

OREGON FISH COMMISSION
RESEARCH DIVISION

INFORMATIONAL REPORT

Harvest of Intertidal Non-Food Invertebrates, 1962-64.

Introduction

At the request of the Oregon Marine Biological Society, the 1961 legislature gave the Oregon Fish Commission jurisdiction over all intertidal non-food invertebrates such as starfish, rock crabs, snails, etc. In February 1962, the Commission adopted General Order No. 39 which established regulations governing the harvest of all intertidal non-food invertebrates along the Oregon coast. The purpose of this report is to review these regulations, define the type of collectors, show the most commonly collected animals, and give an estimate of the total number of animals taken at various areas along the Oregon coast during the period 1962 through 1964.

Materials and Methods

Seven areas along the Oregon coast have been designated as permit-only areas and one area closed to all collecting. Intertidal non-food invertebrates may be taken from the following areas upon obtaining a collecting permit from the Oregon Fish Commission: (1) Boiler Bay; (2) Depoe Bay; (3) Yaquina Head; (4) Neptune State Park; (5) Sunset State Park; (6) Cape Arago State Park; and (7) Harris Beach State Park. The Marine Gardens at Otter Rock are closed to all collecting. The boundaries of each of the areas have been marked and signs indicating collecting restrictions are posted.

In all other intertidal areas of the Oregon coast no permit is needed, although a personal-use bag limit of ten specimens in the aggregate has been imposed. For the purpose of this report the non-permit areas of the coast have been divided into three arbitrary regions: (1) northern coast--extending

from the Columbia River south to Tillamook Bay; (2) central coast—from Tillamook Bay south to Coos Bay and; (3) southern coast—from Coos Bay south to the California state line.

In order to obtain a collecting permit an individual obtains an application blank from either the Portland or Newport office of the Fish Commission. The completed form is then returned to the Newport office for issuance of a permit. The applicant furnishes the following information before the issuance of a collecting permit: (1) name, (2) address, (3) who he or she represents, (4) species and numbers to be collected, (5) date(s) of collection, (6) area(s) of collection, and (7) purpose(s) of collection. After the application is evaluated by the shellfish staff, a permit may or may not be issued. At the end of the year the applicant enters the number of animals taken by class or order and the date and area of collection and turns this in to the shellfish staff. During the first year (1962) permits were issued out of the Portland office after the application was evaluated by the Shellfish staff in Newport. Since that time permits have been issued directly from the Newport office of the Fish Commission. Prior to the 1964 calendar year, permits were issued from April 1 to March 31 of the following year. At the present time permits are issued on a calendar year basis, although some permits are requested to cover only a few weeks or months. This usually occurs during the summer when there are maximum numbers of minus tides that expose the intertidal area.

There are two distinct groups of people who collect intertidal non-food invertebrates:

- (1) The commercial collector; this individual takes the majority of his harvest from non-permit areas. These animals are either imbedded in plastic or dried and sold as curios. Some commercial

collectors also sell animals to biological supply houses which in turn sell to high schools and universities. There are also people who collect non-food animals for display in public aquariums. Since the collection of rock crabs, starfish, etc. now has commercial interest, there is no issuance of permits to commercial collectors for the seven permit areas except for scientific and educational purposes.

- (2) The non-commercial collector: this is usually a university instructor, graduate student, or high school teacher. The main reason for this type of collection of invertebrates is basic research at the college level and to supplement teaching collections at the high school level.

Discussion

During the first three years of collecting under the new regulations, 251,974 intertidal non-food invertebrates were reported taken. If the people who did not report collected at the same rate as those who reported, 369,000 animals could have been collected. Figures 1 through 3 show the total number of animals reported taken by commercial and non-commercial collectors in various areas along the Oregon coast for the years 1962-64. In about half of the permit-only areas there was a decrease in the number of animals taken during the 1963 collecting year--excluding Harris Beach State Park, as no permits were issued for this area. The greatest number of animals (28,612) was taken from the Cape Arago State Park-Sunset Bay area in 1963. The smallest number of animals (73) was taken at Harris Beach State Park in 1964. The bulk of the commercial collecting takes place on the unrestricted areas of the Oregon coast as illustrated in Figures 1-3. In each of the three regions there was an increased amount of commercial collecting both on the northern and southern coast and to a lesser extent on the central coast. These figures are assumed to be conservative as there were collectors that did not return the report form issued to them (Table 1). Also, this does not take into account the people who probably collected intertidal invertebrates without first obtaining a collecting permit.

