

## SHORT COMMUNICATION

### **The first record of True's beaked whale, *Mesoplodon mirus*, from the Mediterranean coast of Turkey during multiple strandings in June 2016**

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#### **Abstract**

Three strandings of beaked whales (Ziphiidae) were observed and reported along the Mediterranean coast of Turkey in June 2016. The first specimen (male, body length: 526 cm) was live stranding in Gökova Gulf on 3 June. The second specimen (male, body length: 510 cm) found stranded on Seferihisar on the Aegean Sea coast on 5 June. The third specimen (male, body length: 472+cm) was found on Yakacık, Gazipaşa on 20 June. They all had two teeth exposed at the tip of the lower jaw. The mouth line and the slender shape of the body are distinct from the Cuvier's beaked whale, *Ziphius cavirostris*, which is a common species in the Mediterranean. The preliminary identification of the species based on the external morphology is True's beaked whale, *Mesoplodon mirus* True, 1913 which is the new record for the Mediterranean Sea, at least for the first two specimens. The genetic information, however, is strongly needed for the confirmation of this species identification. The reason for these strandings was not prominent but the military activities which took place in the eastern Mediterranean-Aegean region may have some relations.

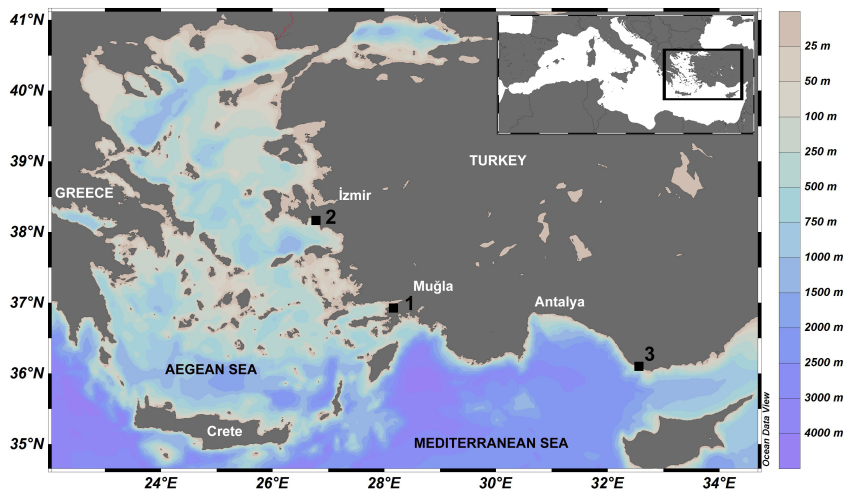
**Key words:** Beaked whale, *Mesoplodon*, Eastern Mediterranean

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#### *First case*

A beaked whale was seen first alive in Çanak Bay (İngiliz Limanı) - Gökova Gulf (Figure 1) near shore on 3 June 2016 and was taken to offshore by

fishermen. Later, the whale was found dead and moved to the Akyaka Port by Muğla Directorate of Provincial Food Agriculture and Livestock. On 4 June, we were been informed by DEKAMER (Sea Turtle Research Rescue and Rehabilitation Center). This specimen was then taken to the campus of Faculty of Fisheries, Muğla Sıtkı Koçman University and the necropsy was completed by ED and IAD. On 5 June, it was buried so as to preserve its skeleton for future studies by the Faculty. The whale was male and the body length was 526 cm (Figure 2a, b). It was infested with *Pennella* sp. and severe subdermal endoparasites and a large plastic bag was found in the main stomach. Stomach, skin and muscle samples for genetic study, parasites were collected.



**Figure 1.** Locations of beaked whale strandings

### *Second case*

On 5 June 2016, another beaked whale stranded in Killik Cape - Seferihisar, Izmir (Figure 1). We were informed on the late night of 7 June, when the whale was already buried in the garbage dump. On 8 June, we dug out the specimen in Seferihisar with the help of Seferihisar District Municipality. During the preliminary examination (conducted by AMT, AD, ED), long line hooks with one end in the anus and the other end in the intestine and also in the stomach were found. It was infested with subdermal endoparasites. Since the carcass was decomposed, the cause of death could not be determined. Genetic samples and stomach were collected, while the head and the vertebrae of the whale were taken to Istanbul for making a skeleton specimen for future studies. It was male and the body length was 510cm (Figure 2c, d).

### *Third case*

On 20 June 2016, we were informed of another beaked whale stranded in Yakacık - Gazipaşa (between the the cities of Antalya and Mersin) (Figure 1). It

was a male individual with the body length 472+ cm as the posterior end of the caudal vertebrae was missing (Figure 2e, f). The carcass was taken from the beach by the help of Gazipaşa Branch of Antalya Water and Wastewater Administration (ASAT) and then carried to Antalya (by EÖÖ). It was then buried so as to preserve its skeleton for exhibition in the Marine Biology Museum of Antalya Metropolitan Municipality. Genetic tissue samples were taken, but the reason of death remain unknown due to the advanced stage of decomposition.



**Figure 2.** Photographs of three individuals (a, b: First case; c, d: Second case; e, f: third case)

### *Species identification*

The most common beaked whale in the Mediterranean, including Turkish waters (Öztürk *et al.* 2011), is the Cuvier's beaked whale, *Ziphius cavirostris*. Notarbartolo di Sciara and Birkun (2010), however, reported two *Mesoplodon* species in the Mediterranean Sea, one is *M. densirostris* in Spain and

the other is *M. europaeus* in Italy and Turkey. They considered these two species as vagrant species.

