GROUNDFISH AND SHRIMP INVESTIGATIONS

Annual Report

1974

by

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Oregon Department of Fish and Wildlife

Marine Region

December, 1975

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Groundfish and Shrimp Investigations

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INTRODUCTION

This report covers the major field and office activities of Groundfish and Shrimp Investigation throughout the calendar year 1974.

PERSONNEL

The 1974 report period saw many changes in the Groundfish and Shrimp staff. Program leader, Jim Meehan, left the investigation to take a position with the National Marine Fisheries Service, Washington, D.C., on July 31, 1974. Jack Robinson completed his educational leave in June and on November 1, 1974 was promoted to program leader (AB-4). Brent Forsberg was promoted to Aquatic Biologist 3 and transferred to Tillamook to head up a new project, the Tillamook Bay Estuary Study. Brent was joined by John Johnson who transferred into the estuary study April 1, 1974 and Steve Klug, who was hired as an EBA-1 on October 1, 1974. Connie Bruneau transferred out of the investigation to the Fish Passage and Reservoirs investigation on July 31, 1974. Gary Hettman transferred from Astoria September 9, 1974 to fill the EBT position vacated by Connie Bruneau. Neil Ten Eyck was promoted to EBT-1 and transferred from the Shellfish investigation to Groundfish and Shrimp on July 1, 1974.

Seasonal employees included Harry Flesher (June-Sept.), at Astoria, and Tom Giustina (June-Sept.), at Charleston.

FLEET SUMMARY

In 1974, Oregon's groundfish and shrimp fleet increased to 147 vessels (Table 1). Vessels fishing for groundfish increased from 67 in 1973 to 79 in 1974. Shrimp vessels increased from 87 in 1973 to 117 in 1974. Of the 117 shrimp vessels, 49 were double-rigged, 66 were single-rigged, and two were single-riggers fishing two nets. Forty-nine vessels fished for both groundfish and shrimp.

REPORTS

Reports prepared in 1974 are listed in the report to the sixteenth annual meeting of the technical sub-committee of the International Groundfish Committee cited below.

Robinson, Jack G., Gary Hettman and Robert Demory. 1975. The Oregon Groundfish Fishe and its Investigation in 1974. Fish Commission of Oregon.

In addition, an annual report for the Tillamook Bay study was prepared and distributed:

Forsberg, Brent O. 1974. Identification and Distribution of Fish and Shellfish in Tillamook Bay, Oregon. Annual Contract Report. Fish Commission of Oregon. Jul

Table 1. Continued

Boat	Port of Landing A	G	N	C	P	B	Fishery S	G
Nelda Woods	(X)	-	-	-	-	-	2	-
Nel Ron Dic	-	-	-	(X)	-	-	1	x
Neptune	x	-	(X)	-	-	-	2	x
Nestucca	(X)	-	-	-	-	-	1	x
New Mexico	(X)	-	-	-	-	-	-	x
*Ol' Rip	-	-	-	(X)	-	-	2	-
Oregonian	-	-	(X)	-	-	-	-	x
Orion	-	-	-	(X)	-	-	2[4]/	x
Overcast	-	-	-	(X)	-	-	1	x
Owner's Choice[3]/	x	x	-	-	-	-	2	-
Owner's Joy[3]/	x	-	-	-	-	-	2	-
Pacific	-	-	-	(X)	-	-	-	x
Pacific Crier[3]/	-	-	-	-	x	x	1	-
Pacific Hustler	(X)	-	x	x	-	-	1	-
Pacific Queen	-	-	(X)	-	-	-	-	x
Pam Bay	-	-	-	-	-	(X)	1	x
Panda	-	-	-	-	-	(X)	1	x
Paul C[3]/	-	-	-	-	x	-	1	-
Pisces	-	-	-	(X)	-	-	1	-
Ponderosa	-	-	-	(X)	-	-	2	-
Prospector	-	-	(X)	-	-	-	1	-
Quest[3]/	-	-	-	-	-	x	1	-
Rainbow	x	-	(X)	-	-	-	1	x
Restless C II	-	-	-	(X)	-	-	1	-
Rhoda Alice	-	-	-	(X)	-	-	2	-
Rosa Belle	-	-	-	(X)	-	-	2	-
Rose Ann Hess	(X)	-	-	-	-	-	-	x
Rubicon	-	-	-	(X)	-	-	1	x
Ruby K II	x	-	(X)	-	-	-	2	-
Ruth Ellen	-	-	(X)	-	-	-	1	x
Sally D	-	-	-	-	-	(X)	-	x
Sea Breeze II	x	-	(X)	-	-	-	1	-
Sea Quest	-	-	(X)	-	-	-	1	-
Sea Runner	-	-	-	(X)	-	-	1	x
Searcher I	-	-	-	(X)	-	-	1	-
Shadow Dew	-	-	(X)	-	-	-	1	x
Sharon Craig	-	-	x	(X)	-	-	2	-
Shaun	-	x	(X)	x	-	-	2	x
Storm[3]/	x	-	-	-	-	-	-	x
Sunset[3]/	-	-	-	x	-	-	1	x
Teddy Jo II	-	x	(X)	-	-	-	2	-
Three Girls	-	-	-	x	x	(X)	1	x
Tidensu	(X)	-	-	-	-	-	1	x
Tralee	(X)	-	-	-	-	-	-	x
Trask	(X)	-	-	-	-	-	1	x
Trego	-	x	(X)	x	-	-	1	x
Triton	x	-	-	(X)	-	-	2	-
Vixon	-	-	-	(X)	-	-	1	x
Washington (Big)	(X)	-	-	-	-	-	-	x
Washington (Little)	-	-	-	(X)	-	-	1	x
Western	(X)	-	-	-	-	-	-	x
Wind Song	-	-	-	(X)	-	-	1	-
Wrangler	(X)	-	-	-	-	-	2	-
Zarembo II	-	-	(X)	-	-	-	-	x

x = landing
(X) = Home port
1 = Single Rig
2 = Double Rig
* = Vessel former name was Capt. Rick Yeager
3/ = Out of State Boat
4/ = Single-rig vessel pulling 2 nets

Ports
- A = Astoria
- G = Garibaldi
- N = Newport
- C = Coos Bay & Winchester Bay
- P = Port Orford
- B = Brsokings

Fishery
- S = Shrimp
- G = Groundfish

Table 1. Vessels Landing Groundfish and Shrimp in Oregon by Port by Fishery, 1974

