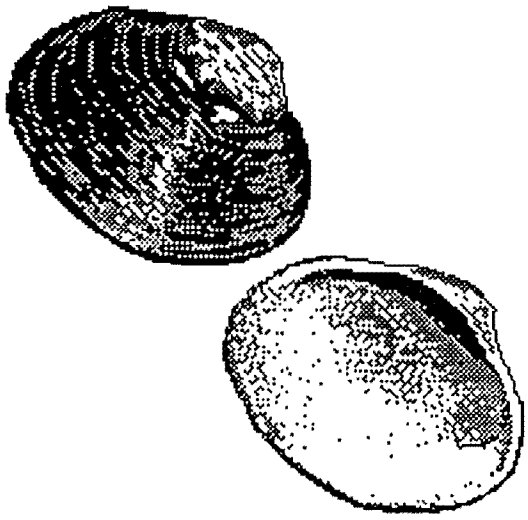
OREGON DEPARTMENT OF FISH AND WILDLIFE

BAY CLAM DATA SERIES REPORT

1985



1985 CLAM STUDIES

by
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INFORMATION REPORT

Oregon Department of Fish and Wildlife
Marine Region

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1985 BAY CLAM SUMMARY REPORT

INTRODUCTION

This report summarizes the results of our bay clam studies in 1985. 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, 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.

Interview data collected included catch/effort, digger origin, species, age, and size composition. These data are tabulated and presented in Tables 1-27. Summaries for each tideflat are presented in the text and are arranged by bay from north to south.

Our 1985 recreational clam interviews revealed a general decrease in digging effort on most of the surveyed tideflats (Table 28). Largest decrease in peak digger counts was observed for Garibaldi Flat on Tillamook Bay (350 to 118 diggers).

In 1985 we interviewed 898 clam diggers who spent 1,303 hours of effort to take 14,614 clams (Table 29). Cockle clams were the principal species harvested providing 32.2% of the take. Catch per effort figures revealed that diggers averaged 16.3 clams per trip or 11.2 clams per hour. Origin of diggers showed that 53.7% were from Oregon but living outside the county of harvest; 37.8% were local county residents, and 8.6 % were out-of-state residents.

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 1). Since 1981 the catch has stabilized and the 1985 figures show 43.2% of the harvest being cockle clams. 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 39.5% in 1985. Percentage of harvest of gaper clams went from 4.5% of the bag in 1983 to 1.8% in 1985 and native littleneck clams showed a sudden decrease in the digger harvest; from 32.1% in 1984 to 15.4% in 1985.

Mean size of gaper clams in 1985 was similar to the mean size in 1984 (106.9 vs. 108.0 mm).Cockle and littleneck clams exhibited increases in mean size, and mean size of butter clams decreased in 1985.

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 2). A reversal of this trend was seen in 1983 and in 1985 catch/effort increased to 18.5 clams/trip primarily because of several successful clam digging parties. Total harvest for the 17 clam diggers interviewed in 1985 showed 314 clams harvested, 45.2% 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 1985 with 10.2 clams/trip being taken (Table 3). Since gaper clams made up 93.6% 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 106.6 mm in size, an increase of 6.3 mm since 1984.

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 20.0 and 12.2 clams, respectively (Table 4). As in previous years, cockles were the principal species collected representing 82.1% of the take. Gaper, butter, and native littleneck clams

made up the remainder of the bag. The cockle clams averaged 75.2 mm in size and were dominated by the 1981 and 1982 year-classes.

Nestucca Bay

Little Nestucca Flat. Catch/effort for the Little Nestucca increased to 24.4 clams/trip (Table 5). Softshell clams were the only species taken and averaged 76.8 mm in size.

Yaquina Bay

Bridge Bed. Catch/effort for this tideflat revealed a slight increase in 1985 to 8.5 clams/trip (Table 6). In 1985, gaper clams comprised 62.4% of the harvest and averaged 108.9 mm in size. Over 76% 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 tideflats. 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 7). Access is strictly by boat which limits the digging pressure on this area. In 1985 87.5% of the clams harvested were gaper clams. The gapers averaged 104.7 mm in size. This is one clam bed where some recruitment of gaper clams has occurred every year since 1975.

Idaho Point. In 1985 there was a slight decrease in catch/effort observed on this clam bed with 15.5 clams/trip being taken (Table 8). The clam bed is subjected to a very intensive cockle fishery where 99% of the take

is this species. The cockles averaged 56.8 mm, an increase of 4.5 mm since 1984. Cockles of the 1981 year-class were dominant in the 1985 harvest.

Northwest Gas Plant. The harvest of clams from this clam bed showed a slight decrease in catch/effort in 1985 (Table 9). Clam diggers averaged 12.3 clams/trip in 1985 compared to 15.1 in 1984. Species composition data revealed that over 92% of the clams harvested were cockle clams, averaging 54.5 mm in size, a decrease of 2.1 mm since 1984. The fishery was primarily on one and two-year-old cockles; 43% were of the 1983 year-class.

Coquille Point. Digging effort continued to be light on Coquille Flat in 1985, with 7 diggers averaging 6.4 clams/trip (Table 10). Butter clams made up 60% of the harvest and averaged 80.4 mm in size.

Critser's Island. In 1985 we interviewed 11 clam diggers that took an average of 34.3 softshells/digger (Table 11). The clams averaged 93.1 mm in size.

North Bank. Softshell clam diggers averaged 25.9 clams/trip on the North Bank softshell bed (Table 12). The clams averaged 63.6 mm in size.

Alsea Bay

North Shore. No clam diggers were interviewed on this tideflat in 1985 (Table 13).

Bayshore. We interviewed 35 diggers on this tideflat and they averaged 13.7 clams/digger, an increase of 4.5 clams/digger since 1984 (Table 14). Over 88% of the clams taken were cockles that averaged 73.8 mm. Over 18% of the clams were of the 1979 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 30.2 clams/ person from this tideflat (Table 15). The clams averaged 95 mm in size.

Siuslaw Bay

North Fork Flat. Clam digging continues to be excellent on this clam bed where catch/effort information revealed 32.8 clams/trip taken (Table 16). Only softshell clams were taken from this area and they averaged 99.2 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. We did not have enough personnel to sample clam diggers in 1985 (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 personnel.

Hanson's Marina. We did not sample clam diggers in this area in 1985 (Table 18).

Charleston Triangle. We interviewed 20 clam diggers and they averaged 20.5 clams/trip (Table 19). Over 56% of the clams harvested were cockle clams, averaging 62.6 mm in size.

Charleston Flat. Eighteen interviewed clam diggers averaged 18.9 clams/ digger (Table 20). Cockle and gaper clams were the principal species taken and averaged 62.2 mm and 110.1 mm, respectively.

Peterson Flat. We did not sample clam diggers on Peterson Flat in 1985 (Table 21).

Pigeon Point. We interviewed 10 diggers and they averaged 19 clams/trip (Table 22). Butter and littleneck clams were the principal species taken accounting for 47.9 and 39.5% of the harvest, respectively.

Sitka Flat. We interviewed 6 clam diggers on Sitka Flat in 1985 and they averaged 18.7 clams/digger (Table 23). Cockle clams were the principal species harvested and they averaged 46.5 mm in size.

Empire Flat. We did not interview clam diggers on Empire Flat in 1985 (Table 24).

North Spit. We interviewed 29 clam diggers on North Spit and they averaged 15.5 clams/trip (Table 25). Gaper clams were the principal species taken accounting for 74.6% of the harvest, and averaging 100.5 mm in size.

Clam Island. The 11 interviewed clam diggers averaged 18.9 clams/trip from this clam bed (Table 26). Gaper and butter clams were the principal species taken making up 54.3 and 26.9% of the harvest, respectively. The gapers and butters averaged 119.2 and 89.5 mm in size, respectively.

Coquille Estuary.

We did not interview any clam diggers on the Coquille estuary softshell clam beds in 1985 (Table 27).

COMMERCIAL CLAM HARVEST

In 1985, there were 98,930 pounds of clams reported to be commercially harvested in Oregon's estuaries (Table 30). Of this total, 46,266 pounds (46.8%) were native littleneck clams. Nehalem Bay produced 40,349 pounds (87.2%) of the total littleneck harvest. Other clams harvested coastwide were cockles (29,412 lbs), gapers (20,121 lbs), butters (1,646 lbs), and softshells (1,485 lbs). Forty fishermen reported landings in 1985, 13 more than in 1984. Six hundred fourteen landings were made in 1985, 90 less than in 1984.

Nehalem Bay produced the most clams in 1985 with 40,349 lbs reported (Table 31). Tillamook and Coos bays produced 34,148 lbs, and 23,030 lbs, respectively. Netarts, Umpqua, and Siuslaw bays produced minor poundages of clams.

Age composition of native littleneck clams harvested in Nehalem Bay showed the 1979-80 year-classes to be predominant (Figure 1). The littlenecks averaged 42.6 mm in size.

Age composition for commercially harvested Tillamook Bay littlenecks and cockles revealed that the 1980-81 year-classes were predominant in the take (Figures 2,3). The littlenecks averaged 42.8 mm and the cockles averaged 68.7 mm in size.

Gaper clams harvested in Coos Bay averaged 130.8 mm in size and were primarily of the 1973, '74, and '75 year-classes (Figure 4). Gapers harvested in 1984 from the same area averaged 139.9 mm in size.

The littleneck clams brought an average of $0.98/lb to the fishermen; gapers, cockles, butters, and softshells brought $0.296/lb, $0.40/lb, $0.431/lb, and $0.389/lb, respectively.

EXPERIMENTAL OFFSHORE CLAM FISHERY

No experimental offshore clam harvesting permits were issued in 1985.

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/ft^2. These clams were progeny of adults collected from the Netarts test area in 1981 and spawned and reared in the Oregon State University laboratory by Wilbur Breese. We have sampled this test plot annually and by June 1985 the clams averaged 40.2 mm in size and produced a survival rate of 3.6%.

Tillamook Bay. We continued our studies on clam introductions into Tillamook Bay. During the year, approximately 30,650 adult Manila littleneck clams were imported from Washington and released in test plots (Figure 5). In addition, 110,000 1984 year-class juvenile Manila clams, produced under laboratory conditions at Oregon State University, were placed in the bay. One hundred thousand of these clams were planted under a 1/2 X 1/2-inch mesh plastic netting to exclude predator animals. Clams were planted at a density of 100/ft^2. Brood stock for these clams came from Hood Canal, Washington. Table 32 summarizes the results of our Manila clam plants in Tillamook Bay since 1971.

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/ft^2. On March 25, 1985, we sampled this test plot and found only 3 live clams that averaged 31.2 mm in size. Poor survival was attributed to a nearly pure sand substrate and numerous sand shrimp in the release area.

On August 25, 1985 we established a new test plot on the King Slough tideflat in Yaquina Bay (Figure 6). The Manila clams were hatchery produced and averaged 18.1 mm when released at a density of 86/ft^2. The clams were covered with 1/2-inch plastic netting to exclude predators.

Coos Bay. On December 19, 1984, we planted 12,600 adult Manila littleneck clams in South Slough of Coos Bay that averaged 31.0 mm in size. These clams were part of the same shipment planted on the breakwater of Yaquina Bay. On July 19, 1985, these clams averaged 35.8 mm and 35.0% of the original plant had survived.

On July 19, 1985, we released an additional 17,200 hatchery produced Manila clams averaging 12.2 mm in size in Coos Bay (Figure 7). These clams were released adjacent to the 1984 release site at a density of 100/ft^2. The test plot was covered with 1/2-inch mesh plastic netting to exclude predators.

Natural Recruitment Studies

Yaquina Bay. We collected 20 subtidal dredge samples from an 18.4 acre area in Yaquina Bay in September 1985 to determine year-class strength, recruitment success, and population and biomass estimates (Figure 8). Each sample covered 1 ft^2 of surface area; depth of samples averaged 12-14 inches.

The 20 samples produced 162 gaper clams (8.1/ft^2) that averaged 104.4 mm in length. Some evidence of recruitment of gaper clams was recorded for the 1985 year-class (Figure 9). The 1975 year-class provided 43.2% of the gaper clams in the test area. We estimated that 6.5 million gapers weighing 4.7 million pounds inhabited the area (Table 33).

Tillamook Bay. In July 1985 we collected 57 subtidal dredge samples in a 82.6 acre area of Hobsonville Channel (Figure 8). Each sample covered 1 ft^2 of surface area; depth of samples averaged 12-14 inches.

Six species of clams were represented in the 537 clams sampled. We estimated that 36.5 million clams inhabited the 82.6 acre site (Table 33). Littleneck, cockle, and butter clams comprised 28.3 million of the total. Biomass estimates for the commercially important species (butter, cockle, gaper, and littleneck) revealed 5.5 million pounds of clams in the area, an increase of 664,200 pounds since 1984.

Age composition data for butter, cockle, gaper, and littleneck clams are shown in Figures 10-13. The data suggests that, for each species, we are seeing consistent annual recruitment for Tillamook Bay.

Nehalem Bay. In August we collected 30 subtidal dredge samples to determine distribution, abundance, and biomass of native littleneck clams in a 9.2 acre area (Figure 8). The survey area included the site of an ongoing commercial clam fishery. Each sample covered 1 ft^2 of surface area; depth of samples averaged 12 inches.

We collected 330 littleneck clams (10.0/ft^2) that averaged 23.9 mm in length. Population estimates revealed that 4.0 million littleneck clams weighing 188,600 pounds inhabited the site (Table 33). In 1983 and 1984 we estimated 267,000 and 214,600 pounds inhabited the area, respectively. A portion of the decreasing biomass since 1983 can be attributed to the commercial fishery in the area. Annual harvest of clams has averaged 31,800 pounds. Age composition data show consistent recruitment in the area with 1 to 6-year-old clams well represented in the sample (Figure 14).

