

HJR

59

HOUSE COMMITTEE REPORT

(9) [REDACTED]
 Date Referred: March 2, 1994

FURTHER REFERRALS:

Date of Committee Action: 3/14/94

The RESOURCES Committee considered:

HJR 59

HOUSE JOINT RESOLUTION NO. 59

WANTON WASTE OF FISH N.PACIFIC/BERING SEA

Relating to reduction of wanton waste in North Pacific Ocean and Bering Sea fisheries.

RECOMMENDATIONS:

be replaced with CS HJR 59 (FSH) the same title
 a new title

have attached amendments(s)

do pass

do not pass

no recommendations

individual recommendations

additional referral to the _____ Committee

ADOPTS: _____ letter of Intent

ATTACHES NEW FISCAL NOTE(S): _____ (Dept)

APPROVES PREVIOUS: _____ (Dept/Date)

fiscal impact _____

fiscal note(s) _____

zero fiscal note _____

zero fiscal note(s) Fish Committee/3-2-94

SIGNING <u>DO PASS</u>	DP	OTHER RECOMMENDATIONS	DNP	NR	AM
<i>Bill Hudson</i> Hudson	<input checked="" type="checkbox"/>				
<i>Kate Carney</i> Carney	<input checked="" type="checkbox"/>				
<i>Robert Green</i> Green	<input checked="" type="checkbox"/>				
<i>James James</i> James	<input checked="" type="checkbox"/>				
<i>David Hinkelstein</i> Hinkelstein	<input checked="" type="checkbox"/>				
<i>Al N. Davies</i> Davies	<input checked="" type="checkbox"/>				
<i>Glen Mulder</i> Mulder	<input checked="" type="checkbox"/>				
<i>Carl Bunde</i> Bunde	<input checked="" type="checkbox"/>				
<i>W.K. Williams</i> Williams	<input checked="" type="checkbox"/>				

W.K. Williams
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Alaska State Legislature

Representative Carl E. Moses

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SPONSOR STATEMENT

House Joint Resolution 59

Reduction of wanton waste in North Pacific Ocean and Bering Sea fisheries.

House Joint Resolution 59 addresses an issue of immediate concern to Alaska and its commercial fishing industry. In a May 1993, report prepared for the Alaska Department of Fish & Game by Pacific Associates, the wanton waste of fishery resources in the North Pacific Ocean and Bering Sea fisheries was documented.

Discards of either dead or live fishery resources occur in these commercial fisheries for three basic reasons: economics, management policies and fishing practices. Discards sometimes occur because of the economic loss associated with processing the entire harvest. When species of little or no value are harvested along with the target species, there is no real economic incentive to discourage discarding.

Management induced discards occur for several reasons. There are federal regulations which prohibit fishermen utilizing certain gear types from retaining certain species. The fact that the fish may be dead or alive does not matter. This is called prohibited species catch. Groundfish fisheries in the North Pacific are managed by an open-access method with species quotas. Fishermen are interested in targeting their particular species as rigorously as possible before the allotted quota is reached. This method also lends itself to waste through discards of non-target species.

Fishing practices discards may be the result of direct action by fishermen or through a combination of management requirements and fishing practices. Some fishermen "prospect" for a closed-fishery species while targeting another species. Because they will harvest prohibited species while doing this, there is mortality associated with the non-targeted species. Technical modifications to gear to make it "legal" (e.g. modifying on-bottom trawl gear to mid-water trawl) can cause increased bycatch mortality.

HJR 59 urges Congress to either amend the Magnuson Fishery Management and Conservation Act or to enact other legislation to address the waste of fishery resources in the North Pacific Ocean and Bering Sea fisheries. Congress can utilize a variety of means to disallow fishery resource waste.

ADAK • AKUTAN • AMCHITKA • ATKA • ATTU • BELKOFSKI • CHERNOFSKI • CHIGNIK • CHIGNIK LAGOON • CHIGNIK LAKE
COLD BAY • DUTCH HARBOR • EGEGIK • EKWOK • FALSE PASS • IVANOF BAY • KING COVE • KING SALMON • KOLIGANEK • LEVELOCK • NAKNEK
NELSON LAGOON • NEW STUYAHOK • NIKOLSKI • PEDRO BAY • PERRYVILLE • PILOT POINT • PORT HEIDEN • PORT MOLLER • SAND POINT
SHEMYA • SQUAW HARBOR • SOUTH NAKNEK • ST. GEORGE ISLAND • ST. PAUL ISLAND • UGASHIK • UNALASKA • UNGA

FISCAL NOTE

STATE OF ALASKA
1994 LEGISLATIVE SESSION

BILL NO. HJR 59

Revision Date: _____ Dept. Affected: _____
 Title: Relating to the reduction of wanton waste CRU: _____
in North Pacific Ocean and Bering Sea fisheries Component: _____
 Sponsor: House Rules Committee
 Requestor: House Rules Committee COMPONENT SERIAL NO. _____

Expenditures/Revenues (Thousands of Dollars)

OPERATING EXPENDITURES	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0					

CAPITAL EXPENDITURES	0					
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CHANGE IN REVENUES ()	0					
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FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1006 GF/MHTIA						
Other						
TOTAL	0					

Estimate of any current year (FY94) cost: \$ 0

POSITIONS

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

Prepared by: Cheryl Sutton, Aide, House Special Committee on Fisheries Phone: 465-6848

Division: _____ Date: March 2, 1994

Approved by Commissioner: *Carl E. Moses* Date: March 2, 1994

Agency: House of Representatives/Legislature

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**DISCARDS IN THE GROUND FISH FISHERIES
OF THE
BERING SEA/ALEUTIAN ISLANDS
& THE GULF OF ALASKA
DURING 1992**

prepared for

The Alaska Department of Fish & Game

by

Pacific Associates

May, 1993

3.2.3	Pot Pacific Cod Fishery	.....	15
3.2.4	Bottom Trawl Pollock Fishery	.....	15
3.2.5	Mid-Water Trawl Pollock Fishery	.....	15
3.2.7	Trawl Pacific Cod Fishery	.....	16
3.2.8	Trawl Rockfish Fishery	.....	16
3.2.9	Trawl Deepwater Flatfish Fishery	.....	16
3.2.10	Trawl Shallow Water Flatfish Fishery	.....	17
3.3	BS/AI and GOA Longline Halibut Fishery	17
3.4	Average Size of Halibut Taken as Bycatch in the BS/AI and the GOA	17

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Table of Contents

Executive Summary	1
1.0 Introduction	1
1.1 Discard Data	1
1.1.1 Groundfish	1
1.1.2 Prohibited Species	2
1.2 Mortality Rates	3
1.3 Managing Entities	3
2.0 General Causes of Discards	5
2.1 Economic Discards	5
2.2 Management Induced Discards	6
2.2.1 Prohibited Species Catch	6
2.2.2 The Race for Fish	7
2.3 Fishing Practice Discards	8
3.0 Amount of Discards	8
3.1 Bering Sea/Aleutian Islands Fisheries	9
3.1.1 Mid-Water Trawl Pollock	9
3.1.2 Bottom Trawl Pollock	10
3.1.3 Flatfish Trawl Fisheries	10
3.1.3.1 Yellowfin Sole Trawl Fishery	11
3.1.3.2 Rocksole Trawl Fishery	11
3.1.4 Pacific Cod Trawl Fishery	12
3.1.5 All Trawl Fisheries	13
3.1.6 Hook & Line Pacific Cod Fishery	13
3.1.7 Pot Fisheries	13
3.2 Gulf of Alaska Fisheries	14
3.2.1 Hook & Line Pacific Cod Fishery	14
3.2.2 Longline Sablefish Fishery	15

3.2.3	Pot Pacific Cod Fishery	.....	15
3.2.4	Bottom Trawl Pollock Fishery	.....	15
3.2.5	Mid-Water Trawl Pollock Fishery	.....	15
3.2.7	Trawl Pacific Cod Fishery	.....	16
3.2.8	Trawl Rockfish Fishery	.....	16
3.2.9	Trawl Deepwater Flatfish Fishery	.....	16
3.2.10	Trawl Shallow Water Flatfish Fishery	.....	17
3.3	BS/AI and GOA Longline Halibut Fishery	.....	17
3.4	Average Size of Halibut Taken as Bycatch in the BS/AI and the GOA	.....	17

List of Tables

Table 1	1992 & 1993 Halibut Bycatch Mortality Rates	4
Table 2	Catch & Discard of All Species and Fisheries in the BS/AI during 1992	18
Table 3	Target Catch Discards in the BS/AI during 1992, by Target Fishery & Gear	19
Table 4	Catch & Discard of All Species in the BS/AI Mid-Water Trawl Pollock Fishery during 1992	20
Table 5	Catch & Discard of All Species in the BS/AI Bottom Trawl Pollock Fishery during 1992	22
Table 6	Catch & Discard of All Species in the BS/AI Yellowfin Sole Trawl Fishery during 1992	24
Table 7	Catch & Discard of All Species in the BS/AI the BS/AI Rocksole Trawl Fishery during 1992	26
Table 8	Catch & Discard of All Species in the BS/AI the BS/AI Pacific Cod Trawl Fishery during 1992	28
Table 9	Catch & Discard of All Species in All BS/AI Trawl Fisheries during 1992	29
Table 10	Catch & Discard of All Species in the BS/AI Hook & Line Pacific Cod Fishery during 1992	31
Table 11	Catch & Discard of All Species in All BS/AI Hook & Line Fisheries during 1992	33
Table 12	Catch & Discard of All Species in All BS/AI Pot & Jig Pacific Cod Fisheries during 1992	34
Table 13	Retained and Discarded Catch in the GOA Hook & Line Fisheries during 1992	35
Table 14	Retained and Discarded Catch in the GOA Jig & "other" Fisheries during 1992	36
Table 15	Retained and Discarded Catch in the GOA Pot Fisheries during 1992	37
Table 16	Retained and Discarded Catch in the GOA Trawl Fisheries during 1992	38
Table 17	Retained and Discarded Catch in the Combined GOA Fisheries during 1992	39
Table 18	Prohibited Species Catch in the 1992 GOA Target Groundfish Fisheries	40
Table 19	Halibut Bycatch Mortality in the 1992 Gulf of Alaska Fisheries (by gear and target fisheries)	41

Table 20	Estimate of Halibut Mortality Associated with the Directed Longline Halibut Fishery during 1992 in the BS/AI and the GOA (In pounds)	.....	42
Table 21	Average Size of Halibut Taken as Bycatch in the BS/AI Groundfish Fisheries During 1992 (by gear type and target fishery)	.....	43
Table 22	Average Size of Halibut Taken as Bycatch in the GOA Groundfish Fisheries During 1992 (by gear type and target fishery)	.....	44

List of Figures

Figure 1	Retained and Discarded Groundfish Catch in the BS/AI Mid-Water Trawl Pollock Fishery	.....	21
Figure 2	Retained and Discarded Groundfish Catch in the BS/AI Bottom Trawl Pollock Fishery	.....	23
Figure 3	Retained and Discarded Groundfish Catch in the BS/AI Yellowfin Sole Trawl Fishery	.....	25
Figure 4	Retained and Discarded Groundfish Catch in the BS/AI Rock Sole Trawl Fishery	.....	27
Figure 5	Retained and Discarded Groundfish Catch in the BS/AI Pacific Cod Trawl Fishery	.....	30
Figure 6	Retained and Discarded Groundfish Catch in the BS/AI Hook & Line Pacific Cod Fishery	.....	32

EXECUTIVE SUMMARY

This paper identifies the amount and source of discards of groundfish, crab, halibut, herring and salmon resulting from the commercial groundfish fisheries in the Bering Sea/Aleutian Islands and the Gulf of Alaska during calendar year 1992. Discards related to the directed commercial fisheries for crab and halibut are not identified.

The data base used to detail the groundfish discards was generated by the National Marine Fisheries Service (NMFS), and reflects only the reports submitted to the NMFS by fishing vessel operators and/or processors, who are required by federal regulation to report their discards to the NMFS. Discard data for species other than groundfish, such as prohibited species catch (PSC), are from observer data generated by independent contract observers.

A significant variance in the amount of groundfish discards reported is found when comparing discard reports by the vessel operator and/or processor to discard reports by the independent contract observers. For example, in the 1992 Bering Sea/Aleutian Islands pollock fishery, vessel operators and/or processors reported total pollock discards of 47,772 mt while federal observers reported extrapolated pollock discards of 113,000 mt — or 237% greater than those reported by the vessel operators.

It is also noteworthy that the largely unobserved hook and line vessels in the Gulf of Alaska reported no discards of groundfish in the sablefish and Pacific cod directed fisheries in 1992.

As a result, the groundfish discard information depicted in this paper should be viewed as a conservative estimate of the actual discards which occurred in the 1992 groundfish fisheries.

The table below depicts the total groundfish harvest, the reported groundfish discards, and the prohibited species discards for the Bering Sea/Aleutian Islands and the Gulf of Alaska during 1992:

	<u>mt</u>	<u>pounds</u>
Total Groundfish Catch	1,893,074	4,173,470,940
Total Groundfish Discards	229,999	507,055,795
Percent Discarded	12%	12%
Halibut Mortality	20,035,767	pounds
Chinook Salmon	49,571	fish
Other Salmon	50,420	fish
King Crab	148,401	crab
Bairdi Tanner Crab	3,967,622	crab
Other Crab	16,360,418	crab
Herring	1,080,200	pounds

With the exception of halibut, the mortality rate for fish returned to the ocean in the Alaskan groundfish fisheries is assumed to be 100% by the NMFS. Halibut mortality rates are displayed in Table 1 (page 4) for the various fisheries.

Bering Sea/Aleutian Islands

The following findings apply to the groundfish fisheries in the Bering Sea and Aleutian Islands (BS/AI) management area.

- A total of 462 million pounds of groundfish (12% of the total harvest) were discarded during 1992 in the BS/AI, according to vessel operator and/or processor reports.
- Trawl fisheries were responsible for 93% of the groundfish discards, while fixed gear accounted for 7% of the discards.
- In trawl fisheries, 47% of the discards consisted of the species being targeted.
- In fixed gear, 2% of the discards consisted of the species being targeted.
- The mortality of halibut taken as incidental bycatch totaled nearly 14 million pounds.
- The average size of halibut taken as bycatch in the trawl fisheries was 0.94 pounds per halibut; in the pot fisheries the average size was 2.16 pounds per halibut; and, in the hook and line fishery the average size was 11.94 pounds per halibut.
- 20.3 million crab were discarded (60% of this total came from the yellowfin sole trawl fishery).
- 73,000 salmon of all species were discarded (81% of this total came from the mid-water trawl pollock fishery).
- 1 million pounds of herring were discarded.

The following findings apply to specific fisheries in the BS/AI:

Mid-Water Trawl Pollock Fishery: From a percentage perspective, this was a relatively

clean fishery as 4% of the total groundfish harvest of 2.27 billion pounds was discarded. This "mid-water" fishery, however, had a higher incidental bycatch of bottom-dwelling animals than the bottom trawl pollock fishery: 2.2 million pounds of halibut mortality and 3.2 million crab.

Bottom Trawl Pollock Fishery: The total groundfish harvest was 360 million pounds. Of this amount, 18% (64 million pounds) was discarded. The FSC discard consisted of 1.7 million pounds of halibut mortality and 2.2 million crabs.

Yellowfin Sole Trawl Fishery: The total groundfish harvest was 354 million pounds; 38% (133 million pounds) was discarded, including 58.7 million pounds of yellowfin sole. Halibut bycatch mortality associated with the fishery was 1.55 million pounds, and 12.2 million crab were taken as bycatch.

Rocksole Trawl Fishery: The total groundfish harvest was 115.5 million pounds.; 61% (70 million pounds) of the total catch was discarded, including twenty-two million pounds of rock sole and nineteen million pounds of pollock . The PSC discard consisted of 2 million crab and 1.6 million pounds of halibut mortality.

Pacific Cod Trawl Fishery: The total groundfish harvest was 146 million pounds; 36% (53 million pounds) was discarded. Halibut bycatch mortality was 3.5 million pounds.

Pacific Cod Hook & Line Fishery: The total groundfish harvest was 229 million pounds; 12% (29 million pounds) was discarded. Discards of Pacific cod accounted for less than one-tenth of one percent (618,000 pounds). Halibut bycatch mortality was 2.4 million pounds.

Pacific Cod Pot Fishery: The total groundfish harvest was 30.5 million pounds; 3% (1 million pounds) was discarded. Ninety-seven percent of the catch was the target species. 274,000 crab were taken as bycatch.

Gulf of Alaska

Discard information available for the Gulf of Alaska (GOA) management area varies significantly from that in the BS/AI. The following findings apply to the Gulf of Alaska management area.

- A total of 45 million pounds (9% of the total catch) of groundfish were discarded during 1992 in the GOA, according to vessel operator and/or processor reports.
- While the total catch in the GOA is approximately 16% of the total

catch in the BS/AI; the reported groundfish discards in the GOA are 9% of the reported groundfish discards in the BS/AI. This is likely due to greater observer coverage in the BS/AI.

- The total groundfish discard rate reported by the vessel operators in the GOA hook and line fishery is significantly less than 1%. This seems unexpectedly low.
- Trawl groundfish discard rates in the GOA are more reflective of the Bering Sea: 9% of the total groundfish harvest.
- Halibut bycatch mortality was 6.2 million pounds..
- The average size of halibut taken as bycatch was greater in the Gulf than the Bering Sea: 7.25 pounds per fish for trawl gear, 10.14 pounds per fish for pot gear, and 14.38 pounds per fish for hook and line.
- 26,500 salmon of all species were reported as discards.

The following findings apply to specific fisheries in the GOA:

Bottom Trawl Pollock Fishery: The total groundfish harvest was 53 million pounds; 6% (3 million pounds mt) of the harvest was discarded. 118,051 pounds of halibut mortality were associated with the fishery.

Mid-Water Trawl Pollock Fishery: The total groundfish harvest was 121 million pounds; 7% (8 million pounds) were discarded. Approximately 4,000 chinook salmon were taken as bycatch. Unlike the Bering Sea, there was little halibut bycatch mortality associated with this fishery.

Pacific Cod Trawl Fishery: The total reported groundfish harvest was 113 million pounds; 6% (6.6 million pounds) of the harvest was discarded. Halibut mortality associated with the fishery was 1.2 million pounds. 5,300 chinook salmon were also taken as bycatch.

