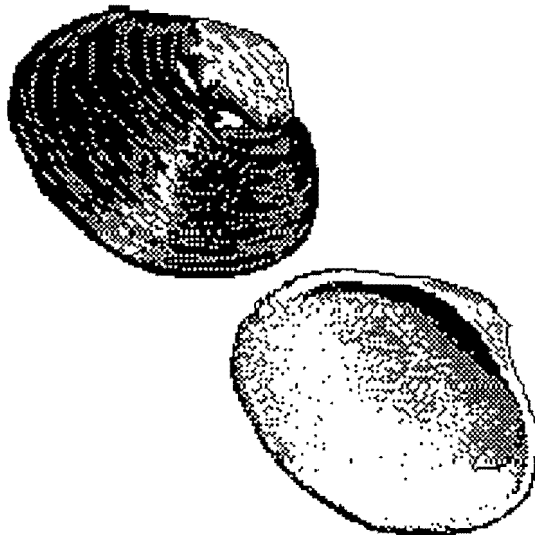


OREGON DEPARTMENT  
OF  
FISH AND WILDLIFE

BAY CLAM  
DATA SERIES REPORT

1998



# **1998 BAY CLAM DATA SERIES REPORT**

by

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November 1998

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# **1998 BAY CLAM DATA SERIES REPORT**

## **INTRODUCTION**

This report summarizes the results of our bay clam studies in 1998. Activities summarized include recreational and commercial clam fisheries. The tables and figures included give an historical overview of clam harvesting activities and are presented in a manner to allow future analysis to show trends of changes in stock status and fishing activities.

## **RECREATIONAL CLAM FISHERY**

No recreational data were collected for 1998.

## **COMMERCIAL CLAM HARVEST**

We issued 22 permits to commercial fishermen to harvest bay clams in 1998 (Table 12). Nine fishermen reported landings of 56,746 lbs of clams. In 1997, 10 fishermen reported landings of 75,681 lbs. Butter clams represented the bulk of the commercial catch in 1998 at 30,434 lbs (53.6%) (Table 13). Tillamook Bay was the major producer of bay clams in Oregon with 51,339 lbs (90.5%). Coos Bay and Umpqua estuaries followed, producing 944 and 508 lbs of clams in 1998, respectively (Table 14). Commercial harvest of cockle clams in Tillamook Bay decreased from 69,604 lbs in 1997 to 15,937 lbs in 1998. Butter clam harvest increased in Tillamook Bay from 12,652 lbs in 1997 to 30,434 lbs in 1998.

## **SPECIAL STUDIES**

### **Native Oyster Enhancement**

#### ***Netarts Bay***

Whiskey Creek Oyster Hatchery spawned Yaquina native oyster broodstock and set seed on 50 sacks of shell that was later distributed to the upper bay.

#### ***Alsea Bay***

A natural set of age 1+ native oysters were discovered growing on the rocks on the north shore in the Bayshore Canal. This indicates that native oysters are successfully reproducing in Alsea Bay.

# APPENDIX

**Table 1. Annual Summary of Recreational Interview Data; Garibaldi Flat, Tillamook Bay**

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997/98
# Diggers Sampled	597	456	359	219	132	200	107	290	277	421	476	450	272	-	2,031	3,028	2,443	994	-
# Clams Sampled	11,104	8,728	6,558	4,249	2,471	3,729	2,128	5,598	5,491	8,067	9,150	8,665	4,879	-	39,816	59,573	50,363	15,563	-
# Digger Hours	715	549	443	220	158	243	143	311	312	452	631	568	354	-	1,469	2,168	1,853	835	-
Hours per Trip	1.2	1.2	1.2	1.3	1.2	1.2	1.3	1.1	1.1	1.1	1.3	1.3	1.3	-	0.7	0.7	0.8	0.8	-
Clams per Trip	18.6	19.1	18.3	19.4	18.7	18.7	19.9	19.3	19.8	19.2	19.2	19.3	17.9	-	19.6	19.7	20.6	15.7	-
Clams per Hour	15.5	15.9	14.0	14.6	15.6	15.4	14.9	18.0	17.6	17.9	14.5	15.3	13.8	-	27.1	27.5	27.2	18.6	-
Digger Origin (%)																			
Local	30.2	22.4	27.6	38.8	37.7	30.0	28.0	17.9	23.5	35.2	21.0	17.6	30.1	-	36.0	28.1	27.8	31.7	-
State	64.7	72.6	63.5	57.1	46.9	67.5	66.4	78.6	67.9	57.0	69.1	79.8	60.3	-	56.9	67.1	62.1	61.2	-
Non-State	-	-	-	4.1	15.4	2.5	5.6	3.4	8.7	7.8	9.9	2.7	9.6	-	7.1	4.8	10.1	7.0	-
Species Comp. (%)																			
Butter	13.5	28.7	42.8	45.8	39.7	38.8	39.5	32.9	41.6	34.0	45.6	49.0	17.8	-	27.9	16.9	19.1	22.4	-
Cockle	64.0	46.5	24.2	27.4	27.4	28.5	43.2	51.0	48.7	35.6	32.0	35.9	18.5	-	45.8	55.4	55.4	63.7	-
Gaper	9.6	7.1	5.7	6.0	4.5	0.7	1.8	1.0	1.3	0.9	1.1	1.5	1.3	-	1.8	1.0	0.2	2.0	-
Littleneck	12.7	17.7	27.2	20.8	28.4	32.1	15.4	15.1	8.0	29.6	21.3	13.4	62.4	-	24.2	26.2	25.0	11.1	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	0.2	0.8	-
Clams per Trip																			
Butter	2.5	5.5	7.8	8.9	7.4	7.2	7.9	6.3	8.2	6.5	8.8	9.4	3.2	-	5.5	3.3	3.90	3.5	-
Cockle	11.9	8.9	4.4	5.3	5.1	5.3	8.6	9.9	9.7	6.8	6.2	6.9	3.3	-	9.0	10.9	11.40	10.0	-
Gaper	1.8	1.4	1.4	1.2	0.9	0.1	0.4	0.2	0.2	0.2	0.2	0.3	0.2	-	0.4	0.2	0.04	0.3	-
Littleneck	2.4	3.4	5.0	4.0	5.3	6.0	3.1	2.9	1.6	5.7	4.1	2.6	11.2	-	4.7	5.2	5.20	1.7	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	0.1	-
Clams per Hour																			
Butter	2.1	4.6	6.3	6.7	6.2	6.0	5.9	5.9	7.3	6.1	6.6	7.5	2.5	-	7.5	4.6	5.2	4.2	-
Cockle	9.9	7.4	3.6	4.0	4.3	4.4	6.5	9.2	8.6	6.4	4.6	5.5	2.6	-	12.4	15.2	15.1	11.9	-
Gaper	1.5	1.1	0.9	0.9	0.7	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2	-	0.5	0.3	0.1	0.4	-
Littleneck	2.0	2.8	4.0	3.0	4.4	4.9	2.3	2.7	1.4	5.3	3.1	2.0	8.6	-	6.6	7.2	5.2	2.1	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	0.1	0.1	-

