

ORIGINAL SPECIES VENTURE SECTION

14.4.3 Fishing Area Restrictions

A. General

None

B. Trawl Fishery

1. Area A -- "Bristol Bay Pot Sanctuary" (as described in Appendix III and Figure 27) -- domestic trawling will be permitted year-round on an experimental basis and be monitored closely by observers. Those domestic vessels fishing for a "species venture" will be subject to the following restrictions:

- a. Definition of Species Venture.

A species venture is defined to be any one of the following:

- (1) joint ventures using a foreign processor of a particular flag and controlled by either a particular American partner or a foreign entity directly;
- (2) individual factory trawler operations;
- (3) domestic joint ventures with at sea processing by a particular processor/buyer;
- (4) trawl-caught deliveries to a particular buyer.

- b. For each species venture domestic trawling will be permitted until the annual incidental interception of Pacific halibut exceeds the guideline level as determined by the appropriate analysis of relevant data.

The guideline level shall be one percent by line weight of the total harvest of each species venture. Each species venture's harvest shall be monitored on a current time basis by observers or other appropriate means. At the initial 10,000 metric ton level, the incidental catch of Pacific halibut shall be determined. Upon achieving a 20,000 mt catch, if a species venture's incidental catch of Pacific halibut exceeds one percent by weight of total catch, the species venture shall be restricted to pelagic trawl gear for the remainder of the fishing year when trawling in Area A. If a species venture's incidental catch of Pacific halibut is one percent or less, then the species venture may continue bottom trawling subject to the one-percent incidental catch of Pacific halibut restriction for each additional 20,000 mt catch level achieved.

Domestic fishermen trawling in Area "A" shall provide appropriate data and observation from their own records relevant to the nature of their fishing efforts, and shall cooperate with personnel assigned for scientific study of fishing activity in Area "A".

The Council will consider relevant data on all prohibited species accumulated and analyzed from Area A and will take appropriate action as necessary.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL MARINE FISHERIES SERVICE
 Washington, D.C. 20235

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	Tech. Serv.	
	Training	
	Off. of the Chief of Staff	

Mr. Clement Tillion
 Chairman, North Pacific
 Fishery Management Council
 P.O. Box 3136DT
 Anchorage, Alaska 99510

Dear Clem,

On January 11, 1982, I disapproved the remaining portion (Part 5) of Amendment 8 to the FMP for Gulf of Alaska Groundfish--the part authorizing the NMFS Regional Director (RD) to issue field orders to resolve gear conflicts between foreign trawlers and domestic fixed-gear fishermen. I did so, not because I am opposed to delegating authority to the RD, but because this part of Amendment 8 was vague and incomplete. Also, with the approval of Amendments 9 and 10, which filled most of the need for the field order authority, I decided that it would be better to wait for the Council to submit an amendment that was complete and precise rather than implement this part of Amendment 8 as written. I realize that even with Amendments 9 and 10 it may be desirable for the RD to have authority to issue field orders for resolving gear conflicts in the Gulf of Alaska.

I decided the amendment was incomplete and unclear for several reasons. For example, although the amendment states that "field orders may open or close fishing areas or parts thereof . . .," it contains no criteria for opening an area after it has been closed. Also, the criteria fail to specify whether a closure would apply to some or all foreign nations, to some or all gear types (i.e., does foreign trawling mean off-bottom as well as on-bottom trawling?), to harvesting-only as well as processing and harvesting/processing vessels, and to processing vessels engaged in a joint venture with domestic harvesting vessels. Further, the criteria fail to specify limits to areas that can be closed, how those limits will be determined, how long the areas would be closed, and how many days would elapse between announcement of an order and its effective date (i.e., how long would foreign vessels have to leave the grounds?). Finally, the amendment fails to specify what procedures, if any, are available for concerned parties to comment on proposed closures, and it contains no provisions to assure that OY will be achieved.



The Council could remedy most of the shortcomings in Part 5 by writing the criteria and procedures more precisely. For example, specify what categories of vessels would be stopped from fishing; would a closure apply to all foreign fishing vessels, or only to those of one type of gear from one nation? Would restrictions on bottom trawling apply to domestic as well as foreign fishermen? If not, why not? How long would a field order stay in effect? What criteria would allow the RD to rescind the field order and reopen the area? Although there appeared to be no insuperable legal problems in delegating this field order authority to the RD, the Council should provide assurance that the OY would likely be achieved, that non-excluded foreign fishermen would have opportunities to harvest their allocation, and that excluded foreign fishermen would have an opportunity to be heard.

I regret that we took so long with this part of Amendment 8, but it was a precedent-setting concept and required careful consideration of the legal and policy issues.

Sincerely yours,



William G. Gordon
Assistant Administrator
for Fisheries

BERING SEA/ALEUTIANS GROUNDFISH FMP
AMENDMENT #1

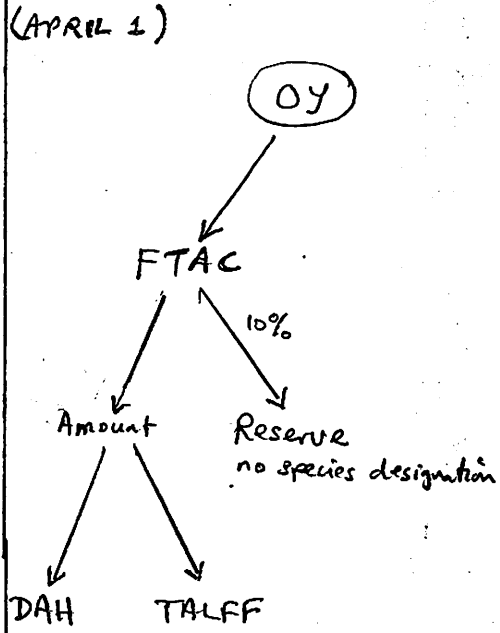
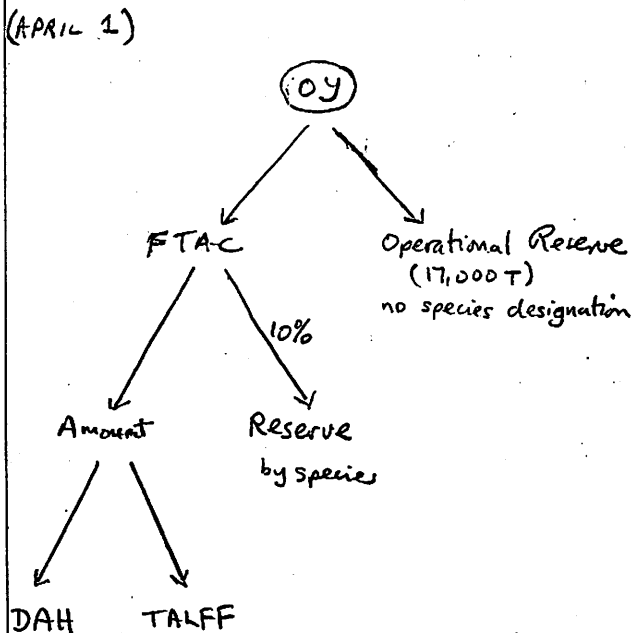
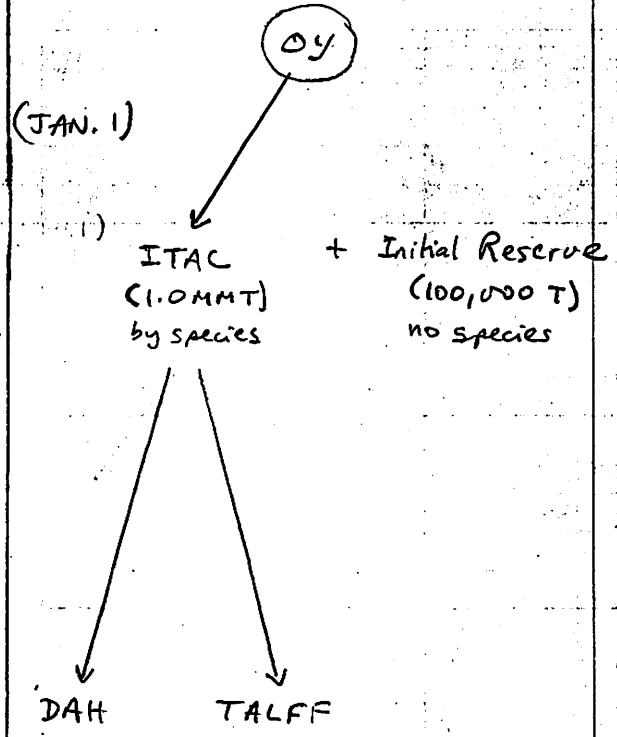
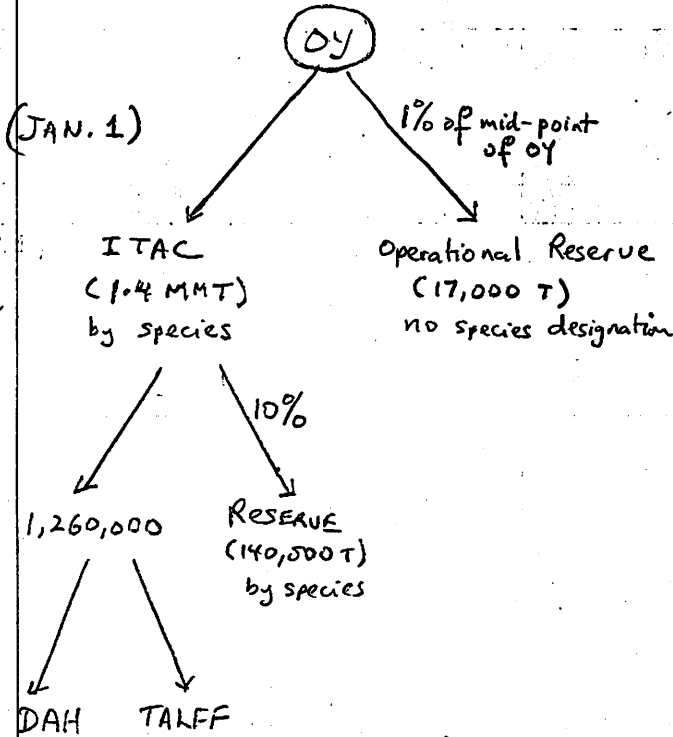
MSY = 1.7 to 2.4 MMT



OY = 85% MSY = 1.4 to 2.0 MMT

ORIGINAL AMENDMENT #1

REVISED AMENDMENT #1



Plan Development Team Evaluation
on
Creation of a United States Fishing Sanctuary in the Bering Sea/Aleutian
Region as Proposed by Bart Eaton
(PDT for Bering Sea/Aleutian Groundfish FMP, March 1982)

INTRODUCTION

A fishing sanctuary in the Bering Sea for the exclusive use by the developing domestic groundfish fishery was proposed by Council member Bart Eaton to the North Pacific Fishery Management Council at the December 1981 meeting. This sanctuary would lie just north of Unimak Pass (Figure 1) and incorporate parts of the following existing sanctuaries: 1) the southeast corner of the Winter Halibut Savings area, closed 12/1-6/1; 2) the Northwest corner of Davidson Bank, closed year-round; and 3) the southwest corner of the Bristol Bay Pot Sanctuary, closed year-round.