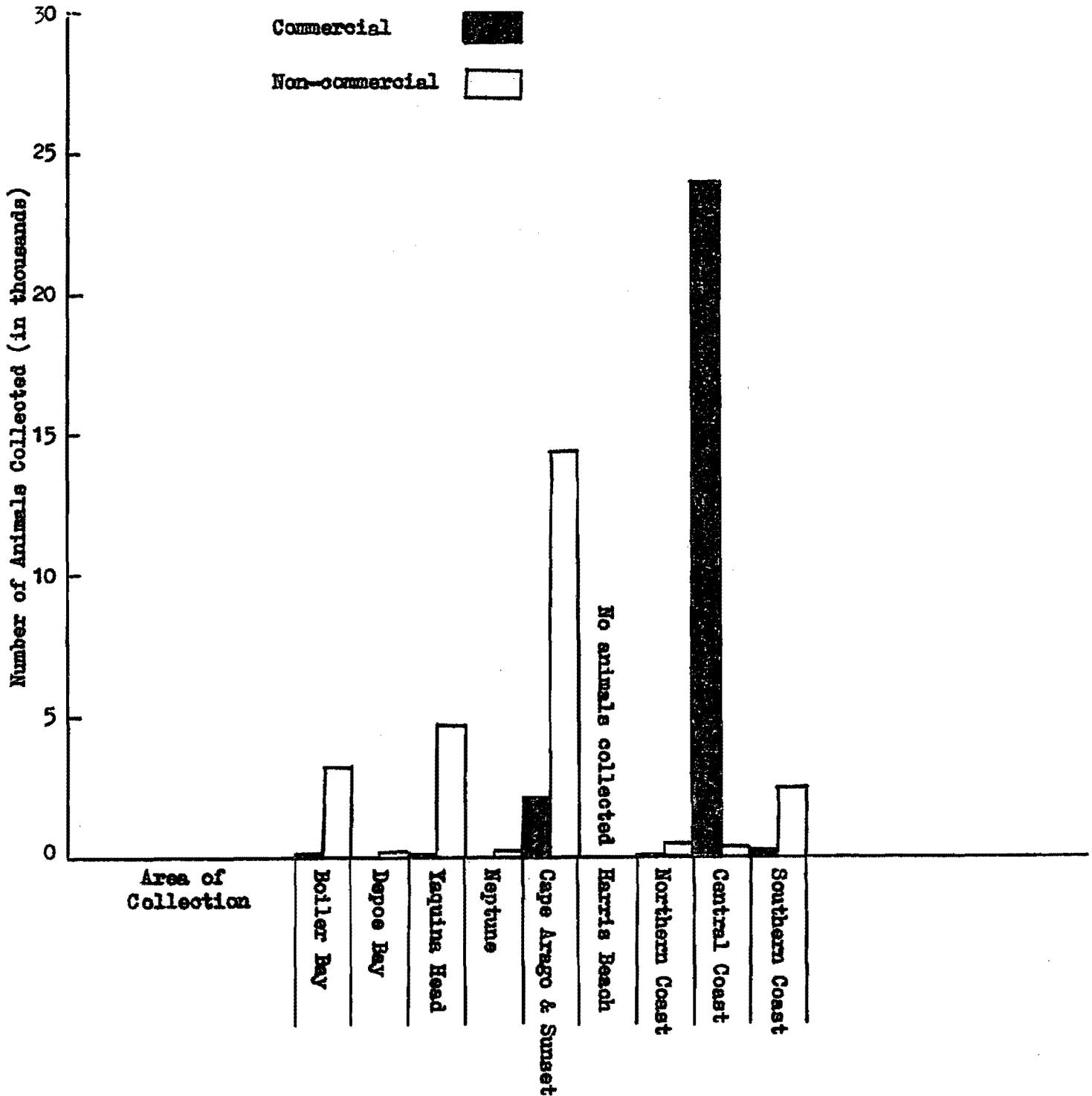


Figure 1. Total Number of Animals Reported Collected by Commercial and Non-Commercial Collectors During 1962.

