

REVIEW OF THE PELAGIC WET FISHERIES DURING THE 1961-62 AND 1962-63 SEASONS¹

SARDINE

1961-62 Season

The 1961-62 season started with a "bang"; 1,660 tons were caught by 35 boats in southern California during the first night (September 4). The bright prospects soon faded, limits were abandoned, and the season's landings of 25,528 tons failed to equal those of the relatively poor preceding year (Table 1). The small catch was not surprising to CalCOFI scientists since it exceeded their pre-season estimate by only about 20 percent.

The season officially began August 1 in central California and September 1 in southern California, and continued through March 1 in both areas. This was two months longer than recent seasons. In addition, beginning June 1, 1961, a special summer sardine pack was legalized for the first time since 1948. Sardine prices were set at \$50 per ton, an increase of \$15 above the previous season.

Fishing off central California was poor, and accounted for only 2,231 tons of the total landings. Catches were made in Monterey Bay and along the coast as far south as Morro Bay. Southern area catches were made at Anacapa Island, Port Hueneme, Santa Barbara Island, Santa Catalina Island, Tanner and Cortez Banks and scattered locations along the mainland from Point Dume to La Jolla.

Fish sampled at San Pedro had a modal body length of 226 to 228 mm (mean, 224 mm) and an average weight of 0.31 pounds compared to the 0.27-pound average during the 1960-61 season. There had been very little recruitment. Age composition of the southern California catch was: 20 percent three-year-olds, 48 percent four-year-olds, 26 percent five-year-olds, and the remainder (6 percent) were two- and six-year-olds. In central California: 42 percent were 4's, 44 percent 5's, and the remainder (14 percent) two-, three-, and six-year-olds.

"And then there was one..." During the heyday of the sardine fishery, Monterey was called, "The Sardine Capital of the World." "Cannery Row" included 18 plants and was supplied by 78 purse seiners. As the fishery declined, the number of plants decreased until by the beginning of the 1961-62 season only five remained active. This number was reduced to three in December 1961, two in April 1962, and finally one in July 1962. "Cannery Row" is no more.

During 1961-62, the California sardine fleet consisted of 94 boats, 14 fewer than during the 1960-61 season: 51 were large purse seiners (60 feet and

over), and 43 were small purse seine and lampara boats (less than 60 feet). This included 19 boats which fished off central California only; the rest fished primarily south of Point Arguello, off southern California.

Baja California sardine landings totaled 21,270 tons for the season, only slightly less than the California total and slightly more than Baja California landings during 1960-61. The bulk of these landings were made at the six canneries operating in Ensenada (10,770 tons). The rest were landed at Cedros Island (8,527 tons) and Matancitas (1,972 tons).

1962-63 Season

Although the sardine season officially began August 1, in central California and September 1 in southern California it never quite got off the ground. With the price of sardines set at \$50 per ton, the southern California fleet remained tied up. The price dispute was finally resolved in early October at \$60 per ton, \$10 above the preceding season. Mixed fish (less than 50 percent mackerel) sold for \$47.50. The fishermen went to sea under the new price structure, but the worst expectations of CalCOFI scientists came true. They predicted, in August 1962, that the 1962-63 season catch would range between 5,000 and 15,000 tons; only 4,172 tons were landed. Thus, the worst season since 1912 was written into the records.

Most central California sardines were taken south of Monterey Bay, between Point Sur and Morro Bay. Southern California sardines were taken from points along the coast ranging from Santa Cruz Island and Port Hueneme to La Jolla, and from the offshore islands and banks. Cortez and Tanner Banks remained important origins of fish.

Central California sardines had body lengths ranging from 154 to 266 mm, with a mode at 242 to 244 mm. Southern California sardines included both medium-sized and large fish, with a range of 188-266 mm, and modes at 202 and (the majority) at 234 mm. The average size was 228 mm, and the average weight 0.35 pounds. The modal size 20 years ago was around 200 mm, as was the average; the modal weight at that time was 0.2 pounds.

Ages were determined for 124 fish from central California, and 33 percent were four-year-olds, while 32 percent were five. Of 217 southern California fish, 34 percent were three-year-olds, 37 percent were four, and 28 percent five.

As in recent seasons in southern California, when large fish were present, some females contained developing eggs. During 1962-63, almost all of the females in 13 of 22 samples contained developing eggs, as did a few females in other samples. A sample taken October 23, a few miles off San Pedro, contained six

¹ For a report of catches for seasons preceding 1959-60, see *California Cooperative Oceanic Fisheries Investigations, Reports*, 8 January, 1961.

females, 234-246 mm body length, with ripe eggs, clear in color, in a running condition. This was unusual for that time of year. In October 1961, four such females were taken at Anacapa Island.

