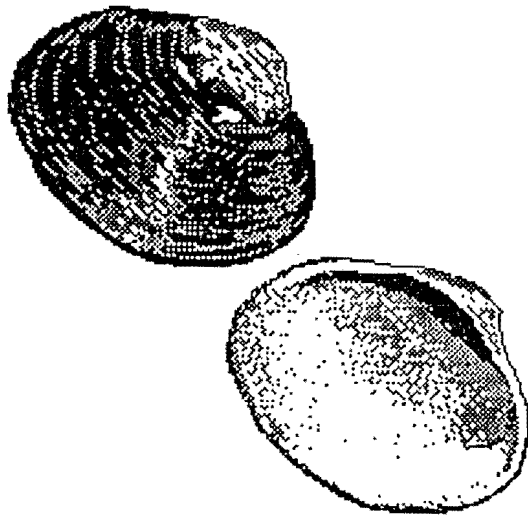


OREGON DEPARTMENT
OF
FISH AND WILDLIFE

BAY CLAM
DATA SERIES REPORT

1988



1988 BAY CLAM DATA SERIES REPORT

by

Thomas F. Gaumer

Oregon Department of Fish and Wildlife
Marine Region
Newport, Oregon

December 1990

CONTENTS

	<u>Page</u>
INTRODUCTION.....	1
RECREATIONAL CLAM FISHERY.....	1
COMMERCIAL CLAM HARVEST.....	3
SPECIAL STUDIES.....	3
Hatchery Stock Enhancement.....	3
Tillamook Bay.....	3
Yaquina Bay.....	3
Coos Bay.....	4
Natural Recruitment Studies.....	4
Yaquina Bay.....	4
Netarts Bay.....	5
SIGN REPLACEMENT.....	5
ACKNOWLEDGMENTS.....	5
LITERATURE CITED.....	5
APPENDIX.....	6

TABLES

<u>Number</u>		<u>Page</u>
1	Annual summary of recreational interview data; Garibaldi Flat, Tillamook Bay.....	14
2	Annual summary of recreational interview data; Bay Ocean, Tillamook Bay.....	15
3	Annual summary of recreational interview data; Boat Basin, Tillamook Bay.....	16
4	Annual summary of recreational interview data; Happy Camp, Netarts Bay.....	17
5	Annual summary of recreational interview data; Cape Lookout Sand Spit, Netarts Bay.....	18
6	Annual summary of recreational interview data; Little Nestucca Flat, Nestucca Bay.....	19
7	Annual summary of recreational interview data; Bridge Bed, Yaquina Bay.....	20
8	Annual summary of recreational interview data; Breakwater Bed, Yaquina Bay.....	21
9	Annual summary of recreational interview data; Idaho Point, Yaquina Bay.....	22
10	Annual summary of recreational interview data; Northwest Gas Plant, Yaquina Bay.....	23
11	Annual summary of recreational interview data; Coquille Point, Yaquina Bay.....	24
12	Annual summary of recreational interview data; Critser's Island, Yaquina Bay.....	25
13	Annual summary of recreational interview data; North Bank Softshell, Yaquina Bay.....	26
14	Annual summary of recreational interview data; North Shore, Alsea Bay.....	27
15	Annual summary of recreational interview data; Bayshore, Alsea Bay.....	28
16	Annual summary of recreational interview data; Breakwater, Alsea Bay.....	29
17	Annual summary of recreational interview data; Softshell, Alsea Bay.....	30

TABLES (continued)

<u>Number</u>		<u>Page</u>
18	Annual summary of recreational interview data; North Fork, Siuslaw Bay.....	31
19	Annual summary of recreational interview data; Bolin Island, Umpqua Bay.....	32
20	Annual summary of recreational interview data; Charleston Triangle, Coos Bay.....	33
21	Annual summary of recreational interview data; Charleston Flat, Coos Bay.....	34
22	Annual summary of recreational interview data; Peterson Flat, Coos Bay.....	35
23	Annual summary of recreational interview data; Pigeon Point, Coos Bay.....	36
24	Annual summary of recreational interview data; Empire Flat, Coos Bay.....	37
25	Annual summary of recreational interview data; North Spit, Coos Bay.....	38
26	Annual summary of recreational interview data; Clam Island, Coos Bay.....	39
27	Annual summary of recreational interview data; Bandon Softshell, Coquille Bay.....	40
28	Annual summary of recreational interview data; all estuaries combined.....	41
29	Peak counts of clam diggers.....	42
30	Summary of pounds of bay clams reported commercially harvested in Oregon by species, 1970-88.....	44
31	Summary of pounds of bay clams reported commercially harvested in major Oregon estuaries, 1970-88.....	45
32	Summary of experimental Manila littleneck clam plants in Tillamook Bay, 1971-88.....	46
33	Summary of experimental Manila littleneck clam plants in Yaquina Bay, 1970-88.....	48

TABLES (continued)

<u>Number</u>		<u>Page</u>
34	Summary of experimental Manila littleneck clam plants in Coos Bay, 1973-88.....	51
35	Population and biomass estimates (95% CI) for gaper clams in Yaquina Bay, Area 2, 1975-88.....	54

FIGURES

<u>Number</u>		<u>Page</u>
1	Location of clam beds from which diggers were interviewed in Tillamook Bay.	7
2	Location of clam beds from which diggers were interviewed in Netarts Bay.	8
3	Location of clam beds from which diggers were interviewed in Nestucca Bay.	8
4	Location of clam beds from which diggers were interviewed in Yaquina Bay.	10
5	Location of clam beds from which diggers were interviewed in Alsea Bay.	11
6	Location of clam beds from which diggers were interviewed in Siuslaw Bay.	12
7	Location of clam beds from which diggers were interviewed in Coos Bay.	13
8	Length composition of recreationally harvested bay clams, all bays combined, 1975-88.	43
9	Location of subtidal clam survey in Yaquina Bay, 1988.....	52
10	Age composition of subtidal gaper clams, Area 2, Yaquina Bay, 1981-1988.	53
11	Recruitment of gaper clams in Netarts and Yaquina bays, 1975-88.	55

1988 BAY CLAM DATA SERIES REPORT

INTRODUCTION

This report summarizes the results of our bay clam studies in 1988. 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 (Figures 1-7). 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 1-27. Table 28 summarizes the recreational activities presented in Tables 1-27 and Table 29 shows the peak counts of clam diggers taken at low tide for each of the surveyed tideflats.

In 1988, we interviewed 1,324 clam diggers that expended 1,876 hours of effort to harvest 21,986 clams (Table 28). The clam diggers averaged 16.6 clams/trip or 11.7 clams/hour. Digging success was slightly poorer in 1988 than in 1987 when 16.8 clams/trip were taken. This decrease was influenced

by poorer digging on several major clam beds in Netarts, Yaquina, and Coos bays. 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 1988, 33.2% of the diggers were local county residents, 56.7% were from Oregon but living outside the county of harvest, and 10.1% were out-of-state residents (Table 28). These figures were generally the same as in 1987.

The cockle clam was the most frequently observed species in the recreational fishery representing 37.7% of the 1988 harvest (Table 28). Gaper, butter, littleneck, and softshell clams comprised 20.0, 16.5, 14.1, and 9.3% of the bag, respectively. These values fluctuate annually but the general trend shows a gradual decline in the gaper and softshell harvest and an increase in the take of cockle and butter clams. Somewhat surprising was the strong unexplained showing of littlenecks, providing over 14% of the harvest. The reduced occurrence of gaper clams can be partially attributed to poor recruitment of this species in a number of our more popular clam beds, especially at Happy Camp in Netarts Bay.

Length composition data collected for each species shows a gradual increase in mean size for the butter clam since 1985, and the cockle and gaper clam since 1986. Decreases in mean size were observed for the littleneck and softshell clam since 1987 (Table 28). Data collected on length composition since 1979 revealed only minor variations in overall mean size for each species (Figure 8). Gaper, softshell, butter, cockle, and littleneck clams averaged 110.3 mm, 87.9 mm, 83.9 mm, 63.9 mm, and 52.0 mm in 1988, respectively.

Changes in digging effort through time as reflected by peak digger counts revealed a general decrease in digging effort from 1987 for most of the surveyed tideflats (Table 29). The largest decrease in peak digger counts was observed for the Garibaldi Flat clam bed in Tillamook Bay (400 diggers to 257 diggers). There was no apparent reason observed for this decrease in digging activity.

COMMERCIAL CLAM HARVEST

In 1988, we issued 136 permits to commercial fishermen to harvest bay clams. Of this total, 28 reported landing 44,696 lb of clams (Table 30). In 1987, 34 clam diggers reported landing 46,283 lb of clams. Of the total clams landed in 1988, 30,068 lb (67.3%) were cockles. Tillamook Bay was the major producer with 26,215 lb (87.2%) of the total cockle harvest. Other clams harvested coastwide were littlenecks (6,884 lb), gapers (3,816 lb), butters (2,492 lb), and softshells (1,436 lb). The continuous decline in harvest of gaper clams 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 1988 with 34,450 lb reported (Table 31); Coos Bay produced 7,086 lb. Yaquina, Alsea, Siuslaw, Umpqua, and Coquille bays produced minor poundages of clams.

SPECIAL STUDIES

Hatchery Stock Enhancement

Tillamook Bay

No Manila clams were planted in Tillamook Bay in 1988. Clams planted in test plots in 1984 and 1985 were sampled for growth and survival. Table 32 summarizes the results of our Manila clam plants in Tillamook Bay since 1971. Of particular interest was the difference in survival of clams placed under Vexar netting in 1985 as compared to uncovered clams. Covered clams showed a 5.5% survival for clams planted as set, 38 months after release, as compared to 0.0% survival for clams planted with no protection. Clams planted as adults in 1985 had survival rates ranging from 15.0 to 52.0%, 39 months after release. These clams were planted without protection of Vexar netting.

Yaquina Bay

Manila clam set planted under Vexar netting near King Slough in 1985 revealed a survival rate of 54.7%, 35 months later (Table 33). These clams, 18.1 mm when planted, averaged 46.7 mm in length.

During 1988, we also sampled each of the 14 test plots established in 1986 to determine if

various introduced substrate materials could impact survival of Manila clam set (Gaumer 1990a). Also tested was the impact of 1/2-inch Vexar netting on clam survival.

Because of the generally poor survival of clams in each of the test plots, statistical tests were not repeated to determine the significance of differences in survival rates for clams placed under netting or in different substrate types. Results of these tests, one year after release, were reported in last years annual report (Gaumer 1990b). Manila clams planted in 1987, both under Vexar netting and those left uncovered, failed to survive one year after release.

Coos Bay

Table 34 shows the results of our Manila littleneck clam plants in Coos Bay since 1973. Manilas planted in 1984, 1985, and 1986 were sampled in 1988 and we recorded survival rates ranging from 0.0% to 82.7%. The best survival was recorded for clams released in 1985 under Vexar netting. These clams averaged 12.2 mm in length when planted. The poorest survival (0.0%) was for 10.0 mm size clams planted without Vexar protection near Valino Island. Clams released nearby under Vexar netting, produced a survival rate of 12.3%.

Natural Recruitment Studies

Yaquina Bay

We collected 12 subtidal dredge samples from an 18.4 acre area in Yaquina Bay in September 1988 to determine year-class strength, recruitment success, and population and biomass estimates (Figure 9). Each sample covered 1 sq ft of surface area; depth of samples averaged 12-14 inches.

The 12 samples produced 112 gaper clams (9.3/sq ft) that averaged 109.4 mm in length. For the first time in several years we observed some evidence of recruitment; both the 1987 and 1988 year-classes were represented in our samples (Figure 10). The 1988 year-class clams averaged 0.7 gapers/sq ft; average size was 10.2 mm. The 1975 year-class continued to dominate the standing crop comprising 86.6% of the 1988 sample. We estimated that 7.5 million gapers, weighing 7.4 million lb, inhabited the area (Table 35).

Netarts Bay

In addition to the subtidal samples taken in Yaquina Bay, we collected nine 1 sq ft intertidal samples in Netarts Bay to determine recruitment success. Each sample averaged 3 inches in depth and was washed through a 3 mm sieve.

The nine samples produced 37 1988 year-class gaper clams (4.1/sq ft) that averaged 9.3 mm in length (Figure 11). No evidence of 1987 year-class gaper clams was observed in the samples.

SIGN REPLACEMENT

In 1988, the shellfish staff continued a coastwide project of repairing or replacing regulation signs. We currently are maintaining 187 signs along the Oregon coast.

