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First Record of Humpback Dolphins in Mersin Bay, the Eastern Mediterranean, Turkey

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Abstract

Two to four humpback dolphins were first time observed at two occasions on 3 February and 25 April 2016 on Turkish coastal waters of the Northeast Mediterranean. They were recorded by under-water cameras while feeding on fish escaping from experimental demersal trawl during two separate operations conducted on shallow waters. Although the quality of the footage was quite good, the individuals could only be identified at genus level. When the distribution ranges of the genus and recent enlargement of the Suez Channel are considered, the individuals are most likely of the strays of Indian Ocean humpback dolphin (*Sousa plumbea*).

Keywords: Sousa spp.; the Mediterranean; Suez Canal; Trawl

Introduction

Humpback dolphins are members of the family Delphinidae, genus *Sousa*. These dolphins are characterized by the conspicuous humps and elongated dorsal fins found on the backs of adults of the species and inhabit coastal waters of tropical and subtropical West Africa, the Indian Ocean, and the western Pacific Ocean (Ross, Heinsohn, & Cockcroft, 1994; Keith, Atkins, Johnson, & Karczmarski, 2013). The delphinid genus Sousa has recently undergone a major revision, and currently contains four species, the Atlantic humpback (*Sousa teuszii*), Indian Ocean humpback (*Sousa plumbea*), Indo-Pacific humpback (*Sousa chinensis*), and Australian humpback (*Sousa sahulensis*) dolphins (Jefferson & Curry, 2015).

Atlantic humpback dolphin is found in the shallow coastal waters of western African from Dahkla Bay, Western Sahara (23^0 50'N) to Tombua, Angola (15^0 47'S) (Jefferson & Rosenbaum, 2014).

Indian Ocean humpback dolphin, widely distributed across the coastal zone of the Northwestern Indian Ocean, from False Bay in South Africa to the Northern Red Sea, and east across southern Asia to the Gulf of Bengal (Notarbartolo di Sciara & Birkun, 2010).

Indo-Pacific humpback is distributed in waters from central China (near the mouth of the Yangtze River), south throughout the waters of Southeast Asia as far southeast at least as Borneo, and as far west as the Orissa coast of India (Sutaria & Jefferson, 2004).

Australian humpback is found in the tropical/subtropical waters along the coast of northern Australia, from the Queensland/New South Wales border to Ningaloo Reef, near Exmouth Bay (Parra, Corkeron, & Marsh, 2004).

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We report two to four humpback dolphins in Mersin Bay, Turkey (Figure1). They were observed by under-water cameras in two separate hauls aiming to investigate fish behaviour in relation to demersal trawl operations.

The first observation was made on 3 February 2016 (at around 36.728238°N – 34.523579°E) by GoPro Hero (GoPro, Inc.) action camera mounted ahead of a fish-eye codend selectivity device. The camera was positioned to look backwards with the aim of observing specimens escaping from the device. The tow lasted for 60 minutes, and the two individuals were observed and heard (mostly like clicking and whistling) for about 27 minutes starting from 33rd minute of the tow in and out of the visual range of the camera. They never approached the camera at the same time. However, their silhouettes clearly indicated that they were a couple (Figure 2a.) They were observed to feed on escaping fishes from fish-eye and codend meshes (Figure 2b, c).

The second observation was made on 25 April 2016 (at approximately 36.725581°N – 34.513451°E) by GoPro Hero 2 (GoPro, Inc.) action camera mounted at the rear end of extension piece of the same trawl. It was positioned to look backwards with the aim of observing specimens escaping from 40 mm square mesh codend. The tow lasted for 60 minutes, and the two individuals were observed and heard for about 12 minutes starting from 48th minute of the tow, in and out of the visual range of the camera. They were seen to feed simultaneously (Figure 3) with codend escapees.

It may worth to note that Bottlenose dolphin (*Tursiops truncatus*) predations on demersal trawls are already known (Gonzalvo, Valls, Cardona & Aguilar, 2008; Bearzi, 2002) in the Mediterranean. However, this event was the first time that a humpback dolphin was seen during the underwater video observations. Throughout the 39 min footage 54 times humpbacks attempted to eat fish either escaped from or entangled in the net. In contrary to, for instance, the cases of *Tursiops truncatus*, no damage was incurred on the net. Also in one occasion, they seemed to avoid eating a lightly poisonous spinefoot (*Siganus rivulatus*), a fish of Indian Ocean origin, although the fish displayed provoking movements that should allure a dolphin chasing easy food. This may be an indication that the observed couple were familiar with that fish of same origin.

