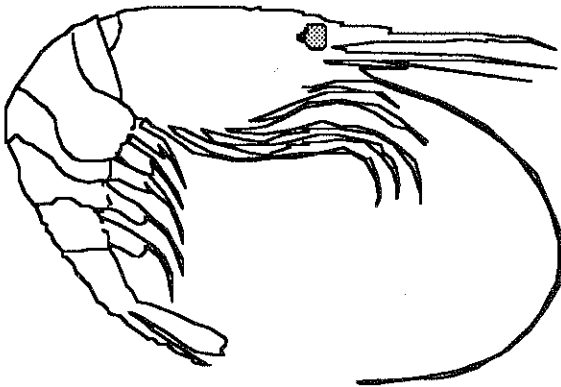
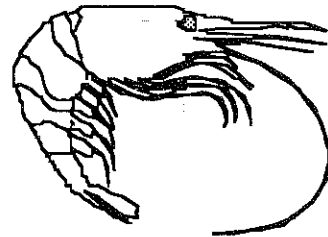
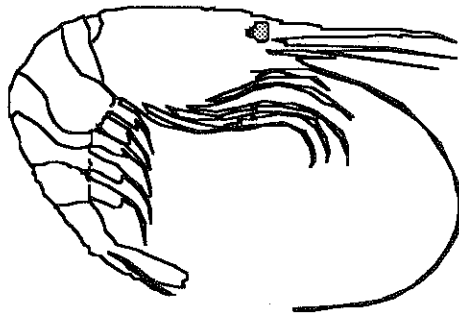


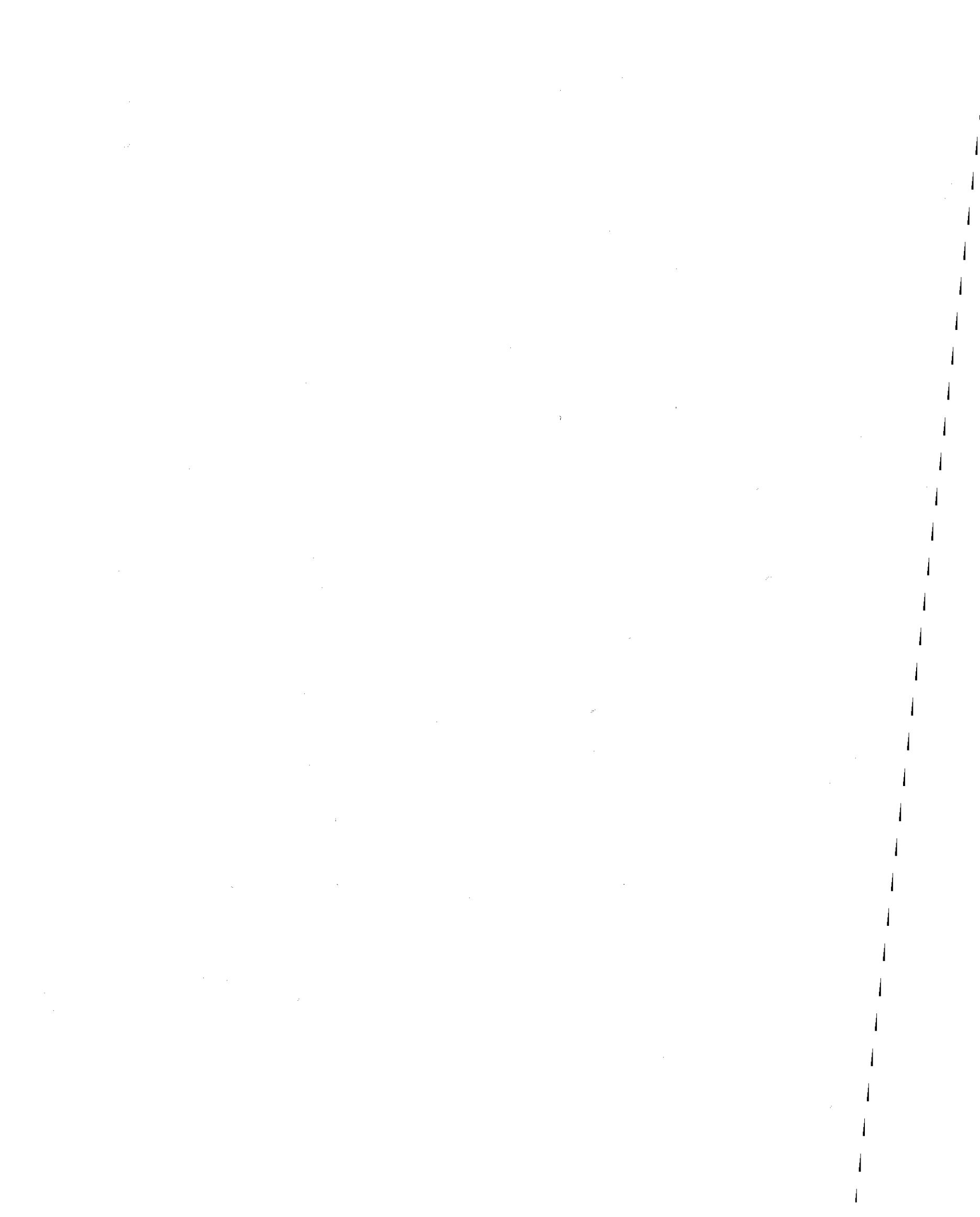
OREGON DEPARTMENT
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FISH AND WILDLIFE



PINK SHRIMP
DATA SERIES REPORT

1985-1989



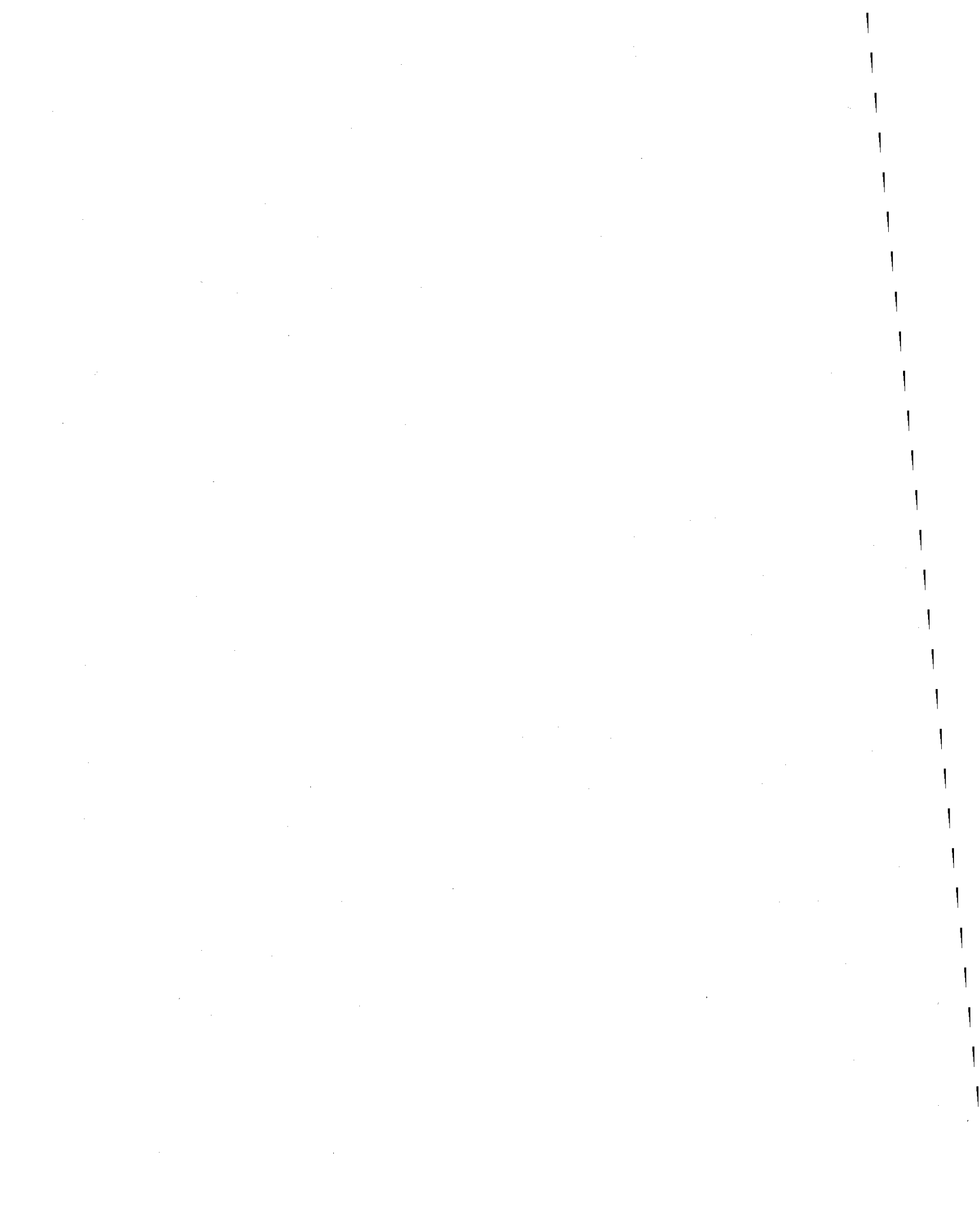


Oregon Pink Shrimp Fishery Catch and Market Sample Data Series:
1985-1989

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INTRODUCTION

The data summaries presented in this report extend the time series of Oregon commercial pink shrimp data produced by Saelens and Zirges (1985). Detailed statistics on pounds landed, effort, age composition, count per pound, and sex composition of shrimp landed in Oregon are presented for each year from 1985 through 1989. Longterm landing statistics are presented from Alaska, British Columbia, Washington, and California. Longterm effort statistics are presented from California and Washington. Changes and conditions which occurred in the pink shrimp fishery from 1985 through 1989 were described and discussed by Jones and Hannah (1992).

METHODS

Catch and effort statistics by month and state statistical area were summarized from trawl logbooks, landing tickets, and biological samples (market samples) collected at seafood processing plants. Both single-rig and double-rig effort is reported in single-rig equivalent hours (SRE) and will be referred to simply as "hours" in this report when no other distinction is made.

Each month during each season, we attempted to collect 4-6 market samples of approximately 100 pink shrimp from each area (Figure 1). Samples were obtained at the docks. We counted and weighed the shrimp to determine count per pound (count), and measured each carapace length. During April, September, and October, each shrimp was classified as male, female, or transitional based upon close examination of the inner ramus of the first pleopod after Tegelberg and Smith (1957).

We combined data from individual samples within a month and area for analysis of age composition and sex composition. Raw length- and sex-frequency data were rescaled proportionally to a sample size of 100 before they were combined with other samples when sample size deviated substantially from 100 shrimp. Hence, samples were given equal weight in determining age and sex composition.

We determined age composition for each month and area by identifying modes in the combined length-frequency histogram. Ages were assigned to individual shrimp using nadirs in the histograms to set a range of carapace lengths corresponding to each age group. Sometimes a bimodal distribution of age-1 shrimp observed late in the season would complicate the analysis. In these instances, the bimodal distribution developed slowly from August through October and was easily recognizable. Mean length at age was calculated for each month and area after the age and sex of each shrimp was assigned.

