

# 1990 BAY CLAM DATA SERIES REPORT

## INTRODUCTION

This report summarizes the results of our bay clam studies in 1990. Activities summarized include recreational and commercial clam fishery monitoring, hatchery stock enhancement, and natural recruitment studies. This report is presented as a series of tables and figures with a minimum of discussion; other reports will evaluate the data presented here. The tables and figures included give a historical overview of clam harvesting activities and are presented in a manner to allow future analysis to show trends or changes in stock status and fishing activities. This report is intended primarily to be an internal document, to be used as a reference by the shellfish staff.

## RECREATIONAL CLAM FISHERY

Recreational clam digger interviews are conducted annually on each of the major clam harvesting tideflats of the Tillamook, Netarts, Nestucca, Yaquina, Alsea, Siuslaw, and Coos estuaries. Interviews are usually conducted by two shellfish staff members. A count of diggers is made on each tideflat at low tide; this provides a peak digger count for that day. Currently, an effort is made to visit each tideflat at least two times per season, in the spring and again in midsummer. This is about half of the sampling effort that we expended annually from 1975 to 1984 to collect recreational use data.

We attempt to measure a minimum of 200 clams of each species for each tideflat. In 1988, we discontinued aging the clams we measured. We measure the height of the cockle clam and the length of the butter, gaper, littleneck, and softshell clams.

Interview data collected included catch/effort, digger origin, species, and length composition. These data are presented for each tideflat in Appendix Tables 1-21. Table 22 summarizes the recreational activities presented in Tables 1-21 and Table 23 shows the peak counts of clam diggers taken at low tide for each of the surveyed tideflats.

In 1990, we interviewed 1,363 clam diggers that expended 2,029 hours of effort to harvest 22,847 clams (Table 22). The clam diggers averaged 16.8 clams/trip or 11.3 clams/hour. Digging success was slightly poorer in 1990 than in 1989 when 17.2 clams/trip were taken. Since 1977, when the

Commission approved a reduction in bag limit from 36 to 20, clam digger harvest has ranged between 14.7 and 18.8 clams/trip. In 1976, prior to the reduced bag limit, clam diggers averaged 20.9 clams/trip.

As in previous years, most clam diggers traveled some distance to harvest clams. In 1990, 31.3% of the diggers were local county residents, 62.7% were from Oregon but living outside the county of harvest, and 5.9% were out-of-state residents (Table 22). These figures were generally the same as in 1989.

The cockle clam was the most frequently observed species in the recreational fishery representing 30.4% of the 1990 harvest (Table 22). Gaper, butter, softshell, and littleneck clams comprised 23.6, 22.7, 12.4, and 8.7% of the bag, respectively. Somewhat surprising, and encouraging, was the increased incidence of gaper clams in the harvest, especially from clam beds in Netarts and Coos bays. This indicates recent recruitment for this species is starting to have an impact on clam harvesters digging success.

Data collected on length composition since 1979 revealed only minor variations in overall mean size for each species (Figure 1). Gaper, softshell, butter, cockle, and littleneck clams averaged 113.7, 89.6, 78.5, 61.4, and 53.4 mm in 1990, respectively.

Changes in digging effort through time as reflected by peak digger counts revealed digging effort generally similar to 1989 for most of the surveyed tideflats (Table 23). Most of the clam beds in Coos Bay experienced a slightly higher digging pressure than in 1989.

### **COMMERCIAL CLAM HARVEST**

In 1990, we issued 92 permits to commercial fishermen to harvest bay clams (Table 24). Of this total, 38 reported landing 72,756 lb of clams. In 1989, 24 clam diggers reported landing 60,482 lb of clams. Of the total clams landed in 1990, 45,607 lb (62.7%) were cockles (Table 25). Tillamook Bay was the major producer with 44,043 lb (96.6%) of the total cockle harvest. Other clams harvested coastwide were gapers (10,391 lb), littlenecks (7,521 lb), softshells (4,633 lb), and butters (4,604 lb). Although the commercial harvest of gaper clams nearly doubled in 1990 over the previous year, the general decline in harvest since 1982, when 106,440 lb were taken, again illustrates poor recruitment of this species in several of our bays.

Tillamook Bay produced the most clams in 1990 with 47,198 lb reported (Table 26); Coos Bay produced 14,363 lb. Nehalem, Yaquina, Alsea, and Umpqua bays produced minor poundages of clams.

## **SPECIAL STUDIES**

### **Hatchery Stock Enhancement**

#### **Tillamook Bay**

No Manila clams were planted in Tillamook Bay in 1990. In addition, we did not sample the Manila clams planted in previous years.

#### **Yaquina Bay**

Two Manila littleneck clam test plots were sampled in Yaquina Bay in 1990 (Table 27). Manila clams in both plots were protected by Vexar netting. Clams planted in 1985, averaging 18.1 mm in size, averaged 53.8 mm when sampled. Over 18% of the originally released clams survived. Clams planted in 1986, averaging 6.7 mm in size, averaged 50.6 mm when sampled. Survival rates were not calculated for this group of clams.

#### **Coos Bay**

Six Manila littleneck clam test plots were sampled in Coos Bay in 1990. Table 28 shows the results of our Manila littleneck clam plants in Coos Bay since 1973. Unfortunately, test plot nos. 4, 5, 6, and 8 were destroyed by clam diggers precluding our estimating survival rates for clams in these areas.

### **Natural Recruitment Studies**

#### **Yaquina Bay**

We collected 20 subtidal dredge samples from an 18.4 acre area in Yaquina Bay in September 1990 to determine year-class strength, recruitment success, and population and biomass estimates (Figure 2). Each sample covered 1 sq ft of surface area; depth of samples averaged 12-14 inches.

The 20 samples produced 154 gaper clams (7.7/sq ft) that averaged 94.1 mm in size. As in 1988, we observed some evidence of recruitment; 24.6% of the sampled clams were of the 1990 year class (Figure 3). The 1990 year- class clams averaged 1.9 gapers/sq ft; average size was 8.9 mm. The

1975 year-class continued to dominate the standing crop comprising 73.4% of the 1990 sample. We estimated that 6.2 million gapers, weighing 8.0 million lb, inhabited the area (Table 29).

### **Netarts Bay**

In addition to the subtidal samples taken in Yaquina Bay, we collected ten 1 sq ft intertidal samples in Netarts Bay to determine gaper clam recruitment success . The samples were collected from the intertidal clam bed at Happy Camp and washed through a 3 mm screen. Results revealed that recruitment continued to be extremely poor with only 0.5 clams/sq ft, averaging 5.7 mm in size (Figure 3). In 1989, the same area also produced 0.5 new recruits/sq ft. None of the 1989 year-class clams were recovered in 1990.

### **ACKNOWLEDGMENTS**

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## APPENDIX

Table 1. Annual summary of recreational interview data; Garibaldi Flat, Tillamook Bay.

	1975	1976	1977 <sup>1</sup>	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	104	207	252	239	597	456	359	219	132	200	107	290	277	421	476	450
No. Clams Sampled	2,472	4,825	4,647	4,631	11,104	8,728	6,558	4,249	2,471	3,729	2,128	5,598	5,491	8,067	9,150	8,665
No. Digger Hours	-	283	336	261	715	549	443	220	158	243	143	311	312	452	631	568
Hours/trip	-	1.4	1.3	1.1	1.2	1.2	1.2	1.3	1.2	1.2	1.3	1.1	1.1	1.1	1.3	1.3
Clams/trip	23.8	23.3	18.4	19.4	18.6	19.1	18.3	19.4	18.7	18.7	19.9	19.3	19.8	19.2	19.2	19.3
Clams/hour	-	17.0	13.8	17.7	15.5	15.9	14.0	14.6	15.6	15.4	14.9	18.0	17.6	17.9	14.5	15.3
Digger Origin (%)																
Local	-	32.9	27.8	33.1	30.2	22.4	27.6	38.8	37.7	30.0	28.0	17.9	23.5	35.2	21.0	17.6
State	-	57.0	57.3	55.2	64.7	72.6	63.5	57.1	46.9	67.5	66.4	78.6	67.9	57.0	69.1	79.8
Non-state	-	-	-	-	-	-	-	4.1	15.4	2.5	5.6	3.4	8.7	7.8	9.9	2.7
Species Comp. (%)																
Butter	20.7	18.2	10.5	11.5	13.5	28.7	42.8	45.8	39.7	38.8	39.5	32.9	41.6	34.0	45.6	49.0
Cockle	43.4	28.5	46.7	66.6	64.0	46.5	24.2	27.4	27.4	28.5	43.2	51.0	48.7	35.6	32.0	35.9
Gaper	5.3	18.5	17.2	7.1	9.6	7.1	5.7	6.0	4.5	0.7	1.8	1.0	1.3	0.9	1.1	1.5
Littleneck	29.7	34.7	24.9	14.7	12.7	17.7	27.2	20.8	28.4	32.1	15.4	15.1	8.0	29.6	21.3	13.4
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/trip																
Butter	4.9	4.2	1.9	2.2	2.5	5.5	7.8	8.9	7.4	7.2	7.9	6.3	8.2	6.5	8.8	9.4
Cockle	10.3	6.6	8.6	12.9	11.9	8.9	4.4	5.3	5.1	5.3	8.6	9.9	9.7	6.8	6.2	6.9
Gaper	1.3	4.3	3.2	1.4	1.8	1.4	1.4	1.2	0.9	0.1	0.4	0.2	0.2	0.2	0.2	0.3
Littleneck	7.0	8.1	4.6	2.8	2.4	3.4	5.0	4.0	5.3	6.0	3.1	2.9	1.6	5.7	4.1	2.6
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/hour																
Butter	-	3.1	1.5	2.0	2.1	4.6	6.3	6.7	6.2	6.0	5.9	5.9	7.3	6.1	6.6	7.5
Cockle	-	4.9	6.5	11.8	9.9	7.4	3.6	4.0	4.3	4.4	6.5	9.2	8.6	6.4	4.6	5.5
Gaper	-	3.2	2.4	1.3	1.5	1.1	0.9	0.9	0.7	0.1	0.3	0.2	0.2	0.2	0.2	0.2
Littleneck	-	5.9	3.5	2.6	2.0	2.8	4.0	3.0	4.4	4.9	2.3	2.7	1.4	5.3	3.1	2.0
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Size Comp. (x size)																
Butter	77.3	81.6	83.8	83.0	72.3	64.8	70.6	70.3	68.8	78.4	71.4	75.5	79.4	73.8	69.7	69.5
Cockle	63.9	64.3	55.9	55.2	60.9	55.0	56.9	60.1	54.0	52.8	58.9	58.7	60.6	60.7	57.5	54.4
Gaper	67.5	56.8	69.3	82.0	84.2	90.2	91.3	114.1	107.9	108.0	106.9	99.4	67.9	86.8	93.5	98.2
Littleneck	36.7	36.8	39.4	38.2	38.5	36.5	39.5	38.0	37.0	38.3	39.5	39.9	40.4	35.2	38.9	39.8
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured																
Butter	219	536	394	145	555	304	413	379	481	203	241	231	110	263	255	305
Cockle	290	978	1,517	637	1,501	535	254	389	407	240	267	360	88	271	259	303
Gaper	74	349	538	84	327	111	81	7	21	2	17	5	31	27	72	124
Littleneck	297	518	862	233	171	187	251	392	461	236	131	322	142	246	266	273
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

<sup>1</sup> Regulation change in bag limit; effective January 1, 1977.

Table 2. Annual summary of recreational interview data; Happy Camp, Netarts Bay.

