

FISH COMMISSION OF OREGON
GROUNDFISH & SHRIMP INVESTIGATIONS

Report of Cruise 73-6, Shrimp

- Vessel: M/V Ruth Ellen, chartered trawler.
- Dates: September 1-3, 1973
- Objective: 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-foot registered length of 27 net tons capacity. She is powered by a 350 h.p. diesel engine. We furnished a 41-52 foot (headrope-footrope) shrimp trawl (1 1/8-inch mesh except for a 1 1/2-inch codend with a 1/2-inch bobinette innerliner).

The vessel furnished two 1/4-inch tickler chains, attached to each pigtail of the net. We selected 24 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 1 1/2-mile (radius) circle in which the tow was made. Tows were approximately 1 nautical mile long. We recorded Loran (LLO) and depth (fathoms) at the 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. No subsampling was necessary due to fairly clean catches. 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 froze ashore for later analysis.

Results: We occupied 24 stations in the survey area without problems. Shrimp were captured in 24 tows and were dispersed fairly evenly over the survey area. Catches ranged from 16 to 370 pounds per tow and averaged 82. Catches were composed of mostly age III (1970 year class) shrimp on most tows. Table 1 summarizes the cruise log.

Personnel: Jack G. Robinson, Party Chief
Thomas Gatens, Vessel Captain
Paul Farley, Crewman

Jack G. Robinson
Management & Research Division
October 9, 1973

Table 1. Summary of Tows, Cruise 73-6, Shrimp, M/V Ruth Ellen,
September 1-3, 1973.

| Tow No. | Date | Time Start PDT | Duration (min) | Length Micro-seconds | Loran 110 Start Stop | Depth (fms) | Shrimp Catch (lbs.) |
|---------|--------|----------------|----------------|----------------------|----------------------|-------------|---------------------|
| 1 | 9-1-73 | 0930 | 20 | 13 | 2476 - 2488 | 78-82 | 25 |
| 2 | " | 1030 | 25 | 11 | 2521 - 2531 | 76-77 | 40 |
| 3 | " | 1220 | 25 | 12 | 2576 - 2588 | 82-82 | 170 |
| 4 | " | 1330 | 25 | 12 | 2629 - 2641 | 92-93 | 104 |
| 5 | " | 1445 | 25 | 17 | 2675 - 2690 | 67-66 | 94 |
| 6 | " | 1550 | 30 | 12 | 2729 - 2742 | 65-65 | 63 |
| 7 | " | 1650 | 25 | 12 | 2774 - 2786 | 83-83 | 151 |
| 8 | " | 1750 | 32 | 12 | 2819 - 2831 | 88-88 | 112 |
| 9 | 9-2-73 | 0800 | 23 | 11 | 2879 - 2891 | 84-83 | 35 |
| 10 | " | 0855 | 20 | 11 | 2923 - 2936 | 83-83 | 23 |
| 11 | " | 0950 | 25 | 12 | 2969 - 2981 | 78-78 | 94 |
| 12 | " | 1048 | 18 | 13 | 2979 - 2992 | 95-94 | 48 |
| 13 | " | 1200 | 20 | 12 | 3020 - 3032 | 104-104 | 40 |
| 14 | " | 1330 | 30 | 11 | 2925 - 2937 | 97-96 | 60 |
| 15 | " | 1448 | 23 | 12 | 2881 - 2893 | 101-100 | 39 |
| 16 | " | 1601 | 22 | 11 | 2824 - 2836 | 106-106 | 64 |
| 17 | " | 1718 | 26 | 12 | 2775 - 2788 | 104-103 | 50 |
| 18 | " | 1838 | 29 | 14 | 2734 - 2748 | 93-92 | 100 |
| 19 | 9-3-73 | 0745 | 20 | 12 | 2670 - 2682 | 100-100 | 16 |
| 20 | " | 0840 | 23 | 12 | 2632 - 2644 | 124-125 | 29 |
| 21 | " | 0955 | 23 | 11 | 2582 - 2592 | 105-103 | 18 |
| 22 | " | 1130 | 30 | 12 | 2533 - 2543 | 150-150 | 20 |
| 23 | " | 1255 | 30 | 12 | 2525 - 2537 | 90-90 | 194 |
| 24 | " | 1425 | 35 | 13 | 2482 - 2494 | 97-98 | 370 |