We estimated catch and effort statistics by area for 1985 through 1989 using logbook and landing ticket data. Landing tickets provide a complete summary of catch, but no information on area of catch. Logbook data gave information on area of catch and also information on fishing effort and catch per unit of effort (CPUE), but was often incomplete. The pattern of catch and effort from the available logbooks was used to allocate the landed pounds and the associated effort to individual areas on a port and month basis. The exact methods used in 1985 and 1986 to obtain these estimates differed from those used after 1986. Logbooks and landing tickets were collected for all years, providing tow-by-tow data on date,

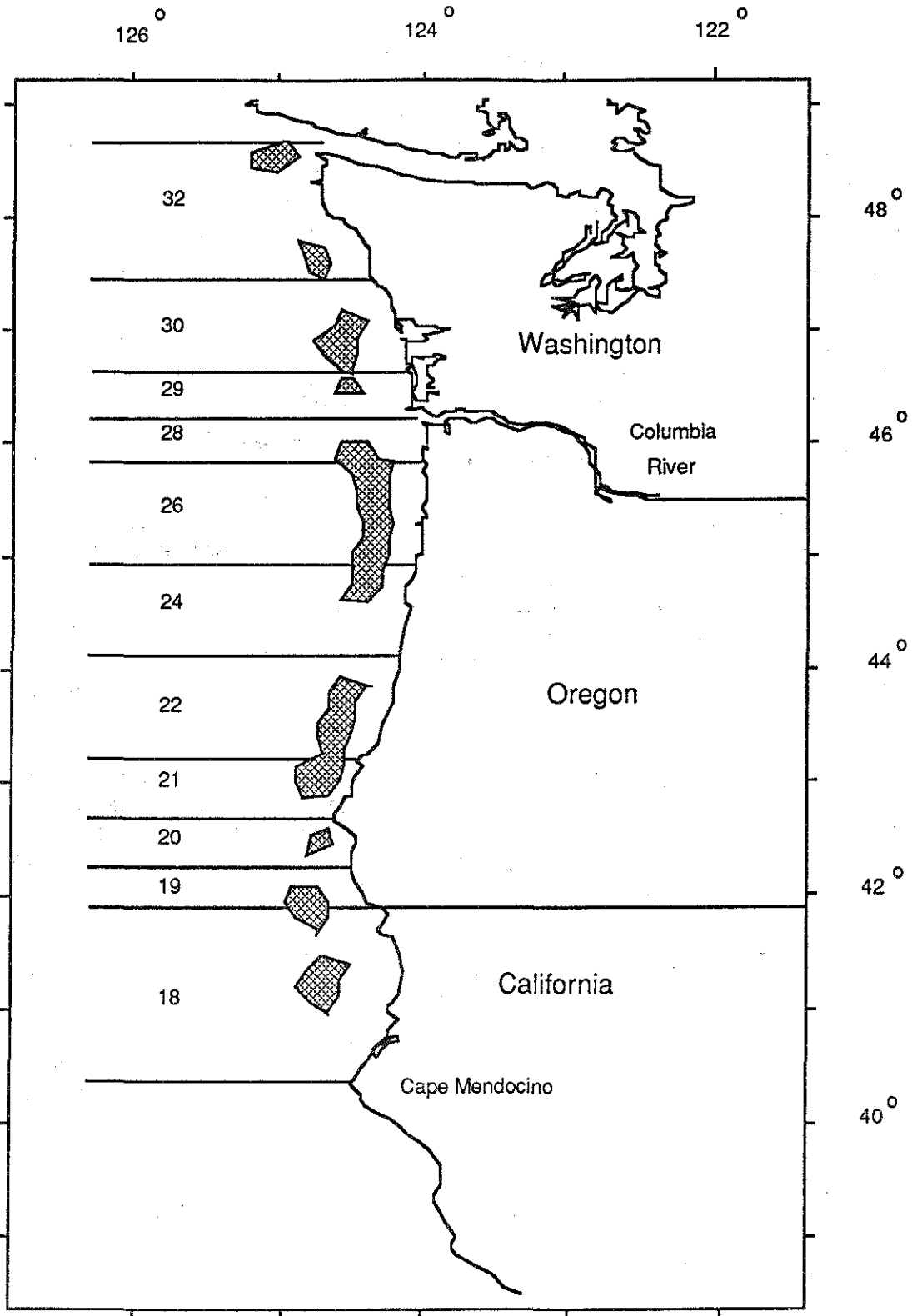


Figure 1. Oregon state statistical areas (18-32). Commercially fished pink shrimp beds along the Washington, Oregon, and northern California coasts are shown in crosshatching.

location, tow duration, hailed catch, and actual pounds landed. During 1985 and 1986, all landing ticket information and useable trawl logs were entered into a REVELATION© data base and expanded on a tow-by-tow basis. Single-rig and double-rig effort and CPUE were not expanded separately, but were standardized to double-rig equivalents (1 SRE = 1 single-rig hour = 1 double-rig hour X 1.6). Trawl logs were summarized by trip from 1987 through 1989 to provide hours fished and the pounds hailed for each area fished within a trip. Trawl log summary data and landing ticket information were then recorded on trip summary sheets and entered into a FOXBASE+/MAC® data base for processing. Trips whose hauls differed from the landed pounds by 50% or more were discarded from the data base. Poundage and effort was allocated by port to the appropriate area. Single-rig and double-rig effort were analyzed separately. Additionally, in 1987 and 1989, useable trawl logs were systematically subsampled at a 50% rate (100% for single-rig effort in north and central coast ports) because of the large volume of logs and limited staff time. Subsampling was not used in analyzing data from 1988.

Table 1. Pink shrimp landed catch (C=lb X 1000), effort (E=sre hours) and CPUE (C/E=lb/sre) by Oregon state statistical area and month for vessels landing pink shrimp into Oregon ports, 1985.

Area	Stat- istic	Month							Total
		Apr	May	Jun	Jul	Aug	Sep	Oct	
32	C	0.0	345.8	441.1	943.8	314.9	302.8	132.7	2,481.1
	E	0.0	593.5	1,263.7	2,650.9	992.2	675.2	421.4	6,596.9
	C/E	--	582.6	349.1	356.0	317.4	448.5	314.9	376.1
30	C	2.8	166.9	697.9	468.4	324.0	214.4	105.9	1,980.3
	E	8.0	458.4	1,730.7	1,735.4	1,005.9	607.8	253.9	5,800.1
	C/E	350.0	364.1	403.2	269.9	322.1	352.7	417.1	341.4
29	C	0.0	0.0	0.0	0.1	0.0	0.0	118.8	118.9
	E	0.0	0.0	0.0	14.7	0.0	3.8	273.0	291.5
	C/E	--	--	--	6.8	--	0.0	435.2	407.9
28	C	0.0	16.4	6.8	474.4	51.5	0.5	283.3	832.9
	E	3.2	78.6	18.6	1,427.8	317.9	32.6	451.2	2,329.9
	C/E	0.0	208.7	365.6	332.3	162.0	15.3	627.9	357.5
26	C	748.4	858.3	106.4	332.3	978.2	240.4	442.5	3,706.5
	E	2,257.3	3,504.4	658.0	1,338.7	3,700.8	1,086.9	1,441.9	13,988.0
	C/E	331.5	244.9	161.7	248.2	264.3	221.2	306.9	265.0
24	C	101.7	273.7	0.6	81.0	951.4	360.7	91.6	1,860.7
	E	396.1	1,264.7	29.8	331.3	2,480.6	1,363.1	490.2	6,355.8
	C/E	256.8	216.4	20.1	244.5	383.5	264.6	186.9	292.8
22	C	290.9	215.2	66.4	27.9	43.0	1,071.6	403.1	2,118.1
	E	1,269.6	944.0	457.0	137.1	140.3	2,741.9	1,358.6	7,048.5
	C/E	229.1	228.0	145.3	203.5	306.5	390.8	296.7	300.5
21	C	732.1	238.9	12.1	36.7	0.0	319.9	244.7	1,584.4
	E	1,797.3	1,021.0	40.3	164.2	0.0	946.7	870.9	4,840.4
	C/E	407.3	234.0	300.2	223.5	--	337.9	281.0	327.3
20	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	E	10.1	1.7	0.0	0.0	0.0	0.0	1.8	13.6
	C/E	0.0	0.0	--	--	--	--	0.0	0.0
19	C	5.1	34.1	0.0	0.0	13.0	29.5	11.3	93.0
	E	44.5	190.9	7.9	0.0	51.9	93.4	47.4	436.0
	C/E	114.6	178.6	0.0	--	250.5	315.8	238.4	213.3
18	C	20.6	40.4	0.0	0.0	0.0	0.0	18.2	79.2
	E	75.1	136.0	3.3	0.0	0.0	0.0	57.4	271.8
	C/E	274.3	297.1	0.0	--	--	--	317.1	291.4
TOTAL	C	1,901.6	2,189.7	1,331.3	2,364.6	2,676.0	2,539.8	1,852.1	14,855.1
	E	5,861.2	8,193.2	4,209.3	7,800.1	8,689.6	7,551.4	5,667.7	47,972.5
	C/E	324.4	267.3	316.3	303.1	308.0	336.3	326.8	309.7

Table 2. Pink shrimp statistics including percent age composition (0 through 3+ years), count-per-pound (Ct), and number sampled (N) by Oregon state statistical area, 1985.

Area	Statistic	Month						
		Apr	May	Jun	Jul	Aug	Sep	Oct
32	0	--	0.0	0.0	0.0	0.0	0.0	--
	1	--	80.6	87.3	91.6	77.0	89.7	--
	2	--	19.4	12.7	7.6	21.0	9.4	--
	3+	--	0.0	0.0	0.7	2.0	1.0	--
	Ct	--	154.3	135.4	145.4	94.6	108.6	--
	N	0	103	102	406	100	203	0
30	0	--	0.0	0.0	0.0	0.0	0.0	4.5
	1	--	78.2	80.3	79.5	94.1	85.6	88.1
	2	--	19.8	17.2	19.8	5.5	12.9	6.7
	3+	--	2.0	2.5	0.7	0.4	1.5	0.7
	Ct	--	143.5	126.9	121.7	124.0	106.7	122.3
	N	0	303	203	303	506	404	100
29	0	--	--	--	--	--	--	--
	1	--	--	--	--	--	--	--
	2	--	--	--	--	--	--	--
	3+	--	--	--	--	--	--	--
	Ct	--	--	--	--	--	--	--
	N	0	0	0	0	0	0	0
28	0	0.0	--	--	0.0	--	--	2.0
	1	31.1	--	--	61.4	--	--	66.8
	2	67.0	--	--	33.7	--	--	30.7
	3+	1.9	--	--	5.0	--	--	0.5
	Ct	102.9	--	--	111.3	--	--	87.3
	N	103	0	0	101	0	0	202
26	0	0.0	0.0	0.0	0.0	--	--	--
	1	30.9	49.4	62.4	66.7	--	--	--
	2	64.0	48.8	35.6	33.3	--	--	--
	3+	5.1	1.8	2.0	0.0	--	--	--
	Ct	96.9	108.0	104.2	115.3	--	--	--
	N	797	805	101	99	0	0	0
24	0	0.0	--	--	--	0.0	--	--
	1	8.1	--	--	--	73.9	--	--
	2	71.3	--	--	--	26.0	--	--
	3+	20.6	--	--	--	0.2	--	--
	Ct	72.6	--	--	--	98.6	--	--
	N	298	0	0	0	601	0	0

Table 2. Continued.

Area	Statistic	Month						
		Apr	May	Jun	Jul	Aug	Sep	Oct
22	0	0.0	0.0	0.0	0.0	--	0.0	--
	1	58.9	47.8	43.1	48.5	--	81.3	--
	2	39.3	47.8	54.8	50.5	--	18.3	--
	3+	1.8	4.5	2.1	1.0	--	0.3	--
	Ct	123.4	99.4	98.7	92.9	--	94.6	--
	N	475	201	300	200	0	300	0
21	0	0.0	0.0	0.0	--	0.0	1.2	3.0
	1	60.9	81.5	76.9	--	98.0	85.2	80.8
	2	34.6	17.3	23.0	--	1.5	9.6	15.1
	3+	4.5	1.2	0.1	--	0.5	4.0	1.1
	Ct	123.8	136.6	123.4	--	105.2	90.0	84.1
	N	802	502	1005	0	400	500	536
20	0	--	--	--	--	--	--	--
	1	--	--	--	--	--	--	--
	2	--	--	--	--	--	--	--
	3+	--	--	--	--	--	--	--
	Ct	--	--	--	--	--	--	--
	N	0	0	0	0	0	0	0
19	0	0.0	0.0	--	--	--	8.4	--
	1	67.3	78.0	--	--	--	84.9	--
	2	20.3	20.5	--	--	--	6.0	--
	3+	12.4	1.5	--	--	--	0.7	--
	Ct	119.4	126.9	--	--	--	90.1	--
	N	404	200	0	0	0	403	0

Table 3. Mean pink shrimp carapace lengths (mm) at age (years), by month and Oregon state statistical area, 1985.