Boat	Port of Landing A	G	N	C	P	B	Fishery S	G
Amak	-	-	-	x	Ⓧ	-	1	x
Aquarius	-	-	-	x	-	Ⓧ	1	x
Arctic Sea	-	-	-	Ⓧ	-	-	2	-
Attilio Paladini	-	-	-	Ⓧ	-	-	-	x
Basil Boy	-	Ⓧ	-	-	-	-	1	x
Bernadette	-	x	Ⓧ	x	-	-	2	-
Betty A	-	-	-	Ⓧ	-	-	-	x
Bold Lady	Ⓧ	-	-	-	-	-	2	x
Bonnie C	-	-	-	x	x	Ⓧ	1	x
Bristol[3]/	-	-	-	-	-	x	1	-
Cap Elza	x	Ⓧ	x	-	-	-	2	-
Cape Foulweather	-	-	-	Ⓧ	-	-	2	-
Cape Lookout	x	Ⓧ	x	-	-	-	2	-
Captain Adam[3]/	-	-	-	x	-	-	2	-
Captain LHF	Ⓧ	-	-	-	-	-	2	-
Captain Mark	-	-	-	Ⓧ	-	-	-	x
Challenger	Ⓧ	-	-	-	-	-	1	x
Cherokee	-	-	x	Ⓧ	-	-	2	-
Cheryl Marie	-	-	x	Ⓧ	-	-	-	x
Christie	-	-	Ⓧ	-	-	-	1	x
Christina J	-	-	-	Ⓧ	-	-	2	-
Christopher M	x	-	Ⓧ	-	-	-	1	x
Columbia	x	-	-	Ⓧ	-	-	1	x
Coolidge II	Ⓧ	-	-	-	-	-	2[4]/	x
Corsair	-	-	x	Ⓧ	-	-	1	-
Cottree	-	-	Ⓧ	-	-	-	2	-
Cumberland Trail	x	Ⓧ	-	-	-	-	1	-
Daphne[3]/	-	-	-	-	x	x	-	x
Dare II	-	-	-	Ⓧ	-	-	2	-
Daybreak	x	-	Ⓧ	-	-	-	1	x
Defender	-	-	Ⓧ	-	-	-	1	-
Destiny	x	-	Ⓧ	-	-	-	2	-
Dick & Jim	-	-	-	Ⓧ	-	-	1	x
Donna	Ⓧ	-	-	-	-	-	2	-
Eagle (Lg.)	Ⓧ	-	-	-	-	-	-	x
Eagle (Sm.)	Ⓧ	-	-	-	-	-	1	-
Elaine Dell	-	-	x	Ⓧ	-	-	-	x
Empress[3]/	x	-	-	-	-	-	-	x
Elaine B[3]/	x	-	-	-	-	-	1	x
Estep	-	-	-	Ⓧ	-	-	2	-
Fargo	-	Ⓧ	-	-	-	-	1	x
Faymar	-	-	-	Ⓧ	-	-	1	x
Flo-N	-	-	-	Ⓧ	-	-	1	-
Four C's	-	-	Ⓧ	-	-	-	1	x
Frances E[3]/	-	-	-	x	-	-	2	-
Frank Allen	Ⓧ	x	x	x	-	-	1	-
Frank F	-	-	-	Ⓧ	-	-		
Galway Bay	x	-	Ⓧ	-	-	-	2	-
Garnet	-	-	-	-	-	Ⓧ	-	x
Georgia K	x	x	Ⓧ	-	-	-	1	x
Guppy	-	-	-	Ⓧ	-	-	2	-
Harmony	-	-	-	Ⓧ	-	-	-	x
Helen Louise	-	-	-	Ⓧ	x	-	1	x
Hellion	-	-	-	x	-	Ⓧ	2	-
Intrepid	-	-	-	-	-	Ⓧ	-	x
Irene Kay	-	-	-	-	-	Ⓧ	1	x
Jaka B	x	Ⓧ	x	-	-	-	2	-
Jamie K	x	-	-	Ⓧ	-	-	2	-
Jean Marie	x	-	Ⓧ	-	-	-	1	-
Jeanoah	-	-	Ⓧ	-	-	-	2	x
Jefferson	-	-	-	-	-	Ⓧ	-	x
Jeffery Allen[3]/	-	-	-	x	-	-	2	-
Jennie F. Decker	Ⓧ	-	-	-	-	-	-	x
Jennifer J	-	-	-	-	-	x	1	
Junior	x	-	-	Ⓧ	-	-	1	
Kanak[3]/	-	-	-	x	-	-	1	
Karen	-	-	-	x	-	Ⓧ	1	
Karen T[3]/	x	-	-	-	-	-	-	
Karlena Lori	Ⓧ	-	-	-	-	-	-	
Kangaroo	-	-	-	Ⓧ	-	-	1	
Kathy Jo	Ⓧ	-	-	-	-	-	1	
KDM[3]/	-	-	-	-	-	x	1	
Kincheloe	-	-	-	-	x	Ⓧ	1	
Kodiak	-	-	-	Ⓧ	-	-	1	
Liebling	Ⓧ	-	-	-	-	-	2	
Lituya	Ⓧ	-	-	-	-	-	-	
Marian F	Ⓧ	-	-	-	-	-	-	
Martle	x	-	Ⓧ	-	-	-	2	
Master Chris	x	-	Ⓧ	-	-	-	2	
Michael Lisa	x	-	x	Ⓧ	-	-	2	
Midnight Charger	x	-	Ⓧ	-	-	-	2	
Midnight Sun	-	-	-	Ⓧ	-	-	1	
Mikado[3]/	-	-	-	x	-	-	-	
Miss Connie	-	-	Ⓧ	-	-	-	-	
Miss Heather	x	Ⓧ	-	-	-	-	-	
Miss Lorraine	x	Ⓧ	-	-	-	-	-	
Miss Mary[3]/	-	-	-	x	-	-	-	
Miss Peggy[3]/	-	-	-	x	-	-	-	
Miss Yvonne	x	Ⓧ	x	-	-	-	-	
Mista Sea[3]/	x	-	-	-	-	-	-	
Mitkof	Ⓧ	-	-	-	-	-	-	
Mitoi	x	-	Ⓧ	-	-	-	-	
Ms. Dana	x	-	Ⓧ	-	-	-	-	

GROUNDFISH FISHERY

Landings

Oregon annual landings from 1965 to 1974 are shown in Table 2. Table 3 presents the total catch for 1970-1974 by International Statistical area (Figure 1), hours fished, and catch per hour. State-wide landings for 1974 were below the 10-year average but slightly above 1973 landings.

Rockfish landings were down substantially in 1974 as they were in 1973. Dover sole, petrale sole, rex sole, starry flounder, and Pacific cod landings increased. English sole, lingcod, and sablefish landings decreased. Pacific ocean perch landings increased to their highest level since 1971 but were still far below the 10-year average. Animal food landings were up 15% over 1973.

Catch rates and total landings of Dover, English, and petrale sole, Pacific ocean perch and other rockfish for the period 1960-1974 are listed in Tables 4 through 8.

Market Sampling

The 1974 sampling program produced 33 Dover sole samples, 11 petrale sole samples, 12 English sole samples, 5 Pacific ocean perch samples, and 48 rockfish species composition samples. One black rockfish sample was obtained.

The age frequency and sample size for English, petrale, and Dover sole, by sex and area of catch, are listed in Tables 9 through 11 for 1973.

Animal Food Fishery

Landings of fish that are utilized as animal food are sampled to determine the species composition of whole fishes. During 1974, 11 species composition samples were taken. Landings for 1970-1974 are listed in Table 12 by species. Mink food landings in 1974 showed a slight increase over 1973. Arrowtooth flounder, English sole, Dover sole, sanddab, and rex sole were the most numerous species found in mink food landings in the order listed.

Tagging Studies

The 1974 tagging results are listed in the report to the sixteenth annual meetin of the technical sub-committee of the International Groundfish Committee cited in the reports section.

INTERNATIONAL FISHERIES

Groundfish and Shrimp Investigations has a three-point program involving inter- national fisheries: (1) monitoring of foreign fleets, (2) coordination and exchange of information with fishery agencies in Canada, Japan, and the U.S.S.R., and (3) preparation of materials for use by the U.S. Department of State in unilateral nego ations with the U.S.S.R., Japan, Canada, and Poland.

Table 13 lists the average number of foreign vessels observed off the Oregon a Washington coasts in 1974.

