inshore waters and on the Continental Shelf throughout the region. Low densities (less than 50/m²) prevailed in the offshore deepwaters. Biomass had a somewhat similar pattern of distribution. Large (greater than 200/m²) and moderately large (25 to 199 g/m²) biomasses were most common on the Continental Shelf in Southern New England. Moderate quantities (1 to 25 g/m²) were found in extensive areas of the Continental Shelf. Small quantities (less than 1 g/m²) were prevalent in the Chesapeake Bight subarea and in offshore deepwater.

Pycnogonida, Arachnida, Ostracoda, Nebaliacea, and Copepoda (fig. 45) were found in only a few scattered localities. Densities varied in magnitude from one group to another, but generally they were low, and the biomass of all groups was very small.

Cirripedia (figs. 46 and 47) were present in only a few localities, primarily on the Continental Shelf. Most were found in the area from New York northward to Cape Cod, also the area of its highest density (500 to 7,932/m²). Biomass was distributed in a similar pattern and reached quantities ranging from 500 to 1,104 g/m² at localities of highest density.

Cumacea (figs. 48 and 49) were widely distributed throughout the region, particularly on the Continental Shelf, from shallow inshore waters to offshore deepwaters, and from Cape Cod to Cape Hatteras. High densities (greater than 500/m²) and moderately high densities (100/m² to 499/m²) were common on the central Continental Shelf off Southern New England, and along the outer margin of the Continental Shelf in the Chesapeake Bight subarea. Low densities (less than 25/m²) prevailed for most of their area of occurrence on the Continental Shelf and in all deepwater areas. Biomass was small (less than 0.5 g/m²), except for widely scattered patches of limited size.

Tanaidacea (figs. 50 and 51) were found only in deepwater. They were found in small and widely separated areas on the Continental Slope and Rise ranging from offshore Cape Code to the offshore Chesapeake Bay region. In all localities their density was low, less than 6/m², and their biomass was small, less than 0.05 g/m².

Isopoda (figs. 52 and 53) were widely dispersed over the Continental Shelf throughout the region at densities ranging from 1/m² to 24/m². Moderate-size areas, more or less equally distributed over the Continental Shelf, contained populations between 25/m² and 199/m². High densities (200/m² to 1,053/m²) were restricted to small areas, chiefly the bays and the Inner Continental Shelf. Biomass throughout most of their area of occurrence was less than 0.5 g/m². Some moderately large areas, rather evenly scattered throughout the region, contained biomasses between 0.5 and 5.0 g/m². In a few small areas, along the middle and inner shelf between New Jersey and Virginia, they were present in relatively large quantities, 5 to 12.6 g/m².

Amphipoda (figs. 54 and 55) were ubiquitous in the Middle Atlantic Bight region where densities ranged from 10/m² to more than 19,000/m². Lowest densities were most closely associated with the deep water below the shelf break and in patches along the coastline. Moderate densities (50/m² to 500/m²) predominated on the Continental Shelf below the eastern tip of Long Island. Higher densities (500/m² to 5,000/m²) were distributed in relatively large areas off Southern New England, somewhat smaller areas in the New York Bight region, and the smallest areas in the more southerly reaches of the study area. Highest densities (5,000/m² to 19,000/m²) were found only in comparatively small patches in the Southern New England region. Biomass ranged from 0.01 to 175 g/m². Largest biomasses (25 to 175 g/m²) were, like density, most prevalent in the northern sectors of the study area and in a few discrete patches in the south. Intermediate biomasses (1–25 g/m²) were present over large parts of the Southern New England and New York Bight Continental Shelves, and in smaller areas farther south. Generally, the inshore and offshore areas contained the smallest (0.01 to 1 g/m²) biomasses.

Mysidacea (figs. 56 and 57) were present in scattered localities from Cape Cod to Cape Hatteras. All samples except one were from the Continental Shelf, primarily in coastal areas and the Inner Continental Shelf. Densities were low (less than 25/m²) in about half their area of occurrence and moderate (25/m²–385/m²) in the remaining half. Biomass of mysids was small (less than 1.4 g/m²) at all localities.

Decapoda (figs. 58 and 59) were found over a large part of the Middle Atlantic Bight. They were broadly distributed on the Continental Shelf, extending from Cape Cod to Cape Hatteras. Densities over most of this expanse were low (less than 25/m²) and moderate (25/m² to 99/m²) to high (100/m² to 395/m²) in rather small scattered patches in all sections. Biomass was distributed somewhat differently in that most of the largest quantities were on the Inner and Middle Continental Shelf and smaller quantities were on the Outer Continental Shelf.

Bryozoa (figs. 60 and 61) were distributed in moderate-sized patches in the study area. Densities, for the most part, were rather low (1/m² to 24/m²);

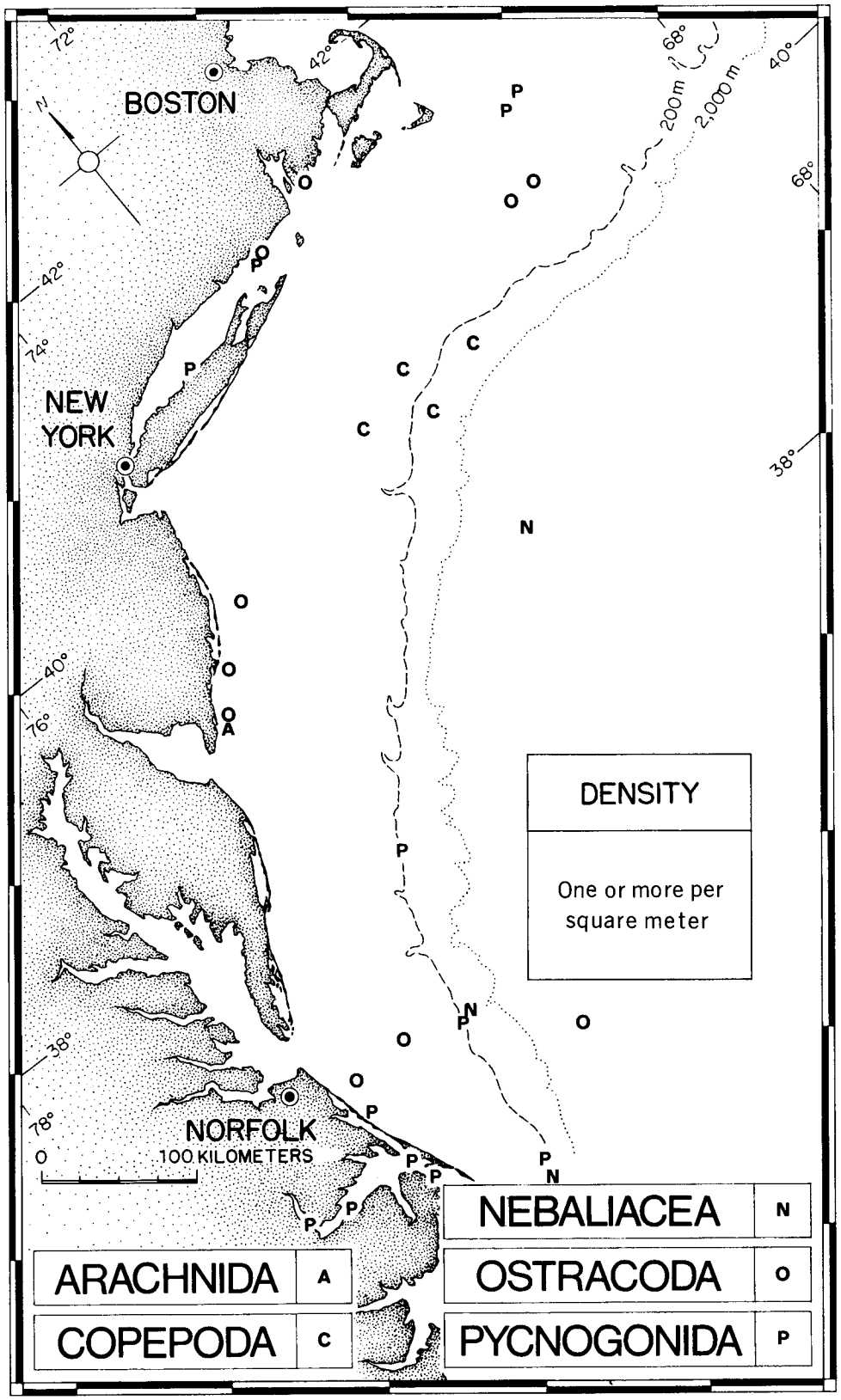

FIGURE 45.—Geographic distribution of the density of Arachnida (*A*), Copepoda (*C*), Nebaliacea (*N*), Ostracoda (*O*), and Pycnogonida (*P*), expressed as number of individuals per square meter of bottom area.

