BY FOREIGN TRAWLERS IN THE ALEUTIAN ISLANDS

- A. (Alternative 1: Preferred) Prohibit foreign trawling within 20 miles of the Aleutian Islands.

Under this alternative, foreign trawl catches of Pacific cod, sablefish, Pacific ocean perch, and Atka mackerel would be reduced, thus making them more available to domestic fishermen. The exact location of the proposed closure is shown in Figure 1.

- B. (Alternative 2: Status Quo) Allow foreign trawlers to fish in those areas around the Aleutians that are currently open to such fishing.

Under this status quo alternative, foreign nations could continue to trawl for their share of groundfish quotas that are apportioned to TALFF, including bycatch amounts of Pacific cod, sablefish, Pacific ocean perch, and Atka mackerel. Each nation would be subject to early closures of its fishery if its share of these limiting species were caught.

- C. (Alternative 3) Establish zero TALFFs for all species in the Aleutians (all of Area IV) except pollock.

This alternative in effect would expand the closure around the Aleutians and also include all foreign vessels rather than just trawlers. Bycatch allowances would be available (as TALFF) for those species not fully utilized by

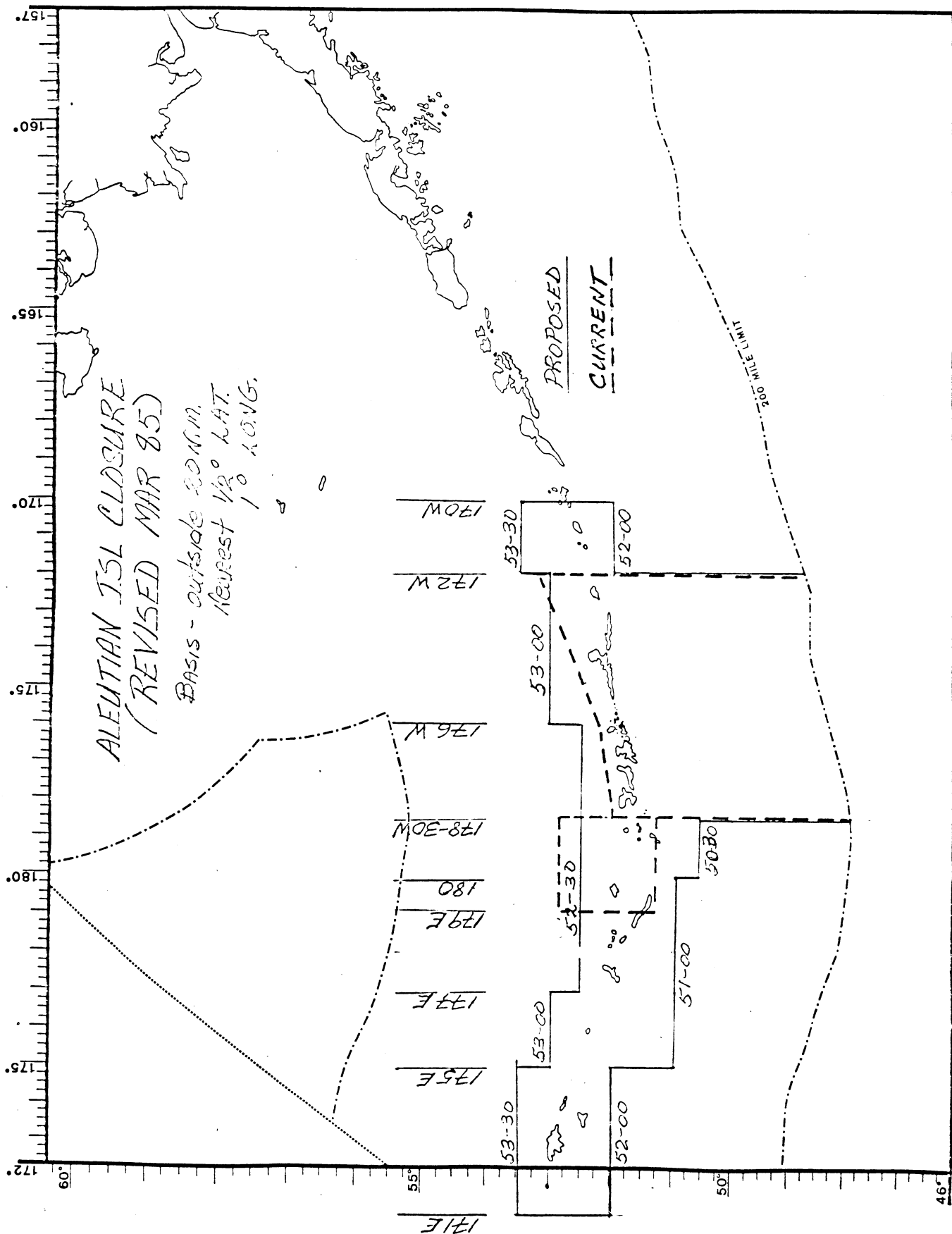


FIGURE 1

U.S. fishermen. The primary bycatch is expected to be pollock. Zero TALFFs for other species would mean they are prohibited species. Catch of those species would be unrestricted by regulation but would be low because pollock would be the only target species. Prohibited species catches could not be retained.

This alternative differs from the status quo in that currently separate TACs (and thus separate TALFFs) are established only for sablefish, Pacific ocean perch, rockfish and pollock. Under this alternative, TACs for all other species except pollock will remain unchanged but TALFFs will be available only outside Area IV. Pollock TAC inside Area IV will remain available inside Area IV.

## 2. ESTABLISH A REPORTING SYSTEM FOR CATCHER/PROCESSORS

- A. (Alternative 1: Preferred) Require an FCZ processing permit with check-in/check-out and weekly catch reporting.

Under this alternative, catcher/processor and mothership/processor vessels would be required to obtain an FCZ processing permit. These catcher/processor and mothership/processor vessels would be required to notify NMFS via U.S. Coast Guard radio each time they entered or left an FMP management area. Catcher/processor and mothership/processor vessel operators or their representatives would also be required to submit a report to NMFS by U.S. mail or telex for each fishing week documenting the hail weight estimates of catch by FMP species group in each FMP area. These weekly reports would be due within 7 days of the end of the fishing week. ADF&G fish tickets would continue to be required to be submitted within one week of the date of landing to document more precise catch or product weights and specific ADF&G statistical areas. A completed logbook may be submitted with the ADF&G fish ticket showing total catch by species for a trip as a means of documenting catch by specific ADF&G statistical area.

- B. (Alternative 2: Status Quo) Maintain the current reporting requirements.

With the present system catches are reported on ADF&G fish tickets at the time of landing.

- C. (Alternative 3) Require an FCZ processing permit with a weekly catch report, but without check-in/check-out reporting.

Under this alternative, catcher/processor and mothership/processor vessels would be required to obtain an FCZ processing permit. These catcher/processor and mothership/processor vessel operators or their representatives would be required to submit a report to NMFS by U.S. mail or telex for each fishing week documenting the hail weight estimates of catch by FMP species group in each FMP area. These weekly reports would be due within 7 days of the end of the fishing week. ADF&G fish tickets would continue to be required to be submitted within one week of the date of landing to document more precise catch or product weights and specific ADF&G statistical areas. A completed logbook may be submitted with the ADF&G fish ticket showing total catch by species for a trip as a means of documenting catch by specific ADF&G statistical area.

- D. (Alternative 4) Place observers aboard a portion of the catcher/processor and mothership/processor vessels and extrapolate the catch from these vessels to the entire fleet.

Under this alternative, catcher/processor and mothership/processor vessels would be required to obtain an ECZ processing permit which would require that observers be allowed onboard if requested. These catcher/processor and mothership/processor vessels would be required to notify NMFS via U.S. Coast Guard radio each time they entered or left an FMP management area. Observers would be placed aboard a portion of the catcher/processor and mothership/processor vessels. Radio reports of catch from the observed sample would be extrapolated to all vessels in each management area. ADF&G fish tickets would continue to be required to be submitted within one week of the date of landing to document more precise catch or product weights and specific ADF&G statistical areas. A completed logbook may be submitted with the ADF&G fish ticket showing total catch by species for a trip as a means of documenting catch by specific ADF&G statistical area.

- E. (Alternative 5) Place observers aboard all catcher/processor and mothership/processor vessels.

Require catcher/processor and mothership/processor vessels to obtain an ECZ processing permit which would require that an observer be aboard at all times. Total catch would be computed directly from observer radio reports.

### 3. IMPLEMENTATION OF THE NMFS HABITAT POLICY

- A. (Alternative 1: Preferred) Amend the FMP to address habitat considerations, based on the best available information, to meet standards set forth in the National Marine Fisheries Service's Habitat Conservation Policy.

This alternative focuses, within the FMP, on habitat as the source of productivity of a fishery and demonstrates Council awareness of potential adverse and cumulative effects of man-induced habitat alterations on the health of stocks and size of the harvest. It would provide legal foundation for future Council expressions of concern and action should the need arise, and would provide the Secretary with a basis for implementing appropriate Council habitat recommendations to the extent possible within legal and budget limitations.

- B. (Alternative 2) Amend the FMP to add a general habitat conservation objective. However, the more detailed material that is under the Alternative 1 proposed amendment would be included in a separate Council Habitat Document that would be referenced in, but not part of, the FMP.

This alternative would issue the amendment text as a Council Habitat Document separate from, but referenced in the FMP. Not subject to Secretarial approval, it would provide essentially the same information without the need for FMP amendment should the information change. Whether future Council action based on information published separately from the FMP would have the same legal effect is uncertain.

- C. (Alternative 3: Status Quo) Do not amend the FMP to address habitat considerations.

Under this alternative, the FMP would not be responsive to the NMFS Habitat Conservation Policy.

#### IV. ENVIRONMENTAL IMPACTS OF THE AMENDMENT PROPOSALS AND THEIR ALTERNATIVES

Environmental impacts on the quality of the human environment are categorized as biological, physical, and socioeconomic. The socioeconomic analysis is presented under the draft Regulatory Impact Review/Initial Regulatory Flexibility Analysis prepared for Amendment 9. Biological and physical impacts are discussed as follows:

1. REDUCE THE BYCATCH OF FULLY UTILIZED DOMESTIC SPECIES BY FOREIGN VESSELS IN THE ALEUTIAN ISLANDS AREA.

The environmental impacts of replacing foreign trawling with domestic fishing (mostly trawling) are expected to be negligible. No increased direct stress to marine mammals and birds is expected. No changes in the effects on endangered species or the coastal zone are expected. This issue is primarily allocational in nature and is considered in greater detail in the Regulatory Impact Review.

2. ESTABLISH A REPORTING SYSTEM FOR CATCHER/PROCESSORS

The primary effects imposed upon the biological and physical environment by the catcher/processor reporting alternatives result from the varying potential for overfishing under each alternative. Both targetted groundfish species and non-targetted incidental or prohibited species could be overfished by catcher/processor and mothership/processor vessels. Since many of the groundfish species concerned are slow growing and long-lived, overharvesting can have considerable impacts on future population levels and production of the targeted groundfish species. Similar effects on population levels and production are possible for incidental and prohibited species catches by these vessels. In addition, considerable socioeconomic impacts on catches by other user groups could result from excessive harvests of prohibited species by catcher/processors, particularly for crab, salmon and halibut. Secondary biological impacts of overharvests would result from changes in trophic interactions caused by the altered population levels of the overfished species.

The potential for resource depletion through overfishing results from the large hold capacities of the catcher/processor and mothership/processor vessels and the potential for these vessels to remain at sea for long periods of time. Under alternative 1, fishery managers have no knowledge of the catch aboard these vessels until the time of landing. By the time these vessels land, OY's and possible PSC levels could have been greatly exceeded by the aggregate catch aboard the catcher/processor vessels and shore-based domestic vessels. Alternative 2 would greatly reduce the risk of overfishing of targetted groundfish species by requiring weekly catch reports from the catcher/processor and mothership/processor vessels. In addition, this alternative requires vessels to check-in and check-out of each management area

fished. This requirement increases the compliance and enforceability of this alternative, further reducing the risk of overfishing. Alternative 3 would require only the weekly catch report, with a somewhat larger risk of overfishing of targetted groundfish species, because of reduced compliance and enforceability. The risk of overfishing is also increased under Alternative 3 because the precision of catch estimates is reduced. This results from catch projections for the most recent two-week reporting period being based on a two week old effort distribution provided by the preceding catch report, rather than basing the effort distribution on current information from the check-in/check-out system. The onboard observer catch reporting of Alternatives 4 and 5 provide the least risk of overfishing targetted groundfish species. Observer based catch reporting provides the only reduction of the risk of overfishing prohibited species catches of the alternatives.

### 3. IMPLEMENT THE NMFS HABITAT POLICY

The NMFS Habitat Conservation Policy is considered "other applicable law" under the Administrative Procedures Act. In order to fully conform to this rule the FMP must address habitat issues directly rather than by reference to other reports, statements or annexes. Incorporation of the habitat amendment may serve several useful purposes. It may be useful to educate the public about the interactions between the aquatic and benthic environments and the fishery resources. This amendment is primarily descriptive in nature, focusing on the environment within which the product for harvest is generated and nurtured. It's purpose is to alert users of the marine environment to the elemental influence of habitat on the productivity of the fishery and to the potential for alteration by man's actions. The intended effect is to provide the basis for a common awareness among these users and for appropriate expressions of Council concern should the need arise. Because this statement is primarily informational, there is no immediate environmental impact, although the residual effect of increased knowledge may serve, in the long-term, to protect, maintain, or restore the habitats of the Bering Sea groundfish fishery. The amendment does provide the legal basis for implementation of certain habitat protection regulations such as domestic debris discard regulations. In the absence of such an amendment, the benefits of increased public awareness of habitat issues would be lost and specific regulations could not be implemented.

### V. EFFECTS ON ENDANGERED SPECIES AND ON THE ALASKA COASTAL ZONE

None of the alternatives for each managment proposal would constitute actions that "may affect" endangered species or their habitat within the meaning of the regulations implementing Section 7 of the Endangered Species Act of 1973. Thus, consultation procedures under Section 7 on the proposed actions and their alternatives will not be necessary.

Also, for the reasons discussed above, each of the alternative managment measures would be conducted in a manner consistent, to the maximum extent practicable, with the Alaska Coastal Zone Management Program within the meaning of Section 307(c)(1) of the Coastal Cone Management Act of 1972 and its implementing regulations.

