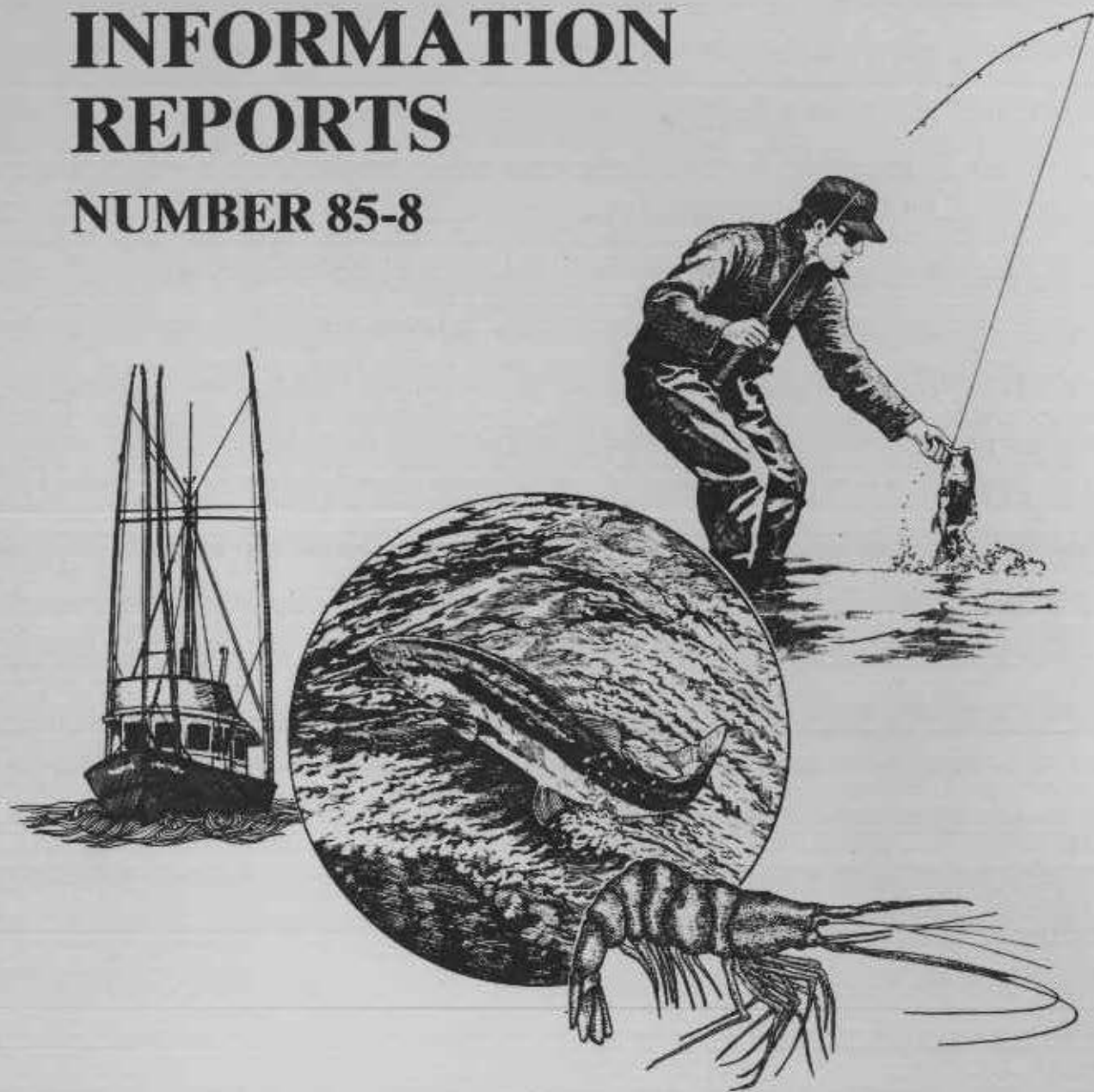


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FISH DIVISION

Oregon Department of Fish and Wildlife

1984 Clam Studies

1984 CLAM STUDIES

by
Tom Gaumer

INFORMATION REPORT 85-8

Oregon Department of Fish and Wildlife
Marine Region

Newport, Oregon

October 15, 1985

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1984 BAY CLAM SUMMARY REPORT

INTRODUCTION

This report summarizes the results of our bay clam studies in 1984. Activities summarized include monitoring of the recreational and commercial clam fisheries, hatchery stock enhancement studies, natural recruitment studies, and miscellaneous other projects.

Recreational Clam Fishery

Recreational clam interviews are conducted annually on each of the major clam harvesting tideflats of the Tillamook, Netarts, Nestucca, Yaquina, Alsea, Siuslaw, Umpqua, Coos, and Coquille estuaries.

Sampling of clam diggers is usually conducted by two shellfish staff. A count of diggers is made on each tideflat at low tide; this equates to a peak digger count for that day. An effort is made to visit each tideflat at least two times per season, in the spring and again in midsummer. In the past we have had staff and time to cover the major clam beds 3 to 4 times per season. A sample of the harvest is measured and aged. We measure the height of the cockle clam and length of butter, gaper, littleneck, and softshell clams. We age the various species of clams by counting annual growth checks on the shell surface. The total number of annual checks is back calculated to give year of recruitment.

Our 1984 recreational clam interviews revealed a continued decrease in digging effort on most of the surveyed tideflats (Table 1). Only on the Siuslaw did we observe a noticeable increase in effort.

Largest decreases in peak digger counts were observed for the bridge bed on Yaquina Bay (275 to 84 diggers), and Happy Camp on Netarts Bay (478 to 200 diggers).

An unexplained phenomenon has occurred during the past several years in a number of our estuaries. Gaper clams generally occur in greatest abundance in areas containing a substrate of gravel, shell and some sand. This substrate preference applies to both intertidal and subtidal stocks. Since 1975 we have had little or no recruitment of gaper clams in this type of substrate. An example of this is at the popular Happy Camp and bridge beds. Poor recruitment undoubtedly contributed to the reduced effort at these two clam beds. On the other hand, we have evidence of fair recruitment in areas containing a sand-mud substrate where gaper clams are generally not found in great abundance.

Interview data collected included catch/effort, digger origin, species composition, and age, and size composition. These data are tabulated and presented in Tables 2-27. Summaries for each tideflat are presented in the text and are arranged by bay from north to south.

Tillamook Bay

Garibaldi Flat. Catch/effort data revealed that clams/trip and clams/hour have remained relatively constant since the Department's regulation change in 1977 which reduced the bag limit from 36 to 20 clams.

Cockle clams declined from 66.6% of the total recreational catch in 1978 to 24.2% of the catch in 1981 (Table 2). Since 1981 the catch has stabilized and the 1984 figures show 28.5% of the harvest being cockle clams. This reflects a dramatic change either in cockle clam availability or digger preference. Since the late 1970's we believe the harvest reduction is due to a decrease in cockle abundance intertidally. Butter clams, on the other hand, have increased from 10.5% of the harvest in 1977 to 38.8% in 1984. Percentage

of harvest of gaper clams went from 4.5% of the bag in 1983 to 0.7% in 1984 and native littleneck clams showed a gradual increase in the digger harvest.

Mean size of gaper clams in 1984 was similar to 1983 (108.0 vs. 107.9 mm). Butter and littleneck clams exhibited increases in mean size, and mean size of cockle clams continued to decrease in 1984.

Bay Ocean Flat. Unlike the catch/effort on Garibaldi Flat, the Bay Ocean clam bed has experienced a dramatic fluctuation in clam production. Catch/trip and catch/hour had declined steadily since 1976, to a low value of less than 0.1 animals per trip in 1982 (Table 3). A reversal of this trend was seen in 1983 and in 1984 catch/effort increased to 14.6 clams/trip primarily because of several successful clam digging parties. Total harvest for the 11 clam diggers interviewed in 1984 showed 161 clams harvested, all of which were cockle clams. Historically, cockle clams have made up over 75% of the harvest from this bed.

Netarts Bay

Happy Camp. Clam digging on the Happy Camp clam bed continued to be very good in 1984 with 12.0 clams/trip being taken (Table 4). Since gaper clams made up over 89.5% of the harvest, this success rate suggests most diggers were getting their daily bag limit of 12 gapers. Nearly 100% of the harvested gapers were of the 1975 year-class. The gapers averaged 100.3 mm in size, a decrease of 1.6 mm since 1983.

Cape Lookout Sand Spit. Clam diggers using the Cape Lookout Sand Spit are interviewed as they return to the Netarts boat basin. As with Happy Camp, the Cape Lookout Sand Spit continued to produce clams at a relatively constant rate. Catch/trip and catch/hour averaged 19.2 and 15.8 clams, respectively

(Table 5). As in previous years, cockles were the principal species collected representing 78% of the take. Gaper, butter, native littleneck, and softshell clams made up the remainder of the bag. Unlike Happy Camp, most of the gaper clams (94.4%) were of year-classes younger than 1975. The cockle clams averaged 70.0 mm in size and were dominated by the 1980 and 1981 year-classes.

Nestucca Bay

Little Nestucca Flat. After a relatively poor digging year in 1981, both 1983 and 1984 showed catch/effort back up to a respectable 28.3 and 22.4 clams/trip, respectively (Table 6). Softshell clams were the only species taken and averaged 76.6 mm in size.

Yaquina Bay

Bridge Bed. Catch/effort for this tidelflat revealed a continued decline in 1984. The 7.2 clams/trip was the lowest ever recorded and the 5.2 clams/hour was also a record low (Table 7). In 1984, gaper clams comprised over 80% of the harvest and averaged 105.6 mm in size. All of the gapers were of the 1975 year-class. Most of this fishery occurs on the gravel island under the 101 Highway Bridge. For the past several years this area has supported one of the heaviest digging efforts of any of our Yaquina Bay tidelflats. Extremely high survival of the 1975 year-class gaper set provided the digger excellent digging for seven years, but the flat in 1983 started showing the effects of this heavy digging pressure.

Breakwater Bed. Unlike the bridge bed, catch/effort on the breakwater has remained relatively constant for the past several years (Table 8). Access is strictly by boat which limits the digging pressure on this area. In 1984 over 71% of the clams harvested were gaper clams. The gapers averaged 96.3 mm in size. No single year-class dominated the harvest. This is one clam bed

where some recruitment of gaper clams has occurred every year since 1975.

Idaho Point. In 1984 there was a slight increase in catch/effort observed on this clam bed with 17.1 clams/trip being taken (Table 9). The clam bed is subjected to a very intensive cockle fishery where over 97% of the take is this species. The cockles averaged 52.3 mm, a reduction of 0.3 mm since 1983 and the smallest mean size ever recorded for this tideflat. Since 1977, there has been a gradual decrease in mean size of the cockle suggesting possible overharvest. Cockles of the 1982 and 1983 year-classes were dominant in the 1984 harvest.

Northwest Gas Plant. The harvest of clams from this clam bed showed a continued remarkable upturn in catch/effort in 1984 (Table 10). Clam diggers averaged 15.1 clams/trip in 1984 compared to 9.5 in 1983. Species composition data revealed that over 94% of the clams harvested were cockle clams, averaging 56.6 mm in size, a decrease of 0.4 mm since 1983. The fishery was primarily on one, two and three-year-old cockles; over 36% were of the 1982 year-class.

Coquille Point. No clam diggers were interviewed on this tideflat in 1984 (Table 11).

Critser's Island. In 1984 we interviewed 14 clam diggers that took an average of 35.1 softshells/digger (Table 12). The clams averaged 93.0 mm in size.

Alsea Bay

North Shore. No clam diggers were interviewed on this tideflat in 1984 (Table 13).

Bayshore. We interviewed 17 diggers on this tideflat and they averaged 9.2 clams/digger, a decrease of 4.0 clams/digger since 1983 (Table 14). Over 98% of the clams taken were cockles that averaged 76.3 mm. Over 35% of the clams were of the 1981 year-class. This fishery occurs primarily subtidally with clams taken with long handled rakes made out of modified pitch forks.

Softshell Clam Bed. The softshell clam diggers averaged 27.6 clams/person from this tideflat (Table 15). The clams averaged 94.6 mm in size.

Siuslaw Bay

Mouth. A small sport fishery for huge gaper clams occurs on the north side of the entrance to Siuslaw Bay. In 1984 we interviewed five clam diggers that averaged 7.2 gapers/person. These clams averaged 148 mm and were primarily 11-year-old clams.

North Fork Flat. Clam digging continues to be excellent on this clam bed where catch/effort information revealed 34 clams/trip taken (Table 16). Only softshell clams were taken from this area and they averaged 95.0 mm in size. Although the digging pressure is very heavy in this area, little impact has been observed on the availability or size of the clams.

Umpqua Estuary.

We added the Umpqua estuary to our sampling program in 1983 due to its importance as a softshell clam producer.

Bolin Island. Although our sampling effort was small, catch/effort data revealed diggers on Bolin Island were getting 40.4 clams per digger which was 4.4 clams/digger over the bag limit (Table 17).

Coos Bay.

Nine clam digging areas in Coos Bay were added to our sampling program in 1983. Sampling effort in the future will depend on availability of manpower.

Hanson's Marina. We did not sample clam diggers in this area in 1984 (Table 18).

Charleston Triangle. We interviewed 32 clam diggers and they averaged 18.4 clams/trip (Table 19). Over 69% of the clams harvested were cockle clams, averaging 66.3 mm in size.

Charleston Flat. Twenty-seven interviewed clam diggers averaged 16.1 clams/digger (Table 20). Cockle and gaper clams were the principal species taken and averaged 63.2 mm and 105.9 mm, respectively.

Peterson Flat. Clam diggers on Peterson Flat averaged 13.5 clams/trip (Table 21). Gaper clams were the principal species taken and averaged 113.7 mm in size.

Pigeon Point. We interviewed 43 diggers and they averaged 15.8 clams/trip (Table 22). Butter and gaper clams were the principal species taken accounting for 36.4 and 32.7% of the harvest, respectively.

Sitka Flat. No clam diggers were interviewed on Sitka Flat in 1984 (Table 23).

Empire Flat. Clam diggers on Empire Flat averaged 20.0 clams/trip (Table 24). Littleneck clams comprised 53.3% of the harvest.

North Spit. We interviewed 50 clam diggers on North Spit and they averaged 14.9 clams/trip (Table 25). Gaper clams were the principal species

taken accounting for 65.5% of the harvest, and averaging 111.2 mm in size.

Clam Island. The 462 interviewed clam diggers averaged 17.2 clams/trip from this clam bed (Table 26). Gaper and cockle clams were the principal species taken making up 59.8 and 33.7% of the harvest, respectively. The gapers and cockles averaged 121.0 and 76.8 mm in size, respectively.

Coquille Estuary.

The Coquille estuary was the most southern estuary surveyed for clam diggers. The diggers averaged 36.0 clams/trip; all were softshells (Table 27).

