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The distribution of whales in the northern Arabian Sea along the coast of Pakistan obtained through crew-based observer programme - results of the 2018 fishing season

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The Distribution of Whales in the Northern Arabian Sea along the Coast of Pakistan Obtained through Crew-Based Observer Programme- Results of the 2018 fishing season

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ABSTRACT

Sightings of whales made by WWF-Pakistan's Crew Based Observers deputed on tuna gillnet vessels operating along Pakistan's coast were reported for the 2018 fishing season. A total of 13 sightings of Arabian Sea humpback whales, 2 sightings of blue whales, 1 sightings of Bryde's whales, 4 sightings of sperm whales and 15 sightings of baleen whales (that could not be identified to species level due to lack of adequate photographic or video evidence) were made during 2018. The number of whales recorded for the year 2018 is much less than 2017 when a total of 95 sightings of whale were recorded from the area. This decrease in sighting is attributed to early closure of fishing season in late April 2018 because of extremely low prices of tuna in the market. Usually a voluntary two month close season is observed between June and July, however, the new fishing season was started in September 2018. The close season, therefore, remained effective for about four months (May to August). In addition, a major part of tuna fishing fleet operated in the further offshore waters (known to have thin population of whales) to avoid checking by Government agencies for implementation on various legislation during November- December 2018.

INTRODUCTION

A well diversified whale fauna is reported from the Arabian which includes both baleen and toothed whales. A number of studies have previously been Sea documented including Gore et al. (2012), Kiani and Siddiqui (2009), Kiani (2014, 2015a, 2015b), Mikhalev (1997; 2000), Minton *et al.* (2015) and Moazzam and Nawaz (2017, 2018). Among whales Arabian Sea humpback whales (*Megaptera novaeangliae*), blue whales (*Balaenoptera musculus*), Bryde's whales (*Balaenoptera brydei*), sperm whales (*Physeter macrocephalus*), killer whales (*Orcinus orca*), dwarf sperm whales (*Kogia sima*), Longman's beaked (or tropical bottlenose (*Indopacetus pacificus*) and Cuvier's beaked whales (*Ziphius cavirostris*) have been previously reported from Pakistan. Moazzam and Nawaz (2017, 2018) have provided details of the occurrence of baleen whales occurring along the Pakistan coast during the year 2016 and 2017.

Whale sightings reported during 2016 included 47 sightings of baleen whales, including 12 confirmed sightings of Arabian Sea humpback whales, three sightings of Bryde's and 32 sightings of baleen whales that could not be identified to species level. In 2017, 95 whale sightings were reported, including 42 sightings of Arabian Sea humpback whales, 13 sightings of blue whales, 5 sightings of Bryde's whales, 4 sightings of sperm whales, 1 sighting of killer whales and 30 sightings of baleen

whales. This paper provides an update on sightings recorded by the WWF-Pakistan's Crew Based Observer Programme. during the 2018.

MATERIAL AND METHODS

The data collection of whales was described in detail by Moazzam and Nawaz (2017, 2018). The data was collected by 85 crew based observers posted on tuna gillnet fishing vessels.

RESULTS

During the 2018 season, crew-based observers reported 13 sightings of Arabian Sea humpback whales, 2 sightings of blue whales, 1 sightings of Bryde's whales, 4 sightings of sperm whales and 15 sightings of baleen whales that could not be identified to species level due to lack of adequate photographic or video evidence. In 2017, there was one sighting of killer whale (*Orcinus orca*) was made from the area, however, no killer whale was observed during 2018.

Arabian Sea humpback whales

Arabian Sea humpback whales were mainly sighted on the continental shelf and slope area mainly along Sindh coast (eastern coast of Pakistan) whereas there are a few sightings along Sonmiani along Balochistan coast (Fig. 1). This species seems to be more abundant along the Balochistan coast than along the Sindh Coast. Moazzam and Nawaz (2017) reported feeding on planktonic shrimp and sardinellas in waters along the coastline. It may be added that some of the unidentified baleen whales reported here may also include Arabian humpback whales. There are four sighting of Arabian humpback whale from the central Arabian Sea. These sightings are located within the route that was followed by satellite tagged Arabian humpback whale namely "Luban" in 2017 (http://www.seaturtle.org/tracking/?project_id=1295)..



