

## Economic Status of the Washington, Oregon and California

## Groundfish Fishery

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I. Introduction

The economic condition of the Washington, Oregon and California (WOC) Groundfish Fishery is reviewed by presenting general statistics on changes in production, ex-vessel values, prices, fleet sizes, and markets. The primary thrust of this document will be to show how the economic status of the industry has changed following implementation of the Groundfish Fishery Management Plan. Regulations implementing the Plan were approved in September 1982. To place the 1982-1983 fishing seasons into some kind of dynamic perspective, where possible, the annual variations in important economic parameters for the harvesting, processing and marketing sectors also will be presented for the post-Magnuson Fishery Conservation and Management Act era of 1977-1983. This report essentially updates a similar document prepared for the Pacific Fishery Management Council (PFMC) by the Groundfish Team, which covered the economic status of the fishery in 1981.

II. Harvesting Sector

## A. Shoreside Landings

Total groundfish landings in WOC more than doubled from 1977-1982, reaching an historical high of 119,000 mt in 1982 (Table 1). Following this period of rapid growth, coastwide landings fell back to under 98,000 mt in 1983. The physical output in 1983 still exceeded the 1978-1982 five-year average of 94,200 mt. Similarly within the individual states, groundfish landings reached their peaks in 1982 but then declined in each state in 1983. California and Washington 1983 landings were below the 1978-1982

averages for the respective states, while Oregon was 15 percent above. California showed the largest percentage drop in shoreside landings of 25 percent between 1982 and 1983.

At the same time production was increasing, the ex-vessel value of these landings almost tripled from 1977-1982. An all-time high of over \$60 million in vessel revenues was generated from shoreside landings in 1982; however, vessel revenues fell 13 percent to 52.2 million in 1983 (Table 1). Yet the 1983 total shoreside value was well above the three-state five-year average of \$45.3 million. If ex-vessel values are adjusted for the annual rate of inflation, the results of the 1983 fishing year represent a 17 percent decline in shoreside earnings. All three states had lower adjusted ex-vessel values in 1983; however, California's total fell 24 percent, compared to 13 percent for Oregon and 6 percent for Washington.

The rapid expansion in landings and landed value from 1977-1982 was caused by several factors. Many new trawl vessels were built in the period from 1977-1980, the widow rockfish fishery developed, beginning in 1980, and the depressed shrimp and Dungeness crab catch induced vessels in those fisheries to shift into groundfish. By 1983, however, the fleet had stopped growing, the widow rockfish landings were dropping due to trip limits and season closures, and ex-vessel prices were not keeping up with inflation. As a result of recent high exploitation rates, some groundfish stocks were declared to be biologically stressed. To safeguard the biological health of these species, the PFMC adopted several restrictive harvest regulations to control the quantity and rates of removal of economically important species such as widow rockfish, sablefish and rockfish (Sebastes species).

## B. Joint-Venture Landings

At the same time that production of traditional groundfish species appears to have peaked, catches of Pacific whiting in joint-ventures are continuing to expand. Landings in the joint-venture fishery off of WOC have risen from just over 9,000 mt delivered to foreign processing vessels in 1979 to over 72,000 mt taken in 1983 (Table 2). This represents a seven-fold increase in volume in just five years.

The ex-vessel value of joint-venture deliveries exceeded \$10 million in 1982 and 1983. The value per ton in 1983 was down from that of 1982 because a larger percentage of fish was converted to reduction products.

## C. Species/Species Groups

Table 3 provides landings and ex-vessel values of individual species/species groups for 1982 and 1983. Although total shoreside production declined in 1983, the catches of some individual species increased over 1982. However, landings and ex-vessel values were lower for most species, resulting in poorer economic returns to the harvesting sector in 1983. The changes in the production of some of the more economically important species are highlighted.<sup>1</sup>

### Sablefish

Sablefish landings decreased 22 percent, from a record high of 18,500 mt in 1982 to 14,500 mt in 1983 (Table 3). The ex-vessel value of the sablefish landed catch was \$8.0 million in 1983 compared to \$10.6 million in 1982. Sablefish continues to be one of the most valuable commercial species, exceeded by only dover sole and the rockfish group in 1983. Only the 17,500 mt of sablefish landed in 1979 approached the 1982 total. Improved markets

<sup>1</sup> Landings and inflation adjusted values for the years prior to 1982 can be found in Tables 8-14.

for large sablefish in Japan and an increase in demand for domestic "butterfish" filets were factors thought to be responsible for the high landings in 1982. Landings figures were lower in 1983 because of the combination of deteriorating overseas demand and regulations that restricted the catch of sablefish under 22 inches in total length.