This proposed sanctuary is an important fishing ground for the developing domestic groundfish fisheries because of its abundant cod and pollock resources and close proximity to shore-based processing stations. The area is very rich in other groundfish species as well.

The PDT has been asked by the council to evaluate the proposal and to report to the Council at the March 1982 meeting.

TEAM MEETING

A PDT meeting was held on March 11 at the Northwest and Alaska Fisheries Center, Seattle, where the proposal was evaluated. Attendees at the meeting, including technical experts invited by the Team, were:

Council Staff:	Jeff Povolny	ADF&G:	Mark Miller
			Barry Bracken
NMFS, Juneau:	Sue Salvesson		
		IPHC:	Steve Hoag
NMFS, Seattle:	Loh-Lee Low		
	Joe Terry		
	Macgill Lynde		
	Richard Marasco		
	Richard Bakkala		

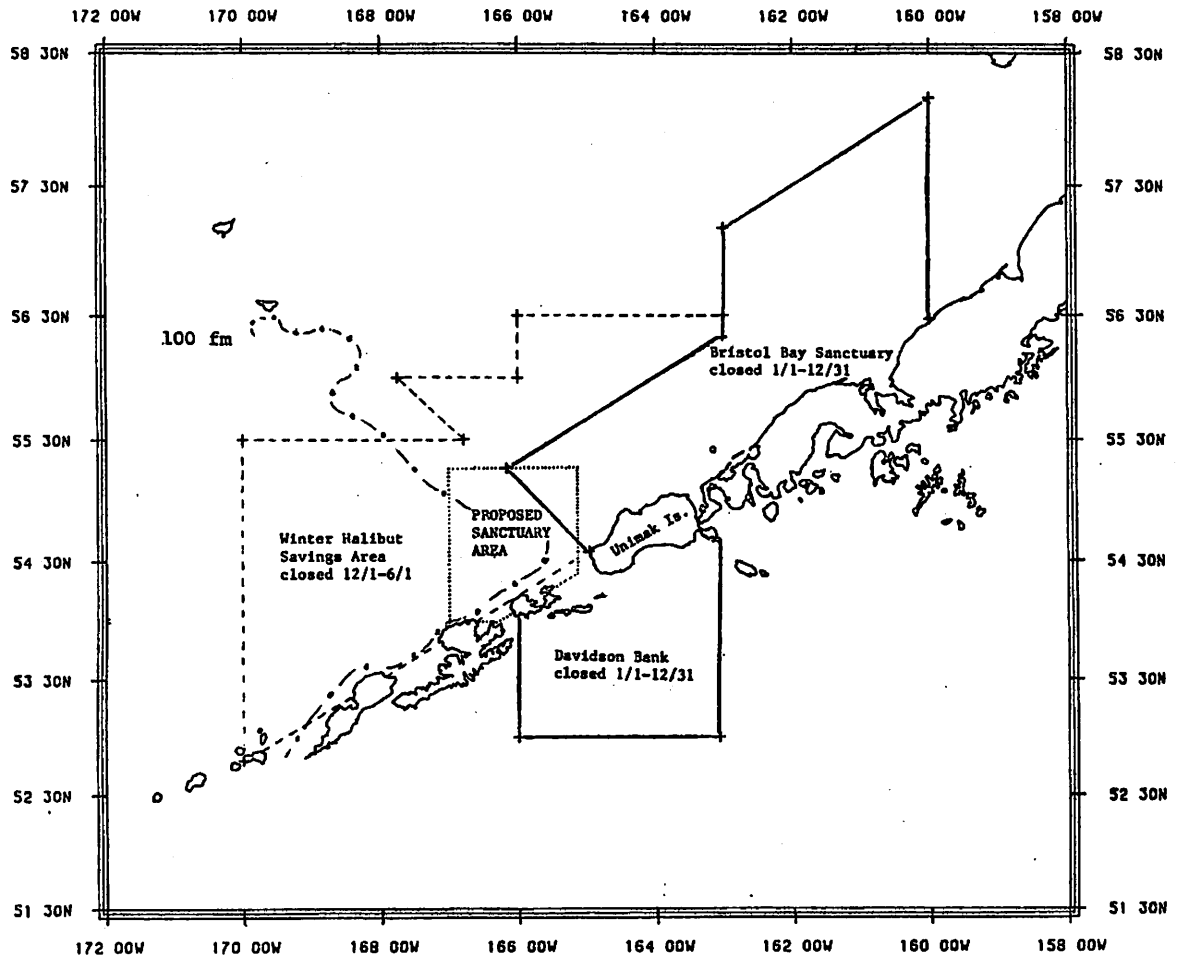


Figure 1. Location of proposed sanctuary in relation to existing restricted areas.

INFORMATION EVALUATED

The PDT evaluated written materials submitted for the meeting and discussed ongoing analyses that pertain to the proposal. The written materials submitted were:

- Appendix 1: Charts on catch per unit effort for Pacific cod by Japanese fisheries during 1977 that indicate cod fishing grounds (submitted by Macgill Lynde);
(p.8-10)
- Appendix 2: Cruise results of the NOAA R/V MILLER FREEMAN during February 2-27, 1981 that indicate abundance of cod and other groundfish in the vicinity of the proposed area (submitted by the NWAFC);
(p.11-20)
- Appendix 3: A paper entitled "Creation of a U.S. fishing sanctuary in the Bering Sea/Aleutian region as proposed by Bart Eaton--Effect on foreign catches and catch distribution" (submitted by Loh-Lee Low and Ren Narita); and
(p.21-30)
- Appendix 4: Preliminary data on joint venture catches during 1981 in the proposed sanctuary area (submitted by Sue Salvesson).
(p.31-32)

OUTLINE OF EVALUATION

The PDT agreed that the following items should be considered for a thorough evaluation of the proposed sanctuary area:

1. Location of Sanctuary Area
 - (i) proposed area by Bart Eaton
 - (ii) other areas

2. Effect of Sanctuary Area on Foreign Fisheries

- (i) effect on groundfish catch--species and amount
- (ii) effect on prohibited species catch--species and amount

3. Effect of Sanctuary Area on Domestic Fisheries

- (i) potential increase in groundfish catches--species, amount, and economics
- (ii) potential increased catch of prohibited species--species and amount
- (iii) potential gear conflict between groundfish and crab vessels

LOCATION OF SANCTUARY AREA

The PDT noted that the area proposed by Bart Eaton is a good year-round fishing ground for cod and pollock, and its close proximity to shore-based stations makes the area a good choice as an exclusive fishing ground for domestic vessels.

Since the domestic fisheries are dependent on cod for its development and expects to catch substantially more cod than ever taken by foreign fisheries during 1977-80 in the proposed area, there appears to be insufficient cod in the area to serve both foreign and domestic needs. Therefore, the area must necessarily be considered for closer management, if not an outright exclusion of foreign fisheries.

In the proposed Bart Eaton area, the foreign catch of cod averaged 5,100 t during 1977-80. The 1981 joint venture catch alone is expected to be 7,600 t (Appendix 2). Although the domestic fisheries can operate during the period when foreign fisheries are excluded, there is still a question of whether the

Bart Eaton area is large enough to serve domestic needs for cod. An expanded area (northward by 30 minutes and westward by 3 degrees) was considered by the PDT as well. The average 1977-80 foreign catch of cod was 7,400 t within this expanded area; therefore, this expanded area would provide more cod grounds for domestic fisheries.

EFFECT OF SANCTUARY AREA ON FOREIGN FISHERIES

This question is addressed in a report in Appendix 3. The Bering Sea time-area closure model developed by the Northwest and Alaska Fisheries Center was used to study the impact of the Bart Eaton sanctuary area and the expanded sanctuary area on foreign groundfish and prohibited species catches.

The PDT believes that creation of either sanctuary area will have adverse impacts on operations of the foreign fleets but would not necessarily prevent the foreign fisheries from catching their groundfish quota outside the areas.

The creation of the sanctuary area, as proposed by Bart Eaton, would require that 11% (137,000 t) of the foreign groundfish catch be taken in the open areas, which does not seem impossible. The expanded sanctuary area yields 16% (204,900 t) of the groundfish to foreign fisheries, and it is presumably more difficult to make up these catches elsewhere. In both cases, no nation seems to be in serious danger of a premature closure of its entire groundfish fishery due to an early achievement of a quota species. It is also assumed that the nation can adjust its fishing pattern in order to avoid early achievement of quota for a minor species.

The creation of either sanctuary area should not have substantial effects on incidental catches of Pacific halibut, king crab, and Tanner crab by foreign fisheries. However, there is an anticipated 14% to 20% increase in incidental catches of salmon by foreign fisheries on account of the closure. This increase, however, should not take place because of the salmon-interception amendments to

the FMP which limit the amount of incidentally caught salmon. In light of the projected increase in salmon interceptions, however, it is reasonable to assume that an increased burden would be placed on foreign vessels to avoid salmon.

EFFECT OF SANCTUARY AREA ON DOMESTIC FISHERIES

This question was not thoroughly evaluated by the PDT because extensive analyses have not been made of the effects. Although one can speculate on the benefits that can accrue to domestic groundfish fisheries and the adverse impacts of a likely increase in prohibited species catches and gear conflicts with crab fishermen, the speculation cannot be well supported by data because little data exist on this topic.

The PDT noted that the creation of either sanctuary area would eliminate direct competition with foreign fisheries that took 137,000 to 205,000 t of groundfish from the areas. This is expected to help domestic fishermen greatly.