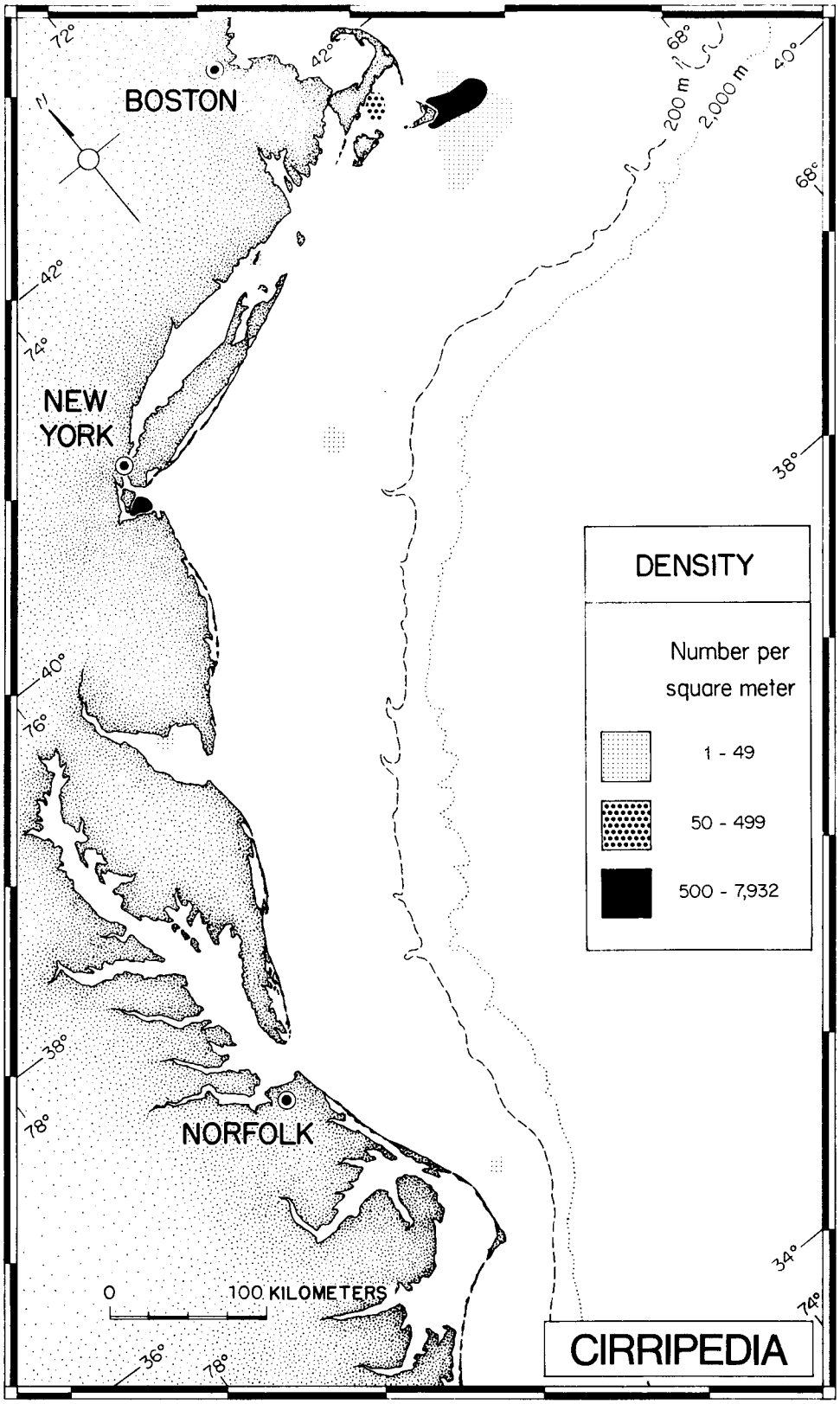

FIGURE 46.—Geographic distribution of the density of Cirripedia, expressed as number of individuals per square meter of bottom area.

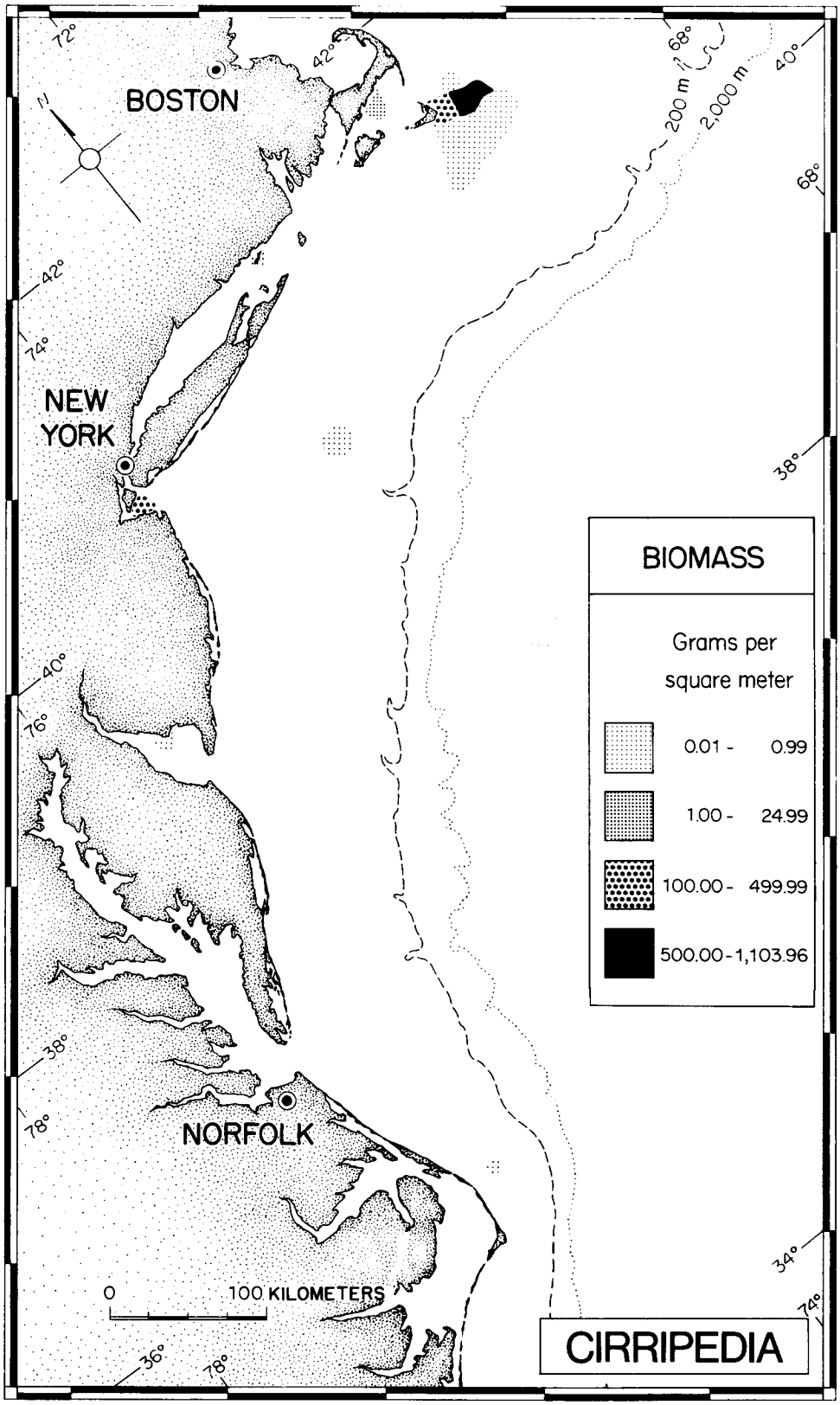

FIGURE 47.—Geographic distribution of the biomass of Cirripedia, expressed as damp weight per square meter of bottom area.