Commercial Clam Harvest

In 1984, there were 120,574 pounds of clams reported to be commercially harvested in Oregon's estuaries (Table 28). Of this total, 50,573 pounds (41.9%) were gaper clams. Coos Bay produced 50,304 pounds (99.5%) of the total gaper harvest. Other clams harvested coastwide were native littlenecks (46,874 lbs), cockles (17,919 lbs), butters (4,842 lbs), and softshells (366 lbs). Twenty-seven fishermen reported landings in 1984, ten less than in 1983. Seven hundred four landings were made in 1984, 107 less than in 1983.

Coos Bay produced the most clams in 1984 with 54,763 lbs reported (Table 29). Tillamook and Nehalem bays produced 42,663 lbs, 23,069 lbs, respectively. Yaquina and Siuslaw bays produced minor poundages of clams.

Commercial Clam Fishery by Mechanical Means

Yaquina Bay. No mechanical clam harvesting permits were issued for Yaquina Bay in 1984.

Coos Bay. We issued five commercial clam harvesting permits for Coos Bay in 1984; six were issued in 1983. Of the five permits issued, two were used and resulted in a production of 33,698 pounds of clams. Of the 33,698 pounds harvested, 30,101 pounds (89.3%) were gaper clams. Fishermen averaged 171 lbs/trip and received an average of \$0.66/lb.

The gaper clams harvested in the permit area averaged 139.9 mm in size and were primarily of the 1973, 74 and 75 year-classes (Figure 1). Clams harvested in 1983 from the same area averaged 137.2 mm in size.

Commercial Clam Fishery by Hand

Commercial clam fishermen harvested a reported 86,876 lbs of clams by hand in Oregon's estuaries in 1984. Many of these clams were taken subtidally in Tillamook, Nehalem, and Coos bays where a reported 42,663 lbs, 23,069 lbs, and 21,065 lbs, respectively, were taken. Tillamook Bay landings were primarily littleneck and cockle clams; Nehalem Bay landings were entirely native littlenecks, and Coos Bay landings were primarily gapers.

Age composition for commercially harvested Tillamook Bay littlenecks and cockles revealed that the 1979-81 year-classes were predominant in the take (Figures 2, 3). The littleneck clams averaged 45.6 mm and the cockles averaged 60.8 mm in size. Age composition of native littleneck clams harvested in Nehalem Bay also showed the 1979-81 year-classes to be predominant (Figure 4). The littlenecks averaged 44.6 mm in size.

The littleneck clams brought an average of \$1.03/lb to the fishermen; gapers and cockles brought \$0.33/lb and \$0.43/lb, respectively.

Experimental Offshore Clam Fishery

No experimental offshore clam harvesting permits were issued in 1984.

Special Studies

Hatchery Stock Enhancement; Manila Littleneck Clams

Netarts Bay. We continued to monitor the growth characteristics of Manila littleneck clams planted in Netarts Bay.

A new study was started in June 1982, in Netarts Bay, where 18,000 Manila littleneck clams, averaging 6.9 mm long, were planted in a fenced test plot at a density of 180/ft². These clams were progeny of adults collected from the Netarts test area in 1981 and spawned and reared in the OSU laboratory by Wilbur Breese. By June 1983 the planted clams averaged 22.5 mm in size, an increase of 15.6 mm, and averaged 3.8 clams/ft², giving a survival rate of 2.1%. Sampling again in June 1984 revealed the clams averaged 36.1 mm in size, an increase of 13.6 mm since June 1983.

Tillamook Bay. We continued our studies on clam introductions into Tillamook Bay. During the year approximately 25,850 adult Manila littleneck clams were imported from Washington and released in test plots (Figure 5). In addition, 4,000 1983 year-class juvenile Manila clams, produced under laboratory conditions at Oregon State University, were placed in the bay. Brood stock for these clams came from Hood Canal, Washington.

A sample of 1982 year-class Manila clams released in March 1983 showed the clams averaged 17.5 mm long in July 1984. Survival was poor at 0.3% of the original release.

Yaquina Bay. On December 5, 1984, we planted 8,700 adult Manila littleneck clams on the north side of Yaquina Bay breakwater. These clams were part of a shipment of 700 pounds we received from the Washington Department of Fisheries Point Whitney Shellfish Laboratory. The clams averaged 31.0 mm in size and were planted at a density of 10/ft².

Coos Bay. On December 19, 1984, we planted 12,600 adult Manila littleneck clams in South Slough of Coos Bay. These clams were part of the same shipment planted on the breakwater of Yaquina Bay.

Natural Recruitment Studies

Yaquina Bay. We collected 20 subtidal dredge samples from the 18.4 acre Area 2 in Yaquina Bay in September 1984 to determine year-class strength, recruitment success, and population and biomass estimates (Figure 6). Each sample covered 1 ft² of surface area; depth of samples averaged 12-14 inches.

The 20 samples produced 140 gaper clams (7.0/ft²) that averaged 96.5 mm in length. Some evidence of recruitment of gaper clams was recorded for the 1984 year-class (Figure 7). The 1972-75 year-classes provided 73.6% of the gaper clams in the test area. We estimated that 5.6 million gapers weighing 3.5 million pounds inhabited the area (Table 30).

Tillamook Bay. In July 1984 we collected 56 subtidal dredge samples in a 98.9 acre area of Hobsonville Channel (Figure 6). Each sample covered 1 ft² of surface area; depth of samples averaged 12-14 inches.

Seven species of clams were represented in the 404 clams sampled. Population estimates revealed that 31,093,700 clams inhabited the 98.9 acre site (Table 30). Littleneck, cockle, and butter clams comprised 27.7 million of the total. Biomass estimates for the commercially important species (butter, cockle, gaper, and littleneck) revealed 4.9 million pounds of clams in the area.

Age composition data for butter, cockle, gaper, and littleneck clams is shown in Figures 8-11. The data revealed that, for each species, we are seeing consistent annual recruitment for Tillamook Bay.

Nehalem Bay. In August we collected 36 subtidal dredge samples to determine distribution, abundance, and biomass of native littleneck clams in a 16.5 acre area (Figure 6). The survey area included the site of an ongoing commercial clam fishery. Each sample covered 1 ft² of surface area; depth of samples averaged 12 inches.

We collected 213 littleneck clams (5.9/ft²) that averaged 36.5 mm in length. Population estimates revealed that 4,262,400 littleneck clams weighing 214,600 pounds inhabited the site. (Table 30). Age composition data show consistent recruitment in the area with 2 to 5-year-old clams well represented in the sample (Figure 12).

Sign Replacement

In 1984 the shellfish staff continued a coastwide project of repairing or replacing regulation signs.

ACKNOWLEDGMENT

I wish to thank Darrell Demory, Jean McCrae, and Rick Starr for their assistance in gathering the data that was used in this report.

APPENDIX

Table 1. Peak Counts of Clam Diggers^{1/}.

Estuary	Tideflat	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Tillamook	Garibaldi Flat	425	350	131	225	256	300	460	516	487	350
	Bay Ocean	-	280	122	39	107	-	33	13	10	4
Netarts	Happy Camp	-	175	73	-	150	160	425	500	478	200
Nestucca	Little Nestucca	-	-	-	-	-	-	44	6	12	6
Yaquina	Bridge Bed	-	245	138	30	91	84	225	625	275	84
	Breakwater Bed	-	127	120	62	23	20	27	63	26	28
	Idaho Point	-	110	98	45	66	61	38	176	46	35
	NW Gas Plant	-	-	-	-	24	26	41	16	12	10
	Coquille Point	-	-	-	-	17	18	45	41	20	5
Alsea	North Beach	-	-	-	-	-	-	-	4	3	0
	Bay Shore	-	-	-	-	-	-	-	49	31	14
Siuslaw	North Fork	-	55	-	-	109	57	146	33	22	43

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

Table 2. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Tillamook

Tideflat: Garibaldi Flat

	1/												
	1962	1963	1965	1971	1975	1976	1977	1978	1979	1980	1981	1982	1983
No. Diggers Sampled	149	758	319	13,048	104	207	252	239	597	456	359	219	132
No. Clams Sampled	3,296	19,053	8,414	389,946	2,472	4,825	4,647	4,631	11,104	8,728	6,558	4,249	2,471
No. Digger Hours	-	-	-	20,439	-	283.2	335.8	261.1	715.2	548.9	443.3	219.5	158.0
Hours/trip	-	-	-	1.6	-	1.4	1.3	1.1	1.2	1.2	1.2	1.3	1.2
Clams/trip	22.1	25.1	22.9	29.9	23.8	23.3	18.4	19.4	18.6	19.1	18.3	19.4	18.7
Clams/hour	-	-	-	19.1	-	17.0	13.8	17.7	15.5	15.9	14.0	14.6	15.6
Digger origin (%)													
Local	-	-	38	21	-	32.9	27.8	33.1	30.2	22.4	27.6	38.8	37.7
State	-	-	62	73	-	57.0	57.3	55.2	64.7	72.6	63.5	57.1	46.9
Non-State	-	-	-	-	-	-	-	-	-	-	-	4.1	15.4
Species Comp. (%)													
Butter	31.9	27.0	-	16.3	20.7	18.2	10.5	11.5	13.5	28.7	42.8	45.8	39.7
Cockle	38.2	45.0	-	16.8	43.4	28.5	46.7	66.6	64.0	46.5	24.2	27.4	27.4
Gaper	6.3	7.0	-	5.4	5.3	18.5	17.2	7.1	9.6	7.1	5.7	6.0	4.5
Littleneck	23.6	21.0	-	60.8	29.7	34.7	24.9	14.7	12.7	17.7	27.2	20.8	28.4
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/trip													
Butter	7.1	6.8	-	5.0	4.9	4.2	1.9	2.2	2.5	5.5	7.8	8.9	7.4
Cockle	8.4	11.3	-	4.9	10.3	6.6	8.6	12.9	11.9	8.9	4.4	5.3	5.1
Gaper	1.4	1.8	-	1.6	1.3	4.3	3.2	1.4	1.8	1.4	1.4	1.2	0.9
Littleneck	5.2	5.3	-	18.4	7.0	8.1	4.6	2.8	2.4	3.4	5.0	4.0	5.3
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams/hour													
Butter	-	-	-	3.2	-	3.1	1.5	2.0	2.1	4.6	6.3	6.7	6.2
Cockle	-	-	-	3.1	-	4.9	6.5	11.8	9.9	7.4	3.6	4.0	4.3
Gaper	-	-	-	1.1	-	3.2	2.4	1.3	1.5	1.1	0.9	0.9	0.7
Littleneck	-	-	-	11.7	-	5.9	3.5	2.6	2.0	2.8	4.0	3.0	4.4
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-
Size Comp. (x size)													
Butter	-	-	-	-	77.3	81.6	83.8	83.0	72.3	64.8	70.6	70.3	68.8
Cockle	-	-	-	-	63.9	64.3	55.9	55.2	60.9	55.0	56.9	60.1	54.0
Gaper	-	-	-	-	67.5	56.8	69.3	82.0	84.2	90.2	91.3	114.1	107.9
Littleneck	-	-	-	-	36.7	36.8	39.4	38.2	38.5	36.5	39.5	38.0	37.0
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured													
Butter	-	-	-	-	219	536	394	145	555	304	413	379	481
Cockle	-	-	-	-	290	978	1,517	637	1,501	535	254	389	407
Gaper	-	-	-	-	74	349	538	84	327	111	81	7	21
Littleneck	-	-	-	-	297	518	862	233	171	187	251	392	461
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-

1/ Regulation change in bag limit; effective Jan. 1, 1977

Table 2. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA (Continued)

Bay: Tillamook

Tideflat: Garibaldi Flat

1984	
No. Diggers Sampled	200
No. Clams Sampled	3,729
No. Digger Hours	242.5
Hours/trip	1.2
Clams/trip	18.7
Clams/hour	15.4
Digger origin (%)	
Local	30.0
State	67.5
Non-State	2.5
Species Comp. (%)	
Butter	38.8
Cockle	28.5
Gaper	0.7
Littleneck	32.1
Softshell	-
16 Clams/trip	
Butter	7.2
Cockle	5.3
Gaper	0.1
Littleneck	6.0
Softshell	-
Clams/hour	
Butter	6.0
Cockle	4.4
Gaper	0.1
Littleneck	4.9
Softshell	-
Size Comp. (x size)	
Butter	78.4
Cockle	52.8
Gaper	108.0
Littleneck	38.3
Softshell	-
No. Clams Measured	
Butter	203
Cockle	240
Gaper	2
Littleneck	236
Softshell	-

1/ Regulation change in bag limit; effective Jan. 1, 1977

Table 3. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Tillamook

Tideflat: Bay Ocean

	1971	1976	1977	1978	1979	1980	1981	1982	1983	1984
No. Diggers Sampled	10,379	94	170	38	79	119	34	13	11	11
No. Clams Sampled	216,728	2,242	2,1664	574	11,063	215.6	314	1	63	161
No. Digger Hours	16,156	171	333	70.4	146.1	215.6	57.5	17.0	16.0	12.0
Hours/trip	1.6	1.8	2.0	1.9	1.8	1.8	1.7	1.3	1.5	1.1
Clams/trip	20.8	23.9	15.7	15.1	13.5	12.3	9.2	<0.1	5.7	14.6
Clams/hour	13.4	13.1	8.0	8.2	7.3	6.8	5.5	<0.1	3.9	13.4
Digger origin (%)										
Local	21.0	20.2	14.7	13.2	10.1	21.8	20.6	15.4	0.0	18.2
State	73.0	74.5	79.0	76.3	89.9	73.1	70.6	84.6	72.7	81.8
Non-State	16.0	5.3	6.5	10.5	-	5.0	8.8	-	27.3	-
Species Comp. (%)										
Butter	<0.1	0.1	0.6	-	-	0.4	-	-	-	-
Cockle	85.0	85.8	78.5	87.3	91.4	89.6	74.2	-	95.2	100.0
Gaper	8.8	12.3	17.5	12.2	8.0	7.1	1.3	-	-	-
Littleneck	1.3	0.1	0.8	-	0.1	0.5	1.3	-	-	-
Softshell	-	-	-	-	-	-	-	100.0	-	-
Clams/trip										
Butter	<0.1	<0.1	0.1	-	-	<0.1	-	-	-	-
Cockle	17.1	20.5	12.3	13.2	12.3	11.0	6.9	-	5.5	14.6
Gaper	1.8	2.9	2.7	1.8	1.1	0.9	0.1	-	-	-
Littleneck	0.3	<0.1	0.1	-	<0.1	<0.1	0.1	-	-	-
Softshell	-	-	-	-	-	-	-	<0.1	-	-
Clams/hour										
Butter	<0.1	<0.1	<0.1	-	-	<0.1	-	-	-	-
Cockle	11.0	11.3	6.3	7.1	6.7	6.1	4.1	-	3.8	13.4
Gaper	1.1	1.6	1.4	1.0	0.6	0.5	0.1	-	-	-
Littleneck	0.2	<0.1	0.1	-	<0.1	<0.1	0.1	-	-	-
Softshell	-	-	-	-	-	-	-	<0.1	-	-
Size Comp. (x size)										
Butter	-	-	-	-	-	-	-	-	-	-
Cockle	-	66.0	66.1	64.0	68.4	71.2	60.6	-	67.6	69.8
Gaper	-	110.6	107.9	104.7	109.3	106.2	105.5	-	-	95.0
Littleneck	-	-	-	-	42.0	-	37.0	-	-	38.0
Softshell	-	-	-	-	-	-	-	-	-	-
No. Clams Measured										
Butter	-	-	-	-	-	-	-	-	-	-
Cockle	-	1,075	781	318	525	277	213	-	59	77
Gaper	-	224	118	68	79	44	4	-	-	24
Littleneck	-	-	-	-	-	-	4	-	-	2
Softshell	-	-	-	-	-	-	-	1	-	-