Rockfish Trawl Fishery: The total reported groundfish harvest was 48 million pounds; 18% (8.7 million pounds) of the harvest was discarded. There were no discards of rockfish reported. Halibut mortality associated with the fishery was 1.1 million pounds. Over 5,000 salmon of all species were also taken.

Deepwater Flatfish Trawl Fishery: The total reported groundfish harvest was 34 million

pounds; 50% of the harvest was discarded. Halibut mortality was 1.3 million pounds.

Pacific Cod Hook and Line fishery: The total reported groundfish harvest was 32 million pounds. There were zero discards of groundfish reported; 98% of the reported harvest was Pacific cod. Halibut bycatch mortality associated with the fishery was 843,000 pounds.

Sablefish Hook and Line Fishery: The total reported groundfish harvest was 47.4 million pound; 93% of the total reported harvest was sablefish. Less than 2% of the total groundfish catch was reported as discard. Halibut bycatch mortality associated with the fishery was 1 million pounds.

.....

The data used in this paper, drawn exclusively from the NMFS 1992 records, is attached in appendices at the end of this paper.

1.0 Introduction

The purpose of this paper is to identify the amount of discards by species and fishery which occur annually in the commercial groundfish fisheries of the North Pacific and to examine the contributory cause of discards. The data used in this paper is drawn exclusively from National Marine Fisheries Service (NMFS) files for 1992. All data used is attached in its original form as Appendix 1 (NMFS Catch & Discard Data), Appendix 2 (NMFS Bering Sea Prohibited Species Catch), Appendix 3 (NMFS GOA Prohibited Species Catch), and Appendix 4 (Numbers and Size of Halibut PSC).

Although discards also occur in the crab fisheries in the North Pacific, primarily consisting of undersize crab, crab of species other than the target species, and varying amounts of halibut, this paper does not review those discards.

Discards are generally defined as those fish or animals which are returned to the sea after being harvested. For the purpose of this paper, the term "discard" is synonymous with waste since a discarded fish is thrown away, or wasted, instead of being used for the purpose it was initially harvested for — food. Not all of the fish or animals discarded die; therefore, total discards do not equate to total waste. NMFS has developed assumed mortality rates to estimate the survival rate of various species discarded in the different fisheries. Those rates were used in this paper to estimate actual discard waste. They take into account those fish or animals returned to the sea which survive. Therefore, discard waste figures used in this paper exclude those discards which are presumed to have survived the harvest and discard trauma. (See Section 1.2 for further discussion on mortality rates.)

Not all of the species discarded have a food production value; markets either do not exist or processing technology is not available to render the fish into viable consumptive products. As a result, it is questionable whether the discard of those species constitutes waste.

1.1 Discard Data

1.1.1 Groundfish

The National Marine Fisheries Service collects data on discards from two sources: the vessel operator and/or processor, and the contract employed, federal observer — if any — on board the vessel. The discard data for groundfish used in this paper was generated by NMFS for the 1992 fishing year, and reflects only the reports submitted by vessel operators/processors to document the discards in the fishery. Vessel/processor reports were used rather than observer reports because they were available for 1992 (observer reports were not) at the time this paper was being prepared. Because the data used is that reported by the industry itself, there should be little dispute from the harvesting sector of the industry regarding the data's veracity.

Discards in the Groundfish Fisheries of the North Pacific

It is worth noting that observer reports on discards are generally higher than the reports submitted by vessel operators/processors. This is exemplified by the data shown below which compares observer/best blend discard data with vessel/processor reported discard data for the target 1992 pollock fishery.¹ In the 1992 pollock fishery, the observer/best blend data shows pollock discards 65,249 mt (or 144 million pounds) greater than that reported by the vessel /processors. This represents a difference of 137% between the two reports.

	<u>Total Catch (mt)</u>	<u>Retained Catch (mt)</u>	<u>Discard (mt)</u>
Observer/Best Blend Report	1,333,754	1,220,733	113,021
Vessel/Processor Reports	1,158,853	1,111,081	47,772
Difference (mt)	174,901	109,652	65,249
Difference (lbs)	385,586,745	241,738,799	143,847,945
Difference (%)	15%	10%	237%

Again, note that the summary discard data used in this report for groundfish is not observer/best blend data, but data reported by the vessel operators and/or processors themselves.

For further comparisons between observed and reported discards, see Comparison Between Observed and Reported Catches of Retained and Discarded Groundfish in the Bering Sea and the Gulf of Alaska, 199-91 (Berger, 1993).

1.1.2 Prohibited Species

The discard data for prohibited species catch (PSC) contained in this report is NMFS observer data. This is available for 1992 because NMFS manages fisheries, in part, upon the level of PSC harvested. NMFS observers collect PSC data as a priority, so this data is continuously monitored and updated.

It is important to note that observers estimate only the number of PSC harvested, and only on those hauls or gear that the observers witness. NMFS assumes that the bycatch rate observed and reported by observers is standard throughout the fleet, and extrapolates that rate to all unobserved harvests. Through this process, NMFS develops an estimate of total PSC catches and discards.

¹Observer/best blend data from NMFS Bulletin Board (Preliminary Catch figures); vessel report data also from NMFS as shown in Tables 4 and 5.

Discards in the Groundfish Fisheries of the North Pacific

This report does not separate discard data between various harvesting entities, such as catcher vessels delivering to shoreside processors, catcher vessels delivering to floating processors, or harvests by catcher/processors. That information is, however, generally available.

1.2 Mortality Rates

The National Marine Fisheries Service establishes mortality rates for the various species that are harvested and then returned to the sea. These rates are then applied to the amount of the harvest of the species in question to determine the total discard mortality for that species.

The assumed mortality rate for all species is 100%, except in the case of halibut. For halibut, different mortality rates are used for different gear types and different fisheries. Additionally, halibut mortality rates may change from one year to the next dependent upon a variety of factors. Table 1 shows halibut mortality rates for 1992 and 1993.

The mortality rates used to identify halibut mortality in the 1992 fisheries (as shown in Section 3) are the 1992 rates.

Although the assumed mortality rate for crab is 100%, studies have shown that the actual rate is less than 100%. A mortality rate less than 100% may, however, be offset (or partially offset) by the unobserved mortality of crab that may be mortally injured on the bottom as a result of contact with trawl gear. Insufficient studies have occurred to determine an accurate crab mortality rate, and NMFS continues to use 100%.

1.3 Managing Entities

The managing entities for the groundfish fisheries in the North Pacific include NMFS, the North Pacific Fishery Management Council (NPFMC), the Alaska Department of Fish & Game (ADF&G), and the International Pacific Halibut Commission.

The North Pacific Fishery Management Council is a federal body charged with developing management policies affecting the commercial fisheries in the 200 mile Exclusive Economic Zone (EEZ). Those policies include the establishment of recommended harvest guidelines by species, fishery management plans, and policies and management techniques which address a wide array of issues, including bycatch management, limited access, and allocation issues.

The National Marine Fisheries Service is responsible for the overall day-to-day management of the fisheries. This includes the review, approval, and/or modification and implementation of the NPFMC's recommendations, as approved by the U.S. Secretary of Commerce.

Discards in the Groundfish Fisheries of the North Pacific

Table 1

**1992 and 1993 Halibut Bycatch Mortality Rates
for the
Bering Sea/Aleutian Islands & the Gulf of Alaska**

<u>Area</u>	<u>Gear</u>	<u>Fishery</u>	<u>1992 Rate</u>	<u>1993 Rate</u>
BS/AI	Trawl	Mid-Water Pollock	100%	80%
		Atka Mackerel	100%	70%
		Rock Sole		
		Yellowfin Scle Other Flatfish		
		Pacific Cod	100%	60%
		Bottom Trawl Pollock Rockfish		
		Arrowtooth Flounder Greenland Turbot Sablefish Other	100%	40%
	Longline	All	16%	18%
	Pot	All	5%	5%
GOA	Trawl	Mid-Water Pollock	65%	75%
		Rockfish	65%	60%
		Shallow Water Flatfish Other		
		Pacific Cod	65%	55%
		Bottom Trawl Pollock Deep Water Flatfish		
	Longline	Sablefish	16%	20.5%
		All Other Fisheries	16%	16.0%
	Pot	All	5%	5%

Source: National Marine Fisheries Service

Discards in the Groundfish Fisheries of the North Pacific

The Alaska Department of Fish & Game has management authority in the EEZ over those species and fisheries for which the federal government has declined to adopt a fishery management plan, or which have been formally delegated to the state of Alaska. With the exception of demersal shelf rockfish in the Eastern Gulf of Alaska, ADF&G does not exert management control over groundfish species in the EEZ.

The International Pacific Halibut Commission has the responsibility to establish overall harvest limits for the directed halibut fishery, define legal gear for harvesting of halibut, and other conservation oriented measures. The IPHC's authority is limited to conservation actions; allocation decisions are the responsibility of the NPFMC and the NMFS.

2.0 General Causes of Discards

There are a variety of reasons why discards occur, including economics, management policies, and fishing practices.

2.1 Economic Discards

Discards sometimes occur because of the economic loss associated with processing the entire harvest. This normally happens in the case of mixed stock fisheries or when species of little or no value are incidentally harvested along with the target species.

Mixed stock fisheries are those in which many different species are harvested at the same time. This occurs when the species being targeted inhabits the same area as other species, and/or when the harvesting gear being used cannot discriminate between species.

Common examples of mixed stock fisheries include the rocksole and yellowfin sole trawl fisheries. In these fisheries, large amounts of other species are also harvested, and since they were not the target species, are frequently discarded. In most instances, the fish being discarded have a lesser value than the target species. Since cargo hold or processing space aboard commercial fishing vessels (including catcher/processors) is at a premium, the retention of these lesser value species may reduce the overall economic income associated with a fishing trip because they occupy space which would otherwise be used for the higher value, target species, or the species for which a market has been secured. Consequently, the incidentally caught species are discarded.

Many species taken incidental to the target catch are discarded because they have little or no commercial value. Arrowtooth flounder in the Gulf of Alaska is a good example. Arrowtooth flounder is the most abundant groundfish in the Gulf, and is harvested incidentally in almost every target fishery. Since arrowtooth turns to mush when cooked, it has no value as a food product at present.

Discards in the Groundfish Fisheries of the North Pacific

One of the arguments surrounding discards is the question of whether or not they represent a cost to the nation. Some in the industry suggest that a certain minimal level of discards may be necessary or realistic, but that discards above that level occur as a result of poor fishing practices or bad judgment. Discards of that nature are not necessary (they argue), and may constitute a cost since they would otherwise have been utilized.

During 1991, the discard rate for the inshore sector of the industry for pollock was 4.3%, the offshore discard rate was 9.01%, the total offshore harvest was 1,052,625 mt, and the amount of pollock discarded by the offshore component was 94,822.² It may be reasonable to assume that the lower of the two discard rates accurately reflects the high end of minimal necessary discards; therefore, the amount of discards greater than 4.3% of the total harvest could be considered to be an economic cost. That amount was 49,308 mt (1,052,625 mt of total harvest times 4.3%, subtracted from total discards of 94,822 mt), or 109 million pounds. If one relies upon the argument that these discards were unnecessary, the 109 million pounds constitutes economic waste since other participants in the fishery would, presumably, have been able to utilize the harvest in an economically positive manner.

Clearly, the "economics" of discards work in both directions: they can be used to justify waste in the name of efficiency, or they can be used to illustrate what appears to be needless waste.

2.2 Management Induced Discards

Regulations, or the lack thereof, by managing entities are often a direct cause for discards. The following sections review the most common of management-induced discards.

2.2.1 Prohibited Species Catch

Federal regulations prohibit fishermen using certain gear types from retaining certain species, regardless of whether the fish are alive or dead. These species are referred to as prohibited species catch (PSC). PSC is divided into two categories.

The first category consists of halibut, salmon, crab, and herring. These species are PSC for all but a few gear types — it is unlawful for a gear type other than that specified to purposefully harvest, or to retain in any circumstances, these species. In no case, for example, are trawlers allowed to retain any of those species: any that are harvested must be returned as quickly as possible to the ocean. For each species other than

²North Pacific Fishery Management Council, Amendment 18/23, Supplemental SEIS, Table 1.5, NMFS Scenario.

Discards in the Groundfish Fisheries of the North Pacific

halibut, this rule was established by the NPFMC; for halibut, IPHC rules prohibit retention at any time by any gear other than longline. Also, IPHC rules prohibit the retention of halibut by longline vessels at any time other than when directed fishing for halibut is allowed.

The second category of PSC consists of those species whose allocated catch level has nearly been met and the amount of the quota remaining is insufficient to allow targeting without the risk of exceeding the harvest quota. In these cases, a minimal amount (or none) of the species may be retained. The purpose of this regulation is to eliminate or reduce the incentive for vessels to target the particular species which is nearing its total allowable catch level.

This paper does not provide a breakdown of management induced discard as compared to other types of discard. That information is, however, available and could be compiled.

Management induced discards of PSC are becoming increasingly controversial because they require discard waste.

2.2.2 The Race for Fish

The groundfish fisheries in the North Pacific have become seriously over-capitalized; the existing harvesting capacity far exceeds the amount that is reasonably necessary to harvest the quota. Since the fishing quotas are managed on an open access principle (anyone with a license and the proper gear can fish), and open seasons last only as long as the quota is available, a race for fish occurs as vessels compete with each other to take as much of the quota as possible during the time the season is open. With ever more efficient harvesting techniques available, fishing seasons are becoming shorter and shorter.

This management system, commonly known as the Olympic system, has an impact upon discard rates for both PSC and non-PSC species. Since vessels have an extremely limited amount of time to harvest the target quota, they are unable to fish slower and more selectively; on the contrary, they fish for maximum production and discard those species or those fish they are incapable of efficiently holding for transport back to port (for catcher vessels), or processing through their volume-oriented production line (for catcher-processors). Time is money in an Olympic system fishery, and vessels simply do not have the time to process anything other than the most profitable species they can harvest. Consequently, they throw everything else away.

The Olympic system also results in increased handling mortality of bycatch species and the loss of gear. This is particularly a problem in the longline halibut fisheries (see Section 4.1).

2.3 Fishing Practice Discards

Discards resulting from fishing practices may be the result of action by the fishermen directly, by management requirements (as described in Section 2.2 above), or a combination of the two. For the purpose of this paper, fishing practice discards are those discards which result from cavalier fishing practices by the vessel without regard to the impact of that practice. The following are examples:

- During the past two years in the Bering Sea, when the use of on-bottom trawl gear for pollock and/or Pacific cod was prohibited (due to halibut bycatch), some vessel operators made slight technical modifications to their gear so that the trawl was no longer classified as a bottom trawl, but as a mid-water trawl. In this manner, the operators could legally continue to fish their gear on the bottom. These modifications not only violated the intent of the law, but resulted in higher levels of halibut bycatch than had occurred with the defined "bottom trawl".³
- In the period prior to the opening of a halibut fishery, some longline vessels "prospect" for halibut while allegedly targeting another species such as Pacific cod. Since the purpose of the prospecting fishing trip is really to locate large quantities of halibut, the vessels fish in areas of known halibut concentration under the guise of fishing for Pacific cod; the halibut are discarded (they are PSC until the directed halibut fishery begins) and the cod retained, but the halibut bycatch rate and associated mortality are substantially greater than what would otherwise occur.
- Some vessels fish in areas where PSC and groundfish bycatch rates are known to be substantially higher than in other — albeit more distant and operationally costly — locations.

3.0 Amount of Discards

The following sections describe discard amounts by fishery in the Bering Sea/Aleutian Islands and the Gulf of Alaska.

³In fact, the bycatch of bottom-dwelling species in the mid-water pollock fishery during 1992 was substantially greater than the bycatch of bottom-dwelling species in the bottom trawl pollock fishery (see Sections 3.1.1 and 3.1.2).

3.1 Bering Sea/Aleutian Islands Fisheries

The reported 1992 harvest of groundfish in the Bering Sea/Aleutian Islands was 1.66 million mt. or 3.7 billion pounds. Of this amount, 462 million pounds (12%) of the total groundfish harvested was reported by the vessels as being discarded. Discards of PSC directly associated with the groundfish catch during 1992 included 14 million pounds of halibut (mortality), 3.85 million bairdi Tanner crab, 16.2 million opilio Tanner crab, 148,000 red king crab, 104,000 other king crab, 33,000 Chinook salmon, 40,000 salmon of other species, and 1 million pounds of herring.⁴ (See Table 2.)

Trawl fisheries accounted for 93% of total groundfish discards; fixed gear fisheries accounted for the remainder.

In the trawl fisheries, 47% of the total groundfish discards consisted of the same species the trawl fishery was targeting. For example, 22 million pounds of the 50 million pounds of rocksole harvested in the target trawl rocksole fishery was discarded by the vessels fishing rocksole. In total, 202 million pounds of the groundfish discarded by the trawl fisheries were the same species the trawl fisheries were targeting.

This problem did not exist in the longline fisheries, where just 2% of the total longline groundfish discards consisted of the targeted species.

Table 3 documents target catch discards.

The following provides a review of each major trawl and fixed gear fishery.

3.1.1 Mid-Water Trawl Pollock

Table 4 documents total catch and discard figures for the mid-water trawl pollock fishery. Figure 1 also depicts the relationship between groundfish retained and groundfish discarded in this fishery.

The total harvest of groundfish in the mid-water trawl pollock fishery during 1992 was 2.27 billion pounds. Of this amount, 85 million pounds, or 4% of the entire harvest, was discarded. This includes 73 million pounds (of pollock, or 3% of the pollock harvested. Pollock amounted to 86% of total groundfish discards. Of the remaining 12 million pounds of groundfish discard, 4.8 million pounds was Pacific cod and 3 million pounds was other flatfish.

⁴These numbers do not include discards that may have occurred during the December, 1992 Community Development Quota fishery. The total pollock harvest in that fishery was approximately 100,000 mt. The incidental harvest of bottom-dwelling PSC species was very low, however some 7,000 Chinook salmon were taken according to observer reports.