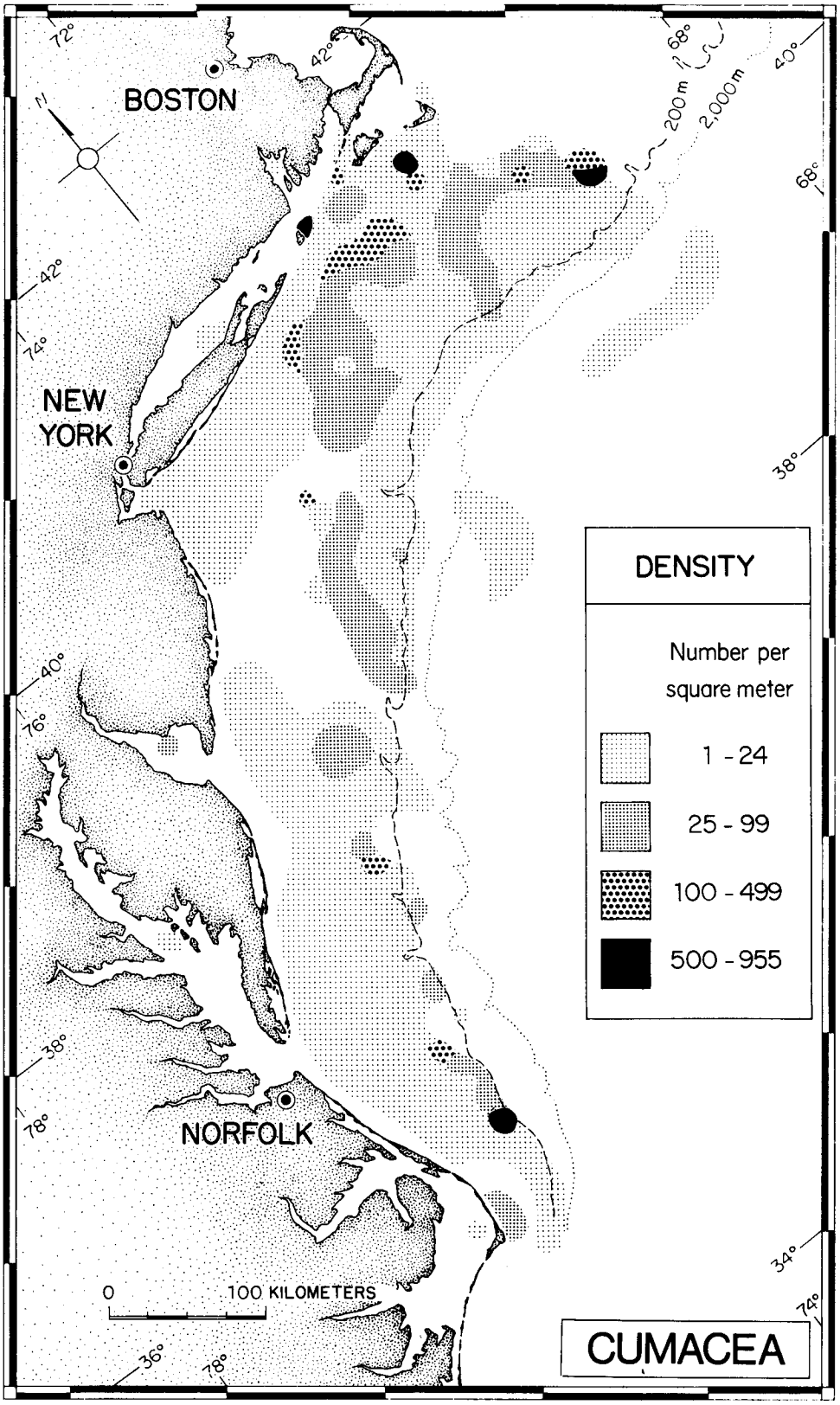

FIGURE 48.—Geographic distribution of the density of Cumacea, expressed as number of individuals per square meter of bottom area.

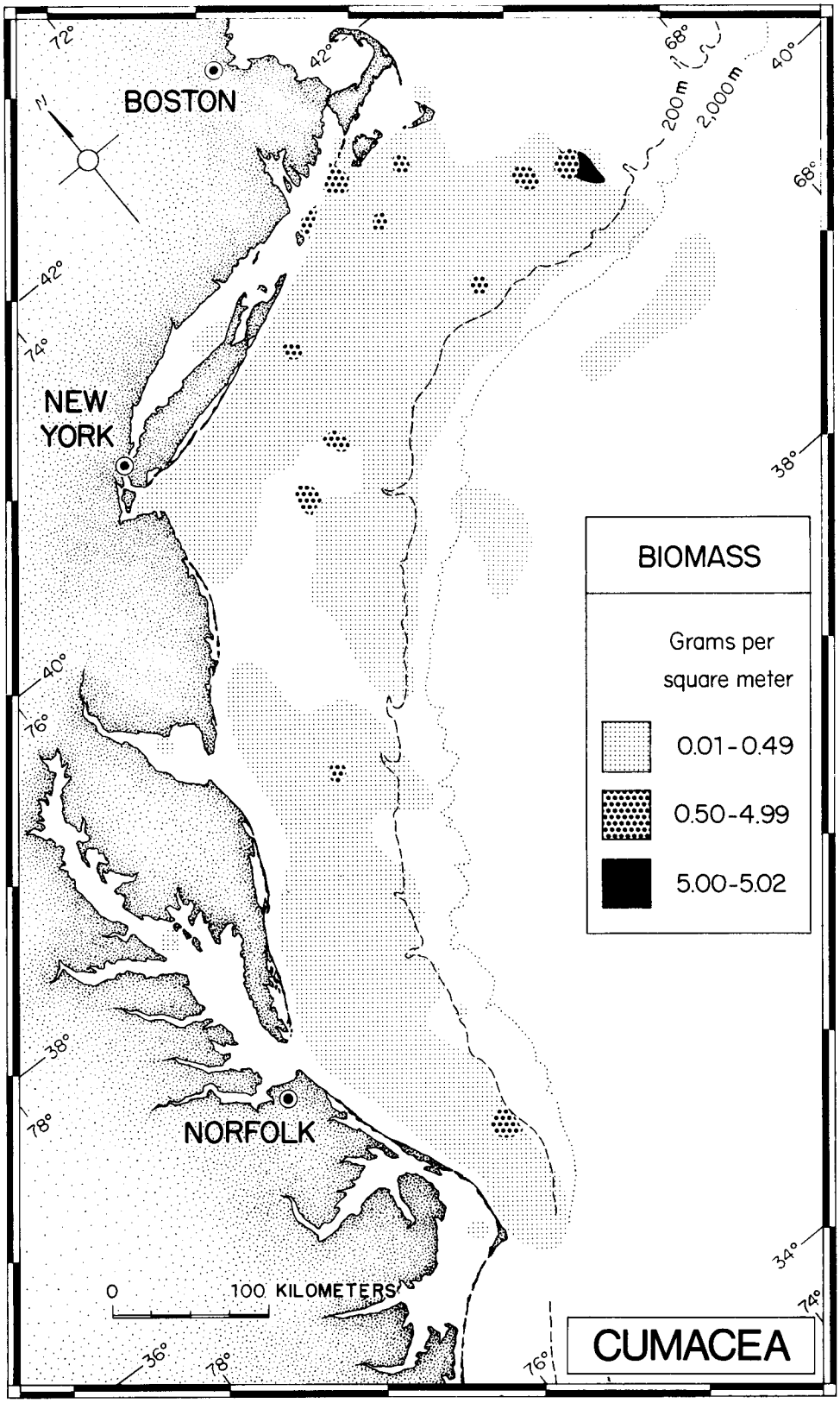

FIGURE 49.—Geographic distribution of the biomass of Cumacea, expressed as damp weight per square meter of bottom area.

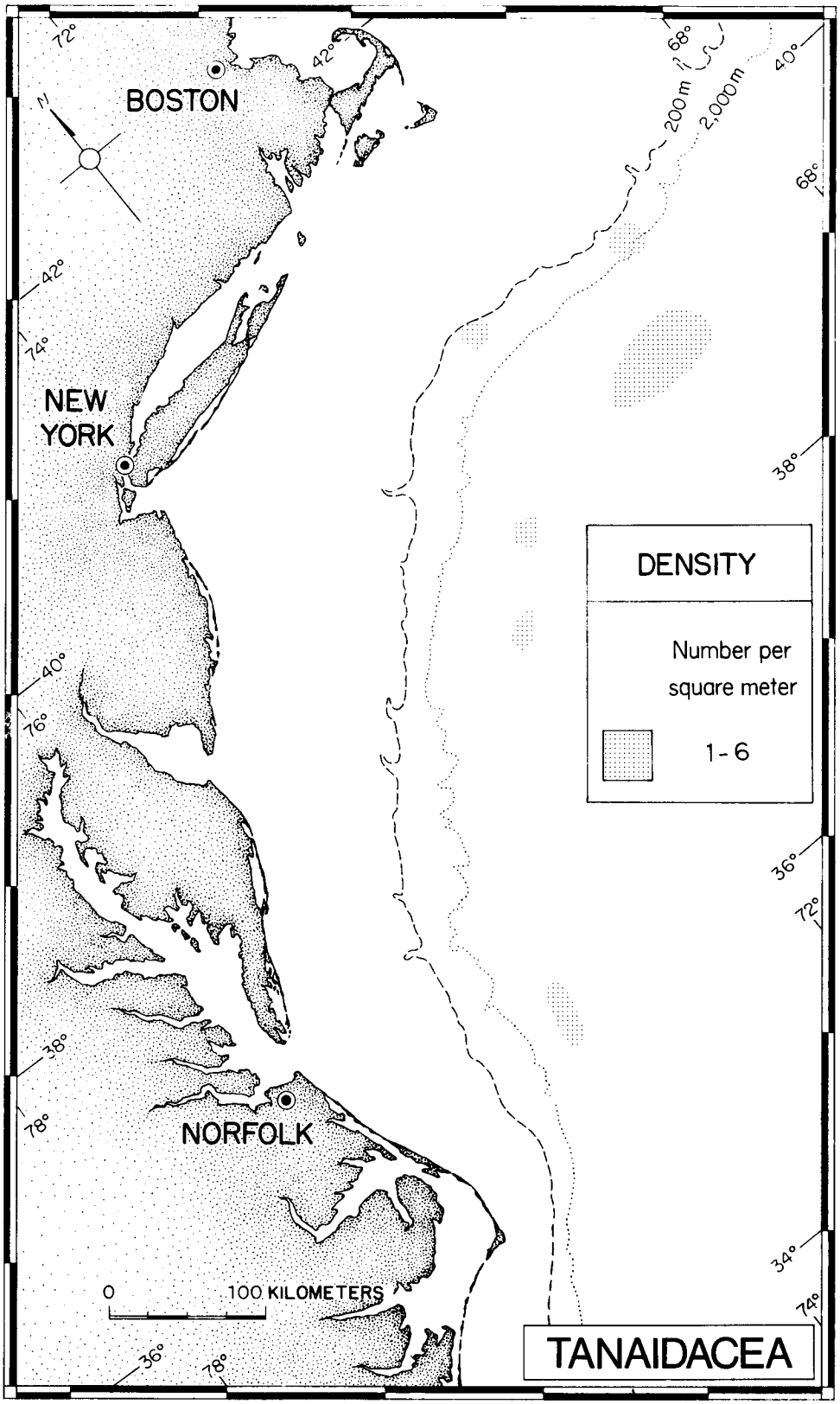

FIGURE 50.—Geographic distribution of the density of Tanaidacea, expressed as number of individuals per square meter of bottom area.

