

HARVEST OF INTERTIDAL ANIMALS (NONFOOD INVERTEBRATES), 1976

INTRODUCTION

Persons desiring to harvest intertidal nonfood invertebrates in permit areas or in excess of personal use bag limits in open areas must obtain a collecting permit from the Oregon Department of Fish and Wildlife and report the number and kinds of animals taken, by area.

This report summarizes data in the 1976 collecting reports. A general analysis of the data is followed by a separate analysis of index species such as sea anemones, shore crabs, sea stars and others to determine collecting trends.

RESULTS AND DISCUSSION

The Department of Fish and Wildlife issued 201 intertidal nonfood invertebrate collecting permits in 1976 (Table 1), down 10% from 1975. Collecting reports were returned by 62% of the permittees and showed a harvest of 39,094 animals.

Table 1. Summary of Intertidal Animal (Nonfood Invertebrate) Collecting Permits Issued, Reports Returned and Harvest Reported from the Oregon Coast, 1976.

	<u>Number</u>	<u>Percentage</u>
Educational permits	193	94
Commercial permits	8	6
	<u>201</u>	<u>100</u>
Number of collecting reports returned	125	62
Number of permits unused	22	18
		<u>80</u>
Educational harvest	11,093	28
Commercial harvest	<u>28,001</u>	<u>72</u>
	<u>39,094</u>	<u>100</u>

Miscellaneous species such as amphipods, isopods and barnacles made up 35% of the educational harvest. Marine worms, snails and sea urchins comprised most of the remaining harvest (Table 2). Shore and porcelain crabs accounted for 46% of the commercial take, with chitons, sea stars and sea urchins making up most of the other 54% (Table 3).

The peak educational catch came from open areas on the central coast but 59% of the animals were miscellaneous species such as amphipods, isopods and barnacles. Sunset Bay-Cape Arago had the largest harvest among the permit areas (Table 2). The central coast was still the most popular commercial area but Cape Blanco on the south coast has also become important to the commercial collector (Table 3).

To get a more accurate indication of collecting trends, a separate analysis of the data was made, eliminating such "annual" species as amphipods and isopods. Most of the chosen index species are of general interest and can be accurately counted. Collecting report returns have averaged 83% over 11 years with a high of 96% in 1966 and a low of 62% in 1976. An estimate of the unreported harvest was made by calculating the number of index animals reported per collecting report returned. This value was then applied to the number of educational permits unreported. This estimate was made only for educational collectors since all commercial collectors usually file reports. Collecting of index species was unchanged among educational collectors and down 34% among commercial collectors for an overall decrease 28% compared to 1975 (Table 5). Educational collecting was 35% below the 11-year average (1965-75) and the commercial harvest was 10% above the 11-year average commercial take (Figures 1 and 2).

Table 2. Intertidal Nonfood Invertebrates Harvested by Educational Collectors Along the Oregon Coast, by Area and Taxonomic Group, 1976.

Animal Group	Haystack Rock	Boiler Bay	Shell Cove (Depoe Bay)	Yaquina Head	Neptune State Park	Sunset Bay-Cape Arago	Harris Beach Permit Area	North Coast ^{1/}	Central Coast ^{2/}	South Coast ^{3/}	Total	Percentage
Coelenterata Sea anemones	3	36	0	104	7	55	3	12	230	0	450	4.1
Annelida Marine worms	0	51	5	53	0	199	3	4	788	6	1,109	10.0
Arthropoda Hermit & Porcelain crabs	5	77	0	244	19	237	2	12	59	0	655	5.9
Ghost & mud Shrimp	0	4	0	14	0	30	0	0	158	2	208	1.9
Shore, spider & kelp crabs	0	43	0	244	2	245	1	24	140	0	699	6.3
Mollusca Chitons	2	34	5	73	2	101	3	5	29	0	254	2.3
Snails, limpets	10	115	25	497	22	520	3	65	440	0	1697	15.3
Sea slugs or nudibranchs	0	14	0	21	0	33	1	0	11	0	80	0.7
Echinodermata Sea stars or star fish	3	23	0	95	12	84	3	8	177	0	405	3.7
Sea urchins	0	707	0	394	14	312	2	12	27	0	1468	13.2
Sand dollars	0	0	0	2	0	0	0	3	0	0	5	0.1
Brittle stars	0	0	0	1	0	39	0	0	5	0	45	0.4
Sea cucumbers	0	5	0	35	5	121	0	2	15	0	183	1.6
Other groups	0	32	0	145	0	473	0	205	2,980	0	3,835	34.5
Total	23	1,141	35	1,922	83	2,449	21	352	5,059	8	11,093	100.0
Percentage	0.2	10.3	0.3	17.3	0.7	22.1	0.2	3.2	45.6	0.1	100.0	