Sign Replacement

In 1985 the shellfish staff continued a coastwide project of repairing or replacing regulation signs. We currently are maintaining 187 signs along the Oregon coast.

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. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Tillamook Tideflat: Garibaldi Flat

	1962	1963	1965	1971	1975	1976	1977 1/	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	-	-	-	20,439.0	-	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 1. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA (Continued)

Bay: Tillamook

Tideflat: Garibaldi Flat

	1984	1985
No. Diggers Sampled	200	107
No. Clams Sampled	3,729	2,128
No. Digger Hours	242.5	142.5
Hours/trip	1.2	1.3
Clams/trip	18.7	19.9
Clams/hour	15.4	14.9
Digger origin (%)		
Local	30.0	28.0
State	67.5	66.4
Non-State	2.5	5.6
Species Comp. (%)		
Butter	38.8	39.5
Cockle	28.5	43.2
Gaper	0.7	1.8
Littleneck	32.1	15.4
Softshell	-	-
Clams/trip		
Butter	7.2	7.9
Cockle	5.3	8.6
Gaper	0.1	0.4
Littleneck	6.0	3.1
Softshell	-	-
Clams/hour		
Butter	6.0	5.9
Cockle	4.4	6.5
Gaper	0.1	0.3
Littleneck	4.9	2.3
Softshell	-	-
Size Comp. (x size)		
Butter	78.4	71.4
Cockle	52.8	58.9
Gaper	108.0	106.9
Littleneck	38.3	39.5
Softshell	-	-
No. Clams Measured		
Butter	203	241
Cockle	240	267
Gaper	2	17
Littleneck	236	131
Softshell	-	-

1/ egulation change in bag limit: effective January 1, 19

Table 2. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Tillamook

Tideflat: Bay, Ocean

	1971	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
No. Diggers Sampled	10,379	94	170	38	79	119	34	13	11	11	17
No. Clams Sampled	216,728	2,242	2,664	574	1,063	1,465	314	1	63	161	314
No. Digger Hours	16,156.0	171.0	333.0	70.4	146.1	215.6	57.5	17.0	16.0	12.0	23.0
Hours/trip	1.6	1.8	2.0	1.9	1.8	1.8	1.7	1.3	1.6	1.1	1.4
Clams/trip	20.9	23.9	15.7	15.1	13.5	12.3	9.2	<0.1	5.7	14.6	18.5
Clams/hour	13.4	13.1	8.0	8.2	7.3	6.8	5.5	<0.1	3.9	13.4	13.7
Digger origin (%)											
Local	21.0	20.2	14.7	13.2	10.1	21.8	20.6	15.4	0.0	18.2	11.8
State	73.0	74.5	79.0	76.3	89.9	73.1	70.6	84.6	72.7	81.8	88.2
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	-	-	-	-	21.7
Cockle	85.0	85.8	78.5	87.2	91.4	89.6	74.2	-	95.2	100.0	45.2
Gaper	8.8	12.3	17.5	12.2	8.0	7.1	1.3	-	-	-	33.1
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	-	-	-	-	4.0
Cockle	17.1	20.5	12.3	13.2	12.3	11.0	6.9	-	5.5	14.6	8.4
Gaper	1.8	2.9	2.7	1.8	1.1	0.9	0.1	-	-	-	6.1
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	-	-	-	-	3.0
Cockle	11.0	11.3	6.3	7.1	6.7	6.1	4.1	-	3.8	13.4	6.2
Gaper	1.1	1.6	1.4	1.0	0.6	0.5	0.1	-	-	-	4.5
Littleneck	0.2	<0.1	0.1	-	<0.1	0.1	-	-	-	-	-
Softshell	-	-	-	-	-	-	-	<0.1	-	-	-
Size Comp. (x size)											
Butter	-	-	-	-	-	-	-	-	-	-	78.2
Cockle	-	66.0	66.1	64.0	68.4	71.2	60.6	-	67.6	69.8	68.6
Gaper	-	110.6	107.9	104.7	109.3	106.2	105.5	-	-	95.0	110.6
Littleneck	-	-	-	-	42.0	-	37.0	-	-	38.0	-
Softshell	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured											
Butter	-	-	-	-	-	-	-	-	-	-	17
Cockle	-	1,075	781	318	525	277	213	-	59	77	122
Gaper	-	224	118	68	79	44	4	-	-	24	70
Littleneck	-	-	-	-	-	-	4	-	-	2	-
Softshell	-	-	-	-	-	-	-	1	-	-	-

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

Table 3. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Netarts Tideflat: Happy Camp

	1971	1975	1976	1977 1/	1978	1979	1980	1981	1982	1983	1984	1985
No. Diggers Sampled	5,106	18	141	187	146	222	106	71	168	280	84	99
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
No. Digger Hours	6,613.0	-	193.0	254.0	149.2	204.4	67.7	66.8	150.5	290.0	84.0	124.0
Hours/trip	1.3	-	1.4	1.4	1.0	0.9	0.6	0.9	0.9	1.0	1.0	1.3
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
Clams/hour	12.9	-	8.9	10.7	11.7	13.8	19.1	14.8	13.4	10.3	12.0	8.1
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
State	74.8	-	66.0	75.9	71.2	59.9	73.6	50.6	44.0	72.9	64.3	53.5
Non-State	7.6	-	5.0	9.1	17.8	11.7	8.5	9.1	7.7	4.6	6.0	14.1
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
Cockle	1.0	-	0.1	21.9	-	-	0.1	-	<0.1	0.1	4.0	0.4
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
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
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
Cockle	0.2	-	<0.1	3.2	-	-	<0.1	-	<0.1	<0.1	0.5	<0.1
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
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
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
Cockle	0.1	-	<0.1	2.3	-	-	<0.1	-	<0.1	<0.1	0.5	<0.1
Gaper	12.3	-	6.5	6.7	10.7	12.5	17.7	12.3	12.7	10.2	10.8	7.6
Littleneck	0.1	-	0.5	0.6	0.4	0.3	0.4	0.5	0.1	0.1	0.4	0.2
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
Cockle	-	-	-	-	-	-	-	-	-	31.0	-	54.0
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
Littleneck	-	65.3	67.6	70.0	70.1	73.6	66.7	71.3	70.7	55.8	70.2	67.2
Softshell	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured												
Butter	-	66	219	-	-	-	24	109	62	6	32	20
Cockle	-	190	-	-	-	-	-	-	-	1	-	1
Gaper	282	190	643	557	921	417	468	454	565	338	240	436
Littleneck	-	43	99	28	54	34	3	22	9	4	29	12
Softshell	-	-	-	-	-	-	-	-	-	-	-	-

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

Table 4. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Netarts Tideflat: Cape Lookout Sand Spit

	1971	1975	1976	1977 [1/]	1978	1979	1980	1981	1982	1983	1984	1985
No. Diggers Sampled	6,473	43	76	509	72	85	63	80	56	118	71	52
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
No. Digger Hours	8,656.0	-	148.0	1,055.0	148.8	178.0	88.5	149.5	83.0	196.5	86.5	85.0
Hours/trip	1.3	-	1.9	2.1	2.1	2.1	1.4	1.9	1.5	1.7	1.2	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
Clams/hour	13.4	-	16.5	8.8	8.9	8.8	12.1	9.3	12.4	11.1	15.8	12.2
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
State	74.8	-	76.3	66.6	77.8	61.2	76.2	81.3	51.8	53.4	52.1	44.2
Non-State	7.6	-	-	10.6	-	2.3	6.3	7.5	3.6	8.5	4.2	1.9
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
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
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
Littleneck	6.9	1.3	3.2	2.1	1.3	3.8	-	1.9	2.6	2.6	0.1	1.7
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
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
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	0.3
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
Cockle	5.9	-	12.7	6.4	6.5	6.5	11.3	7.2	10.5	8.9	12.3	10.0
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	0.2
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
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
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	57.1
Softshell	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured												
Butter	32	237	294	80	11	86	20	49	3	27	133	110
Cockle	245	257	674	851	555	812	525	486	534	238	240	542
Gaper	52	257	36	170	144	191	44	48	71	15	18	-
Littleneck	-	31	-	-	12	60	-	13	26	53	2	14
Softshell	-	-	-	-	-	-	-	-	-	-	-	-

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

Table 5. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Nestucca

Tideflat: Little Nestucca Flat

	1971	1977 1/	1979	1980	1981	1982	1983	1984	1985
No. Diggers Sampled	1,466	34	16	38	23	22	22	62	23
No. Clams Sampled	23,211	1,049	484	1,120	357	653	623	1,386	561
No. Digger Hours	1,584.0	43.0	21.0	72.0	27.0	31.0	33.5	94.0	38.0
Hours/trip	1.1	1.3	1.3	1.9	1.2	1.4	1.5	1.5	1.7
Clams/trip	15.8	30.9	30.3	29.5	15.5	29.7	28.3	22.4	24.4
Clams/hour	14.7	24.4	23.2	15.6	13.2	21.4	18.6	14.7	14.8
Digger origin (%)									
Local	12.4	52.9	18.8	-	13.0	4.5	18.2	21.0	4.3
State	73.5	47.1	62.5	86.8	87.0	86.4	77.3	59.7	52.2
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
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
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
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
No. Clams Measured									
Butter									
Cockle	-	-	-	-	-	-	-	-	
Gaper	-	-	-	-	-	-	-	-	
Littleneck	-	-	-	-	-	-	-	-	
Softshell	0	250	332	254	163	547	300	240	132

1/ Regulation change in bag limit: effective January 1, 197[illegible]

Table 6. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Yaqu...a

Tideflat: Bridge Bed

	1971	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
					1/							
No. Diggers Sampled	4,518	88	29	357	89	143	142	342	149	202	191	207
No. Clams Sampled	41,769	694	414	2,838	892	1,313	1,222	3,773	1,609	1,543	1383	1,765
No. Digger Hours	6,769.0	-	36.0	488.0	109.9	120.0	159.5	353.9	154.0	273.5	264.5	304.0
Hours/trip	1.5	-	1.2	1.4	1.2	0.8	1.1	1.0	1.0	1.4	1.4	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
Clams/hour	6.2	-	11.7	5.8	8.1	10.9	7.7	10.7	10.4	5.6	5.2	5.8
Digger origin (%)												
Local	-	-	31.0	19.6	24.7	22.4	18.3	44.7	48.3	32.2	45.5	34.3
State	-	-	48.3	70.9	69.7	76.2	70.4	49.1	48.3	67.8	49.7	62.8
Non-State	-	-	20.7	9.5	4.5	1.4	11.3	6.1	3.4	-	4.7	2.9
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
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
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
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
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
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
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
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
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
Cockle	4.9	-	8.4	2.6	2.0	0.9	0.1	1.1	0.8	0.7	0.3	0.6
Gaper	1.2	-	2.9	2.5	5.9	9.8	7.3	8.6	8.9	4.1	4.2	3.6
Littleneck	-	-	-	-	-	-	-	-	-	0.2	0.2	0.4
Softshell	-	-	-	-	-	-	-	-	-	-	-	-
Size Comp. (x size)												
Butter	-	-	-	-	-	67.5	71.9	72.5	80.4	74.0	78.9	81.0
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
Gaper	-	107.1	115.5	95.0	101.7	96.8	100.0	107.7	105.9	104.6	105.6	108.9
Littleneck	-	60.3	-	-	-	51.5	62.2	54.7	54.7	52.4	55.9	64.0
Softshell	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured												
Butter	-	-	-	-	-	-	14	20	5	35	12	23
Cockle	-	276	205	592	202	51	6	536	86	138	41	67
Gaper	-	316	62	593	154	279	419	1,370	308	406	200	266
Littleneck	-	12	-	-	-	2	19	55	9	34	24	49
Softshell	-	-	-	-	-	-	-	-	-	-	-	-

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

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

Table 7. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Yaquina — Tideflat: Breakwater Bed

