

HARD-BOTTOM MACROZOOBENTHIC INVERTEBRATES AND MACROPHYTA OF SINOP COASTS IN THE BLACK SEA

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Abstract

The aim of the present study was to describe the hard-bottom macrozoobenthic invertebrates and macrophyta along the coasts of the Sinop Peninsula, Black Sea during May in 2013.

Keywords: Zoobenthos, Black Sea, Phytobenthos

Introduction: The Black Sea is the most isolated marine environment among all inland seas of the world, whose only tenuous link with other seas is with the Mediterranean through the narrow Turkish straits system. A relatively diverse marine fauna occurs in the Black Sea, despite its low salinity (17‰) and anoxic waters below depths of 180 m (with high levels of H₂S). Of the 3,800 fauna and flora species identified from the Black Sea, 42.9% belongs to fungi, algae and higher plants, 52.5% to invertebrates, 4.5% to fishes and 0.1% to marine mammals [1]. The benthos researches of the Turkish Black Sea coast have generally been focused on the sandy bottoms. There are few scattered studies due to numerous difficulties in collecting the quantitative samples. **Material Method:** Hard-bottom benthic macroorganism surveys were carried out, along the Sinop coasts (Fig. 1) during May in 2013. In order to analyze the benthic fauna related to the biocenosis of rocky habitats from shallow waters, 8 qualitative samples were taken by free diving during May 2013, from 8 stations along the Sinop Bay coast. Scraping technique is commonly employed to sample hard-bottom communities (animals and algae) with divers [2]. Three samples were taken from each station at depths 0 and 1m by scraping out the organisms from an area of 400 cm² with the help of a metal quadrat (20x20) and a spatula. The scrape areas were chosen at random. The scraped biological samples were stored in a classic net; its hatch would close through a binder in order to prevent the loss of the samples in the water. The taxonomic identification was performed in its totality for the species.

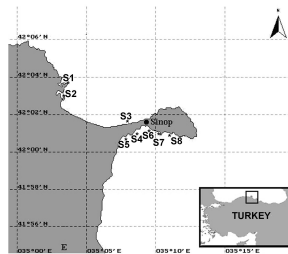


Fig. 1. Map of study area and sampling stations

Results and Discussion: A total of 42 species of hard-bottom macrobenthic species were identified. Table 1 shows species list of hard-bottom zoobenthic invertebrates obtained at May in 2013. During the diving surveys, based on the qualitative analysis, 13 taxa algae were identified. They are; Chlorophyta (*Cladophora laetevirens*, *Cladophora fracta*, *Cladophora glomerata*, *Cladophora sericea*, *Rhizoclonium tortuosum*, *Ulva intestinalis*); Rhodophyta (*Ceramium virgatum*, *Laurencia obtusa*, *Lomentaria clavellosa*, *Parviphycus antipai*, *Polysiphonia fucoides*, *Phyllophora crispa*); Heterokontophyta (*Cystoseira crinita*). The results of the faunistic and floristic analysis of the shallow-water rocky epibiont populations (0-1m), of the coastal sector of Sinop Bay, enabled us to highlight the following general conclusions: The qualitative diversity of the shallow-water rocky habitat populations is dominated by the crustaceans that include over 20 euconstant species forming a mature epibiont system. The analysis of populations' structure on specific taxonomic groups shows that the qualitative differences among the two levels of depth (0 and 1) are very reduced, and the biodiversity, slightly higher at the depth of 1 m. In spite of these taxonomic observations, the hard-bottom communities of the Black Sea is complicated, it is necessary to consider the developmental stage of various of the taxa here at issue, in order to reach the precise conclusions.

Tab. 1. Species list and abundance (ind.m⁻²) of hard-bottom zoobenthic invertebrates

Taxonomic Groups	STATIONS							
	S1	S2	S3	S4	S5	S6	S7	S8
POLYCHAETA								
<i>Eteone</i> sp.		50			50			25
<i>Hediste diversicolor</i>	275	50	825	325	775	1025	550	
<i>Platynereis dumerilii</i>		50		100		300		25
<i>Polyophthalmus pictus</i>	25		75		25	25		
<i>Nereis zonata</i>	525		425		300	125	275	125
<i>Perinereis cultrifera</i>	150		125	125	125		25	
<i>Syllis armillaris</i>	275	175	175	25		25		25
CRUSTACEA								
<i>Alpheus</i> sp.			25		175			275
<i>Ampithoe ramondi</i>	125	250	175	225	150	175	625	325
<i>Apherusa bispinosa</i>		50						50
<i>Athanas nitescens</i>	25	25	125	350	200	25	550	
<i>Caprella liparotensis</i>				250		25	300	325
<i>Dexamine spinosa</i>	475							
<i>Erichonius brasiliensis</i>	550	575	1000	200		200	475	500
<i>Erichonius punctatus</i>			50					
<i>Gammarellus angulosus</i>							100	325
<i>Hyale crassipes</i>	50							
<i>Hyale pontica</i>		300	25					
<i>Idotea balthica</i>	150	50		25	25	100		
<i>Jassa marmorata</i>	5025	100	500	275	50	525	800	5600
<i>Jassa ocia</i>		25	75			75	100	
<i>Leptochelia savignyi</i>		525	525	125	50	125	300	
<i>Melita palmata</i>	275	950	625	1750	900	2050		425
<i>Microdeutopus gryllotalpa</i>		300						
<i>Monocorophium acherusicum</i>	150		175	400	125	275	300	300
<i>Monocorophium insidiosum</i>		750	125			375		
<i>Pachygrapsus marmoratus</i>			50	175		50		25
<i>Palaemon elegans</i>				75		50		
<i>Pilumnus hirtellus</i>		75	25	250	100	125		125
<i>Pisidia bluteli</i>		50						
<i>Pisidia longicornis</i>		75	25	475	275	175	25	200
<i>Siriella jaltensis</i>		25						
<i>Stenothoe monoculoides</i>	650	1125	6250	1200	525	2325	1175	3500
<i>Synisoma capito</i>	25			100		25		25
<i>Xantho poressa</i>					50			
MOLLUSCA								
<i>Mytilus galloprovincialis</i>	625	825	1025	575	300	25		1125
<i>Mytilaster lineatus</i>	300	850		525		275	1100	300
<i>Rapana venosa</i>		75		25				25
<i>Rissoa splendida</i>	50	525	375		1125	75	50	
<i>Tricolia pullus pullus</i>	5325	1400		3375	1950		2450	1900
<i>Bittium reticulatum</i>	1625		1150	575	600	275	1900	2825

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