

State of California - The Resources Agency  
Department of Fish and Game  
Marine Resources Region  
Long Beach, California

CRUISE REPORT 74-KB-30 and 74-M-6 - ABALONE - LOBSTER INVESTIGATIONS

Prepared by Steven Schultz and Charles Haugen

Vessels: R/V KELP BASS and R/V MOLLUSK

Dates: November 15-22, 1974

Locality: San Clemente Island and Santa Catalina Island

Purpose: 1. To retrieve green abalones, *Haliotis fulgens*, tagged at China Cove and Northwest Harbor San Clemente Island, and the Isthmus, Santa Catalina Island during August and November 1973.

2. To tag additional green abalones as time allowed.

3. To conduct escape-port studies for commercial lobster traps.

4. To recover marked lobster at Catalina Isthmus for growth studies.

Procedure: 1. Divers carefully retrieved tagged abalones, measured length and width, tag-coded each with string, and returned them to abalones scars on rocks.

2. Twenty-six commercial lobster traps, half of which were fitted with one 60.3 x 39.2-mm (2 3/8 x 1 1/2-inch) escape port were fished three nights at San Clemente Island and two nights at Santa Catalina Island.

Results: Abalone

The three green abalone tagging sites established at China Cove in 1973 were revisited. Of the 613 green abalone tagged at area I and II in 1973, we retrieved 257 (41.9%). This retrieval rate would have been considerably higher in that we only incidentally picked abalones from area I and we were not able to dive either area for the period desired due to naval operations closing the area. Three hundred forty tagged abalone (55.5%) were not accounted for, 2 (0.3%) were lost as a result of natural mortality, and 14 (2.3%) were mortalities attributed to the original tagging.

During retrieval of the 257 tagged green abalones we lost an additional 23 due to bar cutting and 8 due to predators when the abalones were returned to the substrate.

Four hundred and thirty-seven green abalone were originally tagged in area III. A total of 138 (31.6%) were retrieved. Again, this figure does not reflect the possible retrievable rate due to an unexpected Navy closure. Two hundred eighty-three tagged abalone (64.8%) were unaccounted for, 4 (0.9%) were attributed to natural mortality, and 12 (2.7%) were mortalities attributed to the original tagging. Of the 138 retrieved, we lost an additional 11 from bar cutting and 5 were lost to predators.

Northwest Harbor produced the highest tag return of the trip, with 125 (52.1%) of the original 240 tagged green abalones being retrieved. One hundred and ten (45.8%) were not accounted for, 3 (1.3%) were attributed to natural mortalities, and 2 (0.8%) were mortalities during original tagging. Of the 125 retrieved at Northwest Harbor we lost an additional 12 due to bar cutting and 1 was eaten by a bat ray, *Myliobatis californicus*, when returned to the rocks.

At Catalina Island we retrieved 82 (26.4%) of the 310 that had been tagged and transplanted to the Isthmus from Northwest Harbor, San Clemente Island. This low retrieval was probably due to the large boulder habitat and dense algal growth, primarily *Sargassum* sp. Two hundred more tagged abalone (67.4%) were unaccounted for, 2 (0.6%) were natural mortalities, 4 (1.3%) were returned by sportsmen, and 15 (4.8%) were mortalities attributed to original tagging. Of the 82 retrieved, we lost an additional 2 (0.6%) due to bar cutting, and 2 (0.6%) were eaten by predators when returned to the rocks.

Growth rates for green abalones at San Clemente were very poor at all size classes. Many lost growth by wearing their shells against the substrate. The green abalones transplanted from Northwest Harbor to the Isthmus showed definite new growth bands.

Time did not allow additional tagging.

Results: Lobster

A total of 146 lobster was captured in 77 trap sets at San Clemente Island. Traps without escape ports caught 15 legal size lobster and 98 shorts. Those with escape ports took 17 legal lobster and 16 shorts. Ninety-eight lobster were taken in 52 trap sites at Catalina Island. Catches for traps without ports totaled 26 legals and 22 shorts; with ports, 46 legals and 4 shorts.

Catch per haul rates for traps without escape ports:

	legal	short
San Clemente	0.39	2.51
Santa Catalina	1.00	0.85

Catch per haul rates for traps with escape ports:

	legal	short
San Clemente	0.45	0.42
Santa Catalina	1.77	0.15

Forty-four of the 94 lobsters captured at Santa Catalina were recaptures (45%); of these 13 (13.3%) were recaptured for the first time. All recaptures had molted.

Personnel: M. Mazarovich, Vessel Captain, KELP BASS  
D. Carvahlo, Vessel Captain, MOLLUSK  
S. Schultz, Biologist-in-charge  
M. Odemar, Biologist  
J. Duffy, Biologist  
R. McAllister, Biologist

ORB/LB/150  
2-10-75/pb