1/ Regulation change in bag limit; effective Jan. 1, 1977

Table 4. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Netarts

Tideflat: Happy Camp

	1971	1975	1976	1/ 1977	1978	1979	1980	1981	1982	1983	1984	19
No. Diggers Sampled	5,106	18	141	187	146	222	106	71	168	280	84	
No. Clams Sampled	85,230	164	1,709	2,727	1,747	2,823	1,293	991	2,020	2,994	1,009	
No. Digger Hours	6,613	-	193	254	149.2	204.4	67.7	66.8	150.5	290.0	84	
Hours/trip	1.3	-	1.4	1.4	1.0	0.9	0.6	0.9	0.9	1.0	1.0	
Clams/trip	16.7	9.1	12.1	14.6	12.0	12.7	12.2	12.9	12.0	10.7	12.0	
Clams/hour	12.9	-	8.9	10.7	11.7	13.8	19.1	14.8	13.4	10.3	12.0	
Digger origin (%)												
Local	17.6	-	29.1	14.9	11.0	28.4	17.9	40.3	48.2	22.5	29.8	
State	74.8	-	66.0	75.9	71.2	59.9	73.6	50.6	44.0	72.9	64.3	
Non-State	7.6	-	5.0	9.1	17.8	11.7	8.5	9.1	7.7	4.6	6.0	
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	
Cockle	1.0	0.0	0.1	21.9	-	-	0.1	0	<0.1	0.1	4.0	
Gaper	95.7	36.6	73.6	62.5	91.0	90.3	92.5	82.7	94.3	98.5	89.5	
Littleneck	0.8	15.9	5.3	5.4	3.1	0.2	2.0	3.4	0.6	0.8	2.9	
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	
Cockle	0.2	0.0	<0.1	3.2	0.0	-	<0.1	0	<0.1	<0.1	0.5	
Gaper	16.0	4.3	8.9	9.1	10.9	11.5	11.3	10.6	11.3	10.5	10.8	
Littleneck	0.1	1.4	0.6	0.8	0.4	0.2	0.2	0.4	0.1	0.1	0.4	
Softshell	-	-	-	-	-	-	-	-	-	-	-	
Clams/hour												
Butter	0.3	-	1.8	1.0	0.7	1.1	1.0	2.0	0.7	0.1	0.4	
Cockle	0.1	-	<0.1	2.3	0.0	-	<0.1	0	<0.1	<0.1	0.5	
Gaper	12.3	-	6.5	6.7	10.7	12.5	17.7	12.3	12.7	10.2	10.8	
Littleneck	0.1	-	0.5	0.6	0.4	0.3	0.4	0.5	0.1	0.1	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	
Cockle	-	-	-	-	-	-	-	-	-	31.0	-	
Gaper	93.2	112.1	96.3	86.1	87.5	92.1	93.6	98.9	97.7	101.9	100.3	
Littleneck	-	65.3	67.6	70.0	70.1	73.6	66.7	71.3	70.7	55.8	70.2	
Softshell	-	-	-	-	-	-	-	-	-	-	-	
No. Clams Measured												
Butter	-	66	219	-	-	-	24	109	62	6	32	
Cockle	-	190	-	-	-	-	-	-	-	1	-	
Gaper	282	190	643	557	921	417	468	454	565	338	240	
Littleneck	-	43	99	28	54	34	3	22	9	4	29	
Softshell	-	-	-	-	-	-	-	-	-	-	-	

1/ Regulation change in bag limit; effective Jan. 1, 1977

Table 5. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Netarts

Tideflat: Cape Lookout Sand Spit

	1971	1975	1976	1/	1978	1979	1980	1981	1982	1983	1984	19
No. Diggers Sampled	6,473	43	76	509	72	85	63	80	56	118	71	
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	
No. Digger Hours	8,656	-	148	1,055	148.8	178	88.5	149.5	83.0	196.5	86.5	
Hours/trip	1.3	-	1.9	2.1	2.1	2.1	1.4	1.9	1.5	1.7	1.2	
Clams/trip	17.9	24.1	32.0	18.3	18.4	18.4	17.0	17.5	18.4	18.4	19.2	
Clams/hour	13.4	-	16.5	8.8	8.9	8.8	12.1	9.3	12.4	11.1	15.8	
Digger origin (%)												
Local	17.6	-	23.7	23.1	22.2	36.5	17.5	12.5	44.6	38.1	43.7	
State	74.8	-	76.3	66.6	77.8	61.2	76.2	81.3	51.8	53.4	52.1	
Non-State	7.6	-	-	10.6	-	2.3	6.3	7.5	3.6	8.5	4.2	
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	
Cockle	44.4	46.0	76.9	72.3	72.7	74.4	93.3	76.7	84.9	80.4	78.0	
Gaper	8.9	2.7	3.7	15.3	22.4	16.0	4.8	13.3	12.1	5.9	9.0	
Littleneck	6.9	1.3	3.2	2.1	1.3	3.8	-	1.9	2.6	2.6	0.1	
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	
Cockle	8.0	11.1	24.6	13.2	13.4	13.6	15.9	13.4	15.6	14.8	15.0	
Gaper	1.6	0.7	1.2	2.8	4.1	2.9	0.8	2.3	2.2	1.1	1.7	
Littleneck	1.2	0.3	1.0	0.4	0.2	0.7	-	0.3	0.5	0.5	<0.1	
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	
Cockle	5.9	-	12.7	6.4	6.5	6.5	11.3	7.2	10.5	8.9	12.3	
Gaper	1.2	-	0.6	1.3	2.0	1.4	0.6	1.2	1.5	0.7	1.4	
Littleneck	0.9	-	0.5	0.2	0.1	0.3	-	0.2	0.3	0.3	<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	
Cockle	65.4	73.3	73.0	75.7	72.7	75.2	72.2	72.0	71.3	69.5	70.0	
Gaper	108.1	80.4	87.4	103.4	100.5	91.7	110.7	104.7	119.0	117.7	75.1	
Littleneck	-	57.8	-	-	57.9	53.7	-	53.3	49.5	42.2	52.5	
Softshell	-	-	-	-	-	-	-	-	-	-	-	
No. Clams Measured												
Butter	32	237	294	80	11	86	20	49	3	27	133	
Cockle	245	257	674	851	555	812	525	486	534	238	240	
Gaper	52	257	36	170	144	191	44	48	71	15	18	
Littleneck	-	31	-	-	12	60	-	13	26	53	2	
Softshell	-	-	-	-	-	-	-	-	-	-	-	

1/ Regulation change in bag limit; effective Jan. 1, 1977

Table 6. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Nestucca

Tideflat: Little Nestucca Flat

	1971	1/ 1977	1979	1980	1981	1982	1983	1984	19	19	19	19
No. Diggers Sampled	1,466	34	16	38	23	22	22	62				
No. Clams Sampled	23,211	1,049	484	1,120	357	653	623	1,386				
No. Digger Hours	1,584	43	21	72	27	31	33.5	94				
Hours/trip	1.1	1.3	1.3	1.9	1.2	1.4	1.5	1.5				
Clams/trip	15.8	30.9	30.3	29.5	15.5	29.7	28.3	22.4				
Clams/hour	14.7	24.4	23.2	15.6	13.2	21.4	18.6	14.7				
Digger origin (%)												
Local	12.4	52.9	18.8	-	13.0	4.5	18.2	21.0				
State	73.5	47.1	62.5	86.8	87.0	86.4	77.3	59.7				
Non-State	14.1	-	18.8	13.2	-	9.1	4.6	19.4				
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	15.8	30.9	30.3	29.5	15.5	29.7	28.3	22.4				
Clams/hour												
Butter												
Cockle	-	-	-	-	-	-	-	-				
Gaper	-	-	-	-	-	-	-	-				
Littleneck	-	-	-	-	-	-	-	-				
Softshell	14.7	24.4	23.2	15.6	13.2	21.4	18.6	14.7				
Size Comp. (x size)												
Butter												
Cockle	-	-	-	-	-	-	-	-				
Gaper	-	-	-	-	-	-	-	-				
Littleneck	-	-	-	-	-	-	-	-				
Softshell	-	86.0	84.2	79.9	78.3	75.6	80.5	76.6				
No. Clams Measured												
Butter												
Cockle	-	-	-	-	-	-	-	-				
Gaper	-	-	-	-	-	-	-	-				
Littleneck	-	-	-	-	-	-	-	-				
Softshell	0	250	332	254	163	547	300	240				

1/ Regulation change in bag limit; effective Jan. 1, 1977

Table 7. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Yaquina

Tideflat: Bridge Bed

	1/											
	1971	1972	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
No. Diggers Sampled	4,518	-	88	29	357	89	143	142	342	149	202	191
No. Clams Sampled	41,769	-	694	414	2,838	892	1,313	1,222	3,773	1,609	1,543	1383
No. Digger Hours	6,769	-	-	36.0	488	109.9	120.0	159.5	353.9	154.0	273.5	264.5
Hours/trip	1.5	-	-	1.2	1.4	1.2	0.8	1.1	1.0	1.0	1.4	1.4
Clams/trip	9.2	-	7.9	14.3	7.9	10.0	9.2	8.6	11.0	10.8	7.6	7.2
Clams/hour	6.2	-	-	11.7	5.8	8.1	10.9	7.7	10.7	10.4	5.6	5.2
Digger origin (%)												
Local	-	-	-	31.0	19.6	24.7	22.4	18.3	44.7	48.3	32.2	45.5
State	-	-	-	48.3	70.9	69.7	76.2	70.4	49.1	48.3	67.8	49.7
Non-State	-	-	-	20.7	9.5	4.5	1.4	11.3	6.1	3.4	-	4.7
Species comp. (%) other ^{2/}												7.8
Butter	0.2	-	0.8	0.2	0.8	0.6	0.2	1.7	0.8	1.9	3.2	2.4
Cockle	79.4	-	42.1	72.2	45.4	24.6	7.9	1.4	15.7	7.2	12.9	5.2
Gaper	19.5	-	54.8	24.6	43.6	72.1	89.6	94.8	81.0	85.4	72.9	80.1
Littleneck	0.8	-	2.3	1.4	1.4	1.1	0.4	2.1	1.7	4.5	2.8	4.5
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
Cockle	7.3	-	3.3	10.3	3.6	2.5	0.7	<0.1	1.7	0.8	1.0	0.4
Gaper	1.8	-	4.3	3.5	3.5	7.2	8.2	8.2	8.9	9.2	5.6	5.8
Littleneck	<0.1	-	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.5	0.2	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
Cockle	4.9	-	-	8.4	2.6	2.0	0.9	0.1	1.1	0.8	0.7	0.3
Gaper	1.2	-	-	2.9	2.5	5.9	9.8	7.3	8.6	8.9	4.1	4.2
Littleneck	-	-	-	-	-	-	-	-	-	-	0.2	0.2
Softshell	-	-	-	-	-	-	-	-	-	-	-	-
Size Comp. (x size)												
Butter	-	-	-	-	-	-	67.5	71.9	72.5	80.4	74.0	78.9
Cockle	60.5	31.1	49.3	46.7	57.5	69.9	66.8	55.8	57.4	65.1	66.9	73.2
Gaper	-	-	107.1	115.5	95.0	101.7	96.8	100.0	107.7	105.9	104.6	105.6
Littleneck	-	-	60.3	-	-	-	51.5	62.2	54.7	54.7	52.4	55.9
Softshell	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured												
Butter	-	-	-	-	-	-	-	14	20	5	35	12
Cockle	-	25	276	205	592	202	51	6	536	86	138	41
Gaper	-	-	316	62	593	154	279	419	1,370	308	406	200
Littleneck	-	-	12	-	-	-	2	19	55	9	34	24
Softshell	-	-	-	-	-	-	-	-	-	-	-	-

1/ Regulation change in bag limit; effective Jan. 1, 1977.

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

Table 8. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Yaquina

Tideflat: Breakwater Bed

	1971	1975	1976	1/ 1977	1978	1979	1980	1981	1982	1983	1984	19
No. Diggers Sampled	1,455	46	-	48	20	10	21	16	14	17	63	
No. Clams Sampled	22,175	515	-	511	270	142	261	166	157	190	654	
No. Digger Hours	2,179	-	-	69.1	21.5	20.0	44	27	20.5	24.0	102.5	
Hours/trip	1.5	-	-	1.4	1.1	2.0	2.1	1.7	1.5	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	
Clams/hour	10.2	-	-	7.4	12.6	7.1	5.9	6.1	7.7	7.9	6.4	
Digger origin (%)												
Local	-	-	-	35.4	55.0	30.0	28.6	18.8	71.4	52.9	30.2	
State	-	-	-	64.6	45	-	71.4	50.0	28.6	47.1	66.7	
Non-State	-	-	-	-	-	-	-	31.3	-	-	3.2	
Species Comp. (%) Other ^{2/}												15.9
Butter	1.2	1.5	-	1.4	0.7	-	6.5	1.8	2.5	1.1	5.8	
Cockle	15.3	3.9	-	18.2	13.7	7.0	11.1	19.9	1.9	8.4	4.0	
Gaper	83.0	95.0	-	78.9	84.4	84.5	81.2	75.3	94.9	85.8	71.6	
Littleneck	0.4	0.2	-	0.8	0.4	-	1.1	1.2	0.6	0.5	2.8	
Softshell	-	-	-	-	-	-	-	-	-	-	-	
Clams/trip												
Butter	0.2	<0.1	-	0.1	0.1	-	0.8	0.2	0.3	0.1	0.6	
Cockle	2.3	0.4	-	1.9	1.8	1.0	1.4	2.1	0.2	0.9	0.4	
Gaper	12.7	10.6	-	-	-	-	10.1	7.8	10.6	9.6	7.4	
Littleneck	<0.1	<0.1	-	0.1	0.1	-	0.1	0.1	0.1	0.1	0.3	
Softshell	-	-	-	-	-	-	-	-	-	-	-	
Clams/hour												
Butter	0.1	-	-	0.1	0.1	-	0.4	0.1	0.2	0.1	0.4	
Cockle	1.6	-	-	1.3	1.7	0.5	0.6	1.2	0.1	0.7	0.3	
Gaper	8.4	-	-	5.8	10.6	6.0	4.8	4.6	7.3	6.8	4.6	
Littleneck	<0.1	-	-	0.1	0.1	-	0.1	0.1	<0.1	<0.1	0.2	
Softshell	-	-	-	-	-	-	-	-	-	-	-	
Size Comp. (x size)												
Butter	<0.1	-	-	0.1	<0.1	<0.1	85.3	-	-	97.0	82.3	
Cockle	75.6	-	-	72.5	76.1	-	-	62.6	-	81.6	70.1	
Gaper	113.8	116.2	-	123.3	118.9	-	109.1	106.4	106.4	100.7	96.3	
Littleneck	-	-	-	-	-	-	64.0	-	-	51.0	52.0	
Softshell	-	-	-	-	-	-	-	-	-	-	-	
No. Clams Measured												
Butter	-	-	-	-	-	-	16	-	4	1	36	
Cockle	-	-	-	-	79	37	-	27	3	12	32	
Gaper	-	310	-	198	207	-	195	69	142	109	200	
Littleneck	-	-	-	-	-	-	3	-	1	1	20	
Softshell	-	-	-	-	-	-	-	-	-	-	-	