## VI. FINDINGS OF NO SIGNIFICANT IMPACT

For the reasons discussed above, it is hereby determined that neither approval and implementation of any of the reasonable alternatives concerning the six topics presented would significantly affect the quality of the human environment, and that the preparation of an environmental impact statement on these actions is not required by Section 102(2)(C) of the National Environmental Policy Act or its implementing regulations.

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Assistant Administrator for Fisheries, NOAA      Date

#### VII. COORDINATION WITH OTHERS

The following persons were consulted during the preparation of this environmental assessment: Dr. Loh-Lee Low, Northwest and Alaska Fishery Center, NMFS, Seattle, Washington and Patrick J. Travers, Alaska Regional Counsel, NOAA, Juneau, Alaska.

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REGULATORY IMPACT REVIEW/INITIAL REGULATORY FLEXIBILITY ANALYSIS  
FOR AMENDMENT 9 TO THE FISHERY MANAGEMENT PLAN FOR THE  
GROUNDFISH FISHERY OF THE BERING SEA AND ALEUTIAN ISLANDS AREA

ADOPTED BY THE  
NORTH PACIFIC FISHERY MANAGEMENT COUNCIL

PREPARED BY THE PLAN TEAM FOR THE GROUNDFISH FISHERY  
OF THE BERING SEA AND ALEUTIAN ISLANDS AREA

MAY 28, 1985

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## 1. INTRODUCTION

The Administration's policy on the development and issuance of regulations is established by Executive Order 12291. The main objectives of that policy are to reduce the burdens imposed by existing and future regulations, to increase agency accountability for regulatory actions, and to provide for Presidential oversight of the regulatory process, minimize duplication and conflict of regulations, and ensure well-reasoned regulations. Under these guidelines each agency, to the extent permitted by law, is expected to comply with the following requirements:

1. Administrative decisions shall be based on adequate information concerning the need for and consequences of proposed government action.
2. Regulatory action shall not be undertaken unless the potential benefits to society from the regulation outweigh the potential costs to society.
3. Regulatory objectives shall be chosen to maximize the net benefits to society.
4. Among alternative approaches to any given regulatory objective, the alternative involving the least net cost to society shall be chosen.
5. Agencies shall set regulatory priorities with the aim of maximizing the aggregate net benefit to society, taking into account the condition of the particular industries affected by regulations, the condition of the national economy, and other regulatory actions contemplated for the future.

In compliance with Executive Order 12291, the National Marine Fisheries Service (NMFS) requires the preparation of a Regulatory Impact Review (RIR) for all regulatory actions which either implement a new fishery management plan (FMP) or significantly amend an existing FMP, or may be significant in that they affect important DOC/NOAA policy concerns and are the object of public interest. The RIR: (1) provides a comprehensive review of the level and incidence of impact associated with the proposed or final regulatory actions; (2) provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problems; and (3) ensures that the regulatory agency or council systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost effective way.

The RIR also serves as the basis for determining whether the proposed regulations implementing the FMP or amendment are "major" under criteria provided in Executive Order 12291 (described above), whether or not the proposed regulations will have a "significant economic impact on a substantial number of small entities" under the Regulatory Flexibility Act (P.L. 96-354), and whether or not the Paperwork Reduction Act of 1980 (P.L. 96-511) applies. The primary purpose of the Regulatory Flexibility Act is to relieve small businesses, small organizations and small governmental jurisdictions (collectively, "small entities") from burdensome regulatory and recordkeeping

requirements. This Act requires that if regulatory and recordkeeping requirements are not burdensome then the head of an agency must certify that the requirement, if promulgated, will not have a significant economic effect on a substantial number of small entities.

The purpose of the Paperwork Reduction Act, in part, is to minimize the federal paperwork burden for individuals, small businesses, state and local governments and other persons. This Act requires each agency to ensure its information systems do not overlap each other or duplicate the systems of other agencies.

This RIR analyzes the impacts of three proposals by the North Pacific Fishery Management Council (Council) for amending the Fishery Management Plan for Groundfish in the Bering Sea/Aleutian Islands (FMP):

1. The first proposal would close an area within 20 miles of the Aleutians to all foreign trawling in order to reduce the incidental catches of fully utilized species.
2. The second proposal would require domestic catcher/processors to submit weekly catch reports to provide for timely inseason catch reporting by management area to reduce the risk of under or overharvest.
3. The third proposal would implement the NMFS Habitat Preservation Policy.

## II. BACKGROUND

In 1977, under authority of the Magnuson Fishery Conservation and Management Act (Magnuson Act), the Secretary of Commerce assumed management jurisdiction over foreign fishing for Bering Sea and Aleutian Islands area groundfish in the 3- to 200-mile Fishery Conservation Zone (FCZ) by promulgating the Trawl Fisheries and Herring Gillnet Fisheries of the Eastern Bering Sea and Northeast Pacific Preliminary Management Plan (PMP). The PMP was published in the Federal Register (43 FR 9298) on February 15, 1977, and implemented March 1, 1977. It regulated foreign fishing through 1981. The North Pacific Fishery Management Council (Council) developed a Fishery Management Plan for the Groundfish Fishery of the Bering Sea and Aleutian Island Area (FMP) and submitted it in 1979 to the Assistant Administrator for approval and implementation under the Magnuson Act. The FMP and its implementing regulations became effective on January 1, 1982 (46 FR 63295) and govern fishing for groundfish by United States and foreign vessels in the FCZ of the Bering Sea and that part of the North Pacific Ocean adjacent to Alaska west of 170°W. longitude. The FMP has been amended several times, although not all recommendations made by the Council have been approved and implemented.

Prior to 1984, the Council would receive amendment proposals during any of its scheduled meetings. At its April, 1984 meeting, the Council adopted a policy whereby proposals for amendments would be received only once a year. Proposals contained in Amendment 9 were requested by the Council in September 1984 with a deadline set at December 7, 1984. The Council then instructed its Plan Team to review and rank each proposal that was received. At its February

1985 meeting, the Council reviewed the recommendations of the Plan Team, Scientific and Statistical Committee, and Advisory Panel, and selected six proposals for inclusion in Amendment 9. Other proposals were identified for development and consideration in a future amendment. At the March meeting the Council deleted one of these proposals. At the May meeting, the Council further deleted two of the remaining proposals, leaving three.

The three topics to be reviewed in this environmental assessment are: (1) establish measures to reduce the incidental bycatch of fully utilized domestic species by foreign trawlers in the Aleutian Islands; (2) establish a reporting system for catcher/processor vessels; and (3) implement the NMFS habitat policy. Each of these topics will be presented as chapters of this document.

### III. PROPOSAL 1: ESTABLISH MEASURES TO REDUCE THE INCIDENTAL CATCH OF FULLY UTILIZED SPECIES BY FOREIGN TRAWLERS IN THE ALEUTIANS ISLANDS

#### A. Problems Necessitating the Amendment Proposal

U.S. fishing and processing companies operating in the Bering Sea and Aleutian Islands have expanded dramatically in recent years. For example, in 1981 joint ventures in the Aleutian Islands caught approximately 3,800 mt of groundfish (Table 1). This catch reached 19,000 mt in 1982 and climbed to over 50,000 mt in 1984. This rapid increase in domestic harvest has led to full utilization of several groundfish species and greatly increased utilization of others. The Council has identified three species as fully utilized by U.S. fishermen: Pacific ocean perch, sablefish, and Atka mackerel. Pacific cod, while not yet fully utilized in the Aleutians, is also of great economic importance. These species have supported foreign directed fisheries in the past and, although directed fisheries have been curtailed due to reduced allocations, are still taken in varying quantities incidentally to normal groundfish trawl operations. Because of the importance of these species to the development of the U.S. industry it is essential that foreign catches be reduced to the absolute minimum. Modification of fishing practices can reduce these incidental catches but it is doubtful that bycatches can be eliminated entirely by that alone.

Data from recent years indicate that a substantial portion of the foreign catch of these fully utilized species in the Aleutian Islands has been taken in the immediate vicinity of the islands themselves. In 1983 foreign trawlers harvested a total of 1,870 mt of Pacific cod, 155 mt of sablefish, 738 mt of Pacific ocean perch, and 1,097 mt of Atka mackerel in the Aleutian Islands (Statistical Area 4). Preliminary analysis of observer data for the 1983 fishing year indicate that 92% of the trawl catches of Pacific cod, 88% of sablefish, 92% of rockfish and 66% of Atka mackerel came from within 20 miles of the islands in 1983.

At the December 1984 North Pacific Fishery Management Council meeting, the Council voted to enact an emergency regulation to close the area within 20 miles of the Aleutian Islands to all foreign trawling for 1985. The proposed rule would continue the Council's emergency regulation for future years. The amendment seeks to reduce foreign bycatch of these species of fish fully utilized by U.S. fishermen in the Aleutian Islands: sablefish, Pacific

Table 1. Joint venture and foreign trawl catches in the Aleutian Islands  
(INPFC Area 4), 1981-84.

|                      | <u>Pollock</u> | <u>Pacific<br/>Cod</u> | <u>Atka<br/>Mackerel</u> | <u>POP</u> | <u>Sablefish</u> | <u>All<br/>Species</u> |
|----------------------|----------------|------------------------|--------------------------|------------|------------------|------------------------|
| <u>Joint Venture</u> |                |                        |                          |            |                  |                        |
| 1981                 | 145            | 1,749                  | 1,633                    | 0          | 156              | 3,769                  |
| 1982                 | 1,983          | 4,280                  | 12,429                   | 2          | 118              | 19,043                 |
| 1983                 | 2,547          | 4,700                  | 10,511                   | 10         | 70               | 18,051                 |
| 1984*                | 6,736          | 6,476                  | 35,927                   | 429        | 272              | 50,251                 |
| <u>Foreign Trawl</u> |                |                        |                          |            |                  |                        |
| 1981                 | 55,346         | 2,680                  | 15,027                   | 3,660      | 172              | 88,362                 |
| 1982                 | 55,745         | 1,520                  | 7,117                    | 1,732      | 147              | 77,252                 |
| 1983                 | 56,453         | 1,870                  | 1,097                    | 651        | 155              | 69,663                 |
| 1984*                | 71,452         | 437                    | 71                       | 390        | 115              | 75,473                 |

\*preliminary

Ocean perch and Atka mackerel. Pacific cod, although not quite fully utilized by domestic fishermen, is also a species of concern. The proposed action would also tend to prevent potential gear/user conflict between foreign and domestic fishermen.

The Council selected 20 miles as opposed to some other distance due to the marine topography of the region. Figure 1 graphically shows the bottom features of the area. Due to the steep slope of the ocean floor in the immediate vicinity of the islands, most of the productive habitat for the fully utilized species occurs in a narrow band along the Aleutian Chain. This band is roughly 20 miles or less to the north and south of the Islands. A narrower closed area would, therefore, be less effective, and a wider closure would not significantly improve the effectiveness.

Figure 2 shows the major fishing areas in the Bering Sea/Aleutian Islands area. The 20-mile closure would affect foreign trawling in INPFC Area IV. Figure 3 and Table 2 indicate the areas of special restrictions on foreign and/or domestic fisheries in the Bering Sea and the Aleutian Islands.

#### B. Alternative Management Measures Including Those Proposed

Three basic alternative approaches were identified to solve the problems outlined above. They are:

1. Preferred Alternative: To close the area within 20 miles of the Aleutian Islands to all foreign trawling.
2. Status Quo: To allocate bycatch quotas for these species to the foreign trawl fleet and allow them to continue fishing in areas currently open.
3. Establish zero TALFFs for all species in the Aleutians (all of Area IV) except pollock.

#### C. Regulatory Impacts of the Alternatives

##### Impacts on Foreign Groundfish Fisheries

This information shows a 20-mile closure will effectively eliminate foreign trawling in 2° of longitude between areas C and B in Figure 3 (i.e. 170°W to 172°W). Foreign trawling in all other areas within the proposed 20-mile closure area is already tightly restricted. Fishing activity in all of Area IV (Figure 2) then is of primary interest in evaluation of this issue. Table 1 reviews the catch history of groundfish for foreign and joint venture trawling for the years 1981-84 in Statistical Area IV (Figure 2). Table 3 indicates DAP catches in that area for the same years. Table 1 indicates substantial reductions in foreign trawl catches of the fully utilized species (Atka mackerel, Pacific ocean perch and sablefish) have already occurred. The cause or causes for those reductions whether they are due to fleet relocation or other changes in fishing practices, is unknown at present. Observer data to be compiled later in 1985 will indicate whether any reductions are due to the relocation of the fleet. These data are similar to those compiled for 1983 and include observed catches by species in ½° x 1° areas. Also, the Japanese Hokuten trawl fleet underwent major restructuring in late 1984 and

Table 2. Bering Sea/Aleutian Islands foreign fishery restrictions by area.

| Special Area                                | Foreign Trawl <sup>1/</sup>                                | Foreign Longline <sup>2/</sup>                                                                                                                                                                   |
|---------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All Areas                                   | Pacific cod allowed in bycatch amounts only.               | Directed Pacific cod fisheries allowed only north of 55°N and to the extent ice conditions permit, stay west of 170°W.                                                                           |
| Bristol Bay Pot Sanctuary (A)               | Closed all year.                                           | Open all year beyond 12 miles.                                                                                                                                                                   |
| Winter Halibut Savings Area (B)             | Closed 12/1 to 5/31.                                       | Beginning June 1 each year, when longline catch of halibut reaches 105 mt, areas inside 500-meter isobath will close for rest of period 12/1-5/31. Foreign fisheries must stay outside 12 miles. |
| U.S. Fishery <sup>3/</sup> Development Zone | Closed 12/1 to 9/15                                        | Closed 3/15 to 9/15 in addition to restrictions for Winter Halibut Savings Area above.                                                                                                           |
| Longline Sanctuary (C)                      | Closed all year.                                           | Unrestricted except for cod.                                                                                                                                                                     |
| Petrel Bank (D)                             | Closed: 1/1 to 6/30.<br>Open beyond 20 miles:<br>7/1-12/31 | Unrestricted except for cod.                                                                                                                                                                     |

<sup>1/</sup> Under the proposed action, Area G is created, which is closed to foreign trawling.

<sup>2/</sup> Foreign longliners west of 170°W can fish to within 3 miles.

