

# North Pacific Fishery Management Council

Clement V. Tillion, Chairman  
Jim H. Branson, Executive Director

Mailing Address: P.O. Box 3136DT  
Anchorage, Alaska 99510

Suite 32, 333 West 4th Avenue  
Post Office Mall Building



Telephone: (907) 274-4563  
FTS 265-5435

February 19, 1979

## MEMORANDUM

To: Council, Scientific and Statistical Committee, and Advisory Panel

From: Jim H. Branson *Mark*  
Executive Director

Subject: Proposed Gulf of Alaska FMP Amendments

### ACTION REQUIRED:

Listed below are three proposed amendments to the Gulf of Alaska Groundfish FMP which have been carried forward from previous meetings: Approval or Disapproval is required at this time.

1. *A proposal requesting the Davidson Bank area not be a prohibited fishing area for longlining. (SEE Options A and B)*

Proposed by: North Pacific Longline Gillnet Association, June 1978

Comments: Davidson Bank has been closed to trawling for all or part of the year by bilateral agreements with Japan, U.S.S.R., and Poland for several years. The PMP closed the area to all foreign trawling while the FMP closed the area to all foreign fishing.

This proposal has been kicking around for some time and has recently been modified as follows:

OPTION A: *Exempt foreign longliners from the Davidson Bank closure during half of the fishing year (October 1 through March 31), OR*

OPTION B: *Exempt foreign longliners from the Davidson Bank closure but limited to two the number of such vessels operating in the area at any given time for all (foreign) fisheries.*

Comments: These options are discussed in a letter from Paul MacGregor to Clem Tillion (14 Feb 1979). The matter has also been reviewed by the GOA Management Plan Drafting Team in Seattle 12-16 Feb.1979. Bert Larkins will have the report.

2. *Allow a directed foreign longline fishery for Pacific cod between 157° West longitude and 140° West longitude and landward of the appropriate 400/500 meter isobath during the offseason for U.S. halibut fishermen.*

Proposed by: North Pacific Longline Gillnet Association, November 1978.

Comments: The Advisory Panel has rejected the proposal on the basis of halibut conservation arguments and potential gear conflicts.

The proposal was reviewed by the GOA Groundfish Management Plan Drafting Team in Seattle 12-16 Feb. 1979. Their report is expected by meeting time.

3. *Increase Atka mackerel OY in the Gulf of Alaska by 2,000 metric tons.*

Comments: The Management Plan Drafting Team believed that the current zero OY (and TALFF) for Atka mackerel in the southeast fishing area is unwarranted. This requested increase is well below the estimated MSY of 33,000 metric tons which was conservatively based on the historic Soviet catch in the western portion of the Gulf only.

If the increased amount were apportioned to the newly combined Yakutat-Southeast area and designated for incidental catch only, it would allow normal trawl fisheries in that area.

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If the proposed... Initial... and potential... gain...  
Initial... and potential... gain...  
Initial... and potential... gain...

MUNDT, MacGREGOR, HAPPEL, FALCONER & ZULAUF

ATTORNEYS AT LAW

JAY H. ZULAUF  
JAMES C. FALCONER  
HENRY EDWARD HAPPEL, III  
WM. MacGREGOR  
J. CA. MUNDT

BANK OF CALIFORNIA CENTER  
SUITE 1230  
SEATTLE, WASHINGTON 98164  
206-824-5950

February 14, 1979

Clement V. Tillion, Chairman  
North Pacific Fishery  
Management Council  
Post Office Box 3136DT  
Anchorage, Alaska 99510

Re: Fishery Management Plan for Gulf of  
Alaska Groundfish - Davidson Bank

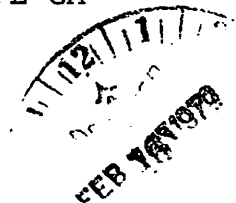
Dear Mr. Tillion:

At the January meeting of the North Pacific Fishery Management Council (the "Council") our clients, the North Pacific Longline-Gillnet Association (the "NPL-GA") and several members of the Advisory Panel proposed to the Council two alternative compromise solutions to the question of whether Davidson Bank should be reopened to foreign long-lining. Those proposals, both of which were designed to minimize the possibility of gear conflicts between U.S. and foreign vessels, were as follows:

Option 1: Exempt foreign longliners from the Davidson Bank closure during half of the fishing year (October 1 through March 31); or

Option 2: Exempt foreign longliners from the Davidson Bank closure, but limit to two (2) the number of such vessels operating in the area at any given time for all fisheries.

At the last meeting, Mr. Bob Alverson of the Advisory Panel advised the Council that, although both options were acceptable, the U.S. fishermen had a preference for Option #2. That preference has been reaffirmed by Mr. Alverson during follow-up meetings here in Seattle over the past several weeks. The purpose of this letter is to inform you and the other members of the Council that the NPL-GA also wishes to express a preference for Option #2.



Clement V. Tillion  
February 14, 1979  
Page Two

MUNDT, MacGREGOR, HAPPEL,  
FALCONER & ZULAUF

The NPL-GA's decision to express a preference for Option #2 was reached after careful consideration of both options and the operational implications that each would have for the members of the Association. After serious consideration, it became clear that it would be simply too difficult for the 22 Japanese longline vessels to organize a coordinated fishing effort around a six month closure. This was particularly true when problems associated with the mid-season reallocation of reserves were considered.

Although option #2 may involve some operational difficulties as well, the NPL-GA members do not view those difficulties as being insurmountable. They are concerned, however, about the possibility of future allocations in the Davidson Bank area being given to foreign nations that have not conducted traditional fisheries in that part of the Gulf of Alaska. They would, therefore, request the Council and the National Marine Fisheries Service to do everything in their power to preserve and protect traditional foreign fisheries when making future area allocations among the various foreign fishing nations that fish or will be fishing in the Gulf of Alaska.

Given the fact that both the NPL-GA and Mr. Alverson's group have agreed on a compromise solution to the Davidson Bank issue, we respectfully request the Council to adopt Option #2 and to amend the FMP to reopen Davidson Bank to two foreign longline vessels year-round.

Sincerely,

MUNDT, MacGREGOR, HAPPEL,  
FALCONER & ZULAUF

  
Paul MacGregor

WPM:vm

cc: All Council Members  
Mr. Bob Alverson  
Mr. A. W. Boddy  
Mr. Jim Branson  
Mr. Mark Hutton  
Mr. Raymond Lewis  
Mr. Harold Lokken  
Mr. Keith Specking  
Mr. Scott Stafne



# HOKUYO HAENAWA SASHIMI KYOKAI

NORTH PACIFIC LONGLINE-GILLNET ASSOCIATION

CABLE ADDRESS:  
"HAENAWAKYOKAI" TOKYO  
TELEX: 232-2620 NPLA J

ADDRESS: ZENKEIREN BLDG.  
2-7-2, HIRAKAWACHO,  
CHIYODA-KU, TOKYO JAPAN.  
PHONE: 264-5671

Feb. 20 1979

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

Re: Fishery Management Plan for Gulf of  
Alaska Groundfish - Pacific Cod Fishery  
inside 500 m between 157°W and 140°W.

Dear Mr. Tillion:

We understand that the primary objectives of FCMA and FMP are for one thing conservation of halibut. In this regard we wish to draw the Council and AP and SSC members' attention to the fact that foreign longlining is operated only during off-season of US halibut fishery in the area west of 157°W and so will it be in the area eastward of 157°W for its directed fishery for Pacific Cod.

We are confident that our longlining is the best suited method for conservation purpose of the groundfish resources of the Gulf of Alaska.

We believe it is important to remember that our skippers keep reporting the presence of vessels with other gear type always landward of where the longliners happen to be fishing.

Although what we have outlined above are not the scientific evidence, these considerations are essential in dealing with fishery matters for reasonable and good management. The Council and AP and SSC members are respectfully requested to give full and fair considerations on this issue.

With best regards,

Respectfully,

*H. Nakamura*  
H. Nakamura, Vice Chairman

HN:nt



PDT Recommendations Re Bering Sea/Aleutian  
Groundfish FMP 1/

I. Area closures

- A. Pot sanctuary -- add "Pot Storage Area" year-round trawl closure to the north of the "Pot Sanctuary"
- B. Winter halibut savings area -- no foreign longlining landward of 500 m during winter. During 1978, foreign longliners had a total catch in Area I during winter of 4015 mt and an incidental halibut catch rate in shallow water 24.17 halibut/mt of total catch. Therefore, total halibut catch would have been 97,000 halibut and, with a 50 percent mortality, the total kill would have been about 48,500 halibut. The incidence rate during summer is 0.13; therefore, that same amount of total catch taken during the summer would result in a halibut kill of only  $4015 \times 0.13 \times 0.5 = 261$  halibut. Consistent with restriction on trawling.
- C&D. Aleutian Islands -- see attached figure and table.
- E. Exempt longliners from national closure when any allocation is reached -- NO; should be up to each foreign government to look after its various fleets. Otherwise, landbased dragnet fleet should not be affected by mothership catches, etc.

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1/  
Items I-VII keyed to attached summary.

- F. Salmon-savings closure -- greatest salmon incidence is during January-April in Area II but detailed incidence data by  $\frac{1}{2}^{\circ} \times 1^{\circ}$  areas will not be available until mid-March. This might mesh with Herring PDT's recommendation for herring-savings closure.
- II. OY -- no changes.
- III. Reserve -- no changes.
- IV. DAH -- Regional Office resurvey of processors should allow reevaluation of all DAH's (the team questions especially the 10,000 mt DAH for pollock)
- V. Allocate TALFF among gear types -- no comment
- VI. Domestic reporting -- the PDT agrees that crab-bait trawlers and any other catcherboat that does not deliver its catch to a processor, should be required to submit completed fish tickets. With regard to statistical reporting areas, the PDT recommends that foreign fishermen continue reporting by  $\frac{1}{2}^{\circ} \times 1^{\circ}$  units but, if domestic fishermen will cooperate, they report by ADFG depth-based areas (this affects only the Aleutians and Alaska Peninsula as the ADFG areas in the remainder of the Bering Sea are  $\frac{1}{2}^{\circ} \times 1^{\circ}$  units. This will give extra percision in the inshore areas where domestic fishermen will likely operate and where small area-to-area differences may be significant.



