

## REVIEW ARTICLE

# Strandings of the beaked whales, Risso's dolphins, and a minke whale on the Turkish coast of the Eastern Mediterranean Sea

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### Abstract

Stranding information of nine Cuvier's beaked whale (*Ziphius cavirostris*) and one *Mesoplodon* sp., five Risso's dolphin (*Grampus griseus*), and one minke whale (*Balaenoptera acutorostrata*) on the Turkish coast of the Aegean and Mediterranean Sea was compiled, based on the published and unpublished data between 1964 and 2011. *Mesoplodon* sp. and the minke whale were rare, possibly visitors, in the eastern Mediterranean Sea.

**Keywords:** Eastern Mediterranean, Cetacean strandings, Turkey, Cuvier's beaked whale (*Ziphius cavirostris*), Risso's dolphin (*Grampus griseus*), *Mesoplodon*, minke whale (*Balaenoptera acutorostrata*)

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### Introduction

Turkey has a long coastline in the Aegean and Mediterranean Seas. According to Öztürk (1996), ten cetacean species are known to occur in the Turkish waters and they are all under legal protection since 1983. However, not much effort has been made to understand cetacean fauna in its coastal waters. Strandings can be good indicators for the cetacean fauna of the area, although they may not represent the real composition of the local populations. Nevertheless, where there is little sighting effort at sea and for relatively rare species, the information gained through strandings cannot be ignored. For example, Ozturk and Ozturk (1998) reported a total of 23 stranded cetaceans along the Turkish coast in the Aegean and Mediterranean Seas.

The aim of this review is to compile all existing stranding data for relatively rare species, namely, Cuvier's beaked whale (*Ziphius cavirostris*), *Mesoplodon*, Risso's dolphin (*Grampus griseus*), and minke whale (*Balaenoptera acutorostrata*) to provide basic information to be used for better conservation plans for cetaceans in the eastern Mediterranean Sea.

## Materials and Methods

Stranding data of the beaked whales, Risso's dolphins, and a minke whale collected personally, published in articles (journals, newsletters, newspapers), broadcasted on TV, and reported by the Turkish Marine Research Foundation (TUDAV) Stranding Network were compiled for the years between 1964 and 2011. Besides, the information provided by fishermen was also taken into consideration since 1990.

## Results and Discussion

The information on the cetacean strandings of the beaked whales, Risso's dolphins, and a minke whale is compiled in Table 1 and their locations are shown in Figure 1.

Cuvier's beaked whales are widely distributed in offshore waters of all oceans (Jefferson *et al.* 1993) including the Mediterranean Sea. Podesta *et al.* (2006) compiled the records of 316 stranding whales of this species between 1803-2003 in the Mediterranean Sea. In Turkey, the first stranding of the Cuvier's beaked whale was reported by Marchasseux (1980) from the Gökçeada Island in the Northern Aegean Sea (Figure 1). Kinzelbach (1985) reported a skull which had been found by the fishermen in Karataş, Adana in 1982. Later, Öztürk and Öztürk (1998) reported three stranded individuals from the Aegean and Mediterranean coasts of Turkey between 1990 and 1997. Podesta *et al.* (2006) included 2 whales stranded in 2001. They actually stranded alive on the beach of Bozyazi, Mersin. One of them died and the other one was returned to the sea, then stranded again (A.C.Gücü, *pers.comm.*). In 2002, a dead Cuvier's beaked whale was found in an underwater cave near Fethiye (Öztürk, 2002). Most recently in 2009, an animal stranded in Sarıgerme. As total, nine stranded Cuvier's beaked whales have been reported.

