

M E M O R A N D U M

TO: Council, SSC and AP Members  
FROM: Jim H. Branson  
Executive Director  
DATE: December 1, 1980  
SUBJECT: Gulf of Alaska Groundfish Amendment for 1981

**ACTION REQUIRED:**

*Review of proposed time/area closure amendment; approval for public review.*

**BACKGROUND:**

At the request of the Alaska Longline Fishermen's Association, the Council requested the Gulf of Alaska Groundfish PDT to consider the implications of the proposed amendment for 1981 to close the Eastern Regulatory Area (Figures 1 and 2) to foreign trawlers.

The PDT reviewed the status of sablefish stocks, the status of Pacific Ocean perch stocks, the incidental catch of salmon, halibut and crab, the gear conflicts in the area and the impact of the closure on foreign fleets. They have prepared a report (Attachment I) containing several options for action as follows:

Option A

- a. Foreign trawling allowed only with off-bottom gear and only from December 1 to May 31.
- b. POP TALFF = 500 mt
- c. POP DAH = 500 mt
- d. Sablefish catch levels not to increase.
- e. Present sanctuaries in the FMP would be continued.

Option B

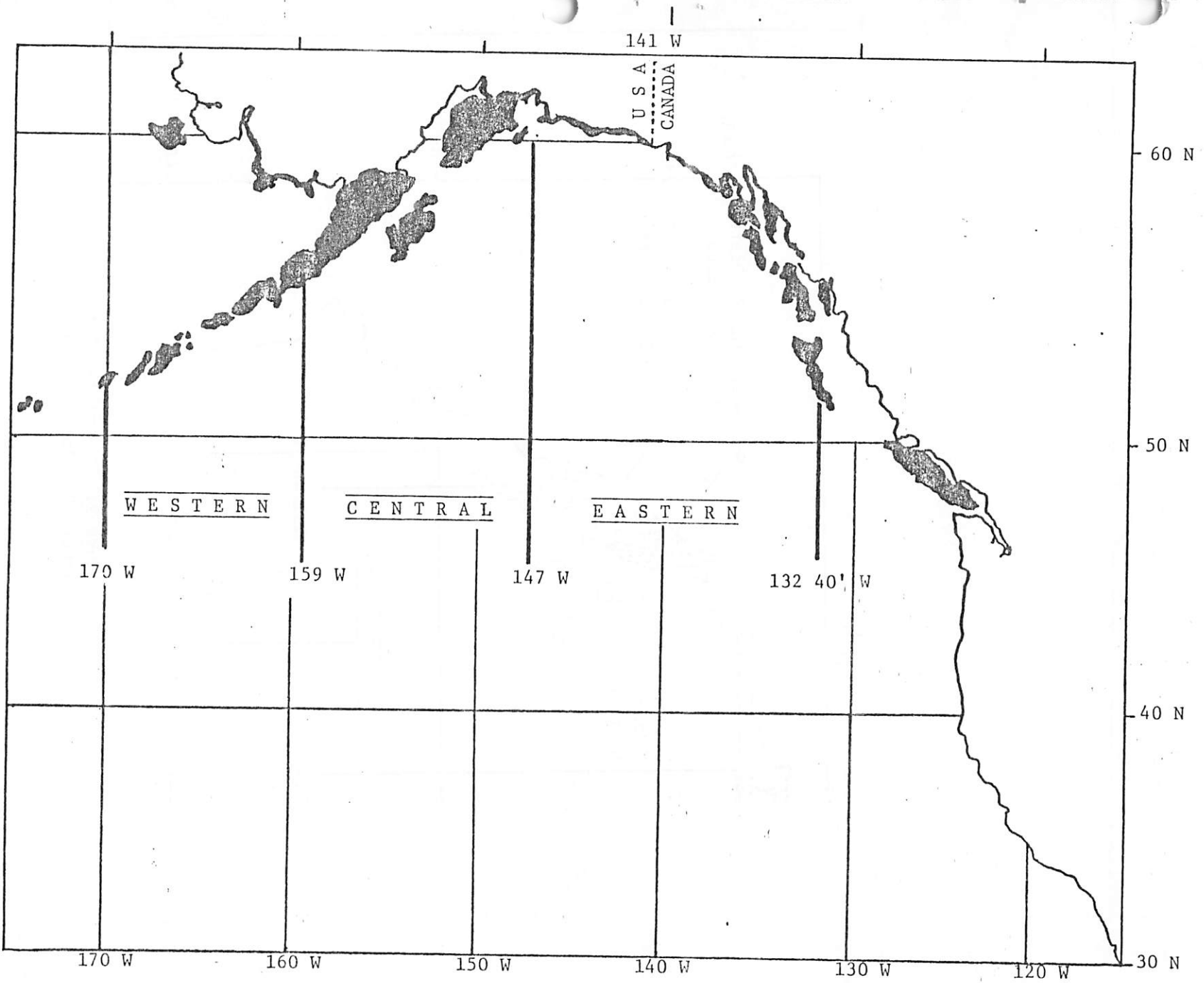
- a. Foreign trawling prohibited in the eastern area.
- b. POP TALFF = 0
- c. POP DAH = 500 mt
- d. Sablefish catch levels not to increase.

Option C

- a. No foreign trawling in Southeastern District.
- b. Foreign trawling in Yakutat only with off-bottom gear and only from December 1 to May 31.
- c. POP TALFF (Yakutat) = 375 mt
- d. POP DAH = 500 mt
- e. Sablefish catch levels not to increase.
- f. Present sanctuaries in Yakutat to be continued.

With Council approval at this meeting, this amendment will go to public review beginning about the end of December 1980, and be available for final Council action at its February meeting, 1981.

Figure 1 -- Regulatory Areas of the Gulf of Alaska (FMP)



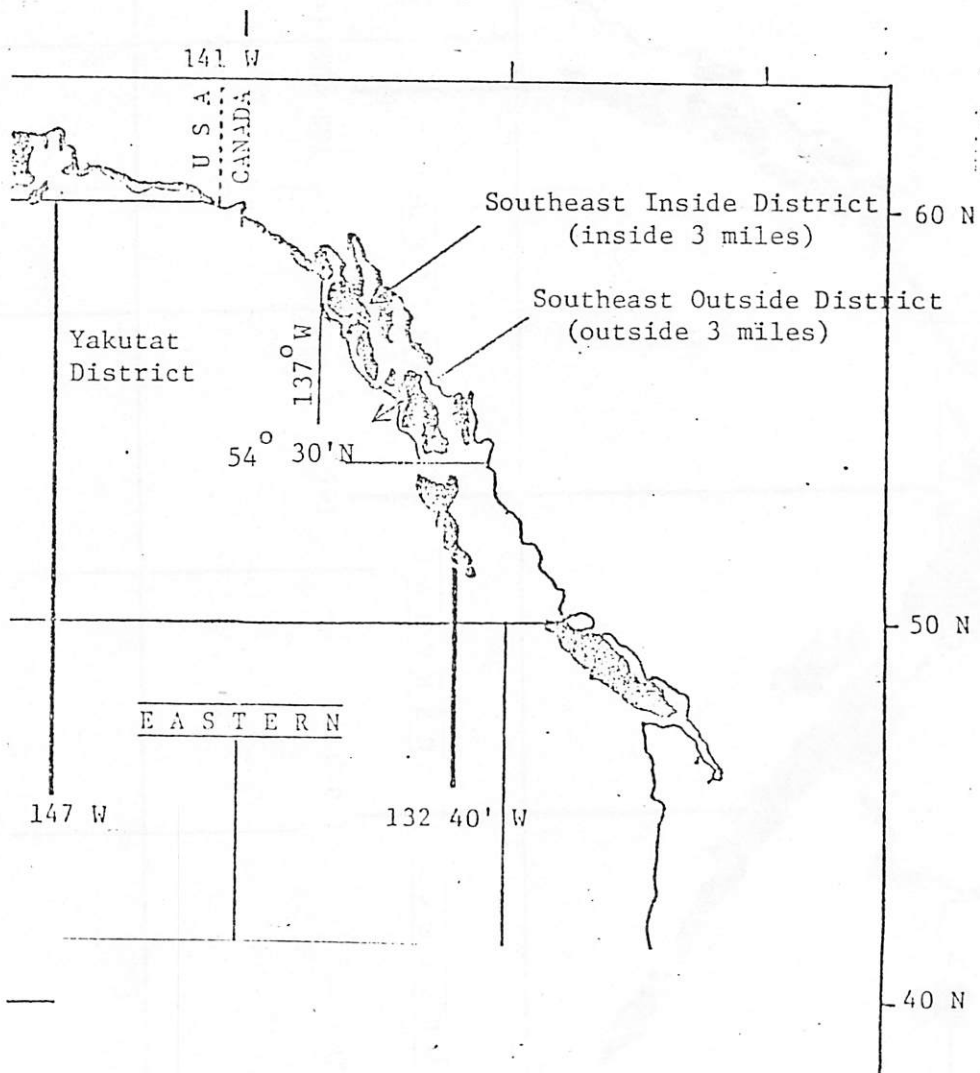


Figure 2. Districts of the Eastern Regulatory Area

Attachment I.

Report from the Gulf of Alaska Groundfish PDT on

- a. public participation at team meetings.
- b. Sablefish Stocks
- c. ALFA amendment to prohibit trawling by foreign fleets in the Eastern regulatory area.

Supporting papers by Barry Bracken (status of sablefish stocks), Steve Hoag (incidental catch in the Eastern Regulatory Area) and Phil Rigby (status of POP stocks) are available on request.

DEC 1 1980

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ACTION	NOV 10	INITIAL
GULF OF ALASKA GROUND FISH PDT REPORT		

GULF OF ALASKA GROUND FISH PDT REPORT

The Gulf of Alaska Groundfish PDT met on November 12 and 13, 1980, and discussed three topics: (I) A team position on public participation at team meetings; (II) The status of sablefish stocks in the Gulf of Alaska; and (III) The ALFA-sponsored proposed amendment to the Gulf of Alaska Fisheries Management Plan which would prohibit foreign trawling in the Eastern regulatory area.

I. PDT position on public participation at team meetings

The team prefers to conduct its meetings as closed sessions, restricting attendance to team members exclusive of AP and SSC representatives. The team believes this allows uninhibited discussions of ideas, alternatives, and options to take place in a timely manner. The team recognizes the roles of the AP, SSC, and Council members in the review process and would be prepared to meet in review with these groups at their request at any time.

The team proposes to meet its obligations to the public at open meetings before or after the closed team meetings, as appropriate.

II. Status of sablefish stocks in the Gulf of Alaska

The team considered statistics from the domestic longline fishery which show CPUE and average size of sablefish are down in 1980 and 1979 compared to 1978 (see attached report by Barry Bracken). This evidence, which conflicts with results of the 1978 and 1979 Japan/U.S. cooperative longline survey, suggests that sablefish population parameters need to be re-evaluated. This re-evaluation is being undertaken by the team; in the interim, the team recommends that increased catch of sablefish be avoided.

III. Proposal to prohibit foreign trawling in the Eastern regulatory area of the Gulf of Alaska

The team debated this issue from 5 perspectives and proposes three alternate proposals which address each of these perspectives. The five perspectives are:

1. The present condition of POP stocks and the impact the proposed closure would have on POP;
2. The present condition of sablefish and the impact the proposed closure would have on sablefish;
3. Recent catches of prohibited species and the impact the proposed closure would have on prohibited species;
4. Recent gear conflicts and the impact the proposed closure would have on future occurrences; and
5. The impact the proposed closure would have on the foreign fishing fleet.

1. The team reviewed the available data pertinent to POP (see attached report by Phillip Rigby) and concluded that this evidence suggests POP stocks are severely depressed in the Eastern area. The team recommends that the harvest of POP be severely curtailed. The team noted that several detailed studies on POP are currently underway and scheduled to conclude in the summer of 1981. However, the status of POP appears to be such that this interim action is required.

2. As mentioned in (II) above, conflicting reports exist on trends in sablefish stocks. There is sufficient reason for concern, and the team recommends that sablefish catch levels established for 1981 should not exceed those set for 1980 until the ongoing analyses are completed.

3. The team noted that incidental catches of halibut in 1979 were markedly higher than those in 1978 (see attached report by Steve Hoag) and considers the 1979 level to be excessive and recommends that action be taken to reduce these catches. The ex-vessel value of the estimated incidental catch of halibut was about \$3.9 million.

4. The team reviewed evidence on reported gear conflicts between U.S. longline fishermen and foreign trawlers (see attached report by Barry Bracken). The team recommends some action which will protect U.S. fishing gear and allow domestic fishermen to fish where they prefer.

5. Catch statistics from 1979 show total foreign catch of groundfish in the Eastern area to be 22,900 tons (see attached Table 1). The total value of this catch based on the foreign fee schedule is about \$7.2 million. If POP is eliminated from the foreign catch, the remainder is 16,500 tons with a value of about \$4.9 million. If the expected foreign catch in 1981 remains at the 1979 level, and if the foreign fleet is restricted from POP, the profit loss to a total closure would be less than \$4.9 million.

The team proposes the following three options which would meet the recommendations listed under items 1-4 above. The team has no specific preference, but notes that Options A and C are highly dependent on increased observer coverage on foreign trawlers in the Eastern area, and would not be effective options if the measures suggested were not closely enforced.

#### OPTION A

Option A is the least restrictive of the three proposed options:

- (i) Foreign trawling allowed only with off-bottom gear and only from December 1 to May 31;
- (ii) POP TALFF set at 500 t;
- (iii) POP DAH set at 500 t;
- (iv) Sablefish catch levels not to increase;
- (v) Present sanctuaries in the FMP would be continued.

#### Notes:

a) -- Foreign trawling is currently restricted to off-bottom gear from December 1 - May 31.



(b) -- Evidence from the observer program suggests that in those trawl hauls in which rockfish were not the target species, the foreign trawlers took approximately 3 percent POP in their catches. Hence, 500 t would allow foreign trawlers to operate on species other than POP.

(c) -- The team judged 500 t sufficient to allow the initiation of an experimental domestic fishery for POP.

(d) -- The open period for foreign trawling would have less overlap with domestic longline fishing periods, and would lead to fewer gear conflicts. In addition, foreign trawls being worked off-bottom have less potential to encounter domestic longline gear.

(e) -- The trawling period, coupled with the off-bottom restriction, would greatly reduce the incidental harvest of prohibited species.

(f) -- If the impact of a total closure on the foreign trawl fleets is \$4.9 million, this option would provide a somewhat lesser impact. The team could not determine how much less.

(g) -- The team feels that the 500 t limit on POP and the off-bottom restriction would be non-enforceable without significant increases in observer coverage and Coast Guard boardings.

#### OPTION B

Option B is the most restrictive of the three proposed options (this is essentially the ALFA proposal).

- (i) Foreign trawling prohibited in the Eastern area;
- (ii) POP DAI set at 500 t;
- (iii) Sablefish catch levels not to increase.

#### Notes:

a) -- This option would have the most positive influence on POP stocks, prohibited species, and the gear conflict problem.

b) -- The team judged 500 t sufficient to allow the initiation of an experimental domestic fishery for POP.

c) -- This option would have the greatest impact on foreign fleets. As noted above, a potential harvest loss of 16,000 tons would occur. There is some potential of reducing this loss by allowing foreign longliners to harvest Pacific cod and arrowtooth flounder in that part of Yakutat west of 140°W. The maximum recovery by the foreign longliners of the discontinued foreign trawl catch would probably not exceed 200 tons of Pacific cod and 1500 tons of arrowtooth flounder.

d) -- This option would be easily enforced.

#### OPTION C

This option is a compromise position between Option A and Option B. Basically, it applies Option B to the Southeastern regulatory area and Option A to Yakutat.

- (i) Foreign trawling prohibited in Southeast;
- (ii) Foreign trawling allowed in Yakutat only with off-bottom gear and only from December 1 to May 31;
- (iii) POP TALFF (Yakutat) set at 375 t based on catch distribution shown in Table 1.
- (iv) POP DAH set at 500 t;
- (v) Sablefish catch levels not to increase;
- (vi) Present sanctuaries in Yakutat would be continued.

#### Notes:

a) -- The notes under Options A and B above apply here to the restriction which are imposed in the Yakutat and Southeast areas, respectively.

b) -- The total foreign trawl harvest of groundfish (exclusive of POP) in the Yakutat area in 1979 was about 12,500 tons with an ex-vessel value of approximately \$3.5 million. Some undetermined fraction of this might be

recovered in the off-bottom winter fishery. The total foreign trawl harvest of groundfish (exclusive of POP) in the Southeast area in 1979 was 4,000 t, with an ex-vessel value of about \$1.4 million. This catch would not be recovered by foreign vessels in the area.

