

Charleston
Hm

Fish Commission of Oregon
Trawl Investigations
Report of Cruise 69-2, Shrimp

Vessel: MV Sunrise, chartered vessel

Dates: July 16-19, 1969

- Objectives:
1. To determine distribution of pink shrimp (Pandalus jordani) by age and sex in the area off Tillamook Head, Oregon.
 2. To determine the location of 0-age pink shrimp (1969-year class).
 3. To collect associated oceanographic data.

Methods: The study area incorporates 15 stations off Tillamook Head set up in an east-west line (Figure 1). The stations are approximately 3 miles apart and from 3-30 miles offshore. Range in depth is from 30-120 fathoms.

We used a 41-foot headrope Gulf semi-balloon trawl. The body and intermediate of the trawl were made of 1-1/8-inch stretch mesh netting and the cod end consisted of 1-1/2-inch mesh. An innerliner in the cod end was made of 1-1/8-inch mesh in the anterior third and 1/2-inch mesh in the posterior two-thirds. Plastic rollers were attached to the 52-foot footrope. A 50-foot 5/16-inch steel tickler chain was used. Each end was attached to the ends of the footrope. Seventeen-inch dropper chains along the length of the tickler connected it to the footrope. Fifteen feet of cable bridle connected the net to the otter boards.

Plans called for one 30-minute tow at stations 1-3 and 7-9 and two 15-minute replicate tows at stations 4-6 and 10-15. The

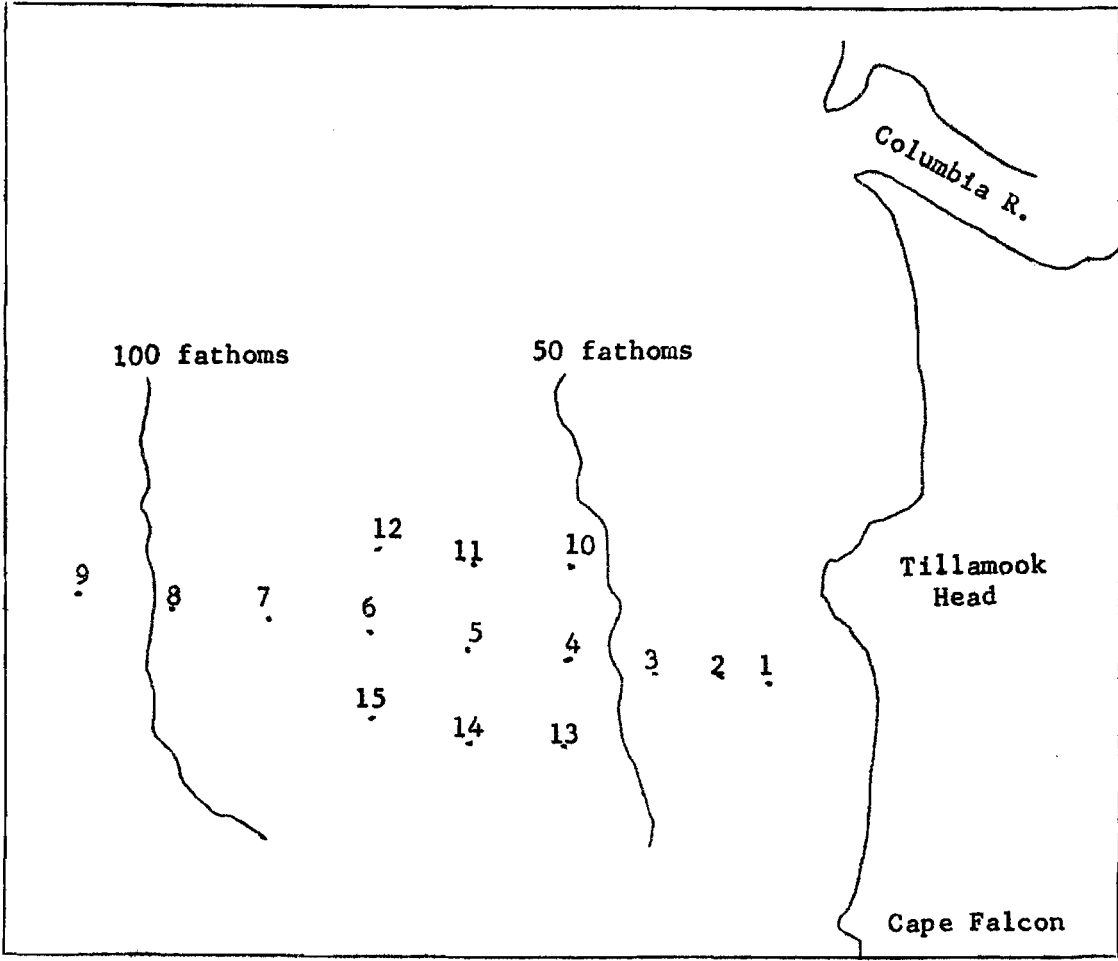


Figure 1. Location of trawl stations, Cruise 69-2

catch from each tow was sorted. All larger species of fish were counted and weighed. A 20-pound subsample of the remaining catch was sorted to determine the percentage of shrimp and incidental smaller species. The calculated percentage of shrimp was applied to the total weight of the remaining catch to determine pounds of shrimp caught. A random sample of approximately 200 shrimp was taken from each tow for later determination of sex and length frequency.

Results: Table 1 summarizes the shrimp catches and sex and age composition in per cent. No pink shrimp were caught at stations 1-3. The tow at station 7 was only 15 minutes because of strong northwest winds and resulting rough sea. No tows were attempted at stations 8 and 9 because of the sea conditions.