1/ Regulation change in bag limit; effective Jan. 1, 1977

2/ Bentnose clam

Table 9. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Yaquina

Tideflat: Idaho Point

	1971	1975	1976	1/	1978	1979	1980	1981	1982	1983	1984	19
No. Diggers Sampled	10,462	123	42	309	20	193	182	147	80	138	52	
No. Clams Sampled	138,784	2,600	812	3,773	298	2,783	3,118	2,339	1,219	2,171	890	
No. Digger Hours	15,621	-	76.5	464	25.2	247.8	301.6	222.3	144.5	219.0	83	
Hours/trip	1.5	-	1.8	1.5	1.3	1.3	1.7	1.5	1.8	1.6	1.6	
Clams/trip	13.3	21.1	19.3	12.2	14.9	14.4	17.1	15.9	15.2	15.7	17.1	
Clams/hour	8.9	-	10.6	8.1	11.8	11.2	10.3	10.5	8.4	9.9	10.7	
Digger origin (%)												
Local	-	-	35.7	12.3	45.0	31.6	28.6	15.6	18.8	9.4	21.2	
State	-	-	33.3	84.1	50.0	62.7	65.4	70.7	81.3	85.5	76.9	
Non-State	-	-	31.0	3.6	5.0	5.7	6.0	13.6	-	5.1	1.9	
Species Comp. (%)	Other ^{2/}											0.4
Butter	0.3	<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	
Gaper	21.7	5.8	18.4	13.1	15.1	20.7	12.8	4.1	2.9	2.8	1.6	
Littleneck	0.4	<0.1	0.1	0.2	-	0.1	-	0.5	0.9	0.7	0.3	
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	
Gaper	2.9	1.2	3.6	1.6	2.3	3.0	2.2	0.6	0.4	0.4	0.3	
Littleneck	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	0.1	0.1	
Softshell	-	-	-	-	-	-	-	-	-	-	-	
Clams/hour												
Butter	0.1	-	0.1	0.1	-	0.2	-	-	-	<0.1	0.1	
Cockle	6.9	-	7.7	6.4	9.9	7.9	1.3	9.8	8.0	8.5	10.4	
Gaper	1.9	-	2.0	1.1	1.8	2.3	9.0	0.4	0.2	0.3	0.2	
Littleneck	<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	
Gaper	113.0	96.6	91.3	93.5	95.2	95.9	94.5	91.7	83.3	89.1	-	
Littleneck	-	-	-	-	-	55.3	-	50.1	42.7	42.6	44.0	
Softshell	-	-	-	-	-	-	-	-	-	-	-	
No. Clams Measured												
Butter	-	-	-	-	-	-	-	4	-	-	5	
Cockle	-	-	-	-	-	45	1,620	1,302	-	540	240	
Gaper	-	369	522	1,804	250	1,471	181	75	-	40	-	
Littleneck	-	171	126	173	42	24	-	9	-	5	4	
Softshell	-	-	-	-	-	-	-	-	-	-	-	

1/ Regulation change in bag limit; effective Jan. 1, 1977

2/ Bentnose clam

Table 10. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Yaquina

Tideflat: Northwest Gas Plant

	1971	1975	1976	1/	1978	1979	1980	1981	1982	1983	1984	19
No. Diggers Sampled	5,857	92	93	315	49	137	63	38	29	23	9	
No. Clams Sampled	119,702	13,541	583	3,852	684	1,073	495	151	128	219	136	
No. Digger Hours	8,725	-	139.0	402.0	66.8	164.8	84.3	54.4	32.5	25.0	13	
Hours/trip	1.5	-	1.5	1.3	1.4	1.2	1.3	1.4	1.1	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	
Clams/hour	13.7	-	11.4	9.6	10.2	6.5	5.9	2.8	3.9	8.8	10.5	
Local	-	-	9.7	22.5	59.2	33.6	30.2	36.8	65.5	34.8	44.4	
State	-	-	86.0	72.1	38.8	49.6	68.3	57.9	34.5	65.2	33.3	
Non-State	-	-	4.3	5.4	2.0	16.8	1.5	5.3	-	-	22.2	
Species Comp. (%) Other ^{2/}										1.8	2.2	
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	
Gaper	12.7	29.8	22.0	13.8	16.8	11.9	19.6	34.4	7.0	-	-	
Littleneck	0.7	1.3	0.3	0.5	0.4	0.6	1.4	2.0	1.6	13.7	2.9	
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	
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	
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	
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	
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	
Gaper	95.3	91.3	91.5	92.8	101.1	94.9	96.0	88.8	87.3	96.5	-	
Littleneck	-	-	-	-	-	-	47.4	48.0	45.5	45.8	-	
Softshell	-	-	-	-	-	-	-	57.5	-	-	-	
No. Clams Measured												
Butter	-	-	-	-	-	-	1	1	-	1	-	
Cockle	-	219	648	889	525	606	349	18	60	177	122	
Gaper	-	451	217	152	106	96	61	46	7	8	-	
Littleneck	-	-	-	-	-	5	5	2	-	30	-	
Softshell	-	-	-	-	-	-	-	2	-	-	-	

1/ Regulation change in bag limit; effective Jan. 1, 1977

2/ Bentnose clam

Table 11. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Yaquina

Tideflat: Coquille Point

	1981	1982	1983	1984	19	19	19	19	19	19	19
No. Diggers Sampled	11	53	27	-							
No. Clams Sampled	24	267	147	-							
No. Digger Hours	9	75.0	33.0	-							
Hours/trip	0.8	1.4	1.2	-							
Clams/trip	2.2	5.0	5.4	-							
Clams/hour	2.7	3.6	4.5	-							
Digger origin (%)											
Local	-	9.4	25.9	-							
State	100	75.5	55.6	-							
Non-State	-	15.1	18.5	-							
Species Comp. (%)											
Butter	4.2	3.0	40.1	-							
Cockle	-	-	34.7	-							
Gaper	95.8	93.3	15.7	-							
Littleneck	-	3.0	8.2	-							
Softshell	-	-	-	-							
Clams/trip											
Butter	0.1	0.2	2.2	-							
Cockle	-	-	1.9	-							
Gaper	2.1	4.7	0.9	-							
Littleneck	-	0.2	0.4	-							
Softshell	-	-	-	-							
Clams/hour											
Butter	0.1	0.1	1.8	-							
Cockle	-	-	1.6	-							
Gaper	2.6	3.3	0.7	-							
Littleneck	-	0.1	0.4	-							
Softshell	-	-	-	-							
Size Comp. (x size)											
Butter	88.0	93.6	74.9	-							
Cockle	-	-	47.2	-							
Gaper	94.5	96.6	98.9	-							
Littleneck	-	61.3	45.9	-							
Softshell	-	-	-	-							
No. Clams Measured											
Butter	1	5	22	-							
Cockle	-	-	51	-							
Gaper	23	142	15	-							
Littleneck	-	4	12	-							
Softshell	-	-	-	-							

Table 12. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Yaquina

Tideflat: Critser's Island

	1983	1984	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	42	14									
No. Clams Sampled	1,380	491									
No. Digger Hours	56	23.5									
Hours/trip	1.3	1.7									
Clams/trip	32.9	35.1									
Clams/hour	24.6	20.9									
Digger origin (%)											
Local	40.5	50.0									
State	59.5	50.0									
Non-State	-	-									
Species Comp. (%)											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	100.0	100.0									
Clams/trip											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	32.9	35.1									
Clams/hour											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	24.6	20.9									
Size Comp. (x size)											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	82.5	93.0									
No. Clams Measured											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	569	68									

Table 13. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Alsea

Tideflat: North Shore

	1982	1983	1984	19	19	19	19	19	19	19	19
No. Diggers Sampled	4	3	-								
No. Clams Sampled	71	22	-								
No. Digger Hours	6.0	4.5	-								
Hours/trip	1.5	1.5	-								
Clams/trip	17.8	7.3	-								
Clams/hour	11.8	4.9	-								
Digger origin (%)											
Local	100.0	-	-								
State	-	100.0	-								
Non-State	-	-	-								
Species Comp. (%)											
Butter	-	-	-								
Cockle	100.0	90.9	-								
Gaper	-	-	-								
Littleneck	-	4.6	-								
Softshell	-	4.6	-								
Clams/trip											
Butter	-	-	-								
Cockle	17.8	6.7	-								
Gaper	-	-	-								
Littleneck	-	0.3	-								
Softshell	-	0.3	-								
Clams/hour											
Butter	-	-	-								
Cockle	11.8	4.4	-								
Gaper	-	-	-								
Littleneck	-	0.2	-								
Softshell	-	0.2	-								
Size Comp. (x size)											
Butter	-	-	-								
Cockle	80.1	71.0	-								
Gaper	-	-	-								
Littleneck	-	39.0	-								
Softshell	-	58.0	-								
No. Clams Measured											
Butter	-	-	-								
Cockle	39	20	-								
Gaper	-	-	-								
Littleneck	-	-	-								
Softshell	-	-	-								

Table 14. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Alsea

Tideflat: Bayshore

	1982	1983	1984	19	19	19	19	19	19	19	19
No. Diggers Sampled	32	24	17								
No. Clams Sampled	529	316	156								
No. Digger Hours	46	39.5	28.5								
Hours/trip	1.4	1.7	1.7								
Clams/trip	16.5	13.2	9.2								
Clams/hour	11.5	8.0	5.5								
Digger origin (%)											
Local	59.4	66.7	41.2								
State	25.0	25.0	58.8								
Non-State	15.6	8.3	-								
Species Comp. (%)											
Butter	-	-	-								
Cockle	99.8	99.7	98.7								
Gaper	0.2	-	1.3								
Littleneck	-	-	-								
Softshell	-	0.3	-								
Clams/trip											
Butter	-	-	-								
Cockle	16.5	13.1	9.1								
Gaper	<0.1	-	0.1								
Littleneck	-	-	-								
Softshell	-	<0.1	-								
Clams/hour											
Butter	-	-	-								
Cockle	11.5	8.0	5.4								
Gaper	<0.1	-	0.1								
Littleneck	-	-	-								
Softshell	-	<0.1	-								
Size Comp. (x size)											
Butter	-	-	-								
Cockle	72.9	76.4	76.3								
Gaper	-	-	116.0								
Littleneck	-	-	-								
Softshell	-	-	-								
No. Clams Measured											
Butter	-	-	-								
Cockle	159	295	154								
Gaper	-	-	2								
Littleneck	-	-	-								
Softshell	-	-	-								

Table 15. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Alsea

Tideflat: Softshell

	1983	1984	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	4	5									
No. Clams Sampled	91	138									
No. Digger Hours	6.0	7									
Hours/trip	1.5	1.4									
Clams/trip	22.8	27.6									
Clams/hour	15.2	19.7									
Digger origin (%)											
Local	50.0	60.0									
State	50.0	-									
Non-State	-	40.0									
Species Comp. (%)											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	100.0	100.0									
Clams/trip											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	22.8	27.6									
Clams/hour											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	15.2	19.7									
Size Comp. (x size)											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	96.8	94.6									
No. Clams Measured											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	86.0	135									

Table 16. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Siuslaw

Tideflat: North Fork^{1/}

	1971	1976	1977	1978	1979	1980	1981	1982	1983	1984	19	19
No. Diggers Sampled	3,203	39	51	21	42	7	115	21	33	168		
No. Clams Sampled	72,756	1,067	1,426	670	1,140	188	3,445	875	1,163	5,418		
No. Digger Hours	4,844	54	101	31.5	55.3	5.0	145.2	28	32.0	231.0		
Hours/trip	1.5	1.4	2.0	1.5	1.3	0.7	1.3	1.3	1.0	1.4		
Clams/trip	22.7	27.4	28.0	31.9	27.1	26.9	30.0	41.7	35.2	34.0		
Clams/hour	15.0	19.8	14.1	21.3	20.6	37.6	23.7	31.3	36.3	24.7		
Digger origin (%)												
Local	-	12.8	28.8	28.6	19.0	28.6	38.3	47.6	51.5	27.4		
State	-	84.6	66.7	71.4	47.6	71.4	48.7	52.4	42.4	67.3		
Non-State	-	2.6	4.4	-	33.3	-	13.0	-	9.1	5.4		
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		
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		
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		
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		
No. Clams Measured												
Butter	-	-	-	-	-	-	-	-	-	-		
Cockle	-	-	-	-	-	-	-	-	-	-		
Gaper	-	-	-	-	-	-	-	-	-	-		
Littleneck	-	-	-	-	-	-	-	-	-	-		
Softshell	-	741	408	335	676	110	1,629	757	867	297		

^{1/} Includes digging on west side, east side and in North Fork of Siuslaw & near Florence.

