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By

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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Southwest Region

NOAA Technical Memorandum NMFS

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I. INTRODUCTION

This is the first of an annual series of reports on the economic status of the Washington, Oregon, and California (West Coast) groundfish industry. A similar report covering the economic status of the California groundfish fishery in 1983 has been published as a Technical Memorandum and is available through the National Marine Fisheries Service, Southwest Regional Office.

This report reviews the economic performance of the West Coast groundfish industry in 1984. Indicators of economic performance such as total catch, total exvessel revenue, revenue per vessel, and number of operating vessels, are provided for major components of the groundfish fleet. Performance in the processing sector cannot be measured at this time due to a lack of comprehensive data for 1984. However, price ranges for processed products experienced in 1984 are given. Factors affecting groundfish markets, including changes in imports and exports are examined.

II. OVERVIEW OF THE FISHERY IN 1984

The total landings and exvessel value of landings of groundfish from U.S. waters off Washington, Oregon, and California remained almost the same in 1984 as they were in 1983. Total landings in 1984 were 168,635 mt (including joint venture deliveries) compared to 169,808 mt in 1983 (Table 1). The

exvessel value of these landings declined 2.4 percent, from $62,417,000 in 1983 to $60,931,000 in 1984. However, this relatively static outcome was the result of offsetting changes within the groundfish industry.

The joint venture Pacific whiting landings increased by 10 percent in 1984, but this increase was offset by a nearly 16 percent decline in domestic rockfish landings and a 6 percent decline in flatfish landings. The shoreside West Coast groundfish landings for all species were down 8.3 percent in 1984 (Table 2). Generally, exvessel prices for major groundfish species were slightly higher in 1984 (Table 4). The 1984 total domestic groundfish catch accounted for 31 percent of the fishing revenue earned by West Coast domestic commercial vessels (Table 5). Developments in the fisheries for principal components of the groundfish catch are given below.

Sablefish

Sablefish landings declined 3 percent, from 14,500 mt in 1983 to 14,100 mt in 1984. This follows a 22 percent drop in landings from 1982-1983. The exvessel value of sablefish landings was $7.2 million compared to $8.0 million in 1983. Sablefish still remains one of the most valuable commercial species on the West Coast.

Widow Rockfish

Since reaching a high of almost 28,000 mt in 1981, widow rockfish landings have fallen in each of the last three years. This decline has been the result of declining quotas imposed by the Pacific Fishery Management Council (PFMC) in order to bring the catch down and stabilize the biomass. Landings were limited in 1984 by a 9,300 mt quota (OY) set by the PFMC. The catch totaled 9,620 mt in 1984 compared to 9,900 mt in 1983. The resulting small decline in landings was offset by an increase in the exvessel price of these landings; the exvessel value of $4.8 million was 14 percent higher than in 1983.

Other Rockfish

Landings of rockfish (excluding Pacific Ocean Perch and widows) were 28,700 mt, down 20 percent from the 1983 total of almost 36,000 mt. The value of these landings was 10.5 percent lower in 1984. The sharp decline in other rockfish production was due primarily to the reduction in the harvest guideline established for the Sebastes complex in the Columbia/Vancouver INPFC areas. The other rockfish group represented 34 percent of the total value of groundfish landed on the West Coast in 1984, compared to 35.4 percent in 1983.

Flatfish

Landings of all flatfish totaled 27,600 mt, down 6 percent from the 29,400 mt of flatfish delivered shoreside in 1983. The reduction applies to all the major species in the group - Dover sole, petrale sole, and English sole. Dover sole landings fell only slightly, while English and petrale sole declined more significantly (Table 3). The exvessel value of Dover sole landings was essentially unchanged from 1983 and this species continues to rank second in commercial importance for the West Coast groundfish fishery. The lower production of petrale and English sole was accompanied by a decline in exvessel value by 18 and 26 percent respectively.

Pacific Whiting

The trawl fleet delivered 2,700 mt of Pacific whiting to U.S. processors in 1984, more than doubling the total for 1983 (Table 3). Renewed industry efforts to develop markets for frozen headed-and-gutted and canned whiting was responsible for the substantial increase in landings. At the same time, the joint venture fisheries continued to expand, landing 79,047 mt of fish, of which 78,889 mt were Pacific whiting (Table 6). The total revenue to U.S. fishermen from Pacific whiting was approximately $12 million in 1984, making it the leading revenue source among groundfish species.