Table 2. Yearly Oregon Trawl Landings from 1965 to 1974 (landings in thousands of pounds)

Species	Year										Mean
	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1965-74
English sole	1,678	3,537	2,304	2,360	1,716	1,884	1,799	2,196	2,371	1,747	2,154
Rock sole	4	18	8	51	25	5	122	2	tr.	4	24
Petrale sole	1,838	1,838	1,771	1,653	1,835	2,141	2,284	2,185	2,191	2,692	2,043
Dover sole	3,631	3,492	3,565	4,325	5,553	5,538	5,538	5,942	4,416	5,604	4,761
Rex sole	985	1,498	1,219	1,075	1,215	1,074	839	1,314	1,256	1,300	1,178
Starry flounder	410	477	277	454	251	426	485	439	339	408	397
Other flatfish	62	205	245	215	506	646	521	600	657	581	425
Pacific cod	194	628	430	385	47	78	483	1,069	453	685	445
Lingcod	852	993	1,067	1,526	1,084	945	1,281	1,349	1,999	1,937	1,303
Sablefish	130	68	67	56	135	111	240	403	838	547	260
Pac. Ocean perch	13,647	4,518	1,706	1,649	940	1,595	1,649	602	540	831	2,768
Other rockfish	4,121	5,069	4,061	4,253	5,101	3,515	3,404	4,057	3,558	2,545	3,968
Misc. species	23	12	8	31	4	17	28	36	63	59	28
Dogfish	1	0	0	2	tr.	17	4	tr.	tr.	12	4
Animal food	4,152	3,357	3,999	2,815	2,599	2,052	1,786	730	603	708	2,280
Reduction use[1/]	1,498	79	18	49	45	0	0	0	0	0	169
Total	33,226	25,789	20,745	20,899	21,057	20,044	20,463	20,924	19,284	19,660	22,207
Total hours	29,254	23,676	20.183	24,456	25,692	27,587	28,544	29,206	28,243	27,258	26,420
Catch/hour	1,136	1,089	1,028	855	818	727	714	716	682	721	841

1/ New category introduced in 1965, previously included with miscellaneous fish.

Table 3. Total Oregon Trawl Landings (by Area Fished), Calculated Hours Fished, and Catch/hr. by International Statistical Areas for 1970-74.

		1970	1971	1972	1973	1974	Mean 1970-74
5-A/5-B	Pounds	60,000	753,000	0	0	101,000	182,000
	Hours	60	531	0	0	64	131
	Lbs/Hr.	1,000	1,418	-	-	1,578	1,395
3-D	Pounds	224,000	88,000	0	0	0	62,400
	Hours	223	51	0	0	0	55
	Lbs/Hr	1,004	1,725	-	-	-	1,135
3-C	Pounds	1,080,000	749,000	112,000	80,000	143,000	505,000
	Hours	375	340	82	40	122	272
	Lbs/Hr	2,880	2,203	1,365	2,000	1,172	1,857
3-B	Pounds	1,028,000	828,000	1,231,000	664,000	504,000	851,000
	Hours	1,375	1,023	1,568	727	525	1,044
	Lbs/Hr	748	809	785	913	960	815
3-A	Pounds	8,628,000	7,703,000	9,101,000	8,000,000	8,632,000	8,412,800
	Hours	11,125	10,151	10,081	9,636	10,017	10,202
	Lbs/Hr	776	759	903	830	862	825
2-C	Pounds	1,625,000	1,546,000	1,633,000	2,593,000	1,855,000	1,850,400
	Hours	2,770	3,362	3,362	3,098	3,800	3,278
	Lbs/Hr	587	460	527	641	488	564
2-B	Pounds	6,012,000	7,329,000	7,736,000	6,230,000	6,643,000	6,790,000
	Hours	8,409	9,478	11,229	9,064	8,492	9,334
	Lbs/Hr	715	773	689	687	782	727
2-A	Pounds	1,012,000	1,153,000	760,000	1,132,000	1,167,000	1,397,200
	Hours	2,229	2,663	2,019	3,112	2,831	2,585
	Lbs/Hr	454	433	376	364	412	541
1-C	Pounds	375,000	314,000	351,000	585,000	615,000	448,000
	Hours	1,021	965	1,129	1,620	1,407	1,228
	Lbs/Hr	367	325	311	361	437	365

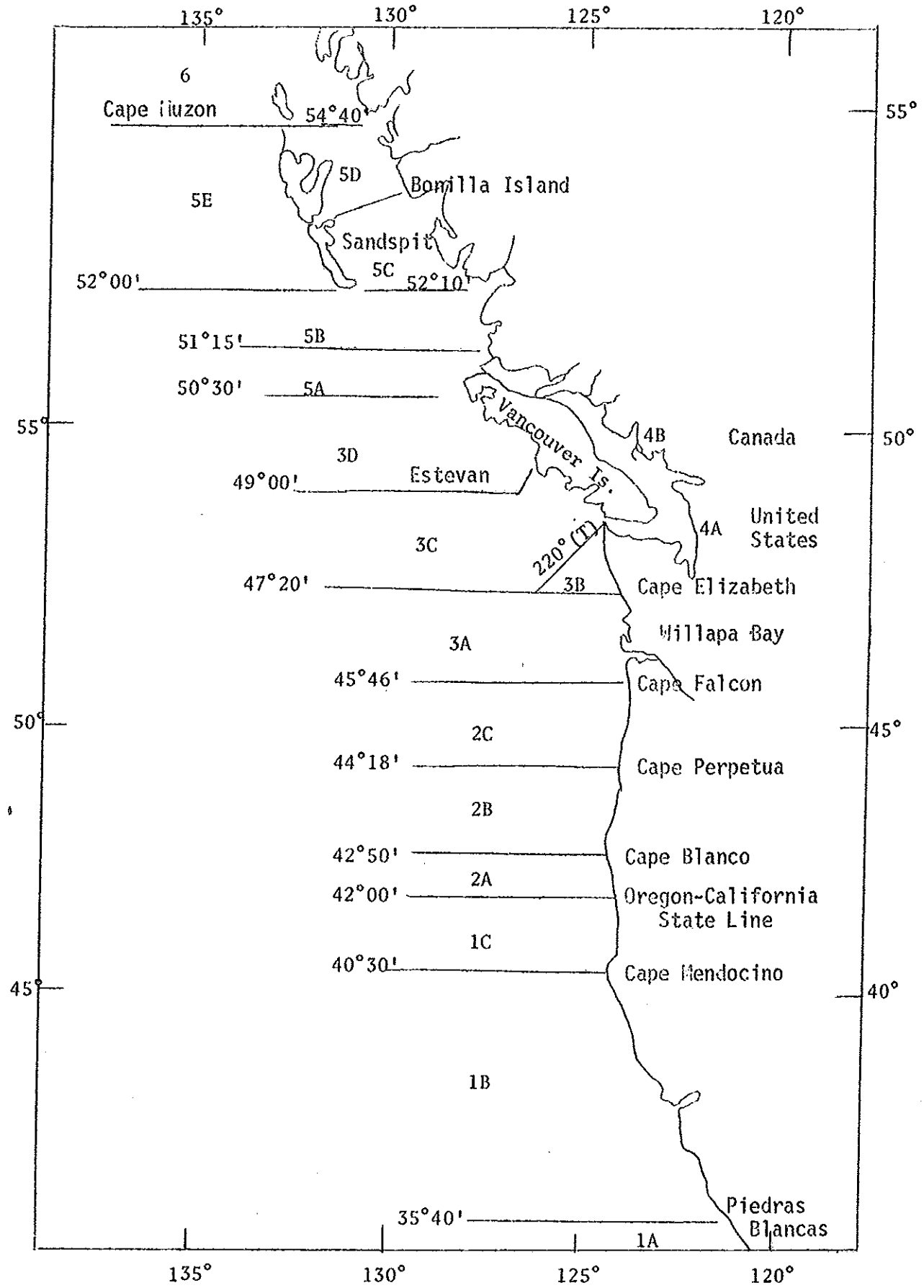

Figure 1. Chart of Pacific Coast Showing International Statistical Areas

Table 4. Total Pounds Landed and Pounds Per Hour Per Significant Landings by International Statistical Area for Dover Sole, 1960-74 (catch in thousands of pounds).