	1975	1976	1977 <sup>1</sup>	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	18	141	187	146	222	106	71	168	280	84	99	60	103	108	91	62
No. Clams Sampled	164	1,709	2,727	1,747	2,823	1,293	991	2,020	2,994	1,009	1,010	579	709	1,068	870	398
No. Digger Hours	-	193	254	149	204	68	67	151	290	84	124	92	205	209	182	92
Hours/trip	-	1.4	1.4	1.0	0.9	0.6	0.9	0.9	1.0	1.0	1.3	1.5	2.0	1.9	2.0	1.5
Clams/trip	9.1	12.1	14.6	12.0	12.7	12.2	12.9	12.0	10.7	12.0	10.2	9.7	6.9	9.9	9.6	6.4
Clams/hour	-	8.9	10.7	11.7	13.8	19.1	14.8	13.4	10.3	12.0	8.1	6.3	3.5	5.1	4.8	4.3
Digger Origin (%)																
Local	-	29.1	14.9	11.0	28.4	17.9	40.3	48.2	22.5	29.8	32.3	31.7	10.7	16.7	25.3	16.1
State	-	66.0	75.9	71.2	59.9	73.6	50.6	44.0	72.9	64.3	53.5	66.7	87.4	65.7	65.9	51.6
Non-state	-	5.0	9.1	17.8	11.7	8.5	9.1	7.7	4.6	6.0	14.1	1.7	1.9	17.6	8.8	32.3
Species Comp. (%)																
Butter	47.1	20.8	9.2	5.8	7.7	5.4	13.7	5.0	0.7	3.7	4.0	7.9	15.9	20.8	16.3	14.8
Cockle	-	0.1	21.9	-	-	0.1	-	<0.1	0.1	4.0	0.4	2.1	2.1	3.4	1.8	1.3
Gaper	36.6	73.6	62.5	91.0	90.3	92.5	82.7	94.3	98.5	89.5	93.6	84.6	73.1	68.8	72.5	81.4
Littleneck	15.9	5.3	5.4	3.1	0.2	2.0	3.4	0.6	0.8	2.9	2.1	5.4	8.3	7.0	9.2	2.5
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/trip																
Butter	3.3	2.5	1.3	0.7	1.0	0.7	1.8	0.6	0.1	0.4	0.4	0.8	1.1	2.1	1.6	1.0
Cockle	-	<0.1	3.2	-	-	<0.1	-	<0.1	<0.1	0.5	<0.1	0.2	0.1	0.3	0.2	0.1
Gaper	4.3	8.9	9.1	10.9	11.5	11.3	10.6	11.3	10.5	10.8	9.5	8.2	5.0	6.8	6.9	5.2
Littleneck	1.4	0.6	0.8	0.4	0.2	0.2	0.4	0.1	0.1	0.4	0.2	0.5	0.6	0.7	0.9	0.2
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/hour																
Butter	-	1.8	1.0	0.7	1.1	1.0	2.0	0.7	0.1	0.4	0.3	0.5	0.6	1.1	0.8	0.6
Cockle	-	<0.1	2.3	-	-	<0.1	-	<0.1	<0.1	0.5	<0.1	0.1	0.1	0.2	0.1	0.1
Gaper	-	6.5	6.7	10.7	12.5	17.7	12.3	12.7	10.2	10.8	7.6	5.3	2.5	3.5	3.5	3.5
Littleneck	-	0.5	0.6	0.4	0.3	0.4	0.5	0.1	0.1	0.4	0.2	0.3	0.3	0.4	0.4	0.1
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Size Comp. (x size)																
Butter	102.8	100.2	103.0	103.2	107.2	105.9	109.7	102.5	82.0	101.8	103.5	105.2	109.5	108.0	107.6	108.9
Cockle	-	-	-	-	-	-	-	-	31.0	-	54.0	47.6	-	83.1	63.7	55.6
Gaper	112.1	96.3	86.1	87.5	92.1	93.6	98.9	97.7	101.9	100.3	106.6	111.7	114.0	125.3	126.2	123.1
Littleneck	65.3	67.6	70.0	70.1	73.6	66.7	71.3	70.7	55.8	70.2	67.2	65.6	65.7	68.9	70.9	69.4
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured																
Butter	66	219	-	-	-	24	109	62	6	32	20	45	26	179	151	55
Cockle	190	-	-	-	-	-	-	-	1	-	1	8	-	57	3	5
Gaper	190	643	557	921	417	468	454	565	338	240	436	405	20	322	213	80
Littleneck	43	99	28	54	34	3	22	9	4	29	12	28	27	69	83	10
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

<sup>1</sup> Regulation change in bag limit; effective January 1, 1977.

Table 3. Annual summary of recreational interview data; Cape Lookout Sand Spit, Netarts Bay.

	1975	1976	1977 <sup>1</sup>	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	43	76	509	72	85	63	80	56	118	71	52	42	71	147	100	117
No. Clams Sampled	1,038	2,433	9,293	1,324	1,560	1,074	1,397	1,029	2,174	1,362	1,040	819	1,409	2,765	1,713	2,314
No. Digger Hours	-	148	1,055	149	178	89	150	83	197	87	85	92	151	237	196	232
Hours/trip	-	1.9	2.1	2.1	2.1	1.4	1.9	1.5	1.7	1.2	1.6	2.2	2.1	1.6	2.0	2.0
Clams/trip	24.1	32.0	18.3	18.4	18.4	17.0	17.5	18.4	18.4	19.2	20.0	19.5	19.8	18.8	17.1	19.8
Clams/hour	-	16.5	8.8	8.9	8.8	12.1	9.3	12.4	11.1	15.8	12.2	9.0	9.4	11.7	8.8	10.0
Digger Origin (%)																
Local	-	23.7	23.1	22.2	36.5	17.5	12.5	44.6	38.1	43.7	53.8	31.0	26.8	18.4	44.0	31.6
State	-	76.3	66.6	77.8	61.2	76.2	81.3	51.8	53.4	52.1	44.2	40.5	62.0	67.3	43.0	64.1
Non-state	-	-	10.6	-	2.3	6.3	7.5	3.6	8.5	4.2	1.9	28.6	11.3	14.3	13.0	4.3
Species Comp. (%)																
Butter	49.0	15.8	6.6	2.0	5.5	1.9	7.7	0.3	11.0	11.0	16.0	7.0	10.6	4.1	18.2	13.9
Cockle	46.0	76.9	72.3	72.7	74.4	93.3	76.7	84.9	80.4	78.0	82.1	89.5	83.1	88.9	67.7	68.0
Gaper	2.7	3.7	15.3	22.4	16.0	4.8	13.3	12.1	5.9	9.0	0.2	3.4	3.2	3.0	5.7	11.9
Littleneck	1.3	3.2	2.1	1.3	3.8	-	1.9	2.6	2.6	0.1	1.7	0.1	0.9	0.9	7.7	0.6
Softshell	-	-	-	-	-	-	-	-	-	1.8	-	-	-	-	-	3.2
Clams/trip																
Butter	11.8	5.1	1.2	0.4	1.0	0.3	1.4	0.1	2.0	2.1	3.2	1.4	2.1	0.8	3.1	2.7
Cockle	11.1	24.6	13.2	13.4	13.6	15.9	13.4	15.6	14.8	15.0	16.4	17.5	16.5	16.7	11.6	13.4
Gaper	0.7	1.2	2.8	4.1	2.9	0.8	2.3	2.2	1.1	1.7	-	0.7	0.6	0.6	1.0	2.4
Littleneck	0.3	1.0	0.4	0.2	0.7	-	0.3	0.5	0.5	<0.1	0.3	-	0.2	0.2	1.3	0.1
Softshell	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-	-	0.6
Clams/hour																
Butter	-	2.6	0.6	0.2	0.5	0.2	0.7	<0.1	1.2	1.7	2.0	0.6	1.0	0.5	1.6	1.4
Cockle	-	12.7	6.4	6.5	6.5	11.3	7.2	10.5	8.9	12.3	10.0	8.0	7.8	10.4	5.9	6.8
Gaper	-	0.6	1.3	2.0	1.4	0.6	1.2	1.5	0.7	1.4	-	0.3	0.3	0.4	0.5	1.2
Littleneck	-	0.5	0.2	0.1	0.3	-	0.2	0.3	0.3	<0.1	0.2	-	0.1	0.1	0.7	0.1
Softshell	-	-	-	-	-	-	-	-	-	0.3	-	-	-	-	-	0.3
Size Comp. (x size)																
Butter	80.3	71.8	74.1	76.9	80.4	75.6	74.2	67.7	68.8	72.2	68.8	69.0	76.0	70.9	66.9	77.6
Cockle	73.3	73.0	75.7	72.7	75.2	72.2	72.0	71.3	69.5	70.0	75.2	72.3	71.2	72.7	66.5	74.0
Gaper	80.4	87.4	103.4	100.5	91.7	110.7	104.7	119.0	117.7	75.1	-	128.0	101.2	106.1	105.5	110.7
Littleneck	57.8	-	-	57.9	53.7	-	53.3	49.5	42.2	52.5	57.1	47.0	56.4	51.8	49.7	64.2
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured																
Butter	237	294	80	11	86	20	49	3	27	133	110	49	151	55	227	95
Cockle	257	674	851	555	812	525	486	534	238	240	542	277	223	222	380	201
Gaper	257	36	170	144	191	44	48	71	15	18	-	12	4	56	93	47
Littleneck	31	-	-	12	60	-	13	26	53	2	14	1	5	10	94	6
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

<sup>1</sup> Regulation change in bag limit; effective January 1, 1977.



Table 4. Annual summary of recreational interview data; Little Nestucca Flat, Nestucca Bay.

	1971	1977 <sup>1</sup>	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	1,466	34	16	38	23	22	22	62	23	14	2	1	13	6
No. Clams Sampled	23,211	1,049	484	1,120	357	653	623	1,386	561	431	57	26	385	158
No. Digger Hours	1,584	43	21	72	27	31	34	94	38	27	6	3	26	14
Hours/trip	1.1	1.3	1.3	1.9	1.2	1.4	1.5	1.5	1.7	1.9	3.0	2.5	2.0	2.3
Clams/trip	15.8	30.9	30.3	29.5	15.5	29.7	28.3	22.4	24.4	30.8	28.5	26.0	29.6	26.3
Clams/hour	14.7	24.4	23.2	15.6	13.2	21.4	18.6	14.7	14.8	16.3	9.5	10.4	14.8	11.3
Digger Origin (%)														
Local	12.4	52.9	18.8	-	13.0	4.5	18.2	21.0	4.3	42.9	100.0	-	23.1	33.3
State	73.5	47.1	62.5	86.8	87.0	86.4	77.3	59.7	52.2	57.1	-	100.0	38.5	66.7
Non-state	14.1	-	18.8	13.2	-	9.1	4.6	19.4	43.5	-	-	-	38.5	0.0
Species Comp. (%)														
Butter	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Softshell	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Clams/trip														
Butter	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Softshell	15.8	30.9	30.3	29.5	15.5	29.7	28.3	22.4	24.4	30.8	28.5	26.0	29.6	26.3
Clams/hour														
Butter	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Softshell	14.7	24.4	23.2	15.6	13.2	21.4	18.6	14.7	14.8	16.3	9.5	10.4	14.8	11.3
Size Comp. (x size)														
Butter	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Softshell	-	86.0	84.2	79.9	78.3	75.6	80.5	76.6	76.8	72.9	-	60.9	71.7	88.2
No. Clams Measured														
Butter	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Softshell	-	250	332	254	163	547	300	240	132	116	-	26	238	81

<sup>1</sup> Regulation change in bag limit; effective January 1, 1977.

Table 5. Annual summary of recreational interview data; Bridge Bed, Yaquina Bay.

	1975	1976	1977 <sup>1</sup>	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	88	29	357	89	143	142	342	149	202	191	207	120	110	102	108	91
No. Clams Sampled	694	414	2,838	892	1,313	1,222	3,773	1,609	1,543	1,383	1,765	1,363	960	814	834	1,031
No. Digger Hours	-	36	488	110	120	160	354	154	274	265	304	153	160	155	109	159
Hours/trip	-	1.2	1.4	1.2	0.8	1.1	1.0	1.0	1.4	1.4	1.5	1.3	1.5	1.5	1.0	1.7
Clams/trip	7.9	14.3	7.9	10.0	9.2	8.6	11.0	10.8	7.6	7.2	8.5	11.4	8.7	8.0	7.7	11.3
Clams/hour	-	11.7	5.8	8.1	10.9	7.7	10.7	10.4	5.6	5.2	5.8	8.9	6.0	5.3	7.7	6.5
Digger Origin (%)																
Local	-	31.0	19.6	24.7	22.4	18.3	44.7	48.3	32.2	45.5	34.3	25.8	32.7	18.6	38.0	28.6
State	-	48.3	70.9	69.7	76.2	70.4	49.1	48.3	67.8	49.7	62.8	72.5	64.5	72.5	62.0	64.8
Non-state	-	20.7	9.5	4.5	1.4	11.3	6.1	3.4	-	4.7	2.9	1.7	2.7	8.8	-	6.6
Species Comp. (%)																
Butter	0.8	0.2	0.8	0.6	0.2	1.7	0.8	1.9	3.2	2.4	5.8	4.3	4.4	1.8	3.9	1.9
Cockle	42.1	72.2	45.4	24.6	7.9	1.4	15.7	7.2	12.9	5.2	11.2	14.4	2.8	10.1	9.9	12.1
Gaper	54.8	24.6	43.6	72.1	89.6	94.8	81.0	85.4	72.9	80.1	62.4	65.1	83.6	39.9	69.1	60.2
Littleneck	2.3	1.4	1.4	1.1	0.4	2.1	1.7	4.5	2.8	4.5	7.4	2.6	5.3	3.7	3.6	3.8
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other <sup>2</sup>	-	-	-	-	-	-	-	-	-	7.8	13.2	-	-	-	-	-
Clams/trip																
Butter	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.2	0.3	0.2	0.5	0.5	0.4	0.1	0.3	0.2
Cockle	3.3	10.3	3.6	2.5	0.7	<0.1	1.7	0.8	1.0	0.4	1.0	1.6	0.6	0.8	0.8	1.4
Gaper	4.3	3.5	3.5	7.2	8.2	8.2	8.9	9.2	5.6	5.8	5.3	7.4	7.3	3.2	5.7	6.8
Littleneck	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.5	0.2	0.3	0.6	0.3	0.5	0.3	0.3	0.4
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/hour																
Butter	-	<0.1	<0.1	0.1	<0.1	0.1	0.1	0.2	0.2	0.1	0.3	0.4	0.3	0.1	0.3	0.1
Cockle	-	8.4	2.6	2.0	0.9	0.1	1.1	0.8	0.7	0.3	0.6	1.3	0.2	0.5	0.8	0.8
Gaper	-	2.9	2.5	5.9	9.8	7.3	8.6	8.9	4.1	4.2	3.6	5.8	5.0	2.1	5.6	3.9
Littleneck	-	-	-	-	-	-	-	-	0.2	0.2	0.4	0.2	0.3	0.2	0.3	0.2
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Size Comp. (x size)																
Butter	-	-	-	-	67.5	71.9	72.5	80.4	74.0	78.9	81.0	84.1	85.4	87.8	89.1	93.7
Cockle	49.3	46.7	57.5	69.9	66.8	55.8	57.4	65.1	66.9	73.2	56.4	64.4	60.7	64.3	64.6	64.6
Gaper	107.1	115.5	95.0	101.7	96.8	100.0	107.7	105.9	104.6	105.6	108.9	106.3	105.2	100.4	111.9	110.0
Littleneck	60.3	-	-	-	51.5	62.2	54.7	54.7	52.4	55.9	64.0	62.3	57.1	61.5	62.4	64.5
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured																
Butter	-	-	-	-	-	14	20	5	35	12	23	22	29	15	27	19
Cockle	276	205	592	202	51	6	536	86	138	41	67	57	7	79	100	122
Gaper	316	62	593	154	279	419	1,370	308	406	200	266	362	135	217	278	216
Littleneck	12	-	-	-	2	19	55	9	34	24	49	18	26	31	29	32
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

<sup>1</sup> Regulation change in bag limit; effective January 1, 1977.