ACKNOWLEDGMENTS

I wish to thank Darrell Demory, Terry Link, Jean McCrae, Steve Jones, Neil Richmond, and Mark Saelens for their assistance in gathering the data that was used in this report.

LITERATURE CITED

- Gaumer, Thomas F. 1990a. 1986 Bay Clam Data Series Report, Ore. Dept. of Fish and Wildlife, Proc. Rept. 54 pp.
- Gaumer, Thomas F. 1990b. 1987 Bay Clam Data Series Report, Ore. Dept. of Fish and Wildlife, Proc. Rept. 59 pp.

APPENDIX

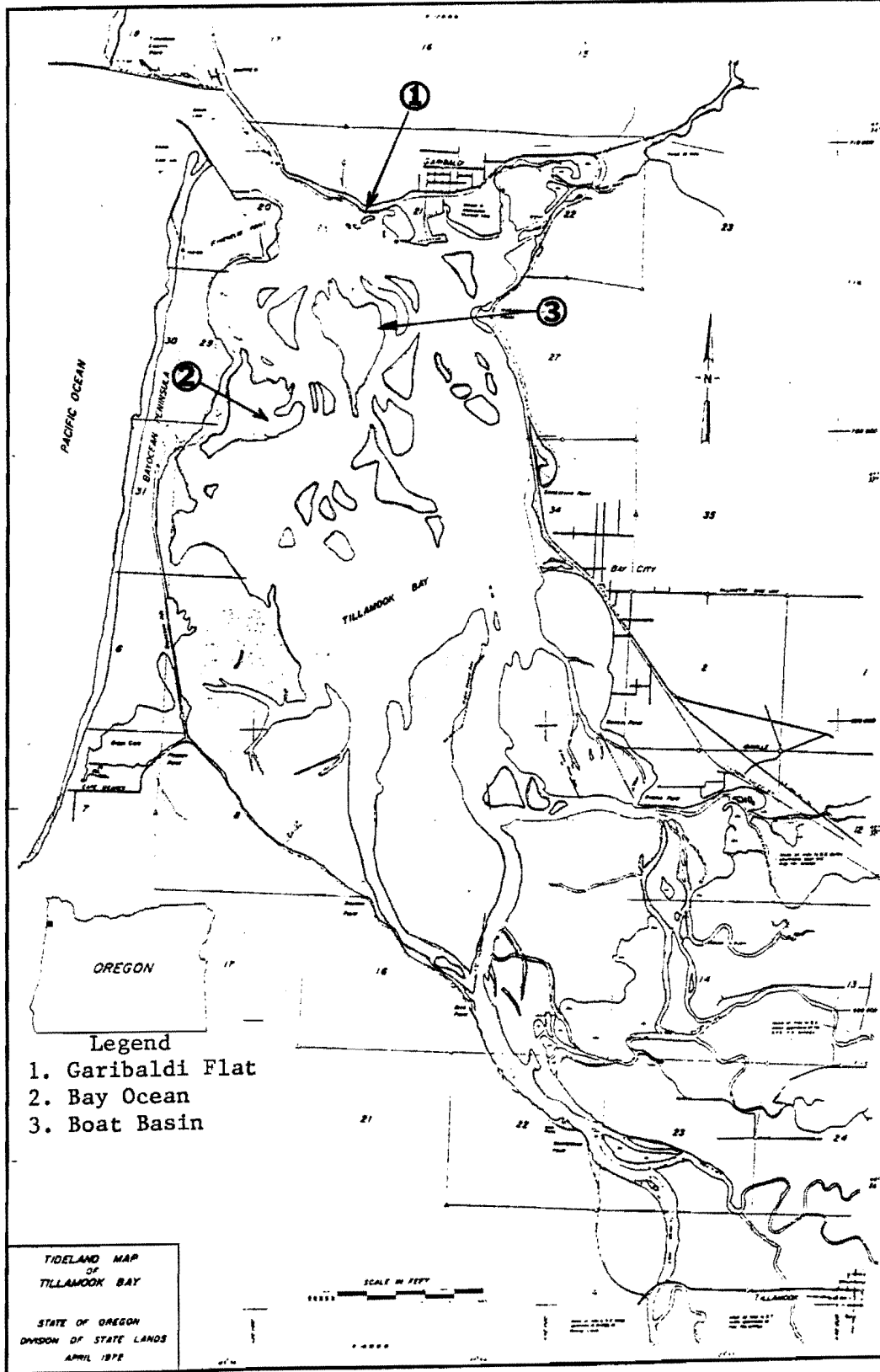


Figure 1. Location of clam beds from which diggers were interviewed in Tillamook Bay.

Netarts Bay

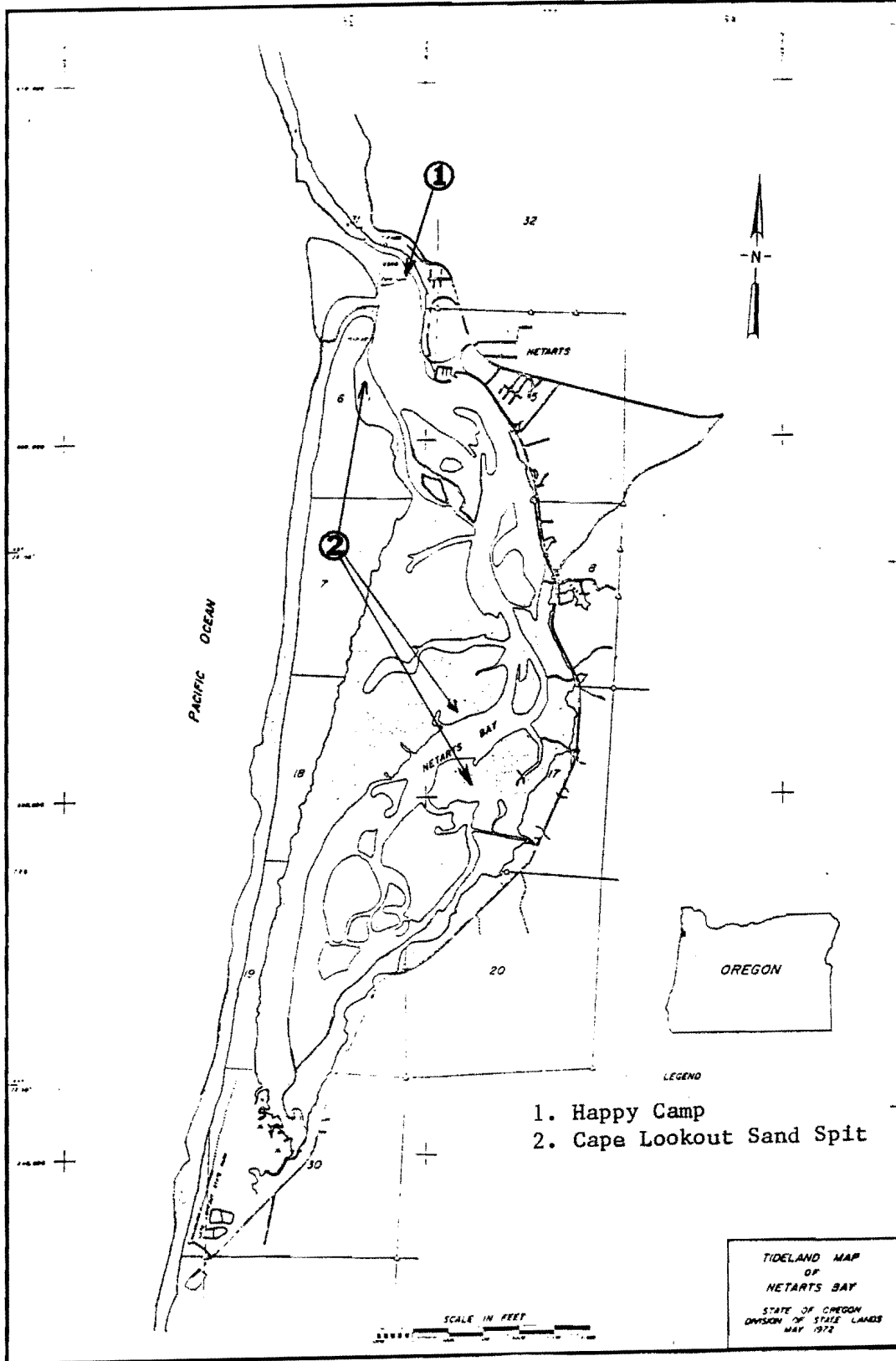


Figure 2. Location of clam beds from which diggers were interviewed in Netarts Bay.

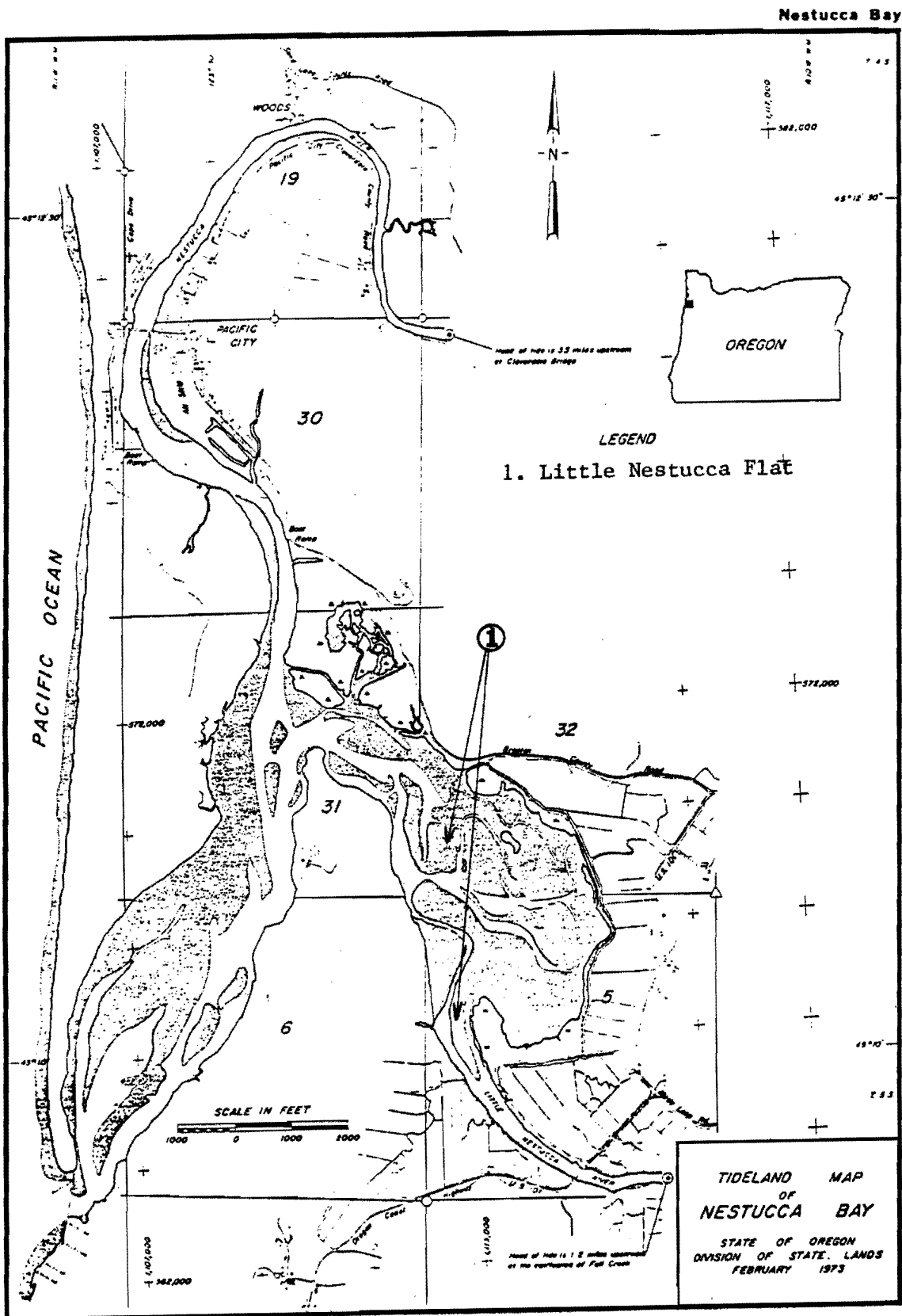


Figure 3. Location of clam bed from which diggers were interviewed in Nestucca Bay.