**Table 2. Annual Summary of Recreational Interview Data;  
Tillamook Bay**

	Central Bay					Buoy 10				
	1993	1994	1995	1996	1997/98	1993	1994	1995	1996	1997/98
No. Diggers Sampled	343	402	209	134	-	63	-	-	-	-
No. Clams Sampled	6,420	7,965	4,116	2,711	-	1,174	-	-	-	-
No. Digger Hours	375	511	242	107	-	64	-	-	-	-
Hours per Trip	1.1	1.1	1.2	0.8	-	1.0	-	-	-	-
Clams per Trip	18.7	19.8	19.7	20.2	-	18.6	-	-	-	-
Clams per Hour	17.1	15.6	17.0	25.3	-	18.3	-	-	-	-
Digger Origin (%)										
Local	51.3	43.0	69.3	57.5	-	57.1	-	-	-	-
State	45.2	56.2	28.7	39.6	-	41.3	-	-	-	-
Non-State	3.5	0.8	1.9	3.0	-	1.6	-	-	-	-
Species Comp. (%)										
Butter	16.2	27.8	41.1	28.8	-	80.5	-	-	-	-
Cockle	79.0	67.4	53.3	60.1	-	18.7	-	-	-	-
Gaper	3.8	1.5	5.7	1.4	-	0.8	-	-	-	-
Littleneck	1.0	3.3	-	4.5	-	-	-	-	-	-
Softshell	-	-	-	6.6	-	-	-	-	-	-
Clams per Trip										
Butter	3.0	5.5	8.1	5.8	-	15.0	-	-	-	-
Cockle	14.8	13.4	10.5	12.2	-	3.5	-	-	-	-
Gaper	1.4	0.3	1.1	0.3	-	0.1	-	-	-	-
Littleneck	0.2	0.7	-	0.9	-	-	-	-	-	-
Softshell	-	-	-	1.3	-	-	-	-	-	-
Clams per Hour										
Butter	2.8	4.3	7.0	7.3	-	14.8	-	-	-	-
Cockle	13.5	10.5	9.1	15.2	-	3.4	-	-	-	-
Gaper	0.6	0.2	1.0	0.4	-	0.1	-	-	-	-
Littleneck	0.2	0.5	-	1.1	-	-	-	-	-	-
Softshell	-	-	-	1.7	-	-	-	-	-	-



**Table 3. Annual Summary of Recreational Interview Data; Happy Camp, Netarts Bay**

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997/98
# Diggers Sampled	222	106	71	168	280	84	99	60	103	108	91	62	27	-	23	13	146	-	-
# Clams Sampled	2,823	1,293	991	2,020	2,994	1,009	1,010	579	709	1,068	870	398	390	-	255	251	1,493	-	-
# Digger Hours	204	68	67	151	290	84	124	92	205	209	182	92	48	-	24	17	224	-	-
Hours per Trip	0.9	0.6	0.9	0.9	1.0	1.0	1.3	1.5	2.0	1.9	2.0	1.5	1.5	-	1.0	1.3	1.5	-	-
Clams per Trip	12.7	12.2	12.9	12.0	10.7	12.0	10.2	9.7	6.9	9.9	9.6	6.4	14.4	-	11.1	19.3	10.2	-	-
Clams per Hour	13.8	19.1	14.8	13.4	10.3	12.0	8.1	6.3	3.5	5.1	4.8	4.3	8.1	-	10.6	14.8	6.7	-	-
Digger Origin (%)																			
Local	28.4	17.9	40.3	48.2	22.5	29.8	32.3	31.7	10.7	16.7	25.3	16.1	55.6	-	43.5	-	20.5	-	-
State	59.9	73.6	50.6	44.0	72.9	64.3	53.5	66.7	87.4	65.7	65.9	51.6	37.0	-	56.5	100.0	69.2	-	-
Non-State	11.7	8.5	9.1	7.7	4.6	6.0	14.1	1.7	1.9	17.6	8.8	32.3	7.4	-	-	-	10.3	-	-
Species Comp. (%)																			
Butter	7.7	5.4	13.7	5.0	0.7	3.7	4.0	7.9	15.9	20.8	16.3	14.8	52.6	-	82.0	53.0	6.2	-	-
Cockle	-	0.1	-	<0.1	0.1	4.0	0.4	2.1	2.1	3.4	1.8	1.3	10.5	-	4.7	10.4	0.8	-	-
Gaper	90.3	92.5	82.7	94.3	98.5	89.5	93.6	84.6	73.1	68.8	72.5	81.4	31.8	-	13.3	36.6	90.6	-	-
Littleneck	0.2	2.0	3.4	0.6	0.8	2.9	2.1	5.4	8.3	7.0	9.2	2.5	5.1	-	-	-	2.3	-	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams per Trip																			
Butter	1.0	0.7	1.8	0.6	0.1	0.4	0.4	0.8	1.1	2.1	1.6	1.0	7.6	-	9.1	10.2	0.6	-	-
Cockle	-	<0.1	-	<0.1	<0.1	0.5	<0.1	0.2	0.1	0.3	0.2	0.1	1.5	-	0.5	2.0	0.1	-	-
Gaper	11.5	11.3	10.6	11.3	10.5	10.8	9.5	8.2	5.0	6.8	6.9	5.2	4.6	-	1.5	7.1	9.3	-	-
Littleneck	0.2	0.2	0.4	0.1	0.1	0.4	0.2	0.5	0.6	0.7	0.9	0.2	0.7	-	-	-	0.2	-	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams per Hour																			
Butter	1.1	1.0	2.0	0.7	0.1	0.4	0.3	0.5	0.6	1.1	0.8	0.6	4.3	-	8.7	7.8	0.4	-	-
Cockle	-	<0.1	-	<0.1	<0.1	0.5	<0.1	0.1	0.1	0.2	0.1	0.1	0.9	-	0.5	1.5	0.1	-	-
Gaper	12.5	17.7	12.3	12.7	10.2	10.8	7.6	5.3	2.5	3.5	3.5	3.5	2.6	-	1.4	5.4	6.0	-	-
Littleneck	0.3	0.4	0.5	0.1	0.1	0.4	0.2	0.3	0.3	0.4	0.4	0.1	0.4	-	-	-	0.2	-	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Table 4. Annual Summary of Recreational Interview Data; Cape Lookout Sand Spit, Netarts Bay**