	1971	1975	1976	1977 1/	1978	1979	1980	1981	1982	1983	1984	1985
No. Diggers Sampled	1,455	46	-	48	20	10	21	16	14	17	63	39
No. Clams Sampled	22,175	515	-	511	270	142	261	166	157	190	654	489
No. Digger Hours	2,179.0	-	-	69.1	21.5	20.0	44.0	27.0	20.5	24.0	102.5	50.5
Hours/trip	1.5	-	-	1.4	1.1	2.0	2.1	1.7	1.5	1.4	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
Clams/hour	10.2	-	-	7.4	12.6	7.1	5.9	6.1	7.7	7.9	6.4	9.7
Digger origin (%)												
Local	-	-	-	35.4	55.0	30.0	28.6	18.8	71.4	52.9	30.2	61.5
State	-	-	-	64.6	45	-	71.4	50.0	28.6	47.1	66.7	33.3
Non-State	-	-	-	-	-	-	-	31.3	-	-	3.2	5.1
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
Cockle	15.3	3.9	-	18.2	13.7	7.0	11.1	19.9	1.9	8.4	4.0	4.1
Gaper	83.0	95.0	-	78.9	84.4	84.5	81.2	75.3	94.9	85.8	71.6	87.5
Littleneck	0.4	0.2	-	0.8	0.4	-	1.1	1.2	0.6	0.5	2.8	1.8
Softshell	-	-	-	-	-	-	-	-	-	-	-	-
Clams/trip												
Butter	0.2	<0.1	-	0.1	0.1	-	0.8	0.2	0.3	0.1	0.6	0.5
Cockle	2.3	0.4	-	1.9	1.8	1.0	1.4	2.1	0.2	0.9	0.4	0.5
Gaper	12.7	10.6	-	-	-	-	10.1	7.8	10.6	9.6	7.4	11.0
Littleneck	<0.1	<0.1	-	0.1	0.1	-	0.1	0.1	0.1	0.1	0.3	0.2
Softshell	-	-	-	-	-	-	-	-	-	-	-	-
Clams/hour												
Butter	0.1	-	-	0.1	0.1	-	0.4	0.1	0.2	0.1	0.4	0.4
Cockle	1.6	-	-	1.3	1.7	0.5	0.6	1.2	0.1	0.7	0.3	0.4
Gaper	8.4	-	-	5.8	10.6	6.0	4.8	4.6	7.3	6.8	4.6	8.5
Littleneck	<0.1	-	-	0.1	0.1	-	0.1	0.1	<0.1	<0.1	0.2	0.2
Softshell	-	-	-	-	-	-	-	-	-	-	-	-
Size Comp. (x size)												
Butter	<0.1	-	-	0.1	<0.1	<0.1	85.3	-	-	97.0	82.3	78.2
Cockle	75.6	-	-	72.5	76.1	-	-	62.6	-	81.6	70.1	69.6
Gaper	113.8	116.2	-	123.3	118.9	-	109.1	106.4	106.4	100.7	96.3	104.7
Littleneck	-	-	-	-	-	-	64.0	-	-	51.0	52.0	55.6
Softshell	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured												
Butter	-	-	-	-	-	-	16	-	4	1	36	14
Cockle	-	-	-	-	79	37	-	27	3	12	32	16
Gaper	-	310	-	198	207	-	195	69	142	109	200	265
Littleneck	-	-	-	-	-	-	3	-	1	1	20	8
Softshell	-	-	-	-	-	-	-	-	-	-	-	-

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

2/ Bentn clam

Table 8. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Yaquir

Tideflat: Idaho Point

	1971	1975	1976	1977 [1]	1978	1979	1980	1981	1982	1983	1984	1985
No. Diggers Sampled	10,462	123	42	309	20	193	182	147	80	138	52	26
No. Clams Sampled	138,784	2,600	812	3,773	298	2,783	3,118	2,339	1,219	2,171	890	403
No. Digger Hours	15,621.0	-	76.5	464.0	25.2	247.8	301.6	222.3	144.5	219.0	83.0	42.0
Hours/trip	1.5	-	1.8	1.5	1.3	1.3	1.7	1.5	1.8	1.6	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	15.5
Clams/hour	8.9	-	10.6	8.1	11.8	11.2	10.3	10.5	8.4	9.9	10.7	9.6
Digger origin (%)												
Local	-	-	35.7	12.3	45.0	31.6	28.6	15.6	18.8	9.4	21.2	50.0
State	-	-	33.3	84.1	50.0	62.7	65.4	70.7	81.3	85.5	76.9	42.3
Non-State	-	-	31.0	3.6	5.0	5.7	6.0	13.6	-	5.1	1.9	7.7
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	99.0
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	1.0
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
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	0.2
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	9.5
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	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
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	42.8
Softshell	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured												
Butter	-	-	-	-	-	-	-	4	-	-	5	-
Cockle	-	-	-	-	-	45	1,620	1,302	-	540	240	377
Gaper	-	369	522	1,804	250	1,471	181	75	-	40	-	-
Littleneck	-	171	126	173	42	24	-	9	-	5	4	4
Softshell	-	-	-	-	-	-	-	-	-	-	-	-

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

[2] Bentnose clam

Table 9. ANNUAL SUMMARY OF RECREATIONAL INTER... DATA

Bay: Yaquina — Tideflat: Northwest Gas Plant

	1971	1975	1976	1977 [1/]	1978	1979	1980	1981	1982	1983	1984	1985
No. Diggers Sampled	5,857	92	93	315	49	137	63	38	29	23	9	26
No. Clams Sampled	119,702	13,541	583	3,852	684	1,073	495	151	128	219	136	319
No. Digger Hours	8,725.0	-	139.0	402.0	66.8	164.8	84.3	54.4	32.5	25.0	13.0	33.0
Hours/trip	1.5	-	1.5	1.3	1.4	1.2	1.3	1.4	1.1	1.1	1.4	1.3
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
Clams/hour	13.7	-	11.4	9.6	10.2	6.5	5.9	2.8	3.9	8.8	10.5	9.7
Digger Origin (%)												
Local	-	-	9.7	22.5	59.2	33.6	30.2	36.8	65.5	34.8	44.4	50.0
State	-	-	86.0	72.1	38.8	49.6	68.3	57.9	34.5	65.2	33.3	50.0
Non-State	-	-	4.3	5.4	2.0	16.8	1.5	5.3	-	-	22.2	-
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
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
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
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
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
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
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
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
Softshell	-	-	-	-	-	-	-	57.5	-	-	-	-
No. Clams Measured												
Butter	-	-	-	-	-	-	1	1	-	1	-	-
Cockle	-	219	648	889	525	606	349	18	60	177	122	293
Gaper	-	451	217	152	106	96	61	46	7	8	-	1
Littleneck	-	-	-	-	-	5	5	2	-	30	-	9
Softshell	-	-	-	-	-	-	-	2	-	-	-	-

1/ Regul[illegible]ion change in bag limit; effective Jan. 1, 1977

2/ Bentn[illegible]e clam

Table 10. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Yaquina

Tideflat: Coquille Point

	1981	1982	1983	1984	1985	19	19	19	19	19	19	19
No. Diggers Sampled	11	53	27	-	7							
No. Clams Sampled	24	267	147	-	45							
No. Digger Hours	9.0	75.0	33.0	-	5.5							
Hours/trip	0.8	1.4	1.2	-	0.8							
Clams/trip	2.2	5.0	5.4	-	6.4							
Clams/hour	2.7	3.6	4.5	-	8.2							
Digger origin (%)												
Local	-	9.4	25.9	-	57.1							
State	100.0	75.5	55.6	-	42.9							
Non-State	-	15.1	18.5	-	-							
Species Comp. (%)												
Butter	4.2	3.0	40.1	-	60.0							
Cockle	-	-	34.7	-	17.8							
Gaper	95.8	93.3	15.7	-	-							
Littleneck	-	3.0	8.2	-	22.2							
Softshell	-	-	-	-	-							
Clams/trip												
Butter	0.1	0.2	2.2	-	3.9							
Cockle	-	-	1.9	-	1.1							
Gaper	2.1	4.7	0.9	-	-							
Littleneck	-	0.2	0.4	-	1.4							
Softshell	-	-	-	-	-							
Clams/hour												
Butter	0.1	0.1	1.8	-	4.9							
Cockle	-	-	1.6	-	1.5							
Gaper	2.6	3.3	0.7	-	-							
Littleneck	-	0.1	0.4	-	1.8							
Softshell	-	-	-	-	-							
Size Comp. (x size)												
Butter	88.0	93.6	74.9	-	80.4							
Cockle	-	-	47.2	-	38.6							
Gaper	94.5	96.6	98.9	-	-							
Littleneck	-	61.3	45.9	-	41.9							
Softshell	-	-	-	-	-							
No. Clams Measured												
Butter	1	5	22	-	27							
Cockle	-	-	51	-	9							
Gaper	23	142	15	-	-							
Littleneck	-	4	12	-	10							
Softshell	-	-	-	-	-							

Table 11. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Yaquina

Tideflat: Critser's Island

	1983	1984	1985	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	42	14	11									
No. Clams Sampled	1,380	491	377									
No. Digger Hours	56.0	23.5	15.0									
Hours/trip	1.3	1.7	1.4									
Clams/trip	32.9	35.1	34.3									
Clams/hour	24.6	20.9	25.1									
Digger origin (%)												
Local	40.5	50.0	81.8									
State	59.5	50.0	18.2									
Non-State	0	0	-									
Species Comp. (%)												
Butter	0	0	-									
Cockle	0	0	-									
Gaper	0	0	-									
Littleneck	0	0	-									
Softshell	100.0	100.0	100.0									
Clams/trip												
Butter	0	0	-									
Cockle	0	0	-									
Gaper	0	0	-									
Littleneck	0	0	-									
Softshell	32.9	35.1	34.3									
Clams/hour												
Butter	0	0	-									
Cockle	0	0	-									
Gaper	0	0	-									
Littleneck	0	0	-									
Softshell	24.6	20.9	25.1									
Size Comp. (x size)												
Butter	0	0	-									
Cockle	0	0	-									
Gaper	0	0	-									
Littleneck	0	0	-									
Softshell	82.5	93.3	93.1									
No. Clams Measured												
Butter	0	0	-									
Cockle	0	0	-									
Gaper	0	0	-									
Littleneck	0	0	-									
Softshell	569	68	280									

Table 12. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Yaqu...a

Tideflat: North Bank Sof' ell

	1984	1985	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	26	27									
No. Clams Sampled	971	698									
No. Digger Hours	24.5	27.0									
Hours/trip	0.9	1.0									
Clams/trip	37.4	25.9									
Clams/hour	39.6	25.9									
Digger origin (%)											
Local	84.6	51.9									
State	15.4	33.3									
Non-State	-	14.8									
Species Comp. (%)											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	100.0	99.9									
Clams/trip											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	37.4	25.8									
Clams/hour											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	39.6	25.8									
Size Comp. (x size)											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	74.6	63.6									
No. Clams Measured											
Butter	-	-									
Cockle	-	-									
Gaper	-	-									
Littleneck	-	-									
Softshell	240	366									

Table 13. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Alsea Tideflat: North Shore

	1982	1983	1984	1985	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: Alse

Tideflat: Bayshore

	1982	1983	1984	1985	19	19	19	19	19	19	19	19
No. Diggers Sampled	32	24	17	35								
No. Clams Sampled	529	316	156	478								
No. Digger Hours	46.0	39.5	28.5	60.5								
Hours/trip	1.4	1.7	1.7	1.7								
Clams/trip	16.5	13.2	9.2	13.7								
Clams/hour	11.5	8.0	5.5	7.9								
Digger origin (%)												
Local	59.4	66.7	41.2	48.6								
State	25.0	25.0	58.8	45.7								
Non-State	15.6	8.3	-	5.7								
Species Comp. (%)												
Butter	-	-	-	-								
Cockle	99.8	99.7	98.7	88.9								
Gaper	0.2	-	1.3	2.9								
Littleneck	-	-	-	0.4								
Softshell	-	0.3	-	7.5								
Clams/trip												
Butter	-	-	-	-								
Cockle	16.5	13.1	9.1	12.1								
Gaper	<0.1	-	0.1	0.4								
Littleneck	-	-	-	0.1								
Softshell	-	<0.1	-	1.0								
Clams/hour												
Butter	-	-	-	-								
Cockle	11.5	8.0	5.4	7.0								
Gaper	<0.1	-	0.1	0.2								
Littleneck	-	-	-	-								
Softshell	-	<0.1	-	0.6								
Size Comp. (x size)												
Butter	-	-	-	-								
Cockle	72.9	76.4	76.3	73.8								
Gaper	-	-	116.0	130.9								
Littleneck	-	-	-	44.0								
Softshell	-	-	-	-								
No. Clams Measured												
Butter	-	-	-	-								
Cockle	159	295	154	331								
Gaper	-	-	2	10								
Littleneck	-	-	-	2								
Softshell	-	-	-	-								

Table 15. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Alsea

Tideflat: Softshell

	1983	1984	1985	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	4	5	5									
No. Clams Sampled	91	138	151									
No. Digger Hours	6.0	7.0	10.0									
Hours/trip	1.5	1.4	2.0									
Clams/trip	22.8	27.6	30.2									
Clams/hour	15.2	19.7	15.1									
Digger origin (%)												
Local	50.0	60.0	80.0									
State	50.0	-	20.0									
Non-State	-	40.0	-									
Species Comp. (%)												
Butter	-	-	-									
Cockle	-	-	-									
Gaper	-	-	-									
Littleneck	-	-	-									
Softshell	100.0	100.0	100.0									
Clams/trip												
Butter	-	-	-									
Cockle	-	-	-									
Gaper	-	-	-									
Littleneck	-	-	-									
Softshell	22.8	27.6	30.2									
Clams/hour												
Butter	-	-	-									
Cockle	-	-	-									
Gaper	-	-	-									
Littleneck	-	-	-									
Softshell	15.2	19.7	15.1									
Size Comp. (x size)												
Butter	-	-	-									
Cockle	-	-	-									
Gaper	-	-	-									
Littleneck	-	-	-									
Softshell	96.8	94.6	95.0									
No. Clams Measured												
Butter	-	-	-									
Cockle	-	-	-									
Gaper	-	-	-									
Littleneck	-	-	-									
Softshell	86	135	180									

Table 16. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Siusl

Tideflat: North Fork[1]/

	1971	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
No. Diggers Sampled	3,203	39	51	21	42	7	115	21	33	168	70
No. Clams Sampled	72,756	1,067	1,426	670	1,140	188	3,445	875	1,163	5,418	2,297
No. Digger Hours	4,844.0	54.0	101.0	31.5	55.3	5.0	145.2	28.0	32.0	231.0	103.5
Hours/trip	1.5	1.4	2.0	1.5	1.3	0.7	1.3	1.3	1.0	1.4	1.5
Clams/trip	22.7	27.4	28.0	31.9	27.1	26.9	30.0	41.7	35.2	34.0	32.8
Clams/hour	15.0	19.8	14.1	21.3	20.6	37.6	23.7	31.3	36.3	24.7	22.2
Digger origin (%)											
Local	-	12.8	28.8	28.6	19.0	28.6	38.3	47.6	51.5	27.4	17.1
State	-	84.6	66.7	71.4	47.6	71.4	48.7	52.4	42.4	67.3	70.0
Non-State	-	2.6	4.4	-	33.3	-	13.0	-	9.1	5.4	12.9
Species Comp. (%)											
Butter	-	-	-	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-	-	-	-
Softshell	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
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
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
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
No. Clams Measured											
Butter	-	-	-	-	-	-	-	-	-	-	-
Cockle	-	-	-	-	-	-	-	-	-	-	-
Gaper	-	-	-	-	-	-	-	-	-	-	-
Littleneck	-	-	-	-	-	-	-	-	-	-	-
Softshell	-	741	408	335	676	110	1,629	757	867	297	670