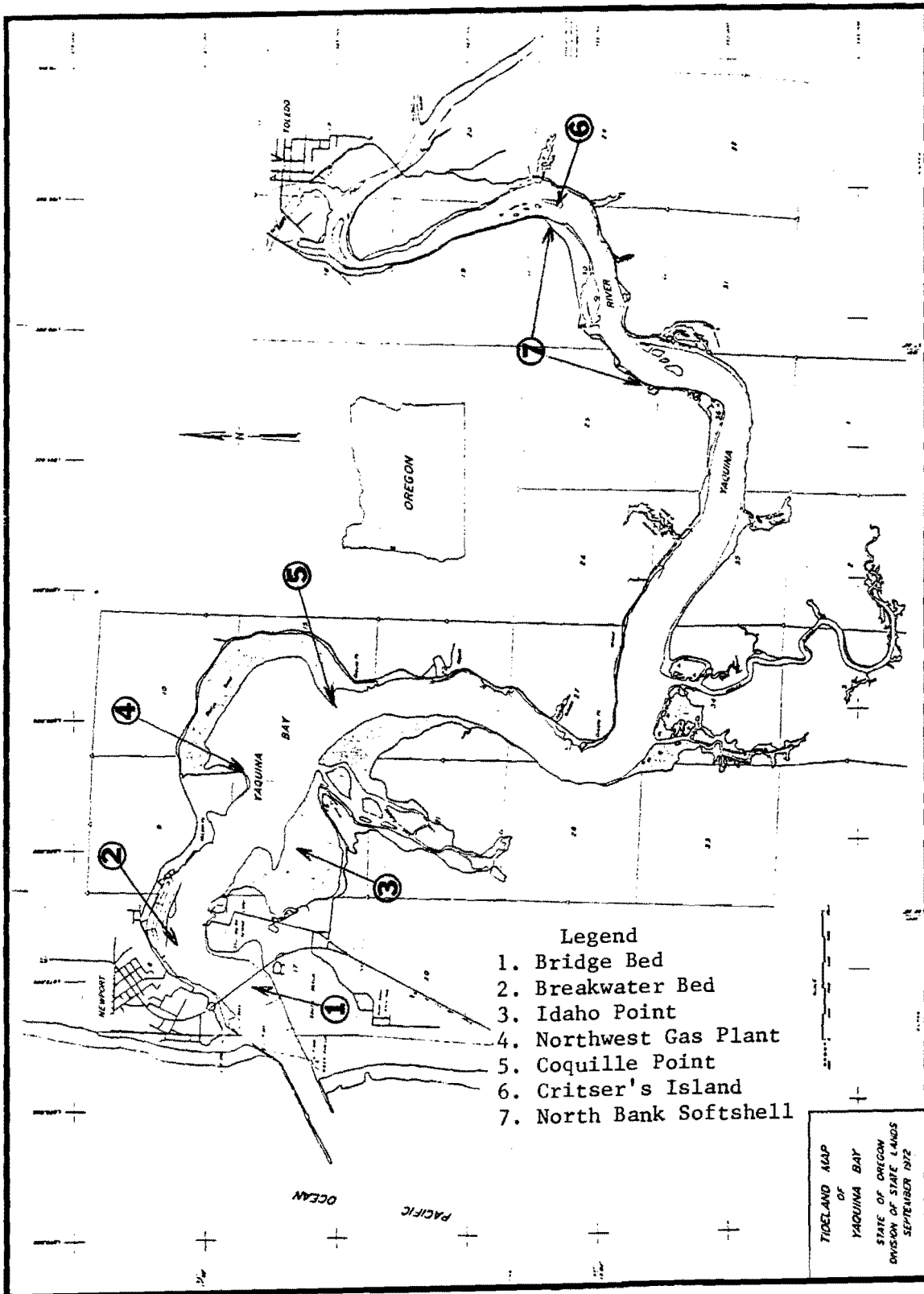


Figure 4. Location of clam beds from which diggers were interviewed in Yaquina Bay.

Alsea Bay

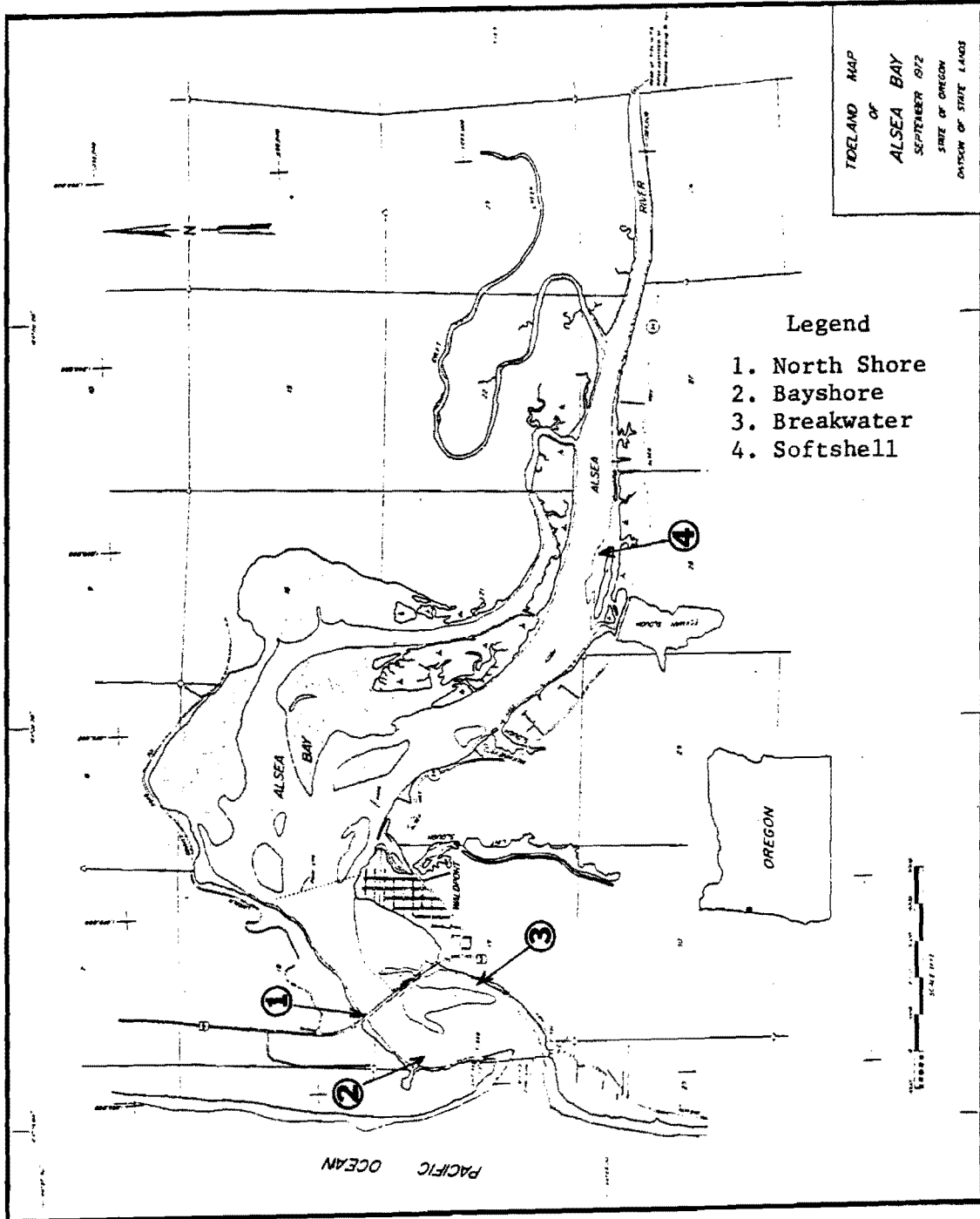


Figure 5. Location of clam beds from which diggers were interviewed in Alsea Bay.

Siuslaw River

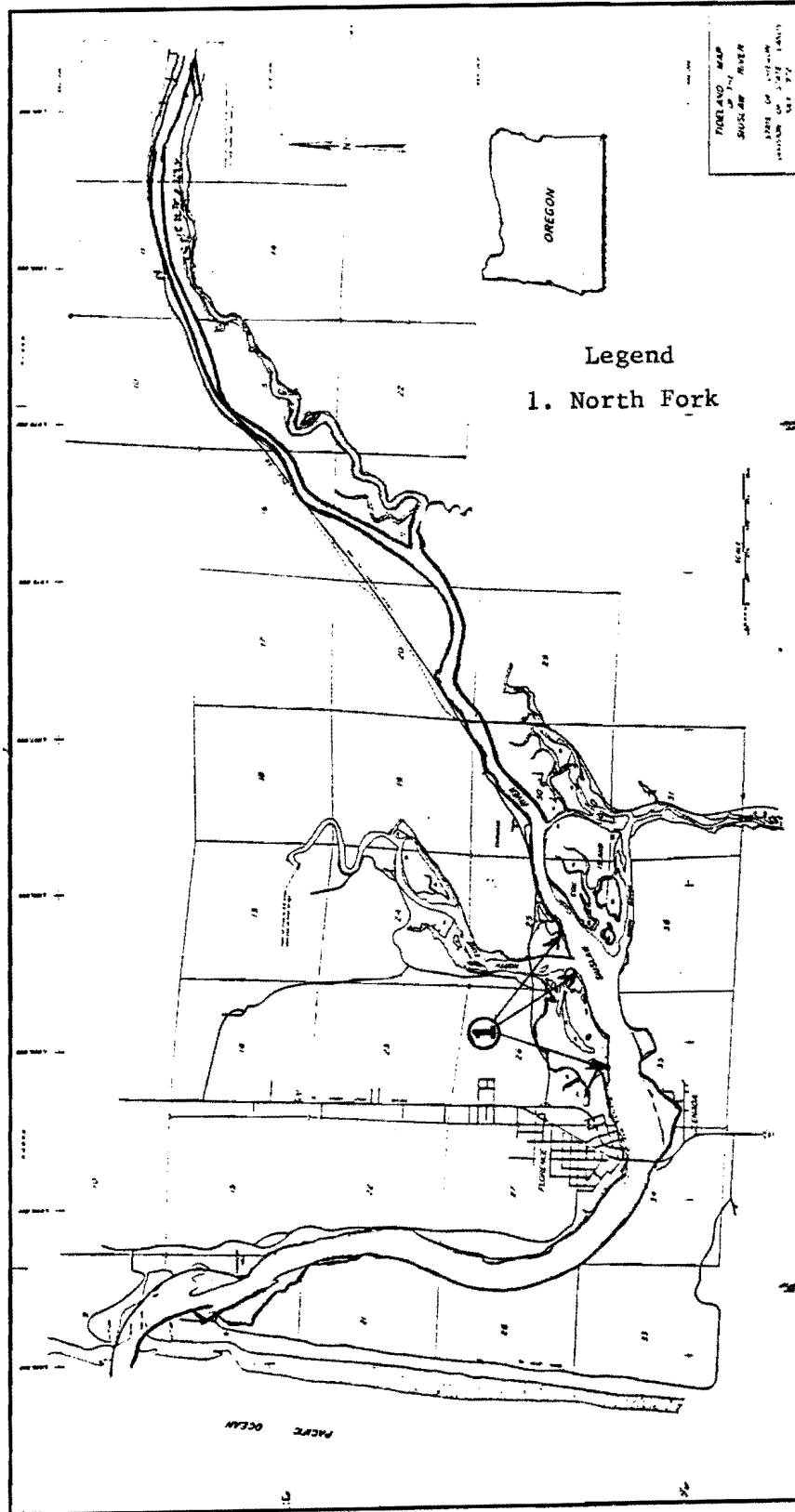


Figure 6. Location of clam bed from which diggers were interviewed in Siuslaw Bay.