VII. Limited entry -- the PDT agrees that this section should be changed to say that while no limited entry need be applied in 1980, a plan for limited entry should be developed and implemented during the period of domestic fishery development rather than after such development is complete (or "overcomplete").

Summary of Public Comments on BS/AI Groundfish FMP

I. Area closures .

A. Pot sanctuary

1. As in FMP - FVOA

B. Winter halibut-savings area

1. Trawling, foreign

- a. As in FMP - FVOA

- ~~b. Less restrictive - KMDC/Deyanny~~

2. Trawling, domestic

- a. As in FMP-FVOA

- b. Less restrictive - KMDC/Deyanny*

3. Longlining, foreign

- a. As in FMP-FVOA

- b. Less restrictive - NPLGA, JFAssoc., JFA

4. Longlining, domestic

- a. Less restrictive - FVOA

C. Aleutian longline sanctuary

1. In favor - FVOA, NPLGA, ALFA, ILA

2. Against - Japan Trawlers Ass'n, Japan Hokuten Ass'n,  
Japan Fish. Ass'n

D. Aleutian 3-12 zone

1. Open to foreign fishing - NPLGA, JFA

E. Area closed to all fishing when any species quota taken

1. Exempt foreign longlines - NPLGA

F. Establish salmon-savings trawl closure(s) - DeMantle & Foster

II. OY

- A. Pollock, increase -- Japan Fish. Ass'n., Japan Trawlers Ass'n, JFA
- B. POP and rockfishes
  - 1. Increase - Japan Trawlers Ass'n, Japan Fish. Ass'n, JFA
  - 2. Set less than EY - FVOA
- C. Sablefish
  - 1. Increase - Japan Fish. Ass'n, JFA
  - 2. Set less than EY - FVOA
- D. Cod & flounders, increase - JFA
- E. Shrimp, establish OY of 600 mt - Japan Hakuten Ass'n
- F. Carry over unused portion to following year - Japan Fish. Ass'n.

III. Reserve

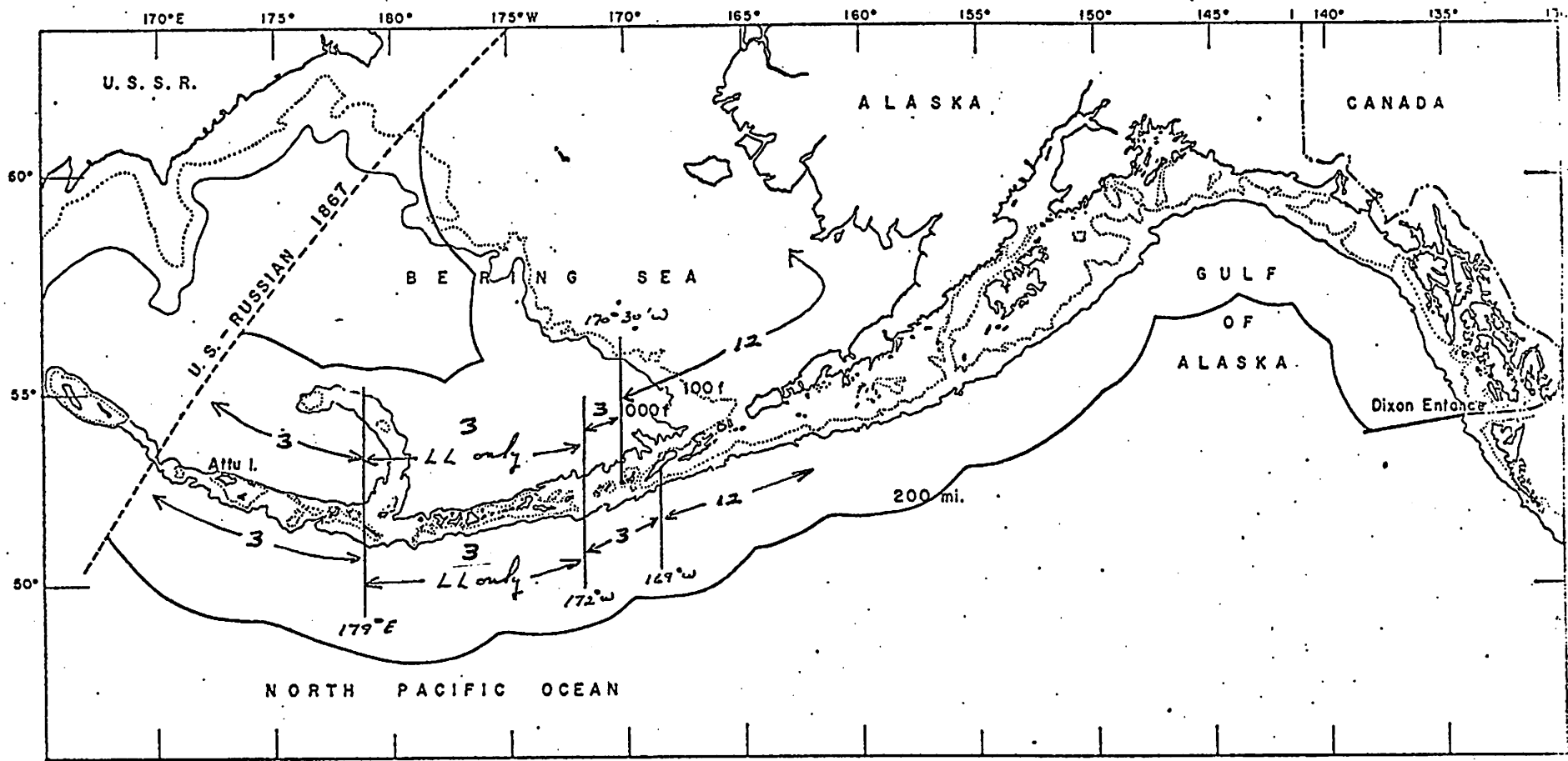
- A. Remove for all species - JFA
- B. Release 30% every 2 months - Japan Trawlers Ass'n
- C. Cod, increase at expense of DAH - NPLGA
- D. Sablefish, increase at expense of DAH - NPLGA

IV. DAH, reduce - JFA, NPLGA

V. TALFF, allocate among gear types - NPLGA

VI. Domestic reporting; require fish tickets for domestic crab-bait trawlers - Paz

VII. Limited entry; change to say not necessary in 1980 but a plan should be developed and implemented well before all foreign fishing is displaced - SSC



*Distance offshore closed to foreign fishing  
and longline sanctuary closed to foreign trawling  
(proposed by PDT 2/16/79)*

Aleutian Island groundfish catches (mt) within and outside proposed  
longline sanctuary -- 1977

Species	West of 179°E	179°E - 172°W	172°W - 170°W	Total
POP	3372	1558	1439	6369
Other rockfish	3974	1654	1324	6952
Pollock	3035	2056	2708	7799
Atka mackerel	18221	2686	13	20920
Cod	860	1296	1096	3252
Black cod	316	312	1217	1845
Greenland turbot	446	1378	603	2427
Arrowtooth flounder	1046	666	308	2020
Yellowfin sole	14	15	3	32
Rock sole	67	7	1	75
Flathead sole	5	4	23	32
Other flounders	466	247	219	932
Herring	4	3	6	13
Squid	881	560	627	2068
Other fish	8506	4621	3598	16725
 TOTAL	 41213	 17063	 13185	 71461
 % Aleutian Total of BS/Al Total	 57.7 4.3	 23.9 1.8	 18.5 1.4	 100.1 7.5

Gulf of Alaska Groundfish FMP -- PDT Comments

1. Foreign longlining in Davidson Bank area

- Halibut abundance is no higher in Davidson Bank than in Shumagin Area as a whole; therefore, halibut-savings is not an issue.
- Only purpose of Davidson Bank sanctuary is to preserve groundfish stocks for eventual use of domestic fishery, primarily those boats operating out of Sandpoint and Dutch Harbor.
- Domestic use of the area, to date, has been limited to a small amount of trawling for crab bait.
- The question of potential domestic use of the area vis-a-vis some limited use by foreign longliners should be resolved by the AP.

2. Foreign longlining landward of 400/500 m between 157°W. and 140°W.

a. Halibut-savings

- Average halibut incidence from U.S. observer data in Shumagin and Chirikof Areas (only areas where trawl and longline catches in shallow water can be compared) allows the following analysis:

	<u>Longline</u>	<u>Trawl</u>
No. halibut/mt of total catch	2.47	3.35
Assumed mortality of incidentally-caught halibut	50%	100%
No. halibut killed/mt of total catch	1.23	3.35
Ave. weight of halibut	3.36 kg	7.40 kg
No. halibut killed/mt of total catch, adjusted to 7.40 kg <sup>1/</sup>	0.83	3.35
Incidental kill ratio	1.00	4.04

1/ Approximate size at recruitment to setline fishery; 2 years for halibut to grow from 3.36 kg with natural mortality (M=0.20) acting over that period [(1.23 X 0.819) X 0.819].

Therefore, in the traditional foreign fisheries in the Gulf of Alaska, a trawl catch will result in a potential loss to the setline fishery of about 4 times as many halibut as would a similar longline catch,

If the entire cod reserve of 10,000 mt is allocated to foreign fishermen, the following table shows the likely impact on halibut of assigning that amount to either the trawl or longline fishery,

	<u>Foreign Longline</u>	<u>Foreign Trawl</u>
Cod catch	10,000	10,000
No. of halibut killed/mt of total catch (adjusted to 7.40 kg)	0,83	3,35
Total no. of halibut killed	8,300	33,500
Total weight of halibut killed (7.4 kg)	61,420 kg 135,124 lb	247,900 kg 545,380 lb
Difference		410,256 lb
Ex-vessel price (round wt) of halibut to U.S. fishermen (based on \$1.75/lb dressed wt)	\$ 1.31	\$ 1.31
Potential dollar loss to U.S. setline fishery	\$177,012	\$714,448
Difference		\$537,436

If the mortality of longline-caught halibut is less than 50 percent (as claimed by the Japanese Longline Association) the difference between the impact on halibut by longliners and trawlers would be more pronounced than indicated above. Furthermore, the above analysis is based on the average incidental halibut catch in the mixed-species trawl fishery. Although difficult to quantify, the ranges of halibut and cod appear to overlap, especially, in shallow water (<200 m) during summer (when foreign trawlers

may fish with bottom trawls); this could mean that trawl effort which targets more heavily on cod may result in an even higher incidental halibut catch rate than used in the above analysis and lead to a more pronounced difference in trawl and longline effects on halibut than indicated above (see attached table).

b. King crab

Although the Team has not yet been able to thoroughly review the available trawl survey information, there is reason to believe that during the summer (when foreign trawlers may use bottom trawls) king crab and cod distributions overlap to a substantial extent. Therefore, an increased trawl effort for cod (using bottom-tending trawls during summer in relatively shallow water) is likely to result in an increase in the incidental catch rate and catch of king crabs.

c. Trawl vs. longline for cod

Given the potential impacts on halibut and king crab of trawling for cod, the Council may conclude that foreign longlining should be permitted for cod landward of 400/500 m in that portion of the Gulf east of 140°W. If so, the Council might wish to also consider designating cod to be primarily a longline species, at least for the foreign fisheries, throughout the Gulf as it did earlier for that part of the Gulf west of 157°W.