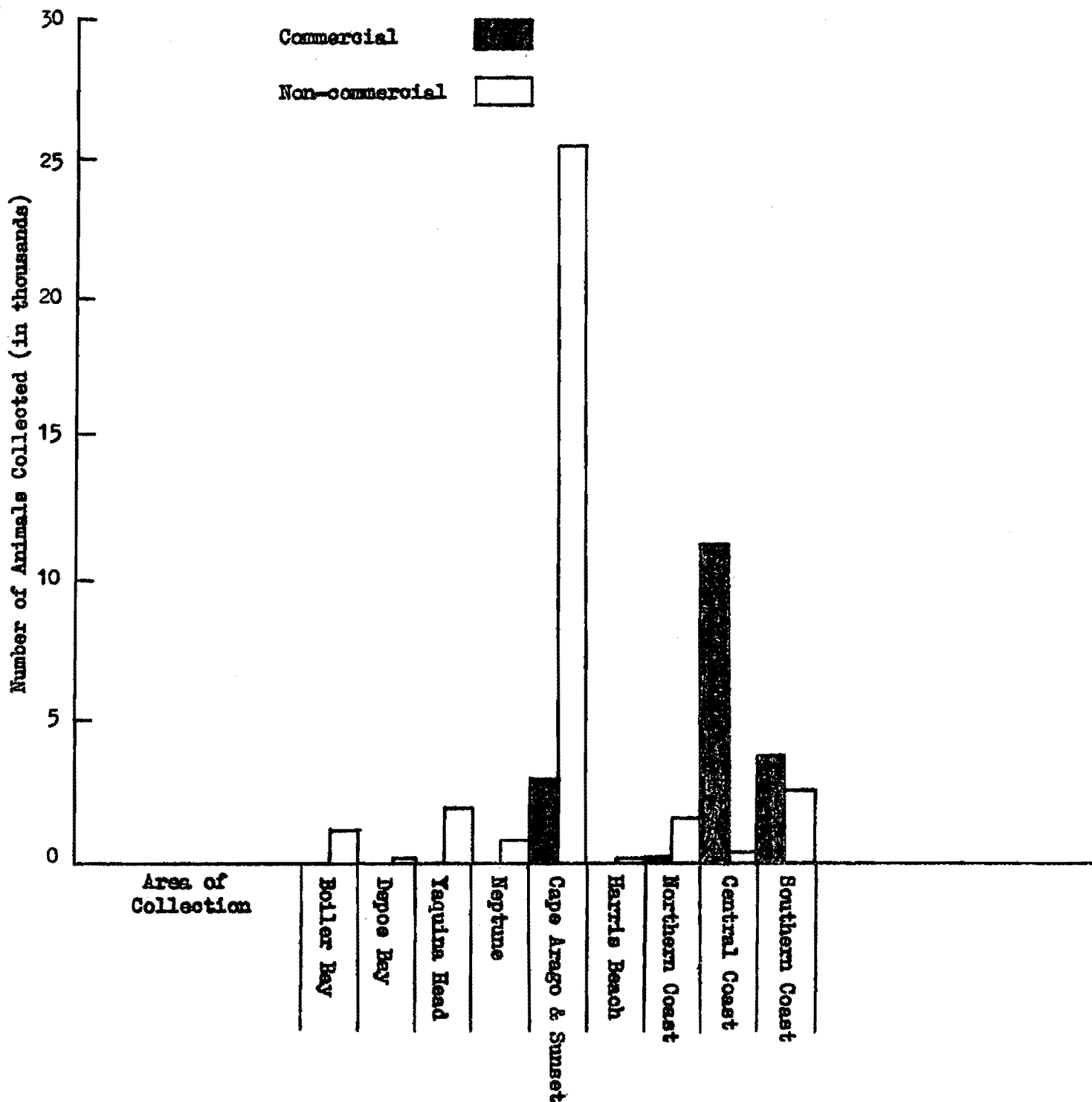


Figure 2. Total Number of Animals Reported Collected by Commercial and Non-Commercial Collectors During 1963.

