









## First Live-Stranding Record of a Risso's Dolphin (*Grampus griseus*) on the Mediterranean Coast of Türkiye

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### Short Communication

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### Abstract

Risso's Dolphin *Grampus griseus* was stranded alive on the coast of the Iskenderun Bay, northeastern Mediterranean, on 28 March 2022. It was found dead in the same location the next day (29 March 2022). *G. griseus* was identified as female and measured to be 370 kg weight and 294 cm long. Deep ulceration areas containing the amorphous and necrotic substance were observed, and neutrophils, bacteria or parasites were not detected in necropsy. It had a poor body condition and displayed several lacerations and scratches on the rostrum. The blubber thickness in the central body was 2.8 cm. In this study, the live-stranding record of a Risso's dolphin (*Grampus griseus*) for the first time in the Iskenderun Bay, the Mediterranean coast of Türkiye.

**Keywords:** *Grampus griseus*, risso's dolphin, eastern Mediterranean, live-stranding

## Introduction

The Risso's dolphin *Grampus griseus* Cuvier, 1812 is a member of the subfamily Globicephalinae (Delphinidae). It is one of the lesser-known species because of its patchy distribution and its low stranding frequency (Hartman, 2018; Luna et al., 2021). It is listed as Least Concern by the IUCN

Red List since 2008 (IUCN, 2021). *G. griseus* is a widely distributed species that occurs throughout tropical and temperate waters in the Atlantic, Pacific, and Indian Oceans (Jefferson et al., 2014). It shows a strong preference for mid-temperate waters warmer than 12°C and it does not occur in Polar Regions. It has been sighted in deep offshore waters (Hartman, 2018).

Stranding records can be good indicators of the cetacean fauna of the area, although they may not represent the true composition of local populations (Maldini et al., 2005). Nevertheless, though there is little sighting effort and relatively rare information on these species, information obtained from stranding cannot be ignored (Turan et al., 2023). There have been several Risso's dolphins stranding records in the Mediterranean with full necropsies conducted in the Ligurian Sea (Carlini et al., 1992; Bello and Bentivegna, 1996; Maio, 1998), Tyrrhenian Sea (Bello, 1992; 1996), Adriatic Sea (Blanco et al., 2006), West Mediterranean (García Polo et al., 2014), Italy (Pedà et al., 2015), Aegean Sea (Öztürk et al., 2007) and Sea of Marmara (Dede et al., 2013). Threats including bycatch in offshore gillnets, pelagic longlines, and other fishing gears may be causing declines in this species (Bearzi et al., 2011).

This study reports the first live-stranding record of a Risso's dolphin *Grampus griseus* in the Mediterranean coast of Türkiye.

## Material and Methods

Risso's dolphin *Grampus griseus* was stranded alive on the coast of Arsuz-Uluçınar, Iskenderun Bay in the northeastern Mediterranean on 28 March 2022 (Figure 1). When it was seen first, it was alive but unable to dive underwater. Afterwards, the Risso's dolphin was transferred offshore by the Turkish coast guard, but it came to inshore again after several hours. It was found dead on the beach in the same location the next day (29 March 2022). After that, it was transferred from Iskenderun Technical University, Marine Sciences and Technology Faculty garden for the necropsy (Figure 2).

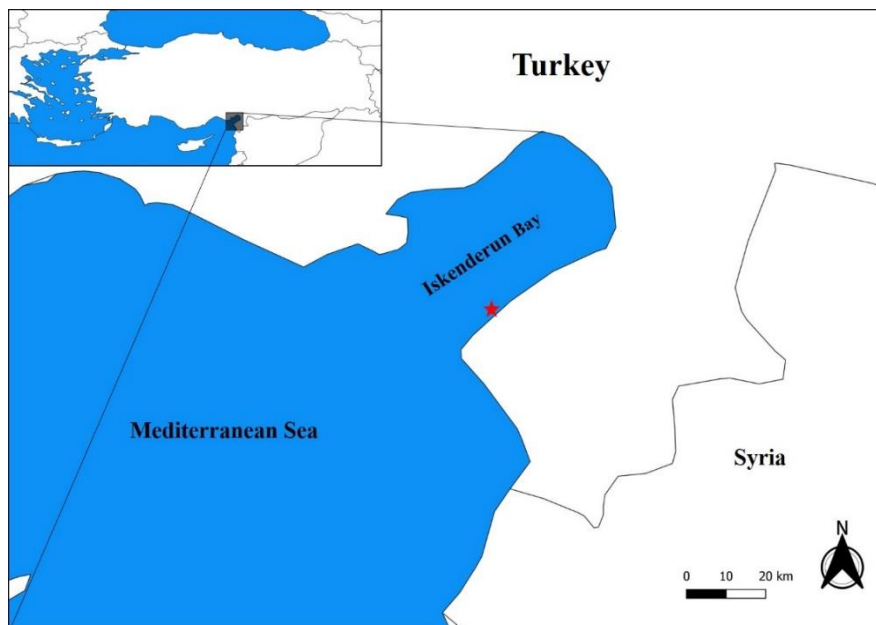


Figure 1. Stranding location of *G. griseus*.