Year of Landing	1-C Catch	1-C C/E	2-A Catch	2-A C/E	2-B Catch	2-B C/E	2-C Catch	2-C C/E	3-A Catch	3-A C/E	3-B Catch	3-B C/E	3-C Catch	3-C C/E	3-D Catch	3-D C/E	5-A-B Catch	5-A-B C/E	Annual Landing	Mean C/E
1959	0	-	0	-	2279	528	360	275	1853	423	51	245							4543	445
1960	2	na	3	na	2,326	412	534	262	2,220	369	94	336	27	204	2	na	0	-	5,208	369
1961	0	-	7	307	1,944	405	259	183	1,743	349	101	242	0	-	0	-	0	-	4,054	348
1962	5	956	98	60	1,937	440	478	246	1,893	345	41	289	3	81	0	-	0	-	4,455	326
1963	1	58	34	94	2,241	430	501	250	2,472	332	90	181	6	na	0	-	0	-	5,345	344
1964	29	na	163	126	2,281	555	722	232	2,210	316	90	312	31	306	0	-	3	na	5,529	346
1965	98	305	177	337	1,242	408	598	304	1,471	384	29	310	9	153	7	na	0	-	3,631	368
1966	82	382	270	473	1,069	379	346	247	1,683	448	6	na	37	na	0	-	0	-	3,493	394
1967	87	376	56	326	1,532	572	235	260	1,563	364	89	377	2	na	0	-	1	na	3,565	418
1968	177	457	178	480	1,985	649	261	271	1,532	315	140	213	1	na	1	na	50	352	4,325	414
1969	119	333	770	458	2,968	625	115	200	1,537	334	33	333	2	na	1	na	9	na	5,554	459
1970	135	235	359	240	3,257	477	138	126	1,534	328	91	336	3	na	19	848	2	na	5,538	370
1971	48	169	405	285	3,574	538	161	368	1,249	344	45	241	52	na	0	-	4	na	5,538	439
1972	142	156	276	229	3,642	479	116	471	1,720	400	46	151	tr.	na	0	-	0	-	5,942	408
1973	202	245	411	289	2,645	392	69	204	1,045	412	44	na	0	-	0	-	0	-	4,416	368
1974	258	466	662	576	3,221	594	151	555	1,290	349	19	192	.1	na	0	-	1	na	5,604	511
1975	104	214	363	371	2,617	374	251	157	1,429	315	16	—							4,780	336
1976	118	194	453	279	2,814	357	319	308	1,265	307	18	77	Tr	—					4,987	330
1977		123																		

Table 5. Total Pounds Landed and Pounds Per Hour Per Significant Landing by International Statistical Area for English Sole, 1960-74 (catch in thousands of pounds).

Year of Landing	Area of Catch 1-C Catch	1-C C/E	2-A Catch	2-A C/E	2-B Catch	2-B C/E	2-C Catch	2-C C/E	3-A Catch	3-A C/E	3-B Catch	3-B C/E	3-C Catch	3-C C/E	3-D Catch	3-D C/E	5-A-B Catch	5-A-B C/E	Annual Landing	Mean C/E
1959	0	—	0	—	107	218	41	103	1,363	343	104	300	0	—	0	—	0	—	1615	324
1960	0	-	0✓	-	234	284	380	179	1,627	368	198	372	3	na	12	na	0	-	2,454	309
1961	0	-	17✓	359	187	213	111	160	1,286	274	188	320	0	-	0	-	0	-	1,789	259
1962	11✓	203	80✓	83	496	386	241	183	1,411	278	57	391	0	-	0	-	0	-	2,296	260
1963	6✓	63	37✓	74	255	214	307	252	1,251	259	90	401	2	na	0	-	0	-	1,948	241
1964	34✓	124	115✓	99	124	132	309	233	904	301	64	389	12	141	0	-	0	-	1,562	225
1965	32✓	189	93✓	195	150	195	397	174	960	381	34	435	12	na	0	-	0	-	1,678	265
1966	74✓	273	75✓	279	455	460	406	212	2,424	503	86	590	18	152	0	-	0	-	3,538	417
1967	91✓	446	34✓	269	342	272	310	198	1,237	354	290	538	0	-	0	-	0	-	2,304	321
1968	102✓	434	57✓	317	280	240	293	207	993	280	615	268	0	-	1	na	19	359	2,360	265
1969	42✓	111	202✓	171	156	335	247	198	948	251	119	409	1	na	0	-	1	na	1,716	233
1970	41✓	107	97✓	141	444	262	255	225	746	248	291	324	6	na	3	na	1	na	1,884	240
1971	66✓	111	165✓	138	528	276	325	226	632	214	74	225	9	na	0	-	0	-	1,799	214
1972	47✓	84	134✓	117	764	231	416	308	721	351	113	295	1	na	0	-	0	-	2,196	249
1973	119✓	140	224✓	128	708	193	558	246	670	261	92	241	0	-	0	-	0	-	2,371	206
1974	111✓	120	162✓	133	628	325	308	192	498	318	32	176	8	na	0	-	0	-	1,747	225
1975	65	129	102	130	605	238	673	182	669	242	12		—	—	—		—	—	2 166	196
1976	97	147	162	140	1698	282	659	296	1590	377	26	202	Tr						3 622	283

Table 6. Total Pounds Landed and Pounds Per Hour Per Significant Landing by International Statistical Area for Petrale Sole, 1960-74 (catch in thousands of pounds).

Year of Landing	Area of Catch: 1-C Catch	1-C C/E	2-A Catch	2-A C/E	2-B Catch	2-B C/E	2-C Catch	2-C C/E	(3-A) Catch	(3-A) C/E	3-B Catch	3-B C/E	3-C Catch	3-C C/E	3-D Catch	3-D C/E	5-A-B Catch	5-A-B C/E	Annual Landing	Mean C/E
1959	0	–	0	–	538	330	187	600	528	291	22	—	0	–	0	–	0	—	1275	334
1960	0	-	6	na	646	396	494	302	936	297	50	na	5	na	6	na	0	-	2,143	323
1961	0	-	8	120	315	185	511	344	919	239	54	162	31	na	0	-	0	-	1,838	243
1962	4	na	37	na	623	220	594	276	1,321	297	27	271	0	-	0	-	0	-	2,606	269
1963	11	108	26	82	534	234	321	195	1,361	246	39	226	3	na	0	-	0	-	2,295	228
1964	19	60	65	209	271	169	379	298	1,091	242	39	106	13	na	tr	na	0	-	1,877	222
1965	27	183	53	243	369	214	644	243	683	300	9	na	52	536	0	-	0	-	1,838	257
1966	31	127	33	169	239	219	449	224	1,048	283	7	na	29	na	0	-	1	na	1,837	249
1967	25	na	18	183	213	129	365	215	1,061	300	80	na	7	na	0	1	2	na	1,771	237
1968	31	136	33	205	241	352	350	174	801	228	142	na	1	na	16	186	28	na	1,653	220
1969	37	61	283	308	319	370	234	336	930	257	28	na	1	na	0	-	3	na	1,835	269
1970	36	92	266	284	583	259	269	317	849	231	108	154	19	na	11	na	0	-	2,141	240
1971	43	47	195	173	419	327	168	263	1,193	237	119	233	28	na	0	-	8	na	2,284	240
1972	16	na	82	166	600	373	219	259	1,002	228	246	287	20	na	0	-	0	-	2,185	262
1973	30	18	85	63	485	294	501	449	912	331	174	587	4	na	0	-	0	-	2,191	251
1974	27	na	47	49	661	507	511	324	1,352	377	68	299	26	na	0	-	0	-	2,692	384
1975	13	–	22	40	1010	240	658	163	891	255	55	—	—	—	—	—	—	—	2649	202
1976	12		23		754	270	208	188	745	200	7		7						1749	235

Table 7. Total Pounds Landed and Pounds Per Hour Per Significant Landing by International Statistical Area for Pacific Ocean Perch, 1960-74 (catch in thousands of pounds).