The opening of the Suez Canal has led to the introduction of hundreds of Lessepsian immigrants into the Mediterranean Sea (Streftaris, Zenetos, & Papathanasiou, 2005; Zenetos et al., 2012). To our knowledge two reports exist of humpback dolphins straying through the Suez Canal into the Mediterranean as Lessepsian immigrants from the Red Sea. First Marchessaux (1980) reported the observation of *Sousa chinensis* at the entrance of Port Said harbour in Egypt and then Kerem (2001) reported observation of a single humpback dolphin (*Sousa* spp.) in different locations across the Mediterranean coast of Israel. Later Kerem et al. (2012) reported that it was most likely a member of the plumbea-type Indo-Pacific humpback dolphin.

In this study, when the distribution ranges of the members of the genus and recent enlargement of the Suez Channel are considered, the individuals are most likely of the strays of Indian Ocean humpback dolphin (*Sousa plumbea*). In addition, easily seen wide hump (Figure 2c) and long beak (Figure 3) which are the morphological characteristics of the Indian Ocean humpback dolphin may support this identification.

Although it is well known that many fish species has strayed through the Suez Canal from the Red Sea into the Mediterranean (Galil et al., 2014), sightings of immigrant cetaceans are rather limited. Bishop (2016) indicated that the occurrence of this dolphin species in the Mediterranean might be caused by the expansion of the Channel in the second half of 2015. Concerns regarding expansion of the channel have been reported by Galil et al. (2015).

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References

Bearzi, G. (2002). Interactions between cetacean and fisheries in the Mediterranean Sea. Cetaceans of the Mediterranean and Black Seas: state of knowledge and conservation strategies (Section 9). A report to the ACCOBAMS Secretariat, Monaco, 20 pp.

Bishop, D.R. (2016). Our Mediterranean, our survival. Retrieved from https://www.nytimes.com/2016/01/30/opinion/our-mediterranean-our-survival.html

Galil, B.S., Marchini, A., Occhipinti-Ambrogi, A., Minchin, D., Narscius, A., Ojaveer, H., & Olenin, S. (2014). International Arrivals: Widespread Bioinvasions in European Seas. *Ethology Ecology & Evolution*, 26, 152–171. http://dx.doi.org/10.1080/03949370.2014.897651

Galil, B.S., Boero, F., Campbell, M.L., Carlton, J.T., Cook, E., Fraschetti, S., Gollasch, S., … Ruiz, G.M. (2015). 'Double Trouble': The Expansion of the Suez Canal and Marine Bioinvasions in the Mediterranean Sea. *Biological Invasions*, 17, 973-976. http://dx.doi.org/10.1007/s10530-014-0778-y

Gonzalvo, J., Valls, M., Cardona, L., & Aguilar, A. (2008). Factors Determining the Interaction Between Common Bottlenose Dolphins and Bottom Trawlers off the Balearic Archipelago (Western Mediterranean Sea). *Journal of Experimental Marine Biology and Ecology*, 367, 47–52. http://dx.doi.org/10.1016/j.jembe.2008.08.013

Jefferson, T.A., & Rosenbaum, H.C. (2014). Taxonomic Revision of the Humpback Dolphins (*Sousa spp.*), and Description of a New Species from Australia. *Marine Mammal Science*, 30(4), 1494-1541. http://dx.doi.org/10.1111/mms.12152

Jefferson, T.A., & Curry, B.E. (2015). Chapter One-Humpback Dolphins: A Brief Introduction to the Genus Sousa. *Advances in Marine Biology*, 72, 1-16. http://dx.doi.org/10.1016/bs.amb.2015.04.001

Kerem, D., Goffman, O., & Spanier, E. (2001). Sighting of a Single Humpback Dolphin (*Sousa sp.*) Along the Mediterranean Coast of Israel. *Marine Mammal Science*, 17, 170–171.

