

SHELLFISH / MARINE HABITAT INVESTIGATION

INFORMATION REPORT

1998 RAZOR CLAM FISHERY

BY

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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 April through June and was monitored regularly during the winter 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 1998 harvest of 160,906 clams, which included 12,223 wasted clams, was one of the lowest on record. The catch was taken on 20,784 digger trips and the average catch per trip was 7.2 clams. The presence of shellfish toxins in mussels closed the beaches to digging in July.

The winter fishery produced 8,100 clams on 1,800 digger trips. Bad weather hindered digging and the lack of clams discouraged diggers.

The spring harvest of 152,806 clams, including 12,223 wasted clams, was taken on an estimated 18,984 digger trips. Diggers averaged 7.4 clams per trip with 36% of the effort on Area 5 (Seaside beach). 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 occurred in June on Seaside and Peter Iredale beaches when the 1997 year class mixed with older clams. Wastage was minimal as the season was cut short by a shellfish ban the first of July.

The fall fishery was not opened due to continuing high rates of domoic toxin in razor clams. The 1998 year class was found to be spotty and low in numbers in the fall.

Table 1. SPORT HARVEST OF RAZOR CLAMS AND NUMBER OF DIGGERS BY AREA FROM CLATSOP BEACH, MARCH THROUGH JUNE, 1998.

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	4,385	7.5	32,931	2,863	35,794
2	6.2	3,517	5.3	18,812	1,635	20,447
3	5.0	2,724	2.3	6,218	541	6,759
4	1.2	1,529	8.1	12,407	1,079	13,486
5	2.0	6,829	10.3	70,215	6,105	76,320
TOTAL	18.0	18,984	7.4	140,583	12,223	152,806

- 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, 1993-1998.

YEAR OF HARVEST	0	1	2	3	4	5+
1993	no season					
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
10 YR. AV.	16.2	40.2	30.8	9.9	2.4	0.5

Table 3. ANNUAL EFFORT AND HARVEST DATA FOR THE RAZOR CLAM FISHERY

YEAR	Commercial Fishery			Sport Fishery		NO. OF CLAMS DUG	NO. OF CLAMS WASTED	TOTAL CLAMS HARVESTED
	NO. OF DIGGERS	NO. OF CLAMS	NO. OF TRIPS	CLAMS/TRIP				
1955	295	904,000	56,000	22		1,212,000	295,000	2,411,000
1956	253	490,000	60,000	18		1,061,000	295,000	1,846,000
1957	193	336,000	77,000	21		1,646,000	416,000	2,398,000
*1958	221	386,000	89,000	19		1,679,000	218,000	2,283,000
1959	118	179,000	54,000	12		646,000	124,000	949,000
1960	93	154,000	48,000	12		596,000	46,000	796,000
1961	58	80,000	51,000	11		583,000	70,000	733,000
1962	79	102,000	56,000	16		892,000	105,000	1,099,000
1963	77	107,000	55,000	13		713,000	70,000	890,000
1964	125	125,000	71,000	16		1,098,000	264,000	1,487,000
1965	213	399,000	76,000	15		1,134,000	186,000	1,719,000
1966	217	282,000	78,000	14		1,052,000	434,000	1,768,000
1967	297	494,000	74,000	20		1,472,000	195,000	2,161,000
1968	340	361,000	64,000	13		831,000	162,000	1,354,000
1969	185	111,000	59,000	14		851,000	155,000	1,117,000
1970	79	61,000	56,000	13		715,000	125,000	901,000
1971	134	123,000	77,000	13		968,000	213,000	1,304,000
1972	76	49,000	69,000	9		636,000	139,000	824,000
*1973	111	89,000	76,000	10		725,000	159,000	973,000
1974	58	32,000	44,000	8		347,000	5,000	384,000
1975	146	171,000	75,000	10		785,000	157,000	1,113,000
1976	391	717,000	119,000	12		1,431,000	63,000	2,211,000
*1977	269	143,000	51,000	10		499,000	33,000	675,000
1978	253	205,000	72,000	12		849,000	137,000	1,191,000
1979	236	180,000	90,000	11		958,000	63,000	1,201,000
1980	145	116,000	70,000	11		747,000	143,000	1,006,000
1981	91	128,000	30,000	6		187,000	49,000	364,000
1982	209	165,000	84,000	9		758,000	123,000	1,046,000
*1983	9	1,000	32,000	3		105,000	12,000	118,000
1984	34	37,000	23,000	15		341,000	15,000	393,000
1985	340	303,000	94,000	10		984,000	147,000	1,434,000
1986	51	18,000	46,000	5		260,000	33,000	311,000
1987	173	236,000	68,000	15		1,010,000	83,000	1,329,000
1988	178	161,000	84,000	11		1,016,000	168,000	1,345,000
1989	228	195,000	97,000	11		1,082,000	136,000	1,413,000
1990	151	75,000	55,000	11		579,000	61,000	715,000
*1991	129	130,000	57,000	11		643,000	80,000	853,000
1992		NO SEASON BECAUSE OF DOMOIC ACID AND PSP						
1993		NO SEASON BECAUSE OF PSP						
1994	107	78,000	59,000	15		885,000	0	
1995	159	276,000	91,000	10		912,000	67,000	
*1996	75	17,000	21,000	9		192,000	11,000	220,000
1997	13	8,000	27,000	7		186,000	47,000	241,000
1998	18	11,000	21,000	7		149,000	12,000	172,000