<sup>2</sup> Bentnose 7.0%, Inquinata 0.2%, other 0.6%.

Table 6. Annual summary of recreational interview data; Breakwater Bed, Yaquina Bay.

	1971	1975	1977 <sup>1</sup>	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	1,455	46	48	20	10	21	16	14	17	63	39	31	65	19	33	11
No. Clams Sampled	22,175	515	511	270	142	261	166	157	190	654	489	303	125	217	413	148
No. Digger Hours	2,179	-	69	22	20	44	27	21	24	103	51	34	105	24	47	18
Hours/trip	1.5	-	1.4	1.1	2.0	2.1	1.7	1.5	1.4	1.6	1.3	1.1	1.6	1.3	1.4	1.6
Clams/trip	15.2	11.2	10.6	13.5	14.2	12.4	10.4	11.2	11.2	10.4	12.5	9.8	14.2	11.4	12.5	13.5
Clams/hour	10.2	-	7.4	12.6	7.1	5.9	6.1	7.7	7.9	6.4	9.7	8.9	8.9	9.0	8.8	8.2
Digger Origin (%)																
Local	-	-	35.4	55.0	30.0	28.6	18.8	71.4	52.9	30.2	61.5	32.3	55.4	52.6	39.4	9.1
State	-	-	64.6	45.0	-	71.4	50.0	28.6	47.1	66.7	33.3	67.7	41.5	47.4	60.6	90.9
Non-state	-	-	-	-	-	-	31.3	-	-	3.2	5.1	-	3.1	-	-	-
Species Comp. (%)																
Butter	1.2	1.5	1.4	0.7	-	6.5	1.8	2.5	1.1	5.8	3.7	7.3	3.0	9.7	4.8	3.4
Cockle	15.3	3.9	18.2	13.7	7.0	11.1	19.9	1.9	8.4	4.0	4.1	3.6	19.0	4.6	5.6	1.4
Gaper	83.0	95.0	78.9	84.4	84.5	81.2	75.3	94.9	85.8	71.6	87.5	82.8	73.4	85.3	84.3	80.4
Littleneck	0.4	0.2	0.8	0.4	-	1.1	1.2	0.6	0.5	2.8	1.8	5.9	4.5	0.5	5.3	11.5
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Others <sup>2</sup>	-	-	-	-	-	-	-	-	-	15.9	2.9	-	-	-	-	-
Clams/trip																
Butter	0.2	<0.1	0.1	0.1	-	0.8	0.2	0.3	0.1	0.6	0.5	0.7	0.4	0.9	0.6	0.5
Cockle	2.3	0.4	1.9	1.8	1.0	1.4	2.1	0.2	0.9	0.4	0.5	0.4	2.7	0.4	0.7	0.2
Gaper	12.7	10.6	-	-	-	10.1	7.8	10.6	9.6	7.4	11.0	8.1	10.4	8.0	10.5	10.8
Littleneck	<0.1	<0.1	0.1	0.1	-	0.1	0.1	0.1	0.1	0.3	0.2	0.6	0.6	-	0.7	1.5
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/hour																
Butter	0.1	-	0.1	0.1	-	0.4	0.1	0.2	0.1	0.4	0.4	0.6	0.3	0.8	0.4	0.3
Cockle	1.6	-	1.3	1.7	0.5	0.6	1.2	0.1	0.7	0.3	0.4	0.3	1.7	0.4	0.5	0.1
Gaper	8.4	-	5.8	10.6	6.0	4.8	4.6	7.3	6.8	4.6	8.5	7.4	6.5	6.6	7.4	6.6
Littleneck	<0.1	-	0.1	0.1	-	0.1	0.1	<0.1	<0.1	0.2	0.2	0.5	0.4	-	0.5	0.9
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Size Comp. (x size)																
Butter	<0.1	-	0.1	<0.1	<0.1	85.3	-	-	97.0	82.3	78.2	80.0	88.8	86.4	80.5	92.8
Cockle	75.6	-	72.5	76.1	-	-	62.6	-	81.6	70.1	69.6	67.2	65.5	66.6	73.7	76.0
Gaper	113.8	116.2	123.3	118.9	-	109.1	106.4	106.4	100.7	96.3	104.7	108.9	111.8	109.5	107.4	119.8
Littleneck	-	-	-	-	-	64.0	-	-	51.0	52.0	55.6	56.6	59.9	-	60.1	63.4
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured																
Butter	-	-	-	-	-	16	-	4	1	36	14	22	20	21	21	5
Cockle	-	-	-	79	37	-	27	3	12	32	16	11	129	9	19	2
Gaper	-	310	198	207	-	195	69	142	109	200	265	176	162	133	201	113
Littleneck	-	-	-	-	-	3	-	1	1	20	8	18	33	-	18	16
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

<sup>1</sup> Regulation change in bag limit; effective January 1, 1977.

<sup>2</sup> Bentnose Clam.

Table 7. Annual summary of recreational interview data; Idaho Point, Yaquina Bay.

	1975	1976	1977 <sup>1</sup>	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	123	42	309	20	193	182	147	80	138	52	26	47	47	20	57	39
No. Clams Sampled	2,600	812	3,773	298	2,783	3,118	2,339	1,219	2,171	890	403	849	741	435	992	579
No. Digger Hours	-	77	464	25	248	302	222	145	219	83	42	77	52	29	82	70
Hours/trip	-	1.8	1.5	1.3	1.3	1.7	1.5	1.8	1.6	1.6	1.6	1.6	1.1	1.4	1.4	1.8
Clams/trip	21.1	19.3	12.2	14.9	14.4	17.1	15.9	15.2	15.7	17.1	15.5	18.1	15.8	21.8	17.4	14.8
Clams/hour	-	10.6	8.1	11.8	11.2	10.3	10.5	8.4	9.9	10.7	9.6	11.0	14.4	15.0	12.2	8.3
Digger Origin (%)																
Local	-	35.7	12.3	45.0	31.6	28.6	15.6	18.8	9.4	21.2	50.0	21.3	38.3	-	31.6	5.1
State	-	33.3	84.1	50.0	62.7	65.4	70.7	81.3	85.5	76.9	42.3	72.3	38.3	90.0	56.1	89.7
Non-state	-	31.0	3.6	5.0	5.7	6.0	13.6	-	5.1	1.9	7.7	6.4	23.4	10.0	12.3	5.1
Species Comp. (%)																
Butter	<0.1	0.5	0.5	-	1.7	-	0.1	-	0.4	0.6	-	-	-	-	-	0.5
Cockle	93.2	72.5	78.5	83.9	70.2	87.2	93.4	95.0	85.5	97.1	99.0	93.9	99.3	100.0	93.9	77.5
Gaper	5.8	18.4	13.1	15.1	20.7	12.8	4.1	2.9	2.8	1.6	-	5.4	0.1	-	0.5	6.4
Littleneck	<0.1	0.1	0.2	-	0.1	-	0.5	0.9	0.7	0.3	1.0	0.7	0.5	-	2.8	2.1
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5
Other <sup>2</sup>	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-	-	-
Clams/trip																
Butter	<0.1	0.1	0.1	-	0.2	-	-	-	0.1	0.1	-	-	-	-	-	0.1
Cockle	19.7	14.0	9.6	12.5	10.1	14.9	14.9	14.5	13.5	16.6	15.3	17.0	15.7	21.8	16.4	11.5
Gaper	1.2	3.6	1.6	2.3	3.0	2.2	0.6	0.4	0.4	0.3	-	1.0	-	-	0.1	0.9
Littleneck	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	0.1	0.1	0.2	0.1	0.1	-	0.5	0.3
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1
Clams/hour																
Butter	-	0.1	0.1	-	0.2	-	-	-	<0.1	0.1	-	10.4	-	-	-	-
Cockle	-	7.7	6.4	9.9	7.9	1.3	9.8	8.0	8.5	10.4	9.5	0.6	14.3	15.0	11.4	6.5
Gaper	-	2.0	1.1	1.8	2.3	9.0	0.1	0.2	0.3	0.2	-	0.1	-	-	0.1	0.5
Littleneck	-	<0.1	<0.1	-	<0.1	-	-	0.1	0.1	<0.1	0.1	-	0.1	-	0.3	0.2
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Size Comp. (x size)																
Butter	-	-	-	-	75.1	-	87.3	-	-	85.8	-	-	-	-	-	58.1
Cockle	58.6	58.3	60.2	59.0	58.2	57.8	54.3	54.4	52.6	52.3	56.8	56.7	45.7	58.5	55.7	53.8
Gaper	96.6	91.3	93.5	95.2	95.9	94.5	91.7	83.3	89.1	-	-	94.2	-	-	102.0	104.5
Littleneck	-	-	-	-	55.3	-	50.1	42.7	42.6	44.0	42.8	42.0	41.3	-	49.4	45.3
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured																
Butter	-	-	-	-	-	-	4	-	-	5	-	-	-	-	-	13
Cockle	-	-	-	-	45	1,620	1,302	-	540	240	377	477	142	227	294	199
Gaper	369	522	1,804	250	1,471	181	75	-	40	-	-	5	-	-	1	34
Littleneck	171	126	173	42	24	-	9	-	5	4	4	2	3	-	21	7
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

<sup>1</sup> Regulation change in bag limit; effective January 1, 1977.

<sup>2</sup> Bentnose clam.

Table 8. Annual summary of recreational interview data; Northwest Gas Plant, Yaquina Bay.

