

Report of Stranding of Striped Dolphin *Stenella coeruleoalba* (Meyen, 1833) in Mersin Bay (Northeastern Mediterranean Sea, Turkey)

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Abstract: On 08 April 2019, a mature female striped dolphin *Stenella coeruleoalba* (Meyen, 1833), 185 cm in length (TL), was found dead across the shores of the Mersin Naval Museum, Mersin on the northeastern Mediterranean coast of Turkey. Striped dolphins may accidentally enter the fishing nets, which may be one of the reasons for their death. Although this species has been classified as Vulnerable in the IUCN list, considering the frequency of deaths among this species, the necessity to develop species conservation strategies for the Mediterranean was once again proven by the death of this individual.

Keywords: Dolphin, Delphinidae, Record, Turkish Mediterranean coast.

Mersin Körfezi'ndeki (Kuzeydoğu Akdeniz, Türkiye) Çizgili Yunus *Stenella coeruleoalba*'nın (Meyen, 1833) Boğulma Raporu

Öz: 08 Nisan 2019 tarihinde Türkiye'nin Doğu Akdeniz kıyısında Mersin Deniz Müzesi açıklarında 185 cm uzunluğa sahip bir adet çizgili yunus *Stenella coeruleoalba* (Meyen, 1833) ölü olarak bulunmuştur. Çizgili yunuslar, balıkçı ağlarına tesadüfen girebilirler bu durum da onların ölüm nedenleri arasında gösterilebilir. Tür IUCN listesinde hassas olarak sınıflandırılmış olsa da bu türün ölüm vakalarının sıklığı düşünüldüğünde, Akdeniz için türe ait koruma stratejileri geliştirilmesi gerekliliği, bu bireyin ölümü ile de bir kez daha ortaya konmuştur.

Anahtar kelimeler: Yunus, Delphinidae, Kayıt, Türkiye Akdeniz sahili.

Stenella coeruleoalba (Meyen, 1833) is a dolphin species belonging to order Cetacea and family Delphinidae (Rice, 1998). This species was first described as *Delphinus coeruleoalbus* in 1833 by the German zoologist Franz Julius Meyen from the southwest Atlantic (Kinzelbach, 1997; Van Waerebeek et al., 1998). The striped dolphin *S. coeruleoalba* is widely distributed in tropical, subtropical, and temperate waters (Van Waerebeek et al., 1998).

Striped dolphin is the common name of this species. They have a smooth body, with a thin waist, and a beak. The upper part of the body is dark-gray. There is a light-gray pattern specific to the species extending from the head area to the base of the dorsal fin. They have a thin dark band located between the upper jaw and the eyes extending towards the flippers to the bottom of the tail. The upper part of the beak is entirely darker in color and sometimes, the tip part is pale (Still, Harrop, Stenton, & Dias, 2019).

Although they can be found in groups of 1 to 500 individuals, they often live in groups of 20-30 in tropical, subtropical, and warm seas. They mostly prefer deep waters beyond the continental shelf regions and rarely coastal areas (Still et al., 2019).

In the literature, the length of *S. coeruleoalba* is given as 100 cm at the time of birth. The first reproductive age in males is 6.7-8.7 and the length is 210-219 cm. The early reproductive age in females is 7.1-8.8, and the equivalent length is 209-216 cm. They enter the breeding season 3 times a year with 4-5 month intervals (Miyazaki, 1977).

The first published record of the striped dolphin *S. coeruleoalba* in the Mediterranean coast of Turkey (Göksu Delta, Silifke) was documented by Kinzelbach (1997) and reported as an incidental capture of one individual in July 1996. Although Öztürk, Salman, Öztürk, & Tonay (2007) states that the dolphin fishery in Turkish waters is banned, this species had been incidentally caught in the swordfish driftnet fisheries in the Aegean and Mediterranean parts of Turkey (Öztürk, 1996; Öztürk & Öztürk, 1998; Öztürk, Öztürk, & Dede, 2001).

In the Mediterranean, dolphins are under continuous pressure due to whaling, drowning in fishing net, and marine pollution. *S. coeruleoalba* are mainly fed with species which have commercial value and targeted by fishermen (Pulcini, Angradi, & Sanna, 1993; Blanco, Anzar, & Raga, 1995). Thus, while fishers and dolphins try to hunt the same species, they involuntarily reside in the same environment. For this reason, *S. coeruleoalba* is often caught as by-catch (Aguilar, 2000).

The striped dolphin has limited records, although it is common in the Mediterranean Sea coasts of Turkey. Up to date, three individuals of striped dolphins were recorded in the eastern Mediterranean, Turkey (Okuş et al., 2006; Dede, Saad, Fakhri, & Öztürk, 2012).

Although the occurrence of the striped dolphin species in the Mediterranean was reported before, this species is infrequent in the northern part of the Mediterranean, Turkey. The present study reports the occurrence of a dead striped dolphin, which represents the

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second confirmed record in the Mersin Bay coast of Turkey.

