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SHELLFISH / MARINE HABITAT INVESTIGATION

INFORMATION REPORT

1999 RAZOR CLAM FISHERY

BY

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2001 MARINE DRIVE
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INTRODUCTION

The Pacific razor clam fishery on Clatsop beach (Tillamook Head to Columbia River) was sampled four days each tide series June through July and was monitored regularly during the fall fishery. Sport and commercial diggers were interviewed to obtain data on digging effort, number and age composition of clams, and harvest area. Data from beaches south of Tillamook Head were collected as time permitted. Random age and length data, samples for biological toxin analysis, wastage of clams and other miscellaneous data were collected and reported.

SPORT FISHERY

Clatsop Beach

The total 1999 harvest of 177,000 clams, which included 10,000 wasted clams was taken on 32,000 digger trips. The average catch per trip was 5.2 clams.

The winter fishery was closed to digging due to Domoic toxins in razor clams. Beach erosion, the worst seen in twenty years, caused heavy losses of clams.

The spring harvest started after nearly a years ban on digging. News releases were made to inform harvesters that the beaches would open on June 11, but numbers of clams would be low. A harvest of 175,000 clams, including 10,000 wasted clams, was taken on 31,000 digger trips. Diggers averaged 5.3 clams per trip with 42% of the catch coming from Area 1 (Peter I. to South Jetty). Effort quickly dropped after the first tide series with Area 5 (Seaside beach) having 33% of the total effort. Effort from Washington diggers was 5% of the total effort or about 1500 diggers. Table 1 lists harvest, catch rates and number of diggers by area. The age composition of the sport catch is listed in Table 2. Wastage of small clams was 5.5% and occurred on Seaside and Peter Iredale beaches when the 1998 year class mixed with older clams.

The fall fishery had low effort due to bad weather, low clam numbers and good digging in Washington. A calculated 2,000 clams were taken on 600 digger trips. The 1999 year class was found in several areas, but in low numbers.

Table 1. SPORT HARVEST OF RAZOR CLAMS AND NUMBER OF DIGGERS BY AREA FROM CLATSOP BEACH, JUNE THROUGH JULY, 1999.

AREA	MILES OF BEACH	NO. OF DIGGER TRIPS	CLAMS DUG / DIGGER TRIP	NO. OF CLAMS DUG	NO. OF CLAMS WASTED	TOTAL CLAMS HARVESTED
1	3.6	8713	7.9	68907	4010	72917
2	6.2	6306	5.9	37307	2171	39478
3	5.0	4903	2.6	12778	744	13522
4	1.2	998	4.7	4642	270	4912
5	2.0	10159	4.1	41794	2432	44226
TOTAL	18.0	31077	5.3	165428	9627	175055

- Area 1 Columbia River to Peter Iredale.
- Area 2 Peter Iredale to Sunset Beach Road.
- Area 3 Sunset Beach Road to Gearhart Beach road.
- Area 4 Gearhart Beach Road to Necanicum River.
- Area 5 Necanicum River to Tillamook Head.

Table 2. AGE COMPOSITION OF SPORT DUG CLAMS IN PERCENT FROM CLATSOP BEACH, 1994-1999.

YEAR OF HARVEST	AGE IN YEARS					
	0	1	2	3	4	5+
1994	3.1	44.6	47.6	4.5	0.2	0.0
1995	1.9	27.9	39.2	23.9	5.5	1.6
1996	10.5	40.3	27.4	15.2	5.6	1.0
1997	40.2	29.9	19.8	7.8	1.5	0.8
1998	15.5	44.5	27.9	9.7	2.0	0.4
1999	8.8	34.9	38.2	14.4	3.5	0.2
10 YR. AV.	13.8	37.6	34.1	11.2	2.7	0.6