Year of Landing	1-C Catch	1-C C/E	2-A Catch	2-A C/E	2-B Catch	2-B C/E	2-C Catch	2-C C/E	3-A Catch	3-A C/E	3-B Catch	3-B C/E	3-C Catch	3-C C/E	3-D Catch	3-D C/E	5-A-B Catch	5-A-B C/E	Annual Landing	Mean C/E
1959	0	-	0	-	446	376	1435	823	587	587	4	-	0	-	0	-	0	-	2472	628
1960	0	-	0	-	141	261	1,154	623	1,053	734	130	933	141	1,067	115	na	0	-	2,734	640
1961	0	-	0	-	408	554	2,165	692	1,968	774	28	268	0	-	0	-	0	-	4,569	702
1962	0	-	1	57	449	455	2,534	608	2,772	682	33	1,413	0	-	0	-	0	-	5,789	625
1963	0	-	2	589	931	537	3,610	1,009	3,267	630	167	429	5	na	0	-	0	-	7,982	733
1964	0	-	1	na	2,505	835	3,755	1,000	2,310	574	829	744	62	392	0	-	86	1,089	9,548	787
1965	0	-	tr	-	1,956	909	8,847	1,544	2,681	806	30	690	133	375	13	324	0	-	13,660	1,173
1966	0	-	21	na	420	926	2,177	922	1,132	1,221	22	na	138	605	0	-	608	4,780	4,518	1,092
1967	0	-	0	-	247	402	1,032	747	324	826	16	na	6	na	0	-	81	529	1,706	663
1968	0	-	0	-	170	423	450	320	120	353	55	1,129	2	na	1	na	851	1,095	1,649	553
1969	4	na	23	214	218	278	335	477	46	323	0	-	9	na	9	na	296	740	940	430
1970	0	-	tr	-	127	308	416	418	73	195	2	na	901	3,481	64	996	12	196	1,595	735
1971	0	-	30	252	419	351	212	182	221	933	6	na	433	1,533	10	na	308	822	1,649	488
1972	tr	-	8	na	232	219	220	331	141	440	1	na	0	-	0	-	0	-	602	290
1973	2	na	5	na	224	368	130	323	178	377	0	-	1	na	0	-	0	-	540	359
1974	1	na	tr	na	380	413	53	906	318	810	0	-	0	-	0	-	79	na	831	604
1975	-	-	7	330	217	459	374	251	361	558	1	-							960	455
1976	1		2		414	338	1284	664	541	479	Tr								[illegible]	

Table 8. Total Pounds Landed and Pounds Per Hour Per Significant Landings by International Statistical Area for Other Rockfish, 1960-74 (catch in thousands of pounds).

Year of Landing	1-C		2-A		2-B		2-C		3-A		3-B		3-C		3-D		5-A-B		Annual Landing	Mean C/E
	Catch	C/E	Catch	C/E	Catch	C/E	Catch	C/E	Catch	C/E	Catch	C/E	Catch	C/E	Catch	C/E	Catch	C/E		
* 1960	-	-	-	-	1,330	494	1,911	1,055	2,504	524	-	-	-	-	-	-	-	-	-	-
* 1961	-	-	-	-	789	552	1,941	909	2,189	539	-	-	-	-	-	-	-	-	-	-
* 1962	-	-	-	-	805	436	1,610	622	4,907	544	-	-	-	-	-	-	-	-	-	-
1963	7	103	28	119	969	515	850	429	2,730	478	94	594	3	na	-	-	-	-	4,681	472
1964	13	129	65	138	477	484	640	529	2,811	492	117	355	24	na	-	-	-	-	4,147	491
1965	83	384	103	237	557	457	1,564	757	1,691	448	51	na	69	321	3	na	-	-	4,121	534
1966	43	277	50	279	712	629	962	728	3,080	1,167	32	na	117	1,436	-	-	73	2,066	5,069	959
1967	25	na	13	94	366	580	734	582	2,835	820	68	na	11	na	-	-	9	na	4,061	749
1968	32	440	18	131	761	670	200	375	2,277	693	305	416	7	221	118	1,675	535	736	4,253	666
1969	57	202	218	290	1,727	746	279	477	2,171	419	208	435	45	889	116	1,130	280	776	5,101	501
1970	99	244	167	433	1,040	470	111	181	1,723	474	152	521	103	340	108	1,811	12	na	3,515	469
1971	87	209	180	225	1,178	540	131	188	1,146	386	250	386	105	na	47	916	280	475	3,404	413
1972	69	159	117	144	1,410	457	230	395	1,904	616	311	451	16	na	-	-	-	-	4,057	483
1973	83	167	143	126	806	277	532	508	1,901	502	64	351	29	na	-	-	-	-	3,558	411
1974	83	152	100	149	633	200	250	163	1,399	473	59	307	3	na	-	-	18	na	2,545	353
1975	30	146	85	158	647	192	173	107	1511	419	50								2496	343
1976	36	166	160	403	1149	628	93	171	3129	651	11		Tr.						4578	626

* Catch figures may include some California and or Washington landings.

1977 83 35 1054 288 3261 1 Tr 4731

Table 9. Age Frequency of English Sole by Area of Catch and Sex in 1974.

	Area 3-A		Area 2-B	
Age	N	N	N	N
1				
2			1	
3	1	16		8
4	4	104	6	53
5	11	124	2	54
6	6	139	3	89
7	1	65	7	54
8	9	59	11	71
9	11	30	0	42
10	10	18	1	21
11	7	11	1	17
12	9	3		14
13	6	4		14
14				7
15		2		2
16+	1		1	2
Unk				
Total	76	575	33	448
Mean Age	8.79	6.15	6.91	7.30

Table 10. Age Frequency of Petrale Sole by Area of Catch and Sex in 1974.

	Area 3-A		Area 2-B	
Age	N	N	N	N
1				
2				
3	1	1		1
4	9	3	14	14
5	17	11	7	6
6	49	33	40	34
7	83	37	32	36
8	82	43	56	31
9	44	26	40	23
10	16	24	22	14
11	13	11	13	24
12	11	11	14	6
13	3	4	11	9
14	1	5	1	13
15	2	1		3
16+	1	4		12
Unk				
Total	332	214	250	226
Mean Age	7.80	8.43	8.16	9.01

Table 11. Age Frequency of Dover Sole by Area of Catch and Sex in 1974.