Area	Age	Month						
		Apr	May	Jun	Jul	Aug	Sep	Oct
19	0	--	--	--	--	--	10.5	--
	1	14.7	15.0	--	--	--	18.5	--
	2	19.9	21.0	--	--	--	23.3	--
	3+	22.6	25.0	--	--	--	25.8	--
20	0	--	--	--	--	--	--	--
	1	--	--	--	--	--	--	--
	2	--	--	--	--	--	--	--
	3+	--	--	--	--	--	--	--
21	0	--	--	--	--	--	10.3	10.8
	1	15.1	15.9	16.6	--	18.4	18.5	19.0
	2	20.3	20.8	21.2	--	23.0	22.9	23.0
	3+	24.0	23.8	24.5	--	24.0	24.5	25.1
22	0	--	--	--	--	--	--	--
	1	15.2	15.5	16.2	17.0	--	17.6	--
	2	19.9	20.8	21.0	21.4	--	22.3	--
	3+	22.9	24.3	24.8	24.0	--	24.5	--
24	0	--	--	--	--	--	--	--
	1	14.4	--	--	--	17.4	--	--
	2	19.6	--	--	--	21.9	--	--
	3+	23.1	--	--	--	25.5	--	--
26	0	--	--	--	--	--	--	--
	1	14.7	15.4	16.0	16.4	--	--	--
	2	20.0	20.3	20.6	21.1	--	--	--
	3+	23.4	23.1	23.3	--	--	--	--
28	0	--	--	--	--	--	--	10.6
	1	14.7	--	--	15.9	--	--	17.7
	2	19.8	--	--	20.8	--	--	22.0
	3+	24.0	--	--	22.8	--	--	24.5
29	0	--	--	--	--	--	--	--
	1	--	--	--	--	--	--	--
	2	--	--	--	--	--	--	--
	3+	--	--	--	--	--	--	--
30	0	--	--	--	--	--	--	10.7
	1	--	15.6	16.4	16.7	17.5	17.6	17.7
	2	--	20.1	20.4	21.0	21.9	21.9	22.3
	3+	--	22.8	23.2	23.5	24.5	23.9	24.0
32	0	--	--	--	--	--	--	--
	1	--	16.1	16.3	16.2	17.7	17.8	--
	2	--	20.1	20.6	21.0	21.9	21.3	--
	3+	--	--	--	23.2	23.8	24.3	--

Table 4. Pink shrimp sex composition (%male, transitional and female), sample size, and number of primary females during April, September and October from Oregon state statistical areas 18-32, 1985.

Month	Area	Percent			Percent primary female	Number primary female	Number sampled
		Percent male	transitional	Percent female			
Apr	18	72.3	12.5	15.2	0.0	0	631
	19	80.2	6.9	12.9	0.0	0	404
	20	--	--	--	--	--	--
	21	69.5	16.0	14.6	0.0	0	802
	22	64.3	11.7	23.9	0.0	0	475
	24	55.0	15.3	29.7	0.0	0	298
	26	41.9	28.6	29.5	0.0	0	797
	28	44.7	28.2	27.2	0.0	0	103
	29	--	--	--	--	--	--
	30	--	--	--	--	--	--
	32	--	--	--	--	--	--
Sep	18	--	--	--	--	--	--
	19	53.3	9.2	37.5	36.4	124	403
	20	--	--	--	--	--	--
	21	52.2	22.6	25.2	15.0	64	500
	22	59.3	6.7	34.0	19.7	48	300
	24	--	--	--	--	--	--
	26	--	--	--	--	--	--
	28	--	--	--	--	--	--
	29	--	--	--	--	--	--
	30	54.2	28.2	17.6	4.6	16	404
32	30.5	29.1	40.4	33.5	61	203	
Oct	18	--	--	--	--	--	--
	19	--	--	--	--	--	--
	20	--	--	--	--	--	--
	21	41.0	17.5	41.4	31.4	136	536
	22	--	--	--	--	--	--
	24	--	--	--	--	--	--
	26	--	--	--	--	--	--
	28	44.1	5.9	50.0	28.9	39	202
	29	--	--	--	--	--	--
	30	59.0	6.0	35.1	31.4	37	134
	32	--	--	--	--	--	--

Table 5. Pink shrimp landed catch (C=lb X 1000), effort (E=sre hours) and CPUE (C/E=lb/sre) by Oregon state statistical area and month for vessels landing pink shrimp into Oregon ports, 1986.

Area	Stat- istic	Month							Total
		Apr	May	Jun	Jul	Aug	Sep	Oct	
32	C	325.2	1,758.5	790.8	614.0	661.3	334.6	44.0	4,528.4
	E	302.5	2,387.3	2,106.5	2,036.1	2,841.1	1,378.7	218.7	11,270.9
	C/E	1,075.0	736.6	375.4	301.6	232.8	242.7	201.2	401.8
30	C	139.1	1,062.4	1,303.4	908.5	538.2	440.9	475.4	4,867.9
	E	184.2	1,664.8	2,583.8	3,369.7	2,299.0	1,830.4	2,204.9	14,136.8
	C/E	755.2	638.2	504.5	269.6	234.1	240.9	215.6	344.3
29	C	15.9	0.0	0.0	24.6	47.9	48.7	137.2	274.3
	E	35.3	0.0	0.0	115.9	248.2	247.4	826.0	1,472.8
	C/E	450.4	--	--	212.3	193.0	196.8	166.1	186.2
28	C	996.0	1,882.4	1,257.7	435.3	489.4	693.4	557.1	6,311.3
	E	1,419.2	2,883.2	3,862.5	2,154.2	2,271.2	3,412.2	3,004.5	19,007.0
	C/E	701.8	652.9	325.6	202.1	215.5	203.2	185.4	332.1
26	C	1,191.0	1,272.8	717.9	640.6	925.5	368.0	970.5	6,086.3
	E	2,984.4	2,470.4	2,335.6	3,329.9	4,266.7	2,277.0	4,942.7	22,606.7
	C/E	399.1	515.2	307.4	192.4	216.9	161.6	196.4	269.2
24	C	741.3	29.0	518.7	118.2	148.2	261.4	47.0	1,863.8
	E	1,665.4	125.4	1,477.8	604.9	816.9	1,374.9	538.0	6,603.3
	C/E	445.1	231.3	351.0	195.4	181.4	190.1	87.4	282.3
22	C	527.4	1,479.9	419.8	303.8	117.4	572.6	352.3	3,773.2
	E	1,421.6	4,207.3	1,348.1	1,534.1	413.2	2,570.2	1,808.3	13,302.8
	C/E	371.0	351.7	311.4	198.0	284.1	222.8	194.8	283.6
21	C	1,296.5	513.9	697.5	929.1	311.1	676.8	235.1	4,660.0
	E	2,160.6	1,533.4	1,509.6	2,537.4	1,394.4	2,782.1	1,336.2	13,253.7
	C/E	600.1	335.1	462.0	366.2	223.1	243.3	175.9	351.6
20	C	0.0	0.0	0.0	8.5	0.0	0.0	0.0	8.5
	E	0.0	0.0	0.0	30.2	0.0	0.0	0.0	30.2
	C/E	--	--	--	281.5	--	--	--	281.5
19	C	11.3	56.2	347.2	140.6	416.5	71.8	130.8	1,174.4
	E	45.6	103.2	866.2	528.4	2,132.4	383.9	770.3	4,830.0
	C/E	247.8	544.6	400.8	266.1	195.3	187.0	169.8	243.1
18	C	0.1	0.0	0.3	11.7	158.5	38.6	78.2	287.4
	E	5.1	0.0	5.1	44.6	660.5	153.2	351.4	1,219.9
	C/E	19.6	--	58.8	262.3	240.0	252.0	222.5	235.6
TOTAL	C	5,243.8	8,055.1	6,053.3	4,134.9	3,814.0	3,506.8	3,027.6	33,835.5
	E	10,223.9	15,375.0	16,095.2	16,285.4	17,343.6	16,410.0	16,001.0	107,734.1
	C/E	512.9	523.9	376.1	253.9	219.9	213.7	189.2	314.1

Table 6. Pink shrimp statistics including percent age composition (0 through 3+ years), count-per-pound (Ct), and number sampled (N) by Oregon state statistical area, 1986.

Area	Statistic	Month						
		Apr	May	Jun	Jul	Aug	Sep	Oct
32	0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
	1	32.4	55.1	35.7	64.9	47.0	60.5	68.3
	2	61.9	40.3	54.3	30.0	46.6	36.8	28.6
	3+	5.7	4.6	10.1	5.1	6.4	2.7	2.6
	Ct	154.5	117.6	117.6	129.2	106.5	104.0	111.3
	N	210	425	100	626	513	517	403
30	0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
	1	29.3	59.9	60.1	68.1	57.8	72.4	70.6
	2	64.0	35.6	37.8	28.4	40.6	27.1	28.6
	3+	6.7	4.5	2.1	3.6	1.6	0.5	0.4
	Ct	119.7	123.1	123.1	121.1	100.2	103.4	104.4
	N	314	403	625	843	737	210	812
29	0	--	--	--	0.0	--	--	0.0
	1	--	--	--	63.2	--	--	63.8
	2	--	--	--	30.2	--	--	27.6
	3+	--	--	--	6.6	--	--	8.6
	Ct	--	--	--	93.4	--	--	86.9
	N	0	0	0	106	0	0	105
28	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	44.1	44.7	34.6	43.6	58.8	54.4	55.4
	2	47.5	49.5	52.6	47.2	35.3	39.3	42.6
	3+	8.4	5.8	12.8	9.2	5.9	6.3	2.0
	Ct	117.0	93.7	93.7	90.0	97.7	83.6	89.8
	N	524	295	502	303	102	206	706
26	0	0.0	0.0	0.0	--	0.0	0.0	0.0
	1	22.6	40.3	69.4	--	57.5	61.7	67.9
	2	63.7	53.5	26.1	--	36.2	30.3	30.3
	3+	13.7	6.2	4.5	--	6.2	8.0	1.9
	Ct	92.7	119.1	119.1	--	88.5	79.6	85.4
	N	804	404	111	0	709	201	588
24	0	0.0	--	--	0.0	0.0	0.0	--
	1	26.6	--	--	62.7	74.4	72.7	--
	2	53.3	--	--	32.4	18.1	21.7	--
	3+	20.1	--	--	4.9	7.5	5.7	--
	Ct	88.1	--	--	94.8	97.9	89.0	--
	N	199	0	0	204	199	300	0

Table 6. Continued.

Area	Statistic	Month						
		Apr	May	Jun	Jul	Aug	Sep	Oct
22	0	0.0	0.0	0.0	0.0	--	0.6	2.7
	1	48.3	71.7	83.1	85.9	--	78.2	71.5
	2	44.8	25.1	15.2	10.3	--	14.4	22.4
	3+	6.9	3.2	1.7	3.7	--	6.8	3.4
	Ct	108.9	125.8	125.8	111.1	--	85.8	83.8
	N	506	505	605	602	0	406	597
21	0	0.0	0.0	0.0	0.0	0.0	0.0	18.8
	1	75.2	69.3	81.0	87.1	87.3	82.8	69.0
	2	20.7	26.8	16.7	12.1	11.1	13.3	11.6
	3+	4.1	3.9	2.3	0.7	1.6	3.9	0.6
	Ct	145.8	134.0	134.0	120.7	106.6	90.6	105.0
	N	622	414	407	412	505	412	603
20	0	--	--	--	--	--	--	--
	1	--	--	--	--	--	--	--
	2	--	--	--	--	--	--	--
	3+	--	--	--	--	--	--	--
	Ct	--	--	--	--	--	--	--
	N	0	0	0	0	0	0	0
19	0	0.0	0.0	0.0	0.0	0.0	15.0	29.0
	1	42.0	86.2	85.6	71.1	17.7	82.7	61.1
	2	53.2	13.3	13.9	26.8	58.6	2.3	9.4
	3+	4.9	0.5	0.5	2.1	23.7	0.0	0.5
	Ct	111.1	126.3	126.3	100.1	94.8	114.5	107.7
	N	205	191	404	190	266	300	597

Table 7. Mean pink shrimp carapace lengths (mm) at age (years), by month and Oregon state statistical area, 1986.