<sup>3/</sup> The proposed complete closure of the FDZ to foreign fishing was disapproved by NMFS on December 8, 1983. The restrictions listed above are voluntary and based on an industry agreement made in February 1984 and reaffirmed in February 1985. Current regulations officially close the area to foreign trawlers only from December 1 through May 31.

Table 3. DAP Catches 1981-1984 for Bering Sea/Aleutian Islands INPFC  
Statistical Area IV (metric tons)

|               | <u>1981</u> | <u>1982</u> | <u>1983</u> | <u>Preliminary<br/>1984</u> |
|---------------|-------------|-------------|-------------|-----------------------------|
| Pollock       | 58          | 48          | 71          | 12                          |
| Sablefish     | 0*          | 29          | 25          | 3                           |
| Pacific Cod   | 5,249       | 5,214       | 4,000       | 391                         |
| Flounder      | -           | -           | -           | 0*                          |
| Pacific Ocean |             |             |             |                             |
| Perch         | -           | -           | -           | 2                           |
| Rockfish      | -           | -           | -           | -                           |
| Others        | 0*          | -           | 43          | -                           |
| <br>TOTAL     | <br>5,307   | <br>5,290   | <br>4,139   | <br>408                     |

\*Catches less than .5 mt

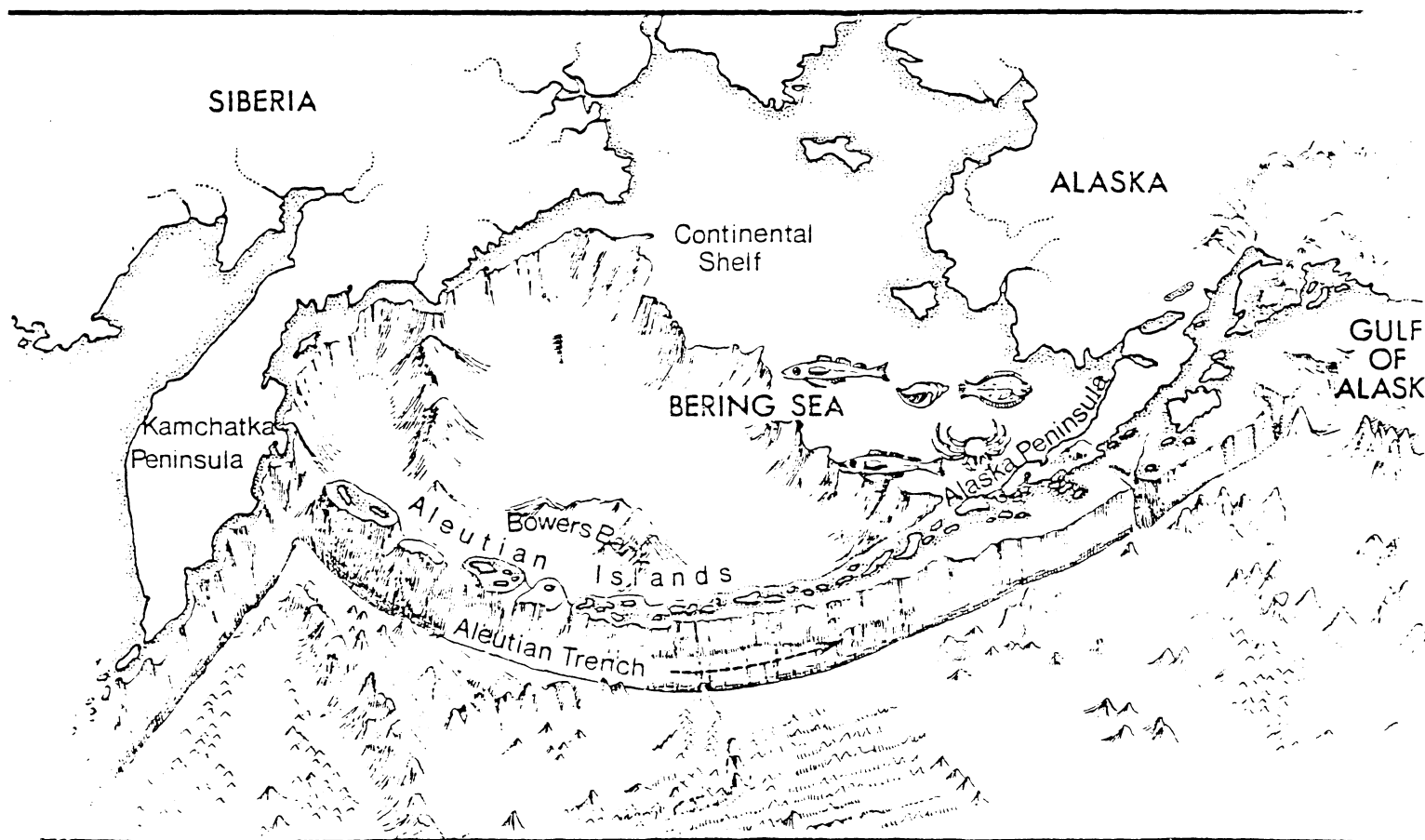


Figure 1 -Bottom features of Bering Sea and Aleutian Islands regions  
ORIGINAL

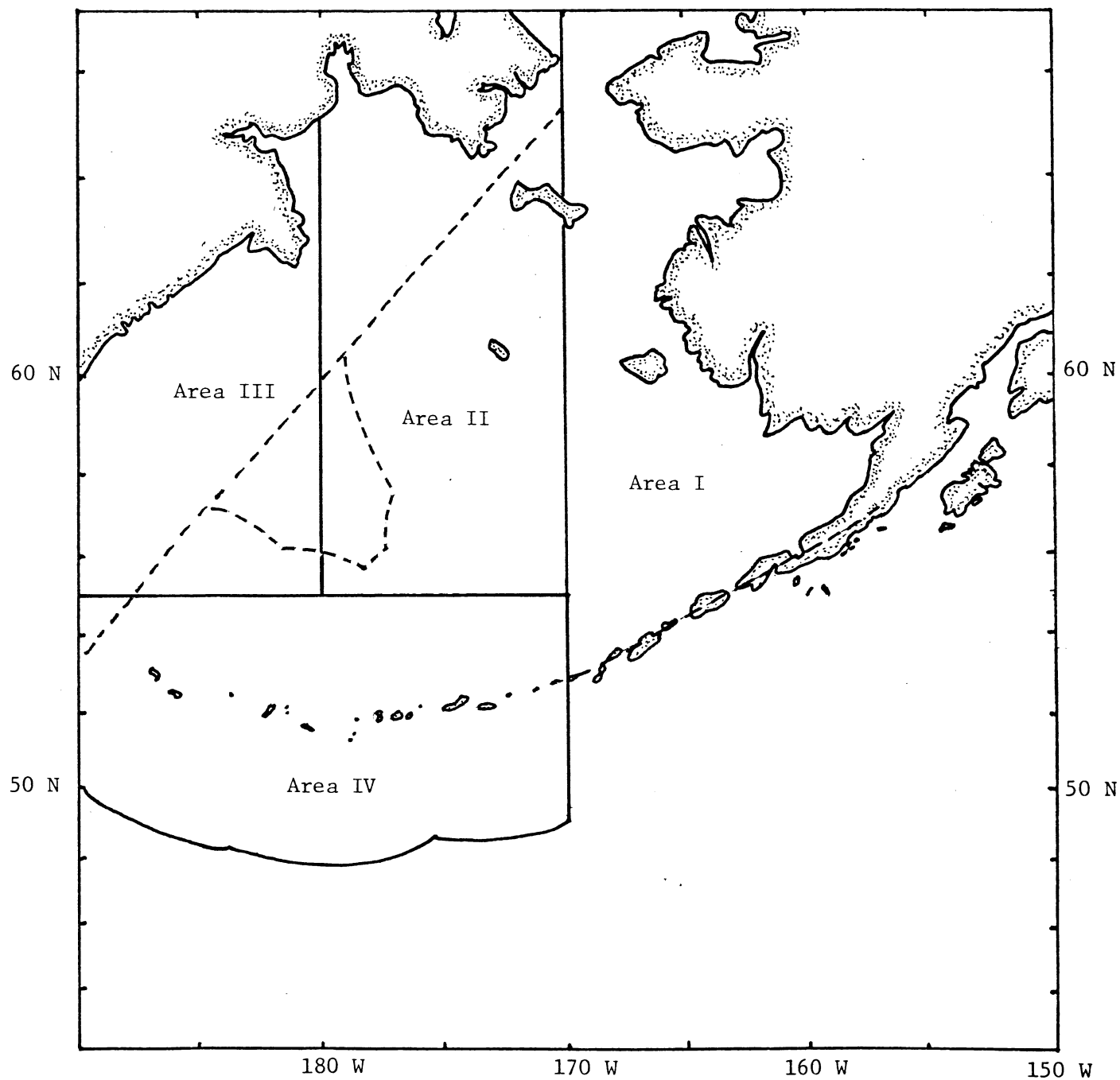


Figure 2. Fishing areas in the Bering Sea and Aleutians.

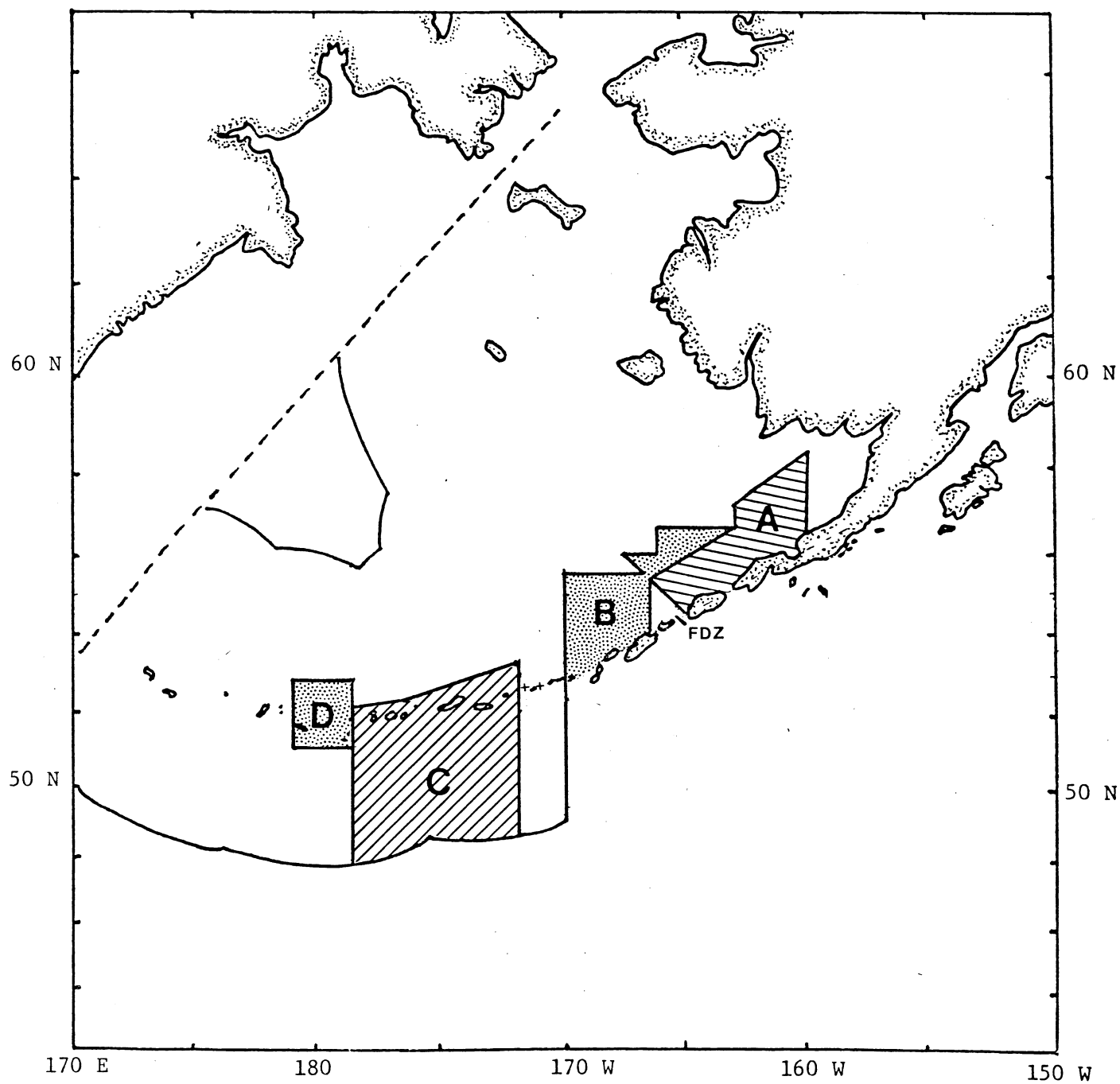


Fig. 3 Areas with special restrictions on foreign and/or domestic fisheries in the Bering Sea and Aleutian Islands Groundfish Plan area.

fishing practices will probably be different from past years. The number of vessels was substantially reduced and there has been a verbal commitment to comply with U.S. fishing regulations and more accurately report catch data.

The TALFF allocations for the Bering Sea/Aleutian Islands area are indicated in Table 4. These allocations reflect the industry-to-industry agreement reached between Japan and the U.S. Japanese trawling interests. Foreign trawling interests might argue that incidental catch allocations cannot be reduced further without disrupting fishing practices. They fear allocations will go so low they will have difficulty allocating adequate amounts to individual vessels to make targeted species fishing possible. In hoping to avert a 20-mile closure, the two Japanese trawling associations submitted to the Council a document entitled "Comments on the Groundfish Issue" dated January 22, 1985 in which were outlined various proposed changes in their trawling practices which would help control the amount of incidental catch.

In considering the options for the closure, it is pertinent to consider the availability of target species inside and outside the area proposed for closure to foreign trawling and how foreign fishing patterns might change in response to the closure. A review of historical catch data provides insight into both of these questions. Figures 4-12 show the percentage distribution of foreign catches in 1977 for the following species: (1) all groundfish species combined, (2) pollock, (3) Pacific cod, (4) yellowfin sole, (5) turbot, (6) small flounders, (7) sablefish, (8) POP, and (9) Atka mackerel. In the early 1970s up to about 1978 there were few restrictions on foreign fisheries, and those fisheries tended to focus on areas of highest concentrations of target species. Catch data reflect a degree of exploratory fishing and minor shifts in stock distribution during the period as well, but the distribution of catches has been quite stable. In general, the geographical distribution of groundfish catches did not change significantly between 1970 and 1983, although minor variations have occurred from area to area from time to time. Data from the 1977 fishing year are typical of this distribution and, because they are from the period of less regulation, are felt to reflect the general distribution of various species throughout the Aleutian Islands area. They clearly indicate that those species for which a Total Allowable Level of Foreign Fishing (TALFF) will be available in 1985 and future years for directed fishing are largely located outside of the proposed closed area. Table 5 summarizes data that essentially illustrates that fishery resources are readily available outside the proposed 20-mile closure and that the impact of the closure on the ability of foreign nations to harvest their allocations would be insignificant.

