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U.S. DEPARTMENT OF COMMERCE
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U.S. DEPARTMENT OF COMMERCE
C. William Verity, Jr., Secretary
National Oceanic and Atmospheric Administration
William E. Evans, Under Secretary for Oceans and Atmosphere
National Marine Fisheries Service
James E. Douglas, Jr., Acting Assistant Administrator for Fisheries

EXECUTIVE SUMMARY

This report reviews the economic status of the 1986 Washington, Oregon, and California pink shrimp fishery. Pink shrimp (Pandalus jordani) are distributed along the entire West Coast, with the center of abundance found off Oregon. The individual states manage the pink shrimp fishery using season, gear, and size regulations. The fishery is exclusively commercial and stocks are exploited by single and double-rig otter trawl vessels that may also fish for groundfish, crab, salmon, and albacore throughout the year.

Data on landings, exvessel values, and fleet size were supplied by state agencies. Statistics are tabulated to summarize changes in economic conditions between 1985 and 1986. General indicators of fleet economic performance are provided using the measure average gross revenue per vessel from shrimping. General conditions in the market sector are reviewed by examining data on the value of domestic processed shrimp products and the magnitude of foreign shrimp products imported into West Coast markets.

The West Coast pink shrimp fishery improved considerably in 1986 compared to 1985. Coastal pink shrimp landings were 58 million pounds, up over 113 percent from 1985. Landings were significantly higher in each state and consisted of large-size shrimp throughout the year.

Record exvessel values and prices were recorded as well in 1986. Landings were valued at $30.9 million and coastwide exvessel prices averaged $0.54 per pound, 50 percent above 1985 figures. Due to record catches, prices, and exvessel values, shrimp trawl vessels earned substantially greater revenues from shrimping in 1986, the highest in six years.

The 1986 market for pink shrimp also took a more favorable turn for domestic processors. Norwegian imports of frozen shrimp dropped substantially and buyers switched to West Coast pink shrimp to fill the void in supply. The average wholesale pink shrimp price rose from $2.87 per pound in 1985 to $3.30 per pound in 1986. The combination of increased pink shrimp supplies and higher processor prices caused revenues from shrimp production to increase for West Coast shrimp processors in 1986.

ECONOMIC STATUS OF THE WASHINGTON, OREGON AND CALIFORNIA PINK SHRIMP FISHERY IN 1986

I. Introduction

This is the first in a series of annual reports on the economic status of the Washington, Oregon, and California (West Coast) pink shrimp fishery in 1986. Previous pink shrimp reports dealt only with the economic status of California's fishery. The report for this year was expanded to cover all West Coast states. The economic status of the West Coast pink shrimp fishery in 1986 is compared to that in 1985.

The West Coast pink shrimp population (Pandalus jordani) is thought to be one single stock (Pacific Fishery Management Council (PFMC) 1980). The shrimp stock is divided into 10 subunits according to the physical separation of the shrimp beds and differences in the structure of the population (i.e., age composition). The names of the 10 population subunits and their associated Pacific Marine Fisheries Commission (PMFC) statistical areas are given in Table 1. Although pink shrimp range along the entire West Coast, the stock is most abundant off Oregon.

The PFMC originally developed a coastwide fishery management plan for the pink shrimp fishery; however, it was never implemented. Instead, the West Coast states adopted the recommended Federal regulations to manage pink shrimp as a uniform, coastwide stock. The West Coast pink shrimp fishery is currently managed with a combination of season, gear, and size

regulations. The specific management measures are as follows:

1) A coastwide closure from November 1 - March 31, with no provisions for in-season closures.

2) 1 3/8 inch maximum mesh size in the cod-end with no cod-end liners permitted.

3) Maximum average count of 160 shrimp per pound.

The West Coast shrimp stock is exploited exclusively by commercial double-rig and single-rig otter trawl vessels. For the most part, these trawl vessels are multi-species, multi-purpose fishing operations; when not fishing for shrimp they may fish for groundfish, crab, salmon or albacore. All pink shrimp caught by West Coast trawl vessels are delivered to shore based processing plants. There is no joint venture, foreign, or recreational fishery for pink shrimp.

II. Overview of the 1986 Season

The West Coast pink shrimp catch improved dramatically in 1986 compared to 1985. Landings totaled 58 million pounds compared to 27.2 million pounds landed during the 1985 season (Table 2). The 1986 catch exceeded the ten-year average (40.1 million pounds) by 42 percent and was the third highest catch ever recorded. Landings more than doubled in each state. California recorded its highest total since 1978, Oregon landings were the third highest of any season, and Washington landings set a new record of 17.4 million pounds.