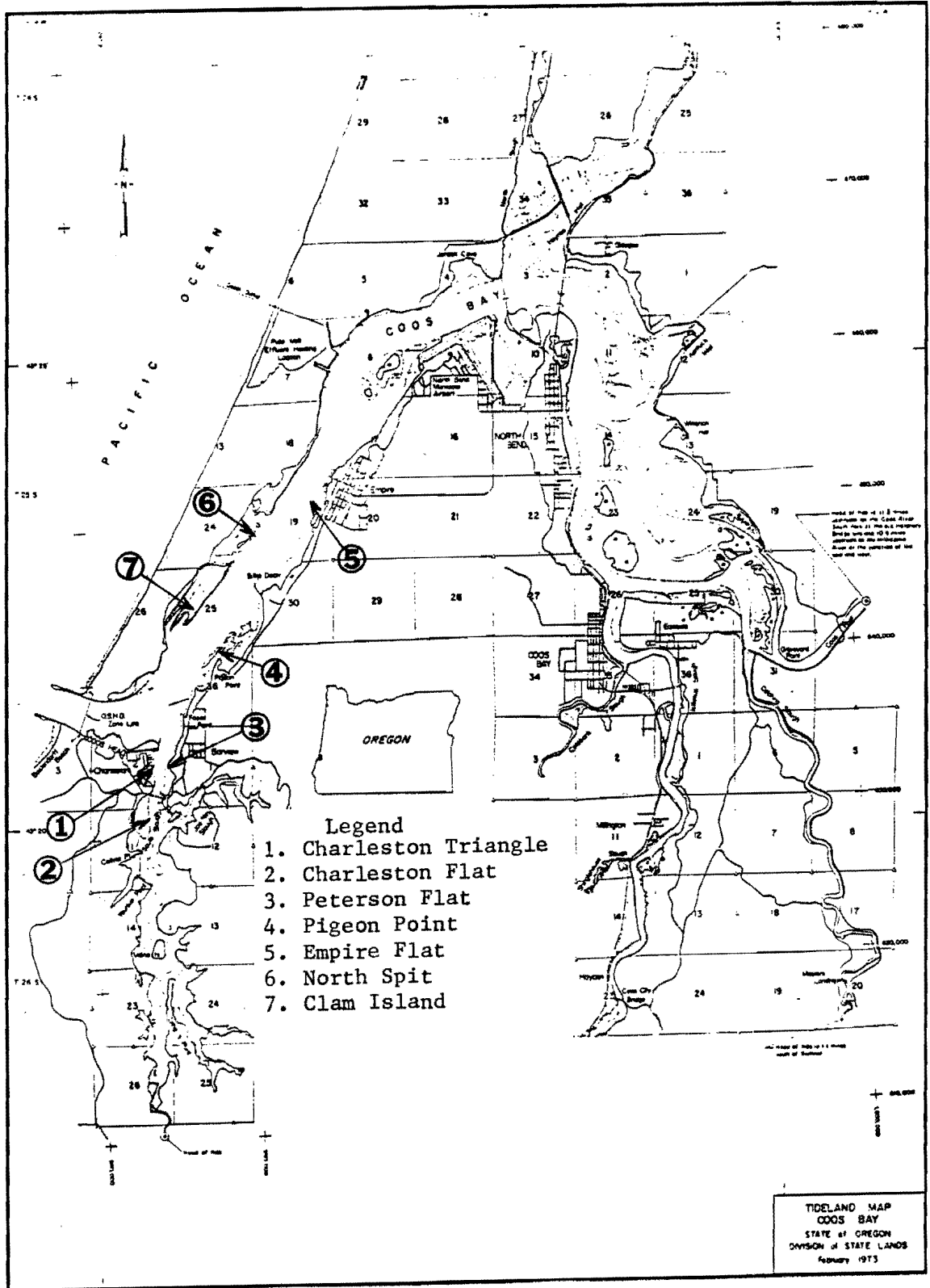


Figure 7. Location of clam beds from which diggers were interviewed in Coos Bay.

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

	1965	1971	1975	1976	1977 ¹	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	319	13,048	104	207	252	239	597	456	359	219	132	200	107	290	277	421
No. Clams Sampled	8,414	389,946	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
No. Digger Hours	-	20,439	-	283	336	261	715	549	443	220	158	243	143	311	312	452
Hours/trip	-	1.6	-	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
Clams/trip	22.9	29.9	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
Clams/hour	-	19.1	-	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
Digger Origin (%)																
Local	38.0	21.0	-	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
State	62.0	73.0	-	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
Non-state	-	-	-	-	-	-	-	-	-	4.1	15.4	2.5	5.6	3.4	8.7	7.8
Species Comp. (%)																
Butter	-	16.3	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
Cockle	-	16.8	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
Gaper	-	5.4	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
Littleneck	-	60.8	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
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/trip																
Butter	-	5.0	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
Cockle	-	4.9	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
Gaper	-	1.6	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
Littleneck	-	18.4	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
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/hour																
Butter	-	3.2	-	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
Cockle	-	3.1	-	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
Gaper	-	1.1	-	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
Littleneck	-	11.7	-	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
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
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
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
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
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured																
Butter	-	-	219	536	394	145	555	304	413	379	481	203	241	231	110	263
Cockle	-	-	290	978	1,517	637	1,501	535	254	389	407	240	267	360	88	271
Gaper	-	-	74	349	538	84	327	111	81	7	21	2	17	5	31	27
Littleneck	-	-	297	518	862	233	171	187	251	392	461	236	131	322	142	246
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

¹ Regulation change in bag limit; effective January 1, 1977.

Table 2. Annual summary of recreational interview data; Bay Ocean, Tillamook Bay.

	1971	1976	1977 ¹	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	10,379	94	170	38	79	119	34	13	11	11	17	31	2	-
No. Clams Sampled	216,728	2,242	2,664	574	1,063	1,465	314	1	63	161	314	557	-	-
No. Digger Hours	16,156	171	333	70	146	216	58	17	16	12	23	38	2	-
Hours/trip	1.6	1.8	2.0	1.9	1.8	1.8	1.7	1.3	1.6	1.1	1.4	1.2	1.0	-
Clams/trip	20.9	23.9	15.7	15.1	13.5	12.3	9.2	<0.1	5.7	14.6	18.5	18.0	-	-
Clams/hour	13.4	13.1	8.0	8.2	7.3	6.8	5.5	<0.1	3.9	13.4	13.7	14.7	-	-
Digger Origin (%)														
Local	21.0	20.2	14.7	13.2	10.1	21.8	20.6	15.4	-	18.2	11.8	25.8	100.0	-
State	73.0	74.5	79.0	76.3	89.9	73.1	70.6	84.6	72.7	81.8	88.2	64.5	-	-
Non-state	16.0	5.3	6.5	10.5	-	5.0	8.8	-	27.3	-	-	9.7	-	-
Species Comp. (%)														
Butter	<0.1	0.1	0.6	-	-	0.4	-	-	-	-	21.7	27.8	-	-
Cockle	85.0	85.8	78.5	87.2	91.4	89.6	74.2	-	95.2	100.0	45.2	49.2	-	-
Gaper	8.8	12.3	17.5	12.2	8.0	7.1	1.3	-	-	-	33.1	20.1	-	-
Littleneck	1.3	0.1	0.8	-	0.1	0.5	1.3	-	-	-	-	2.9	-	-
Softshell	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-
Clams/trip														
Butter	<0.1	<0.1	0.1	-	-	<0.1	-	-	-	-	4.0	5.0	-	-
Cockle	17.1	20.5	12.3	13.2	12.3	11.0	6.9	-	5.5	14.6	8.4	8.8	-	-
Gaper	1.8	2.9	2.7	1.8	1.1	0.9	0.1	-	-	-	6.1	3.6	-	-
Littleneck	0.3	<0.1	0.1	-	<0.1	<0.1	0.1	-	-	-	-	0.5	-	-
Softshell	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
Clams/hour														
Butter	<0.1	<0.1	<0.1	-	-	<0.1	-	-	-	-	3.0	4.1	-	-
Cockle	11.0	11.3	6.3	7.1	6.7	6.1	4.1	-	3.8	13.4	6.2	7.2	-	-
Gaper	1.1	1.6	1.4	1.0	0.6	0.5	0.1	-	-	-	4.5	2.9	-	-
Littleneck	0.2	<0.1	0.1	-	<0.1	0.1	-	-	-	-	-	0.4	-	-
Softshell	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
Size Comp. (x size)														
Butter	-	-	-	-	-	-	-	-	-	-	78.2	75.4	-	-
Cockle	-	66.0	66.1	64.0	68.4	71.2	60.6	-	67.6	69.8	68.6	71.0	-	-
Gaper	-	110.6	107.9	104.7	109.3	106.2	105.5	-	-	95.0	110.6	101.4	-	-
Littleneck	-	-	-	-	42.0	-	37.0	-	-	38.0	-	46.0	-	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured														
Butter	-	-	-	-	-	-	-	-	-	-	17	165	-	-
Cockle	-	1,075	781	318	525	277	213	-	59	77	122	182	-	-
Gaper	-	224	118	68	79	44	4	-	-	24	70	98	-	-
Littleneck	-	-	-	-	-	-	4	-	-	2	-	16	-	-
Softshell	-	-	-	-	-	-	-	1	-	-	-	-	-	-

¹ Regulation change in bag limit; effective January 1, 1977.

Table 3. Annual summary of recreational interview data; Boat Basin, Tillamook Bay.

	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	9	57	14	27	18	-
No. Clams Sampled	224	1,033	273	539	360	-
No. Digger Hours	22	78	21	57	19	-
Hours/trip	2.4	1.4	1.5	2.1	1.1	-
Clams/trip	24.9	18.1	19.5	20.0	20.0	-
Clams/hour	10.4	13.3	13.3	9.5	18.9	-
Digger Origin (%)						
Local	22.2	21.1	50.0	7.4	50.0	-
State	77.8	71.9	50.0	92.6	50.0	-
Non-state	-	7.0	-	-	-	-
Species Comp. (%)						
Butter	24.6	17.8	-	25.6	53.6	-
Cockle	34.8	28.3	98.9	73.1	40.0	-
Gaper	8.5	26.9	1.1	1.3	6.4	-
Littleneck	32.1	27.0	-	-	-	-
Softshell	-	-	-	-	-	-
Clams/trip						
Butter	6.1	3.2	-	5.1	10.7	-
Cockle	8.7	5.1	19.3	14.6	8.0	-
Gaper	2.1	4.9	0.2	0.3	1.3	-
Littleneck	8.0	4.9	-	-	-	-
Softshell	-	-	-	-	-	-
Clams/hour						
Butter	2.6	2.4	-	2.6	10.2	-
Cockle	3.6	3.8	13.2	6.9	7.6	-
Gaper	0.9	3.6	0.1	0.1	1.2	-
Littleneck	3.3	3.6	-	-	-	-
Softshell	-	-	-	-	-	-
Size Comp. (x size)						
Butter	-	75.6	-	97.2	83.0	-
Cockle	69.2	60.5	101.7	70.4	69.2	-
Gaper	98.8	98.4	105.5	-	127.0	-
Littleneck	37.8	42.1	-	-	-	-
Softshell	-	-	-	-	-	-
No. Clams Measured						
Butter	-	47	-	21	57	-
Cockle	78	59	205	39	44	-
Gaper	18	14	2	-	23	-
Littleneck	67	28	-	-	-	-
Softshell	-	-	-	-	-	-

Table 4. Annual summary of recreational interview data; Happy Camp, Netarts Bay.

	1971	1975	1976	1977 ¹	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	5,106	18	141	187	146	222	106	71	168	280	84	99	60	103	108
No. Clams Sampled	85,230	164	1,709	2,727	1,747	2,823	1,293	991	2,020	2,994	1,009	1,010	579	709	1,068
No. Digger Hours	6,613	-	193	254	149	204	68	67	151	290	84	124	92	205	209
Hours/trip	1.3	-	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
Clams/trip	16.7	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
Clams/hour	12.9	-	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
Digger Origin (%)															
Local	17.6	-	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
State	74.8	-	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
Non-state	7.6	-	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
Species Comp. (%)															
Butter	2.6	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
Cockle	1.0	-	0.1	21.9	-	-	0.1	-	<0.1	0.1	4.0	0.4	2.1	2.1	3.4
Gaper	95.7	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
Littleneck	0.8	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
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/trip															
Butter	0.4	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
Cockle	0.2	-	<0.1	3.2	-	-	<0.1	-	<0.1	<0.1	0.5	<0.1	0.2	0.1	0.3
Gaper	16.0	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
Littleneck	0.1	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
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/hour															
Butter	0.3	-	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
Cockle	0.1	-	<0.1	2.3	-	-	<0.1	-	<0.1	<0.1	0.5	<0.1	0.1	0.1	0.2
Gaper	12.3	-	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
Littleneck	0.1	-	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
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
Cockle	-	-	-	-	-	-	-	-	-	31.0	-	54.0	47.6	-	83.1
Gaper	93.2	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
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
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured															
Butter	-	66	219	-	-	-	24	109	62	6	32	20	45	26	179
Cockle	-	190	-	-	-	-	-	-	-	1	-	1	8	-	57
Gaper	282	190	643	557	921	417	468	454	565	338	240	436	405	20	322
Littleneck	-	43	99	28	54	34	3	22	9	4	29	12	28	27	69
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

¹ Regulation change in bag limit; effective January 1, 1977.

