

Oregon Department of Fish and Wildlife  
Marine Region  
Groundfish and Shrimp Investigations

Report of Cruise 79-5

Vessel : M/V *OLYMPIC*

Dates : May 27-30, 1979

- Objectives :
1. To determine biomass and number of shrimp (*Pandalus jordani*) within an offshore survey area between Yaquina Bay and Tillamook Bay.
  2. To make some exploratory tows outside of our traditional survey boundaries with the idea of possibly expanding those boundaries.
  3. To determine age and sex composition of this shrimp stock as well as average size (number/lb) and length frequency.

Methods : The M/V *OLYMPIC* is a fiberglass shrimp trawler built on the Gulf Coast and launched in February of 1978. The vessel is 75 feet overall with a 22 ft beam and is powered by a 365 hp diesel engine. She is 129 gross tons and 88 net tons.

The nets used were supplied by the vessel and were 90-ft Pfister square-box style commercial shrimp trawls. There were ten 12-inch floats on each headrope and ten 18-inch pieces of 3/8-inch chain on each footrope. The wooden doors were 7'X7' and connected to the net by 15-ft doglegs. A 3/8-inch tickler chain, 82 feet long, was used. Bridle length from the doors to the single warp was 50 fathoms.

We occupied 22 sampling stations in the traditional North-Central area (Yaquina Head to Tillamook Bay), based on a systematic sampling plan using 4.0X4.0 nautical mile-square grids. Six tows were selected outside our traditional area. Tows were approximately one nautical mile long. Loran, depth (fathoms), and time were recorded at the start and end of each tow, as well as ocean and weather conditions.

The catch from each tow was sorted and the shrimp was weighed and recorded to the nearest ½ pound. A randomly drawn 2-5 pound sample was taken for analysis on shore. Non-shrimp species in the catch were weighed and recorded. The shrimp not needed for samples and all marketable fish were kept for sale by the vessel at the conclusion of the charter.

Results : Twenty-two of the 24 stations in the North-Central area were occupied. Shrimp were caught on 15 of these 22 stations. Catch/tow (both nets) ranged from 0 to 133 pounds. Shrimp were caught on all tows made outside the traditional boundary. Catch/tow ranged from 6-245 lbs. Table 1 summarizes unweighted catch data.

Table 1. North-Central Area catch and composition summary

Total Catch	925 lbs. (both nets)		
Mean Catch/tow, (28 tows)	33 lbs. (both nets)		
Range	0 - 245 lbs.		
Average Size	82 shrimp/lb.		
Age Composition, (%/age)	<u>Age</u>	<u>No.</u>	<u>Wt.</u>
	1	28.6	13.8
	2	41.7	42.6
	3+	29.7	43.6

The location of tows where our largest catches were made suggests the possibility that the majority of shrimp in this area were outside our traditional survey area in deeper water. The lack of familiarity with the risky bottom and a depth limit due to the amount of cable precluded additional deep water tows.

Table 2 summarizes the cruise log for the North-Central area. Figure 1 shows the approximate locations of tows made.

Personnel : Gary Hettman, Party Chief, ODFW  
 Terry Thompson, Vessel Captain  
 Clyde Fox, Crewman  
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 Groundfish & Shrimp Investi-  
 gations, Marine Region  
 June 18, 1979

North Central Shrimp Survey  
May 28-30, 1979

Tow	Date	Time Start PDT	Tow duration		Down	Haul	Depth (fms)	Shrimp catch (lbs.)	Shrimp grade (#/lb)	% age (yrs)/numbers		
			Min.	Miles						1	2	3
* 1	5/28	0645	35	1.2	12874	12865	110-112	86	81	27.5	52.5	20.0
* 2	5/28	0800	34	1.1	12843	12835	112-115	147	81	12.0	72.4	15.6
3	5/28	1015	25	1.1	12776	12768	98	1	--	--	--	--
4	5/28	1143	37	1.3	12762	12754	81-80	Trace	--	--	--	--
5	5/28	1252	36	1.2	12739	12730	78-76	Trace	--	--	--	--
6	5/28	1420	35	1.1	12701	12693	79-82	0	--	--	--	--
7	5/28	1653	35	1.2	12666	12655	85-87	3	73	4.9	76.7	18.4
8	5/28	1725	35	1.0	12635	12628	91-94	3	71	4.3	66.7	29.0
9	5/28	1830	35	1.1	12630	12625	75-67	0	--	--	--	--
10	5/28	1940	35	1.2	12592	12584	70-67	0	--	--	--	--
11	5/29	0600	35	1.1	12599	12591	99-101	0	--	--	--	--
12	5/29	0740	35	1.2	12555	12547	83-84	Trace	--	--	--	--
13	5/29	0845	35	1.2	12530	12522	85	Trace	--	--	--	--
14	5/29	1012	36	1.3	12510	12500	84-83	Trace	--	--	--	--
15	5/29	1202	35	1.0	12470	12463	85	Trace	--	--	--	--
16	5/29	1223	35	1.0	12438	12435	74	0	--	--	--	--
17	5/29	1430	35	1.0	12440	12440	89	17	60	3.0	17.5	79.5
18	5/29	1540	35	1.5	12418	12418	104	Trace	--	--	--	--
*19	5/29	1730	35	1.2	12441	12450	130-138	245	88	29.0	48.5	22.5
20	5/29	1910	35	1.5	12468	12468	100-97	133	161	92.5	7.5	0.0
21	5/30	0620	35	1.2	12507	12498	95-96	92	151	83.5	16.5	0.0
*22	5/30	0753	37	1.0	12496	12504	106-110	3	--	--	--	--
23	5/30	0916	30	1.3	12532	12540	105-103	Trace	--	--	--	--
24	5/30	1040	40	1.1	12568	12575	102-106	Trace	--	--	--	--
*25	5/30	1225	11	0.5	12603	12606	140-160	6	63	5.5	36.0	58.5
*26	5/30	1353	32	1.2	12642	12635	151-155	189	71	10.9	42.1	47.0
27	5/30	1515	38	1.0	12667	12660	107-105	Trace	--	--	--	--
28	5/30	1708	35	1.1	12696	12704	103-101	0	--	--	--	--