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997/98
# Diggers	85	63	80	56	118	71	52	42	71	147	100	117	35	-	244	253	735	-	-
# Clams Sampled	1,560	1,074	1,397	1,029	2,174	1,362	1,040	819	1,409	2,765	1,713	2,314	387	-	4,649	3,658	12,385	-	-
# Digger Hours	178	89	150	83	197	87	85	92	151	237	196	232	43	-	316	344	1,089	-	-
Hours per Trip	2.1	1.4	1.9	1.5	1.7	1.2	1.6	2.2	2.1	1.6	2.0	2.0	1.2	-	1.3	1.4	1.5	-	-
Clams per Trip	18.4	17.0	17.5	18.4	18.4	19.2	20.0	19.5	19.8	18.8	17.1	19.8	11.1	-	19.1	14.5	16.9	-	-
Clams per Hour	8.8	12.1	9.3	12.4	11.1	15.8	12.2	9.0	9.4	11.7	8.8	10.0	9.1	-	14.7	10.6	11.4	-	-
Digger Origin																			
Local	36.5	17.5	12.5	44.6	38.1	43.7	53.8	31.0	26.8	18.4	44.0	31.6	8.6	-	52.0	36.1	38.9	-	-
State	61.2	76.2	81.3	51.8	53.4	52.1	44.2	40.5	62.0	67.3	43.0	64.1	57.1	-	40.0	58.6	50.3	-	-
Non-State	2.3	6.3	7.5	3.6	8.5	4.2	1.9	28.6	11.3	14.3	13.0	4.3	34.3	-	8.0	5.2	10.8	-	-
Species Comp.																			
Butter	5.5	1.9	7.7	0.3	11.0	11.0	16.0	7.0	10.6	4.1	18.2	13.9	9.8	-	44.0	-	21.8	-	-
Cockle	74.4	93.3	76.7	84.9	80.4	78.0	82.1	89.5	83.1	88.9	67.7	68.0	34.6	-	47.0	82.6	56.0	-	-
Gaper	16.0	4.8	13.3	12.1	5.9	9.0	0.2	3.4	3.2	3.0	5.7	11.9	52.5	-	6.9	17.2	20.0	-	-
Littleneck	3.8	-	1.9	2.6	2.6	0.1	1.7	0.1	0.9	0.9	7.7	0.6	0.8	-	2.1	0.2	0.7	-	-
Softshell	-	-	-	-	-	1.8	-	-	-	-	-	3.2	2.3	-	-	-	1.4	-	-
Clams per Trip																			
Butter	1.0	0.3	1.4	0.1	2.0	2.1	3.2	1.4	2.1	0.8	3.1	2.7	1.1	-	8.4	-	3.7	-	-
Cockle	13.6	15.9	13.4	15.6	14.8	15.0	16.4	17.5	16.5	16.7	11.6	13.4	3.8	-	9.0	12.0	9.4	-	-
Gaper	2.9	0.8	2.3	2.2	1.1	1.7	-	0.7	0.6	0.6	1.0	2.4	5.8	-	1.3	2.5	3.4	-	-
Littleneck	0.7	-	0.3	0.5	0.5	<0.1	0.3	-	0.2	0.2	1.3	0.1	0.1	-	0.4	-	0.1	-	-
Softshell	-	-	-	-	-	0.4	-	-	-	-	-	0.6	0.3	-	-	-	0.2	-	-
Clams per Hour																			
Butter	0.5	0.2	0.7	<0.1	1.2	1.7	2.0	0.6	1.0	0.5	1.6	1.4	0.9	-	6.5	-	2.5	-	-
Cockle	6.5	11.3	7.2	10.5	8.9	12.3	10.0	8.0	7.8	10.4	5.9	6.8	3.2	-	6.9	8.8	6.4	-	-
Gaper	1.4	0.6	1.2	1.5	0.7	1.4	-	0.3	0.3	0.4	0.5	1.2	4.8	-	1.0	1.8	2.3	-	-
Littleneck	0.3	-	0.2	0.3	0.3	<0.1	0.2	-	0.1	0.1	0.7	0.1	0.1	-	0.3	-	0.1	-	-
Softshell	-	-	-	-	-	0.3	-	-	-	-	-	0.3	0.2	-	-	-	0.2	-	-

