



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration

National Marine Fisheries Service

P.O. Box 21668

Juneau, Alaska 99802-1668

AGENDA B-6  
FEBRUARY 1997

December 9, 1996

Richard Lauber, Chairman  
North Pacific Fishery Management Council  
605 West 4th Avenue, Suite 306  
Anchorage, AK 99501-2252

Dear Rick,

Attached for your information is a paper that I requested the Canadians prepare regarding the IBQ program that they instituted in 1996. I had heard that their program has had a dramatic effect in reducing bycatch of halibut as well as general discard and waste in their fishery. I thought the results might be of interest to the North Pacific Fishery Management Council (Council).

The report, as you can see, is in draft form. The Canadians are prepared to attend the February Council meeting to explain in more detail how their program works and some of the problems of its implementation. Even giving the difference in the fisheries and the legal regime governing them, I felt that their experience would be of value to the Council as it embarks on the design of a VBA program for the Alaska fisheries.

Sincerely,

Steven Pennoyer  
Administrator, Alaska Region

Enclosure

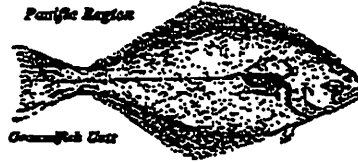
cc: Clarence Pautzke  
Ron Berg  
William Hines





Fisheries  
and Oceans  
Pacific Region

Pêches  
et Océans



**FACSIMILE MESSAGE**

Date: December 6, 1996

Number of Pages to follow: 10

To: **Mr. Steve Pennoyer,**  
*Regional Director,  
National Marine Fisheries Service  
Juneau, Alaska, U.S.A.  
99802-1767*

*Fax # (907) 586-7249*

Subject: Canadian Halibut Bycatch Paper

As agreed to by Dick Beamish at the interim meeting of the IPHC, following is a copy of the latest draft of my review of the Canadian Halibut Bycatch Plan.

If you need any clarification or have any questions please do not hesitate to call me.

Cheers, Barry

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**From: Barry Ackerman**  
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Canada

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**REVIEW OF THE CANADIAN HALIBUT BYCATCH PLAN**

**B. Ackerman**

**Background**

For many years, the catch of the groundfish fishing fleet in British Columbia, the trawl and the hook and line sectors combined, have exceeded set Total Allowable Catches (TAC's) for many of the commercially important groundfish stocks off the west coast of Canada. Since the 1970's, when DFO began to put effort controls on the trawl fleet by limiting entry, the efficiency and overall catching power of the fleet has continually increased, despite little or no increase in the amount of available harvest of many groundfish stocks.

Several events occurred in the summer of 1995 that raised concern about our ability to regulate the fishery effectively. This concern resulted in DFO taking some dramatic steps in the fall of 1995 and began the process towards development of long term plans for the west coast trawl fishery for 1996 and beyond.

The initial impetus for change came as a result of the 1993 commitment by both Canada and the United States through the International Pacific Halibut Commission (IPHC) to reduce the halibut bycatch mortality in the trawl fisheries occurring in the North Pacific. This agreement required the United States to reduce halibut bycatch mortality by 50% by 1977. Subsequent to the agreement was Canada's commitment to reduce its own bycatch mortality by 50%.

Canada tabled a three year plan in 1995 that will result in the trawl fleet operating under a coastwide bycatch mortality cap in 1997. For 1995 a cap of 600,000 lb. of mortality was set for the Hecate Strait area, the area was to be expanded in 1996 to include the WCVI and finally coast wide in 1997.

For 1995, DFO planned to monitor the cap on a quarterly basis by applying halibut mortality incidence rates to landed groundfish catch. (This process had been used to estimate halibut bycatch mortality in Canadian waters for a number of years). Mid-summer estimates of bycatch mortality using available data for the Hecate Strait area led Managers to believe that halibut bycatch mortality levels would not exceed the cap of 600,000 lbs.

More current and timely data analyzed in September surprisingly indicated that halibut bycatch mortality levels exceeded the cap for the Hecate Strait area. This led to full review of all groundfish catches to date and in particular catches in relation to set TAC's and the 1995 scientific yield recommendations.

The review found that most TAC's had been reached or exceeded and more importantly catches on some species had exceeded high risk yield recommendations. This fact coupled with the stance Canada and the Minister had taken in terms of the Atlantic fishery, led to the decision to close, on the basis of conservation, the entire coast to trawling October 1st. This was the first time that the entire trawl fishery had been closed coastwide.