Species composition data collected by U.S. observers during 1977, when cod were as abundant as they are now but the OY and TALFF were very low (6,300 and 2,300 mt compared to 34,800 and 19,300<sup>2/</sup>), indicates that cod made up only one percent of the

<sup>2/</sup> Includes reserve.



total trawl catch:

<u>Country</u>	<u>Vessel Class</u>	<u>Area</u>	<u>% Cod</u>
Japan	Sm. Tr.	Shumagin	3.5
		Chirikof	0.4
		Kodiak	1.5
		Yakutat	1.1
		Southeast	<0.1
	Lg. Tr.	Chirikof	3.8
		Kodiak	1.4
		Yakutat	0.6
		Southeast	0.2
USSR	Lg. Tr.	Shumagin	6.2
		Chirikof	7.2
		Kodiak	4.0
All	All	All	1.0

Therefore, it appears that a viable groundfish trawl fishery in the Gulf of Alaska requires only a small amount of its total catch, perhaps no more than 5 percent, to be cod.

The 1979 TALFF plus reserve of all species except sablefish and cod, totals 258,000 mt. For the trawl fishery to have 5 percent of its total catch be cod would require it to have 12,900 mt of cod available, leaving some 6,400 mt that could have been specified for foreign longliners at the beginning of 1979. However, 11,800 mt (original TALFF plus 2.5 percent of the reserve) of cod have already been allocated to foreign countries and are probably beyond Council control with regard to allocation among gear types. Furthermore,

of the remaining 7,500 mt of cod reserve, most of it would be required by the trawl fleets to balance the reserves of other groundfish species if they are released to TALFF.

If, however, any of the 15,500 mt of cod DAH is to be unused by the domestic fishery and transferred to TALFF, all of that amount could be specified for foreign longliners.

3. OY for Atka mackerel

During the January meeting, it was pointed out to the Council that as an artifact of the process for allocating Gulf-wide OY's to individual statistical areas, the OY (and TALFF) for Atka mackerel in the Southeast Area was zero. The fact that Japanese trawlers are taking small but significant amounts of that species in Southeast indicates that the zero OY and TALFF is unwarranted.

The Team recommends that the OY for Atka mackerel be increased by 2,000 mt (to 26,800 mt), all of which should be apportioned to the newly-combined Yakutat-Southeast Area and designated for incidental catch only (i.e., this additional amount should not be made the basis of a target fishery).

This increased OY is still well below the estimated MSY of 33,000 mt which, in turn, is believed to be a conservative value inasmuch as it was derived from Soviet fishery performance only in the western Gulf.

CRUISE 753 (Electricity + Temperature) Kodial  
 Depth ZONE 0-100 M  
 Season

HAUL NO.	Duration	COD		HALIBUT	
		wt.	No.	wt.	No.
20	.5	13.0	4		
21	.5	3.0	2		
22	.5	1.0	2	5.0	2
23	.5	4.0	5	8.0	1
42	.5	15.0	3	5.0	3
43	.5			5.0	3
53	.5	11.0	3	116.0	26
54	.5			36.0	14
Depth ZONE 101-200 M					
3	.5	40.0	11		
4	.5	81.0	35		
8	.5			.5	1
10	.5	4.0	2	2.0	1
15	.5	46.0	21		
16	.5	19.0	8	9.0	1
19	.5	35.0	6		
32	.5	101.0	14		
38	.5	12.0	3		
44	.5	18.0	4		
46	.5	11.0	4		
48	.5	7.0	2		
49	.5	108.0	32		
50	.5	1.0	1		
51	.5	12.0	7		
55	.5	15.0	5		
63	.5	64.0			
64	.5	23.0			
65	.5	43.0			
66	.5	120.0		11.0	1
68	.5	44.0		2.0	1
69	.5	46.0			
76	.5	93.0			

Cruise 753  
Depth zone 101-200m

Haul No.	Duration	COD		Halibut	
		wt.	No.	wt.	No.
77	.5	34.0	<del>8</del>	132.0	8
80	.5	50.0	10		
81	.5	8.0	3	25.0	1
82	.5	80.0	20		
84	.5	45.0	<del>8</del>		
85	.5	127.0	<del>8</del>		
86	.5	86.0	<del>8</del>	40.0	2
87	.5	71.0	<del>8</del>	20.0	1
89	.5	32.0	<del>8</del>		
90	.5	9.0	2		
91	.5	37.0	<del>8</del>		
92	.5	45.0	<del>8</del>		
93	.5	16.0	6		
94	.5	33.0	<del>8</del>	3.0	1
95	.5	8.0	4		
97	.5	121.0	<del>8</del>	5.0	1
98	.5	10.0	3	3.0	1

11-52		Depth zone 201-300m		55	
5	.5	287.0	71		
6	.5	251.0	67		
7	.5	32.0	12		
17	.5	90.0	26	21.0	1
18	.5	71.0	17	19.0	1
25	.5			6.0	1
26	.5	4.0	2	246.0	2
27	.5	5.0	1		
28	.5	23.0	7	23.0	1
29	.5	16.0	3		
30	.5	30.0	6	11.0	1
31	.5	8.0	2	6.0	1
33	.5	62.0	11	12.0	1
34	.5	8.0	2	86.0	3

Cruise 753  
Depth zone 201-300m

Haul no.	Duration	wt.	no.	wt.	no.
36	.5	44.0	7		
39	.5	17.0	4		
40	.5	104.0	19	17.0	2
41	.5	51.0	13	37.0	2
57	.5	66.0	15	20.0	1
59	.5	3.0	1		
62	.5	10.0	4		
71	.5	6.0	2		
72	.5	35.0	<del>2</del>	120.0	1
73	.5	6.0	2	10.0	1
75	.5	5.0	2		
79	.5	112.0	<del>2</del>	33.0	2

Hull 1645

CDP

11=22

51.7

51.7

CRUISE 744 (Shumagin - Chirikof)  
 Depth ZONE 0-100M

5-11-62

Haul No.	Duration	COD		Halibut	
		wt.	no.	wt.	no.
4	.5	14.0	6	1.0	3
8	.5	2.0	1	20.0	<del>3</del>
10	.5	617.0	<del>1</del>	25.0	4
13	.5	195.0	<del>1</del>	40.0	55
23	.5	50.0	<del>1</del>	17.0	7
38	.5	62.0	40	5.0	3
49	.5	8.0	3	6.0	7
55	.5	2.0	3	19.0	27
56	.5	231.0	72	6.0	9
60	.5	14.0	5		
Depth ZONE 101-200M					
1	.5	27.0	<del>1</del>	6.0	2
2	.5	115.0	<del>1</del>	33.0	8
3	.5	75.0	<del>1</del>		
9	.5	113.0	<del>1</del>		
11	.5	22.0	4	9.0	3
15	.5	49.0	<del>1</del>	6.0	2
18	.5	40.0	<del>1</del>	25.0	2
21	.5	75.0	<del>1</del>	43.0	0
22	.5	22.0	<del>1</del>	6.0	4
29	.5	123.0	<del>1</del>		
32	.5	126.0	<del>1</del>	7.0	1
33	.5	22.0	<del>1</del>	7.0	1
36	.5	490.0	<del>1</del>		
37	.5	335.0	<del>1</del>	14.0	7
39	.5	117.0	<del>1</del>	12.0	9
40	.5	81.0	<del>1</del>	40.0	23
41	.5		<del>1</del>	23.0	5
42	.5	109.0	<del>1</del>	12.0	4
47	.5	53.0	11		
48	.5	30.0	9		
50	.5	47.0	9	7.0	5
52	.5	77.0	<del>1</del>		

Cruise 744  
Depth zone 101-200m

Haul no.	Duration	wt.	no.	wt.	no.
54	.5	570		8.0	6
58	.5	537.0			
59	.5	20.0	4		
DEPTH ZONE					
201-300m					
16	.5	105.0			
20	.5	96.0	17		
28	.5	18.0	5		
30	.5	55.0		3.0	1
43	.5	42.0	8		
51	.5	88.0	21	10.0	1
				7.5	

Habitat

CRUISE 734 (~~Hermit Strait~~) Kodiak  
 Depth ZONE 0-100 m Summer

HAUL NO.	Duration	COD		Halibut	
		wt.	No.	wt.	No.
8	.5	50.0	<del>0</del>	65.0	<del>0</del>
9	.5	1091.0	<del>0</del>	137.0	<del>0</del>
12	.5	20.0	<del>0</del>	25.0	<del>0</del>
25	.5	24.0	<del>0</del>	2.0	<del>0</del>
26	.5	0.5	<del>0</del>	34.0	9
27	.5			80.0	<del>0</del>
35	.5	141.0	<del>0</del>	7.0	<del>0</del>
46	.5	271.0	<del>0</del>	195.0	16
63	.5	32.0	<del>0</del>		
74	.5			84.0	7
82	.5	11.0	<del>0</del>	30.0	3
		Depth ZONE 101-200 m			
1	.5	58.0	<del>0</del>		
2	.5	43.0	<del>0</del>		
6	.5	4.0	<del>0</del>	2.0	<del>0</del>
7	.5			5.0	<del>0</del>
10	.5	28.0	<del>0</del>		
11	.5	75.0	<del>0</del>	16.0	<del>0</del>
14	.5	47.0	<del>0</del>		
17	.5	60.0	<del>0</del>		
18	.5	906.0	<del>0</del>		
19	.5	205.0	<del>0</del>	28.0	<del>0</del>
20	.5	20.0	<del>0</del>	55.0	<del>0</del>
21	.5	416.0	<del>0</del>		
22	.5	62.0	<del>0</del>		
28	.5	36.0	<del>0</del>		
30	.5	291.0	<del>0</del>		
33	.5	2.0	<del>0</del>		
34	.5	34.0	<del>0</del>	170.0	<del>0</del>
40	.5	133.0	<del>0</del>		
41	.5	91.0	<del>0</del>		
42	.5	7.0	<del>0</del>		
43	.5	227.0	<del>0</del>	50.0	<del>0</del>