**Table 5. Annual Summary of Recreational Interview Data; Bridge Bed, Yaquina Bay**

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997/98
# Diggers	143	142	342	149	202	191	207	120	110	102	108	91	72	-	319	94	70	546	-
# Clams Sampled	1,313	1,222	3,773	1,609	1,543	1,383	1,765	1,363	960	814	834	1,031	818	-	3,612	976	783	5,290	-
# Digger Hours	120	160	354	154	274	265	304	153	160	155	109	159	106	-	457	126	83	702	-
Hours per Trip	0.8	1.1	1.0	1.0	1.4	1.4	1.5	1.3	1.5	1.5	1.0	1.7	1.5	-	1.4	1.3	1.2	1.3	-
Clams per Trip	9.2	8.6	11.0	10.8	7.6	7.2	8.5	11.4	8.7	8.0	7.7	11.3	11.4	-	11.3	10.4	11.2	9.7	-
Clams per Hour	10.9	7.7	10.7	10.4	5.6	5.2	5.8	8.9	6.0	5.3	7.7	6.5	7.7	-	7.9	7.7	9.4	7.5	-
Digger Origin (%)																			
Local	22.4	18.3	44.7	48.3	32.2	45.5	34.3	25.8	32.7	18.6	38.0	28.6	26.4	-	26.3	26.6	68.3	42.1	-
State	76.2	70.4	49.1	48.3	67.8	49.7	62.8	72.5	64.5	72.5	62.0	64.8	63.9	-	67.1	62.8	31.7	50.2	-
Non-State	1.4	11.3	6.1	3.4	-	4.7	2.9	1.7	2.7	8.8	-	6.6	9.7	-	6.6	10.6	0.0	7.7	-
Species Comp.																			
Butter	0.2	1.7	0.8	1.9	3.2	2.4	5.8	4.3	4.4	1.8	3.9	1.9	1.6	-	2.8	0.7	1.3	1.5	-
Cockle	7.9	1.4	15.7	7.2	12.9	5.2	11.2	14.4	2.8	10.1	9.9	12.1	1.9	-	9.8	8.8	1.0	0.6	-
Gaper	89.6	94.8	81.0	85.4	72.9	80.1	62.4	65.1	83.6	39.9	69.1	60.2	93.3	-	85.0	88.0	95.3	96.4	-
Littleneck	0.4	2.1	1.7	4.5	2.8	4.5	7.4	2.6	5.3	3.7	3.6	3.8	3.1	-	-	2.1	-	-	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other *	-	-	-	-	-	7.8	13.2	-	-	-	-	-	-	-	2.4	-	2.4	1.3	-
Clams per Trip																			
Butter	<0.1	<0.1	0.1	0.2	0.3	0.2	0.5	0.5	0.4	0.1	0.3	0.2	0.2	-	0.3	0.1	0.1	0.1	-
Cockle	0.7	<0.1	1.7	0.8	1.0	0.4	1.0	1.6	0.6	0.8	0.8	1.4	0.2	-	1.1	0.9	0.1	0.1	-
Gaper	8.2	8.2	8.9	9.2	5.6	5.8	5.3	7.4	7.3	3.2	5.7	6.8	10.3	-	9.6	9.1	10.7	9.3	-
Littleneck	0.1	0.2	0.2	0.5	0.2	0.3	0.6	0.3	0.5	0.3	0.3	0.4	0.3	-	-	0.2	-	-	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clams per Hour																			
Butter	<0.1	0.1	0.1	0.2	0.2	0.1	0.3	0.4	0.3	0.1	0.3	0.1	0.1	-	0.22	0.1	0.1	0.1	-
Cockle	0.9	0.1	1.1	0.8	0.7	0.3	0.6	1.3	0.2	0.5	0.8	0.8	0.1	-	0.77	0.7	0.1	0.1	-
Gaper	9.8	7.3	8.6	8.9	4.1	4.2	3.6	5.8	5.0	2.1	5.6	3.9	7.0	-	6.70	6.8	9.0	7.3	-
Littleneck	-	-	-	-	0.2	0.2	0.4	0.2	0.3	0.2	0.3	0.2	0.2	-	-	0.2	-	-	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

\*Bentnose 7.0%, Inquinata 0.2%, other 0.6%

**Table 6. Annual Summary of Recreational Interview Data**

	Umpqua Triangle					Alsea Bay						N Fork Siuslaw	Smith River Bridge		
						Seawall			N Shore				1995	1993	1994
	1991	1992	1993	1994	1995	1995	1996	1997	1995	1996	1997	1995			
# Diggers Sampled	59	-	66	-	-	750	70	21	349	158	76	8	48	135	-
# Clams Sampled	894	-	569	-	-	14,143	203	106	4,234	1,500	410	195	1,566	5,691	-
# Digger Hours	81	-	97	-	-	774	62	39	290	187	75	16	58	143	-
Hours per Trip	1.4	-	1.5	-	-	1.0	0.89	1.9	0.83	1.2	.98	2.0	1.2	1.1	-
Clams per Trip	15.2	-	9.6	-	-	18.9	2.90	5.1	12.10	9.5	5.4	24.4	32.6	42.2	-
Clams per Hour	11.1	-	5.8	-	-	18.3	3.20	2.7	14.60	8.0	5.4	12.2	27.0	39.8	-
Digger Origin (%)															
Local	52.5	-	47.0	-	-	46.4	36.0	42.9	53.4	63.0	50	0.0	37.5	53.0	-
State	33.9	-	25.8	-	-	39.8	20.0	52.4	29.9	29.0	50	87.5	52.1	32.1	-
Non-State	13.6	-	27.2	-	-	13.8	14.0	4.7	16.7	8.0	-	12.0	10.4	15.0	-
Species Comp. (%)															
Butter	0.0	-	-	-	-	0.0	-	-	0.0	-	-	-	-	-	-
Cockle	82.4	-	79.8	-	-	98.9	67.0	95.3	80.3	5.1	0.4	-	-	-	-
Gaper	17.4	-	20.0	-	-	0.3	22.7	2.8	13.4	38.0	59.2	-	-	-	-
Littleneck	0.1	-	-	-	-	0.8	10.3	1.9	2.4	56.9	40.2	-	-	-	-
Softshell	-	-	-	-	-	-	-	-	3.9	-	-	100.0	100.0	100.0	-
Clams per Trip															
Butter	0.0	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-
Cockle	12.5	-	6.9	-	-	18.6	1.90	4.8	9.7	0.5	0.1	-	-	-	-
Gaper	2.6	-	1.7	-	-	0.1	0.66	0.1	1.6	3.6	3.2	-	-	-	-
Littleneck	-	-	-	-	-	0.2	0.30	0.1	0.3	5.4	2.2	-	-	-	-
Softshell	-	-	-	-	-	-	-	-	0.5	-	-	24.4	32.6	42.2	-
Clams per Hour															
Butter	0.0	-	-	-	-	0.0	-	-	0.0	-	-	-	-	-	-
Cockle	12.5	-	4.7	-	-	18.1	2.20	2.6	11.7	0.4	0.1	-	-	-	-
Gaper	2.6	-	1.2	-	-	0.1	0.74	0.1	2.0	3.0	3.2	-	-	-	-
Littleneck	-	-	-	-	-	0.2	0.34	0.1	0.4	4.6	2.2	-	-	-	-
Softshell	-	-	-	-	-	-	-	-	0.6	-	-	12.2	27.0	39.8	-