Area	Age	Month						
		Apr	May	Jun	Jul	Aug	Sep	Oct
19	0	--	--	--	--	--	9	10
	1	14.4	15.5	16.2	17.3	17.7	18.2	19.1
	2	19.2	20.2	20.8	21	21.4	22.4	23
	3+	23.3	23.8	24	24	23.4	--	25.7
20	0	--	--	--	--	--	--	--
	1	--	--	--	--	--	--	--
	2	--	--	--	--	--	--	--
	3+	--	--	--	--	--	--	--
21	0	--	--	--	--	--	--	10.1
	1	14.6	15.2	15.5	16.6	17.3	17.9	18.2
	2	20	20.4	20.2	21.3	21.7	22.4	22.7
	3+	23.2	23.5	23.2	24.7	24.1	24.7	25.1
22	0	--	--	--	--	--	7.9	10
	1	15	15.3	15.9	16.8	--	17.9	17.9
	2	19.8	20.5	20.9	21.3	--	22.2	22.7
	3+	23.1	23.2	23.5	23.8	--	24.1	25.3
24	0	--	--	--	--	--	--	--
	1	14.8	--	--	16.9	17.2	17.7	--
	2	20.1	--	--	21.9	21.5	22.4	--
	3+	22.9	--	--	24.3	23.5	24.6	--
26	0	--	--	--	--	--	--	--
	1	14.8	15.4	15.6	--	17.1	17.5	17.7
	2	20	20.7	21.1	--	21.9	22.4	22.5
	3+	23.3	23.8	24.5	--	24.5	24.5	25.3
28	0	--	--	--	--	--	--	--
	1	14.9	15.3	16	16.4	17.3	17.2	17.8
	2	19.8	19.7	20.4	21	21.4	21.7	22.1
	3+	23.4	22.5	23.3	23.8	23	24	24.7
29	0	--	--	--	--	--	--	--
	1	--	--	--	16.7	--	--	17.6
	2	--	--	--	21	--	--	22.2
	3+	--	--	--	24.5	--	--	24.7
30	0	--	--	--	--	--	--	10.4
	1	14.1	15.5	15.8	16.2	16.8	17.1	17.6
	2	19.1	20	20.6	20.8	21.2	21	22.2
	3+	22.4	22.5	23.3	23.1	24.3	24.5	25
32	0	--	--	--	--	--	--	10.5
	1	13.9	14.9	15.6	15.9	16.1	16.7	17.1
	2	17.5	19.4	19.5	19.9	19.9	21	21.3
	3+	21.1	22.6	22.2	22.7	22.6	23.4	23.4

Table 8. Pink shrimp sex composition (%male, transitional and female), sample size, and number of primary females during April, September and October from Oregon state statistical areas 18-32, 1986.

Month	Area	Percent male	Percent transitional	Percent female	Percent primary female	Number primary female	Number sampled
Apr	18	--	--	--	--	--	--
	19	72.7	2.4	24.9	4.7	4	205
	20	--	--	--	--	--	--
	21	82.1	2.5	15.4	0.2	1	622
	22	66.8	16.0	17.2	0.0	0	506
	24	27.6	32.7	39.7	0.0	0	199
	26	27.1	51.5	21.4	0.0	0	804
	28	43.1	37.0	19.8	0.0	0	524
	29	--	--	--	--	--	--
	30	32.2	34.7	33.1	0.0	0	314
	32	41.0	45.2	13.8	0.0	0	210
Sep	18	--	--	--	--	--	--
	19	57.6	9.0	33.4	37.6	93	300
	20	--	--	--	--	--	--
	21	50.7	9.0	40.3	28.8	101	412
	22	50.1	8.4	41.5	27.2	86	406
	24	60.7	4.7	34.7	11.5	25	300
	26	59.7	1.0	39.3	4.0	5	201
	28	43.7	8.7	47.6	3.6	4	206
	29	--	--	--	--	--	--
	30	53.8	11.0	35.2	11.2	17	210
	32	51.5	8.5	40.0	3.5	11	517
Oct	18	--	--	--	--	--	--
	19	58.7	5.4	35.9	43.1	157	597
	20	--	--	--	--	--	--
	21	58.8	4.1	37.1	36.9	154	603
	22	58.1	3.6	38.4	18.0	77	597
	24	--	--	--	--	--	--
	26	66.7	5.4	27.9	1.5	6	588
	28	55.7	5.0	39.4	0.8	3	706
	29	61.9	0.0	38.1	3.0	2	105
	30	62.8	3.1	34.1	10.8	62	812
	32	60.8	3.3	35.9	9.0	25	403

Table 9. Pink shrimp landed catch (C=lb X 1000), effort (E=sre hours) and CPUE (C/E=lb/sre) by Oregon state statistical area and month for vessels landing pink shrimp into Oregon ports, 1987.

Area	Stat- istic	Month							Total
		Apr	May	Jun	Jul	Aug	Sep	Oct	
32	C	0.0	87.1	1.7	1,082.3	1,941.7	318.6	531.2	3,962.6
	E	0.0	315.0	6.6	3,019.0	5,728.1	764.9	1,550.9	11,384.5
	C/E	--	276.0	259.0	358.0	339.0	417.0	343.0	348.1
30	C	26.1	438.1	115.3	589.8	849.8	499.0	375.5	2,893.6
	E	98.6	1,421.6	394.6	1,693.9	2,752.1	1,713.2	1,095.7	9,169.7
	C/E	265.0	308.0	292.0	348.0	309.0	291.0	343.0	315.6
29	C	71.2	8.5	45.7	96.4	0.0	33.3	3.2	258.3
	E	113.4	35.8	78.7	340.8	0.0	90.2	20.6	679.5
	C/E	628.0	237.0	581.0	283.0	--	369.0	155.0	380.1
28	C	3,378.4	1,958.2	2,102.9	1,104.6	435.8	1,072.5	1,865.7	11,918.1
	E	5,235.8	5,737.0	6,484.8	4,826.8	1,938.1	3,984.6	6,327.0	34,534.1
	C/E	645.0	341.0	324.0	229.0	225.0	269.0	295.0	345.1
26	C	2,000.3	1,952.8	3,079.1	2,616.5	743.3	1,263.4	856.1	12,511.5
	E	5,096.0	7,404.0	9,514.6	10,727.8	3,659.1	4,845.6	3,962.3	45,209.4
	C/E	393.0	264.0	324.0	244.0	203.0	261.0	216.0	276.7
24	C	208.8	354.6	65.1	42.8	279.1	211.5	206.7	1,368.6
	E	534.9	1,157.3	414.2	256.8	835.2	1,113.8	926.1	5,238.3
	C/E	390.0	306.0	157.0	167.0	334.0	190.0	223.0	261.3
22	C	728.2	1,262.5	921.0	1,531.3	319.8	1,177.9	608.5	6,549.2
	E	2,161.1	3,812.0	3,564.7	5,204.7	1,437.4	3,352.4	2,273.1	21,805.4
	C/E	337.0	331.0	258.0	294.0	222.0	351.0	268.0	300.3
21	C	2,124.8	305.6	25.9	103.3	93.8	450.1	331.4	3,434.9
	E	4,001.8	1,535.0	187.1	410.7	447.4	2,402.0	1,528.0	10,512.0
	C/E	531.0	199.0	138.0	252.0	210.0	187.0	217.0	326.8
20	C	0.0	0.2	0.0	0.0	0.0	0.5	0.0	0.7
	E	0.0	2.5	0.0	0.0	0.0	2.1	0.0	4.6
	C/E	--	80.0	--	--	--	238.0	--	152.2
19	C	531.0	137.5	103.0	169.4	103.0	77.0	44.9	1,165.8
	E	974.1	542.1	463.8	686.3	422.2	436.6	236.6	3,761.7
	C/E	545.0	254.0	222.0	247.0	244.0	176.0	190.0	309.9
18	C	369.6	52.7	14.5	38.9	10.0	30.9	9.1	525.7
	E	640.6	192.5	64.2	179.0	84.6	149.6	64.6	1,375.1
	C/E	577.0	274.0	226.0	217.0	118.0	207.0	141.0	382.3
TOTAL	C	9,438.4	6,557.8	6,474.2	7,375.3	4,776.3	5,134.7	4,832.3	44,589.0
	E	18,856.3	22,154.8	21,173.3	27,345.8	17,304.2	18,855.0	17,984.9	143,674.3
	C/E	500.5	296.0	305.8	269.7	276.0	272.3	268.7	310.3

Table 10. Single-rig and double-rig pink shrimp catch (C=pounds), effort (h and sre), and CPUE (C/effort) statistics by month for shrimp landed into Oregon ports, 1987.

Gear type, statistic	Month							Total
	Apr	May	Jun	Jul	Aug	Sep	Oct	
Single-rig								
C	1,319.1	661.7	657.0	859.0	290.9	318.8	131.9	4,238.4
h	3,359.1	2,552.1	2,311.2	3,228.0	1,217.5	1,536.6	848.5	15,053.0
CPUE	392.7	259.3	284.3	266.1	238.9	207.5	155.5	281.6
Double-rig								
C	8,119.3	5,896.1	5,817.2	6,516.3	4,485.4	4,815.9	4,700.4	40,350.6
h	9,685.7	12,251.7	11,788.8	15,073.7	10,054.3	10,823.9	10,710.3	80,388.4
CPUE	838.3	481.2	493.5	432.3	446.1	444.9	438.9	501.9
Total								
C	9,438.4	6,557.8	6,474.2	7,375.3	4,776.3	5,134.7	4,832.3	44,589.0
sre	18,856.2	22,154.8	21,173.3	27,345.9	17,304.4	18,854.8	17,985.0	143,674.4
CPUE	500.5	296.0	305.8	269.7	276.0	272.3	268.7	310.3

Table 11. Single-rig and double-rig statistics for catch (C=lb), effort (h or sre), and CPUE (C/effort) by state statistical area for pink shrimp landed in Oregon, 1987

Gear type, statistic	Statistical area					
	18	19	20	21	22	24
Single-rig						
C	151.3	795.2	0.7	676.6	927.9	117.0
h	589.1	2,780.9	4.6	2,306.2	3,269.7	407.4
CPUE	256.8	286.0	152.2	293.4	283.8	287.2
Double-rig						
C	374.4	370.6	0.0	2,758.3	5,621.3	1,251.6
h	491.3	613.0	0.0	5,128.6	11,584.8	3,019.3
CPUE	762.1	604.6	--	537.8	485.2	414.5
Total						
C	525.7	1,165.8	0.7	3,434.9	6,549.2	1,368.6
sre	1,375.2	3,761.7	4.6	10,512.0	21,805.4	5,238.3
CPUE	382.3	309.9	152.2	326.8	300.3	261.3

Gear type, statistic	Statistical Area					
	26	28	29	30	32	Total
Single-rig						
C	887.7	638.3	0.0	24.6	19.0	4,238.3
h	3,638.3	1,844.4	0.0	122.4	90.0	15,053.0
CPUE	244.0	346.1	--	201.0	211.1	281.6
Double-rig						
C	11,623.7	11,279.8	258.3	2,869.0	3,943.6	40,350.6
h	25,982.0	20,431.0	424.8	5,654.5	7,059.1	80,388.4
CPUE	447.4	552.1	608.1	507.4	558.7	501.9
Total						
C	12,511.4	11,918.1	258.3	2,893.6	3,962.6	44,588.9
sre	45,209.5	34,534.0	679.7	9,169.6	11,384.6	143,674.4
CPUE	276.7	345.1	380.0	315.6	348.1	310.3

Table 12. Pink shrimp statistics including percent age composition (0 through 3+ years), count-per-pound (Ct), and number sampled (N) by Oregon state statistical area, 1987.

Area	Statistic	Month						
		Apr	May	Jun	Jul	Aug	Sep	Oct
32	0	--	--	--	0.0	0.0	--	8.0
	1	--	--	--	88.9	84.5	--	81.4
	2	--	--	--	6.0	10.4	--	8.6
	3+	--	--	--	5.1	5.0	--	2.0
	Ct	--	--	--	181.6	152.5	--	138.4
	N	0	0	0	117	317	0	603
30	0	--	0.0	--	0.0	0.0	0.0	4.3
	1	--	18.6	--	87.6	70.3	89.1	87.1
	2	--	52.2	--	10.6	23.8	9.9	8.0
	3+	--	29.2	--	1.8	5.9	1.0	0.7
	Ct	--	106.3	--	179.9	123.9	136.9	124.2
	N	0	113	0	217	101	101	704
29	0	--	--	--	--	--	--	--
	1	--	--	--	--	--	--	--
	2	--	--	--	--	--	--	--
	3+	--	--	--	--	--	--	--
	Ct	--	--	--	--	--	--	--
	N	0	0	0	0	0	0	0
28	0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
	1	67.7	71.4	92.3	94.4	98.3	83.3	79.8
	2	21.2	21.4	4.2	4.0	0.0	11.0	13.7
	3+	11.1	7.1	3.5	1.7	1.7	5.7	3.8
	Ct	161.1	160.8	176.1	165.5	134.6	115.3	118.1
	N	632	210	311	301	115	311	514
26	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	17.4	82.5	89.2	91.5	95.2	94.0	87.0
	2	57.3	13.8	8.2	7.4	1.9	2.0	12.0
	3+	25.4	3.8	2.7	1.1	2.9	4.0	1.0
	Ct	77.4	185.3	163.6	138.5	119.0	105.1	94.0
	N	386	80	415	808	210	100	100
24	0	0.0	--	--	0.0	0.0	0.0	--
	1	59.4	--	--	83.2	95.0	96.0	--
	2	35.4	--	--	15.8	4.0	3.0	--
	3+	5.2	--	--	1.0	1.0	1.0	--
	Ct	129.7	--	--	106.1	112.4	108.6	--
	N	96	0	0	101	200	100	0

Table 12. Continued.

