

FISH COMMISSION OF OREGON
GROUNDFISH & SHRIMP INVESTIGATIONS

Report of Cruise 71-6, Shrimp

Vessel: M/V Ruth Ellen, chartered trawler.

Dates: September 4-9, 1971

- Objectives:
1. To determine biomass and number of shrimp (Pandalus jordani) within the survey area between Yaquina Head and Tillamook Bay.
 2. To determine age and sex composition of stocks as well as average size (number/pound) and length-frequency.

Methods: The M/V Ruth Ellen is a wooden western seiner-trawler, 51.2 feet registered length of 27 net tons capacity. She is powered by a 350 h.p. diesel engine. We furnished a $\frac{1}{2}$ -inch mesh nylon liner for the codend; the vessel furnished a 57-72-foot (headrope-foot-rope) shrimp trawl of $1\frac{1}{2}$ -inch mesh.

We selected 22 sample stations within the survey area between Yaquina Head and Tillamook Bay using a systematic random sampling scheme based on grid intersects of 4.0 nautical miles. Each station was the center of a $\frac{1}{2}$ -mile (radius) circle in which the tow was made. Tows were approximately 1 nautical mile long. We recorded Loran (1L0) and depth (fathoms) at start and end of each tow, time and ocean weather conditions.

We sorted the catch of each tow to fish, miscellaneous invertebrates and shrimp. We then weighed the shrimp catch. Particularly fishy catches were sorted to large fish and shrimp-small fish. The mixed small fish and shrimp were then sub-sampled (20 pound sample), sorted and weighed. This estimate of the shrimp catch (in per cent) was then applied to the balance of the unsorted catch for an estimate of the total shrimp catch. Fish catch was estimated, in pounds, for major species in each catch. We randomly drew a 2-4 pound sample from each shrimp catch. This we placed in a plastic bag and frozen ashore for later analysis.

Results: We occupied 22 stations in the survey area without problems. Shrimp were captured on all tows and were fairly abundant. Catches ranged from 4 to 708 pounds per tow and averaged 203. Catches were composed of $\frac{2}{3}$ age I (1970 yearclass) shrimp on most tows. Table 1 summarizes data obtained.

Personnel: Edwin L. Niska, Party Chief
Thomas Gatens, Vessel Captain
Two Crewmen

Jack G. Robinson
Research Division
October 14, 1971

Table 1. Mean Unweighted Catch and Catch Composition in Area 3 - Yaquina Head to Tillamook Bay, for Cruise 71-6.

Area	Tows	% Age Composition by No. and (Weight)						N/Lb	Mean Catch
		I	II	III	I	II	III		
345 mi. ²	22	67	18	15	(55)	(20)	(27)	151	203 Lbs.