**Table 7. Annual Summary of Recreational Interview Data; Charleston Triangle, Coos Bay**

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997/98
No. Diggers Sampled	40	32	20	58	91	50	96	107	40	-	-	43	-	-	-
No. Clams Sampled	771	588	410	1,193	1,647	814	1,535	1,742	606	-	-	438	-	-	-
No. Digger Hours	44	27	25	75	105	75	115	141	47.5	-	-	69	-	-	-
Hours per Trip	1.1	0.8	1.2	1.3	1.2	1.5	1.2	1.3	1.2	-	-	1.6	-	-	-
Clams per Trip	19.3	18.4	20.5	20.6	18.1	16.3	16.0	16.3	15.2	-	-	10.2	-	-	-
Clams per Hour	17.5	22.0	16.7	16.0	15.7	10.9	13.4	12.4	12.8	-	-	6.3	-	-	-
Digger Origin (%)															
Local	22.5	40.6	50.0	29.3	34.1	20.0	21.9	20.6	22.5	-	-	26.8	-	-	-
State	72.5	56.3	35.0	62.1	47.3	52.0	68.8	71.0	37.5	-	-	51.2	-	-	-
Non-State	5.0	3.1	15.0	8.6	18.1	28.0	9.4	8.4	40.0	-	-	22.0	-	-	-
Species Comp. (%)															
Butter	19.6	10.9	13.2	2.6	13.2	11.8	2.7	3.3	0.2	-	-	0.5	-	-	-
Cockle	55.1	69.2	56.6	66.5	47.3	43.2	47.5	34.6	57.6	-	-	3.0	-	-	-
Gaper	3.9	15.0	20.5	17.5	31.3	32.9	44.9	48.1	41.7	-	-	91.6	-	-	-
Littleneck	23.2	4.9	9.5	8.5	5.8	8.8	5.0	9.4	0.5	-	-	-	-	-	-
Softshell	-	-	-	0.3	0.1	-	-	0.1	-	-	-	-	-	-	-
Clams per Trip															
Butter	3.8	2.0	2.7	0.5	2.4	1.9	0.4	0.5	-	-	-	0.1	-	-	-
Cockle	10.6	12.7	11.6	13.7	8.6	7.0	7.4	5.6	8.7	-	-	0.3	-	-	-
Gaper	0.8	2.8	4.2	3.6	5.7	5.4	7.0	7.8	6.3	-	-	9.3	-	-	-
Littleneck	4.5	0.9	1.9	1.8	1.1	1.4	0.8	1.5	0.1	-	-	0.5	-	-	-
Softshell	-	-	-	0.1	-	-	-	<0.1	-	-	-	-	-	-	-
Clams per Hour															
Butter	3.4	2.4	2.2	0.4	2.1	1.3	0.3	0.4	-	-	-	-	-	-	-
Cockle	9.7	15.2	9.5	10.6	7.4	4.7	6.2	4.3	7.3	-	-	0.2	-	-	-
Gaper	0.7	3.3	3.4	2.8	4.9	3.6	5.9	6.0	5.3	-	-	5.8	-	-	-
Littleneck	4.1	1.1	1.6	1.4	0.9	1.0	0.7	1.2	0.1	-	-	0.3	-	-	-
Softshell	-	-	-	0.1	-	-	-	<1.2	-	-	-	-	-	-	-
Size Comp. (x size)															
Butter	73.3	80.2	82.5	75.3	78.2	80.7	85.9	80.6	85.3	-	-	-	-	-	-
Cockle	51.2	66.3	62.6	63.2	61.2	61.4	59.1	60.6	55.1	-	-	-	-	-	-
Gaper	88.6	95.2	98.2	97.3	99.1	103.3	98.7	113.3	107.7	-	-	-	-	-	-
Littleneck	55.2	57.6	61.3	61.1	58.9	62.1	64.8	63.9	66.0	-	-	-	-	-	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured															
Butter	39	17	52	15	118	88	30	19	3	-	-	-	-	-	-
Cockle	45	218	185	175	298	149	169	97	238	-	-	-	-	-	-
Gaper	26	54	67	30	187	165	158	125	192	-	-	-	-	-	-
Littleneck	18	159	41	51	64	63	29	57	3	-	-	-	-	-	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Table 8. Annual Summary of Recreational Interview Data; Charleston Flat, Coos Bay**