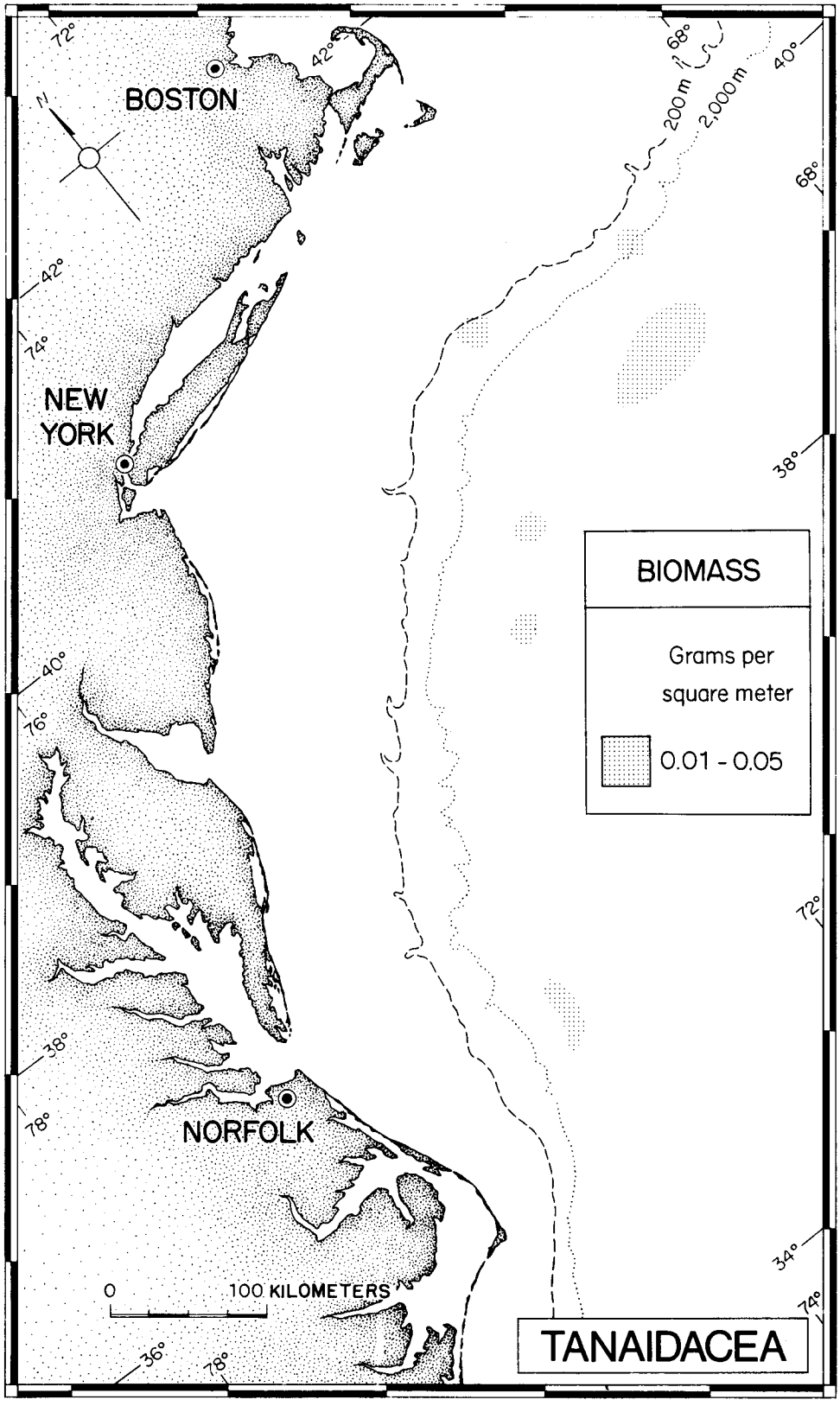

FIGURE 51.—Geographic distribution of the biomass of Tanaidacea, expressed as damp weight per square meter of bottom area.

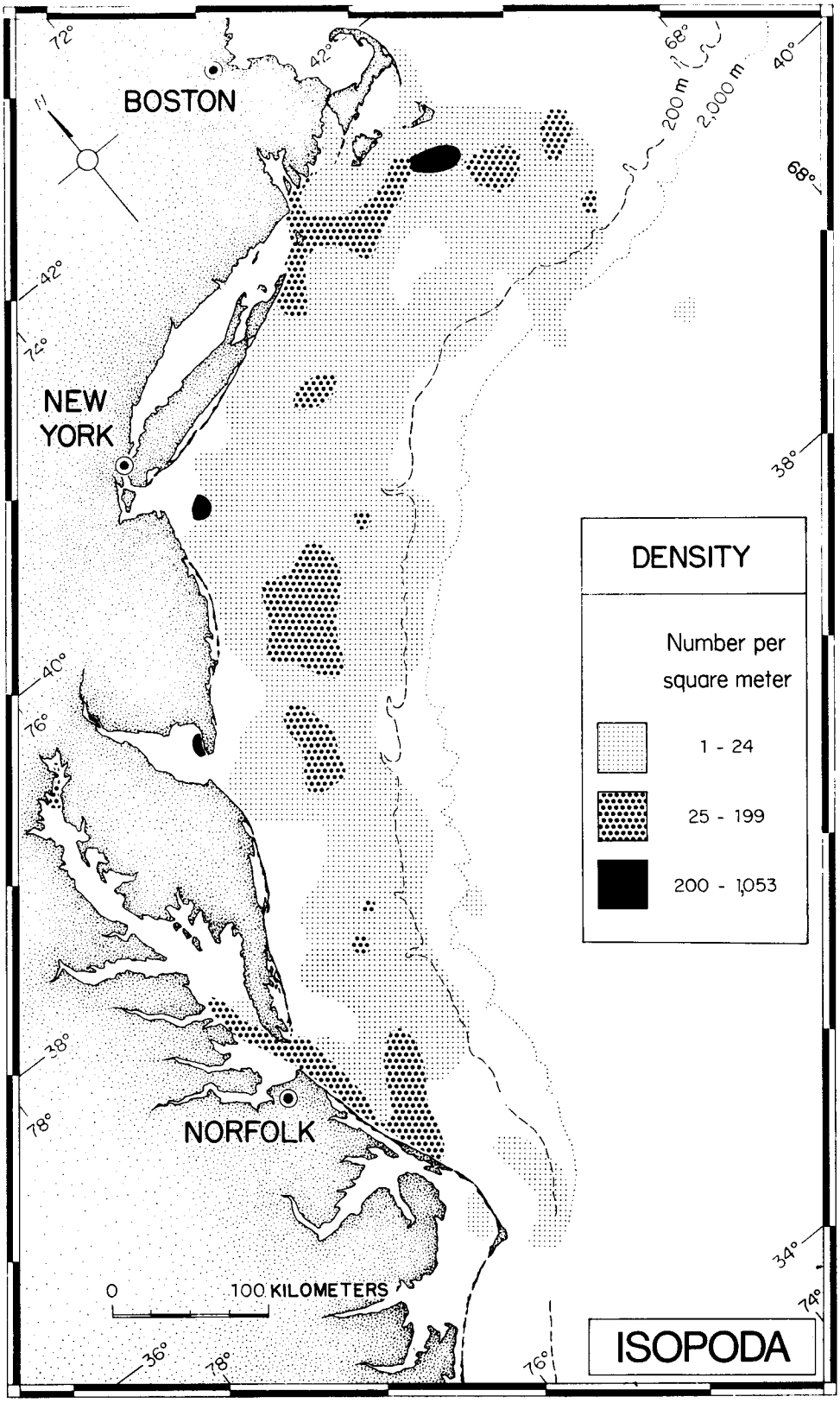

FIGURE 52.—Geographic distribution of the density of Isopoda, expressed as number of individuals per square meter of bottom area.