Table 5. Annual summary of recreational interview data; Cape Lookout Sand Spit, Netarts Bay.

	1971	1975	1976	1977 ¹	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	6,473	43	76	509	72	85	63	80	56	118	71	52	42	71	147
No. Clams Sampled	115,811	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
No. Digger Hours	8,656	-	148	1,055	149	178	89	150	83	197	87	85	92	151	237
Hours/trip	1.3	-	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
Clams/trip	17.9	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
Clams/hour	13.4	-	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
Digger Origin (%)															
Local	17.6	-	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
State	74.8	-	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
Non-state	7.6	-	-	10.6	-	2.3	6.3	7.5	3.6	8.5	4.2	1.9	28.6	11.3	14.3
Species Comp. (%)															
Butter	38.4	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
Cockle	44.4	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
Gaper	8.9	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
Littleneck	6.9	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
Softshell	-	-	-	-	-	-	-	-	-	-	1.8	-	-	-	-
Clams/trip															
Butter	6.9	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
Cockle	8.0	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
Gaper	1.6	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
Littleneck	1.2	0.3	1.0	0.4	0.2	0.7	-	0.3	0.5	0.5	<0.1	0.3	-	0.2	0.2
Softshell	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-
Clams/hour															
Butter	5.1	-	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
Cockle	5.9	-	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
Gaper	1.2	-	0.6	1.3	2.0	1.4	0.6	1.2	1.5	0.7	1.4	-	0.3	0.3	0.4
Littleneck	0.9	-	0.5	0.2	0.1	0.3	-	0.2	0.3	0.3	<0.1	0.2	-	0.1	0.1
Softshell	-	-	-	-	-	-	-	-	-	-	0.3	-	-	-	-
Size Comp. (x size)															
Butter	84.5	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
Cockle	65.4	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
Gaper	108.1	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
Littleneck	-	57.8	-	-	57.9	53.7	-	53.3	49.5	42.2	52.5	57.1	47.0	56.4	51.8
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured															
Butter	32	237	294	80	11	86	20	49	3	27	133	110	49	151	55
Cockle	245	257	674	851	555	812	525	486	534	238	240	542	277	223	222
Gaper	52	257	36	170	144	191	44	48	71	15	18	-	12	4	56
Littleneck	-	31	-	-	12	60	-	13	26	53	2	14	1	5	10
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

¹ Regulation change in bag limit; effective January 1, 1977.

Table 6. Annual summary of recreational interview data; Little Nestucca Flat, Nestucca Bay.

	1971	1977 ¹	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	1,466	34	16	38	23	22	22	62	23	14	2	1
No. Clams Sampled	23,211	1,049	484	1,120	357	653	623	1,386	561	431	57	26
No. Digger Hours	1,584	43	21	72	27	31	34	94	38	27	6	3
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
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
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
Digger Origin (%)												
Local	12.4	52.9	18.8	-	13.0	4.5	18.2	21.0	4.3	42.9	100.0	-
State	73.5	47.1	62.5	86.8	87.0	86.4	77.3	59.7	52.2	57.1	-	100.0
Non-state	14.1	-	18.8	13.2	-	9.1	4.6	19.4	43.5	-	-	-
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
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
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
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
No. Clams Measured												
Butter	-	-	-	-	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-	-	-	-	-
Softshell	-	250	332	254	163	547	300	240	132	116	-	26

¹ Regulation change in bag limit; effective January 1, 1977.

Table 7. Annual summary of recreational interview data; Bridge Bed, Yaquina Bay.

	1971	1975	1976	1977 ¹	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	4,518	88	29	357	89	143	142	342	149	202	191	207	120	110	102
No. Clams Sampled	41,769	694	414	2,838	892	1,313	1,222	3,773	1,609	1,543	1,383	1,765	1,363	960	814
No. Digger Hours	6,769	-	36	488	110	120	160	354	154	274	265	304	153	160	155
Hours/trip	1.5	-	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
Clams/trip	9.2	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
Clams/hour	6.2	-	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
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
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
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
Species Comp. (%) other ²	-	-	-	-	-	-	-	-	-	-	7.8	13.2	-	-	-
Butter	0.2	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
Cockle	79.4	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
Gaper	19.5	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
Littleneck	0.8	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
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/trip															
Butter	<0.1	<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
Cockle	7.3	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
Gaper	1.8	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
Littleneck	<0.1	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
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/hour															
Butter	<0.1	-	<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
Cockle	4.9	-	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
Gaper	1.2	-	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
Littleneck	-	-	-	-	-	-	-	-	-	0.2	0.2	0.4	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
Cockle	60.5	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
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
Littleneck	-	60.3	-	-	-	51.5	62.2	54.7	54.7	52.4	55.9	64.0	62.3	57.1	61.5
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured															
Butter	-	-	-	-	-	-	14	20	5	35	12	23	22	29	15
Cockle	-	276	205	592	202	51	6	536	86	138	41	67	57	7	79
Gaper	-	316	62	593	154	279	419	1,370	308	406	200	266	362	135	217
Littleneck	-	12	-	-	-	2	19	55	9	34	24	49	18	26	31
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

¹ Regulation change in bag limit; effective January 1, 1977.

² Bentnose 7.0%, Inquinata 0.2%, other 0.6%.

Table 8. Annual summary of recreational interview data; Breakwater Bed, Yaquina Bay.

	1971	1975	1977 ¹	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	1,455	46	48	20	10	21	16	14	17	63	39	31	65	19
No. Clams Sampled	22,175	515	511	270	142	261	166	157	190	654	489	303	125	217
No. Digger Hours	2,179	-	69	22	20	44	27	21	24	103	51	34	105	24
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
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
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
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
State	-	-	64.6	45.0	-	71.4	50.0	28.6	47.1	66.7	33.3	67.7	41.5	47.4
Non-state	-	-	-	-	-	-	31.3	-	-	3.2	5.1	-	3.1	-
Species Comp. (%) other ²	-	-	-	-	-	-	-	-	-	15.9	2.9	-	-	-
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
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
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
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
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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
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
Gaper	12.7	10.6	-	-	-	10.1	7.8	10.6	9.6	7.4	11.0	8.1	10.4	8.0
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	-
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
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
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
Littleneck	<0.1	-	0.1	0.1	-	0.1	0.1	<0.1	<0.1	0.2	0.2	0.5	0.4	-
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
Cockle	75.6	-	72.5	76.1	-	-	62.6	-	81.6	70.1	69.6	67.2	65.5	66.6
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
Littleneck	-	-	-	-	-	64.0	-	-	51.0	52.0	55.6	56.6	59.9	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured														
Butter	-	-	-	-	-	16	-	4	1	36	14	22	20	21
Cockle	-	-	-	79	37	-	27	3	12	32	16	11	129	9
Gaper	-	310	198	207	-	195	69	142	109	200	265	176	162	133
Littleneck	-	-	-	-	-	3	-	1	1	20	8	18	33	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-

¹ Regulation change in bag limit; effective January 1, 1977.

² Bentnose Clam.

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

	1971	1975	1976	1977 ¹	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	10,462	123	42	309	20	193	182	147	80	138	52	26	47	47	20
No. Clams Sampled	138,784	2,600	812	3,773	298	2,783	3,118	2,339	1,219	2,171	890	403	849	741	435
No. Digger Hours	15,621	-	77	464	25	248	302	222	145	219	83	42	77	52	29
Hours/trip	1.5	-	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
Clams/trip	13.3	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
Clams/hour	8.9	-	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
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	-
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
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
Species Comp. (%) other ²	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-
Butter	.03	<0.1	0.5	0.5	-	1.7	-	0.1	-	0.4	0.6	-	-	-	-
Cockle	77.7	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
Gaper	21.7	5.8	18.4	13.1	15.1	20.7	12.8	4.1	2.9	2.8	1.6	-	5.4	0.1	-
Littleneck	0.4	<0.1	0.1	0.2	-	0.1	-	0.5	0.9	0.7	0.3	1.0	0.7	0.5	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/trip															
Butter	<0.1	<0.1	0.1	0.1	-	0.2	-	-	-	0.1	0.1	-	-	-	-
Cockle	10.3	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
Gaper	2.9	1.2	3.6	1.6	2.3	3.0	2.2	0.6	0.4	0.4	0.3	-	1.0	-	-
Littleneck	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	0.1	0.1	0.2	0.1	0.1	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/hour															
Butter	0.1	-	0.1	0.1	-	0.2	-	-	-	<0.1	0.1	-	10.4	-	-
Cockle	6.9	-	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
Gaper	1.9	-	2.0	1.1	1.8	2.3	9.0	0.1	0.2	0.3	0.2	-	0.1	-	-
Littleneck	<0.1	-	<0.1	<0.1	-	<0.1	-	-	0.1	0.1	<0.1	0.1	-	0.1	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Size Comp. (x size)															
Butter	-	-	-	-	-	75.1	-	87.3	-	-	85.8	-	-	-	-
Cockle	61.0	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
Gaper	113.0	96.6	91.3	93.5	95.2	95.9	94.5	91.7	83.3	89.1	-	-	94.2	-	-
Littleneck	-	-	-	-	-	55.3	-	50.1	42.7	42.6	44.0	42.8	42.0	41.3	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured															
Butter	-	-	-	-	-	-	-	4	-	-	5	-	-	-	-
Cockle	-	-	-	-	-	45	1,620	1,302	-	540	240	377	477	142	227
Gaper	-	369	522	1,804	250	1,471	181	75	-	40	-	-	5	-	-
Littleneck	-	171	126	173	42	24	-	9	-	5	4	4	2	3	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

¹ Regulation change in bag limit; effective January 1, 1977.

² Bentnose clam.

Table 10. Annual summary of recreational interview data; Northwest Gas Plant, Yaquina Bay.

	1971	1975	1976	1977 ¹	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	5,857	92	93	315	49	137	63	38	29	23	9	26	57	66	6
No. Clams Sampled	119,702	13,541	583	3,852	684	1,073	495	151	128	219	136	319	1,125	1,107	86
No. Digger Hours	8,725	-	139	402	67	165	84	54	33	25	13	33	71	75	9
Hours/trip	1.5	-	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
Clams/trip	20.4	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
Clams/hour	13.7	-	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
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
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
Non-state	-	-	4.3	5.4	2.0	16.8	1.5	5.3	-	-	22.2	-	14.0	15.2	-
Species Comp. (%) other ²	-	-	-	-	-	-	-	-	-	1.8	2.2	4.7	-	-	-
Butter	0.6	1.9	0.1	1.1	0.1	0.2	0.6	2.0	-	0.5	-	-	-	-	-
Cockle	85.1	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
Gaper	12.7	29.8	22.0	13.8	16.8	11.9	19.6	34.4	7.0	-	-	0.3	-	-	-
Littleneck	0.7	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
Softshell	-	-	-	-	-	-	-	47.0	-	-	-	-	-	-	-
Clams/trip															
Butter	0.1	0.3	<0.1	0.1	<0.1	<0.1	0.1	0.1	-	<0.1	-	-	-	-	-
Cockle	17.4	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
Gaper	2.6	4.4	3.7	1.7	2.3	0.9	1.5	1.4	0.3	-	-	-	-	-	-
Littleneck	0.1	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
Softshell	-	-	-	-	-	-	-	1.9	-	-	-	-	-	-	-
Clams/hour															
Butter	<0.1	-	<0.1	0.1	<0.1	<0.1	<0.1	0.1	-	<0.1	-	-	-	-	-
Cockle	11.7	-	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
Gaper	1.7	-	2.5	1.3	1.7	0.8	1.2	1.0	0.3	-	-	-	-	-	-
Littleneck	<0.1	-	<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
Softshell	-	-	-	-	-	-	-	1.3	-	-	-	-	-	-	-
Size Comp. (x size)															
Butter	-	-	-	-	-	-	99.0	80.0	-	97.0	-	-	-	-	-
Cockle	66.3	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
Gaper	95.3	91.3	91.5	92.8	101.1	94.9	96.0	88.8	87.3	96.5	-	33.0	-	-	-
Littleneck	-	-	-	-	-	-	47.4	48.0	45.5	45.8	-	48.6	51.3	43.6	47.0
Softshell	-	-	-	-	-	-	-	57.5	-	-	-	-	-	-	-
No. Clams Measured															
Butter	-	-	-	-	-	-	1	1	-	1	-	-	-	-	-
Cockle	-	219	648	889	525	606	349	18	60	177	122	293	408	431	60
Gaper	-	451	217	152	106	96	61	46	7	8	-	1	-	-	-
Littleneck	-	-	-	-	-	5	5	2	-	30	-	9	15	23	1
Softshell	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-

¹ Regulation change in bag limit; effective January 1, 1977.