#### Pacific Ocean Perch

Pacific ocean perch landings were 1,650 mt in 1983, compared to 885 mt in 1982. The ex-vessel value of this catch was \$794,000. In order to restrict directed fishing on Pacific ocean perch, the PFMC reduced the Pacific ocean perch trip limit to allow landing of 5,000 pounds or 20 percent of the total trip weight, whichever is less.

#### Widow Rockfish

The 1983 widow rockfish trawl catch fell 61 percent to 9,900 mt. The ex-vessel value of these landings was \$4.2 million, down 52 percent from the \$8.8 million in 1982. Widow rockfish became the leading groundfish species landed shoreside in 1981, but has declined since then.

#### Other Rockfish

Landings of other rockfish (excluding Pacific ocean perch and widow rockfish) increased 2 percent to 35,900 mt in 1983. The ex-vessel value of these rockfish landings was \$18.4 million, about 6 percent above the \$17.4 million of rockfish landed shoreside in 1982. The catch of other rockfish has increased steadily since 1977, when an estimated 19,800 mt were landed coastwide. Over the last seven years, production has increased 81 percent. In terms of economic value, rockfish are very important to the commercial fleet and accounted for approximately 35 percent of the value of all species landed shoreside in 1983.

### Flatfish

The landed catch of all flatfish species decreased almost 10 percent, from 32,600 mt in 1982 to 29,400 mt in 1983. Production declined for all species of flatfish in the group; however, flatfish landings in 1983 were still above those recorded before 1982. Landed catches of flatfish were an estimated 22,730 mt in 1980 and 25,900 mt in 1981. Thus, despite lower totals in 1983, flatfish landings have risen since 1977. The 1983 total compares to the 1978-1982 average of 27,400 mt for the flatfish group. For individual species, dover sole landings in 1981 were an all-time high and in 1983 exceeded the 1978-1982 average of 16,900 mt by 17 percent. Meanwhile production of English and petrale sole has remained relatively steady over the last seven years.

The ex-vessel value of flatfish landings was \$17.6 million in 1983 compared to \$19.8 million in 1982. The ex-vessel value of individual species were all down in 1983. Compared to the 1978-1982 average ex-vessel value, dover sole and petrale sole values were higher by 20 percent and 19 percent respectively in 1983, while the 1983 English sole landings were 17 percent under the five-year average of about \$2.0 million.

### Other Groundfish

Lingcod landings were up by 8 percent and the ex-vessel value of these landings improved 6 percent. This was 17 percent higher than the 1978-1982 average of 3,550 mt landed.

## D. Fishing Fleets

### Otter Trawls

Data on the shoreside landings by the otter trawl fleet are shown in Table 4. After reaching an historical record of 103,000 mt in 1982, trawl

landings fell to 81,800 mt in 1983, a decrease of 21 percent. The 1983 total landed catch by trawl gear was about equal to the 1978-1982 average of 81,000 mt.

The otter trawl fleet received approximately \$40.8 million in ex-vessel revenues from groundfish landings in 1983. This was 13.6 percent lower than in 1982 but 13.5 percent above the 1978-1982 average. The 1983 ex-vessel value of trawl landings, after adjusting for inflation, was 17 percent below the value for 1982.