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

Bay: Umpqua

Tideflat: Bolin Island

	1983	1984	1985	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	1985	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	1985	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	40	32	20									
No. Clams Sampled	771	588	410									
No. Digger Hours	44.0	26.7	24.5									
Hours/trip	1.1	0.8	1.2									
Clams/trip	19.3	18.4	20.5									
Clams/hour	17.5	22.0	16.7									
Digger origin (%)												
Local	22.5	40.6	50.0									
State	72.5	56.3	35.0									
Non-State	5.0	3.1	15.0									
Species Comp. (%)												
Butter	19.6	10.9	13.2									
Cockle	55.1	69.2	56.6									
Gaper	3.9	15.0	20.5									
Littleneck	23.2	4.9	9.5									
Softshell	-	-	-									
Clams/trip												
Butter	3.8	2.0	2.7									
Cockle	10.6	12.7	11.6									
Gaper	0.8	2.8	4.2									
Littleneck	4.5	0.9	1.9									
Softshell	-	-	-									
Clams/hour												
Butter	3.4	2.4	2.2									
Cockle	9.7	15.2	9.5									
Gaper	0.7	3.3	3.4									
Littleneck	4.1	1.1	1.6									
Softshell	-	-	-									
Size Comp. (x size)												
Butter	73.3	80.2	82.5									
Cockle	51.2	66.3	62.6									
Gaper	88.6	95.2	98.2									
Littleneck	55.2	57.6	61.3									
Softshell	-	-	-									
No. Clams Measured												
Butter	39	17	52									
Cockle	45	218	185									
Gaper	26	54	67									
Littleneck	18	159	41									
Softshell	-	-	-									

Table 20. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coos

Tideflat: Charleston Flat

	1983	1984	1985	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	60	27	18									
No. Clams Sampled	859	435	341									
No. Digger Hours	124.5	28.8	32.0									
Hours/trip	2.1	1.1	1.8									
Clams/trip	14.3	16.1	18.9									
Clams/hour	6.9	15.1	10.7									
Digger origin (%)												
Local	21.7	40.7	16.7									
State	73.3	51.9	38.9									
Non-State	5.0	7.4	44.4									
Species Comp. (%)												
Butter	2.0	4.6	6.7									
Cockle	46.6	60.9	72.4									
Gaper	38.8	27.6	17.3									
Littleneck	10.6	3.7	3.5									
Softshell	-	3.0	-									
Clams/trip												
Butter	0.3	0.7	1.3									
Cockle	6.7	9.8	13.7									
Gaper	5.6	4.4	3.3									
Littleneck	1.5	0.6	0.7									
Softshell	-	0.5	-									
Clams/hour												
Butter	0.1	0.7	0.7									
Cockle	3.2	9.2	7.7									
Gaper	2.7	4.6	1.8									
Littleneck	0.7	0.6	0.4									
Softshell	-	-	-									
Size Comp. (x size)												
Butter	84.0	78.1	75.0									
Cockle	59.9	63.2	62.2									
Gaper	100.6	105.9	110.1									
Littleneck	55.0	65.0	62.2									
Softshell	-	-	-									
No. Clams Measured												
Butter	1	13	20									
Cockle	38	92	247									
Gaper	13	80	58									
Littleneck	3	2	13									
Softshell	-	-	-									

TABLE 21. ANNUAL SUMMARY OF RECREA

Bay: Coos

Tideflat: Peterson Flat

	1983	1984	1985	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	12	4	-									
No. Clams Sampled	235	54	-									
No. Digger Hours	23.5	5.0	-									
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	-	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	-	-	-									
Clams/trip	Bentnose	1.0	-									
Butter	1.6	-	-									
Cockle	4.3	0.3	-									
Gaper	8.8	12.0	-									
Littleneck	4.9	0.3	-									
Softshell	-	-	-									
Clams/hour	Bentnose	0.8	-									
Butter	0.8	-	-									
Cockle	2.2	0.2	-									
Gaper	4.5	9.6	-									
Littleneck	2.5	0.2	-									
Softshell	-	-	-									
Size Comp. (x size)[1/]												
Butter	-	-	-									
Cockle	-	-	-									
Gaper	-	113.7	-									
Littleneck	-	-	-									
Softshell	-	-	-									
No. Clams Measured[1/]												
Butter	-	-	-									
Cockle	-	-	-									
Gaper	-	23	-									
Littleneck	-	-	-									
Softshell	-	-	-									

1/ Not taken

Table 22. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coos

Tideflat: Pigeon Point

	1983	1984	1985	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	111	43	10									
No. Clams Sampled	1,681	679	190									
No. Digger Hours	94.8	70.0	19.0									
Hours/trip	0.9	1.6	1.9									
Clams/trip	15.1	15.8	19.0									
Clams/hour	17.7	9.7	10.0									
Digger origin (%)												
Local	45.9	65.1	20.0									
State	48.6	27.9	60.0									
Non-State	5.4	7.0	20.0									
Species Comp. (%)												
Butter	27.1	36.4	47.9									
Cockle	0.7	8.0	2.1									
Gaper	51.2	32.7	10.0									
Littleneck	20.9	22.5	39.5									
Softshell	-	0.6	-									
Clams/trip												
Butter	4.1	5.4	9.1									
Cockle	0.1	1.3	0.4									
Gaper	7.7	5.2	1.9									
Littleneck	3.2	3.6	7.5									
Softshell	-	0.1	-									
Clams/hour												
Butter	4.8	3.5	4.8									
Cockle	0.1	0.8	0.2									
Gaper	9.1	3.2	1.0									
Littleneck	3.7	2.2	3.9									
Softshell	-	0.1	-									
Size Comp. (x size)[1/]												
Butter	85.9	84.8	84.3									
Cockle	37.9	-	40.0									
Gaper	108.0	104.5	85.3									
Littleneck	67.2	62.0	60.6									
Softshell	-	-	-									
No. Clams Measured[1/]												
Butter	44	93	51									
Cockle	7	-	4									
Gaper	46	52	19									
Littleneck	9	50	74									
Softshell	-	-	-									

1/ Not taken

Table 23. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coos

Tideflat: Sitka Flat

	1983	1984	1985	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	46	-	6									
No. Clams Sampled	678	-	112									
No. Digger Hours	81.5	-	14.0									
Hours/trip	1.8	-	2.3									
Clams/trip	14.7	-	18.7									
Clams/hour	8.3	-	8.0									
Digger origin (%)												
Local	58.7	-	50.0									
State	41.3	-	50.0									
Non-State	-	-	-									
Species Comp. (%)												
Butter	19.8	-	8.9									
Cockle	1.0	-	42.0									
Gaper	50.9	-	29.5									
Littleneck	28.2	-	19.6									
Softshell	-	-	-									
Clams/trip												
Butter	2.9	-	1.7									
Cockle	0.2	-	7.8									
Gaper	7.5	-	5.5									
Littleneck	4.2	-	3.7									
Softshell	-	-	-									
Clams/hour												
Butter	1.6	-	0.7									
Cockle	0.1	-	3.4									
Gaper	4.2	-	2.4									
Littleneck	2.3	-	1.6									
Softshell	-	-	-									
Size Comp. (x size)												
Butter	85.9	-	-									
Cockle	37.9	-	46.5									
Gaper	108.0	-	-									
Littleneck	67.2	-	-									
Softshell	-	-	-									
No. Clams Measured												
Butter	44	-	-									
Cockle	7	-	47									
Gaper	46	-	-									
Littleneck	9	-	-									
Softshell	-	-	-									

Table 24. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coos

Tideflat: Empire Flat

	1983	1984	1985	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	70	9	-									
No. Clams Sampled	1,057	180	-									
No. Digger Hours	99.0	9.0	-									
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/

Table 26. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coos

Tideflat: Clam Island

	1983	1984	1985	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	57	462	11									
No. Clams Sampled	1,002	7,931	208									
No. Digger Hours	82.0	736.5	15.0									
Hours/trip	1.4	1.9	1.4									
Clams/trip	17.6	17.2	18.9									
Clams/hour	12.2	10.8	13.9									
Digger origin (%)												
Local	36.8	51.5	81.8									
State	57.9	46.3	18.2									
Non-State	5.3	2.2	-									
Species Comp. (%)												
Butter	2.8	4.6	26.9									
Cockle	36.5	33.7	12.5									
Gaper	54.2	59.8	54.3									
Littleneck	1.1	1.8	6.2									
Softshell	5.4	-	-									
Clams/trip												
Butter	0.5	0.8	5.1									
Cockle	6.4	5.8	2.4									
Gaper	9.5	10.3	10.3									
Littleneck	0.2	0.3	1.2									
Softshell	1.0	-	-									
Clams/hour												
Butter	0.3	0.5	3.7									
Cockle	4.5	3.6	1.7									
Gaper	6.6	6.4	7.5									
Littleneck	0.1	0.2	0.9									
Softshell	0.7	-	-									
Size Comp. (x size)												
Butter	78.7	95.0	89.5									
Cockle	54.1	76.8	69.4									
Gaper	107.7	121.0	119.2									
Littleneck	55.5	68.0	66.9									
Softshell	-	-	-									
No. Clams Measured												
Butter	6	1	55									
Cockle	8	12	25									
Gaper	46	56	108									
Littleneck	4	1	13									
Softshell	-	-	-									

Table 27. ANNUAL SUMMARY OF RECREATIONAL INTERVIEW DATA

Bay: Coquille Tidefiat: Bandon Softshell

	1983	1984	1985	19	19	19	19	19	19	19	19	19
No. Diggers Sampled	6	1	-									
No. Clams Sampled	215	36	-									
No. Digger Hours	5.0	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	-	-	-									

Table 28. Peak Counts of Clam Diggers[1]/.

Estuary	Tideflat	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Tillamook	Garibaldi Flat	425	350	131	225	256	300	460	516	487	350	118
	Bay Ocean	-	280	122	39	107	-	33	13	10	4	-
Netarts	Happy Camp	-	175	73	-	150	160	425	500	478	200	191
Nestucca	Little Nestucca	-	-	-	-	-	-	44	6	12	6	8
Yaquina	Bridge Bed	-	245	138	30	91	84	225	625	275	84	107
	Breakwater Bed	-	127	120	62	23	20	27	63	26	28	25
	Idaho Point	-	110	98	45	66	61	38	176	46	35	31
	NW Gas Plant	-	-	-	-	24	26	41	16	12	10	11
	Coquille Point	-	-	-	-	17	18	45	41	20	5	9
Alsea	North Beach	-	-	-	-	-	-	-	4	3	-	5
	Bay Shore	-	-	-	-	-	-	-	49	31	14	20
	Waldport Breakwater	-	-	-	-	-	-	-	12	9	-	22
Siuslaw	North Fork	-	55	-	-	109	57	146	33	22	43	41
Coos Bay	Charleston Triangle	-	-	-	-	-	-	-	-	31	24	41
	Charleston Flat	-	-	-	-	-	-	-	-	64	30	26
	Peterson Flat	-	-	-	-	-	-	-	-	5	-	2
	Fossil Point	-	-	-	-	-	-	-	-	38	-	0
	Pigeon Point	-	-	-	-	-	-	-	-	62	50	42
	Empire Flat	-	-	-	-	-	-	-	-	20	-	19
	Hanson's Marina	-	-	-	-	-	-	-	-	5	3	4
	Clam Island	-	-	-	-	-	-	-	-	-	58	-
	Clam Island	-	-	-	-	-	-	-	-	-	37	-
	North Spit	-	-	-	-	-	-	-	-	-	-	-
Bandon	Softshell Bed	-	-	-	-	-	-	-	-	-	-	-

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

Table 30. Summary of Pounds of Bay Clams Reported Commercially Harvested in Oregon, by Species, 1970-1985.

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	65,508	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
1985	1,646	29,412	20,121	46,266	1,485	0	98,930

Table 31. Summary of Pounds of Bay Clams Reported Commercially Harvested in Oregon, by Estuary, 1970-1985.

Year	Nehalem	Tillamook	Netarts	Yaquina	Alsea	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	54,673	120,567
1985[1]/	40,349	34,148	240	0	0	895	268	23,030	98,930

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

Table 32. Summary of Experimental Manila Littleneck Clam Plants in Tillamook Bay, 1971-1985.