² Bentnose clam.

Table 11. Annual summary of recreational interview data; Coquille Point, Yaquina Bay.

	1981	1982	1983	1984	1985	1986	1987	1988
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 12. Annual summary of recreational interview data; Critser's Island, Yaquina Bay.

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

Table 13. Annual summary of recreational interview data; North Bank Softshell, Yaquina Bay.

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

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

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

Table 15. Annual summary of recreational interview data; Bayshore, Alsea Bay.

	1982	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	32	24	17	35	9	20	21
No. Clams Sampled	529	316	156	478	138	314	310
No. Digger Hours	46	40	29	61	18	27	35
Hours/trip	1.4	1.7	1.7	1.7	2.0	1.4	1.6
Clams/trip	16.5	13.2	9.2	13.7	15.3	15.7	14.8
Clams/hour	11.5	8.0	5.5	7.9	7.7	11.6	9.0
Digger Origin (%)							
Local	59.4	66.7	41.2	48.6	66.7	35.0	33.3
State	25.0	25.0	58.8	45.7	33.3	50.0	52.4
Non-state	15.6	8.3	-	5.7	-	15.0	14.3
Species Comp. (%)							
Butter	-	-	-	-	-	-	-
Cockle	99.8	99.7	98.7	88.9	94.2	90.4	76.5
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
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
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
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
Gaper	-	-	2	10	6	24	49
Littleneck	-	-	-	2	1	3	10
Softshell	-	-	-	-	-	-	-

Table 16. Annual summary of recreational interview data; Breakwater, Alsea Bay.

	1986	1987	1988
No. Diggers Sampled	23	14	31
No. Clams Sampled	122	144	417
No. Digger Hours	25	24	42
Hours/trip	1.1	1.7	1.3
Clams/trip	5.3	10.3	13.5
Clams/hour	5.0	6.0	10.0
Digger Origin (%)			
Local	47.8	28.6	41.9
State	52.2	50.0	45.2
Non-state	-	21.4	12.9
Species Comp. (%)			
Butter	-	-	0.2
Cockle	89.3	81.9	98.1
Gaper	-	13.9	0.2
Littleneck	10.7	4.2	1.2
Softshell	-	-	-
Clams/trip			
Butter	-	-	-
Cockle	4.7	8.4	13.2
Gaper	-	1.4	-
Littleneck	0.6	0.4	0.2
Softshell	-	-	-
Clams/hour			
Butter	-	-	-
Cockle	4.4	4.9	9.9
Gaper	-	0.8	-
Littleneck	0.5	0.2	0.1
Softshell	-	-	-
Size Comp. (x size)			
Butter	47.0	-	36.0
Cockle	64.1	45.4	59.0
Gaper	-	120.8	69.0
Littleneck	45.1	45.8	36.2
Softshell	-	-	-
No. Clams Measured			
Butter	1	-	1
Cockle	83	138	262
Gaper	-	15	1
Littleneck	8	6	5
Softshell	-	-	-

Table 17. Annual summary of recreational interview data; Softshell, Alsea Bay.

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

Table 18. Annual summary of recreational interview data; North Fork², Siuslaw Bay.

	1971	1976	1977 ¹	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	3,203	39	51	21	42	7	115	21	33	168	70	47	42	41
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
No. Digger Hours	4,844	54	101	32	55	5	145	28	32	231	104	65	67	64
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
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
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
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
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
Non-state	-	2.6	4.4	-	33.3	-	13.0	-	9.1	5.4	12.9	4.3	-	-
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	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
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
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
No. Clams Measured														
Butter	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Softshell	-	741	408	335	676	110	1,629	757	867	297	670	670	585	294

¹ Regulation change in bag limit; effective January 1, 1977.

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

Table 19. Annual summary of recreational interview data; Bolin Island, Umpqua Bay.

	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	2	23	-	-	-	-
No. Clams Sampled	72	930	-	-	-	-
No. Digger Hours	4	69	-	-	-	-
Hours/trip	2.0	3.0	-	-	-	-
Clams/trip	36.0	40.4	-	-	-	-
Clams/hour	18.0	13.6	-	-	-	-
Digger Origin (%)						
Local	-	30.4	-	-	-	-
State	100.0	56.5	-	-	-	-
Non-state	-	13.0	-	-	-	-
Species Comp. (%)						
Butter	-	-	-	-	-	-
Cockle	-	-	-	-	-	-
Gaper	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-
Softshell	100.0	100.0	-	-	-	-
Clams/trip						
Butter	-	-	-	-	-	-
Cockle	-	-	-	-	-	-
Gaper	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-
Softshell	36.0	40.4	-	-	-	-
Clams/hour						
Butter	-	-	-	-	-	-
Cockle	-	-	-	-	-	-
Gaper	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-
Softshell	18.0	13.6	-	-	-	-
Size Comp. (x size)						
Butter	-	-	-	-	-	-
Cockle	-	-	-	-	-	-
Gaper	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-
Softshell	-	-	-	-	-	-
No. Clams Measured						
Butter	-	-	-	-	-	-
Cockle	-	-	-	-	-	-
Gaper	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-
Softshell	-	-	-	-	-	-

Table 20. Annual summary of recreational interview data; Charleston Triangle, Coos Bay.

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

Table 21. Annual summary of recreational interview data; Charleston Flat, Coos Bay.

	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	60	27	18	100	113	97
No. Clams Sampled	859	435	341	1,980	2,145	1,523
No. Digger Hours	125	29	32	180	185	176
Hours/trip	2.1	1.1	1.8	1.8	1.6	1.8
Clams/trip	14.3	16.1	18.9	19.8	19.0	15.7
Clams/hour	6.9	15.1	10.7	11.0	11.6	8.7
Digger Origin (%)						
Local	21.7	40.7	16.7	35.0	28.3	20.6
State	73.3	51.9	38.9	57.0	48.7	66.0
Non-state	5.0	7.4	44.4	8.0	23.0	13.4
Species Comp. (%)						
Butter	2.0	4.6	6.7	2.8	2.7	10.2
Cockle	46.6	60.9	72.4	83.3	63.9	35.4
Gaper	38.8	27.6	17.3	8.8	26.2	42.5
Littleneck	10.6	3.7	3.5	4.1	4.7	10.8
Softshell	-	3.0	-	0.1	-	0.4
Clams/trip						
Butter	0.3	0.7	1.3	0.6	0.5	1.6
Cockle	6.7	9.8	13.7	16.5	12.1	5.6
Gaper	5.6	4.4	3.3	1.8	5.0	6.7
Littleneck	1.5	0.6	0.7	0.8	0.9	1.7
Softshell	-	0.5	-	<0.1	-	0.1
Clams/hour						
Butter	0.1	0.7	0.7	0.3	0.3	0.9
Cockle	3.2	9.2	7.7	9.2	7.4	3.1
Gaper	2.7	4.6	1.8	1.0	3.0	3.7
Littleneck	0.7	0.6	0.4	0.5	0.5	0.9
Softshell	-	-	-	<0.1	-	-
Size Comp. (x size)						
Butter	84.0	78.1	75.0	78.9	81.3	78.3
Cockle	59.9	63.2	62.2	66.9	65.6	62.3
Gaper	100.6	105.9	110.1	109.1	109.0	106.9
Littleneck	55.0	65.0	62.2	60.5	58.4	65.8
Softshell	-	-	-	-	-	-
No. Clams Measured						
Butter	1	13	20	43	44	86
Cockle	38	92	247	234	128	193
Gaper	13	80	58	70	188	271
Littleneck	3	2	13	30	86	96
Softshell	-	-	-	-	-	-

Table 22. Annual summary of recreational interview data; Peterson Flat, Coos Bay.

	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	12	4	-	19	10	2
No. Clams Sampled	235	54	-	284	191	38
No. Digger Hours	24	5	-	41	15	2
Hours/trip	2.0	1.3	-	2.2	1.5	1.0
Clams/trip	19.6	13.5	-	14.9	19.1	19.0
Clams/hour	10.0	10.8	-	6.9	12.7	19.0
Digger Origin (%)						
Local	25.0	0	-	42.1	60.0	100.0
State	75.0	50.0	-	0.0	40.0	-
Non-state	-	50.0	-	57.9	-	-
Species Comp. (%)other ¹	-	7.4	-	-	-	-
Butter	8.1	-	-	3.5	2.1	-
Cockle	21.7	1.9	-	34.5	19.9	36.8
Gaper	45.1	88.9	-	60.2	68.1	63.2
Littleneck	25.1	1.9	-	1.4	9.9	-
Softshell	-	-	-	-	-	-
Clams/trip other ¹	-	1.0	-	-	-	-
Butter	1.6	-	-	0.5	0.4	-
Cockle	4.3	0.3	-	5.2	3.8	7.0
Gaper	8.8	12.0	-	9.0	13.0	12.0
Littleneck	4.9	0.3	-	0.2	1.9	-
Softshell	-	-	-	-	-	-
Clams/hour other ¹	-	0.8	-	-	-	-
Butter	0.8	-	-	0.2	0.3	-
Cockle	2.2	0.2	-	2.4	2.5	7.0
Gaper	4.5	9.6	-	4.2	8.7	12.0
Littleneck	2.5	0.2	-	0.1	1.3	-
Softshell	-	-	-	-	-	-
Size Comp. (x size)						
Butter	-	-	-	95.0	66.8	-
Cockle	-	-	-	64.9	66.8	-
Gaper	-	113.7	-	110.6	95.1	-
Littleneck	-	-	-	62.0	45.5	-
Softshell	-	-	-	-	-	-
No. Clams Measured						
Butter	-	-	-	2	4	-
Cockle	-	-	-	43	38	-
Gaper	-	23	-	23	81	-
Littleneck	-	-	-	1	19	-
Softshell	-	-	-	-	-	-

¹ Bentnose clam.

Table 23. Annual summary of recreational interview data; Pigeon Point, Coos Bay.

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

Table 24. Annual summary of Recreational interview data; Empire Flat, Coos Bay.

	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	70	9	-	5	16	-
No. Clams Sampled	1,057	180	-	82	222	-
No. Digger Hours	99	9	-	9	32	-
Hours/trip	1.4	1.0	-	1.7	2.0	-
Clams/trip	15.1	20.0	-	16.4	13.9	-
Clams/hour	10.7	20.0	-	9.6	7.0	-
Digger Origin (%)						
Local	54.3	100.0	-	100.0	18.8	-
State	34.3	-	-	-	81.2	-
Non-state	11.4	-	-	-	-	-
Species Comp. (%)						
Butter	1.4	-	-	1.2	-	-
Cockle	11.2	13.3	-	68.3	19.4	-
Gaper	58.8	33.3	-	28.0	72.1	-
Littleneck	0.3	53.3	-	1.2	3.6	-
Softshell	-	-	-	-	0.5	-
Clams/trip						
Butter	0.2	-	-	0.2	-	-
Cockle	1.7	2.7	-	11.2	2.7	-
Gaper	8.9	6.7	-	4.6	10.0	-
Littleneck	<0.1	10.7	-	0.2	0.5	-
Softshell	-	-	-	-	0.1	-
Clams/hour						
Butter	0.2	-	-	0.1	-	-
Cockle	1.2	2.7	-	6.6	1.4	-
Gaper	6.3	6.7	-	2.7	5.1	-
Littleneck	<0.1	10.7	-	0.1	0.3	-
Softshell	-	-	-	-	-	-
Size Comp. (x size)						
Butter	-	-	-	-	-	-
Cockle	-	-	-	67.0	-	-
Gaper	-	-	-	95.7	-	-
Littleneck	-	-	-	-	-	-
Softshell	-	-	-	-	-	-
No. Clams Measured						
Butter	-	-	-	-	-	-
Cockle	-	-	-	21	-	-
Gaper	-	-	-	12	-	-
Littleneck	-	-	-	-	-	-
Softshell	-	-	-	-	-	-

Table 25. Annual summary of recreational interview data; North Spit, Coos Bay.

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

Table 26. Annual summary of recreational interview data; Clam Island, Coos Bay.