Table 3. ANNUAL EFFORT AND HARVEST DATA FOR THE RAZOR CLAM FISHERY							
YEAR	COMMERCIAL FISHERY			SPORT FISHERY			TOTAL
	NO. OF	NO. OF	NO. OF	CLAMS/	NO. OF	NO. OF	CLAMS
	DIGGERS	CLAMS	TRIPS	TRIP	CLAMS DUG	CLAMS WASTED	HARVESTED
1955	295	904000	56000	22	1212000	295000	2411000
1956	253	490000	60000	18	1061000	295000	1846000
1957	193	336000	77000	21	1646000	416000	2398000
*1958	221	386000	89000	19	1679000	218000	2283000
1959	118	179000	54000	12	646000	124000	949000
1960	93	154000	48000	12	596000	46000	796000
1961	58	80000	51000	11	583000	70000	733000
1962	79	102000	56000	16	892000	105000	1099000
1963	77	107000	55000	13	713000	70000	890000
1964	125	125000	71000	16	1098000	264000	1487000
1965	213	399000	76000	15	1134000	186000	1719000
1966	217	282000	78000	14	1052000	434000	1768000
1967	297	494000	74000	20	1472000	195000	2161000
1968	340	361000	64000	13	831000	162000	1354000
1969	185	111000	59000	14	851000	155000	1117000
1970	79	61000	56000	13	715000	125000	901000
1971	134	123000	77000	13	968000	213000	1304000
1972	76	49000	69000	9	636000	139000	824000
*1973	111	89000	76000	10	725000	159000	973000
1974	58	32000	44000	8	347000	5000	384000
1975	146	171000	75000	10	785000	157000	1113000
1976	391	717000	119000	12	1431000	63000	2211000
*1977	269	143000	51000	10	499000	33000	675000
1978	253	205000	72000	12	849000	137000	1191000
1979	236	180000	90000	11	958000	63000	1201000
1980	145	116000	70000	11	747000	143000	1006000
1981	91	128000	30000	6	187000	49000	364000
1982	209	165000	84000	9	758000	123000	1046000
*1983	9	1000	32000	3	105000	12000	118000
1984	34	37000	23000	15	341000	15000	393000
1985	340	303000	94000	10	984000	147000	1434000
1986	51	18000	46000	5	260000	33000	311000
1987	173	236000	68000	15	1010000	83000	1329000
1988	178	161000	84000	11	1016000	168000	1345000
1989	228	195000	97000	11	1082000	136000	1413000
1990	151	75000	55000	11	579000	61000	715000
*1991	129	130000	57000	11	643000	80000	853000
1992	NO SEASON BECAUSE OF DOMOIC ACID AND PSP						
1993	NO SEASON BECAUSE OF PSP						
1994	107	78000	59000	15	885000	0	963000
1995	159	276000	91000	10	912000	67000	1255000
*1996	75	17000	21000	9	192000	11000	220000
1997	13	8000	27000	7	186000	47000	241000
1998	18	11000	21000	7	149000	12000	172000
1999	12	2000	32000	5	167000	10000	179000
* OCCURRENCE OF EL NINO	FALL SPORT HARVEST INCLUDED IN TOTAL FOR 1984 TO PRESENT						

Beaches South Of Tillamook Head

Digging occurred on many beaches along the coast but effort was minimal and harvest poor. Domoic acid and possible oil contaminates closed several beaches during the winter months. Surveys found no clams on beaches in the Cannon Beach area.

COMMERCIAL FISHERY

The commercial harvest was 2397 clams (510 pounds), one of the lowest harvests on record. Harvest data are listed in Table 3. Commercial catch and effort by harvest area is listed in Table 4. The age composition of commercially dug clams are listed in Table 5.

A total of 50 commercial harvesters were issued ODF&W shellfish harvest permits, but only 12 diggers sold clams. The value of clams to the digger reached \$3.25 per pound for human consumption. Low numbers of clams had many harvesters keeping their catches for personal use and not selling their catch to a wholesale buyer. Fall digging was poor and only one landing was recorded and that happened to be a commercial having no harvest permit.

The Oregon Department of Agriculture did not close the ocean beach in front of the Necanicum River to commercial digging of clams, as no clams were sold out of state. To help commercial diggers the Department of Agriculture issued their harvest permits at our office for several days before the digging ban was lifted.

Table 4. COMMERCIAL CATCH/EFFORT AND POUNDS IN PERCENT LANDED BY AREA FROM CLATSOP BEACH, 1999.

	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	TOTAL
POUNDS/HOUR	3.4	5.3		5.2	2.3	4.2
PERCENT OF POUNDS LANDED	34.0	19.3	0.0	42.6	4.1	100.0

Table 5. AGE COMPOSITION IN PERCENT FOR COMMERCIALY DUG CLAMS,
CLATSOP BEACH, 1994-1999.

YEAR OF HARVEST	AGE IN YEARS					
	0	1	2	3	4	5+
1994	1.5	38.5	46.4	12.0	1.5	0.1
1995	0.0	20.7	43.2	22.9	10.4	2.8
1996	0.3	49.1	23.4	16.0	11.2	0.0
1997	0.0	26.0	33.8	39.0	1.2	0.0
1998	1.8	40.7	36.3	16.4	4.3	0.5
1999	0.0	25.0	34.8	37.0	3.0	0.2
10 YR. AV.	1.0	33.9	40.1	20.1	4.3	0.6

MISCELLANEOUS PROJECTS

Beach Closures

High concentrations of Domoic acid in razor clams kept harvesting closed during the winter on Clatsop, Tillamook and Lincoln County beaches. On May 4 the ban on Lincoln County Beaches was lifted. On Clatsop and Tillamook beaches the ban was lifted on June 11. Terry link with the help of several volunteers collected Clatsop Beach razor clam samples used for toxin analysis during the year.

A shellfish closure was issued Feb. 8 in Coos Bay, due to oil leaking from the New Carissa. This closure was lifted March 22. No shellfish closure was made of the New Carissa oil on Clatsop beaches, as there was already a ban on harvesting.

Domoic Acid

High rates of Domoic acid, which kept northcoast beaches closed till June, initially had toxin levels (310 ppm) three times the levels (120 ppm) seen in 1991. Monthly changes in depuration of toxin levels have been similar between years as seen in Figure 1. The initial losses of toxin in clams are rapid after contamination, but slow down for several months, with depuration increasing reaching safe toxin levels after clams spawn