	Area 3-A		Area 2-B		Area 2-A	
Age	N	N	N	N	N	N
1						
2						
3						
4			1			
5	1	4	4	4		6
6	7	20	24	17	13	26
7	21	105	30	62	24	77
8	36	130	44	115	31	99
9	54	89	59	98	18	68
10	39	75	38	77	15	35
11	27	56	25	52	8	18
12	24	53	19	48	7	18
13	11	28	13	30	1	7
14	18	17	6	37	3	2
15	6	14	4	22	2	1
16	4	11	2	11		3
17	2	14		10		2
18		4		8		
19		5		4		
20		2		1		
21				2		
22		1				
23				1		
Total	250	628	269	599	122	362
Mean Age	10.05	9.83	9.25	10.29	8.71	8.59

Table 12. Yearly Oregon Animal Food Landings from 1970 to 1974 (Landings in Thousands of Pounds).

Species	1970	1971	1972	1973	1974	Average
Arrowtooth flounder	425	534	258	103	155	295
Rockfish	18	63	4	13	9	20
Pacific cod	0	0	8	tr.	0	2
Butter sole	105	56	1	18	1	36
Starry flounder	147	9	21	8	1	37
Skate	104	21	14	23	23	37
English sole	512	228	128	81	150	227
Dover sole	90	45	42	67	112	71
Rex sole	257	114	46	62	55	107
Sanddab	223	244	119	115	99	197
Petrale sole	52	82	10	13	1	32
Hake	0	0	8	8	0	3
Sablefish	41	126	17	8	28	44
Miscellaneous	50	64	10	75	31	46
Unspecified 1/	28	200	44	9	42	65
Total	2,052	1,786	730	603	707	1,176

1/ Not Sampled.

tr. = Less than 500 pounds.

Table 13. Average Number of Foreign Fishing Vessels Observed off the Oregon and Washington Coast by Country of Origin by Month During 1974.

Month	USSR	Japan	East German	Polish	South Korean
			Oregon		
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	53	0	0	0	0
June	48	0	1	1	0
July	48[1]/	0	0	2	0
August	na	0	0	4	0
September	23	0	0	7	0
October	0	0	0	8	0
November	0	0	0	4	1
December	0	na	0	6	na
Ship Months	172	na	1	32	1
Monthly Average	15.64	-	0.08	2.67	0.09
			Washington		
January	0	0	0	0	0
February	0	1	0	0	0
March	0	1	0	0	0
April	0	0	0	0	0
May	0	2	0	0	0
June	0	1	0	0	0
July	17[1]/	6	0	0	0
August	na	2	0	0	0
September	37	1	0	0	0
October	0	3	0	0	0
November	0	4	0	0	1
December	0	na	0	0	na
Ship Months	54	21	0	0	1
Monthly Average	4.91	1.91	-	-	0.09
			Oregon-Washington		
January	0	0	0	0	0
February	0	1	0	0	0
March	0	1	0	0	0
April	0	0	0	0	0
May	53	2	0	0	0
June	48	1	1	1	0
July	65[1]/	6	0	2	0
August	57[2]/	2	0	4	0
September	60	1	0	7	0
October	0	3	0	8	0
November	0	4	0	4	2
December	0	3	0	6	5
Ship Months	283	24	1	32	7
Monthly Average	23.58	2.0	0.08	2.67	0.58

1/ Includes whaling fleet of 12 vessels.
2/ Nearly all off of Oregon
na = not available

SHRIMP FISHERY

Landings

Strong market demand continued during the 1974 season and resulted in a continuation of high prices (22¢ per pound average) paid to the fishermen. A total of 117 vessels participated in the fishery, the highest ever recorded. Even more significant was the total of 49 double-rigged vessels, which was more than the 1973 total of 23 double-rigged vessels. The increase in vessels resulted in greater effort (hours fished) in 1974, but in spite of this the total catch of shrimp was 19,967,827 pounds (Table 14), a decrease of 18% from the record catch in 1973, but 27% greater than the five-year average (1969-73) of 15,725,000 pounds. A substantial amount of shrimp was caught in out-of-state waters and landed in Oregon in 1974. For the first time, Oregon shrimp fishermen fished off British Columbia. They landed 893,000 pounds; 4.5% of the total Oregon landings. Nearly a third of Oregon landings (6,105,000 pounds, a record amount) came from shrimp grounds off Washington. California-caught shrimp contributed only 26,000 pounds. The remaining 12,944,000 pounds (64.8% of the total landings) were caught off Oregon.

Biology & Stock Status

We continue to monitor the biology and status of the major shrimp stocks off Oregon by routinely sampling commercial landings of shrimp at Astoria, Newport, and Coos Bay. Less frequent samples were taken at Winchester Bay, Port Orford and Brookings. Monthly length-frequency distribution by sex for shrimp from northern Oregon and Coos Bay are shown in Figures 2 and 3. In northern Oregon the 1971 year class shrimp (age 3) dominated the catches at the beginning of the season, but by mid-season the 1973 year class (age 1) were more prevalent. On the Coos Bay grounds the 1971 year class (age 3) was weak and the 1972 year class (age 2) showed more strength during the season. As with northern Oregon, the 1973 year class (age 1) became very dominant off Coos Bay during the course of the season.

The September 1974 survey cruises indicated that the estimated stock biomass off Oregon continues to remain stable. Biomass estimates for 1974 and the past three years are given below:

	Area	
Year	Coos Bay	Northern Oregon
1971	9,029,000 lbs.	12,877,000 lbs.
1972	13,184,000 lbs.	13,027,000 lbs.
1973	13,426,000 lbs.	13,272,000 lbs.
1974	11,813,000 lbs.	13,981,000 lbs.
1971-73, Average	11,880,000 lbs.	13,725,000 lbs.

Estimates for both areas were comparable to averages for the past three years. Despite the high estimate for 1973, the carryover of shrimp into 1974 did not materialize. Landings of shrimp from the area surveyed were 11 million pounds in 1974, about 40% lower than the 19 million pounds landed from a comparable area in 1973. Catch per unit effort (Table 14) for both single-rig and double-rigged vessels was down in 1974 in most areas. The highest average CPUE for the season was obtained by double-rigged vessels fishing in area 88-N and by both double-rigged and single-rig vessels in areas 72 and 66 (Figure 4).

Table 14. Oregon 1974 Monthly Shrimp Catch and Catch-per-effort by Statistical Ara for Single and Double-rigged Vessels.

Month		Statistical Area 92	88-S	88-N	86	84	82	75	74	72	66	Total
April	C[1]/	2,111	15,485	8,510	1,064,653	843,445	9,680	650	97,135	0	0	2,041,669
	c/e_1	119	129	324	294	349	581	122	131	-	-	
	c/e_2	-	-	86	432	524	173	17	408	-	-	
May	C	13,505	80,037	99,717	912,194	1,481,622	412,525	275,681	318,678	0	0	3,593,959
	c/e_1	158	240	315	249	360	684	796	602	-	-	
	c/e_2	641	-	1,100	388	554	988	901	756	-	-	
June	C	0	70,099	547,934	711,004	897,306	33,380	279,203	732,748	87,972	0	3,359,646
	c/e_1	-	217	762	350	269	155	504	584	1,100	-	
	c/e_2	-	-	1,648	492	448	788	667	883	1,324	-	
July	C	0	16,835	145,848	699,349	522,202	12,660	6,823	797,916	1,858,350	0	4,059,983
	c/e_1	-	210	349	453	507	-	370	633	950	-	
	c/e_2	-	-	926	523	703	652	488	852	1,327	-	
August	C	2,819	52,721	113,318	1,417,128	1,027,441	155,160	70,550	616,896	254,737	316,516	4,027,286
	c/e_1	276	277	545	425	353	620	466	479	380	838	
	c/e_2	-	712	866	631	725	670	442	612	777	1,354	
September	C	7,215	16,600	67,855	430,674	579,195	2,130	8,763	274,021	242,998	548,934	2,178,385
	c/e_1	-	-	1,121	371	360	-	325	618	606	896	
	c/e_2	792	527	1,099	721	434	313	269	661	831	1,224	
October	C	0	0	55,010	426,450	15,429	524	848	98,650	82,209	27,779	706,899
	c/e_1	-	-	708	424	629	262	652	616	-	-	
	c/e_2	-	-	-	624	525	-	-	445	806	387	
Total	C	25,650	251,777	1,038,192	5,661,452	5,366,640	626,059	642,518	2,936,044	2,526,266	893,229	19,967,827
	C[2]/	18,820	41,585	392,265	2,888,188	3,607,352	479,409	359,597	2,271,441	1,983,109	838,559	12,880,325
	c/e_1	171	213	565	355	362	639	624	592	746	872	
	c/e_2	692	633	1,261	563	550	846	677	726	1,182	1,248	