Discards in the Groundfish Fisheries of the North Pacific

Despite the fact that the mid-water pollock fishery is an off-bottom fishery, the incidental harvest of bottom-dwelling crab and halibut consisted of 2.2 million pounds of halibut mortality, 700,000 Bairdi Tanner crab, and 2.5 million Opilio Tanner crab. Additionally, 22,000 Chinook salmon and 39,000 salmon of other species were taken incidentally.

The PSC bycatch of bottom-dwelling animals resulted from the use of bottom trawl gear that was modified to meet the mid-water trawl gear definition; the modified gear was used to fish pollock on the bottom after the bottom trawl fishery had been closed. Future PSC catches of bottom-dwelling animals should be nearly eliminated if the fishery truly occurs mid-water.

3.1.2 Bottom Trawl Pollock Fishery

Table 5 documents total catch and discard figures for the bottom trawl pollock fishery. Figure 2 also depicts the relationship between groundfish retained and groundfish discarded in this fishery.

The total harvest of groundfish in the bottom trawl pollock fishery during 1992 was 359 million pounds. Of this amount, 64 million pounds, or 18% of the entire harvest, was discarded. This includes 32.3 million pounds of pollock, or 10% of the pollock harvested. Of the remaining 32 million pounds of groundfish discard, 9.5 million pounds was other flatfish, 6.8 million pounds was rocksole, and 6.8 million pounds was Pacific cod.

Prohibited species discard included 1.7 million pounds of halibut mortality, 600,000 Bairdi Tanner crab, 1.6 million Opilio Tanner crab, 43,000 king crab of all species, and 6,000 Chinook salmon.

The incidental harvest of bottom dwelling species was lower than that of the mid-water trawl pollock fishery.

3.1.3 Flatfish Trawl Fisheries

The flatfish trawl fisheries consist of two components: the yellowfin sole target fishery and the rocksole target fishery. Both are mixed stock fisheries in which sizable quantities of other groundfish species are harvested due to co-habitation of grounds.

The flatfish fisheries are also bottom trawl fisheries which often occur in areas that have a high abundance of crab and halibut; as a result, high incidental bycatch rates of those species are not unusual.

Discards in the Groundfish Fisheries of the North Pacific

3.1.3.1 Yellowfin Sole Trawl Fishery

Table 6 documents total catch and discard figures for the trawl yellowfin sole fishery. Figure 3 also depicts the relationship between groundfish retained and groundfish discarded in this fishery.

The total harvest of groundfish in the yellowfin sole fishery during 1992 was 354 million pounds. Of this amount, 133 million pounds, or 38% of the entire harvest, was discarded. This includes 58.7 million pounds of yellowfin sole, or 23% of the yellowfin sole harvested. Of the remaining 74.2 million pounds of groundfish discard, 14 million pounds was rocksole, 25.5 million pounds was other flatfish, 16.5 million pounds was pollock, and 4.5 million pounds was Pacific cod.

Additionally, large quantities of PSC were harvested and discarded. This includes 1.55 million pounds of halibut mortality, 1.6 million Bairdi Tanner crab, 10.5 million Opilio Tanner crab, and 96,000 king crab of all species.

The following illustrates the discard rate of groundfish and PSC for every one metric ton of yellowfin sole retained (also see Table 6):

<u>Species</u>	<u>Amount Discarded</u>
Yellowfin Sole	0.30 mt
Rocksole	0.07 mt
Other Flatfish	0.13 mt
Pollock	0.09 mt
Pacific Cod	0.02 mt
Halibut	0.01 mt
Bairdi Tanner Crab	18.03 animals
Opilio Tanner Crab	119.75 animals
King Crab	1.09 animals

3.1.3.2 Rocksole Trawl Fishery

Table 7 documents total catch and discard figures for the trawl rocksole fishery. Figure 4 also depicts the relationship between groundfish retained and groundfish discarded in this fishery.

The total harvest of groundfish in the rocksole fishery during 1992 was 114.4 million pounds. Of this amount, 70 million pounds, or 61% of the entire harvest, was discarded. This includes 22.3 million pounds of rocksole, or 45% of the rocksole harvested. Of the remaining 47.7 million pounds of groundfish discard, 19 million

Discards in the Groundfish Fisheries of the North Pacific

pounds was pollock, 9.4 million pounds was other flatfish, 7.5 million pounds was yellowfin sole, and 2.9 million pounds was Pacific cod.

Additionally, large quantities of PSC were harvested and discarded. This includes 1.6 million pounds of halibut mortality, 588,000 bairdi Tanner crab, 1.4 million opilio Tanner crab, and 72,000 king crab of all species.

The following illustrates the discard rate of groundfish and PSC for every one metric ton of rocksole retained (also see Table 7):

<u>Species</u>	<u>Amount Discarded</u>
Rocksole	0.81 mt
Yellowfin Sole	0.27 mt
Other Flatfish	0.34 mt
Pollock	0.69 mt
Pacific Cod	0.11 mt
Halibut	0.06 mt
Bairdi Tanner Crab	47.18 animals
Opilio Tanner Crab	110.77 animals
King Crab	5.82 animals

3.1.4 Pacific Cod Trawl Fishery

Table 8 documents total catch and discard figures for the trawl Pacific cod fishery. Figure 5 also depicts the relationship between groundfish retained and groundfish discarded in this fishery.

The total harvest of groundfish in the Pacific cod trawl fishery during 1992 was 146 million pounds. Of this amount, 53 million pounds, or 36% of the entire harvest, was discarded. This includes 4.8 million pounds of Pacific cod, or 5% of the Pacific cod harvested. Of the remaining 48 million pounds of groundfish discard, 23.6 million pounds was pollock, 5 million pounds was other flatfish, 4.2 million pounds was rocksole, and 3.6 million pounds was Atka mackerel.

The incidental bycatch of prohibited species, notably halibut and crab, were relatively high on a catch per mt basis when compared to other fisheries. Halibut bycatch was 3.5 million pounds of mortality, and bairdi and opilio Tanner crab catches were 163,648 and 77,048 respectively. Additionally, 4,000 chinook salmon were taken.

3.1.5 All Trawl Fisheries

With the exception of the fisheries identified above, the remainder of the trawl fisheries take extremely limited quantities of target and non-target species. Table 9 documents total catch and discard figures for the combined trawl fisheries.

3.1.6 Hook & Line Pacific Cod Fishery

The hook and line fisheries in the Bering Sea/Aleutian Islands are essentially limited to Pacific cod, although nominal fisheries for sablefish and some other species also occur.

Table 10 documents total catch and discard figures for the longline Pacific cod fishery. Figure 6 also depicts the relationship between groundfish retained and groundfish discarded in this fishery.

The total harvest of groundfish in the Pacific cod longline fishery during 1992 was 229 million pounds. Of this amount, 28 million pounds, or 12% of the entire harvest, was discarded. This includes 600,000 pounds of Pacific cod, less than one-tenth of one percent of the Pacific cod harvested. Of the remaining 27 million pounds of groundfish discard, 17 million pounds was "other" species, 5.6 million pounds was pollock, and 2.6 million pounds was arrowtooth flounder.

The incidental catch of prohibited species was primarily halibut; approximately 2.4 million pounds of halibut mortality were associated with this fishery. Surprisingly, 113,000 crab were taken as bycatch; this consisted of 17,000 Bairdi Tanner crab, 93,600 Opilio Tanner crab, and 3,600 king crab. These are observer numbers extrapolated across the entire fishery.

With the exception of the Pacific cod fishery identified above, the remainder of the hook and line fisheries take extremely limited quantities of target and non-target species. Table 11 documents total catch and discard figures for the combined hook and line fisheries.

3.1.7 Pot Fisheries

The only groundfish pot fishery in the Bering Sea/Aleutian Islands is the Pacific cod pot fishery. The total harvest of groundfish in this fishery during 1992 was 30.5 million pounds. Of this amount, 29.5 million pounds (97%) was Pacific cod. Discards of Pacific cod amounted to 154,300 pounds — less than 1% of the Pacific cod harvest. Discards of other groundfish species were inconsequential. Table 12 documents total catch and discard figures for the Pacific cod pot fishery.

Discards in the Groundfish Fisheries of the North Pacific

The incidental catch of prohibited species consisted primarily of Tanner crab; approximately 213,000 bairdi and 52,000 opilio were taken.

3.2 Gulf of Alaska Fisheries

Tables 13, 14, 15, 16, and 17 show groundfish retained and discard amounts of species and target fishery. Table 18 shows PSC discards in the same fisheries.

The discard figures in the Gulf of Alaska are unreliable. The reports generated by the vessel operators and/or processors, particularly in the longline fisheries, are especially suspect. Total reported discards in the Gulf of Alaska longline fisheries amounted to just 366 mt, or 807,000 pounds; this compares to a retained harvest of 37,000 mt, resulting in a discard rate significantly less than 1%.

Trawl discard rates appear to be more realistic; 20,115 mt (44 million pounds) were reported as discard out of a total trawl catch of 188,000 mt, resulting in an overall trawl discard rate of 11%.

Although federal regulations require vessel operators to report discards, enforcement of this regulation is difficult in the absence of on-board observers. Since the requirements for observer coverage are based upon length of a vessel⁵, and smaller vessels predominate in the Gulf, either vessel operators are failing to account for their discards or they are extremely effective and clean operators.

The 1992 harvest of groundfish in the Gulf of Alaska was 234,746 mt, or 518 million pounds. Of this amount, 9% (20,559 mt or 45.3 million pounds) of the groundfish harvested was reported as discard. Discards of PSC directly associated with the groundfish catch during 1992 included 6.2 million pounds of halibut mortality, 117,000 bairdi Tanner crab, 14,000 other Tanner crab, 1,400 king crab of all species, 16,200 Chinook salmon, 10,300 salmon of other species, and 36,400 pounds of herring.

The following is a brief review of major Gulf of Alaska fisheries.

3.2.1 Hook & Line Pacific Cod Fishery

The total harvest of groundfish in the Pacific cod longline fishery during 1992 was 32 million pounds (14,475 mt). Of this amount, 99% (or 14,326 mt) was Pacific cod; the remaining 149 mt of catch was split between demersal shelf rockfish, sablefish, and shortraker/Rougheye. There was no groundfish discard reported. (See Table 13.)

⁵Vessels greater than 125 feet are required to carry an observer at all times, vessels between 60 and 125 feet must carry an observer at least 30% of the time, and vessels less than 60 feet are not required to carry an observer.

Discards in the Groundfish Fisheries of the North Pacific

The incidental catch of prohibited species in this fishery consisted nearly exclusively of halibut; approximately 843,000 pounds of halibut mortality was attributed to the longline Pacific cod fishery. (See Table 18.)

3.2.2 Hook & Line Sablefish Fishery

The total harvest of groundfish in the sablefish longline fishery during 1992 was 47.4 million pounds (21,489 mt). Of this amount, 93% (or 19,988 mt) was sablefish. The remaining 1,500 mt of catch was primarily split between demersal shelf rockfish, Pacific cod, slope rockfish, and shortraker/rougheye, all of which were retained. The only groundfish discard reported consisted of arrowtooth flounder, deep water flounder, and skates. The reported groundfish discard rate in the longline sablefish fishery was less than 1%. (See Table 13.)

The incidental catch of prohibited species in this fishery consisted nearly exclusively of halibut; approximately 1 million pounds of halibut mortality was attributed to the longline Pacific cod fishery. (See Table 18.)

3.2.3 Pot Pacific Cod Fishery

The Pacific cod pot fishery is the only pot fishery of consequence in the Gulf of Alaska. During 1992, the fishery accounted for a total groundfish harvest of 21 million pounds (9,533 mt); virtually the entire reported groundfish harvest consisted of Pacific cod — little or no groundfish discards were reported. (See Table 15.)

The prohibited species catch consisted of 21,800 pounds of Tanner crab and 9,068 pounds of halibut mortality. (See Table 18.)

3.2.5 Bottom Trawl Pollock Fishery

The total groundfish harvest in the target bottom trawl pollock fishery during 1992 was 53 million pounds (24,200 mt). Pollock comprised 94% of the harvest. A total of 3.2 million pounds, or 6% of the total groundfish catch, was discarded. Groundfish discards consisted mostly of pollock. (See Table 16.)

The prohibited species catch consisted of 118,000 pounds of halibut mortality, 3,100 Tanner crab, and 3,200 salmon. (See Table 18.)

3.2.6 Mid-Water Trawl Pollock Fishery

In the mid-water trawl pollock fishery, the total groundfish harvest during 1992 was 123 million pounds (55,000 mt). Pollock comprised 99% of the groundfish catch. A

Discards in the Groundfish Fisheries of the North Pacific

total of 8.3 million pounds, or 7% of the total groundfish catch, was discarded. Groundfish discards consisted almost entirely of pollock. (See Table 16.)

The prohibited species catch consisted of 12,250 pounds of halibut mortality, 1,600 Tanner crab, and 9,600 salmon (3,900 of which were Chinook). (See Table 18.)

3.2.7 Trawl Pacific Cod Fishery

The total groundfish harvest in the target Pacific cod trawl fishery during 1992 was 113 million pounds (51,306 mt). Pacific cod comprised 89% of the catch. A total of 6.6 million pounds, or 6% of the total catch, was discarded. Discards consisted primarily of arrowtooth flounder (3 million pounds), flatfish (2 million pounds), and Pacific cod (1.3 million pounds). (See Table 16.)

The prohibited species catch consisted of 1.2 million pounds of halibut mortality, 59,000 Tanner crab, and 5,300 Chinook salmon. (See Table 18.)

3.2.8 Trawl Rockfish Fishery

During 1992, the total groundfish harvest in the fishery was 48 million pounds (22,000 mt). Rockfish comprised 70% of the catch (34 million pounds). A total of 8.7 million pounds, or 18% of the total catch, was discarded. Ninety-one percent of the discards consisted of arrowtooth flounder; the remainder were flounder and Pacific cod (see Table 16).

The prohibited species catch consisted of 1.1 million pounds of halibut mortality, 7,600 Tanner crab, and 5,000 salmon (see Table 18.)

3.2.9 Trawl Deepwater Flatfish Fishery

During 1992, the total groundfish harvest in the trawl deepwater flatfish fishery was 34 million pounds (15,500 mt). Deepwater flatfish comprised 38% of the harvest (13 million pounds). A total of 17 million pounds, or 50% of the total catch, was discarded. Eighty-eight percent of the discards consisted of arrowtooth flounder; the remainder were deepwater flatfish and Pacific cod (see Table 16).

The prohibited species catch consisted of 1.3 million pounds of halibut mortality, 33,500 Tanner crab, and 3,000 salmon (mostly chinook). (see Table 18.)

3.2.10 Trawl Shallow Water Flatfish Fishery

The shallow water trawl flatfish fishery reported a total groundfish harvest of 12 million pounds (5,375 mt) during 1992. There were no groundfish discards reported. Sixty-four percent of the harvest consisted of shallow water flatfish. (See Table 16.)

The incidental bycatch of prohibited species in the shallow water flatfish fishery consisted of 323,000 pounds of halibut mortality and 16,000 Tanner crab. (See Table 18.)

3.3 Bering Sea/Aleutian Island & Gulf of Alaska Longline Halibut Fishery

Participation in the directed halibut fisheries is limited to longline vessels only. Fishing openings typically are limited to one day due to the huge amount of harvesting effort. The halibut grounds are extremely crowded, and gear is often lost or abandoned. The pace of the fishery is very fast (given the short openings), and halibut of sub-legal size suffer from improper handling which reduces their chance of surviving when they are returned to the water.

The International Pacific Halibut Commission (IPHC) estimates the amount of halibut mortality associated with lost and abandoned gear and with sub-legal handling. For 1992, in the Bering Sea/Aleutian Islands and the Gulf of Alaska combined, the IPHC estimated 1.64 million pounds of halibut died as a result of lost and abandoned gear and 1.33 million pounds of sub-legal halibut died as a result of handling mortality. The total loss of halibut was 3 million pounds. (See Table 19.)

3.4 Average Size of Halibut Taken as Bycatch in the Bering Sea/Aleutian Islands and the Gulf of Alaska

Tables 20 and 21 shows the number and size of halibut taken as bycatch in each of the target fisheries in the Bering Sea/Aleutian Islands and the Gulf of Alaska respectively during 1992. This information is from observer reports.

In the Bering Sea/Aleutian Islands, the average size of halibut taken as bycatch varies greatly between the different gear types and fisheries. The trawl fisheries accounted for the lowest average size (0.94 pounds per halibut), followed by the pot fisheries (2.16 pounds per halibut) and the hook and line fisheries (11.94 pounds per halibut).

Halibut taken as bycatch in the Gulf of Alaska were substantially greater in size on average than the Bering Sea/Aleutian Islands: trawl fisheries averaged 7.25 pounds per halibut, pot fisheries averaged 10.14 pounds per halibut, and hook and line fisheries averaged 14.38 pounds per halibut.