The reasons of the stranding of Cuvier's beaked whales are not known in the Turkish waters. Frantzis (1998), however, reported a mass stranding of 12 Cuvier's beaked whales along the coast of the Kyparissiakos Gulf and hypothesized that the low frequency active sonar (LFAS) can be a reason for this mass stranding. Cox *et al.* (2006) mentioned that several mass strandings of Cuvier's beaked whales suggested that exposure to anthropogenic sounds negatively affect them. No mass stranding has been recorded in the Turkish part of the Aegean or Mediterranean Seas. There are, however, some occasions when military exercises are carried out in the two seas and the use of low-mid frequency sonar is considerable. Seismic research for petrol and natural gas in the area can also be a threat to the beaked whales. Therefore, by knowing the existence of the Cuvier's beaked whales as shown by the present study, precautionary approaches should be taken when such human activities are anticipated in the area.

**Table 1.** List of cetacean strandings along the Turkish coast of the Aegean and Mediterranean Seas. (M: male, F: female; Number of animals was all one, except two animals of *Z.cavirostris*\*\* in Bozyazi.)

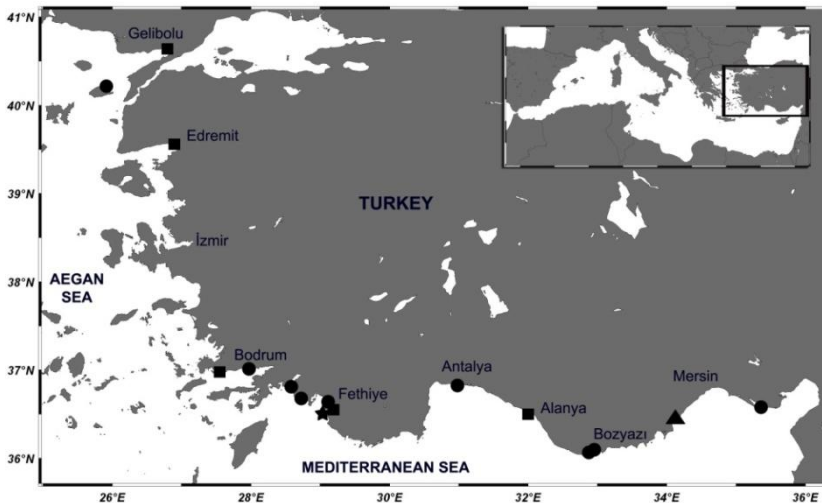
Species	Date	B.L. (cm)	Sex	Place	Source
<i>Z. cavirostris</i>	8 Mar. 1964	580	-	Gökçeada	Marchasseux 1980
<i>Z. cavirostris</i>	13 Sep. 1982	-	-	Karataş	Kinzelbach 1985
<i>Z. cavirostris</i>	July 1994	800	-	Serik	Öztürk & Öztürk 1998
<i>G. griseus</i>	25 May 1995	300≈	-	Fethiye	TUDAV
<i>Z. cavirostris</i> *	19 Mar. 1995	350≈	F	Ören	Öztürk & Ozturk 1998
<i>Z. cavirostris</i>	Apr. 1997	610	M	Dalyan	Öztürk & Öztürk 1998
<i>G. griseus</i>	Aug. 1998	350	-	Alanya	TUDAV
<i>Z. cavirostris</i> **	19 Apr. 2001	?	-	Bozyazi	Podesta <i>et al.</i> 2006, A.C. Gücü, <i>pers. comm.</i>
<i>Z. cavirostris</i>	27 Jan. 2002	755	F	Fethiye	Öztürk 2002 E. Akbulut, <i>pers.comm.</i>
<i>B. acutorostrata</i>	14 Aug. 2005	400	M	Erdemli	Media
<i>G. griseus</i>	2 Feb.2007	300≈	-	Edremit	Tonay <i>et al.</i> 2009
<i>Mesoplodon</i> sp.	9 Jan. 2009	500≈	F	Fethiye	Notarbartolo di Sciara 2009
<i>Z. cavirostris</i>	7 Feb.2009	500≈	M	Sarıgerme	Media
<i>G. griseus</i>	26 Apr. 2011	334	-	Saros Bay, Gelibolu	Media
<i>G. griseus</i>	5 May 2011	340?	F	Bodrum	Media

Note: The stranding date of *Z. cavirostris*\* recorded as June 1995(Ozturk & Ozturk 1998) was corrected as 19 Mar. 1995.

