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SHELLFISH INVESTIGATION

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HARVEST OF INTERTIDAL, NONFOOD INVERTEBRATES, 1967

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INTRODUCTION

Since the adoption of O.A.R. 10-670 through 10-740, regulating the harvest of intertidal, nonfood invertebrates, records have been kept of collecting activities. These records are based on collecting reports that the permit holder must file. This report summarizes 1967 collecting activities.

COLLECTING REPORT RESULTS

During 1967 there was a 7% increase in collecting permits issued and a 12% decrease in the number of animals collected as compared to 1966. Of the 162 permits issued, 146 (90%) were returned which recorded a harvest of 139,797 animals, (Tables 1 and 2).

It is believed the reduction in numbers of animals collected is related partially to our educational program on invertebrate collection. Other reasons are believed to be (1) an increasing number (22%) did not collect, (2) completion of several research projects, and (3) errors in estimating numbers of animals taken. Barnacles, sponges, hydroids, and tube worms are impractical to count individually and have been reported by the bushel, garbage can, pound, or individually, making it necessary in some cases to estimate numbers of animals taken. To reduce the error inherent in estimating numbers, the collecting data were analyzed using only those groups of animals which can be counted accurately. Included were (1) Anthozoa (anemones), (2) Anomura (hermit and porcelain crabs, mud and ghost shrimp), (3) Brachyura (shore and spider crabs), (4) Amphineura (chitons), (5) gastropoda (snails, sea slugs), (6) Asteroidea (starfish), (7) Echinoidea (sea urchins), (8) Ophiuroidea (brittle stars), and (9) Holothuroidea (sea cucumbers). Excluded from this analysis were (1)

Hydrozoa (hydroids), (2) Polychaeta (worms), (3) Cirripedia (barnacles), (4) Peracarida (pill bugs, beach hoppers), and (5) miscellaneous groups such as sponges, ascidians, flatworms, and others.

Table 1. Summary of Intertidal, Nonfood Invertebrate Catch Data from the Oregon Coast, January 1 to December 31, 1967

	Number	Per Cent
Number of permits issued	162	
Scientific and educational	157	97
Commercial	5	3
Number of collecting reports returned	146	90
Permits issued and animals taken	114	78
Permits issued but not used	32	22
Number of animals taken	139,797	
Scientific and educational	34,772	25
Commercial	105,025	75

The results are as follows: The collecting of molluscs and arthropods decreased 24 and 54%, respectively. In contrast the harvesting of coelenterates and echinoderms increased 27 and 24%. Scientific and educational collecting remained relatively stable except for shore crabs which decreased 36%. The commercial harvest of both shore crabs and chitons decreased 96 and 86%, respectively, while the commercial harvest of starfish and sea urchins increased 21 and 65% (Table 3).

Yaquina Head was the most popular collecting area. Cape Arago-Sunset Bay replaced Boiler Bay as the second most commonly used area and the central coast was the most popular nonpermit area. As in previous years, all other areas were used sparingly (Table 4).

SUMMARY

There was a 7% increase in the number of intertidal nonfood invertebrate collecting permits issued in 1967. One hundred and forty-six permittees

Table 2. Intertidal Nonfood Invertebrates Taken by Permit Holders Along the Oregon Coast from January 1 to December 31, 1967