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Foreign Catches in Gulf of Alaska, 1978<sup>1/</sup> and 1979<sup>2/</sup>  
Best Blend Estimates

	West	Central	East	Yakutat	South-eastern	Total
<u>1979</u>						
Pollock	30,217.5	67,598.0	5,371.8	4,816.3	555.5	103,187.3
Pacific cod	3,969.4	8,797.9	406.9	344.4	62.5	13,174.2
Flounders	2,816.7	5,026.0	5,631.6	3,289.7	2,341.9	13,474.3
POP	944.6	2,371.2	6,434.0	2,216.6	4,217.4	9,749.8
Other rack	44.5	235.2	1,144.2	534.2	610.0	1,423.9
Sablefish	999.4	3,159.0	2,726.2	2,632.8	93.4	6,884.6
Atka mackerel	418.3	10,519.0	10.5	10.5	0.0	10,947.8
Squid	133.0	96.1	196.5	111.5	85.0	425.6
Other fish	929.3	2,177.4	974.5	695.4	279.1	4,081.2
Total	40,472.7	99,979.8	22,896.2	14,651.4	8,244.8	163,349.0
<u>1978</u>						
Pollock	31,300.5	61,498.3	3,528.3	2,538.0	990.3	96,327.1
Pacific cod	5,518.8	5,584.6	264.8	199.0	65.8	11,368.2
Flounders	2,538.3	6,283.8	5,491.7	2,955.3	2,536.4	14,313.8
POP	3,642.1	2,023.0	2,504.0	1,343.6	1,160.4	8,169.1
Other rack	749.6	581.3	565.1	420.8	144.3	1,896.0
Sablefish	1,418.9	3,087.9	2,620.0	2,584.7	35.3	7,126.8
Atka mackerel	488.6	18,806.6	289.8	124.8	165.0	19,585.0
Squid	147.0	120.1	53.9	45.5	8.4	321.0
Other fish	2,522.9	2,439.4	1,023.9	805.5	218.7	5,986.2
Total	48,326.7	100,425.0	16,341.5	11,017.2	5,324.6	165,093.2

1/ Anonymous. 1979. Summaries of provisional 1978 foreign groundfish catches in the north-east Pacific Ocean and Bering Sea. Northwest and Alaska Fish. Cent., Natl. Mar. Fish. Serv., Seattle, WA. Unpubl. manusc. 96 p.

2/ Nelson, R., Jr., R. French, J. Wall, and J. Berger. 1980. Summaries of provisional 1979 foreign groundfish catches in the northeast Pacific Ocean and Bering Sea. Northwest and Alaska Fish. Cent., Natl. Mar. Fish. Serv., Seattle, WA. Unpubl. manusc. 149 p.

EFFECT OF FOREIGN TRAWLING ON PROHIBITED SPECIES  
IN THE YAKUTAT AND SOUTHEASTERN REGIONS

*Steve Haug*

Prohibited species (salmon, halibut and crab) are caught incidentally in the foreign trawl fishery in the Yakutat and Southeastern regions. Although prohibited species must be released, their survival is nil because of injuries received during the capture process. The U.S. National Marine Fisheries Service estimated the incidental catches during 1978-1979, based on data collected by observers. A summary of the estimated incidental catches is as follows:

	<u>Salmon</u>		<u>Halibut</u>		<u>Tanner Crab</u>		<u>King Crab</u>	
	Number	Metric Tons	Number	Metric Tons	Number	Metric Tons	Number	Metric Tons
<u>Yakutat</u>								
1978	321	1.22	18,902	201.32	7,521	3.89	750	0.83
1979	79	0.44	62,542*	1,374.95*	1,308	1.22	127	0.31
Average	200	0.83	40,722	788.13	4,414	2.55	438	0.57
<u>Southeastern</u>								
1978	128	0.50	5,165	45.23	0	0	0	0
1979	212	1.09	21,052*	313.30*	0	0	19	0.02
Average	170	0.80	13,108	179.26	0	0	10	0.01
<u>Total</u>								
1978	449	1.72	24,067	246.55	7,521	3.89	750	0.83
1979	291	1.53	83,594*	1,688.25*	1,308	1.22	146	0.33
Average	370	1.63	53,830	967.39	4,414	2.55	448	0.58

\*These estimates may be too high; see paragraph 3 on page 2.

*equal possibility it's too low*

Except for halibut, the estimated incidental catches are small and probably have relatively little impact biologically or economically. The annual incidental catch for 1978-1979 averaged 1.63 m.t. for salmon, 2.55 m.t. for Tanner crab, and 0.58 m.t. for king crab.

The incidental catch of halibut, on the other hand, was substantial, averaging 967.39 m.t. annually during 1978-79. An incidental catch of this magnitude impacts both the management of the halibut resource and the potential yield available to the halibut fishery. The directed catch of halibut in the halibut fishery averaged about 4,000 m.t. annually during 1978-79 in the Yakutat and Southeastern regions. Thus, the incidental catch in the foreign trawl fishery represents about 25% of the directed catch. Incidental catches contribute a significant management problem in that the catch is unspecified and varies annually; the combined incidental and directed catch may lead to overfishing. In any event, the incidental catch reduces the potential yield available to the fishery. The incidental catch, being discarded at sea, has no economic benefit, and even if it were landed would not benefit the domestic fishing industry. Applying 1979 prices of about \$4,000/m.t. (ex-vessel) and \$10,000/m.t. (retail) to the incidental catch of halibut, the economic loss from foreign trawling in the Yakutat and Southeastern regions would be about \$3,900,000 (ex-vessel) and \$9,700,000 (retail).

It should be noted that the estimates of incidental catch are in some cases based on meager data. For example in 1979, the estimated incidental catches in the Korean fishery in the Yakutat and Southeastern fishery were based on one day of sampling. In the case of halibut, an observed catch rate of 16.667 halibut per m.t. of groundfish was extrapolated to the total groundfish catch and resulted in an estimated halibut catch of about 1,400 m.t. Because of the meager data, the estimates may not be precise.

High rates of halibut incidence have been observed during summer and winter and in several areas within the Yakutat and Southeastern regions. However, data are not sufficient to differentiate between areas and times of high and low incidental catch.

The Yakutat and Southeastern regions combined accounted for 28% of total halibut catch by the domestic setline fishery during 1978-79 (IPHC, 1980). Within the Yakutat and Southeastern regions, catch data from the domestic setline fishery are available by IPHC statistical areas (Figure 1). These data provide an indication of the areas that are most important to halibut. Considering offshore grounds only, Areas 19 and 20 (approximately 142° W - 137° W) were the most important areas for domestic halibut production. However, halibut move from inshore waters to offshore waters during the winter for spawning. Thus, halibut from inshore grounds are vulnerable to foreign trawling. Combining inshore and offshore grounds suggests that most of the grounds east of 142° W are important for halibut.

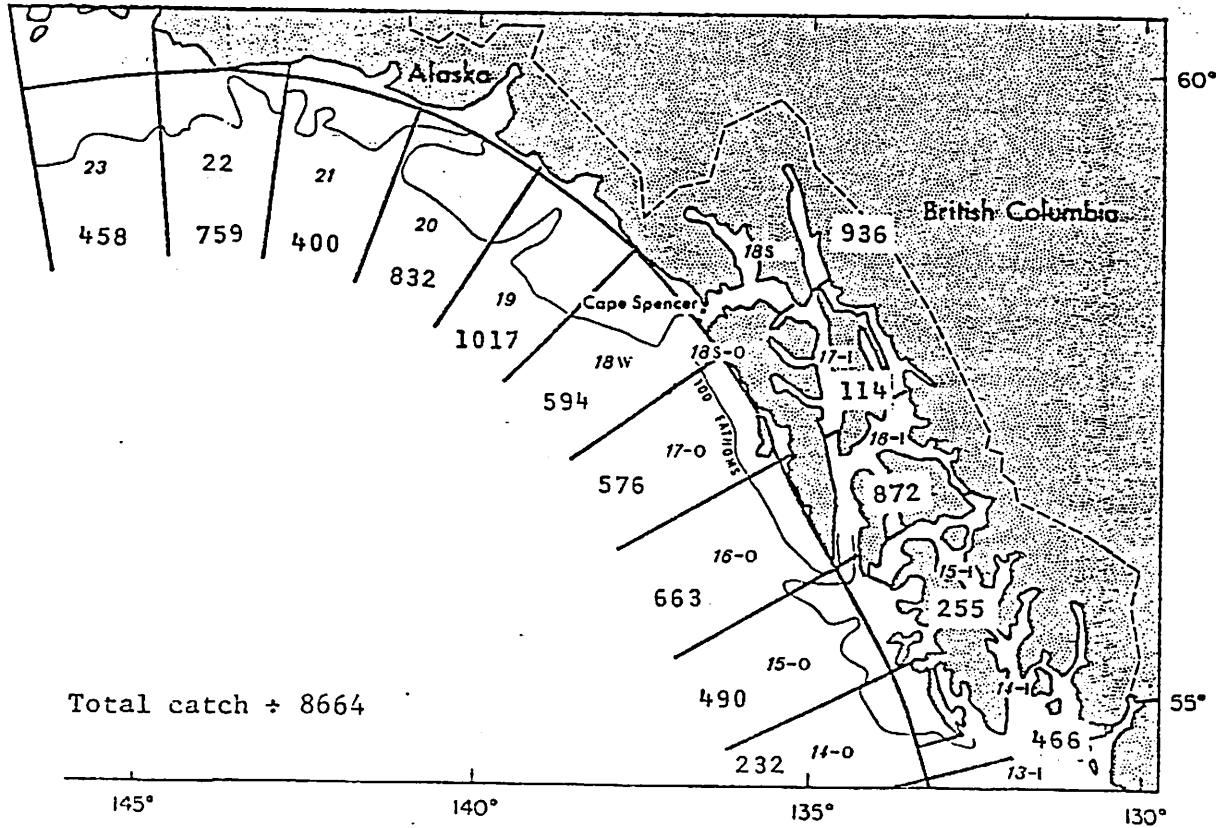


Figure 1. Average 1978-1979 catch of halibut (thousands of pounds) by IPHC statistical areas for the domestic setline fishery in the Yakutat - Southeastern regions.



PACIFIC OCEAN PERCH IN THE EASTERN REGULATORY AREA  
WITH RECOMMENDED CATCH RESTRICTIONS

By

Phillip W. Rigby

Groundfish Research Coordinator

Division of Commercial Fisheries

Alaska Department of Fish and Game

The Pacific Ocean perch (POP) resource of the Bering Sea/Gulf of Alaska is severely depressed. Foreign fisheries for this species first initiated in the Gulf of Alaska by the Soviets in 1962 and by the Japanese in 1963 have reduced this resource to approximately 10% of its virgin level (Hughes & Ronholt, 1976) (Ronholt, et.al., 1978). For the Gulf of Alaska the highest recorded catch of 344.7 thousand mt (759 million lbs.) was taken in 1965. From this point annual catches declined drastically to 46.4 thousand mt (102 million lbs.) in 1976 (Figure 18). This latter year was selected because it is prior to any regulatory influence of preliminary management plans (PMP's) under the Fishery Conservation and Management Act (FCMA). The catches and catch per unit effort (CPUE) for POP of Japanese trawlers show a continuing decline in all areas. From Japanese CPUE data available<sup>1/</sup> since 1968, when the stocks were already reduced to one third their virgin biomass (Quast, 1972), a continued declining trend is evident. For the area Southeastern annual Japanese trawl CPUE dropped from 4.16 mt/hr. in 1968 to 1.50 mt/hr. in 1978 and 1979.

For the Yakutat area CPUE dropped from 6.22 mt/hr. in 1968 to 0.53 mt/hr. in 1978 (1979 <sup>mt</sup> available). Similar declines occurred for the Kodiak, Chirikof and Shumagin areas (Figure 19). Even these drastic declines do not fully represent the depressed condition of POP stocks as is evident from the following statement taken from the Fishery Management Plan for the Gulf of Alaska Groundfish Fishery, p. 4-18:

"U.S. scientists contend that the population has probably declined to a lower level than indicated by CPUE studies because effort has not been adequately adjusted to account for unquantifiable improvements in the fishing power of Japanese trawlers. In other words, an hour of trawling now represents a great deal more fishing power than an hour's trawling in 1966 because of larger engines and nets, improved hydroacoustic equipment and techniques for locating fish, extended search time, and experience on the part of the fishermen. When CPUE is based on catch per vessel-day rather than catch per hour, the downward trend is accentuated (Larkins, 1974)."

Quast (1972) predicted that without restriction the stocks would be taken to the lowest economic yield of the nation that is able to fish most cheaply. He also suggested that if fishing ceased entirely decades would be required for moderate recovery, and that replacement of POP by faster growing species was possible.

Chikuni (1974) considered all POP stocks in the North Pacific to be in bad condition and recommended that the allowable catch of the Gulf region be reduced within the sustainable yield expected from the recruitment in recent years. It is obvious from declining CPUE that Chikuni's recommendations were not heeded, and that Quast's predictions have come true.

In view of the above, the question now may be, if POP are in such bad condition why be concerned about this particular species? We know that Pacific Ocean perch is slow growing with a low reproductive potential and, therefore, will take a long time to recover. And we know that pollock increased in abundance by ten fold and other species such as Pacific cod and Atka mackerel have also increased substantially.

In answer to this rhetorical question the following arguments are offered. Although groundfish species other than POP increased substantially in recent years, these increases have in a relative sense been only in the western Gulf of Alaska. As indicated in the Gulf plan only 19.6% (66,086 mt) of the optimum yield is allocated to the eastern regulatory area even though this area encompasses almost half the Gulf of Alaska. Of the 162,000 mt Gulf catch taken by foreign fleets (Russel, 1980) only 7.3% (11,857 mt) and 5.1% (8,323 mt) came from the Yakutat and Southeastern areas respectively. For Southeastern, 45% of this catch was POP; 53% was rockfish of all species. For Yakutat 17% was POP; 21% was rockfish of all species. In relation to the western Gulf no substantial increases in groundfish stocks have been observed in the eastern Gulf since the demise of the massive foreign fishery for Pacific Ocean perch. This absence of substantial increases in species other

than POP is very evident in Figures 20, 21, 22, 34 and 35. As a result there are few groundfish populations in the eastern regulatory area on which to base a new and sustainable U.S. fishery. Of the two other species with some potential throughout the area, sablefish (blackcod) and arrow tooth flounder (turbot), the first is reduced far beyond the MSY and the second presently has no market for human consumption.

As mentioned above Pacific Ocean perch are slow growing with a low reproductive potential. On the other hand they are long lived (30+ years); have a low rate of natural mortality<sup>2/</sup>; and although few larvae are produced when compared with many other groundfish species, the larvae when released are free swimming and of a relatively large size. These biological parameters contribute to the maintenance of a very stable population and, therefore, under an appropriate regulatory regime contribute to the maintenance of a stable fishery (Adams, 1980). It is interesting to note that in its virgin state this species had out competed other marine species and was by far the most abundant commercially valuable groundfish in the North Pacific.

Many people have commented that many years are required to rebuild depressed stocks of Pacific Ocean perch, and the draft Pacific Coast groundfish Plan gives rebuilding schedules of between 11 and 39 years, depending on annual catch levels, to produce MSY from stocks now at 22% to 33% of MSY. However, from an optimistic view point, recent NMFS rockfish surveys in the Southeastern area indicated improved recruitment (Table 2) with 33% of the specimens below 21 cm in length. With appropriate catch restrictions the potential

exists to build in the near future, POP populations in this area to levels which will support a domestic fishery. During 1976 through 1979 four U.S. trawl vessels each experienced chopper's attempts to fish for POP in the eastern area without finding concentrations which would support a commercial fishery.

In view of the present condition of groundfish populations in the eastern Gulf and the highly seasonal nature of the foreign effort in the eastern Gulf it is easy to speculate that foreign trawlers could not economically operate if they were forced to fish only this area. Now that the POP resource is severely reduced, the foreign trawlers are simply removing the annual production as it comes available, essentially taking the cream off the top. At these low population levels there is no way a U.S. fisherman can ever hope to compete with foreign fleets built and paid for at the expense of resources within the U.S. FCZ with low interest loans, government subsidies, and no regulations.

#### CONCLUSION

In conclusion the following statements are made.

1. Pacific Ocean perch stocks are severely depressed.
2. With this decline other groundfish species have replaced POP in abundance only in the western Gulf of Alaska.
3. Although POP stocks are depressed, signs of recovery are evident in the Southeastern area.

In accordance with paper regulations

4. Pacific Ocean perch can support a stable U.S. fishery.
5. Except for sablefish, groundfish stocks in the Yakutat and Southeastern areas do not provide an opportunity for development by the U.S. industry because of presently low levels of abundance.
6. Foreign trawl fleets gain a small portion of their total catch from the eastern Gulf of Alaska <sup>(       % of the Gulf and        % of the eastern north Pacific catch)</sup> and ~~probably could not fish economically if forced to depend only on this area.~~

Since POP is the only species other than sablefish which can support a U.S. groundfish industry in the eastern Gulf, every attempt should be made to protect and rebuild this species. A moratorium on foreign trawl effort within the eastern regulatory area should be established. The Gulf groundfish plan should be amended such that the OY for each species equals DAH, and the DAH for all species other than sablefish should remain at the level determined by the NMFS domestic industry survey until reassessments verify a need for change. Since this proposal is based on both economics and conservation the domestic fishery should also be restricted initially.