Table 2

Catch & Discard of All Species and Fisheries in the Bering Sea/Aleutian Islands During 1992

Total Catch	Retained Catch (mt)	Discard Catch (mt)	Discard Rate (%)	Ratio of Discard Per mt of Retained Catch	Assumed Mortality Rate	Discard Loss (mt)	Discard Loss (lbs)
Groundfish							
Atka Mackerel	30,608	6,484	14%	0.00	100%	6,484	14,294,626
Arrowtooth	593	8,082	93%	0.01	100%	8,082	17,817,798
Flounder	5,050	24,276	83%	0.02	100%	24,276	53,519,311
Turbot	611	1,008	62%	0.00	100%	1,008	2,222,016
Pacific Cod	160,881	11,618	7%	0.01	100%	11,618	25,612,381
Pollock	1,115,850	78,346	7%	0.05	100%	78,346	172,722,473
Pacific Ocean Porch	10,560	2,299	18%	0.00	100%	2,299	5,067,714
Rockfish	1,200	993	45%	0.00	100%	993	2,189,829
Rocksole	18,599	21,862	54%	0.02	100%	21,862	48,197,627
Sablefish	1,965	27	1%	0.00	100%	27	59,083
Yellowfin Sole	90,885	31,319	26%	0.02	100%	31,319	69,045,867
Other	2,984	23,125	89%	0.02	100%	23,125	50,981,595
Total	1,448,888	209,440	13%	0.14	100%	209,440	461,730,322
Prohibited Species							
Halibut (mt or pounds)	0	12,196	100%	0.01	varies	6,255	13,789,303
Herring (in pounds)	0	1,043,871	100%	0.72	100%	473	1,043,871
Bairdi (in numbers)	0	3,850,692	100%	2.66	100%		3,850,692
Other Tanner (in numbers)	0	16,241,162	100%	11.21	100%		16,241,162
Red King Crab (in numbers)	0	148,332	100%	0.10	100%		148,332
Other King (in numbers)	0	104,204	100%	0.07	100%		104,204
Chinook Salmon (in numbers)	0	33,401	100%	0.02	100%		33,401
Other Salmon (in numbers)	0	40,213	100%	0.03	100%		40,213
Total Grd'fish, Halibut & Herring Discards in All Fisheries (in mt and pounds)						216,168	476,563,496
Total Crab and Salmon Discards in All Fisheries (in numbers)							20,418,004

Source: NMFS Special Data Run (see Appendix 1)

Discards in the Groundfish Fisheries of the North Pacific

Discards in the Groundfish Fisheries of the North Pacific

Table 3

Target Catch Discards in the Bering Sea/Aleutian Islands During 1992 by Target Fishery and Gear

Trawl	Target Fishery	Target Catch Retained (mt)	Target Catch Discard (mt)	Target Catch Discard (lbs)
	Atka Mackerel	37,400	4,268	9,404,824
	Bottom Pollock	125,765	14,634	32,262,118
	Pacific Cod	37,817	2,185	4,772,959
	Pacific Ocean Perch	5,482	568	1,247,804
	Mid-Water Pollock	985,318	33,138	73,056,035
	Rocksole	12,470	10,129	22,330,393
	Yellowfin Sole	87,952	26,625	58,697,475
	Total Target Catch	1,298,182	91,523	201,771,608
	Total Groundfish Discards of All Species in Trawl Fisheries		195,020	429,941,092
	Percent of Discard Composed of Target Catch Species		47%	47%

Longline	Target Fishery	Target Catch Retained (mt)	Target Catch Discard (mt)	Target Catch Discard (lbs)
	Pacific Cod	89,548	280	617,288
	Sablefish	1,720	1	2,205
	Total Discards of Target Catch		281	619,493
	Total Groundfish Discards of All Species in Longline Fisheries		13,614	30,013,424
	Percent of Discard Composed of Target Catch Species		2%	2%

Pot/Jig	Target Fishery	Target Catch Retained (mt)	Target Catch Discard (mt)	Target Catch Discard (lbs)
	Pacific Cod	13,298	70	154,322
	Rockfish	828	300	661,380
	Total Discards of Target Catch		370	815,702
	Total Groundfish Discards of All Species in Pot/Jig Fisheries		806	1,776,908
	Percent of Discard Composed of Target Catch Species		46%	46%

All Gear Types	Target Fishery	Target Catch Retained (mt)	Target Catch Discard (mt)	Target Catch Discard (lbs)
	Trawl		91,523	201,771,608
	Longline		281	619,493
	Pot/Jig		370	815,702
	Total Discards of Target Catch		92,174	203,206,800
	Total Groundfish Discards of All Species		209,440	461,731,424
	Percent of Discard Composed of Target Catch Species		44%	44%

Source: NMFS Special Data Run (see Appendix 1)

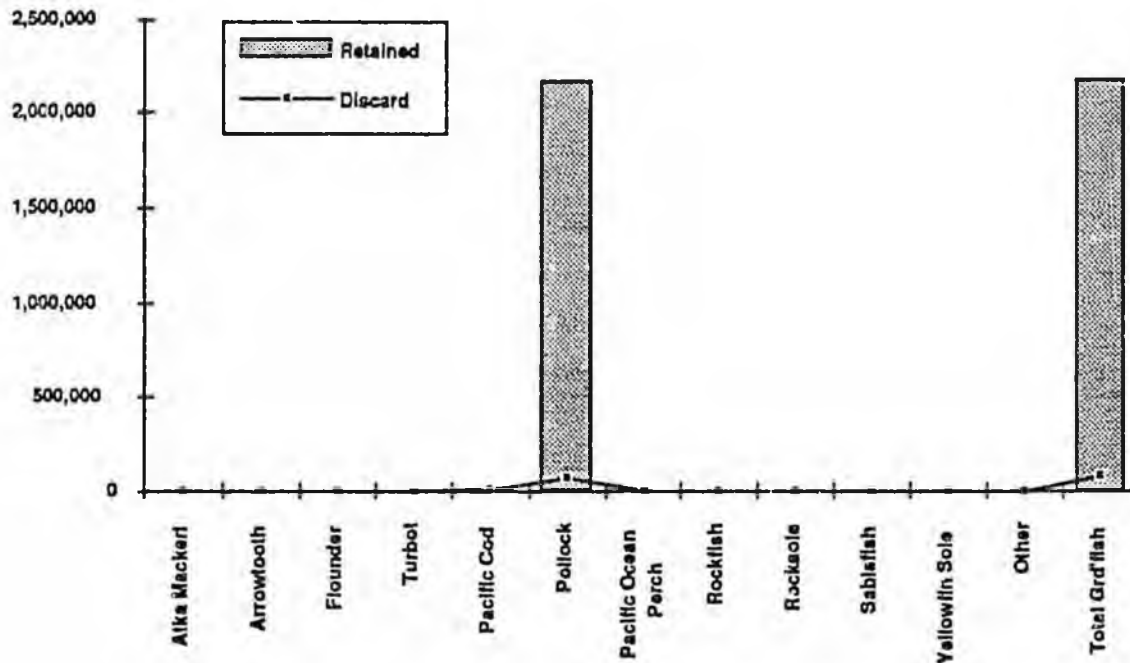
Table 4

**Catch & Discards of All Species In the Bering Sea/Aleutian Islands
Mid-Water Trawl Pollock Fishery During 1992**

Species	Retained Catch (mt)	Discard Catch (mt)	Discard Rate (%)	Rate of Discard Per mt of Retained Target Catch (mt)	Assumed Mortality Rate	Discard Loss (mt)	Discard Loss (lbs)
Atka Mackerel	3	56	95%	0.00	100%	56	123,899
Arrowtooth	144	503	78%	0.00	100%	503	1,108,473
Flounder	539	1,340	71%	0.00	100%	1,340	2,954,825
Turbot	63	82	57%	0.00	100%	82	180,116
Pacific Cod	3,078	2,157	41%	0.00	100%	2,157	4,758,204
Pollock	985,310	33,138	3%	0.03	100%	33,138	73,056,035
Pacific Ocean Perch	18	33	64%	0.00	100%	33	73,193
Rockfish	3	16	83%	0.00	100%	16	34,171
Rocksole	637	195	23%	0.00	100%	195	430,117
Sablefish	3	1	20%	0.00	100%	1	1,764
Yellowfin Sole	12	50	80%	0.00	100%	50	110,010
Other	434	940	68%	0.00	100%	940	2,071,222
TOTAL GROUND FISH	990,240	38,510	4%	0.04	100%	38,510	84,900,028
Halibut	0	991	100%	0.00	100%	991	2,184,507
Herring (in pounds)	0	654,768	100%	0.66	100%	297	654,768
Bairdi (in numbers)	0	694,471	100%	0.70	100%		694,471
Other Tanner (in numbers)	0	2,500,128	100%	2.54	100%		2,500,128
Red King Crab (in numbers)	0	5,212	100%	0.01	100%		5,212
Other King (in numbers)	0	7,780	100%	0.01	100%		7,780
Chinook Salmon (in numbers)	0	21,821	100%	0.02	100%		21,821
Other Salmon (in numbers)	0	38,981	100%	0.04	100%		38,981
Total Grd'fish, Halibut & Herring Discards in the Mid-Water Trawl Pollock Fishery (in mt and pounds)						39,798	87,739,303
Total Crab and Salmon Discards in the Mid-Water Trawl Pollock Fishery (in numbers)							3,268,393

Source: NMFS Special Data Run (see Appendix 1)

FIGURE 1
Retained and Discarded Groundfish Catch
in the
Bering Sea/Aleutian Islands Mid-Water Trawl Pollock Fishery
(by species, in 1,000 pounds)



Source: NMFS (also see Table 4).

Table 5

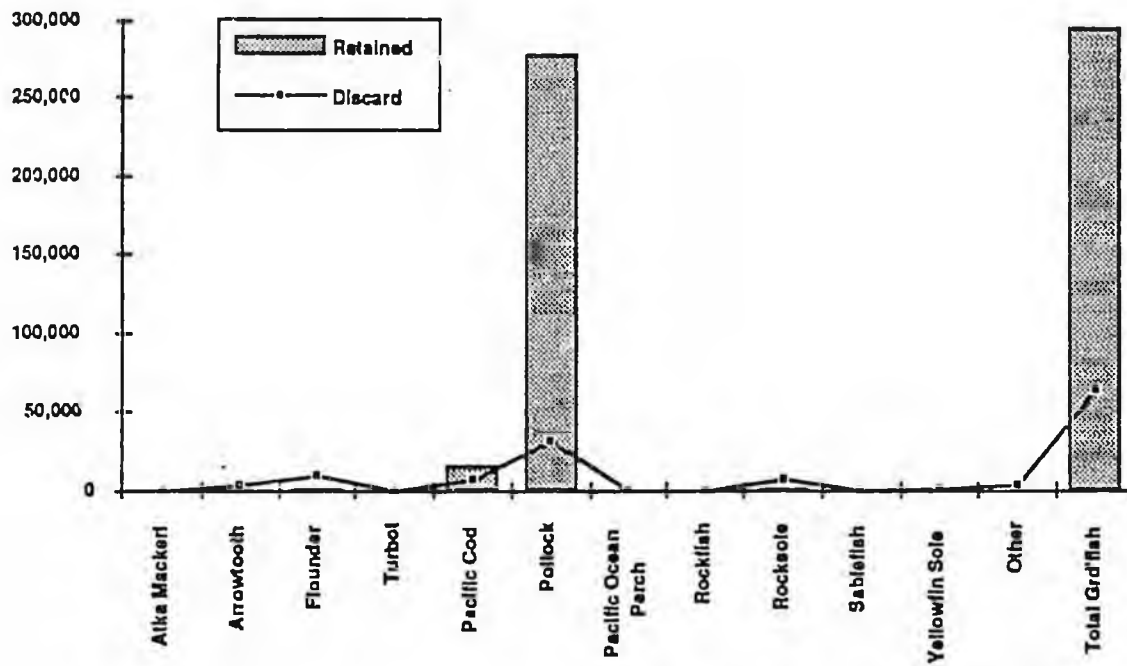
**Catch & Discards of All Species in the Bering Sea/Aleutian Islands
Bottom Trawl Pollock Fishery During 1992**

Species	Retained Catch (mt)	Discard Catch (mt)	Discard Rate (%)	Rate of Discard Per mt of Retained Target Catch (mt)	Assumed Mortality Rate	Discard Loss (mt)	Discard Loss (lbs)
Atka Mackerel	35	4	10%	0.00	100%	4	8,598
Arrowtooth	43	1,568	97%	0.01	100%	1,568	3,451,522
Flounder	146	4,319	97%	0.03	100%	4,319	9,521,667
Turbot	4	80	95%	0.00	100%	80	175,707
Pacific Cod	6,949	3,084	31%	0.02	100%	3,084	6,799,868
Pollock	125,765	14,634	10%	0.12	100%	14,634	32,262,116
Pacific Ocean Perch	34	30	47%	0.00	100%	30	66,138
Rockfish	1	5	83%	0.00	100%	5	11,684
Rocksole	760	3,092	80%	0.02	100%	3,092	6,815,962
Sablefish	1	4	82%	0.00	100%	4	8,157
Yellowfin Sole	41	673	94%	0.01	100%	673	1,483,696
Other	64	1,612	96%	0.01	100%	1,612	3,554,256
TOTAL GROUND FISH	133,844	29,103	18%	0.23	100%	29,103	64,159,372
Halibut	0	774	100%	0.01	100%	774	1,706,111
Herring (in pounds)	0	11,986	100%	0.10	100%	5	11,986
Bairdi (in numbers)	0	586,221	100%	4.66	100%		586,221
Other Tanner (in numbers)	0	1,603,259	100%	12.75	100%		1,603,259
Red King Crab (in numbers)	0	33,862	100%	0.27	100%		33,862
Other King (in numbers)	0	9,093	100%	0.07	100%		9,093
Chinook Salmon (in numbers)	0	6,082	100%	0.05	100%		6,082
Other Salmon (in numbers)	0	261	100%	0.00	100%		261
Total Grd'fish, Halibut & Herring Discards in the Bottom Trawl Pollock Fishery (In mt and pounds)						29,892	65,877,469
Total Crab and Salmon Discards in the Bottom Trawl Pollock Fishery (In numbers)							2,238,783

Source: NMFS Special Data Run (see Appendix 1)

Discards in the Groundfish Fisheries of the North Pacific

FIGURE 2
Retained and Discarded Groundfish Catch
in the
Bering Sea/Aleutian Islands Bottom Trawl Pollock Fishery
(by species, in 1,000 pounds)



Source: NMFS (also see Table 5).

Table 6

**Catch & Discards of All Species in the Bering Sea/Aleutian Islands
Yellowfin Sole Trawl Fishery During 1992**

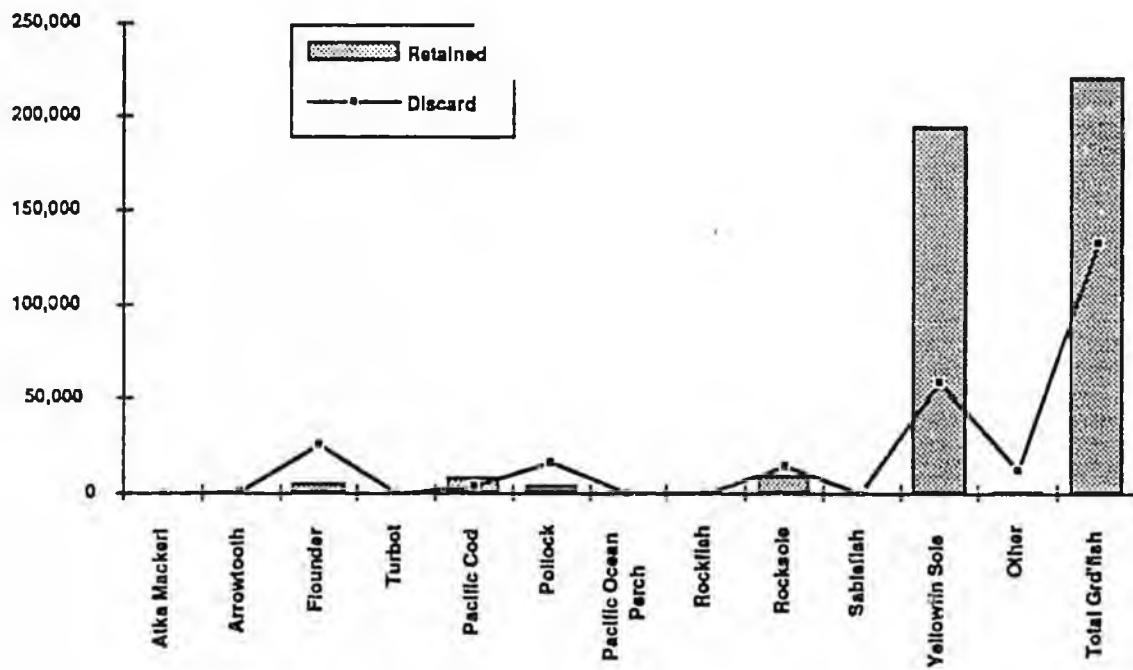
Species	Retained Catch (mt)	Discard Catch (mt)	Discard Rate (%)	Ratio of Discard Per mt of Retained Target Catch (mt)	Assumed Mortality Rate	Discard Loss (mt)	Discard Loss (lbs)
Atka Mackerel	0	0	0%	0.00	100%	0	0
Arrowtooth	18	369	95%	0.00	100%	369	812,616
Flounder	2,441	11,580	83%	0.13	100%	11,580	25,528,166
Turbot	2	1	37%	0.00	100%	1	3,086
Pacific Cod	3,848	2,030	35%	0.02	100%	2,030	4,475,779
Pollock	1,737	7,477	81%	0.09	100%	7,477	16,483,574
Pacific Ocean Perch	0	0	25%	0.00	100%	0	220
Rockfish	0	68	100%	0.00	100%	68	149,031
Rocksole	3,959	6,420	62%	0.07	100%	6,420	14,153,091
Sablefish	0	0	100%	0.00	100%	0	882
Yellowfin Sole	87,052	26,625	23%	0.30	100%	26,625	58,697,475
Other	203	5,719	97%	0.07	100%	5,719	12,608,769
TOTAL GROUND FISH	100,161	60,289	38%	0.69	100%	60,289	132,912,688
Halibut	0	706	100%	0.01	100%	706	1,555,802
Herring (in pounds)	0	364,331	100%	4.14	100%	165	364,331
Bairdi (in numbers)	0	1,586,047	100%	18.03	100%		1,586,047
Other Tanner (in numbers)	0	10,532,438	100%	119.75	100%		10,532,438
Red King Crab (in numbers)	0	50,665	100%	0.58	100%		50,665
Other King (in numbers)	0	45,221	100%	0.51	100%		45,221
Chinook Salmon (in numbers)	0	145	100%	0.00	100%		145
Other Salmon (in numbers)	0	861	100%	0.01	100%		861
Total Grd'fish, Halibut & Herring Discards in the Trawl Yellowfin Sole Fishery (in mt and pounds)						61,160	134,832,821
Total Crab and Salmon Discards in the Trawl Yellowfin Sole Fishery (in numbers)							12,215,377

Source: NMFS Special Data Run (see Appendix 1)

Discards in the Groundfish Fisheries of the North Pacific

FIGURE 3

Retained and Discarded Groundfish Catch
in the
Bering Sea Trawl Yellowfin Sole Fishery
(by species, in 1,000 pounds)



Source: NMFS (also see Table 6).