Animal Group	Scientific and Education Catch			Commercial Catch			Total Catch		
	Number	% by Division	% of Total Sci. and Ed. Catch	Number	% by Division	% of Total Comm. Catch	Number	% by Division	% of Total Catch
Coelenterata									
Cl: Hydrozoa	683	2.0	4.4				683	0.5	1.3
Anthozoa	849	2.4		229	0.2	0.2	1,078	0.8	
Annelida									
Cl: Polychaeta	7,567	21.8	21.8	78,850	75.1	75.1	86,417	61.8	61.8
Arthropoda									
Cl: Cirripedia	4,024	11.6		487	0.5		4,511	3.2	
Cl: Malacostraca									
Subcl: Peracarida	3,810	11.0	35.8			6.1	3,810	2.7	13.5
Subcl: Eucarida									
Tribe: Anomura	1,846	5.3		5,552	5.3		7,398	5.3	
Tribe: Brachyura	2,757	7.9		330	0.3		3,087	2.2	
Mollusca									
Cl: Amphineura	1,118	3.2	18.2	297	0.3	0.4	1,415	1.0	4.8
Cl: Gastropoda	5,229	15.0		105	0.1		5,334	3.8	
Echinodermata									
Cl: Asteroidea	1,923	5.5		13,048	12.4		14,971	10.7	
Cl: Echinoidea	3,777	10.9	17.7	6,093	5.7	18.2	9,870	7.1	18.1
Cl: Ophiuroidea	209	0.6		30	0.03		239	0.2	
Cl: Holothuroidea	256	0.7		4	0.003		260	0.2	
Miscellaneous									
	724	2.1	2.1				724	0.5	0.5
Totals	24,772	100.0	100.0	105,025	100.0		139,797	100.0	100.0

Table 3. Selected Groups of Intertidal Nonfood Invertebrates Taken by Permit Holders Along the Oregon Coast from January 1 to December 31, 1967

Animal Group	Sci. and Ed. Catch				Commercial Catch				Total			
	Number	% by Div.	% of Total Sci. and Ed. Catch	% Change From 1966	Number	% by Div.	% of Total Comm. Catch	% Change From 1966	Number	% by Div.	% of Total Catch	% Change From 1966
Coelenterata												
C1: Anthozoa	849	4.7	4.7	+76	229	0.9	0.9	+100	1,078	2.5	2.5	+27.2
Arthropoda												
C1: Malacostraca												
Tribe: Anomura	1,846	10.3	25.7	+20.8	5,552	21.6	22.9	-20.7	7,398	17.0	24.0	-12.6
Tribe: Brachyura	2,757	15.4		-36.0	330	1.3		-96.7	3,087	7.1		-78.6
Mollusca												
C1: Amphineura	1,118	6.2	35.3	-16.0	297	1.2	1.6	-86.0	1,415	3.2	15.5	-59.4
C1: Gastropoda	5,229	29.1		-11.9	105	0.4		-86.7	5,334	12.2		-1.1
Echinodermata												
C1: Asteroidea	1,923	10.7		+10.5	13,048	50.8		+21.1	14,971	34.3		+19.8
C1: Echinoidea	3,777	21.0	34.3	-0.8	6,093	23.7		+52.2	9,870	22.6	58.0	+31.9
C1: Ophiuroidea	209	1.2		-1.8	30	0.1	74.6	+100.0	239	0.5		+10.8
C1: Holothuroidea	256	1.4		+13.6	4	0.01		+100.0	260	0.6		+15.0
Totals	17,964	100.0	100.0	-2.6	25,688	100.0	100.0	-22.7	43,652	100.0	100.0	-15.5

Table 4. Summary of Collecting Intensity by Area Along the Oregon Coast, January 1 to December 31, 1967

Location	Permittees Collecting in Area	Per Cent of Total
Yaquina Head	47	30.5
Cape Arago-Sunset Bay	32	20.8
Central Coast <u>1/</u>	28	18.2
Boiler Bay	20	13.0
South Coast <u>2/</u>	13	8.4
North Coast <u>3/</u>	4	2.6
Neptune State Park	4	2.6
Harris Beach	4	2.6
Depoe Bay	<u>2</u>	<u>1.3</u>
Total	154	100.0

1/ Central Coast: Southern Tillamook Bay to Northern Coos Bay

2/ South Coast: Southern Coos Bay to California Border

3/ North Coast: Columbia River to northern Tillamook Bay

reported collecting an estimated 140,000 animals; a decrease of 12% from 1966. Based on past experience, many of the 16 permittees that did not report, did not collect any animals. Using only those animals whose numbers can be accurately counted, the same 146 permittees collected 43,652 animals; a decrease of 15% from 1966.

Polychaeta was the most sought after phylum followed by Echinodermata. Yaquina Head was the most popular permit area. The "central coast" from Tillamook to northern Coos Bay continued to be the most popular nonpermit area.