

The Evaluation of Cetacean Strandings on the Mediterranean Coasts of Turkey between 2009 and 2019

Cansu İLKILINÇ¹, Harun GÜÇLÜSOY²

¹ Mediterranean Conservation Society, İzmir, ilkilincansu@gmail.com

² Dokuz Eylül University, Institute of Marine Sciences and Technology, İzmir, harun.guclusoy@deu.edu.tr

INTRODUCTION

Although there are many cetacean stranding cases that occurred on the coasts of Turkey every year, there is still no systematic stranding network on the Turkish Mediterranean coast. Also, existing studies on the subject in the Mediterranean are limited and not systematic. The aim of this study is to give information on the evaluation of cetacean strandings by collecting the stranding cases occurred in the Turkish Mediterranean coasts in the last decade and analyzing in terms of parameters such as the number of individuals, species, geographical distribution, the status of case interventions causes of death.

METHODS

The data obtained based on existing images, reported or validated cases were collected from television and newspaper news, web sites, related dissertations and published articles between January 1, 2009 and April 20, 2019 and on Turkish Mediterranean coast; from the Greek border in the north to the Syrian border in the south. While evaluating the causes of death, cases known to be performed a necropsy have been included in certain category and cases are known not to be performed necropsy but existing findings of the causes of death have been included in the uncertain category.

The regional distributions of the cases have been prepared by using querying and thematic mapping techniques in ArcMap 10.3.1 GIS software. The coordinates used in mapping are the exact coordinates of the recorded cases in the articles. For the cases, whose coordinates were not given, the midpoint of the closest coastline to the reported location has been chosen.

CONCLUSIONS

It is thought that the obtained data were below actual figures since there was no functioning stranding network for Turkish Mediterranean coasts. Data provided by the media is much higher compared to published articles. Therefore; it is necessary to establish a systematic stranding network from where continuous monitoring data to be gathered, and necessary first aid was given to ailing animals should be operational on the Turkish Mediterranean coasts. It is important for scientists to be aware of the cases and to evaluate the stranded individuals and to obtain scientific data.

RESULTS & DISCUSSION

Sources of Evaluated Data

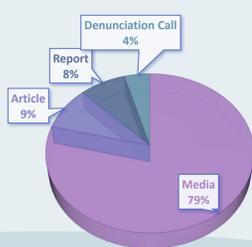


Figure 1. Graph of sources of evaluated data
Most of the data (n = 90) has been obtained from media. However, only 10 articles regarding this subject could be found for the region.

Cetacean Groups that Stranded in the Mediterranean in the Last Decade

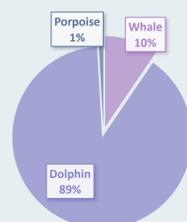


Figure 2 Graph of Cetacean groups that stranded in the Mediterranean in the last decade
The most frequently stranded taxa in the last 10 years belong to dolphins (n=102), followed by whales (n=11) and porpoises (n=1). There is only one reported case for the porpoise.

Cetacean Species Stranded in the Mediterranean in the Last Decade

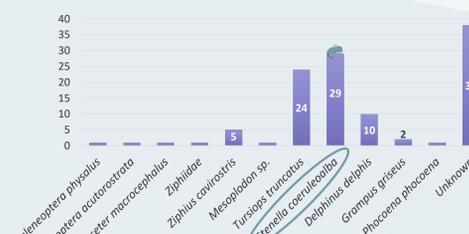


Figure 3. Graph of Cetacean species stranded in the Mediterranean in the last decade

IUCN Red List Mediterranean Conservation Status of Stranded Cetaceans

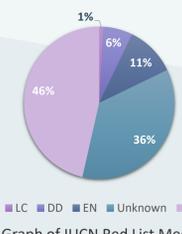


Figure 4. Graph of IUCN Red List Mediterranean Conservation status of stranded Cetaceans

In total, 113 stranding cases have been recorded. In only one case, two individuals (mother and calf) have simultaneously stranded. Of the 114 individuals (Figure 3, 5), the most frequently stranded species is *S. coeruleoalba* (n=29) known that shows the most common distribution in the region. 38 individual species have been evaluated in the unknown category. 11 of them are live strandings. Most of the stranded individuals, species of which have been determined, are evaluated in "Threatened" status in the IUCN Red List Mediterranean; 46% VU (Vulnerable), 11% EN (Endangered).