The PDT has assigned specific individuals to study the following but is not expecting to receive the results for some time:

(i) using the NEPAC model developed by the NWAFC and the University of Washington, evaluate the economics of operating a domestic groundfish fishery with and without competition with foreign fisheries in the sanctuary area;

(ii) evaluate the effect on prohibited species catches by an exclusive domestic groundfish fishery in the area; and

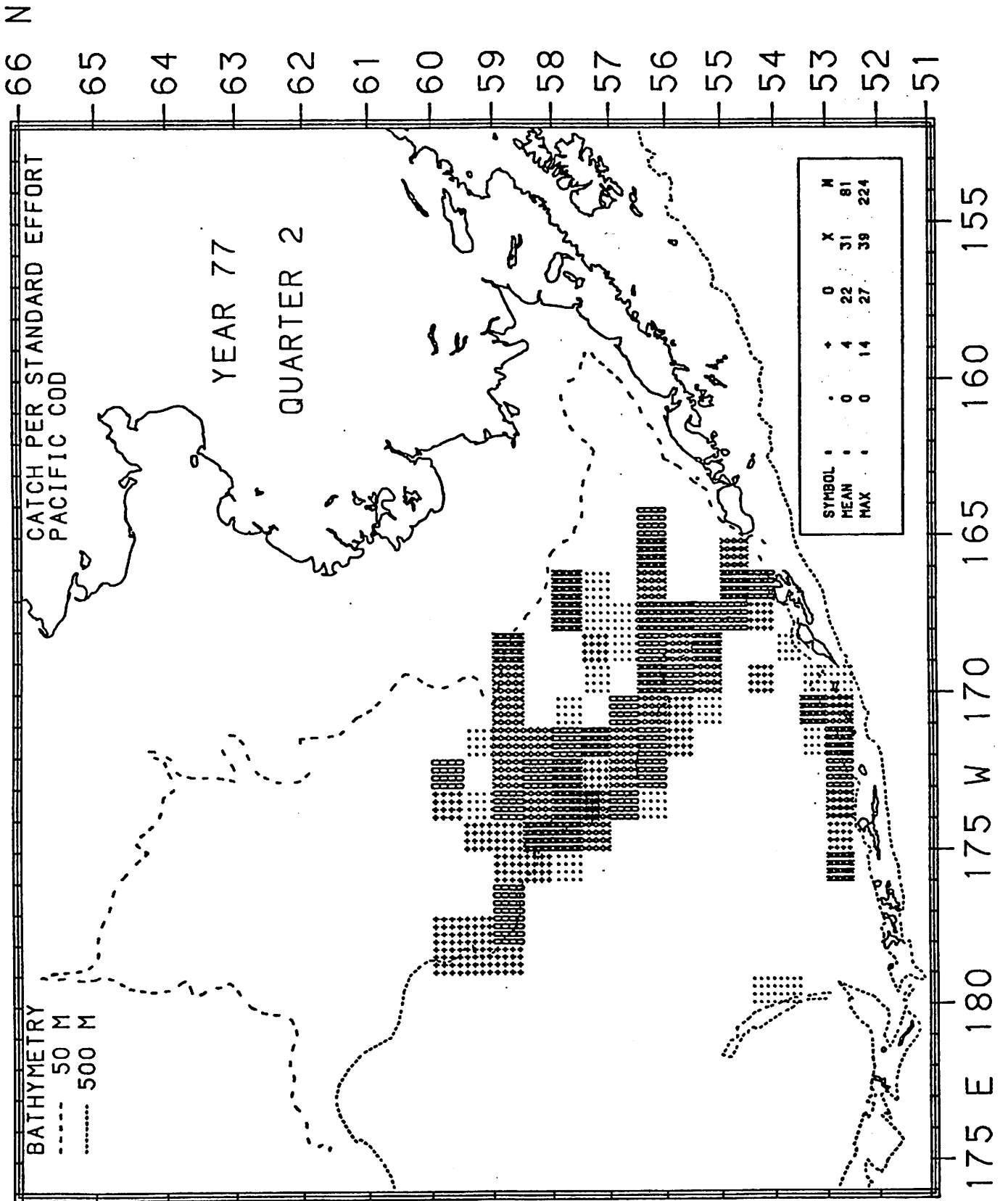
(iii) evaluate possible gear conflicts between domestic groundfish and crab fishermen in the areas.

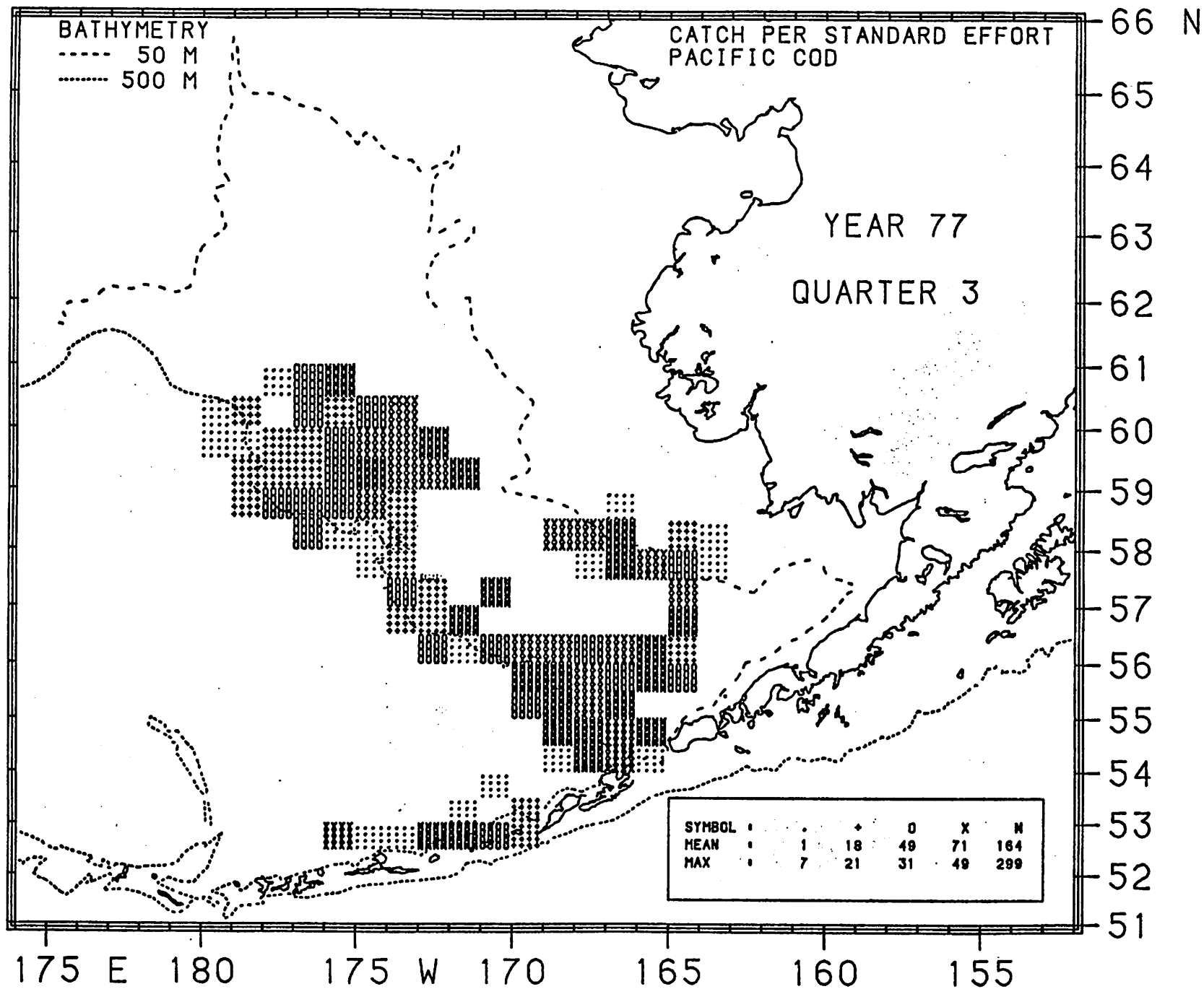
The PDT wishes to note that Appendix 4 shows an ambitious intent by the domestic fisheries to catch more than 60,000 t of cod in the Bering Sea, presumably most of them from the sanctuary area. A report by Weststad et al.

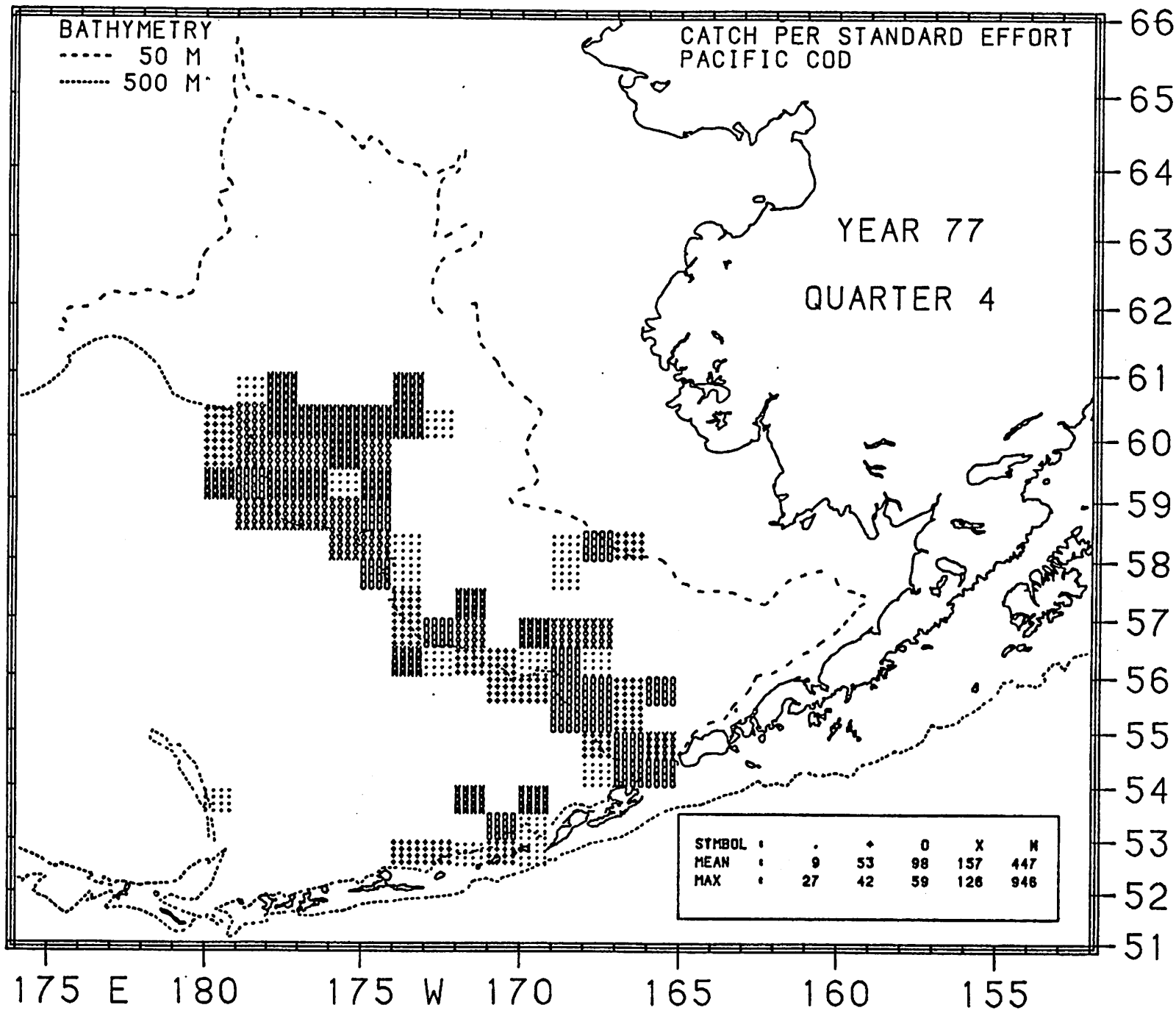
(1982)^{1/} submitted to the Council at this meeting notes that there may not be that much cod to catch in the near future, let alone in the sanctuary area. Therefore, caution should be exercised on anticipated catch of cod.

^{1/} Wespestad, V., R. Bakkala, and J. June. 1982. Current abundance of Pacific cod (Gadus macrocephalus) in the eastern Bering Sea and expected abundance in 1982-86. Northwest and Alaska Fisheries Center.