Area	Statistic	Month						
		Apr	May	Jun	Jul	Aug	Sep	Oct
22	0	0.0	0.0	0.0	0.0	0.0	0.5	0.7
	1	65.8	72.9	70.8	88.9	82.9	86.6	84.1
	2	30.8	22.8	26.2	9.3	16.1	11.6	13.7
	3+	3.4	4.3	3.0	1.8	1.0	1.3	1.5
	Ct	152.7	130.5	115.8	122.6	98.4	95.9	91.6
	N	699	513	397	601	295	391	402
21	0	0.0	0.0	--	--	0.0	0.0	3.6
	1	67.8	84.1	--	--	85.2	85.1	88.4
	2	26.5	14.1	--	--	14.4	14.9	7.6
	3+	5.7	1.7	--	--	0.4	0.0	0.3
	Ct	123.8	141.1	--	--	108.3	97.2	101.7
	N	804	303	0	0	400	300	604
20	0	--	--	--	--	--	--	--
	1	--	--	--	--	--	--	--
	2	--	--	--	--	--	--	--
	3+	--	--	--	--	--	--	--
	Ct	--	--	--	--	--	--	--
	N	0	0	0	0	0	0	0
19	0	0.0	0.0	0.0	0.0	0.0	2.0	46.5
	1	72.4	70.3	75.4	65.5	68.0	89.6	43.9
	2	26.1	25.7	23.6	32.1	30.2	8.4	8.3
	3+	1.5	4.0	1.0	2.4	1.8	0.0	1.3
	Ct	132.2	124.1	106.9	87.2	83.1	92.8	127.3
	N	601	300	202	401	200	303	303

Table 13. Mean pink shrimp carapace lengths (mm) at age (years), by month and Oregon state statistical area, 1987.

Area	Age	Month							
		Apr	May	Jun	Jul	Aug	Sep	Oct	
19	0	--	--	--	--	--	9.8	10.8	
	1	14.9	15.3	16.1	17.4	18.1	18.4	19.1	
	2	20.5	20.6	21.1	22.0	22.2	22.7	23.1	
	3+	24.3	23.6	24.9	24.7	25.4	--	25.3	
20	0	--	--	--	--	--	--	--	
	1	--	--	--	--	--	--	--	
	2	--	--	--	--	--	--	--	
	3+	--	--	--	--	--	--	--	
21	0	--	--	--	--	--	--	11.0	
	1	14.6	15.2	--	--	17.4	17.6	17.9	
	2	20.0	20.4	--	--	21.8	22.5	22.6	
	3+	23.4	23.6	--	--	25.5	--	25.3	
22	0	--	--	--	--	--	9.3	10.5	
	1	14.1	14.8	15.6	16.8	17.4	17.9	18.0	
	2	19.9	20.1	21.1	21.3	22.2	22.4	22.3	
	3+	23.6	23.7	24.6	24.5	25.2	24.9	24.3	
24	0	--	--	--	--	--	--	--	
	1	13.7	--	--	17.1	17.3	17.6	--	
	2	19.8	--	--	21.7	21.9	22.5	--	
	3+	23.7	--	--	24.5	25.3	24.0	--	
26	0	--	--	--	--	--	--	--	
	1	14.1	13.5	14.7	15.7	16.1	17.6	17.3	
	2	20.2	18.2	20.0	21.1	21.6	22.5	22.1	
	3+	23.5	22.2	22.8	23.5	24.7	23.8	24.0	
28	0	--	--	--	--	--	--	10.9	
	1	12.3	13.5	14.0	14.7	15.1	15.4	15.8	
	2	18.3	19.3	19.5	20.0	--	20.2	19.4	
	3+	22.2	22.6	22.1	22.5	22.5	22.1	22.8	
29	0	--	--	--	--	--	--	--	
	1	--	--	--	--	--	--	--	
	2	--	--	--	--	--	--	--	
	3+	--	--	--	--	--	--	--	
30	0	--	--	--	--	--	--	10.9	
	1	--	12.7	--	14.1	14.9	14.9	16.8	
	2	--	17.9	--	19.5	19.5	20.3	21.2	
	3+	--	21.0	--	22.4	22.0	23.0	24.7	
32	0	--	--	--	--	--	--	10.6	
	1	--	--	--	13.6	14.0	--	16.5	
	2	--	--	--	17.6	18.0	--	20.8	
	3+	--	--	--	20.5	21.2	--	23.2	

Table 14. Pink shrimp sex composition (%male, transitional and female), sample size, and number of primary females during April, September and October from Oregon state statistical areas 18-32, 1987.

Month	Area	Percent male	Percent transitional	Percent female	Percent primary female	Number primary female	Number sampled
Apr	18	--	--	--	--	--	--
	19	83.2	1.8	15.0	0.0	0	601
	20	--	--	--	--	--	--
	21	81.0	2.7	16.3	0.0	0	804
	22	73.1	9.7	17.2	0.0	0	699
	24	59.4	32.3	8.3	0.0	0	96
	26	17.4	49.5	33.2	0.0	0	386
	28	79.1	4.1	16.8	0.0	0	632
	29	--	--	--	--	--	--
	30	--	--	--	--	--	--
	32	--	--	--	--	--	--
Sep	18	--	--	--	--	--	--
	19	43.2	14.7	42.1	38.3	104	303
	20	--	--	--	--	--	--
	21	50.8	10.0	39.2	29.6	76	300
	22	44.0	5.6	50.4	43.9	149	391
	24	63.0	28.0	9.0	5.2	5	100
	26	58.0	25.0	17.0	11.7	11	100
	28	51.9	7.6	40.5	29.3	76	311
	29	--	--	--	--	--	--
	30	55.4	11.9	32.7	25.6	23	101
	32	--	--	--	--	--	--
Oct	18	--	--	--	--	--	--
	19	69.0	0.7	30.4	48.1	64	303
	20	--	--	--	--	--	--
	21	53.1	3.6	43.2	40.4	217	604
	22	40.3	5.5	54.2	46.4	157	402
	24	--	--	--	--	--	--
	26	66.0	3.0	31.0	20.7	18	100
	28	54.8	6.2	39.0	28.8	119	514
	29	--	--	--	--	--	--
	30	61.1	0.6	38.4	34.1	209	704
	32	60.4	1.2	38.5	34.2	168	603

Table 15. Pink shrimp landed catch (C=lb X 1000), effort (E=sre hours) and CPUE (C/E=lb/sre) by Oregon state statistical area and month for vessels landing pink shrimp into Oregon ports, 1988.

Area	Stat- istic	Month							Total
		Apr	May	Jun	Jul	Aug	Sep	Oct	
32	C	68.8	53.9	60.2	70.5	888.1	215.1	49.1	1,405.7
	E	187.4	175.2	142.7	216.2	1,792.6	511.8	131.8	3,157.7
	C/E	367.0	308.0	422.0	326.0	495.0	420.0	373.0	445.2
30	C	106.2	45.2	585.2	1,634.6	1,007.2	497.3	436.9	4,312.6
	E	336.2	175.0	1,784.8	4,185.6	2,482.6	1,291.4	1,141.8	11,397.4
	C/E	316.0	258.0	328.0	391.0	406.0	385.0	383.0	378.4
29	C	0.0	0.0	35.8	43.5	24.6	2.3	16.1	122.3
	E	0.0	0.0	226.2	312.0	140.3	7.0	55.2	740.7
	C/E	--	--	158.0	139.0	175.0	329.0	292.0	165.1
28	C	392.0	855.7	1,419.5	261.9	255.4	561.5	1,285.0	5,031.0
	E	1,578.4	2,374.3	4,136.4	782.0	687.0	1,623.2	3,882.9	15,064.2
	C/E	248.0	360.0	343.0	335.0	372.0	346.0	331.0	334.0
26	C	1,045.2	1,624.3	1,861.6	700.6	1,141.7	1,119.4	602.8	8,095.6
	E	3,786.5	5,221.4	6,688.4	2,928.3	3,979.2	3,271.7	1,979.6	27,855.1
	C/E	276.0	311.0	278.0	239.0	287.0	342.0	305.0	290.6
24	C	259.6	518.8	1,356.0	1,436.6	1,478.7	843.0	438.9	6,331.6
	E	1,057.7	1,436.5	3,461.1	3,784.3	4,503.8	2,779.6	1,671.1	18,694.1
	C/E	245.0	361.0	392.0	380.0	328.0	303.0	263.0	338.7
22	C	175.8	1,213.5	641.9	205.5	91.5	1,425.1	1,636.1	5,389.4
	E	709.0	3,270.6	2,542.3	1,075.5	299.5	3,909.7	4,862.0	16,668.6
	C/E	248.0	371.0	252.0	191.0	306.0	365.0	337.0	323.3
21	C	847.4	506.3	1,549.2	1,316.0	1,872.3	1,017.2	838.4	7,946.8
	E	1,926.7	1,262.5	3,561.3	2,867.6	4,096.8	2,582.3	2,387.4	18,684.6
	C/E	440.0	401.0	435.0	459.0	457.0	394.0	351.0	425.3
20	C	0.0	0.0	2.1	0.5	0.0	0.1	310.9	313.6
	E	0.8	0.0	17.1	0.5	3.5	5.4	538.5	565.8
	C/E	--	--	123.0	1,000.0	0.0	19.0	577.0	554.3
19	C	361.4	218.5	541.9	172.6	461.7	254.3	313.0	2,323.4
	E	846.2	412.1	1,156.5	415.5	873.6	596.3	709.6	5,009.8
	C/E	427.0	530.0	469.0	415.0	529.0	426.0	441.0	463.8
18	C	35.7	28.1	98.7	148.0	120.9	125.9	7.5	564.8
	E	65.5	30.4	232.3	394.8	284.4	360.6	34.5	1,402.5
	C/E	545.0	924.0	425.0	375.0	425.0	349.0	217.0	402.7
TOTAL	C	3,292.1	5,064.3	8,152.1	5,990.3	7,342.1	6,061.2	5,934.7	41,836.8
	E	10,494.4	14,358.0	23,949.1	16,962.3	19,143.3	16,939.0	17,394.4	119,240.5
	C/E	313.7	352.7	340.4	353.2	383.5	357.8	341.2	350.9

Table 16. Single-rig and double-rig pink shrimp catch (C=pounds), effort (h and sre), and CPUE (C/effort) statistics by month for shrimp landed into Oregon ports, 1988.

Gear type, statistic	Month							Total
	Apr	May	Jun	Jul	Aug	Sep	Oct	
Single-rig								
C	363.4	524.9	934.4	602.2	814.8	749.0	392.8	4,381.5
h	1,176.5	1,463.5	2,551.6	1,633.1	1,997.4	2,024.1	1,266.4	12,112.6
CPUE	308.9	358.7	366.2	368.7	407.9	370.0	310.2	361.7
Double-rig								
C	2,928.7	4,539.4	7,217.7	5,388.1	6,527.3	5,312.2	5,541.9	37,455.3
h	5,823.7	8,059.2	13,373.6	9,580.7	10,716.2	9,321.8	10,080.0	66,955.2
CPUE	502.9	563.3	539.7	562.4	609.1	569.9	549.8	559.4
Total								
C	3,292.1	5,064.3	8,152.1	5,990.3	7,342.1	6,061.2	5,934.7	41,836.8
sre	10,494.4	14,358.2	23,949.4	16,962.2	19,143.3	16,939.0	17,394.4	119,240.9
CPUE	313.7	352.7	340.4	353.2	383.5	357.8	341.2	350.9

Table 17. Single-rig and double-rig statistics for catch (C=lb), effort (h or sre), and CPUE (C/effort) by state statistical area for pink shrimp landed in Oregon, 1988.

