MACROBENTHIC INVERTEBRATE FAUNA

OF THE

MIDDLE ATLANTIC BIGHT REGION:

PART II. FAUNAL COMPOSITION AND QUANTITATIVE DISTRIBUTION

by

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ABSTRACT

In the early 1960's a quantitative survey of the macrobenthic invertebrate fauna was conducted in the Middle Atlantic Bight Region. Purposes of this survey were to obtain a preliminary measure of the macrobenthic standing crop, particularly in terms of biomass, and secondarily, to determine the principal taxonomic components of the fauna and learn the general features of their distribution. Sampling was conducted at 563 locations; water depths represented ranged from 4 to 3,080 m. An analysis of faunal composition and quantitative distributions, from the survey, are presented in this report. Quantities are expressed in terms of density and biomass.

Dominant taxonomic components, in numbers of individuals, in decreasing order of importance were: Arthropoda (46%), Mollusca (25%), Annelida (21%), Echinodermata (4%), and Coelenterata (1%), Dominant in biomass, in decreasing order of importance were: Mollusca (71%), Echinodermata (12%), Annelida (7%), Arthropoda (5%), and Ascidiacea (2%). The quantity of fauna, both density and biomass, decreased substantially from shallow to deep water. Another major trend was the marked decrease in quantity from north to south within the Middle Atlantic Bight. Bottom sediment composition strongly influenced both the kind and quantity of macrobenthic animals. Coarse-grained sediments generally supported the largest quantities of animals, including many sessile forms. Fine-

grained sediments usually contained a depauperate fauna; attached organisms were uncommon. No obvious correlations were detected between the amount of organic carbon in bottom sediments and the quantity of benthic animals present. Marked seasonal changes in bottom water temperature were associated with an abundant fauna composed of diverse forms, whereas uniform temperatures throughout the year were associated with a sparse fauna composed of a moderate variety of species. Taxonomic groups that were dominant in a significant number of samples, in terms of number of individuals, were: Bivalvia, Annelida, Echinoidea, Ophiuroidea, Crustacea, and the Bathyal assemblage. Groups dominant in terms of biomass were: Bivalvia, Annelida, Echinoidea, Ophiuroidea, Holothuroidea, and the Bathyal assemblage.