Appendix 1. Charts of Pacific cod catch-per-unit-effort by Japanese fisheries.
(Submitted by McGill Lynde)









11
UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Appendix 2. Cruise Report

Northwest and Alaska Fisheries Center
Resource Assessment and Conservation Engineering
2725 Montlake Boulevard East
Seattle, WA 98112

May 8, 1981

CRUISE RESULTS

NOAA R/V MILLER FREEMAN
Leg I
Cruise No. MF-81-01

Northwest and Alaska Fisheries Center-International Pacific Halibut Commission
Cooperative Demersal Trawl Survey

Cruise Period: February 2-27, 1981

Itinerary

The NOAA ship MILLER FREEMAN departed the Pacific Marine Center on February 2 and returned to Kodiak on February 27 upon the completion of the time allocated for the 1981 cooperative Northwest and Alaska Fisheries Center-International Pacific Halibut Commission (NWAFIC-IPHC) demersal trawl survey. One intervening port call was made in Kodiak on February 7 to off-load equipment and to embark scientific personnel.

Area Surveyed

The survey area was restricted to the slope and shelf region between Unimak Pass and the Pribilof Islands in the southeastern Bering Sea.

Primary Objectives

This survey was conducted to:

1. Determine the incidental catch rates of Pacific halibut in demersal trawl hauls; and
2. Examine the distribution and abundance of crab/groundfish resources in the study region during midwinter.

Secondary Objectives

Other objectives were to:

1. Tag Pacific halibut;
2. Collect biological data on selected species of fish and crab;



3. Conduct a series of comparative trawling operations with the 83/112 (with and without roller gear) to determine relative catchability coefficients by gear type;
4. Collect tissue samples from Pacific halibut for electrophoretic analyses;
5. Collect and preserve various species of fish and crab for subsequent laboratory identification and analyses;
6. Obtain water temperature profiles using XBT's.

Gear

The 83/112 otter trawl was the standard sampling gear used with a 112 ft footrope and 83 ft headrope. Mesh sizes in the wings and body were 4 inches and 3.5 inches in the intermediate and codend. There was no codend liner. Thirty-one 8-inch and three 10-inch floats were attached to the headrope. Six ft by nine ft steel v-doors with 25 fathom dandyines (25 fathom single and 15 fathom double) were used.

Methods

The survey sampling pattern was designed to comprehensively evaluate the distribution and abundance of fish and crab stocks over the continental shelf and slope region (Figure 1). The standard NWAFC 20 x 20 nautical mile grid sampling system (one primary station per 400 square miles) was used over the study area. Additional IPHC primary stations and NWAFC secondary stations were established to provide more intensive area coverage.

Catches were processed entirely at all stations if they were less than approximately 2500 pounds (1100 kg), or in the case of larger catches, subsampling techniques were used to reduce the processed portion to 2500 pounds or less. However, all Pacific halibut were removed from the catch regardless of catch size. Pacific halibut were measured as unsexed, tagged as time permitted, and released.

All groundfish were sorted by species with weights and, in most cases, numbers of each species determined. For commercially important species, length-frequency data were taken from each haul. King and Tanner crabs were sorted by species and sex. Weights and numbers in each species-sex category were determined. Lengths, widths, shell condition, egg condition, and fullness of egg clutch were also determined from all crabs in the catch or from a random subsample of the total catch.

An important objective of the survey was to compare incidence of halibut in trawl catches when the trawl was fished with and without roller gear. The standard gear for the survey was the 83/112 trawl without roller gear. For the comparative fishing experiments when relatively large catches of halibut were taken in a standard tow, the station was fished again with the 83/112 trawl rigged with roller gear. Stations on the shelf and slope were both fished in this manner.

Results

A total of 68 demersal trawl hauls was attempted in the survey area. This included 6 comparative tows utilizing roller gear, 6 opportunistic sets made near Unimak Pass, and 8 unsuccessful trawl hauls. Additionally, one test tow was conducted at the beginning of the survey to evaluate the gear proficiency and one qualitative mid-water tow was completed to sample heavy pelagic fish sign. A total of 48 scheduled stations was successfully occupied. Because it soon became apparent that there was no difference in catches of halibut with and without roller gear and because of time restrictions, the comparative experiments were discontinued after 6 comparative tows had been completed.

A total of 20,939 length measurements by sex/cm group was collected from the major fish species encountered (Table 1). Shell size and condition and clutch condition were recorded for 8 crab species. Tanner crabs were also examined for the presence of "blackmat disease" and chela height and merus length were taken from Korean horsehair crabs.

A total of 237 Pacific halibut was tagged and released for subsequent movements and recapture studies. Tissue and organ samples were retained from 60 halibut for electrophoretic analyses. Individual weights, lengths by sex, maturity, and otoliths were collected from 186 sablefish specimens. Approximately 60 specimens of arrowtooth flounder and Kamchatka flounder were preserved for later taxonomical evaluation. Various species of Sebastes, Zoarcidae, and Coryphaenoides were also preserved for later identification.

The gadids, Pacific cod, and walleye pollock were the most abundantly observed species with overall CPUE's of 86.7 and 54.8 kg/ha, respectively (Table 2). Both species were observed in greatest concentrations near Unimak Pass and along the shelf edge (Figures 2 and 3). Pacific cod size composition increased substantially by depth, averaging 39 cm on the shelf and 57 cm at water depths greater than 100 fathoms on the slope. Arrowtooth flounder (22.6 kg/ha overall) and Pacific halibut (10.0 kg/ha overall) were the most commonly encountered Pleuronectid species (Figures 4 and 5). CPUE for arrowtooth flounder increased about 10-fold from 5.5 kg/ha trawled on the shelf to 58.6 kg/ha trawled on the slope. The average lengths of halibut were approximately 44 cm on the shelf and 60 cm on the slope with an overall average of 48 cm.

Scientific Personnel

Terry Sample, Chief Scientist, NWAFC, Seattle WA
 Allen Shimada, Fishery Biologist, NWAFC, Seattle WA
 Yuko Umeda, Fishery Biologist, NWAFC, Seattle WA
 Mike Bohle, Fishery Biologist, NWAFC, Seattle WA
 Calvin Blood, Fishery Biologist, NWAFC, Seattle WA
 Bob Otto, Fishery Biologist, NWAFC, Kodiak AK
 Gilbert St. Pierre, Fishery Biologist, IPHC, Seattle, WA
 Lia Bijsterveld, Fishery Biologist, IPHC, Seattle, WA

 For further information, contact Ben Jones, Deputy Division Director;
 Resource Assessment and Conservation Engineering Division; Northwest and
 Alaska Fisheries Center; National Marine Fisheries Service; 2725 Montlake
 Boulevard East; Seattle, Washington 98112. Telephone (206) 442-7719.

Table 1.--Length measurements taken during the 1981 cooperative NWAFC-IPHC demersal trawl survey in the eastern Bering Sea.

Species	Number measured
Pacific cod (<u>Gadus macrocephalus</u>)	4,142
Walleye pollock (<u>Theragra chalcogramma</u>)	4,292
Flathead sole (<u>Hippoglossoides elassodon</u>)	3,239
Arrowtooth flounder (<u>Atheresthes stomias</u>)	2,882
Pacific halibut (<u>Hippoglossus stenolepis</u>)	2,302
Rock sole (<u>Lepidopsetta bilineata</u>)	1,646
Yellowfin sole (<u>Limanda aspera</u>)	1,491
Sablefish (<u>Anoplopoma fimbria</u>)	423
Atka mackerel (<u>Pleurogrammus monopterygius</u>)	186
Greenland turbot (<u>Reinhardtius hippoglossoides</u>)	159
Kamchatka flounder (<u>Atheresthes evermanni</u>)	91
Pacific ocean perch (<u>Sebastes alutus</u>)	73
Northern rockfish (<u>Sebastes polyspinus</u>)	13
Total measured fish	20,939
Red king crab (<u>Paralithodes camtschatica</u>)	22
Blue king crab (<u>Paralithodes platypus</u>)	10
Golden king crab (<u>Lithodes aequispina</u>)	10
Tanner crab (<u>Chionocetes bairdi</u>)	1,592
Tanner crab (<u>C. opillo</u>)	564
Tanner crab (<u>C. hybrid</u>)	96
Tanner crab (<u>C. tanneri</u>)	1
Korean horsehair crab (<u>Erimacrus isenbeckii</u>)	59
Total crab measured	2,354

Table 2.--Rank by CPUE (kg/ha) of fish and invertebrate species encountered during the 1981 cooperative NWAFC-IPHC trawl survey in the eastern Bering Sea.

Rank/Taxon	All areas combined			Subarea					
	kg/ha	Mean size (cm)	Mean wt (lb)	kg/ha	Mean size (cm)	Mean wt (lb)	kg/ha	Mean size (cm)	Mean wt (lb)
1. Pacific cod	86.7	40.4	1.98	98.1	38.7	1.68	62.7	56.8	4.73
2. Walleye pollock	54.8	47.3	1.75	39.3	46.7	1.70	87.7	47.9	1.81
3. Arrowtooth flounder	22.6	43.0	1.49	5.5	36.9	1.06	58.6	44.8	1.63
4. Atka mackeral	13.7			20.1			3/		
5. Pacific halibut	10.0	48.2	3.42	8.1	44.4	2.46	14.2	60.1	6.42
6. Yellowfin sole	6.9	27.5	0.48	10.2	27.5	0.48	0	-	-
7. Sablefish	6.8			0.2			20.7		
8. Rock sole	6.6			0.7			3/		
9. Flathead sole	6.1	29.2	0.61	5.8	27.8	0.49	6.7	34.4	1.05
10. Yellow Irish lord	5.5			6.7			2.8		
11. Basketstarfish	4.1			6.1			0		
12. Starry skate	3.3			3.4			3.1		
13. Greenland turbot	2.1	64.8	4.85	0.1	-	1.84	6.3	64.8	5.20
14. Tanner crab (<u>C. bairdi</u>)	1.9			2.2			1.4		
15. Tanner crab (<u>C. opilio</u>)	1.9			2.8			3/		
16. Skate species	1.4			1.4			1.5		
17. Octopus	1.1			1.1			1.2		
18. Bigmouth sculpin	1.0			0.5			2.3		
19. Gymnocanthus species	0.8			1.1			0		
20. Snail	0.6			0.8			0.4		

