

*Informational
Report*

THE 1979 OREGON SHRIMP FISHERY

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by

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1979 OREGON SHRIMP FISHERY

Oregon

Oregon pink shrimp (*Pandalus jordani*) landings in 1979 were 29,416,946 pounds (13,343 mt), slightly more than half (52%) of the total shrimp landings for Oregon in 1978 (Lukas, 1978). Although landings declined below the previous two record years, the 1979 total was the third highest on record (Figure 1, Table 1). Reduced availability of shrimp was the major probable cause for decreased total landings this season. Poor weather influenced fishing effort and adverse environmental conditions reduced the availability of shrimp to the gear.

Table 1. Annual shrimp landings at Oregon ports 1976-79 in thousands of pounds^{1/}.

Port	1976	1977	1978	1979
Astoria	5,688	11,697 ^{2/}	7,414	7,625
Garibaldi	3,761	5,739 ^{2/}	3,166	1,429
Newport	7,702	15,361	20,595 ^{2/}	7,145
Winchester Bay	578	1,921 ^{2/}	1,084	819
Coos Bay	6,256	12,056	17,476 ^{2/}	9,073
Bandon	13	-	9	-
Port Orford	754	1,011	529	26
Gold Beach	-	-	-	42
Brookings	640	795	6,724 ^{2/}	3,253
Total	25,392	48,580	56,997	29,417

^{1/} Figures represent only the shrimp poundage landed at each port, not the poundage that was processed. (Some was transshipped to other ports).

^{2/} Record annual landing

A total of 203 vessels landed shrimp in Oregon in 1979, an increase of 17 vessels over the 1978 total (Figure 1). Shrimp were periodically most available off the northern coast of California and the southern coast of Washington, enticing Oregon vessels to stray from traditional beds and inducing out-of-state boats to remain in their respective home ports most of the season.

Processors were prepared for a big season with twenty new peeler machines having been installed, bringing the total to 87. As in 1978, there were 26 processors buying shrimp. The number of buying stations fell from 38 in 1978 to 28 in 1979.

The ex-vessel price for shrimp was 32 cents per pound from April through early May. Prices jumped to 35 cents and then to 42 cents by early June. Skippers were paid 46 cents per pound landed by late June through October 15. Their product brought them 28 cents per pound in 1978.

Astoria was the only port in Oregon to reflect an increase in landings over the 1978 season (Table 1). By comparison, in 1979, Newport landings were only a third as much as in 1978 and Coos Bay-delivered shrimp, slightly more than half. Coos Bay reported the greatest number of total pounds delivered in 1979.