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The closure initiated a series of meetings with DFO's Groundfish Trawl Advisory Committee (GTAC). The purpose of these meetings were twofold; first to examine if there was any possibility for reopening the fishery in 1995 secondly, and more importantly, to begin developing a management plan, supported by industry, that provided for year-round fishing opportunities for groundfish trawl fishermen, but ensured overall conservation of groundfish resource.

On the first issue DFO agreed to allow resumption of limited fishing opportunities in early November for those mid-waters species with quota remaining but only under the condition that any vessels participating in the fishery carried an onboard observer 100% of the time, and at the fishers cost.

Development of the 1996 management plan proved to be a major challenge for both DFO and industry advisors. Key elements from DFO's perspective were overall conservation of the resource by keeping the catches within set TAC's, 100% onboard observer coverage at industries cost, and finally putting the onus on individual fishers to be responsible for the fishing practices through the implementation of Individual Vessel Bycatch Caps (IVBC's). DFO stated clearly from the onset of the discussions that unless these elements were met, the bottom trawl fishery would remain closed.

After several months of consultations within the GTAC, a plan was finally put forward to the Minister in early February. While, industry consensus on all aspects of the plan was not achieved, the single principle on which there was broad agreement, was that overall conservation of the groundfish resource was paramount.

The Groundfish Management plan approved set out a number of objectives. These were:

- to provide more reliable information on removals from the stocks (information that will enhance future stock assessments);
- to reduce the quantity of fish discarded and wastage;
- to minimize incidental catches of valuable non-target species, such as halibut and sablefish;
- to generally promote "cleaner" fishing practices; and
- to allow a year-round fishery and thus avoid the need to prematurely close the fishery, as occurred in 1995.

Measures to be used to achieve these objectives included the introduction of the 100% on-board observer program, continuation of the comprehensive monitoring of landings dockside, and the implementation of individual vessel bycatch limits for Pacific Cod, Sablefish and Halibut. Under the plan, the fishing year was split into trimesters with each trawl vessel was restricted to fishing in two of the three trimesters. In addition, trawl vessel owners were required to select to fish under three different options A, B, or C. Generally, vessels choosing Option A vessels were the larger, more productive trawlers on the coast. Of the 142 licensed vessels 108 vessels chose to fish under option A. (Option A vessels are subject to 100% observer coverage). 27 vessels owners chose to operate under Option B. (Option B vessels are subject to 15 days/vessel of at-sea observer coverage) These vessels were typically smaller vessels who operate as day boats that out of Uchuellet, Port Hardy and Prince

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Rupert areas. The remaining 8 vessels opted for Option C which restricts their fishing activities to the Gulf area. Options A and B are not allowed to bottom trawl in the Gulf.

### Issues:

#### At- sea observers

The introduction of the fully cost recoverable 100% mandatory at-sea observer program continues to be one of the most contentious issues in this fishery. While it is recognized there is a need for at sea observers to meet the objectives of the plan, the main issue is the cost of that service. Adding to the at sea observer costs was DFO imposing significantly new higher license fees in 1996. Fees increased from \$10 to an average of \$5,400 per vessel. These fees added to costs borne with the implementation of the Dockside Monitoring Program in 1994, has led to many claiming it would be difficult for trawlers to remain economically viable in this fishery.

The impacts of the increased costs were raised with the Minister, and it was agreed that DFO would provide \$1,000,000 in fiscal year 1996-97 toward the cost of the observer program. This has effectively reduced the at-sea observer sea day cost to \$261/day for 1996, and approx. \$305/day for 1997 from the unsubsidized rate of approx. \$350/day.

At-sea Observers are supplied and trained by a private contractor, Archipelago Marine Research Ltd. (AMR), in accordance its contract with DFO. AMR has successfully competed for and won this contract through an open bidding process since 1988. This contract grants Archipelago the exclusive right to provide observers for this program in the Pacific Region.

100% Observer coverage is essential to the plan to ensure that removals fall within the established Total Allowable Catches (TACs) and provides for an accurate accounting of discard/bycatch and individual vessel bycatch quotas.

#### Individual bycatch quotas:

The second issue was putting the onus on individual fishermen to be responsible for their fishing actions. Fishing in manner that results in a vessel exceeding their bycatch cap would result in that vessel being restricted to mid-water or to fishing in other areas of the coast only.