With respect to the five species groups for which a directed TALFF is available, the proposed closure has no effect on three--pollock, yellowfin sole, and other flatfish. The majority of the population of these resources is located and historically harvested outside of the proposed 20-mile closure. With respect to Pacific cod, the effect of the closure on foreign fisheries is negligible. Foreign trawl fisheries are initially allowed only incidental catches (2,000 mt) of Pacific cod in the entire Bering Sea/Aleutian Islands management area in 1985. The rest of the initial TALFF (35,000 mt) is designated for the foreign longline fishery substantially north of the proposed closure within 20 miles of the Aleutians. Therefore, the Aleutians closure will have little or no effect on Pacific cod catches, since most of the foreign incidental and target catches are available outside the area.

Table 4. Initial apportionments (mt) of total allowable catch for 1985.

| <u>Species</u>         | <u>Area</u> | <u>TAC</u>    | <u>ITAC</u>   | <u>DAF</u> | <u>JVF</u>   | <u>Initial<br/>TALFF</u> |
|------------------------|-------------|---------------|---------------|------------|--------------|--------------------------|
| Pollock                | BS          | 1,200,000     | 1,020,000     | 17,680     | 393,584      | 608,736                  |
|                        | AI          | 100,000       | 85,000        | 10,540     | 13,966       | 60,494                   |
| Pacific Ocean<br>Perch | BS          | 1,000         | 850           | 660        | 120          | 220                      |
|                        | AI          | 3,800         | 3,230         | 3,300      | 340          | 160                      |
| Rockfish               | BS          | 1,120         | 952           | 600        | 22           | 330                      |
|                        | AI          | 5,500         | 4,675         | 30         | 960          | 3,685                    |
| Sablefish              | BS          | 2,625         | 2,231         | 2,275      | 100          | 250                      |
|                        | AI          | 1,875         | 1,594         | 1,305      | 420          | 150                      |
| Pacific Cod            |             | 220,000       | 187,000       | 100,000    | 63,190       | 37,000                   |
| Yellowfin Sole         |             | 226,900       | 192,865       | 1,770      | 82,200       | 108,895                  |
| Turbot                 |             | 42,000        | 35,700        | 0          | 5,000        | 30,700                   |
| Flatfish               |             | 109,900       | 93,415        | 1,200      | 62,500       | 41,365                   |
| Atka mackerel          |             | 37,700        | 32,045        | 0          | 37,600       | 100                      |
| Squid                  |             | 10,000        | 8,500         | 0          | 70           | 8,430                    |
| Other species          |             | <u>37,580</u> | <u>31,943</u> | <u>0</u>   | <u>3,000</u> | <u>28,943</u>            |
| TOTAL                  |             | 2,000,000     | 1,700,000     | 139,360    | 663,072      | 929,458                  |

Table 5. Distribution of foreign groundfish catch inside and outside proposed 20-mile closure, 1977.

| Species                  | Is TALFF Available? | Amount of TALFF        | % Distribution Within 20 miles of Aleutians | Can TALFF be taken outside 20 miles |
|--------------------------|---------------------|------------------------|---------------------------------------------|-------------------------------------|
| All ground-fish combined | Yes                 | 929,458                | 2                                           | Yes                                 |
| Pollock                  | Yes                 | 669,230                | <1                                          | Yes                                 |
| Pacific cod              | Yes                 | 37,000                 | 3                                           | Yes                                 |
| Yellowfin sole           | Yes                 | 108,895                | 0                                           | Yes                                 |
| Turbots                  | Yes                 | 30,700                 | 8                                           | Yes                                 |
| Other flatfish           | Yes                 | 41,365                 | <1                                          | Yes                                 |
| Sablefish                | No                  | 400 I.C. <sup>1/</sup> | 32                                          | Not applicable                      |
| Atka mackerel            | No                  | 100 I.C.               | >50                                         | Not applicable                      |
| POP                      | No                  | 380 I.C.               | 33                                          | Not applicable                      |
| Other rockfish           | Yes                 | 3,845                  | 33                                          | Partially                           |

<sup>1/</sup> I.C. means incidental catch only, no directed fishing allowed.



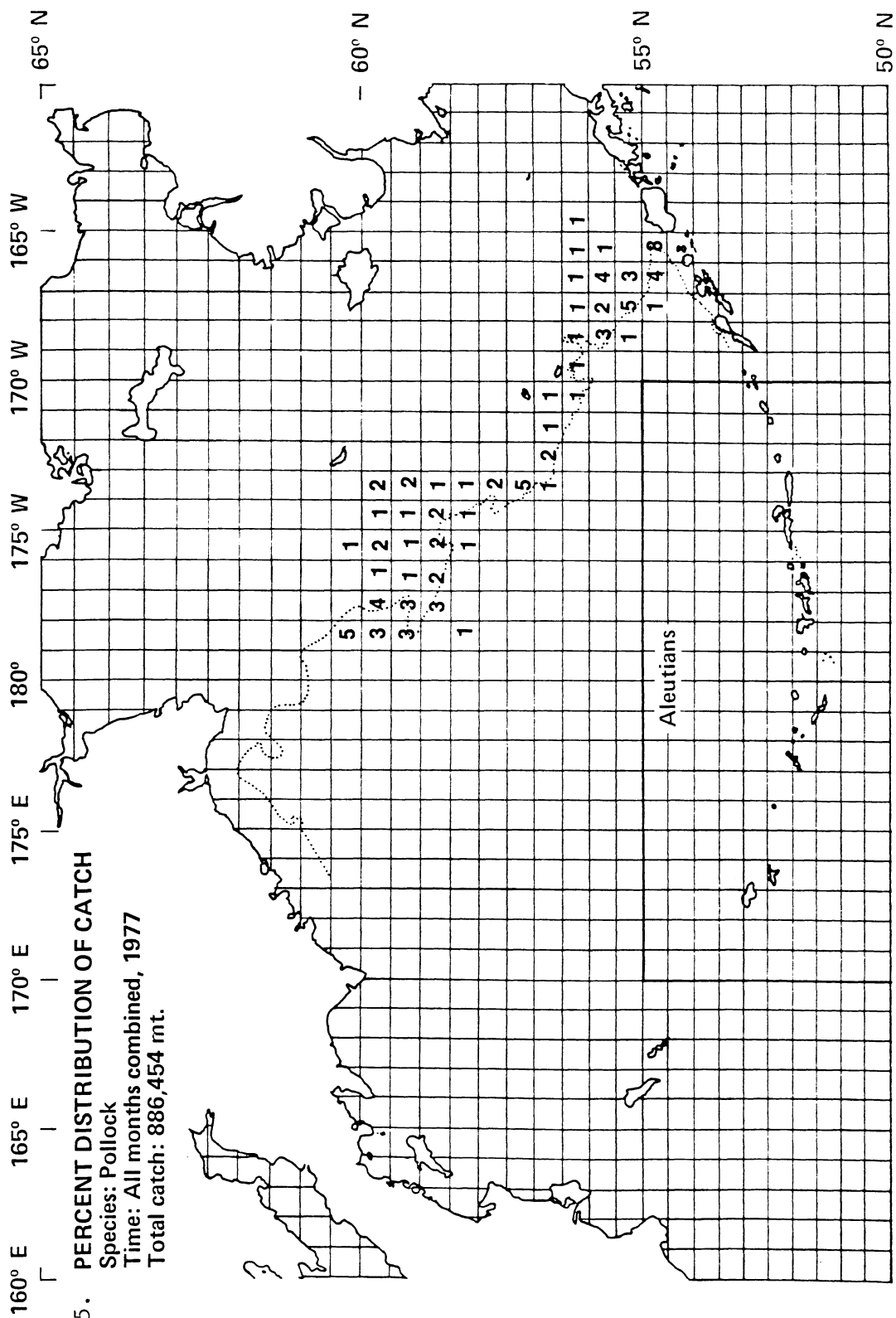


Figure 5. PERCENT DISTRIBUTION OF CATCH  
 Species: Pollock  
 Time: All months combined, 1977  
 Total catch: 886,454 mt.