## CRUISE 734, Depth ZONE 101-200M

Haul No.	Duration	COB		HABIBUT	
		Wt.	No.	Wt	No.
44	.5	26.0	<del>0</del>	40.0	9
47	.5	225.0	<del>0</del>	29.0	4
50	.5	254.0	<del>0</del>	59.0	3
54	.5	88.0	15	9.0	3
60	.5	1592.0	<del>0</del>	2.0	1
61	.5	43.0	<del>0</del>	75.0	2
64	.5	73.0	<del>0</del>	6.0	3
65	.5	62.0	<del>0</del>	32.0	8
66	.5	48.0	<del>0</del>	24.0	7
67	.5	249.0	<del>0</del>	70.0	9
68	.5			32.0	4
69	.5	2.0	5	13.0	8
70	.5	5.0	5	34.0	18
76	.5	25.0	<del>0</del>	35.0	1
80	.5	2.0	3		
Depth Zone 201-300M					
3	.5	4.0	<del>0</del>		
23	.5	7.0	<del>0</del>		
48	.5	28.0	5	2.0	1
51	.5	130.0	<del>0</del>	25.0	1
52	.8	6.0	2		
53	.5	31.0	3		
55	.5	160.0	<del>0</del>	37.0	3
59	.5	158.0	<del>0</del>	22.0	1
62	.5	229.0	<del>0</del>	2.0	1
71	.5	1.0	1	101.0	36
73	.4	30.0	<del>0</del>	75.0	4
75	.5	35.0	<del>0</del>	5.0	2
77	.5	33.0	<del>0</del>	10.0	3
79	.5		<del>0</del>	39.0	13
81	.5	25.0	<del>0</del>	20.0	7
NETS		43.1		24.2	

# Pacific Pearl

AN Amfac COMPANY

February 16, 1979

Mr. Scott Stafne  
Law Offices of Scott E. Stafne  
2208 N.W. Market St.  
Suite 210  
Seattle, Washington 98107

Dear Mr. Stafne:

This season, Pacific Pearl Seafoods will purchase black cod from American vessels fishing in Dutch Harbor and Sand Point, Alaska areas. Two vessels will begin fishing in March. In addition, we have offered to receive black cod from any vessel at our Dutch Harbor, Sand Point and Kodiak plants.

We understand that Marine Resources, Inc. made an application through the State Department to receive Pacific Ocean perch, pollock and black cod from American fishermen. This, I believe, is in violation of the intent of the 200-mile management act. As long as American firms, including Pacific Pearl Seafoods, receive and continue to offer to purchase black cod, foreign joint venture applications should not be approved.

In regard to ex-vessel prices, Pacific Pearl will pay a price higher than the price offered by Marine Resources, Inc. If a specific price is necessary for discussion with the North Pacific Council, this information can be submitted later on a confidential basis.

We appreciate your efforts to speak on behalf of the American black cod fishing industry.

If we can give you any additional information, please let us know.

Sincerely,



William K. Deshler  
President

WKD:kr  
cc: Chuck Jensen

SCOTT E. STAFNE

Suite 210 Ballard Building  
2208 N.W. Market Street  
Seattle, Washington 98107

Fisheries, Marine Resources  
and Admiralty Law

(206) 784-5344

Scott E. Stafne  
Eileen M. Cooney  
Kenneth A. Sheppard  
David L. Flory

COMMISSIONER'S OFFICE  
**RECEIVED**  
JAN 15 1979

January 10, 1979

DEPARTMENT OF FISH AND GAME

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

Dear Jim:

Our office represents the Alaska Longline Fishermen's Association (ALFA) and the International Longline Association (ILA). The enclosed Position Paper constitutes their comments in support of the sanctuary area proposed by section 14.3.2.3 B(iii) of the Fishery Management Plan for the Bering Sea/Aleutian Island Area (FMP). In addition it should be noted that similar supportive comments were presented to the North Pacific Council by Mr. Robert Alverson on behalf of the Seattle Vessel Owners Association in a letter dated October 7, 1978.

Very truly yours,



Scott E. Stafne

SES/sa

cc: North Pacific Council Members  
Dr. Loh Lee Low

POSITION PAPER IN SUPPORT OF  
THE PROPOSED LONGLINE SANCTUARY  
IN THE CENTRAL ALEUTIAN ISLANDS  
(Ref: FMP for Groundfish in the  
Bering Sea/Aleutian Island Area,  
Section 14.3.2.3 B(iii), p.194)

Prepared and Submitted On Behalf  
of the Alaska Longline Fishermen's  
Association (ALFA) and the  
International Longline Association  
(ILA) by:

Scott E. Stafne

Law Offices Of Scott E. Stafne  
Suite 210 Ballard Building  
2208 N.W. Market Street  
Seattle, Washington 98107

POSITION PAPER IN SUPPORT OF  
THE PROPOSED LONGLINE SANCTUARY  
IN THE CENTRAL ALEUTIAN ISLANDS  
(Ref: FMP for Groundfish in the  
Bering Sea/Aleutian Island Area,  
Section 14.3.2.3B(iii), p.194)

This Position Paper is submitted on behalf of the Alaska Longline Fishermen's Association (ALFA) and the International Longline Association (ILA). It supports adoption of section 14.3.2.3.B(iii) of the Fishery Management Plan for Groundfish in the Bering Sea/Aleutian Island Area (FMP) which provides:

"No trawling year-round in that part of the FCZ adjacent to the Aleutian Island between 172° W and 179° E to provide a sanctuary for foreign and domestic longline fishing in recognition of the situation in which highly developed trawl fisheries in both the Bering Sea and Gulf of Alaska have tended to preempt grounds from the traditional longline fishing method. In 1976, no Japanese Danish seiners, side trawlers, or pair trawlers operated in this area; less than one percent of the Bering Sea/Aleutian stern trawl effort occurred in this area; \_\_\_ percent of the Soviet trawl effort occurred in this area; and \_\_\_ of the Korean effort occurred in this area. Therefore, no significant dislocation of the foreign trawl fishery is expected." FMP, p.194.

Prior to 1977 there was little trawl effort between 172° W and 179° E<sup>1</sup>. In 1977, however, trawl effort in the entire Aleutian Island region, including the proposed sanctuary area, rose dramatically<sup>2</sup>. This increase resulted primarily from the displacement of the Japanese land based stern trawl fleet from the Soviet 200 mile fishing zone<sup>3</sup>.

This situation is disturbing for two reasons. First, the additional fishing effort stems not from better efficiency, but from an increase in the total number of land based Japanese draggers fishing this region. In the past, fishing effort by this

group has been relatively small. Allowing distinct foreign fisheries like this one to grow beyond their historical levels in the United States Fishery Conservation Zone appears to set a bad precedent. A second source of concern is that the growth of this relatively new fishery in the United States Fishery Conservation Zone was prompted by its displacement from the Soviet fishing zone. We believe the growth of foreign fleets in our waters as the result of their displacement from the fishery zones of other countries should be carefully scrutinized and rarely allowed, especially when those new fleets fish for species which are already fully utilized by existing foreign and/ or domestic fishermen.

In the instant case, displacement appears particularly unsound for several factual reasons. First, the land based draggers have traditionally had higher incidental catches of more valuable and/or depleted species than have other types of Japanese drag operations. This is because the vessels are smaller and traditionally fish in the shallower regions, where different species of fish are most likely to intermingle<sup>4</sup>. It should also be noted that in the past land based draggers have indicated a desire to harvest higher value fish, like black cod, in order to make their smaller operations more profitable<sup>5</sup>.

Enforcement problems are also likely to result from allowing the displacement of the land based drag fleet into the U.S. Fishery Conservation Zone since this will increase the total number of foreign vessels in our waters even if there is no change in the foreign quota. This problem is, of course, magnified by

the fact that the number of vessels which are increasing have higher incidental catches of depleted and/or higher valued fish than the mother ship vessels which have historically fished our waters.

The rationale offered by the NMFS Report to the North Pacific Council (a copy of which is attached hereto as Appendix 1) regarding the reasons for the proposed sanctuary area appear to us to be sound. The report notes that prior to 1977 there was very little trawl effort in this region and that therefore the creation of a sanctuary could not be expected to greatly harm those historical foreign drag fisheries which have traditionally harvested fish in the Aleutian area. The lack of harm to the draggers which would result from the proposed sanctuary should be balanced with a consideration of the resource benefits which would occur to the United States. These benefits stem from the fact that the catch of draggers in this region is primarily Pacific Ocean Perch, a species of fish which is presently badly depleted in this area<sup>6</sup>. Black cod would also likely benefit since in the past land based draggers have often caught more of this species in the proposed sanctuary area than in all the other Aleutian Island regions combined<sup>7</sup>.

In addition, several strong management considerations appear to support adoption of the proposed sanctuary. The need for the sanctuary area stems from the incompatibility between stationary and trawl gear. Although presently in the Aleutian area this incompatibility exists primarily only between foreign stationary and

trawl fishing operations, as the domestic fleet expands the same problems will affect its stationary gear and trawl components. When this happens there will be a need to allocate fishery resources between these two incompatible gear types.

The allocation of fishery resources and areas between competing users is perhaps the most difficult of all fishery management decisions. It is a problem with which the United States is currently struggling in regard to both certain species of fish, like salmon, and certain areas, like the Northeast Atlantic Ocean.