While trawl landings and value reached unprecedented highs in 1981-1982, the size of the otter trawl fleet also expanded rapidly following enactment of the Magnuson Fishery Conservation and Management Act of 1976. The active otter trawl fleet grew 65 percent from 286 to 472 vessels during 1977-1979. The growth trend was reversed in 1980, as the active fleet decreased in size to 408 vessels by 1981. The fleet increased again after 1981, with 436 active vessels in 1983. The primary factor responsible for the resumption in growth during 1982 was the large number of vessels that switched into groundfish because of the depressed catches in the shrimp and Dungeness crab fisheries. Some of the large mid-water trawl vessels that had entered the fleet in 1980-1981 left the groundfish fishery in 1983 because of declining widow rockfish catches and the imposition of regulations that essentially curtailed the high-volume fishing for rockfish stocks.

The economic status of the groundfish trawl fleet can be approximated by examining average gross revenues per trawl vessel. In 1983, trawl vessels earned an average of \$93,500 from groundfish landings compared to \$106,400 in 1982 (Table 6). Gross earnings, after inflation is taken into account, were slightly higher in 1983 than in 1980. However, average vessel costs had risen substantially during the same period, due primarily to the high construction

and financing costs of the vessels constructed in 1979 and 1980. Generally depressed economic conditions in the groundfish trawl fleet are indicated by the number of outstanding NMFS Fishing Vessel Obligation Guarantee (FVOV) program loans that were delinquent in 1983. The NMFS Southwest Regional Office reported that 7 of 23 loans for otter trawl vessels had defaulted, while the Northwest Regional Office had 4 of 15 loans classified as default cases (Korson, 1984). Industry estimates are that 20-30 percent of the trawl fleet had loans in arrears or faced repossession in 1983.

This gross measure of economic performance is limited in usefulness, however, because costs and income from other sources are not known. Trawl vessels land non-groundfish species, participate in joint-ventures, and generate earnings in ancillary business activities such as charter services to augment income from groundfish. But, in general, the data suggest that the groundfish trawl fleet experienced reduced economic returns from groundfish fishing in 1983.

#### Pot/Trap Vessels

Groundfish caught and landed by pot/trap vessels decreased from an estimated 6,500 mt in 1982 to 5,440 mt in 1983 (Table 4). Similarly the ex-vessel revenue of this catch fell 25 percent, from 4.9 million in 1982 to \$3.6 million in 1983. When inflation is taken into account, the pot-trap fleets' gross revenues fell 28 percent in 1983.

The drop in pot/trap landings is attributable to the reduced volume and lower prices paid for sablefish. Industry sources have indicated that the Japanese discontinued purchasing all size classes of sablefish in 1983. This may explain why ex-vessel prices fell from a coastwide average of \$0.34 per pound in 1982 to \$0.30 per pound in 1983.

The coastal pot fleet fell from 82 vessels participating in 1982 to 61 vessels making landings in 1982, a decrease of 26 percent. Thus, despite a slight increase in the fleet occurring in 1982, the general trend has been for a steady decline in the number of vessel operations using pot and trap gear since 1979. The fleet in 1983 earned an average of approximately \$60,000 in gross revenues per vessel from groundfish landings, about the same as in 1982 (Table 6). But average gross revenues per vessel fell by 4 percent when values are adjusted for inflation. Despite somewhat lower real values and weak demand for sablefish, earnings for the average vessel in the pot fleet in 1983 were higher than the average performance of the fleet in 1980 and 1981.

#### Other Gear Vessels

The 1983 WOC catch by other gears, including longline, set-nets, troll, jigs, poles, and shrimp trawl totalled 10,500 mt. This was 14 percent above 1982 other gear landings of 9,175 mt. The ex-vessel value of the landed catch was 7.81 million in 1983 compared to 8.2 million in 1982. Within the other gear group, the longline gear catch fell by 48 percent in 1983 and the ex-vessel value of \$1.3 million was 52 percent lower than the landed value in 1982 (Table 4). Fluctuations in the market demand for sablefish probably led to the substantial drop in longline production of groundfish in 1983. Longline groundfish landings have been declining steadily since 1980. The longline fleet recorded an average of \$7,200 gross earnings per vessel from groundfish, compared to an estimated \$13,200 in 1982 (Table 6).