1/ Shelf area, depths less than 100 fm, total effort 178.8 ha

2/ Slope area, depths greater than or equal to 100 fm, total effort 66.2 ha

3/ CPUE less than 0.005 kg/ha trawled

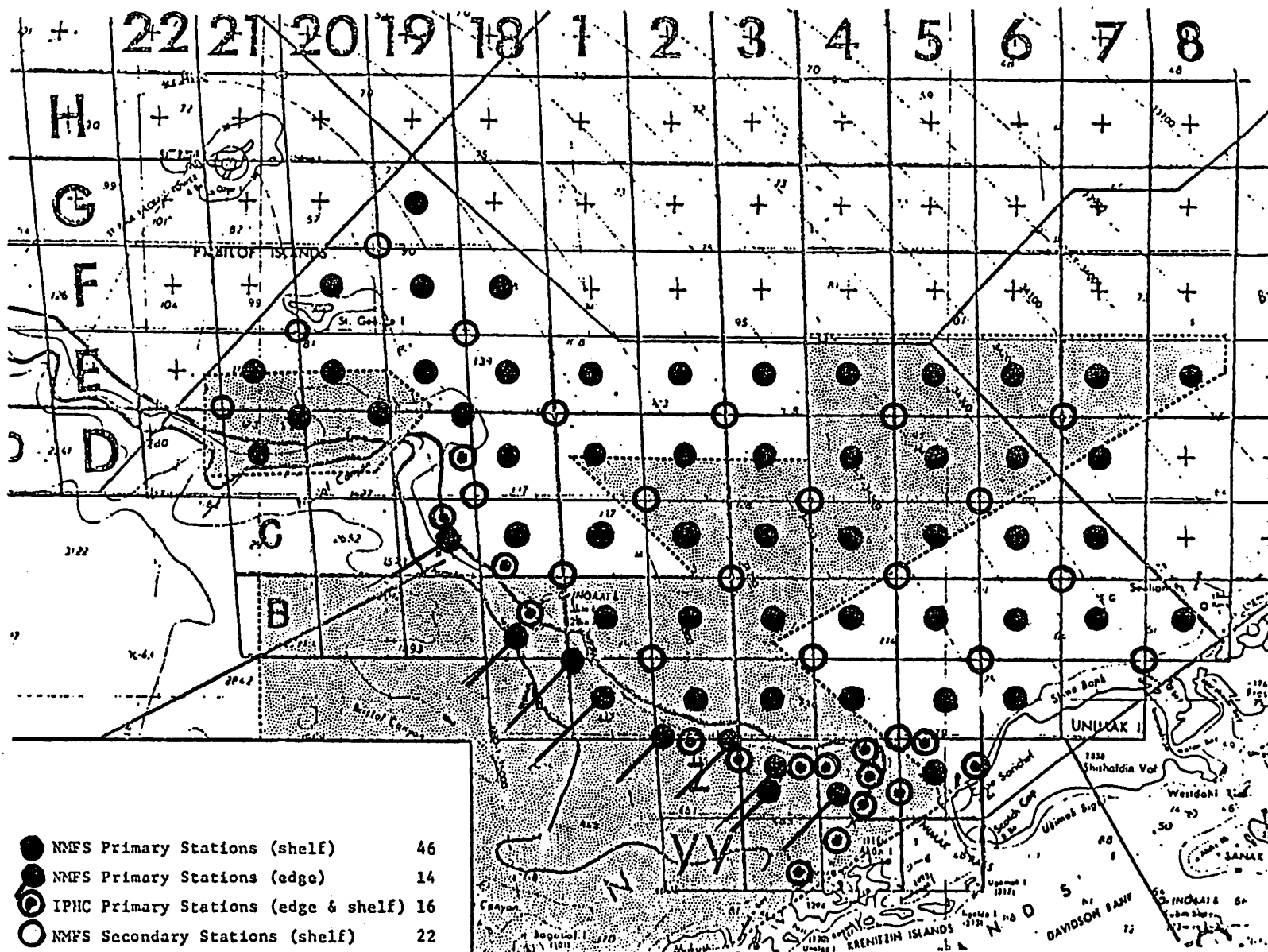


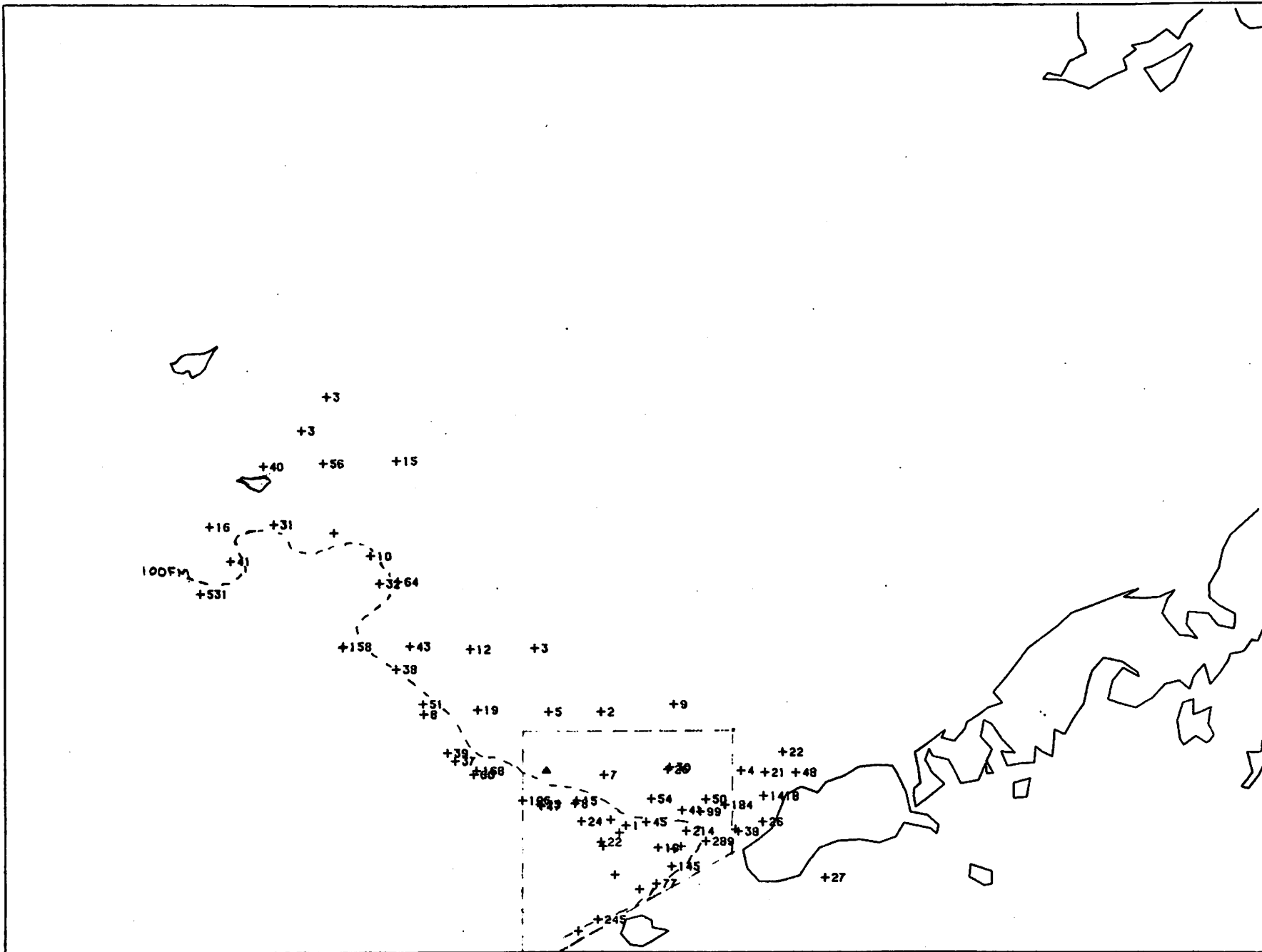
Figure 1.--Planned station pattern for the NWAFC-IPHC cooperative survey, February, 1981.

59 00N

59 00N

54 00N
172 00W

54 00N
160 00W



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Figure 2.--Distribution and relative abundance by weight (kg/ha) of Pacific cod during the 1981 cooperative NWAFC-IPHC trawl survey in the eastern Bering Sea.

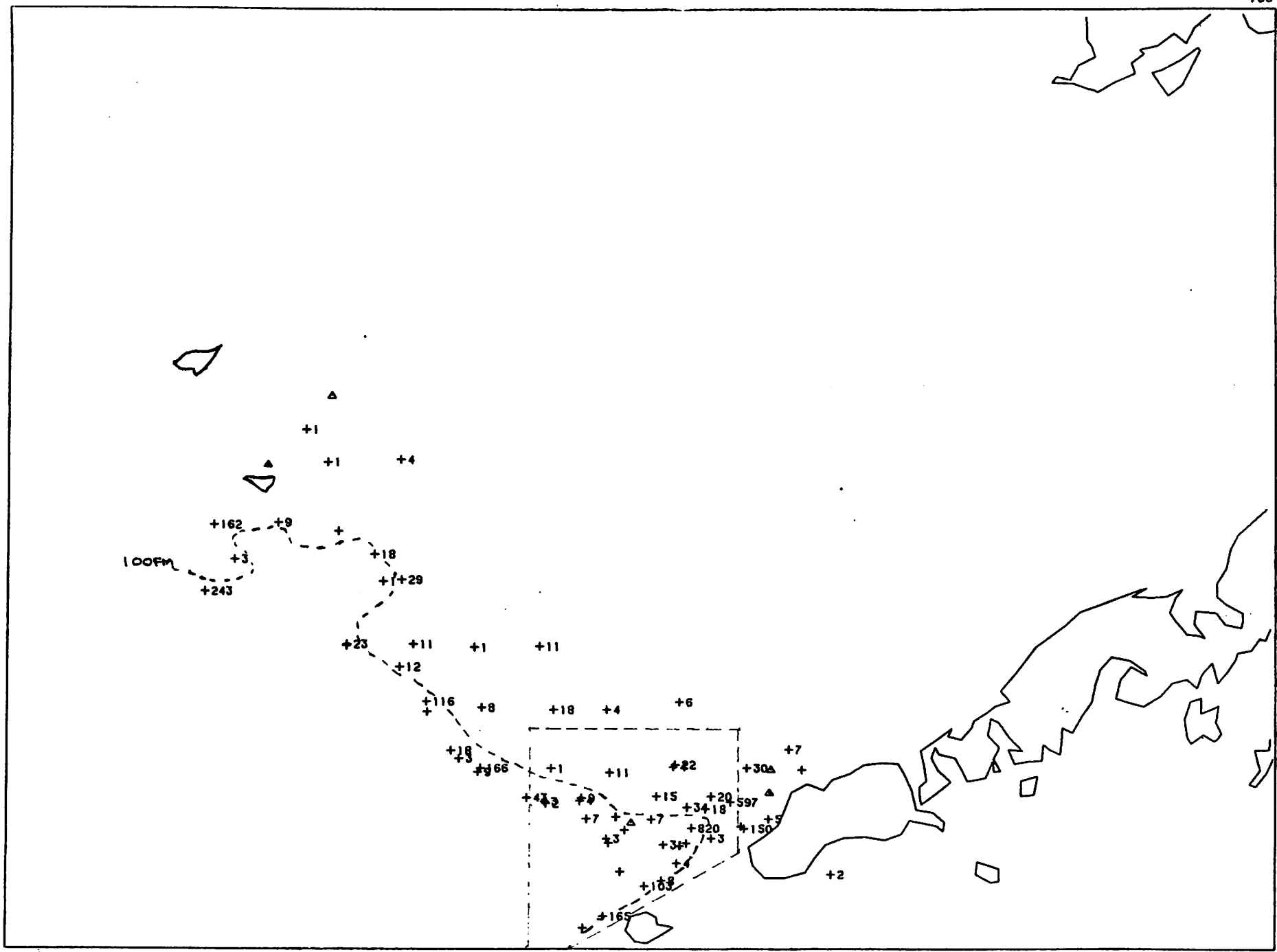


Figure 3.--Distribution and relative abundance by weight (kg/ha) of walleye pollock during the 1981 cooperative NAWFC-IPHC trawl survey in the eastern Bering Sea.

