

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME
MARINE RESEARCH COMMITTEE

CALIFORNIA
COOPERATIVE
OCEANIC
FISHERIES
INVESTIGATIONS

Progress Report

1 July 1956 to 1 January 1958

Cooperating Agencies:
CALIFORNIA ACADEMY OF SCIENCES
CALIFORNIA DEPARTMENT OF FISH AND GAME
STANFORD UNIVERSITY, HOPKINS MARINE STATION
U. S. FISH AND WILDLIFE SERVICE, SOUTH PACIFIC FISHERY INVESTIGATIONS
UNIVERSITY OF CALIFORNIA, SCRIPPS INSTITUTION OF OCEANOGRAPHY

1 January 1958

LETTER OF TRANSMITTAL

1 January 1958

HONORABLE GOODWIN J. KNIGHT
Governor of the State of California
Sacramento, California

DEAR SIR: We respectfully submit a report on the progress of the California Cooperative Oceanic Fisheries Investigations for the period 1 July 1956 to 1 January 1958.

The report consists of three parts: a Review of Activities for the period; a scientific paper, *Studies of the California Current System*, by Joseph L. Reid, Jr., Gunnar I. Roden, and John G. Wyllie; and a list of publications arising from the program.

Respectfully,

THE MARINE RESEARCH COMMITTEE
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ABSTRACT

In the year 1957, oceanographic conditions along the western coast of the United States differed considerably from those in the past few years. Average temperatures at the shore stations were higher than at any time throughout the 1949-56 period. The winds in 1957 had less of a northerly component than at any time during the 1949-56 period.

Sea surface temperatures for the entire CCOFI area tell virtually the same story when compared with those for the period 1949 to 1954: warmer water, as much as 3° C., prevailed over much of the area from January through October.

These higher temperatures do not necessarily mean that southern water swept northward. The California Current continued to flow southward, although perhaps with reduced transport. Most probably the warm water came from offshore, from the west or northwest. One of the most striking features of the year, preliminary analysis shows, is that the warming extended to considerable depths.

Sardine spawning off northern Baja California and southern California during 1957 was also unique. On the usual offshore grounds, spawning was limited and discontinuous. Most of the spawning took place in a coastal band from Punta Baja to San Pedro. For the first time in several years, some sardine spawning occurred north of Pt. Conception, reaching at least as far as Monterey Bay.

The 1957-class of sardines soon made itself evident in the live-bait fishery. Preliminary figures indicate these "firecrackers" will account for at least 6.0 percent of the live-bait catch, as against 0.3 percent in the best previous year since 1949.

Survival of the 1957-class of sardines off southern California has undoubtedly been better than in recent years. It is possible that the 1957-class will prove to be large, but judgment should be reserved, since these juveniles may have been over-available during the year because of their inshore origin, and been over-sampled.

The year 1957 will unquestionably prove to be the best for the southern California anglers since party boat records were re-established in 1947. Equally as remarkable as the year's upsurge in landings of game fish by sportsmen is the fact that many species have been taken much farther north than in recent years.

To the agencies conducting research under the California Cooperative Oceanic Fisheries Investigations, the year 1957 presents both an opportunity and a challenge. In previous years, large amounts of data have been collected on the ocean and the fisheries, so that it has been possible to describe in considerable detail what has happened to oceanographic conditions since 1949. A comprehensive study of the California Current region from 1949 to 1956 appears as the central paper in this report, for instance. This material will now offer an invaluable basis of comparison with a year which differs strikingly from those immediately preceding, but which may have been similar to others in the past for which not so large an amount of data exists. Thus, 1957 may offer an opportunity to explain both the immediate past and perhaps throw further light on the years of the thriving sardine fishery.

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