Kerem, D., Hadar, N., Goffman, O., Scheinin, A., Kent, R., Boisseau, O., & Schattner, U. (2012). Update on the Cetacean Fauna of the Mediterranean Levantine Basin. The *Open Marine Biology Journal*, 6(1), 6-27. http://dx.doi.org/10.2174/1874450801206010006

Keith, M., Atkins, S., Johnson, A.E., & Karczmarski, L. (2013). Area Utilization Patterns of Humpback Dolphins (*Sousa plumbea*) in Richards Bay, KwaZulu-Natal, South Africa. *Journal of Ethology*, 31, 261-274. http://dx.doi.org/10.1007/s10164-013-0375-z

Marchessaux D. (1980). A Review of the Current Knowledge of the Cetaceans in the Eastern Mediterranean Sea. *Vie Marine*, 2(2): 59- 66.

Notarbartolo di Sciara, G., & Birkun, A.Jr. (2010). Conserving whales, dolphins and porpoises in the Mediterranean and Black Seas. A report to the ACCOBAMS Secretariat, Monaco, 212 pp.

Parra, G.J., Corkeron, P.J., & Marsh, H. (2004). The Indo-Pacific Humpback Dolphin, *Sousa chinensis* (Osbeck, 1765), in Australian Waters: A Summary of Current Knowledge. *Aquatic Mammals*, 30(1), 197-206. http://dx.doi.org/10.1578/AM.30.1.2004.197

Ross, G.J., Heinsohn, G.E., & Cockcroft, V.G. (1994). Humpback Dolphins *Sousa chinensis* (Osbeck, 1765), *Sousa plumbea* (G. Cuvier, 1829) and *Sousa teuszii* (Kukenthal, 1892). In S.H. Ridgway & R. Harrison (Eds.), *Handbook of Marine Mammals* (pp. 5), London, United Kingdom, Academic Press., 416p.

Streftaris, N., Zenetos, A., & Papathanasiou, E. (2005). Globalisation in Marine Ecosystems: the Story of Non-indigenous Marine Species Across European Seas. *Oceanography and Marine Biology: An Annual Review*, 43, 419-453.

Sutaria, D., & Jefferson, T.A. (2004). Records of Indo-Pacific Humpback Dolphins (*Sousa chinensis*, Osbeck, 1765) Along the Coasts of India and Sri Lanka: An Overview. *Aquatic Mammals*, 30(1), 125-136. http://dx.doi.org/10.1578/AM.30.1.2004.125

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Zenetos, A., Gofas, S., Morri, C., Rosso, A., Violanti, D., Raso, J. G., ... & Ballesteros, E. (2012). Alien Species in the Mediterranean Sea by 2012. A Contribution to the Application of European Union's Marine Strategy Framework Directive (MSFD). Part 2. Introduction Trends and Pathways. *Mediterranean Marine Science*, 13(2), 328-352. http://dx.doi.org/10.12681/mms.327