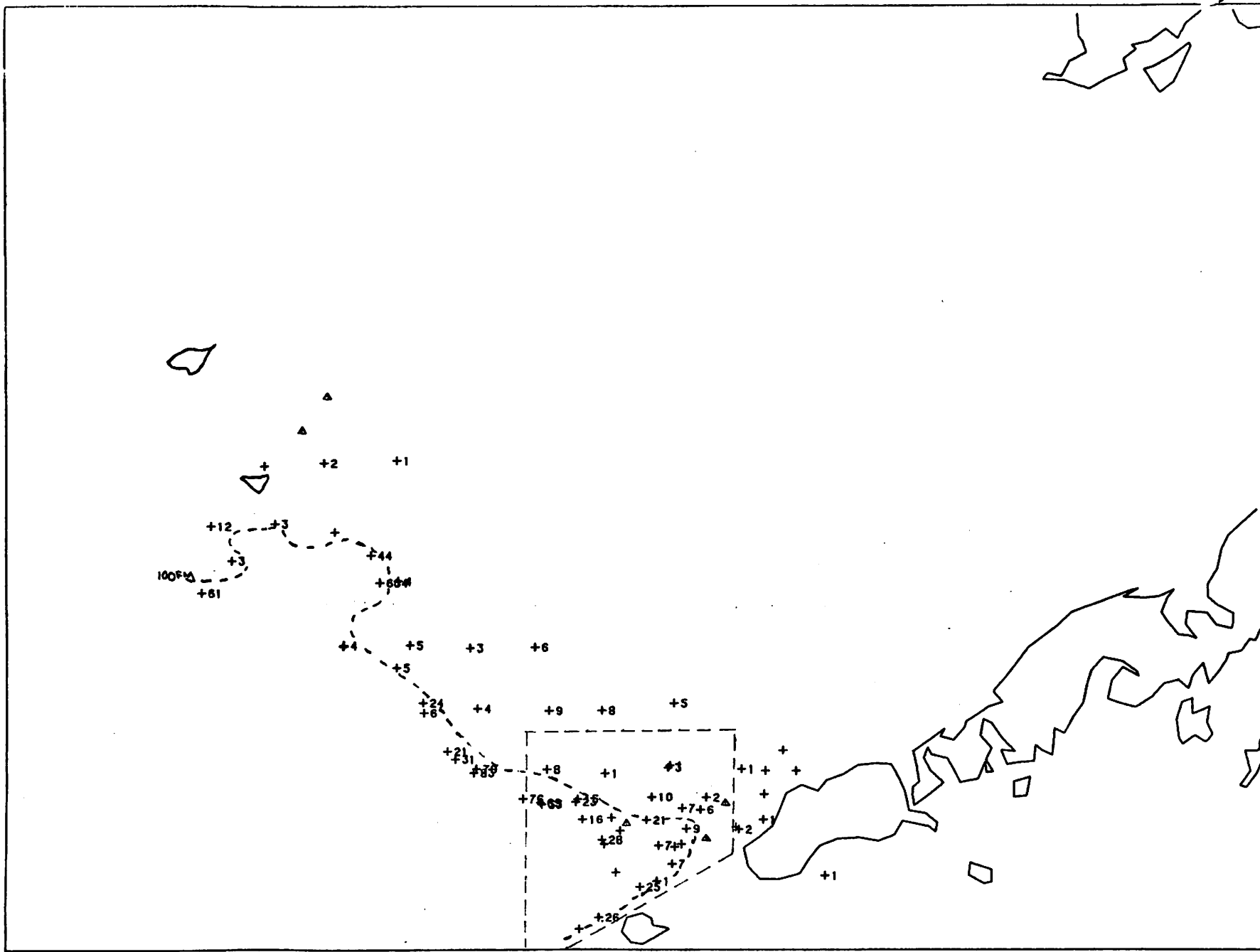


Figure 4.--Distribution and relative abundance by weight (kg/ha) of arrowtooth flounder during the 1981 cooperative NAWFC-IPHC trawl survey in the eastern Bering Sea.

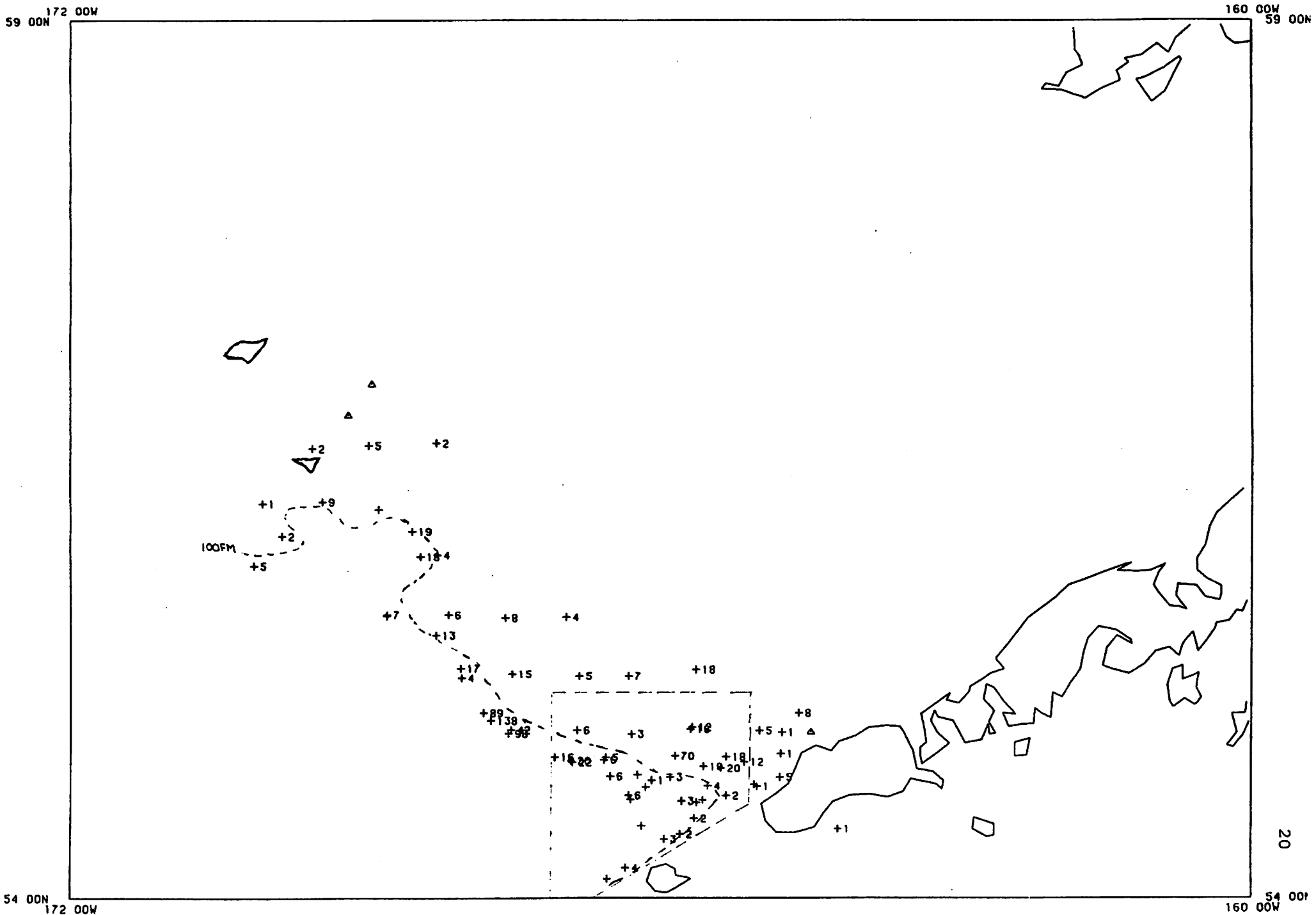


Figure 5.--Distribution and relative abundance by weight (kg/ha) of Pacific halibut during the 1981 cooperative NWAFC-IPHC trawl survey in the eastern Bering Sea.

Appendix 3

CREATION OF A UNITED STATES FISHING SANCTUARY IN THE
BERING SEA/ALEUTIANS REGION AS PROPOSED BY BART EATON--EFFECT ON FOREIGN
CATCHES AND CATCH DISTRIBUTION

by

Loh-Lee Low and Ren Narita

Northwest and Alaska Fisheries Center
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
2725 Montlake Boulevard East
Seattle, WA 98112

March 1982

CREATION OF A UNITED STATES FISHING SANCTUARY IN THE
BERING SEA/ALEUTIANS REGION AS PROPOSED BY BART EATON--EFFECT ON FOREIGN
CATCHES AND CATCH DISTRIBUTION

INTRODUCTION

A fishing sanctuary in the Bering Sea for the exclusive use by the developing domestic groundfish fishery was proposed by Council member Bart Eaton to the North Pacific Fishery Management Council at the December 1981 meeting. This sanctuary would lie just north of Unimak Pass (Figures 1 and 2, designated as Sanctuary Area A) and incorporate parts of the following existing sanctuaries:

- 1) The southeast corner of the Winter Halibut Savings area, closed 12/1-6/1;
- 2) the Northwest corner of Davidson Bank, closed year-round; and 3) the southwest corner of the Bristol Bay Pot Sanctuary, closed year-round. To evaluate the possible effects of this closure on foreign fisheries, the Bering Sea time-area closure model (Low et al. 1981)^{1/} was queried to determine the potential resource available from this area and how the catch by the foreign fishery would be redistributed if displaced from the area.

Since the developing domestic groundfish fishery is primarily interested in harvesting Pacific cod, the model was also used to evaluate possible effects of a larger U.S. fishery sanctuary that would extend the proposed Sanctuary Area A northward by 30 minutes latitude and westward to the western boundary of the present Winter Halibut Savings Area (Figure 2, designated as Sanctuary Area B).

This paper reports only on the possible redistribution of groundfish and prohibited species catches by the foreign fisheries as a result of their exclusion from a sanctuary area. When an area is closed, it is assumed that the

^{1/} Low, L., B. Gibbs, and R. Narita. 1981. Bering Sea time area closure model. In Reducing the incidental catch of prohibited species by foreign groundfish fisheries in the Bering Sea. North Pacific Fishery Management Council. Council Doc. 13.

foreign nations will increase their fishing effort outside the closed area and/or period to make up their "lost" catches in a manner that is directly proportional to the historical (1977-80) fishing pattern in the open areas. The simulation on how the effort will be increased and the resultant pattern of catches by amount, species, area, and time period area evaluated by the Bering Sea time-area closure model (Low et al., 1981)^{1/} that was previously used to determine the effect of time-area closures associated with the drafting of the FMP Amendment #3 on prohibited species.