Species bycatch limits were established for Halibut, Sablefish and Pacific Cod. By licence condition trawl vessels cannot legally retain Halibut, in fact by regulation all prohibited species must be returned alive to the water, as quickly as possible. This differs from the other species subject to bycatch caps where retention of those species is allowed. For all species of groundfish, other than halibut, fish that are determined to be unmarketable and that are discarded at-sea are not deducted from fishing period limits, IVBCs or annual TACs. The marketability of sablefish is determined by size. As in previous years under the dockside monitoring program, all fish landed, whether considered marketable or not, is deducted from the appropriate fishing period limits, bycatch caps and/or species TACs.

Option B vessels, as a group, were subject to an overall fleet bycatch cap, which was based on pre-determined mortality rates and incidence rates when fishing for other species. The bycatch limit for each species was divided equally among each of the three fishing periods. If an area specific bycatch limit for Halibut (Hecate Strait/Dixon Entrance and west coast of Vancouver Island) was attained, all

- Hecate Strait/Dixon Entrance - 4,600 lbs mortality
- West coast of Vancouver Island - 6,100 lbs mortality

set were:

Vessels choosing Option A had individual vessel allocations set for each area under caps. These levels

calculation of overall halibut mortality figures for Canadian waters. To monitor individual vessel caps the onboard observer assesses the condition of each halibut encountered before it is returned to the water by using condition factors that have been established by the International Pacific Halibut Commission. Based on the condition of the halibut a mortality rate is then applied against the vessel individual cap for that area. This protocol is used for halibut regardless of where it is encountered and for those areas not subject to individual caps, the mortality is used in the calculation of overall halibut mortality figures for Canadian waters.

DFQ, following the bycatch plan tabled with the IPHC, set Halibut bycatch mortality caps for Hecate Strait (500,000 pounds) and the west coast of Vancouver Island (380,000 pounds) in 1996.

Halibut:

Specific IVBQs are:

The above mortality rates do not reflect true mortality rates of fish discarded at-sea but, are solely intended to provide incentives in 1996 for vessels to reduce towing time and avoid bycatch wherever possible.

An hour fished was defined as the time that the net is in contact with the sea floor. For periods less than one hour, mortality shall be determined by multiplying that portion of an hour by the applicable mortality rate.

Sablefish	-10% mortality for the first two hours fished or portion thereof and 10% for each additional hour <sup>1</sup>	Pacific cod	-25% mortality for the first two hours fished or portion thereof and 25% for each additional hour <sup>1</sup>
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Fish determined to be marketable had mortality rates set as follows:

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vessels operating under Fishing Option B would be prohibited from fishing in the relevant area until the commencement of the next fishing period.

Sablefish.

An IVBQ was set at 7,000 pounds. Vessels which exceed the 7,000 lbs Sablefish cap were permitted to continue fishing by means of bottom trawl, provided that they obtain additional Sablefish quota from the holder of a category 'K' licence. This additional quantity of Sablefish may be obtained at any time during the year. The annual amount of additional Sablefish quota that may be obtained is not allowed to exceed the amount of the original Sablefish vessel cap issued to the vessel. Once the entire quantity of permitted Sablefish is landed or discarded, the vessel is prohibited from bottom trawling for the remainder of the year.

For Option B vessels a monthly bycatch limit of 700 lbs were provided to each vessel. Overages up to 20% of monthly limits are deducted from limits available in the next month. Overages in excess of 20% are both relinquished and deducted from limits available in the next month.

Pacific Cod:

For Pacific cod, two fishing period limits were issued to each vessel (16,000 pounds for Hecate Strait/Dixon Entrance and 8,000 pounds for the remainder of the coast). If a vessel's Pacific cod limit for an area is exceeded by 50%, that vessel shall be restricted to midwater trawling, or bottom trawling in depths greater than 100 fathoms, for the remainder of the fishing period in that area.

Vessels which attain a cap in-season is prohibited from bottom trawling for the remainder of the year in the area for which the cap has been reached.

Note:

Again all Option B vessels, as a group, were subject to a bycatch limit of 3000 lbs for Pacific Cod which is based on pre-determined mortality rates and incidence rates when fishing for other species. The bycatch limit for each species was divided equally among the three fishing periods. If an area-specific bycatch limit for Pacific cod (Hecate Strait/Dixon Entrance and the remainder of the coast) is attained, all vessels operating under Fishing Option B are then prohibited from fishing in the relevant area until the commencement of the next fishing period.