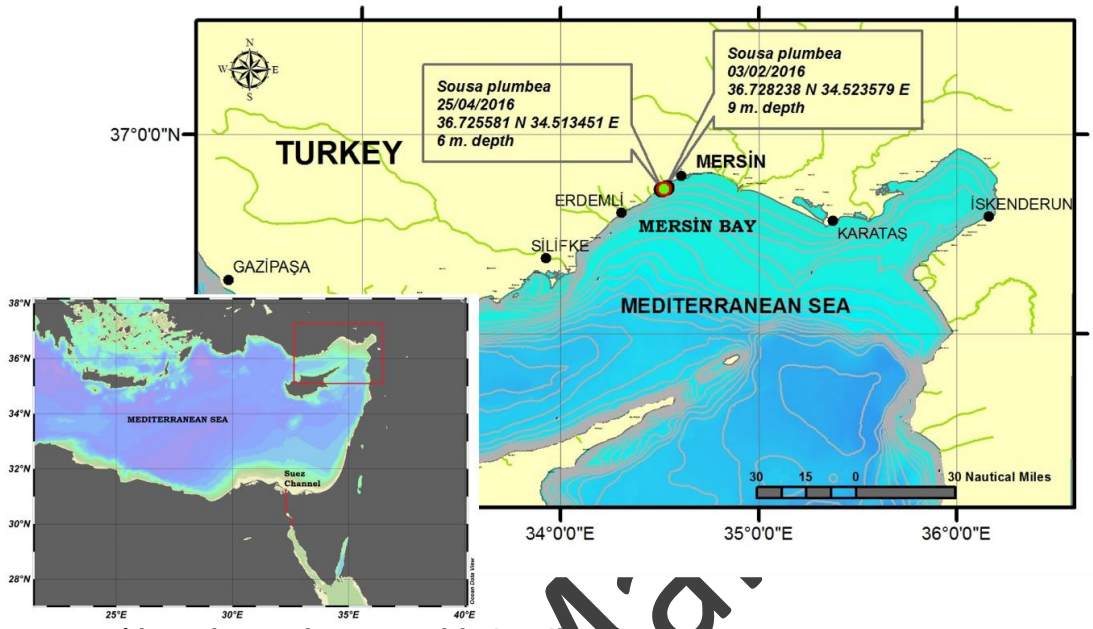

Figure 1. Map of the Northeast Mediterranean and the Suez Channel.

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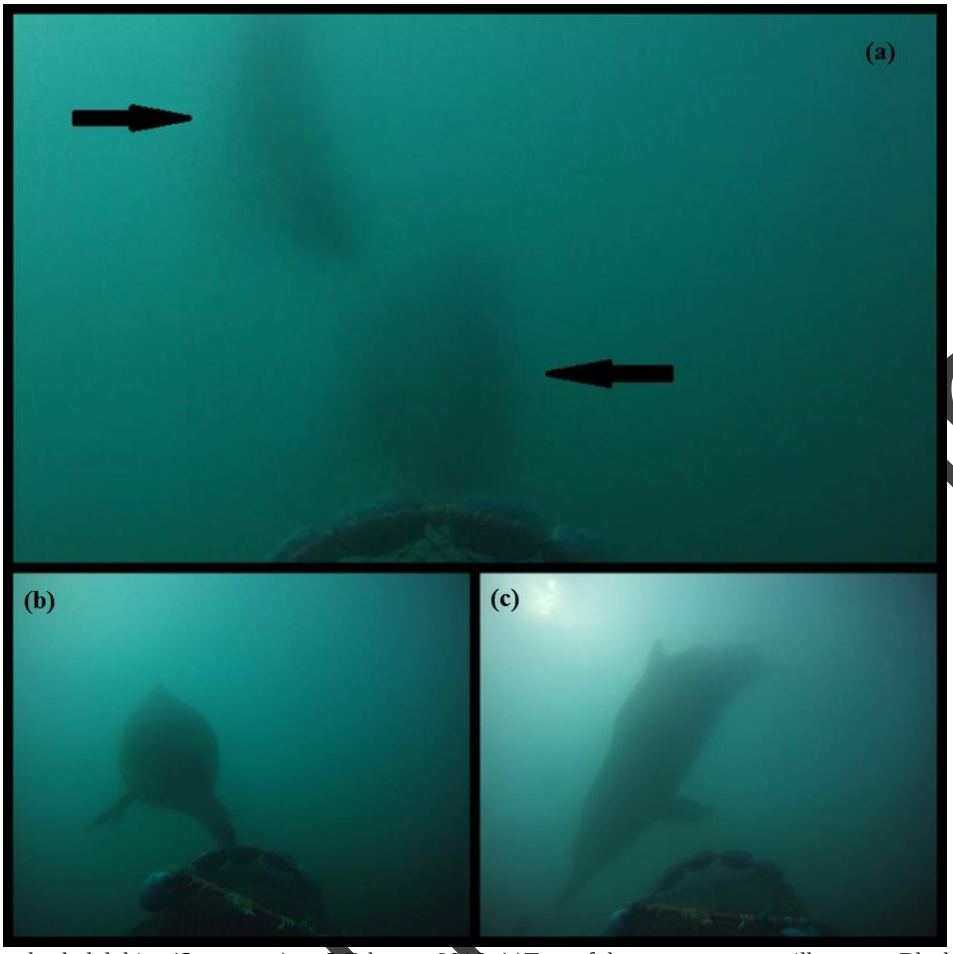

Figure 2. Humpback dolphins (*Sousa* spp.) on 3 February 2016. (a)Two of them were seen as silhouettes. Black arrows were placed to indicate them. Feeding moments from fish eye (b) and codend (c).