	1975	1976	1977 <sup>1</sup>	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	92	93	315	49	137	63	38	29	23	9	26	57	66	6	11	2
No. Clams Sampled	13,541	583	3,852	684	1,073	495	151	128	219	136	319	1,125	1,107	86	137	-
No. Digger Hours	-	139	402	67	165	84	54	33	25	13	33	71	75	9	17	3
Hours/trip	-	1.5	1.3	1.4	1.2	1.3	1.4	1.1	1.1	1.4	1.3	1.2	1.1	1.4	1.5	1.5
Clams/trip	14.7	17.0	12.2	14.0	7.8	7.9	4.0	4.4	9.5	15.1	12.3	19.7	16.8	14.3	12.5	-
Clams/hour	-	11.4	9.6	10.2	6.5	5.9	2.8	3.9	8.8	10.5	9.7	15.8	14.9	10.1	8.3	-
Digger Origin (%)																
Local	-	9.7	22.5	59.2	33.6	30.2	36.8	65.5	34.8	44.4	50.0	47.4	25.8	66.7	36.4	-
State	-	86.0	72.1	38.8	49.6	68.3	57.9	34.5	65.2	33.3	50.0	38.6	59.1	33.3	54.5	100.0
Non-state	-	4.3	5.4	2.0	16.8	1.5	5.3	-	-	22.2	-	14.0	15.2	-	9.1	-
Species Comp. (%)																
Butter	1.9	0.1	1.1	0.1	0.2	0.6	2.0	-	0.5	-	-	-	-	-	2.2	-
Cockle	60.6	71.3	74.5	82.6	81.9	78.4	11.3	91.4	84.0	94.9	92.2	95.9	96.8	95.3	8.0	-
Gaper	29.8	22.0	13.8	16.8	11.9	19.6	34.4	7.0	-	-	0.3	-	-	-	10.1	-
Littleneck	1.3	0.3	0.5	0.4	0.6	1.4	2.0	1.6	13.7	2.9	2.8	3.0	2.9	4.7	75.4	-
Softshell	-	-	-	-	-	-	47.0	-	-	-	-	-	-	-	-	-
Other <sup>2</sup>	-	-	-	-	-	-	-	-	1.8	2.2	4.7	-	-	-	-	-
Clams/trip																
Butter	0.3	<0.1	0.1	<0.1	<0.1	0.1	0.1	-	<0.1	-	-	-	-	-	0.3	-
Cockle	8.9	12.1	9.1	11.5	6.4	6.2	0.4	4.0	8.0	14.3	11.3	18.9	16.2	13.7	1.0	-
Gaper	4.4	3.7	1.7	2.3	0.9	1.5	1.4	0.3	-	-	-	-	-	-	1.3	-
Littleneck	0.2	<0.1	0.1	0.1	<0.1	0.1	0.1	0.1	1.3	0.4	0.3	0.6	0.5	0.7	9.5	-
Softshell	-	-	-	-	-	-	1.9	-	-	-	-	-	-	-	-	-
Clams/hour																
Butter	-	<0.1	0.1	<0.1	<0.1	<0.1	0.1	-	<0.1	-	-	-	-	-	0.2	-
Cockle	-	8.1	7.1	8.5	5.3	4.6	0.3	3.6	7.4	9.9	8.9	15.2	14.4	9.6	0.7	-
Gaper	-	2.5	1.3	1.7	0.8	1.2	1.0	0.3	-	-	-	-	-	-	0.8	-
Littleneck	-	<0.1	0.1	<0.1	<0.1	0.1	0.1	0.1	1.2	0.3	0.3	0.5	0.4	0.5	6.3	-
Softshell	-	-	-	-	-	-	1.3	-	-	-	-	-	-	-	-	-
Size Comp. (x size)																
Butter	-	-	-	-	-	99.0	80.0	-	97.0	-	-	-	-	-	79.0	-
Cockle	63.4	56.5	60.7	60.0	59.4	52.5	47.1	50.2	57.0	56.6	54.5	56.5	50.1	53.6	55.9	-
Gaper	91.3	91.5	92.8	101.1	94.9	96.0	88.8	87.3	96.5	-	33.0	-	-	-	85.0	-
Littleneck	-	-	-	-	-	47.4	48.0	45.5	45.8	-	48.6	51.3	43.6	47.0	50.6	-
Softshell	-	-	-	-	-	-	57.5	-	-	-	-	-	-	-	-	-
No. Clams Measured																
Butter	-	-	-	-	-	1	1	-	1	-	-	-	-	-	3	-
Cockle	219	648	889	525	606	349	18	60	177	122	293	408	431	60	11	-
Gaper	451	217	152	106	96	61	46	7	8	-	1	-	-	-	14	-
Littleneck	-	-	-	-	5	5	2	-	30	-	9	15	23	1	105	-
Softshell	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-

<sup>1</sup> Regulation change in bag limit; effective January 1, 1977.

<sup>2</sup> Bentnose clam.

Table 9. Annual summary of recreational interview data; Coquille Point, Yaquina Bay.

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	11	53	27	-	7	13	20	-	-	-
No. Clams Sampled	24	267	147	-	45	28	287	-	-	-
No. Digger Hours	9	75	33	-	6	22	25	-	-	-
Hours/trip	0.8	1.4	1.2	-	0.8	1.7	1.2	-	-	-
Clams/trip	2.2	5.0	5.4	-	6.4	2.2	14.3	-	-	-
Clams/hour	2.7	3.6	4.5	-	8.2	1.3	11.5	-	-	-
Digger Origin (%)										
Local	-	9.4	25.9	-	57.1	46.2	35.0	-	-	-
State	100.0	75.5	55.6	-	42.9	23.1	35.0	-	-	-
Non-state	-	15.1	18.5	-	-	30.8	30.0	-	-	-
Species Comp. (%)										
Butter	4.2	3.0	40.1	-	60.0	7.1	15.3	-	-	-
Cockle	-	-	34.7	-	17.8	42.9	41.5	-	-	-
Gaper	95.8	93.3	15.7	-	-	-	36.2	-	-	-
Littleneck	-	3.0	8.2	-	22.2	35.7	2.1	-	-	-
Softshell	-	-	-	-	-	-	0.7	-	-	-
Clams/trip										
Butter	0.1	0.2	2.2	-	3.9	0.2	2.2	-	-	-
Cockle	-	-	1.9	-	1.1	0.9	6.0	-	-	-
Gaper	2.1	4.7	0.9	-	-	-	5.2	-	-	-
Littleneck	-	0.2	0.4	-	1.4	0.8	0.3	-	-	-
Softshell	-	-	-	-	-	-	0.1	-	-	-
Clams/hour										
Butter	0.1	0.1	1.8	-	4.9	0.1	1.8	-	-	-
Cockle	-	-	1.6	-	1.5	0.5	4.8	-	-	-
Gaper	2.6	3.3	0.7	-	-	-	4.2	-	-	-
Littleneck	-	0.1	0.4	-	1.8	0.5	0.2	-	-	-
Softshell	-	-	-	-	-	-	0.1	-	-	-
Size Comp. (x size)										
Butter	88.0	93.6	74.9	-	80.4	80.0	77.7	-	-	-
Cockle	-	-	47.2	-	38.6	37.5	-	-	-	-
Gaper	94.5	96.6	98.9	-	-	-	-	-	-	-
Littleneck	-	61.3	45.9	-	41.9	41.8	41.0	-	-	-
Softshell	-	-	-	-	-	-	-	-	-	-
No. Clams Measured										
Butter	1	5	22	-	27	2	39	-	-	-
Cockle	-	-	51	-	9	12	75	-	-	-
Gaper	23	142	15	-	-	-	1	-	-	-
Littleneck	-	4	12	-	10	10	5	-	-	-
Softshell	-	-	-	-	-	-	-	-	-	-

Table 10. Annual summary of recreational interview data; Critser's Island, Yaquina Bay.

	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	42	14	11	29	12	3	6	7
No. Clams Sampled	1,380	491	377	906	297	108	214	225
No. Digger Hours	56	24	15	53	17	5	10	5
Hours/trip	1.3	1.7	1.4	1.8	1.4	1.5	1.7	0.7
Clams/trip	32.9	35.1	34.3	31.2	24.8	36.0	35.7	32.1
Clams/hour	24.6	20.9	25.1	17.3	18.0	24.0	21.4	45.0
Digger Origin (%)								
Local	40.5	50.0	81.8	48.3	100.0	100.0	50.0	100.0
State	59.5	50.0	18.2	51.7	-	-	50.0	-
Non-state	-	-	-	-	-	-	-	-
Species Comp. (%)								
Butter	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-
Softshell	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Clams/trip								
Butter	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-
Softshell	32.9	35.1	34.3	31.2	24.8	36.0	35.7	32.1
Clams/hour								
Butter	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-
Softshell	24.6	20.9	25.1	17.3	18.0	24.0	21.4	45.0
Size Comp. (x size)								
Butter	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-
Softshell	82.5	93.3	93.1	85.4	94.5	90.3	89.5	81.6
No. Clams Measured								
Butter	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-
Softshell	569	68	280	306	138	102	140	93

Table 11. Annual summary of recreational interview data; North Bank Softshell, Yaquina Bay.

	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	26	27	10	25	16	8	-
No. Clams Sampled	971	698	156	709	336	225	-
No. Digger Hours	25	27	20	35	16	11	-
Hours/trip	0.9	1.0	2.0	1.4	1.0	1.4	-
Clams/trip	37.4	25.9	15.6	28.4	21.0	28.1	-
Clams/hour	39.6	25.9	7.8	20.3	21.0	20.5	-
Digger Origin (%)							
Local	84.6	51.9	100.0	40.0	-	75.0	-
State	15.4	33.3	-	60.0	100.0	25.0	-
Non-state	-	14.8	-	-	-	-	-
Species Comp. (%)							
Butter	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-
Softshell	100.0	99.9	100.0	100.0	100.0	100.0	-
Clams/trip							
Butter	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-
Softshell	37.4	25.8	15.6	28.4	21.0	28.1	-
Clams/hour							
Butter	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-
Softshell	39.6	25.8	7.8	20.3	21.0	20.5	-
Size Comp. (x size)							
Butter	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-
Softshell	74.6	63.6	83.5	65.6	66.6	91.6	-
No. Clams Measured							
Butter	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-
Softshell	240	366	63	104	192	142	-



Table 12. Annual summary of recreational interview data; North Shore, Alsea Bay.

	1982	1983	1984	1985	1986	1987	1988	1989	1990 <sup>†</sup>
No. Diggers Sampled	4	3	-	-	-	20	15	4	-
No. Clams Sampled	71	22	-	-	-	329	208	57	-
No. Digger Hours	6	5	-	-	-	24	23	12	-
Hours/trip	1.5	1.5	-	-	-	1.2	1.5	3.0	-
Clams/trip	17.8	7.3	-	-	-	16.4	13.9	14.2	-
Clams/hour	11.8	4.9	-	-	-	13.7	9.2	4.8	-
Digger Origin (%)									
Local	100.0	-	-	-	-	90.0	80.0	50.0	-
State	-	100.0	-	-	-	10.0	6.7	50.0	-
Non-state	-	-	-	-	-	-	13.3	-	-
Species Comp. (%)									
Butter	-	-	-	-	-	-	-	-	-
Cockle	100.0	90.9	-	-	-	93.9	75.0	71.9	-
Gaper	-	-	-	-	-	5.8	0.5	3.5	-
Littleneck	-	4.6	-	-	-	0.3	24.0	24.6	-
Softshell	-	4.6	-	-	-	-	-	-	-
Clams/trip									
Butter	-	-	-	-	-	-	-	-	-
Cockle	17.8	6.7	-	-	-	15.4	10.4	10.2	-
Gaper	-	-	-	-	-	0.9	0.1	0.5	-
Littleneck	-	0.3	-	-	-	0.1	3.3	3.5	-
Softshell	-	0.3	-	-	-	-	-	-	-
Clams/hour									
Butter	-	-	-	-	-	-	-	-	-
Cockle	11.8	4.4	-	-	-	12.9	6.9	3.4	-
Gaper	-	-	-	-	-	0.8	-	0.2	-
Littleneck	-	0.2	-	-	-	-	2.2	1.2	-
Softshell	-	0.2	-	-	-	-	-	-	-
Size Comp. (x size)									
Butter	-	-	-	-	-	-	-	-	-
Cockle	80.1	71.0	-	-	-	76.5	59.2	57.7	-
Gaper	-	-	-	-	-	116.7	-	72.5	-
Littleneck	-	39.0	-	-	-	-	39.9	38.2	-
Softshell	-	58.0	-	-	-	-	-	-	-
No. Clams Measured									
Butter	-	-	-	-	-	-	-	-	-
Cockle	39	20	-	-	-	169	57	41	-
Gaper	-	-	-	-	-	19	-	2	-
Littleneck	-	-	-	-	-	-	45	14	-
Softshell	-	-	-	-	-	-	-	-	-

<sup>†</sup> New 101 bridge is being built - this prevented clam diggers from accessing this clam bed.

Table 13. Annual summary of recreational interview data; Bayshore, Alsea Bay.

	1982	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	32	24	17	35	9	20	21	-	10
No. Clams Sampled	529	316	156	478	138	314	310	-	153
No. Digger Hours	46	40	29	61	18	27	35	-	11
Hours/trip	1.4	1.7	1.7	1.7	2.0	1.4	1.6	-	1.1
Clams/trip	16.5	13.2	9.2	13.7	15.3	15.7	14.8	-	15.3
Clams/hour	11.5	8.0	5.5	7.9	7.7	11.6	9.0	-	14.6
Digger Origin (%)									
Local	59.4	66.7	41.2	48.6	66.7	35.0	33.3	-	40.0
State	25.0	25.0	58.8	45.7	33.3	50.0	52.4	-	20.0
Non-state	15.6	8.3	-	5.7	-	15.0	14.3	-	40.0
Species Comp. (%)									
Butter	-	-	-	-	-	-	-	-	-
Cockle	99.8	99.7	98.7	88.9	94.2	90.4	76.5	-	100.0
Gaper	0.2	-	1.3	2.9	5.1	8.6	20.3	-	-
Littleneck	-	-	-	0.4	0.7	1.0	3.2	-	-
Softshell	-	0.3	-	7.5	-	-	-	-	-
Clams/trip									
Butter	-	-	-	-	-	-	-	-	-
Cockle	16.5	13.1	9.1	12.1	14.4	14.2	11.3	-	15.3
Gaper	<0.1	-	0.1	0.4	0.8	1.4	3.0	-	-
Littleneck	-	-	-	0.1	0.1	0.1	0.5	-	-
Softshell	-	<0.1	-	1.0	-	-	-	-	-
Clams/hour									
Butter	-	-	-	-	-	-	-	-	-
Cockle	11.5	8.0	5.4	7.0	7.2	10.5	6.9	-	14.6
Gaper	<0.1	-	0.1	0.2	0.4	1.0	1.8	-	-
Littleneck	-	-	-	-	0.1	-	0.3	-	-
Softshell	-	<0.1	-	0.6	-	-	-	-	-
Size Comp. (x size)									
Butter	-	-	-	-	-	-	-	-	-
Cockle	72.9	76.4	76.3	73.8	74.8	69.8	62.2	-	75.8
Gaper	-	-	116.0	130.9	121.7	85.5	79.0	-	-
Littleneck	-	-	-	44.0	49.0	48.0	39.5	-	-
Softshell	-	-	-	-	-	-	-	-	-
No. Clams Measured									
Butter	-	-	-	-	-	-	-	-	-
Cockle	159	295	154	331	109	180	217	-	115
Gaper	-	-	2	10	6	24	49	-	-
Littleneck	-	-	-	2	1	3	10	-	-
Softshell	-	-	-	-	-	-	-	-	-

Table 14. Annual summary of recreational interview data; Breakwater, Alsea Bay.