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997/98
No. Diggers Sampled	60	27	18	100	113	97	61	65	65	-	-	90	-	-	-
No. Clams Sampled	859	435	341	1,980	2,145	1,523	974	887	938	-	-	925	-	-	-
No. Digger Hours	125	29	32	180	185	176	103	113	110	-	-	113	-	-	-
Hours per Trip	2.1	1.1	1.8	1.8	1.6	1.8	1.7	1.7	1.7	-	-	1.26	-	-	-
Clams per Trip	14.3	16.1	18.9	19.8	19.0	15.7	16.0	13.6	14.4	-	-	10.30	-	-	-
Clams per Hour	6.9	15.1	10.7	11.0	11.6	8.7	9.5	7.8	8.6	-	-	8.20	-	-	-
Digger Origin (%)															
Local	21.7	40.7	16.7	35.0	28.3	20.6	14.8	36.9	41.5	-	-	11.4	-	-	-
State	73.3	51.9	38.9	57.0	48.7	66.0	68.9	49.2	46.2	-	-	65.9	-	-	-
Non-State	5.0	7.4	44.4	8.0	23.0	13.4	16.4	13.8	12.3	-	-	22.7	-	-	-
Species Comp. (%)															
Butter	2.0	4.6	6.7	2.8	2.7	10.2	4.8	5.5	19.4	-	-	3.6	-	-	-
Cockle	46.6	60.9	72.4	83.3	63.9	35.4	31.8	9.1	16.5	-	-	4.5	-	-	-
Gaper	38.8	27.6	17.3	8.8	26.2	42.5	47.7	71.6	58.3	-	-	84.7	-	-	-
Littleneck	10.6	3.7	3.5	4.1	4.7	10.8	14.5	11.6	5.8	-	-	7.0	-	-	-
Softshell	-	3.0	-	0.1	-	0.4	1.3	-	0.0	-	-	-	-	-	-
Clams per Trip															
Butter	0.3	0.7	1.3	0.6	0.5	1.6	0.7	0.8	2.7	-	-	0.4	-	-	-
Cockle	6.7	9.8	13.7	16.5	12.1	5.6	4.9	1.2	2.3	-	-	0.5	-	-	-
Gaper	5.6	4.4	3.3	1.8	5.0	6.7	7.3	9.8	8.1	-	-	8.7	-	-	-
Littleneck	1.5	0.6	0.7	0.8	0.9	1.7	2.2	1.6	0.8	-	-	0.7	-	-	-
Softshell	-	0.5	-	<0.1	-	0.1	0.2	-	-	-	-	-	-	-	-
Clams per Hour															
Butter	0.1	0.7	0.7	0.3	0.3	0.9	0.4	0.4	1.6	-	-	0.3	-	-	-
Cockle	3.2	9.2	7.7	9.2	7.4	3.1	2.9	0.7	1.4	-	-	0.4	-	-	-
Gaper	2.7	4.6	1.8	1.0	3.0	3.7	4.3	5.6	4.8	-	-	6.9	-	-	-
Littleneck	0.7	0.6	0.4	0.5	0.5	0.9	1.3	0.9	0.5	-	-	0.6	-	-	-
Softshell	-	-	-	<0.1	-	-	0.1	-	-	-	-	-	-	-	-
Size Comp. (x size)															
Butter	84.0	78.1	75.0	78.9	81.3	78.3	93.7	79.3	72.5	-	-	-	-	-	-
Cockle	59.9	63.2	62.2	66.9	65.6	62.3	62.6	56.2	67.2	-	-	-	-	-	-
Gaper	100.6	105.9	110.1	109.1	109.0	106.9	102.4	103.1	107.2	-	-	-	-	-	-
Littleneck	55.0	65.0	62.2	60.5	58.4	65.8	59.3	61.8	50.8	-	-	-	-	-	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured															
Butter	1	13	20	43	44	86	39	46	129	-	-	-	-	-	-
Cockle	38	92	247	234	128	193	163	88	135	-	-	-	-	-	-
Gaper	13	80	58	70	188	271	109	150	166	-	-	-	-	-	-
Littleneck	3	2	13	30	86	96	102	98	42	-	-	-	-	-	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Table 9. Annual Summary of Recreational Interview Data; Pigeon Point, Coos Bay**

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997/98
No. Diggers Sampled	111	43	10	68	64	24	59	37	44	-	-	18	-	-	-
No. Clams Sampled	1,681	679	190	1,160	1,003	444	927	485	700	-	-	163	-	-	-
No. Digger Hours	95	70	19	145	119	42	105	67	78	-	-	24	-	-	-
Hours per Trip	0.9	1.6	1.9	2.1	1.9	1.8	1.8	1.8	1.8	-	-	1.3	-	-	-
Clams per Trip	15.1	15.8	19.0	17.1	15.7	18.5	15.7	13.1	15.9	-	-	9.0	-	-	-
Clams per Hour	17.7	9.7	10.0	8.0	8.4	10.6	8.9	7.3	9.0	-	-	6.8	-	-	-
Digger Origin (%)															
Local	45.9	65.1	20.0	51.5	32.8	41.7	23.7	40.5	43.2	-	-	35.3	-	-	-
State	48.6	27.9	60.0	41.2	51.6	58.3	61.0	51.4	20.5	-	-	52.9	-	-	-
Non-State	5.4	7.0	20.0	7.4	15.6	-	15.3	8.1	36.4	-	-	11.8	-	-	-
Species Comp. (%)															
Butter	27.1	36.4	47.9	56.5	48.6	44.8	40.5	37.7	57.7	-	-	37.4	-	-	-
Cockle	0.7	8.0	2.1	1.3	6.0	-	4.5	-	-	-	-	5.5	-	-	-
Gaper	51.2	32.7	10.0	17.2	11.1	15.3	3.0	23.9	15.5	-	-	3.1	-	-	-
Littleneck	20.9	22.5	39.5	24.1	33.3	32.9	51.9	37.5	26.9	-	-	52.8	-	-	-
Softshell	-	0.6	-	0.8	-	0.7	-	-	-	-	-	-	-	-	-
Clams per Trip															
Butter	4.1	5.4	9.1	9.6	7.6	8.3	6.4	4.9	9.2	-	-	3.4	-	-	-
Cockle	0.1	1.3	0.4	0.2	0.9	-	0.7	-	-	-	-	0.5	-	-	-
Gaper	7.7	5.2	1.9	2.9	1.7	2.8	0.5	3.1	2.5	-	-	0.3	-	-	-
Littleneck	3.2	3.6	7.5	4.1	5.2	6.1	8.1	4.9	4.3	-	-	4.8	-	-	-
Softshell	-	0.1	-	0.1	-	0.1	-	-	-	-	-	-	-	-	-
Clams per Hour															
Butter	4.8	3.5	4.8	4.5	4.1	4.7	3.6	2.8	5.2	-	-	2.5	-	-	-
Cockle	0.1	0.8	0.2	0.1	0.5	-	0.4	-	-	-	-	0.4	-	-	-
Gaper	9.1	3.2	1.0	1.4	0.9	1.6	0.3	1.7	1.4	-	-	0.2	-	-	-
Littleneck	3.7	2.2	3.9	1.9	2.8	3.5	4.6	2.7	2.4	-	-	3.6	-	-	-
Softshell	-	0.1	-	0.1	-	0.1	-	-	-	-	-	-	-	-	-
Size Comp. (x size)															
Butter	85.9	84.8	84.3	84.0	87.2	81.0	76.0	81.1	74.1	-	-	-	-	-	-
Cockle	37.9	-	40.0	-	-	-	-	-	-	-	-	-	-	-	-
Gaper	108.0	104.5	85.3	107.9	102.6	109.5	92.1	84.7	109.1	-	-	-	-	-	-
Littleneck	67.2	62.0	60.6	63.3	54.6	58.6	57.2	60.2	57.6	-	-	-	-	-	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. Clams Measured															
Butter	44	93	51	145	186	108	214	123	291	-	-	-	-	-	-
Cockle	7	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Gaper	46	52	19	15	82	20	42	86	128	-	-	-	-	-	-
Littleneck	9	50	74	22	172	29	234	102	119	-	-	-	-	-	-
Softshell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Table 10. Peak Counts of Clam Diggers\***