In contrast to the longline fleet, the groundfish catch by all other gears has been rising substantially since 1980. Landings have increased 362 percent from 1980 to 1983. The production in 1983 accounted for \$6.5 million in ex-vessel revenues for the fleet. One of the factors responsible for this



upward trend is the growth of the gillnet fleet. The set-net fishery continued to expand in California, as gillnet fishing has spread northward to the Farallon Islands.

#### E. Ex-Vessel Prices

The average annual ex-vessel prices paid for some commercially important groundfish species from 1977-1983 are shown in Table 7. Some general trends can be noted. Sablefish prices peaked at \$0.36 per pound in 1979, when demand in Japan was particularly strong, but dropped sharply in 1980 following the collapse of export markets. Sablefish prices have remained relatively constant since 1980 after discounting for inflation.

After falling to a seven year low in 1980, average prices for rockfish returned to \$0.22 per pound by 1983. The sharp drop in prices during 1980 was due to the widow rockfish that was landed in large quantities during the height of the mid-water trawl fishery. Regulations that were adopted by the PFMC to protect widows and other Sebastes species have essentially limited rockfish supplies. Rockfish prices have risen slightly faster than the rate of inflation since 1981.

Ex-vessel prices for flatfish species follow somewhat different patterns. The nominal price of dover sole has increased slowly over the last seven years, while the real price has remained about even with inflation over the period. Nominal and real prices for english sole have been moving generally upward following the 9 percent drop in the average nominal price occurring in 1981. There has been a somewhat more significant and steady rise in nominal and real ex-vessel prices paid for petrale sole since 1977.

### III. Processing Sector and Markets

WOC groundfish processors purchased, processed, and sold less groundfish than in 1982, which was a record year for processed volume. Thus, although data on the quantity, value and species composition of groundfish processed in WOC plants in 1983 are unavailable, some plants may have encountered a drop in groundfish sales and consequent economic difficulties during the year. The number of plants which processed groundfish in 1983 are unknown, but in 1981 approximately 50 coastal plants located mostly from central California to Washington produced groundfish products (PFMC, October 1982).

In recent years WOC groundfish processors were successful at developing new markets east of the Rockies and increasing established markets on the West Coast (PFMC, October 1982). The impetus behind this marketing success was processors ability to provide constant supplies of high-quality, fresh fillets throughout the year. However, now that the year-round, high-volume widow rockfish fishery has ended and rockfish supplies have been reduced because of landing restrictions placed on the Sebastes complex, WOC groundfish processors were unable to supply markets with adequate quantities of rockfish in 1983. Compounding the problem was the unusually bad winter weather that curtailed groundfish supplies during the first half of 1983. Processors unable to sell sufficient quantities of fresh fish during the important Lenten season lost eastern markets developed over the past two years (Korson, June 1984).

Distributors and retailers imported more groundfish from Canada, New Zealand, and the U.S. east coast to fill markets previously supplied by WOC processors. Pacific Fishing (1984) reported that rockfish from British Columbia entered markets previously occupied by widow rockfish in the first quarter of 1983. Another source of competition in traditional flatfish markets was gray sole from the east coast and yellow sole from Newfoundland.

Frozen orange roughy fillets from New Zealand gained a larger share of the West Coast fresh fish market. Imports of orange roughy fillets into California exceeded 2.3 million pounds in 1982 and by 1983 had increased to almost 4 million pounds (Korson, June 1984). Some of this growth of imports was undoubtedly caused by the continuing appreciation of the U.S. dollar relative to foreign currency.

Not only were the markets for fresh rockfish and flatfish generally unfavorable in 1983, but WOC processors also had limited success in marketing sablefish products to Japan. Exports of sablefish to Japan decreased from 2.97 million pounds in 1982 to about 1.2 million pounds in 1983 (U.S. Dept. of Commerce, Bureau of Census, 1983). These exports of chilled, fresh, or frozen sablefish were valued at \$968,000, compared to \$3.3 million worth of sablefish exported from the U.S. to Japan in 1982 (Korson, 1984).

Table 1 - California, Oregon, and Washington Commercial Groundfish Landings From U.S. FCZ Waters (Metric Tons) and Ex-vessel Values (Thousands of Dollars) from 1977-1983.