Information to date:

The 1996 trawl fishery opened Feb 16th. Year to date Trawl fishery Catch data is set out in Table 1. Habbur bycatch figures are set out in Table 2. Figures 1, 2, and 3 and Table 3 indicate the status of the IVBC's for both Sablefish and Habbur to date.

The plan has allowed the trawl sector to continue to prosecute a year round fishery. In retrospect had measures (ie. 100% onboard observers, TVBC's) not been implemented for the 1996 season, in all likelihood, the trawl fishery in British Columbia would have been shut down due to the reaching of bycatch caps sometime by mid-summer of 1996.

Finally, there is the influence on the fishing operation when an observer onboard. Fishers are though to be operating more responsibly, and with less wastage, thus achieving most of the stated objectives of the 1996 management plan.

Additional bycatch savings have been seen as a result of the plan itself. In particular, are the combination of area closures and species period trip limits, the closing of the Pacific Cod fishery in Hecate Strait, the closure for trawling in western Hecate Strait to protect soft shell crabs, and the coming into law the 5 1/2" codend mesh size in Hecate Straits have all contributed to the lower level of bycatch.

Estimates are that habitat bycatch mortality will be less than 400,00 lbs for 1996. With measures set out above being implemented, the observed effect on the fleet has been a change in the fishing behavior. In particular, fishers have altered fishing practices to ensure they can continue to fish on bottom. Changes include the redirection of effort to species where bycatch is less, shortened tow times, the making of short exploratory tows to identify target species, avoidance of fishing for species and areas where it is expected high levels of bycatch will be encountered. Fishing crews, being aware of how bycatch mortality in determined are returning bycatch to the water more quickly (resulting in less mortality) and finally, many vessels directed their efforts to mid-water species at the start of the season to avoid bycatch and to service markets.

In order to achieve its international commitments Canada has taken strong measures to reduce habitat bycatch mortality. The compulsory 100% observer program, bycatch mortality caps by areas, and individual bycatch quotas have been implemented. Data to date clearly shows that these measure have lead to the reduction of habitat bycatch mortality in Canadian waters.

**General comments:**

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## TABLE 1:

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## Year to Date Trawl Fishery Catch Summary - All Options, (data to November 28)

Species or Aggregate	Catch Area	Total Allowable Catch	Option A Landed To Date (tonnes)	Option A Marketable Discards (tonnes)	Total Option A Catch (tonnes)	Option B Landed To Date (tonnes)	Option C Landed To Date (tonnes)	Total Catch To Date (tonnes)	Percent of Annual TAC
Yellowtail/Widow	Coastwide	7,722	7063.57	9.77	7073.34	66.89	0.03	7140.26	92.47%
Canary/Silvergrey	Coastwide	1,943	1463.55	11.89	1475.44	73.23	0.00	1548.68	79.71%
P/P/Yellowmouth	Coastwide	6,835	6959.21	12.42	6971.70	104.90	0.02	7076.62	103.23%
Roughway/Shartraker	Coastwide	913	933.25	1.61	936.86	0.09	0.00	936.95	102.62%
Redstripe/Sharthead	Coastwide	2,019	1110.25	3.94	1114.19	11.27	0.00	1125.46	55.74%
Other Rockfish	Coastwide		889.08	5.99	895.07	24.43	0.28	919.79	
S Spine Idiote	Coastwide	736	607.88	0.23	607.31	0.34	0.00	607.65	82.56%
I. Spine Idiote	Coastwide		771.41	0.62	772.03	0.01	0.00	772.04	
Sablefish	Coastwide	304	156.25	17.40	173.65	3.07	0.00	176.72	58.13%
Pacific Cod	S C/D	zero	366.67	1.91	368.59	2.89	0.00	371.47	
Pacific Cod	Balance*	zero	243.74	1.34	245.08	51.78	1.56	296.42	
Dover Sole	3C/D	1,813	764.83	531	770.14	32.83	0.49	803.46	44.32%
Dover Sole	3C/D/E	1,100	1048.19	2.07	1050.26	0.62	0.00	1050.88	95.53%
Dover Sole	Balance*		488.01	0.44	488.45	14.43	1.94	504.81	
Rock Sole	5A/B	880	316.04	0.58	316.62	19.17	0.00	335.80	38.16%
Rock Sole	5C/D	673	671.84	0.27	672.11	7.66	0.00	679.77	101.01%
Rock Sole	Balance*		16.82	0.12	16.94	26.24	34.40	77.38	
Lemon Sole	5C/D	490	348.36	0.23	348.58	0.50	0.00	349.08	70.81%
Lemon Sole	Balance*		82.56	0.08	82.64	34.22	20.64	137.50	
Petrale Sole	Coastwide	zero	222.05	0.11	222.16	16.12	0.09	238.38	
Lingcod	3C	1,560	379.39	0.20	380.09	47.83	0.06	427.98	27.79%
Lingcod	3D	468	202.91	0.09	203.01	18.15	0.00	221.16	47.26%
Lingcod	5A/B	1,815	592.25	0.18	592.43	47.97	0.00	640.40	35.28%
Lingcod	5C/D	1,100	161.28	0.00	161.29	7.32	0.00	168.61	15.33%
Lingcod	Balance*		17.70	0.01	17.71	1.63	0.04	19.38	
Pollock	4B	1,490	see note	n/a	0.00	0.00	0.01	0.01	0.00%
Pollock	Areas 11/12	1,898	705.23	n/a	705.23	0.00	0.00	705.23	37.16%
Pollock	5C/D	3,190	631.87	0.00	631.87	0.00	0.00	631.87	19.81%
Pollock	Balance*		633.29	0.00	633.29	1.10	0.01	634.40	
Hake	4B	11,000	10187.53	n/a	10187.53	0.00	0.07	10187.60	92.61%
Hake	3C/D	50,000	22635.21	0.00	22635.21	0.07	0.00	22635.28	45.27%
Hake	Balance*		211.08	0.00	211.08	0.00	0.01	211.09	
Dogfish	4B	5,000	170.18	0.00	170.18	2.11	36.77	209.06	4.18%
Dogfish	Coastwide	12,000	248.67	0.00	248.67	9.40	0.00	258.07	2.15%