	1986	1987	1988	1989	1990
No. Diggers Sampled	23	14	31	71	17
No. Clams Sampled	122	144	417	559	346
No. Digger Hours	25	24	42	92	19
Hours/trip	1.1	1.7	1.3	1.3	1.1
Clams/trip	5.3	10.3	13.5	7.9	20.4
Clams/hour	5.0	6.0	10.0	6.1	18.7
Digger Origin (%)					
Local	47.8	28.6	41.9	25.4	88.2
State	52.2	50.0	45.2	57.7	5.9
Non-state	-	21.4	12.9	16.9	5.9
Species Comp. (%)					
Butter	-	-	0.2	5.8	0.0
Cockle	89.3	81.9	98.1	44.3	99.7
Gaper	-	13.9	0.2	48.8	0.0
Littleneck	10.7	4.2	1.2	1.1	0.3
Softshell	-	-	-	-	-
Clams/trip					
Butter	-	-	-	0.5	0.0
Cockle	4.7	8.4	13.2	3.5	20.3
Gaper	-	1.4	-	3.8	0
Littleneck	0.6	0.4	0.2	0.1	0.1
Softshell	-	-	-	-	-
Clams/hour					
Butter	-	-	-	0.3	0.0
Cockle	4.4	4.9	9.9	2.7	18.6
Gaper	-	0.8	-	3.0	0.0
Littleneck	0.5	0.2	0.1	0.1	0.1
Softshell	-	-	-	-	-
Size Comp. (x size)					
Butter	47.0	-	36.0	-	-
Cockle	64.1	45.4	59.0	66.0	58.0
Gaper	-	120.8	69.0	71.3	-
Littleneck	45.1	45.8	36.2	33.3	46.0
Softshell	-	-	-	-	-
No. Clams Measured					
Butter	1	-	1	-	-
Cockle	83	138	262	222	208
Gaper	-	15	1	6	-
Littleneck	8	6	5	39	1
Softshell	-	-	-	-	-

Table 15. Annual summary of recreational interview data; Softshell, Aisea Bay.

	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	4	5	5	8	14	5	23	7
No. Clams Sampled	91	138	151	148	431	164	66	255
No. Digger Hours	6	7	10	9	23	7	36	11
Hours/trip	1.5	1.4	2.0	1.1	1.6	1.4	1.6	1.5
Clams/trip	22.8	27.6	30.2	18.5	30.8	32.8	28.8	36.4
Clams/hour	15.2	19.7	15.1	16.4	19.2	23.4	18.4	24.3
Digger Origin (%)								
Local	50.0	60.0	80.0	50.0	78.6	80.0	65.2	71.4
State	50.0	-	20.0	25.0	21.4	20.0	34.8	14.3
Non-state	-	40.0	-	25.0	-	-	-	14.3
Species Comp. (%)								
Butter	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-
Softshell	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Clams/trip								
Butter	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-
Softshell	22.8	27.6	30.2	18.5	30.8	32.8	28.8	36.4
Clams/hour								
Butter	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-
Softshell	15.2	19.7	15.1	16.4	19.2	23.4	18.4	24.3
Size Comp. (x size)								
Butter	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-
Softshell	96.8	94.6	95.0	97.1	94.0	99.2	85.1	93.4
No. Clams Measured								
Butter	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-
Softshell	86	135	180	102	190	158	281	108

Table 16. Annual summary of recreational interview data; North Fork<sup>2</sup>, Siuslaw Bay.

	1971	1976	1977 <sup>1</sup>	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	3,203	39	51	21	42	7	115	21	33	168	70	47	42	41	129	77
No. Clams Sampled	72,756	1,067	1,426	670	1,140	188	3,445	875	1,163	5,418	2,297	1,704	1,453	1,388	4,107	2,104
No. Digger Hours	4,844	54	101	32	55	5	145	28	32	231	104	65	67	64	187	121
Hours/trip	1.5	1.4	20.	1.5	1.3	0.7	1.3	1.3	1.0	1.4	1.5	1.4	1.6	1.6	1.4	1.6
Clams/trip	22.7	27.4	28.0	31.9	27.1	26.9	30.0	41.7	35.2	34.0	32.8	36.3	34.6	33.9	31.8	27.3
Clams/hour	15.0	19.8	14.1	21.3	20.6	37.6	23.7	31.3	36.3	24.7	22.2	26.4	21.7	21.7	22.0	17.5
Digger Origin (%)																
Local	-	12.8	28.8	28.6	19.0	28.6	38.3	47.6	51.5	27.4	17.1	34.0	35.7	31.7	28.7	15.6
State	-	84.6	66.7	71.4	47.6	71.4	48.7	52.4	42.4	67.3	70.0	61.7	64.3	68.3	61.2	80.5
Non-state	-	2.6	4.4	-	33.3	-	13.0	-	9.1	5.4	12.9	4.3	-	-	10.1	3.9
Species Comp. (%)																
Butter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Softshell	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Clams/trip																
Butter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Softshell	22.7	27.4	28.0	31.9	27.1	26.9	30.0	41.7	35.2	34.0	32.8	36.3	34.6	33.9	31.8	27.3
Clams/hour																
Butter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Softshell	15.0	19.8	14.1	21.3	20.6	37.6	23.7	31.3	36.3	24.7	22.2	26.4	21.7	21.7	22.0	17.5
Size Comp. (x size)																
Butter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Softshell	-	107.4	96.5	99.0	89.5	90.0	89.4	90.7	92.8	95.0	99.2	96.1	97.8	97.1	97.5	94.2
No. Clams Measured																
Butter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Softshell	-	741	408	335	676	110	1,629	757	867	297	670	670	585	294	336	336

<sup>1</sup> Regulation change in bag limit; effective January 1, 1977.

<sup>2</sup> Includes digging on west side, east side and in North Fork of Siuslaw and near Florence.

Table 17. Annual summary of recreational interview data; Charleston Triangle, Coos Bay.

	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	40	32	20	58	91	50	96	107
No. Clams Sampled	771	588	410	1,193	1,647	814	1,535	1,742
No. Digger Hours	44	27	25	75	105	75	115	141
Hours/trip	1.1	0.8	1.2	1.3	1.2	1.5	1.2	1.3
Clams/trip	19.3	18.4	20.5	20.6	18.1	16.3	16.0	16.3
Clams/hour	17.5	22.0	16.7	16.0	15.7	10.9	13.4	12.4
Digger Origin (%)								
Local	22.5	40.6	50.0	29.3	34.1	20.0	21.9	20.6
State	72.5	56.3	35.0	62.1	47.3	52.0	68.8	71.0
Non-state	5.0	3.1	15.0	8.6	18.1	28.0	9.4	8.4
Species Comp. (%)								
Butter	19.6	10.9	13.2	2.6	13.2	11.8	2.7	3.3
Cockle	55.1	69.2	56.6	66.5	47.3	43.2	47.5	34.6
Gaper	3.9	15.0	20.5	17.5	31.3	32.9	44.9	48.1
Littleneck	23.2	4.9	9.5	8.5	5.8	8.8	5.0	9.4
Softshell	-	-	-	0.3	0.1	-	-	0.1
Clams/trip								
Butter	3.8	2.0	2.7	0.5	2.4	1.9	0.4	0.5
Cockle	10.6	12.7	11.6	13.7	8.6	7.0	7.4	5.6
Gaper	0.8	2.8	4.2	3.6	5.7	5.4	7.0	7.8
Littleneck	4.5	0.9	1.9	1.8	1.1	1.4	0.8	1.5
Softshell	-	-	-	0.1	-	-	-	<0.1
Clams/hour								
Butter	3.4	2.4	2.2	0.4	2.1	1.3	0.3	0.4
Cockle	9.7	15.2	9.5	10.6	7.4	4.7	6.2	4.3
Gaper	0.7	3.3	3.4	2.8	4.9	3.6	5.9	6.0
Littleneck	4.1	1.1	1.6	1.4	0.9	1.0	0.7	1.2
Softshell	-	-	-	0.1	-	-	-	<1.2
Size Comp. (x size)								
Butter	73.3	80.2	82.5	75.3	78.2	80.7	85.9	80.6
Cockle	51.2	66.3	62.6	63.2	61.2	61.4	59.1	60.6
Gaper	88.6	95.2	98.2	97.3	99.1	103.3	98.7	113.3
Littleneck	55.2	57.6	61.3	61.1	58.9	62.1	64.8	63.9
Softshell	-	-	-	-	-	-	-	-
No. Clams Measured								
Butter	39	17	52	15	118	88	30	19
Cockle	45	218	185	175	298	149	169	97
Gaper	26	54	67	30	187	165	158	125
Littleneck	18	159	41	51	64	63	29	57
Softshell	-	-	-	-	-	-	-	-

Table 18. Annual summary of recreational interview data; Charleston Flat, Coos Bay.

	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	60	27	18	100	113	97	61	65
No. Clams Sampled	859	435	341	1,980	2,145	1,523	974	887
No. Digger Hours	125	29	32	180	185	176	103	113
Hours/trip	2.1	1.1	1.8	1.8	1.6	1.8	1.7	1.7
Clams/trip	14.3	16.1	18.9	19.8	19.0	15.7	16.0	13.6
Clams/hour	6.9	15.1	10.7	11.0	11.6	8.7	9.5	7.8
Digger Origin (%)								
Local	21.7	40.7	16.7	35.0	28.3	20.6	14.8	36.9
State	73.3	51.9	38.9	57.0	48.7	66.0	68.9	49.2
Non-state	5.0	7.4	44.4	8.0	23.0	13.4	16.4	13.8
Species Comp. (%)								
Butter	2.0	4.6	6.7	2.8	2.7	10.2	4.8	5.5
Cockle	46.6	60.9	72.4	83.3	63.9	35.4	31.8	9.1
Gaper	38.8	27.6	17.3	8.8	26.2	42.5	47.7	71.6
Littleneck	10.6	3.7	3.5	4.1	4.7	10.8	14.5	11.6
Softshell	-	3.0	-	0.1	-	0.4	1.3	-
Clams/trip								
Butter	0.3	0.7	1.3	0.6	0.5	1.6	0.7	0.8
Cockle	6.7	9.8	13.7	16.5	12.1	5.6	4.9	1.2
Gaper	5.6	4.4	3.3	1.8	5.0	6.7	7.3	9.8
Littleneck	1.5	0.6	0.7	0.8	0.9	1.7	2.2	1.6
Softshell	-	0.5	-	<0.1	-	0.1	0.2	-
Clams/hour								
Butter	0.1	0.7	0.7	0.3	0.3	0.9	0.4	0.4
Cockle	3.2	9.2	7.7	9.2	7.4	3.1	2.9	0.7
Gaper	2.7	4.6	1.8	1.0	3.0	3.7	4.3	5.6
Littleneck	0.7	0.6	0.4	0.5	0.5	0.9	1.3	0.9
Softshell	-	-	-	<0.1	-	-	0.1	-
Size Comp. (x size)								
Butter	84.0	78.1	75.0	78.9	81.3	78.3	93.7	79.3
Cockle	59.9	63.2	62.2	66.9	65.6	62.3	62.6	56.2
Gaper	100.6	105.9	110.1	109.1	109.0	106.9	102.4	103.1
Littleneck	55.0	65.0	62.2	60.5	58.4	65.8	59.3	61.8
Softshell	-	-	-	-	-	-	-	-
No. Clams Measured								
Butter	1	13	20	43	44	86	39	46
Cockle	38	92	247	234	128	193	163	88
Gaper	13	80	58	70	188	271	109	150
Littleneck	3	2	13	30	86	96	102	98
Softshell	-	-	-	-	-	-	-	-

Table 19. Annual summary of recreational interview data; Pigeon Point, Coos Bay.