The paper, therefore, reports on possible effects on foreign groundfish and prohibited species catches but not the effects on domestic fisheries nor the potential catches of prohibited species by domestic vessels that would operate in the sanctuary area.

EFFECT ON GROUND FISH CATCH

Sanctuary Area A (as proposed by Bart Eaton)

Groundfish catches taken by foreign fisheries inside the proposed Sanctuary Area A during 1977-80 are given in Table 1. Total groundfish caught in the area averaged 11% (137,600 t) of the Bering Sea/Aleutian catch during 1977-80. Of these catches, the dominant species were pollock (121,600 t, 88%); flatfishes (5,800 t, 4%); Pacific cod (5,100 t, 4%); Pacific ocean perch (400 t, 0.3%); and sablefish (320 t, 0.2%).

Table 1 also summarizes the model calculations of catches inside and outside Sanctuary Area A for (a) a year-round closure, and (b) a 6-month June-November closure. The model shows that despite a year-round closure, groundfish quotas would most likely be achieved. No nation seems to be in serious danger of a premature closure of its entire fishery due to an early achievement of a quota species. If it does, it is assumed that the nation can adjust its fishing

pattern in order to avoid early quota achievement of a minor species. The results of a half-year closure from June through November are essentially the same because of the winter Halibut Savings Area closure.

Sanctuary Area B (Expanded Proposed Area of Bart Eaton)

Groundfish catches taken by foreign fisheries inside the expanded Sanctuary Area B during 1977-80 are given in Table 1. The total catch averaged 16% (204,900 t) of the Bering Sea/Aleutians catch during 1977-80 and are, therefore, not much higher than those taken in the smaller Sanctuary A. The dominant species composition of the catch was pollock (180,500 t, 88%); flatfishes (10,200 t, 5%); Pacific cod (7,400 t, 4%); Pacific ocean perch (550 t, 0.3%); and sablefish (680 t, 0.3%). The data indicate that more Pacific cod were taken in the expanded Sanctuary B area (7,400 t versus 5,100 t).

Table 1 also summarizes the model calculations of catches inside and outside Sanctuary Area B for (a) a year-round closure, and (b) a 6-month June-November closure. The results show that despite a year-round or 6-month closure it is likely that groundfish quotas will still be achieved. No nation seems to be in serious danger of a premature closure of its entire groundfish fishery due to an early achievement of a quota species. If it does, it is assumed that the nation can adjust its fishing pattern in order to avoid early quota achievement of a minor species.

EFFECT ON PROHIBITED SPECIES CATCH

Sanctuary Area A (as proposed by Bart Eaton)

The average incidental catch of prohibited species by the foreign fisheries in the entire Bering Sea/Aleutians region were 3,400 t of Pacific halibut, 1.6 million king crab, 17.1 million Tanner crab, and 96,500 salmon, as shown in Table 2. Finer details of this table are given in Table 3.

Within the proposed Sanctuary Area A, the catch of prohibited species was 374 t of halibut, 74,500 king crab, 750,000 Tanner crab, and 5,300 salmon. If this Area was vacated by the foreign fleet, it is assumed that the fleet will catch its groundfish outside this area and, therefore, intercept prohibited species in the process.

If the Sanctuary Area A is closed the entire year, the resultant pattern of prohibited species catches would be: 2% decrease for halibut (75 t), 2% increase for king crab (27,300 crabs), 5% increase for Tanner crab (834,000 crabs), and a substantial 20% increase for salmon (19,200 salmon).

A 6-month June-November closure would have essentially the same result as the year-round closure.

Sanctuary Area B (Expanded Proposed Area of Bart Eaton)

Within the expanded Sanctuary Area B, the catch of prohibited species was 475 t of halibut, 97,800 king crab, 1.3 million Tanner crab, and 16,800 salmon (Table 3). If this Area was closed to the foreign fleet for the entire year, the anticipated change in prohibited species catches is: 1% decrease for halibut (-33 t), 4% increase for king crab (57,600 crab), 6% increase for Tanner crab (1 million crab), and 14% increase for salmon (13,300 salmon). If the closure was for 6 months (June through November), the changes in prohibited species catches are almost similar.

CONCLUSION

If a fishing sanctuary for the exclusive use by the developing domestic groundfish fishery is desired, the sanctuary area proposed by Council member Bart Eaton is a good choice. The foreign fisheries took 11% of its groundfish catch during 1977-80 in this area and if they are excluded from the area, it

appears that they can make up their groundfish catches elsewhere in the Bering Sea. There is a potential 20% increase of salmon incidental catch, but this presumably would not take place because of the prohibited species amendments.

If the foreign fisheries were excluded from the Bart Eaton-proposed area, the domestic fisheries would be assured a good cod fishing ground where more than 5,000 t of cod were taken previously. More cod are presumably available for harvest by the domestic vessels because they can operate in the portions of the Winter Halibut Savings Area and the Bristol Bay Pot Sanctuary Area that are excluded to foreign fishermen.

If the Bart Eaton-proposed area was extended northward and westward to include more cod grounds, the impact on foreign fisheries would be more adverse. The foreign fisheries would have to make up 16% of its total catch in the rest of the Bering Sea. It would virtually eliminate opportunities for foreign longliners to operate along the Aleutians. However, this expanded area yielded 7,400 t of cod to the foreign fisheries as opposed to 5,100 t in the smaller, Bart Eaton-proposed area. Therefore, the domestic fisheries may benefit from a larger cod ground. Also, interception of salmon will be lowered from a 20% increase to 14% increase if the Expanded Sanctuary Area is created instead of the smaller Bart Eaton-proposed area.

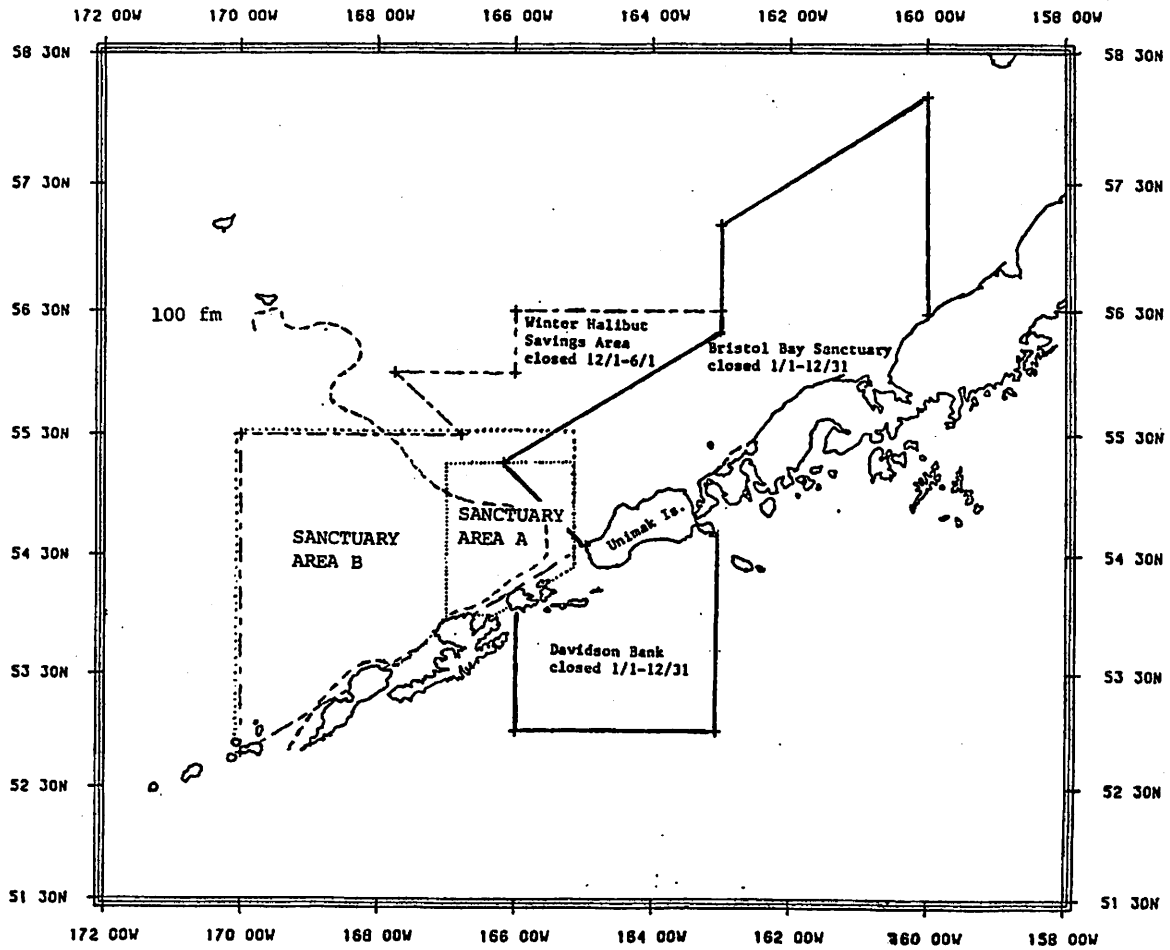


Figure 1. Location of proposed sanctuaries in relation to existing restricted areas.

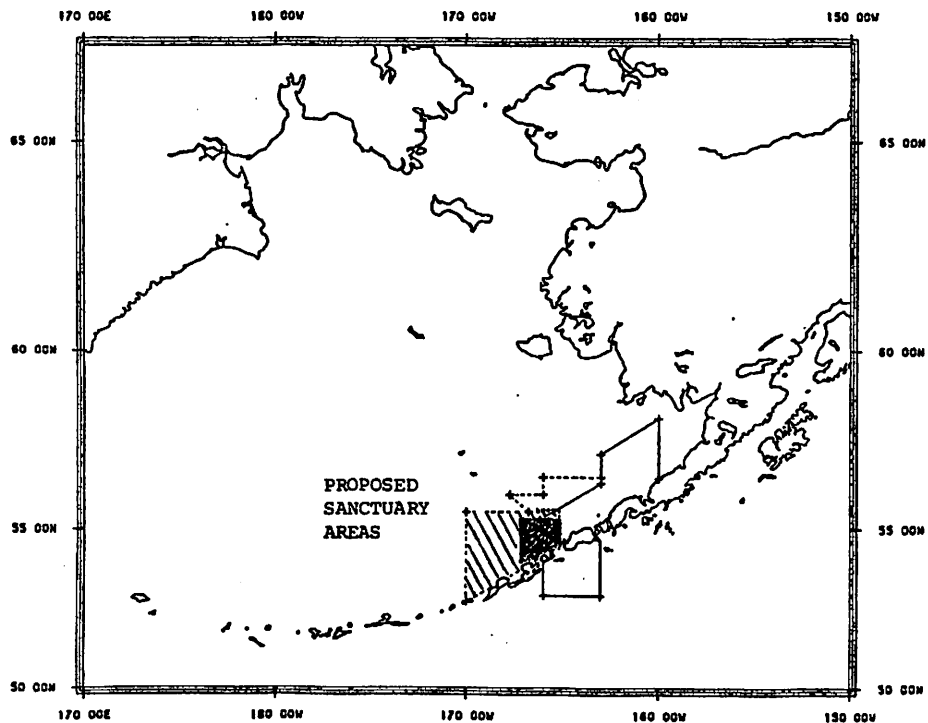


Figure 2. Location of proposed sanctuaries in the Bering Sea/Aleutian region.