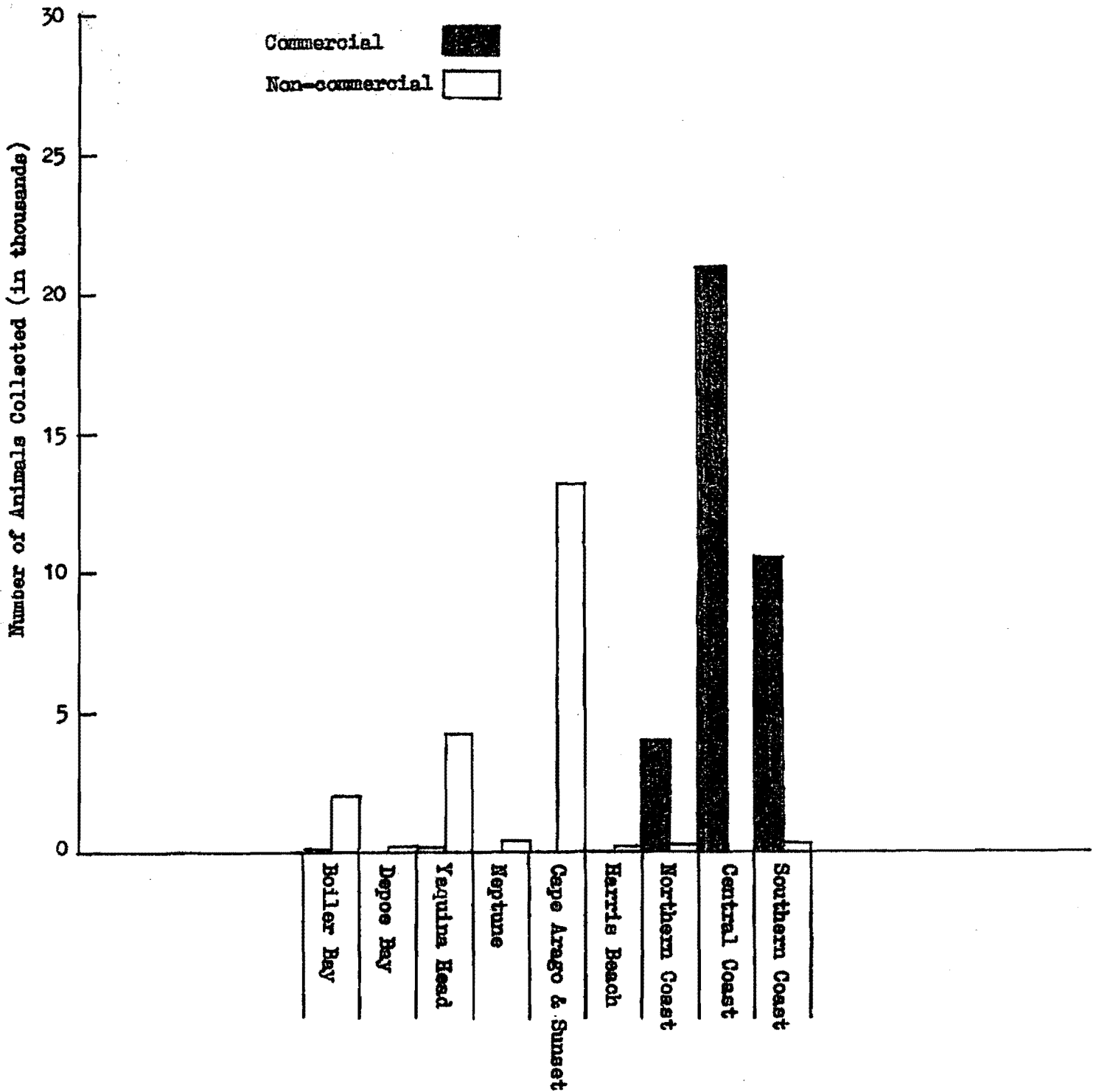


Figure 3. Total Number of Animals Reported Collected by Commercial and Non-Commercial Collectors During 1964.

