

## 1969 RAZOR CLAM ACTIVITIES

### INTRODUCTION

Razor clam work for 1969 (March to September) included sampling the personal use and commercial fisheries for number and age composition of clams, the number of diggers and their distribution on the beach. Beaches in the Cannon Beach area were sampled on occasion as time permitted. The slope of the beach was measured once each month at 17 stations along the coast. Diggers were checked incidentally in all areas if possible. Some experimental tagging was done and the highest elevation at which clam set occur was determined also.

### HARVEST

#### Personal use

One million plus clams were dug from Clatsop beach in 1969 by 59,200 diggers (Figure 1). This includes 155,000 clams that were lost through wastage. The harvest was only slightly better than 1968, but the number of diggers decreased by 7.5%. Razor clam wastage was reduced by 9.5% compared to 1968.

Seaside continues to be a problem as 40% of the diggers took 34% of the harvest from this two-mile beach. Wastage was also higher at Seaside at 20.1%. Table 1 summarizes the harvest by area.

Table 1 Personal use harvest of razor clams from Clatsop beach, April-September 1969.

Area	Miles of beach	No. of diggers	Ave. no. clams/dig	No. clams dug	Wastage	Total clams
1-4 <sup>1/2</sup>	16	35,681	18.1	563,855	83,225	647,080
5 <sup>2/3</sup>	2	23,512	15.3	286,846	72,199	359,045
Total	18	59,193	17.0	850,701	155,424	1,006,125

<sup>1/</sup> Necanicum River to Columbia River.

<sup>2/</sup> Tillamook Head to Necanicum River.

The age composition for personal use clams for 1965-69 is shown in Figure 2. The number of small clams (zeros) increased by 20% over 1968, but is well below the average prior to the July 15-August 31 closure enacted in 1967. The increase of small clams in the catch and numerous reports from diggers of small clams on the outside bars indicate a strong yearclass. In general, there has been a reduction of small clams and an increase in the number of large clams in the catch since the summer closure went into effect. However, population fluctuations still occur but their effects are not so outstanding as in the past.

Digging was only fair to good for most of the 1969 season. Adverse weather and high surf hampered digging until late May, but in spite of this record numbers of diggers were active in both May and June.

#### Commercial

Preliminary estimates indicate that the 1969 commercial harvest will be one of the poorest on record, 100-150 thousand clams. However, the age composition shows that large clams dominated the catch and reflects the accumulated results of the July 15-August 31 closure. Clam license sales also decreased in 1969.

#### CLAM SURVEYS

Several razor clam beaches south of Tillamook Head were checked on occasion as time permitted. A description of these beaches is given in the 1967 Razor Clam Survey report. Their general location is shown in Figure 3. The samples were generally small but the size of clams available was indicated (Table 2).

Digging was mediocre in most areas but the Newport and north Umpqua beaches were exceptions. Agate, north jetty, and south jetty beaches all produced good catches of clams. One local digger said it was the best he had

Table 2 Summary of 1969 razor clam surveys.

Beach	No. digs counted	Bio. sample	No. clams per dig	% age composition						
				0	1	2	3	4	5	
Indian	50	7	-			100				
Crescent	0	13	-	8	38	38	16			
Arch Cape	61	-	14.5	43	44	10	3			
Cove	244	51	15.7	42	32	20	6			
Short Sand	320	-	7.8	19	40	35	5	1		
Oceanside	65	-	12.8	16	29	52	3			
Newport area:										
Agate	340	260	12.2	17	12	40	24	6	1	
North jetty	29	55	19.0	6	6	39	48	1		
South jetty	603	470	7.8	22	31	26	19	2		
North Umpqua	320	-	5.2		100					
Bastendorff	61	-	-							
Whiskey Run	24	-	-							
Myers Creek	170	47	7.8	19	49	18	11	1		

seen since 1938. About 3,000 clams were dug by commercial diggers from Lincoln county beaches in 1969.

The north Umpqua beach was a real surprise in 1969. In July 1969 about 300 diggers were checked on one week end. Twenty diggers were checked July 27 with 104 clams, all of good size. The best digging was from bars near the north jetty of Winchester Bay. Don Towhy reported some digging here in 1949.