Plot No.	Planting Date	Number Released	Size at Release (mm)	Planting Density (ft^2/)	Sample Date	Recovery Size (mm)	Survival Percent
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	14.1	0.4
					7/15/84	17.5	0.3
					8/02/85	30.2	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	31.0	18.9
					7/15/84	34.0	11.7
					8/02/85	37.6	0.6
5.	6/30/83	10,000[1]/	-	44.0	9/08/83	13.6	0.7
					7/15/84	21.0	0.5
6.	3/14/84	1,150	-	6.3	7/15/84	40.6	44.4
					8/02/85	-	0.0
7	3/14/84	700	-	10.6	7/15/84	39.1	17.0
					8/02/85	45.0	1.9
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	36.6	100+
					8/02/85	42.2	100+
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	49.8	47.6
12.	11/21/84	3,400	31.0	10.0	8/02/85	35.3	20.0
13.	11/21/84	3,400	31.0	10.0	8/02/85	34.5	34.0
14.	11/21/84	13,500	31.0	10.0	8/02/85	35.8	56.0
15.	4/09/85	10,200	37.0	10.0	8/02/85	44.2	82.0
16.	4/09/85	12,700	37.0	10.0	8/02/85	40.0	96.0
17.	4/09/85	7,700	37.0	10.0	8/02/85	44.2	54.0
18.	4/25/85	100,000[1]/	-	100.0			
19.	4/25/85	10,000[1]/	-	100.0			

1/ Hatchery produced clams, planted as set.

Table 33. Summary of Population and Biomass Estimates for Yaquina, Tillamook and Nehalem bays, 1985

Species	Yaquina		Tillamook		Nehalem	
	Numbers	Biomass(lbs)	Numbers	Biomass(lbs)	Numbers	Biomass(lbs)
Butter	2,000,000	160,100	10,460,000	2,961,000	307,000	N/A
Cockle	360,000	N/A	9,374,000	1,309,000	147,000	N/A
Gaper	6,480,000	4,708,000	1,291,000	624,500	93,000	N/A
Littleneck	2,360,000	42,700	8,491,000	579,500	4,000,000	188,600
Macoma sp	47,960,000	N/A	5,400,000	N/A	0	0
CA softshell	40,000	N/A	1,440,000	N/A	213,000	N/A
Softshell	0	0	0	0	40,000	N/A
TOTAL	59,200,000	N/A	36,456,000	N/A	5,200,000	N/A

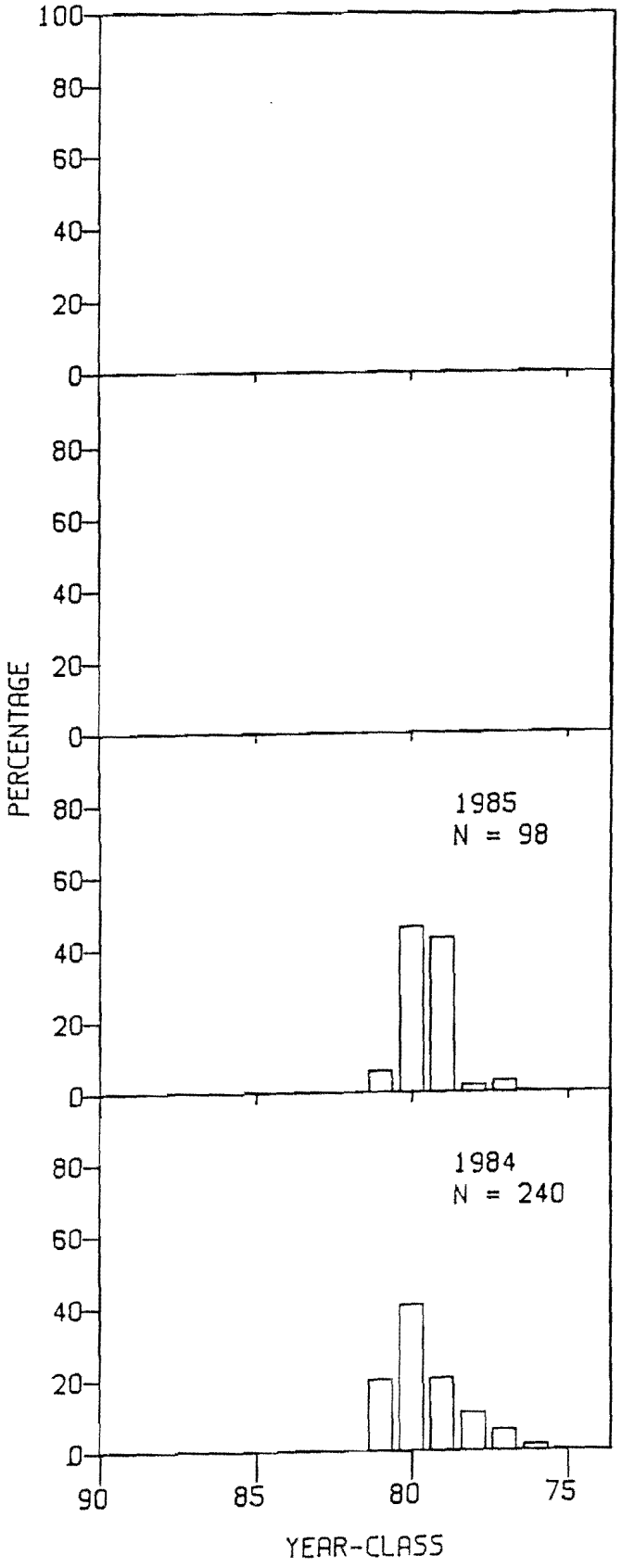


Figure 1. Age Composition of Commercial Subtidal Native Littleneck Clam Harvest, Nehalem Bay, 1984-85.

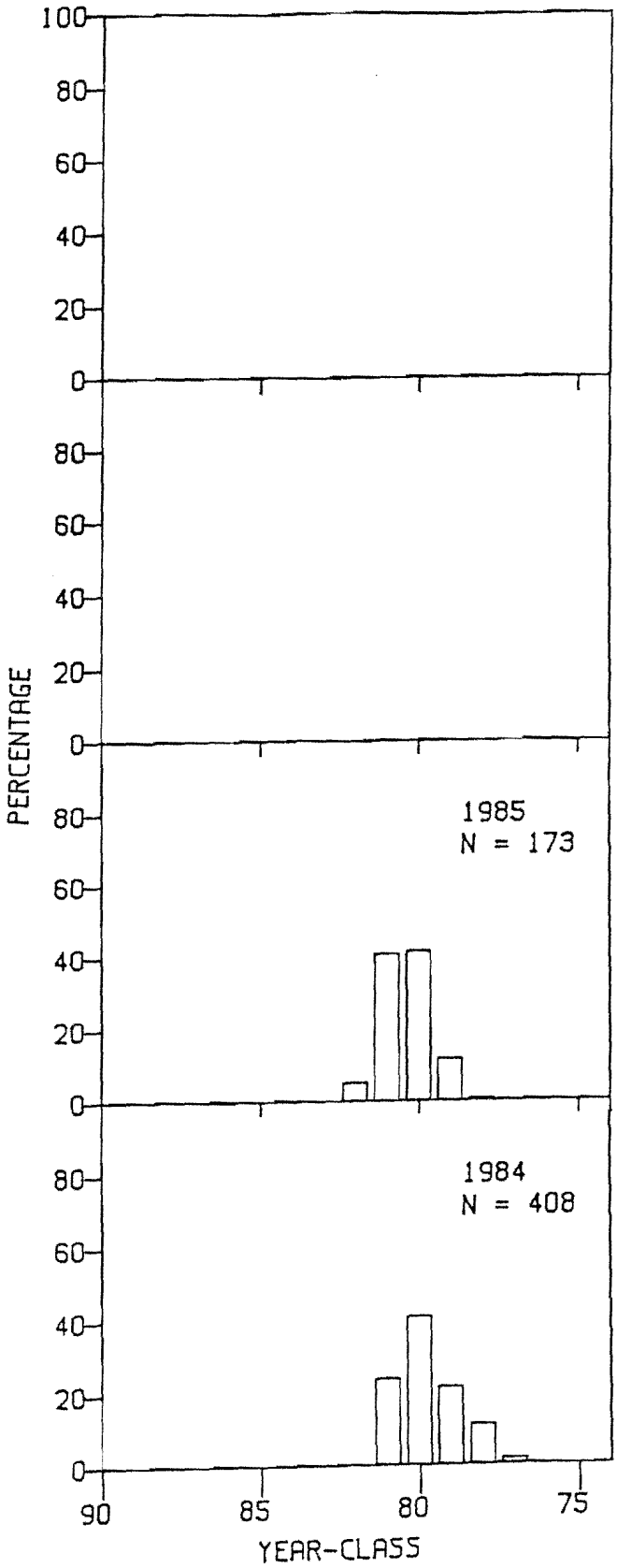


Figure 2. Age Composition of Commercial Subtidal Native Littleneck Clam Harvest, Tillamook Bay, 1984-85.

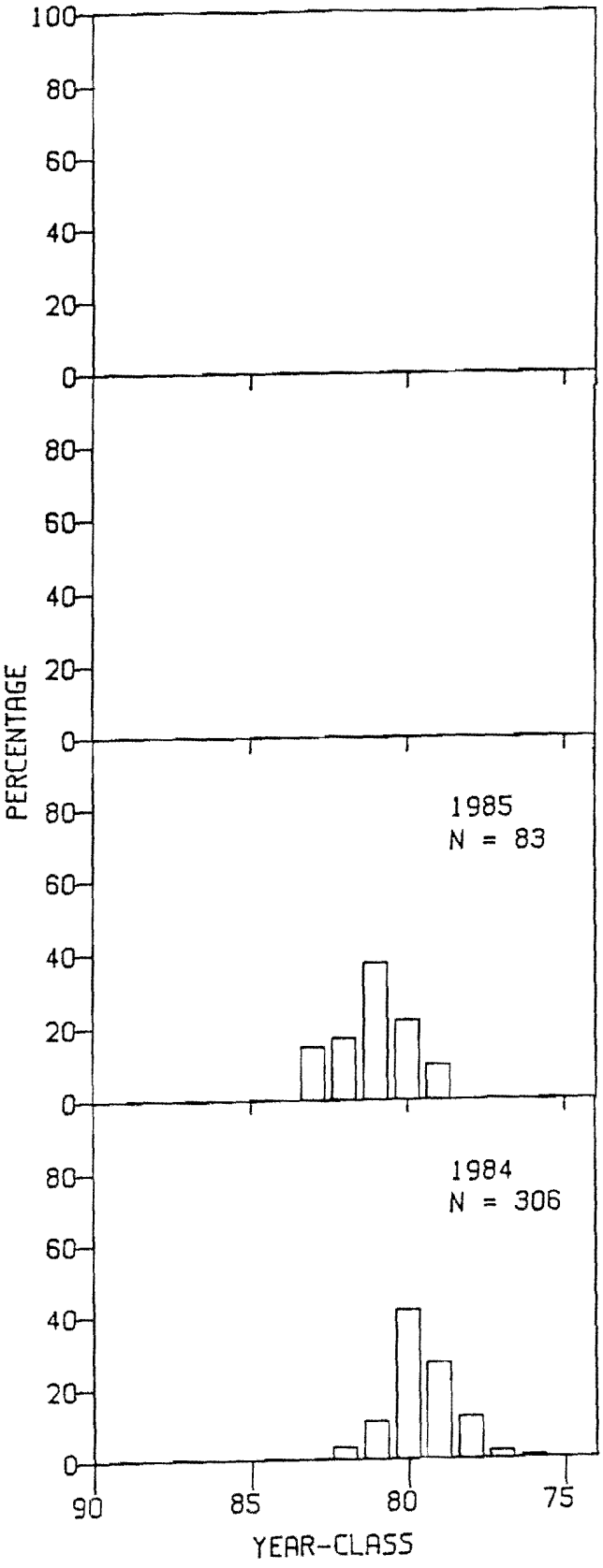


Figure 3. Age Composition of Commercial Subtidal Cockle Clam Harvest, Tillamook Bay, 1984-85.

