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ECONOMIC STATUS OF THE CALIFORNIA DUNGENESS CRAB FISHERY IN 1983-1984

by

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

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I. OVERVIEW

This is the second report of an annual series on the economic status of the California Dungeness crab fishery. The first report on the 1982-83 fishery is published as a Technical Memorandum and is available through the National Marine Fisheries Service, Southwest Regional Office.

The west coast Dungeness crab (Cancer magister) catch remained at a very low level during the 1983-84 season. Landings in Washington, Oregon, California, and Alaska were an estimated 24.4 million pounds, down slightly from the poor 1982-83 season and 37 percent below the recent five-year average (Table 1). In California, Dungeness crab landings reached 5.6 million pounds, up slightly from the poor catch recorded in 1982-83, but still well below the five-year state average of 9.9 million pounds. One exceptional difference was the increase in landings in the San Francisco area; the 1983-84 total of 857,000 pounds was 50 percent higher than last season and was the largest total catch since the 1969-70 season.

II. DESCRIPTION OF FISHERY

The Dungeness crab resource off California is harvested from five discrete fishing areas off: (1) Avila-Morro Bay, (2) Monterey, (3) San Francisco-Bodega Bay, (4) Fort Bragg, and (5) Eureka to the Oregon border. The areas from San Francisco northward yield the highest commercial harvests. Although Dungeness crab off California is found in distinct areas, the stock

units have not been shown to be reproductively discrete (Pacific Fishery Management Council (PFMC) 1979). For management purposes, however, the California Department of Fish and Game (CDFG) considers each area to have a separate stock unit (PFMC 1979).

Dungeness crabs are landed primarily for commercial sale; however, a small recreational fishery for Dungeness crab does occur along the northern coast, especially in the Crescent City area (Dalstrom and Wild 1983). The commercial fleet consists largely of multi-purpose, combination vessels capable of switching among numerous fisheries such as crab, shrimp, albacore, and groundfish. Commercial crab gear consists of circular steel or iron frame pots 3 to 3.5 feet in diameter and covered with coarsely woven, taut stainless steel wire mesh.

The State of California establishes regulations for gear, season, areas, and sex of the catch in order to manage the Dungeness crab fishery (PFMC 1979). State regulations require at least two circular escape ports of 4 1/4 inches. North of Pt. Conception, at least one half of these escape ports must be located in the upper half of pots. The fishing season is December 1 to July 31 in the Eureka/Ft. Bragg areas and from the second Tuesday in November to June 30 in all other areas, including San Francisco. Areas closed to commercial fishing are the Eel River and out one mile from the mouth, Trinidad Bay, Bodega Lagoon, Crescent City Harbor, Humboldt Bay and within one mile from the entrance. Retention of female crabs is prohibited to protect breeding stocks.

III. COMMERCIAL HARVEST SECTOR

Approximately 400 vessels landed Dungeness crab in California during the 1983-84 fishing season, down sharply from the estimated 557 vessels in 1982-83. Fewer boats from Washington and Oregon fished in northern California waters because they found local fishing grounds more productive in 1983-84. Despite a decline in fleet participation, northern California landings were 4.7 million pounds, about the same as in 1982-83.

The estimated total exvessel value of California Dungeness crab landings is \$9,566,000. This is a 96 percent increase over the 1982-83 landed value of \$4,871,000, or corrected for inflation, an increase in the real value of 87 percent. The average exvessel price rose significantly from \$0.91 per pound in 1982-83 to \$1.71 per pound in 1983-84. Over the last few years the total exvessel value of crab landings has increased steadily to compensate for lower production.

Improved catches, substantially higher exvessel prices, and fewer vessels combined to send individual average revenues of California crabbers higher in 1983-84. Average revenue per vessel from crab landings in California is estimated at \$24.7 thousand compared to only \$10.3 thousand earned during the 1982-83 season. California crabbers benefited from the absence of a large number of Oregon and Washington vessels that appeared off

California in previous years. Contributing to the recovery in vessel gross earnings was the improved San Francisco Bay fishery; the exvessel price of crab in San Francisco started at \$1.65, and unlike previous years, climbed even with the initial glut of crab landed at the beginning of the season. The San Francisco exvessel price peaked at \$2.50 per pound in 1983-84 (Talley 1985).

The California crab fishery showed some signs of improvement in 1983-84. Whether the slight upturn in landings presages a return to normal catches is unknown; December landings in California in 1984 were slightly lower than December 1983, while Oregon and Washington coastal landings were down significantly in early 1985. With supplies low relative to historical levels, crab exvessel prices should remain high.