Notes: \* Balance category includes catch that is not assigned to an area and catch that is assigned to areas other than those listed.

\*\* 4B pollock catch is included as part of area 11/12 pollock catch.

TABLE: 2

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DF0 GROUNDFISH

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**Summary of Option A Trawl Halibut Catch (in lbs) for Observed Trips (Data to Nov. 28)**

Statistical Area	Total Retained Catch		Released At Sea			Total Retained and Released Dead	% Of Bycatch Cap
	At Sea Estimate	Onload Weight	Alive	Dead	Total		
3C/D*	346	943	127,424	56,061	184,774	57,004	41.31
5A/B	165	1,162	406,771	164,183	572,281	165,345	
5C/D*	71	244	330,874	124,829	456,018	125,073	27.79
5E	0	17	56,871	25,435	82,323	25,452	
Unspecified	0	6,620	8	1	6,629	6,621	
All Areas	582	8,986	921,948	370,509	1,302,025	379,495	

\* Managed by area bycatch caps

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### 1996 Groundfish Trawl Summary of Bycatch Cap Status for the Third Trimester\*

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Figure 1

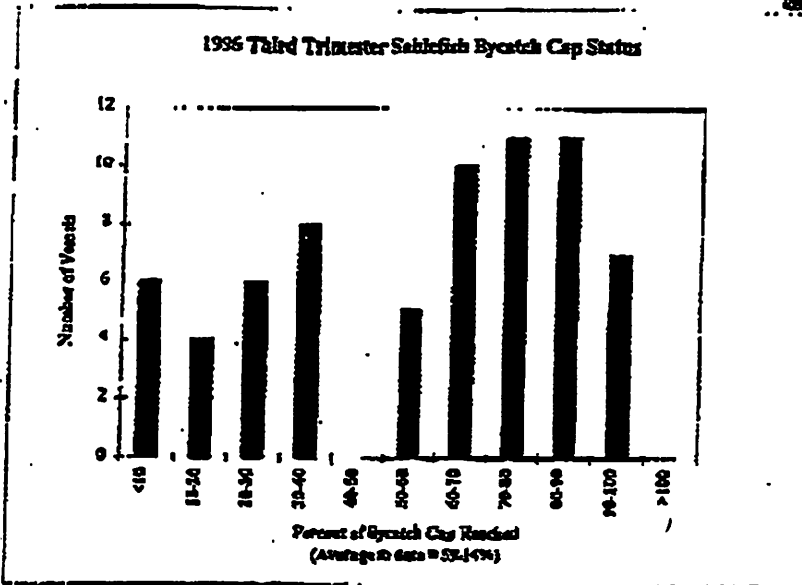


Figure 2

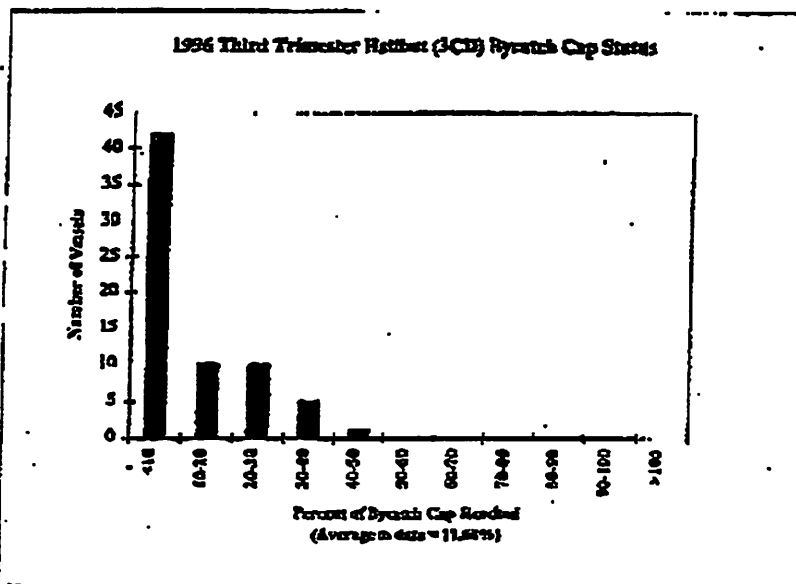
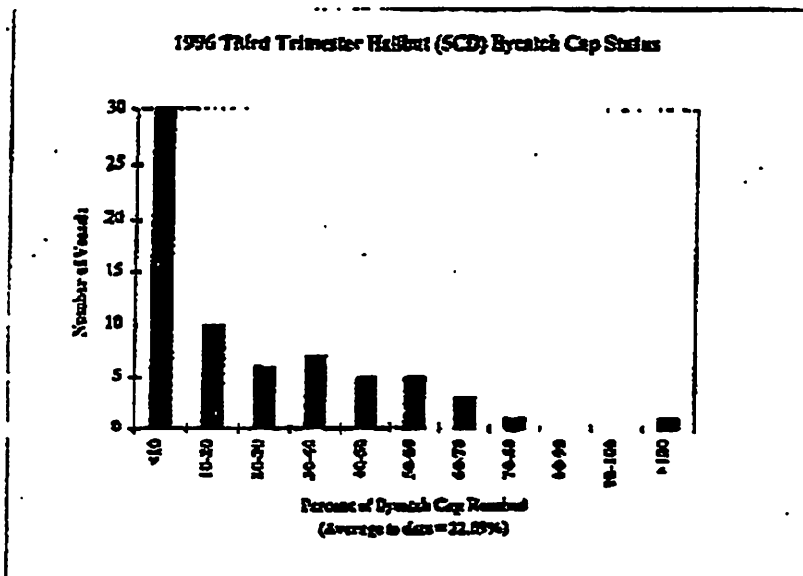


Figure 3



\* Excludes 68 active vessels as of 11/29/96 12:33

1996 Groundfish Trawl Summary of Bycatch  
Cap

TABLE 3

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			Total	Average
			68	
Sablefish	Coastwide	Fished? Wt (lbs.)	281,527	3,312
Halibut	3 CD	Wt (lbs.)	34,659	408
Halibut	5 CD	Wt (lbs.)	91,634	1,078
			59.14	59.14
Sablefish	Coastwide	% of Cap	11.08	11.08
Halibut	3 CD	% of Cap	22.09	22.09
Halibut	5 CD	% of Cap		

Coastwide Sablefish

		Total
0-10	<10	6
10-20	10-20	4
20-30	20-30	6
30-40	30-40	8
40-50	40-50	0
50-60	50-60	5
60-70	60-70	10
70-80	70-80	11
80-90	80-90	11
90-100	90-100	7
100+	>100	0

68

Halibut (3CD)

		Total
0-10	<10	42
10-20	10-20	10
20-30	20-30	10
30-40	30-40	5
40-50	40-50	1
50-60	50-60	0
60-70	60-70	0
70-80	70-80	0
80-90	80-90	0
90-100	90-100	0
100+	>100	0

Halibut (5CD)

		Total
0-10	<10	30
10-20	10-20	10
20-30	20-30	6
30-40	30-40	7
40-50	40-50	5
50-60	50-60	5
60-70	60-70	3
70-80	70-80	1
80-90	80-90	0
90-100	90-100	0
100+	>100	1