Development of a manageable and fair groundfish allocation scheme to best utilize Alaska's vast fishery resources is not likely to be easy. Such an allocation scheme will have to balance many different considerations applicable to competing user groups and fishing areas. For example, such an allocation scheme will have to come to terms with the fact that certain species of fish are most efficiently caught by drag gear; but that for the most part dragging is a non-selective fishery which can and has in some instances adversely impacted on the biological status of certain species of fish like halibut and perhaps sablefish. The ability of draggers to harvest vast amounts of fish in a short period of time will have to be balanced against the fact that some of the species caught would have been of better quality and worth more if they had been harvested by stationary gear.

Certainly the weight to be attached to these factors will vary by fishing area. For example, in an area particularly abun-



dant in a depleted fish species, like halibut and sablefish, or in certain nursery grounds, it may be advisable to restrict dragging because of its non-selective nature. On the other hand, certain areas may be peculiarly appropriate for certain types of fishing because of a combination of topography and fishery resources.

Clearly, reasonable application of these kinds of considerations to the vast fishing areas of Alaska, many of which are domestically unexplored, will be a formidable and time consuming task. It is a task, however, which ALFA and ILA believe should be started now.

Adoption of the proposed sanctuary area will help to give the United States further experience with the type of fisheries management which will be needed in the future. It can be done now on an experimental basis without any domestic dislocation and without appreciable disruption to traditional foreign drag fisheries. That the sanctuary will result in beneficial impacts on the fishery resources in this area is also a major factor in its favor.

A final consideration is that it will help to alleviate the severe economic dislocation of the Japanese Longline-Gillnet fleet. This dislocation has stemmed from 1.) their displacement from certain areas in the Gulf of Alaska as the result of domestic management regulations pursuant the Gulf of Alaska Groundfish FMP; 2.) reduced quotas for sablefish as the result of that species present severe depletion and 3.) increased gear competition in the Aleutian area as the result of the addition of a new foreign fish-

ery to this region, namely the Japanese landbased stern draggers displaced from the Soviet fishery zone.

Certainly, it is appropriate under these circumstances to give more consideration to the economic dislocation of those distinct foreign fisheries which have historically fished our waters, like the Japanese longliners, than to those foreign fisheries which have been displaced from the fishery zones of other nations.

For all of the above reasons, ALFA and the ILA join in urging that the North Pacific Council adopt the proposed longline sanctuary.

FOOTNOTES -

1. See Information Memorandum to the North Pacific Council entitled: "Proposed Longline Sanctuary in the Central Islands (Ref: FMP Sec. 14.3.2.3 B(iii) p.194)" (NMFS Report). A copy of which is attached as Appendix 1.

2. "During the first seven months of 1978, according to NMFS Alaska Region enforcement-surveillance records, 2,509 vessel-days of foreign trawl activity took place in the Aleutian Area (Statistical Area IV), of which 1,911 vessel-days (76%) were by the Japanese landbased dragnet fleet (medium stern trawlers). The remaining trawl effort in the Aleutian Area consisted of 135 vessel-days (5%) by large Japanese stern trawlers and 463 vessel-days (18%) by large Soviet stern trawlers. Most of the Soviet effort (75%) was between 174° E and 175° E and targetted at Atka mackerel." (NMFS Report, p.1) A copy of which is attached as Appendix 1.

3. See Appendix 1.

4. Personal Communication with Dr. Loh Lee Low. See also 1978 PMP for Sablefish, Section 2.1.4.3 Non-Target Species: Mortalities, at pp.24-26. A copy of which is attached as Appendix 2.

5. See 1978 PMP for Sablefish, p.24.

6. See Attached Appendix 3. Note also that in the past catches of Pacific Ocean Perch in the area of 170° W - 180° E have been relatively small compared with the Pacific Ocean Perch catches from other Aleutian Island areas.

7.

Sablefish Catch of Landbased Draggers

Within Sanctuary Area

In other Aleutian Island Areas

1970	98 mt	35 mt
1971	274 mt	112 mt
1972	380 mt	105 mt
1973	232 mt	26 mt
1974	108 mt	130 mt
1975	6 mt	58 mt
1977	2 mt	5 mt

Source: Personal Communication with Dr. Loh Lee Low.

BERING SEA/ALEUTIAN GROUND FISH FMP

Proposed Longline Sanctuary in the Central Aleutian Islands  
(Ref: FMP Sec. 14.3.2.3. B (iii), page 194)

This report has been prepared to assist in evaluating the proposed longline sanctuary between 179°E and 172°W in the Aleutian Islands.

Prior to 1977, the proposed sanctuary area received very little use by foreign trawlers, as indicated by the italicized portion of the referenced FMP section. In 1977 and 1978, however, the entire Aleutian Area has been relatively heavily used by the Japanese "landbased dragnet fleet," apparently as a result of limitations on that fleet's operation in the Soviet 200-mile fishery zone.

During the first seven months of 1978, according to NMFS Alaska Region enforcement-surveillance records, 2,509 vessel-days of foreign trawl activity took place in the Aleutian Area (Statistical Area IV), of which 1,911 vessel-days (76%) were by the Japanese landbased dragnet fleet (medium stern trawlers). The remaining trawl effort in the Aleutian Area consisted of 135 vessel-days (5%) by large Japanese stern trawlers and 463 vessel-days (18%) by large Soviet stern trawlers. Most of the Soviet effort (75%) was between 174°E and 175°E and targetted at Atka mackerel.

The attached table and figure show the proportion of the total foreign trawl effort during January-July 1978 in the entire Bering Sea/Aleutian Region and in the Aleutian Area that was expended in various Aleutian sub-areas that might be considered for a longline sanctuary. All longitudinal "corridors" shown in the table and figure refer to both sides of the Aleutian chain.

January-July 1978, All-Nation Trawl Effort

<u>Area</u>	<u>Vessel-days</u>	<u>% of BS/Al Region Effort</u>	<u>% of Aleutian Area Effort</u>
BS/Al Region-total	21,307	100	-
Aleutian Area-subtotal	2,509	11.8	100
Aleutian Area:			
178°E-180°	28	0.1	1.1
178°E-179°W*	37	0.2	1.5
178°E-178°W	86	0.4	3.4
178°E-177°W*	127	0.6	5.1
178°E-176°W	283	1.3	11.3
178°E-175°W	303	1.4	12.1
178°E-174°W*	310	1.4	12.4
176°E-176°W*	345	1.6	13.8
178°E-173°W*	406	1.9	16.2
176°E-174°W*	528	2.5	21.0
178°E-172°W <sup>1/</sup>	614	2.9	24.5
175°E-174°W*	650	3.0	25.9
175°E-173°W*	746	3.5	29.7
178°E-170°W*	774	3.6	30.8
175°E-170°W*	1,114	5.2	44.4
170°E-170°W*	2,509	11.8	100.0

\* Shown on attached chart.

<sup>1/</sup>No foreign effort between 179°E and 180°; therefore, the figures in this row are the same as for the 179°E-172°W proposed sanctuary.

170°E to 178°E (177°E)	(2504 - 774) 1735	<del>8.1%</del> 8.1%	69%
173°W to 170°W (172°)	(774 - 406) 368	1.7%	14.6%

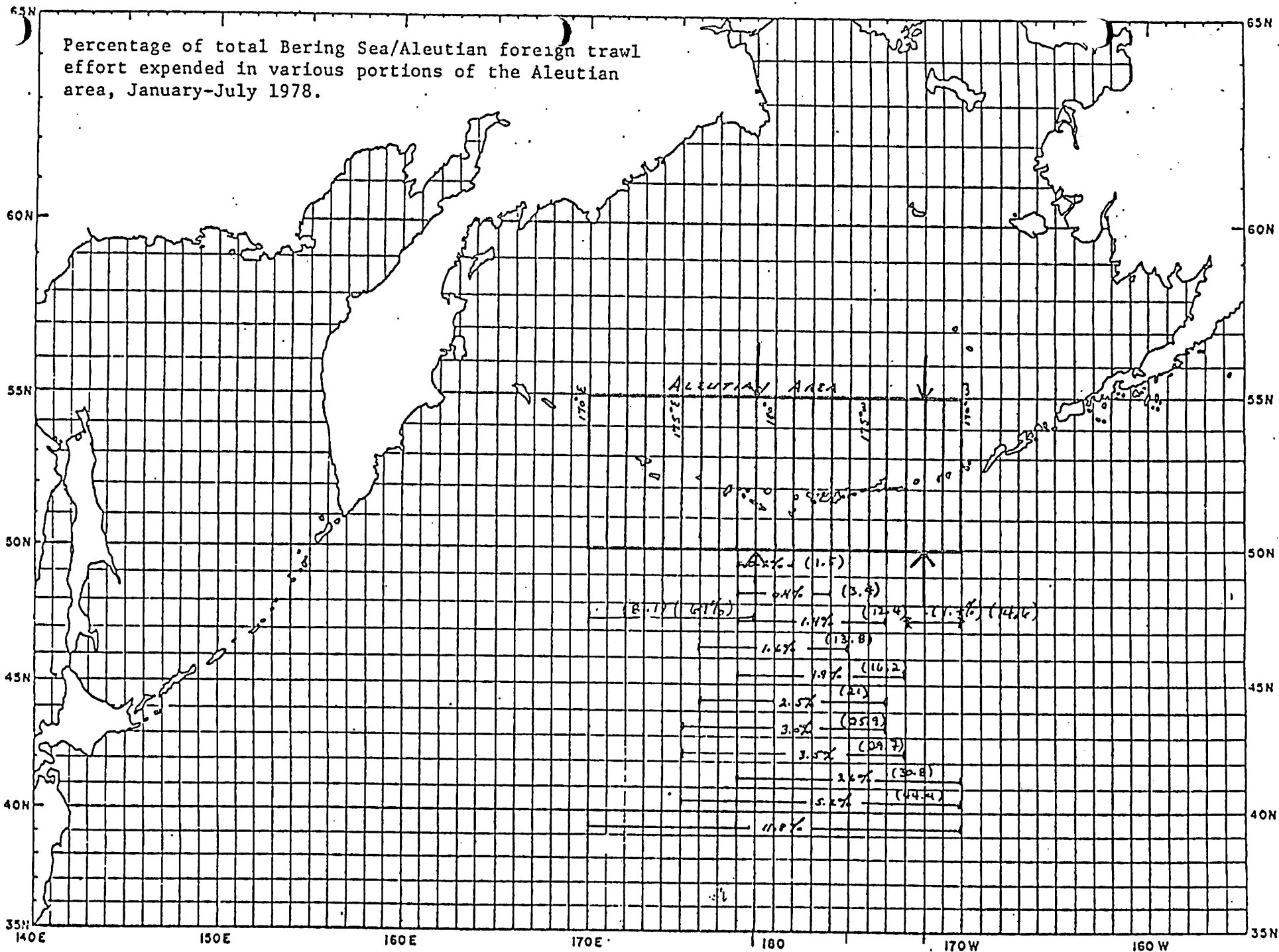
Gear conflicts are most acute in the Washington-California area. The greatest problem is with the damage to or loss of U.S. sablefish setline and trap gears due to foreign trawling activities. Furthermore, with the recent expansion of the R.O.K. longline/trap fishery, foreign longliners are also reported as being responsible for the loss of U.S. sablefish traps (footnote 6). In light of the increased usage of sablefish traps by U.S. fishermen (traps accounting for as much as 30 percent of the most recent U.S. sablefish landings), these gear conflicts are considered serious.