III. HARVESTING SECTOR

Otter Trawl Fleet

Otter trawl fleet revenue from groundfish landings in 1984 was approximately $48.8 million, compared to $51 million in 1983. Trawl fleet size was 403 and 439 in those respective years (this includes joint venture boats operating off the West Coast but making no landings in those states). Thus, average revenue per vessel increased from $116 thousand in 1983 to $121 thousand in 1984, or just enough to offset the effects of inflation from 1983 to 1984. This increase, however, was not shared equally by all segments of the trawl fleet; revenue per vessel for the non-joint venture fishery dropped slightly from $93.5 thousand in 1983 to $92.6 thousand in 1984 (Table 8).

Average physical characteristics of the trawl fleet are given in Table 8 as well as the distribution of vessels by length and home fleet. The changes in length-frequencies since 1983 suggest that the fleet is becoming more homogeneous; the percentage decline in vessels over 89 feet and less than 60 feet in length has been substantially greater than for vessels in the 60-89 feet range. The otter trawl fleet declined in number for the second consecutive year (Table 9).

Pot/Trap Vessels

Landings of groundfish caught with traps (pots) amounted to 3,850 mt in 1984, 29 percent lower than the total for 1983 (Table 7). Over 99 percent of the volume consisted of sablefish. The exvessel value of these landings decreased 35 percent to $2.35 million (a 37.5 percent decrease after adjusting for inflation).

West Coast sablefish pot landings have declined for the second consecutive year, but the causes are uncertain. In 1983 demand decreased for sablefish in Japanese markets. However, the market situation in Japan improved significantly in 1984, with the Japanese purchasing greater quantities of U.S. sablefish to offset a reduction in their catch. The Alaskan harvest of sablefish with longline gear increased from 3,200 mt in 1983 to over 8,000 mt in 1984 while exvessel prices rose substantially in 1984 (J. Terry, Northwest and Alaskan Fishery Center, pers. comm.). However, in Washington, Oregon, and California the average weighted price per pound paid for pot sablefish declined from $0.303 in 1983 to $0.277 in 1984. This drop in average price despite apparently increased demand may have reflected a shift in the size composition of the West Coast catch to smaller, lower priced fish.

The number of pot vessels landing in Washington, Oregon, and California declined for the second consecutive year (Table 9). However, the reduction in fleet size resulted in a 16 percent increase in average gross revenue per vessel in 1984 (Table 7). Thus, even though sablefish pot landings continue to fall, the average vessel remaining in the fleet appears to have earned more revenue from sablefish than in 1983.

Other Gear Vessels

The West Coast groundfish catch by other gear, including longline, set-nets, troll, jigs, poles and shrimp trawl was approximately 13,500 mt in 1984. This was 28.5 percent higher than the total for 1983. The exvessel value of $9.8 million was 25 percent above the 1983 exvessel value of landings by other groundfish gear. Within this gear group, longline landings remained relatively stable, while landings by the gillnet fleet in California continued to increase.

IV. PROCESSING SECTOR

The West Coast harvesting sector delivered 8 percent less volume of groundfish to domestic processors in 1984 than in 1983. Most of this reduction was attributable to the large decline in rockfish landings and a somewhat smaller decline in flatfish landings. Strict landing limits on the *Sebastes* complex and widow rockfish apparently reduced rockfish landings in

1984 while the flatfish decline was probably caused by declining resource availability and exvessel prices which have not kept pace with inflation (Table 4).

Wholesale price data for 1984 is not available. However, wholesale price ranges published privately (Urner Barry Publications 1983 and 1984) indicate that wholesale prices of groundfish have not changed much from 1983 to 1984. Thus, processor revenue from groundfish probably declined in 1984. Since groundfish processors also process most of the crab, shrimp, and salmon landed on the West Coast, their financial performance depends on the combined returns from all of these fisheries. The coastwide landings of crab increased in value in 1984, but shrimp and especially salmon declined in 1984 (Korson 1985a and 1985b). Consequently, reduced 1984 revenue from groundfish coincided with reduced revenue from complementary fishery products for the groundfish processors.

V. WEST COAST GROUNDFISH MARKETS

The decline in rockfish and flatfish landings described in the previous section also produced a decline in fresh and fresh-frozen domestic groundfish in West Coast markets. At the same time, the quantity of fresh and fresh-frozen groundfish imported to the West Coast decreased from 1983 to 1984, despite a substantial increase in imports of orange roughy from New Zealand

(Table 11). This was due to a 27 percent drop in the quantity of rockfish imported from Canada. Consequently, the total amount of fresh and fresh-frozen groundfish supplied to the West Coast decreased in 1984.