Fig. 1. Sighting of Arabian humpback whales (2018) in the northern Arabian Sea

Blue whales

There were only two sightings of blue whales from the northern Arabian Sea. Both of these sightings are from offshore deeper waters of Balochistan coast (Fig. 2). In addition, some of the baleen whale sightings in this study that could not be assigned to species level may include blue whales. Less records of blue whale in 2018 may be attributed to operation of Pakistani tuna gillnet fleet in the further offshore waters (known to have thin population of whales) during November- December 2018, as compared previous years.

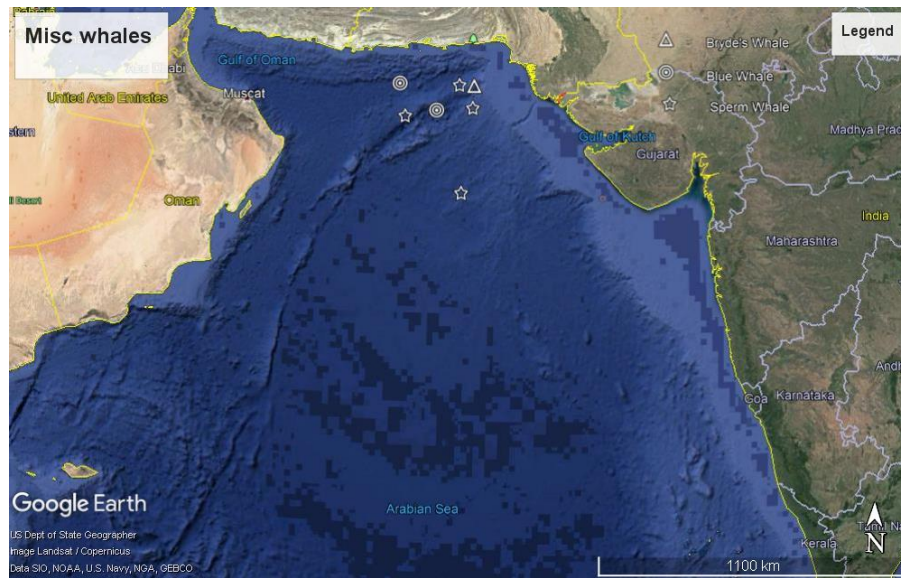


Fig. 2. Sighting of Blue whales (2018) in the northern Arabian Sea

Bryde's Whale

There was only one record of Bryde's whale during 2018 from Murray Ridge area in the offshore waters of Balochistan (Fig. 2). During previous years (2016 and 2017) only 3 and 5 Bryde's whales were recorded. There may be possibility of some additional records from the area which is included in baleen whales that could not be assigned to species level may include blue whales.

Sperm Whale

There were four records of sperm whales from offshore waters of Pakistan (Fig. 2). Identification of the sperm whales was based on their typical spouts which project forward and to the left. Presence sperm whale in the area may be attributed to high concentration of purpleback flying squid (*Sthenoteuthis oualaniensis*) in the northern Arabian Sea (Tian *et al.*, 2006) upon which sperm whales may be feeding.

Unidentified Baleen Whale

A number of baleen whales were sighted but could not be assigned to any specific whale species because of their distance from the boat and/or lack of photographic/video evidence. In some cases, these were sighted but the whale disappeared from view before a photograph or video could be taken. There were a total of 15 such sightings (Fig. 3) most of which from offshore waters of Balochistan

except two which were recorded from continental shelf at Ormara and Shumal Bundar along Balochistan coast. In most cases, whale blows were sighted and/or photographed which confirmed them to be baleen whales (and distinguished from sperm whales). . Less records of blue whale in 2018 may be attributed to operation of Pakistani tuna gillnet fleet in the further offshore waters (known to have thin population of whales) during November- December 2018, as compared previous years.



Fig. 3. Sighting of unidentified baleen whales in the northern Arabian Sea during 2018.

DISCUSSIONS

In 2018, only 35 whale sightings were reported from northern Arabian Sea along the coast of Pakistan and beyond in the area beyond national jurisdiction (ABNJ). In comparison to year 2016 and 2017, the number of whale sighting was comparatively less. In 2016, 47 whale sightings were recorded from same area where as in 2017, a total of 95 whale sightings were recorded (Fig. 4). A near-doubling of whale sightings in 2017 as compared to 2016 was attributed to increased awareness and effectiveness of the WWF-Pakistan’s Crew Based Observer Programme.

