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SHELLFISH INVESTIGATION  
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HARVEST OF INTERTIDAL, NONFOOD INVERTEBRATES 1970

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# HARVEST OF INTERTIDAL, NONFOOD INVERTEBRATES, 1970

## INTRODUCTION

Since 1962 persons desiring to harvest intertidal nonfood invertebrates in permit areas or in excess of personal-use bag limits have been required to obtain a collecting permit from the Fish Commission and report the number of animals collected and areas where taken. This report summarizes collecting activities for 1970.

## RESULTS

The Fish Commission issued 238 permits in 1970, an increase of 14% over 1969. Collecting reports were returned by 92% of the permittees. The reported harvest of intertidal invertebrates increased 15% from 131,000 animals in 1969 to 150,000 in 1970 (Tables 1 and 2).

Table 1. Summary of Intertidal, Nonfood Invertebrate Catch Data from the Oregon Coast, 1970.

	<u>Number</u>	<u>Percentage</u>
Educational permits	232	97.5
Commercial permits	6	2.5
Total	<u>238</u>	<u>100.0</u>
Number of collecting reports returned	218	92.0
Number of collecting reports used	162	74.0
Number of collecting reports unused	56	26.0
Educational harvest	39,976	26.6
Commercial harvest	<u>110,437</u>	<u>73.4</u>
Total	<u>150,413</u>	<u>100.0</u>

Yaquina Head and the Central Coast were the most popular areas among educational collectors, both in the number of animals taken and in frequency of visits (Tables 3 and 5). The Central Coast provided 97% of the commercial harvest (Table 4). Miscellaneous species such as barnacles and amphipods made up the largest single category (29%) in the educational harvest. The polychaete tubeworm *Eudistylia* made up 63% of the commercial collecting (Table 2).

To get a more accurate indication of collecting trends, a separate analysis was made, eliminating such "annual" species as amphipods or barnacles and using only those animals that can be counted individually. This analysis indicated that educational and commercial collecting increased 80 and 28%, respectively, over 1969. Research projects involving sea urchins and snails accounted for part of the increase in the educational harvest. Shore crabs were taken in larger numbers by commercial collectors, accounting for part of that increase. Overall, there was a 40% increase in the harvest of index animals (Table 6).

Table 2. Intertidal Nonfood Invertebrates Collected by Permit Holders Along the Oregon Coast, 1970.

Animal Group	Educational Catch		Commercial Catch		Total Catch	
	Number	Percentage	Number	Percentage	Number	Percentage
Coelenterata						
Sea anemones	979	2.4	0	0.0	979	0.7
Annelida						
Marine worms	8,466	21.2	69,100	62.6	77,566	51.6
Arthropoda						
Hermit & porcelain crabs	1,976	4.9	5,200	4.7	7,176	4.8
Ghost and mud shrimp	2,473	6.2	0	0.0	2,473	1.6
Shore, spider, & kelp crabs	1,977	4.9	13,748	12.4	15,725	10.5
Mollusca						
Chitons	939	2.3	3,984	3.6	4,923	3.3
Snails, limpets	5,074	12.7	500	0.5	5,574	3.7
Sea slugs	520	1.3	0	0.0	520	0.3
Echinodermata						
Sea stars	1,266	3.2	13,201	12.0	14,467	9.6
Sea urchins	4,282	10.7	4,054	3.7	8,336	5.5
Sand dollars	108	0.3	150	0.1	258	0.2
Brittle stars	146	0.4	0	0.0	146	0.1
Sea cucumbers	260	0.7	0	0.0	260	0.2
Other groups	11,510	28.8	500	0.5	12,010	8.0
Total	39,976	100.0	110,437	100.1	150,413	100.1

Table 3. Intertidal, Nonfood Invertebrates Harvested by Educational Collectors Along the Oregon Coast, by Area and Taxonomic Group, 1970.

Taxonomic Group	Boiler Bay	Shell Cove (Depoe Bay)	Yaquina Head	Neptune State Park	Sunset-Cape Arago	Harris Beach	North Coast <sup>1/</sup>	Central Coast <sup>2/</sup>	South Coast <sup>3/</sup>	Total	Percentage
<b>Colenterata</b>											
Sea anemones	98	55	223	82	124	37	25	334	1	979	2.4
<b>Annelida</b>											
Marine worms	1,566	90	1,659	1,332	1,421	0	5	2,393	0	8,466	21.2
<b>Arthropoda</b>											
Hermit & porcelain crabs	147	10	622	102	307	15	40	733	0	1,976	4.9
Ghost & mud shrimp	21	0	0	31	37	4	8	2,369	3	2,473	6.2
Shore, spider & kelp crab	151	12	456	84	561	17	16	675	5	1,977	4.9
<b>Mollusca</b>											
Chitons	124	9	245	33	239	16	10	263	0	939	2.3
Snails, limpets	1,091	75	1,391	240	587	63	69	1,552	6	5,074	12.7
Sea slugs	81	15	102	69	78	12	10	153	0	520	1.3
<b>Echinodermata</b>											
Sea stars	73	6	214	22	175	12	569	195	0	1,266	3.2
Sea urchins	1,358	62	2,329	9	406	25	32	49	12	4,282	10.7
Sand dollars	0	0	0	0	0	1	7	100	0	108	0.3
Brittle stars	32	6	33	14	58	1	1	1	0	146	0.4
Sea cucumbers	69	5	80	25	52	0	9	20	0	260	0.7
Other groups	533	60	1,335	246	1,272	24	52	7,972	16	11,510	28.8
<b>Total</b>	<b>5,344</b>	<b>405</b>	<b>8,689</b>	<b>2,289</b>	<b>5,317</b>	<b>227</b>	<b>853</b>	<b>16,809</b>	<b>43</b>	<b>39,976</b>	<b>100.0</b>
<b>Percentage</b>	<b>13.4</b>	<b>1.0</b>	<b>21.7</b>	<b>5.7</b>	<b>13.3</b>	<b>0.6</b>	<b>2.1</b>	<b>42.0</b>	<b>0.1</b>	<b>99.9</b>	