Year	California		Oregon		Washington		Total Coast	
	mt	\$	mt	\$	mt	\$	mt	\$
1977	32,082	12,184.5	10,172	4,150.3	12,712	4,361.7	54,966	20,697
1978	36,805	18,456.7	16,469	7,871.4	19,285	8,213.0	72,559	34,541
1979	36,392	19,565.9	28,935	17,264.0	22,508	11,111.7	87,835	47,942
1980	36,862	16,551.4	28,515	11,424.6	22,514	9,119.3	87,891	37,095
1981	42,698	21,460.4	37,487	14,711.1	23,683	10,652.5	103,868	46,824
1982	52,608	27,794.9	41,021	20,443.7	25,474	12,100.4	119,002	60,339
1978-82 Average	41,073	20,765.9	30,485	14,343.0	25,215	10,239.4	94,231	45,348
1983	39,498	21,984	35,200	18,420.2	22,970	11,795.9	97,668	52,200

Source: 1977-1980 preliminary data from State Fishery Agencies;  
1981-1983 preliminary data from PacFIN reports.

Table 2 - Landings and Participation in Pacific Whiting Joint-Venture Fisheries Off of Washington, Oregon and California, 1979-1983.

<u>Year</u>	<u>Landings (mt)</u>	<u>Estimated Dollar Value</u>	<u>Number of Trawl Vessels</u>
1979	9,054	1,162,000	11
1980	26,793	3,275,000	15
1981	43,758	6,345,000	21
1982	68,420	10,367,000	17
1983	72,140	10,217,000	19

Source: PacFIN reports; NMFS Northwest Regional Office.

Table 3 - Landings and Value of Species of Groundfish landed in WOC in 1982 and 1983.<sup>1</sup>

Species	1982		1983		% Change	
	mt.	\$	mt.	\$	mt.	\$
Lingcod	3,831	2,216,500	4,146	2,360,900	+8.2	+6.5
Pacific Cod	909	445,900	597	311,500	-34.3	-30.1
Pacific Whiting	1,024	189,100	1,051	194,600	+2.6	+2.9
Sablefish	18,552	10,635,300	14,528	8,001,600	-21.7	-24.8
Pacific Ocean Perch	885	380,200	1,659	794,400	+87.4	+108.9
Widow Rockfish	25,369	8,834,500	9,904	4,213,700	-60.9	-52.1
Other Rockfish	35,212	17,357,900	35,920	18,381,200	+2.0	+5.9
Dover Sole	20,917	10,743,700	19,819	9,776,800	-5.2	-9.0
English Sole	2,788	1,958,000	2,336	1,656,400	-16.2	-15.4
Petrale Sole	2,630	3,513,100	2,193	3,300,100	-16.6	-6.1
Other Flatfish	6,272	3,616,600	5,052	2,861,800	-19.5	-20.9
TOTAL	118,389	59,890,800	97,205	51,853,000		

Source: PacFIN Reports, July 1984, preliminary data.

<sup>1</sup> Includes landings from U.S. coastal waters off WOC, but not Puget Sound; A small amount of landings of miscellaneous groundfish species are not included.

Table 4 - WOC Commercial Groundfish Shoreside Landings and Ex-vessel Values (Thousands of Dollars) by Major Gear Group from 1977-1983.

Year	Otter <sup>1</sup> Trawl		Pot/Trap		Longline		Other <sup>2</sup> Gears	
	mt	\$	mt	\$	mt	\$	mt	\$
1977	49,700	18,000	2,940	N/A	1,950	N/A	N/A	N/A
1978	60,700	27,400	5,612	N/A	3,264	N/A	N/A	N/A
1979	70,200	34,800	N/A	N/A	N/A	N/A	N/A	N/A
1980	79,500	32,200	2,960	1,520	4,344	N/A	1,990	N/A
1981	91,300	38,200	3,955	2,040	2,600	2,150	6,150	5,657
1982	103,300	47,200	6,530	4,882	2,500	2,750	6,670	5,438
1978-1982 average	81,000	35,960	-	-	-	-	-	-
1983	81,700	40,800	5,440	3,635	1,300	1,322	9,203	6,491

Source: PacFIN Reports, preliminary data.