The return of final report forms has been less than desired with an average of 68% of the collectors returning their completed reports (Table 1).

Table 1. Number of Permits Issued, Collection Reports Received, and Number of Animals Taken for the Years 1962 Through 1964.

	1962	1963	1964	Mean
Total number of permits issued	153	96	96	115
Commercial permits	11	7	12	10
Non-commercial permits	142	89	84	105
Total number of collection reports received	73	70	81	75
Permits issued and animals taken	64	50	68	61
Permits issued and <u>no</u> animals taken	7	20	13	13
Permits issued and collections made in <u>unrestricted</u> areas	2	9	17	9
Percentage of final reports received	47.7%	72.9%	84.4%	68.3%
Total number of animals taken	140,002	52,360	59,612	83,991
Commercial	88,485	17,711	35,711	47,302
Non-commercial	51,517	34,649	23,901	36,689

For the three-year collecting period, arthropods and echinoderms were the most heavily harvested non-food invertebrates. For the non-commercial collector, arthropods are used for respiration and molting studies while the echinoderms serve as a source of gametes for embryological experiments. The commercial collector imbeds the arthropods, usually porcelain crabs, in plastic for key rings, etc. Echinoderms (usually starfish) are dried and sold as curios. Figure 4 shows the percentage of arthropods and echinoderms harvested by both the commercial and non-commercial collector. This has amounted to 47% (1963) in the arthropods and 86% (1962) in the echinoderms.

Based on collection report data from the seven permit-only areas there was more collecting done in the northern areas during 1964. During the 1962 collecting year, 27 (22%) of the people collected at Cape Arago State Park while only one