Table 17. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Umpqua

Tideflat: Bolin Island

	1983	1984	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	2	23									
No. Clams Sampled	72	930									
No. Digger Hours	4.0	68.5									
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 18. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coos

Tideflat: Hanson's Marina - South Slough

	1983	1984	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	6	-									
No. Clams Sampled	1012	-									
No. Digger Hours	4.5	-									
Hours/trip	0.8	-									
Clams/trip	16.8	-									
Clams/hour	22.4	-									
Digger origin (%)											
Local	100.0	-									
State	-	-									
Non-State	-	-									
Species Comp. (%)											
Butter	4.0	-									
Cockle	19.8	-									
Gaper	69.3	-									
Littleneck	6.9	-									
Softshell	-	-									
Clams/trip											
Butter	0.7	-									
Cockle	3.3	-									
Gaper	11.7	-									
Littleneck	1.2	-									
Softshell	-	-									
Clams/hour											
Butter	0.9	-									
Cockle	4.4	-									
Gaper	15.6	-									
Littleneck	1.6	-									
Softshell	-	-									
Size Comp. (x size) ^{1/}											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	-	-									
No. Clams Measured ^{1/}											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	-	-									

^{1/} Not taken

Table 19. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coos

Tideflat: Charleston Triangle

	1983	1984	19	19	19	19	19	19	19	19
No. Diggers Sampled	40	32								
No. Clams Sampled	771	588								
No. Digger Hours	44	26.7								
Hours/trip	1.1	0.8								
Clams/trip	19.3	18.4								
Clams/hour	17.5	22.0								
Digger origin (%)										
Local	22.5	40.6								
State	72.5	56.3								
Non-State	5.0	3.1								
Species Comp. (%)										
Butter	19.6	10.9								
Cockle	55.1	69.2								
Gaper	3.9	15.0								
Littleneck	23.2	4.9								
Softshell	-	-								
Clams/trip										
Butter	3.8	2.0								
Cockle	10.6	12.7								
Gaper	0.8	2.8								
Littleneck	4.5	0.9								
Softshell	-	-								
Clams/hour										
Butter	3.4	2.4								
Cockle	9.7	15.2								
Gaper	0.7	3.3								
Littleneck	4.1	1.1								
Softshell	-	-								
Size Comp. (x size)										
Butter	73.3	80.2								
Cockle	51.2	66.3								
Gaper	88.6	95.2								
Littleneck	55.2	57.6								
Softshell	-	-								
No. Clams Measured										
Butter	39	17								
Cockle	45	218								
Gaper	26	54								
Littleneck	18	159								
Softshell	-	-								

Table 20. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coos

Tideflat: Charleston Flat

	1983	1984	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	60	27									
No. Clams Sampled	859	435									
No. Digger Hours	124.5	28.8									
Hours/trip	2.1	1.1									
Clams/trip	14.3	16.1									
Clams/hour	6.9	15.1									
Digger origin (%)											
Local	21.7	40.7									
State	73.3	51.9									
Non-State	5.0	7.4									
Species Comp. (%)											
Butter	2.0	4.6									
Cockle	46.6	60.9									
Gaper	38.8	27.6									
Littleneck	10.6	3.7									
Softshell	-	3.0									
Clams/trip											
Butter	0.3	0.7									
Cockle	6.7	9.8									
Gaper	5.6	4.4									
Littleneck	1.5	0.6									
Softshell	-	0.5									
Clams/hour											
Butter	0.1	0.7									
Cockle	3.2	9.2									
Gaper	2.7	4.6									
Littleneck	0.7	0.6									
Softshell	-	-									
Size Comp. (x size)											
Butter	84.0	78.1									
Cockle	59.9	63.2									
Gaper	100.6	105.9									
Littleneck	55.0	65.0									
Softshell	-	-									
No. Clams Measured											
Butter	1	13									
Cockle	38	92									
Gaper	13	80									
Littleneck	3	2									
Softshell	-	-									

Table 21. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coos

Tideflat: Peterson Flat

	1983	1984	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	12	4									
No. Clams Sampled	235	54									
No. Digger Hours	23.5	5									
Hours/trip	2.0	1.3									
Clams/trip	19.6	13.5									
Clams/hour	10.0	10.8									
Digger origin (%)											
Local	25.0	0									
State	75.0	50.0									
Non-State	0	50.0									
Species Comp. (%)											
Bentnose	7.4										
Butter	8.1	-									
Cockle	21.7	1.9									
Gaper	45.1	88.9									
Littleneck	25.1	1.9									
Softshell	0	-									
Clams/trip											
Bentnose	1.0										
Butter	1.6	-									
Cockle	4.3	0.3									
Gaper	8.8	12.0									
Littleneck	4.9	0.3									
Softshell	0	-									
Clams/hour											
Bentnose	0.8										
Butter	0.8	-									
Cockle	2.2	0.2									
Gaper	4.5	9.6									
Littleneck	2.5	0.2									
Softshell	0	-									
Size Comp. (x size) ^{1/}											
Butter	-	-									
Cockle	-	-									
Gaper	-	113.7									
Littleneck	-	-									
Softshell	-	-									
No. Clams Measured ^{1/}											
Butter	0	-									
Cockle	0	-									
Gaper	0	23									
Littleneck	0	-									
Softshell	0	-									

^{1/} Not taken

Table 22. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coos

Tideflat: Pigeon Point

	1983	1984	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	111	43									
No. Clams Sampled	1,681	679									
No. Digger Hours	94.8	70.0									
Hours/trip	0.9	1.6									
Clams/trip	15.1	15.8									
Clams/hour	17.7	9.7									
Digger origin (%)											
Local	45.9	65.1									
State	48.6	27.9									
Non-State	5.4	7.0									
Species Comp. (%)											
Butter	27.1	36.4									
Cockle	0.7	8.0									
Gaper	51.2	32.7									
Littleneck	20.9	22.5									
Softshell	-	0.6									
Clams/trip											
Butter	4.1	5.4									
Cockle	0.1	1.3									
Gaper	7.7	5.2									
Littleneck	3.2	3.6									
Softshell	-	0.1									
Clams/hour											
Butter	4.8	3.5									
Cockle	0.1	0.8									
Gaper	9.1	3.2									
Littleneck	3.7	2.2									
Softshell	-	0.1									
Size Comp. (x size) ^{1/}											
Butter	85.9	84.8									
Cockle	37.9	-									
Gaper	108.0	104.5									
Littleneck	67.2	62.0									
Softshell	-	-									
No. Clams Measured ^{1/}											
Butter	44	93									
Cockle	7	-									
Gaper	46	52									
Littleneck	9	50									
Softshell	-	-									

^{1/} Not taken

Table 23. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coos

Tideflat: Sitka Flat

	1983	1984	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	46	-									
No. Clams Sampled	678	-									
No. Digger Hours	81.5	-									
Hours/trip	1.8	-									
Clams/trip	14.7	-									
Clams/hour	8.3	-									
Digger origin (%)											
Local	58.7	-									
State	41.3	-									
Non-State	-	-									
Species Comp. (%)											
Butter	19.8	-									
Cockle	1.0	-									
Gaper	50.9	-									
Littleneck	28.2	-									
Softshell	-	-									
Clams/trip											
Butter	2.9	-									
Cockle	0.2	-									
Gaper	7.5	-									
Littleneck	4.2	-									
Softshell	-	-									
Clams/hour											
Butter	1.6	-									
Cockle	0.1	-									
Gaper	4.2	-									
Littleneck	2.3	-									
Softshell	-	-									
Size Comp. (x size)											
Butter	85.9	-									
Cockle	37.9	-									
Gaper	108.0	-									
Littleneck	67.2	-									
Softshell	-	-									
No. Clams Measured											
Butter	44	-									
Cockle	7	-									
Gaper	46	-									
Littleneck	9	-									
Softshell	-	-									

Table 24. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coos

Tideflat: Empire Flat

	1983	1984	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	70	9									
No. Clams Sampled	1,057	180									
No. Digger Hours	99	9									
Hours/trip	1.4	1.0									
Clams/trip	15.1	20.0									
Clams/hour	10.7	20.0									
Digger origin (%)											
Local	54.3	100.0									
State	34.3	-									
Non-State	11.4	-									
Species Comp. (%)											
Butter	1.4	-									
Cockle	11.2	13.3									
Gaper	58.8	33.3									
Littleneck	0.3	53.3									
Softshell	-	-									
Clams/trip											
Butter	0.2	-									
Cockle	1.7	2.7									
Gaper	8.9	6.7									
Littleneck	<0.1	10.7									
Softshell	-	-									
Clams/hour											
Butter	0.2	-									
Cockle	1.2	2.7									
Gaper	6.3	6.7									
Littleneck	<0.1	10.7									
Softshell	-	-									
Size Comp. (x size) ^{1/}											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	-	-									
No. Clams Measured ^{1/}											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	-	-									

^{1/} Not taken

Table 25. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coos

Tideflat: North Spit

	1983	1984	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	65	50									
No. Clams Sampled	692	746									
No. Digger Hours	93	81.5									
Hours/trip	1.4	1.6									
Clams/trip	10.7	14.9									
Clams/hour	7.4	9.2									
Digger origin (%)											
Local	72.3	68.0									
State	27.7	28.0									
Non-State	-	4.0									
Species Comp. (%)											
Butter	3.5	6.4									
Cockle	17.6	22.0									
Gaper	75.3	65.5									
Littleneck	3.6	6.0									
Softshell	-	-									
Clams/trip											
Butter	0.4	1.0									
Cockle	1.9	3.3									
Gaper	8.0	9.8									
Littleneck	0.4	0.9									
Softshell	-	-									
Clams/hour											
Butter	0.3	0.6									
Cockle	1.3	2.0									
Gaper	5.6	6.0									
Littleneck	0.3	0.6									
Softshell	-	-									
Size Comp. (x size)											
Butter	-	77.0									
Cockle	67.7	62.2									
Gaper	109.6	111.2									
Littleneck	72.0	59.5									
Softshell	-	-									
No. Clams Measured											
Butter	-	28									
Cockle	20	39									
Gaper	185	138									
Littleneck	2	28									
Softshell	-	-									

Table 26. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coos

Tideflat: Clam Island

	1983	1984	19	19	19	19	19	19	19	19
No. Diggers Sampled	57	462								
No. Clams Sampled	1,002	7,931								
No. Digger Hours	82	736.5								
Hours/trip	1.4	1.9								
Clams/trip	17.6	17.2								
Clams/hour	12.2	10.8								
Digger origin (%)										
Local	36.8	51.5								
State	57.9	46.3								
Non-State	5.3	2.2								
Species Comp. (%)										
Butter	2.8	4.6								
Cockle	36.5	33.7								
Gaper	54.2	59.8								
Littleneck	1.1	1.8								
Softshell	5.4	-								
Clams/trip										
Butter	0.5	0.8								
Cockle	6.4	5.8								
Gaper	9.5	10.3								
Littleneck	0.2	0.3								
Softshell	1.0	-								
Clams/hour										
Butter	0.3	0.5								
Cockle	4.5	3.6								
Gaper	6.6	6.4								
Littleneck	0.1	0.2								
Softshell	0.7	-								
Size Comp. (x size)										
Butter	78.7	95.0								
Cockle	54.1	76.8								
Gaper	107.7	121.0								
Littleneck	55.5	68.0								
Softshell	-	-								
No. Clams Measured										
Butter	6	1								
Cockle	8	12								
Gaper	46	56								
Littleneck	4	1								
Softshell	-	-								

Table 27. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coquille

Tideflat: Bandon Softshell

	1983	1984	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	6	1									
No. Clams Sampled	215	36									
No. Digger Hours	5	1.5									
Hours/trip	0.8	1.5									
Clams/trip	35.8	36.0									
Clams/hour	43.0	24.0									
Digger origin (%)											
Local	100.0	-									
State	-	-									
Non-State	-	100.0									
Species Comp. (%)											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	100.0	100.0									
Clams/trip											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	35.8	36.0									
Clams/hour											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	43.0	24.0									
Size Comp. (x size) ^{1/}											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	-	-									
No. Clams Measured ^{1/}											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	-	-									

^{1/} Not taken

Table 28. Summary of Pounds of Bay Clams Reported Harvested in Oregon, 1970-84.

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	16	0	216,926
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	134,105
1983	4,035	2,579	95,091	34,444	36	0	136,185
1984	4,842	17,919	50,573	46,874	366	0	120,574

Table 29. Summary of Reported Commercial Harvest of Bay Clams in Major Oregon Estuaries, 1970-84.

Year	Nehalem	Tillamook	Netarts	Yaquina	Alesea	Siuslaw	Umpqua	Coos	Total
1970	258	7,819	2,210	444	0	0	10,631	4,522	25,884
1971 ^{1/}	589	5,948	1,598	1,819	0	0	7,459	10,893	28,306
1972	80	9,637	914	57	70	0	6,105	44,642	61,505
1973	329	11,997	1,191	0	0	0	786	2,853	17,156
1974 ^{1/}	882	9,309	2,409	398	0	0	445	3,232	16,675
1975 ^{1/}	0	4,637	0	0	13	0	309	21,553	26,512
1976 ^{1/}	0	820	0	0	480	0	0	86,529	87,829
1977 ^{1/}	0	1,881	0	71,013	0	0	35	12,066	84,995
1978 ^{1/}	0	2,905	0	172,047	0	0	0	41,804	216,756
1979	174	433	0	74,565	0	3,432	0	16,308	94,912
1980	373	5,320	486	244	0	9,109	0	65,935	81,467
1981	65	4,259	0	128	0	684	0	76,002	81,138
1982 ^{1/}	10,862	11,501	37	15	0	223	25	111,427	134,090
1983	31,856	3,144	200	5,253	0	15	0	95,717	136,185
1984 ^{1/}	23,069	42,663	0	22	0	50	0	54,763	120,567

^{1/} Totals exclude landings of clams reported from Columbia River, Astoria, Bandon, Port Orford, and Gold Beach.

Table 30. Summary of Population and Biomass Estimates for Yaquina, Tillamook, and Nehalem Bays, 1984.