A foreign trawl closure may not be warranted for the entire eastern regulatory area, and potential options are indicated in Figures 3, 5, 15, and 16. The potential options are for a closure east of 140°<sup>0</sup>, 144°<sup>0</sup>, or 147°<sup>0</sup> W. longitude. Table I shows the 1979 catch by species for the Japanese trawl fishery by option area. Considering the historic distribution of POP catches (Figure 16) and recent survey data (Figure 15) the FCZ east of 144°<sup>0</sup> should be closed to

foreign trawling. If the fact that approximately 65% of the Yakutat area foreign trawl catch<sup>3/</sup> is taken between 144° and 140° is of critical importance then 140° should be considered as an alternative. Only 11% of the trawl catch<sup>3/</sup> within the Yakutat area is harvested between 140° and 137°.

Footnotes

1/ Calculated from catches composed of 50% or more POP.

2/ Most authorities consider M to approximate 0.2.

3/ Based on 1979 Japanese trawl catches, NWAFC foreign catch printouts.

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Table 1. 1979 Japanese Trawl Groundfish Catch<sup>1/</sup> by International Statistical Area and Option Sub-areas (1,000's m.t.).

Species	- Yakutat			Total Yakutat	South- east	Total Yakutat & Southeast
	146° thru 144°	143° thru 140°	139° thru 137°			
All Species	2779	7780	1345	11904	8337	20,241
POP	360	1307	398	2065	3542	5,607
Turbot <sup>2/</sup>	242	1987	247	2476	2542	5,018
Other Flounder	99	588	129	816	260	1,076
Other Rockfish	88	366	129	583	1057	1,640
Pollock	1739	3039	360	5146	571	5,717
Pacific Cod	49	142	18	209	117	326
Sablefish	5	95	30	130	78	208
Other Species	197	256	34	479	170	649

<sup>1/</sup> Data Source: NMFS.

<sup>2/</sup> Atheresthes stomias (arrowtooth flounder).

Table 2.--Weighted length frequencies by sexes for Pacific ocean perch captured during the 1978 rockfish survey in the eastern Gulf of Alaska.

Length (cm)	Southeastern Alaska <sup>1/</sup>		Yakutat	
	♂	♀	♂	♀
14	10	10		
15	72	72	1	
16	177	177		1
17	198	198		1
18	82	82		
19	7	7		
20	3	3		
21			1	
22	10	10	1	
23	3	3	2	
24		1	4	1
25			1	1
26	1	1	3	1
27	9	8	3	1
28	7	9	2	2
29	35	21	3	1
30	44	35	6	3
31	39	57	10	10
32	78	82	12	17
33	101	93	22	20
34	118	182	27	13
35	123	117	10	10
36	98	124	6	8
37	57	116	4	7
38	23	103	1	5
39	8	113	1	5
40	4	95	2	4
41	14	68		3
42	5	62	1	1
43	13	17		1
44	9	12		
45	9	8		
46	6	5		
47	2	3		
48	1	7		
49		2		
50		2		
51		1		
52				
53				
54				
55				
Total ...	1,366	1,806	123	116
$\bar{X}$ =	27.14	32.19	32.18	33.76

<sup>1/</sup> Smaller Pacific ocean perch in the southeastern Alaska area were not sexed; therefore, these individuals were evenly divided between males and females.

From Ronholt, Lael, 1979. Results of NMFS trawl surveys of rockfish in the eastern Gulf of Alaska. NMFS Unpublished Report.

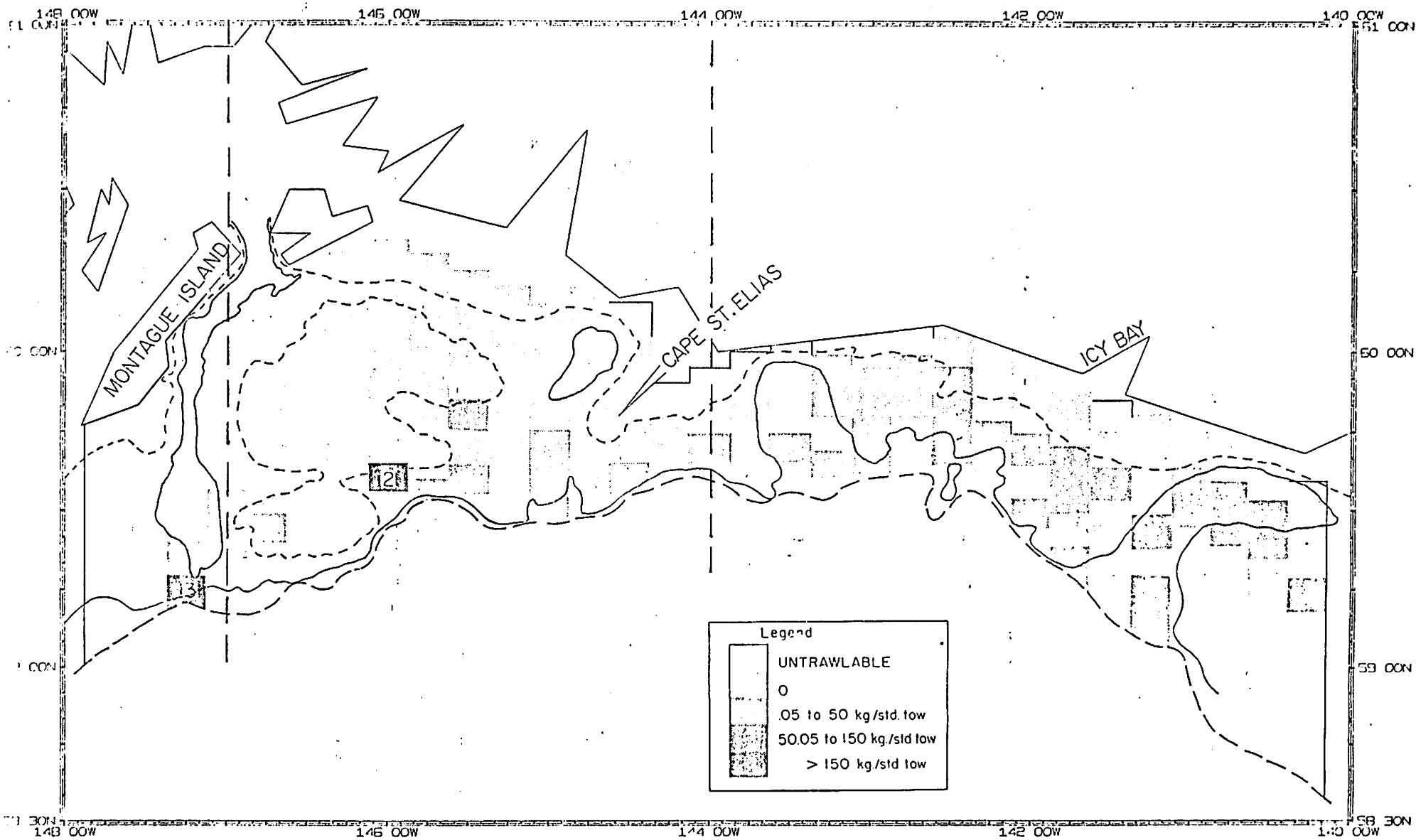
Table 3. 1979 Foreign 'Best Blend' Catches in metric tons (Russell et. al., 1980).

Area	All Species	POP	FR Other Rockfish	All Rockfish
Southeastern	8,323.8 8,244.8	3,775.9 4,217.4 BB	639.4 610.2 BB	4,415.3 (85.5% POP) 4,527.4 BB (57.4% POP)
Yakutat	11,857.4 14,651.4	2,070.0	478.6	2,548.6 (81.2% POP)
Kodiak	63,038.0	2,216.6	534.2	2,750.8 (50.1% POP)
Chirikof	38,998.5			
Shumagin	39,806.9			
Total	162,014.6			

22,596.2  
(14% of total)

Figure 15.

From: Ronholt et.al. An assessment of the demersal fish and invertebrate resources of the northeastern Gulf of Alaska, Yakutat Bay to Cape Clear May-August 1975. NWAFC Proc. Rept. March 1976.



DISTRIBUTION AND RELATIVE ABUNDANCE OF SEBASTES ALUTUS MAY-AUG 1975

Fig. 5. Geographical distribution of annual catch of Pacific ocean perch (in m.t.) in 1978 calendar year.

Distribution by Area

Year	1978	1977
Total	3,957 ( % )	21,335 ( % )
Shumagin	396 (10.0)	1,564 ( 7.3)
Chirikof	390 ( 9.9)	2,525 (11.8)
Kodiak	1,000 (25.3)	4,959 (23.3)
Yakutat	1,073 (27.1)	5,407 (25.4)
Southeastern	1,077 (27.2)	4,740 (22.2)
Charlotte	6 ( 0.2)	2,134 (10.0)
Vancouver	15 ( 0.4)	6 ( 0.0)

Total Yakutat area 237mt

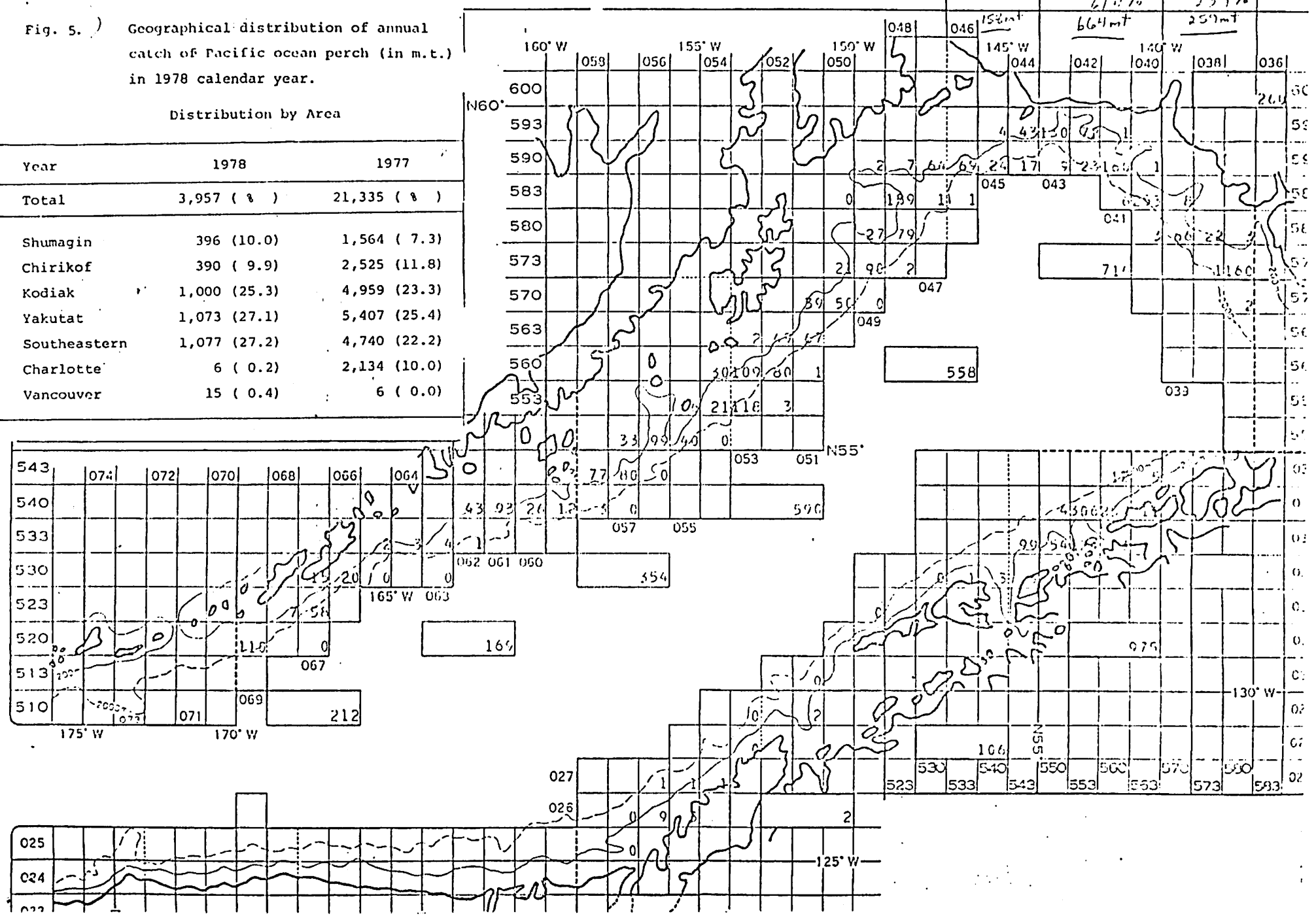
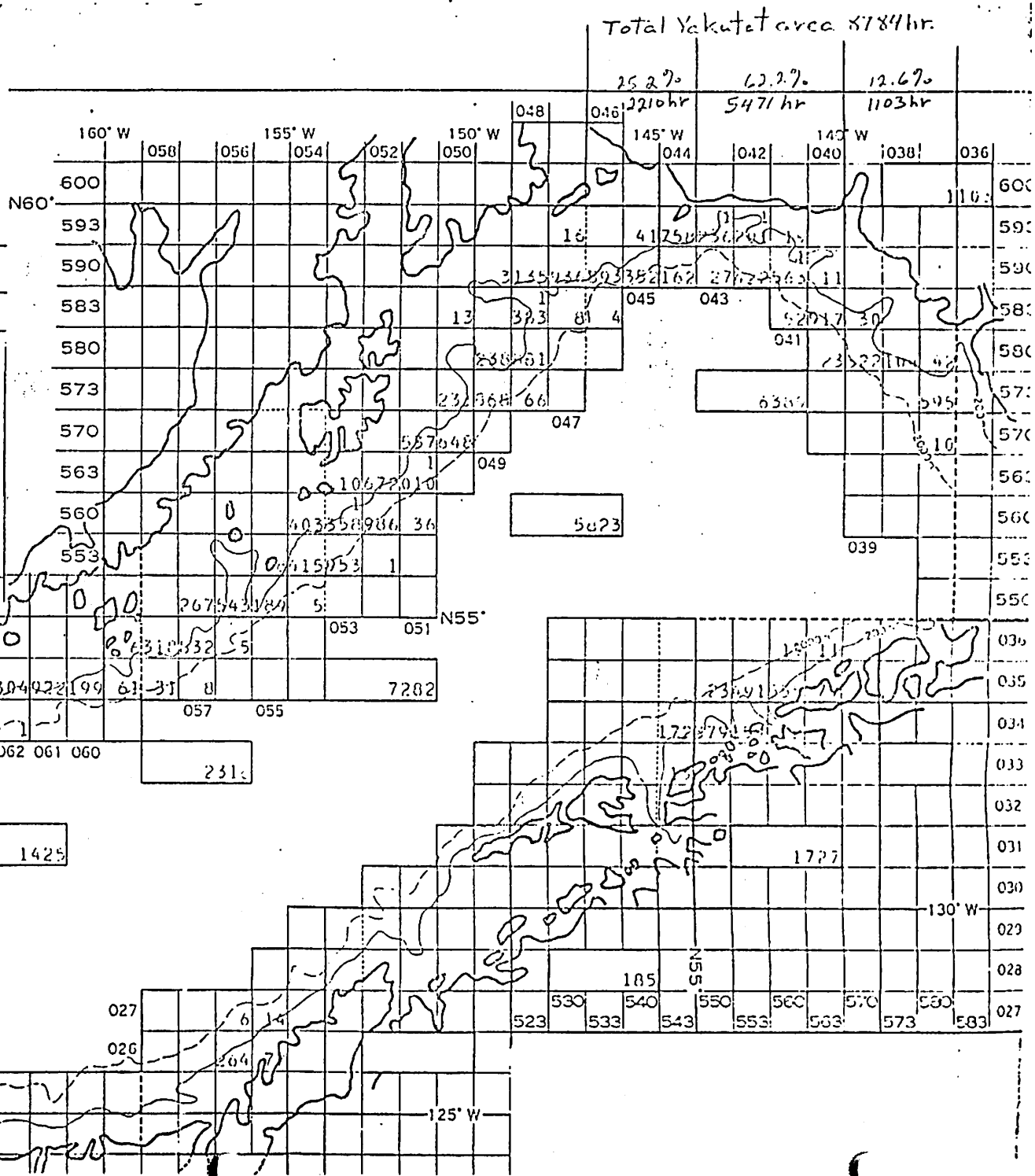


Fig. 3.

Geographical distribution of annual effort of stern trawl (in hours) in 1978 calendar year.