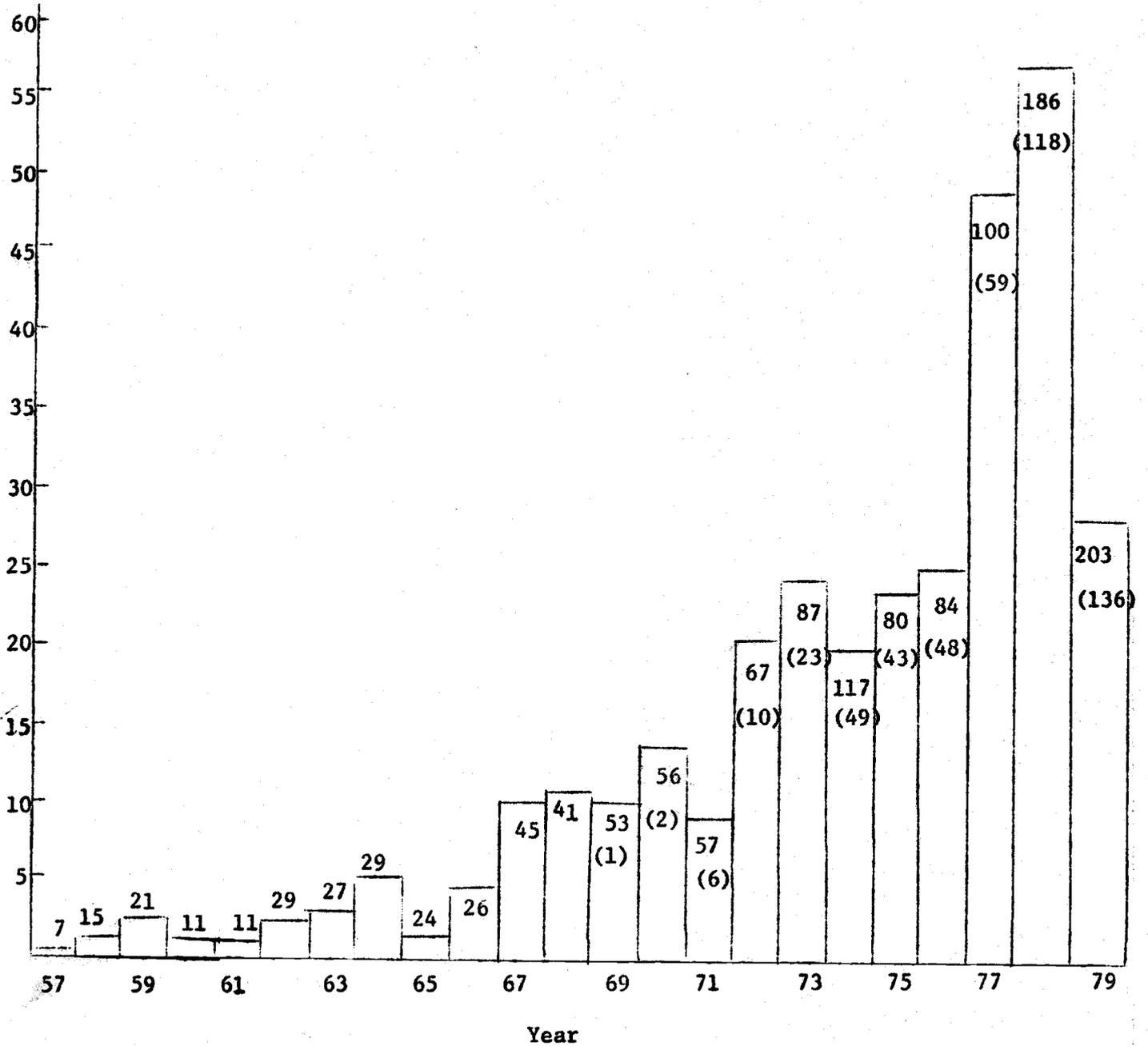


Figure 1. Annual Oregon shrimp landings and number of shrimp boats; number of double-rigged boats in parentheses and included in total.

Brookings had its second highest year on record. This significant increase in landings was due to improvements in off-loading facilities, and a higher CPUE (catch per unit effort) which attracted more vessels to southern ports.

The increase in landings in Astoria was due in part to the increase in effort by the fleet in areas off northern Oregon and Washington (Table 2). Astoria had the largest increase in fleet size which was 67 vessels, an increase of 28 boats over the 39 delivering in 1978.

Table 2. Number of vessels delivering shrimp by port, 1978-79.

Port	Home Port		Oregon Transient ^{1/}		Out-of-state		Total	
	1978	1979	1978	1979	1978	1979	1978	1979
Astoria	26	28	4	29	9	10	39	67
Garibaldi	14	18	2	2	-	1	16	21
Newport	39	37	18	14	4	5	61	56
Winchester Bay	6	8	1	6	-	4	7	18
Coos Bay	37	54	31	28	24	22	92	104
Bandon	-	-	1	-	-	-	1	-
Port Orford	1	0	1	3	-	-	2	3
Brookings	16	20	11	13	31	15	58	48
Gold Beach	-	-	-	2	-	-	-	2
Total Oregon	139	165						
Out-of-state:								
California	30	33						
Washington	17	5						
Total vessels delivering to Oregon ports	186	203						

^{1/} Oregon vessels which delivered to ports other than their home ports.