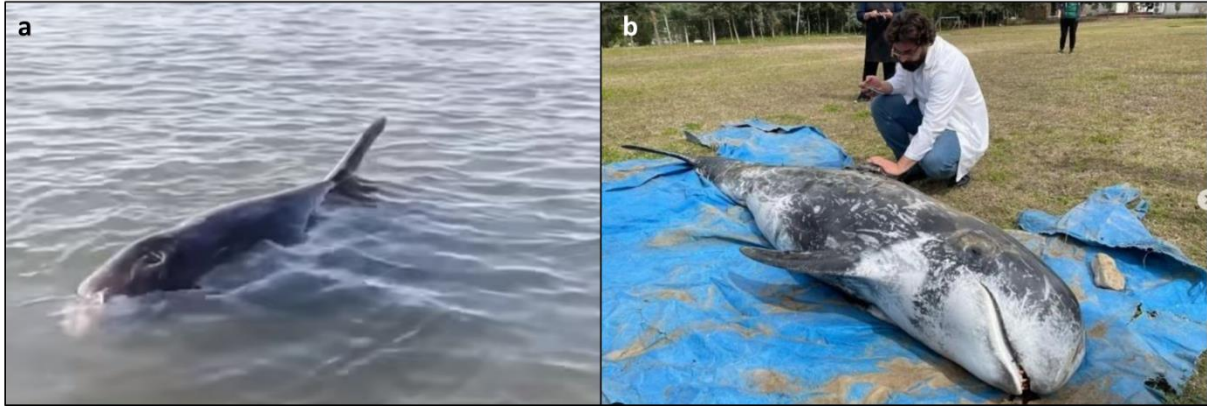


Figure 2. a: Live-stranded Risso's dolphin 28 March 2022, b: Necropsy analyzes.

## Results and Discussion

*G. griseus* was identified as female and measured to be 370 kg weight and 294 cm long, and several lacerations and scratches on the rostrum were observed. Blubber thickness in the central body was 2.8 cm. Other morphometric measurements are listed in Table 1.

Table 1. Morphometric measurement of the stranding Risso's dolphin *Grampus griseus*.

Character	Length (cm)
Body length, tip of rostrum to tail notch	294
Tip of rostrum to mid-point of anus	240
Tip of rostrum to mid-point of genital slit	195
Tip of rostrum to mid-point of umbilicus	161
Tip of rostrum to tip of dorsal fin	180
Tip of rostrum to font of dorsal fin, at anterior insertion of dorsal fin	127
Tip of rostrum to centre of blowhole	31
Tip of rostrum to end of gape	27
Tip of rostrum to centre of eye	33
Tip of rostrum to front of pectoral fin, at anterior insertion of pectoral fin	51
Length of left fluke	38
Length of right fluke	38
Total fluke span, tip to tip	76
Basal length of dorsal fin	37
Height of dorsal fin	31
Maximum width of pectoral fin	25
Outer length of pectoral fin, from anterior insertion to tip	60
Inner length of pectoral fin, from posterior insertion to tip	43
Girth behind pectoral fin, at posterior insertion of pectoral fin	60
Girth in front of dorsal fin, at anterior insertion of dorsal fin	70
Girth behind the dorsal fin, at posterior insertion of dorsal fin	59
Girth at the genital slit	45
Girth at anus	25

Deep ulceration areas containing the amorphous and necrotic substances were observed. Neutrophils, bacteria or parasites were not detected in necropsy. The internal examination began with

DNA sampling. The Necropsy procedure was conducted according to Mazzariol and Centelleghé (2007). The carcass condition was intact. Body bloating, protruded tongue, dry mucous membranes, and crackings in the skin were observed. Eyes were clear and general appearance was good. The dorsal axis was examined to assess nutritional condition. The epaxial muscle to both sides of the dorsal fin was rounded. The condition of this muscle shows that the dolphin has not been exposed to long term nutritional problems. According to body length, a missing tooth and having excessively worn teeth, this female dolphin is an old adult. Discolouration of the skin, any lesions and parasites neither on the skin nor in the blowhole were observed. Some fine grazes were observed on the skin. But is predicted that this graze happened after death, by chafing to sea ground caused by drifting. The ribs were removed and the entire organs were examined, but nothing was found. The gastrointestinal tract was dissected, beginning with the tongue and proceeding caudally. The stomach contained remnants of squid. No remarkable findings were observed in the other organs, including the brain and heart muscle.

It is known that it takes 8–10 years for a female Risso's dolphin to be sexually mature. A five-year-old Risso's dolphin is considered too young to be sexually mature, based on previous records (Kim et al., 2019). A report from the fisherman was taken that the Risso's dolphins got caught in the trammel net and fluttered in the net for an unknown amount of time. The fisherman gently freed the dolphin from the net and released it. Risso's dolphins are rarely found to be stranded, Risso's dolphin is prone to by-catch as their prey with the fishery target species or baits species of some fishery fields (Lo Brutto et al., 2021; Luna et al., 2021). Their by-catch has been reported in many countries and is considered the most important threat to Risso's dolphin population. Some precautions can be taken in the coastal areas that protect the dolphins from fisheries activities.

### **Conflict of Interest**

The authors declare that they have no competing interests.

### **Author Contributions**

C.T. and S.A.D., performed all the experiments and drafted the main manuscript text. C.T., S.A.D., S.A.D., A.Y., N.Y., and F.A. performed morphological and stomach content analysis. All authors reviewed and approved the final version of the manuscript.

### **Ethical Approval Statements**

Local Ethics Committee Approval was not obtained because experimental animals were not used in this study.

### **Data Availability Statement**

The data used in the present study are available upon request from the corresponding author.

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