Table 7

**Catch & Discards of All Species in the Bering Sea/Aleutian Islands
Rocksole Trawl Fishery During 1992**

Species	Retained Catch (mt)	Discard Catch (mt)	Discard Rate (%)	Ratio of Discard Per mt of Retained Target Catch (mt)	Assumed Mortality Rate	Discard Loss (mt)	Discard Loss (lbs)
Atka Mackerel	63	10	14%	0.00	100%	10	22,707
Arrowtooth	207	892	81%	0.07	100%	892	1,966,283
Flounder	1,584	4,275	73%	0.34	100%	4,275	9,423,783
Turbot	6	0	3%	0.00	100%	0	441
Pacific Cod	2,628	1,325	34%	0.11	100%	1,325	2,921,315
Pollock	769	8,652	92%	0.69	100%	8,652	19,075,081
Pacific Ocean Perch	3	22	88%	0.00	100%	22	47,619
Rockfish	0	0	0%	0.00	100%	0	0
Rocksole	12,470	10,129	45%	0.81	100%	10,129	22,330,393
Sablefish	2	0	0%	0.00	100%	0	0
Yellowfin Sole	2,836	3,424	55%	0.27	100%	3,424	7,548,550
Other	53	3,017	98%	0.24	100%	3,017	6,651,719
TOTAL GROUND FISH	20,620	31,746	61%	2.55	100%	31,746	69,987,893
Halibut	0	742	100%	0.08	100%	742	1,635,460
Herring (in pounds)	0	7,508	100%	0.60	100%	3	7,508
Bairdi (in numbers)	0	588,279	100%	47.18	100%		588,279
Other Tanner (in numbers)	0	1,381,321	100%	110.77	100%		1,381,321
Red King Crab (in numbers)	0	54,363	100%	4.36	100%		54,363
Other King (in numbers)	0	18,172	100%	1.46	100%		18,172
Chinook Salmon (in numbers)	0	35	100%	0.00	100%		35
Other Salmon (in numbers)	0	0	0%	0.00	100%		0
Total Grd'fish, Halibut & Herring Discards in the Trawl Rocksole Fishery (in mt and pounds)						32,492	71,630,861
Total Crab and Salmon Discards in the Trawl Rocksole Fishery (in numbers)							2,042,170

Source: NMFS Special Data Run (see Appendix 1)

Discards in the Groundfish Fisheries of the North Pacific

FIGURE 4
Retained and Discarded Groundfish Catch
in the
Bering Sea Trawl Rock Sole Fishery
(by species, in 1,000 pounds)



Source: NMFS (also see Table 7).

Table 8

**Catch & Discards of All Species in the Bering Sea/Aleutian Islands
Pacific Cod Trawl Fishery During 1992**

Catch	Retained Catch (mt)	Discard Catch (mt)	Discard Rate (%)	Rate of Discard Per mt of Retained Target Catch (mt)	Assumed Mortality Rate	Discard Loss (mt)	Discard Loss (lbs)
Atka Mackerel	945	1,639	63%	0.04	100%	1,639	3,614,221
Arrowtooth	103	2,165	95%	0.08	100%	2,165	4,773,179
Flounder	232	2,281	91%	0.08	100%	2,281	5,029,354
Turbot	11	27	71%	0.00	100%	27	59,524
Pacific Cod	37,817	2,165	5%	0.06	100%	2,165	4,772,959
Pollock	1,836	10,698	85%	0.28	100%	10,698	23,581,283
Pacific Ocean Perch	385	288	43%	0.01	100%	288	629,854
Rockfish	6	192	97%	0.01	100%	192	422,842
Rocksole	740	1,926	72%	0.05	100%	1,926	4,245,178
Sablefish	10	0	0%	0.00	100%	0	0
Yellowfin Sole	44	476	92%	0.01	100%	476	1,050,271
Other	91	2,126	96%	0.06	100%	2,126	4,686,759
TOTAL GROUND FISH	42,219	23,980	36%	0.63	100%	23,980	52,865,428
Halibut	0	1,608	100%	0.04	100%	1,608	3,541,103
Herring (in pounds)	0	5,214	100%	0.14	100%	2	5,214
Bairdi (in numbers)	0	163,648	100%	4.33	100%		163,648
Other Tanner (in numbers)	0	77,048	100%	2.04	100%		77,048
Red King Crab (in numbers)	0	115	100%	0.00	100%		115
Other King (in numbers)	0	359	100%	0.01	100%		359
Chinook Salmon (in numbers)	0	4,290	100%	0.11	100%		4,290
Other Salmon (in numbers)	0	26	100%	0.00	100%		26
Total Grd'fish, Halibut & Herring Discards in the Trawl Pacific Cod Fishery (in mt and pounds)						25,588	56,411,744
Total Crab and Salmon Discards in the Trawl Pacific Cod Fishery (in numbers)							245,486

Source: NMFS Special Data Run (see Appendix 1)

Discards in the Groundfish Fisheries of the North Pacific

Table 9

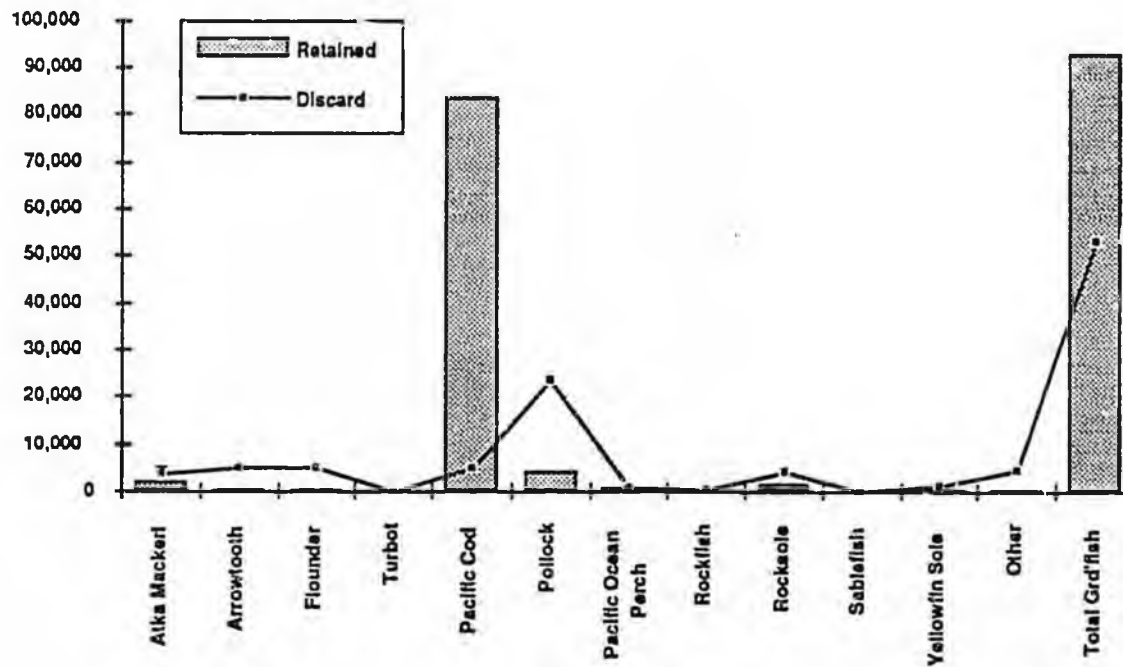
**Catch & Discards of All Species In All Bering Sea/Aleutian Islands
Trawl Fisheries During 1992**

Species	Retained Catch (mt)	Discard Catch (mt)	Discard Rate (%)	Rate of Discard Per mt of Retained Target Catch (mt)	Assumed Mortality Rate	Discard Loss (mt)	Discard Loss (lbs)
Atka Mackerel	39,670	6,453	14%	-	100%	6,453	14,227,166
Arrowtooth	539	6,738	93%	-	100%	6,738	14,855,477
Flounder	5,044	24,007	83%	-	100%	24,007	52,924,730
Turbot	317	223	41%	-	100%	223	491,846
Pacific Cod	57,977	11,265	16%	-	100%	11,265	24,834,599
Pollock	1,115,730	75,734	6%	-	100%	75,734	166,964,058
Pacific Ocean Perch	10,559	2,218	17%	-	100%	2,218	4,889,582
Rockfish	78	631	89%	-	100%	631	1,390,662
Rocksole	18,591	21,829	54%	-	100%	21,829	48,123,111
Sablefish	70	5	7%	-	100%	5	11,905
Yellowfin Sole	90,885	31,252	26%	-	100%	31,252	68,898,380
Other	1,980	14,664	88%	-	100%	14,664	32,328,916
TOTAL GROUND FISH	1,341,440	195,019	13%	-	100%	195,019	429,940,431
Halibut	0	5,136	100%	-	100%	5,136	11,323,679
Herring (in pounds)	0	1,043,833	100%	-	100%	473	1,043,833
Bairdi (in numbers)	0	3,620,806	100%	-	100%		3,620,806
Other Tanner (in numbers)	0	16,094,944	100%	-	100%		16,094,944
Red King Crab (in numbers)	0	145,363	100%	-	100%		145,363
Other King (in numbers)	0	94,203	100%	-	100%		94,203
Chinook Salmon (in numbers)	0	33,349	100%	-	100%		33,349
Other Salmon (in numbers)	0	40,135	100%	-	100%		40,135
Total Grd'fish, Halibut & Herring Discards in all Trawl Fisheries (in mt and pounds)						200,628	442,307,942
Total Crab and Salmon Discards in all Trawl Fisheries (in numbers)							20,028,800

Source: NMFS Special Data Run (see Appendix 1)

Discards in the Groundfish Fisheries of the North Pacific

FIGURE 5
Retained and Discarded Groundfish Catch
in the
Bering Sea/Aleutian Islands Trawl Pacific Cod Fishery
(by species, in 1,000 pounds)



Source: NMFS (also see Table 9).

Table 10

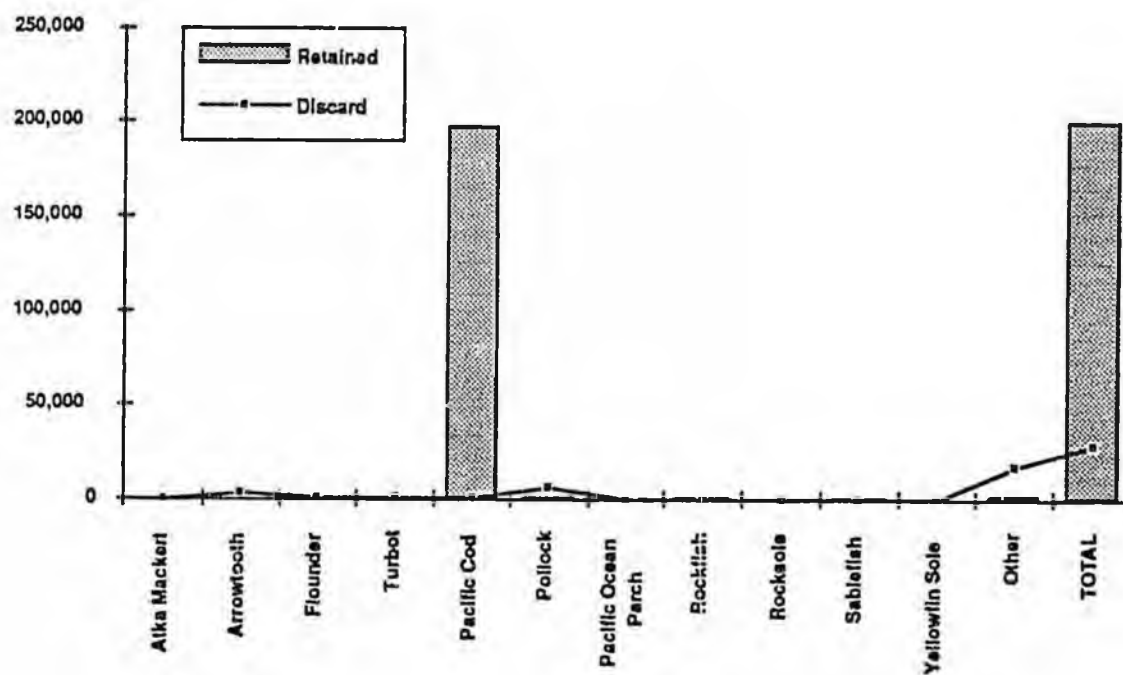
**Catch & Discards of All Species In the Bering Sea/Aleutian Islands
Hook & Line Pacific Cod Fishery During 1992**

Species	Retained Catch (mt)	Discard Catch (mt)	Discard Rate (%)	Rate of Discard		Discard Loss (mt)	Discard Loss (lbs)
				Per mt of Retained Target Catch (mt)	Assumed Mortality Rate		
Atka Mackerel	19	20	55%	0.00	100%	23	49,824
Arrowtooth	51	1,196	96%	0.01	100%	1,196	2,636,481
Flounder	12	234	95%	0.00	100%	234	515,656
Turbot	89	285	76%	0.00	100%	285	628,091
Pacific Cod	89,548	280	0%	0.00	100%	280	618,170
Pollock	71	2,551	97%	0.03	100%	2,551	5,624,596
Pacific Ocean Perch	8	81	93%	0.00	100%	81	177,691
Rockfish	135	44	24%	0.00	100%	44	96,341
Rocksole	9	32	79%	0.00	100%	32	70,106
Sablefish	143	19	12%	0.00	100%	19	42,549
Yellowfin Sole	0	67	99%	0.00	100%	67	147,488
Other	911	8,052	90%	0.09	100%	8,052	17,751,880
TOTAL	90,993	12,864	12%	0.14		12,864	28,358,872
Halibut	0	6,787	100%	0.08	16%	1,086	2,394,159
Herring (in pounds)	0	0	0%	0.00	100%	0	0
Bairdi (in numbers)	0	17,087	100%	0.19	100%		17,087
Other Tanner (in numbers)	0	93,604	100%	1.05	100%		93,604
Red King Crab (in numbers)	0	2,759	100%	0.03	100%		2,759
Other King (in numbers)	0	852	100%	0.01	100%		852
Chinook Salmon (in numbers)	0	52	100%	0.00	100%		52
Other Salmon (in numbers)	0	78	100%	0.00	100%		78
Total Grd'fish, Halibut & Herring Discard in the Longline Pacific Cod Fishery (in mt and pounds)						13,949	30,753,031
Total Crab and Salmon Discard in the Longline Pacific Cod Fishery (in numbers)							114,432

Source: NMFS Special Data Run (see Appendix 1)

Discards in the Groundfish Fisheries of the North Pacific

FIGURE 6
Retained and Discarded Groundfish Catch
in the
Bering Sea/Aleutian Islands Longline Pacific Cod Fishery
(by species, in 1,000 pounds)



Source: NMFS (also see Table 10).

Table 11

**Catch & Discards of All Species in All Bering Sea/Aleutian Islands
Hook & Line Fisheries During 1992**

Species	Retained Catch (mt)	Discard Catch (mt)	Discard Rate (%)	Rate of Discard Per mt of Retained Target Catch (mt)	Assumed Mortality Rate	Discard Loss (mt)	Discard Loss (lbs)
Atka Mackerel	10	23	0%	-	100%	23	49,824
Arrowtooth	54	1,336	96%	-	100%	1,336	2,944,684
Flounder	12	244	95%	-	100%	244	537,261
Turbot	294	780	73%	-	100%	780	1,719,147
Pacific Cod	89,607	283	0%	-	100%	283	632,461
Pollock	73	2,558	97%	-	100%	2,558	5,639,367
Pacific Ocean Perch	7	81	92%	-	100%	81	178,132
Rockfish	295	61	17%	-	100%	61	133,378
Rocksole	9	32	0%	-	100%	32	70,106
Sablefish	1,882	20	1%	-	100%	20	44,974
Yellowfin Sole	0	67	0%	-	100%	67	147,488
Other	938	8,131	90%	-	100%	8,131	17,925,162
TOTAL	93,190	13,614				13,614	30,012,983
Halibut	0	6,956	100%	-	16%	1,113	2,454,337
Herring (in pounds)	0	0	100%	-	100%	0	0
Bairdi (in numbers)	0	17,091	100%	-	100%		17,091
Other Tanner (in numbers)	0	94,279	100%	-	100%		94,279
Red King Crab (in numbers)	0	2,789	100%	-	100%		2,789
Other King (in numbers)	0	1,259	100%	-	100%		1,259
Chinook Salmon (in numbers)	0	52	100%	-	100%		52
Other Salmon (in numbers)	0	78	100%	-	100%		78
Total Grd'fish, Halibut & Herring Discard in All Longline Fisheries (in mt and pounds)						14,727	32,467,421
Total Crab and Salmon Discard in All Longline Fisheries (in numbers)							115,548

Source: NMFS Special Data Run (see Appendix: 1)

Discards in the Groundfish Fisheries of the North Pacific

Table 12

**Catch & Discards of All Species in All Bering Sea/Aleutian Islands
Pot & Jig Pacific Cod Fishery During 1992**

Species	Retained Catch (mt)	Discard Catch (mt)	Discard Rate (%)	Rate of Discard Per mt of Retained Target Catch (mt)	Assumed Mortality Rate	Discard Loss (mt)	Discard Loss (lbs)
Atka Mackerel	0	8	100%	0.00	100%	8	17,637
Arrowtooth	0	8	100%	0.00	100%	8	17,637
Flounder	0	26	100%	0.00	100%	26	57,320
Turbot	0	4	100%	0.00	100%	4	8,818
Pacific Cod	13,296	70	1%	0.01	100%	70	154,322
Pollock	0	12	100%	0.00	100%	12	26,455
Pacific Ocean Perch	0	0	0%	0.00	100%	0	0
Rockfish	1	2	67%	0.00	100%	2	4,409
Rocksole	0	2	100%	0.00	100%	2	4,409
Sablefish	12	1	8%	0.00	100%	1	2,205
Yellowfin Sole	0	0	0%	0.00	100%	0	0
Other	51	329	87%	0.02	100%	329	725,313
TOTAL	13,360	462	3%	0.03		462	1,018,525
Halibut	0	101	100%	0.01	5%	5	11,187
Herring (in pounds)	0	38	0%	0.00	100%	0	38
Bairdi (in numbers)	0	212,795	100%	16.00	100%		212,795
Other Tanner (in numbers)	0	51,939	100%	3.91	100%		51,939
Red King Crab (in numbers)	0	180	100%	0.01	100%		180
Other King (in numbers)	0	8,742	100%	0.66	100%		8,742
Chinook Salmon (in numbers)	0	0	0%	0.00	100%		0
Other Salmon (in numbers)	0	0	0%	0.00	100%		0
Total Grd'fish, Halibut & Herring Discard in the Pot Pacific Cod Fishery (in mt and pounds)						467	1,029,750
Total Crab and Salmon Discard in the Pot Pacific Cod Fishery (in numbers)							273,656