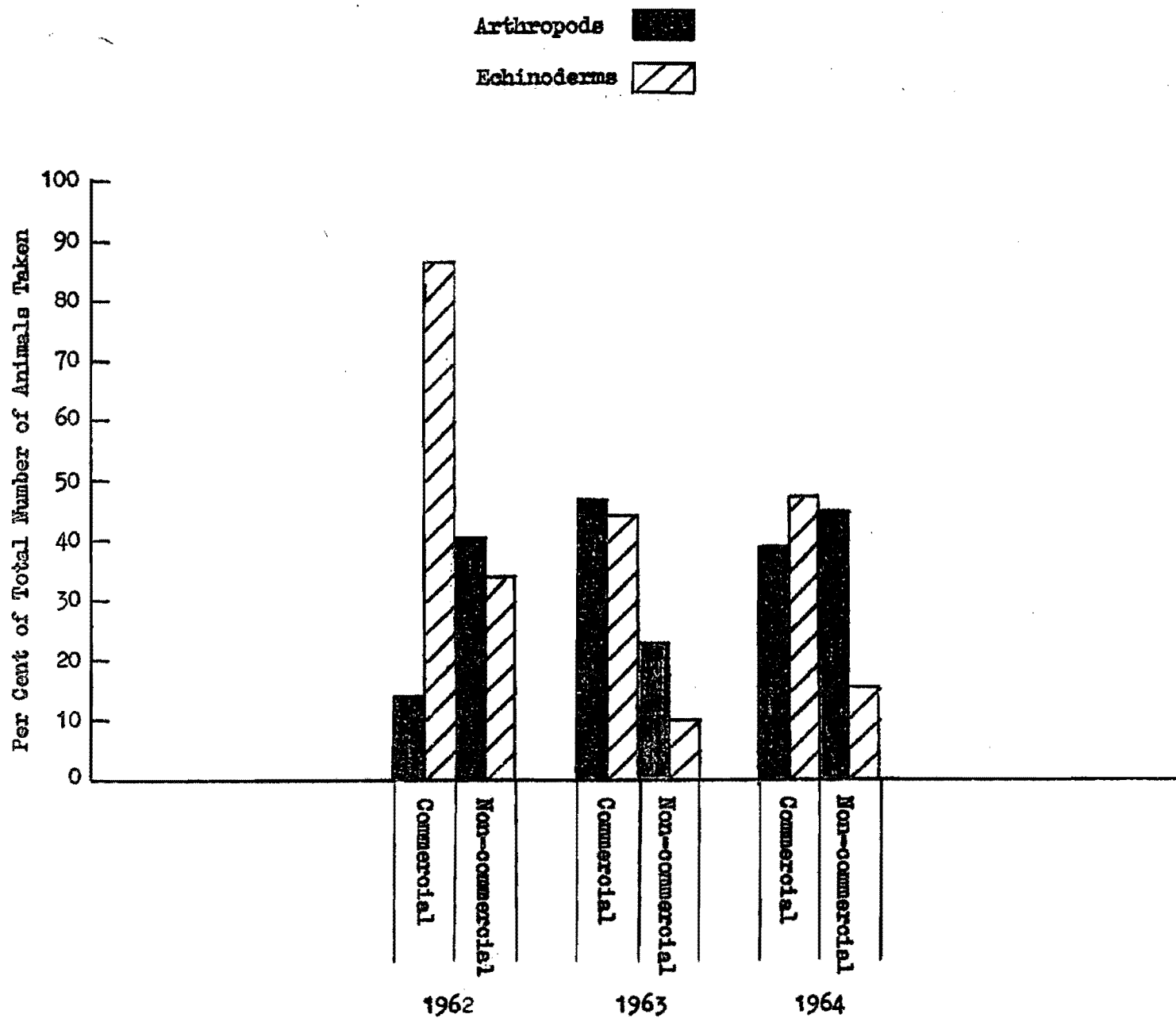


Figure 4. Harvest of Arthropods and Echinoderms by Commercial and Non-Commercial Collectors Along the Oregon Coast, 1962-64.

person (1%) collected at Harris Beach State Park. The central and southern coasts were equally divided with 18 (14%) people reporting the collection of animals from each area. In 1963 Cape Arago State Park was still the most heavily collected area with 26 (20%) people reporting the collection of non-food invertebrates. Students taking summer courses at the Oregon Institute of Marine Biology collect a large number of animals from the Cape Arago area. Both Harris Beach State Park and Depoe Bay State Park had the least number of collectors. More people (30%) collected at Yaquina Head than at any other permit-only area during 1964. Only one person collected at Depoe Bay State Park, however, the number of permits issued for Depoe Bay State Park has been kept at a minimum because of long term ecological studies being conducted by the University of Oregon Medical School. The central coast had 12 (13%) collectors during the 1964 collection year.

There appears to be a relationship between the number of people utilizing an area and the location of their home. The Sunset Bay-Cape Arago State Park area is utilized most heavily by students taking summer courses at the University of Oregon Institute of Marine Biology and by the staff and graduate students of the University of Oregon at Eugene. To a lesser extent high school biology teachers from the Coos Bay and southern Willamette Valley areas utilize this region. Yaquina Head and Boiler Bay are commonly used by the zoology departments at Oregon State University and the smaller private colleges in the Willamette Valley for field trips and to collect specimens for research and teaching purposes. Many of the high schools from the Portland and northern Willamette Valley also use these two sites for field trips and to collect teaching specimens. The possible reason that Harris Beach State Park and Neptune State Park are not more heavily utilized is their remoteness from any large metropolitan complex or to main highways feeding into High 101 from the valley.

Summary

In February 1962 the Oregon Fish Commission adopted General Order No. 39 which established regulations governing the harvest of all intertidal non-food invertebrates along the Oregon coast. Seven areas have been set aside as permit-only areas and one area completely closed to collectors. During the period from 1962-64, 251,974 animals were known to have been collected along the Oregon coast with an average of 68% of the collectors reporting. The greatest number of animals were taken from the Cape Arago State Park-Sunset Bay region in 1963 and the smallest number of animals were taken at Harris Beach State Park. Commercial collecting was confined to the non-permit regions of the coast. Arthropods and echinoderms were the most intensely collected animals during the three-year period. Cape Arago was used more by collectors in 1962 and 1963 while Yaquina Head was the most popular area in 1964. There appears to be a correlation between the utilization of an area and the proximity of a major highway from the Willamette Valley.

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