The primary groundfish export for West Coast distributors is sablefish. Sablefish exports from the continental U.S. and Alaska to Japan were estimated to range from 6,485 - 6,985 mt in 1984 (Suisan Keizai 1985). The volume of domestic sablefish exports was substantially higher than the 3,490 - 4,000 mt sent to Japan in 1983. The increased demand for U.S. sablefish in the Japanese market was a function of the sharply lower Japanese domestic supply during 1984; the Japanese harvested only 9,000 mt of sablefish in 1984 compared to 21,000 - 21,500 mt in 1983. The bulk of the increase in U.S. sablefish exports originated from Alaska, where the export quantity doubled from 1,995 mt to 3,990 mt. Exports from the continental U.S. also increased, but only from a range of 1,495 - 1,995 mt in 1983 to 2,495 - 2,995 mt in 1984. Alaskan sablefish were reportedly larger and of a higher quality than West Coast sablefish in 1984. Japanese buyers interested in purchasing sablefish from West Coast producers reportedly could not find sufficient quantities of the larger sized Japanese cut typically demanded by Japanese consumers (S. Sonu, NMFS, Southwest Region pers. comm.).

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Table 1 - Landings and Exvessel Values of Landings in Washington, Oregon, and California, Including Joint Venture Deliveries in Waters off These States.

	1984	1983	% Change
Shoreside (mt)	89,588	97,665	-8.3
Joint Venture (mt)	79,047	72,137	+9.6
Total WOC Landings	168,635	169,802	-0.70
Shoreside Values $			
Current	49,090,200	52,200,600	-6.0
Real[1]	21,974,000	24,241,000	-9.3
Joint-Venture Value			
Current	11,841,000	10,217,000	+15.9
Real	5,300,400	4,744,600	+11.7
Total WOC Groundfish Landed Value			
Current	60,931,000	62,417,000	-2.4
Real	27,274,000	28,986,000	-5.9

[1] Real values are current values adjusted to eliminate the effects of inflation. This adjustment has been made by dividing current values by the current year GNP implicit price deflator, with a base year of 1972.

Table 2 - California, Oregon, and Washington Commercial Groundfish Landings (Metric Tons) and Exvessel Values (Thousands of Dollars) from 1977-1984.

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
1983	39,498	21,984	35,200	18,420.2	22,970	11,795.9	97,668	52,200
1979-83 Average	41,612	21,471	34,232	16,453.0	23,430	10,956.0	99,253	48,880
1984	40,360	22,726.1	28,218	15,265.2	21,010	11,098.8	89,588	49,090

Source: State Fishery Agencies, 1977-1980 Preliminary Data
PacFIN reports, 1981-1984 Preliminary Data

Table 3 - Landings and Value of Species of Groundfish Landed in Washington, Oregon, or California in 1983 and 1984.[1]

Species	1984		1983		% Change	
	mt.	$	mt.	$	mt.	$
Lingcod	4,052	2,281,800	4,146	2,360,900	-2.3	-3.3
Pacific Cod	585	301,100	597	311,500	-2.0	-3.9
Pacific Whiting	2,716	405,700	1,051	194,600	+158.4	+108.5
Sablefish	14,056	7,240,200	14,528	8,001,600	-3.2	-9.5
Pacific Ocean Perch	1,520	757,200	1,659	794,400	-8.4	-4.7
Widow Rockfish	9,620	4,786,700	9,904	4,213,700	-2.9	+13.6
Other Rockfish	28,662	16,444,100	35,920	18,381,200	-20.2	-10.5
Dover Sole	19,185	9,779,800	19,819	9,776,800	-3.2	+0.3
English Sole	1,719	1,219,200	2,336	1,656,400	-26.4	-26.4
Petrale Sole	1,733	2,707,100	2,193	3,300,100	-21.0	-18.0
Other Flatfish	4,990	2,661,000	5,052	2,861,800	-1.2	-7.0
TOTAL	88,838	48,584,000	97,205	51,853,000		

Source: PacFIN Reports. 1985 preliminary data.

[1] Includes domestic landings from U.S. coastal waters off WOC, but not Puget Sound; A small amount of landings of miscellaneous groundfish species are not included in the totals.

Table 4 - Average Annual Exvessel Prices Paid for Some Commercially Important Groundfish Species from 1977-1984.

	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
1984	.234	.105	.251	.112	.226	.101	.231	.103	.322	.144	.709	.317

Source: PacFIN reports. Preliminary data.