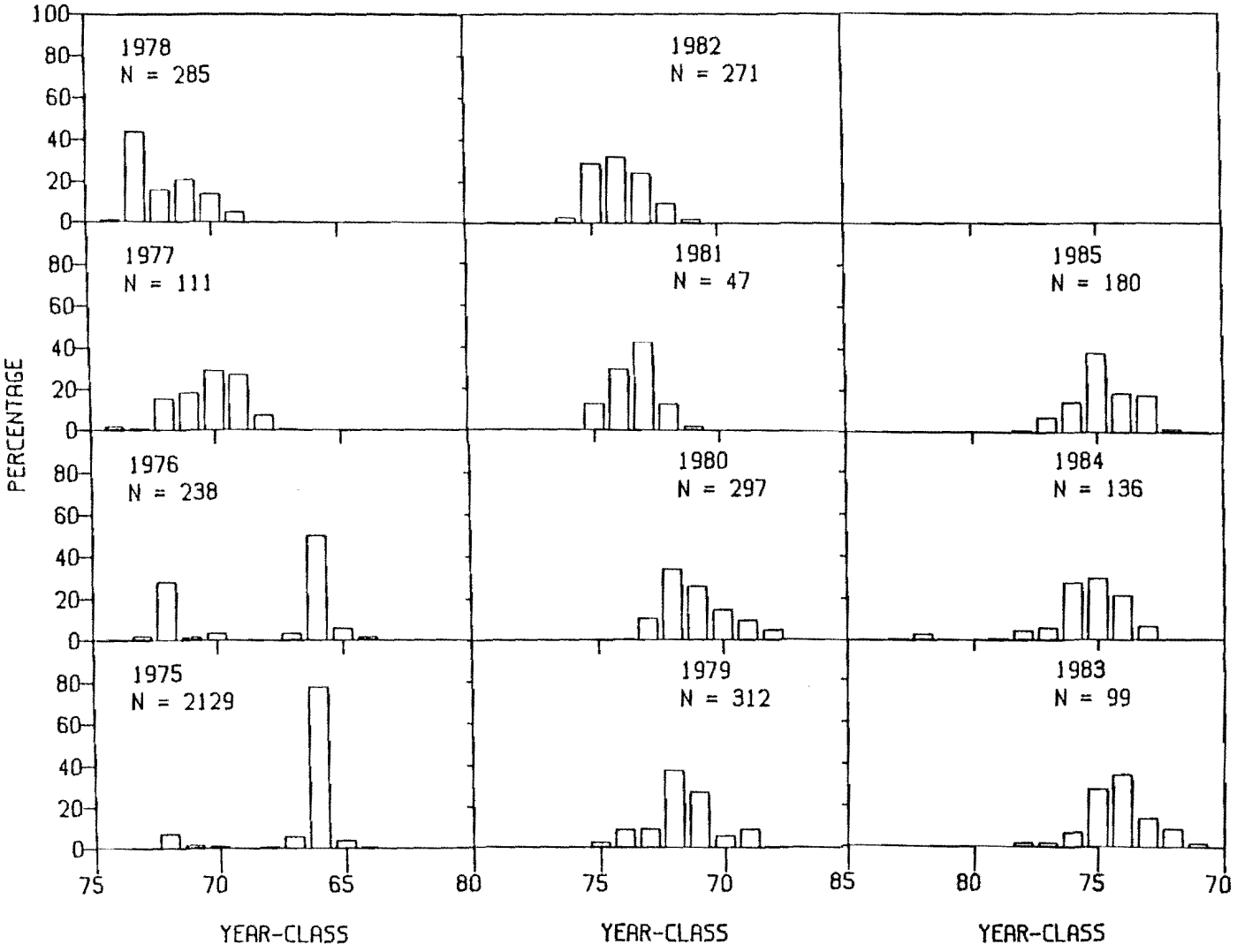
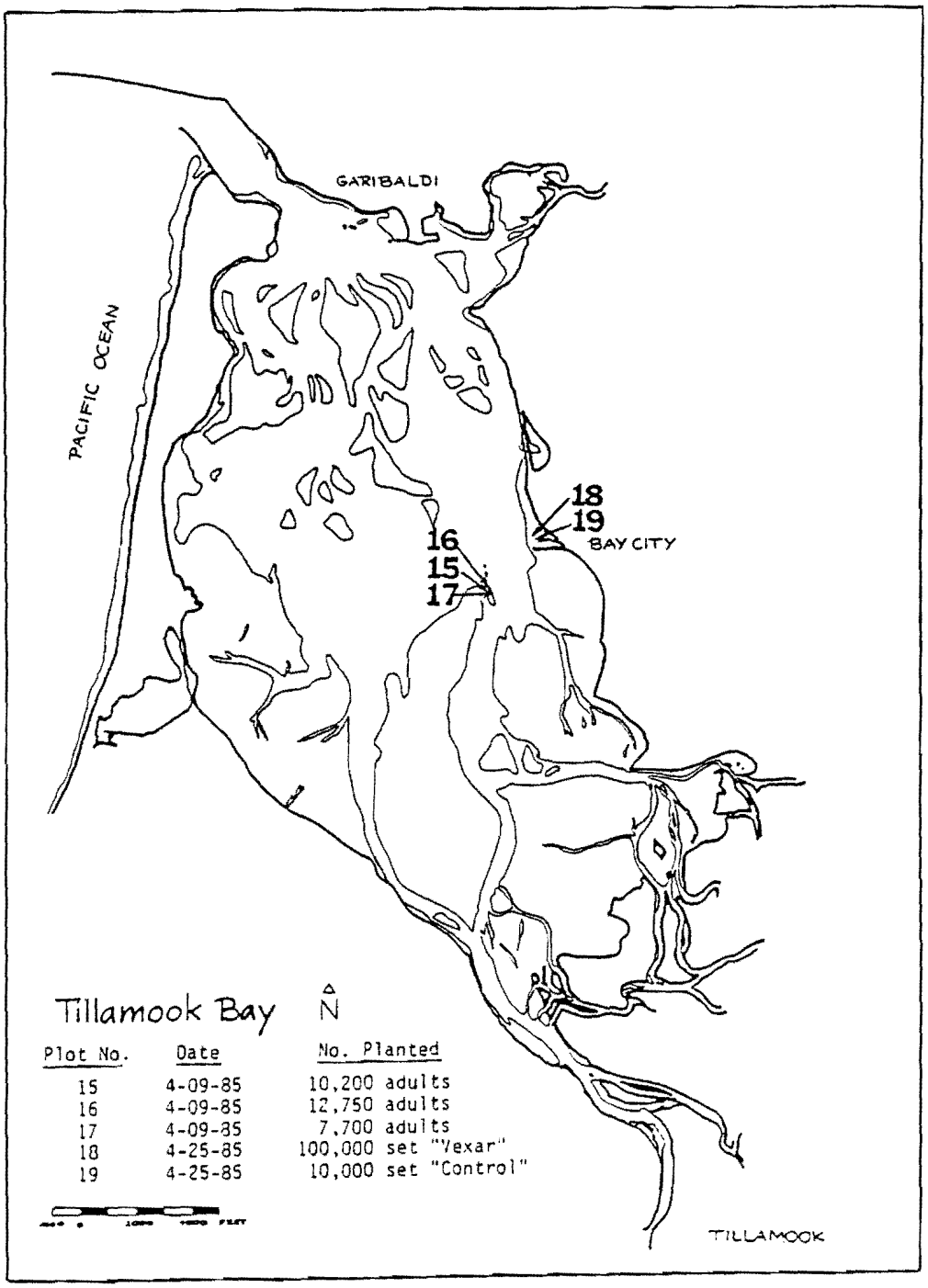


Figure 4. Age Composition of Commercial Subtidal Gaper Clam Harvest, Pigeon Point, Coos Bay 1975-85.



Plot No.	Date	No. Planted
15	4-09-85	10,200 adults
16	4-09-85	12,750 adults
17	4-09-85	7,700 adults
18	4-25-85	100,000 set "Vexar"
19	4-25-85	10,000 set "Control"

Figure 5. Summary of Manila Littleneck Clam Releases in Tillamook Bay, 1985.

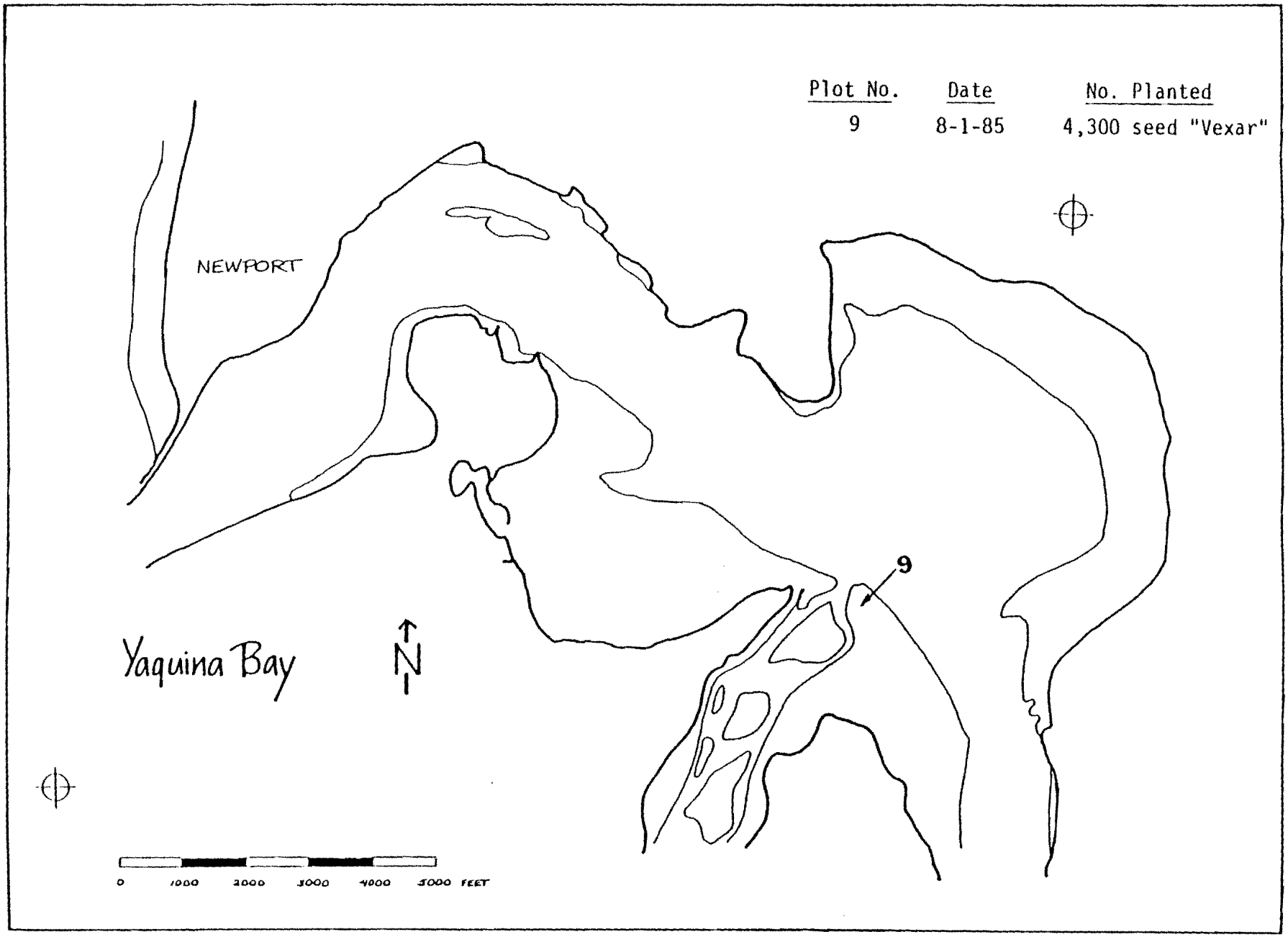


Figure 6. Location of Manila Littleneck Clam Release in Yaquina Bay, 1985.

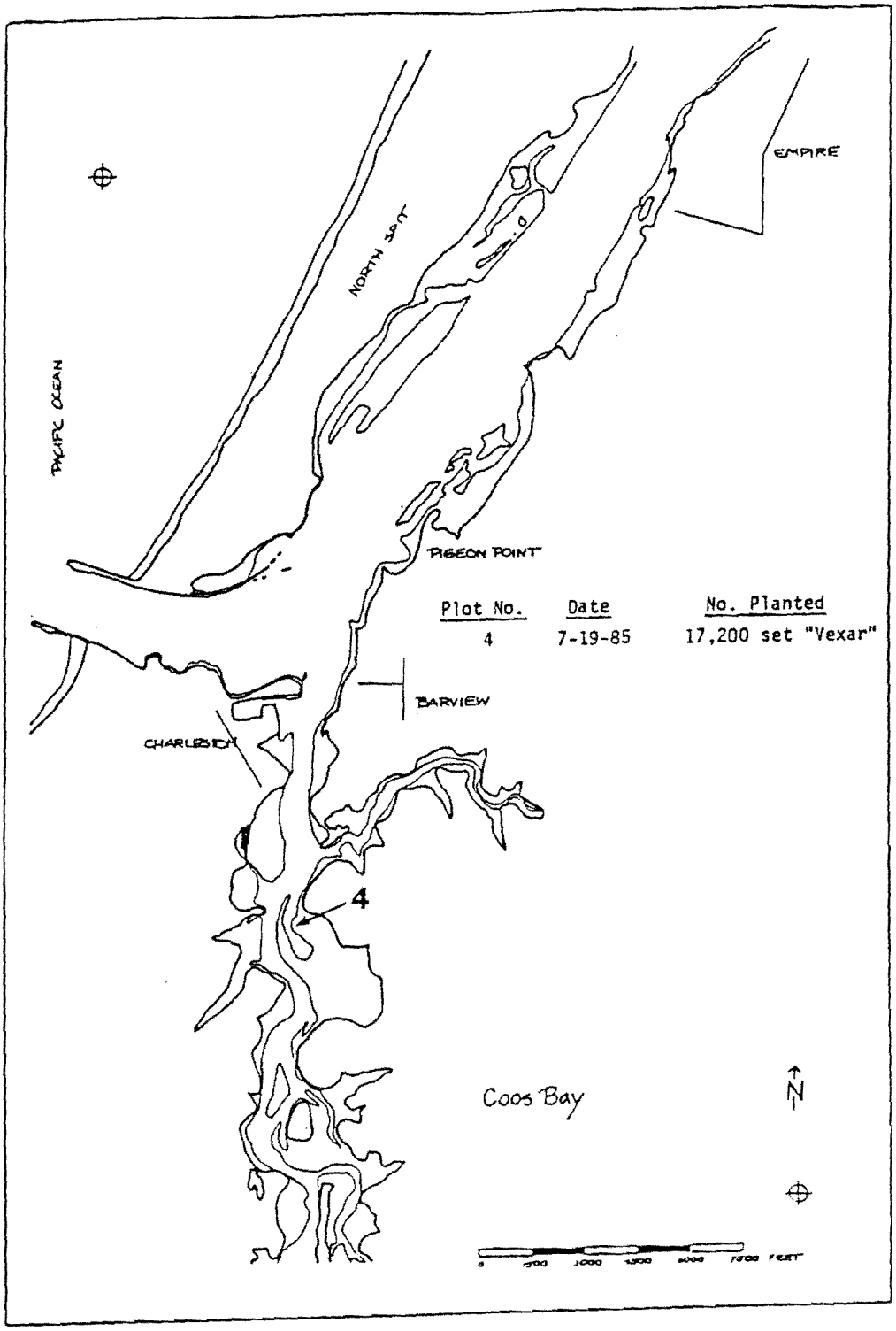
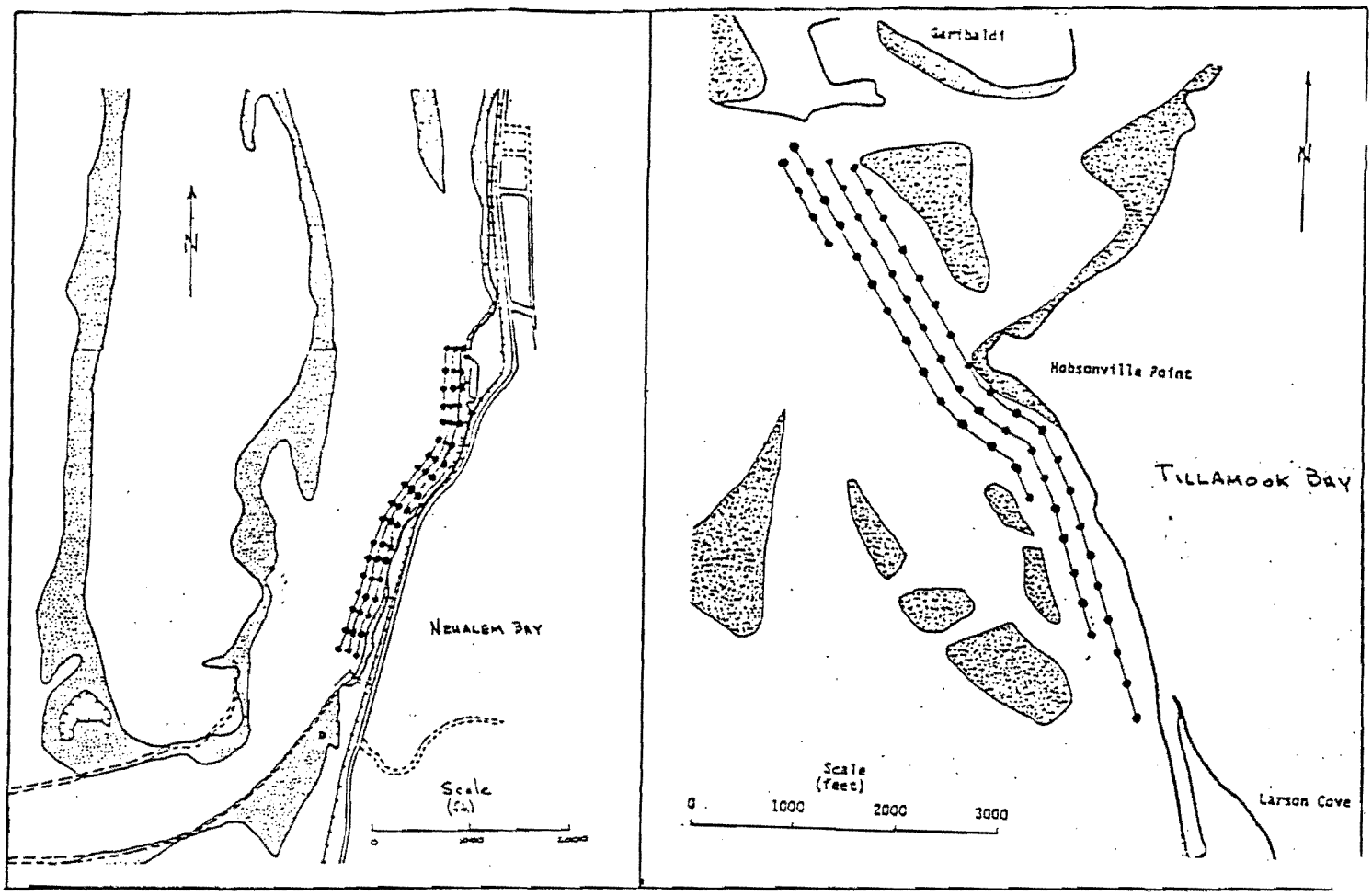