Distribution by Area

Year	1978	1977
Total	28,202 ( % )	36,367 ( % )
Shumagin	3,080 (10.9)	3,354 ( 9.2)
Chirikof	3,075 (10.9)	3,201 ( 8.8)
Kodiak	10,992 (39.0)	11,409 (31.4)
Yakutat	8,781 (31.1)	11,536 (31.7)
Southeastern	1,912 ( 6.8)	4,151 (11.4)
Charlotte	- ( - )	1,887 ( 5.2)
Vancouver	362 ( 1.3)	829 ( 2.3)



543	074	072	070	063	066	064	053	051
540							304	422
533							199	61
530							062	061
523							060	
520							231	
513							1425	
510							067	
							071	1586

Figure 16.--Location and magnitude of Pacific ocean perch catches in the Gulf of Alaska by the Japanese trawl fishery. Catches are the average annual removals for the period, 1963-75.

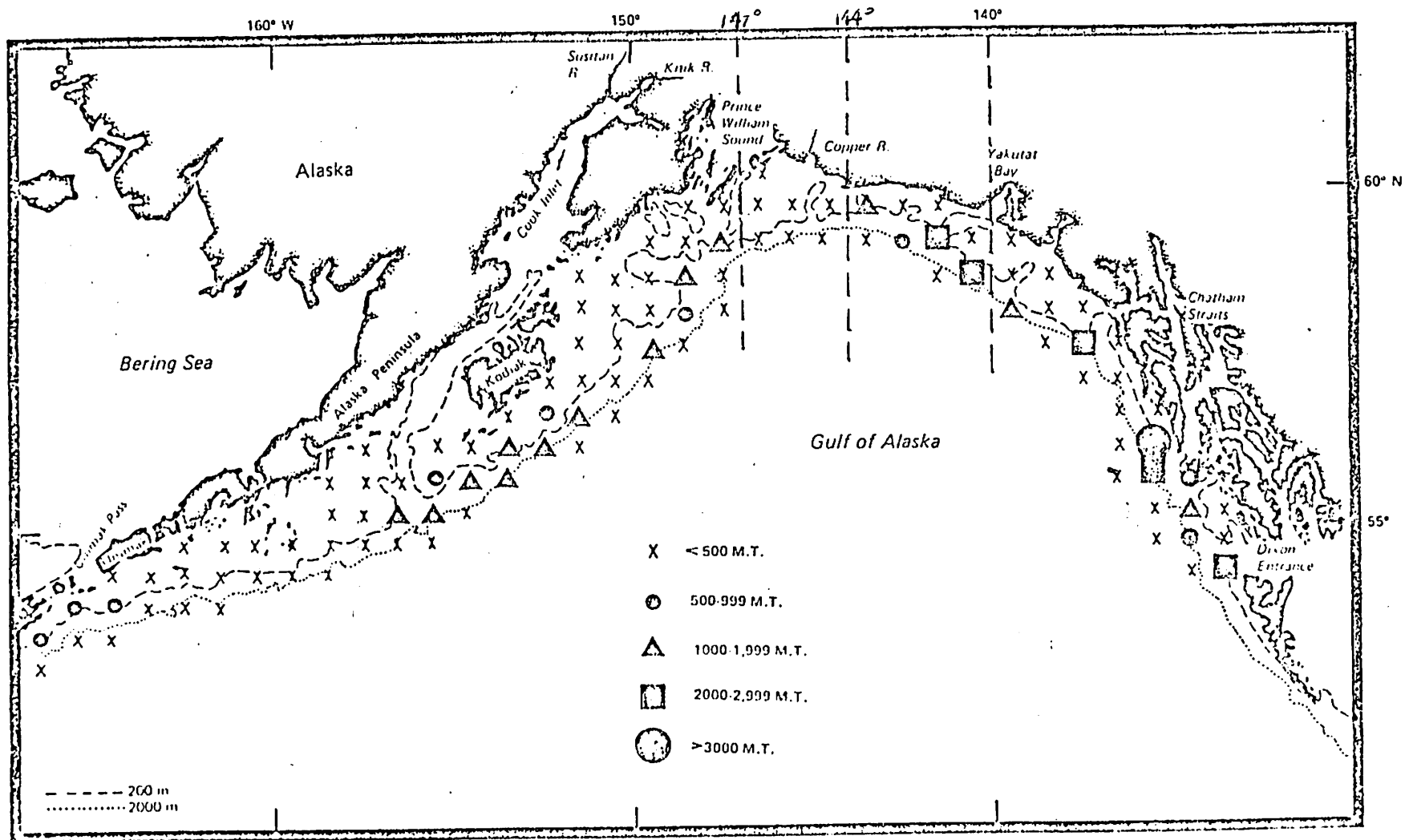
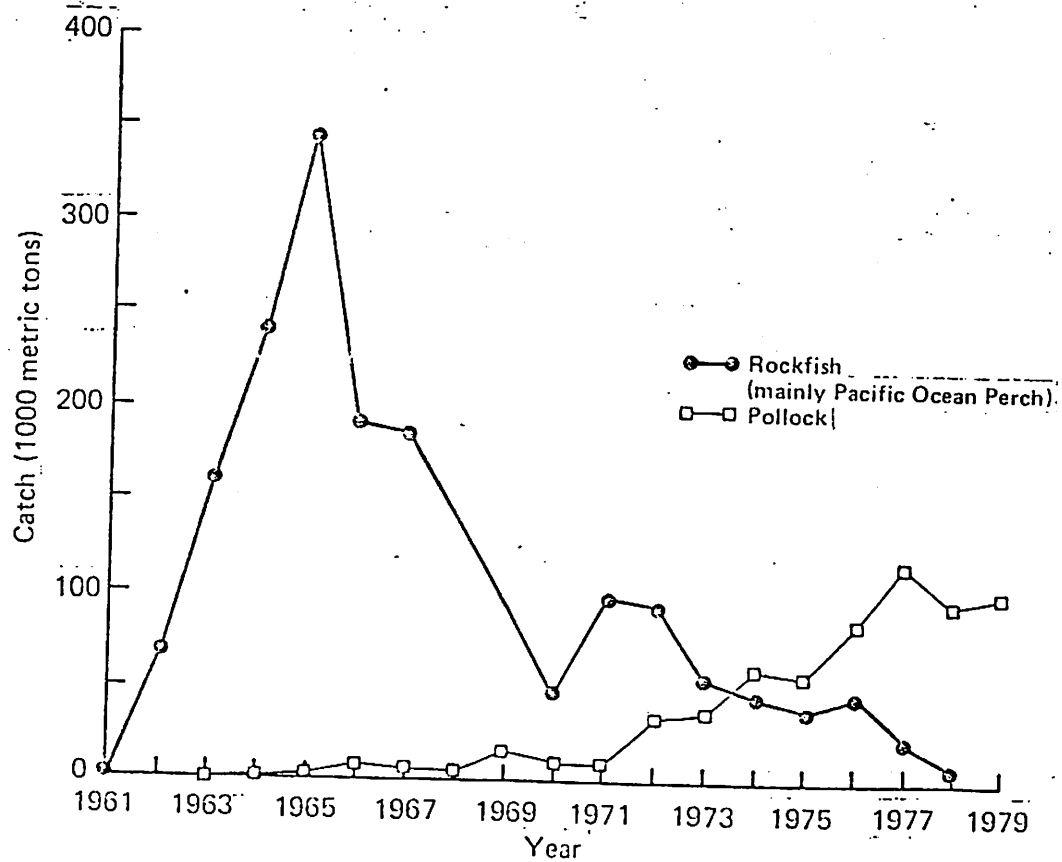




Figure 18.--The rise and decline in landings of Pacific ocean perch followed by the increase in the importance of pollock in the foreign trawl fishery of the Gulf of Alaska.



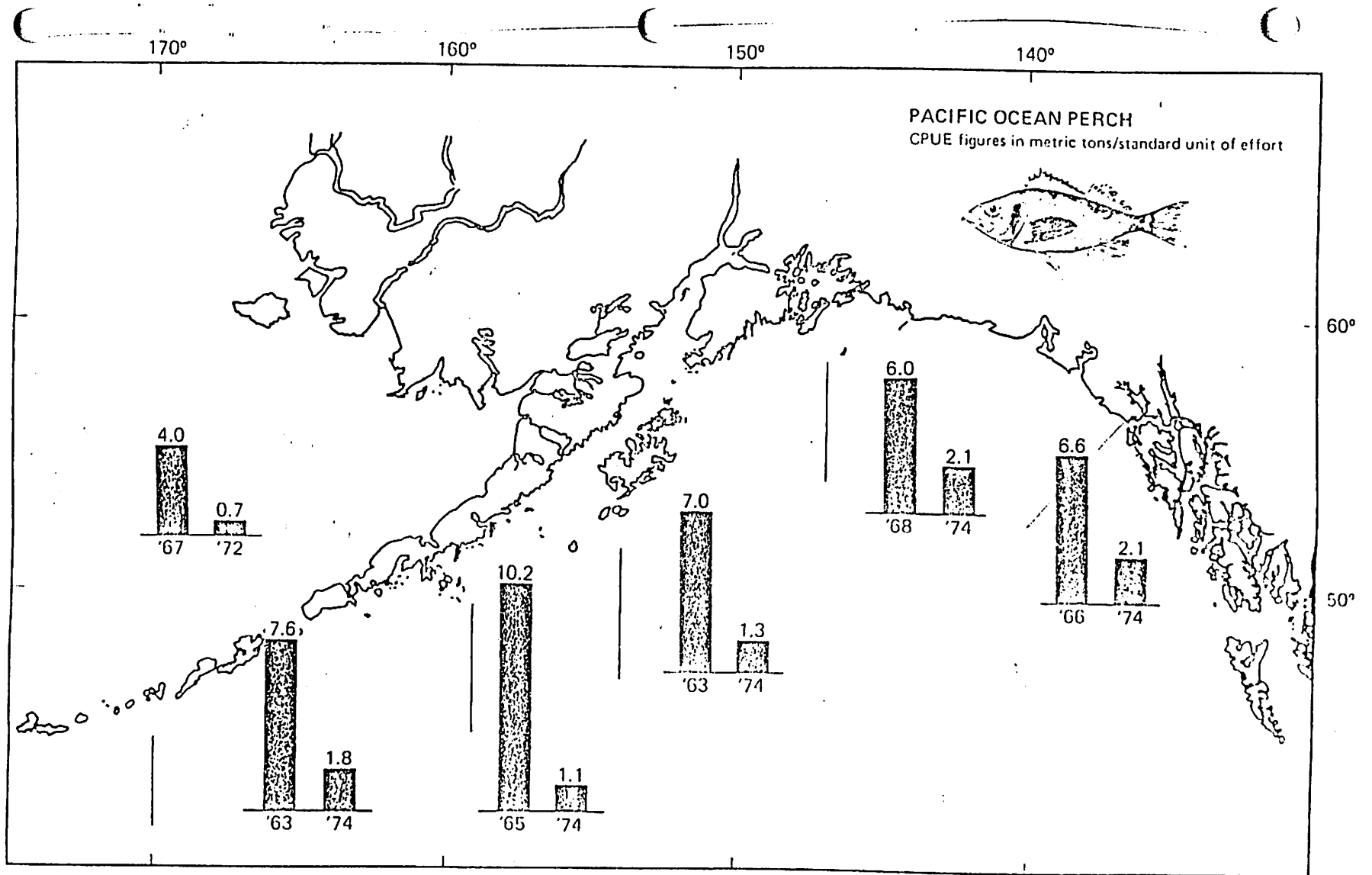


Figure 19.--Regional decline in the catch-per-unit of effort of Pacific ocean perch in the Japanese trawl fishery in Alaskan waters between the 1960's and early 1970's.

Figure 20.--Changes in stock density of Pacific ocean perch and pollock in the Gulf of Alaska as suggested from changes in survey catch rates (kg/hr) between 1961 and 1974-75.

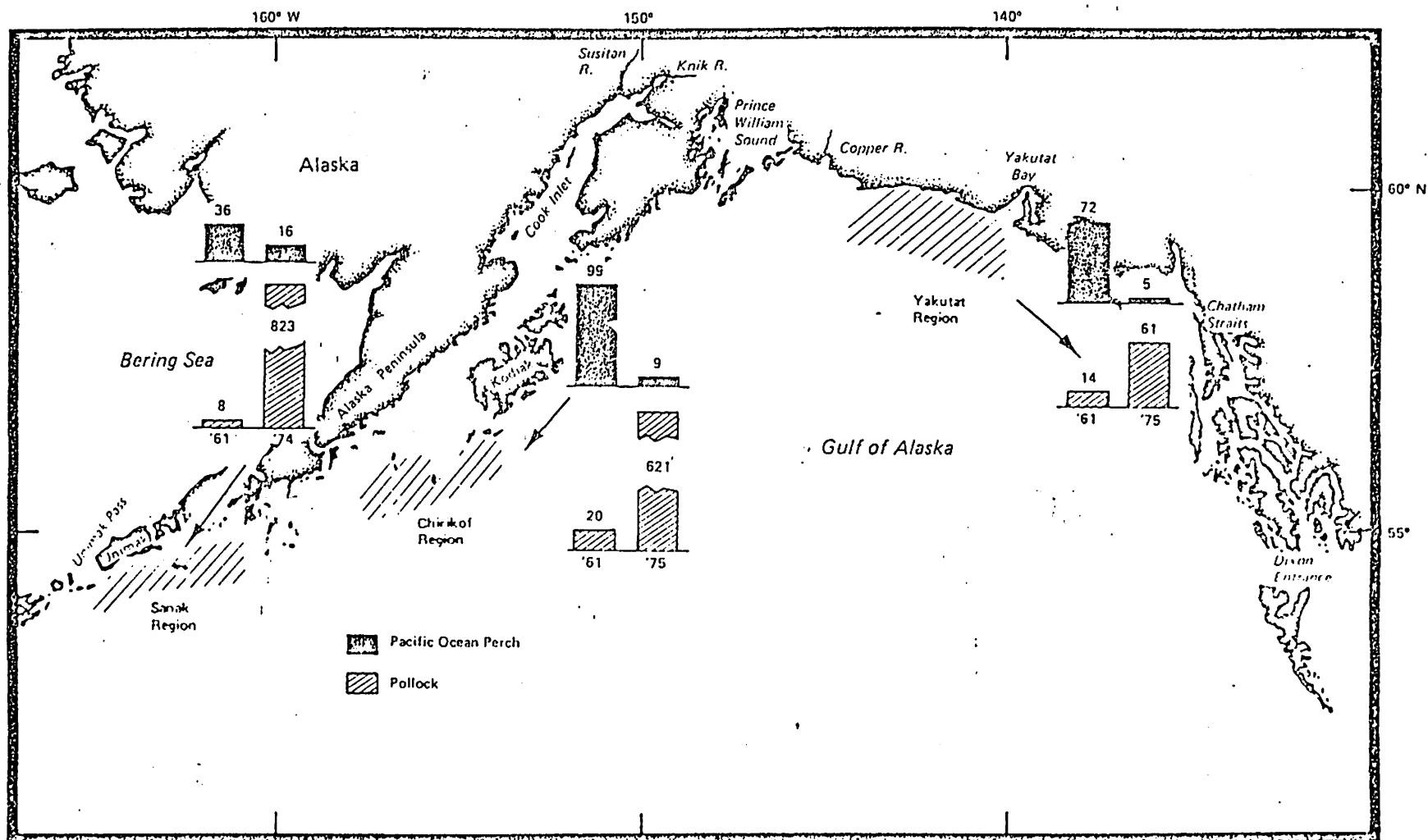
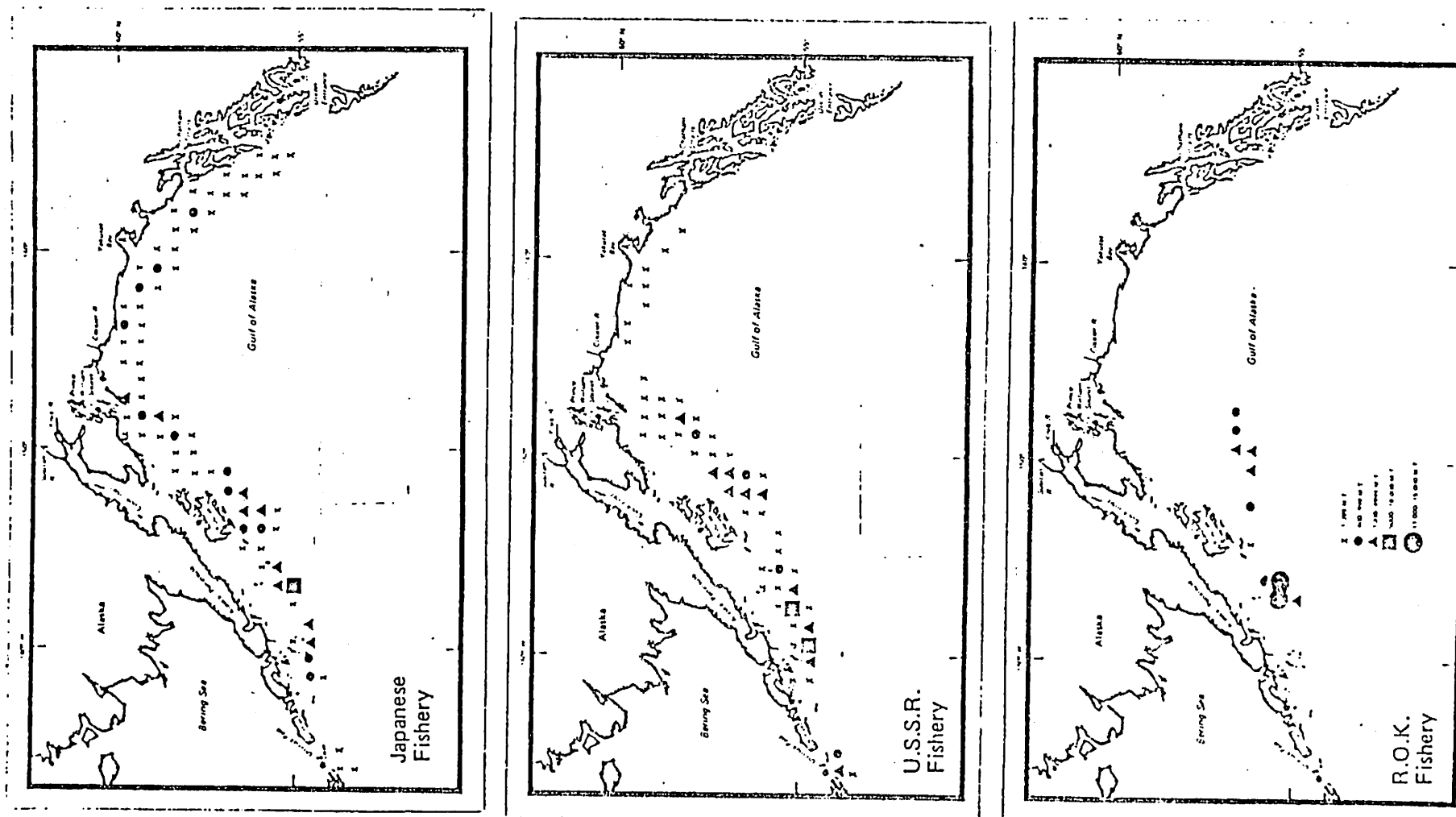


Figure 21.--Location and magnitude of the pollock catch by the trawl fisheries of Japan, U.S.S.R., and R.O.K. Catches are the annual removals in 1977.