Sablefish are also taken by trawl gear in the U.S. fishery. The conflict between U.S. trawl gear (for sablefish) and foreign fishing gear is minimal, however, as U.S. trawls operate closer to shore and away from areas frequented by foreign fisheries.

#### 2.1.4.3 Non-Target Species Mortalities

The impact of foreign fishing activities here is examined in terms of (1) the impact of foreign sablefish fisheries on other (non-target) species and, conversely, (2) the impact of other foreign fisheries on sablefish (as the non-target species).

In the Bering Sea, about 75 percent of the sablefish caught are by trawl gear and the rest by longline gear. Most of the sablefish taken by trawl gear are taken incidental to the more intensive pollock and Pacific ocean perch fisheries. There are actually very few trawlers that fish specifically for sablefish. Some trawlers of the Japanese landbased dragnet fishery (which are of smaller sizes than those of the mothership and independent trawl fisheries) would prefer to fish



for sablefish, but this fishery is confined to the west of longitude 170°W by Japanese regulation. Therefore, the impact of this fishery on small halibut is minimized. For the rest of the trawl fishery, it is not so much the problem that trawling for sablefish may cause excessive mortalities on non-target species, but rather that trawling for other species (pollock and ocean perch) may cause excessive mortalities for sablefish. The longline fishery for sablefish in the Bering Sea is rather small by comparison to the entire Bering Sea fisheries, and mortalities of non-target species due to longlining activities for sablefish are generally not a problem.

In the Aleutian Region, trawl and longline gears account for about equal proportions of sablefish landed. The only other major species of commercial importance is the Pacific ocean perch—which is at a low level of abundance because of earlier overfishing. Therefore, trawling activities for sablefish may cause added mortalities on ocean perch. Added mortalities on other species due to longlining activities in the Aleutian Region are probably a minor problem since few are taken on longline gear.

In the Gulf of Alaska, almost 65 percent of the sablefish are caught by longline gear, 28 percent by trawls, and the rest by traps. Since the Gulf of Alaska is an important Pacific halibut area for U.S. fishermen who take halibut only by longline gear, Japanese longlining activities for sablefish could induce "a hooking mortality" on halibut. The magnitude of the apparent problem, however, is not well known. The size of the hooks used in sablefish longlines is much smaller than that used in the halibut fishery and the gangion line is lighter. Apparently, adult halibut hooked by sablefish longlines are not retained by the



gear but the hooks that become lodged or swallowed by the halibut may induce a mortality factor. Juvenile halibut are generally not taken by sablefish longlines because the sablefish fishery operates in depths beyond their general depth distribution.

Foreign trawlers operating in the Gulf of Alaska for sablefish also cause added mortalities on commercially important species such as halibut and ocean perch but this is probably minimal because purposeful trawling activities are small. On the other hand, purposeful trawling activities for Pacific ocean perch, flounders, and pollock will result in incidental catches of sablefish and impact on the sablefish resource.

In the Washington-California area, the R.O.K. is the only foreign country that has a substantial fishery for sablefish. This is largely a longline/trap fishery which does not create much of a problem with non-target species mortalities. It is, however, a problem in the areas of gear conflict and stock depletion.

#### ~~2.2.4.4 Implied Economic Consequences~~

~~Perhaps the most direct and serious economic impact of foreign fishing activities on U.S. sablefish fisheries is the gear damage and loss problem, especially off Washington-California where the R.O.K. has expanded its sablefish fishery. Coupled with the declining catch rates of sablefish along Washington-California of recent years (1974-76), some U.S. sablefish trap fishermen have been discouraged and forced by economics to revert to other fisheries, such as salmon trolling (footnote 6).~~

1867

NUMBER

STATUS OF PACIFIC OCEAN PERCH IN THE ALEUTIAN  
ISLANDS REGION THROUGH 1974

by

Loh Lee Low

Submitted to the  
INTERNATIONAL NORTH PACIFIC FISHERIES COMMISSION  
by the U.S. NATIONAL SECTION

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

July 1976

STATUS OF PACIFIC OCEAN PERCH IN THE ALEUTIAN  
ISLANDS REGION THROUGH 1974

by

Loh Lee Low

The status of Pacific ocean perch (Sebastes alutus) stocks in the Aleutian Islands region through 1973 was reviewed in Documents 1776 (Japan) and 1786 (U.S.) and discussed at the 1975 meeting of the International North Pacific Fisheries Commission (INPFC). Based on findings in these documents, U.S. and Japanese scientists agreed that the ocean perch stocks in this region were not in good condition and should be carefully watched. U.S. scientists further recommended that the all-nation catch of ocean perch not exceed 15,000 metric tons per year until the resource shows signs of substantial recovery.

This report updates Document 1786 and introduces additional analyses in catch per unit effort by vessel class. A section on fishery restrictions pertaining to ocean perch is also included.

## THE FISHERY

In the Aleutian Region, ocean perch are exploited by the

- (1) Japanese North Pacific Trawl fishery--mainly by stern trawlers seeking ocean perch as a primary species,
- (2) Japanese land-based dragnet fishery by stern trawlers (before 1969 by Danish seiners) seeking ocean perch and sablefish as primary species, and
- (3) U.S.S.R. trawl fishery by large factory trawlers seeking rockfishes in general and ocean perch in particular.

## FISHERY RESTRICTIONS

As a result of U.S.-Japan and U.S.-U.S.S.R. bilateral agreements, fishery restrictions pertaining to ocean perch in the Aleutian Region in 1975 and 1976 are as follows:

- (1) Pacific ocean perch catch by the Japanese mothership-North Pacific trawl and longline gillnet fisheries not to exceed 9,600 mt per year.
- (2) Total catch of all groundfish (including ocean perch) by the Japanese land-based dragnet fishery not to exceed 8,500 mt per year.
- (3) U.S.S.R. catch of rockfish (mainly ocean perch) not to exceed 12,000 mt per year.

## CATCH TRENDS

Japan and the U.S.S.R. are the only two nations harvesting ocean perch in the Aleutian Region. Up to 1970, the U.S.S.R. accounted for 54-96% of total landings. Since then, except for 1972, Japan has dominated the fishery, the U.S.S.R. having sharply reduced its operations for ocean perch in the Region (Table 1, Fig. 1). The highest catch on record was in 1965 when 109,066 mt were landed. Catches then declined to a low of 11,847 mt in 1973. In 1974, the Japanese catch increased to 21,600 mt (from 9,300 mt in 1973), but the Soviet catch was only 824 mt, the lowest in the history of the U.S.S.R. fishery.

## STATUS OF STOCKS

Data Source and Organization

Information used to describe the condition of ocean perch in the Aleutian Region is based primarily on data furnished by the Japan Fisheries Agency (JFA) through INPFC. Although the U.S.S.R. was the main user of the resource until recent years, it has provided practically no data useful for study of stock conditions.

Data used in this analysis include catch and effort statistics from the Japanese North Pacific trawl fleet (made up of large independent factory trawlers) and landbased dragnet fleet (made up of small independent trawlers less than 350 gross tons). Information from the landbased dragnet fishery is treated separately because the vessels used are smaller and catches were comparative low until recently.

Monthly catch and effort data from statistical blocks of  $1^{\circ}$  longitude by  $\frac{1}{2}^{\circ}$  latitude were combined by gear type for each  $5^{\circ}$  longitude band in the Aleutian Region between  $170^{\circ}\text{E}$  and  $170^{\circ}\text{W}$  (Fig. 2). Since stern trawl effort has accounted for nearly the entire Japanese ocean perch catch for the past several years (Table 2), only catch and effort data pertaining to this gear type were used to examine stock conditions. Annual trends in catch, effort, catch rate (CPUE), and size composition were examined.

Monthly length frequency samples for each area were related to total catches by weighting the size distribution data to total weight harvested. The length-weight relation used for ocean perch in the Aleutian Region was that by Westrheim and Snytko (1974).

#### Catch per Unit Effort

##### North Pacific Trawl Fishery

Catch per unit effort (CPUE) data for all vessels combined in the Japanese North Pacific trawl fishery indicated that ocean perch in the Aleutian Region remained in a depressed state in 1974 (Fig. 3). The CPUE (mt per hour trawled) values have dropped from 7.3 in 1964 to 0.9 in 1972 and 0.8 in 1974. Although the catch by that fishery in 1974 was twice that of 1973, fishing effort more than tripled—reaching the highest level in the history of the fishery. Consequently, the catch rate in 1974 was less than that observed in 1973 and, indeed, was the lowest on record.

Catch rates are also computed on a more detailed vessel class basis. Before 1968, data by vessel classes are not available. Class 4 vessels of 301-500 gross tons generally accounted for the largest percentage of ocean perch catches by stern trawlers (Table 3). Their CPUE (mt per hour trawled) data show that catch rates declined from 1.4 in 1968 to 0.5 in 1972 and increased slightly to 0.8 in 1974. This trend is quite similar to CPUE trend of class 7 (1501-2500 gross tons) vessels which accounted for the next highest percentage of ocean perch landed. The CPUE (mt per hour) values declined from 12.6 in 1968 to 3.6 in 1973 and increased slightly to 4.7 in 1974. The other vessel classes (5, 6, 8 and 9) which accounted for minor percentages of ocean perch landed generally show declining CPUE trends from 1968-74.