Figure 7. Location of Manila Littleneck Clam Release in Coos Bay, 1985.



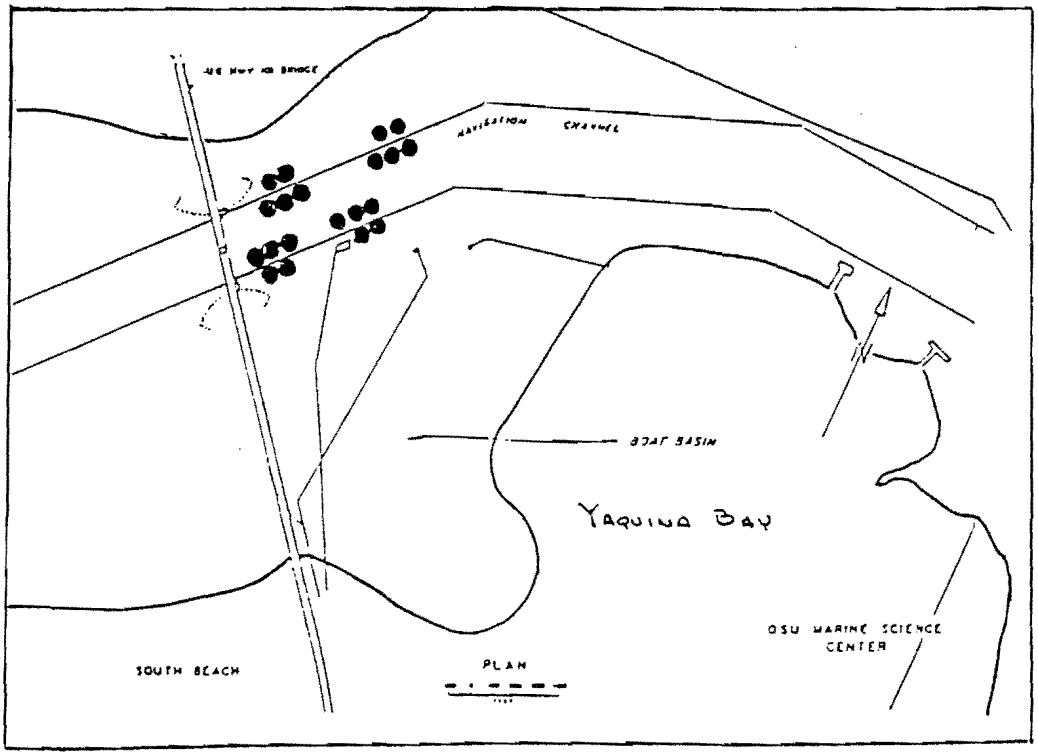


Figure 8 Subtidal Survey Areas in Nehalem, Tillamook, and Yaquina Bays, 1985.

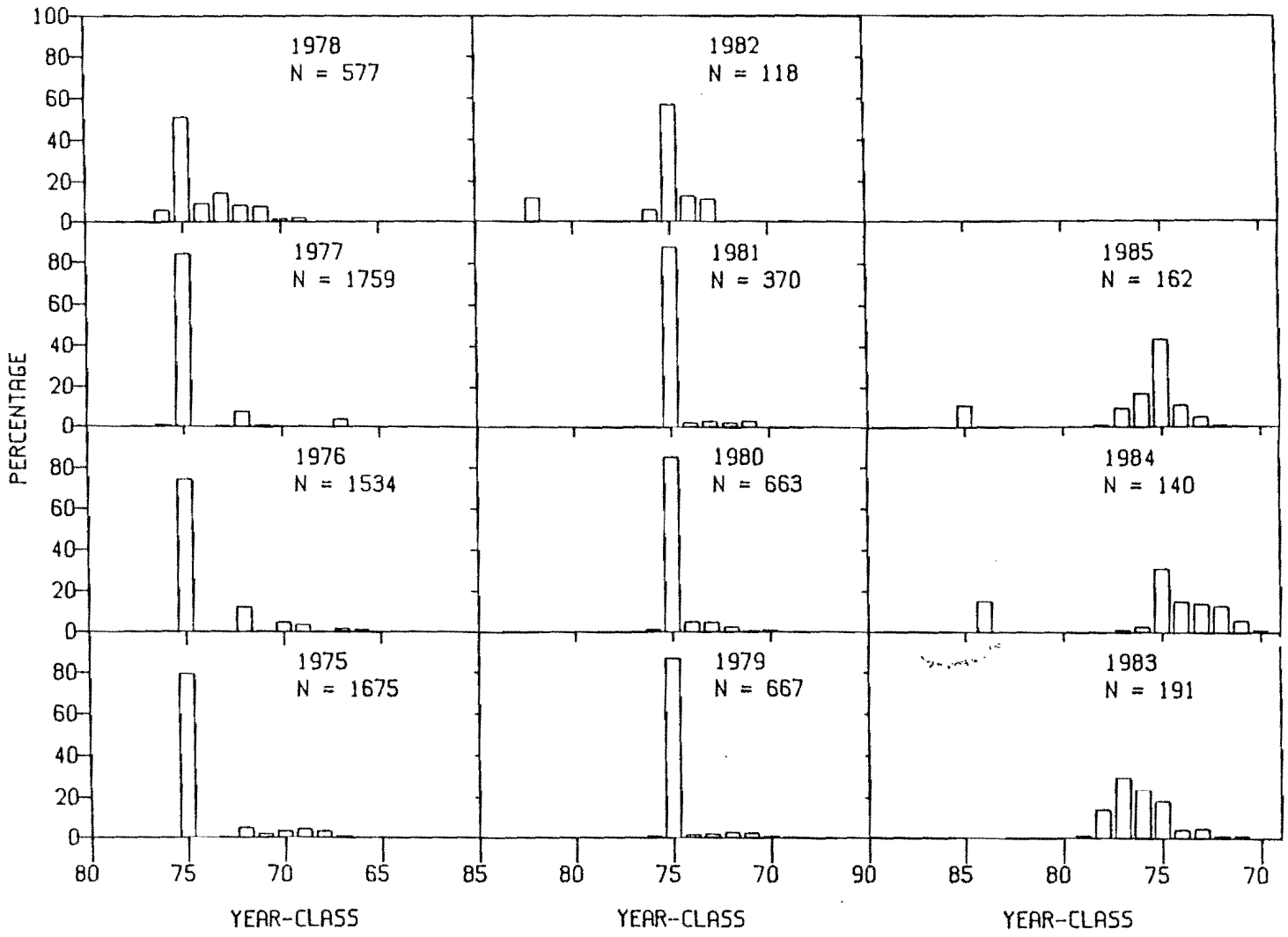


Figure 9. Age Composition of Subtidal Gaper Clams, Area 2, Yaquina Bay, 1975-85.

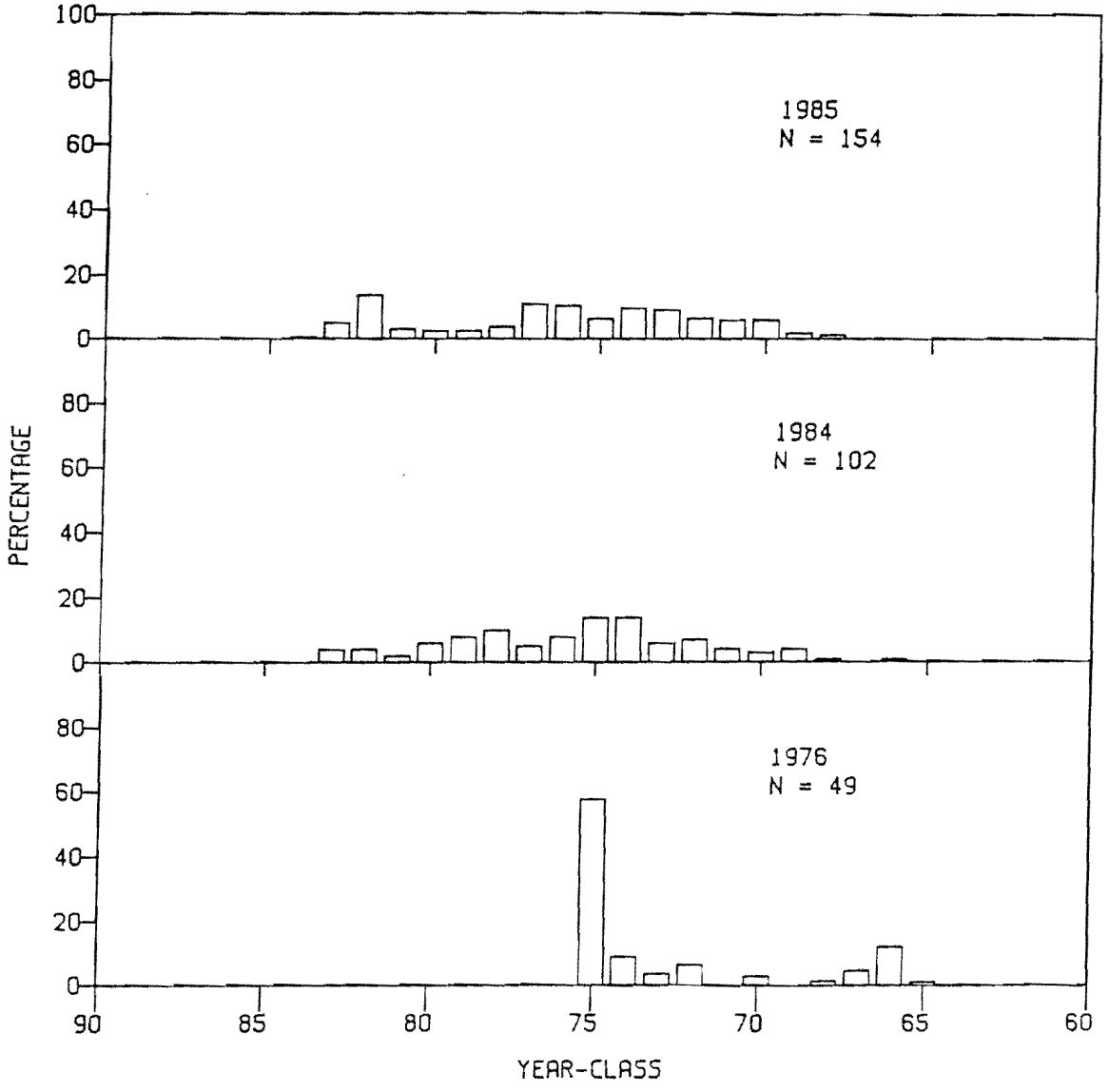


Figure 10. Age Composition of Subtidal Butter Clams, Tillamook Bay, 1976, 1984-85.