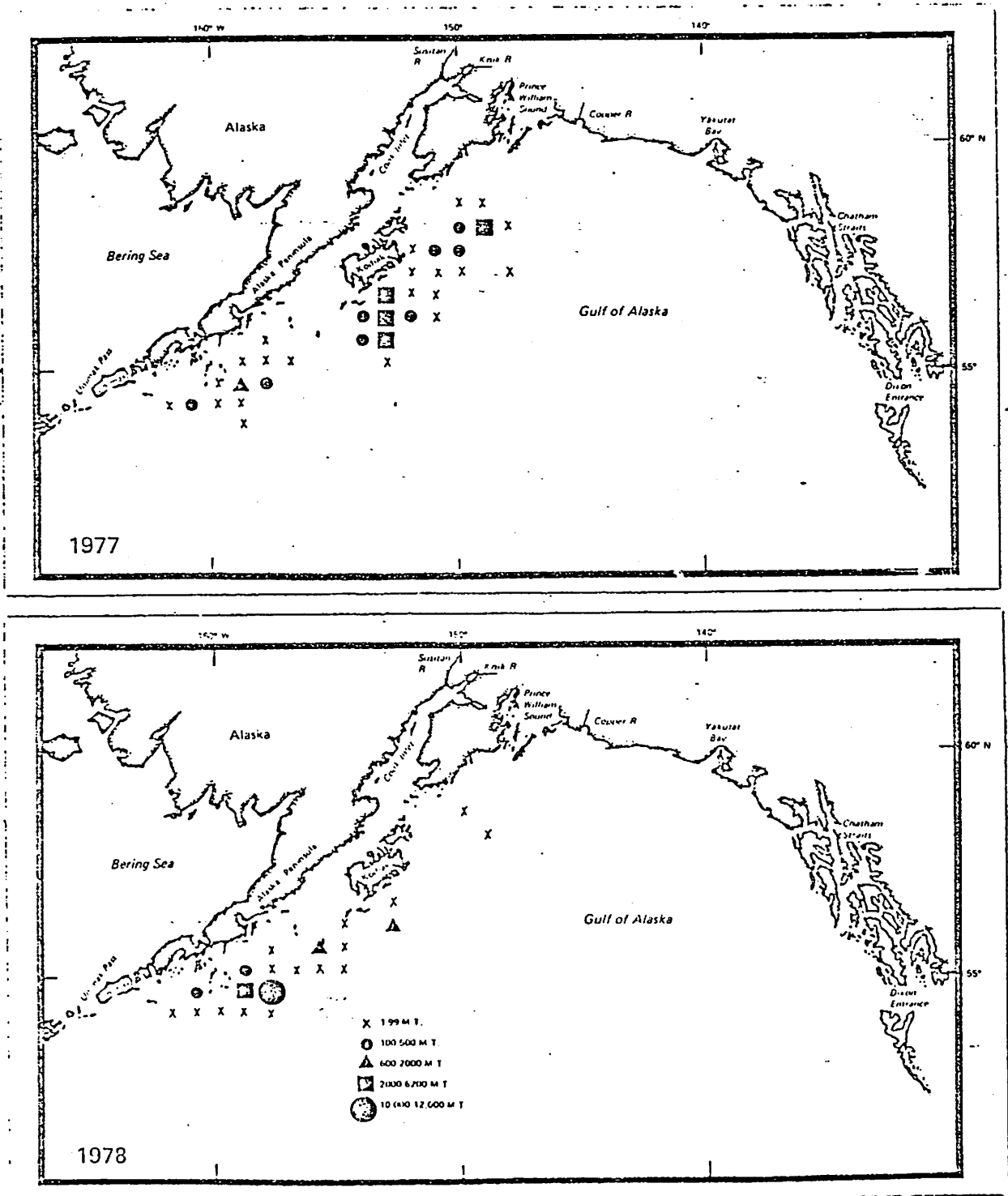


Figure 22.--Principal fishing locations of the U.S.S.R. Atka mackerel fishery in the Gulf of Alaska showing distribution of annual catch, 1977 and 1978.

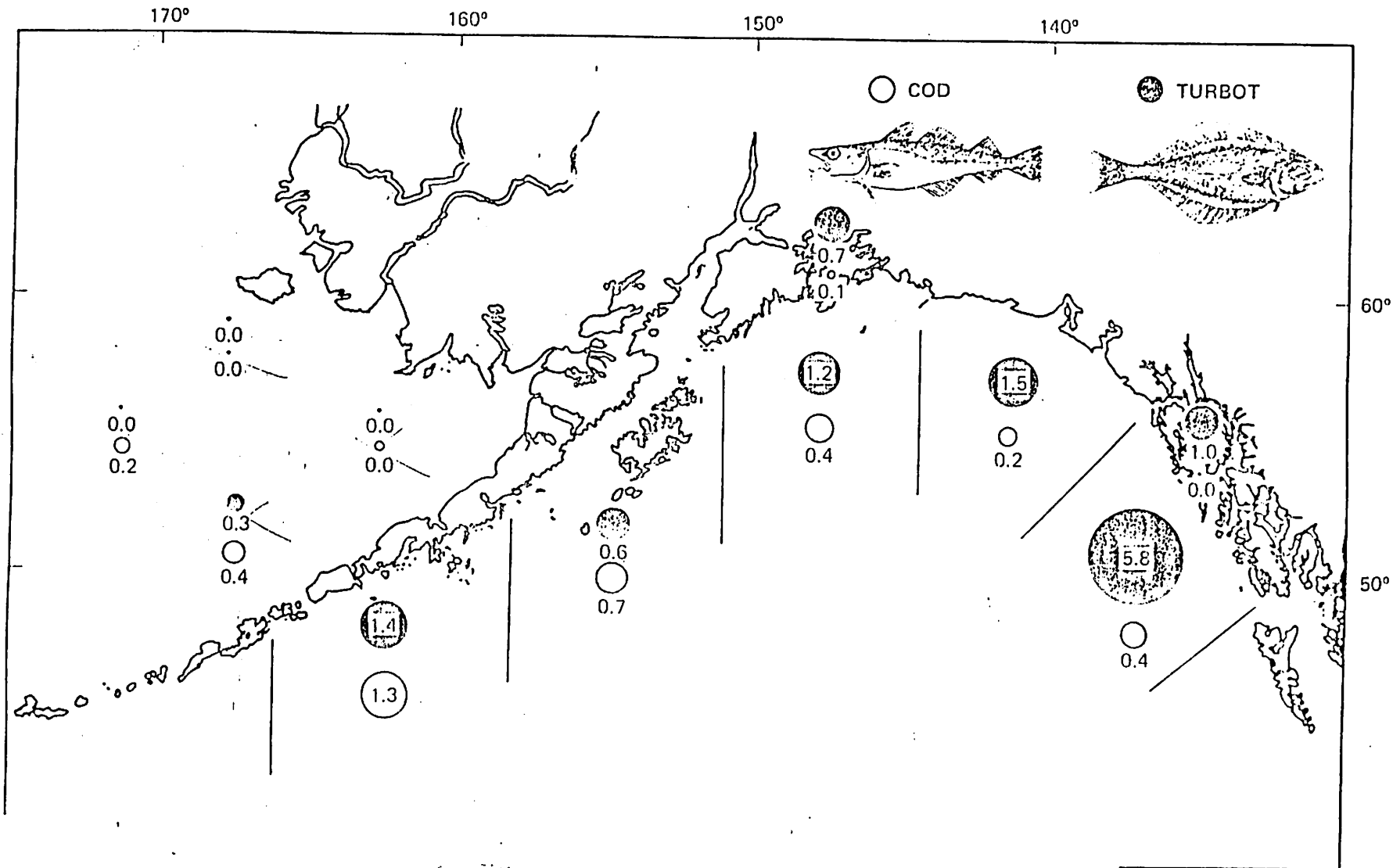


Figure 34.--Apparent density (mt/km<sup>2</sup>) of Pacific cod and turbot in various regions of the Gulf of Alaska based on bottom trawl surveys by the NMFS in 1978-78 at depths of 400 m and less.

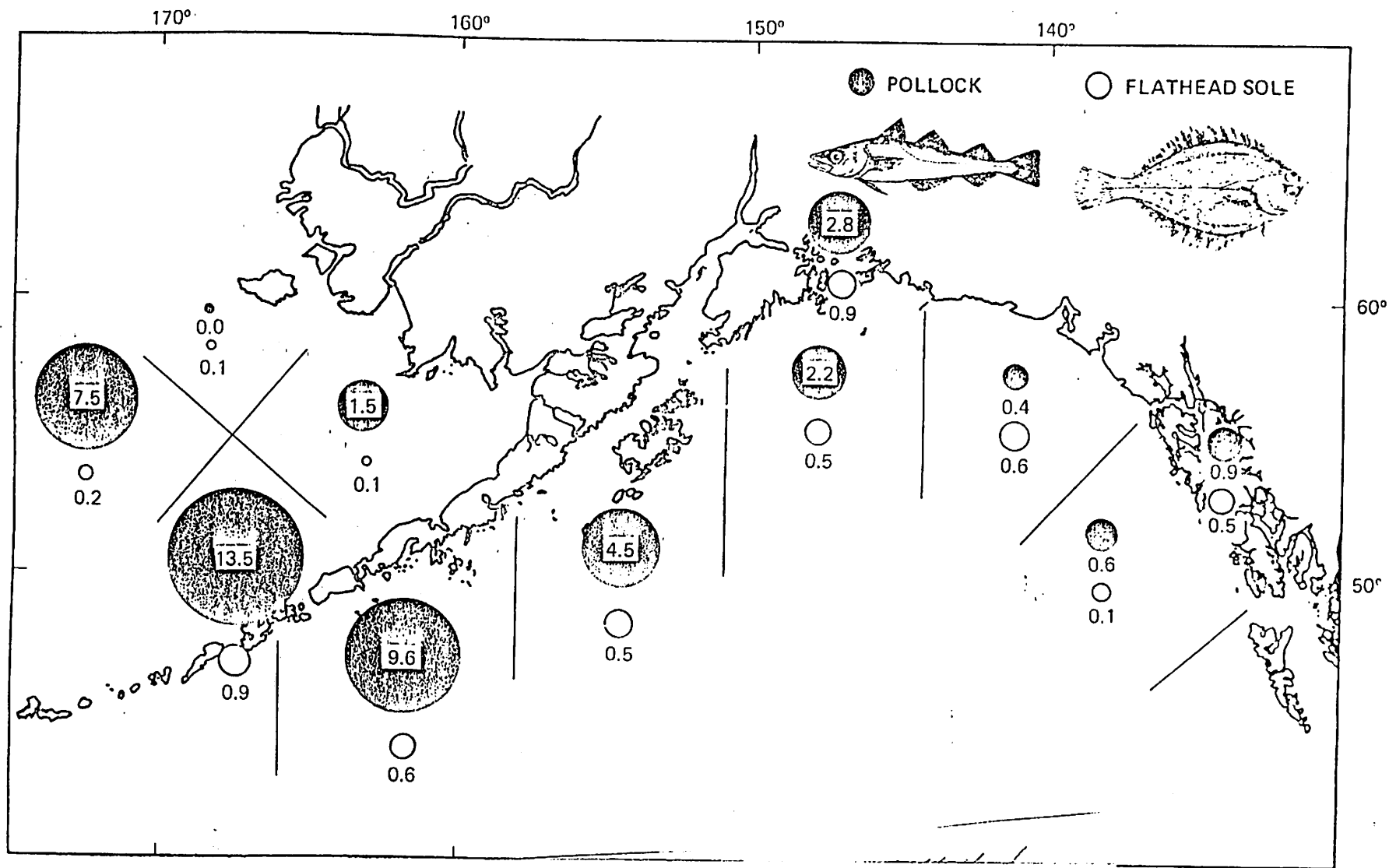


Figure 35.--Apparent density (mt/km<sup>2</sup>) of pollock and flathead sole in various regions of the Gulf of Alaska and eastern Bering Sea as suggested from NMFS bottom trawl surveys (1973-78) at depths of 400 m and less.

STATUS OF THE SABLEFISH FISHERY IN THE  
EASTERN DISTRICT IN THE GULF OF ALASKA

by

Barry E. Bracken

Alaska Department of Fish and Game  
P.O. Box 667  
Petersburg, Alaska 99833

For Presentation to the Gulf of Alaska  
Groundfish Plan Development Team

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THIS REPORT INCLUDES UNPUBLISHED DATA AND SHOULD NOT  
BE CITED WITHOUT PERMISSION OF THE CONTRIBUTORS.



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ABSTRACT

A request by the Advisory Panel to the North Pacific Management Council to eliminate foreign trawling in the Eastern District prompted a re-examination of status of sablefish stocks in that area. National Marine Fisheries Service and Japanese indexing cruises present conflicting results. Recently obtained domestic CPUE data indicates stocks are still declining even though area harvests are below OY levels. Historic catch data is reviewed and supports the contention that U.S. fishermen were displaced from a significant traditional fishery by foreign longliners in the mid-1960's and are just recently reestablishing the offshore fishery as a result of removal of foreign longline effort from the area. Gear conflicts with foreign trawlers continue east of 140° W. longitude. Declines in CPUE and average size of fish result from these conflicts. Recommendations are made for an OY reduction in the Southeastern area based on a continued decline in domestic CPUE and for removal of foreign trawl effort east of 140° W. longitude to eliminate gear conflicts.

Status of the Sablefish Fishery in  
the Eastern Gulf of Alaska

INTRODUCTION

Since 1978 the Alaska Longline Fishermen's Association (ALFA) has stated in testimony to the North Pacific Fisheries Management Council (NPFMC) that *they believe* sablefish stock conditions off Southeastern Alaska are depressed and that harvest levels are too high.

Foreign longlining ceased east of 140° W. longitude in July of 1978. There has not been a consistent indicator available for assessing sablefish stock condition between the closure line and Dixon Entrance since Japanese longline CPUE data is no longer available. Both the National Marine Fisheries Service (NMFS) and a joint Japanese - NMFS research venture have conducted indexing cruises in the area from 1978 through 1980.

The Alaska Department of Fish and Game began extensive port sampling in the summer of 1980. Along with the sampling, skipper interviews are being conducted and logbook data collected. This program is providing information on the domestic fishery not available since a Alaska Department of Fisheries logbook program ceased in 1957.