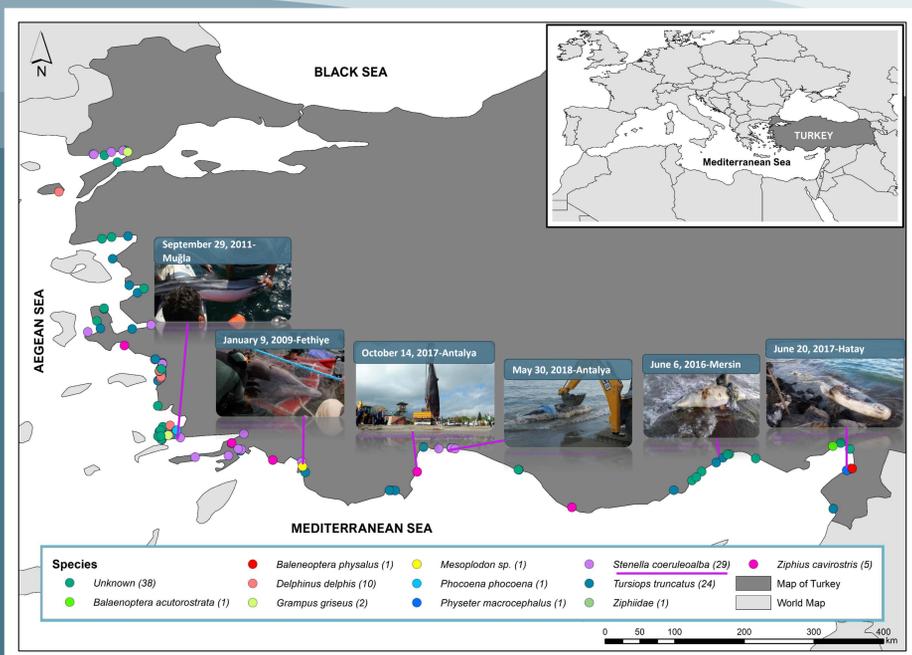


Figure 5. Map of stranded species

Graph of whether the Cause of Death is Known or Unknown



Figure 6. Graph of whether the cause of death is known or unknown

Necropsies were performed for only 17.5% of the carcasses. 17% died due to disease (infection, parasite, etc.), deliberate killing, drowning (fishing nets), trauma (internal bleeding) etc., 8% are uncertain. It is recorded the disease (ectoparasites, infection, lung disease, etc.) factors largely affect the species. This is followed by fishing nets and deliberate killing.

Table 1. Causes of death that belongs to individuals

Cause of Death	Certain	Uncertain
Starvation	3	1
Ectoparasite*	7	0
Infection	2	0
Lung disease	3	0
Dicephalic	1	0
Drowning, fishing nets	3	5
Deliberate killing	3	1
Trauma (internal bleeding)	1	1
Marine pollution	1	0

(*: Most individuals evaluated in the starvation and infection categories also have ectoparasite)

Status of the Case Interventions

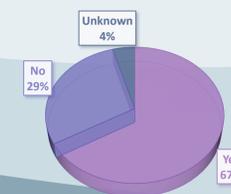


Figure 7. Status of the case interventions

67% of the stranded individuals were intervened by the related institutions and organizations. Many of them are known to be buried without examination. In order to get more information on the causes of death, it should be forwarded to the places where the scientific investigation will be carried out.

Chart of Stranded Individuals According to Year

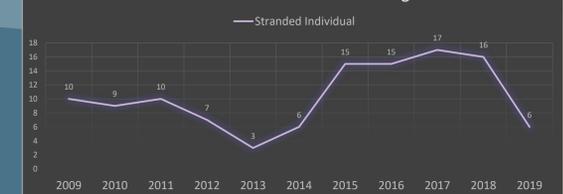


Figure 8. Chart of stranded individuals according to year

Most cases occurred in 2017 (n=17). It is seen that the number of cases has increased in the last four years. It has been thought that this increase is proportional to the increase in interest related to the subject, in technology and social media usage.

ACKNOWLEDGEMENTS

We thank Ecosystem Protection and Nature Lovers Association for case reports and veterinary surgeon Erdem Danyer, Sea Turtle Research and Rehabilitation Centre and Animal Rights Federation for denunciations.

Denunciations have been received within the project titled 'Determination of Threatening Factors and Stranding Frequency for Cetaceans Conservation in the Central Aegean Coasts' supported by Rufford Small Grant. The monitoring study is still in progress during 2019 with the financial support of SPA/RAC.