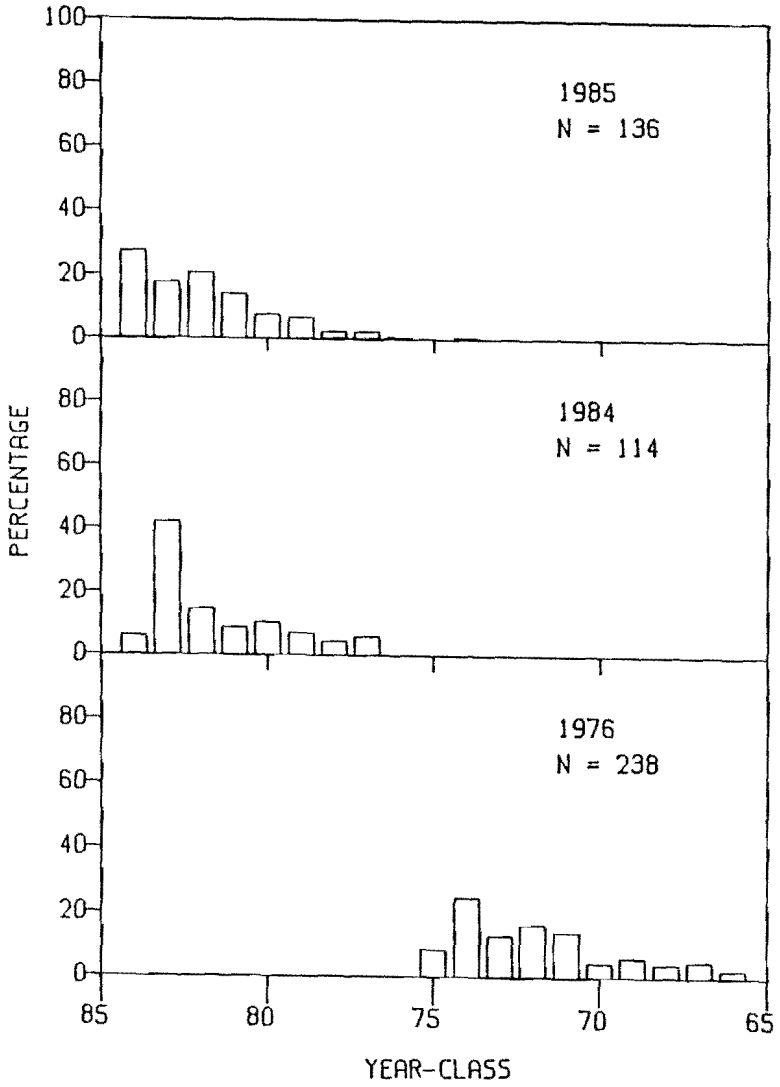


Figure 11. Age Composition of Subtidal Cockle Clams, Tillamook Bay, 1976, 1984-85.

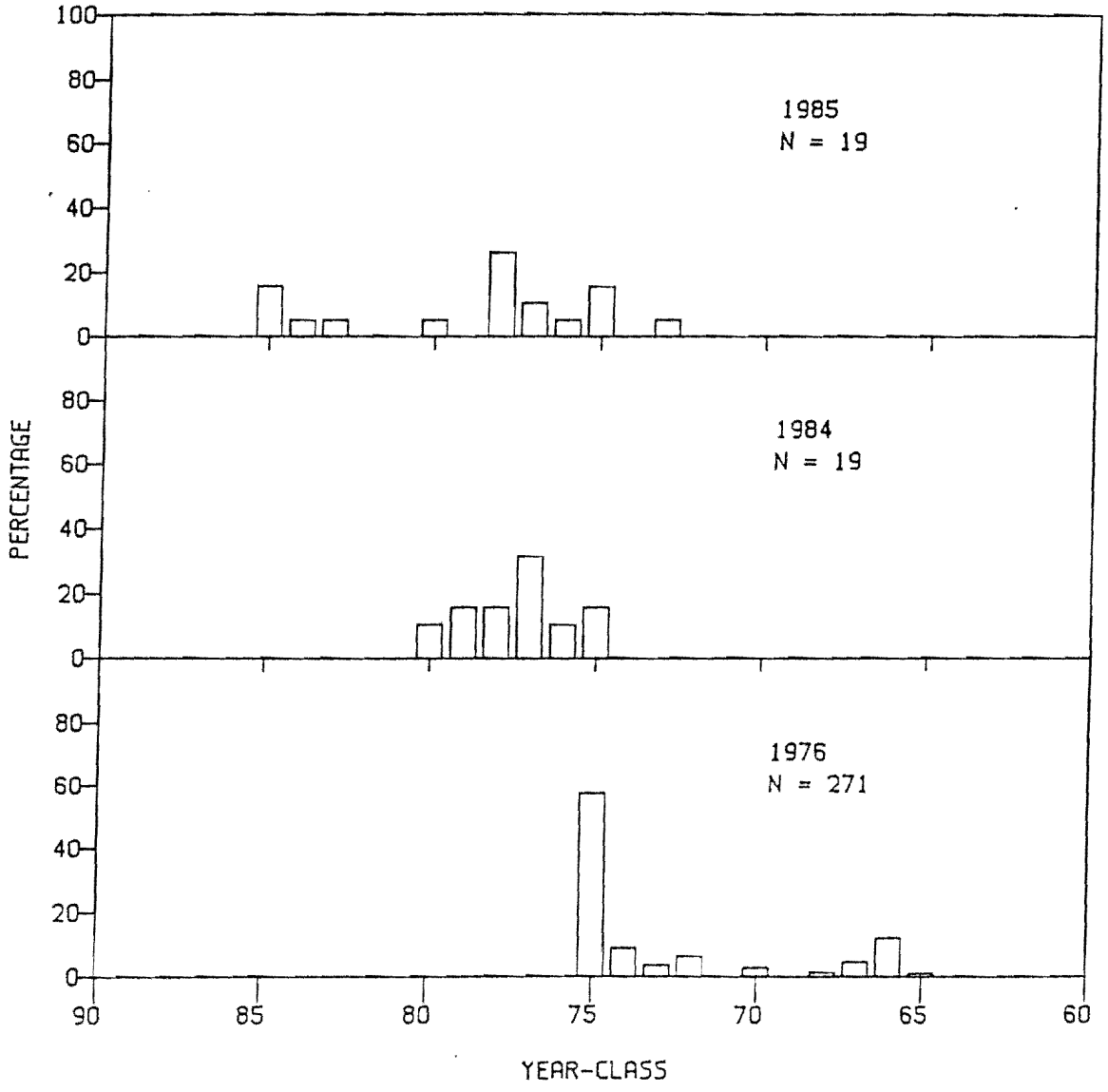


Figure 12. Age Composition of Subtidal Gaper Clams, Tillamook Bay, 1976, 1984-85.

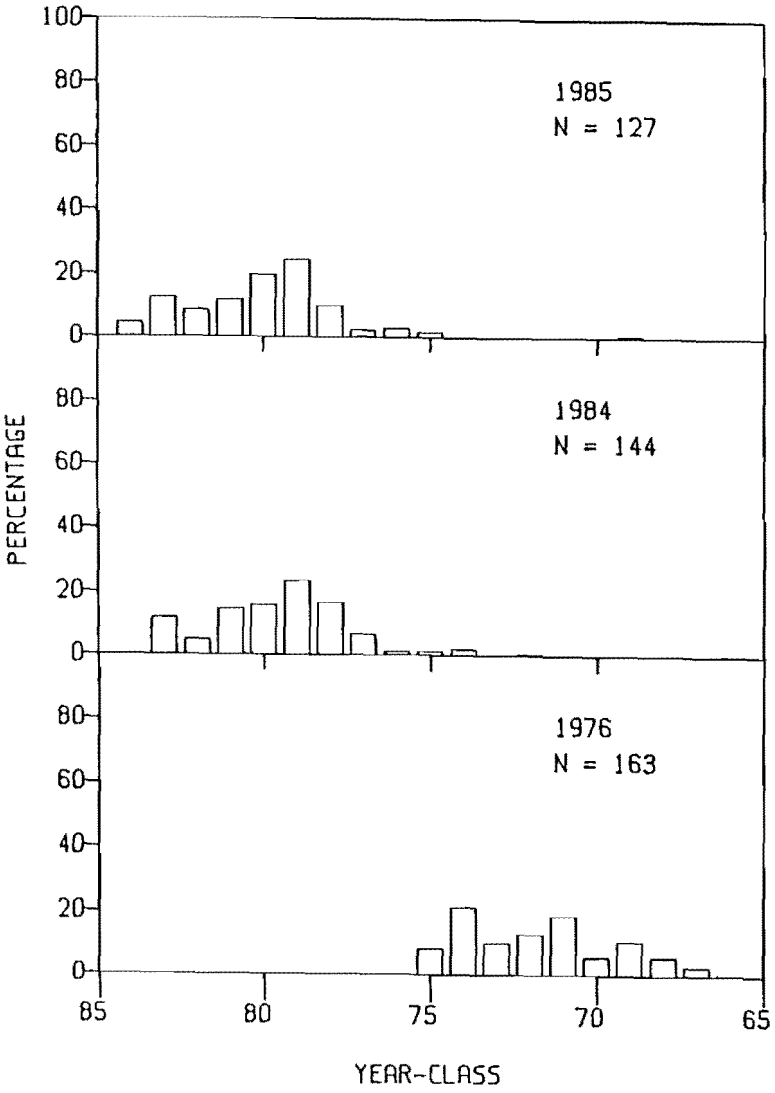


Figure 13. Age Composition of Subtidal Littleneck Clams, Tillamook Bay, 1976, 1985-85

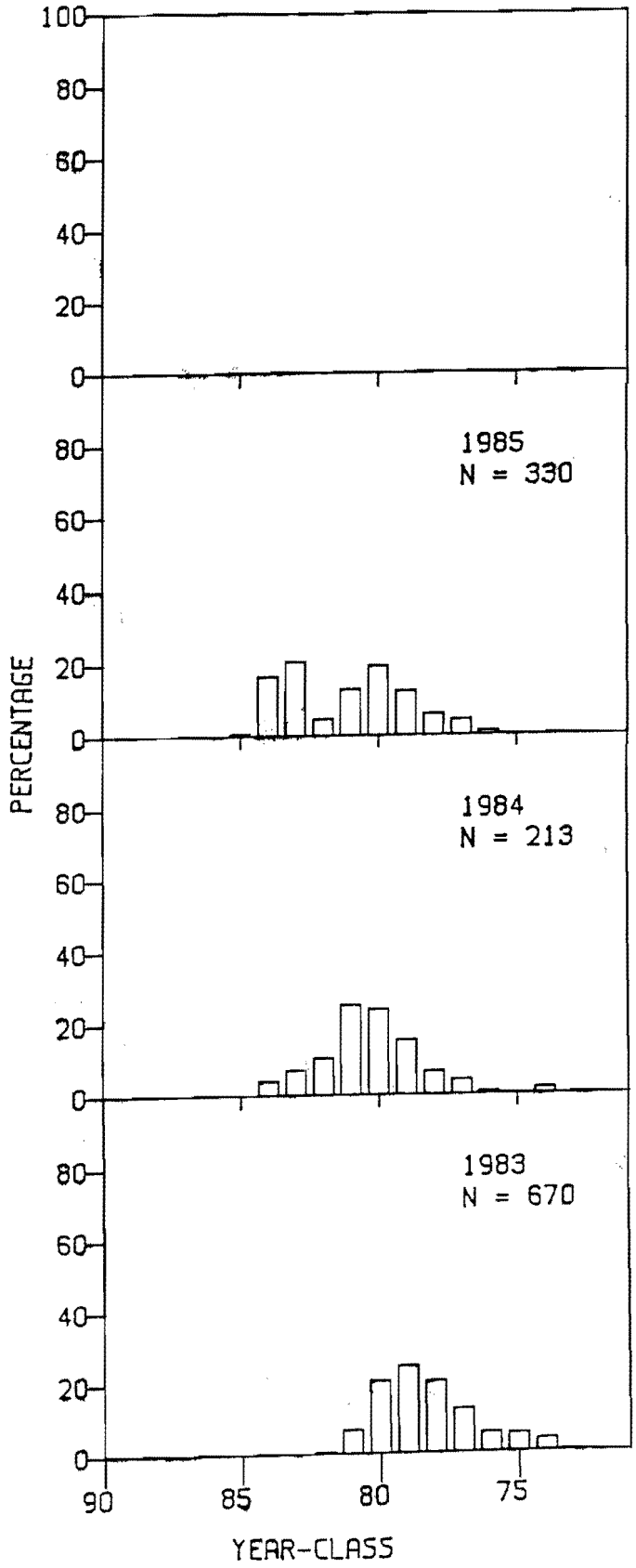


Figure 14. Age Composition of Subtidal Native Littleneck Clams, Nehalem Bay, 1983-85.