

NMFS ANNUAL REPORT, 1973

The mission of the Southwest Fisheries Center's Honolulu Laboratory, located in the central Pacific, is to provide U.S. commercial and recreational fishing interests with information about and assistance in the management and development of the fishery resources of U.S. concern in the central and western Pacific Ocean, particularly the development of the skipjack tuna fishery.

Since these objectives require an understanding of the resources, efforts of the Honolulu Laboratory are also directed to such facets of fishery management and development as the assessment of commercial and game fish stocks and the development of bait resources, and to investigations of the relation of fishes to tropical oceanic and island environments. Because of its unique capability to maintain live tropical pelagic fishes, a major effort at the Honolulu Laboratory is a study of the sensory and physiological reactions of tunas and tuna-like fishes to their physical environment.

Accomplishments of the Honolulu Laboratory for 1973 include:

- o Completion of a study of the behavior of skipjack tuna schools in Hawaiian waters, with observations made in June-August 1967 and 1968. Also completed was the analysis of a study that assesses the relative stock density of skipjack tuna in the Hawaiian pole-and-line fishery.
- o Determination that the concentration of mercury in both red and white muscle of newly-caught skipjack which were starved from 20 to 35 days increased at about the same rate as in skipjack fed whitebait containing 0.06 ppm Hg for the same period of time.

Submitted to F. Wynn 1/19/74

o resource assessment survey was conducted in the Leeward Islands portion of the Hawaiian Islands. Cruise objectives accomplished were the assessment and tagging of skipjack tuna, and the determination of the availability of baitfish species in selected island areas.

o Progress in a study to determine if the fine lamellae observed in the otoliths of the nehu (Stolephorus purpureus), the primary baitfish used in the Hawaiian skipjack tuna fishery, represent daily growth rings. Eight subsamples from three experiments have been read and appear to confirm that daily growth lamellae are formed in nehu otoliths. Mean circuli counts for the time intervals studied closely approximate the expected counts.

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