The fleet consisted of 81 boats; 45 large and 36 small. Of these, 9 lampara boats fished at Monterey only, most of the rest fished off southern California only.

Baja California landings (16,000 tons), although somewhat less than the previous three years, were nearly four times the amount landed in California. Unlike the previous season, Matancitas was the leading port with 8,020 tons. Landings at Cedros Island (4,674 tons) were considerably below preceding years.

ANCHOVY

Cannery and fresh-fish market landings continued at a low level through 1961 (3,856 tons) and 1962 (1,382 tons) despite a large population of anchovies (Table 2). These low catches reflected market conditions rather than a shortage of anchovies. As in recent years, most of the landings were made off southern California.

Live bait continued to dominate the anchovy catch, accounting for 59 percent (5,431 tons) of the total landings in 1961 and 82 percent (6,167 tons) in 1962. Approximately 80 percent of the catches in both years were made off southern California, between San Diego and Santa Monica.

The age composition of the bait catch at Port Hueneme during 1961 and 1962, was significantly different from the catch composition at Newport and San Pedro. At Port Hueneme, one- and two-year-olds dominated the catch in 1961 (55 and 37 percent, respectively) and in 1962 (62 and 23 percent). At Newport, the catch in both years was almost equally divided between zero-; one-; and two-year fish (27, 34, and 29 percent, respectively in 1961, and 35, 24, and 27 percent in 1962). Two-year-olds dominated the 1961 San Pedro landings (34 percent of the catch) with the remainder almost equally divided between zero-, one-, and three-year-olds (22, 24, and 18 percent, respectively). Bait samples were not obtained at San Pedro during 1962.

MACKEREL

The 76,857 tons of mackerel caught during the 1961-62 season, and 71,049 tons caught during 1962-63 represent the two best consecutive seasons on record (Table 3). These high landings were made possible by near-record catches of jack mackerel, exceeded in only three previous years, and substantial landings of Pacific mackerel, exceeded only twice in the last decade.

Mackerel prices to the fishermen were fairly stable at \$42.50 per ton during the 1961-62 and 1962-63 seasons. Lack of orders and "tie-ups" due to price disputes tended to reduce the total catch.

Central California catches were made in the Morro Bay area, off Point Sur, and in Monterey Bay. Prime southern California fishing areas were

around Santa Monica Bay, off San Pedro, between Newport and San Clemente City, and offshore at San Nicolas Island, San Clemente Island, and especially Cortez and Tanner Banks. *James D. Messersmith. California Dept. of Fish and Game.*

TABLE 1
SARDINE CATCH IN TONS ALONG THE PACIFIC COAST—1959-60 THROUGH 1962-63

(Each Season Includes June Through the Following May)

Season	Northern California*	Southern California	Total California	Baja California	GRAND TOTAL
1959-60	16,109	21,147	37,256	21,446	58,702
1960-61	2,340	26,538	28,878	19,899	48,777
1961-62	2,231	23,297	25,528	21,270	46,798
1962-63†	1,211	2,961	4,172	14,620	18,793

* All northern California landings were made north of Pt. Arguello.
† Preliminary.

TABLE 2
COMMERCIAL LANDINGS AND LIVE-BAIT CATCH OF ANCHOVIES IN TONS IN CALIFORNIA, 1959-1963

Year	Commercial Landings	Live Bait	Total	Percent Live Bait
1959	3,587	4,737	8,324	56.9
1960	2,529	4,657	7,186	64.8
1961	3,856	5,431	9,287	58.5
1962	1,382	6,167	7,549	81.7
1963*	2,285	6,930	9,215	75.2

* Preliminary.

TABLE 3
CALIFORNIA SEASONAL CATCH IN TONS OF PACIFIC AND JACK MACKEREL

(Each Season Includes May Through the Following April)

Season	Pacific Mackerel	Jack Mackerel	Total	Percentage Pacific Mackerel
1959-60	20,641	33,280	53,921	38.3
1960-61	19,537	25,286	44,823	43.6
1961-62	22,150	54,707	76,857	28.8
1962-63*	22,627	48,422	71,049	31.8

* Preliminary.

TABLE 4
ANNUAL COMMERCIAL LANDINGS IN TONS OF PELAGIC WET FISHES IN CALIFORNIA, 1959 THROUGH 1963

Year	Sardines	Anchovies	Pacific Mackerel	Jack Mackerel	Herring	Squid	Total
1959	37,184	3,587	18,801	18,754	864	9,826	89,016
1960	28,766	2,529	18,404	37,473	900	1,281	89,353
1961	21,585	3,856	22,055	48,803	701	5,143	102,143
1962	7,681	1,382	24,289	44,989	653	4,684	83,678
1963*	3,564	2,285	20,121	47,721	315	5,780	79,788

* Preliminary.