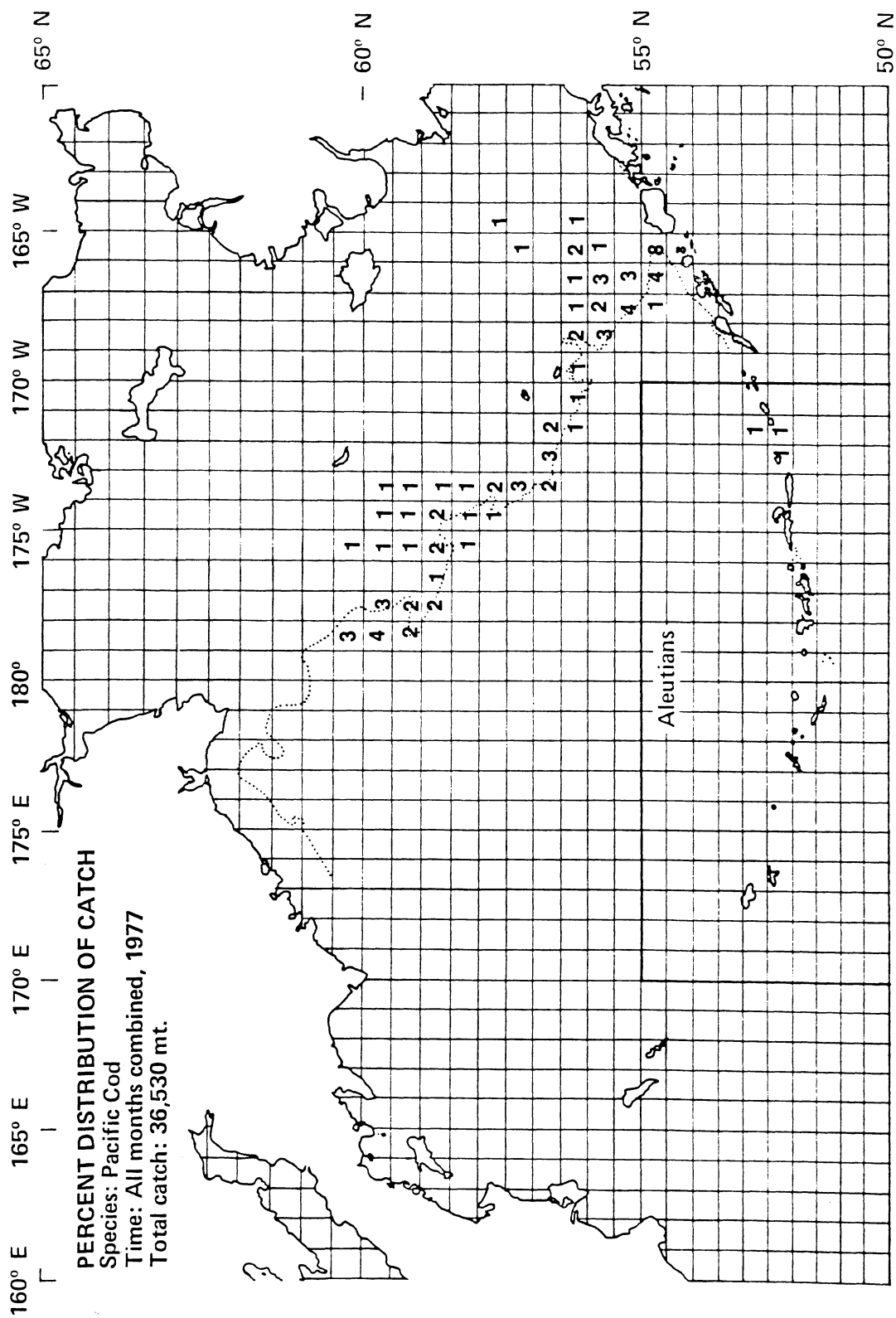


Figure 6

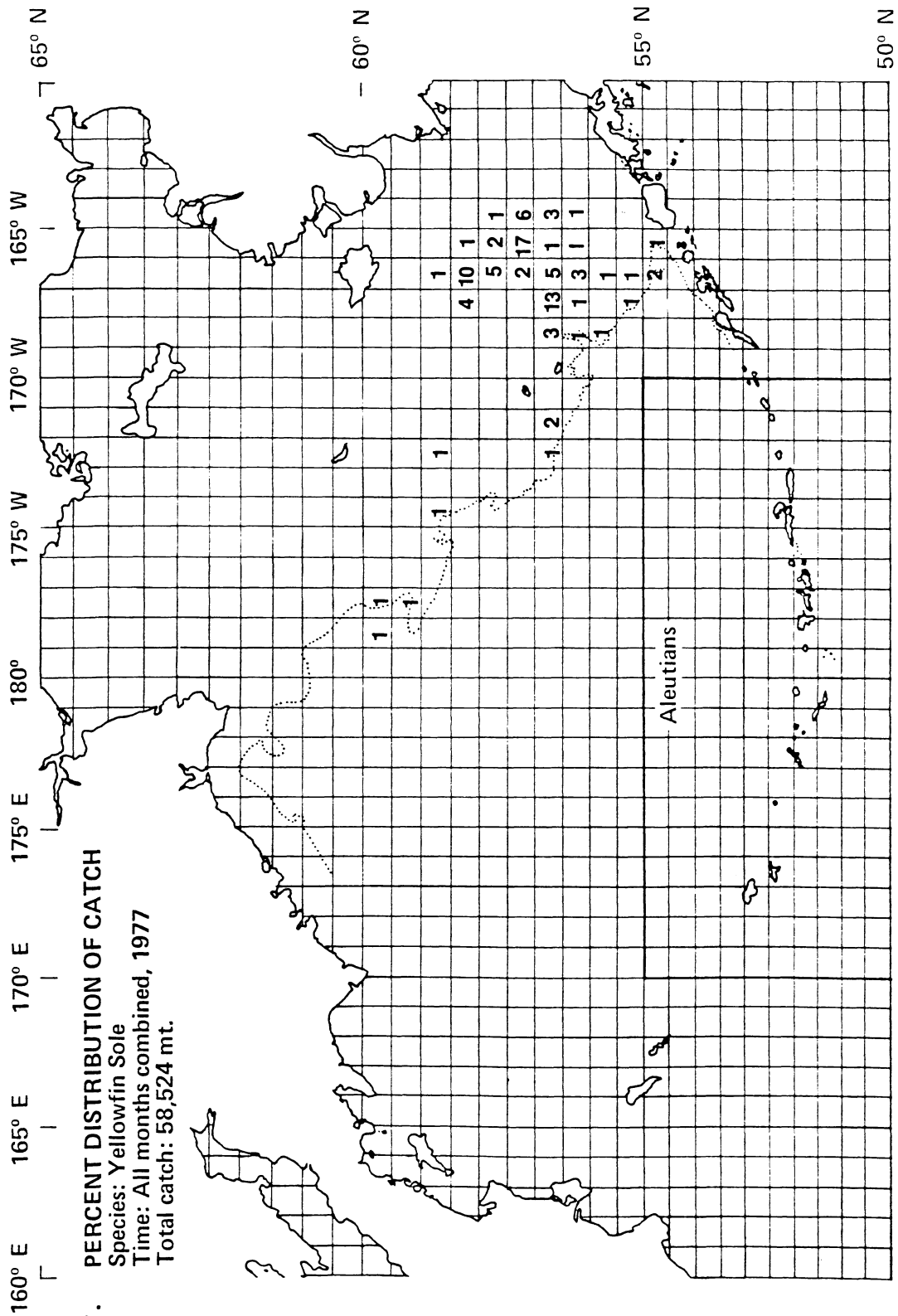
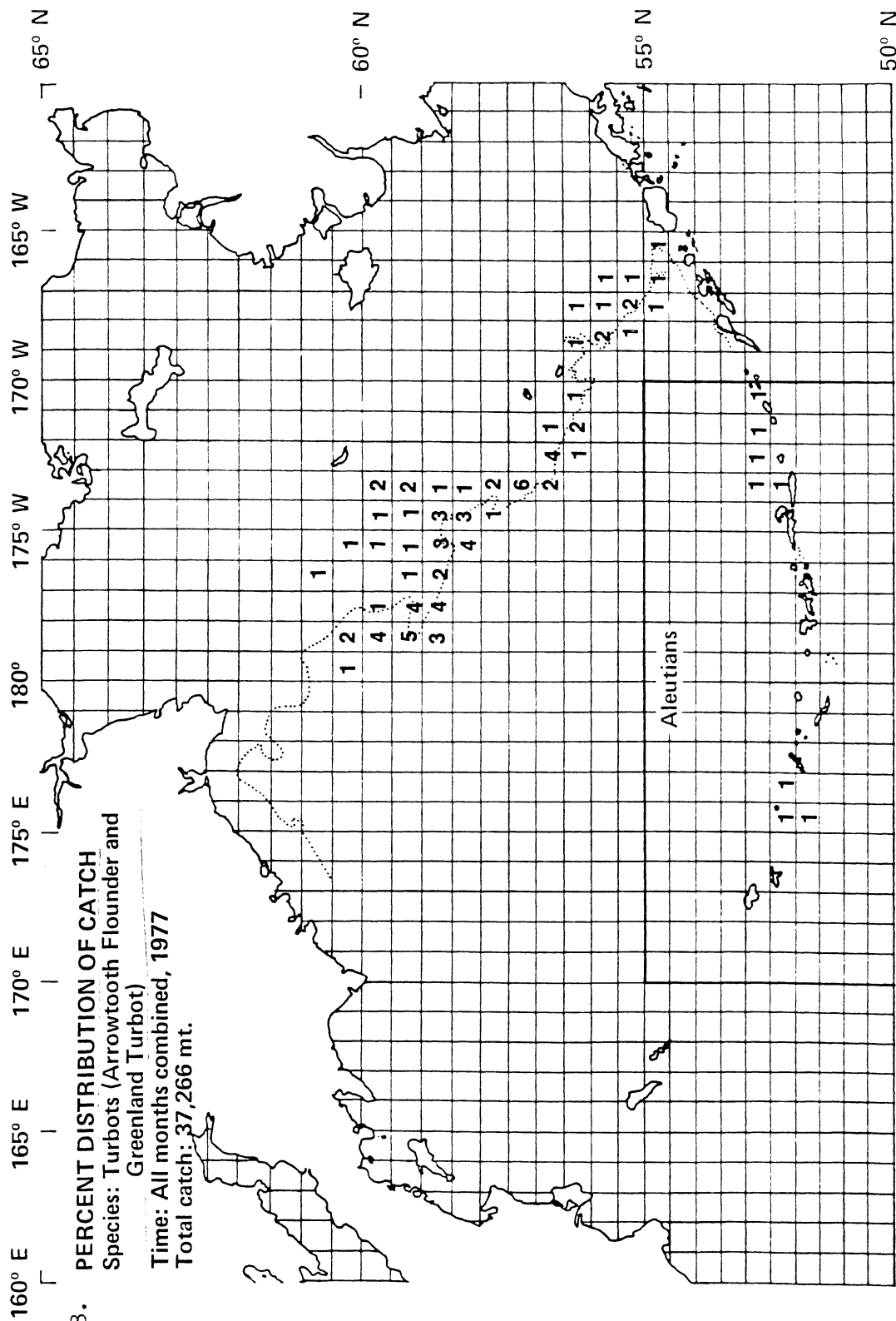


Figure 7. PERCENT DISTRIBUTION OF CATCH

Species: Yellowfin Sole  
 Time: All months combined, 1977  
 Total catch: 58,524 mt.







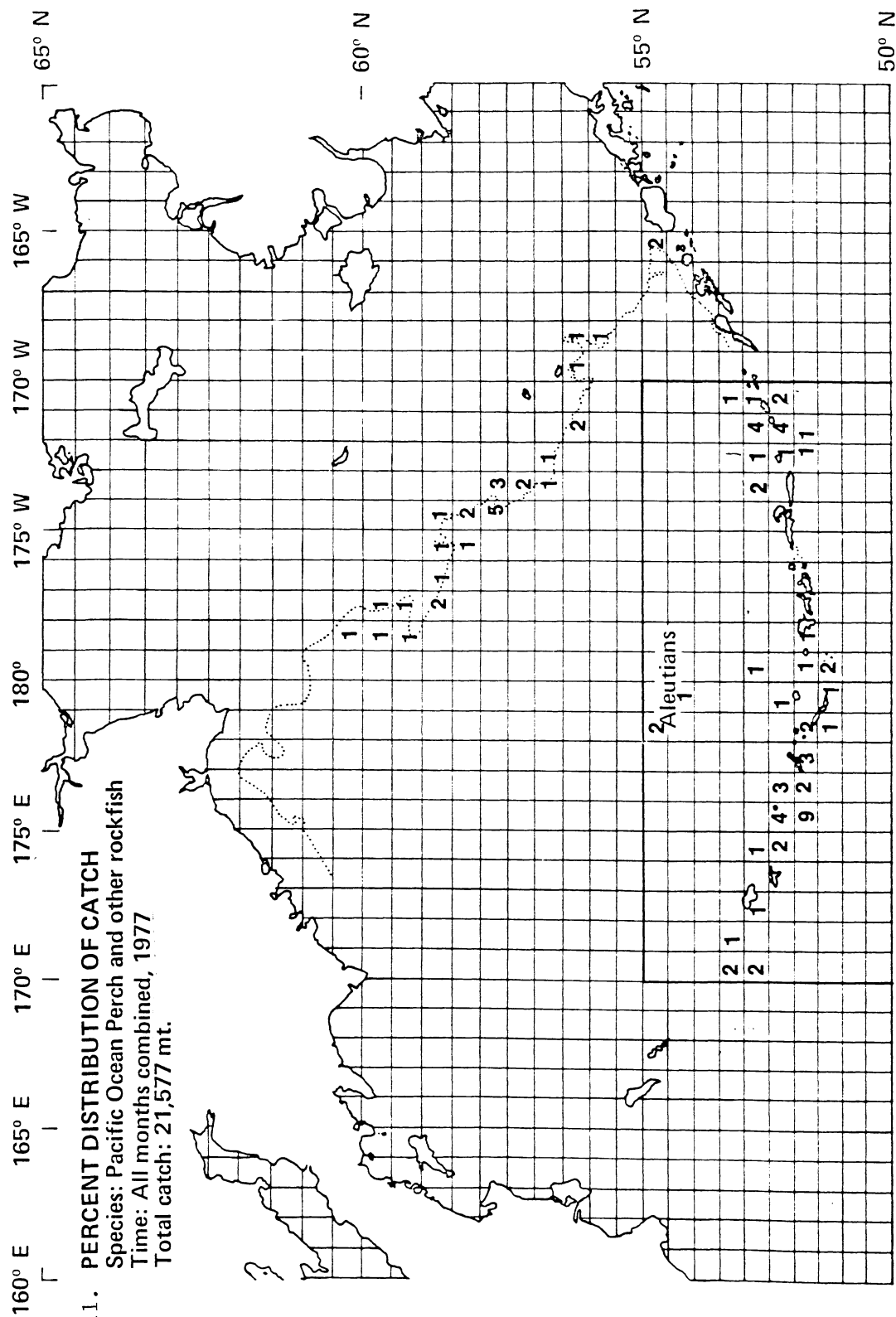
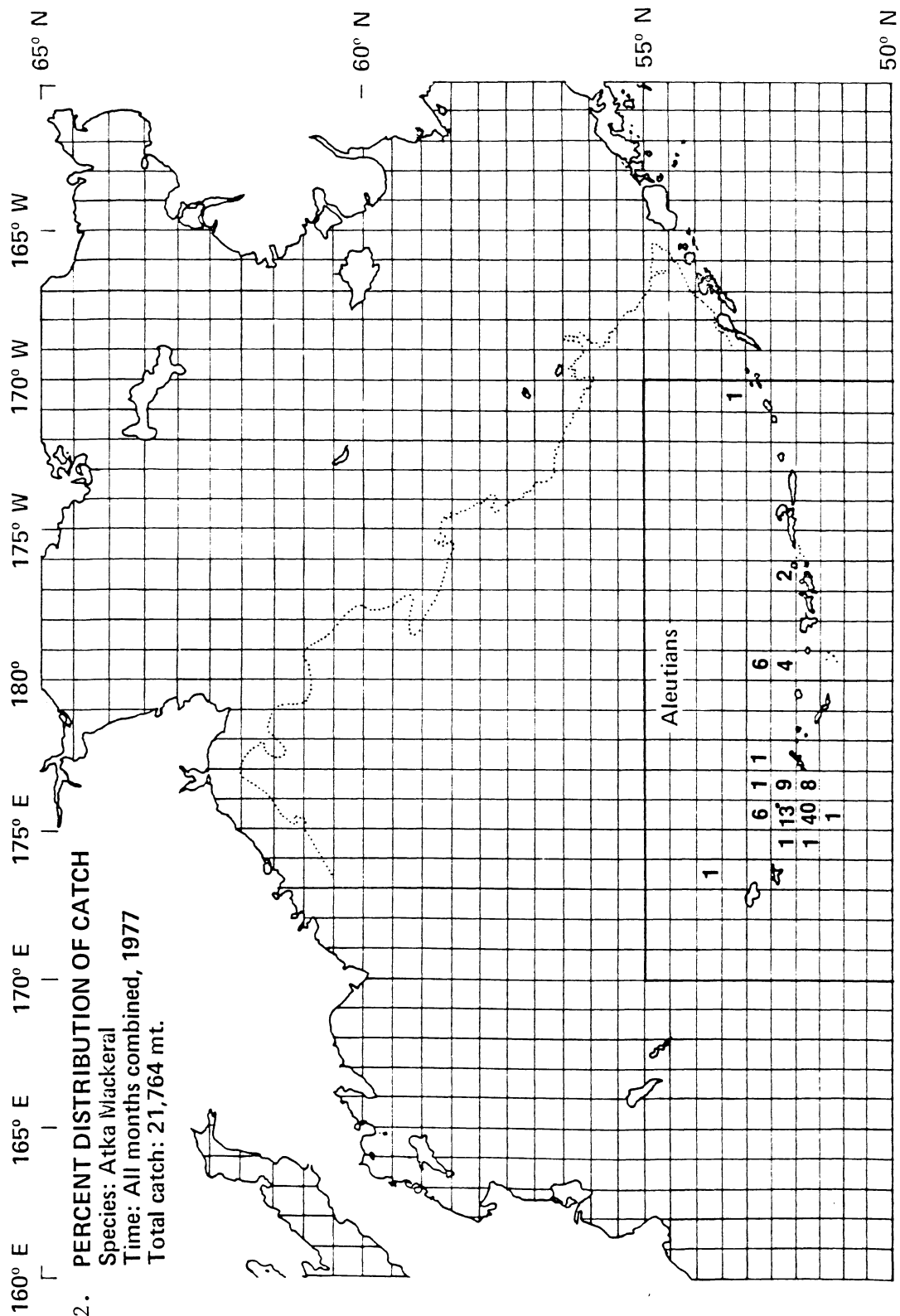


Figure 11. PERCENT DISTRIBUTION OF CATCH  
 Species: Pacific Ocean Perch and other rockfish  
 Time: All months combined, 1977  
 Total catch: 21,577 mt.



Turbot is the only TALFF species which may not be available for harvest by the foreign fleets in sufficient quantities outside of the proposed closure. About 8% of the turbot were harvested in the area proposed for closure. If the area is closed, it is possible that the foreign fisheries may not be able to make up that 8% of the TALFF (or 2,456 mt) in 1985. However, it is much more likely that the remaining catch can be easily taken outside the closed area, since the estimated Equilibrium Yield (EY) and biomass for turbot outside the 20-mile zone are sufficiently large to support the additional 2,500 mt catch.

Finally, the only species group for which foreign nations may be unable to attain their allocations outside the proposed 20-mile zone is the "other rockfish" complex. In the Aleutian region, the TALFF for the complex is 3,685 mt. Almost 33% (or 1,216 mt in 1983) has traditionally been caught within 20 miles. If the zone is closed, the foreign fisheries may not be able to make up the entire "lost" catch. However, if, for example, 50% can be made up outside 20 miles, which is realistically possible without substantial additional cost to foreign vessels, then the lost opportunity would amount to only about 600 mt for foreign fisheries. Consequently, the negative impact of the closure to foreign fisheries is negligible.