#### Land-Based Dragnet Fishery

The entire ocean perch catch by the land-based dragnet fishery in the Aleutian Region was accounted for by stern trawlers of less than 350 gross tons. These vessels began operation in 1969 and except for 1972-73, ocean perch have accounted for more than 20% of their total catches (Table 4). The CPUE (mt per hour trawled) values for POP show a decline from 0.32 in 1969 to 0.14 in 1972 and an increase to 0.25 in 1974. However, the 1972 data may not be a reliable indicator of ocean perch abundance because ocean perch catch was low and accounted for less than 4% of stern trawl catches. On the other hand, the catch and percentage composition may be small because of low stock abundance in 1972. This was probably the case as indicated by North Pacific stern trawl data (Fig. 3, Table 3).

Since the land-based stern trawl data extend back to 1969 only, the relative abundance of ocean perch in the Aleutian Region in earlier years can only be inferred from North Pacific stern trawl data shown in Figure 3. CPUE data show that stock levels of 1968-69 were already at a low level due to earlier fisheries of the mid-1960's. Therefore the 1974 stock level in the Aleutian Region, although showing signs of improvement, remained low.

Catch rates (in numbers of fish per hour trawled) by stern trawlers of the Japanese mothership and North Pacific trawl fleets in the Aleutian Region also show a slight increase from 732 in 1972 to 1,767 in 1974--again indicating slightly improving conditions (Fig.4).

#### Size Composition

In 1974, the average size of ocean perch harvested showed a slight increase from that of 1972 and 1973, being very similar to that of 1971 (Fig. 4).

Compared to the 1960's however, the size composition data of the 1970's reflect the poor condition of the stocks. In the early years of the fishery (1964-67) the size composition of the catch was relatively stable and dominated by fish greater than 28 cm (Fig. 4). After that time, there were dramatic increases in the proportion of fish smaller than 28 cm due in part to recruitment into the fishery of the strong year classes of 1961 and 1962 (Document 1700) and in part to a considerable reduction in abundance of the larger-older perch after 1967. The abundance of these older fish remained low through 1974.

In Document 1672 it was stated that ocean perch in the Aleutian Region spawn for the first time at about 5 years of age, 50% of the fish are mature at 7 years and nearly all fish are mature at about 9 years (modal lengths for these ages are 25 cm, 27.5 cm, and 30 cm respectively).



Document 1700 presented data that indicated fecundity to increase by about 28-33% for each successive age between 7 and 11 years. Inasmuch as most annual yields since 1967 have consisted of large numbers of fish less than 28 cm and dwindling numbers of older, more fecund fish, the reproductive potential of Aleutian Region ocean perch stocks must have been severely reduced. How the production of larvae is related to year class strength, however, has not been determined.

Additionally, age composition of recent Japanese ocean perch catches in the Aleutian Region (Document 1700) and earlier information presented by Paraketsov (1963) suggest age of ocean perch at recruitment to the fishery occurs at about 6-8 years of age. Thus, year classes spawned during the peak years of fishing (1964-66) would have begun appearing in catches by 1970. As shown by CPUE values for small fish (less than 28 cm) in 1970-74 (Fig. 4), recruitment has been relatively low but appears now to be increasing. If the high catches of 1974 have not already cropped these recently recruited fish, some improvement in stock condition may be expected in the near future.

#### DISCUSSION

Catch rate and size composition information suggest that Pacific ocean perch stocks in the Aleutian Region have been considerably reduced in abundance and average size since the early years of the fishery. Stock condition appears to have reached its worst in 1972 and improved slightly through 1974. The condition in 1974 however, was no better than the depressed level of 1971. The improving trend of 1972-74 is not expected to continue because of the high catch of 22,400 mt in 1974.

In Document 1786, the U.S. recommended that the total annual all-nation catch of ocean perch in the Aleutian Region not exceed 15,000 mt until the resource shows signs of substantial recovery. In view of the probable adverse impact of the effects of the 1974 high catch, this recommendation should at the very least continue to be supported.

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Table 1. Pacific ocean perch catch in metric tons in the Aleutian Region  
by nation, 1962-1974.

YEAR	JAPAN	USSR <sup>1/</sup>	TOTAL
1962	200 <sup>1/</sup>	--	200
1963	800 <sup>1/</sup>	20,000	20,800
1964	29,377	61,000	90,377
1965	38,066	71,000	109,066
1966	28,256	57,700	85,956
1967	9,332	46,600	59,932
1968	22,614	26,600	49,214
1969	15,603	23,200	38,803
1970	13,642	53,300	66,942
1971	14,649	7,200	21,849
1972	8,565	24,600	33,165
1973	9,300 <sup>2/</sup>	2,547 <sup>2/</sup>	11,847
1974	21,600 <sup>2/</sup>	824 <sup>3/</sup>	22,424

<sup>1/</sup> From Document 1700.

<sup>2/</sup> From Document 1831.

<sup>3/</sup> Data source--U.S.-USSR 1975 scientific meetings.  
Data sources for Japanese catches for 1964-72 are from Document 1816.



Table 3.—Pacific ocean perch catch and effort data for stern trawlers of the Japanese North Pacific trawl fishery by vessel class in the Aleutian Region, 1968-74.

Year	Vessel class <sup>1/</sup>					
	4	5	6	7	8	9
(A) Catch in metric tons.						
1968	12,157	280	32	2,711	6,787	532
1969	7,290	440	0	4,839	1,125	144
1970	2,384	1,227	0	7,741	249	82
1971	3,322	889	1,038	4,984	2,249	449
1972	3,527	1,318	645	2,035	188	135
1973 <sup>2/</sup>	4,591	0	995	1,881	0	0
1974 <sup>2/</sup>	10,136	1,564	1,326	2,507	16	0
(B) Fishing effort in number of hours trawling						
1968	8,575	115	8	216	759	772
1969	1,952	333	0	910	178	38
1970	1,755	600	0	976	161	25
1971	4,543	634	383	720	785	174
1972	6,533	546	492	388	114	56
1973 <sup>2/</sup>	3,592	0	658	530	0	0
1974 <sup>2/</sup>	12,188	1,816	964	529	22	0
(C) Percentage composition of total ocean perch catch by vessel class. <sup>3/</sup>						
1968	54	1	+	12	30	2
1969	51	3	0	34	8	1
1970	20	10	0	66	2	1
1971	26	7	8	38	17	3
1972	45	17	8	26	2	2
1973 <sup>2/</sup>	61	0	13	25	0	0
1974 <sup>2/</sup>	63	10	8	16	+	0
(D) Catch (in metric tons) per hour trawled.						
1968	1.4	2.4	4.0	12.6	8.9	.7
1969	3.7	1.3	-	5.3	6.3	3.8
1970	1.4	2.0	-	7.9	1.5	3.3
1971	.7	1.4	2.7	6.9	2.9	2.6
1972	.5	2.4	1.3	5.2	1.6	2.4
1973	1.3	-	1.5	3.6	-	-
1974	.8	.9	1.4	4.7	.7	-

<sup>1/</sup> No data for classes 1, 2, and 3 which are mainly side and pair trawls.  
<sup>2/</sup> 1973 and 1974 data converted to pre-1973 gross tonnage classification of

1 = 71-100	6 = 1001-1500
2 = 101-200	7 = 1501-2500
3 = 201-300	8 = 2501-3500
4 = 301-500	9 = 3501 and above
5 = 501-1000	

<sup>2/</sup> Data through October only.

<sup>3/</sup> Totals may fall short of 100% because of rounding errors.

Table 4.—Catch and effort data of stern trawlers of the Japanese land-based dragnet fishery in the Aleutian Region, 1969-74.

Year	Catch of all species in mt	Catch of Pacific ocean perch in mt	Percentage of POP in total catch	Total effort in hours	CPUE of POP in mt per hour
1969	5,478	1,246	23	3,850	.32
1970	4,550	1,956	43	5,040	.39
1971	5,977	1,664	28	6,567	.25
1972	17,801	651	4	17,169	.04
1973	16,230	1,873	12	12,792	.15
1974 <sup>1/</sup>	24,851	5,571	22	22,593	.25

Notation: POP is Pacific ocean perch.  
mt is metric tons.

<sup>1/</sup> Data through October only.