During a meeting of the NPFMC held in Sitka during October, the Advisory Panel asked the Council to consider a trawl closure in the Eastern District due to trawler impact on the domestic sablefish fishery. As a result of the Sitka meeting, I requested members of ALFA and other fishermen to provide me with catch data and records of conflicts for all of the years that they participated in the fishery. I received eleven responses which represented a fair sample of the full-time longline fleet. *How many in the fleet?*

STOCK STRUCTURE

Although tagging data indicates that some sablefish travel long distances, the majority of tagged sablefish are recovered within 100 miles of the release site (Wespestad et. al., 1978; Beamish et. al., 1980; Bracken, 1980). Stocks are currently being managed by broad geographical regions even though tagging results indicate that localized populations do occur and that many adult fish stay within a very limited area over an extensive portion of their reproductive life span (NMFS Computer Tag Return Data, 1972-1980). The fact that a large percentage of sablefish are non-migratory indicates that stocks in heavily fished areas may be subject to overexploitation.

Figures 1 and 2 show length frequency profiles for male and female sablefish captured during NMFS indexing cruises from 1978 through 1980. These are combined results from three cruises and serve to illustrate the percentage of fish below the length where 90% of the samples were mature (Zenger, unpublished data, 1980). The 90% level was chosen as an indicator of full recruitment because percentage of mature fish varied greatly for samples below 90% maturity level for both sexes. One hundred percent maturity was not reached until males attained 74 cm and females 79 cm. From this data, 39% of the females and 30% of the males are below the 90% level. Weighing

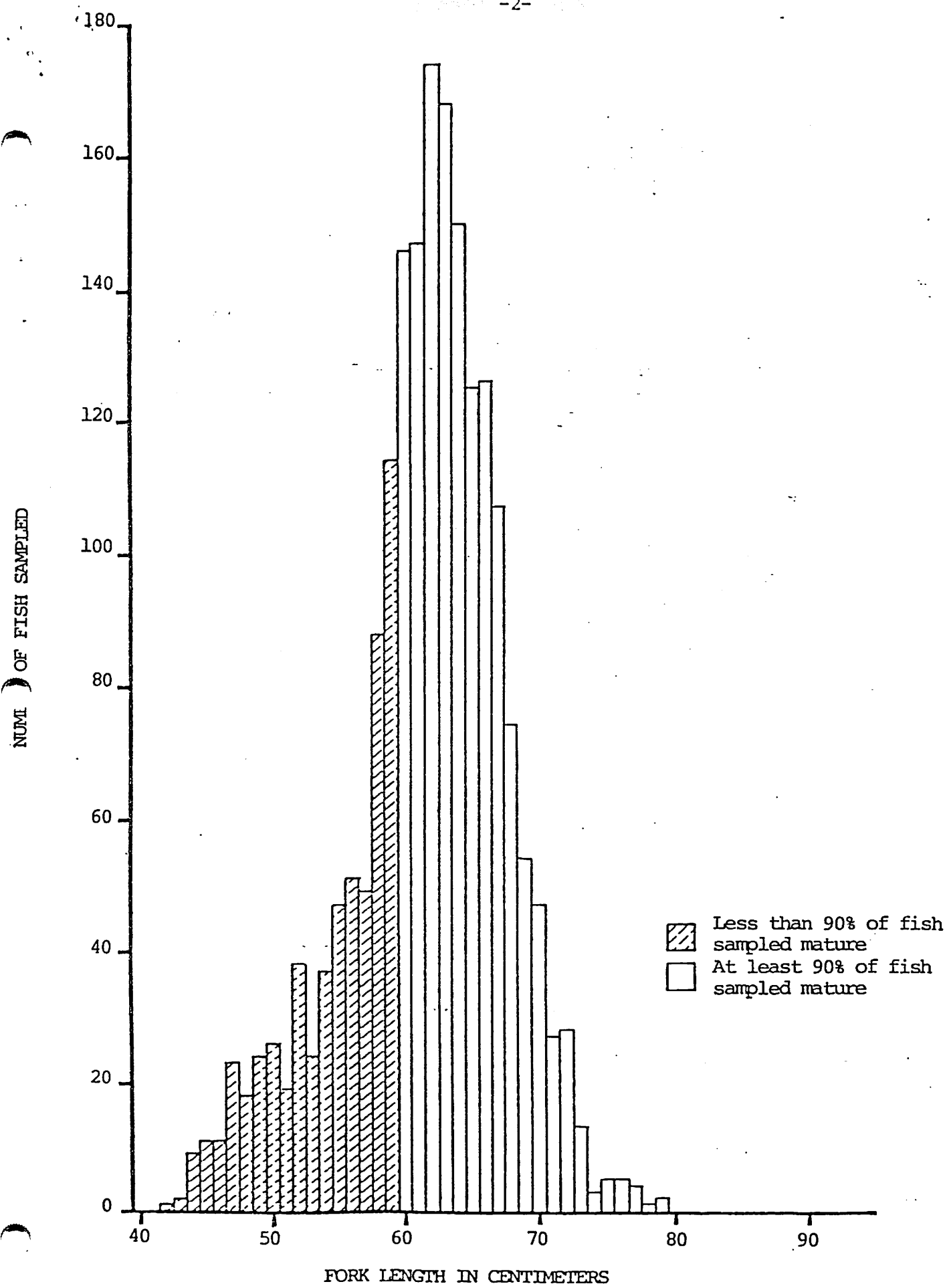


Figure 1. Length composition of male sablefish sampled on NMFS abundance indexing surveys of the coastal waters of Southeastern Alaska, 1978-1980.

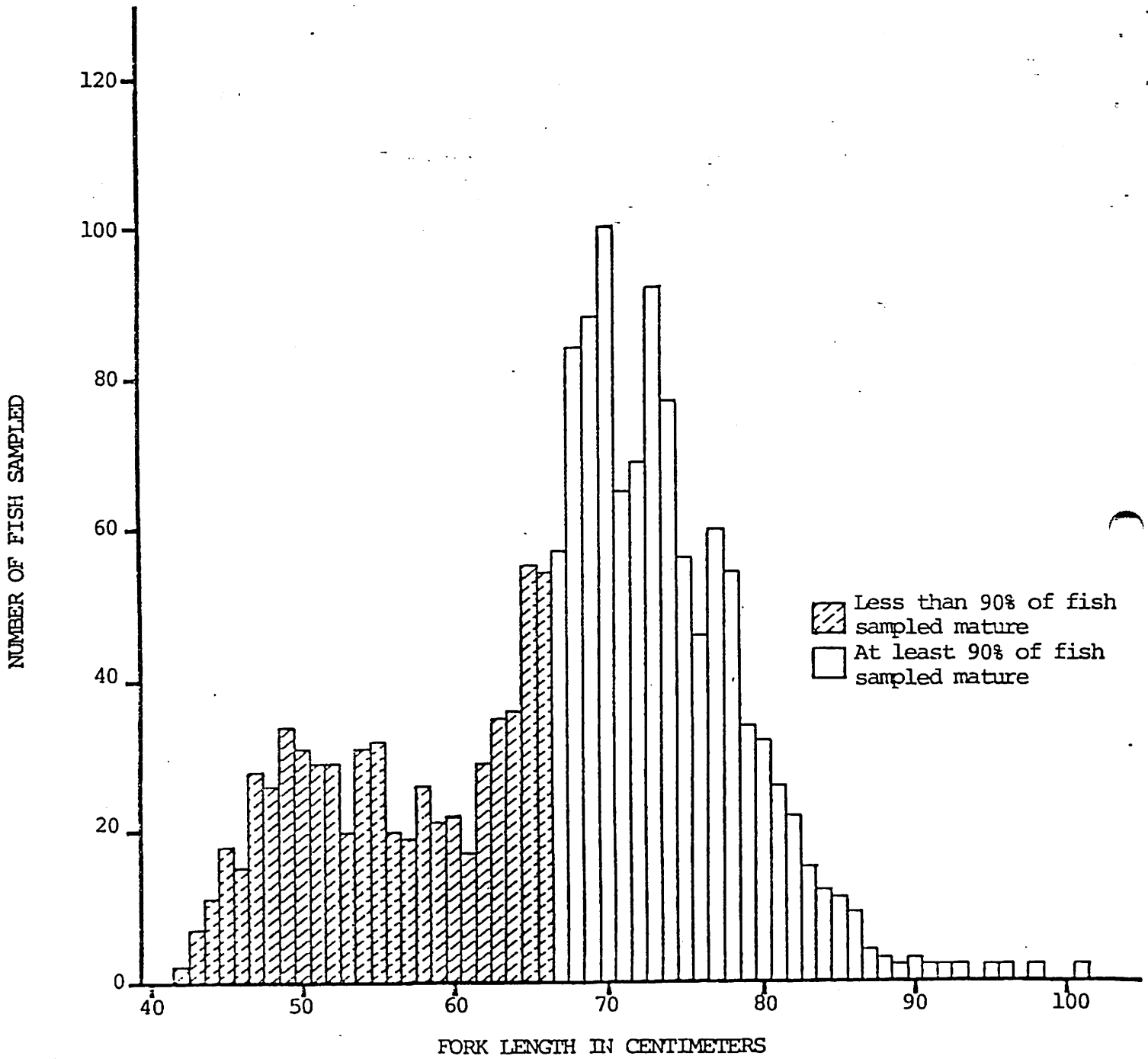


Figure 2. Length composition of female sablefish sampled on NMFS abundance indexing surveys of the coastal waters of Southeastern Alaska, 1978-1980.

the maturity composition by sample size shows that 34% of the sablefish caught in the NMFS surveys in the Southeastern area between 1978 and 1980 are below the 90% level. There were 20% more males than females in the sample.

Port sampling conducted by the Alaska Department of Fish and Game indicates that although dressed fish under 5 pounds occur up to 60 cm, the majority of dressed fish over 53 cm are 5 pounds or over. Sampling data shows that 38% of fish sampled from offshore waters are under 53 cm (Figure 3.) and that 41% are under 5 pounds dressed weight (Table 1.). This compares to only 14% under 5 pounds in samples from inside state waters (Chatham Strait).

Table 1. Summary of sablefish length frequency from Southeastern Alaska with percentage of large (over 5 lbs.) and small (under 5 lbs.) by area from 1980 port sampling.

AREA	WESTERN CUT		EASTERN CUT	
	Small Range cm (%)	Large Range cm (%)	Small Range cm (%)	Large Range cm (%)
Lower Chatham St.	42-54 (14%)	48-81 (86%)	47-56 (12%)	50-79 (88%)
Upper Chatham St.	39-54 (23%)	48-77 (77%)	42-56 (20%)	49-83 (80%)
Combined Chatham St.	42-52 (14%)	48-83 (86%)	48-53 (18%)	50-73 (82%)
Offshore Cape Ommaney to Cape Cross	44-59 (41%)	51-71 (59%)	42-59 (38%)	50-76 (62%)

59  
24  
/93

Port sampling data shows that a length loss of 20% can be expected when sablefish are beheaded in the standard western cut which retains the gill arch. Applying this conversion to NMFS combined sampling data from Southeastern Alaska from 1978-1980 indicates that 52% of the males and 39% of the females or a weighted total of 46% of all fish sampled would be less than 54 cm head off. Because fish less than 5 pounds occur up to 60 cm, an even higher percentage of the fish sampled would be under the size needed for maximum economic return to the fishermen.

Table 2 shows the economic structure of the domestic fishery and demonstrates why fish 5 pounds or over are desired.

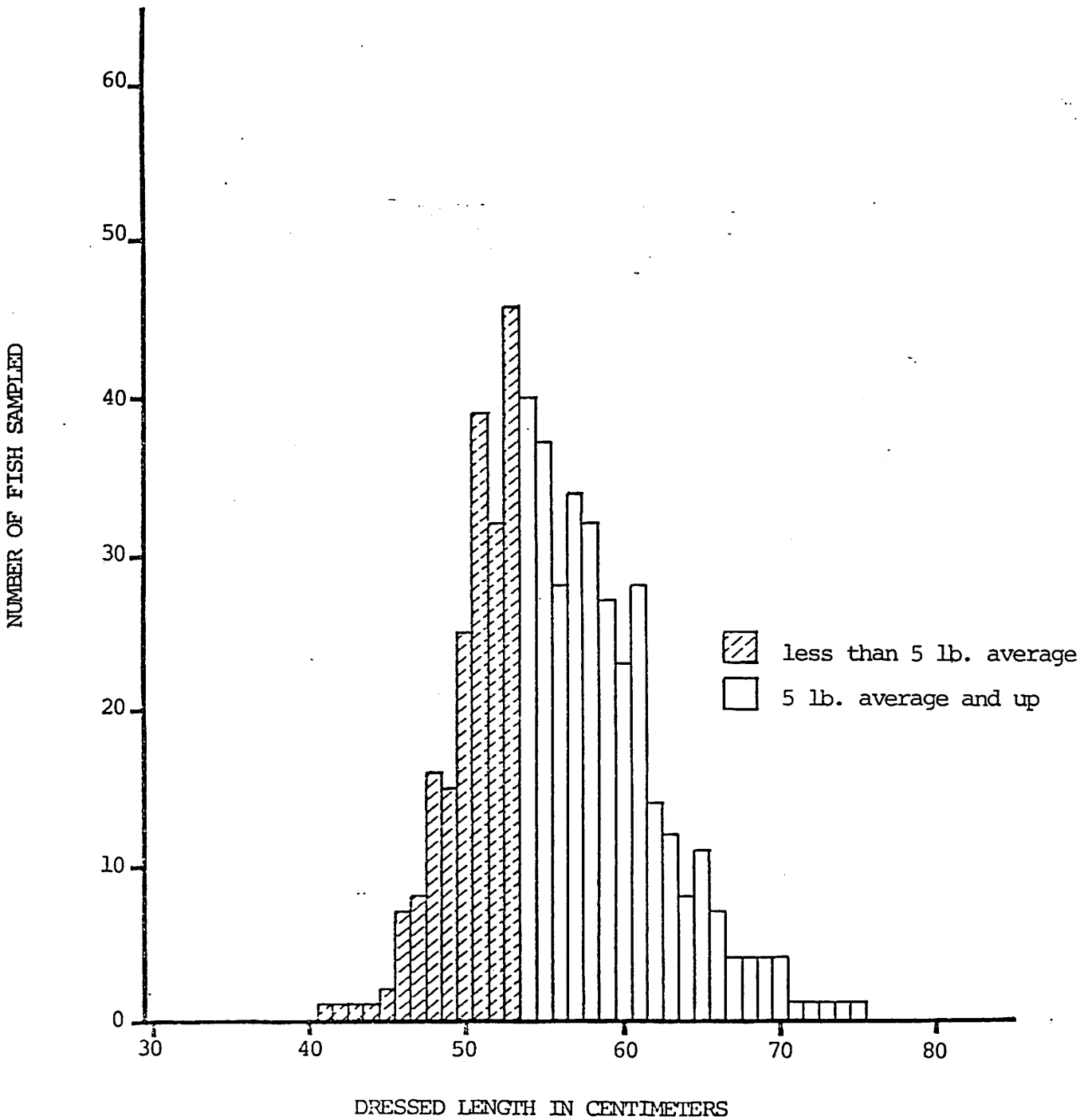


Figure 3. Length composition of commercially caught sablefish from offshore Southeastern Alaska. from data gathered by port samplers, 1980.

Table 2. Ex-vessel prices for dressed sablefish landed in Southeastern Alaska, 1977-1980.

Year	Price per pound in cents		
	Undersized under 3 lbs.	Small 3 to 5 lbs.	Large 5 lbs. or over
1977	20 - 25	50	70 - 77
1978	20 - 25	50	72 - 77
1979	32 - 40	50 - 59	80 - 95
1980	13 - 15	20 - 25	45 - 48

#### INDEXING

National Marine Fisheries Service (NMFS) indexing cruises in Southeastern Alaska began in 1978. Cruise results indicate a 38% increase in marketable sablefish (over 3 pounds, dressed weight or 58 cm, fork length) for three sites that were sampled in both 1978 and 1979 (Zenger and Hughes, 1979). That report suggests that the credibility of the results is questionable due to an unusual increase of 80% at the Cape Ommaney site. The Cape Ommaney site declined in availability of marketable fish by 32% between 1979 and 1980. A decline of 13% was observed for marketable fish at the Cape Cross site from 1978 to 1979 and a further decline of 29% was observed from 1979 to 1980. All sites combined showed a 2% decline for marketable fish from 1979-1980 (Zenger, unpublished data, 1980).

Japanese indexing cruises also began in 1978 and between 1978 and 1979 the Yakutat area catch increased by 40% and the Southeastern area increased by 62% based on numbers of fish per hatchi (Low, 1980). This data is from two separate vessels and includes fish of all sizes including a large increase in very small fish.

#### FISHERY

##### History

Domestic catch records from Alaska date back to 1906. Catches peaked in the 1940's with an average annual harvest of 5.1 million pounds dressed weight between 1941 and 1945, and annual peaks of 6.5 million pounds dressed weight in 1942 and 1946 (Edson, 1954). Although heavy fishing occurred in inside waters of Southeastern Alaska, log data from Alaskan fishermen from 1932 to 1953 shows that 39% of the harvest was from offshore waters and the outer coast was fished as far west as Middleton Island. Because of market conditions, the domestic fishery declined steadily to 1970 and was at the lowest annual production level since 1935 when the extensive Japanese fishery began off of Southeastern Alaska in 1968.