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

Table 5 - Contribution of West Coast Groundfish to Domestic Commercial Fishing Vessel Revenue

Fishery	1984 Domestic Fleet Revenue	1984 Percent of Total	1983 Domestic Fleet Revenue	1983 Percent of Total
Tuna	88,577,000	46%	115,751,000	50%
Groundfish	60,931,000	31%	62,417,000	27%
Dungeness Crab	18,897,000	10%	23,020,000	10%
Wetfish	11,376,000	6%	12,220,000	5%
Salmon	9,567,000	5%	8,369,000	4%
Pink Shrimp	4,468,000	2%	9,745,000	4%
TOTAL	193,816,000		231,522,000	

Source: Preliminary landings from state agencies.
Prices from NMFS Market News, Southwest Region.

Table 6 - Landings and Participation in Pacific Whiting Joint-Venture Fisheries off of Washington, Oregon, and California, 1979-1984.

Year	Landings (mt)	Estimated Dollar Value	Number of Trawl Vessels
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
1984	79,047	11,841,000	21

Source: PacFIN reports; NMFS, Northwest Region.

Table 7 - West Coast Commercial Groundfish Landings, Exvessel Values (Thousands of Dollars) and Average Vessel Gross Revenues for Selected Gear Groups, 1980-1984. (Numbers of vessels using gear types other than the three listed below are unknown)

Year	Otter Trawl			Pot/Trap			Longline		
	mt	$	$ per Vessel	mt	$	$ per Vessel	mt	$	$ per Vessel
1980	79,800	32,230	70.4	2,950	1,530	13.2	N/A	N/A	-
1981	91,300	38,200	93.6	3,955	2,038	30.9	2,600	2,150	11.3
1982	103,300	47,227	106.4	6,530	4,882	59.5	2,500	2,750	13.2
1983	81,700	40,752	93.5	5,440	3,635	59.6	1,300	1,322	7.2
1984	72,500	36,940	92.6	3,854	2,354	69.2	1,346	1,601	N/A

Source: PacFIN Reports.

Table 8 - Washington, Oregon, and California Groundfish Trawl Fleet Characteristics in 1984 and 1983.

	1984	1983
Total Number Landing	399	436
Frequency by Size (Length) Class		
< 30 feet	2	2
30-39	20	22
40-49	100	112
50-59	109	124
60-69	105	109
70-79	44	43
80-89	11	11
> 90	8	13
Vessel Characteristics:		
Average Length	57.43	57.25
Average Horsepower	310.8	312.4
Average Net Tonnage	45.8	45.7
Number Vessels Based in Each State		
California	171	195
Oregon	145	161
Washington	83	80
Vessels Landing in More than One State	62	74

Source: State Fishery Agencies

Table 9 - Number of Vessels in Washington, Oregon, and California Commercial Groundfish Fleets, 1977-1984.

Year	Otter Trawl[1]	Pot/Trap[2]	Longline[2]
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	59	185
1984	399	34	NA

Source: State Fishery Agencies.

[1] Beginning in 1981, double counting of trawlers has been eliminated and therefore numbers represent the true size of the active otter trawl fleet.

[2] Vessels landing fish caught with this gear-type in two or more states are counted in each state. These numbers therefore are an upper bound for the true number of vessels using this gear-type.

Table 10 - Wholesale Prices ($/pound) of West Coast Processed Groundfish by Species Groups, 1975-1983

Year	All Flounders	Lingcod	Rockfish	Sablefish
1975	.9005	.6186	.5849	.7049
1976	1.061	.8170	.7365	.9427
1977	1.226	.8871	.8350	.6973
1978	1.450	.8779	1.095	.7378
1979				
1980	1.600	1.102	.9179	.8314
1981	1.688	1.157	1.011	.8327
1982	1.876	1.162	1.086	.9108
1983	1.923	1.232	1.267	.8925

Source: Average prices computed by dividing total value by pounds of processed product, as reported in the NMFS Processed Products Survey.

Table 11 - Imports (1,000 pounds) of Groundfish to the West Coast, 1983-1984.

Species	Origin	1984	1983
Orange Roughy	New Zealand	5,616[1]	4,010[2]
Rockfish	Canada	5,658	7,754
Flatfish	Canada	1,114	1,205

Source: NMFS, Statistics and Market News, Southwest and Northwest Region. New Zealand Consulate, Los Angeles, California.

[1] A total of 15.6 million pounds of orange roughy was imported to the U.S. in 1984, of which 36 percent went to the west coast.

[2] Total orange roughy imports to California and Washington ports of entry.

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