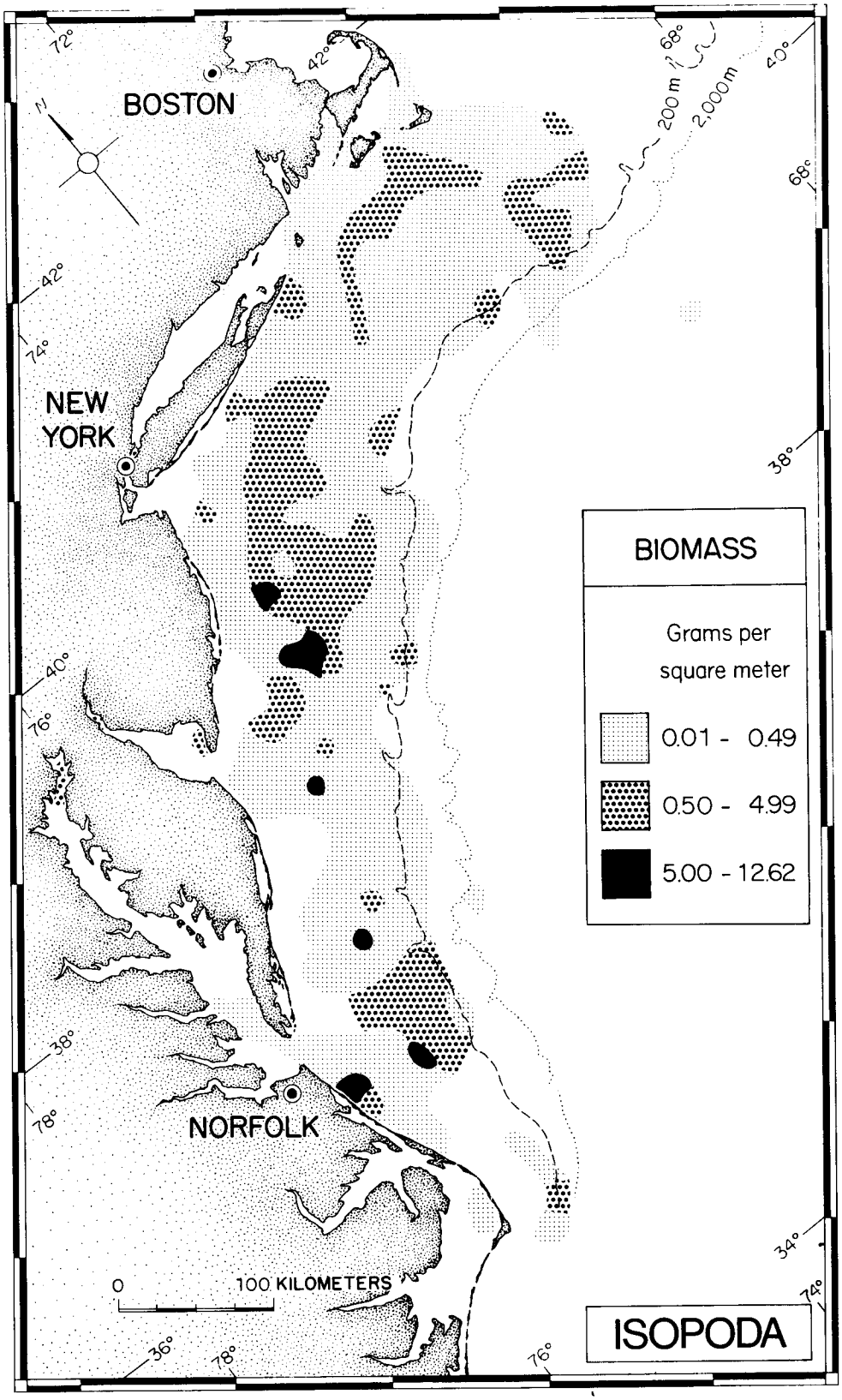

FIGURE 53.—Geographic distribution of the biomass of Isopoda, expressed as damp weight per square meter of bottom area.

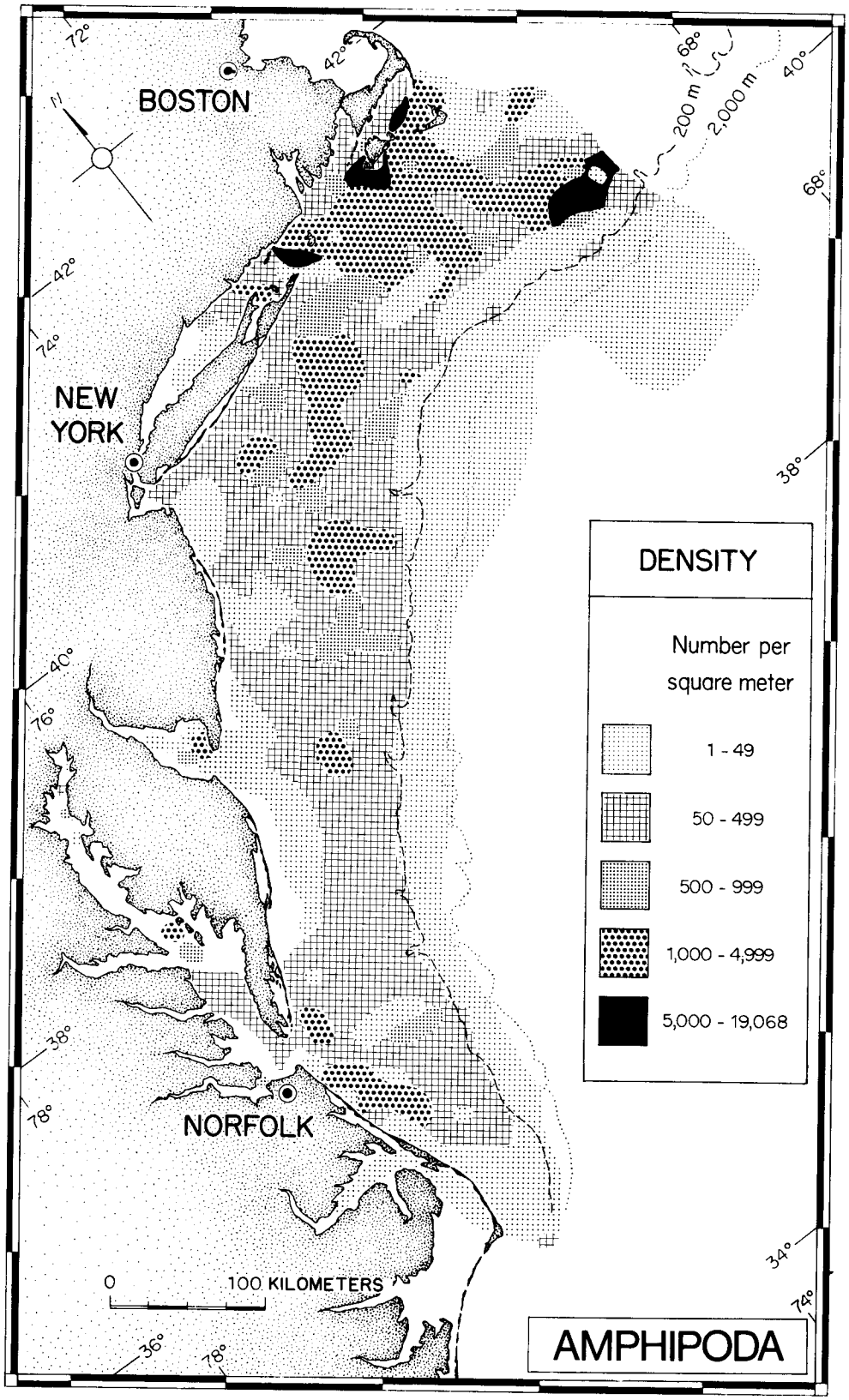

FIGURE 54.—Geographic distribution of the density of Amphipoda, expressed as number of individuals per square meter of bottom area.