Current Status

Since 1969, the domestic sablefish catch has increased steadily in the eastern Gulf of Alaska (Table 3.). Projected 1980 catch levels will be down somewhat from 1979 due to unfavorable market conditions this year.

Table 3. Domestic production of sablefish from the Eastern Gulf of Alaska in metric tons, round weight 1969-1980.

Year	Total Harvest <sup>1/</sup>	S.E. Alaska Offshore <sup>2/</sup>	Yakutat Offshore	Total Offshore
1969	302	6.8	30.7	37.5
1970	570	153.4	1.0	154.4
1971	377	73.5	12.1	85.6
1972	1,081	65.6	2.8	68.4
1973	1,217	24.3	4.0	28.3
1974	1,114	179.3	2.6	181.9
1975	1,556	386.6	166.0	552.6
1976	1,145	427.8	8.0	435.8
1977	1,173	622.1	133.6	755.7
1978	1,777	893.8	123.8	1,017.6
1979	3,382	1,763.2	555.9	2,319.1
1980 <sup>3/</sup>	2,248	1,553.2	153.8	1,707.0

<sup>1/</sup> Includes landings from inside state waters and landings not reported by area. From ADF&G fish ticket data and WDF landing reports.

<sup>2/</sup> Includes landings from offshore state waters and the FCZ.

<sup>3/</sup> Preliminary including catch projection through 1980.



Total landings in the Eastern District are presented in Table 4. Domestic landings nearly doubled from 1977 to 1979 and increased from 12% to 58% of the total landings. This increase is partly a result of reduction in foreign effort, but also demonstrates a strong commitment by the U.S. fishermen to reestablish a major domestic sablefish fishery in the Eastern Gulf.

*increases due to effort*

Table 4. Total reported sablefish harvest in the Eastern District of the Gulf of Alaska in metric tons, round weight and percent of landings 1977-1979.

Year	Domestic Landings <sup>1/</sup>		Foreign Trawl <sup>2/</sup>		Foreign Longline <sup>2/</sup>		Total
	MT	%	MT	%	MT	%	
1977	1,173.0	12	483.7	5	8,236.6	83	9,893.3
1978	1,777.0	40	124.7	3	2,491.6	57	4,393.3
1979	3,382.0	58	230.4	4	2,264.5	39	5,876.9

<sup>1/</sup> From ADF&G and WDF catch data.

<sup>2/</sup> From NMFS Best Blend Catch Report.

CPUE

U.S. observer data from Japanese longline vessels indicates a CPUE increase of 30% in the Yakutat area west of 140° W. longitude from 1978 to 1979 based on landings from depths over 500 meters (Low, 1980). If two reported landings from depths less than 500 meters are included when computing the results however, the observed increase is reduced to 13%. This indicates that for the Eastern District, consideration of landings only from depths greater than 500 meters is not valid.

Foreign CPUE data for the Eastern District is contradictory to the Gulfwide data which showed CPUE data decreased by 25% from 1977 to 1978 and another 4% between 1978 and 1979 based on weighted CPUE data (Low, 1980). Also, U.S. longline fishermen have stated since 1978 that CPUE in the Southeastern area is continuing to decline (personal communication with U.S. fishermen). Recently obtained domestic data (Table 5.) shows a catch per hook decline of 15% from 1977 to 1979 and a further decline of 11% from 1979 to 1980, or a total decline of 24% in the last four years. The 11% decline from 1979 to 1980 is the most significant since the data includes several vessels that entered the fishery for the first time in 1979. The skippers of these vessels should have become more efficient as a result of experience so the decline in available sablefish may actually be greater than the 11% decrease in CPUE indicates. Table 5 also shows the decrease in average fish weight and increase in percent of small fish (less than 5 pounds) during the past four years.

Table 5. Catch rate, average weight and relative size of sablefish landed by domestic vessels in the Eastern Gulf of Alaska 1977-1980.<sup>1/</sup>

Year	Catch rate <sup>2/</sup>	Average weight (pounds)	% Large (over 5 lbs.)	% Small (under 5 lbs.)
1977	.109	5.3	60	40
1978	.069	5.3	67	33
1979	.093	5.0	63	37
1980	.083	4.8	58	42

<sup>1/</sup> From logbook data of domestic fishermen fishing the FCZ in the Eastern Gulf.

<sup>2/</sup> Fish per hook.

026

Effort

Most of the domestic effort occurs in the Southeastern portion of the Eastern District between Cape Spencer and Cape Addington. Gear is generally concentrated near Cape Cross and off Cape Ommaney. The drop in CPUE may be the result of localized depletion, however, the fishermen have stated that the Cape Cross and Cape Ommaney grounds are still the most productive in the area (personal communications with U.S. fishermen). U.S. fishermen have not fished as extensively in the Yakutat area. The 1979 Yakutat landings reached 24% of the domestic offshore landings but only 9% is projected for 1980. They have not fished the area west of Yakutat Bay in recent years because of foreign competition.

GEAR CONFLICTS

Since the mid-1970's the ADF&G staff has received complaints of gear conflicts with foreign vessels. From the period between 1968 and 1978 most of the complaints involved Japanese longline vessels. After the foreign longline fleet moved west of Yakutat in 1978 reports of conflicts were minimal until mid-1979 when reports of conflicts with foreign trawl vessels off Southeastern Alaska began to increase.

Table 6 presents data provided to me by domestic fishermen in the form of signed affidavits. Table 7 presents official complaints registered by U.S. fishermen to the NMFS Law Enforcement Branch. Of the 26 conflicts presented on the two tables, only one is a duplication. There were 9 reports of lost gear out of 25 reported conflicts. These tables do not reflect the much higher number of complaints received by port samplers and staff biologists of ground preemption problems.

W

One problem that is difficult to quantify is the effect of trawl activity on

Table 6. Gear conflicts with foreign vessels in the Eastern Gulf of Alaska as reported by domestic longline fishermen 1978-1980.<sup>1/</sup>

Date	Location	Target Species	Foreign Vessel	Type of Conflict <sup>2/</sup>	Estimated Economic loss
5/10/78	57°45'x 137°10'	Sablefish	Niitaka Maru	G.P.	\$3,500
5/15/78	57°45'x 137°10'	Sablefish	Koyo Maru #2	G.P.	\$3,500
5/18/79	57°45'x 137°10'	Halibut	Tomi Maru #85	G.P.	\$3,500
7/30/79	56°05'x 135°00'	Sablefish	Japanese Trawler	G.P.	No estimate
8/16/79	56°07'x 135°00'	Sablefish	Daishin Maru #23 Dai Ho	G.L.	\$2,600
8/24/79	55°35'x 135°10'	Sablefish	Niitaka Maru	G.P.	\$2,500
6/13/80	57°55'x 137°35'	Sablefish	Tomi Maru #85	G.L.	\$7,000
7/15/80	57°45'x 137°10'	Halibut	Unidentified	G.P.	\$3,500
7/24/80	57°35'x 136°30'	Sablefish	Unidentified Trawler	G.P.	No estimate
7/25/80	57°45'x 137°05'	Sablefish	Unidentified	G.P.	No estimate
7/31/80	57°37'x 136°20'	Sablefish	2 Unidentified Trawlers	G.P.	No estimate
7/12/80	56°45'x 136°15'	Sablefish	Unidentified Trawler	G.P.	No estimate
7/14/80	56°07'x 134°55'	Sablefish	Dashin Maru #23 Niitaka Maru	G.P.	\$3,000
8/12/80	56°45'x 136°15'	Sablefish	Unidentified	G.L.	No estimate
8/19/80	56°05'x 135°00'	Sablefish	Japanese Trawler	G.P.	No estimate

<sup>1/</sup> From Alaska longline fishermen's questionnaire.  
<sup>2/</sup> G.P. = Ground Preemption, G.L. = Gear Loss.

longline success. The ALFA fishermen were asked to document the CPUE from their logs before and after a ground preemption conflict. The results, shown in Table 8, indicate a 42% drop in CPUE and a 12% loss in average weight as a result of foreign trawl activity near set longline gear.

*Thom*  
*Damp*  
*ring*

Table 8. Change in CPUE and average weight of sablefish landed by domestic longliners as a result of foreign trawling in close proximity to set gear 1979-1980.<sup>1/</sup>

	Catch per hook	Average weight (pounds)	% Small fish (under 5 lbs.)
Prior to conflict	.114	5.1	29.6%
After conflict	.066	4.5	43.6%
% change	-42%	-12%	+47%

<sup>1/</sup> From Alaska longline fishermen's logbook questionnaire.

Figure 4 shows the areas where the reported conflicts occur. The area off Cape Ommaney where many of the conflicts occurred is an area where foreign trawlers are reported to work the same depths as U.S. longline fishermen fishing for adult sablefish. In that area a trawl codend full of large sablefish was snagged and recovered by the F/V Eclipse while longlining for sablefish in June, 1980. (Personal communication with Eclipse skipper, Wilbur Olin.)

There have been 10 foreign vessels apprehended for under-logging catch in Alaska this year. The U.S. Coast Guard has stated in testimony to the NPFMC that they cannot adequately patrol the Eastern Gulf because of lack of vessels. Nine Japanese and one Korean vessel have been identified in the gear conflicts and one, the Niitaka Maru is reported in five separate conflicts. The U.S. sablefish fleet almost exclusively fishes in depths greater than 450 meters and catch little other than sablefish, grenadiers (*Coryphaenoides, sp.*) and idiot rockfish (*Sebastolobus, sp.*). U.S. fishermen have suggested that Japanese trawl vessels fishing bottom trawls in the same depths must be catching sablefish as well (personal communication, Jake Phillips), even though reports indicate under 70 mt of incidental sablefish were landed in Southeastern during 1979 (NMFS Best Blend Catch Reports).

### DISCUSSION

#### Stock Status

Available data indicates that sablefish stocks in the Southeastern portion of the Eastern District are depressed and have not recovered from extensive foreign harvests in the area through early 1978. Domestic CPUE continues to decline. Average size of fish and percentage of marketable fish ( 5 pounds

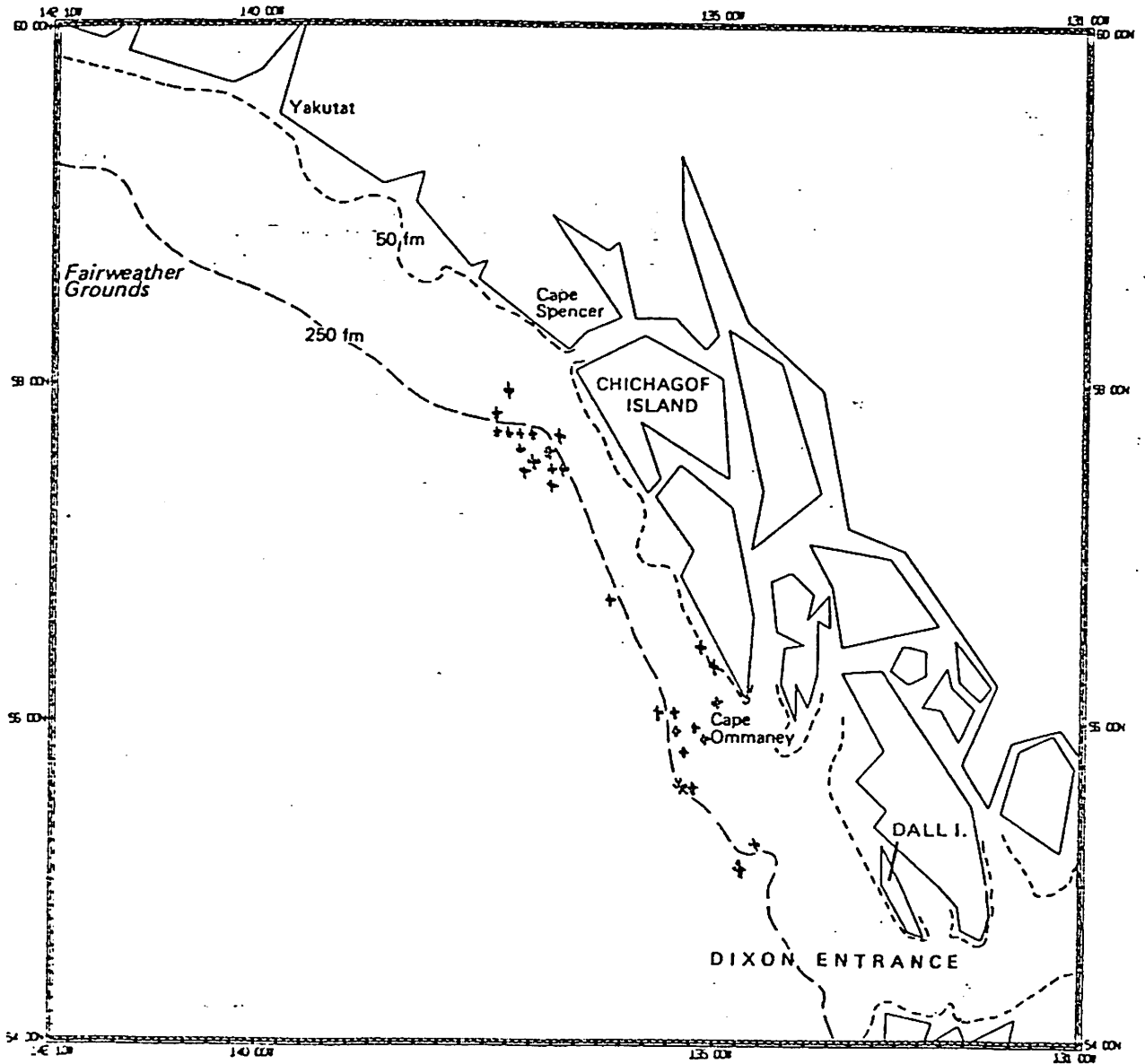


Figure 4. Location of gear conflicts with foreign trawl vessels reported by U.S. setline fishermen 1978-1980.

or greater dressed weight) continues to drop. Indexing studies conducted by the NMFS show reductions of marketable fish between 1979 and 1980 of 29% and 32% for the Cape Cross and Cape Ommaney sites respectively.

The catch rates continue to decline despite the fact that domestic catch has averaged only 1403.4 metric tons off Southeastern since 1977. The average catch is less than half the recently established OY of 3000 mt for offshore waters. Because of this, I would recommend a reduction in OY in the Southeastern area based on percentage CPUE drop in the fishery. The OY should remain at a reduced level until the small fish reach marketable size. Marketable size coincidentally corresponds with the length that 90% of female sablefish reach maturity. Measurements of 67 cm fork length round or 54 cm gill arch to fork should be considered when determining marketable size. Abundance of smaller fish should not influence changes in harvest levels.