<sup>1</sup> Excludes a small amount of groundfish landed in shrimp trawls.

<sup>2</sup> Includes shrimp trawl, gill/set-nets, trolls, jigs, dredges, hook-and-line, and commercial poles.

Table 5 - Size of Washington, Oregon, and California Commercial Groundfish Fleets from 1977-1983.

<u>Year</u>	<u>Otter<sup>1</sup> Trawl</u>	<u>Pot/Trap</u>	<u>Longline</u>
1977	286	60	N/A
1978	351	119	N/A
1979	472	207	299
1980	458	116	205
1981	408	66	191
1982	444	82	208
1983	436	61	184

Source: State Fishery Agencies.

<sup>1</sup> Beginning in 1981, double counting has been eliminated and therefore numbers represent the true size of the otter trawl fleet.





Table 7 - Average Annual Ex-vessel Prices Paid for Some Commercially Important Groundfish Species from 1977-1983.

	Sablefish		All Rockfish Combined		Widow Rockfish		Dover Sole		English Sole		Petrale Sole	
	Nominal	Real	Nominal	Real	Nominal	Real	Nominal	Real	Nominal	Real	Nominal	Real
1977	.154	.109	.163	.155			.161	.114	.237	.167	.315	.222
1978	.283	.186	.181	.119			.207	.136	.245	.161	.371	.244
1979	.356	.215	.199	.121			.215	.130	.286	.173	.447	.270
1980	.199	.112	.159	.090			.211	.119	.328	.185	.458	.258
1981	.215	.111	.170	.088	.139	.071	.222	.115	.297	.153	.512	.264
1982	.260	.126	.196	.095	.158	.076	.233	.113	.318	.154	.606	.293
1983	.250	.116	.224	.104	.194	.09	.224	.116	.322	.149	.683	.317

Source: PacFIN reports, preliminary data.

NOTE: All real prices were adjusted for inflation using the GNP implicit price deflator, where 1972=1.00. All prices are weighted averages.

Table 8 - WOC Commercial Groundfish Landings and Ex-vessel Values (thousands of dollars, adjusted for inflation in 1983).

Species	Washington		Oregon		California	
	mt.	Nominal \$	mt.	Nominal \$	mt.	Nominal \$
Lingcod	1,524	908.1	1,737	952.7	885	500.1
Pacific Cod	508	262.7	89	48.8	-	-
Pacific Whiting	6	1.9	65	30.0	980	162.6
Sablefish	3,362	2,255.8	4,656	2,311.6	6,509	3,424.2
Pacific Ocean Perch	448	214.39	1,158	555.7	52	24.4
Widow Rockfish	3,298	1,441.6	3,151	1,299.2	3,445	1,491
Other Rockfish	8,207	3,704.4	11,795	5,299.5	15,862	9,377.4
Dover Sole	2,935	1,469.3	8,481	4,230.0	8,402	4,077.4
English Sole	260	170.8	914	650.9	1,162	834.7
Petrale Sole	525	774.3	1,105	1,697.6	563	828.1
Other Flatfish	1,810	538.9	1,962	1,300.4	1,281	1,022.5
TOTALS <sup>2</sup>		5,446.0		8,523.3		10,088.9

<sup>1</sup> Value deflated to 1972 dollars using GNP implicit price deflator - 1983=2.156.

Table 9 - Washington, Oregon and California Commercial Groundfish Landings and Ex-vessel Values After Adjusting for Inflation in 1982.