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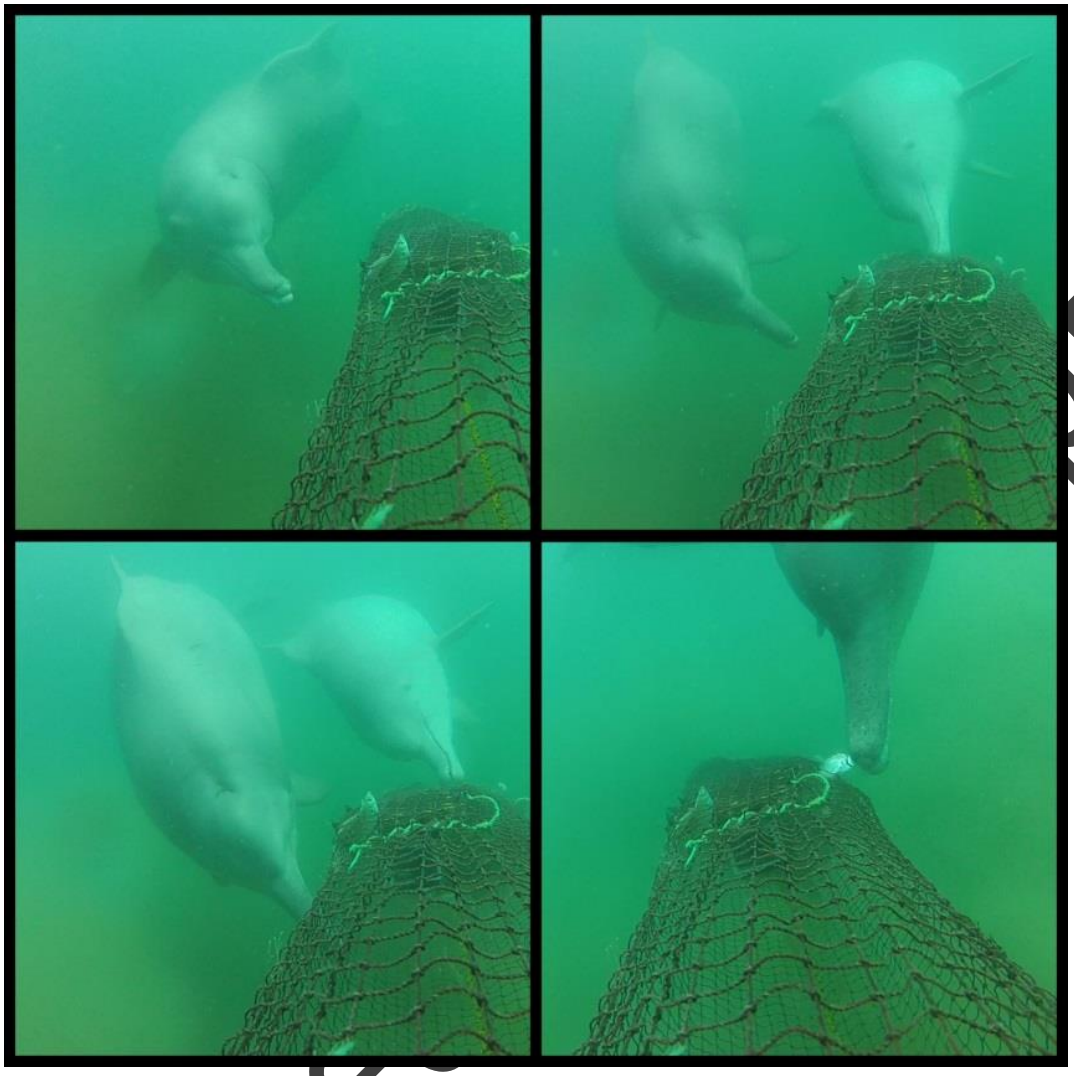

Figure 3. Humpback dolphins (*Sousa spp.*) on 25 April 2016. They were seen to feed "gently" on simultaneously with codend escapees.