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

Table 27. Annual summary of recreational interview data; Bandon Softshell, Coquille Bay.

	1983	1984	1985	1986	1987	1988
No. Diggers Sampled	6	1	-	21	8	-
No. Clams Sampled	215	36	-	635	68	-
No. Digger Hours	5	2	-	35	16	-
Hours/trip	0.8	1.5	-	1.7	2.0	-
Clams/trip	35.8	36.0	-	30.2	8.5	-
Clams/hour	43.0	24.0	-	18.1	4.2	-
Digger Origin (%)						
Local	100.0	-	-	52.4	-	-
State	-	-	-	28.6	-	-
Non-state	-	100.0	-	19.0	100.0	-
Species Comp. (%)						
Butter	-	-	-	-	-	-
Cockle	-	-	-	-	-	-
Gaper	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-
Softshell	100.0	100.0	-	100.0	100.0	-
Clams/trip						
Butter	-	-	-	-	-	-
Cockle	-	-	-	-	-	-
Gaper	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-
Softshell	35.8	36.0	-	30.2	8.5	-
Clams/hour						
Butter	-	-	-	-	-	-
Cockle	-	-	-	-	-	-
Gaper	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-
Softshell	43.0	24.0	-	18.1	4.2	-
Size Comp. (x size) ¹						
Butter	-	-	-	-	-	-
Cockle	-	-	-	-	-	-
Gaper	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-
Softshell	-	-	-	-	79.7	-
No. Clams Measured ¹						
Butter	-	-	-	-	-	-
Cockle	-	-	-	-	-	-
Gaper	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-
Softshell	-	-	-	-	68	-

¹ Not taken.

Table 28. Annual summary of recreational interview data; all estuaries combined.

	1975	1976	1977 ¹	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

Table 29. Peak counts of clam diggers¹.

Estuary	Tideflat	1975	1976	1977 ¹	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Tillamook	Garibaldi Flat	425	350	131	225	256	300	460	516	487	350	118	380	400	257
	Bay Ocean	-	280	122	39	107	-	33	13	10	4	-	17	3	-
Netarts	Happy Camp	-	175	73	-	150	160	425	500	478	200	191	314	265	116
Nestucca	Little Nestucca	-	-	-	-	-	-	44	6	12	6	8	8	-	-
Yaquina	Bridge Bed	-	245	138	30	91	84	225	625	275	84	107	204	225	110
	Breakwater Bed	-	127	120	62	23	20	27	63	26	28	25	30	46	17
	Idaho Point	-	110	98	45	66	61	38	176	46	35	31	50	56	39
	NW Gas Plant	-	-	-	-	24	26	41	16	12	10	11	34	20	10
	Coquille Point	-	-	-	-	17	18	45	41	20	5	9	14	7	4
Alsea	North Beach	-	-	-	-	-	-	-	4	3	-	5	0	13	18
	Bay Shore	-	-	-	-	-	-	-	49	31	14	20	10	15	44
	Waldport Breakwater	-	-	-	-	-	-	-	12	9	-	22	22	4	45
Siuslaw	North Fork	-	55	-	-	109	57	146	33	22	43	41	44	56	45
Coos Bay	Charleston Triangle	-	-	-	-	-	-	-	-	31	24	41	39	87	82
	Charleston Flat	-	-	-	-	-	-	-	-	64	30	26	27	66	103
	Peterson Flat	-	-	-	-	-	-	-	-	5	-	2	15	14	4
	Fossil Point	-	-	-	-	-	-	-	-	38	-	0	44	-	-
	Pigeon Point	-	-	-	-	-	-	-	-	62	50	42	67	97	52
	Empire Flat	-	-	-	-	-	-	-	-	20	-	19	22	44	12
	Hanson's Marina	-	-	-	-	-	-	-	-	5	3	4	-	-	-
	Clam Island	-	-	-	-	-	-	-	-	-	58	-	86	119	93
North Spit	-	-	-	-	-	-	-	-	-	-	-	83	158	102	
Bandon	Softshell Bed	-	-	-	-	-	-	-	-	-	-	-	50	-	-

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

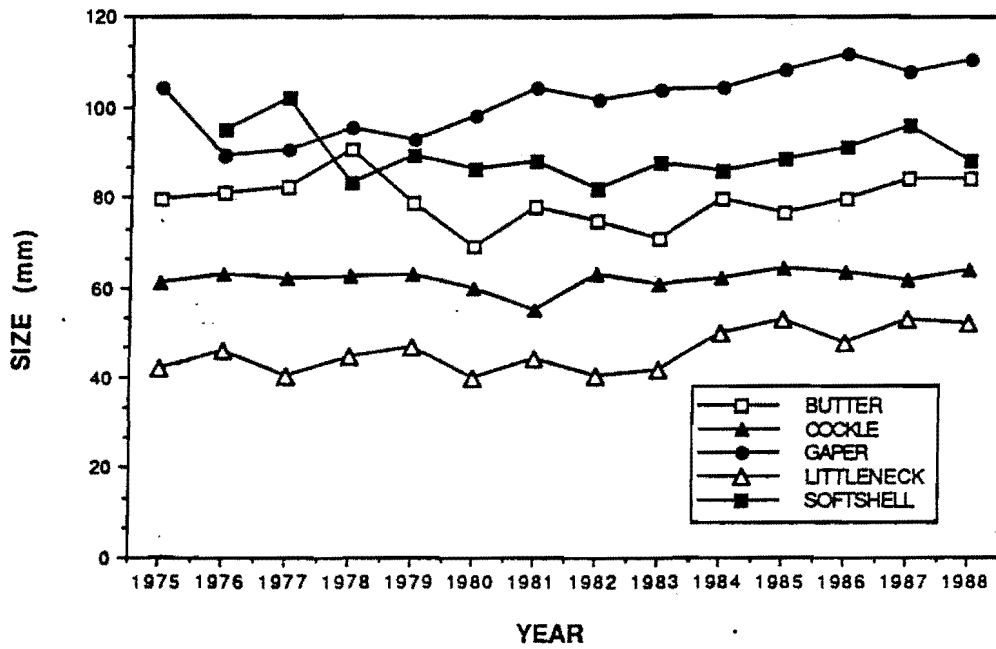


Figure 8. Length composition of recreationally harvested bay clams, all bays combined, 1975-88.

Table 30. Summary of pounds of bay clams reported commercially harvested in Oregon by species, 1970-88.

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

Table 31. Summary of pounds of bay clams reported commercially harvested in major Oregon estuaries, 1970-88.

Year	Nehalem	Tillamook	Netarts	Yaquina	Alsea	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

Table 32. Summary of experimental Manila littleneck clam plants in Tillamook Bay, 1971-88.

Plot No.	Planting Date	Number Released	Size at Release (mm)	Planting Density (ft ²)	Sample Date	Recovery Size (mm)	Survival (%)
1	9/18/71	20,000 ¹	6.3	50	5/16/72	-	0.0
2	3/4/83	2,000,000 ¹	-	800	2/21/84 7/15/84 8/02/85	14.1 17.5 30.2	0.4 0.3 0.1
3	4/16/83	1,000	41.1	5.2	7/15/84	41.8	19.2
4	6/16/83	10,000	-	22.2	9/08/83 7/15/84 8/02/85	31.0 34.0 37.6	18.9 11.7 0.6
5	6/30/83	10,000 ¹	-	44.0	9/08/83 7/15/84	13.6 21.0	0.7 0.5
6	3/14/84	1,150	-	6.3	7/15/84 8/02/85	40.6 -	44.4 0.0
7	3/14/84	700	-	10.6	7/15/84 8/02/85 5/28/86	39.1 45.0 -	17.0 1.9 0.0
8	3/14/84	4,000 ¹	-	79.6	7/15/84	-	0.0
9	5/07/84	2,400	-	10.0	7/15/84 8/02/85 5/28/86 6/16/87 7/14/88	36.6 42.2 47.8 49.6 51.8	100+ 100+ 37.5 39.0 23.8
10	7/15/84	1,000	36.5	10.2	8/02/85	-	0.0
11	7/31/84	300	-	6.3	8/02/85 5/28/86 6/16/87 7/14/88	49.8 49.3 49.2 56.0	47.6 71.4 43.7 11.9
12	11/21/84	3,400	31.0	10.0	8/02/85 5/28/86 6/16/87	35.3 38.1 -	20.0 2.0 0.0
13	11/21/84	3,400	31.0	10.0	8/02/85 5/28/86 6/16/87 7/14/88	34.5 40.0 46.6 -	34.0 20.0 16.0 0.0

Table 32 (continued)

Plot No.	Planting Date	Number Released	Size at Release (mm)	Planting Density (ft ²)	Sample Date	Recovery Size (mm)	Survival (%)
14	11/21/84	13,500	31.0	10.0	8/02/85	35.8	56.0
					5/28/86	40.2	32.0
					6/16/87	44.3	20.0
					7/14/88	44.0	10.0
15	4/09/85	10,200	37.0	10.0	8/02/85	44.2	82.0
					5/28/86	45.8	78.0
					6/16/87	48.8	90.0
					7/14/88	50.3	15.0
16	4/09/85	12,700	37.0	10.0	8/02/85	40.0	96.0
					5/28/86	44.8	97.0
					6/16/87	47.9	84.0
					7/14/88	53.5	42.5
17	4/09/85	7,700	37.0	10.0	8/02/85	44.2	54.0
					5/28/86	42.9	83.0
					6/16/87	49.5	52.0
18	4/25/85	100,000 ^{1,2}	-	100.0	7/25/86	25.0	14.8
					6/16/87	30.4	15.0
					7/14/88	36.0	5.5
19	4/25/85	10,000 ¹	-	100.0	7/25/86	24.3	1.0
					6/16/87	30.4	0.3
					7/14/88	-	0.0

¹ Hatchery produced clams, planted as set.

² Clams placed under "Vexar" netting.

Table 33. Summary of experimental Manila littleneck clam plants in Yaquina Bay, 1970-88.

Plot No.	Subplot No.	Planting Date	Number Released	Size at Release (mm)	Planting Density (ft ²)	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	

Table 33 (continued)

Plot No.	Subplot No.	Planting Date	Number Released	Size at Release (mm)	Planting Density (ft ²)	Sample Date	Recovery Size (mm)	Survival (%)
	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
	2	7/27/72	1,800	6.7	50	9/5/72	9.8	83.0
						4/23/73	14.6	12.8
						4/10/74	-	0.0
	3	7/27/72	1,800	6.7	50	9/5/72	8.5	29.0
						4/23/73	14.6	26.3
						4/10/74	-	0.0
5	1	10/20/72	2,500	6.2	50	4/19/73	-	0.0
6	1	4/24/81	730 ¹	34.5	20.3	9/17/81	-	0.0
7	1	12/5/84	8,700 ¹	31.0	10	3/15/85	31.2	2.5
8	1	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 ²	18.1	86	7/24/86	35.3	49.4
						4/17/87	41.2	72.0
						7/13/88	46.7	54.7
10	1	7/24/86	2,500	6.7	100	4/17/87	15.8	0.4
						7/13/88	-	0.0
	2	7/24/86	2,500 ²	6.7	100	4/17/87	22.3	0.4
						7/13/88	-	0.0
	3	7/24/86	2,500	6.7	100	4/17/87	-	0.0
						7/13/88	-	0.0
	4	7/24/86	2,500 ²	6.7	100	4/17/87	18.3	6.8
						7/13/88	-	0.0

Table 33 (continued)

Plot No.	Subplot No.	Planting Date	Number Released	Size at Release (mm)	Planting Density (ft ²)	Sample Date	Recovery Size (mm)	Survival (%)
	5	7/24/86	2,500	6.7	100	4/17/87	18.9	1.2
						7/13/88	-	0.0
	6	7/24/86	2,500 ²	6.7	100	4/17/87	-	0.0
						7/13/88	-	0.0
	7	7/24/86	2,500	6.7	100	4/17/87	19.8	13.6
						7/13/88	-	0.0
	8	7/24/86	2,500 ²	6.7	100	4/17/87	24.5	1.6
						7/13/88	44.8	2.0
	9	7/24/86	2,500	6.7	100	4/17/87	20.3	20.8
						7/13/88	-	0.0
	10	7/24/86	2,500 ²	6.7	100	4/17/87	17.8	20.8
						7/13/88	39.4	27.0
	11	7/24/86	2,500	6.7	100	4/17/87	18.9	29.2
						7/13/88	36.3	9.5
	12	7/24/86	2,500 ²	6.7	100	4/17/87	16.8	10.0
						7/13/88	32.5	6.0
	13	7/24/86	2,500	6.7	100	4/17/87	18.9	7.2
						7/13/88	40.8	2.5
	14	7/24/86	2,500 ²	6.7	100	4/17/87	19.7	89.2
						7/13/88	36.9	34.0
11	1	8/19/86	100,000 ²	6.7	100	4/17/87	15.7	2.2
						8/19/88	34.3	3.0
	2	8/19/86	10,000	6.7	100	4/17/87	-	0.0
						8/19/88	-	0.0
12	1	7/15/87	100,000 ²	8.1	100	7/15/88	-	0.0
	2	7/15/87	20,000	8.1	100	7/15/88	-	0.0

¹ Planted as adult clams.

