

CETACEAN OBSERVATIONS IN THE MARMARA AND AEGEAN SEA IN SPRING SEASON 2005

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Abstract

In the Aegean Sea, according to standard distance sampling procedure, 1800 km (972 nm) and 139 hrs effort of observation carried out during 20.04-20.05.2005 for determining the size and distribution of dolphin population. During the study, totally 19 sightings of three species (*Delphinus delphis*, *Tursiops truncatus* and *Stenella coeruleoalba*) were recorded. The sighting data were analysed by the Distance 5.0

Keywords : *Cetacea*, *Aegean Sea*, *Sea Of Marmara*.

Introduction

In the Aegean Sea, nine cetacean species are known to occur [1,2,3]. These are; *D. delphis*, *T. truncatus*, *S. coeruleoalba*, *Globicephala melas*, *Grampus griseus*, *Pseudorca crassidens*, *Ziphius cavirostris*, *Physeter macrocephalus* and *Balaenoptera physalus*. The situation of *Phocoena phocoena* that are widely distributed in the North Atlantic coasts and Black Sea and rare in the Marmara Sea is not certain in the Aegean and Mediterranean Sea [4]. Therefore it is important to understand dolphin movements between the Black Sea and Aegean Sea via the Marmara Sea and Straits. A few studies have been conducted on cetacean fauna in the Turkish Aegean coasts. Researches on determining species composition, population and distribution of Cetacea are urgently needed. Such studies conducted in the Aegean Sea, especially in the northern part are very important due to its close position to the Turkish Straits System (TSS) which is known as a migration route for dolphins [5]. Studies conducted in the Turkish coasts of the Aegean Sea and Mediterranean Sea carried out by sampling of strandings or by caught species in fishing gears. Between 1990-1997, in the Turkish coasts of the Aegean Sea and Mediterranean Sea, totally 23 cetacean; 9 *T. truncatus*, 7 *S. coeruleoalba*, 3 *Z. cavirostris*, 2 *D. delphis*, 1 *P. macrocephalus*, 1 *P. crassidens* were found as stranded animals [6]. Besides, between 1999-2000 in the Turkish coasts of the Aegean Sea during swordfish fishery, (7 *S. coeruleoalba*, 2 *T. truncatus*, 1 *G. griseus*) in year 1999 and (6 *S. coeruleoalba*, 2 *T. truncatus*, 1 *G. griseus*) in year 2000 totally; 19 cetacean bycatches were recorded by [7].

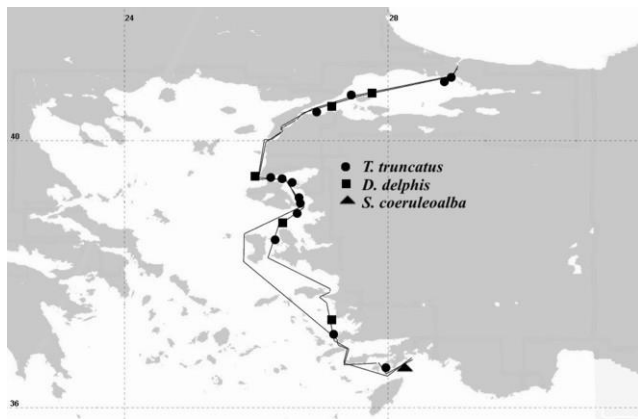


Fig. 1. Survey trackline and sighting locations.

Material and Method

Cetacean sighting data were collected on a research cruise carried out in spring season (20.04-20.05.2005) in the TSS and the Aegean Sea coasts of Turkey between Istanbul and Marmaris vice versa (Figure 1). This research cruise was conducted with a 16 m. sailing boat NAUTICA and followed standard line transect protocols. During the cruise, three experienced observers were placed in helm, port and starboard side. with 7x50 binoculars and naked eye, port and starboard observers, scan areas covering 0-90 and 90-180 degree and helm observer scan entire 180 degree in the front of the vessel. Dolphin species identified with lowest taxonomic level and group size estimates were recorded by observers. Estimation of dolphin density, group size and encounter rate (n/L) where (n) is the number of observed animals and (L) is the total length of transect line was

based on distance sampling [9]. Thus, Distance 5.0 beta was used for the analyses of sighting data and resolution of estimates given at global level. Average speed of the sailing vessel was 7 nautical miles/h.

Results and Discussion

During the survey, totally 1800 km was covered and 139 hour of effort was made. Totally 97 dolphins which belong to three species of family Delphinidae were recorded in 19 sightings; these are 56 *T. truncatus* in 13, 37 *D. delphis* in five and three *S. coeruleoalba* in one observation. Consequently, *T. truncatus* observed most frequently, although the *D. delphis* has a bigger group size. Besides, *P. Phocoena* was not observed and *S. coeruleoalba* observed only one point near Aegean-Mediterranean border suggest that need more effort to increase the level of encounter or these species are not common in the Aegean Sea. Distance results show that the density of dolphins 0.27 (SE: 0.68, 95%CI: 0.17-0.45), encounter rate (n/L) 0.11 (SE: 0.01, 95%CI: 0.83- 0.14) and average cluster size 5.2 (SE: 0.5, 95%CI: 4.1-6.6). These cetacean species are under the protection by national and international (eg. Barcelona and Bern Conventions) laws. Besides, the Mediterranean common dolphins status has been declared as "endangered" [8]. Studies on cetacean species in the Aegean coasts provide an important contribution to diversity and determining conservation strategies for protection of biological richness. This is the preliminary study for understanding dolphin populations in the Turkish coasts. Therefore, more detailed studies are necessary for this purpose.

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