

ANNUAL REPORT

HARVEST OF INTERTIDAL ANIMALS
(NONFOOD INVERTEBRATES) IN 1977

by
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HARVEST OF INTERTIDAL ANIMALS (NONFOOD INVERTEBRATES), 1977

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 1977 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 191 intertidal nonfood invertebrate collecting permits in 1977 (Table 1), down 5% from 1976. Collecting reports were returned by 54% of the permittees and showed a harvest of 77,535 animals.

Table 1. Summary of Intertidal Animal (Nonfood Invertebrate) Collecting Permits Issued, Reports Returned and Harvest Reported from the Oregon Coast, 1977.

	<u>Number</u>	<u>Percentage</u>
Educational permits	184	96
Commercial permits	7	4
	<u>191</u>	<u>100</u>
Number of collecting reports returned	104	54
Number of permits unused	27	2
Educational harvest	17,840	29
Commercial harvest	56,695	71
	<u>77,535</u>	<u>100</u>

Yaquina Head and the central coast were the most frequently visited permit and open areas, respectively (Table 2).

Table 2. Summary of Collecting Intensity by Area, Oregon Coast, 1977.

Location	Permittees Collecting in Area	Percentage
Yaquina Head	28	31.8
Sunset Bay-Cape Arago	27	30.7
Boiler Bay	10	11.4
Harris Beach	2	2.3
Neptune State Park	1	1.1
North Coast ^{1/}	2	2.3
Central Coast ^{2/}	17	19.3
South Coast ^{3/}	1	1.1
	<u>88</u>	<u>100.0</u>

^{1/} North Coast--Columbia River to Tillamook Bay

^{2/} Central Coast--Tillamook Bay to Coos Bay

^{3/} South Coast--Coos Bay to California border

Almost half of the educational catch came from Yaquina Head. The Central Coast had the largest harvest among the open areas (Table 3). Commercial collectors spent all their effort on the Central Coast although some collecting could have been done at Cape Blanco. One South Coast resident did not return a collecting report.

Snails, anomuran crabs and sea urchins made up 63% of the educational harvest. Worms, chitons, miscellaneous groups, sea stars, and brachyuran crabs comprised most of the remaining harvest (Table 3). Crabs and sea stars accounted for 86% of the commercial take (Table 4).

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 81% over twelve years with a high of 96% in 1966 and a low of 54% in 1977. An estimate of the unreported harvest was made by calculating the number of index animals reported per collecting report. This value was then applied to the number of permits reported. This estimated catch is probably high. Some past data indicates that

a larger portion of the permittees that did not report also did not collect, as compared to those that filed reports. This estimate was made only for educational collectors. Since one commercial collector did not file a report, the commercial records are incomplete. Collecting of index species was down forty-four percent among educational collectors and up at least 114% among commercial collectors for an overall increase of 73% compared to 1976 (Table 5).

Table 3. Intertidal nonfood invertebrates harvested by educational collectors along the Oregon coast, by area and taxonomic group, 1977.

Animal Group	Haystack Rock	Boiler Bay	Shell Cove (Depoe Bay)	Yaquina Head	Neptune		Harris Beach			Total	Percentage	
					State Park	Sunset Bay-Cape Arago	Permit Area	North Coast ^{1/}	Central Coast ^{2/}			South Coast ^{3/}
Coelenterata												
Sea anemones	0	14	0	58	0	10	0	31	56	0	169	4.7
Annelida												
Marine worms	0	90	0	106	0	0	0	10	33	0	239	6.6
Arthropoda												
Hermit & porcelain crabs	0	18	0	430	0	0	0	4	47	7	506	14.0
Ghost and mud shrimp	0	4	0	14	0	0	0	0	24	0	42	1.1
Shore, spider & kelp crabs	0	10	0	45	0	5	0	0	78	0	138	3.8
Mollusca												
Chitons	0	46	0	102	0	11	14	10	43	5	231	6.4
Snails, limpets	0	370	0	583	0	37	13	25	131	16	1,175	32.5
Sea slugs or nudibranchs	0	24	0	41	0	3	0	2	17	0	87	2.4
Echinodermata												
Sea stars or star fish	0	48	0	100	0	5	0	4	27	3	187	5.2
Sea urchins	0	321	0	231	0	15	0	0	10	4	581	16.1
Sand dollars	0	0	0	1	0	0	0	0	0	0	1	0.0
Brittle stars	0	0	0	6	0	0	0	0	0	0	6	0.2
Sea cucumbers	0	6	0	14	0	0	0	10	4	0	34	0.9
Other groups	0	1	0	7	0	0	0	4	208	0	220	6.1
Total	0	959	0	1,738	0	86	27	100	678	35	3,616	100.0
Percentage	0.0	26.3	0.0	48.1	0.0	2.4	0.8	2.8	18.7	0.9	100.0	

^{1/} Columbia River to Tillamook Bay

^{2/} Tillamook Bay to Coos Bay

^{3/} Coos Bay to California Border

Table 4. Intertidal nonfood invertebrates harvested by commercial collectors along the Oregon Coast, by area and taxonomic group, 1977.

Animal Group	AREA			Total	Percentage
	North Coast	Central Coast	South Coast		
Coelenterata					
Sea anemones	0	0	0	0	0.0
Annelida					
Marine worms	0	0	0	0	0.0
Arthropoda					
Hermit & porcelain crabs	0	17,000	0	17,000	28.5
Shore, spider & kelp crabs	0	25,000	0	25,000	41.9
Mollusca					
Chitons	0	25	0	25	0.04
Snails, limpets	0	6,000	0	6,000	10.1
Sea slugs	0	0	0	0	0
Echinodermata					
Sea stars	0	9,300	0	9,300	15.6
Sea urchins	0	2,370	0	2,370	4.0
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	0	0	0	0.0
Total	0	59,695	0	59,695	100.0
Percentage	0	100.0	0.0	100.0	

Table 5. Selected groups of intertidal nonfood invertebrates harvested by permit holders along the Oregon Coast, 1977.

Animal Group	Educational Catch		Commercial Catch		Total Catch	
	Number	Percentage	Number	Percentage	Number	Percentage
Coelenterata						
Sea anemones	169	5.4	0	0	169	0.3
Arthropoda						
Hermit & porcelain crabs	506	16.3	17,000	28.5	17,506	27.9
Shore, spider & kelp crabs	138	4.4	25,000	41.9	25,138	40.1
Mollusca						
Chitons	231	6.0	9,300	15.6	9,487	15.1
Snails, limpets	1,175	37.7	6,000	10.0	7,175	11.4
Sea slugs	87	2.8	0	0.0	87	0.0
Echinodermata						
Sea stars	187	6.0	9,300	15.6	9,487	15.1
Sea urchins	581	18.7	2,370	4.0	2,951	4.7
Brittle stars	6	0.2	0	0.0	6	0.0
Sea cucumbers	34	1.1	0	0.0	34	0.1
Subtotal	3,114	100.0	59,695	100.0	62,809	100.0
Estimated unreported catch	2,332		-		2,332	
Grand total	5,446		59,695*		65,141	
Percent change from 1976	-44%		+115%		+73%	

*Incomplete data