Source: NMFS Special Data Run (see Appendix 1)

Discards in the Groundfish Fisheries of the North Pacific

Table 13

Retained and Discarded Catch in the Gulf of Alaska 1992 Hook & Line Fisheries

HOOK AND LINE		Atka Mackerel	Arrow-tooth	Demersal Shell Rockfish	Deep-Water Flounder	Flathead Sole	Octopus	Pacific Cod	Pelagic Shell Rockfish	Pollock	Pacific Ocean Perch	Sablefish	Sculpin	Shallow Water Flatfish	Slope Rockfish	Lherbaker/Roughye	Thorny-heads	Skates	Total
Bottom Pollock	Retained	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	5
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Catch	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	5
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Pacific Cod	Retained	0	0	47	0	0	0	14,326	13	8	0	56	0	0	0	6	19	0	14,475
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Catch	0	0	47	0	0	0	14,326	13	8	0	56	0	0	0	6	19	0	14,475
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shallow Flatfish	Retained	0	0	0	0	0	0	0	0	0	<1	0	0	0	0	0	0	0	<1
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Catch	0	0	0	0	0	0	0	0	0	0	<1	0	0	0	0	0	0	<1
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Rockfish	Retained	0	0	518	0	0	0	54	100	0	0	34	0	0	10	96	9	0	825
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Catch	0	0	518	0	0	0	54	100	0	0	34	0	0	10	96	9	0	825
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	Retained	0	0	<1	0	0	<1	0	0	0	0	<1	0	0	0	0	0	0	<1
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Catch	0	0	<1	0	0	<1	0	0	0	0	<1	0	0	0	0	0	0	<1
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Sablefish	Retained	0	0	208	0	0	0	100	0	0	0	19,088	0	0	57	251	474	0	21,148
	Discard	0	238	0	19	0	0	0	0	0	0	0	0	0	0	0	0	85	342
	Total Catch	0	238	208	19	0	0	100	0	0	0	19,088	0	0	57	251	474	85	21,490
	Percent Discarded	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2%
Arrowtooth	Retained	0	0	0	0	0	0	<1	0	0	0	0	0	0	0	0	0	0	<1
	Discard	0	0	1	0	0	0	13	0	0	0	0	0	0	0	0	0	11	24
	Total Catch	0	0	1	0	0	0	13	0	0	0	0	0	0	0	0	0	11	24
	Percent Discarded	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%
TOTAL	Retained	0	0	771	0	0	0	14,549	119	13	0	20,078	0	0	67	353	502	0	36,453
	Discard	0	238	1	19	0	0	13	0	0	0	0	0	0	0	0	0	96	366
	Total Catch	0	238	772	19	0	0	14,562	119	13	0	20,078	0	0	67	353	502	96	36,819
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%

Discards in the Groundfish Fisheries of the North Pacific

Table 14

Retained and Discarded Catch in the Gulf of Alaska 1992 Jig and "Other" Fisheries

Jig		Atka	Arrow-	Demersal	Deep-	Flathead		Pelagic		Pacific		Shallow	Slope	Shortaker/	Thomy-	Total	
		Mackerel	tooth	Shell Rockfish	Water Flounder	Sole	Octopus	Cod	Shell Rockfish	Pollock	Ocean Perch	Sablefish	Sculpin	Water Flatfish	Rockfish		Rougheye	heads Skates
Pacific Cod	Retained	0	0	<1	0	0	0	153	3	0	0	0	0	0	0	0	156
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Catch	0	0	<1	0	0	0	153	3	0	0	0	0	0	0	0	156
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Deepwater Flatfish	Retained	0	0	0	0	0	0	<1	0	0	0	0	0	0	0	0	<1
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Catch	0	0	0	0	0	0	<1	0	0	0	0	0	0	0	0	<1
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Rockfish	Retained	0	0	9	0	0	0	2	325	0	0	0	0	3	1	0	340
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
	Total Catch	0	0	9	0	0	0	2	325	0	0	0	0	3	1	0	340
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
TOTAL	Retained	0	0	9	0	0	0	155	328	0	0	0	0	3	1	0	486
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Catch	0	0	9	0	0	0	155	328	0	0	0	0	3	1	0	486
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other		Atka	Arrow-	Demersal	Deep-	Flathead		Pelagic		Pacific		Shallow	Slope	Shortaker/	Thomy-	Total	
		Mackerel	tooth	Shell Rockfish	Water Flounder	Sole	Octopus	Cod	Shell Rockfish	Pollock	Ocean Perch	Sablefish	Sculpin	Water Flatfish	Rockfish		Rougheye	heads Skates
Pacific Cod	Retained	0	0	0	0	0	0	160	0	2	0	0	0	0	0	0	170
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Catch	0	0	0	0	0	0	160	0	2	0	0	0	0	0	0	170
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Rockfish	Retained	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Catch	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Arrowtooth	Retained	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
	Discard	0	0	0	0	0	0	<1	0	0	0	0	0	0	0	0	<1
	Total Catch	0	0	0	0	0	0	<1	0	0	0	0	0	0	0	0	<1
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
TOTAL	Retained	0	0	0	0	0	0	160	2	2	0	0	0	0	0	0	172
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Catch	0	0	0	0	0	0	160	2	2	0	0	0	0	0	0	172
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Source: NMFS (see Appendix 1)

Table 15

Retained and Discarded Catch in the Gulf of Alaska 1992 Pot Fisheries

POT		Atka	Demersal	Deep-	Flathead		Pelagic		Pacific		Shallow								Total
		Mackerel	Arrow-tooth Rockfish	Water Flounder	Sole	Octopus	Cod	Shell Rockfish	Pollock	Ocean Perch	Sablefish	Sculpine	Water Flatfish	Slope Rockfish	Chortaker/Rougheye	Thomy-heads	Skates		
Pacific Cod	Retained	0	0	0	0	0	72	9,380	0	0	0	0	0	0	0	0	0	0	9,452
	Discard	0	0	0	0	0	5	72	0	0	0	0	0	0	0	0	0	0	77
	Total Catch	0	0	0	0	0	82	9,452	0	0	0	0	0	0	0	0	0	0	9,533
	Percent Discarded	0%	0%	0%	0%	0%	7%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
Rockfish	Retained	0	0	<1	0	0	0	<1	0	0	0	0	0	0	0	0	0	0	<1
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Catch	0	0	<1	0	0	0	<1	0	0	0	0	0	0	0	0	0	0	<1
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ghor	Retained	0	0	0	0	0	7	1	0	0	0	0	0	0	0	0	0	0	8
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Catch	0	0	0	0	0	7	1	0	0	0	0	0	0	0	0	0	0	8
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Arrowtooth	Retained	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Discard	0	0	0	0	0	<1	<1	0	0	0	<1	0	0	0	0	0	0	1
	Total Catch	0	0	0	0	0	<1	<1	0	0	0	<1	0	0	0	0	0	0	1
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
TOTAL	Retained	0	0	<1	0	0	83	9,381	0	0	0	0	0	0	0	0	0	0	9,464
	Discard	0	0	0	0	0	5	72	0	0	0	<1	0	0	0	0	0	0	78
	Total Catch	0	0	<1	0	0	89	9,452	0	0	0	<1	0	0	0	0	0	0	9,541
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%

Source: NMFS (see Appendix 1)

Table 16

Retained and Discarded Catch in the Gulf of Alaska 1992 Trawl Fisheries

TRAWL		Alaska	Demersal	Deep-	Flathead		Pacific	Pelagic		Pacific		Shallow	Slope	Shortraker/	Thomy-				
		Mackerel	Arrow-tooth	Shell Rockfish	Water Flounder	Bole	Octopus	Cod	Shell Rockfish	Pollock	Ocean Perch	Sablefish	Sculpine	Water Flatfish	Rockfish	Flourheys	heads	Skates	Total
Bottom Pollock	Retained	0	0	0	230	148	0	608	0	21,840	0	47	0	0	0	0	0	0	22,763
	Discard	0	0	0	0	0	0	68	0	1,231	1	0	0	144	0	0	0	0	1,442
	Total Catch	0	0	0	230	148	0	704	0	22,871	1	47	0	144	0	0	0	0	24,205
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%
Pacific Cod	Retained	2	0	0	347	244	2	45,228	60	950	0	0	0	1,441	48	0	0	0	48,332
	Discard	0	1,377	0	71	0	0	874	0	0	0	0	0	849	0	3	0	0	2,074
	Total Catch	2	1,377	0	418	244	2	45,802	60	950	0	0	0	2,300	48	3	0	0	51,306
	Percent Discarded	0%	100%	0%	17%	0%	0%	1%	0%	0%	0%	0%	0%	40%	0%	100%	0%	0%	0%
Deepwater Flatfish	Retained	0	0	0	5,204	610	0	820	0	318	0	472	0	402	0	0	0	0	7,824
	Discard	0	6,859	0	675	0	0	175	0	0	0	0	0	0	0	0	0	0	7,709
	Total Catch	0	6,859	0	5,879	610	0	895	0	318	0	472	0	402	0	0	0	0	15,534
	Percent Discarded	0%	100%	0%	11%	0%	0%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%
Shallow Flatfish	Retained	0	0	0	318	425	0	745	5	334	0	111	0	3,438	0	0	0	0	5,375
	Discard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Catch	0	0	0	318	425	0	745	5	334	0	111	0	3,438	0	0	0	0	5,375
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Rockfish	Retained	147	259	0	150	0	0	419	2,651	137	4,209	1,309	0	65	6,261	1,413	729	0	17,035
	Discard	0	3,613	0	210	0	0	134	0	0	0	0	0	0	0	0	0	0	3,958
	Total Catch	147	3,872	0	360	0	0	553	2,651	137	4,209	1,309	0	65	6,261	1,413	729	0	21,891
	Percent Discarded	0%	93%	0%	58%	0%	0%	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%
Other	Retained	13,148	0	0	71	178	0	385	0	40	333	23	0	0	0	0	0	0	14,170
	Discard	0	0	0	248	0	0	0	0	0	0	0	0	12	0	0	0	0	259
	Total Catch	13,148	0	0	318	178	0	385	0	40	333	23	0	12	0	0	0	0	14,435
	Percent Discarded	0%	0%	0%	78%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	2%
Mid-Water Pollock	Retained	0	0	0	0	0	0	170	0	51,026	0	0	0	0	0	0	0	0	51,196
	Discard	0	0	0	4	0	0	0	0	3,757	2	0	0	0	0	0	0	0	3,762
	Total Catch	0	0	0	4	0	0	170	0	54,783	2	0	0	0	0	0	0	0	54,958
	Percent Discarded	0%	0%	0%	100%	0%	0%	0%	0%	7%	100%	0%	0%	0%	0%	0%	0%	0%	7%
Arrowtooth	Retained	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Discard	0	0	0	0	4	0	1	0	5	0	2	0	>1	1	0	0	0	13
	Total Catch	0	0	0	0	4	0	1	0	5	0	2	0	>1	1	0	0	0	13
	Percent Discarded	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	100%	0%	0%	0%	100%
TOTAL	Retained	13,148	259	0	5,324	1,605	2	48,408	2,725	74,445	4,831	2,052	0	5,345	6,310	1,413	729	0	167,602
	Discard	0	11,849	0	1,207	4	0	949	0	4,993	3	2	0	1,104	1	3	0	0	20,115
	Total Catch	13,205	12,108	0	7,531	1,609	2	49,417	2,725	79,438	4,835	2,054	0	6,450	6,311	1,416	729	0	187,717
	Percent Discarded	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%

Source: NMFS (see Appendix I)

Discards in the Groundfish Fisheries of the North Pacific

Table 17

Retained and Discarded Catch in the Combined Gulf of Alaska 1992 Fisheries

COMBINED TOTAL	Atka	Arrow-	Demersal	Deep-	Flathead		Pacific	Pelagic		Pacific		Shallow		Slope	Shortnose/	Thomy-		Total
	Mackerel	tooth	Rockfish	Water	Sole	Octopus	Cod	Rockfish	Pollock	Ocean	Sablefish	Sculpine	Water	Rockfish	Rougheye	heads	Skates	
Retained	13,285	259	780	8,324	1,605	85	72,722	3,173	74,460	4,631	22,130	0	5,345	6,380	1,787	1,231	0	214,187
Discard	0	12,087	1	1,225	4	5	1,034	0	4,993	3	2	<1	1,104	1	3	0	98	20,559
Total Catch	13,285	12,346	780	7,849	1,609	91	73,756	3,173	79,453	4,635	22,132	<1	6,450	6,381	1,770	1,231	98	234,746
Percent Discarded	0%	98%	0%	16%	0%	0%	1%	0%	0%	0%	0%	0%	17%	0%	0%	0%	100%	0%

Discards in the Groundfish Fisheries of the North Pacific

Table 18

PSC Catch in the 1992 Gulf of Alaska Target Groundfish Fisheries
(excluding halibut)

Gear	Target Species	Baird Tanner (#'s)	Other Tanner (#'s)	Red King Crab (#'s)	Other King (#'s)	Chinook Salmon (#'s)	Other Salmon (#'s)	Herring (lbs)
Longline	Bottom Trawl Pollock	0	0	0	0	0	0	0
	Pacific Cod	265	218	0	0	0	0	0
	Shallow Water Flatfish	0	0	0	0	0	0	0
	Rockfish	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0
	Sablefish	201	8,148	0	381	18	157	0
	Arrowtooth Flounder	0	0	0	0	0	0	0
	Total		465	8,364	0	381	18	157	0
Jug	Pacific Cod	0	0	0	0	0	0	0
	Deepwater Flatfish	0	0	0	0	0	0	0
	Rockfish	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Other	Pacific Cod	0	0	0	0	0	0	0
	Rockfish	0	0	0	0	0	0	0
	Arrowtooth Flounder	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Pot	Pacific Cod	21,824	6	9	0	0	0	0
	Rockfish	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0
	Arrowtooth Flounder	0	0	0	0	0	0	0
	Total	21,824	6	9	0	0	0	0
Trawl	Bottom Trawl Pollock	2,470	660	0	167	2,125	1,109	18,269
	Pacific Cod	34,861	1,973	13	0	5,304	30	0
	Deepwater Flatfish	33,117	462	26	0	2,408	427	7
	Shallow Water Flatfish	16,035	24	22	52	210	55	78
	Rockfish	5,598	2,051	0	781	2,120	2,819	955
	Other	964	128	0	0	77	0	0
	Mid-water Pollock	1,598	0	0	0	3,908	5,707	17,100
	Arrowtooth Flounder	0	0	0	2	0	2	0
	Total	94,841	5,298	60	1,003	16,152	10,149	36,409
All Gear	Bottom Trawl Pollock	2,470	660	0	167	2,125	1,109	18,269
	Pacific Cod	58,950	2,197	21	0	5,304	30	0
	Shallow Water Flatfish	16,035	24	22	52	210	55	78
	Rockfish	5,598	2,051	0	781	2,120	2,819	955
	Other	964	128	0	0	77	0	0
	Sablefish	201	8,148	0	381	18	157	0
	Arrowtooth Flounder	0	0	0	2	0	2	0
	Deepwater Flatfish	33,117	462	26	0	2,408	427	7
	Mid-water Pollock	1,598	0	0	0	3,908	5,707	17,100
	Total	116,930	13,668	69	1,384	16,170	10,307	36,409

Source: NMFS (See Appendix 3)

Discards in the Groundfish Fisheries of the North Pacific

Table 19

**Halibut Bycatch Mortality in the 1992 Gulf of Alaska Fisheries
(by gear and target fishery)**

<u>Gear</u>	<u>Target Species</u>	<u>Halibut Catch (pounds)</u>	<u>Halibut Mortality Rate (%)</u>	<u>Mortality Pounds</u>
Longline	Pollock	1,417	16%	227
	Pacific Cod	5,269,535	16%	843,126
	Flatfish	880	16%	141
	Rockfish	177,395	16%	28,383
	Other	222	16%	36
	Sablefish	6,551,013	16%	1,048,162
	Arrowtooth	7,654	16%	1,225
	TOTAL	12,008,115		1,921,298
Jig	Pacific Cod	34,219	5%	1,711
	Flatfish	287	5%	14
	Rockfish	73,961	5%	3,698
	TOTAL	108,467		5,423
Pot	Pacific Cod	197,369	5%	9,868
Trawl	Bottom Pollock	181,617	65%	118,051
	Pacific Cod	1,793,445	65%	1,165,739
	Deepwater Flatfish	1,998,680	65%	1,299,142
	Shallow Water Flatfish	496,490	65%	322,719
	Rockfish	1,718,924	65%	1,117,301
	Other	414,391	65%	269,354
	Mid-Water Pollock	18,857	65%	12,257
	Arrowtooth Flounder	8,170	65%	5,311
Total	6,630,575		4,309,873	
Total All Gear		18,944,525		6,246,464

Source: NMFS (see Appendix 3)

Discards In the Groundfish Fisheries of the North Pacific

Table 20

**Estimate of Halibut Mortality Associated
with the
Directed Longline Halibut Fishery During 1992
In the
Bering Sea/Aleutian Islands and the Gulf of Alaska
(In pounds)**

		Net Weight (lbs)	Round Weight (lbs) ⁶
Bering Sea/ Aleutian Islands	Lost/Abandoned Gear	146,000	194,180
	Sub-Legal Handling	133,000	176,890
	Total	279,000	371,070
Gulf of Alaska	Lost/Abandoned Gear	1,090,000	1,449,700
	Sub-Legal Handling	870,000	1,157,100
	Total	1,960,000	2,606,800
North Pacific Total	Lost/Abandoned Gear	1,236,000	1,643,880
	Sub-Legal Handling	1,003,000	1,333,990
	Total	2,239,000	2,977,870

Source: IPHC, Report of Assessment and Research Activities, 1993

⁶Conversion is 1.33 times net weight, per conversation with Greg Williams, IPHC.