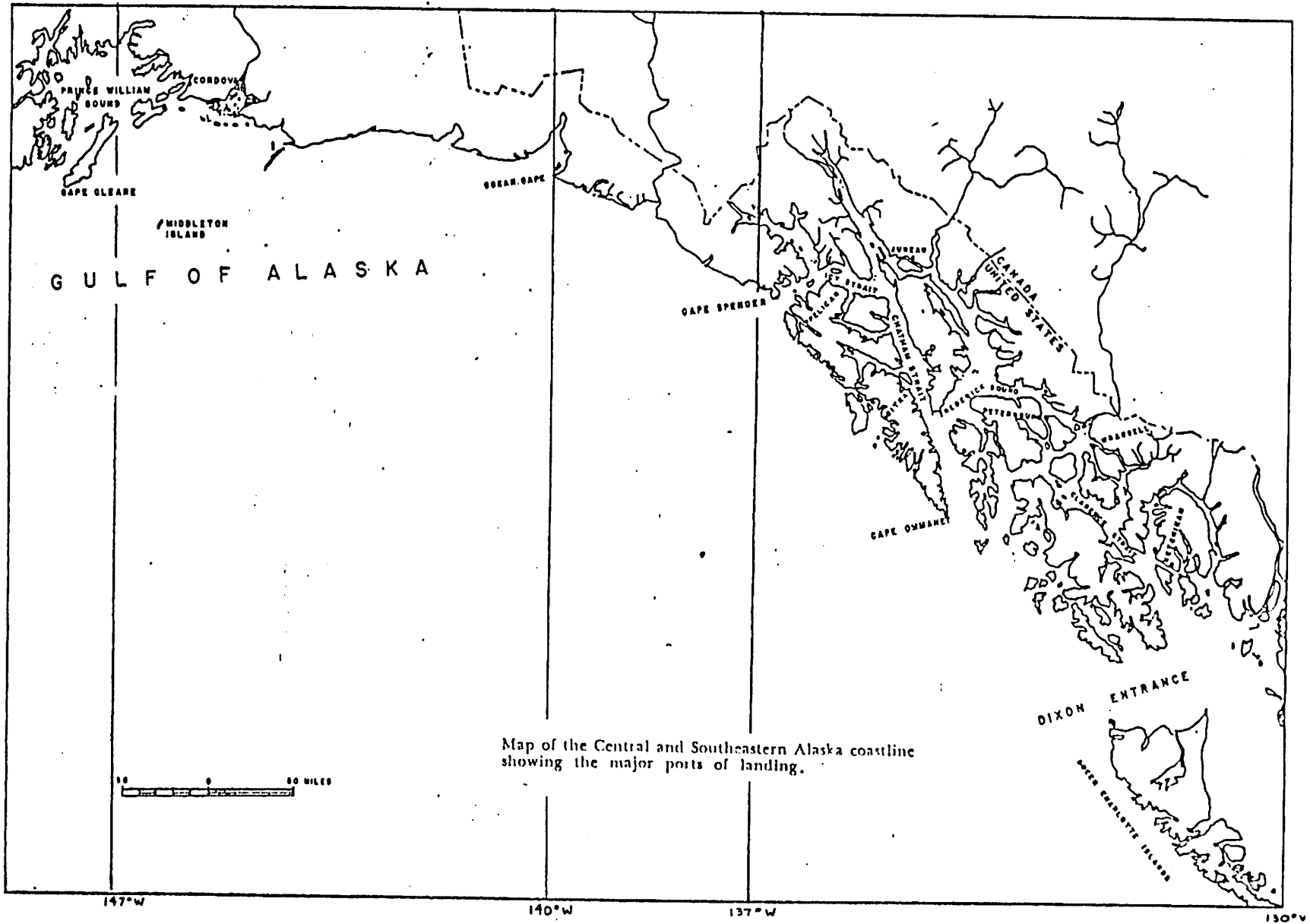
#### Gear Conflicts

Based on data provided by domestic fishermen, it is apparent that for whatever reason, whether caused by actual catch or ground disruption, sablefish catches drop when foreign trawlers are fishing near set longline gear. In addition, nine instances of gear loss were reported in Southeastern in the past two seasons and the problem is increasing. To eliminate these conflicts foreign trawlers should be removed from Southeastern waters. Since the Fairweather Gully is already closed to trawling in the Yakutat area, I would recommend that the trawl closure line should be made consistent with the longline closure and moved west to 140° W. longitude. Data available at this time does not support removal of foreign fishing from the area west of 140° W. longitude. Foreign CPUE remains high for that area and gear conflicts with U.S. sablefish fishermen are minimal. However, to promote expansion of the U.S. fishery into the westward area, foreign competition will have to be eliminated.

3400  
-24

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CHATHAM STRAITS AND FREDERICK SOUND  
CATCH PER SKATE ANALYSIS AND AVERAGE WEIGHTS

YEAR	TOTAL NUMBER OF SKATES	TOTAL WEIGHT OUT WEIGHT	AV. RETURN PER SK. POUNDS	NO. FISH	AV. WT. PER FIS.
1935	1928	257,919	133.8	16.6	8.0
1936	1260	141,400	112.2	14.7	7.6
1937	3063	336,772	109.9	14.7	7.5
1938	3235	270,095	83.5	11.1	7.5
1939	6222	478,792	77.0	10.7	7.2
1940	11348	961,968	84.8	12.2	6.8
1941	9114	810,374	88.9	12.9	6.8
1942	20454	1,642,144	80.3	12.0	6.7
1943	26688	1,751,047	65.8	9.3	6.7
1944	24869	1,461,211	58.8	9.1	6.5
1945	27654	1,377,930	49.8		
1946	33810	1,477,449	43.7	7.2	6.1
1947					

L TOTALS INCLUDE ONLY THOSE LOGS IN WHICH WEIGHED OUT WEIGHTS WERE LISTED.

Patrick S. Higgins Fisheries  
 ADP # G

No. of Boat	Dates of Fishing	Number of Days Fished	Total Hooks for Trip	Total Number Fish Caught	Total Pounds Landed	Average Weight per Fish (lbs)	Fish / hook / day	Pounds per Day Fished	lbs / hook landing
10	9/1 thru 9/20/80	76	413,160	18,570	113,772	6.1 w.c.	0.0440	1,481	0.2754
6	9/19 thru 10-18-80	41	236,105	10,154	66,550	6.6 j.c.	0.0430	1,623	0.2818
13	9/1 thru 9/22/80	68	322,585	13,096	86,618	6.6 j.c.	0.0400	1,274	0.2685
4	9-22 thru 10-15-80	20	100,600	4,407	28,080	6.4 j.c.	0.0438	1,404	0.2791
6	9-1 thru 9-23-80	48	243,510	9,686	66,818	7.1 w.c.	0.0390	1,392	0.2744
4	9-12-80 thru 10-7-80	36	136,900	5,481	36,641	6.7 w.c.	0.0400	1,018	0.2700
3	10-8 thru 10-14-80	14	89,600	3,255	22,604	6.9 j.c.	0.0360	1,615	0.2520
5	6-28 thru 9-14-80	37	299,100	16,659	87,683	5.3 w.c.	0.0550	2,370	0.2932
2	9-26 thru 10-5-80	4	28,400	1,921	8,853	4.6 j.c.	0.0676	2,213	0.3117

CHARM STRAIT BLACKCOD FISHING

OUTSIDE AREA  
CATCH PER SKATE PER SKATE AND AVERAGE WEIGHTS

YEAR	TOTAL # NUMBER OF SKATES	TOTAL WEIGHED OUT WEIGHT	AV. RETURN PER SK. POUNDS	NO. FISH	AV. WEI. PER FISH
1935	179	27,200	152.0	20.7	7.3
1936	102	16,604	162.9	-	-
1937	417	45,820	109.9	-	-
1938	598	81,717	136.6	-	-
1939	536	57,296	106.9	-	-
1940	366	37,696	103.0	-	-
1941	1098	120,524	114.1	-	-
1942	1256	159,073	126.6	-	6.5
1943	595	73,153	122.9	18.0	6.4
1944	2485	302,865	123.2	102.2	6.8
1945	8655	884,393	102.2	81.4	6.4
1946	21,535	1,753,093	186.7	179.4	6.4
1947	1835	342,612	186.7	179.4	6.4
1948	26897	4,825,329	179.4	212.2	6.4
1949	19740	4,188,912	212.2	244.8	6.4
1950	2118	518,565	244.8	233.9	6.4
1951	16856	3,942,570	233.9	214.9	6.4
1952	3358	721,600	214.9	226.4	6.4
1953	3274	741,323	226.4		6.4

IF ONLY LOGS IN WHICH W.D. OUT WTS. WERE LISTED HAVE BEEN USED  
IN COMPUTING THE RETURN PER SK. & AV. WT. PER FISH

Fishery Log Book - JarleIGH 1935

Federal Logbook - program BF

Year	Total # of Skates	Total Weighed	Av. Return per Sk.	Av. Wt. per Fish	All Weigh Weights
1935	179	27,200	152.0	20.7	
1936	102	16,604			
1937	417	45,820		109.9	
1938	598	81,717		136.6	
1939	536	57,296		106.9	
1940	366	37,696		103.0	
1941	1098	120,524		114.1	
1942	1256	159,073		126.6	6.5
1943	595	73,153		122.9	6.4
1944	2485	302,865		123.2	6.8
1945	8655	884,393		102.2	
1946	21,535	1,753,093		81.4	6.4
1947	1835	342,612		186.7	
1948	26,897	4,825,329		179.4	
1949	19740	4,188,912		212.2	
1950	2118	518,565		244.8	
1951	16856	3,942,570		233.9	
1952	3358	721,600		214.9	
1953	3274	741,323		226.4	

IF ONLY LOGS IN WHICH W.D. OUT WTS. WERE LISTED HAVE BEEN USED IN COMPUTING THE RETURN PER SK. & AV. WT. PER FISH

TABLE 64

OY--DAH--DAP--DNP--JVP--Reserve--and TALFF by Area (1000s mt)

Species		Western	Central	Eastern	Total
Pollock	1. OY	57.0	95.2	16.6	168.8
	2. DAH				21.31
	3. ...DAP	0.025	5.38	0.695	
	4. ...JVP	5.75	7.94	1.52	
	5. Reserve	11.4	19.04	3.32	33.76
	6. TALFF	39.25	62.84	<u>11.65</u>	113.73
Pacific Cod	1. OY	16.56	33.54	9.9	60.0
	2. DAH				10.00
	3. ...DAP	0.24	3.48	0.280	
	4. ...DNP <u>1/</u>	0.60	1.200	1.200	
	5. ...JVP	1.04	1.37	0.59	
	6. Reserve	3.312	6.708	1.980	12.0
	7. TALFF	11.368	20.782	<u>5.850</u>	38.0
Flounders	1. OY	10.4	14.7	8.4	33.5
	2. DAH				3.18
	3. ...DAP	0.1	0.3	0.9	
	4. ...JVP	0.6	0.82	0.46	
	5. Reserve	2.08	2.94	1.68	6.7
	6. TALFF	7.62	10.64	<u>5.36</u>	23.62
Pacific Ocean Perch	1. OY	2.7	7.9	14.4	25.0
	2. DAH				2.915
	3. ...DAP	0.025	0.295	0.08	
	4. ...JVP	0.32	0.96	1.235	
	5. Reserve	0.54	1.58	2.83	5.0
	6. TALFF	1.815	5.065	<u>10.205</u>	17.085
Other Rockfish	1. OY	0.3	0.8	6.5	7.6
	2. DAH				0.9
	3. ...DAP	0.045	0.200	0.455	
	4. ...JVP	0.03	0.05	0.12	
	5. Reserve	.06	0.16	1.3	1.52
	6. TALFF	.165	0.39	<u>4.625</u>	5.18
Sablefish	1. OY	2.1	3.8	7.1	13.0
	2. DAH				6.48
	3. ...DAP	0.1	1.00	4.7	
	4. ...JVP	0.17	0.22	0.29	
	5. Reserve	0.42	0.76	1.42	2.6
	6. TALFF	1.41	1.82	0.69	3.92
Atka Mackerel	1. OY	4.678	20.836	3.186	28.7
	2. DAH				2.07
	3. ...DAP	-0-	-0-	-0-	
	4. ...JVP	0.290	1.080	0.70	
	5. Reserve	0.936	4.167	0.637	5.740
	6. TALFF	3.452	15.589	1.849	20.89

Nation	Pollock	Pacific cod	Flounder	POP	Sebastolobus <sup>1/</sup>	Other Rockfish	Sable-fish	Rattail <sup>2/</sup>	Atka mackerel	Squid	Others	TOTAL
Japan	40,740	14,722	21,370	6,448	NA	1,510	8,750	NA	2,000	1,155	5,090	101,785
USSR	56,710	5,518	2,030	9,023	NA	2,045	100	NA	21,570	100	6,060	103,156
Republic of Korea	31,810	1,662	350	5,001	NA	1,485	1,000	NA	100	145	2,595	44,148
Poland	15,840	798	100	2,428	NA	636	50	NA	1,030	50	1,455	22,387
Mexico	6,000	2,400	100	1,000	NA	224	100	NA	100	450	500	10,874
TOTAL	151,100	25,100	23,950	23,900	NA	5,900	10,000	NA	24,800	1,900	15,700	282,350

<sup>1/</sup> In 1978 included under other rockfish.

<sup>2/</sup> In 1978 included under other fish.

Table 20.--Final 1979 Gulf of Alaska TAAFF Allocations (Fishing year Dec 1, 1978 - Oct 31, 1979).

Nation & Region	Halibut	Pacific cod	Flounder	POP	Sebastes <sup>1/</sup>	Other Rockfish	Sablefish	Rattail	Alaska mackerel	Squid	Others	TOTAL
Japan												
Western	3,042	6,721	8,300	910	NA	115	1,550	2,577	1,648	50	910	25,823
Central	30,873	8,566	11,710	1,182	NA	199	3,130	6,376	550	330	3,194	66,175
Eastern	4,359	2,291	6,858	5,381	NA	1,519	2,385	1,118	120	240	538	21,809
NAFF												
Western	16,436	450	640	262	NA	14	65	198	2,000	95	1,005	21,325
Central	30,008	2,980	2,042	4,714	NA	136	220	576	18,018	200	4,242	61,173
Eastern	3,864	514	155	2,853	NA	1,642	80	38	1,105	165	280	10,626
Republic of Korea												
Western	22,116	889	530	195	NA	16	290	482	95	75	665	24,823
Central	0	0	0	0	NA	0	0	0	0	0	0	0
Eastern	5,914	1,465	300	4,004	NA	1,822	695	326	105	305	2,202	16,838
Iceland												
Western	9,489	400	470	871	NA	75	25	42	520	140	740	12,772
Central	10,034	324	420	259	NA	79	45	113	734	175	464	12,647
Eastern	0	0	0	0	NA	0	0	0	0	0	0	0
Mexico												
Western	6,842	400	310	237	NA	10	35	58	42	155	900	8,689
Central	3,510	3,200	128	200	NA	96	55	0	98	325	480	8,092
Eastern	1,818	1,190	162	1,682	NA	962	110	52	60	320	70	6,336
TOTAL	118,310	29,300	31,870	22,750	NA	6,675	8,805	11,868	25,175	2,575	15,750	362,403

<sup>1/</sup> In 1979 included under other fish.

1980  
ECONOMIC DISADVANTAGE OF ~~FISH~~ AMERICAN FISHERMAN IN EASTERN GULF

Rec'd 12-11-80  
\$1,300<sup>00</sup>

AREA INCIDENTAL CATCH-MORTALITY	Foreign Harvest-MT.	M.T. → LB	EXTENSION	VALUE PER LB TO FISHERMAN	TOTAL VALUE #
YAKUTAT	1,412.22	2204	3,110,329	\$1.30	\$4,043,427
	18094	2204	39,879,179	(\$0.06) (\$32/MT)	239,2750
Economic Loss in Allowing Foreign Harvest (Fish Caught vs. Incidental Catch)					\$1,650,677

SOUTHWEST	313.54	2204	691,048	1.30	\$898,355
	5711	2204	1,2587,044	.06	755,223
Economic Loss in Allowing Foreign Harvest					\$143,132

TOTAL ECONOMIC LOSS (YAKUTAT + SOUTHWEST) RESULTING FROM FOREIGN HARVEST - WHOLESALE \$1,793,809

ECONOMIC LOSS TO INDUSTRY

INCIDENTAL CATCH (M.T.)	TO FOREIGN HARVEST
YAKUTAT	1411.22
SOUTHWEST	313.54
VALUE PER TON	x \$88.00
	<u>\$15,177,888</u>
	18094
	5711
	23805
	x 132
	<u>\$3,142,260</u>
TOTAL ECONOMIC LOSS TO INDUSTRY (RETAIL) INFLECTED BY ALLOWING FOREIGN HARVEST	
	<u>\$12,029,915</u>

PERCENTAGE OF HARVEST: U.S. vs FOREIGN

U.S. HALIBUT HARVEST	EASTERN GULF INCIDENTAL KILL	1725	24%
	TOTAL HALIBUT HARVEST (CALIFORNIA)	7123	
FOREIGN HARVEST	EASTERN GULF	23805	106% (LESS THAN 2%)
	TOTAL HARVEST ALASKA	1486742	

THE INCIDENTAL HALIBUT MORTALITY IN THE EASTERN GULF IS EQUIVALENT TO 24% OF THE TOTAL HALIBUT HARVEST AS COMPARED TO THE DIRECTED FOREIGN CATCH EQUALING 106% OF THEIR TOTAL HARVEST.

FURTHER THE FOREIGN CATCH INFLECTS LOSS ON APPROXIMATELY 2000 U.S. VESSELS WHILE BENEFITING ONLY 15 FOREIGN VESSELS  
 COMPILED BY Michael J. Mayo MICHAEL J. MAYO F/V OCEANUS



Table 2.

A comparison of the economic benefits to U.S. fishermen from the U.S.-U.S.S.R. joint venture (January-May, 1980) and the economic loss to the U.S. fishing industry from the resulting incidental capture of prohibited species.

		Benefits to U.S. Fishermen	
		Unit Price	Total Value
<u>Groundfish Catch:</u>	10,437.5 m.t. <sup>1/</sup>	\$132/m.t. (6¢/lb.) <sup>2/</sup>	\$1,377,750
Prohibited species catch		Adjustment for growth and mortality	Loss to U.S. Industry (Retail)
			Unit Price
Halibut	93.6 m.t. <sup>1/</sup>	105.8 <sup>3/</sup>	\$8,800/m.t. (\$4/lb.) \$931,040
Salmon	4.7 m.t. <sup>1/</sup>	8.2 <sup>4/</sup>	\$8,800/m.t. (\$4/lb.) 72,160
Crab	?		
Total			(\$1,003,200)

1/ NMFS, unpublished data: June 20 memo from R. French

2/ Approximation: 11¢ for filleted cod, 1.5¢ for meal

3/ Hoag (1971): IPHC Scientific Report Number 53

4/ Assuming an annual mortality of 0.25 and an average weight at maturity of 24 pounds (See July 21 memo from Dick Majors, NMFS)

*Bevo Sex x  
Un.mats*