Coos Bay accommodated 104 (51%) of the total fleet. Astoria, Coos Bay and Brookings experienced the greatest influx of out-of-state boats. Increased fleet size this year is basically a result of additional Oregon vessels entering the fishery. Last year's increase in fleet size was due to an influx of out-of-state boats and to a lesser degree to additional Oregon vessels in the fishery.

Pacific Coast

Oregon 1979 landings were exceeded only by Alaska's, and all region's 1979 fisheries were down from 1978 (Table 3).

The California shrimp season was markedly low, only a third of last year's near record 13.1 million pounds (Table 3). Thirty-three California boats fished Oregon waters this year. California preceded Oregon 24 hours by closing their season mid-night of October 14, in 1979.

Washington reported its third highest season on record. Washington waters remain open to the shrimp fishery year-round.

Alaska landed 50.4 million pounds (22,844 mt) of trawl caught shrimp in 1979, a 31% reduction from 1978 total landings (Table 3).

California, Oregon and Washington reported a combined seasonal total of 48 million pounds (21,773 mt), only two million pounds less than the 1979 Alaska total.

At the time of this writing, British Columbia statistics are not available.

In April, southern ports reported high yields. CPUE progressively declined throughout the season. In September and October northern ports reported relatively high CPUE and increased total landings (Table 4). Many vessels moved northward in these months to fish out the Oregon season and to continue shrimping in open Washington waters.

Table 3. Annual landings of shrimp by state, province and entire Pacific coast, 1968-1979 (in thousands of pounds; primarily *Pandalus sp.*)
Source: PMFC Crab and Shrimp Data Series.

Year	Alaska	Br. Columbia	Washington	Oregon	California	Total
1968	42,023	1,566	1,164	10,976	2,270	57,999
1969	47,851	2,119	1,425	10,505	2,948	64,848
1970	74,256	1,538	926	13,735	4,048	94,503
1971	94,891	735	678	9,291	3,081	108,676
1972	83,830	794	1,582	20,861	2,434	109,501
1973	119,964	1,729	5,271	24,517	1,240	152,720
1974	108,275	2,644	9,325	19,968	2,338	142,550
1975	98,535	1,728	10,167	23,893	4,993	139,316
1976	129,011	7,723	9,261	25,392	3,400	174,787
1977	116,891	6,176	11,803	48,580	15,640	199,090
1978	73,397	2,969	13,987	56,997	13,167	160,517
1979 ^{1/}	50,362	N/A	11,200	29,417	4,800	95,779+

^{1/} Preliminary data except for Oregon.

The season average of 399 pounds per hour for double-rig and 270 pounds per hour for single-rig vessels was down 55% from the 1978 season average of 879 and 621 pounds per hour for double- and single-rig vessels respectively (Table 4).

Annual landings from areas north and south of Newport reflect an average 50:50 ratio plus or minus 10% of the total reported landings, a pattern seen prior to 1978 (Lukas, 1978). Areas north of Newport reported 11.6 million pounds (5,263 mt) landed while 17.8 million pounds (8,080 mt) were processed south of Newport (Figure 2).

No U.S. fishery was permitted by Canada off Vancouver Island in 1979.

Table 4. Oregon 1979 monthly shrimp catch in thousands of pounds and catch-per-effort by statistical area for single and double-rigged vessels.