\* Outside traditional survey boundary

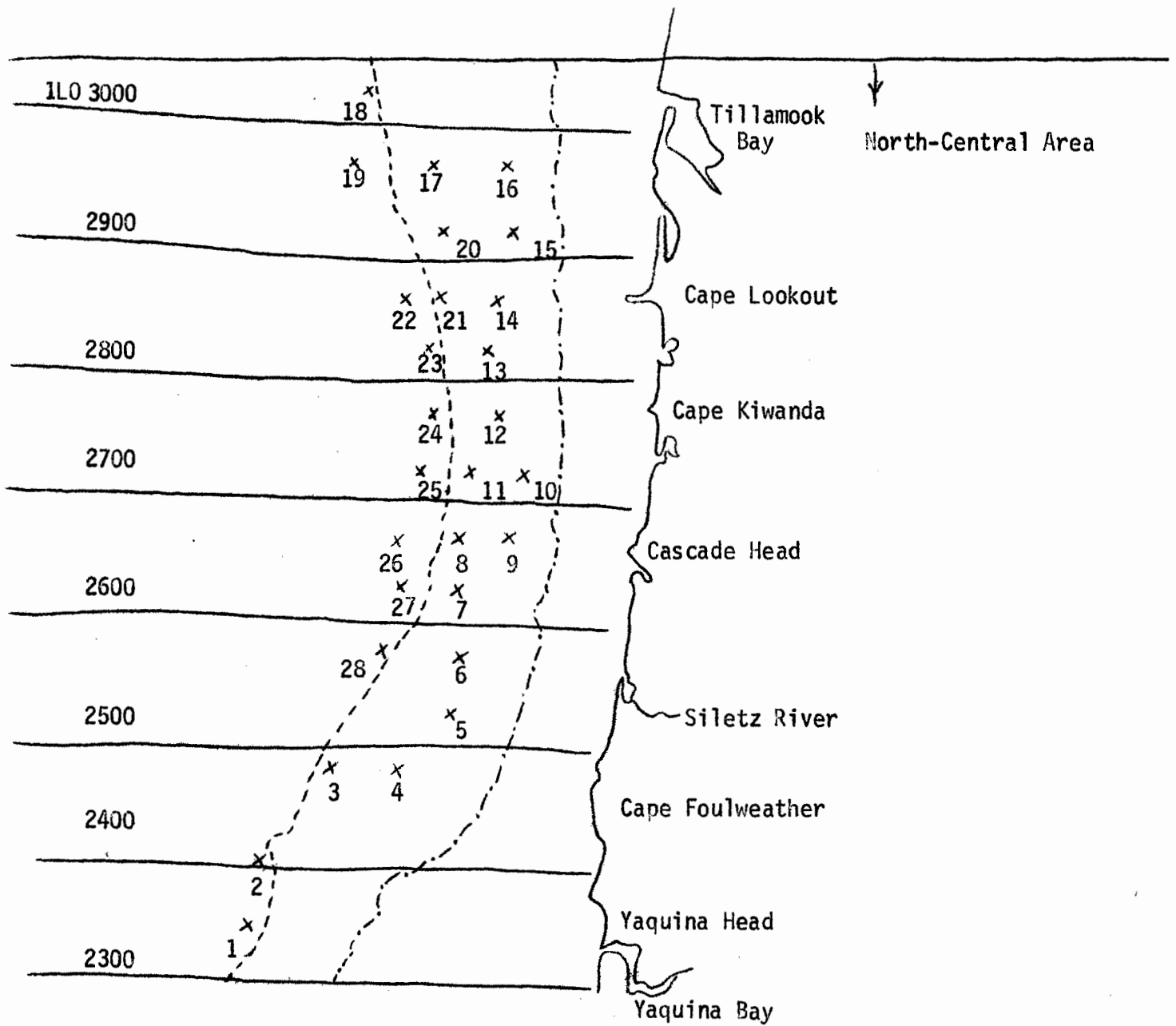


Figure 1. Location of tows made during shrimp cruise 79-5, May 27-30, 1979