It is not completely clear that effort substitution effects in other areas will not occur. That is, if the 20-mile zone is closed to foreign trawlers, those trawlers will not disappear but rather continue fishing elsewhere. Although they will no longer be fishing in the area of highest concentrations of fully utilized species, it is impossible to predict the level of bycatch they will reach. It is expected that greatly reduced bycatch TALFFs may still be required in the future to ensure low bycatches and prevent covert targeting.

Alternative 2 (Status Quo) would retain the system of bycatch quotas. Absent any action on this issue, the bycatch amounts approved by the Council at their December meeting and clarified at the February meeting would hold. That system allocates bycatch TALFFs jointly with target species TALFF allocations. The bycatch harvests are not prohibited species and once the bycatch limit is achieved, the foreign fishery is closed down. If the Council chose to eliminate or greatly reduce bycatch TALFFs, which is permissible under the status quo, foreign vessels could be completely denied access to either the Aleutian Islands area or even the entire Bering Sea/Aleutian Islands management area.

Under Alternative 3 there would be no directed TALFFs for any species except pollock. This would in effect expand the 20-mile closure (Alternative 1) and include all foreign vessels rather than just trawl vessels. Only directed pollock fishing would be allowed. Bycatch allowances would be available (as TALFF) for those species not fully utilized by U.S. fishermen. Zero TALFFs for other species would mean those species are prohibited and they could not be retained. However, unless Prohibited Species Catch (PSC) limits were established, the total catch would be unrestricted. Catch of these other species (both prohibited and bycatch TALFF species) would be low because directed pollock fisheries generally have low bycatch rates.

This alternative would completely deny access by foreign nations to the Aleutian rockfish resources, which are not yet fully utilized by U.S.

fishermen. No foreign longline fishing for Pacific cod would be allowed, although the longline fleet could probably achieve its TALFF outside Area IV. Achievement of turbot quotas outside Area IV might also prove difficult or impossible.

This alternative (3) differs from the status quo in that currently TACs (and thus separate TALFFs) in the Aleutians are established only for sablefish, Pacific ocean perch, rockfish and pollock. TACs for all other species except pollock will remain unchanged but TALFFs will be available only outside Area IV. Pollock TAC and TALFF in Area IV will remain available inside Area IV.

Alternative 3 is more restrictive than the other alternatives with respect to foreign nations. The maximum impact on them is elimination of all Area IV catches except pollock. This impact is similar to that foreseen when U.S. harvesting capacity completely replaces foreign fishing, but is a more rapid step towards foreign phase-out, perhaps leaving more resource available than can readily be absorbed by the U.S. fishing industry. Also, unless some prohibited species catch allowances were made (eg. PSC limits which would trigger closure) no foreign pollock fishing could be allowed.

#### Impacts on Domestic Groundfish Industry

Harvesting. Table 1 shows foreign catches of fully utilized species in INPFC Statistical Area IV for 1984. At this time it is not possible to determine what proportion of those catches occurred within the proposed 20-mile closure area. It is possible to separate out 1983 catches within 20 miles. This information appears in column 1 of Table 6.

Column 2 indicates the percent reduction in total incidental catch in area IV that the proposed 20-mile closure would imply. Column 3 shows the value of these species at the U.S. exvessel level. The total value of these catches amounts to approximately a half million dollars. This represents a direct loss to American fishermen. If the catches were to continue at that rate, total discounted value over a five-year period would amount to \$2,719,002 at a 5% real interest rate. This figure represents the present value of losses to U.S. fishermen over a five-year period of foreign bycatches of fully utilized species. However, as Table 1 indicates, the incidental catches dropped in 1984.

To provide a comparison, we can use 1984 catches for Area IV and assume all was caught within the 20-mile closure area. This information appears in Table 7. These data imply that if all Area IV catches had occurred within 20 miles, a 68% reduction in incidental catches of fully utilized species would have occurred in 1984 over 1983. This clearly indicates a substantial reduction in the magnitude of the bycatch problem. The discounted value of 1984 catches projected over five years is \$705,791. This figure represents the present value of the losses to U.S. fishermen over a five-year period of foreign bycatch amounts at 1984 levels in all of Area IV. The percentage of that loss that would be recouped with a 20-mile closure is unknown at present.

Concern has also been expressed that a 20-mile closure would dampen Japanese willingness to participate in joint venture activities with the U.S. The Hokuten Trawlers Association, the foreign fishing group most affected by the

Table 6. 1983 Foreign Catches and Exvessel Value of Fully Utilized Species in Area IV Within 20 Miles of the Aleutian Chain.

| <u>Fully Utilized Species</u>   | <u>Amount Harvested<br/>Within 20-mile<br/>Closure Area</u> | <u>Observer Coverage<br/>Indication of %<br/>of Catch Inside<br/>Total Area IV<br/>Catches</u> | <u>Exvessel Price<br/>and Total Value</u> |
|---------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------|
| Sablefish                       | 44                                                          | 88%                                                                                            | 25¢/lb<br>\$24,200                        |
| Rockfish<br>(including POP) 33% | 1,099                                                       | 92%                                                                                            | 13¢/lb (POP)<br>\$314,314                 |
| Atka Mackerel                   | 1,097                                                       | 66%                                                                                            | \$154/mt<br>\$168,938                     |
| TOTAL                           |                                                             |                                                                                                | \$507,452                                 |

Table 7. 1984 Foreign Catches and Ex-vessel Value of Fully Utilized Species

|               | <u>Foreign Catch (mt)</u> | <u>Exvessel Value</u> |
|---------------|---------------------------|-----------------------|
| Sablefish     | 102                       | \$ 56,100             |
| POP           | 355                       | 101,530               |
| Atka Mackerel | 35                        | 5,390                 |
| TOTAL         |                           | \$163,020             |

proposed closure is not currently involved in joint venture activity nor were they directly involved in the industry-to-industry negotiation except that their allocation comes out of the total 900,000 mt groundfish allocation for both the Gulf of Alaska and the Bering Sea/Aleutians regions specified in the agreement. Although the Hokuten Trawlers Association is a politically strong voice in the Japanese fishing industry, it is difficult to foresee major repercussions in Japanese/U.S. joint venture activity as a result of the 20-mile closure action. The proportion of the Japanese catch taken by trawlers within 20 miles in 1983 was less than 8% of the total Japanese catch in the Bering Sea and Aleutian Islands area, and less than 7% of their catch in Alaskan waters.

United States fishermen could also obtain additional benefits as a result of a closure. American fishermen have expressed concerns that wherever foreign trawling is occurring it is taking place where the highest concentrations of fish are found and scattering the rest, leaving little for other concurrent fishing efforts, thus reducing operating efficiency of U.S. vessels. "Reduced operating efficiency" is defined here, for a fishing vessel, to mean a decrease in the amount of fishing time available or in other terms, an increase in the amount of unproductive, non-fishing time which must of necessity be spent in handling gear, prospecting, running, etc. Increased competition from (and possible gear conflict with) foreign fleets reduces fishing time and requires more prospecting and moving of gear. Excluding foreign effort would, therefore, increase fishing time for the domestic fleet, either as more hours fished per day or as more days fished per season.

A 20-mile closure could encourage expansion of domestic fishing efforts in the area. To date there has been only one joint venture operation (Soviet) within the 20-mile closure area for Atka mackerel which in 1983 fished with a catch of 10,359 mt. Another Korean joint venture for POP is in planning stages. It is difficult to determine, in many cases, whether U.S. fishermen are being preempted or whether they are simply not at the state of development where they could actively fish the 20-mile area. Therefore, the preemption question might be more of a potential problem than one which is a problem now.

Nevertheless, in the event that the U.S. fishery has yet to develop, then removal of foreign fishing will allow resources to "lie fallow" until U.S. effort moves into the area, making the area potentially more economically productive when U.S. exploratory operations begin. Thus, the expected effect would be to increase marginal catch rates for this domestic fishing effort. This increase would be transitory, since higher catch rates will encourage additional U.S. trawl effort to move in, but may provide incentive for the initial stages of development by the U.S. industry.

A detailed analysis of these benefits is carried out in the RIR for Amendment 6 (NPFMC 1982) on the establishment of a U.S. fishery development zone (FDZ). The FDZ is east of the proposed closure but is mentioned here because potential benefits may be similar to those discussed in the Amendment 6 RIR, although the basic issue was different. That RIR provided a quantitative measure of how a given improvement in operating efficiency (from reduced crowding) will benefit American fishermen. It was not possible to estimate how much operating efficiency would improve with a reduction in foreign effort. Thus, it was not possible to provide a quantitative measure of that source of benefits.

One aspect of a 20-mile closure which may be beneficial to American interests is the encouragement to the lending industry which creation of "American-only" areas seem to provide. It was discovered during Council consideration of the Fisheries Development Zone (Amendment 6 to the FMP) that considerable support for the measure existed in the banking community. This is not surprising, because it seems reasonable that assured access to future raw product supply is a concern to lenders for expensive groundfish conversions or new construction, and lenders felt that actions such as the FDZ or, in this case, a 20-mile closure, do help provide a beneficial environment for lending in the groundfish industry.

Alternatives 1 and 2 involve foreign incidental catch at some level, and less than maximum access to fully utilized species is provided to domestic industry. However, if the Council chose to eliminate or greatly reduce bycatch TALFFs under these alternatives, nearly maximum access could be provided to the domestic industry.

Alternative 3 is the most straightforward means of achieving elimination of foreign bycatches of fully utilized domestic species. Under this alternative all, or very nearly all, of these resources could be utilized by U.S. fishermen. Other impacts would be similar to those described for Alternative 1.

Due to the severe weather conditions and geographic remoteness of the Aleutian Islands area, only large vessels will be involved in the foreseeable future. Vessels fishing in that area are equipped to stay at sea from four to six weeks on average. Consequently, none of the proposed alternatives including the status quo has distributional implications for small vs. large operations as is referred to in the RFA.

Processing. At the present time almost all domestic fishing activity in the Aleutian Island area is in connection with joint ventures. The secondary benefits to processing of improved operating efficiency and productivity of effort accruing to harvesting as a result of the closure are difficult to quantify at present. There are no other apparent benefits to the processing sector from implementation of Alternatives 1, 2 or 3 aside from a general encouragement of domestic development. The existing low DAP catch levels may be construed as the cost of the foreign fishing presence in the area.

Consumer. None of the alternatives should affect retail prices for consumers under any of the alternatives. Bering Sea groundfish catches represent only about 3% of the world catch each year and all of the catch within the 20-mile closure area is currently destined for foreign markets whether totally foreign or joint venture in harvest origin.

#### Management and Enforcement Impacts

If Alternative 1 is implemented, all foreign trawling within 20 miles of the Aleutian Islands would cease. Foreign fees lost by adoption of this alternative would depend on whether comparable concentrations of flatfish, pollock and rockfish are available to foreign trawlers outside the closure area. Indications are that comparable concentrations do exist in other areas in the Bering Sea/Aleutians vicinity and that foreign fees would not decline due to lack of availability of fish. However, foreign fees are declining as

U.S. harvesting replaces foreign harvesting. The discussion of foreign fees is provided here more for general information than for its relevance. Foreign fees are not a benefit as such because they are collected to management costs of maximizing the foreign fishery.

The enforcement division of the NMFS sees no significant increase in enforcement costs with a 20-mile closure. The area could be monitored by existing surveillance operations. Enforcement costs, given that observer coverage is likely to remain near 100%, would not increase significantly with bycatch quotas. Without 100% observer coverage, however, compliance could not be guaranteed and a 20-mile closure would probably be a safer alternative. Alternative 3 would also eliminate foreign fishing (including longlining) within 20 miles of the Aleutians and would eliminate almost all foreign fishing in the entire Area IV. Foreign fees would be reduced just as they would of U.S. harvesting were immediately replacing foreign harvesting. Foreign fees for those species not fully utilized by the U.S. would be lost if adequate concentrations are not available outside Area IV. This is particularly the case for turbot. Other enforcement and management impacts would be similar to Alternative 1.

#### D. Summary

The 20-mile closure has a potential for reducing foreign incidental bycatch of fully utilized species but may not be completely successful in that regard. Other potential benefits are the reduction of potential grounds preemption and improvement in future U.S. catch rates (however temporal) which result from a period of no fishing in the area. Given the greatly reduced foreign catches of the species of concern in the Aleutians in 1984, it is apparent that potential additional reductions of foreign bycatches are relatively small. On the other hand, the potential loss of joint venture relationships which might result from foreign retaliation is tremendous. If the likelihood of such retaliation is small then the benefits to the U.S. outweigh the costs to the U.S.

Bycatch quotas (TALFFs) can be adjusted under the status quo and could theoretically eliminate all foreign bycatches. Under the status quo option, the Council has limited flexibility in further reducing or eliminating bycatches. Low (or zero) TALFFs cannot be established specifically for the Aleutian area (Area 4) except for pollock, Pacific ocean perch, sablefish and "other rockfish." If the Council set zero TALFFs for any of these species and made no bycatch allowances, foreign fishing would be eliminated from Area 4. However, if the Council set the Atka mackerel TALFF at zero the foreign fishing would be eliminated from the entire Bering Sea and Aleutian Islands management area if there was a chance even one Atka mackerel would be caught. Thus, the zero TALFF option (Alternative 3) provides more flexibility and potentially less dislocation.

Establishing zero TALFFs for all species except pollock is similar to the most stringent status quo, but also addresses other species. The primary difference between this and Alternative 1 (other than degree of reduction) is that foreign longlining would also be affected. This alternative appears to be the most likely to achieve the goal of elimination of all bycatch of fully utilized U.S. species but also the most impact on foreign fishing patterns and levels.

#### IV. PROPOSAL 2: ESTABLISH A REPORTING SYSTEM FOR CATCHER/PROCESSOR VESSELS

##### A. Problems Necessitating the Amendment Proposal

The objective of this proposal is to ensure that fishery managers receive timely estimates of catch by all domestic vessels so the effectiveness of inseason management will be enhanced. With the rapid recent growth of the domestic fishing fleet, increasing importance is being placed on timely reporting of domestic harvests in order to ensure that OYs are not exceeded. Vessels which deliver their catch to shore-based processors land their catch frequently enough to allow timely estimation of total catch under existing regulations. However, vessels which process their catch at sea can remain on the fishing grounds for extended periods of time. Catch reports submitted by these vessels at the time of landing as required under existing regulations are not timely enough to prevent OYs from being grossly exceeded. The resulting overharvests could seriously damage future production from groundfish stocks.