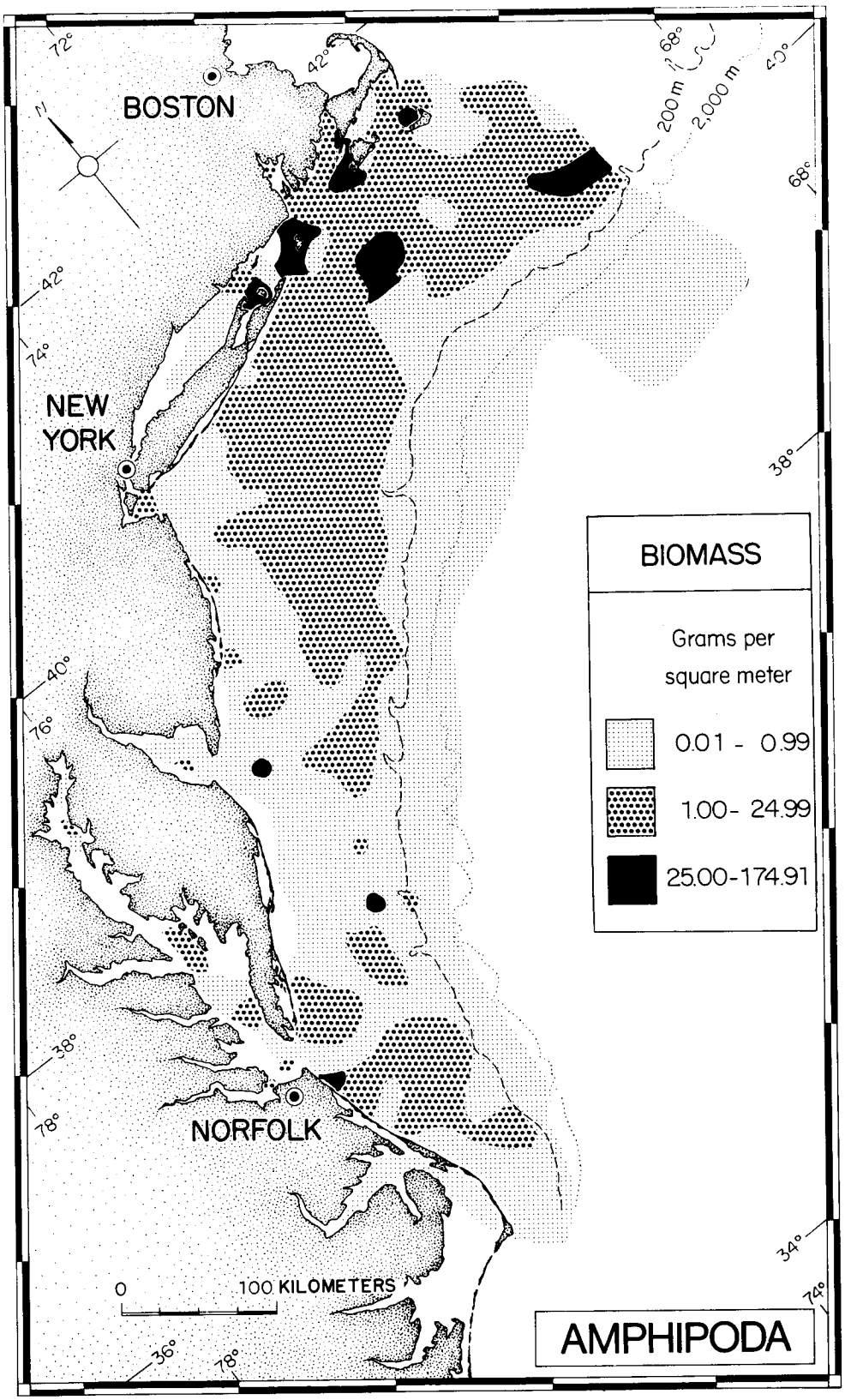

FIGURE 55.—Geographic distribution of the biomass of Amphipoda, expressed as damp weight per square meter of bottom area.

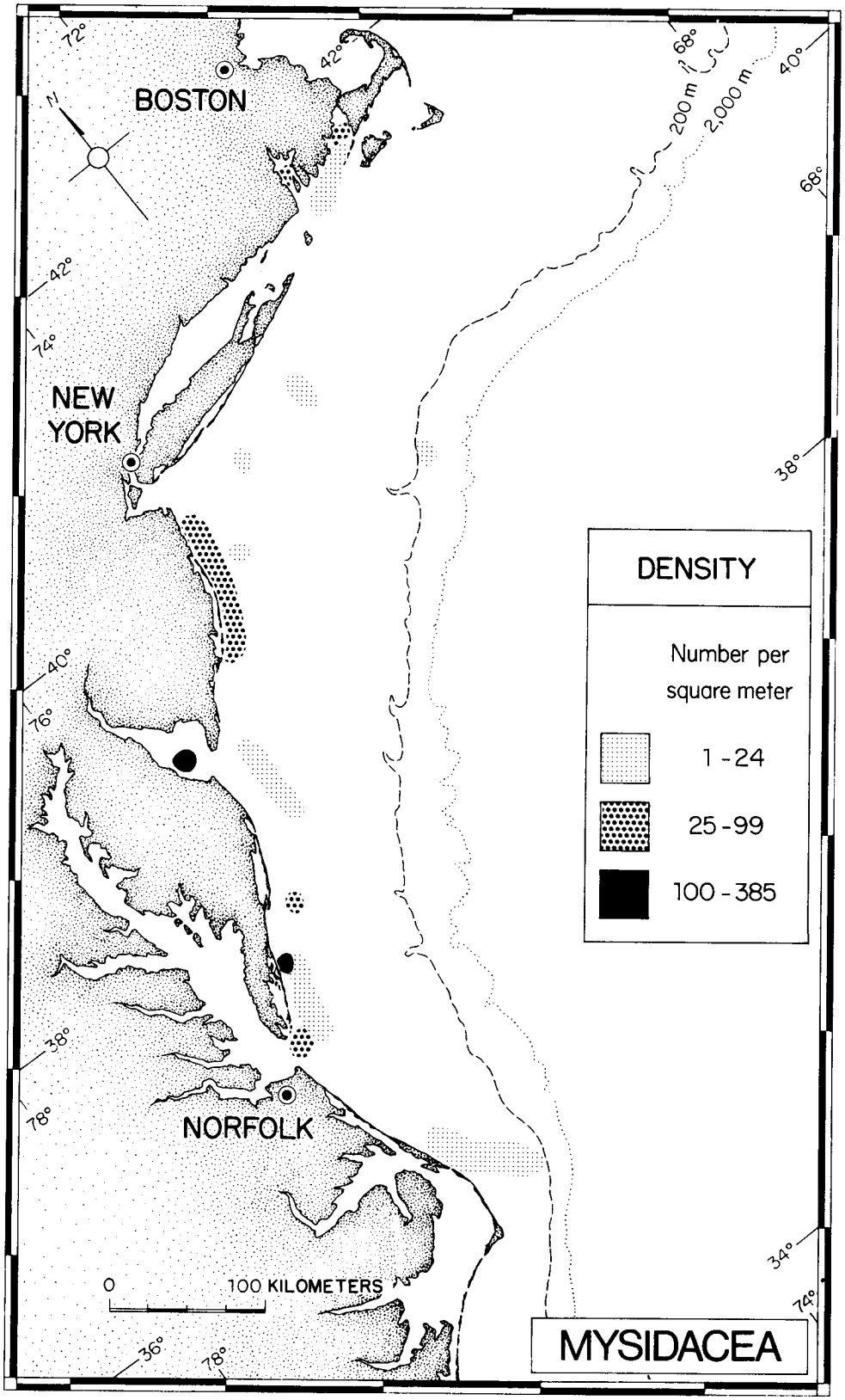

FIGURE 56.—Geographic distribution of the density of Mysidacea, expressed as number of individuals per square meter of bottom area.