	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	111	43	10	68	64	24	59	37
No. Clams Sampled	1,681	679	190	1,160	1,003	444	927	485
No. Digger Hours	95	70	19	145	119	42	105	67
Hours/trip	0.9	1.6	1.9	2.1	1.9	1.8	1.8	1.8
Clams/trip	15.1	15.8	19.0	17.1	15.7	18.5	15.7	13.1
Clams/hour	17.7	9.7	10.0	8.0	8.4	10.6	8.9	7.3
Digger Origin (%)								
Local	45.9	65.1	20.0	51.5	32.8	41.7	23.7	40.5
State	48.6	27.9	60.0	41.2	51.6	58.3	61.0	51.4
Non-state	5.4	7.0	20.0	7.4	15.6	-	15.3	8.1
Species Comp. (%)								
Butter	27.1	36.4	47.9	56.5	48.6	44.8	40.5	37.7
Cockle	0.7	8.0	2.1	1.3	6.0	-	4.5	-
Gaper	51.2	32.7	10.0	17.2	11.1	15.3	3.0	23.9
Littleneck	20.9	22.5	39.5	24.1	33.3	32.9	51.9	37.5
Softshell	-	0.6	-	0.8	-	0.7	-	-
Clams/trip								
Butter	4.1	5.4	9.1	9.6	7.6	8.3	6.4	4.9
Cockle	0.1	1.3	0.4	0.2	0.9	-	0.7	-
Gaper	7.7	5.2	1.9	2.9	1.7	2.8	0.5	3.1
Littleneck	3.2	3.6	7.5	4.1	5.2	6.1	8.1	4.9
Softshell	-	0.1	-	0.1	-	0.1	-	-
Clams/hour								
Butter	4.8	3.5	4.8	4.5	4.1	4.7	3.6	2.8
Cockle	0.1	0.8	0.2	0.1	0.5	-	0.4	-
Gaper	9.1	3.2	1.0	1.4	0.9	1.6	0.3	1.7
Littleneck	3.7	2.2	3.9	1.9	2.8	3.5	4.6	2.7
Softshell	-	0.1	-	0.1	-	0.1	-	-
Size Comp. (x size)								
Butter	85.9	84.8	84.3	84.0	87.2	81.0	76.0	81.1
Cockle	37.9	-	40.0	-	-	-	-	-
Gaper	108.0	104.5	85.3	107.9	102.6	109.5	92.1	84.7
Littleneck	67.2	62.0	60.6	63.3	54.6	58.6	57.2	60.2
Softshell	-	-	-	-	-	-	-	-
No. Clams Measured								
Butter	44	93	51	145	186	108	214	123
Cockle	7	-	4	-	-	-	-	-
Gaper	46	52	19	15	82	20	42	86
Littleneck	9	50	74	22	172	29	234	102
Softshell	-	-	-	-	-	-	-	-



Table 20. Annual summary of recreational interview data; North Spit, Coos Bay.

	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	65	50	29	163	103	111	122	171
No. Clams Sampled	692	746	449	2,262	1,492	1,506	1,574	2,203
No. Digger Hours	93	82	59	246	151	164	171	238
Hours/trip	1.4	1.6	2.0	1.5	1.5	1.5	1.4	1.4
Clams/trip	10.7	14.9	15.5	13.9	14.5	13.6	12.9	12.9
Clams/hour	7.4	9.2	7.6	9.2	9.9	9.2	9.2	9.3
Digger Origin (%)								
Local	72.3	68.0	37.9	65.0	68.0	70.3	86.1	75.4
State	27.7	28.0	58.6	32.5	27.2	27.0	13.9	23.4
Non-state	-	4.0	3.4	2.5	4.9	2.7	-	1.2
Species Comp. (%)								
Butter	3.5	6.4	5.1	6.7	7.9	3.3	0.1	5.8
Cockle	17.6	22.0	17.1	13.7	18.1	17.7	8.8	6.6
Gaper	75.3	65.5	74.6	73.7	66.4	75.5	90.2	80.0
Littleneck	3.6	6.0	2.4	3.9	2.7	2.3	0.9	7.0
Softshell	-	-	-	-	0.1	0.1	-	-
Clams/trip								
Butter	0.4	1.0	0.8	0.9	1.1	0.4	-	0.7
Cockle	1.9	3.3	2.7	1.9	2.6	2.4	1.1	0.9
Gaper	8.0	9.8	11.6	10.2	9.6	10.2	11.3	10.3
Littleneck	0.4	0.9	0.4	0.5	0.4	0.3	0.1	0.9
Softshell	-	-	-	-	<0.1	-	-	-
Clams/hour								
Butter	0.3	0.6	0.4	0.6	0.8	0.3	-	0.5
Cockle	1.3	2.0	1.3	1.3	1.8	1.6	0.8	0.6
Gaper	5.6	6.0	5.7	6.8	6.6	6.9	8.0	7.4
Littleneck	0.3	0.6	0.2	0.4	0.3	0.2	0.1	0.7
Softshell	-	-	-	-	<0.1	-	-	-
Size Comp. (x size)								
Butter	-	77.0	81.8	87.0	85.2	85.8	78.0	80.7
Cockle	67.7	62.2	65.1	64.4	60.2	78.5	75.7	64.9
Gaper	109.6	111.2	100.5	122.7	114.6	113.9	117.8	119.9
Littleneck	72.0	59.5	46.5	64.4	60.6	60.8	66.4	58.1
Softshell	--	-	-	-	-	-	-	-
No. Clams Measured								
Butter	-	28	9	21	65	46	2	101
Cockle	20	39	29	62	104	133	105	129
Gaper	185	138	117	71	159	107	172	251
Littleneck	2	28	2	14	37	34	7	137
Softshell	-	-	-	-	-	-	-	-

Table 21. Annual summary of recreational interview data; Clam Island, Coos Bay.

	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	57	462	11	76	116	66	65	38
No. Clams Sampled	1,002	7,931	208	1,097	1,777	987	1,111	532
No. Digger Hours	82	737	15	98	134	88	103	57
Hours/trip	1.4	1.9	1.4	1.3	1.2	1.3	1.6	1.5
Clams/trip	17.6	17.2	18.9	14.4	15.3	15.0	17.1	14.0
Clams/hour	12.2	10.8	13.9	11.3	13.3	11.2	10.8	9.4
Digger Origin (%)								
Local	36.8	51.5	81.8	52.6	53.4	48.5	44.6	63.2
State	57.9	46.3	18.2	46.1	37.9	39.4	53.8	34.2
Non-state	5.3	2.2	-	1.3	8.6	12.1	1.5	2.6
Species Comp. (%)								
Butter	2.88	4.6	26.9	0.4	5.5	1.5	1.1	12.2
Cockle	36.5	33.7	12.5	26.7	26.6	19.7	31.9	0.6
Gaper	54.2	59.8	54.3	72.0	66.6	76.8	62.8	85.0
Littleneck	1.1	1.8	6.2	0.9	1.3	1.7	4.2	2.3
Softshell	5.4	-	-	-	-	-	-	-
Clams/trip								
Butter	0.5	0.8	5.1	0.1	0.8	0.2	0.2	1.7
Cockle	6.4	5.8	2.4	3.9	4.1	2.9	5.4	0.1
Gaper	9.5	10.3	10.3	10.4	10.2	11.5	10.7	11.9
Littleneck	0.2	0.3	1.2	0.1	0.2	0.3	0.7	0.3
Softshell	1.0	-	-	-	-	-	-	-
Clams/hour								
Butter	0.3	0.5	3.7	-	0.7	0.2	0.1	1.2
Cockle	4.5	3.6	1.7	3.0	3.5	2.2	3.5	0.1
Gaper	6.6	6.4	7.5	8.1	8.8	8.6	6.8	8.0
Littleneck	0.1	0.2	0.9	0.1	0.2	0.2	0.5	0.2
Softshell	0.7	-	-	-	-	-	-	-
Size Comp. (x size)								
Butter	78.7	95.0	89.5	97.0	86.3	-	90.2	81.7
Cockle	54.1	76.8	69.4	80.1	71.0	66.9	72.9	72.0
Gaper	107.7	121.0	119.2	118.8	115.7	117.8	117.1	123.2
Littleneck	55.5	68.0	66.9	-	61.9	63.8	61.0	67.9
Softshell	-	-	-	-	-	-	-	-
No. Clams Measured								
Butter	6	1	55	1	9	-	12	64
Cockle	8	12	25	43	102	105	167	2
Gaper	46	56	108	136	170	194	205	180
Littleneck	4	1	13	-	9	22	41	13
Softshell	-	-	-	-	-	-	-	-

Table 22. Annual summary of recreational interview data; all estuaries combined.

	1975	1976	1977 <sup>†</sup>	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
No. Diggers Sampled	453	721	4,165	847	1,603	1,284	1,276	870	1,506	1,800	898	1,392	1,508	1,324	1,549	1,363
No. Clams Sampled	8,837	15,085	62,963	14,008	24,697	21,601	19,610	12,928	22,189	33,916	14,614	24,691	25,313	21,986	26,708	22,847
No. Digger Hours	-	1,101	6,833	1,187	1,986	1,718	1,606	1,104	2,113	2,589	1,303	2,128	2,154	1,876	2,259	2,029
Hours/trip	-	1.5	1.6	1.4	1.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.4	1.4	1.5	1.5
Clams/trip	19.5	20.9	15.1	16.5	15.4	16.8	15.4	14.9	14.7	18.8	16.3	17.7	16.8	16.6	17.2	16.8
Clams/hour	-	13.7	9.2	11.8	12.4	12.6	12.2	11.7	10.5	13.1	11.2	11.6	11.8	11.7	11.8	11.3
Digger Origin (%)																
Local	-	25.5	30.5	29.0	29.3	22.9	30.6	40.5	33.6	42.7	37.8	36.9	35.6	33.2	32.6	31.3
State	-	66.6	64.4	62.8	63.8	70.5	60.0	54.0	60.7	52.7	53.7	56.7	53.4	56.7	58.2	62.7
Non-state	-	7.9	5.1	8.3	7.0	6.6	9.4	5.5	5.7	4.7	8.6	6.4	10.9	10.1	9.2	5.9
Species Comp. (%)																
Butter	12.9	11.1	7.3	5.2	8.5	12.8	15.8	16.2	9.9	7.8	10.6	13.3	15.3	16.5	19.4	22.7
Cockle	58.7	48.2	46.9	56.6	53.1	44.3	29.3	31.3	31.2	22.7	32.2	40.7	41.7	37.7	26.8	30.4
Gaper	19.1	20.9	32.5	26.9	25.1	17.9	24.9	31.8	35.6	26.1	23.6	20.8	24.0	20.0	19.8	23.6
Littleneck	9.3	12.5	7.5	5.8	6.5	7.5	9.9	8.1	7.8	6.2	5.0	6.7	5.2	14.1	11.9	8.7
Softshell	0.1	7.2	5.8	5.5	6.7	17.5	20.1	12.5	15.4	37.2	28.7	17.1	12.4	9.3	20.9	12.4
Clams/trip																
Butter	2.5	2.3	1.0	0.9	1.3	2.2	2.4	2.4	1.4	1.5	1.7	2.4	2.6	2.7	3.4	3.8
Cockle	11.3	10.0	6.6	9.3	8.1	7.4	4.5	4.6	4.5	4.3	5.1	7.2	7.0	6.3	4.6	5.1
Gaper	3.7	4.4	4.6	4.4	3.8	3.0	3.8	4.7	5.1	4.9	3.8	3.7	4.0	3.3	3.4	4.0
Littleneck	1.8	2.6	1.1	1.0	1.0	1.3	1.5	1.2	1.1	1.2	0.8	1.2	0.9	2.3	2.0	1.5
Softshell	<0.1	1.5	0.8	0.9	1.0	2.9	3.1	1.9	2.2	6.9	4.6	3.0	2.1	1.5	3.6	2.1
Clams/hour																
Butter	-	1.5	0.6	0.6	1.0	1.6	1.9	1.9	1.0	1.0	1.2	1.5	1.8	1.9	2.3	2.6
Cockle	-	6.6	4.0	6.6	6.5	5.6	3.6	3.6	3.2	3.0	3.5	4.7	4.9	4.4	3.2	3.4
Gaper	-	2.9	2.8	3.1	3.1	2.2	3.0	3.7	3.6	3.4	2.6	2.4	2.8	2.3	2.3	2.7
Littleneck	-	1.7	0.6	0.7	0.3	0.9	1.2	1.0	0.8	0.8	0.5	0.8	0.6	1.7	1.4	1.0
Softshell	-	1.0	0.5	0.6	0.8	2.2	2.4	1.5	1.6	4.8	3.2	2.0	1.5	1.1	2.5	1.4
Size Comp. (x size)																
Butter	79.6	81.1	82.4	90.7	78.9	69.2	78.1	75.1	71.0	79.5	76.5	79.8	83.0	83.9	78.5	78.5
Cockle	61.4	63.2	62.3	62.6	63.1	60.2	55.3	63.2	60.8	62.0	64.2	63.3	61.9	63.9	63.5	61.4
Gaper	104.1	89.5	90.7	95.5	93.0	98.0	104.3	101.4	103.6	104.2	108.0	111.6	107.9	110.3	110.4	113.7
Littleneck	42.2	45.8	40.3	44.8	47.0	39.8	44.2	40.2	41.4	50.1	66.5	47.7	53.2	52.0	51.8	53.4
Softshell	-	95.5	101.9	83.3	89.5	86.4	88.2	81.8	87.7	86.0	88.4	91.0	92.7	87.9	87.5	89.6
No. Clams Measured	3,615	7,441	11,743	5,096	8,643	6,661	5,372	4,044	6,774	5,152	7,438	6,997	6,403	5,990	6,853	5,448