*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. Paralytic shellfish poisoning and domoic acid in mussels closed beaches during the summer months. Surveys found few or no clams on beaches in the Cannon Beach area. Sacci beach and Bastendorf in the Coos Bay area were reported as having harvestable numbers of clams.

COMMERCIAL FISHERY

The commercial harvest was 11,000 clams (2,526 pounds), one of the lowest harvest on record. Harvest data are listed in Table 3. Area 5 (Seaside) produced 80% of the spring landings. Commercial catch and effort by harvest area is listed in Table 4. The age composition of commercially dug clams is listed in Table 5.

A total of 51 commercial harvesters were issued ODFW shellfish harvest permits but only 18 diggers sold clams. The value of clams to the digger reached \$3.50 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.

The Oregon Department of Agriculture's shellfish sanitation plan to close the ocean beach in front of the Necanicum River to commercial digging of clams for out of state sales took effect in 1998.

Table 4. COMMERCIAL CATCH/EFFORT AND POUNDS IN PERCENT LANDED BY AREA FROM CLATSOP BEACH, 1998.

	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	TOTAL
POUNDS/HOUR	5.5			5.8	4.0	4.2
PERCENT OF POUNDS LANDED	10.9			8.7	80.4	100.0

Table 5. AGE COMPOSITION IN PERCENT FOR COMMERCIALY DUG CLAMS, CLATSOP BEACH, 1993-1998.

YEAR OF HARVEST	AGE IN YEARS					
	0	1	2	3	4	5+
1993	NO SEASON					
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	1.7	33.3	38.3	16.7	6.7	3.3
10 YR. AV.	1.8	40.7	36.3	16.4	4.3	0.5

MISCELLANEOUS PROJECTS

Domoic Acid

High rates of domoic acid closed north coast beaches in July. This year's high levels were about three times the levels in 1991 but monthly changes in rates have been similar as seen in Figure 1.