State Area	April	May	June	July	August	Sept.	Oct.	Total
32 C	1.0	1,108.9	818.2	469.6	382.1	542.5	33.6	3,355.9
C/E ₁ ^{1/}	-	685	402	290	204	-	-	434
C/E ₂ ^{2/}	89	663	375	291	328	415	232	413
30 C	213.2	756.5	475	763.9	987.1	679.3	321.8	4,050.6
C/E ₁	-	284	319	227	157	221	207	225
C/E ₂	557	591	361	314	271	260	251	325
29 C	1.5	0.2	0.6	34.6	197.3	12.9	7.0	254.0
C/E ₁	-	-	36	143	161	654	-	181
C/E ₂	149	52	18	229	240	64	103	212
28 C	10.1	39.3	42.7	2.1	14.6	13.5	28.0	150.3
C/E ₁	-	-	-	6	-	-	-	6
C/E ₂	183.3	487	377	79	173	186	415	300
26 C	421.7	191.2	1,037.5	482.0	584.3	64.6	70.9	2,852.1
C/E ₁	139	230	169	166	218	-	-	182
C/E ₂	478	505	361	290	244	79	459	311
24 C	72.9	249.2	199.1	72.0	172.1	10.6	19.3	795.1
C/E ₁	0	229	170	110	110	-	-	189
C/E ₂	481	265	277	232	229.6	123	153	257
22 C	2,821.9	1,287.5	354.8	561.3	623.3	340.7	142.8	6,132.2
C/E ₁	437	312	202	157	180	117	160	260
C/E ₂	644	463	308	351	261	217	210	419
21 C	3,286.4	2,071.2	987.3	865.3	839.7	403.9	59.7	8,513.7
C/E ₁	524	314	187	266	193	199	105	279.7
C/E ₂	649	641	407	355	295	293	207	491
20 C	14.2	246.8	143.4	255.6	102.1	73.5	0.4	839.4
C/E ₁	90	271	352	309	501	316	169	292
C/E ₂	436	833	600	467	493	385	-	565
19 C	163.7	265.5	247.7	183.0	15.3	103.8	32.5	1,011.6
C/E ₁	376	370	234	273	131	175	189	284.6
C/E ₂	617	630	373	501	227	468	408	476.7
18 C	679.4	95.4	60.7	0.4	349.1	77.7	32.8	1,315.6
C/E ₁	392	298	278	0	177	145	151	305
C/E ₂	935	563	326	58	630	343	320	636
Total C	7,686.0	6,311.7	4,387.1	3,690.0	4,267.2	2,323.0	752.2	29,417.0
C/E ₁	437	324	213	206	195	170	161	270
C/E ₂	614	565	366	327	285	269	250	399

^{1/} Average catch in pounds per hour of effort for single-rig vessels.
^{2/} Average catch in pounds per hour of effort for double-rig vessels.