18 19 20 22-23 25-27 28 29 30 32 33-34

1/ C = Landed catch by all types of vessels; c/e_1 = catch per hour by single-rig vessels; c/e_2 = catch per hour by double-rig vessels.

2/ C = Landed catch by double-rig vessels; included in C, all columns.

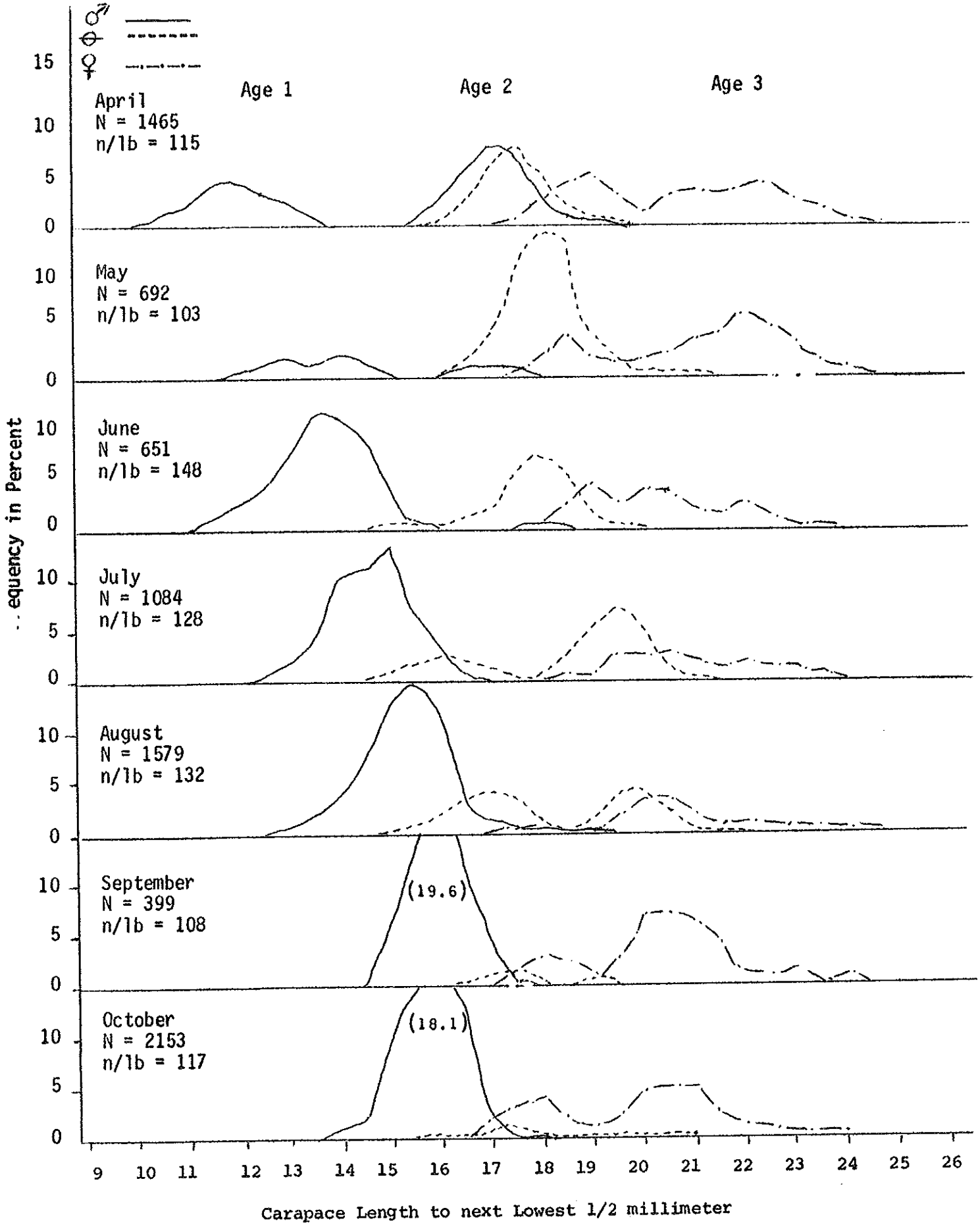

Figure 2. Monthly Length Frequency Composition by Sex of Shrimp Caught off Coos Bay (Area 2B) in 1974.