Estuary	Tideflat	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
<b>Tillamook</b>	Garibaldi Flat	300	460	516	487	350	118	380	400	257	547	585	127	-	482	500	450	472	-	-
<b>Netarts</b>	Happy Camp	160	425	500	478	200	191	314	265	116	163	126	-	-	150	30	55	-	-	-
<b>Yaquina</b>	Bridge Bed	84	225	625	275	84	107	204	225	110	235	158	176	-	61	22	86	229	-	-
<b>Alsea</b>	North Bank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	75	24	-
	Seawall	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99	53	32	-
<b>Umpqua</b>	Smith River Bridge	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-	-	-	-	-
	Umpqua Triangle	-	-	-	-	-	-	-	-	-	-	-	43	-	31	-	-	-	-	-
<b>Coos Bay</b>	Charleston	-	-	-	31	24	41	39	87	82	59	66	36	-	-	44	-	-	-	-
	Charleston Flat	-	-	-	64	30	26	27	66	103	54	84	65	-	-	34	-	-	-	-
	Pigeon Point	-	-	-	62	50	42	67	97	52	51	74	44	-	-	7	-	-	-	-

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



**Table 11. Annual Summary of Recreational Interview Data; All Estuaries Combined**

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
# Diggers Sampled	1,603	1,284	1,276	870	1,506	1,800	898	1,392	1,508	1,324	1,549	1,363	1,131	-	3,137	4,090	4,710	1,902	97	-
# Clams Sampled	24,69	21,60	19,61	12,92	22,18	33,91	14,61	24,69	25,31	21,98	26,70	22,84	19,05	-	58,06	79,97	87,71	25,26	410	-
# Digger Hours	1,986	1,718	1,606	1,104	2,113	2,589	1,303	2,128	2,154	1,876	2,259	2,029	1,662	-	2,859	3,525	4,571	1,893	114	-
Hours per Trip	1.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.4	1.4	1.5	1.5	1.5	-	0.91	0.86	0.97	1.0	1.2	-
Clams per Trip	15.4	16.8	15.4	14.9	14.7	18.8	16.3	17.7	16.8	16.6	17.2	16.8	16.9	-	18.50	19.60	18.60	13.3	4.2	-
Clams per Hour	12.4	12.6	12.2	11.7	10.5	13.1	11.2	11.6	11.8	11.7	11.8	11.3	11.5	-	20.30	22.70	19.20	13.4	6.5	-
Digger Origin (%)																				
Local	29.3	22.9	30.6	40.5	33.6	42.7	37.8	36.9	35.6	33.2	32.6	31.3	41.1	-	38.7	30.3	36.0	40.1	50.0	-
State	63.8	70.5	60.0	54.0	60.7	52.7	53.7	56.7	53.4	56.7	58.2	62.7	45.6	-	54.3	64.2	53.1	54.6	50.0	-
Non-State	7.0	6.6	9.4	5.5	5.7	4.7	8.6	6.4	10.9	10.1	9.2	5.9	13.3	-	7.0	5.5	10.9	3.8	-	-
Species Comp. (%)																				
Butter	8.5	12.8	15.8	16.2	9.9	7.8	10.6	13.3	15.3	16.5	19.4	22.7	10.3	-	26.6	15.6	16.0	17.2	-	-
Cockle	53.1	44.3	29.3	31.3	31.2	22.7	32.2	40.7	41.7	37.7	26.8	30.4	28.9	-	45.7	52.2	62.0	46.7	0.1	-
Gaper	25.1	17.9	24.9	31.8	35.6	26.1	23.6	20.8	24.0	20.0	19.8	23.6	24.2	-	7.8	4.3	6.3	24.0	59.3	-
Littleneck	6.5	7.5	9.9	8.1	7.8	6.2	5.0	6.7	5.2	14.1	11.9	8.7	18.5	-	16.9	20.1	14.7	10.8	40.2	-
Softshell	6.7	17.5	20.1	12.5	15.4	37.2	28.7	17.1	12.4	9.3	20.9	12.4	18.2	-	2.9	7.8	1.0	1.3	-	-
Clams per Trip																				
Butter	1.3	2.2	2.4	2.4	1.4	1.5	1.7	2.4	2.6	2.7	3.4	3.8	1.7	-	4.9	3.1	3.0	2.3	-	-
Cockle	8.1	7.4	4.5	4.6	4.5	4.3	5.1	7.2	7.0	6.3	4.6	5.1	4.8	-	8.5	10.2	11.6	6.2	0.1	-
Gaper	3.8	3.0	3.8	4.7	5.1	4.9	3.8	3.7	4.0	3.3	3.4	4.0	4.0	-	1.4	0.8	1.2	3.2	2.5	-
Littleneck	1.0	1.3	1.5	1.2	1.1	1.2	0.8	1.2	0.9	2.3	2.0	1.5	3.1	-	3.1	3.9	2.7	1.4	1.7	-
Softshell	1.0	2.9	3.1	1.9	2.2	6.9	4.6	3.0	2.1	1.5	3.6	2.1	3.0	-	0.5	1.5	0.1	0.2	-	-
Clams per Hour																				
Butter	1.0	1.6	1.9	1.9	1.0	1.0	1.2	1.5	1.8	1.9	2.3	2.6	1.2	-	5.4	3.5	3.1	2.3	-	-
Cockle	6.5	5.6	3.6	3.6	3.2	3.0	3.5	4.7	4.9	4.4	3.2	3.4	3.3	-	9.3	11.8	11.9	6.2	1.8	-
Gaper	3.1	2.2	3.0	3.7	3.6	3.4	2.6	2.4	2.8	2.3	2.3	2.7	2.7	-	1.6	1.0	1.2	3.2	2.1	-
Littleneck	0.3	0.9	1.2	1.0	0.8	0.8	0.5	0.8	0.6	1.7	1.4	1.0	2.1	-	3.4	4.6	2.8	1.4	1.4	-
Softshell	0.8	2.2	2.4	1.5	1.6	4.8	3.2	2.0	1.5	1.1	2.5	1.4	2.1	-	0.6	1.8	0.1	0.2	-	-
Size Comp. (x size)																				
Butter	78.9	69.2	78.1	75.1	71.0	79.5	76.5	79.8	83.0	83.9	78.5	78.5	81.6	-	-	-	-	-	-	-
Cockle	63.1	60.2	55.3	63.2	60.8	62.0	64.2	63.3	61.9	63.9	63.5	61.4	63.0	-	-	-	-	-	-	-
Gaper	93.0	98.0	104.3	101.4	103.6	104.2	108.0	111.6	107.9	110.3	110.4	113.7	120.0	-	-	-	-	-	-	-
Littleneck	47.0	39.8	44.2	40.2	41.4	50.1	66.5	47.7	53.2	52.0	51.8	53.4	46.3	-	-	-	-	-	-	-
Softshell	89.5	86.4	88.2	81.8	87.7	86.0	88.4	91.0	92.7	87.9	87.5	89.6	89.0	-	-	-	-	-	-	-
# Clams Measured	8,643	6,661	5,372	4,044	6,774	5,152	7,438	6,997	6,403	5,990	6,853	5,448	6,781	-	-	-	-	-	-	-