<u>Species</u>	<u>Washington</u>		<u>mt.</u>	<u>Oregon</u>		<u>California</u>	
	<u>mt.</u>	<u>\$</u>		<u>\$</u>	<u>mt.</u>	<u>\$</u>	
Lingcod	999	317,900	1,458	356,300	1,374	353,850	
Pacific Cod	791	177,850	118	28,940	TR	45	
Pacific Whiting	1	70	2	93	1,021	87,560	
Sablefish	3,932	1,276,200	5,090	1,363,100	9,530	2,493,600	
Pacific Ocean Perch	313	62,690	547	108,740	25	4,930	
Widow Rockfish	6,034	1,065,150	9,059	1,507,530	10,276	1,524,960	
Other Rockfish	7,494	3,009,310	11,595	4,786,670	16,123	5,964,920	
Dover Sole	2,722	622,390	8,143	1,944,275	10,052	2,416,475	
English Sole	337	98,500	992	325,100	1,459	484,550	
Petrable Sole	331	197,680	1,508	956,515	791	475,280	
Other Flatfish	2,199	382,270	2,471	712,345	1,602	582,840	
TOTALS	25,153	7,209,920	40,983	12,089,600	42,723	14,389,010	

GNP implicit price deflator 1982=2.072.

Table 10 - Washington, Oregon and California Commercial Groundfish Landings and Ex-vessel Values, Adjusted for Inflation, in 1981.

<u>Species</u>	<u>Washington</u>		<u>mt.</u>	<u>Oregon</u>		<u>mt.</u>	<u>California</u>	
	<u>mt.</u>	<u>\$</u>		<u>\$</u>	<u>\$</u>		<u>\$</u>	
Lingcod	987	61,100	1,047	5,215	1,286	355,900		
Pacific Cod	1,211	256,950	53	12,950	-	-		
Pacific Whiting	10	860	163	13,500	665	61,140		
Sablefish	2,395	827,500	2,343	617,460	6,668	1,423,800		
Pacific Ocean Perch	408	74,757	925	172,140	10	2,600		
Other Rockfish	14,808	2,604,600	23,756	3,806,970	19,934	4,965,800		
Dover Sole	1,915	450,600	5,295	1,330,400	9,232	2,385,840		
English Sole	275	82,200	726	239,150	1,709	594,100		
Petrable Sole	359	198,200	884	530,250	804	463,750		
Other Flatfish	852	173,200	2,099	592,700	1,796	90,750		
TOTALS <sup>1</sup>	22,220	4,929,970	37,291	7,480,735	42,104	10,943,680		

<sup>1</sup> Does not include a small amount of landings of miscellaneous species for food consumption, industrial use, and animal food.

Source: Data taken from PacFIN reports.

GNP implicit price deflator - 1981=1.937; values deflated to 1972 dollars.

Table 11 - Washington, Oregon and California Commercial Groundfish Landings and Ex-vessel Values, Adjusted for Inflation, in 1980.

<u>Species</u>	<u>Washington</u>		<u>mt.</u>	<u>Oregon</u>		<u>California</u>	
	<u>mt.</u>	<u>\$</u>		<u>\$</u>	<u>mt.</u>	<u>\$</u>	
Lingcod	1,395	352,885	754	212,440	1,388	413,585	
Pacific Cod	1,156	306,252	162	40,210	-	-	
Pacific Whiting	123	7,345	275	23,735	692	85,915	
Sablefish	1,393	395,331	2,661	595,850	4,207	1,048,540	
Pacific Ocean Perch	1,079	255,985	1,640	361,200	11	2,700	
Other Rockfish	13,406	2,597,410	15,954	2,970,525	18,864	3,958,725	
Dover Sole	1,962	496,184	4,119	1,030,470	7,762	2,096,130	
English Sole	478	159,525	719	244,155	2,043	760,810	
Petrable Sole	594	331,875	858	492,220	1,027	586,655	
Other Flatfish	928	231,935	1,373	461,965	868	366,420	
TOTALS <sup>1</sup>	22,514	5,134,727	28,515	6,432,770	36,862	9,319,480	

<sup>1</sup> Does not include a small amount of landings of miscellaneous species for food consumption, industrial use, and animal food.

Sources: State Fishery Agencies.

GNP implicit price deflator - 1980=1.776; values deflated to 1972 dollars.

Table 12 - Washington, Oregon and California Commercial Groundfish Landings and Ex-vessel Values, Adjusted for Inflation, in 1979.