Species of beaked whales (especially those in the genus *Mesoplodon*) are very difficult to identify even when they are dead. The first two specimens of beaked whales reported here (Figure 2a-d) are preliminarily identified as True's beaked whale, *Mesoplodon mirus* True, 1913 for the following external characteristics: slender body compared to *Z. cavirostris*, rather straight mouth line, distinct beak, two erupted teeth at the tip of the lower jaw (Smithsonian Inst. 2016). The identification of the third whale, however, was difficult due to the advanced stage of decomposition. It is generally expected that the identification of such species as of *Mesoplodon* is more reliable with the skull morphology and genetic information. Both information will be available in the following months, so that this preliminary identification will be fully supported or not.

*M. mirus* is one of little known members of the beaked whale family (Ziphiidae). As adults, they can reach lengths of 4.8-5.4 m and weigh at least 1,020-1,400 kg. Adult males can be distinguished from females and juveniles by a pair of teeth visible on the tip of the lower jaw. The mouth line is typically straight or slightly curved. True's beaked whales prefer deep warm temperate waters throughout the northern and southern hemispheres. Their range includes areas off of Nova Scotia (Canada), Ireland, Europe, the Canary Islands, Bermuda, Florida, and the Bahamas in the Atlantic, as well as off the coasts of Brazil, Madagascar, South Africa, and southern Australia. There are no known seasonal movements or migrations for this species (Taylor *et al.* 2008). This species has never been reported before from the Mediterranean Sea. In IUCN Red List, it is listed as a species of Data Deficient (Taylor *et al.* 2008).

### *Multiple strandings*

This paper is the first to report multiple strandings of beaked whales in the Turkish waters. We examined and reported three cases of beaked whales here, but there was another stranding of a beaked whale on 16 June 2016, in the island of Chrysi (south of Crete), Greece (Anonymous 2016). In total, four beaked whales stranded in the eastern Mediterranean and Aegean Sea in June 2016.

Currently, the biggest threat to beaked whales in general is anthropogenic noise, such as seismic surveys and military mid-frequency sonar (2–10 kHz) (Pitman 2009). Beaked whale strandings were significantly correlated with naval activity in the Mediterranean (Filadelfo *et al.* 2009). Sonar-associated strandings are well known in the area, particularly in the Greek islands, such as 14 Cuvier's beaked whales in 1996, the Kyparissiakos Gulf, nine in 1997, the Ionian Sea (Frantzis 1998; 2004); seven in 2014, Crete (Jasny 2014). There were two military firing exercises in the Aegean Sea according to Navtex alerts (Warning to mariners 347/16 and 224/16) in May and June 2016. The US naval activities

in the Eastern Mediterranean Sea were also known on the behalf of Operation Inherent Resolve. Although we have no information about using low frequency active sonar and we could not determine any symptom of embolism or damage in hearing organs, the relation between these strandings and the military exercises seems to be an important factor to consider in terms of the conservation of rare species like beaked whales.

During their 5th Meeting of the Parties (Morocco, November 2013) the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic Area (ACCOBAMS) have identified on a map the areas where sonar should be avoided in the Mediterranean Sea (ACCOBAMS-MOP5, 2003), and made this information publicly available. Although the Eastern Mediterranean Sea is one of the gaps in this study, precautionary approach is definitely needed for protecting beaked whales.

#### **Acknowledgement**

Authors thank the dean Dr. Taçnur Baygar and the members of the Fisheries Faculty of Muğla Sıtkı Koçman University, DEKAMER, ASAT Seferihisar Municipality, Mr. U. Sadedoğan Mr. O. Kaplan for the assistance in the field and Turkish Marine Research Foundation (TUDAV) for financial support. We also appreciate the comments by Drs. R.L. Brownell, Jr., J.G. Mead and T.K. Yamada on the species identification.

## **Türkiye'nin Akdeniz kıyılarında Haziran 2016'da çoklu karaya vurma vakasında ilk True gagalı balina kaydı, *Mesoplodon mirus***

#### **Özet**

Haziran 2016'da Türkiye'nin Akdeniz kıyılarından üç adet gagalı karaya vurma vakası gözlenmiş ve rapor edilmiştir. İlk örnek, Gökova Körfezi'nde 3 Haziran tarihinde canlı karaya vurmuştur (erkek, 526cm). İkinci örnek 5 Haziran tarihinde Ege Denizi'nde Seferihisar'da ölü olarak karaya vurmuştur (erkek, 510cm). Üçüncü birey ise Gazipaşa Yakacık'da 20 Haziranda bulunmuştur (erkek, 472+cm). Hepsinde de alt çenenin ucunda iki diş görülmektedir. Ancak ağız çizgisi ve ince vücut yapısı ile Akdeniz'de en çok görülen gagalı balina türü *Ziphius cavirostris*' den farklı oldukları tespit edilmiştir. Dış morfolojik özelliklerine dayanarak türün Akdeniz için ilk kayıt olan True gerçek balinası *Mesoplodon mirus* olduğu en az ikisi için belirlenmiştir. Ancak genetik bilgiler ile bu tür tayinin doğrulanması şarttır. Karaya vurma nedenleri belirlenemese de, Ege Denizi ve Akdeniz'deki mevcut askeri tatbikatlarla ilişkisi olma ihtimali vardır.

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**Received:** 28.06.2016

**Accepted:** 15.07.2016