A PRELIMINARY STUDY OF DENSITY AND AREA COVER OF A SHALLOW WATER SPONGE *SARCOTRAGUS SPINOSULUS* IN DOGANBEY, CENTRAL AEGEAN SEA, TURKEY

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Abstract
Sarcotragus spinosulus is a massive sponge undergoing disease/mortality risks in the Mediterranean Sea. It is among the dominant macrobenthic species of photophilic assemblages in Doganbey area. The aim of this study was to provide a basis for future monitoring attempts of this species in Doganbey, Aegean Sea.

Keywords: Zoobenthos, Aegean Sea, Porifera, Density

Introduction

Sarcotragus spinosulus is a demosponge species inhabiting photophilic assemblages and is generally abundant in shallow waters not exceeding 20 m of depth. Sarcotragus sponges are massive sponges that constitute a habitat for several other species [1]. In the Mediterranean Sea, mass mortality events affected a wide range of species [2] including several sponges and *S. spinosulus* was also reported to be affected by mass mortalities related to anomalously high sea-water temperatures [3]. Another threat for *S. spinosulus* is the canopy development by *Caulerpa racemosa* on sponge surface that can lead to its smothering and even death [4]. In consequence of these risks that might affect *S. spinosulus*, monitoring of its populations is important in order to determine any disease/mortality events. The aim of this study was to provide a basis for future monitoring attempts of this species in Doganbey area.

Material and Methods

The study area (Fig. 1) consisted of boulders spread among sandy bottom/posidonia meadows. *Sarcotragus spinosulus* was among the dominant macrobenthic species of photophilic assemblages covering rocky substratum from 1 to 5 meters deep (Fig. 2). 7 plots of 10 m diameters were randomly laid overall the area in August 2012 and sizes of all *S. spinosulus* specimens within the plot were measured via snorkeling. 3 measurements were considered in order to calculate the sponge size: surface length, width and height. Area and surface calculations were performed by considering the sponge shape as the half of an ellipsoid.

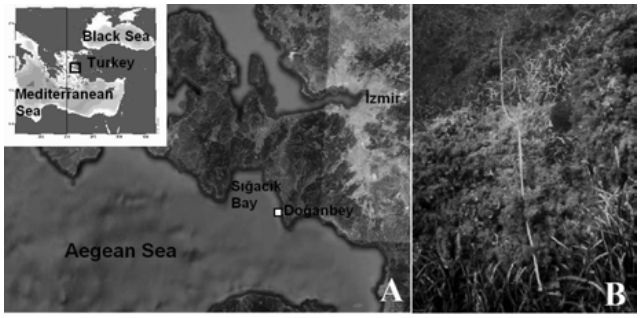

Fig. 1.
Location of the study area (A); The study area consisted of boulders spread among sandy bottom/posidonia meadows (B).

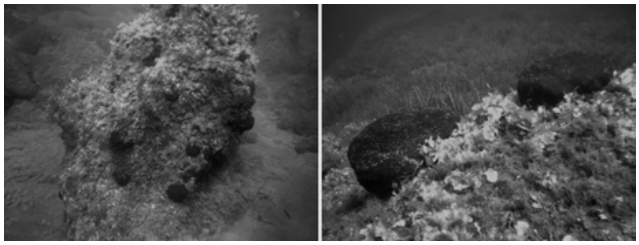

Fig. 2. *Sarcotragus spinosulus* specimens in Doganbey area

Results and Discussion

A total of 165 *S. spinosulus* specimens were observed over an area of 550 m^2. We didn't observe any injuries characteristic of sponge diseases [5] and all sponges within the plots were almost free of epiphytes. *S. spinosulus* density was 0.30±0.18 specimens.m^2 of the area including the soft substratum. The density value seems low compared to other density values [3; 5; 6] because we worked within continuous plots on a mixed substratum and did not use quadrats placed exclusively on rocky surfaces. We estimated *S. spinosulus* density over rocky surface as 1-3 specimens.m^2 via examinations of scaled pictures. The area cover by *S. spinosulus* was 51,32 cm^2/m^2 of the area including the soft substratum. 41% of *S. spinosulus* specimens in Doganbey were 100-1000 cm^3 in volume. 37% were smaller than 100 cm^3 whereas 14% were 1000-3000 cm^3. 5% of the specimens were 3000-5000 cm^3 and only 2% were larger than 5000 cm^3. *S. spinosulus* is the dominant macrobenthic species of Doganbey shallow water benthic community and this study provides a basis for its future monitoring attempts.

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