Species	Yaquina		Tillamook		Nehalem	
	Numbers	Biomass	Numbers	Biomass	Numbers	Biomass
Butter	1,000,000	N/A	7,850,400	2,171,800	260,000	N/A
Cockle	80,000	N/A	8,773,900	1,023,400	100,000	N/A
Gaper	5,600,000	3,527,700	1,462,300	807,100	180,000	N/A
Littleneck	440,000	N/A	11,082,900	875,600	4,262,400	214,600
Macoma sp.	14,360,000	N/A	1,693,300	N/A	160,000	N/A
California softshell	40,000	N/A	230,900	N/A	-	-
TOTAL	21,520,000	-	31,093,700	-	4,962,400	-

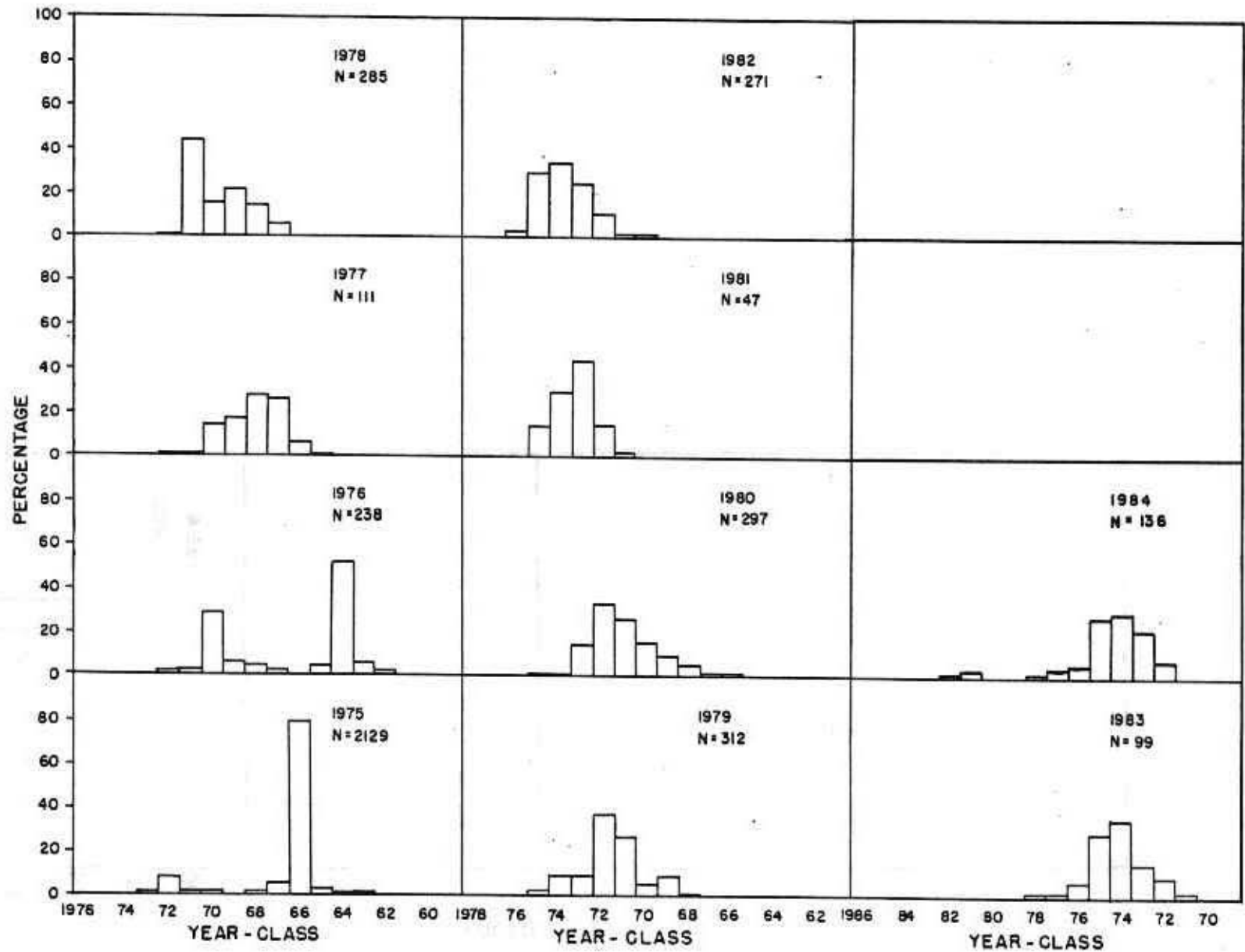


Figure 1. Age Composition of Commercial Subtidal Gaper Clam Harvest, Pigeon Point, Coos Bay, 1975-84.

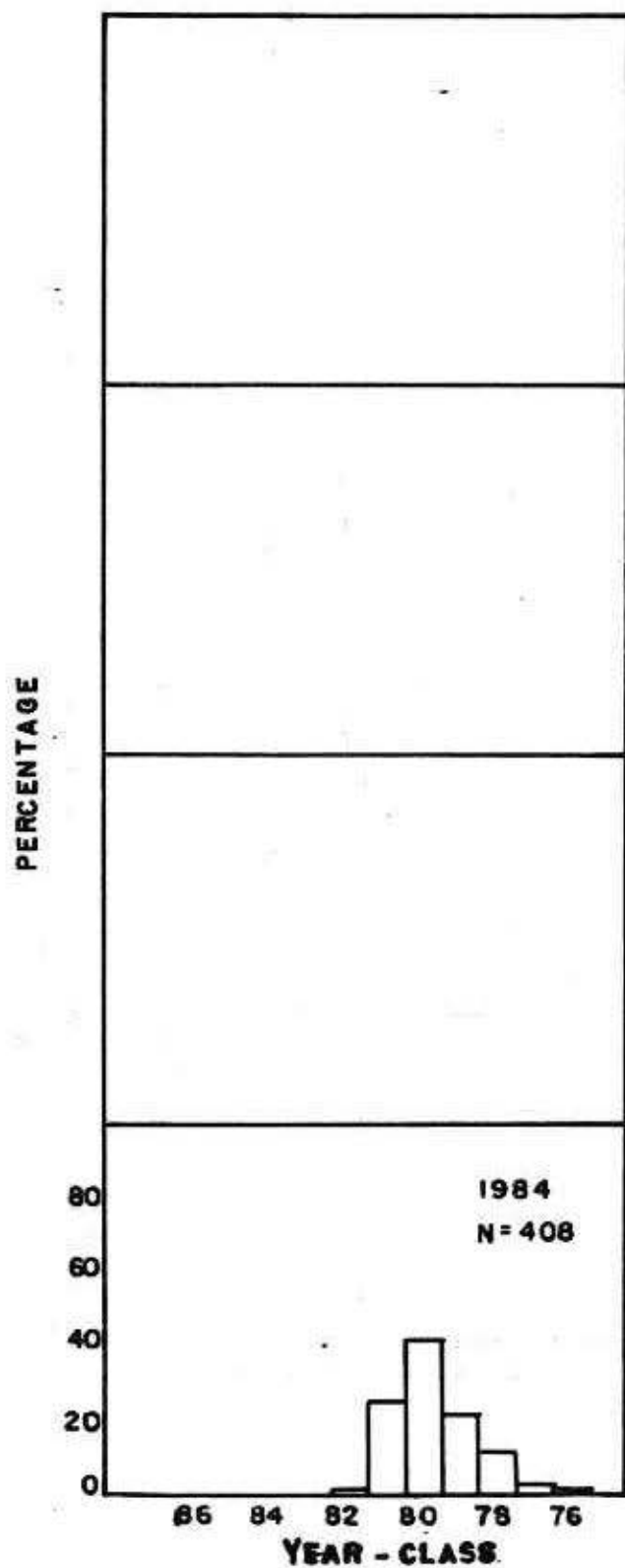


Figure-2. Age Composition of Commercial Subtidal Native Littleneck Clam Harvest, Tillamook Bay, 1984.

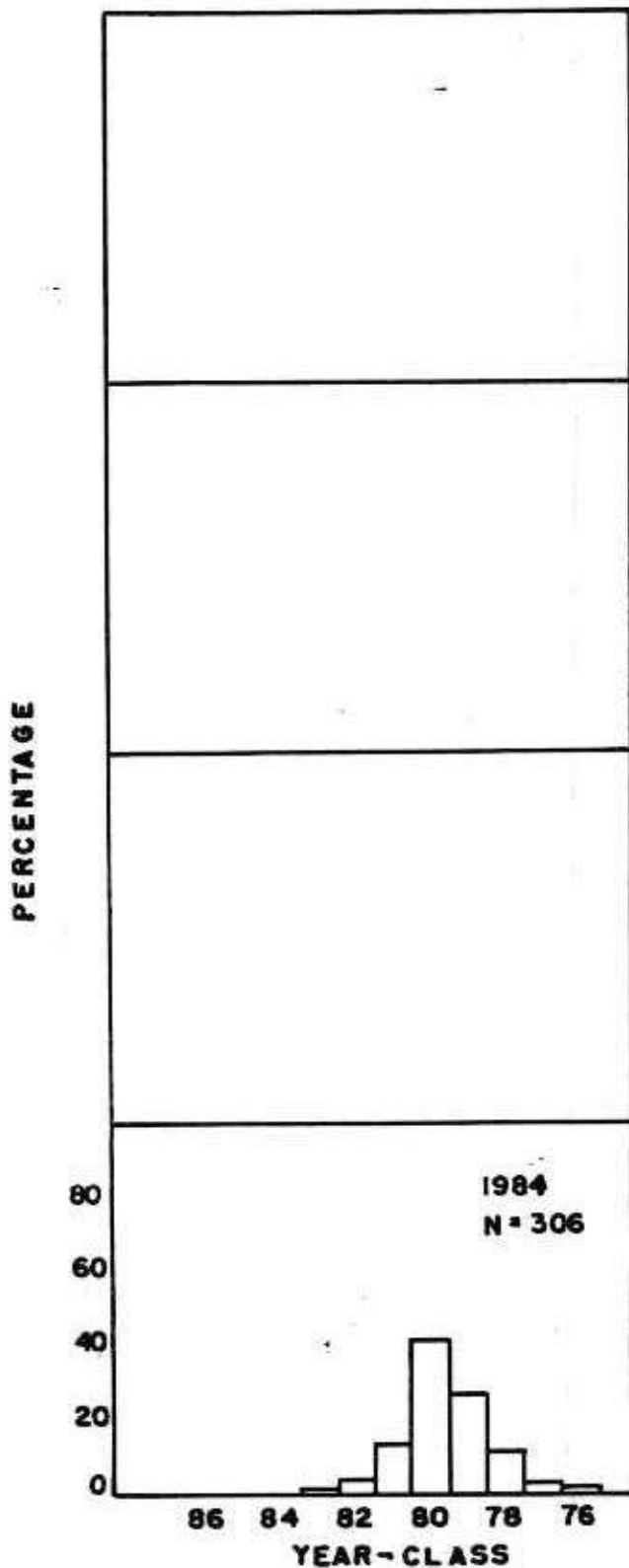


Figure 3. Age Composition of Commercial Subtidal Cockle Clam Harvest, Tillamook Bay, 1984.

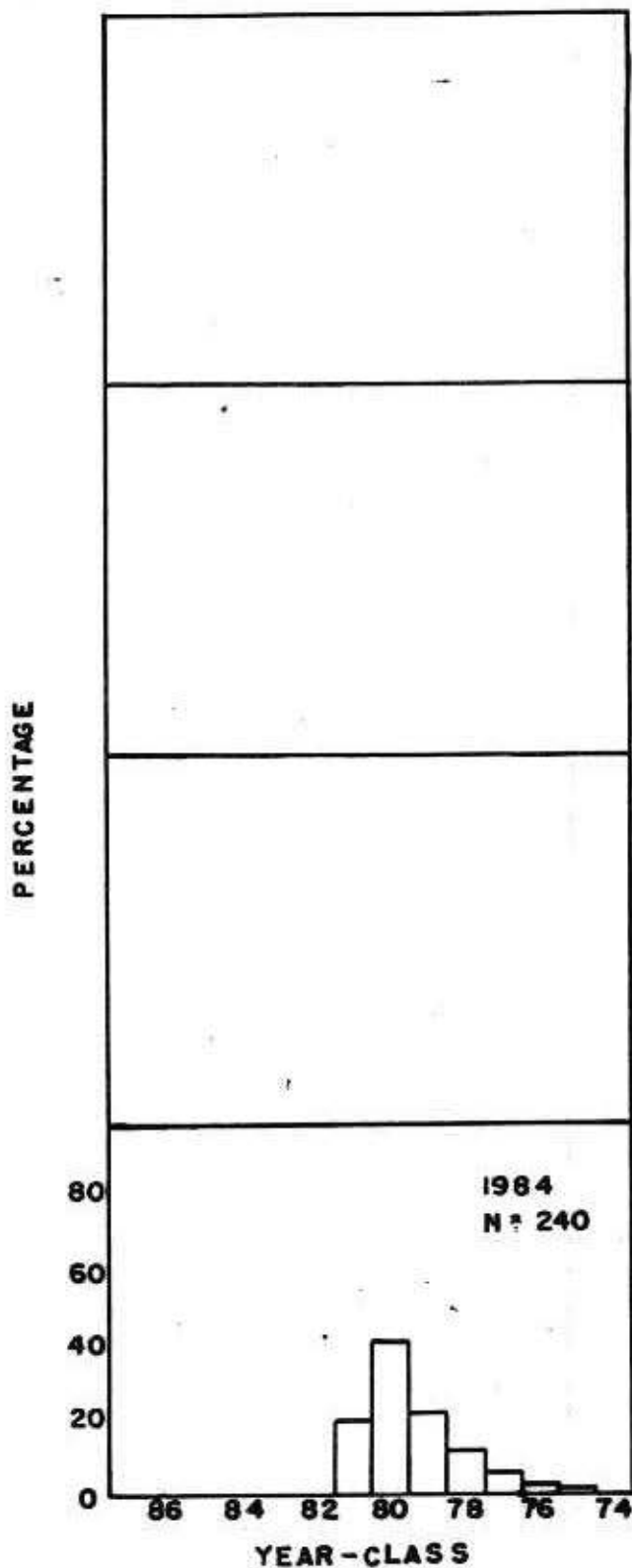


Figure 4. Age Composition of Commercial Subtidal Native Littleneck Clam Harvest, Nehalem Bay, 1984.

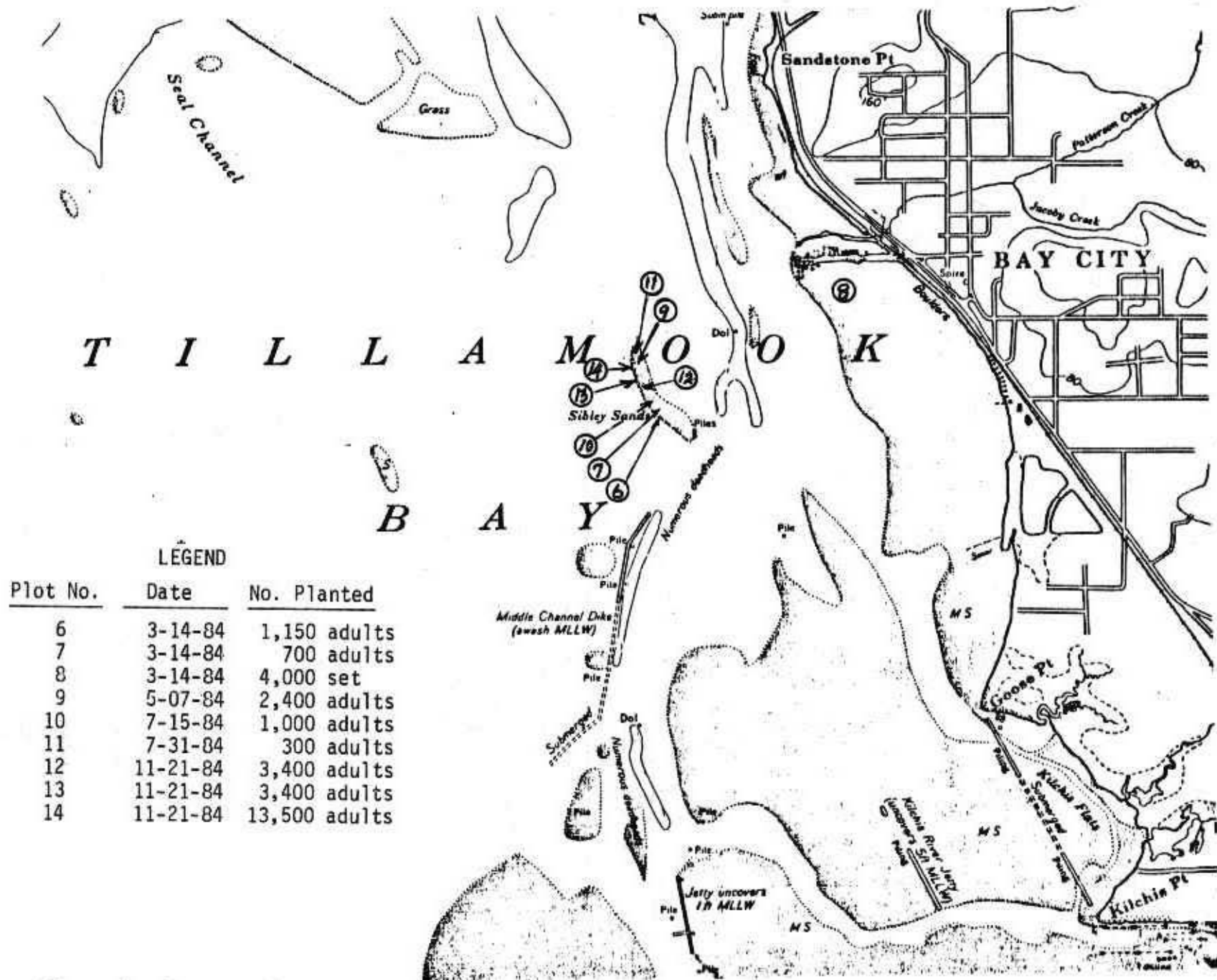


Figure 5. Summary of Manila Littleneck Clam Releases in Tillamook Bay, 1984.