### CATCH OF POP IN THE ALEUTIAN REGION

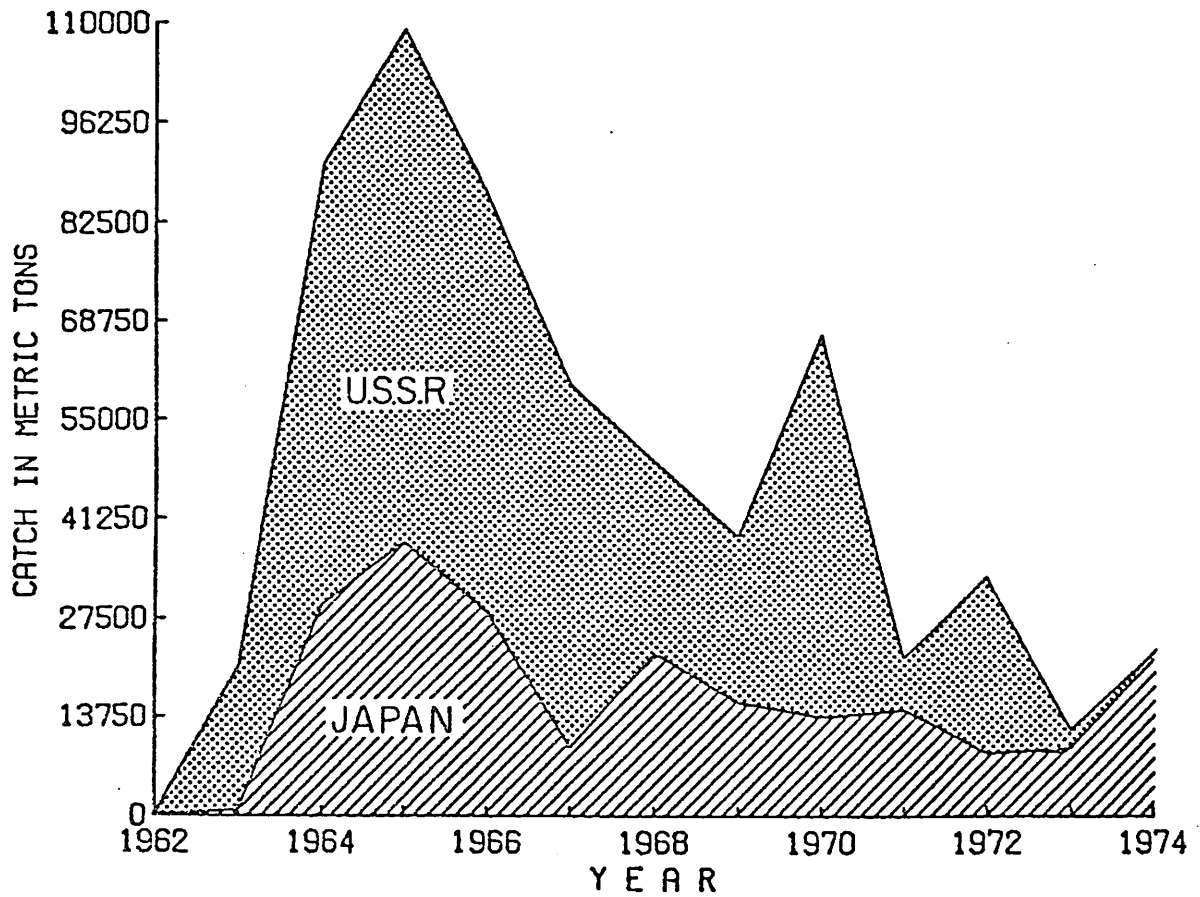
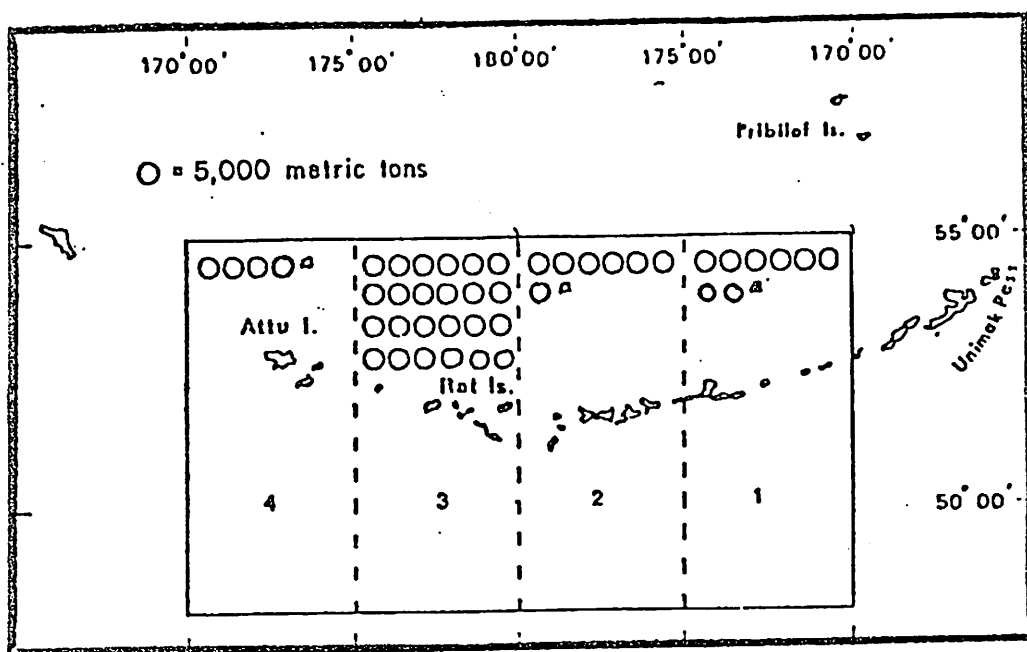


Fig. 1. Pacific ocean perch catch in the Aleutian Region by nation, 1962-74. Catches by the USSR include other rockfish.



YEARLY CATCH BY AREA  
(metric tons)

<u>Year</u>	<u>Area 4</u>	<u>Area 3</u>	<u>Area 2</u>	<u>Area 1</u>	<u>TOTAL</u>
<u>Mothership, longline and North Pacific trawl fisheries</u>					
1964	2,402	11,504	5,576	9,895	29,377
1965	2,802	28,545	4,801	1,918	38,066
1966	6,300	13,878	7,385	695	28,256
1967	421	6,741	752	1,418	9,332
1968	518	14,782	4,868	2,446	22,669 <sup>1/</sup>
1969	403	7,637	5,060	1,256	14,355
1970	384	9,108	236	1,958	11,686
1971	1,105	7,312	1,509	3,059	12,985
1972	234	3,397	548	3,735	7,914
1973	1,080	3,336	653	2,405	8,408
1974 <sup>2/</sup>	3,686	5,691	299	6,383	17,001
<b>Total</b>	<b>19,335</b>	<b>111,931</b>	<b>31,687</b>	<b>35,168</b>	<b>199,997</b>
<u>Landbased dragnet fishery</u>					
1965	26	106	2	4	138
1966	128	325	22	-	475
1967	50	373	166	-	589
1968	195	675	118	287	1,275
1969	62	246	170	807	1,285
1970	87	151	1,070	1,179	2,487
1971	375	711	249	489	1,824
1972	49	221	64	541	875
1973	343	783	213	981	2,320
1974	1,061	3,396	240	1,501	6,198
<b>Total</b>	<b>2,376</b>	<b>6,987</b>	<b>2,314</b>	<b>5,789</b>	<b>17,466</b>

<sup>1/</sup> Includes 55 mt from west of 170°E long.

<sup>2/</sup> Jan.-Oct. only.

Figure 2. Pacific ocean perch catch by Japan and subarea in the Aleutian Region, 1964-1974.



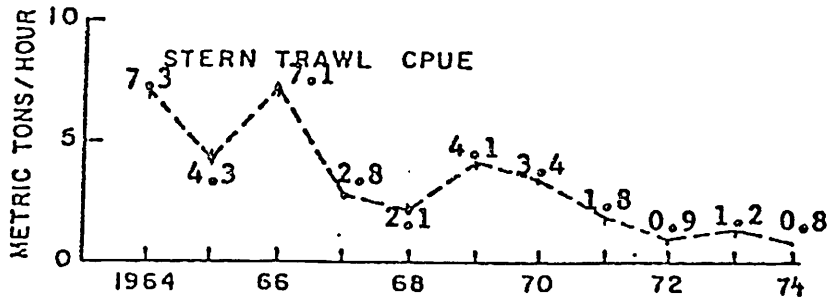
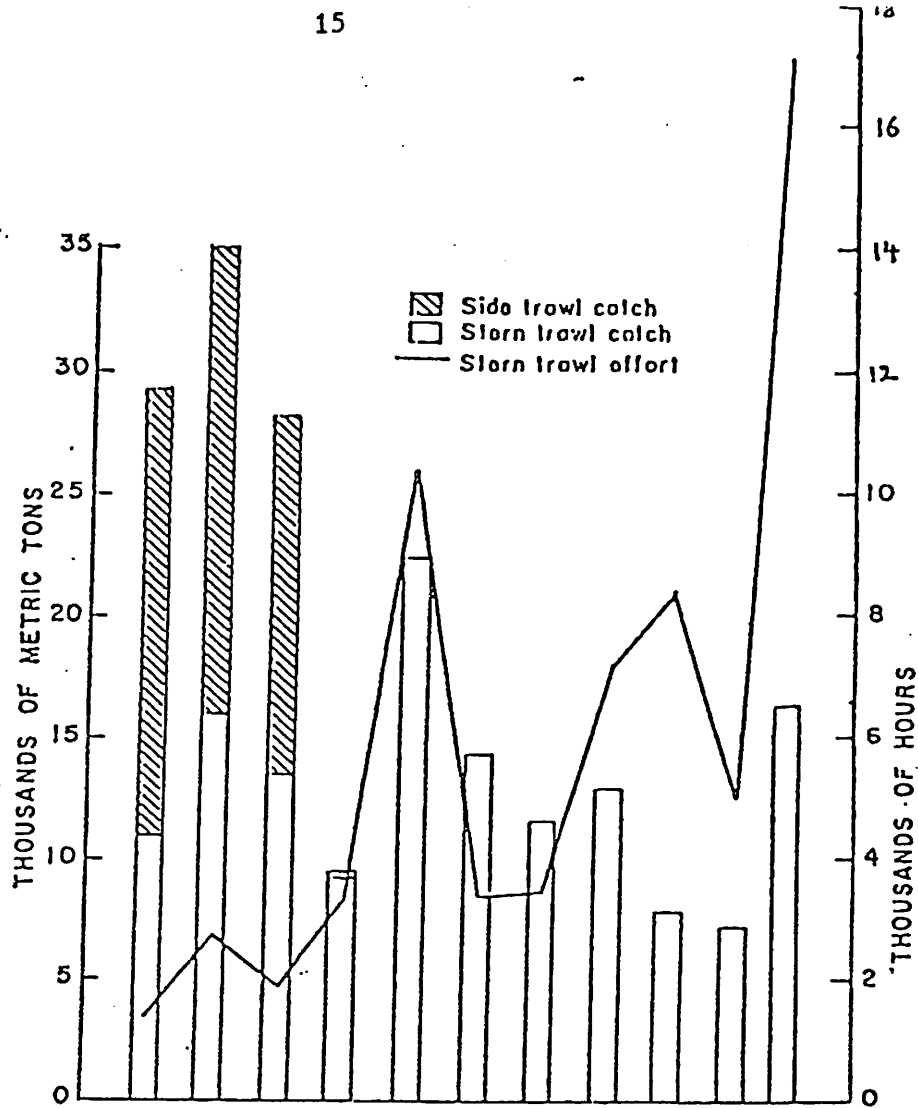


Figure 3. Comparison of Pacific ocean perch catch, effort, and CPUE in the Aleutian Region by the Japanese mothership and North Pacific trawl fisheries, 1964-1974.