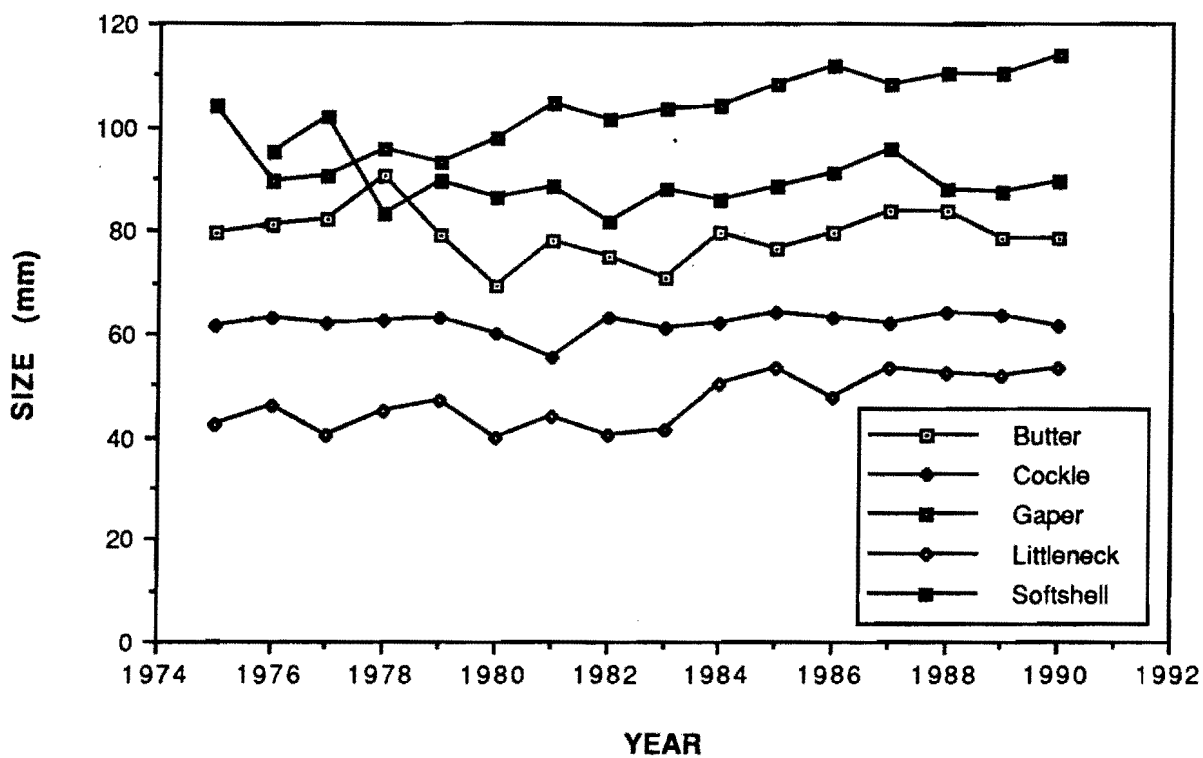


Figure 1. Length composition of recreationally harvested bay clams, all bays combined, 1975-90.

Table 23. Peak counts of clam diggers<sup>1</sup>.

Estuary	Tideflat	1976	1977 <sup>1</sup>	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<b>Tillamook</b>	Garibaldi Flat	350	131	225	256	300	460	516	487	350	118	380	400	257	547	585
	Bay Ocean	280	122	39	107	-	33	13	10	4	-	17	3	-	-	-
<b>Netarts</b>	Happy Camp	175	73	-	150	160	425	500	478	200	191	314	265	116	163	126
<b>Nestucca</b>	Little Nestucca	-	-	-	-	-	44	6	12	6	8	8	-	-	-	-
<b>Yaquina</b>	Bridge Bed	245	138	30	91	84	225	625	275	84	107	204	225	110	235	158
	Breakwater Bed	127	120	62	23	20	27	63	26	28	25	30	46	17	63	43
	Idaho Point	110	98	45	66	61	38	176	46	35	31	50	56	39	29	44
	NW Gas Plant	-	-	-	24	26	41	16	12	10	11	34	20	10	11	7
	Coquille Point	-	-	-	17	18	45	41	20	5	9	14	7	4	11	2
<b>Alsea</b>	North Beach	-	-	-	-	-	-	4	3	-	5	0	13	18	14	2
	Bay Shore	-	-	-	-	-	-	49	31	14	20	10	15	44	7	10
	Waldport Breakwater	-	-	-	-	-	-	12	9	-	22	22	4	45	29	26
<b>Siuslaw</b>	North Fork	55	-	-	109	57	146	33	22	43	41	44	56	45	95	86
<b>Coos Bay</b>	Charleston Triangle	-	-	-	-	-	-	-	31	24	41	39	87	82	59	66
	Charleston Flat	-	-	-	-	-	-	-	64	30	26	27	66	103	54	84
	Peterson Flat	-	-	-	-	-	-	-	5	-	2	15	14	4	7	15
	Fossil Point	-	-	-	-	-	-	-	38	-	0	44	-	-	-	-
	Pigeon Point	-	-	-	-	-	-	-	62	50	42	67	97	52	51	74
	Empire Flat	-	-	-	-	-	-	-	20	-	19	22	44	12	36	43
	Hanson's Marina	-	-	-	-	-	-	-	5	3	4	-	-	-	6	11
	Clam Island	-	-	-	-	-	-	-	-	58	-	86	119	93	101	138
	North Spit	-	-	-	-	-	-	-	-	-	-	83	158	102	135	158
<b>Bandon</b>	Softshell Bed	-	-	-	-	-	-	-	-	-	-	50	-	-	-	-

<sup>1</sup> Number of clam diggers actually on tideflat at time of count. Count occurred at or near low tide.

Table 24 Oregon commercial clam harvest in pounds, 1970-90.

Year	Harvest (lb)	No. Diggers	No. Landings	Ave. lb/landing	No. Permits Issued
1970	25,884	40	258	100.3	0
1971	28,526	50	230	124.0	0
1972	61,523	37	354	174.8	0
1973	17,156	19	187	91.7	0
1974	16,315	23	182	39.6	0
1975	25,908	19	116	227.3	0
1976	88,054	7	97	946.8	0
1977	85,733	29	155	304.0	0
1978	216,926	15	218	943.2	0
1979	94,912	19	128	741.5	0
1980	80,467	36	176	442.1	0
1981	81,138	30	336	222.5	0
1982	134,105	46	538	245.3	0
1983	136,185	41	811	168.0	0
1984	120,574	30	704	171.3	0
1985	99,254	44	614	161.7	65
1986	82,829	36	664	124.7	65
1987	46,283	34	385	120.2	121
1988	44,696	28	258	173.2	136
1989	60,482	24	221	273.7	111
1990	72,756	38	384	189.5	92

Table 25. Summary of pounds of bay clams reported commercially harvested in Oregon by species, 1970-90.

Year	Butter	Cockle	Gaper	Littleneck	Softshell	Macoma	Total
1970	885	12,257	1,218	863	10,661	0	25,884
1971	217	9,391	10,345	639	7,714	220	28,526
1972	52	7,269	34,006	1,406	18,772	0	61,505
1973	95	5,756	185	9,771	1,349	0	17,156
1974	412	6,073	0	8,987	843	0	16,315
1975	0	6,855	15,024	4,311	360	0	26,550
1976	816	322	85,831	455	630	0	88,054
1977	607	859	81,775	232	1,366	894	85,733
1978	1,452	6,717	207,685	1,056	52	0	216,962
1979	606	2,299	91,028	0	979	0	94,912
1980	40	2,244	74,459	4,268	456	0	81,467
1981	2,409	4,580	68,508	4,892	749	0	81,138
1982	3,654	10,517	106,440	13,231	248	0	134,090
1983	4,035	2,579	95,091	34,444	36	0	136,185
1984	4,842	17,912	50,573	46,874	366	0	120,567
1985	1,646	29,412	20,121	46,266	1,809	0	99,254
1986	2,862	31,681	17,021	27,487	3,558	0	82,609
1987	3,046	20,202	6,368	14,140	2,527	0	46,283
1988	2,492	30,068	3,816	6,884	1,436	0	44,696
1989	3,806	44,344	5,164	6,032	1,136	0	60,482
1990	4,604	45,607	10,391	7,521	4,633	0	72,756

Table 26. Summary of pounds of bay clams reported commercially harvested in major Oregon estuaries, 1970-90.

Year	Nehalem	Tillamook	Netarts	Yaquina	Alesea	Siuslaw	Umpqua	Coos	Coquille	Total
1970	258	7,819	2,210	444	0	0	10,631	4,522	0	25,884
1971	589	6,168	1,598	1,819	0	0	7,459	10,893	0	28,526
1972	80	9,637	914	57	70	0	6,105	44,642	0	61,505
1973	329	11,997	1,191	0	0	0	786	2,853	0	17,156
1974	882	9,309	2,049	398	0	0	445	3,232	0	16,315
1975	0	4,637	0	0	13	0	309	21,553	38	26,550
1976	0	998	0	0	480	0	0	86,576	0	88,054
1977	0	2,619	0	71,013	0	0	35	12,066	0	85,733
1978	0	3,111	0	172,047	0	0	0	41,804	0	216,962
1979	174	433	0	74,565	0	3,432	0	16,308	0	94,912
1980	373	5,320	486	244	0	9,109	0	65,935	0	81,467
1981	65	4,259	0	128	0	684	0	76,002	0	81,138
1982	10,862	11,501	37	15	0	223	25	111,427	0	134,090
1983	31,856	3,144	200	5,253	0	15	0	95,717	0	136,185
1984	23,069	42,663	0	22	0	50	0	54,763	0	120,567
1985	40,349	34,148	240	0	0	895	268	23,030	324	99,254
1986	30,545	28,737	480	6	0	1,206	0	19,557	2,078	82,609
1987	10,723	22,936	0	1,114	250	654	0	10,214	392	46,283
1988	0	34,450	0	1,153	230	1,200	28	7,086	549	44,696
1989	80	49,650	0	2,790	993	600	150	6,183	36	60,482
1990	5,810	47,198	0	1,543	410	0	3,432	14,363	0	72,756



Table 27. Summary of experimental Manila littleneck clam plants in Yaquina Bay, 1970-90.

Plot No.	Subplot No.	Planting Date	Number Released	Size at Release (mm)	Planting Density (ft <sup>2</sup> )	Sample Date	Recovery Size (mm)	Survival (%)
1	1	9/20/71	20,000	5.7	50	5/12/72	10.0	16.5
						4/11/73	18.3	6.1
						4/24/74	-	1.3
	2	7/10/72	1,710	10.6	114	8/1/73	20.8	24.6
						7/22/74	20.6	1.2
	3	7/10/72	24,240	6.7	101	8/1/73	16.1	30.4
						7/22/74	-	0.0
	4	7/10/72	1,460	10.8	97			
	5	7/10/72	52,340	6.0	102			
	6	7/12/72	130,000	6.6	120			
	7	7/12/72	3,860	10.6	97			
	8	9/7/72	35,000	-	194			
9	9/7/72	11,500	-	194				
10	9/7/72	11,700	4.1	98	8/1/73	11.8	4.1	
					7/22/74	-	0.0	
11	9/7/72	24,700	6.1	103	8/1/73	12.0	21.4	
					7/22/74	-	0.0	
12	9/7/72	1,700	-					
13	9/7/72	7,500	-					
14	9/7/72	1,700	-	156				
15	9/7/72	4,900	-	-				
16	9/7/72	78,000	-	-				
17-22	10/4/72	35,500	5.3	148	8/2/73	11.7	3.8	
					7/22/74	-	0.0	
2	1	4/19/72	800	3.6	80	9/6/72	19.1	-
						5/4/73	28.4	3.8
	2	4/19/72	800	3.7	80	9/3/72	22.0	-
						5/4/73	29.2	3.8
	3	4/19/72	800	6.5	80	9/6/72	22.6	-
						5/4/73	30.7	1.3
	4	4/19/72	800	11.0	80	9/6/72	23.3	-
						5/4/73	31.7	7.5
	5	4/19/72	1,250	3.7	125	5/4/73	29.6	1.3
6	4/19/72	1,250	6.5	125	5/4/73	-	0.0	
7	4/19/72	1,250	11.0	125	5/4/73	32.2	2.5	
8	4/19/72	2,000	3.7	200	5/4/73	29.8	2.5	
9	4/19/72	2,000	6.5	200	5/4/73	33.6	3.8	
10	4/19/72	2,000	11.0	200	5/4/73	-	0.0	
3	1	5/22/70	4,000	3.0	20	8/18/70	12.0	8.0
						10/28/70	19.1	11.0
						1/7/71	19.6	4.0
						5/14/71	21.4	3.0
						4/18/72	33.9	0.0
2	10/5/71	4,000	-	-	4/18/72	-	0.0	
4	1	7/27/72	1,800	6.7	50	9/5/72	10.5	55.0
						4/23/73	16.4	34.4
						4/10/74	-	0.0