<sup>1/</sup> Columbia River to Tillamook Bay.

<sup>2/</sup> Tillamook Bay to Coos Bay.

<sup>3/</sup> Coos Bay to California border.

Table 4. Intertidal Nonfood Invertebrates Harvested by Commercial Collectors Along the Oregon Coast, by Area and Taxonomic Group, 1970.

Taxonomic Group	Area			Total	Percentage
	North Coast	Central Coast	South Coast		
<b>Coelenterata</b>					
Sea anemones	0	0	0	0	0.0
<b>Annelida</b>					
Marine worms	0	69,100	0	69,100	62.6
<b>Arthropoda</b>					
Hermit and porcelain crabs	0	5,200	0	5,200	4.7
Ghost and mud shrimp	0	0	0	0	0.0
Shore, spider, and kelp crabs	0	13,748	0	13,748	12.4
<b>Mollusca</b>					
Chitons	0	2,000	1,984	3,984	3.6
Snails, limpets	0	500	0	500	0.5
Sea slugs	0	0	0	0	0.0
<b>Echinodermata</b>					
Sea stars	0	13,201	0	13,201	12.0
Sea urchins	0	2,547	1,507	4,054	3.7
Sand dollars	0	150	0	150	0.1
Brittle stars	0	0	0	0	0.0
Sea cucumbers	0	0	0	0	0.0
<b>Other groups</b>	0	500	0	500	0.5
<b>Total</b>	0	106,946	3,491	110,437	100.1
<b>Percentage</b>	0	96.8	3.2	100.0	

Table 5. Summary of Collecting Intensity, by Area, Along the Oregon Coast, 1970.

Location	Permittees Collecting in Area	Percent of Total
Yaquina Head	69	33.7
Sunset Bay - Cape Arago	31	15.1
Boiler Bay	30	14.6
Neptune State Park	12	5.9
Shell Cove (Depoe Bay)	6	2.9
Harris Beach Permit Area	5	2.4
Central Coast <sup>1/</sup>	42	20.5
North Coast <sup>2/</sup>	8	3.9
South Coast <sup>3/</sup>	2	1.0
Total	205	100.0

1/ Central Coast: Tillamook Bay to Coos Bay.

2/ North Coast: Columbia River to Tillamook Bay.

3/ South Coast: Coos Bay to California border.

Table 6. Selected Groups of Intertidal Nonfood Invertebrates Taken by Permit Holders Along the Oregon Coast, 1970.

Animal Group	Educational Catch			Commercial Catch			Total Catch		
	Number	Percentage	% Change from 1969	Number	Percentage	% Change from 1969	Number	Percentage	% Change from 1969
<b>Coelenterata</b>									
Sea anemones	979	5.6	+92.0	0	0.0	0.0	979	1.7	+92.0
<b>Arthropoda</b>									
Hermit and porcelain crabs	1,976	11.3	+39.3	5,200	12.8	-55.8	7,176	12.4	-45.6
Shore, spider, and kelp crabs	1,977	11.3	+93.6	13,748	33.8	+707.8	15,725	27.1	+477.5
								39.5	43.9
<b>Mollusca</b>									
Chitons	939	5.4	+28.6	3,984	9.8	+47.8	4,923	8.5	+43.7
Snails, limpets	5,074	29.1	+126.3 <sup>1/</sup>	500	1.2	+100.0	5,574	9.6	+146.5 <sup>1/</sup>
Sea slugs	520	3.0		0	0.0	0.0	520	0.9	
<b>Echinodermata</b>									
Sea stars	1,266	7.3	+22.1	13,201	32.5	+11.4	14,467	24.9	+12.3
Sea urchins	4,282	24.6	+92.9	4,054	10.0	+8.3	8,336	14.4	+39.8
Brittle stars	146	0.8	+31.5	0	0.0	0.0	146	0.3	+31.5
Sea cucumbers	260	1.5	+87.1	0	0.0	0.0	260	0.5	+87.1
<b>Total</b>	<b>17,419</b>	<b>99.9</b>	<b>+80.3</b>	<b>40,687</b>	<b>100.1</b>	<b>+28.1</b>	<b>58,106</b>	<b>100.3</b>	<b>+40.3</b>

<sup>1/</sup> Sea slugs included under snails in 1969.