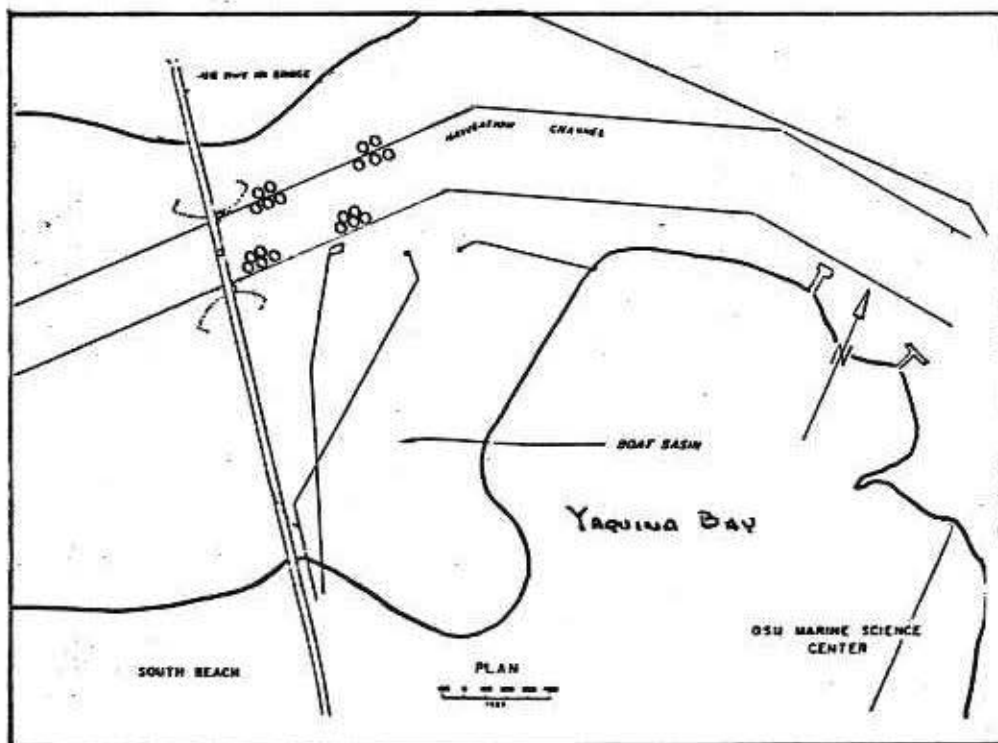
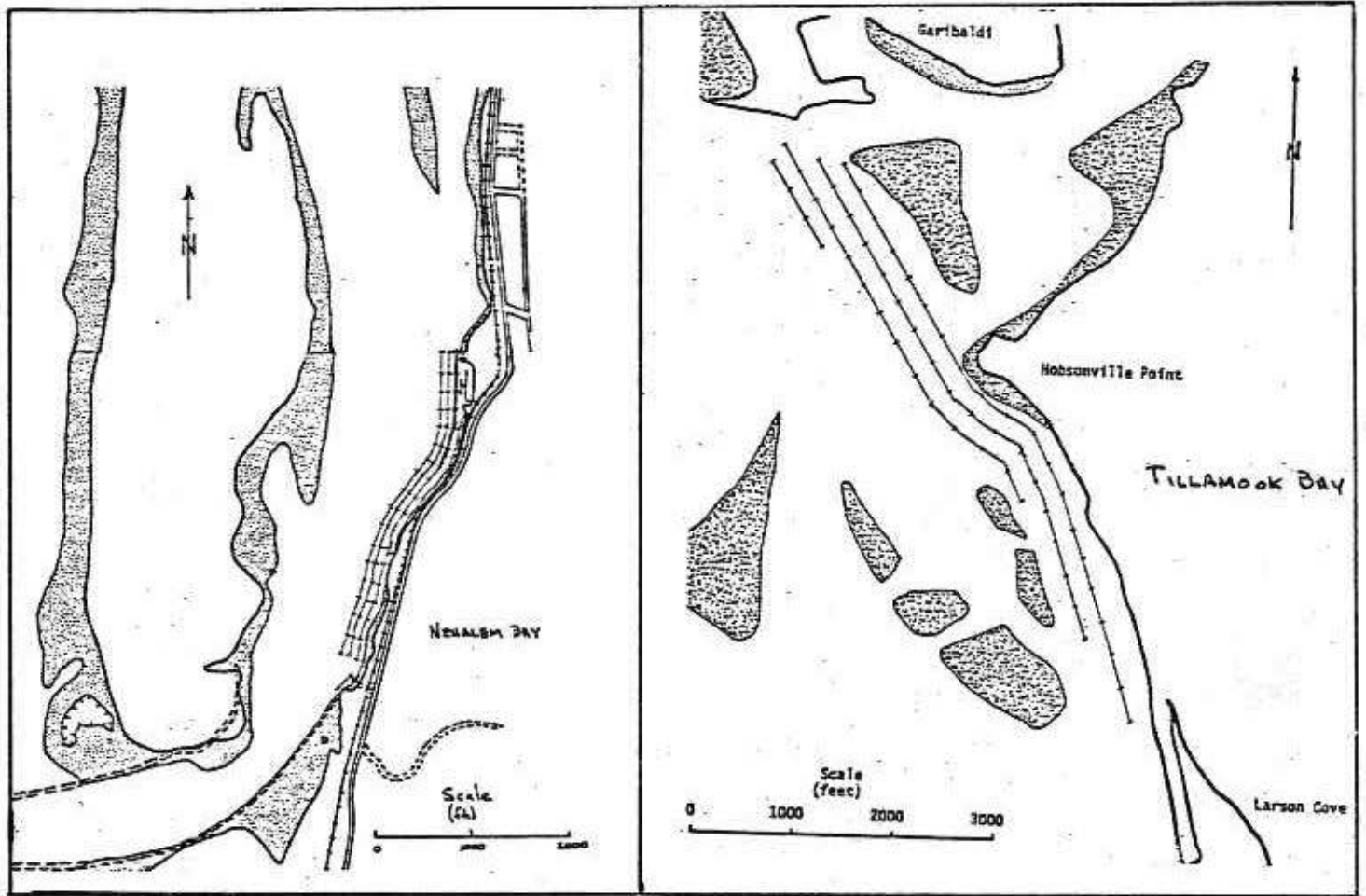


Figure 6. Subtidal Survey Areas in Nehalem, Tillamook, and Yaquina Bays, 1984.

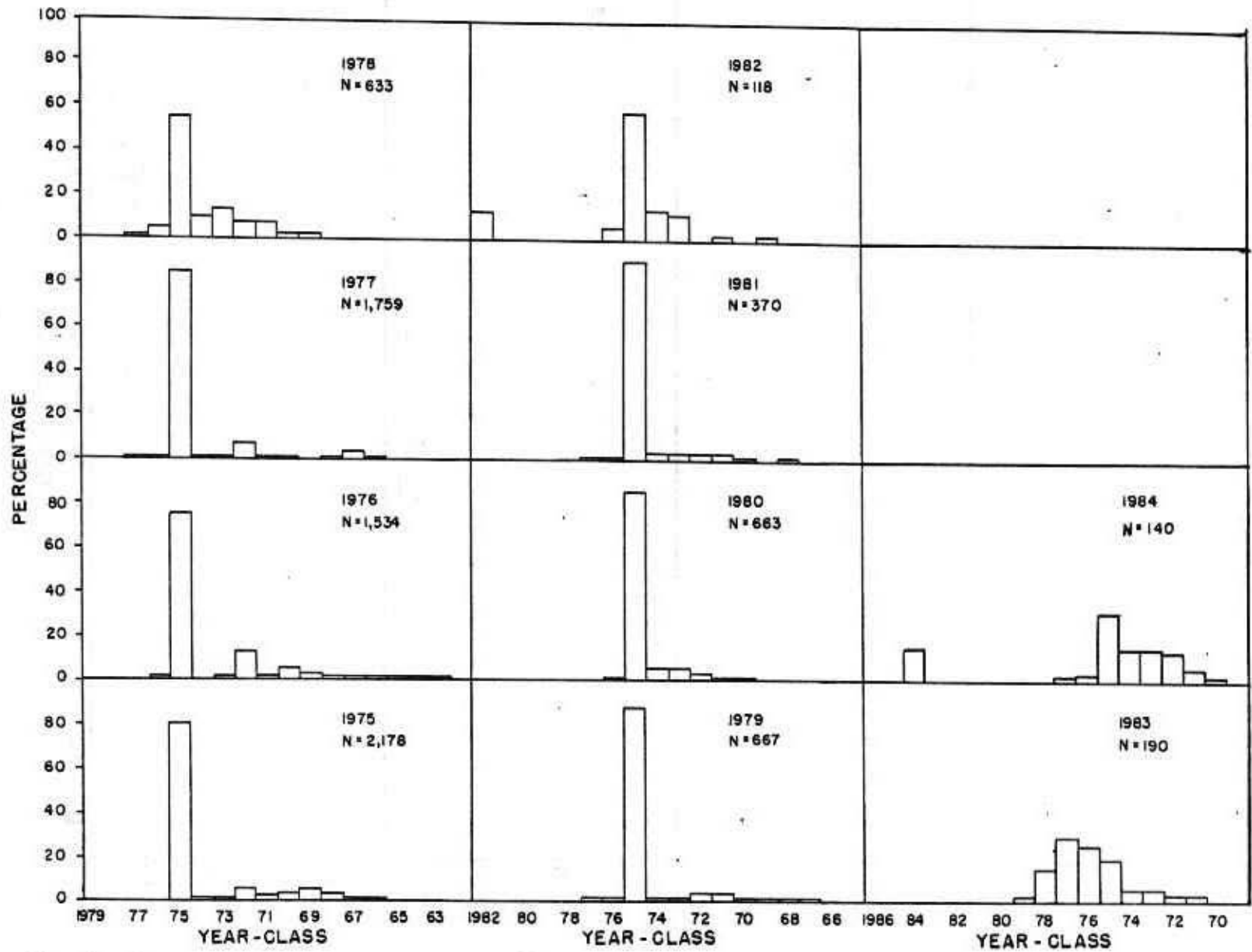


Figure 7. Age Composition of Subtidal Gaper Clams, Area 2, Yaquina Bay, 1975-84.

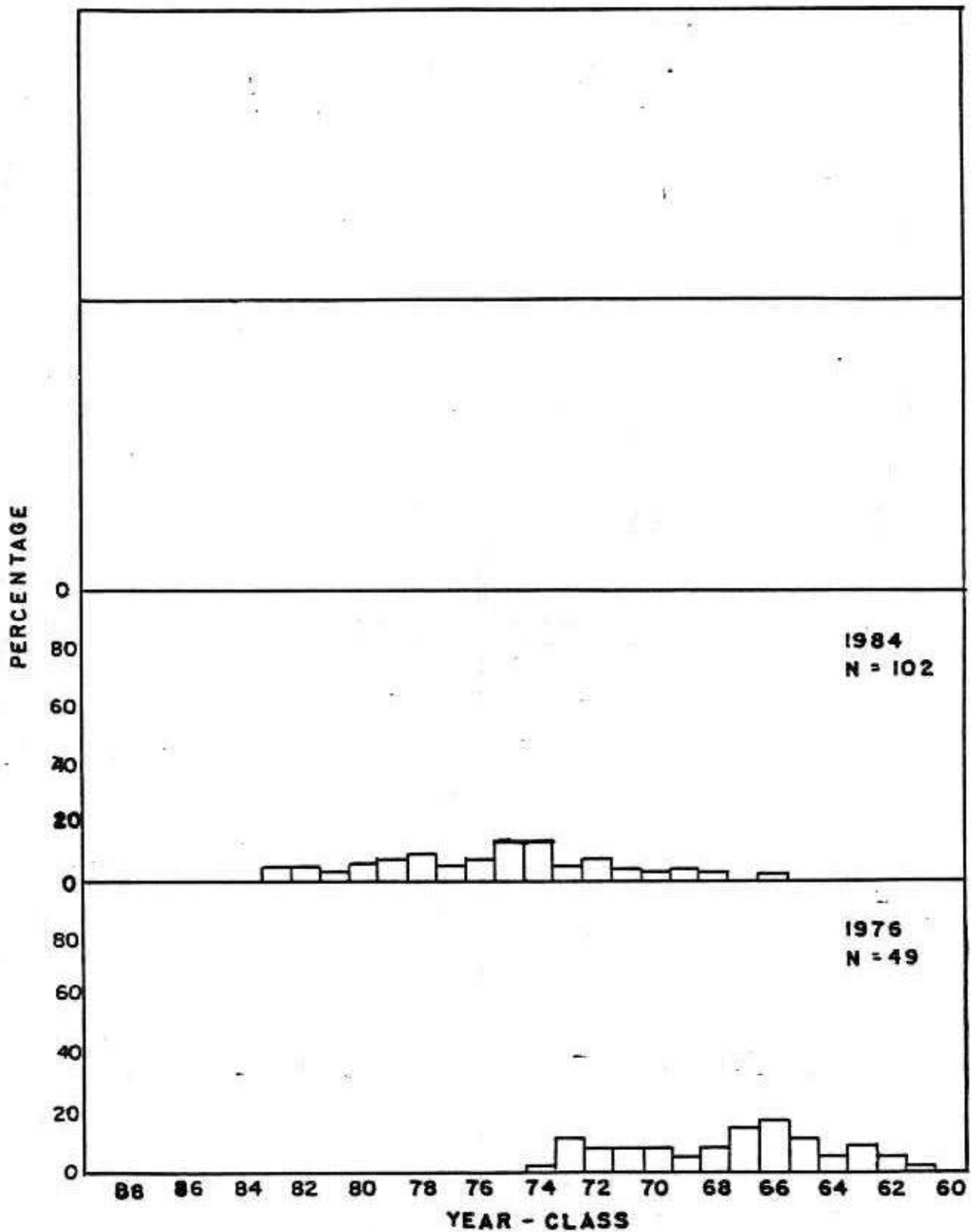


Figure 8. Age Composition of Subtidal Butter Clams, Tillamook Bay, 1976, 1984.