Discards In the Groundfish Fisheries of the North Pacific

Table 21

**Average Size of Halibut Taken as Bycatch in the
Bering Sea/Aleutian Islands Groundfish Fisheries During 1992
(by gear type and target fishery)**

Gear	Target	Weight of Bycatch (kg)	Number of Animals	Average Size Per Animal (kg)	Average Size Per Animal (lb)
Hook & Line	Pacific Cod	4,257,457	792,860	5.37	11.84
	Other	1,191	214	5.56	12.26
	Mid-Water Pollock	2,008	647	3.10	6.84
	Sablefish	52,842	3,689	14.32	31.58
	Greenland Turbot	11,130	1,147	9.71	21.40
	TOTAL		4,324,628	798,556	5.42	11.94
POT	Pacific Cod	81,338	83,102	0.98	2.16
	Other	365	506	0.72	1.59
	Sablefish	258	65	3.98	8.78
	TOTAL	81,961	83,673	0.98	2.16
Trawl	Atka Mackerel	57,125	21,068	2.71	5.98
	Bottom Pollock	635,792	1,224,688	0.52	1.14
	Pacific Cod	1,070,278	909,466	1.18	2.59
	Other Flatfish	274,003	1,837,932	0.15	0.33
	Rockfish	146,634	40,907	3.58	7.90
	Other	6,273	8,683	0.72	1.59
	Mid-Water Pollock	1,610,195	2,261,602	0.71	1.57
	Rocksole	531,847	843,571	0.63	1.39
	Arrowtooth	2,107	9,708	0.22	0.48
	Yellowfin Sole	1,702,846	6,967,938	0.24	0.54
	TOTAL	6,037,098	14,125,562	0.43	0.94
GRAND TOTAL		10,443,688	15,007,791	0.70	1.53

Source: NMFS Juneau (Also see Appendix 4)

Discards in the Groundfish Fisheries of the North Pacific

Table 22

**Average Size of Halibut Taken as Bycatch in the
Gulf of Alaska Groundfish Fisheries During 1992
(by gear type and target fishery)**

Gear	Target	Weight of Bycatch (kg)	Number	Average Size (kg)	Average Size (lb)
Hook & Line	Pacific Cod	523,788	97,470	5.37	11.85
	Rockfish	2,248	157	14.35	31.64
	Other (Unspecified)	44	19	2.33	5.14
	Sablefish	269,712	24,617	10.96	24.15
	Arrowtooth	9,025	1,166	7.74	17.07
TOTAL		804,817	123,429	6.52	14.38
POT	Pacific Cod	15,761	5,382	2.93	6.46
	Sablefish	16,090	1,545	10.41	22.95
TOTAL		31,851	6,927	4.60	10.14
Trawl	Bottom Pollock	12,831	6,073	2.11	4.66
	Pacific Cod	207,930	104,431	1.99	4.39
	Deepwater Flatfish	304,990	115,648	2.64	5.81
	Shallow Water Flat	84,077	34,544	2.43	5.37
	Rockfish	442,875	73,433	6.03	13.30
	Other (Unspecified)	110,535	23,973	4.61	10.17
	Mid-Water Pollock	30,614	5,365	5.71	12.58
	Sablefish	2,570	389	6.62	14.59
	Arrowtooth	7,892	2,429	3.25	7.16
TOTAL		1,204,315	366,283	3.29	7.25
GRAND TOTAL		2,040,984	496,639	4.11	9.06

Source: NMFS Juneau (Also see Appendix 4)

Appendix 1: NMFS Catch Discard Data

Retained and Discard catch by gear, target fishery and species from weekly production reports

Bering Sea & Aleutian Islands

Hook & Line	C	AMCK	Discard	22.64
Hook & Line	C	AMCK	Retain	18.84
Hook & Line	C	ARTH	Discard	1,195.92
Hook & Line	C	ARTH	Retain	51.31
Hook & Line	C	FLOU	Discard	233.93
Hook & Line	C	FLOU	Retain	11.74
Hook & Line	C	GTRB	Discard	284.85
Hook & Line	C	GTRB	Retain	88.46
Hook & Line	C	OCTO	Discard	47.09
Hook & Line	C	OCTO	Retain	28.00
Hook & Line	C	PCOD	Discard	280.44
Hook & Line	C	PCOD	Retain	89,548.19
Hook & Line	C	PLCK	Discard	2,551.29
Hook & Line	C	PLCK	Retain	70.93
Hook & Line	C	POPA	Discard	80.59
Hook & Line	C	POPA	Retain	6.06
Hook & Line	C	ROCK	Discard	43.72
Hook & Line	C	ROCK	Retain	134.99
Hook & Line	C	RSOL	Discard	31.79
Hook & Line	C	RSOL	Retain	8.58
Hook & Line	C	SABL	Discard	19.32
Hook & Line	C	SABL	Retain	143.05
Hook & Line	C	SCLP	Discard	928.92
Hook & Line	C	SCNO	Discard	39.50
Hook & Line	C	SCNO	Retain	5.31
Hook & Line	C	SRRE	Discard	159.59
Hook & Line	C	SRRE	Retain	163.68
Hook & Line	C	SRSN	Discard	6.24
Hook & Line	C	SRSN	Retain	21.09
Hook & Line	C	THDS	Retain	0.56
Hook & Line	C	USKT	Discard	6,810.45
Hook & Line	C	USKT	Retain	692.11
Hook & Line	C	USRK	Discard	60.38
Hook & Line	C	YSOL	Discard	66.87
Hook & Line	C	YSOL	Retain	0.36
Hook & Line	K	ROCK	Retain	0.68
Hook & Line	K	SABL	Retain	0.24
Hook & Line	P	PLCK	Retain	2.31
Hook & Line	S	ARTH	Discard	131.76

Appendix 1: NMFS Catch Discard Data

Hook & Line	S	ARTH	Retain	2.73
Hook & Line	S	FLOU	Discard	8.75
Hook & Line	S	FLOU	Retain	0.09
Hook & Line	S	GTRB	Discard	488.89
Hook & Line	S	GTRB	Retain	172.68
Hook & Line	S	OCTO	Discard	0.20
Hook & Line	S	PCOD	Discard	1.43
Hook & Line	S	PCCD	Retain	39.86
Hook & Line	S	PLCK	Discard	0.71
Hook & Line	S	POPA	Discard	0.22
Hook & Line	S	POPA	Retain	0.33
Hook & Line	S	ROCK	Discard	16.84
Hook & Line	S	ROCK	Retain	158.10
Hook & Line	S	SABL	Discard	1.14
Hook & Line	S	SABL	Retain	1,720.04
Hook & Line	S	SCLP	Discard	0.45
Hook & Line	S	SCNO	Discard	2.00
Hook & Line	S	SCNO	Retain	0.58
Hook & Line	S	SRRE	Discard	1.70
Hook & Line	S	SRRE	Retain	1.77
Hook & Line	S	SRSN	Discard	9.41
Hook & Line	S	SRSN	Retain	7.36
Hook & Line	S	THDS	Discard	0.57
Hook & Line	S	THDS	Retain	15.00
Hook & Line	S	USKT	Discard	34.90
Hook & Line	S	USKT	Retain	0.97
Hook & Line	S	USRK	Discard	12.28
Hook & Line	T	ARTH	Discard	6.03
Hook & Line	T	FLOU	Discard	0.36
Hook & Line	T	GTRB	Discard	5.68
Hook & Line	T	GTRB	Retain	34.01
Hook & Line	T	PCOD	Discard	0.23
Hook & Line	T	PCOD	Retain	18.46
Hook & Line	T	PLCK	Discard	3.58
Hook & Line	T	POPA	Retain	0.16
Hook & Line	T	ROCK	Discard	0.04
Hook & Line	T	ROCK	Retain	1.56
Hook & Line	T	SABL	Retain	18.51
Hook & Line	T	SCLP	Discard	1.17
Hook & Line	T	SRRE	Discard	0.18
Hook & Line	T	SRSN	Discard	0.04
Hook & Line	T	THDS	Retain	0.01
Hook & Line	T	USKT	Discard	6.37
Hook & Line	T	USRK	Discard	1.01
Hook & Line	Y	ARTH	Discard	2.27

Appendix 1: NMFS Catch Discard Data

Hook & Line	Y	FLOU	Discard	0.67
Hook & Line	Y	GTRB	Discard	0.79
Hook & Line	Y	OCTO	Discard	0.18
Hook & Line	Y	PCOD	Discard	0.22
Hook & Line	Y	PLCK	Discard	2.15
Hook & Line	Y	POPA	Discard	0.02
Hook & Line	Y	ROCK	Discard	0.10
Hook & Line	Y	RSOL	Discard	0.02
Hook & Line	Y	SCLP	Discard	2.24
Hook & Line	Y	SRRE	Discard	0.02
Hook & Line	Y	SRSN	Discard	0.19
Hook & Line	Y	USKT	Discard	4.56
Hook & Line	Y	USRK	Discard	0.02
JIG	C	AMCK	Discard	0.02
JIG	C	PCOD	Retain	0.66
JIG	C	PLCK	Discard	0.02
JIG	C	ROCK	Discard	0.01
Other	A	AMCK	Retain	8.82
Other	C	ARTH	Discard	4.09
Other	C	FLOU	Discard	5.11
Other	C	OCTO	Discard	0.08
Other	C	PCOD	Discard	13.64
Other	C	PCOD	Retain	102.25
Other	C	PLCK	Discard	4.67
Other	C	ROCK	Discard	0.10
Other	C	ROCK	Retain	0.23
Other	C	SABL	Discard	0.09
Other	C	SABL	Retain	0.28
Other	C	SCLP	Discard	0.09
Other	C	USKT	Discard	0.05
Other	K	ROCK	Discard	300.00
Other	K	ROCK	Retain	826.00
Other	S	SABL	Retain	0.86
Pot	C	AMCK	Discard	7.83
Pot	C	ARTH	Discard	3.74
Pot	C	FLOU	Discard	20.48
Pot	C	GTRB	Discard	3.69
Pot	C	OCTO	Discard	68.12
Pot	C	OCTO	Retain	51.05
Pot	C	PCOD	Discard	55.67
Pot	C	PCOD	Retain	13,192.58
Pot	C	PLCK	Discard	7.16
Pot	C	PLCK	Retain	0.01
Pot	C	POPA	Discard	0.02
Pot	C	ROCK	Discard	1.52

Appendix 1: NMFS Catch Discard Data

Pot	C	ROCK	Retain	0.47
Pot	C	RSOL	Discard	1.91
Pot	C	SABL	Discard	1.00
Pot	C	SABL	Retain	11.82
Pot	C	SCLP	Discard	242.86
Pot	C	SCNO	Discard	0.34
Pot	C	SQID	Discard	0.29
Pot	C	SRIPE	Discard	0.17
Pot	C	USKT	Discard	18.07
Pot	C	YSOL	Discard	3.82
Pot	O	OCTO	Retain	14.74
Pot	P	PLCK	Discard	42.37
Pot	P	PLCK	Retain	45.97
Pot	S	GTRB	Discard	1.23
Pot	S	PCOD	Retain	0.21
Pot	S	SABL	Retain	0.35
Pot	Y	PCOD	Retain	0.58
Pot	Y	PLCK	Retain	0.54
Pot	Y	RSOL	Retain	0.33
Pot	Y	YSOL	Retain	1.98
Trawl	A	AMCK	Discard	4,265.82
Trawl	A	AMCK	Retain	37,400.15
Trawl	A	ARTH	Discard	232.97
Trawl	A	ARTH	Retain	2.65
Trawl	A	FLOU	Discard	59.88
Trawl	A	FLOU	Retain	3.88
Trawl	A	GTRB	Discard	4.50
Trawl	A	GTRB	Retain	41.72
Trawl	A	OCTO	Discard	0.10
Trawl	A	PCOD	Discard	341.51
Trawl	A	PCOD	Retain	2,863.11
Trawl	A	PLCK	Discard	237.30
Trawl	A	PLCK	Retain	217.35
Trawl	A	POPA	Discard	654.68
Trawl	A	POPA	Retain	1,281.34
Trawl	A	ROCK	Discard	259.89
Trawl	A	ROCK	Retain	37.18
Trawl	A	RSOL	Discard	37.14
Trawl	A	RSOL	Retain	8.47
Trawl	A	SABL	Discard	0.10
Trawl	A	SABL	Retain	4.46
Trawl	A	SCLP	Discard	171.57
Trawl	A	SCNO	Discard	469.73
Trawl	A	SCNO	Retain	103.48
Trawl	A	SQID	Discard	0.02

Appendix 1: NMFS Catch Discard Data

Trawl	A	SPRE	Discard	6.34
Trawl	A	SPRE	Retain	374.45
Trawl	A	SRSN	Discard	16.42
Trawl	A	SRSN	Retain	3.68
Trawl	A	USKT	Discard	23.24
Trawl	A	USKT	Retain	0.48
Trawl	A	USRK	Discard	1.19
Trawl	B	AMCK	Discard	3.93
Trawl	B	AMCK	Retain	35.34
Trawl	B	ARTH	Discard	1,565.63
Trawl	B	ARTH	Retain	43.19
Trawl	B	FLOU	Discard	4,318.99
Trawl	B	FLOU	Retain	145.98
Trawl	B	GTRB	Discard	79.73
Trawl	B	GTRB	Retain	4.36
Trawl	B	OCTO	Discard	3.41
Trawl	B	OCTO	Retain	0.94
Trawl	B	POOD	Discard	3,084.43
Trawl	B	POOD	Retain	6,949.17
Trawl	B	PLCK	Discard	14,634.18
Trawl	B	PLCK	Retain	125,764.73
Trawl	B	POPA	Discard	30.00
Trawl	B	POPA	Retain	33.63
Trawl	B	ROCK	Discard	5.34
Trawl	B	ROCK	Retain	1.10
Trawl	B	RSOL	Discard	3,091.65
Trawl	B	RSOL	Retain	760.19
Trawl	B	SABL	Discard	3.69
Trawl	B	SABL	Retain	0.76
Trawl	B	SCLP	Discard	500.43
Trawl	B	SCLP	Retain	3.22
Trawl	B	SMLT	Discard	0.02
Trawl	B	SMLT	Retain	3.28
Trawl	B	SQID	Discard	5.67
Trawl	B	SQID	Retain	43.42
Trawl	B	SRSN	Discard	0.40
Trawl	B	SRSN	Retain	0.40
Trawl	B	USKT	Discard	950.09
Trawl	B	USKT	Retain	12.28
Trawl	B	USRK	Discard	152.15
Trawl	B	USRK	Retain	0.18
Trawl	B	YSOL	Discard	673.02
Trawl	B	YSOL	Retain	41.03
Trawl	C	AMCK	Discard	1,639.42
Trawl	C	AMCK	Retain	945.37

Appendix 1: NMFS Catch Discard Data

Trawl	C	ARTH	Discard	2,165.14
Trawl	C	ARTH	Retain	102.45
Trawl	C	FLOU	Discard	2,291.27
Trawl	C	FLOU	Retain	231.73
Trawl	C	GTRB	Discard	27.03
Trawl	C	GTRB	Retain	10.98
Trawl	C	OCTO	Discard	8.18
Trawl	C	OCTO	Retain	1.10
Trawl	C	PCOD	Discard	2,165.26
Trawl	C	PCOD	Retain	37,817.08
Trawl	C	PLCK	Discard	10,696.36
Trawl	C	PLCK	Retain	1,836.06
Trawl	C	POPA	Discard	285.71
Trawl	C	POPA	Retain	384.57
Trawl	C	ROCK	Discard	191.82
Trawl	C	ROCK	Retain	6.11
Trawl	C	RSOL	Discard	1,925.55
Trawl	C	RSOL	Retain	740.08
Trawl	C	SABL	Retain	10.02
Trawl	C	SCLP	Discard	1,047.27
Trawl	C	SCLP	Retain	4.18
Trawl	C	SCNO	Discard	214.80
Trawl	C	SCNO	Retain	6.86
Trawl	C	SQID	Discard	5.11
Trawl	C	SRRE	Discard	30.81
Trawl	C	SRRE	Retain	22.52
Trawl	C	SRSN	Discard	65.28
Trawl	C	SRSN	Retain	31.69
Trawl	C	USKT	Discard	752.69
Trawl	C	USKT	Retain	25.01
Trawl	C	USRK	Discard	1.66
Trawl	C	YSOL	Discard	476.36
Trawl	C	YSOL	Retain	43.46
Trawl	K	AMCK	Discard	477.59
Trawl	K	AMCK	Retain	1,223.35
Trawl	K	ARTH	Discard	1,010.62
Trawl	K	ARTH	Retain	14.98
Trawl	K	FLOU	Discard	150.72
Trawl	K	FLOU	Retain	97.03
Trawl	K	GTRB	Discard	28.59
Trawl	K	GTRB	Retain	186.42
Trawl	K	OCTO	Retain	1.43
Trawl	K	PCOD	Discard	161.25
Trawl	K	PCOD	Retain	790.08
Trawl	K	PLCK	Discard	896.45

Appendix 1: NMFS Catch Discard Data

Trawl	K	PLCK	Retain	89.62
Trawl	K	POPA	Discard	565.66
Trawl	K	POPA	Retain	9,461.83
Trawl	K	ROCK	Discard	90.70
Trawl	K	ROCK	Retain	29.35
Trawl	K	RSOL	Discard	29.03
Trawl	K	RSOL	Retain	15.10
Trawl	K	SABL	Discard	0.39
Trawl	K	SABL	Retain	22.76
Trawl	K	SCLP	Discard	168.25
Trawl	K	SCNO	Discard	104.90
Trawl	K	SCNO	Retain	98.32
Trawl	K	SQID	Discard	9.20
Trawl	K	SQID	Retain	0.13
Trawl	K	SRRE	Discard	5.99
Trawl	K	SRRE	Retain	479.06
Trawl	K	SRSN	Discard	43.99
Trawl	K	SRSN	Retain	65.68
Trawl	K	USKT	Discard	218.34
Trawl	K	USKT	Retain	5.63
Trawl	K	USRK	Discard	6.63
Trawl	P	AMCK	Discard	56.20
Trawl	P	AMCK	Retain	3.19
Trawl	P	ARTH	Discard	502.78
Trawl	P	ARTH	Retain	143.78
Trawl	P	CPLN	Discard	0.05
Trawl	P	CPLN	Retain	0.13
Trawl	P	EULC	Discard	2.06
Trawl	P	EULC	Retain	1.58
Trawl	P	FLOU	Discard	1,340.33
Trawl	P	FLOU	Retain	539.03
Trawl	P	GTRB	Discard	81.67
Trawl	P	GTRB	Retain	62.63
Trawl	P	OCTO	Discard	3.20
Trawl	P	OCTO	Retain	0.62
Trawl	P	PCOD	Discard	2,157.39
Trawl	P	PCOD	Retain	3,075.95
Trawl	P	PLCK	Discard	33,137.89
Trawl	P	PLCK	Retain	985,315.87
Trawl	P	POPA	Discard	33.15
Trawl	P	POPA	Retain	18.39
Trawl	P	ROCK	Discard	15.47
Trawl	P	ROCK	Retain	3.08
Trawl	P	RSOL	Discard	637.37
Trawl	P	RSOL	Retain	195.05