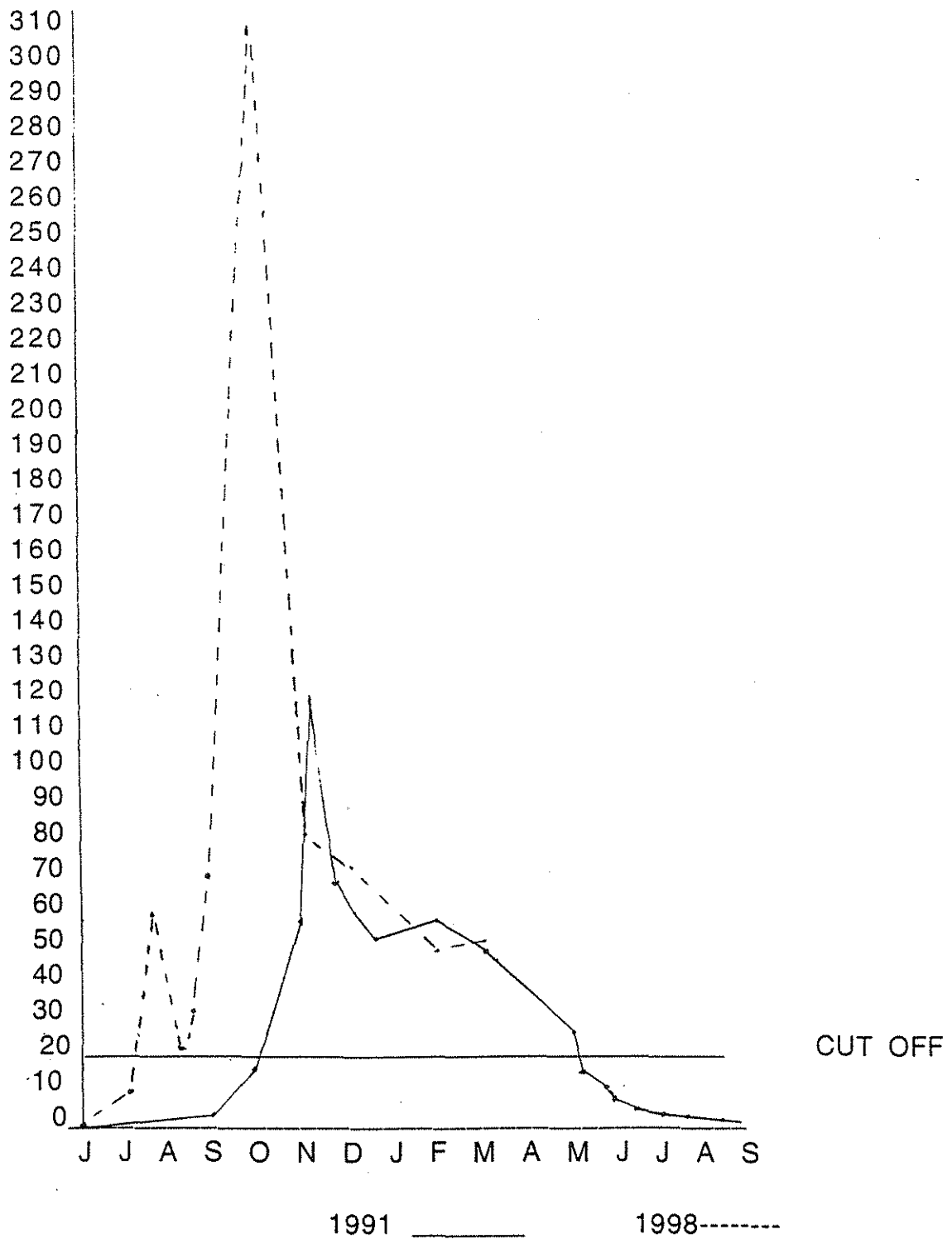
Toxin Closures

High concentrations of PSP in mussels stopped shellfish harvesting July 2 through July 31 on Clatsop, Tillamook and Lincoln County beaches. On July 31, the harvesting ban continued on Clatsop and Tillamook County beaches because of high rates of domoic acid in razor clams. This ban on razor clam digging lasted the rest of the year on Clatsop and Tillamook County beaches. Mussel harvesting was permitted August 28 to September 22 before Clatsop, Tillamook and Lincoln County beaches were closed for the rest of the year.

The south coast beaches were open to harvesting until July 2 when Curry County was closed because of PSP in mussels. All beaches south of Tillamook County were open July 31 through August 7, then high rates of PSP closed Douglas, Coos and Curry County beaches through August 28. Harvesting on the south coast opened August 28 and was opened the rest of the year.

Terry Link, with the help of several volunteers, collected Clatsop beach razor clam samples used for toxin analysis during beach closures.

Figure 1. Domoic Acid Rates By Month for Beach Closures in 1991 and 1998



Experimental Clam Dredge

An experimental gear permit was issued to F/V Lady Rosemary to use dredge gear to harvest clams off the Oregon coast. The target species was to be razor clams. Primary objectives of the work were to survey nearshore coast for commercial quantities of clams and determine effectiveness of a modified hydraulic dredge to harvest razor, gaper and cockle clams.

The 265 tows during June and July ranged from 1 to 57 fathoms deep and were made between the Columbia River and Coquille River. The Pacific razor clam was the most common species found ranging in shell length from 77mm to 146mm and averaged 126mm. They were found in 3 to 10 fathoms of water and in harvestable numbers north of Winchester Bay and north of Coquille River. Clams were found scattered off Clatsop beach.

The sloat razor clam (Siliqua sloati) was found deeper than the Pacific razor clam in depths of 28 fathoms. Average shell length was 104mm.

Survey results verified that Pacific razor clams are in shallow subtidal waters along the coast. We learned that clams were scattered and harvestable numbers were limited. This information should be considered, if commercial activity is pursued further, for protection of subtidal areas off heavily dug intertidal areas. This is to protect subtidal brood stocks that provide set for intertidal beaches.