

The Resources Agency
Department of Fish and Game
Marine Resources Operations
California State Fisheries Laboratory
Terminal Island, California

Cruise Report 66-S-5 Shrimp
Prepared by Mel Willis

Vessel: N. B. SCOFIELD

Dates: Departed August 9, 1966 from San Pedro
Returned September 13, 1966 to San Pedro

Areas: Coastal waters from Oregon border to Eureka, California
and off Point Rincon, Santa Barbara.

Objectives:

1. Randomly sample concentrations of pink shrimp, *Pandalus jordani*, for estimating population size, recruitment, and natural mortality rates.
2. Determine size, sex, and weight of shrimp.
3. Examine stomachs of Pacific hake, *Merluccius productus*, in conjunction with studies of pink shrimp relative abundance.
4. Sample bottom fauna of the shrimp beds.
5. To collect live specimens for Humboldt State College Marine Laboratory and Steinhart Aquarium.
6. To sample the new ridgeback prawn, *Eusicyonea ingetis*, fishery off Point Rincon, Ventura County.
7. To save rare fishes and invertebrates for State Fisheries Laboratory, Terminal Island.

Results:

The 156 tows were randomly distributed over the 270 square mile survey area between the mouth of the Mad River and the Oregon border. Fishing depths ranged from 40 to 105 fathoms. We used a semi-balloon, gulf shrimp trawl with a 41-foot head rope or 25-foot estimated spread. The net had one-inch stretch mesh with a 1/2 inch stretch mesh liner in the cod end to prevent escapement of juveniles.

We found that approximately 101 square miles of the 270 square mile survey area contained sufficient concentrations to provide at least 50 pounds of shrimp per hour. Approximately 17 square miles of this area produced catches of 300 pounds of more per hour (see map).

Excluding catches under 34 pounds, the average catch was 162 pounds per hour and ranged from 35 to 1496 pounds per hour. Counts per pound ranged from 57 to 151 with a mean of 100.

The year-class composition was:

<u>Year-class</u>	<u>Percent by Number</u>
0 (1966)	63.6
I (1965)	22.1
II (1964)	13.8
III (1963)	.5

Total poundage on the bed was estimated to be 2,210,000 pounds. This is compared to 5,086,000 pounds estimated on the bed in April. During this period, 1,225,000 pounds were removed by fishing.

The average surface temperature from August 16 to September 3 was 12.2° C.

Two hundred and two (202) Pacific hake stomachs were examined for pink shrimp; these contained 116 identifiable shrimp.

Eight bottom samples were taken with a 1/25 square meter Shipek sediment sampler; samples are being analyzed by Humboldt State College.

Sixteen shrimp samples were taken for stomach analysis by Humboldt State College.

Three exploratory tows off Trinidad Head, one in 25 fathoms and two in 120-155 fathoms were conducted for specimens.

Two successful tows were made off Rincon Point in 34-38 fathoms for ridgeback prawns.

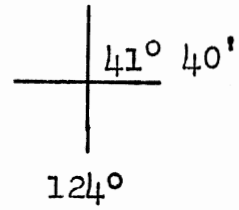
Unusual fishes collected during the survey included: 15 bearded eelpouts, *Lyconema barbatum*; one juvenile ragfish, *Icosteus aenigmaticus*; and one flathead sole, *Hippoglossoides elassodon*.

Personnel:

R. B. Mitchell, Vessel Captain
 D. Gotshall, Biologist-in-charge, August 15 - August 31
 M. Willis, Biologist-in-charge, August 9-14-Sept. 10
 S. Taylor, Biologist-September 3-4
 Richard Pierce, U. C. Institute of Marine Resources
 Berkeley, September 8-10
 Gary Milburn, Biologist, Oregon Fish Commission
 August 15-17




N. B. Scofield
66-S-3
Area A

Pt. St. George



Klamath River

• Redding Rock

-  300 lbs/hr or more
-  50 lbs/hr or more
-  Area Surveyed

Pacific Ocean

15 Miles

Mad
River