This decrease in sighting during 2018, however, can be attributed to early closure of tuna fishing in late April 2018 because of extremely low prices of tuna March and April 2018 in the market. This is because of currency crises in neighbouring country where bulk of the tuna catch is destined. Usually a voluntary two month close season is observed between June and July, however, the new fishing season in 2018 was started in September as compared to previous years when it was started in August. The close season, therefore, remained effective for about four months (May to August).

In addition, a major part of tuna fishing fleet operated in the further offshore waters (known to have thin population of whales) during 2018 to avoid checking by Government agencies in the coastal area for implementation on various legislation during November- December 2018.

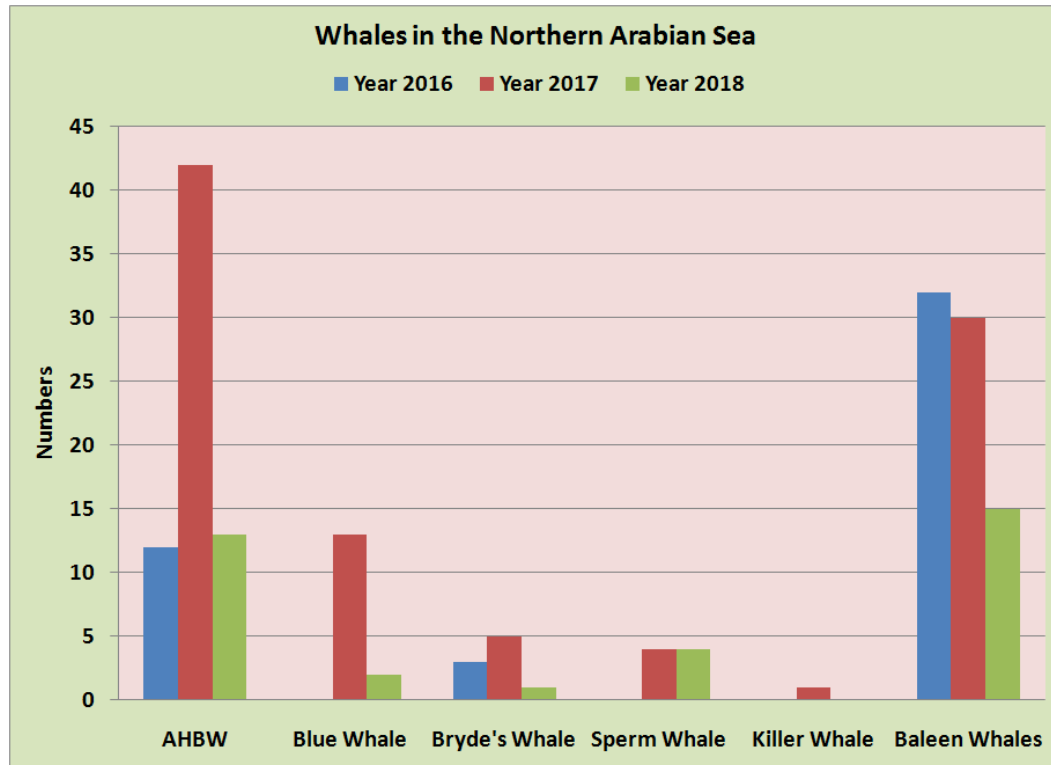


Fig. 4. A comparison of the number of sighting of whales in the northern Arabian Sea during 2016 to 2018.

No major seasonal trend in whale sighting was observed during 2018, however, the majority of sightings (21 out of 35) recorded during the post-southwest monsoon period (September-November). Only 6 sightings were recorded during the northeast monsoon (December-February) and 8 during the pre-southwest monsoon period (March-April). No information is available for southwest monsoon (May to August) because of the voluntary closed season observed by the fishermen engaged in tuna gillnetting.

WWF-Pakistan's Crew Based Observer Programme has provided a platform for collection of information about cetaceans of the northern Arabian Sea along the coast of Pakistan and in the adjacent ABNJ. New sightings of whales especially records of the Arabian Sea humpback whale off the coast of Pakistan are clearly very valuable, as highly limited information about the population of this whale is available.

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