Gear type, statistic	Statistical area					
	18	19	20	21	22	24
Single-rig						
C	231.9	1,358.6	41.7	1,317.4	392.7	502.9
h	634.7	2,834.8	77.3	2,884.6	1,374.1	1,863.0
CPUE	365.4	479.3	539.5	456.7	285.8	269.9
Double-rig						
C	332.9	964.8	271.9	6,629.4	4,996.7	5,828.7
h	479.9	1,359.4	305.3	9,875.1	9,559.1	10,519.5
CPUE	693.7	709.7	890.6	671.3	522.7	554.1
Total						
C	564.8	2,323.4	313.6	7,946.8	5,389.4	6,331.6
sre	1,402.5	5,009.8	565.8	18,684.8	16,668.7	18,694.2
CPUE	402.7	463.8	554.3	425.3	323.3	338.7

Gear type, statistic	Statistical Area					
	26	28	29	30	32	Total
Single-rig						
C	435.9	100.4	0.0	0.0	0.0	4,381.5
h	2,053.5	390.6	0.0	0.0	0.0	12,112.6
CPUE	212.3	257.0	--	--	--	361.7
Double-rig						
C	7,659.7	4,930.6	122.3	4,312.6	1,405.7	37,455.3
h	16,126.0	9,171.0	463.0	7,123.3	1,973.6	66,955.2
CPUE	475.0	537.6	264.1	605.4	712.3	559.4
Total						
C	8,095.6	5,031.0	122.3	4,312.6	1,405.7	41,836.8
sre	27,855.1	15,064.2	740.8	11,397.3	3,157.8	119,241.0
CPUE	290.6	334.0	165.1	378.4	445.2	350.9

Table 18. Pink shrimp statistics including percent age composition (0 through 3+ years), count-per-pound (Ct), and number sampled (N) by Oregon state statistical area, 1988.

Area	Statistic	Month						
		Apr	May	Jun	Jul	Aug	Sep	Oct
32	0	0.0	0.0	--	--	0.0	0.0	2.0
	1	33.2	50.0	--	--	81.9	88.8	89.0
	2	57.4	47.5	--	--	17.1	10.2	8.0
	3+	9.5	2.5	--	--	1.0	1.0	1.0
	Ct	135.3	154.9	--	--	158.4	137.3	124.9
	N	401	100	0	0	398	98	100
30	0	0.0	--	0.0	0.0	0.0	0.0	2.4
	1	40.9	--	64.5	73.6	89.7	90.3	88.8
	2	51.1	--	32.0	24.9	9.5	9.2	8.4
	3+	7.9	--	3.5	1.5	0.7	0.5	0.4
	Ct	142.4	--	--	--	155.3	137.2	130.8
	N	403	0	0	0	400	403	703
29	0	--	--	--	--	0.0	--	0.0
	1	--	--	--	--	58.6	--	87.0
	2	--	--	--	--	33.3	--	13.0
	3+	--	--	--	--	8.1	--	0.0
	Ct	--	--	--	--	96.0	--	126.5
	N	0	0	0	0	99	0	100
28	0	0.0	0.0	0.0	0.0	--	0.0	0.1
	1	66.2	70.7	83.3	83.3	--	83.4	84.4
	2	30.4	28.2	15.5	14.3	--	15.9	14.5
	3+	3.4	1.2	1.2	2.5	--	0.7	1.0
	Ct	143.5	143.6	152.6	139.4	--	119.7	115.0
	N	500	600	498	203	0	302	902
26	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	52.6	73.4	86.3	87.3	89.0	78.3	93.3
	2	45.0	25.6	13.3	12.4	10.6	21.0	6.3
	3+	2.5	1.0	0.3	0.3	0.3	0.7	0.3
	Ct	121.1	141.4	145.9	134.3	118.8	95.9	107.8
	N	803	601	600	400	601	400	300
24	0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
	1	32.0	74.7	90.2	92.1	93.0	92.0	89.2
	2	60.3	23.3	9.4	7.2	6.6	8.0	9.0
	3+	7.8	2.0	0.4	0.7	0.4	0.0	1.1
	Ct	95.8	141.9	146.8	140.1	123.2	112.4	105.8
	N	400	300	499	902	500	601	800

Table 18. Continued.

Area	Statistic	Month						
		Apr	May	Jun	Jul	Aug	Sep	Oct
22	0	0.0	0.0	0.0	0.0	--	0.3	0.8
	1	45.8	73.5	91.5	76.8	--	77.5	82.7
	2	41.7	23.0	8.3	18.1	--	19.0	16.0
	3+	12.5	3.5	0.3	5.1	--	4.2	0.5
	Ct	104.7	146.3	153.6	104.5	--	94.8	92.0
	N	592	408	400	400	0	289	595
21	0	0.0	0.0	0.0	0.0	0.2	0.5	3.7
	1	59.1	78.4	80.9	92.4	88.3	92.8	91.6
	2	35.0	20.4	16.6	7.2	10.5	6.2	4.3
	3+	6.0	1.2	2.5	0.4	1.0	0.5	0.4
	Ct	126.8	149.5	138.8	140.3	124.7	113.9	108.0
	N	701	510	500	500	600	401	810
20	0	--	--	--	--	--	--	5.0
	1	--	--	--	--	--	--	86.0
	2	--	--	--	--	--	--	8.7
	3+	--	--	--	--	--	--	0.2
	Ct	--	--	--	--	--	--	110.5
	N	0	0	0	0	0	0	402
19	0	0.0	0.0	0.0	0.0	0.0	0.3	19.4
	1	78.8	80.3	86.3	92.5	91.8	91.7	67.9
	2	16.4	18.4	11.9	6.3	7.5	5.8	9.7
	3+	4.8	1.3	1.8	1.3	0.7	2.3	3.0
	Ct	135.6	136.4	116.0	118.7	101.3	88.4	88.9
	N	499	300	504	399	400	399	592

Table 19. Mean pink shrimp carapace lengths (mm) at age (years), by month and Oregon state statistical area, 1988.

Area	Age	Month						
		Apr	May	Jun	Jul	Aug	Sep	Oct
19	0	--	--	--	--	--	11.0	12.0
	1	15.3	15.7	16.7	17.0	17.9	18.9	19.5
	2	20.3	20.8	21.2	21.5	22.3	22.6	23.2
	3+	23.9	23.7	24.0	24.0	25.0	24.8	25.4
20	0	--	--	--	--	--	--	12.0
	1	--	--	--	--	--	--	18.1
	2	--	--	--	--	--	--	22.7
	3+	--	--	--	--	--	--	--
21	0	--	--	--	--	8.0	8.8	10.7
	1	14.7	15.2	15.7	16.2	16.6	17.2	18.0
	2	19.6	20.0	20.3	21.0	21.0	21.4	22.0
	3+	23.4	24.3	23.6	25.0	23.4	23.0	24.7
22	0	--	--	--	--	--	8.0	9.9
	1	14.8	15.3	15.6	16.6	--	17.8	18.0
	2	19.6	19.8	20.1	21.5	--	22.2	22.0
	3+	23.5	22.8	23.5	25.2	--	25.0	25.2
24	0	--	--	--	--	--	--	10.1
	1	15.2	15.3	15.9	16.2	16.7	17.3	17.4
	2	20.1	20.2	20.6	21.2	21.0	22.0	21.6
	3+	23.5	22.6	23.0	24.3	23.8	--	24.2
26	0	--	--	--	--	--	--	--
	1	15.0	15.5	15.7	16.4	16.8	17.3	17.4
	2	20.0	20.2	20.4	21.0	21.1	22.0	21.9
	3+	23.9	24.1	24.5	25.5	24.5	24.7	24.5
28	0	--	--	--	--	--	--	10.5
	1	14.6	15.2	15.4	15.8	--	16.7	17.0
	2	19.5	19.8	20.0	20.1	--	21.3	21.4
	3+	23.1	23.1	23.3	23.4	--	24.5	24.3
29	0	--	--	--	--	--	--	--
	1	--	--	--	--	16.3	--	16.4
	2	--	--	--	--	20.9	--	21.2
	3+	--	--	--	--	24.4	--	--
30	0	--	--	--	--	--	--	10.0
	1	13.9	--	14.8	15.2	15.8	16.2	16.6
	2	18.6	--	19.5	19.8	20.4	21.1	21.1
	3+	22.3	--	23.4	22.8	23.3	23.3	24.1
32	0	--	--	--	--	--	--	11.0
	1	13.5	14.2	--	--	15.3	16.0	16.7
	2	18.0	18.6	--	--	19.4	20.3	21.8
	3+	22.0	23.8	--	--	22.8	24.0	23.5

Table 20. Pink shrimp sex composition (%male, transitional and female), sample size, and number of primary females during April, September and October from Oregon state statistical areas 18-32, 1988.

Month	Area	Percent male	Percent transitional	Percent female	Percent primary female	Number primary female	Number sampled
Apr	18	--	--	--	--	--	0
	19	79.8	7.6	12.6	1.8	7	499
	20	--	--	--	--	--	0
	21	71.3	9.8	18.8	0.7	3	701
	22	56.3	13.9	29.9	0.0	0	592
	24	27.3	45.0	27.8	0.0	0	400
	26	46.1	29.0	24.9	3.1	13	803
	28	56.8	16.2	27.0	3.6	12	500
	29	--	--	--	--	--	0
	30	41.9	20.6	37.5	0.6	1	403
	32	42.1	20.9	36.9	0.8	1	401
Sep	18	--	--	--	--	--	--
	19	33.1	8.5	58.4	55.7	204	399
	20	--	--	--	--	--	0
	21	49.9	10.0	40.1	37.1	138	401
	22	39.4	11.8	48.8	36.6	82	289
	24	55.1	14.2	30.7	23.2	84	401
	26	58.0	12.0	30.0	13.1	21	200
	28	56.3	7.3	36.4	25.0	63	302
	29	--	--	--	--	--	0
	30	73.5	1.0	25.5	17.7	32	200
	32	--	--	--	--	--	0
Oct	18	--	--	--	--	--	--
	19	46.9	1.4	51.7	57.5	231	592
	20	54.7	3.4	41.9	43.3	162	402
	21	46.2	1.4	52.5	52.1	386	810
	22	49.4	2.7	47.9	38.2	188	595
	24	63.1	5.1	31.8	24.4	174	800
	26	61.7	5.0	33.3	28.6	80	300
	28	59.2	0.3	40.5	29.5	225	902
	29	70.0	0.0	30.0	19.5	17	100
	30	70.8	0.0	29.2	22.9	143	703
	32	72.0	0.0	28.0	21.3	19	100

Table 21. Pink shrimp landed catch (C=lb X 1000), effort (E=sre hours) and CPUE (C/E=lb/sre) by Oregon state statistical area and month for vessels landing pink shrimp into Oregon ports, 1989.

Area	Stat- istic	Month							Total
		Apr	May	Jun	Jul	Aug	Sep	Oct	
32	C	151.4	448.7	639.8	138.3	98.6	198.6	44.4	1,719.8
	E	392.3	1,184.0	1,634.9	404.5	331.8	703.8	175.5	4,826.8
	C/E	386.0	379.0	391.0	342.0	297.0	282.0	253.0	356.3
30	C	551.7	227.0	251.8	322.2	356.6	419.4	33.2	2,161.9
	E	1,327.4	580.9	951.0	833.9	927.7	1,448.2	108.2	6,177.3
	C/E	416.0	391.0	265.0	386.0	384.0	290.0	307.0	350.0
29	C	108.3	60.9	0.9	0.0	118.0	16.4	0.0	304.5
	E	200.5	166.1	10.7	0.0	449.1	141.3	0.0	967.7
	C/E	540.0	367.0	83.0	--	263.0	116.0	--	314.7
28	C	518.1	1,679.0	656.9	391.7	531.8	249.1	690.7	4,717.3
	E	1,451.9	5,227.2	2,408.2	1,276.2	2,471.0	1,094.2	2,398.2	16,326.9
	C/E	357.0	321.0	273.0	307.0	215.0	228.0	288.0	288.9
26	C	1,779.9	1,160.1	1,534.3	638.8	1,531.4	829.8	398.0	7,872.3
	E	5,189.3	4,566.0	5,395.1	1,756.8	5,958.9	3,355.3	1,554.4	27,775.8
	C/E	343.0	254.0	284.0	364.0	257.0	247.0	256.0	283.4
24	C	1,146.3	468.0	997.3	193.9	741.1	1,484.7	1,151.1	6,182.4
	E	3,049.8	1,790.5	3,207.6	513.4	2,381.1	5,151.5	4,182.5	20,276.4
	C/E	376.0	261.0	311.0	378.0	311.0	288.0	275.0	304.9
22	C	1,863.7	3,578.4	1,519.5	649.8	2,555.5	1,702.5	1,129.1	12,998.5
	E	3,758.1	7,813.3	4,530.2	1,529.1	7,458.4	5,367.6	4,161.8	34,618.5
	C/E	496.0	458.0	335.0	425.0	343.0	317.0	271.0	375.5
21	C	1,246.9	777.0	631.8	396.1	704.9	1,204.4	759.5	5,720.6
	E	2,242.1	2,028.6	1,543.2	756.5	2,251.8	3,364.9	2,538.3	14,725.4
	C/E	556.0	383.0	409.0	524.0	313.0	358.0	299.0	388.5
20	C	225.5	487.9	408.8	457.7	360.6	290.0	518.9	2,749.4
	E	327.8	878.8	626.1	566.5	1,002.7	768.7	1,126.1	5,296.7
	C/E	688.0	555.0	653.0	808.0	360.0	377.0	461.0	519.1
19	C	568.5	358.6	233.7	180.8	949.0	710.8	464.3	3,465.7
	E	1,043.4	1,033.3	564.4	227.2	1,507.8	1,547.2	1,069.5	6,992.8
	C/E	545.0	347.0	414.0	796.0	629.0	459.0	434.0	495.6
18	C	93.5	104.4	138.0	173.3	326.0	247.7	153.6	1,236.5
	E	239.5	239.4	284.9	196.8	462.3	454.9	373.8	2,251.6
	C/E	391.0	436.0	484.0	880.0	705.0	544.0	411.0	549.2
TOTAL	C	8,253.8	9,350.0	7,012.8	3,542.6	8,273.5	7,353.4	5,342.8	49,128.9
	E	19,222.1	25,508.1	21,156.3	8,060.9	25,202.6	23,397.6	17,688.3	140,235.9
	C/E	429.4	366.6	331.5	439.5	328.3	314.3	302.1	350.3

Table 22. Single-rig and double-rig pink shrimp catch (C=pounds), effort (h and sre), and CPUE (C/effort) statistics by month for shrimp landed into Oregon ports, 1989.