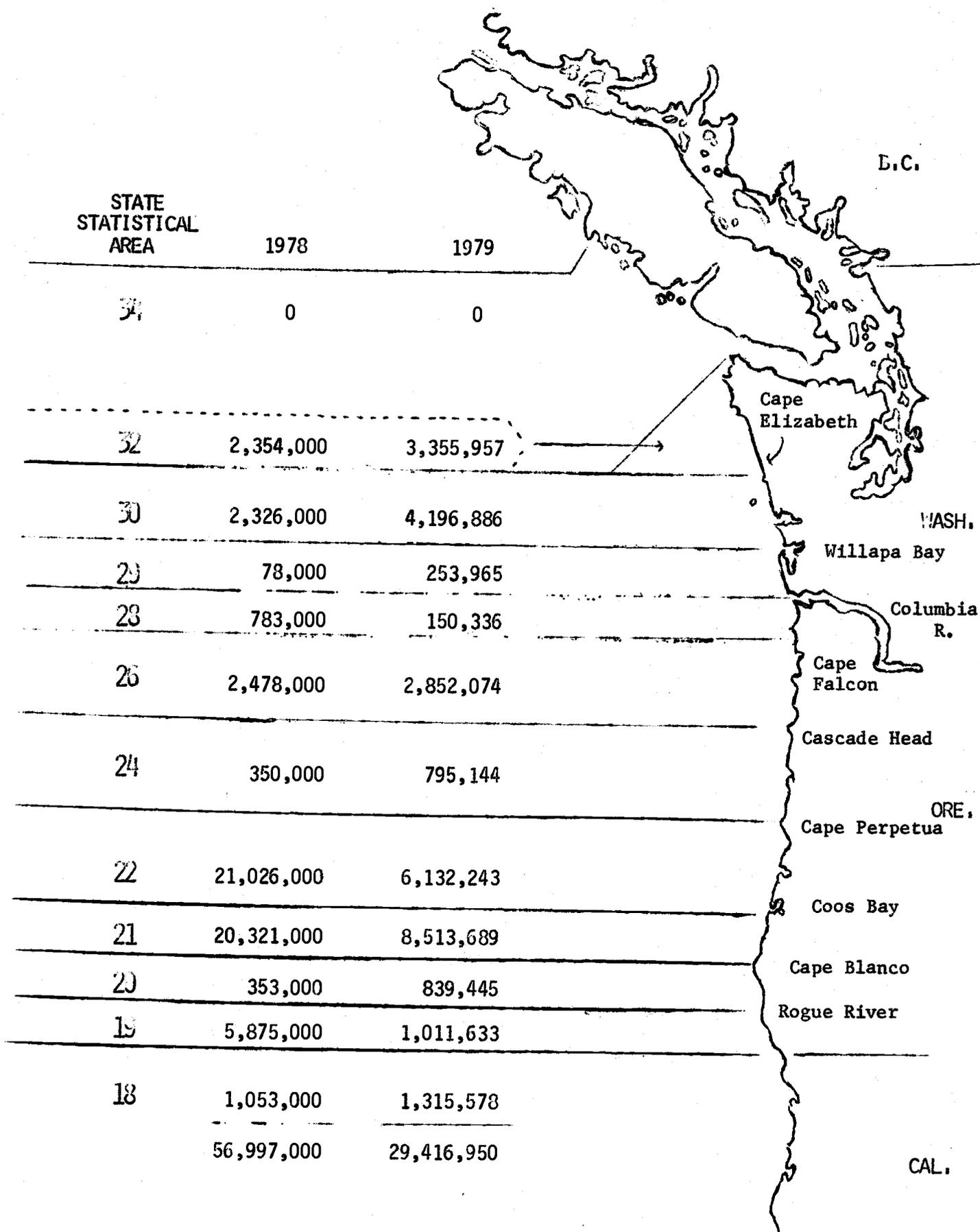


Figure 2. Oregon 1978 and 1979 shrimp landings, in pounds, by state statistical area.

AREA SUMMARIES

Washington

Oregon-landing vessels fishing off Washington landed 7.8 million pounds (3,541 mt), up 40% over 1978 landings and nearly equal to the record 8.0 million pounds caught in 1977 (Figure 2, Table 5). The Destruction Island grounds (Area 32) yielded a record 3.4 million pounds in 1979. The Grays Harbor bed yielded 4.2 million pounds, the second highest catch for that area. Area 29 (off Willapa Bay) also had an increase in catch this year. These figures do not include catches landed in Washington.

Average seasonal catch per effort by single-rig vessels in Area 32 (Destruction Island) was 434 pounds per hour. This was the highest seasonal average CPUE for the three Washington areas (Table 4). May catch rates were good but declined as the season progressed.

Market sample data showed good grade throughout the season (Table 6). The 1977 year class (age II), reportedly strong in 1978, was a dominant year class in 1979. Age I shrimp (year class 1978) appeared strong and may be a major influence in the 1980 fishery as 2-year olds. Age III+ shrimp (year class 1976 and older) showed weakly. A few exceptionally large females were sampled and may be representative of the very strong 1975 year class (Age IV). Clear delineation of this year class from younger shrimp is difficult due to their overlapping length distributions.

Table 6. Count per pound and age composition (by number of shrimp in Areas 29, 30 and 32 (Washington Coast) as summarized from monthly market samples.