Table 27 (continued)

Plot No.	Subplot No.	Planting Date	Number Released	Size at Release (mm)	Planting Density (ft <sup>2</sup> )	Sample Date	Recovery Size (mm)	Survival (%)
	2	7/27/72	1,800	6.7	50	9/5/72 4/23/73 4/10/74	9.8 14.6 -	83.0 12.8 0.0
	3	7/27/72	1,800	6.7	50	9/5/72 4/23/73 4/10/74	8.5 14.6 -	29.0 26.3 0.0
5	1	10/20/72	2,500	6.2	50	4/19/73	-	0.0
6	1	4/24/81	730 <sup>1</sup>	34.5	20.3	9/17/81	-	0.0
7	1	12/5/84	8,700 <sup>1</sup>	31.0	10	3/15/85	31.2	2.5
8	1/30/85 Betty Fowler dumped 3,000-5,000 lbs of dying clams into Yaquina Bay at their dock.							
9	1	8/1/85	4,300 <sup>2</sup>	18.1	86	7/24/86 4/17/87 7/13/88 6/26/90	35.3 41.2 46.7 53.8	49.4 72.0 54.7 18.6
10	1	7/24/86	2,500	6.7	100	4/17/87 7/13/88	15.8 -	0.4 0.0
	2	7/24/86	2,500 <sup>2</sup>	6.7	100	4/17/87 7/13/88	22.3 -	0.4 0.0
	3	7/24/86	2,500	6.7	100	4/17/87 7/13/88	- -	0.0 0.0
	4	7/24/86	2,500 <sup>2</sup>	6.7	100	4/17/87 7/13/88	18.3 -	6.8 0.0
	5	7/24/86	2,500	6.7	100	4/17/87 7/13/88	18.9 -	1.2 0.0
	6	7/24/86	2,500 <sup>2</sup>	6.7	100	4/17/87 7/13/88	- -	0.0 0.0
	7	7/24/86	2,500	6.7	100	4/17/87 7/13/88	19.8 -	13.6 0.0
	8	7/24/86	2,500 <sup>2</sup>	6.7	100	4/17/87 7/13/88	24.5 44.8	1.6 2.0
	9	7/24/86	2,500	6.7	100	4/17/87 7/13/88	20.3 -	20.8 0.0
	10	7/24/86	2,500 <sup>2</sup>	6.7	100	4/17/87 7/13/88	17.8 39.4	20.8 27.0
	11	7/24/86	2,500	6.7	100	4/17/87 7/13/88	18.9 36.3	29.2 9.5
	12	7/24/86	2,500 <sup>2</sup>	6.7	100	4/17/87 7/13/88	16.8 32.5	10.0 6.0
	13	7/24/86	2,500	6.7	100	4/17/87 7/13/88	18.9 40.8	7.2 2.5
	14	7/24/86	2,500 <sup>2</sup>	6.7	100	4/17/87 7/13/88 6/26/90	19.7 36.9 50.6	89.2 34.0 n/a

Table 27 (continued)

Plot No.	Subplot No.	Planting Date	Number Released	Size at Release (mm)	Planting Density (ft <sup>2</sup> )	Sample Date	Recovery Size (mm)	Survival (%)
11	1	8/19/86	100,000 <sup>2</sup>	6.7	100	4/17/87 8/19/88	15.7 34.3	2.2 3.0
	2	8/19/86	10,000	6.7	100	4/17/87 8/19/88	- -	0.0 0.0
12	1	7/15/87	100,000 <sup>2</sup>	8.1	100	7/15/88	-	0.0
	2	7/15/87	20,000	8.1	100	7/15/88	-	0.0

<sup>1</sup> Planted as adult clams.

<sup>2</sup> Planted under "Vexar" netting.

Table 28. Summary of experimental Manila littleneck clam plants in Coos Bay, 1973-90.

Plot No.	Subplot No.	Planting Date	Number Released	Size at Release (mm)	Planting Density (ft <sup>2</sup> )	Sample Date	Recovery Size (mm)	Survival (%)
1	1	8/17/73	11,550	7.1	50	5/8/74	-	0.0
2	1	8/17/73	11,500	7.0	50	5/8/74	-	0.0
3	1	12/19/84	12,660 <sup>1</sup>	31.0	10.3	5/8/85	32.3	39.8
						7/19/85	35.8	35.0
						5/29/86	40.1	10.0
						2/24/87	41.4	10.7
						4/13/88	43.5	6.9
						6/21/90	-	0.0
4	1	7/19/85	17,000 <sup>2</sup>	12.2	100	5/29/86	23.2	100+
						2/24/87	33.3	85.0
						4/13/88	41.3	82.7
						6/21/90	45.6	n/a <sup>3</sup>
5	1	8/20/86	100,000 <sup>2</sup>	6.7	100	2/24/87	12.5	88.7
						4/13/88	32.1	30.0
						7/20/89	43.1	24.0
						6/21/90	43.3	n/a <sup>3</sup>
6	1	8/20/86	3,300	6.7	132	2/24/87	12.5	78.8
						4/13/88	26.2	6.8
						7/20/89	32.4	0.8
						6/21/90	-	n/a <sup>3</sup>
7	1	8/20/86	10,000	6.7	100	2/24/87	10.9	30.0
						4/13/88	20.8	1.3
8	1	9/19/86	10,000 <sup>2</sup>	10.0	100	4/20/87	17.3	34.4
						4/13/88	38.5	12.3
						6/21/90	53.9	n/a <sup>3</sup>
9	1	9/19/86	10,000	10.0	100	4/20/87	13.3	0.8
						4/13/88	-	0.0
						6/21/90	-	0.0

<sup>1</sup> Planted as adult clams.

<sup>2</sup> Planted under "Vexar" netting.

<sup>3</sup> Plot destroyed by clam diggers.

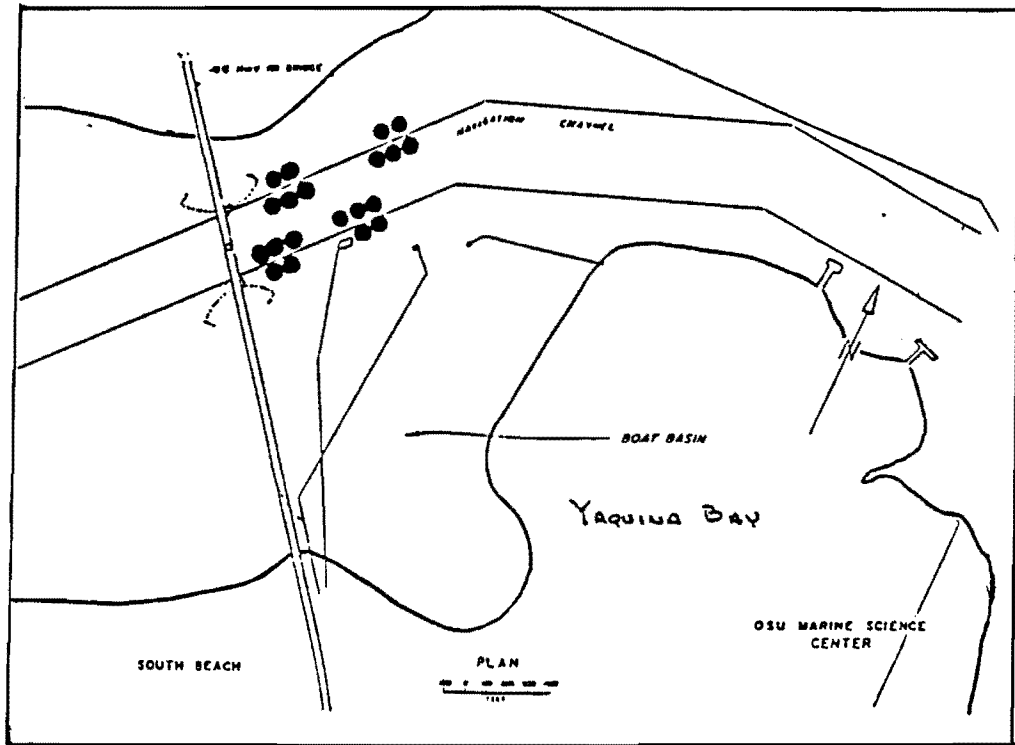


Figure 2. Subtidal clam survey area in Yaquina Bay, 1990.

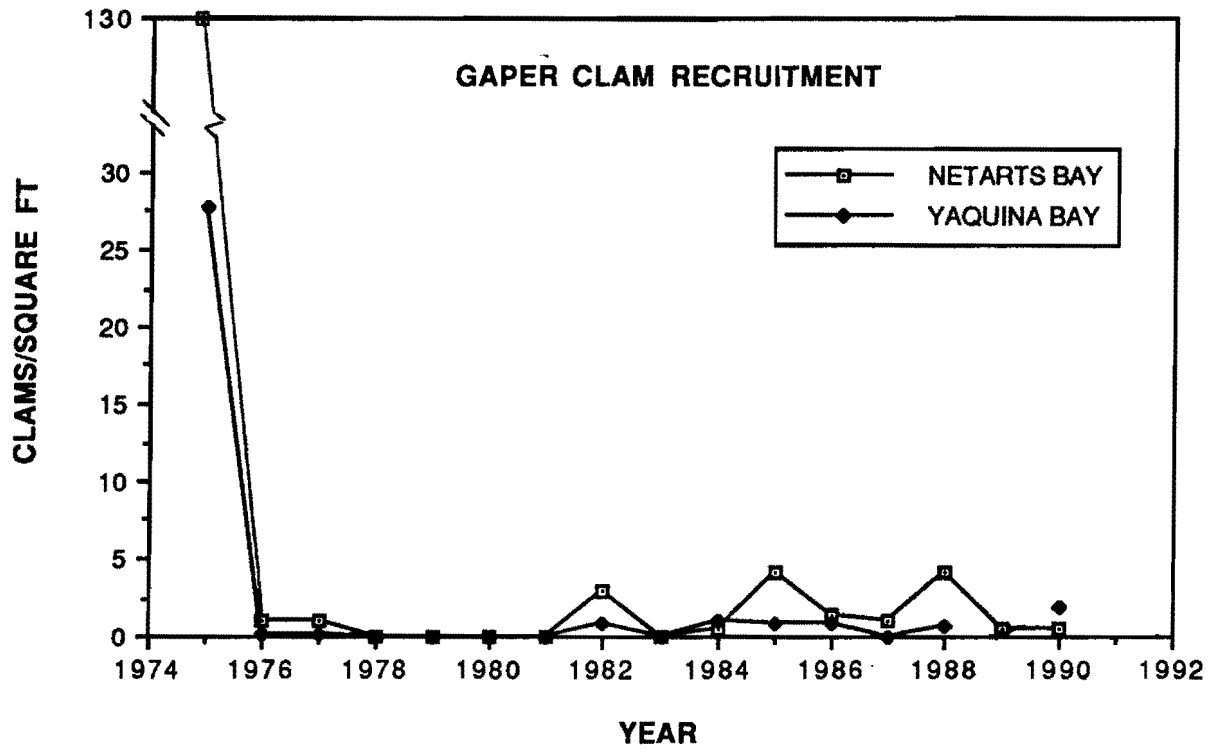


Figure 3. Recruitment of gaper clams in Netarts and Yaquina bays, 1975-90.

Table 29. Population and biomass estimates (95% CI) for gaper clams in Yaquina Bay, Area 2, 1975-90.

Year	Population Estimates		Biomass Estimates	
	Numbers	95% CI	Pounds	95% CI
1975	36,302,000	±56.1	5,084,200	n/a
1976	25,566,400	±51.5	5,217,200	n/a
1977	29,316,000	±44.5	4,969,000	n/a
1978	10,560,000	±48.9	4,136,800	n/a
1979	11,116,700	±51.7	3,459,900	±39.0
1980	11,050,000	±51.6	4,252,500	±33.2
1981	6,160,000	±49.4	2,569,700	±36.9
1982	6,320,000	±42.6	4,424,900	±30.4
1983	7,680,000	±40.3	5,042,100	±29.7
1984	5,600,000	±59.2	3,528,700	±54.2
1985	6,480,000	±32.6	4,708,200	±32.7
1986	5,920,000	±48.8	4,350,600	±50.0
1987	7,563,600	±66.1	6,507,400	±58.6
1988	7,467,000	±35.5	7,430,500	±31.1
1989	no sample		no sample	
1990	6,160,000	±27.5	7,996,600	±16.7