Gear type, statistic	Month							Total
	Apr	May	Jun	Jul	Aug	Sep	Oct	
Single-rig								
C	1,223.9	1,065.7	771.5	385.3	886.8	787.9	544.4	5,665.6
h	2,965.8	3,117.4	1,995.2	586.2	2,032.5	2,266.4	1,603.7	14,567.2
CPUE	413.0	342.0	387.0	657.0	436.0	348.0	339.0	389.0
Double-rig								
C	7,029.9	8,294.3	6,241.1	3,157.2	7,386.7	6,565.6	4,798.5	43,463.3
h	10,160.1	13,994.2	11,975.7	4,671.6	14,481.3	13,207.0	10,052.9	77,768.3
CPUE	692.0	592.0	521.0	676.0	510.0	497.0	477.0	559.0
Total								
C	8,253.9	9,350.0	7,012.7	3,542.5	8,273.5	7,353.5	5,343.0	49,128.9
sre	19,222.0	25,508.1	21,156.3	8,060.8	25,202.6	23,397.6	17,688.3	140,235.7
CPUE	429.0	367.0	331.0	439.0	328.0	314.0	302.0	350.0

Table 23. Single-rig and double-rig statistics for catch (C=lb), effort (h or sre), and CPUE (C/effort) by state statistical area for pink shrimp landed in Oregon, 1989.

Gear type, statistic	Statistical area					
	18	19	20	21	22	24
Single-rig						
C	536.2	1,499.7	613.6	773.3	1,166.5	401.7
h	1,012.3	3,018.3	1,074.8	2,239.4	3,481.5	1,306.0
CPUE	529.7	496.9	570.9	345.3	335.1	307.6
Double-rig						
C	700.1	1,966.0	2,135.8	4,947.4	11,831.8	5,780.8
h	774.5	2,484.1	2,638.6	7,803.7	19,460.6	11,856.5
CPUE	903.9	791.4	809.4	634.0	608.0	487.6
Total						
C	1,236.3	3,465.7	2,749.4	5,720.7	12,998.3	6,182.5
sre	2,251.5	6,992.9	5,296.6	14,725.3	34,618.5	20,276.4
CPUE	549.1	495.6	519.1	388.5	375.5	304.9

Gear type, statistic	Statistical area					
	26	28	29	30	32	Total
Single-rig						
C	483.3	148.8	10.6	1.2	30.7	5,665.6
h	1,766.8	525.2	25.7	19.0	98.2	14,567.2
CPUE	273.5	283.3	412.5	63.2	312.6	388.9
Double-rig						
C	7,389.1	4,568.5	294.0	2,160.6	1,689.2	43,463.3
h	16,255.6	9,876.1	588.8	3,848.9	2,955.4	78,542.8
CPUE	454.6	462.6	499.3	561.4	571.6	553.4
Total						
C	7,872.4	4,717.3	304.6	2,161.8	1,719.9	49,128.9
sre	27,775.8	16,327.0	967.8	6,177.2	4,826.8	140,235.7
CPUE	283.4	288.9	314.7	350.0	356.3	350.3

Table 24. Pink shrimp statistics including percent age composition (0 through 3+ years), count-per-pound (Ct), and number sampled (N) by Oregon state statistical area, 1989.

Area	Statistic	Month						
		Apr	May	Jun	Jul	Aug	Sep	Oct
32	0	--	0.0	0.0	0.0	0.0	0.0	0.0
	1	--	32.0	35.4	70.9	44.6	62.2	69.3
	2	--	56.9	53.5	26.2	53.5	32.7	25.7
	3+	--	11.1	11.2	3.0	2.0	5.2	5.0
	Ct	--	150.6	138.0	147.4	116.3	123.2	136.0
	N	0	406	591	302	101	300	101
30	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	11.2	28.9	51.5	59.6	70.6	76.2	81.0
	2	78.1	66.3	46.5	35.9	27.9	23.1	17.3
	3+	10.7	4.7	2.0	4.6	1.5	0.7	1.7
	Ct	125.3	130.3	143.4	137.6	144.5	145.8	161.3
	N	606	401	299	403	401	403	294
29	0	0.0	--	0.0	--	0.0	--	--
	1	13.0	--	60.4	--	69.8	--	--
	2	71.0	--	38.6	--	28.2	--	--
	3+	16.0	--	1.0	--	2.1	--	--
	Ct	104.7	--	150.8	--	124.2	--	--
	N	100	0	101	0	387	0	0
28	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	21.7	36.5	45.0	56.9	59.4	74.8	71.3
	2	70.2	53.9	53.6	42.9	40.1	24.7	28.5
	3+	8.0	9.6	1.3	0.2	0.5	0.5	0.2
	Ct	116.4	116.2	117.2	119.0	108.9	119.0	105.1
	N	299	395	302	601	397	401	600
26	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	34.2	30.4	59.4	55.5	65.1	68.9	80.0
	2	58.0	66.9	39.2	44.3	31.9	29.5	19.8
	3+	7.8	2.7	1.4	0.3	3.0	1.6	0.2
	Ct	99.4	100.4	117.1	107.6	98.9	101.2	112.9
	N	603	700	503	400	505	499	499
24	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	49.1	57.3	68.9	75.0	85.6	81.5	81.6
	2	49.1	40.7	29.4	25.0	13.4	18.0	18.0
	3+	1.7	2.0	1.7	0.0	1.0	0.5	0.4
	Ct	125.2	127.1	127.3	130.1	124.8	111.8	113.9
	N	696	501	599	100	792	601	902

Table 24. Continued.

Area	Statistic	Month						
		Apr	May	Jun	Jul	Aug	Sep	Oct
22	0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
	1	47.5	59.4	79.7	76.2	81.1	80.6	81.1
	2	47.7	37.8	19.3	22.6	18.4	19.1	18.3
	3+	4.9	2.8	0.5	1.1	0.5	0.2	0.7
	Ct	119.2	126.4	132.6	116.1	105.9	100.0	100.8
	N	701	502	407	800	201	202	597
21	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	39.4	63.1	46.0	69.0	84.2	89.5	78.8
	2	55.6	33.7	52.0	30.2	15.3	10.5	20.2
	3+	5.0	3.2	2.0	0.8	0.5	0.0	1.0
	Ct	114.8	151.4	120.3	119.0	126.7	126.4	106.2
	N	601	401	400	504	393	401	605
20	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	47.3	64.2	44.3	76.5	68.4	62.8	74.5
	2	52.7	35.1	52.2	23.5	31.6	37.2	24.8
	3+	0.0	0.7	3.5	0.0	0.0	0.0	0.7
	Ct	140.9	138.8	101.4	120.6	107.8	94.4	99.1
	N	150	148	201	400	393	199	604
19	0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
	1	42.8	50.6	76.2	73.7	91.8	94.3	84.0
	2	53.2	45.9	22.3	24.8	7.8	5.7	14.0
	3+	4.0	3.5	1.5	1.6	0.5	0.0	1.4
	Ct	99.9	114.4	132.1	110.0	122.1	117.0	97.0
	N	502	401	404	505	400	401	499

Table 25. Mean pink shrimp carapace lengths (mm) at age (years), by month and Oregon state statistical area, 1989.

Area	Age	Month							
		Apr	May	Jun	Jul	Aug	Sep	Oct	
19	0	--	--	--	--	--	--	--	9.0
	1	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.0
	2	20.4	20.3	21.1	21.5	22.0	22.5	23.0	23.0
	3+	24.7	24.6	24.8	25.4	24.8	--	25.9	25.9
20	0	--	--	--	--	--	--	--	--
	1	14.7	14.9	15.7	16.5	17.0	17.5	17.7	17.7
	2	19.2	19.4	20.4	20.8	20.9	21.7	22.0	22.0
	3+	--	23.0	24.7	--	--	--	24.4	24.4
21	0	--	--	--	--	--	--	--	--
	1	14.4	14.7	15.3	16.4	16.6	16.8	17.3	17.3
	2	19.5	19.5	20.1	21.0	20.9	21.7	21.8	21.8
	3+	22.9	22.9	24.8	24.5	24.5	--	24.3	24.3
22	0	--	--	--	--	--	--	--	--
	1	15.1	15.8	16.0	16.6	17.0	17.3	17.5	17.5
	2	19.5	20.2	20.4	20.9	21.2	22.6	22.2	22.2
	3+	23.3	23.5	23.3	24.1	24.0	25.5	24.8	24.8
24	0	--	--	--	--	--	--	--	--
	1	15.1	15.1	15.7	16.3	16.7	16.6	16.6	16.6
	2	20.0	20.2	20.6	20.4	21.5	21.7	21.9	21.9
	3+	23.1	23.2	23.3	--	24.6	24.2	26.0	26.0
26	0	--	--	--	--	--	--	--	--
	1	15.0	15.2	15.4	15.8	16.8	16.9	16.7	16.7
	2	20.1	20.2	20.5	20.8	21.7	21.9	21.6	21.6
	3+	23.2	23.2	23.4	24.5	24.2	24.3	24.5	24.5
28	0	--	--	--	--	--	--	--	--
	1	13.6	14.0	14.7	15.3	16.0	16.0	16.5	16.5
	2	18.6	19.3	19.5	20.0	20.6	21.3	21.2	21.2
	3+	21.8	22.1	22.6	23.5	24.8	24.3	24.5	24.5
29	0	--	--	--	--	--	--	--	--
	1	14.0	--	14.4	--	15.7	--	--	--
	2	18.3	--	19.1	--	20.6	--	--	--
	3+	22.6	--	23.5	--	24.1	--	--	--
30	0	--	--	--	--	--	--	--	--
	1	13.1	13.4	14.2	14.9	15.2	15.3	15.1	15.1
	2	17.8	18.3	18.7	19.4	19.6	20.2	20.1	20.1
	3+	21.0	21.6	21.8	22.0	23.1	23.0	22.1	22.1
32	0	--	--	--	--	--	--	--	--
	1	--	12.6	13.2	14.6	15.1	15.2	15.3	15.3
	2	--	17.4	17.9	19.4	19.1	19.8	19.6	19.6
	3+	--	20.6	21.0	22.3	22.3	22.5	21.7	21.7

Table 26. Pink shrimp sex composition (%male, transitional and female), sample size, and number of primary females during April, September and October from Oregon state statistical areas 18-32, 1989.