On 08 April 2019, a mature female striped dolphin, *Stenella coeruleoalba*, 185 cm in total length (TL), was found dead across the shores of the Mersin Naval Museum (36°46'45.6" N; 34°36'06.4" E) in the northeastern Mediterranean coast of Turkey. The sampling point of the species in the northeastern Mediterranean Sea was presented in Figure 1. With the help of information provided in a study from Silifke, identification of the species was performed and necessary measurements taken (Kinzelbach, 1997). Its weight is 114 kg (The weight was measured with a hook scale (SF-912 300 Kg) with a sensitivity of 100 g). The specimen is buried to obtain the skeleton of the individual. After obtaining the skeleton of the sample, it will be deposited in the Museum of the Systematic, Faculty of Fisheries, Mersin University, (Catalogue no: MEUMC-19-11-002).

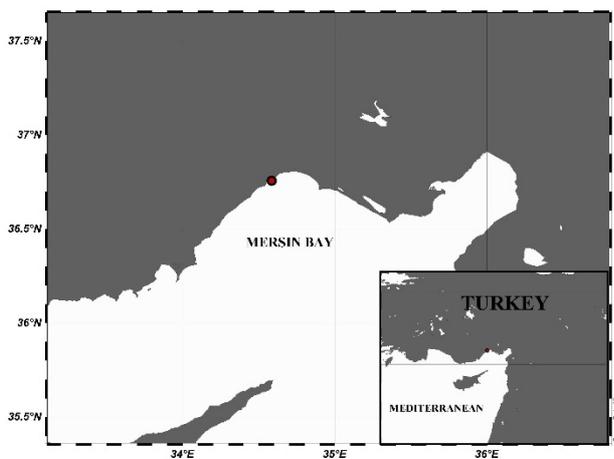


Figure 1. The red mark indicates the location where the sample found

Due to the wounds on the skin, it is thought that she was caught in a fishing net and drowned. According to the information given about the maturity stages of *S. coeruleoalba* in Miyazaki (1977), our sample was a mature female. The female specimen was measured as 185 cm total length, from the snout tip to the anterior base of the dorsal fin was 77 cm, and length of the flipper was 20 cm. Necessary measurements (body and skull) agree with the descriptions of Kinzelbach (1997). However, Kinzelbach (1997) reported as the total actual length of the female *S. coeruleoalba* was approximately 191 cm, from the snout tip to the anterior base of the dorsal fin as 81 cm; length of the (shrunk) flipper 23 cm for *S. coeruleoalba* from Goksu Delta (Silifke Turkey). The most critical parameters of the skull and body measurements of a female striped dolphin *S. coeruleoalba* specimen was obtained and the measurements compared with the other previous records in Mersin Bay (Kinzelbach, 1997). Values are shown in Table 1.

In this study, the skull measurements of our specimen and other previous record in the Mersin Bay are almost similar. These values are shown in Table 1. Our specimen is found somewhat smaller than the previous reported striped dolphins in the Silifke, Turkey (N.E. Mediterranean).

Every year a lot of dolphins are dying because of by-catch. Marsili, Casini, Marini, Regoli, & Focardi, (1997) reported the stranding of cetaceans along the

Mediterranean coasts as a regular event. These dolphins are dying because of natural causes such as old age or as a result of accidents such as strike by boats, ingestion of foreign objects (including plastic bags), or drowning in fishing nets.

Table 1. The crucial measurements of *S. coeruleoalba* compared with the previous Mediterranean record

Measurements (cm)	Values	
	1	1
Specimen No	1	1
References	Present Study N.E. Mediterranean (Mersin, Turkey)	Kinzelbach (1997) N. E. Mediterranean Silifke, Turkey
Total length	185	191
The snout tip to the anterior base of the dorsal fin	77	81
Length of the flipper	20	23*
Condylbasal length	35.2	>35.8
Rostrum length	19.1	>19.4
Breadth of rostrum near base	10.1	10.4
Preorbital breadth	18.4	19.0
Postorbital breadth	20.6	21.2
Mandible length	31.5	>32.3
Mandible height	6.4	6.6

*This value was reported as shrunk

Mediterranean population of *S. coeruleoalba* is categorized as Vulnerable on the IUCN Red List (IUCN, 2019) and Least Concern global Red List of Threatened Species category (Braulik, 2019). The number of mature individuals for this species is unknown (Aguilar & Gaspari, 2012). Besides, this species listed in Appendix II of the Convention on International Trade in Endangered Species (CITES) (IUCN, 2019). However, there is still a need for conservation strategy for *S. coeruleoalba* and other dolphins in the Mediterranean Sea.

The striped dolphins may be taken incidentally in fishing nets. As a result, human interactions can be a cause or contributing factor in the deaths of striped dolphins in the Mediterranean Sea. Thus, conservation measures should be enforced at the local and national level more intensively for this species.

In this study, we aimed to report a *S. coeruleoalba* who drowned as a result of by-catch in Mersin Bay (Northeastern Mediterranean Sea, Turkey).

For preventing non-target fishing, it is recommended to design perceptible nets in water considering the biological characteristics of by-catch species.

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