Appendix 1: NMFS Catch Discard Data

Trawl	P	SABL	Discard	0.78
Trawl	P	SABL	Retain	3.30
Trawl	P	SCLP	Discard	140.98
Trawl	P	SCLP	Retain	15.31
Trawl	P	SCNO	Discard	-0.24
Trawl	P	SMLT	Discard	5.01
Trawl	P	SMLT	Retain	54.98
Trawl	P	SQID	Discard	191.85
Trawl	P	SQID	Retain	289.55
Trawl	P	SRRE	Discard	0.98
Trawl	P	SRSN	Discard	7.75
Trawl	P	SRSN	Retain	0.81
Trawl	P	USKT	Discard	422.40
Trawl	P	USKT	Retain	58.91
Trawl	P	USRK	Discard	164.84
Trawl	P	USRK	Retain	12.28
Trawl	P	YSOL	Discard	49.86
Trawl	P	YSOL	Retain	12.12
Trawl	R	AMCK	Discard	10.30
Trawl	R	AMCK	Retain	62.54
Trawl	R	ARTH	Discard	891.92
Trawl	R	ARTH	Retain	206.47
Trawl	R	EULC	Discard	4.30
Trawl	R	FLOU	Discard	4,274.64
Trawl	R	FLOU	Retain	1,583.62
Trawl	R	GTRB	Discard	0.21
Trawl	R	GTRB	Retain	6.26
Trawl	R	OCTO	Discard	19.47
Trawl	R	OCTO	Retain	3.19
Trawl	R	FOOD	Discard	1,325.06
Trawl	R	FOOD	Retain	2,628.42
Trawl	R	PLCK	Discard	8,652.37
Trawl	R	PLCK	Retain	768.77
Trawl	R	POPA	Discard	21.58
Trawl	R	POPA	Retain	3.00
Trawl	R	ROCK	Retain	0.04
Trawl	R	RSOL	Discard	10,129.10
Trawl	R	RSOL	Retain	12,470.35
Trawl	R	SABL	Retain	1.96
Trawl	R	SCLP	Discard	2,365.80
Trawl	R	SCLP	Retain	1.18
Trawl	R	SRSN	Retain	3.74
Trawl	R	USKT	Discard	626.64
Trawl	R	USKT	Retain	45.07
Trawl	R	USRK	Discard	1.00

Appendix 1: NMFS Catch Discard Data

Trawl	R	YSOL	Discard	3,424.00
Trawl	R	YSOL	Retain	2,836.07
Trawl	S	ARTH	Discard	0.82
Trawl	S	GTRB	Discard	1.10
Trawl	S	GTRB	Retain	0.82
Trawl	S	ROCK	Retain	1.24
Trawl	S	SABL	Retain	25.72
Trawl	S	SRRE	Retain	0.30
Trawl	S	USKT	Discard	0.85
Trawl	W	ARTH	Retain	6.48
Trawl	W	FLOU	Discard	1.20
Trawl	W	FLOU	Retain	2.11
Trawl	W	GTRB	Retain	2.27
Trawl	W	OCTO	Retain	0.17
Trawl	W	POOD	Retain	5.21
Trawl	W	PLCK	Discard	2.92
Trawl	W	POPA	Retain	2.12
Trawl	W	RSOL	Discard	1.20
Trawl	W	RSOL	Retain	0.90
Trawl	W	SABL	Retain	0.06
Trawl	W	SCLP	Discard	1.20
Trawl	W	SRSN	Retain	0.74
Trawl	W	USKT	Discard	1.20
Trawl	W	USKT	Retain	0.16
Trawl	W	YSOL	Retain	0.01
Trawl	Y	ARTH	Discard	368.59
Trawl	Y	ARTH	Retain	18.43
Trawl	Y	CPLN	Discard	18.02
Trawl	Y	EULC	Discard	6.60
Trawl	Y	FLOU	Discard	11,579.49
Trawl	Y	FLOU	Retain	2,440.69
Trawl	Y	GTRB	Discard	1.42
Trawl	Y	GTRB	Retain	2.35
Trawl	Y	POOD	Discard	2,030.21
Trawl	Y	POOD	Retain	3,848.29
Trawl	Y	PLCK	Discard	7,476.94
Trawl	Y	PLCK	Retain	1,737.04
Trawl	Y	POPA	Discard	0.05
Trawl	Y	POPA	Retain	0.30
Trawl	Y	ROCK	Discard	67.63
Trawl	Y	RSOL	Discard	6,419.80
Trawl	Y	RSOL	Retain	3,958.55
Trawl	Y	SABL	Discard	0.42
Trawl	Y	SABL	Retain	0.02
Trawl	Y	SCLP	Discard	3,096.64

Appendix 1: NMFS Catch Discard Data

Trawl	Y	SCLP	Retain	1.23
Trawl	Y	SMLT	Discard	46.03
Trawl	Y	SQID	Discard	0.03
Trawl	Y	SRSN	Discard	55.36
Trawl	Y	SRSN	Retain	-0.06
Trawl	Y	USKT	Discard	2,496.69
Trawl	Y	USKT	Retain	201.89
Trawl	Y	YSOL	Discard	26,624.72
Trawl	Y	YSOL	Retain	87,952.01

Gulf of Alaska

Hook and Line	B	PLCK	Retain	5.10
Hook and Line	C	DEM1	Retain	46.62
Hook and Line	C	PCOD	Retain	14,326.48
Hook and Line	C	PELS	Retain	12.91
Hook and Line	C	PLCK	Retain	6.35
Hook and Line	C	SABL	Retain	56.00
Hook and Line	C	SRRE	Retain	5.76
Hook and Line	C	THDS	Retain	13.78
Hook and Line	H	SABL	Retain	0.14
Hook and Line	K	DEM1	Retain	515.87
Hook and Line	K	PCOD	Retain	53.69
Hook and Line	K	PELS	Retain	105.85
Hook and Line	K	SABL	Retain	34.00
Hook and Line	K	SLR1	Retain	9.84
Hook and Line	K	SRRE	Retain	96.46
Hook and Line	K	THDS	Retain	9.28
Hook and Line	O	DEM1	Retain	0.09
Hook and Line	O	OCTO	Retain	0.26
Hook and Line	O	SABL	Retain	0.03
Hook and Line	S	ARTH	Discard	238.24
Hook and Line	S	DEM1	Retain	208.38
Hook and Line	S	DFL1	Discard	18.69
Hook and Line	S	PCOD	Retain	169.30
Hook and Line	S	SABL	Retain	19,988.26
Hook and Line	S	SLR1	Retain	57.04
Hook and Line	S	SRRE	Retain	250.62
Hook and Line	S	THDS	Retain	473.97
Hook and Line	S	USKT	Discard	84.94
Hook and Line	W	DEM1	Discard	0.77
Hook and Line	W	PCOD	Discard	12.83
Hook and Line	W	PCOD	Retain	0.21
Hook and Line	W	USKT	Discard	10.61

Appendix 1: NMFS Catch Discard Data

Jig	C	DEM1	Retain	0.20
Jig	C	PCOD	Retain	153.38
Jig	C	PELS	Retain	2.80
Jig	D	PELS	Retain	0.20
Jig	K	DEM1	Retain	8.69
Jig	K	PCOD	Retain	2.01
Jig	K	PELS	Retain	324.93
Jig	K	SLR1	Retain	2.82
Jig	K	SRRE	Retain	1.28
Other	C	PCOD	Retain	168.83
Other	C	PLCK	Retain	1.55
Other	K	PELS	Retain	1.77
Other	W	PCOD	Discard	0.03
Pot	C	OCTO	Discard	5.45
Pot	C	OCTO	Retain	76.39
Pot	C	PCOD	Discard	71.69
Pot	C	PCOD	Retain	9,739.93
Pot	K	DEM1	Retain	0.02
Pot	K	PCOD	Retain	0.01
Pot	O	OCTO	Retain	7.04
Pot	O	PCOD	Retain	0.59
Pot	W	OCTO	Discard	0.45
Pot	W	PCOD	Discard	0.11
Pot	W	SCLP	Discard	0.29
Trawl	B	DFL1	Retain	229.56
Trawl	B	FSOL	Retain	147.73
Trawl	B	PCOD	Discard	65.91
Trawl	B	PCOD	Retain	698.58
Trawl	B	PLCK	Discard	1,231.23
Trawl	B	PLCK	Retain	21,640.05
Trawl	B	POPA	Discard	1.46
Trawl	B	SABL	Retain	46.99
Trawl	B	SFL1	Discard	143.66
Trawl	C	AMCK	Retain	2.26
Trawl	C	ARTH	Discard	1,377.31
Trawl	C	DFL1	Discard	70.97
Trawl	C	DFL1	Retain	346.75
Trawl	C	FSOL	Retain	243.91
Trawl	C	OCTO	Retain	1.77
Trawl	C	PCOD	Discard	573.76
Trawl	C	PCOD	Retain	45,228.53
Trawl	C	PELS	Retain	68.80
Trawl	C	PLCK	Retain	949.94
Trawl	C	SFL1	Discard	948.84
Trawl	C	SFL1	Retain	1,441.34

Appendix 1: NMFS Catch Discard Data

Trawl	C	SLR1	Retain	48.45
Trawl	C	SRRE	Discard	3.08
Trawl	D	ARTH	Discard	6,858.55
Trawl	D	DFL1	Discard	674.64
Trawl	D	DFL1	Retain	5,293.52
Trawl	D	FSOL	Retain	610.49
Trawl	D	PCOD	Discard	174.65
Trawl	D	PCOD	Retain	820.42
Trawl	D	PLCK	Retain	317.83
Trawl	D	SABL	Retain	471.70
Trawl	D	SFL1	Retain	402.09
Trawl	H	DFL1	Retain	318.81
Trawl	H	FSOL	Retain	425.14
Trawl	H	PCOD	Retain	745.16
Trawl	H	PELS	Retain	4.72
Trawl	H	PLCK	Retain	333.88
Trawl	H	SABL	Retain	110.62
Trawl	H	SFL1	Retain	3,436.34
Trawl	K	AMCK	Retain	146.55
Trawl	K	ARTH	Discard	3,612.66
Trawl	K	ARTH	Retain	259.15
Trawl	K	DFL1	Discard	209.87
Trawl	K	DFL1	Retain	154.71
Trawl	K	PCOD	Discard	133.73
Trawl	K	PCOD	Retain	419.29
Trawl	K	PELS	Retain	2,651.30
Trawl	K	PLCK	Retain	137.42
Trawl	K	POPA	Retain	4,298.53
Trawl	K	SABL	Retain	1,399.23
Trawl	K	SFL1	Retain	65.46
Trawl	K	SLR1	Retain	6,261.45
Trawl	K	SRRE	Retain	1,412.81
Trawl	K	THDS	Retain	728.81
Trawl	O	AMCK	Retain	13,146.15
Trawl	O	DFL1	Discard	247.54
Trawl	O	DFL1	Retain	70.51
Trawl	O	FSOL	Retain	177.86
Trawl	O	PCOD	Retain	386.46
Trawl	O	PLCK	Retain	40.19
Trawl	O	POPA	Retain	332.61
Trawl	O	SABL	Retain	23.04
Trawl	O	SFL1	Discard	11.85
Trawl	P	DFL1	Discard	3.62
Trawl	P	PCOD	Retain	170.41
Trawl	P	PLCK	Discard	3,756.52

Appendix 1: NMFS Catch Discard Data

Trawl	P	PLCK	Retain	51,025.98
Trawl	P	POPA	Discard	1.94
Trawl	W	FSOL	Discard	3.98
Trawl	W	PCOD	Discard	1.23
Trawl	W	PLCK	Discard	-5.02
Trawl	W	SABL	Discard	2.01
Trawl	W	SFL1	Discard	0.10
Trawl	W	SLR1	Discard	1.00

Appendix 2: 1992 Bering Sea Prohibits

GEAR	Target	Groundfish	Hallbut	BAIRDI	RED_KING	CHIN_SAL	OTHR_SAL	HERRING	OTANN	CKING
		Tons	killograms							
HAL	C	103858.79	6787397.49	17087.39	2758.97	51.58	77.58	0.00	93604.07	852.39
HAL	K	0.92	25.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HAL	P	2.31	64.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HAL	S	2830.78	156887.48	4.44	30.08	0.00	0.00	0.13	672.26	385.74
HAL	T	97.10	13385.42	0.00	0.00	0.00	0.00	0.00	2.63	0.00
HAL	Y	13.45	503.70	0.00	0.00	0.00	0.00	0.00	0.05	20.70
JIG	C	0.71	21.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTH	A	8.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTH	C	130.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTH	K	1126.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTH	S	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POT	C	13692.62	101468.03	212795.00	180.33	0.00	0.00	37.65	51938.76	8742.02
POT	O	14.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POT	P	88.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POT	S	1.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POT	Y	3.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRW	A	49124.80	104912.02	41.38	107.68	31.45	1.32	0.00	0.00	11145.03
TRW	B	162945.98	773886.51	586220.67	33861.81	6081.80	281.29	11988.49	1603258.50	9098.17
TRW	C	68188.09	1606234.24	163647.60	115.48	4280.55	25.70	5213.58	77047.88	359.38
TRW	K	16549.07	211433.00	2098.77	1038.31	944.79	4.67	28.02	749.69	2428.18
TRW	P	1028758.81	990885.74	884470.88	5211.88	21821.33	38981.11	654768.24	2500127.72	7780.19
TRW	R	52387.07	741840.23	588278.73	54363.30	35.33	0.00	7507.68	1381320.58	18171.62
TRW	S	30.85	842.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRW	W	27.95	845.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRW	Y	180440.50	705707.25	1586047.44	50665.00	144.73	860.91	364330.88	10532437.79	45220.55

Source: NMFS Juneau

APPENDIX 3: 1992 Gull of Alaska Prohibs

GEAR	T	Groundfish Tons	Hallbut kilograms	BAIRDI	RED_KING	CHIN_SAL	OTHR_SAL	HERRING	OTANN	OKNG
HAL	B	8.51	842.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HAL	C	15174.21	2390245.38	284.59	0.00	0.00	0.00	0.00	217.93	0.00
HAL	H	4.04	398.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HAL	K	814.95	80485.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HAL	O	1.02	100.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HAL	S	21983.17	2971519.89	200.58	0.00	17.53	157.25	0.00	8146.21	380.82
HAL	W	45.24	3471.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00
JIG	C	157.18	15521.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00
JIG	D	1.32	130.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
JIG	K	339.73	33548.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTH	C	177.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTH	K	1.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTH	W	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POT	C	9926.12	89525.79	21823.08	8.84	0.00	0.00	0.00	5.85	0.00
POT	K	1.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POT	O	7.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POT	W	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRW	B	24700.07	82381.02	2469.77	0.00	2125.10	1109.23	18269.08	660.40	166.89
TRW	C	54827.87	813501.10	34881.10	12.78	5304.18	30.36	0.00	1973.03	0.37
TRW	D	18302.40	908595.44	33118.63	25.51	2408.23	427.21	6.64	462.30	0.00
TRW	H	7058.35	225208.44	16035.48	22.08	200.74	54.83	78.31	23.79	52.22
TRW	K	25419.80	779698.75	5595.57	0.00	2119.54	2818.50	955.28	2050.56	781.49
TRW	O	17502.46	187966.69	963.58	0.00	77.08	0.00	0.00	128.29	0.00
TRW	P	55713.07	8553.37	1598.41	0.00	3908.28	5708.97	17100.00	0.00	0.00
TRW	W	157.14	3700.08	0.00	0.00	0.00	2.35	0.00	0.00	2.22

Source: NMFS Juneau

1992 Observer data showing kg of halibut sampled, number of halibut, and average weight by area, gear, and target fishery.

5 = Bering Sea and Aleutian Islands

6 = Gulf of Alaska

gear target	kilo	number	average size (kilo/number)
5 HAL C	4257457.4	792859.8	5.37
5 HAL O	1190.89	214.1	5.56
5 HAL P	2007.85	646.8	3.10
5 HAL S	52842.33	3689.0	14.32
5 HAL T	11129.80	1146.5	9.71
5 POT C	81337.80	83101.8	0.98
5 POT O	365.40	506.2	0.72
5 POT S	257.78	64.7	3.98
5 TRW A	57124.53	21067.9	2.71
5 TRW B	635791.94	1224688	0.52
5 TRW C	1070277.7	909465.9	1.18
5 TRW F	274002.62	1837932	0.15
5 TRW K	146633.59	40906.6	3.58
5 TRW O	6273.38	8682.9	0.72
5 TRW P	1610194.7	2261602	0.71
5 TRW R	531846.96	943570.6	0.63
5 TRW W	2107.33	9707.9	0.22
5 TRW Y	1702845.5	6967938	0.24
6 HAL C	523787.86	97469.6	5.37
6 HAL K	2247.70	156.6	14.35
6 HAL O	44.32	19.0	2.33
6 HAL S	269712.05	24617.4	10.96
6 HAL W	9025.36	1165.9	7.74
6 POT C	15761.12	5381.9	2.93
6 POT S	16090.25	1545.4	10.41
6 TRW B	12831.10	6072.6	2.11
6 TRW C	207929.77	104431.1	1.99
6 TRW D	304990.27	115647.9	2.64
6 TRW H	84077.36	34543.9	2.43
6 TRW K	442874.56	73433.1	6.03
6 TRW O	110535.18	23972.9	4.61
6 TRW P	30614.29	5364.5	5.71
6 TRW S	2570.43	388.5	6.62
6 TRW W	7891.98	2428.6	3.25