Month	Number Sampled	Shrimp per pound	Age composition, in percent, by number		
			I	II	III
April	907	100	16	72	12
May	698	118	32	54	14
June	1,190	121	41	49	10
July	953	115	57	37	6
August	1,085	118	66	29	5
September	612	130	70	23	7
October	1,165	119	61	36	3

North Central Oregon

Shrimp landings from north-central Oregon (state areas 24, 26, and 28) totaled 3.8 million pounds (1,723 mt), slightly higher than the 3.6 million pounds (1,600 mt) of 1978 (Figure 2). As in 1978, average CPUE levels were lowest of any area with the exception of Area 29, just north of the Columbia River (Table 4). High yields in October may be a reflection of the fleet extending its range to deeper water.

Market samples indicated grade was good. North-central areas showed an increased incidence of three-year old shrimp (Table 7). Both 1977 and 1978 age classes (I's and II's) showed strongly throughout the season. Together they accounted for approximately 75% of the shrimp sampled in this area. No samples were obtained from Area 28.

Table 5. Annual Oregon shrimp landings in 1000's of pounds and catch-per-effort by statistical area for single and double-rigged vessels, 1968-1979.

Year	Area of Catch																	
	34	32	30	29	28	26	24	22	21	20	19	18	17	16	15	14	13	12
1968 C				1/	1,771.6	2,660.8	325.9	4,062.8	238.9	1,302.7	307.2	281.2						
C/E	0	25.2	494		792	635	556	580	636	1,087	554	895						
1969 C				1/	1,220.0	3,852.1	251.1	3,666.9	159.4	2.1	15.0	140.4						
C/E	166.4	1,067.4	690		662	567	430	431	398	58	157	551						
1970 C				1/	601.3	2,915.8	2,207.6	4,686.9	199.7	1,550.4	141.9	166.0						
C/E	475.2	787.1	539		497	560	675	565	494	1,228	443	740						
1971 C				1/	430.2	5,575.9	4/	1,534.4	5/	656.0	576.0	46.7						
C ₂ ^{2/}	9.8	461.5			337.0	1,762.1		0		0	0	0						
C/E ₁ ^{3/}	1.9	190.2			368	465		357		879	472	341						
C/E ₂	416	497	902		926	720		-		-	-	-						
1972 C				1/	14.0	9,295.8	4/	7,011.3	5/	1,344.9	1,454.6	187.0						
C ₂	0	606.7			0	4,381.0		400.4		0	0	0						
C/E ₁	0	933			469	671		632		975	677	727						
C/E ₂	-	1,253			-	1,001		1,213		-	-	-						
1973 C				1/	105.9	8,665.9	4/	10,757.4	5/	2,240.7	802.3	0.9						
C ₂	1,829.3	113.9			40.3	5,947.8		3,228.6		38.8	89.1	-						
C/E ₁	84.4	35.8			489	617		627		1,098	549	132						
C/E ₂	722	383	702		1,061	795		778		2,589	810	0						
1974 C				1/	626.0	5,366.6	4/	5,661.5	5/	1,038.2	251.8	25.6						
C ₂	893.2	2,526.3	2,936.0		479.4	3,607.4		2,888.2		392.3	41.6	18.8						
C/E ₁	838.6	1,983.1	2,271.4		639	362		355		565	213	171						
C/E ₂	872	746	592		846	550		563		1,261	633	692						
1975 C				1/	734.0	4,936.9	2,780.4	9,502.4	927.0	754.1	14.8	0.6						
C ₂	1.9	259.9	2,630.4		617.3	3,891.7		6,048.1		246.5	14.8	0						
C/E ₁	1.9	218.8	2,224.9		590	608		731		654	-	158						
C/E ₂	-	827	931		908	757		1,180		1,500	388	-						

1/ Areas 30 and 29 combined through 1973
 2/ C₂ is landed catch by double-rig vessels; included in C, all columns
 3/ C/E₁ = catch per hour by single-rig vessels; C/E₂ = catch per hour by double-rig vessels
 4/ Area 24 included with Area 26 data
 5/ Area 21 included with Area 22 data