The more than doubling of production was accompanied by a

222 percent increase in the exvessel value of these landings. The exvessel value of $30.9 million was a record high, exceeding by 22 percent the previous record set in 1980 (Table 2). The exvessel price opened at $0.45 per pound and then moved steadily upward throughout the season. The average coastwide exvessel price of $0.544 per pound was 51 percent higher than in 1985 ($0.353 per pound).

In general, large-grade shrimp were landed throughout the year. In 1986 all subunit areas produced shrimp that were significantly below the maximum requirement of 160 shrimp per pound (Table 3). Compared to 1985, a majority of the subunit areas yielded larger shrimp according to market sample data provided by the states.

III. Harvesting Sector

This section reviews factors affecting the economic performance of the West Coast shrimp trawl fleet. A complete measure of fleet financial performance requires consideration of earnings, costs, and cash flows generated by shrimp trawlers participating in a wide range of fishing activities. This range of activities includes fishing for groundfish, salmon, albacore, and crab in addition to shrimp. However, landings and cost data covering the full range of activities are unavailable. In the absence of this information, an alternative financial measure, average gross revenue from shrimping, is presented for the fleet as a whole.

There was a tremendous influx of effort into the West Coast

pink shrimp fishery during 1986. The shrimp trawl fleet almost doubled in size due to the significant increase in shrimp abundance. A total of 216 trawl vessels landed pink shrimp on the West Coast, compared to 118 in 1985. This increase was distributed across all vessel size classes (Table 4). Many of the trawl vessels reentering the fishery left the fleet during 1984 and 1985 to fish groundfish when shrimp catches were low.

Of those trawlers fishing for shrimp, 38 percent landed in more than one coastal state during 1986 compared to 40 percent of the trawl vessels in 1985 (Table 4). A total of 82 vessels made multi-state landings in 1986, of which 61 (74 percent) were home ported in Oregon. The majority of the Oregon shrimpers landing out-of-state fished the Destruction Island and Grays Harbor shrimp beds off Washington due to the increased shrimp abundance.

The combination of a record catch, prices, and exvessel value provided trawlers with substantially higher gross revenues from shrimping during 1986. Trawlers earned an average of $143,200 per vessel from shrimping, compared to $81,500 per vessel in 1985. Shrimp gross revenues per vessel were the highest in six years (Table 5). Moreover, alternative sources of revenue for shrimp trawlers were higher in 1986 due to the improved exvessel value of groundfish, Dungeness crab and salmon landings. This suggests that total gross revenues from all fishing sources were up for shrimp trawl vessels in general.

IV. Processing and Market Sector

The National Marine Fisheries Service annually surveys processing plants on the West Coast (including Puget Sound) to determine the volume and value of processed fish products and employment in the fish processing sector. The results of this survey provide data to compute wholesale prices received by West Coast processors for all shrimp products. A representative average wholesale price paid for West Coast pink shrimp is computed based on production data from plants that are known to produce pink shrimp. Pink shrimp wholesale prices can vary among plants due to: 1) the proportions of fresh, frozen canned or individually quick frozen (IQF) shrimp produced, 2) whether shrimp are graded to increase sales and prices, or 3) the higher cost of production for transporting Alaskan pink shrimp (P. boralis) to the plant. In 1986 pink shrimp produced in all West Coast plants averaged $3.30 per pound wholesale, with a price range of $2.10-4.60 per pound. This compares to the average wholesale pink shrimp price of $2.87 and range of $1.40-5.45 per pound received by processors in 1985. Consequently, with pink shrimp supplies and processor prices much higher, revenue from shrimp production increased for West Coast shrimp processors.

The total supply of domestic pink shrimp landed on the West Coast was higher in 1986 than in 1985. Alaskan pink shrimp landings remained depressed and were essentially unchanged from 1985 (4.7 million pounds); therefore, the increase in supply was accounted for by the increase in West Coast production. As

reported in 1985 a larger proportion of this pink shrimp supply is produced as IQF shrimp and primarily enters the cocktail and salad shrimp markets (Korson 1986). This has occurred in more recent years in response to the large increase in the volume of IQF shrimp imported into West Coast markets from Norway. Several West Coast processors have shifted away from the more traditional fresh and vacuum packed tin shrimp products and now produce the IQF product to compete with Norwegian IQF shrimp.

The 1986 market for pink shrimp took a more favorable turn for West Coast producers as Norwegian IQF imports dropped significantly. The supply of Norwegian IQF shrimp entering West Coast customs districts was only 308,000 pounds in 1986, compared to 8.7 million pounds in 1985 (U.S. Dept. of Commerce 1985, 1986). Moreover, a grand total of only 4.76 million pounds of Norwegian shrimp was imported into all U.S. ports in 1986, down 70 percent from the 15.86 million pounds in 1985. This sharp drop in imports may have contributed to the upturn in pink shrimp wholesale prices in 1986.