Month	Area	Percent male	Percent transitional	Percent female	Percent primary female	Number primary female	Number sampled
Apr	18	43.6	2.0	54.5	0.0	0	101
	19	63.5	1.8	34.7	0.0	0	502
	20	74.7	0.7	24.7	0.0	0	150
	21	50.7	0.8	48.4	0.0	0	601
	22	72.6	9.8	17.6	0.0	0	701
	24	51.0	25.3	23.7	0.0	0	696
	26	41.3	36.2	22.6	0.0	0	603
	28	37.8	29.4	32.8	0.0	0	299
	29	24.0	32.0	44.0	0.0	0	100
	30	29.7	31.5	38.8	0.0	0	606
	32	--	--	--	--	--	0
Sep	18	--	--	--	--	--	0
	19	54.9	11.5	33.7	29.6	112	401
	20	45.2	7.5	47.2	20.0	25	199
	21	71.8	5.7	22.4	13.6	49	401
	22	59.5	5.2	35.3	20.0	33	202
	24	68.8	3.8	27.3	11.9	58	600
	26	61.9	1.0	37.1	9.6	33	499
	28	68.3	0.5	31.2	8.7	26	401
	29	--	--	--	--	--	0
	30	68.2	1.0	30.8	10.1	31	403
	32	57.2	0.5	42.3	7.5	14	300
Oct	18	--	--	--	--	--	0
	19	53.7	3.4	42.9	32.9	138	499
	20	55.6	3.5	40.9	20.9	94	604
	21	59.5	3.5	37.0	20.5	98	605
	22	60.6	1.7	37.7	23.6	114	597
	24	69.8	1.6	28.6	12.8	94	902
	26	74.3	0.0	25.7	8.5	34	499
	28	64.5	0.2	35.3	10.0	43	600
	29	--	--	--	--	--	0
	30	75.9	0.0	24.1	6.7	16	294
	32	61.4	0.0	38.6	11.4	8	101

Table 27. Annual United States and Canadian Pacific coast landings of pandalid shrimp by state and province (millions of pounds).

Year	AK	BC	WA	OR	CA	Total coast	Total WA OR, CA
1952	2.0	0.9	--	--	0.2	--	--
1953	1.7	1.2	--	--	0.3	--	--
1954	1.5	1.0	--	--	0.3	--	--
1955	1.8	1.1	--	--	0.8	--	--
1956	3.0	1.2	--	--	1.2	--	--
1957	2.4	1.6	2.4	0.4	1.4	8.1	4.2
1958	7.9	2.0	6.5	1.5	1.7	19.6	9.8
1959	13.1	1.0	2.9	2.8	1.8	21.6	7.5
1960	7.4	1.7	1.8	1.1	2.0	14.0	4.9
1961	16.0	1.2	1.4	1.5	2.0	22.1	4.9
1962	16.9	1.6	1.4	2.8	1.8	24.5	5.9
1963	15.1	1.8	1.0	3.1	2.1	23.1	6.2
1964	7.7	1.1	0.3	5.5	1.0	15.5	6.8
1965	16.8	1.8	0.0	1.7	1.4	21.8	3.2
1966	28.2	1.7	0.3	4.8	1.2	36.1	6.2
1967	41.8	1.7	1.0	10.4	1.4	56.3	12.8
1968	42.0	1.6	1.2	11.0	2.3	58.0	14.4
1969	47.9	2.1	1.4	10.5	2.9	64.8	14.9
1970	74.3	1.5	0.9	13.7	4.0	94.5	18.7
1971	94.9	0.7	0.7	9.3	3.1	108.7	13.1
1972	83.8	0.8	1.6	20.9	2.4	109.5	24.9
1973	120.0	1.7	5.3	24.5	1.2	152.7	31.0
1974	108.3	2.6	9.3	20.0	2.3	142.6	31.6
1975	98.5	1.7	10.2	23.9	5.0	139.3	39.1
1976	129.0	7.7	9.3	25.4	3.4	174.8	38.1
1977	116.9	6.2	11.8	48.6	15.6	199.1	76.0
1978	73.3	3.5	12.3	57.0	13.2	159.2	82.5
1979	50.9	1.6	12.1	29.6	4.9	99.1	46.6
1980	52.6	1.5	12.6	30.2	5.1	101.9	47.8
1981	28.0	1.8	10.1	25.9	4.2	70.0	40.1
1982	17.0	1.5	5.0	18.5	4.5	46.4	27.9
1983	7.2	1.6	5.7	6.5	1.1	22.1	13.3
1984	9.5	2.0	3.4	4.8	1.5	21.3	9.8
1985	4.4	2.6	9.1	14.9	3.4	34.4	27.3
1986	4.2	2.9	17.4	33.8	6.7	65.1	58.0
1987	2.5	7.4	15.9	44.8	7.8	78.4	68.5
1988	2.5	5.6	18.2	41.9	11.1	79.3	71.2
1989	2.0	5.3	15.9	49.1	13.3	85.6	78.3

Note: Alaska and B.C. landings include shrimp other than *P. jordani*.

Table 28. Number and percentage of vessels by gear type for vessels landing pink shrimp into Oregon ports, 1957-1989.

Year	Single-rig	Percent single	Double-rig	Percent double	Unknown gear	Percent unknown	Total
1957	7	100	--	0	--	0	7
1958	15	100	--	0	--	0	15
1959	21	100	--	0	--	0	21
1960	11	100	--	0	--	0	11
1961	11	100	--	0	--	0	11
1962	29	100	--	0	--	0	29
1963	27	100	--	0	--	0	27
1964	29	100	--	0	--	0	29
1965	24	100	--	0	--	0	24
1966	26	100	--	0	--	0	26
1967	45	100	--	0	--	0	45
1968	41	100	--	0	--	0	41
1969	52	98	1	2	--	0	53
1970	54	96	2	4	--	0	56
1971	51	89	6	11	--	0	57
1972	57	85	10	15	--	0	67
1973	64	74	23	26	--	0	87
1974	68	58	49	42	--	0	117
1975	37	46	43	54	--	0	80
1976	36	43	48	57	--	0	84
1977	41	41	59	59	--	0	100
1978	68	37	118	63	--	0	186
1979	67	33	136	67	--	0	203
1980	108	37	181	63	--	0	289
1981	84	34	165	66	--	0	249
1982	45	26	128	74	--	0	173
1983	28	22	102	78	--	0	130
1984	13	22	46	78	--	0	59
1985	20	21	69	72	7	7	96
1986	38	25	100	66	14	9	152
1987	63	35	116	65	--	0	179
1988	61	34	120	66	--	0	181
1989	66	36	119	64	--	0	185

Table 29. Pink shrimp catch (millions of lb), effort (hours=SRE) and CPUE for shrimp landed in Oregon, 1968-1989.

Year	Hours	Catch	CPUE
1968	16,512	11.0	665
1969	20,303	10.5	518
1970	22,270	13.7	617
1971	20,262	9.3	458
1972	31,026	20.9	672
1973	41,718	24.5	588
1974	46,171	20.0	433
1975	39,069	23.9	611
1976	52,054	25.4	488
1977	68,249	48.6	712
1978	101,464	57.0	562
1979	116,551	29.6	254
1980	124,688	30.2	242
1981	138,923	25.9	187
1982	104,089	18.5	177
1983	61,620	6.6	106
1984	32,509	4.8	149
1985	47,973	14.9	310
1986	107,734	33.8	314
1987	143,715	44.6	310
1988	119,242	41.9	351
1989	140,236	49.1	350

Table 30. Numbers of pink shrimp (billions) and percent age of shrimp harvested in Oregon state statistical areas 18-28; 1966 through 1989.

Year	Number age 1	Number age 2	Number age 3	Total number	Percent age 1	Percent age 2	Percent age 3
1966	0.150	0.533	0.011	0.694	22	77	2
1967	0.674	0.276	0.402	1.352	50	20	30
1968	0.216	0.836	0.198	1.251	17	67	16
1969	0.457	0.198	0.484	1.139	40	17	43
1970	0.341	1.137	0.140	1.618	21	70	9
1971	0.695	0.340	0.401	1.436	48	24	28
1972	0.119	2.258	0.244	2.622	5	86	9
1973	0.119	0.965	0.359	1.443	8	67	25
1974	0.655	0.718	0.335	1.708	38	42	20
1975	1.189	1.124	0.198	2.511	47	45	8
1976	1.210	1.071	0.774	3.055	40	35	25
1977	1.131	3.280	1.364	5.775	20	57	24
1978	3.026	2.075	2.057	7.158	42	29	29
1979	1.468	1.167	0.247	2.881	51	41	9
1980	2.365	0.636	0.180	3.181	74	20	6
1981	1.471	0.826	0.127	2.424	61	34	5
1982	2.086	0.330	0.115	2.530	82	13	5
1983	0.903	0.666	0.121	1.690	53	39	7
1984	0.481	0.049	0.018	0.548	88	9	3
1985	1.070	0.416	0.026	1.512	71	28	2
1986	2.195	0.949	0.149	3.294	67	29	5
1987	5.175	0.972	0.284	6.430	81	15	4
1988	5.090	0.829	0.078	5.997	85	14	1
1989	4.566	2.184	0.154	6.905	66	32	2

Table 31. Fishing effort (single-rig equivalent hours) for pink shrimp in the coastal waters of Washington, Oregon and California north of Cape Mendocino; 1966-1989.

Year	Hours			Total
	California*	Oregon	Washington	
1966	2,806	8,785	270	11,861
1967	2,058	19,681	1,529	23,268
1968	1,908	16,115	1,554	19,577
1969	4,721	18,300	3,902	26,923
1970	4,912	20,001	3,358	28,271
1971	6,082	19,868	2,205	28,155
1972	3,654	29,006	3,553	36,213
1973	1,712	38,979	10,059	50,750
1974	4,796	36,412	24,838	66,046
1975	4,488	31,697	23,873	60,058
1976	3,877	46,946	18,268	69,091
1977	9,905	58,899	28,028	96,832
1978	22,078	90,691	34,043	146,812
1979	16,757	80,278	76,420	173,455
1980	13,120	116,196	99,635	228,951
1981	10,613	104,635	85,269	200,517
1982	16,746	78,486	53,514	148,746
1983	44	38,477	78,877	117,398
1984	5,068	22,647	35,113	62,828
1985	8,119	38,153	37,695	83,967
1986	19,925	84,102	79,662	183,689
1987	20,800	135,146	63,951	219,897
1988	20,973	109,736	63,298	194,007
1989	27,605	137,457	54,677	219,739

* Note: includes only Oregon area 18, i.e. CA waters north of Cape Mendocino.

Table 32. Average count per pound of pink shrimp from Oregon state statistical areas 18-28, 1966-1989. Counts weighted by area-month catches.

Year	Count/lb
1966	114.6
1967	122.5
1968	96.3
1969	91.7
1970	100.1
1971	120.3
1972	122.1
1973	99.7
1974	116.0
1975	109.0
1976	115.9
1977	103.8
1978	109.8
1979	108.3
1980	126.8
1981	112.7
1982	141.5
1983	104.9
1984	130.3
1985	104.0
1986	105.8
1987	134.9
1988	125.9
1989	115.0

Table 33. The number of pink shrimp deliveries by month into Oregon ports; 1979-1989.

Year	Month										Total
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1979	0	554	384	521	488	562	491	128	0	0	3,128
1980	0	592	795	770	606	563	594	181	0	0	4,101
1981	0	789	749	422	305	340	306	243	0	0	3,154
1982	0	272	491	376	385	338	211	129	2	0	2,204
1983	1	328	289	219	122	80	67	85	0	1	1,192
1984	0	109	99	78	68	64	60	46	0	0	524
1985	0	139	150	83	122	164	174	124	0	0	956
1986	0	361	434	334	302	296	312	285	0	0	2,324
1987	0	542	487	431	439	313	382	332	0	0	2,926
1988	0	238	305	473	377	395	386	403	0	0	2,577
1989	0	442	520	392	154	488	449	394	0	0	2,839

Table 34. Average ex-vessel price of pink shrimp (*Pandalus jordani*) and average ex-vessel price adjusted for inflation (in constant 1977 dollars, based on GDP deflation), 1978-1989.

Year	Pounds landed	Estimated total value (\$)	Mean ex-vessel \$/lb	Inflation adjusted (GDP) value (\$)
1978	56,666,109	14,902,939	0.26	0.24
1979	29,586,586	11,339,584	0.38	0.33
1980	30,152,030	16,683,901	0.55	0.43
1981	25,923,589	13,042,627	0.50	0.36
1982	18,461,988	9,288,864	0.50	0.34
1983	6,547,073	4,656,160	0.71	0.46
1984	4,843,571	2,148,092	0.43	0.26
1985	14,855,247	5,241,302	0.35	0.21
1986	33,883,577	18,104,562	0.54	0.31
1987	44,589,472	30,272,202	0.68	0.38
1988	41,846,202	17,149,668	0.41	0.22
1989	49,112,685	17,906,265	0.36	0.19

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