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**SHELLFISH INVESTIGATION
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THE 1978 RAZOR CLAM FISHERY

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Razor clams from Clatsop beach (Tillamook Head - Columbia River) were sampled regularly from March through September and periodically the rest of the year. Sport and commercial diggers were interviewed to obtain catch location and number and age composition of clams dug. Random age-length samples and wastage samples were collected. Data from other beaches south of Tillamook Head were collected as time permitted.

SPORT FISHERY

A calculated 986,000 clams including wastage were harvested on 72,000 digger trips to Clatsop beach. This represented a 41% increase in digger trips and a 70% increase in number of clams dug compared to the 1977 season. The two-mile Seaside beach accounted for only 27% of the digger trips and 20% of the clams dug as larger and more clams were available on the north end of Clatsop beach. Table 1 lists harvest, catch rates and number of digger trips by statistical area.

Table 1. Sport Harvest of Razor Clams and Number of Diggers by Area from Clatsop Beach, March to September, 1978.

Area	Miles of Beach	Number of Digging Trips	Clams Dug/ Digger Trip	Number of Clams Dug	Number of Clams Wasted	Harvest Total
1	3.6	10,610	13.2	139,894	22,585	162,479
2	6.2	20,670	13.4	277,322	44,771	322,093
3	5.0	10,889	11.5	125,108	20,197	145,305
4	1.2	10,763	12.6	135,619	21,894	157,513
5	2.0	19,119	8.9	170,656	27,551	198,207
Total	18.0	72,051	11.8*	848,599	136,998	985,597

- 1 - Columbia River to Fort Stevens Park Road
- 2 - Fort Stevens Park Road to Sunset Beach Road
- 3 - Sunset Beach Road to Gearhart Beach Road
- 4 - Gearhart Beach Road to Necanicum River
- 5 - Necanicum River to Tillamook Head (Seaside)

* Weighted mean

Wastage was estimated at 13.9% or 137,000 clams in 1978, but reached 20% in May, as the 1977 year class was found in good numbers and higher than normal on the beach in many areas. Increased enforcement and news releases on reducing wastage reduced the losses to 5% by July. Age composition of recreationally dug clams reflected an average year (Table 2).

Table 2. Age Composition, in percent, of Sport Dug Razor Clams from Clatsop Beach, 1973-1978.

Year of Harvest	0	1	2	3	4	5+
1973	32.4	49.9	8.1	8.5	1.0	0.1
1974	10.0	55.3	24.3	6.9	3.3	0.2
1975	24.0	46.0	17.6	9.8	2.3	0.3
1976	14.6	78.9	2.8	2.0	1.3	0.4
1977	37.5	15.7	33.5	6.6	3.8	2.9
1978	28.7	61.8	4.0	3.5	1.3	0.7
10 year Average	24.7	53.6	14.4	5.2	1.5	0.6

COMMERCIAL FISHERY

In 1978, 253 diggers harvested approximately 40,000 pounds of clams. Statistical area 2 accounted for 47% of the total clams landed. The age composition of commercially dug clams (Table 3) reflected a good set of the 1976 year class. The commercial fishery took 16.6% of the total clams harvested from Clatsop beach. A sample of 174 commercial catches showed 143,300 clams (41.1% pounds) were not sold to a licensed wholesale buyer.

Table 3. Age Composition, in percent, of Commercially Dug Razor Clams from Clatsop Beach, 1973-1978.

Year of Harvest	0	1	2	3	4	5+
1973	2.0	67.4	13.3	15.8	1.3	0.2
1974	0.7	40.0	35.9	13.0	10.2	0.2
1975	0.4	50.8	14.7	20.6	11.9	1.6
1976	8.7	87.4	2.6	0.9	0.4	0.0
1977	1.6	8.7	60.0	12.0	10.6	7.1
1978	.8	70.8	10.7	12.6	3.4	1.7
10 year Average	2.3	48.2	28.8	13.2	6.1	1.4

RAZOR CLAM PRODUCTION SOUTH OF TILLAMOOK HEAD

Data were obtained from 21 beaches south of Tillamook Head as time permitted. Table 4 lists the beaches and pertinent catch data. The most productive beaches were in the Cannon Beach and Newport-areas. Most beaches had better than average digging with the 1976 year class dominating catches.

Year class data, use, and location of the razor clam population on South Slough Spit in Coos Bay was given to Corps of Engineers. Data were published in the 'Charleston Breakwater Extension and Groin Structure Environmental Impact Statement Supplement No. 1, 1979' by Corps of Engineers.

Many individuals in Cannon Beach area called or wrote inquiring about a summer closure in their area. Wastage was minimal in the area at the time, thus it was not felt necessary. Sampling beaches from Tillamook Head to Cape Falcon found no sport wastage and only minimal wastage by commercials. An estimated 64,000 clams were dug on 4,500 sport digger trips. Commercial diggers dug 1,789 pounds

Table 4. Razor Clam Data from Beaches South of Tillamook Head, 1978.