Current fishing regulations implementing the Gulf of Alaska and Bering Sea Fishery Management Plans require fishing vessels to submit a State of Alaska fish ticket or equivalent document to the Alaska Department of Fish and Game for any commercial groundfish harvest in the Gulf of Alaska or Bering Sea within 7 days of the date of landing the catch. Vessels which preserve their catch by non-freezing refrigeration or icing methods must land their catch within a maximum of 10-12 days from the time of harvest in order to ensure product quality. The catch from these vessels, when delivered to shore-based processors, can be reported on a timely basis under existing regulations. If existing regulations are properly enforced, fishery managers can estimate harvests by these vessels with sufficient precision to ensure that OYs are not exceeded.

However, vessels which freeze or salt their catch aboard frequently remain at sea for trips of up to several months duration and are not currently required to report their catch until the time of landing and offloading. For the purposes of this amendment, a catcher/processor vessel is any vessel which holds its catch or any portion thereof for more than 14 days. At least twenty two catcher/processor vessels will be operating in the Gulf of Alaska and Bering Sea areas in 1985. Based on past catcher/processor landing records the combined hold capacity of these vessels will be approximately 13,000 mt. Therefore these vessels are capable of harvesting significant portions or even entire OYs in a single trip. Under existing fishing regulations, fishery managers have no knowledge of the catch aboard these vessels until the time of landing. In addition, vessels are not required to notify fishery managers when beginning fishing operations. Since domestic groundfish fishing vessels are also not marked for identification by enforcement overflights, the number of catcher/processor vessels actually fishing in a given management area is not known until the time of landing. Without knowledge of effort levels, fishery managers are not able to make projections of catch aboard based on past performance.

Delayed catch reporting is also a problem for fully domestic mothership operations. In these operations small catcher vessels without processing

capability deliver their catch, usually by cod-end transfers, to a mothership/processor vessel. Current regulations require that an ADF&G fish ticket be filled out each time a catcher vessel delivers to the mothership/processor and that these fish tickets be forwarded to ADF&G within 7 days of the date that fish were delivered. Domestic mothership and floating processor operations thus far have all occurred in sheltered waters with at least periodic access to U.S. mail service so that regulations requiring filing of fish tickets with ADF&G within 7 days could have been enforced. However, there is a potential for these mothership operations to occur at sea, with no method of filing the fish tickets with ADF&G within the 7 day period required by law.

With such large processing capacities and increasing numbers of catcher/processor and mothership/processor vessels, the risks of overharvesting groundfish resources under the current system are high. Because of the time delays involved in catch reporting under current regulations, groundfish resources could be drastically overharvested before fishery managers had even discovered that OYs had been exceeded. Since many of the groundfish species concerned are slow growing and long-lived, overharvesting can have considerable impacts on future production.

B. Alternative Management Measures Including Those Proposed

Alternative 1 - Maintain the current reporting requirements.

With the present system catches are reported on ADF&G fish tickets at the time of landing.

Alternative 2 (Preferred Alternative) - Require an FCZ processing permit with check-in/check-out and weekly catch reporting.

Under this alternative, catcher/processor and mothership/processor vessels would be required to obtain an FCZ processing permit. These catcher/processor and mothership/processor vessels would be required to notify NMFS via U.S. Coast Guard radio each time they entered or left an FMP management area. Catcher/processor and mothership/processor vessel operators or their representatives would also be required to submit a report to NMFS by U.S. mail or telex for each fishing week documenting the hail weight estimates of catch by FMP species group in each FMP area. These weekly reports would be due within 7 days of the end of the fishing week. ADF&G fish tickets would continue to be required to be submitted within one week of the date of landing to document more precise catch or product weights and specific ADF&G statistical areas. A completed logbook may be submitted with the ADF&G fish ticket showing total catch by species for a trip as a means of documenting catch by specific ADF&G statistical area.

Alternative 3 - Require an FCZ processing permit with a weekly catch report, but without check-in/check-out reporting.

Under this alternative, catcher/processor and mothership/processor vessels would be required to obtain an FCZ processing permit. These catcher/processor and mothership/processor vessel operators or their representatives would be required to submit a report to NMFS by U.S. mail or telex for each fishing week documenting the hail weight estimates of catch by FMP species group in each FMP area. These weekly reports would be due within 7 days of the end of

the fishing week. ADF&G fish tickets would continue to be required to be submitted within one week of the date of landing to document more precise catch or product weights and specific ADF&G statistical areas. A completed logbook may be submitted with the ADF&G fish ticket showing total catch by species for a trip as a means of documenting catch by specific ADF&G statistical area.

Alternative 4 - Place observers aboard a portion of the catcher/processor and mothership/processor vessels and extrapolate the catch from these vessels to the entire fleet.

Under this alternative, catcher/processor and mothership/processor vessels would be required to obtain an FCZ processing permit which would require that observers be allowed onboard if requested. These catcher/processor and mothership/processor vessels would be required to notify NMFS via U.S. Coast Guard radio each time they entered or left an FMP management area. Observers would be placed aboard a portion of the catcher/processor and mothership/processor vessels. Radio reports of catch from the observed sample would be extrapolated to all vessels in each management area. ADF&G fish tickets would continue to be required to be submitted within one week of the date of landing to document more precise catch or product weights and specific ADF&G statistical areas. A completed logbook may be submitted with the ADF&G fish ticket showing total catch by species for a trip as a means of documenting catch by specific ADF&G statistical area.

Alternative 5 - Place observers aboard all catcher/processor and mothership/processor vessels.

Require catcher/processor and mothership/processor vessels to obtain an FCZ processing permit which would require that an observer be aboard at all times. Total catch would be computed directly from observer radio reports.

### C. Regulatory Impacts of the Alternatives

Alternative 1 - Maintain the status quo system with catches reported on ADF&G fish tickets at the time of landing.

Because catch reports are not required until the time of landing under the current regulatory regime, OYs will almost always be exceeded before a fishery closure order can be issued. Given the large hold capacity of the current catcher/processor and mothership/processor fleets and the rapid expansion of these fleets, the risks of overfishing and reducing stock production in future years is high. Under the current regulations, fishery managers have no knowledge of fishing effort by area prior to the time of landing by each vessel and are therefore not able to project catches based on past performance.

Under this alternative, as well as under all alternatives which do not require onboard observers, discarded prohibited species catches will remain largely unaccounted for. Prohibited species caught and discarded at sea usually have high mortality rates, especially for trawl gear catches. Prohibited species catches as well as discard mortality of unwanted species is largely unaccounted for under the present system. In certain few cases, prohibited species catches can be extrapolated from data provided from the limited

observer program of ADF&G or from the NMFS foreign and joint venture observer program. Prohibited species catches can easily be illegally retained, landed and sold by catcher/processors under the current enforcement system.

Enforcement of regulations prohibiting catches of species after fishery closure orders have been issued is extremely difficult under the present system. Because there is no existing method of tracking or even identifying catcher/processor vessels on the fishing grounds, it is difficult to locate, board and inspect the holds of these vessels on the fishing grounds or in port during the infrequent landings of these vessels. Because of the duration of fishing trips by catcher/processor vessels, these vessels retain large quantities of legally caught catches in their holds long after fisheries for certain species have been closed but prior to their subsequent landing and offloading. Enforcement of fishery closure regulations by hold inspections is extremely difficult under these conditions.

The reporting burdens placed on fishing vessels under the current regulations are minimal. Vessels are required to fill out an ADF&G fish ticket or provide equivalent information within 7 days of the date of landing or delivering their catch. ADF&G fish tickets require vessels to identify the vessel, operator, processor, gear(s) used, and catch by species in each ADF&G statistical area fished for the duration of the trip. Catches are not required to be subdivided into time units smaller than the duration of the trip. Vessels which are leaving Alaskan waters to deliver to ports outside the state of Alaska are required to notify ADF&G or NMFS of their departure prior to leaving the FCZ. Very few vessels have abided by this regulation in the past. The regulation is very difficult to enforce without prior knowledge of which vessels are capable of delivering catches outside of the state of Alaska.

Alternative 2 - Require FCZ processing permit with check-in/check-out and weekly catch report.

Under this alternative vessels would be required to obtain a permit to process their catch in the FCZ. The permit would serve to identify those vessels which would be required to participate in the additional reporting programs. Each time one of these vessels enters or leaves an FMP management area (an area for which a quota is defined), they would be required to notify NMFS via U.S. Coast Guard radio. These vessels would also be required to submit a report to NMFS by U.S. mail, or telex for each fishing week documenting the haul weight estimates of catch by FMP species group in each FMP area. These weekly reports would be due within 7 days of the end of the fishing week. The medium by which the catch reports are submitted is up to the discretion of the vessel operator. Large catcher/processor and mothership/processor operations usually maintain home port offices which are in at least weekly contact with their vessels. Catch reports could be submitted by these offices via telex, telephone, or U.S. mail. Smaller operations without frequent home office contact would have to contact NMFS via U.S. mail or telex.

Under this alternative, as well as under all alternatives which do not require onboard observers, discarded prohibited species catches will remain largely unaccounted. Prohibited species caught and discarded at sea usually have high mortality rates, especially for trawl gear catches. Prohibited species catches as well as discard mortality of unwanted species is largely unaccounted for under the present system. In certain few cases, prohibited species catches can

be extrapolated from data provided from the limited observer program of ADF&G or from the NMFS foreign and joint venture observer program. Prohibited species catches can easily be illegally retained, landed and sold by catcher/processors under the current regulatory and enforcement system.

Under this alternative, fishery managers would be provided with estimates of catch aboard from FCZ domestic processing vessels that were no more than two weeks old. With the check-in/check-out reporting requirement, projections of catch within the most recent two week period could be made based on past performance. This method would allow fishery managers to estimate the date when OYs would be achieved with a moderate level of precision.

With the check-in/check-out reporting requirement, catch reporting by area fished can be enforced. The locations of vessels boarded at sea or sighted from enforcement overflights could be checked against the check-in/check-out list for verification. Without the check-in/check-out requirement, vessels could easily alter the reported area of fishing on the weekly catch report in the rare event of an enforcement boarding or overflight observation. The check-in/check-out requirement would also enable enforcement officials to be notified of upcoming landings so that hold inspections could be performed at the port of landing. Hold inspections performed at the port of landing impose far less burden on fishing vessels than at-sea boardings and are much less expensive to implement. Weekly catch reports would be verified against ADF&G fish tickets which would be submitted at the time of landing. Spot checking of catches from hold inspections performed at the port of landing could be used to verify the fish ticket information.

The catch data in the weekly catch reports would be based on skipper's estimates of catch weights or "hail weights" by species group and management area. Fishing vessels do not weigh their catch at sea and can only estimate "hail weights" from experience. At the time vessels offload their catch, more accurate weights are obtained and these are recorded on the fish ticket, presently required under state and federal regulations, which is forwarded to ADF&G. It is always desirable to update the "soft" data obtained from "hail weights" with the more accurate weights and specific statistical areas obtained from fish tickets.

Alternative 3 - Require an FCZ processing permit with a weekly catch report, but without check-in/out.

Under this alternative vessels would be required to obtain a permit to process their catch in the FCZ. The permit would serve to identify those vessels which would be required to participate in the weekly catch reporting programs. These vessels would then be required to submit a report to NMFS by U.S. mail or telex for each fishing week documenting the hail weight estimates of catch by FMP species group in each FMP area. These weekly reports would be due within 7 days of the end of the fishing week. The medium by which the catch reports are submitted is up to the discretion of the vessel operator as long as a hard copy of the report is received. Large catcher/processor and mothership/processor operations usually maintain home port offices which are in at least weekly contact with their vessels. Catch reports could be submitted by these offices via telex or U.S. mail.

Under Alternative 3, as well as under all alternatives which do not require onboard observers, discarded prohibited species catches will remain largely unaccounted for. Prohibited species caught and discarded at sea usually have high mortality rates, especially for trawl gear catches. Prohibited species catches as well as discard mortality of unwanted species is largely unaccounted for under the present system. In certain few cases, prohibited species catches can be extrapolated from data provided from the limited observer program of ADF&G or from the NMFS foreign and joint venture observer program. Prohibited species catches can easily be illegally retained, landed and sold by catcher/processors under the current regulatory and enforcement system.

Under this alternative, fishery managers would be provided with estimates of catch aboard from FCZ domestic processing vessels that were no more than two weeks old. Fishery managers would make projections of current catch based on past performance and the two week old effort distribution provided in the weekly catch reports.

Without the check-in/check-out reporting requirement, catch reporting by area is more difficult to enforce. The locations of vessels boarded at sea or sighted from enforcement overflights could only be checked against areas fished that are reported at the end of each week. Vessels could easily alter the reported area of fishing on the weekly catch report in the rare event of an enforcement boarding or overflight observation. The current FCZ checkout regulation could enable enforcement officials to be notified of upcoming out-of-state landings so that hold inspections could be performed at the port of landing. However, lacking knowledge of the vessels which are actually operating in an area, the current check-out regulation has been difficult to enforce. Hold inspections performed at the port of landing impose far less burden on fishing vessels than at-sea boardings and are much less expensive to implement. Weekly catch reports would be verified against ADF&G fish tickets which would be submitted at the time of landing. Spot checking of catches from hold inspections performed at the port of landing could be used to verify the fish ticket information.

The catch data in the weekly catch reports would be based on skipper's estimates of catch weights or "hail weights" by species group and management area. Fishing vessels do not weigh their catch at sea and can only estimate "hail weights" from experience. At the time vessels offload their catch, more accurate weights are obtained and these are recorded on the fish ticket, presently required under state and federal regulations, which is forwarded to ADF&G. It is always desirable to update the "soft" data obtained from "hail weights" with the more accurate weights and specific statistical areas obtained from fish tickets.

Alternative 4 - Place observers aboard a small sample of catcher/processor vessels and mothership/processors and extrapolate the catch from these vessels to the entire fleet.