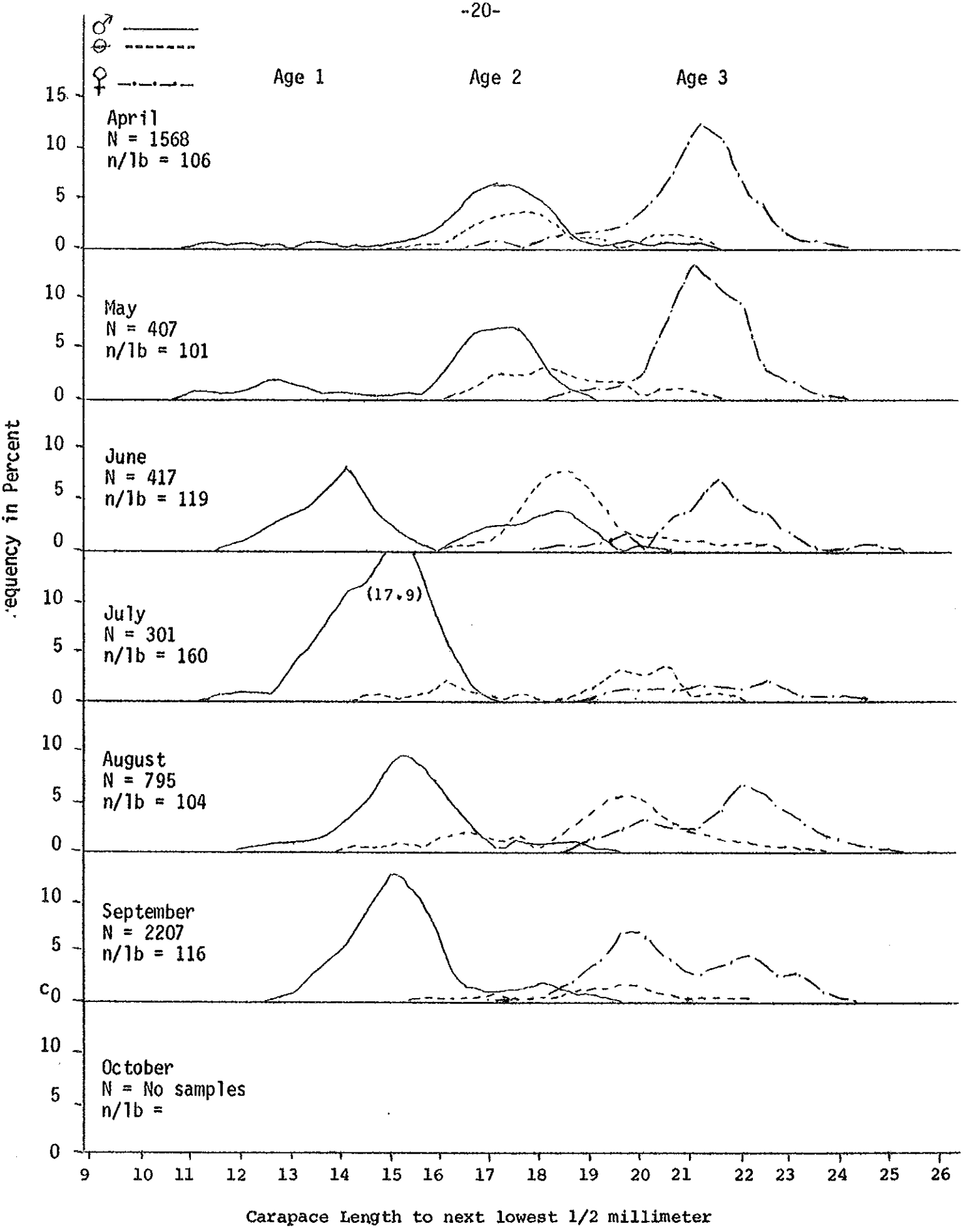

Figure 3. Monthly Length-Frequency Composition by Sex of Shrimp Caught off Northern Oregon (Area 2C) in 1974.

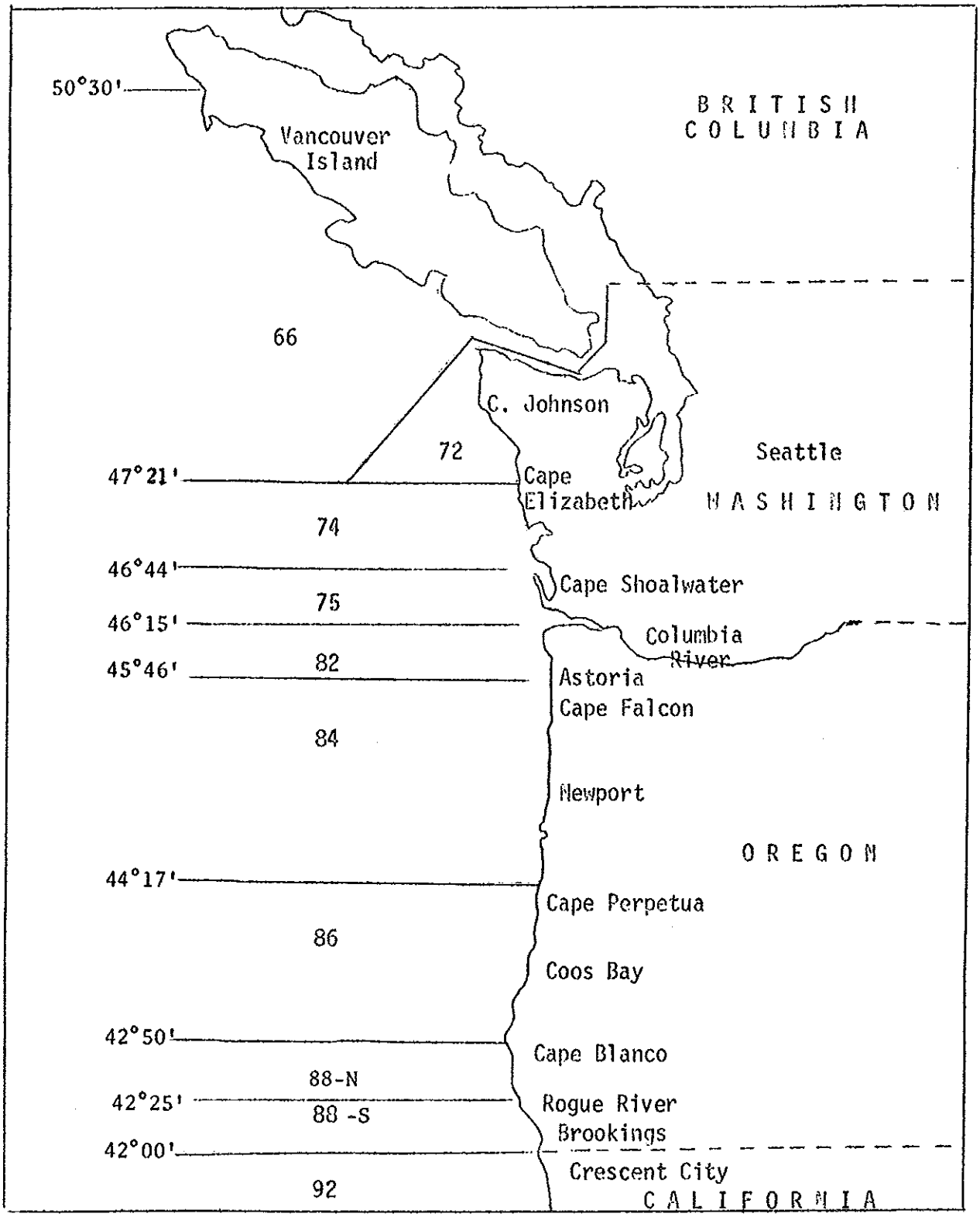

Figure 4. Pacific Marine Fisheries Commission Shrimp Statistical Areas, Washington, Oregon, and California.

TILLAMOOK BAY RESOURCE STUDY

In response to rapidly increasing interest in Oregon's estuaries, and to the increasing need for baseline data on which to base planning decisions regarding development and use of these fragile resources, we embarked upon a small pilot study in February 1974. The U.S. Fish and Wildlife Service funded this study for Tillamook Bay, Oregon. A small staff consisting of Brent Forsberg (project leader) and John Johnson began planning early in 1974. Emphasis was placed upon collecting data on finfish species cataloguing as well as collection of limited physical data (temperature, salinity) and temporal and spatial distribution of species of finfish in the estuary. The major objective was to develop techniques for such study on which to expand the study into other Oregon estuaries, however. We hoped to eventually fund such studies through state general fund appropriations or through funding provided by other state and federal agencies.

Work done through June 30, 1974 was summarized in an annual report last year (Forsberg, 1974); work and results from July 1, 1974 to May, 1975 was reported in detail by Forsberg, Johnson, and Klug (1975)[1/].

In October, 1975 the project was transferred from this investigation to the new agencies Research section.

Oregon State University also cooperated in the study during 1974. OSU personnel collected specimens of selected species in the bay with us, and analyzed stomach contents with the objective of learning more about the food chain and more about the ecology of the bay. Flynn and Frolander (1975)[2/] summarized results of their work; we also embarked on stomach analyses on our own during the period.

1/ Forsberg, Brent O., John A. Johnson, and Stephen M. Klug. 1975. Identification, Distribution, and notes on Food Habits of Fish and Shellfish in Tillamook Bay, Oregon. Contract Report, February 1, 1974 to June 30, 1975. Fish Comm. Oregon.

2/ Flynn, J. and H.F. Frolander. 1975. Analysis of stomach content of various species of Fish in June-July 1974 at Tillamook Bay, Oregon. School of Oceanography, Oregon State University, MS.