A comparatively low percentage (28-55) of age 1 shrimp were caught in the south-central portion of the study area (Figure 2). In the remaining area the percentage of age I shrimp ranged from 63-84. A small number of 0-age shrimp were found in samples from the northern and western stations (10-12 and 7)

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September 2, 1969

Table 1 Summary of sex and age composition in percent
of shrimp catches, cruise 69-2

Station	Sample (no)	Catch (lbs)	No. per lb.	Sex composition (%)			Age composition (%)			
				Male	Trans.	Female	0	I	II	III+
4a	250	163	147	72.0	10.8	17.2	0.0	75.2	7.2	17.6
b	199	200	130	61.8	12.1	26.1	0.0	62.8	20.6	16.6
5a	109	119	95	34.9	17.4	47.7	0.0	34.9	17.4	47.7
b	135	86	94	28.9	22.2	48.9	0.0	30.4	20.0	49.6
6a	175	104	114	56.0	11.4	32.6	0.0	54.9	17.1	28.0
b	166	99	128	62.0	16.3	21.7	0.0	65.1	8.4	26.5
7	233	44	166	68.7	17.6	13.7	0.4	84.1	8.2	7.3
10a	255	199	123	62.7	19.2	18.0	0.8	67.5	12.9	18.8
b	193	185	152	74.6	11.9	13.5	0.0	75.7	9.3	15.0
11a	191	141	132	63.8	13.1	23.1	1.6	66.5	10.5	21.4
b	185	159	146	71.3	9.8	18.9	0.5	75.7	8.1	15.7
12a	224	163	158	69.6	12.9	17.4	2.2	74.1	11.6	12.1
b	207	50	151	63.2	17.7	19.1	1.0	71.3	12.9	14.8
13a	233	168	161	72.1	15.9	12.0	0.0	77.7	9.4	12.9
b	201	189	137	64.7	15.4	19.9	0.0	66.7	11.4	21.9
14a	149	101	103	43.0	24.2	32.9	0.0	42.3	20.8	36.9
b	153	52	92	26.1	23.5	50.3	0.0	26.2	33.3	40.5
15a	194	44	124	52.1	17.5	30.4	0.0	55.2	17.0	27.8
b	150	52	115	42.0	22.0	36.0	0.0	44.0	22.0	34.0

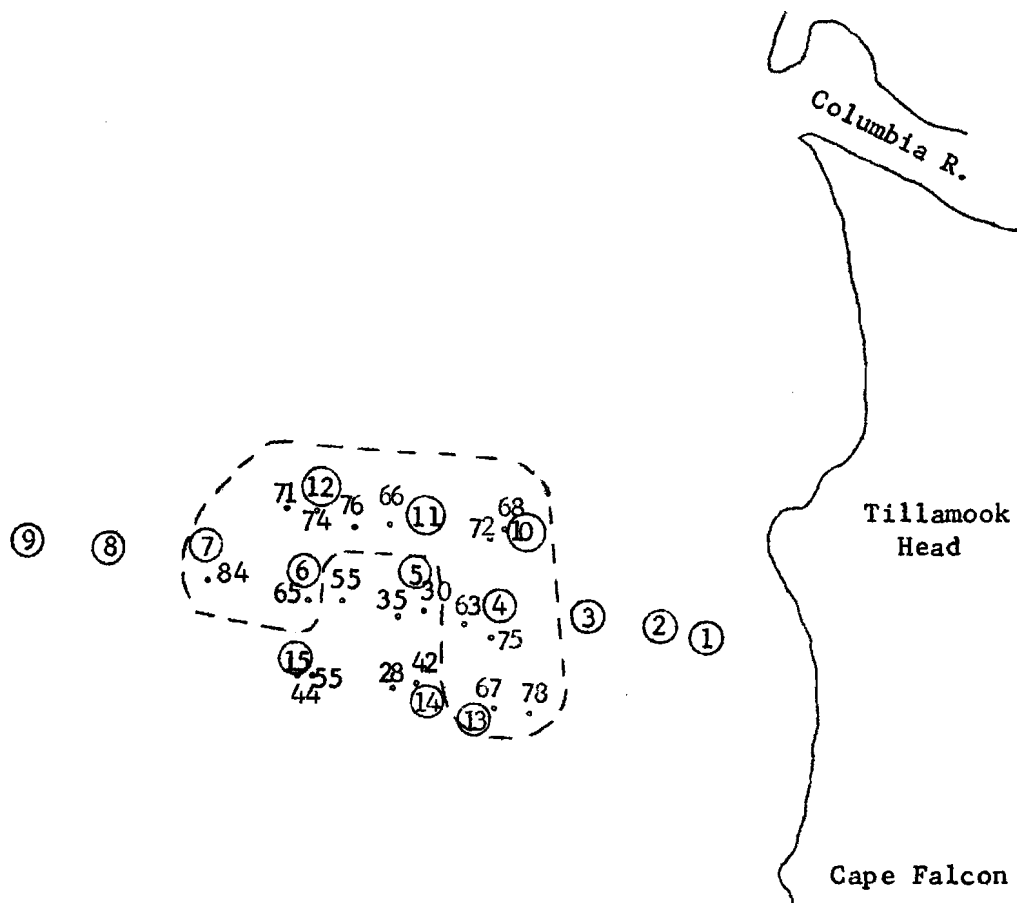


Figure 2. Percentage of age I shrimp in catches and approximate location of tow. Dotted line encloses portion of study area with a comparatively high percentage of age I shrimp