Under this alternative vessels would be required to obtain a permit to process their catch in the FCZ. The conditions of the permit would require observers to be allowed onboard, if requested. All processing vessels would be required to notify NMFS via U.S. Coast Guard radio each time they entered or left an FMP management area. Observers would be placed aboard a sample of catcher/

processors and mothership/processors. Observers would radio catch reports to fishery managers on a weekly basis. The observed catch sample would be extrapolated to the total catch in an FMP management area based on the ratio of sampled effort to total effort as determined from the vessel check-in/check-out system.

Observer derived samples provide the most accurate estimates of total catch of the alternatives. Observer samples estimate catch of all species, including prohibited species and unwanted legal species or sizes that are discarded. Observer samples would also provide the least time delay in catch reporting of the alternatives, at a maximum lag of one week. However, observer derived catch sampling is by far the most expensive of the alternatives. Based on the performance of the foreign and joint venture observer programs, observers would have to be placed aboard at least 30% of the vessels in the fleet in order to provide catch estimates with sufficient precision. Reporting burdens place on vessel operators are reduced under this alternative since no in-season catch reporting is required of the vessel operator. Vessel operators would still have to notify NMFS each time they entered or left an FMP area. Because of cramped living conditions aboard most domestic fishing vessels, vessel operators would be burdened to some extent by the presence of the observer aboard, even if reimbursed for the living expenses of the observer.

The costs of an observer program can be high. Currently, the federally managed foreign observer program costs a minimum of \$235/day plus the cost of food, transportation to and from the vessel, liability insurance, and other support services. Who would bear the costs of an observer program, the federal government or the resource users, is an important question. Other questions include whether the observer would be a biologist, an enforcement agent, or both, and whether the vessel can be held liable for injury or death of an observer.

Alternative 5 - Place observers aboard all catcher/processor and mothership/processor vessels.

Under this alternative vessels would be required to obtain a permit to process their catch in the FCZ. The conditions of the permit would require an observer to be taken aboard at all times. Observers would radio catch reports to fishery managers on a weekly basis. Catches within areas could be computed by fishery managers as total counts.

Observer derived samples provide the most accurate estimates of total catch of the alternatives. Observer samples estimate catch of all species, including prohibited species and unwanted legal species or sizes that are discarded. Observer samples also provide the least delay in catch reporting of the alternatives, at a maximum lag of one week. Placing observers aboard all catcher/processor and mothership vessels could be prohibitively expensive. Reporting burdens placed on vessel operators are minimal under this alternative since no in-season reporting is required of the vessel operator. Vessels would not be required to check in or out of FMP areas since the observer reports would contain this information for all vessels. Because of cramped living conditions aboard most domestic fishing vessels, vessel operators would be burdened to some extent by the presence of the observer aboard, even if reimbursed for the living expenses of the observer.

D. Discussion of the Costs and Benefits of Establishing a Reporting System for Catcher/Processors.

Table 8 summarizes our best estimates of the costs and benefits associated with catcher/processor weekly reporting. It breaks out the costs imposed on different classes of vessels, both in terms of additional time spent reporting, additional costs of reporting, and costs to the government for entry of data collected under this regulation.

It appears, at this point, that approximately 25 vessels would be affected by this requirement. With a total of approximately 140 vessel-weeks in the fishery by all vessels, at \$10 per marine operator-assisted call, the additional home office-to-vessel contacts (at one per week) are estimated to cost \$1,400. The additional fleet costs for trawl catcher/processors are estimated to be \$450 per week; with a total of 40 vessel-weeks anticipated for the fishery, this figures to a total of \$18,000 per season for this category of vessels. Through a similar line of reasoning, the estimated added fleet costs of \$80 per week per vessel for pot catcher/processors, each week for 35 weeks, totals to \$2,800; and the estimated added fleet costs for longline catcher/processors is \$4,000. The total added fleet costs in a season, therefore, is \$24,800, in addition to the \$1,400 estimate of direct phone costs.

Home offices will have to make additional contacts with NMFS, which, through the assumptions laid out in Part B of Table 10, totaled to \$6,853 for the fleet for the season. Additionally, the time burden can be estimated as approximately 1/2-hour per week onboard vessels, 0.2 hours per week in the home office, and 0.3 hours estimated for home office contact with NMFS. The total burden, therefore, is 1 hour per vessel per week. Choosing, arbitrarily, a value of time of \$15 per hour, the total time cost associated with this regulation is estimated to be \$13,800. Totaling these three cost categories, then, the total costs to fishermen of this regulation are estimated to be \$45,453. There may be some additional costs associated with NMFS clerical and data entry functions, once this data is collected. Based on informed staff-level estimates, this cost has been placed at \$50,000, so that total costs of this regulation are estimated to be \$95,000 per year.

On the benefits side, it is useful to note that the value of the groundfish resource targeted by catcher/processors, excluding pollock, is approximately \$113.9 million. A major benefit of this regulation will be an increased ability of managers to properly achieve the optimum yields from the fishery, because of the more timely provision of information about total catches in the fleet. This can be a quite tangible benefit, when one considers the potential reductions in stock size and subsequent quotas which could occur if overfishing were to result from an absence of timely data from vessels that do not deliver their catches until the end of their season.

Assessing the change in risks of affecting future quotas by current year for overfishing is a very complex subject. Overfishing this year would result in an increase in industry earnings this year, which would later be offset by reduced earnings in future years compared to what would be attainable had not the overfishing occurred.

For purposes of the present discussion, an assumption was made that overfishing by catcher/processors, caused by lack of timely data to be used by

Table 8. COST/BENEFIT ANALYSIS OF CATCHER/PROCESSOR WEEKLY REPORTING OPTION

| <u>Vessel Class:</u>                        |                                                                                                                                                                    | <u>Mothership/<br/>Processors</u> | <u>Trawl<br/>Catcher/<br/>Process.</u> | <u>Pot<br/>Catcher/<br/>Process.</u> | <u>Longline<br/>Catcher/<br/>Process.</u> | <u>Total</u>  |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------|--------------------------------------|-------------------------------------------|---------------|
| No. of vessels                              |                                                                                                                                                                    | 2                                 | 15                                     | 4                                    | 4                                         | 25            |
| No. of weeks in fishery                     |                                                                                                                                                                    | 40                                | 40                                     | 35                                   | 25                                        |               |
| A. Added Home Office<br>to Vessel Contacts: | No. of marine oper. calls                                                                                                                                          | 0                                 | 3                                      | 2                                    | 4                                         | 9             |
|                                             | Marine operator costs/call                                                                                                                                         | \$10                              | \$10                                   | \$10                                 | \$10                                      |               |
|                                             | Total added vessel costs/seas                                                                                                                                      | \$400                             | \$400                                  | \$350                                | \$250                                     | \$1,400       |
|                                             | Total added fleet costs/week                                                                                                                                       | \$0                               | \$450                                  | \$80                                 | \$160                                     | \$690         |
|                                             | Total added fleet costs/seas                                                                                                                                       | \$0                               | \$18,000                               | \$2,800                              | \$4,000                                   | \$24,800      |
| B. Home Office to<br>NMFS Contacts:         | Method of contacting NMFS                                                                                                                                          | Telex                             | Telex                                  | Mail                                 | Mail                                      |               |
|                                             | Weekly cost of contact method                                                                                                                                      | \$10                              | \$10                                   | \$0.22                               | \$0.22                                    |               |
|                                             | Total add'l vessel costs/seas                                                                                                                                      | \$400                             | \$400                                  | \$8                                  | \$6                                       | \$813         |
|                                             | Total add'l fleet costs/week                                                                                                                                       | \$20                              | \$150                                  | \$1                                  | \$1                                       | \$172         |
|                                             | Total add'l fleet costs/seas                                                                                                                                       | \$800                             | \$6,000                                | \$31                                 | \$22                                      | \$6,853       |
| C. Added Reporting<br>Time Burden:          | On-vessel tabulation hrs/week                                                                                                                                      | 0.5                               | 0.5                                    | 0.5                                  | 0.5                                       | 2             |
|                                             | Added off. contact hrs/week                                                                                                                                        | 0.2                               | 0.2                                    | 0.2                                  | 0.2                                       | 0.8           |
|                                             | Home office to NMFS hrs/week                                                                                                                                       | 0.3                               | 0.3                                    | 0.3                                  | 0.3                                       | 1.2           |
|                                             | Total burden/vessel/week                                                                                                                                           | 1                                 | 1                                      | 1                                    | 1                                         | 4             |
|                                             | Cost of time (\$/hr)                                                                                                                                               | \$15                              | \$15                                   | \$15                                 | \$15                                      |               |
|                                             | Cost of burden/vessel/week                                                                                                                                         | \$10                              | \$15                                   | \$15                                 | \$15                                      | \$60          |
|                                             | Total add'l vessel costs/seas                                                                                                                                      | \$600                             | \$600                                  | \$525                                | \$375                                     | \$2,100       |
|                                             | Total add'l fleet costs/week                                                                                                                                       | \$30                              | \$225                                  | \$60                                 | \$60                                      | \$375         |
|                                             | Total add'l fleet costs/seas                                                                                                                                       | \$1,200                           | \$9,000                                | \$2,100                              | \$1,500                                   | \$13,800      |
| D. Total Costs<br>to Fishermen:             | Total add'l vessel costs/seas                                                                                                                                      | \$1,400                           | \$1,400                                | \$883                                | \$631                                     | \$4,313       |
|                                             | Total add'l fleet costs/week                                                                                                                                       | \$50                              | \$825                                  | \$141                                | \$221                                     | \$1,237       |
|                                             | Total add'l fleet costs/seas                                                                                                                                       | \$2,000                           | \$33,000                               | \$4,931                              | \$5,522                                   | \$45,453      |
| E. Costs to NMFS:                           | Clerical data entry<br>(Vessel boardings and hold inspections in port and<br>enforcement overflights must be done to properly<br>enforce any of the alternatives.) |                                   |                                        |                                      |                                           | \$50,000      |
| F. TOTAL COSTS:                             |                                                                                                                                                                    |                                   |                                        |                                      |                                           | \$95,453      |
| G. BENEFITS:                                | Value of groundfish resource targeted by catcher/processors<br>(all species except pollock)                                                                        |                                   |                                        |                                      |                                           | \$113,908,968 |
|                                             | Potential reduction in EY caused by overfishing by catcher/processors                                                                                              |                                   |                                        |                                      |                                           | 2%            |
|                                             | Potential benefit of catcher/processor reporting:                                                                                                                  |                                   |                                        |                                      |                                           | \$2,278,179   |
| COST/BENEFIT:                               |                                                                                                                                                                    |                                   |                                        |                                      |                                           | 0.042         |
| BENEFIT/COST:                               |                                                                                                                                                                    |                                   |                                        |                                      |                                           | 23.9          |

managers in closing seasons, would result in a potential reduction in OY of 2% of the groundfish resource, distributed proportionally for all species. This would, if it occurred, result in a lowering of annual groundfish value by some \$2.3 million, and a regulation which prevents this occurrence can be considered to convey a benefit in that amount. Whether this is precisely the savings in lost future earnings which would occur or not it is very much an open question; however, it is useful to note that this particular assumption results in an annual savings of some 24 times the cost of the regulation itself. Looked at another way, if the regulation forestalled a decrease in annual groundfish earnings of  $\$95,453/\$113,908,968 = .08\%$ , the regulation would have a positive benefit-cost ratio.

The value of this regulation is to reduce the variability in actual harvests around the target harvests determined annually by the Council. The Council is a forum for determining what society's preferences for harvesting of groundfish over time are, and these preferences are reflected in the Council's designation of optimum yield. Any deviations in actual harvest which result from the inability of our management system to precisely attain the target can be considered social costs, although the measurement of these social costs can be quite complex because of our lack of understanding of biological ramifications of "underharvesting" or "overharvesting." A measure which reduces that variability can be considered to provide a benefit in two ways: first, in the form of a reduced risk of longer term damage to the stocks productivity; and second, irrespective of effects on the longer term productivity of the stock, a benefit derives from a closer matching of actual harvests to the Council-determined socially optimal harvests over time.

Additional analysis on the weekly catch reports and on vessel check-in/check-out requirements are provided in the Paperwork Reduction Act document (Form SF83I).

#### V. PROPOSAL 3: IMPLEMENT THE NMFS HABITAT POLICY

The proposed action amends the FMP by modifying and adding certain sections specifically to address the habitat requirements of individual species in the Bering Sea/Aleutian Islands groundfish fishery. The amendment describes the diverse habitat types within the Bering Sea and Aleutian Islands, delineates the life states of the species, identifies potential sources of habitat degradation and the potential risk to the fishery, and describes existing programs, applicable to the area, that are designed to protect, maintain, or restore the habitat of living marine resources. The amendment is not mandated by law but rather responds to the Habitat Conservation Policy of the National Marine Fisheries Service, which advocates emphatic consideration of habitat concerns in the development or amendment of FMPs, and the strengthening of NMFS' partnerships with states and the Councils on habitat issues. It also provides the necessary authorization for institution of marine debris restrictions and other regulations to protect the marine habitat.

Alternative 1 (Preferred) - Amend the FMP to address habitat considerations, based on the best available information, to meet standards set forth in the National Marine Fisheries Service's Habitat Conservation Policy.

This alternative focuses, within the FMP, on habitat as the source of

productivity of a fishery and demonstrates Council awareness of potential adverse and cumulative effects of man-induced habitat alterations on the health of stocks and size of the harvest. It would provide legal foundation for future Council expressions of concern and action should the need arise, and would provide the Secretary with a basis for implementing appropriate Council habitat recommendations to the extent possible within legal and budget limitations.

Alternative 2 - Amend the FMP to add a general habitat conservation objective. However, the more detailed material that is under the Alternative 1 proposed amendment would be included in a separate Council Habitat Document that would be referenced in, but not part of, the FMP.

This alternative would issue the amendment text as a Council Habitat Document separate from, but referenced in the FMP. Not subject to Secretarial approval, it would provide essentially the same information without the need for FMP amendment should the information change. Whether future Council action based on information published separately from the FMP would have the same legal effect is uncertain and is being evaluated.

Alternative 3 (Status Quo) - Do not amend the FMP to address habitat considerations.

Under this alternative, the FMP would not be responsive to the NMFS Habitat Conservation Policy.

## VI. LITERATURE CITED

Narita, Reynold E., J.M. Wall and R.E. Nelson. Summary Data on Incidental Catch of Salmon by Foreign and Joint Venture Groundfish Fisheries in the Bering Sea, 1977-1984. NMFS/NWAFRC, February 1985. Unpublished manuscript, 35 pp.

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