

THE BIOMASS OF DEMERSAL FISHERIES RESOURCES IN THE EASTERN AEGEAN SEA

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Abstract

Bottom-trawl catch data collected from the Eastern Aegean Sea between July 1991 and August 1995 were analysed. The Eastern Aegean Sea is divided to five main regions according to their ecological properties, and trawl samples were grouped by these subregions. Total biomass values (t/km^2) for each subregion were calculated. Although the total biomass estimates according to subregions were highly variable, ranging from 0.22 to 8.75 t/km^2 , in general similar biomass distribution patterns were observed.

Keywords : Biomass, Aegean Sea, Trawl Surveys, Demersal.

Introduction

Biomass and/or abundance data are of great importance to fisheries science, because they provide fishery independent indices to assess the demersal fisheries resources. From this perspective, the aim of this work is to evaluate the catch data collected during the "JICA and TUBITAK" trawl survey programs in 1991-1993 and 1993-1995, respectively.

Material and Methods

Data were collected by R/V K. Piri Reis during the bottom-trawl surveys conducted between July 1991 and August 1995 from the Eastern Aegean Sea along the Turkish Coastal and International Area. A total of 11 trawl surveys were carried out, and a total of 525 trawls were hauled between depths of 20 to 700 m. The biomass of demersal organisms was estimated using the "Swept Area Method" [1]. For a more accurate calculation of the area swept by the gear the "SCANMAR-Net Sounder system" was used to determine the width between wing nets during the trawling operation. In order to evaluate whether there is a spatial variation in the biomass estimations, the Eastern Aegean Sea was divided into five main regions according to their ecological properties (Fig 1). Trawl samples were grouped by these subregions and the total biomass of demersal organisms were calculated in terms of t/km^2 for each subregion.

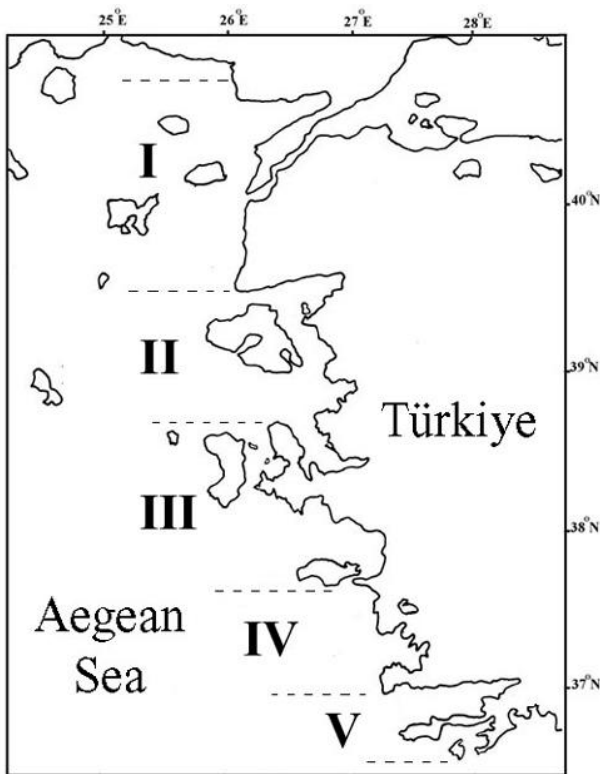


Fig. 1. Sampling subregions.

Results and Discussion

A total of 191 species belonging to 62 families were sampled. From

these, 132 species were teleosteans, 42 elasmobranchs, 19 cephalopods and 9 decapod crustaceans. However, the large majority of the catches was dominated by a small number of taxa. *Mullus barbatus* and *Merluccius merluccius* were the dominant species in most samplings. Some of the other abundant species were *Pagellus acarne*, *Pagellus erythrinus*, *Diplodus annularis*, *Dentex macrophthalmus*, *Lophius piscatorius*, *Chelidonichthys lastoviza*, *Lepidotrigla cavillone*, *Upeneus moluccensis*, *Scyliorhinus canicula*, *Parapeneus longirostris*, *Nephrops norvegicus*, *Octopus vulgaris*, and *Loligo vulgaris*. The occurrence and percentage contributions of the species to the catch compositions varied by subregions, seasons or depths. The number and composition of species observed in this study were similar to those reported by from the North Aegean Sea [2], and from the southern Aegean Sea [3].

Although the total biomass estimates according to sub regions were highly variable ranging from 0.22 to 8.75 t/km^2 , in general similar biomass distribution patterns were observed (Fig 2). The total biomass estimates for the subregions I, II and III were rather similar. While the highest estimated total mean biomass was found in subregion V, the lowest estimate was estimated for subregion IV. Both subregions belong to the Southern part of the Aegean Sea. The reason for discrepancy is probably due to the fact that subregion IV is under the influence of heavy fishing pressure from commercial fishery while subregion V is mostly closed for trawl fishery.

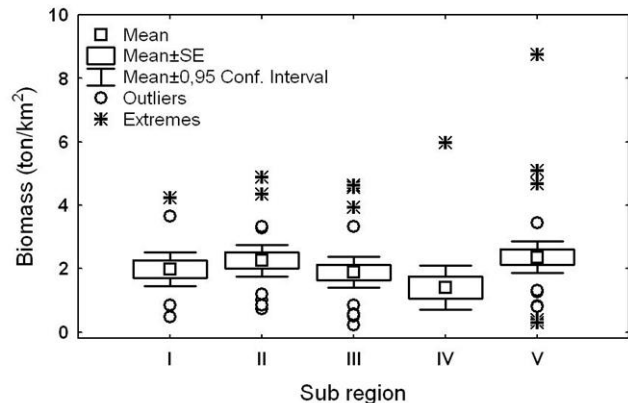


Fig. 2. Total biomass (t/km^2) distribution per subregion. An ANOVA showed no significant variation among the sub regions ($F_{4,109}=1.52$, $p>0.25$)

References

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