² Planted under "Vexar" netting.

Table 34. Summary of experimental Manila littleneck clam plants in Coos Bay, 1973-88.

Plot No.	Subplot No.	Planting Date	Number Released	Size at Release (mm)	Planting Density (ft ²)	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 ¹	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
4	1	7/19/85	17,000 ²	12.2	100	5/29/86	23.2	100+
						2/24/87	33.3	85.0
						4/13/88	41.3	82.7
5	1	8/20/86	100,000 ²	6.7	100	2/24/87	12.5	88.7
						4/13/88	32.1	30.0
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	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 ²	10.0	100	4/20/87	17.3	34.4
						4/13/88	38.5	12.3
9	1	9/19/86	10,000	10.0	100	4/20/87	13.3	0.8
						4/13/88	-	0.0

¹ Planted as adult clams.

² Planted under "Vexar" netting.

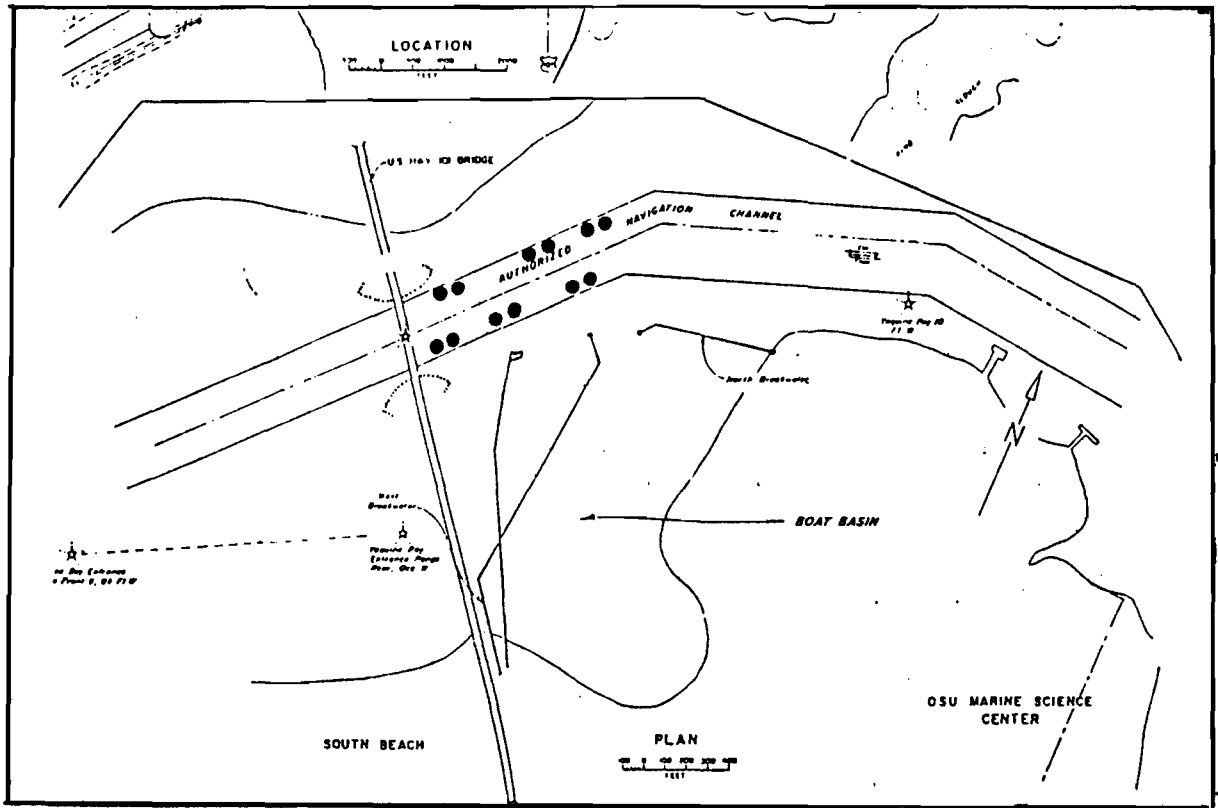


Figure 9. Location of subtidal clam survey in Yaquina Bay, 1988.

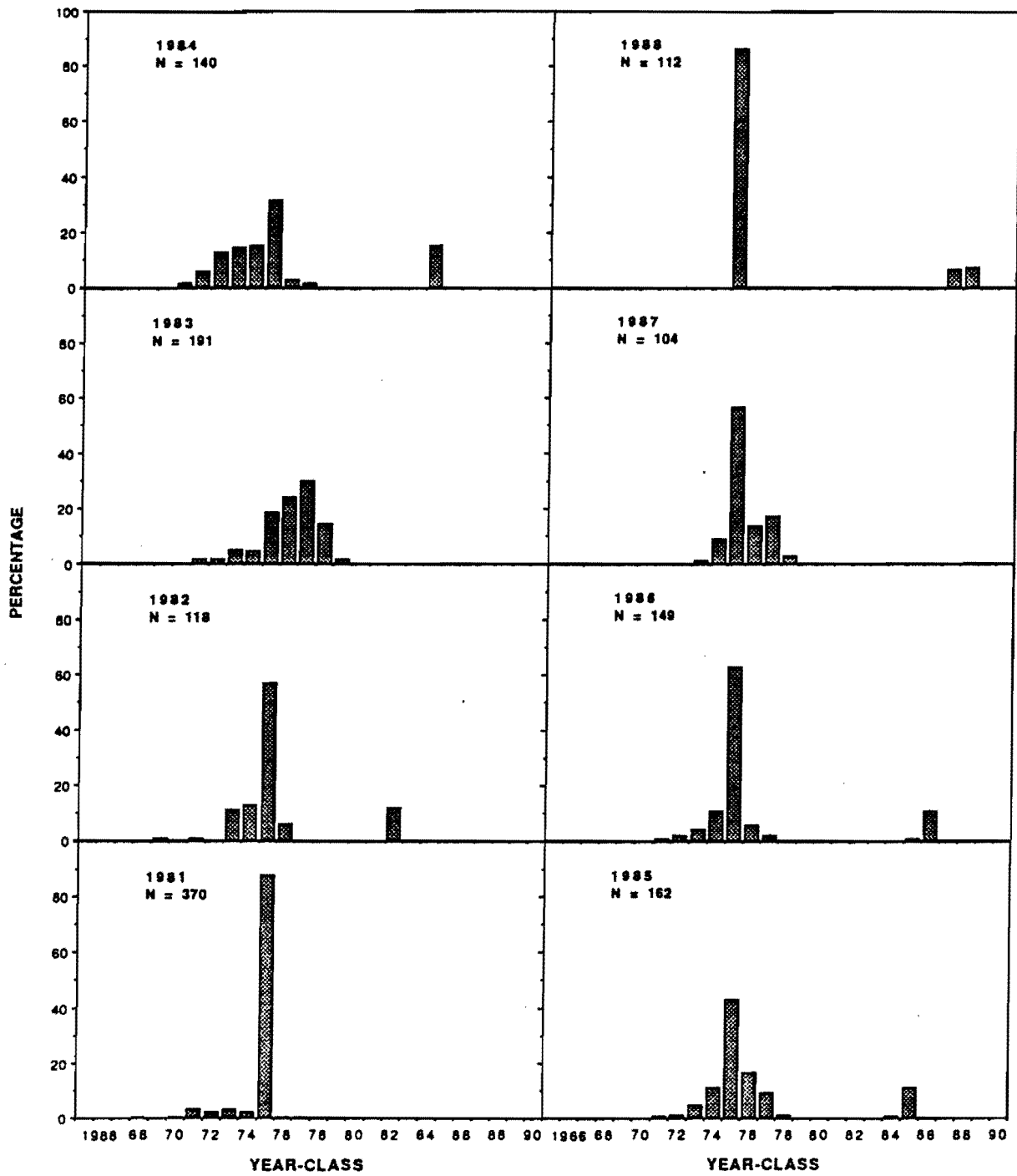


Figure 10. Age composition of subtidal gaper clams, Area 2, Yaquina Bay, 1981-1988.

Table 35. Population and biomass estimates (95% CI) for gaper clams in Yaquina Bay, Area 2, 1975-88.

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

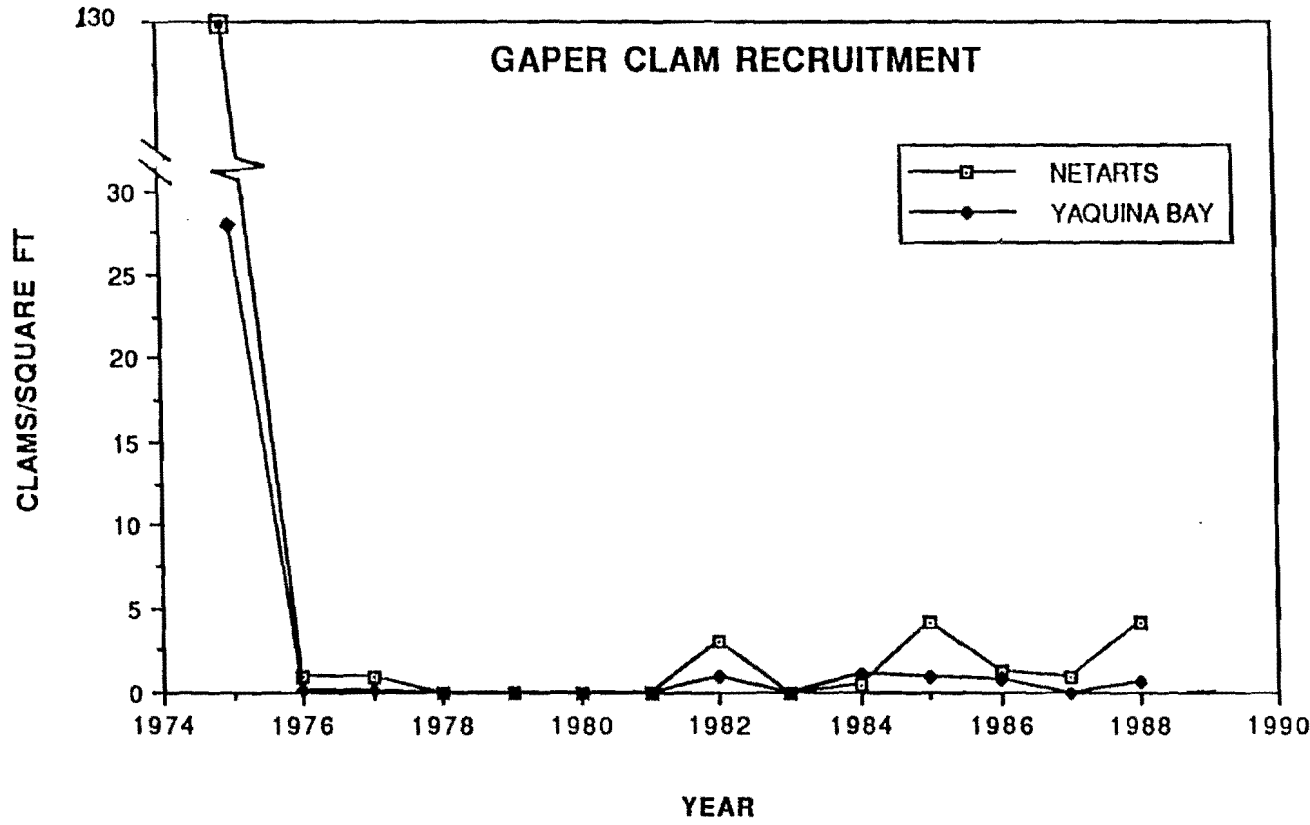


Figure 11. Recruitment of gaper clams in Netarts and Yaquina bays, 1975-88.