Table 5. Continued

Year	Area of Catch													
	34	32	30	29	28	26	24	22	21	20	19	18		
1976 C	1,466.2	108.8	1,728.4	955.1	986.7	7,236.8	3,311.7	6,752.1	1,674.0	704.9	105.5	361.6		
C2	1,120.3	92.2	1,358.0	665.1	727.3	6,459.1	2,899.1	4,491.3	538.5	254.8	81.7	227.1		
C/E1	1,462	551	702	544	628	433	374	595	724	690	383	526		
C/E2	1,394	594	745	542	730	658	582	800	875	963	829	993		
1977 C	5.1	1,396.6	5,822.4	827.0	3,686.2	5,641.1	2,836.0	17,203.7	8,435.1	1,755.1	811.9	155.0		
C2	5.1	1,196.5	5,239.9	587.3	2,870.3	4,649.2	2,639.1	12,601.1	4,844.4	571.0	307.0	126.1		
C/E1	-	1,045	922	465	695	582	437	796	1,120	1,424	1,585	4,012		
C/E2	565	1,170	1,052	751	886	751	790	1,232	1,526	1,920	1,424	1,838		
1978 C	-	2,353.8	2,325.8	78.4	782.5	2,478.4	350.2	21,026.4	20,321.0	353.0	5,875.0	1,052.6		
C2	-	2,154.0	2,090.0	70.5	743.2	2,027.8	325.7	18,024.8	16,021.0	306.8	3,213.0	889.4		
C/E1	-	562	569	173	408	360	256	515	782	507	684	447		
C/E2	-	691	585	243	490	461	420	927	1,085	769	1,112	855		
1979 C	-	3,356.0	4,196.9	254.0	150.3	2,852.1	795.1	6,132.2	8,513.7	839.5	1,011.6	1,315.6		
C2	-	3,223.3	4,050.6	225.8	150.3	2,756.1	719.7	4,994.0	6,937.9	650.7	600.0	1,045.0		
C/E1	-	434	225	181	6	182	189	260	280	292	285	305		
C/E2	-	413	325	212	300	311	257	419	490	565	477	635		

Table 7. Count per pound and age composition (by number of shrimp) in Areas 24, 26 and 28 (northern Oregon) as summarized from monthly market samples.

Month	Number Sampled	Shrimp per pound	Age Composition, in percent by number		
			I	II	III
April	1,325	87	12	74	14
May	1,009	89	32	55	13
June	709	96	48	40	12
July	401	89	53	39	8
August	662	77	40	43	17
September	521	63	24	38	38
October	510	74	43	34	23

Coos Bay

The greatest shrimp production off Oregon occurred from Cape Perpetua to Cape Blanco (state areas 21 and 22). Together, these areas yielded 50% of Oregon's 1979 total shrimp landings. Area 21 (Blanco bed) landings were the highest for the season at 8.5 million pounds (3,862 mt) but were only 40% of the 1978 area total landings (Figure 2). Area 22 (Coos Bay and Mudhole) yielded 6.1 million pounds (2,782 mt), only 30% of the total for that area in 1978. The levels of effort at the beginning of the season were high in these areas due to heavy fishing by Oregon vessels and the increase in effort by out-of-state vessels. Nearly 62% of Newport shrimp landings came from Areas 21 and 22.

Average CPUE rates for double-rig vessels in these areas were the highest reported in the state in 1979 (Table 4). Catch rates declined in both areas after the first month as the season progressed. CPUE remained above the season average until July when they were 351 to 355 pounds per hour. Average CPUE for single and double-rig vessels in both areas were above or nearly equal to the seasonal average for all areas combined.

Market samples show areas 21 and 22 as similar in age composition distributions. The 1978 year class (Age I) was the predominant age group for these areas, averaging close to 50% of shrimp sampled (Table 8). The 1977 year class (Age II) contributed 45% of the total 1979 shrimp counts for these areas.