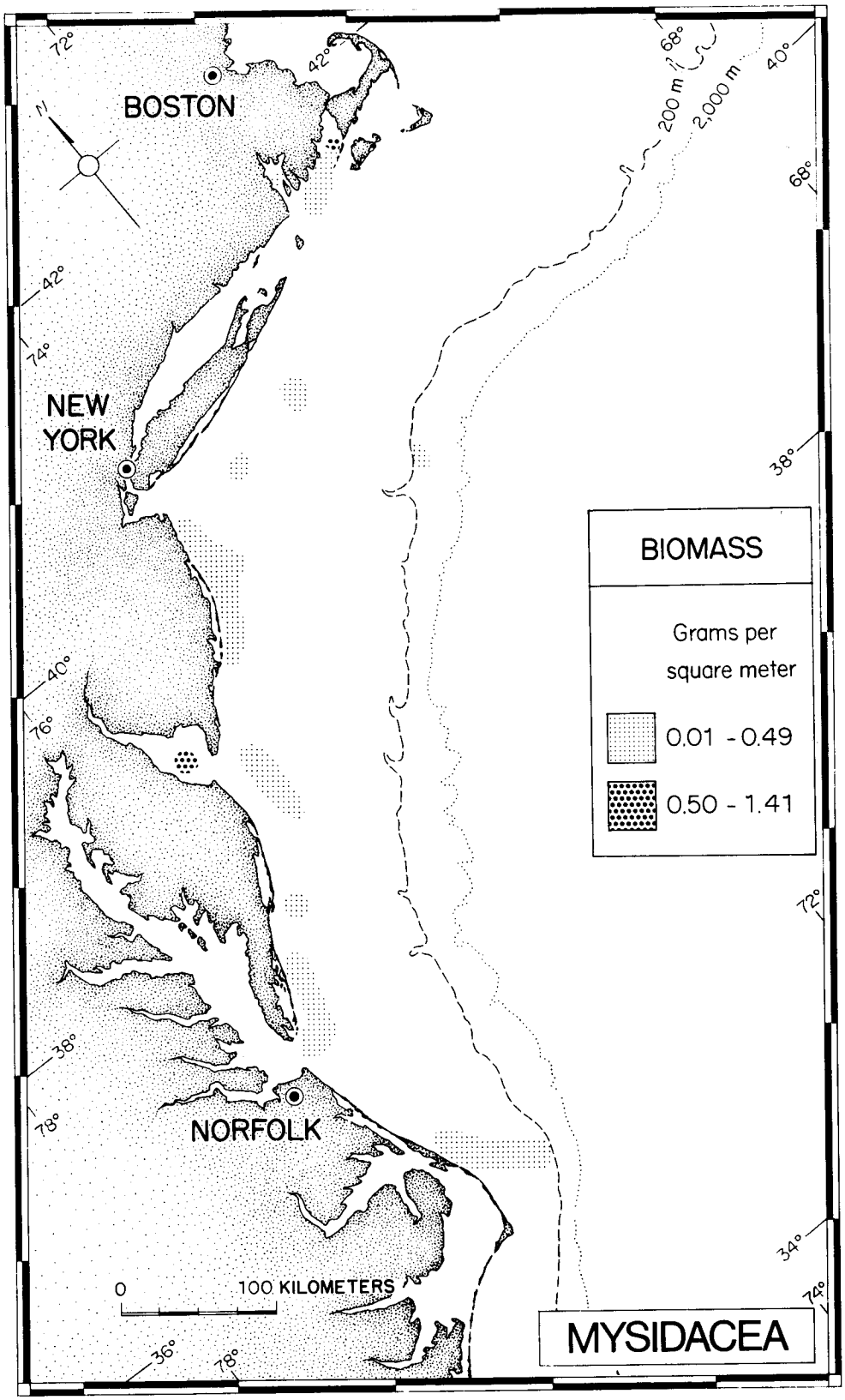

FIGURE 57.—Geographic distribution of the biomass of Mysidacea, expressed as damp weight per square meter of bottom area.

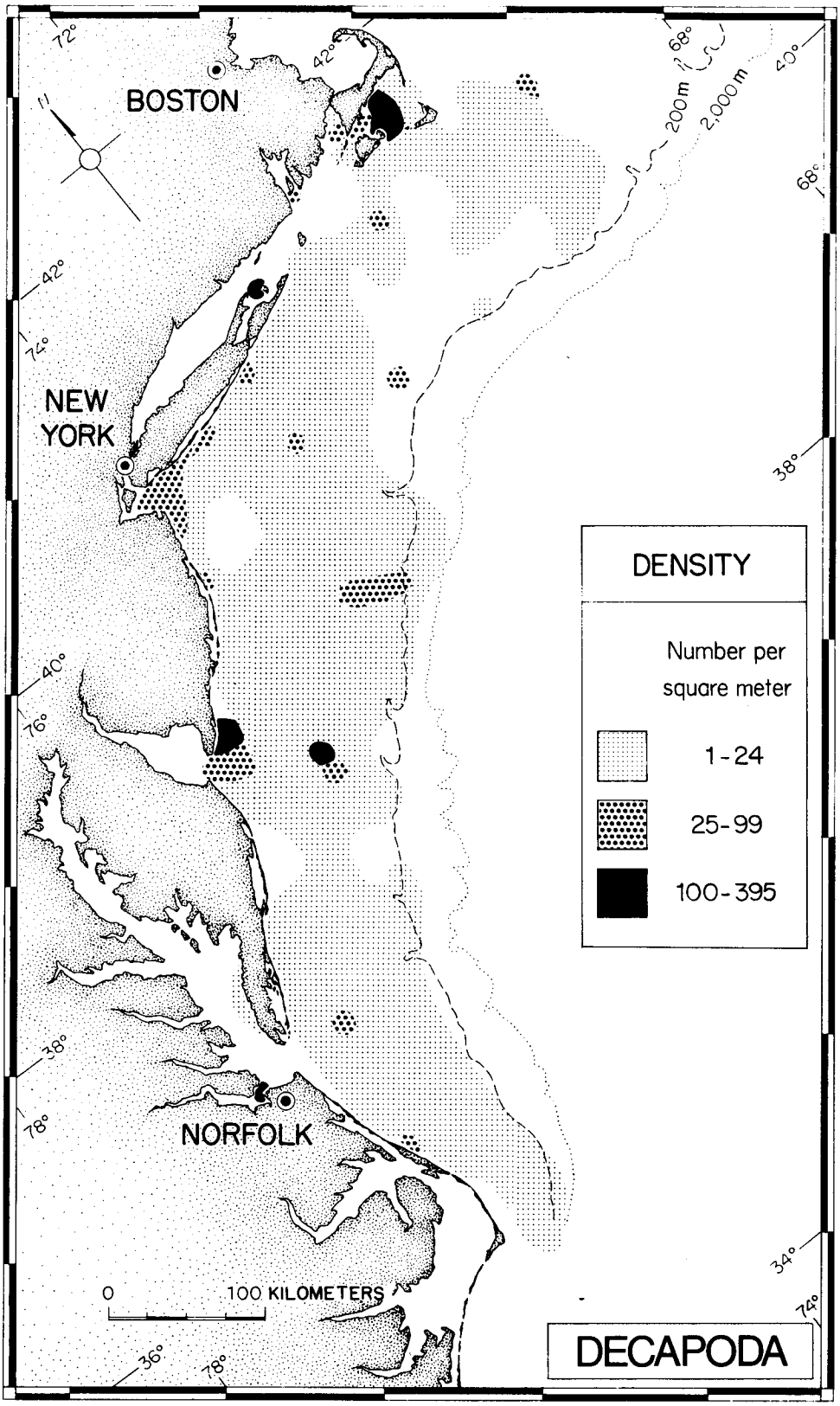

FIGURE 58.—Geographic distribution of the density of Decapoda, expressed as number of individuals per square meter of bottom area.

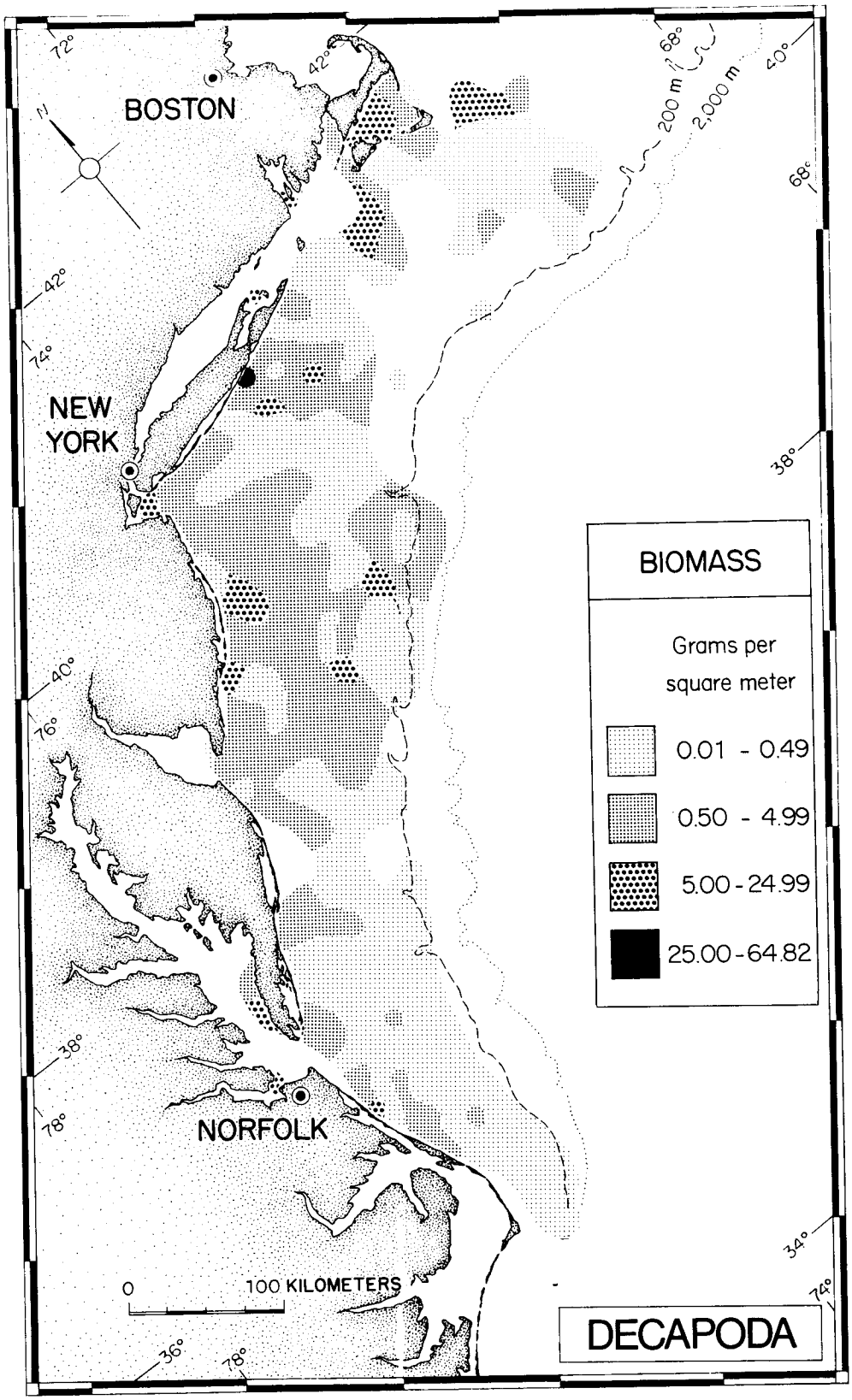

FIGURE 59.—Geographic distribution of the biomass of Decapoda, expressed as damp weight per square meter of bottom area.