Access to the north Umpqua area is difficult. The pipeline road at Three-mile Creek provides access four miles north of the jetty. A second access road is located at the mouth of Siltcoos Lake outlet. A 4-wheel drive vehicle is required to get onto the beach.

Bastendorf beach, near the entrance of Coos Bay, is noteworthy in that little digging occurred here in 1969. Moderate digging has been the rule for several years. Severe beach erosion (4.6 feet) late in 1968 may be the cause of the decline.

The digging at Myers Creek was fair to good for good-sized clams. A California border guard that I checked said that 40-50 diggers from California were digging at Myers Creek on the better tides and most of them were getting limits. Our own digging indicates a crop of large clams and some recruitment for next year.

#### BEACH SURVEYS

A study was done in 1966 to determine some of the physical characteristics of six razor clam beaches (Table 3) including the slope of the beach. Clatsop beach served as the control. Since 1966 the beach slope has been monitored on a monthly basis from March to September.

Table 3 Beaches and number of transects surveyed for slope, 1966-69.

Beach	No. of Transects	Location
Clatsop	1	Seaside, First Avenue
	2	Peter Iredale road
	3	Sunset road
Cannon Beach	1	Ecola Restaurant
	2	1.5 miles south of #1
Bay Ocean	1	0.5 miles south of spit tip
	2	1.5 miles south of #1
Netarts	1	1.7 miles north of state park
Beaver Creek	1	0.25 miles north of Beaver Creek
	2	Lost Creek State Park
	3	2.4 miles north of #2
Whiskey Run	1	1.5 miles south of road
	2	0.2 miles north of road
Bastendorff	1	midbeach off parking lot
Myers Creek	1	0.7 miles north of creek
	2	0.5 miles north of creek
	3	0.1 miles north of creek
	4	0.5 miles south of creek

In terms of net elevation change this is perhaps one of the most important factors in comparing the occurrence and survival of clams in a specific area. The change in elevation is a direct result of beach erosion or accretion by surf action, nearshore ocean currents, and wind. Beach as used here is from the extreme high tide line to a depth of 4-6 feet.

A model beach shows a low flat profile following the winter storms. By spring the net transport of sand is shoreward, the slope and elevation increase and the beach becomes narrower. The maximum accretion usually occurs in late summer before the winter storms arrive. The model profile is seldom seen in nature. A host of factors including location of the beach, natural and man-made obstructions, weather, ocean currents, and surf conditions influence the model.

The mean net elevation by beach, transect, and month for 1966-69 are given in Figures 4-9. The reference point (0) for each transect is the mean elevation of the first survey done in March of 1966 (April for Clatsop, transect 1). All subsequent points plotted on the graphs are mean deviations from the reference point.

The figures show that each beach is different. Clatsop, Cannon Beach, and Meyers Creek are fairly stable (Figures 4, 5, and 9) while Bay Ocean (Figure 6) is very unstable. Whiskey Run (Figure 8) and Beaver Creek are losing sand. A more detailed analysis shows that a net elevation change of 4-6 feet in six months is common. Also, the lower one-third of the beach is highly unstable and elevation changes over 8 feet have been recorded. Since razor clams generally inhabit the lower one-third of the beach, this area is of particular interest. However, too little data are available to draw any sound conclusions.

One fact that has been learned is that an eroded low beach enables clam set to deposit nearer the high tide line. Thus, providing more suitable habitat. However, if accretion is too drastic, the set may be buried and lost.

#### MISCELLANEOUS

##### Tagging

Two new ways to tag razor clams were tried in 1968-69. "T" anchor tags were modified and inserted at the base of the clam's siphon. An "o" or "x" ground on the shell identified the tagged clams. One recovery had lost its tag so it appears that this method may not be suitable.

A second attempt to tag razor clams utilized a waterproof epoxy putty and 7mm Petersen discs. A drop of putty was placed near the posterior margin of the shell and the disc was pressed into it. No recoveries were made, but trials in the laboratory were encouraging. More tagging will be done in the near future.

##### Elevation of clams

A bed of razor clams near the Necanicum River at Gearhart appeared much higher on the beach than is usually seen. Using a Highway Department bench mark (SS 31), I determined that the 3-inch clams were 2.2 feet above mean low tide. Similar measurements were taken at Seaside for clam set; the highest elevation was 2.6 feet. Additional measurements will be taken next summer.