

Fish Commission of Oregon
Trawl Investigations
Report of Cruise 69-7, Shrimp

Vessel: M/V Sunrise, chartered trawler.

Dates: November 11-13, 1969.

- Objectives:
1. To determine benthic distribution of pink shrimp (Pandalus jordani) by sex and age in the area off Tillamook Head, Oregon.
 2. To find the location of zero-age shrimp (1969 year class).
 3. To collect associated oceanographic data.
 4. To tag any lingcod (Ophiodon elongatus) and yellowtail rockfish (Sebastes flavidus) caught incidentally with the shrimp.

Methods: The study area for cruise 69-7 included 18 stations (Figure 1). All stations except 1-3 were 4 nautical miles apart.

We used a 41-foot headrope Gulf semi-balloon trawl. The trawl's body and intermediate were made of 1-1/8-inch stretch mesh netting and its cod-end consisted of 1 1/2-inch mesh. A liner in the cod-end was made of 1/2-inch mesh.

One, 1/2-mile tow was made at each station.

Approximately 400 shrimp were sampled from the catch of each tow. Each sample was placed in a plastic bag and iced. All shrimp were sexed and measured at the laboratory.

Results: Table 1 summarizes the shrimp catches and their sex and age composition in per cent. The average catch was 55.0 pounds per 1/2-mile tow, excluding station 9 and 10 where

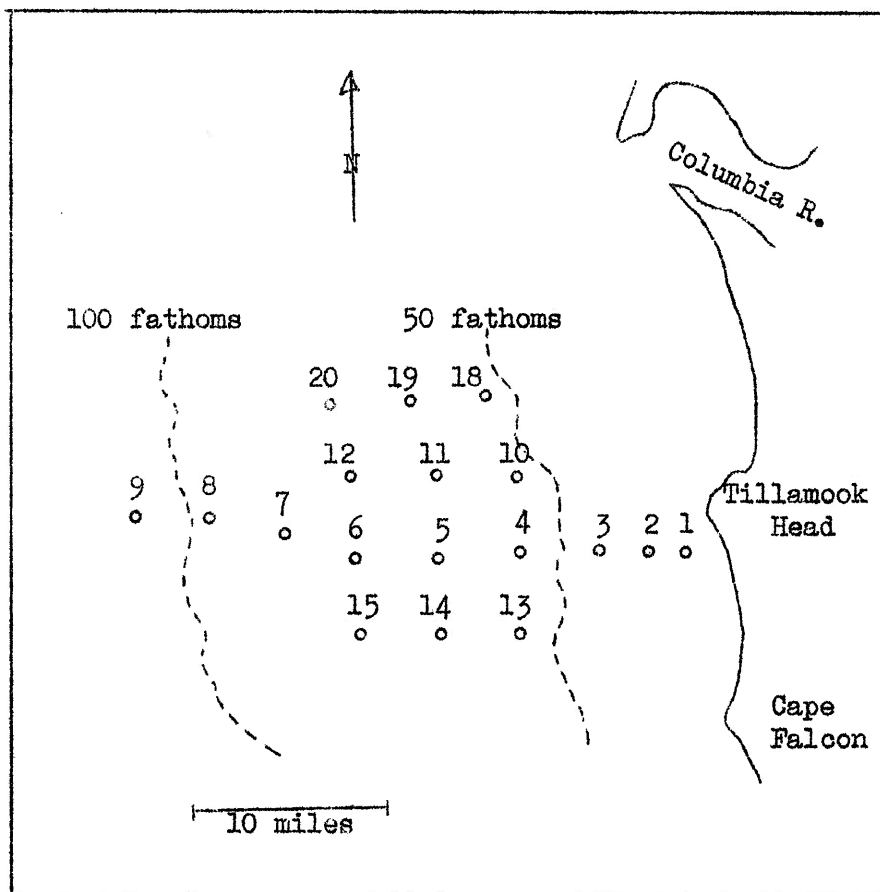


Figure 1. Location of trawl stations, Cruise 69-7

Table 1. Summary of sex and age composition in per cent of shrimp catches, Cruise 69-7

Station no.	Depth (fms)	Catch (lbs)	No. per pound $\frac{1}{2}$	Sample size (no.)	Sex composition (%) $\frac{1}{2}$		Age composition (%)							
					Male	Trans.	Female	0	I	II	III+			
3	49	0.0	--	--	--	--	--	--	--	--	--	--	--	--
4	66	49.0	119	400	71.9	1.0	27.1	1.8	72.9	4.0	21.3			
5	75-76	53.0	139	400	80.8	0.5	18.7	3.3	81.7	3.5	11.5			
6	81	9.5	91	401	42.0	1.3	56.7	1.3	44.0	5.1	49.6			
7	82-83	40.0	126	404	65.0	1.1	33.9	12.4	67.8	6.7	13.1			
8	95-95	205.0	130	402	66.3	1.0	32.7	2.8	78.1	5.2	13.9			
9	135-146	0.2	69	12 $\frac{2}{2}$	18.2	--	81.8	8.3	33.3	16.7	41.7			
10	58-68	0.1	129	16 $\frac{2}{2}$	50.0	50.0	--	75.0	25.0	--	--			
11	70-72	63.0	107	400	58.3	1.0	40.7	1.0	62.8	6.7	29.5			
12	77-78	41.0	96	402	49.9	0.2	49.9	2.0	49.6	5.8	42.6			
13	70	130.0	120	399	66.8	0.8	32.4	2.5	69.9	4.0	23.6			
14	78	34.0	117	401	71.0	0.5	23.5	3.0	68.1	5.5	23.4			
15	80	4.0	144	398	81.1	1.1	17.8	5.8	80.4	3.5	10.3			
18	60	3.3	94	328 $\frac{2}{2}$	40.1	2.9	47.0	6.1	56.3	12.5	25.1			
19	70	66.0	104	401	54.8	1.0	44.2	--	61.5	6.2	32.3			
20	75-76	19.0	153	404	74.7	2.0	23.3	10.9	82.2	2.9	4.0			

$\frac{1}{2}$ Does not include zero-age shrimp (immature).

$\frac{2}{2}$ Total number of shrimp caught.

catches were below 1 pound. No shrimp were caught at Station 3. No tows were made at Stations 1 and 2.

No distinct pattern was found in the shrimp distribution either by sex or age. However, a few individual stations did show definite sex and/or age segregation. Station 9, the furthest offshore, had the lowest percentage of males, no transitionals, and the highest percentage of females. Station 8, 4 miles inshore of Station 9, had a high incidence of males, some transitionals, and a low percentage of females. One of the inshore stations (10) had the highest percentage of transitionals and no females. It also had no age II or III+ shrimp.

Zero-age shrimp were found in samples from 14 of the 16 stations where tows were made. There was no definite pattern to the distribution or abundance of this year class. The catch at Station 10 contained a high percentage (75.0) of zero-age shrimp. However, actual numbers/unit effort were not as high here as at several other stations where per cent occurrence of zeros was lower.

XBT casts at 16 stations showed only slight differences in bottom temperatures between adjacent stations. There was, however, a general trend in bottom temperatures with the inshore stations being slightly warmer than the offshore stations. Station 3, the closest inshore, had a bottom temperature of 47.5 F while at Station 9, the furthest offshore, the sea bed temperature was 44.3 F.

Four lingcod and five yellowtail rockfish were marked
with dart tags.

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Michael Hosie
Oregon Fish Commission
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