Area Sampled	No. of Diggers	No. of Clams	Clams/Digger	Age Composition in Percent					
				0	1	2	3	4	5+
Indian Beach*	-	-	-	5.4	91.1	3.5	0.0	0.0	0.0
Crescent Beach*	0	-	-	43.4	56.6	0.0	0.0	0.0	0.0
Chatlin Point*	4	96	24.0	12.3	84.7	2.5	.5	0.0	0.0
Cannon Beach	48	737	15.4	6.7	93.0	0.0	0.0	0.0	0.3
Tolovana Beach	16	151	9.4	15.3	84.7	0.0	0.0	0.0	0.0
Silver Point*	-	-	-	16.7	82.6	0.7	0.0	0.0	0.0
Arch Cape*	-	-	-	0.0	95.0	5.0	0.0	0.0	0.0
Falcon Cove	22	268	12.2	2.4	97.2	0.4	0.0	0.0	0.0
Short Sand†*	6	144	24.0	63.6	8.6	24.5	2.6	0.0	0.7
Agate Beach	181	1,448	8.0	2.7	42.3	29.4	18.3	4.4	2.9
North Beach (Newport)*	-	-	-	25.0	25.0	21.4	16.1	12.5	0.0
South Beach (Newport)	10	63	6.3	1.1	70.1	20.7	4.6	3.5	0.0
Seal Rock	1	17	17.0	0.0	58.8	41.2	0.0	0.0	0.0
Wandamere Beach†	147	1,512	10.3	1.1	85.0	10.9	2.2	0.8	0.0
South Slough Spit (Coos Bay)	111	741	6.7	5.1	34.0	43.6	10.3	5.8	1.2
Bastendorff† (Coos Bay)	14	99	7.1	7.7	69.2	13.2	4.4	3.3	2.2
Port Orford†	2	12	6.0	-	-	-	-	-	-
Bandon	2	42	21.0	-	-	-	-	-	-
Nesika	0	0	-	-	-	-	-	-	-
Bailey Beach	0	0	-	-	-	-	-	-	-
Myers Creek	264	1,309	5.0	0.3	46.4	31.7	10.8	6.9	3.9

* Age composition from biologist random sample only.

† One trip only.

and averaged 28 pounds per trip. Random samples indicated the population to be 16% first year clams, 74% second year clams and 10% third year or older clams. Of the population, 32% were sublegal for the commercial fishery.

HARVEST SUMMARY

The sport and commercial fisheries harvested 1,191,000 clams in 1978. Digging was good on all beaches thus dispersing effort. Catch per unit of effort was 11.8 clams and almost equalled the 1976 season. Random samples in late 1978 and 1979 from Clatsop beaches indicated the 1977 year class was located higher than normal on the beach in some areas, but not as dispersed as in the 1978 season. The problem of commercial catches not being sold has increased 125.8% over the last two years average. Table 5 lists annual catch data for the fishery.

Table 5. Annual Harvest and Effort Data for the Sport and Commercial Fishery*

Year	Commercial		Sport			Wastage	Total Harvest
	Number of Diggers	Number of Clams Dug	Number of Diggers	Clams per Digger Trip	Number of Clams Dug		
1955	295	904,000	56,000	21.6	1,212,000	295,000	2,411,000
1956	253	490,000	60,000	17.7	1,061,000	295,000	1,846,000
1957	193	336,000	77,000	21.4	1,646,000	416,000	2,398,000
1958	221	386,000	89,000	18.9	1,679,000	218,000	2,283,000
1959	118	179,000	54,000	12.0	646,000	124,000	949,000
1960	93	154,000	48,000	12.4	596,000	46,000	796,000
1961	58	80,000	51,000	11.4	583,000	70,000	733,000
1962	79	102,000	56,000	15.9	892,000	105,000	1,099,000
1963	77	107,000	55,000	13.0	713,000	70,000	890,000
1964	125	125,000	71,000	15.5	1,098,000	264,000	1,487,000
1965	213	399,000	76,000	14.9	1,134,000	186,000	1,719,000
1966	217	282,000	78,000	13.6	1,052,000	434,000	1,768,000
1967	297	494,000	74,000	19.9	1,472,000	195,000	2,161,000
1968	340	361,000	64,000	13.0	831,000	162,000	1,354,000
1969	185	111,000	59,000	14.4	851,000	155,000	1,117,000
1970	79	61,000	56,000	12.8	751,000	125,000	901,000
1971	134	123,000	77,000	12.6	968,000	213,000	1,304,000
1972	76	49,000	69,000	9.2	636,000	139,000	824,000
1973	111	89,000	76,000	9.5	725,000	159,000	973,000
1974	58	32,000	44,000	7.9	347,000	5,000	384,000
1975	146	171,000	75,000	10.5	785,000	157,000	1,113,000
1976	391	717,000	119,000	12.0	1,431,000	63,000	2,211,000
1977	269	143,000	51,000	9.6	499,000	33,000	675,000
1978	253	205,000	72,000	11.8	849,000	137,000	1,191,000
MEAN	178	254,000	67,000	13.9	934,000	170,000	1,358,000

* Commercial harvest is total landings; sport data is for Clatsop Beach. (Most of the commercial harvest comes from Clatsop beach).