

# EUNIS HABITAT CLASSIFICATION OF A POTENTIAL MPA, SILE -TURKEY (WESTERN BLACK SEA)

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## Abstract

Sile region was the Pilot Project (PP) area of the EU-FP7 project, CoCoNet and proposed as one of the potential MPAs along the Turkish Black Sea coast. This study aimed to describe the habitat types according to EUNIS. Three coastal and 12 marine habitats were determined along the coasts and littoral zone of Sile PP area.

**Keywords:** *Biodiversity, Infralittoral, Supralittoral, Black Sea*

## Introduction

The Black Sea has been through dramatic ecosystem changes during the last five decades and still faces several problems mostly originated by anthropogenic activities [1]. Marine Protected Areas are recognized as one of the most effective methods for the recovery of marine ecosystems. Numerous MPAs and reserves have been designed by Black Sea coastal states, such as Zernov's *Phyllophora* Field Botanical Reserve in Ukraine or Danube Delta Biosphere Reserve in Romania [2]. Turkey has not officially designed MPAs along its Black Sea coastline. Öztürk et al. [1] proposed five MPAs, including Sile region, along Turkish Black Sea coasts based on criteria specified by the Convention of Biological Diversity. Sile region is also known to host cetacean populations [3]. Sile region is a Pilot Project (PP) area of the EU-FP7 project, CoCoNet (GA No: 287844). The aim of this study was to describe the habitat types present along Sile coastline which is a potential MPA in the Turkish Black Sea coasts, according to Habitat Classification guidelines developed by EUNIS.

## Material and Method

The coastline was observed from a boat while the underwater landscape was investigated by SCUBA diving. A coastline of 10 nm was studied in total (Fig.1). Species of typical communities in the area were sampled and preserved in %4 formalin solution. The identifications of the samples have been done in the I.U. Fisheries Faculty Marine Biology Laboratories.

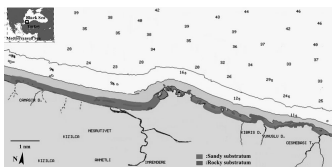


Fig. 1. Location of the Sile Pilot Project Area

## Results and Discussion

Three main coastal habitat types and 12 marine habitats were determined along the coasts and littoral zone of Sile PP area. The Western part of the coastline was mostly characterized by sandy beaches with some subtidal rocks. The central and western parts constituted mainly by rocky substratum with few small sandy beaches. The sublittoral zone has a very slowly descending structure and depths over 20 m are attained almost 2 - 3 km away from the coastline.

**Coastal Habitats:** B1.24 : "Sandy beach ridges with no or low vegetation";

The section between the central and western edge of the PP area consists of fine sands mixed with fragmented shells and gravels (Fig.2a). B3.26 : "Mediterraneo-Pontic sea-cliffs and rocky shores"; Sea-cliffs with ledges and caves, rocky shores and isolated rocks are found particularly along the eastern coast of Sile PP area. B3.11 : "Lichens or small green algae on supralittoral and littoral fringe rock"; Lichen communities form zones or bands in the splash zone on some rocky shores along the western coast of Sile PP area.

**Marine Habitats:** A1.163 "Pontic ephemeral patchwork of green and red algae with *Mytilaster* and *Mytilus*"; These habitats are common in the central and western parts of the Sile PP area. A1.166 "Pontic mediolittoral barren rock scoured by sand"; Rocks and boulder piles are present on the midlittoral rocky shores and as part of the rocky cliffs. These rocky forms are typically observed in the eastern part and also sparsely in the central

area (Fig. 2c). A2.22 "Barren or amphipod-dominated mobile sand shores"; The sand is duned or rippled as a result of wave action at some points along the western part. A1.44C "Pontic mediolittoral caves with *Hildebrandia*, *Phymatolithon*, *Lithophyllum*, *bryozoans*, *Pachygrapsus*, *Eriphia*"; Large to medium size rocks appear out of the sea level and are covered by waves depending on the sea condition. This kind of habitats is observed especially in the eastern part of the area (Fig. 2g). A2.613 "Pontic *Zostera marina* and *Zostera noltii* meadows"; *Zostera* meadows were observed at the entrance of the Sile harbor in the central area. A3.23N "Pontic ephemeral mosaic of green and red seaweeds on moderately exposed or sheltered infralittoral rock (*Enteromorpha*, *Ulva*, *Ceramium*, *Cladophora*, *Gelidium*, *Callithamnion*, *Corallina*"; The infralittoral rocks covered by photophilic algae constitute a very common habitat type in the central and eastern part of the area (Fig. 2f). A3.23M "Pontic association with *Cystoseira barbata* and *Ulva rigida*"; This habitat is common along central and eastern parts. A3.241 "Pontic *Mytilus galloprovincialis* beds on infralittoral rock"; *M. galloprovincialis* is one of the most common organisms in the Black Sea coast of Turkey (Fig. 2d). A3.742 "Pontic caves dominated by sponges *Dysidea sp.* and *Haliclona sp.* with crustose corallines, *Actinia equina*, and *Hemimysis sp.*"; A number of submerged caves characterized with this habitat are present in the eastern and central areas of the Sile PP area (Fig. 2e). A3.743 "Pontic cave entrances with *Palaemon elegans*, *Actinia equina*, *Pachygrapsus marmoratus* and *Eriphia verrucosa* and little sponges"; This is a very typical habitat along the central and eastern parts of the Sile PP area. A5.247 "Pontic thalassinid-dominated muddy sands with *Upogebia pusilla*"; This habitat is present from the beginning of sandy infralittoral zone to 30 m depth. A crustacean *Paguridea* (sp), an important bioturbator organism, and *Chamelea gallina* were also observed in the area (Fig. 2b). A5.2374 "Pontic shallow clean fine sands with *Chamelea gallina*, *Lentidium mediterraneum* and *Divaricella divaricata*"; This habitat has been commercially exploited in the region between 1985 and 2000.

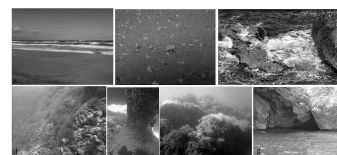


Fig. 2. EUNIS Habitat types defined along Sile Pilot Project Area

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