References

Korson, C. S. 1986. Economic Status of the California Pink Shrimp Fishery in 1985. NOAA-TM-NMFS-SWR-016. 10 p.

Pacific Fishery Management Council. 1980. Draft Fishery Management Plan and Environmental Impact Statement for the Pink Shrimp Fishery off Washington, Oregon and California. 191 p.

U. S. Department of Commerce. 1985, 1986. Unpubl. Statistics by Bureau of the Census.

Table 1 - Statistical subunits for the West Coast pink shrimp population.

Subunit Name	State	PMFC Data Series Statistical Area
Destruction Island	Washington	72
Grays Harbor	Washington	74
Willapa	Washington	75
Northern Oregon	Oregon	82, 84
Coos Bay	Oregon	86
Port Orford	Oregon	Northern 25 nautical miles of 88
Southern OR to Northern CA	-	Southern 25 nautical miles of 88 plus 92
Fort Bragg	California	94
Bodega Bay	California	96
Morro Bay	California	98

Source - Draft fishery management plan for the pink shrimp fishery off Washington, Oregon and California, Pacific Fishery Management Council.

Table 2 - Poundage (1000 lbs) and exvessel value (1,000 dollars) of pink shrimp landings in California, Oregon, and Washington from 1977-1986.

Year	California		Oregon		Washington		Total	
	Lbs	$	Lbs	$	Lbs	$	Lbs	$
1977	15,871	3,609	48,580	11,200	11,804	2,604	76,255	17,413
1978	13,887	3,654	56,666	14,904	12,264	3,000	82,817	21,558
1979	5,183	1,998	29,587	11,340	12,283	4,513	47,053	17,851
1980	3,560	2,006	30,152	16,683	12,688	6,764	46,400	25,453
1981	3,892	1,970	25,924	13,046	10,084	5,027	39,900	20,043
1982	4,383	2,271	18,462	9,295	5,042	2,648	27,887	14,214
1983	1,050	817	6,547	4,674	5,747	4,268	13,344	9,759
1984	1,490	685	4,844	2,151	3,453	1,603	9,787	4,439
1985	3,259	1,141	14,855	5,246	9,134	3,228	27,284	9,615
1976-85 Average	5,608	1,883	26,107	9,363	9,181	3,531	40,896	14,777
1986	6,776	3,625	33,807	18,063	17,446	9,250	58,029	30,938

Sources -

Pounds landed and exvessel value of landings 1977-80:

Unpublished data for 1977-1980 from Eric Knaggs, California Department of Fish and Game.

Oregon data from Pounds and Value of Commercially Caught Fish and Shellfish Landed in Oregon. Oregon Department of Fish and Wildlife.

Washington data from Dale Ward, Washington Department of Fisheries.

Pounds landed and exvessel values of landings for 1981-85 for all three states are from the PacFIN Central Database as of September 10, 1986.

1986 data are preliminary totals obtained from state fishery agencies.

Table 3 - West Coast pink shrimp market sample summaries[1], 1985-1986.

Subunit Area	Average Count per Pound					
	Washington		Oregon		California	
	1985	1986	1985	1986	1985	1986
Destruction Island	129.6	119.7	127.6	145.9	-	-
Grays Harbor	120.0	115.3	122.0	114.2	-	-
Willapa	108.6	110.9	-	-	-	-
Northern Oregon	-	-	96.8	90.2	-	-
Coos Bay	-	-	122.1	110.5	-	-
Port Orford	-	-	-	-	-	-
Southern, OR Northern CA	-	-	106.6	115.8	120.2	123.7
Fort Bragg	-	-	135.1	109.7	-	-

1/ Count-per-pound is a weighted annual average computed from state agency monthly market samples.

Source - State fishery agencies.

Table 4 - West Coast shrimp trawl fleet characteristics, 1985-1986.

	1985	1986
Number Landing	118	216
Size Distribution (Feet)		
Under 30	0	0
30 - 39	5	9
40 - 49	27	52
50 - 59	25	53
60 - 69	49	76
70 - 79	11	24
80 and over	1	2
Average Length (Ft)	57.7	57.4
Average Gross Tons	69.0	69.1
Average Net Tons	46.9	47.7
Average Horsepower	292.6	293.4
Number Home Based per State		
California	24	47
Oregon	67	135
Washington	27	34
Number Landing Out-of-State	47	82

Source - State fishery agencies.

Table 5 - Average revenue (1,000 dollars) per trawl vessel from West Coast shrimp landings, 1981-1986.

Year	# Trawlers	Exvessel Value from Shrimp ($)	Average Gross Revenue per Vessel ($)
1981	314	20,043,000	63,830
1982	230	14,214,000	61,800
1983	189	9,759,000	51,630
1984	98	4,439,000	45,290
1985	118	9,615,000	81,480
1986	216	30,938,000	143,230

Source - State fishery agencies.