^{1/} Columbia River to Tillamook Bay

^{2/} Tillamook Bay to Coos Bay

^{3/} Coos Bay to California border

Table 3. Intertidal Nonfood Invertebrates Harvested by Commercial Collectors Along the Oregon Coast, by Area and Taxonomic Group, 1976

Animal Group	North Coast	Area Central Coast	South Coast	Total	Percentage
Coelenterata	0	0	0	0	0.0
Sea anemones					
Annelida					
Marine worms	0	89	0	89	0.3
Arthropoda					
Hermit & porcelain crabs	0	6,600	0	6,600	23.5
Shore, spider and kelp crabs	0	6,400	0	6,400	22.9
Mollusca					
Chitons	0	100	3,001	3,101	11.1
Snails, limpets	0	550	0	550	2.0
Sea slugs	0	0	0	0	0.0
Echinodermata					
Sea stars	0	9,200	12	9,212	32.9
Sea urchins	0	1,000	968	1,968	7.0
Sand dollars	0	0	0	0	0.0
Brittle stars	0	0	0	0	0.0
Sea cucumbers	0	0	0	0	0.0
Other groups	0	81	0	81	0.3
Total	0	24,020	3,981	28,001	100.0
Percentage	0.0	85.8	14.2	100.0	

Table 4. Summary of Collecting Intensity by Area, Oregon Coast, 1976

Location	Permittees Collecting in Area	Percentage
Yaquina Head	37	31.5
Sunset Bay-Cape Arago	27	22.9
Boiler Bay	14	11.9
Neptune	2	1.7
Shell Cove (Depoe Bay)	1	0.8
Harris Beach	1	0.8
Haystack Rock	1	0.8
Central Coast ^{1/}	30	25.4
North Coast ^{2/}	3	2.5
South Coast ^{3/}	<u>2</u>	<u>1.7</u>
	118	100.0

^{1/} Tillamook Bay to Coos Bay
Columbia River to Tillamook Bay

^{2/} Coos Bay to California border

Table 5. Selected Groups of Intertidal Nonfood Invertebrates Harvested by Permit Holders Along the Oregon Coast, 1975.

Animal Group	Educational Catch		Commercial Catch		Total Catch	
	Number	Percentage	Number	Percentage	Number	Percentage
Coelenterata						
Sea anemones	450	23.1	0	0.8	450	3.9
Arthropoda						
Hermit & porcelain crabs	655	7.7	6,600	3.8	7,255	4.3
Shore, spider and kelp crabs	699	13.4	6,400	24.1	7,099	22.6
Mollusca						
Chitons	254	4.4	3,101	16.3	3,355	14.6
Snails, limpets	1,697	23.6	550	16.5	2,247	17.5
Sea slugs	80	1.9	0	0.0	80	0.3
Echinodermata						
Sea stars	405	3.4	9,212	17.1	9,617	15.2
Sea urchins	1,456	20.2	1,968	21.4	3,424	21.3
Brittle stars	45	0.3	0	0.0	45	0.0
Sea cucumbers	183	2.0	0	0.0	183	0.3
Subtotal	5,924	100.0	27,831	100.0	33,755	100.0
Estimated unreported catch	3,846		-		3,846	
Grand total	9,770		27,831		37,601	
Percent change from 1975	+0.01%		-34%		-28%	