Table 8. Count per pound and age composition (by number of shrimp) in Areas 21 and 22 (Cape Blanco to Cape Perpetua) as summarized from monthly market samples.

Month	Number Sampled	Shrimp per pound	Age composition, in percent, by number		
			I	II	III+
April	1,523	106	34	62	4
May	725	122	55	40	5
June	657	111	61	34	5
July	1,125	100	54	44	2
August	905	83	51	46	3
September	1,152	77	52	43	6
October	2,287	82	56	40	4

Port Orford

Shrimp landings from the Port Orford grounds (Area 20) were up nearly sixty percent over 1978, and yet this was low compared to past average seasonal totals for the area (Figure 2, Table 5). May and June were the most productive months (Table 4).

Brookings

The Brookings area (Area 19) yielded 1.0 million pounds (459 mt), its third highest total landings for a season (Figure 2, Table 5). This total is only 17% of the 5.9 million pounds landed in this area in last year's record season.

Oregon boats caught 1.3 million pounds (579 mt) off California (Area 18) in 1979 (Table 5). Area 18- and Area 19-caught shrimp are considered to be one contiguous group or stock of shrimp that overlap the California-Oregon boundary. Area 18 reported the highest average 1979 CPUE for double-rig vessels at 635 pounds per hour.

Catch rates for Areas 18 and 19 remained above or near the seasonal average for all areas in 1979 (Table 4).

Market samples in Area 20 showed one-year-old shrimp (1978 year class) responsible for 70% of the sample. Two-year-old shrimp (age class 1977) remained strong. In Area 19, 1- and 2-year-old shrimp accounted for approximately 80% of the catch; each age bracket contributing about 40%. In April, June and August low numbers of shrimp were sampled and may reduce the reliability of those samples for those months. These samples seem to indicate a higher incidence of 3-year-olds in the catch; however, these findings did not comply with the trend of the other months reported. By July, one-year-old shrimp (1978 year class) became more vulnerable to the fishery and began to dominate sampled catches (Table 9).

Table 9. Count per pound and age composition (by number of shrimp) in Area 19 (Brookings) as summarized from monthly market samples.

Month	Number Sampled	Shrimp per pound	Age composition, in percent, by number		
			I	II	III+
April	191	95	23	55	22
May	409	128	62	35	3
June	399	102	43	44	13
July	418	111	61	33	6
August	109	69	21	37	42
September					
October	825	80	48	29	13

SUMMARY

In summary, the 1979 shrimp season produced reduced landings, reflected an increase in the fishing fleet and a decrease in CPUE along the coast. Upwelling, strong

currents and "brown water" are probable contributing factors to the decline. Vessels swarmed to "hot spots" in the southern ports early in the season and moved northward into Washington as the Oregon season came to a close. Skippers spoke of having "to wait in line" to set nets and hinted that over crowding and high activity by the fleet in these "hot" areas may be dispersing the shrimp. One- and two-year-old shrimp (1978 and 1979 year classes) showed strongly in 1979 age composition samples and may provide the bulk of the 1980 fishery.

A Vessel Moratorium for the pink shrimp fishery was signed into law by Governor Victor Atiyeh, July 23, 1979 as an amendment to House Bill 2243. Qualifications for obtaining vessel permits are specified: A pink shrimp vessel permit (fee \$1) will be issued only to owners of vessels which landed at least 5,000 pounds of pink shrimp in Oregon during the period January 1, 1974 to June 30, 1979; or to vessels which were under construction or the subject of a written contract for purchase or construction as a commercial fishing vessel designed to be used in the ocean pink shrimp fishery during the period January 1, 1978 to June 30, 1979.

The legislation also specified a Permit Review Board to consider appeals of persons denied permits under certain conditions.

LITERATURE CITED

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1979. Title 42, Commercial Fishing and Fisheries, Note to Oregon Revised Statute Chapter 508.