On 9 January 2009, a beaked whale, *Mesoplodon* sp., was live stranded in Fethiye and it was rescued back to the sea by the effort of local people (Notarbartolo di Sciara, 2009). Later, based on the photographs taken, it was identified possibly as Gervais' beaked whale, *Mesoplodon europaeus*, which can make this 2009 stranding in Fethiye the second case in the whole Mediterranean after the one in Livorno (Italy), 2001 (Notarbartolo di Sciara and Birkun, 2010). Gervais' beaked whales occur between the temperate and tropical waters in the Atlantic Ocean (Jefferson *et al.* 1993), but rare in the Mediterranean Sea.

Risso's dolphins are also widely distributed from the tropics to the temperate regions, including the Mediterranean Sea (Jefferson *et al.* 1993). The status of Risso's dolphins is poorly known in the Mediterranean according to the review made by Bearzi *et al.* (2011). During 1997 - 2011 only five stranded Risso's dolphins were found on the Mediterranean coast of Turkey. Both were adult animals, considering their body length. Besides, two individuals were reported as the bycatch of the swordfish fishery in the Fethiye region (Öztürk *et al.* 2007). Thus there can be other strandings of this species due to bycatch if more survey effort is made as long as swordfish drift net fishery continues.

In August 2005, a whale of approximately 4 m stranded on Erdemli, Mersin, and was towed to the offshore area for disposal. It was reported in the newspapers and TV news. It had a tongue swollen so big like a balloon that made initial identification very difficult. Later based on the video, it was identified most probably as a minke whale, *Balaenoptera acutorostrata*. In the Mediterranean Sea, the only common baleen whale species is the fin whale, although there are occasionally ‘visitor’ whales, such as common minke whales and humpback whales. Notarbartolo di Sciara and Birkun (2010) compiled 29 sighting and stranding events of this species in the whole Mediterranean. In the eastern Mediterranean, there was a stranding in 2000 on the Skiathos Island, the Aegean Sea (Verriopoulou *et al.* 2001) and two strandings in 2000 and 2004 (Sheinin *et al.* 2004) on the Israeli coast. This is the first record of the minke whale stranding on the Turkish coast.



**Figure 1.** Stranding locations of cetaceans in the Turkish part of the Aegean and Mediterranean Seas. (circle: *Z. cavirostris*, square: *G. griseus*, star: *Mesoplodon* sp., triangle: *B. acutorostrata*)

In conclusion, these stranding data provide some a baseline for the conservation plan for cetaceans in the Turkish waters in the eastern Mediterranean Sea. It is necessary to establish a national cetacean stranding network along all the coastline of Turkey, to train volunteers to cover wider areas and to collect more systematic and reliable data for each stranded individual. In case of strandings of rare species, such as the minke whale and *Mesoplodon* in this paper, immediate actions need to be taken to identify species and collect genetic and other specimens. Besides, a rescue team and facility are needed in case of live strandings.

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## Türkiye'nin Doğu Akdeniz kıyılarında karaya vuran gagalı balinalar, Grampus ve Mink Balinası

### Özet

Türkiye'nin doğu Akdeniz kıyılarında karaya vuran cetacea üyelerinden gagalı balina türlerinden *Ziphius cavirostris* (Ziphius balinası) ve *Mesoplodon* sp., *Grampus griseus* (Grampus), *Balaenoptera acutorostrata* (Mink balinası), türlerinin 1965-2011 yılları arasında yayımlanmış ve yayımlanmamış kayıtları derlenmiştir. *G. griseus* türü için beş, *Z. cavirostris* için dokuz, Doğu Akdeniz'de nadir gözlenen "ziyaretçi" türlerden *B. acutorostrata* ve *Mesoplodon* sp. için ise birer birey belirlenmiştir.

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