IV. CALIFORNIA PROCESSORS AND MARKET CONDITIONS

California processors continued to produce whole-cooked crab for restaurants and retail trade outlets during the 1983-84 season. Wholesale prices for whole-cooked Dungeness crab ranged from \$2.45-2.85 per pound compared to a price range of \$1.75-2.25 per pound in 1983 (Talley 1985). At the 1984 price, several processors reportedly could not afford to sell the whole Dungeness product. When the price eventually reached as high as \$2.70-2.85 per pound, sales declined and a number of coastal processors dropped the whole-cooked product in favor of meat production (Talley 1985). Due to the Oregon Dungeness Crab Commission's promotional efforts, new markets for the

whole-cooked crab product resulted in better sales for some processors despite the high wholesale prices (Talley 1985).

Because of its unique position in the market place, the demand for whole Dungeness crab has been relatively insensitive to the price changes. However, the low supply of recent years on the West Coast has resulted in exceptionally high prices. At wholesale prices above \$2.50 per pound, the demand for whole-cooked Dungeness crab declined in some of the restaurant and retail chain-stores (Talley 1985). Similarly, at prices above \$9.00 per pound many of the specialty fresh-fish stores reportedly discontinued purchasing Dungeness meat again in 1984. Wholesale prices for Dungeness crab meat increased from an average of \$8.75 per pound in 1983 to about \$9.50 per pound in 1984. The shortage of Dungeness together with reduced supplies of Alaskan king and tanner crab meat continued to put upward pressure on crab meat prices. The 1983-84 harvest of Alaskan crab was only about 75 million pounds compared to the extremely disappointing 1982-83 total harvest of 110 million pounds of king and tanner crab.

Literature Cited

- California Department of Fish and Game. 1983, 1984. Unpubl. Preliminary Monthly Fish Landings by Region.
- Dahlstrom, W.A. and P.W. Wild. 1983. Life History, Environmental, and Mariculture Studies of Dungeness Crab, Cancer Magister, with Emphasis on the Central California Fishery Resource. California Fish and Game Bulletin 172(1):7-23.
- Pacific Fishery Management Council. 1979. Draft Fishery Management Plan for the Dungeness Crab Fishery Off Washington, Oregon, and California. 93 pages.
- Talley, K. 1985. Dungeness. Pacific Fishing Yearbook 6(4): 125-130.
- Pacific Marine Fisheries Commission. 1978-1984. Dungeness Crab Fishery. In: Annual report of the Commission.

Table 1 - West Coast Dungeness Crab Landings (thousand pounds) from 1977-78 to 1983-84.

<u>Year</u>	<u>California</u>	<u>Oregon</u>	<u>Washington</u>	<u>Alaska</u>	<u>Total</u>
1977-78	13,800	10,400	9,100	7,200	40,500
1978-79	8,300	16,400	10,700	6,400	41,800
1979-80	13,700	18,200	8,300	5,900	46,100
1980-81	11,800	9,500	4,400	15,600	41,300
1981-82	10,500	8,700	3,900	16,200	39,300
1982-83	5,300	4,100	4,000	11,800	25,200
1978-79 to 1982-83 five year average	9,920	11,380	6,260	11,180	38,740
1983-84	5,600	4,700	4,700	9,400	24,400

Source: Pacific Marine Fisheries Commission. 1978-1984. Annual Reports for the Commission.

Table 2 - Estimated Exvessel Value and Average Weighted Price of Dungeness Crab Landings in California from the 1980-81 Season to 1983-84 Season.

<u>Year</u>	<u>Landings</u>	<u>Nominal Exvessel Value</u>	<u>Real¹ Exvessel Value</u>	<u>Average Price per Pound</u>
1980-81	11,800,000	8,643,000	N/A	0.73
1981-82	10,525,700	9,870,000	4,935,000	0.94
1982-83	5,326,900	4,871,000	2,332,000	0.91
1983-84	5,593,900	9,566,000	4,400,000	1.71

Source: 1981-82 and 1982-83 landings, Personal Communication, Phil Swartzell, California Department of Fish and Game.

1983-84 landings, California Department of Fish and Game. 1983, 1984. Unpublished Preliminary Commercial Monthly Fish Landings by Region.

¹ Adjusted for inflation using the GNP implicit price deflator (1972=100).