Table 1.--Foreign catch of groundfish in the Bering Sea/Aleutian region, 1977-80 averaged. Amount taken (t) inside and outside of Sanctuary Area.

Year	Area	Total groundfish (t)	Pollock	Pacific cod	Yellowfin sole	Turbots	Other Flounders	Sablefish	Atka Mackerel	POP	Rockfish	Others
A. Sanctuary Area A (as proposed by Bart Eaton)												
(1) No closure												
1977-	In	137,606	121,636	5,117	1,436	726	3,670	320	1,319	421	110	2,857
80	Out	1,129,123	818,274	33,426	85,818	9,664	76,566	2,372	22,258	6,573	10,364	55,780
	Comb.	1,266,729	939,910	38,543	87,253	10,390	80,236	2,691	23,577	6,994	10,474	58,637
(2) Year-round closure												
1977-	In	0	0	0	0	0	0	0	0	0	0	0
80	Out	1,266,729	938,566	37,160	89,749	10,310	80,998	5,844	22,953	7,135	10,674	59,194
(3) June-November closure												
1977-	In	1,687	104	1,036	0	21	239	148	0	0	2	128
80	Out	1,265,042	1,273,993	36,654	89,745	10,291	80,437	5,717	22,953	7,135	10,673	59,086
	Comb.	1,266,729	1,274,097	37,690	89,745	10,312	80,676	5,865	22,953	7,135	10,675	59,214
B. Sanctuary Area B (expanded area)												
(1) No closure												
1977-	In	204,893	180,463	7,394	2,178	1,102	6,913	684	1,379	544	208	4,092
80	Out	1,061,836	759,446	31,149	85,075	9,289	73,323	2,007	22,198	6,450	10,265	54,545
	Comb.	1,266,729	939,910	38,542	87,253	10,391	80,236	2,691	23,577	6,994	10,473	58,637
(2) Year-round closure												
1977-	In	0	0	0	0	0	0	0	0	0	0	0
80	Out	1,266,729	935,511	37,231	91,363	10,254	80,439	5,757	23,082	7,331	10,863	60,092
(3) June-November closure												
1977-	In	3,198	475	1,406	0	43	575	316	0	28	6	308
80	Out	1,263,531	934,918	36,336	91,353	10,219	79,494	5,452	23,082	7,388	10,841	59,827
	Comb.	1,266,729	935,393	37,742	91,353	10,262	80,069	5,768	23,082	7,416	10,847	60,135

Table 2.--Incidental catch of prohibited species by foreign fisheries associated with Sanctuary Areas A and B in Bering Sea/Alutians region, 1977-80 averaged.

	Halibut (t)	King crab (nos.)	Tanner crab (nos.)	Salmon (nos.)
<u>I. SANCTUARY AREA A (as proposed by Bart Eaton)</u>				
Within sanctuary area	374	74,476	749,315	5,287
Entire Bering Sea	3,353	1,562,819	17,142,055	96,522
<u>Change due to closure for 12 months</u>				
Percentage change	-2%	+2%	+5%	+20%
Amount of change	-74	+27,281	+833,744	+19,156
<u>Change due to closure for 6 months (June-November)</u>				
Percentage change	-1%	+2%	+5%	+20%
Amount of change	-24	+24,888	+831,612	+19,012

<u>II. SANCTUARY AREA B (expanded area)</u>				
Within sanctuary area	475	97,829	1,311,889	16,811
Entire Bering Sea	3,353	1,562,819	17,142,055	96,522
<u>Change due to closure for 12 months</u>				
Percentage change	-1%	+4%	+6%	+14%
Amount of change	-33	+57,578	+1,046,906	+13,319
<u>Change due to closure for 6 months (June-November)</u>				
Percentage change	+1%	+3%	+6%	+14%
Amount of change	+18	+47,322	+1,045,358	+12,984

Table 3.--Foreign incidental catch of prohibited species in the Bering Sea/Aleutian region, 1977-80 averaged. Amount taken (t) inside and outside of Sanctuary Area.

Year	Area	Total groundfish (t)	Halibut (t)	King crab (no.)	Tanner crab (no.)	Salmon (no.)
A. <u>Sanctuary Area A (as proposed by Bart Eaton)</u>						
(1) <u>No closure</u>						
1977-	In	137,606	374.5	74,477	749,313	5,287
80	Out	1,129,123	2,978.0	1,488,342	16,392,743	91,235
	Comb.	1,266,729	3,352.5	1,562,819	17,142,055	96,522
(2) <u>Year-round closure</u>						
1977-	In	0	0.0	0	0	0
80	Out	1,266,729	3,277.9	1,590,100	17,975,797	115,678
(3) <u>June-November closure</u>						
1977-	In	1,687	64.7	4	351	2
80	Out	1,265,042	3,264.4	1,587,703	17,973,315	115,532
	Comb.	1,266,729	3,328.1	1,587,707	17,973,666	115,534
B. <u>Sanctuary Area (expanded area)</u>						
(1) <u>No closure</u>						
1977-	In	204,893	474.8	97,829	1,311,889	16,811
80	Out	1,061,836	2,877.8	1,464,990	15,830,166	79,711
	Comb.	1,266,729	3,352.5	1,562,819	17,142,055	96,522
(2) <u>Year-round closure</u>						
1977-	In	0	0.0	0	0	0
80	Out	1,266,729	3,320.0	1,620,397	18,188,960	109,841
(3) <u>June-November closure</u>						
1977-	In	3,198	77.0	1,577	2,887	186
80	Out	1,263,531	3,294.7	1,608,564	18,184,527	109,320
	Comb.	1,266,729	3,371.3	1,610,141	18,187,414	109,506

Appendix 4

Estimated Joint Venture Processing and Domestic Annual Processing for 1981 and 1982.
(Data submitted by Sue Salvesson)

A. Joint Venture Processing

Nation/Species	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Total	1982*
<u>Japan</u>												
Pollock			1,762.4		202.7							
Pacific cod			8.7		8.7							
YFS			8.9		3.9							
Sablefish			0.8		0.4							
Total Catch			1,784.4		217.5						2,001.9	4,000
<u>German</u>												
Pollock						867.8	255.3	41.8				
Pacific cod						70.8	312.1	75.1				
Sablefish						1.0	0.3	-				
Total Catch						967.0	611.9	121.8			1,700.7	3,400
<u>Korean</u>												
Pollock			67.5	764.4	589.1	997.2	3,662.3	2,066.5	2,443.9			
Pacific cod			2.0	114.7	0.7	0.4	156.1	85.9	10.0			
YFS			0.2	528.9	1.1	-	-	4.3	0.4			
Sablefish			-	-	-	-	-	8.3	2.5			
Herring			-	-	-	-	71.9	56.6	-			
Total Catch			69.7	1,785.2	614.3	998.1	3,890.7	2,234.6	2,461.7		12,054.8	24,100
<u>Polish</u>												
Pollock					84.0	1,177.3	709.1	253.3		22.0		
Pacific cod					-	1.5	0.1	0.9		1.1		(probably
Total Catch					84.0	1,179.7	709.8	254.2		23.1	2,250.8	0)
<u>Soviet</u>												
Pollock	848.4	5,313.9	7,681.5	17.2	195.7	199.9	84.1	111.1				
Pacific cod	7.9	31.1	32.8	817.9	2,415.5	925.2	849.1	1,629.2				
Total Catch	856.3	5,345.0	7,714.3	835.1	2,611.2	1,125.1	933.2	1,740.3			21,160.5	15,000**
<u>All Nation</u>												
Pollock	848.4	5,313.9	7,749.0	2,544.0	1,071.5	3,242.2	4,710.8	2,472.7	2,443.9	22.0	30,418.4	
Pacific cod	7.9	31.1	34.8	941.3	2,424.9	997.9	1,317.4	1,791.1	10.0	1.1	7,557.5	
YFS			0.2	537.8	5.0	-	-	4.3	0.4	-	547.7	
Sablefish			-	0.8	0.4	1.0	0.3	8.3	2.5	-	13.3	
Herring			-	-	-	-	71.9	56.6	-	-	128.5	
Total Catch	856.3	5,345.0	7,784.0	4,405.2	3,527.0	4,269.9	6,145.6	4,350.9	2,461.7	23.1	39,168.7	46,500

*Assuming double 1981; **No rate increase - start in April

Appendix 4 (cont.)

B. Domestic Annual Processing

Source	Expected no. boats 1982	Million 1981 production	Pounds expected 1982 production
Alaska Shell (Floater)	10	6.0	10.0
Trans Pacific (Catcher/Processor)	1	15.0	20.0-25.0
Sea Pro/Sea Freeze (Shore plant)	?	No info	20.0
Sea Alaska (Floater)	12	No info	20-25.0
Trident Seafoods (Shore plant)	12	No production	20.0
Jangaard (Floater & Shoreplant)	15	10.0	20.0-25.0
Universal Seafood (Floater)	6	No info	20.0
Clipperton Fisheries (Floater)		No production	0.5-1.0 (shakedown only)
Sea West (Catcher processor)	1	No production	"will only use Eaton FDZ if foreign trawlers excluded"
Pelican Cold Storage		No production	No production
Sea Klipp (Shore plant)		----- no information -----	

Summary	57+		130.5-146.0 million pounds or 60,000-66,000 mt

Agenda Item C-3


Chairman Clem Tillion
North Pacific Fishery Management Council
P.O. Box 3136 DT
Anchorage, Alaska 99510


Chairman Clem Tillion:

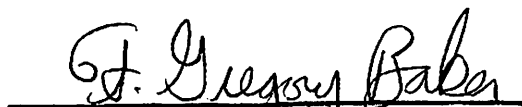
It has come to the attention of the below signed organizations that that portion of the ammendment #1 to the Bering Sea and Aleutian Island Groundfish Plan regarding domestic trawling and its effect on halibut in the Pot Sanctuary area was thrown out by the Commerce Department and the Council due to the complexity of writing the restrirction. The pot sanctuary area is very important as a halibut nursery ground as well as an area of high abunance of tanner and king crab. The below signed organizations request that the following two proposals be sent out for council action as ammendments to the Bering Sea Groundfish Plan.

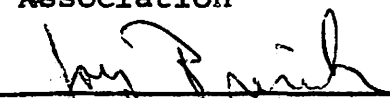
1. Trawling will be permitted in the Pot Sanctuary with Pelagic gear only.

2. A pelagic gear restriction will be enforced in the Pot Sanctuary area if the incidental catch of halibut exceeds .6 % or the incidental catch of crab exceeds .8 % (tanner or king).


Fishing Vessel Owners Association.


Petersburg Fishing Vessel Owners Association


Alaska Longline Fishermens Association


Deep Sea Fishermens Union of the Pacific