<u>Species</u>	<u>Washington</u>		<u>Oregon</u>		<u>California</u>	
	<u>mt.</u>	<u>\$</u>	<u>mt.</u>	<u>\$</u>	<u>mt.</u>	<u>\$</u>
Lingcod	1,530	428,402	819	259,200	1,620	518,010
Pacific Cod	1,128	310,630	423	112,875	-	-
Pacific Whiting	5	1,075	138	11,635	790	105,255
Sablefish	2,730	1,128,315	7,722	4,019,380	7,130	2,944,840
Pacific Ocean Perch	1,161	323,345	1,902	506,930	70	18,655
Other Rockfish	10,773	2,832,500	8,707	2,339,635	12,125	3,230,090
Dover Sole	2,348	636,970	5,092	1,459,850	10,615	3,076,025
English Sole	662	227,456	1,084	400,830	1,925	769,420
Petrale Sole	702	397,100	1,057	627,210	1,257	770,380
Other Flatfish	1,469	427,700	1,991	693,885	860	389,570
TOTALS <sup>1</sup>	22,508	6,713,493	28,935	10,431,430	36,392	11,822,245

<sup>1</sup> Does not include a small amount of landings of miscellaneous species for food consumption, industrial use, and animal food.

Sources: State Fishery Agencies.

GNP implicit price deflator - 1979=1.655; values deflated to 1972 dollars.

Table 13 - Washington, Oregon and California Commercial Groundfish Landings and Ex-vessel Values, Adjusted for Inflation, in 1978.

Species	Washington		mt.	Oregon		mt.	California	
	mt.	\$		\$	\$			
Lingcod	850	211,381	536	160,445	1,719	485,950		
Pacific Cod	2,422	651,400	423	122,645	-	-		
Pacific Whiting	-	-	389	36,830	305	26,530		
Sablefish	1,761	699,750	1,731	758,000	7,155	2,904,340		
Pacific Ocean Perch	1,843	468,040	877	229,965	60	16,090		
Other Rockfish	8,736	2,192,564	5,243	1,416,370	11,608	3,113,210		
Dover Sole	1,355	350,486	3,423	1,002,350	10,570	3,256,215		
English Sole	673	198,370	1,036	353,705	1,825	701,115		
Petrale Sole	874	439,300	1,019	561,245	1,275	702,380		
Other Flatfish	771	188,450	1,792	533,560	2,288	928,740		
TOTALS <sup>1</sup>	19,285	5,399,740	16,469	5,175,115	36,805	12,134,570		

<sup>1</sup> Does not include a small amount of landings of miscellaneous species for food consumption, industrial use, and animal food.

Sources: State Fishery Agencies.

GNP implicit price deflator - 1978=1.521; values deflated to 1972 dollars.



Table 14 - Washington, Oregon and California Commercial Groundfish Landings and Ex-vessel Values, Adjusted for Inflation, in 1977.

<u>Species</u>	<u>Washington</u>		<u>mt.</u>	<u>Oregon</u>		<u>mt.</u>	<u>California</u>	
	<u>mt.</u>	<u>\$</u>		<u>\$</u>	<u>\$</u>			
Lingcod	990	242,792	452	123,990	769	213,635		
Pacific Cod	1,648	397,370	384	101,605	-	-		
Pacific Whiting	-	-	442	41,270	39	3,480		
Sablefish	1,072	370,652	418	138,250	6,040	1,300,775		
Pacific Ocean Perch	965	214,608	656	155,110	41	13,200		
Other Rockfish	5,962	1,267,000	2,930	660,810	10,948	3,112,190		
Dover Sole	843	196,730	1,849	514,795	9,945	2,454,415		
English Sole	342	95,255	985	396,855	1,544	566,280		
Petrale Sole	423	188,413	825	413,335	998	499,240		
Other Flatfish	467	105,321	1,231	382,930	1,758	435,590		
TOTALS <sup>1</sup>	12,712	3,078,140	10,172	2,928,950	32,082	8,598,805		

<sup>1</sup> Does not include a small amount of landings of miscellaneous species for human consumption, industrial use, and animal food.

Sources: Data from California Fish and Game Bulletin 177 (In Press); Oregon Department of Fish and Wildlife, Washington Department of Fisheries.

GNP implicit price deflator - 1977=1.417; values deflated to 1972 dollars.

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