**Table 12. Oregon Commercial Clam Harvest in Pounds; 1970-1998**

Year	Harvest (lb)	# Diggers	# Landings	Ave. lb/Landing	# Permits Issued
1970	25,884	40	258	100.3	0
1971	28,526	50	230	124.0	0
1972	61,523	37	354	174.8	0
1973	17,156	19	187	91.7	0
1974	16,315	23	182	39.6	0
1975	25,908	19	116	227.3	0
1976	88,054	7	97	946.8	0
1977	85,733	29	155	304.0	0
1978	216,926	15	218	943.2	0
1979	94,912	19	128	741.5	0
1980	80,467	36	176	442.1	0
1981	81,138	30	336	222.5	0
1982	134,105	46	538	245.3	0
1983	136,185	41	811	168.0	0
1984	120,574	30	704	171.3	0
1985	99,254	44	614	161.7	65
1986	82,829	36	664	124.7	65
1987	46,283	34	385	120.2	121
1988	44,696	28	258	173.2	136
1989	60,482	24	221	273.7	111
1990	72,756	38	384	189.5	92
1991	87,842	40	473	185.7	126
1992	62,044	29	410	151.3	115
1993	127,730	38	733	174.3	111
1994	180,934	32	422	428.8	113
1995	126,967	24	393	323.1	132
1996	66,733	21	450	148.3	33
1997	75,681	10	288	262.8	21
1998	56,746	9	248	228.8	22

**Table 13. Summary of Pounds of Bay Clams Reported  
Commercially Harvested in Oregon by Species; 1970-1998**

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	52	0	216,962
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	68,508	4,892	749	0	81,138
1982	3,654	10,517	106,440	13,231	248	0	134,090
1983	4,035	2,579	95,091	34,444	36	0	136,185
1984	4,842	17,912	50,573	46,874	366	0	120,567
1985	1,646	29,412	20,121	46,266	1,809	0	99,254
1986	2,862	31,681	17,021	27,487	3,558	0	82,609
1987	3,046	20,202	6,368	14,140	2,527	0	46,283
1988	2,492	30,068	3,816	6,884	1,436	0	44,696
1989	3,806	44,344	5,164	6,032	1,136	0	60,482
1990	4,604	45,607	10,391	7,521	4,633	0	72,756
1991	3,690	58,282	8,660	8,708	9,215	0	87,842
1992	475	35,800	8,609	10,980	6,180	0	62,044
1993	6,382	72,340	4,169	35,913	7,312	0	127,730
1994	1,961	163,295	2,146	6,084	7,448	0	180,934
1995	7,852	97,324	12,677	9,008	106	0	126,967
1996	1,414	57,197	3,459	4,472	191	0	66,733
1997	13,060	48,210	4,283	9,389	739	0	75,681
1998	30,434	17,047	2,568	5,899	798	0	56,746

**Table 14. Summary of Pounds of Bay Clams Reported Commercially Harvested in Major Oregon Estuaries; 1970-1998**

Year	Nehalem	Tillamook	Netarts	Yaquina	Alsea	Siuslaw	Umpqua	Coos	Coquille	Total
1970	258	7,819	2,210	444	0	0	10,631	4,522	0	25,884
1971	589	6,168	1,598	1,819	0	0	7,459	10,893	0	28,526
1972	80	9,637	914	57	70	0	6,105	44,642	0	61,505
1973	329	11,997	1,191	0	0	0	786	2,853	0	17,156
1974	882	9,309	2,049	398	0	0	445	3,232	0	16,315
1975	0	4,637	0	0	13	0	309	21,553	38	26,550
1976	0	998	0	0	480	0	0	86,576	0	88,054
1977	0	2,619	0	71,013	0	0	35	12,066	0	85,733
1978	0	3,111	0	172,047	0	0	0	41,804	0	216,962
1979	174	433	0	74,565	0	3,432	0	16,308	0	94,912
1980	373	5,320	486	244	0	9,109	0	65,935	0	81,467
1981	65	4,259	0	128	0	684	0	76,002	0	81,138
1982	10,862	11,501	37	15	0	223	25	111,427	0	134,090
1983	31,856	3,144	200	5,253	0	15	0	95,717	0	136,185
1984	23,069	42,663	0	22	0	50	0	54,763	0	120,567
1985	40,349	34,148	240	0	0	895	268	23,030	324	99,254
1986	30,545	28,737	480	6	0	1,206	0	19,557	2,078	82,609
1987	10,723	22,936	0	1,114	250	654	0	10,214	392	46,283
1988	0	34,450	0	1,153	230	1,200	28	7,086	549	44,696
1989	80	49,650	0	2,790	993	600	150	6,183	36	60,482
1990	5,810	47,198	0	1,543	410	0	3,432	14,363	0	72,756
1991	6,331	50,860	7,451	1,013	530	120	8,322	12,501	60	87,842
1992	4,597	35,935	879	7,067	1,398	0	6,095	5,986	87	62,044
1993	31,966	76,103	54	2,843	1,495	93	7,105	5,698	0	127,730
1994	5,533	149,494	422	2,413	3,441	0	7,403	12,042	25	180,934
1995	9,143	103,702	4,612	5,593	3,737		120	60	0	126,967
1996	1,276	63,039	748	1,457	0	0	163	50	0	66,733
1997	4,837	69,604	-	-	-	-	367	668	205	75,681
1998	3,955	51,339	-	-	-	-	508	944	-	56,746