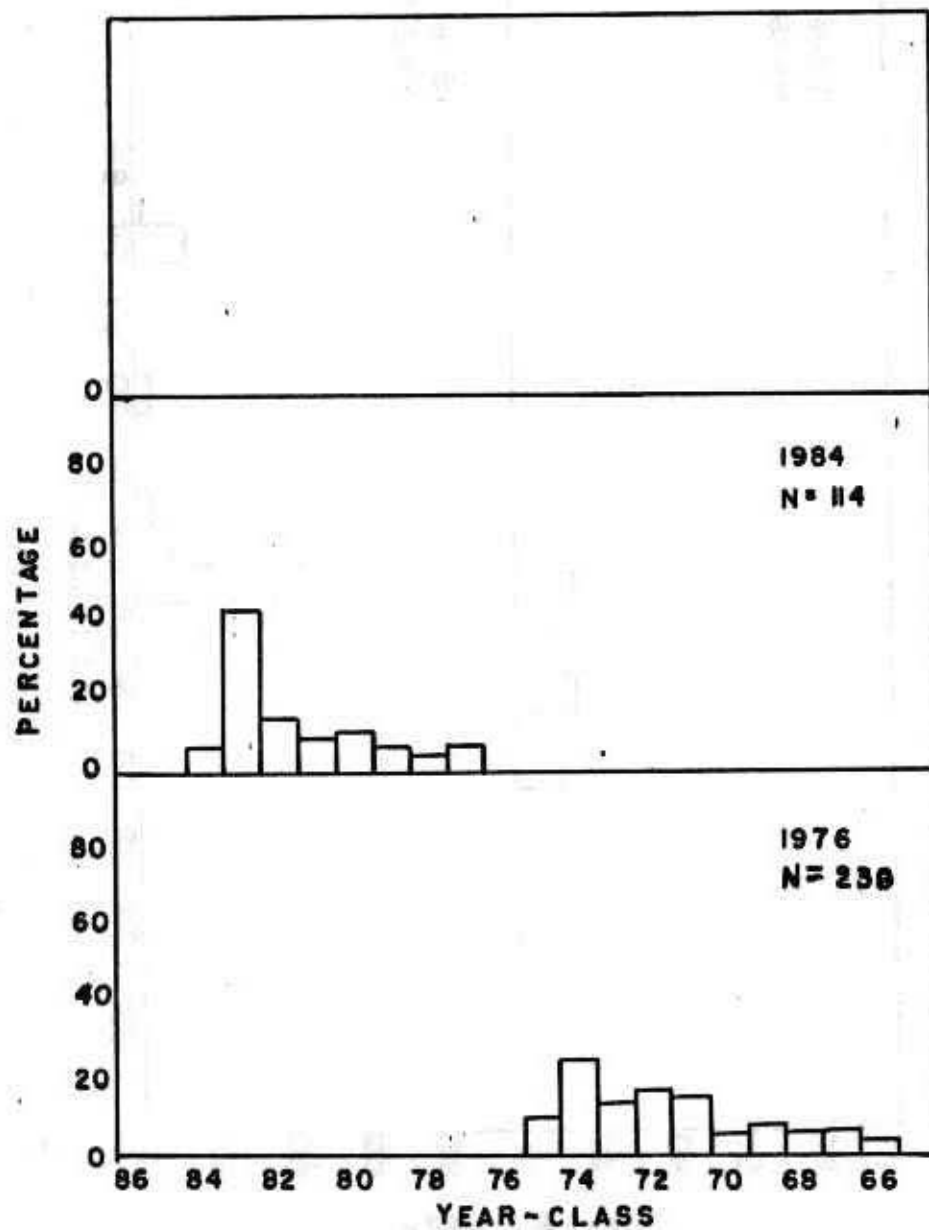


Figure 9. Age Composition of Subtidal Cockle Clams, Tillamook Bay, 1976, 1984.

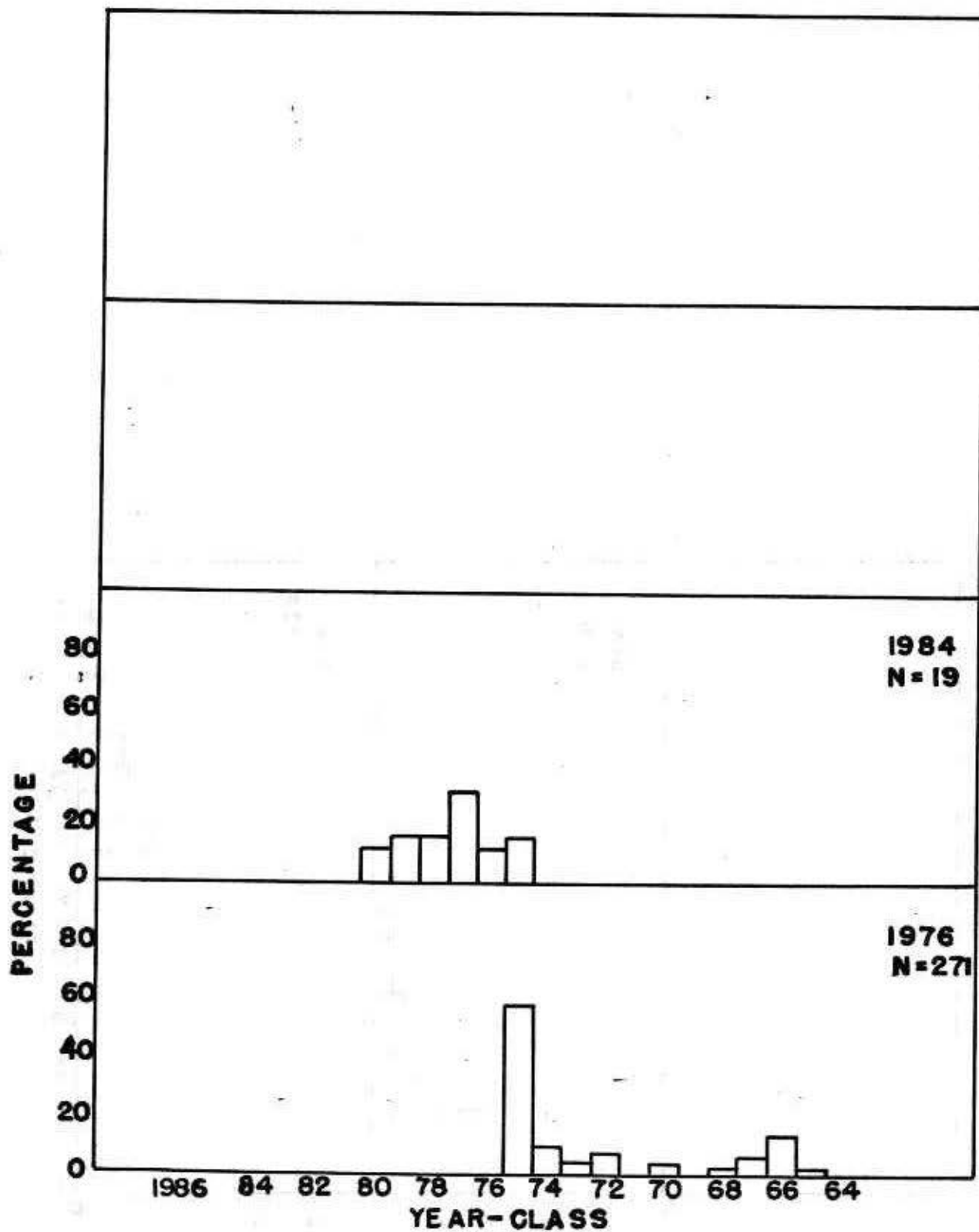


Figure 10. Age Composition of Subtidal Gaper Clams, Tillamook Bay, 1976, 1984.

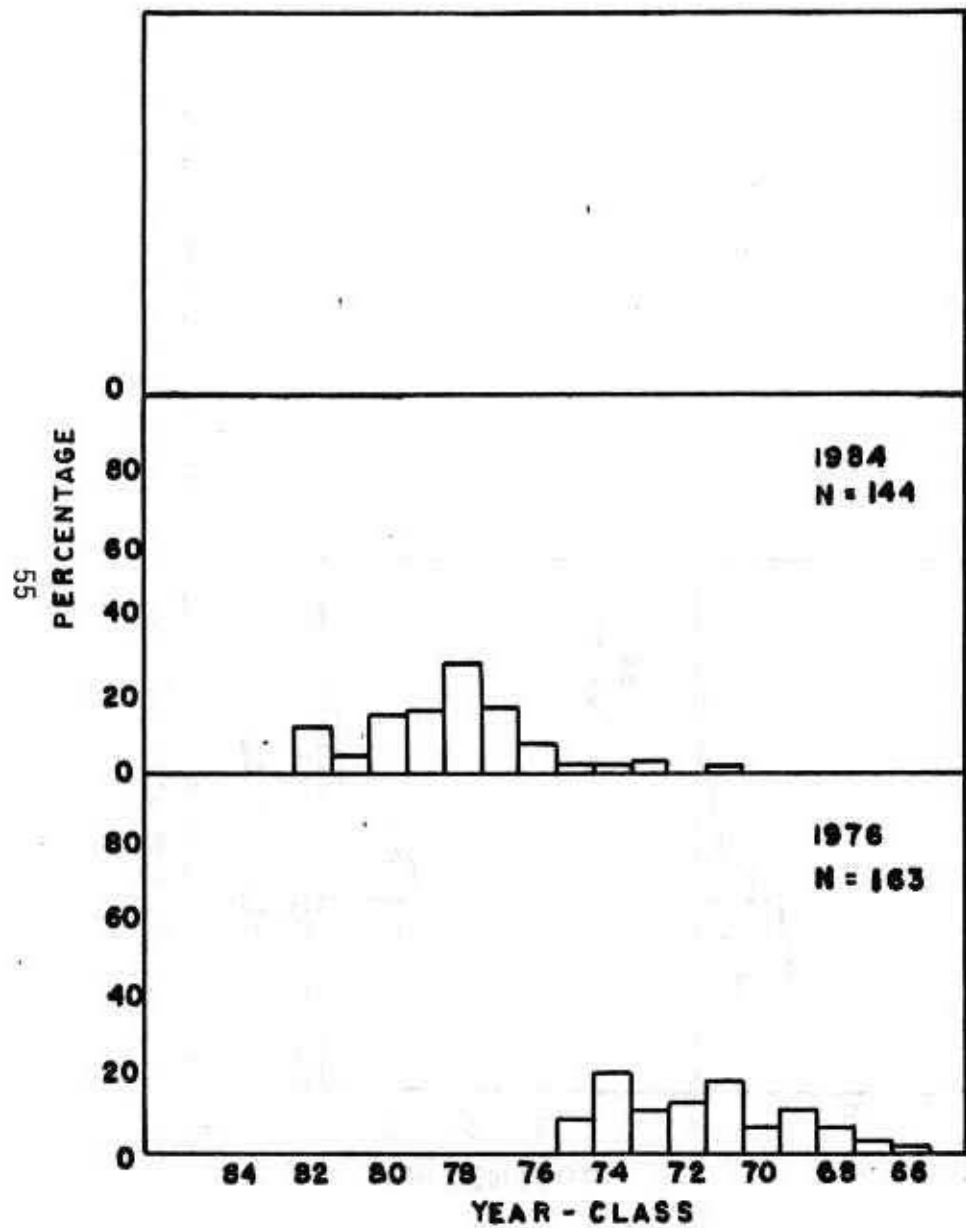


Figure 11. Age Composition of Subtidal Littleneck Clams, Tillamook Bay, 1976, 1984.

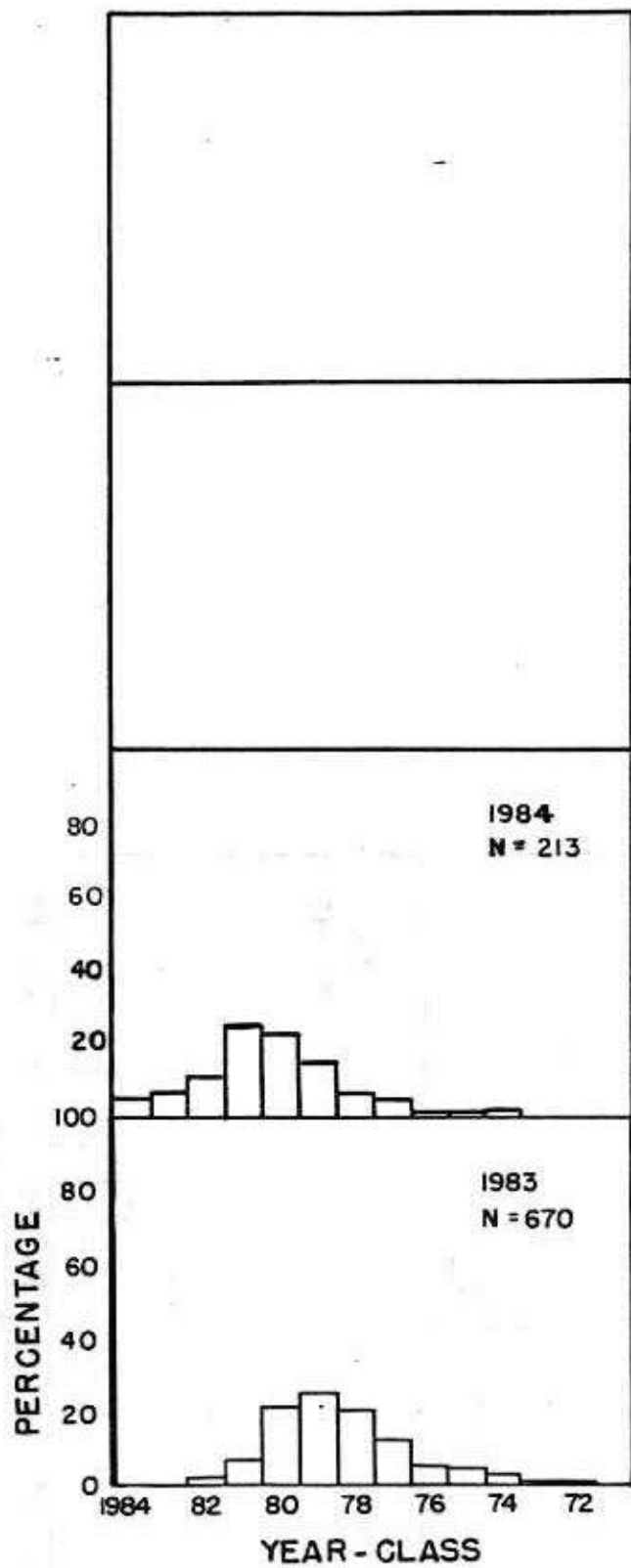


Figure 12. Age Composition of Subtidal Native Littleneck Clams, Nehalem Bay, 1983-84.