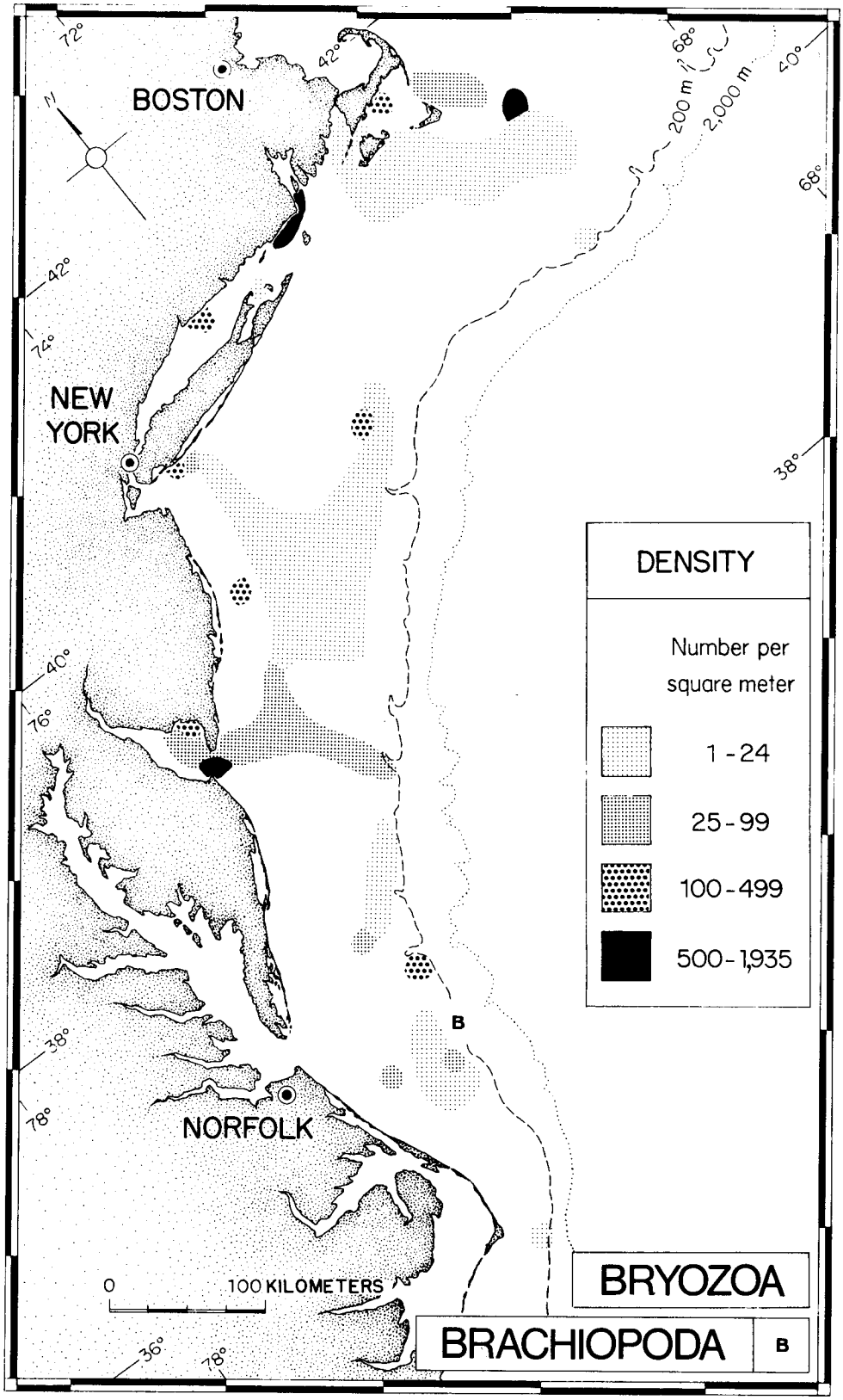

FIGURE 60.—Geographic distribution of the density of Bryozoa and Brachiopoda (*B*), expressed as number of individuals per square meter of bottom area.

higher densities occupied smaller, discrete patches on the periphery. Biomass, similarly, was moderately small (0.01 to 1.0 g/m²) over most of their range, and larger biomass (1 to 52 g/m²) was found only in small isolated patches.

Brachiopoda (figs. 60 and 61) were distributed only in a relatively small area on the Outer Continental Shelf northeast of Cape Hatteras and southeast of Norfolk, Va. Densities ranged from 1/m² to 99/m² and biomass was less than 1 g/m².

Echinodermata (figs. 62 and 63) were widely distributed throughout the region. High densities (greater than 200/m²) and moderately high densities (25/m² to 199/m²) were found on the Outer Continental Shelf in Southern New England, along the inner shelf in New York Bight, and on the central shelf in Chesapeake Bight. Echinoderms were present in low densities (less than 25/m²) in most of the bays and sounds, over substantial parts of the shelf, and in the deepwater beyond the Continental Shelf. The biomass distribution was somewhat similar to that of density, but considerably more irregular. Large (5 and 99 g/m²) and very large (100 and 855 g/m²) biomasses were common over large expanses of the Continental Shelf and in several places on the slope and rise.

Holothuroidea (figs. 64 and 65) were distributed in a broad irregular area centered along the Outer Continental Shelf extending from Cape Code to Chesapeake Bay. Densities over most of this area were relatively low (less than 25/m²). In a few areas, particularly off southern Massachusetts, the density ranged from 25/m² to 201/m². Biomass was small to moderately small (0.01 to 5 g/m²) over most of their range except in two fairly extensive areas on the Outer Continental Shelf, one south of Cade Cod and the other east of Norfolk, Va., where biomasses were between 5 and 664 g/m².

Echinoidea (figs. 66 and 67) were found over much of the Continental Shelf throughout the entire region. They were absent in the bays and sounds (with one exception in outer Long Island Sound) and were present on the Continental Slope and Rise only in this northern region. Densities in a little over half their area of occurrence were less than 25/m². Along the inner shelf in the northern and central sections and in midshelf in the Chesapeake Bight region, they were present in densities ranging from 25/m² to 500/m², and, in a few limited areas in the New York-Delaware sector, densities were between 500/m² and 2,083/m². Echinoids constituted a rather sustantial biomass. In most of their range, their biomass averaged between 0.01 and 25 g/m². In roughly 10 percent of their range, biomass averaged between 25 and 100 g/m². In roughly 5 percent of their area of occupancy, including a large area on the Outer Continental Shelf off Cape Cod, their biomass ranged from 100 to 855 g/m².

Ophiuroidea (figs. 68 and 69) were distributed along the entire length of the Middle Atlantic Bight region, primarily in deep water (100 m or greater), but extending inshore in Southern New England and a few localities farther south. Densities were moderately low (less than 25/m²) over most of their range. Moderate and high (25/m² to 1,018/m²) concentrations were found in a rather broad band along the Outer Continental Shelf between offshore New York and Cape Cod. The pattern of biomass was somewhat different from that of density. Moderately small biomass (less than 1 g/m²) was found over roughly one half of its range, and moderate (1 to 25 g/m²) to high (25 to 77 g/m²) over extensive patches throughout their area of occupancy.

Asteroidea (figs. 70 and 71) were found over a rather extensive area between Cape Cod and Cape Hatteras. They were more common and their density was highest in the New England region. In most localities, their density ranged from 1/m² to 9/m². In New England Bight (and at one locality in New York Bight), their density in a rather large area ranged from 10/m² to 48/m². In the Chesapeake Bight, they were found primarily in deepwater areas extending from the Outer Shelf to the Continental Rise. Biomass of starfish over most of their range averaged between 5 and 50 g/m². At a few places in Southern New England-New York Bight, their biomass was between 50 and 210 g/m². In the Chesapeake Bight, asteroids were found mainly on the Continental Slope and Rise and constituted a small biomass, commonly less than 0.5 g/m².

Hemichordata (figs. 72 and 73) were found at only four localities, three were on the Outer Continental Shelf and Slope south of Rhode Island and one along the coast at Cape May, N.J. Quantities at all localities were very small.

Ascidiacea (figs. 72 and 73) were distributed in rather patchy areas over a large part of the Middle Atlantic Bight region. They were common in the bays and sounds in the northern section and in Chesapeake Bay. In the Southern New England subarea, their density was low (less than 25/m²) to high (500/m² to 2,640/m²) on the Shelf, and on the slope and rise. In New York Bight, their density was commonly lower than 100/m². In Chesapeake Bight, their density was generally low on the Continental Shelf, but ranged from 100/m² to 499/m² in