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**Sightings of whales in the Northern Arabian Sea along the coast of Pakistan in 2022 and 2023**

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# Sightings of whales in the Northern Arabian Sea along the coast of Pakistan in 2022 and 2023

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## ABSTRACT

An observer programme was initiated to monitor tuna gillnet operations in the coastal and offshore waters of Pakistan in 2012. In addition to collecting information about tuna and tuna-like species, observers were trained to report observations of whales encountered during fishing operations. Although this programme was completed in 2019, a number of the trained observers continue to provide information on a voluntary basis enabling them to document sightings of whales in the coastal and offshore waters of Pakistan (northern Arabian Sea). During 2022 and 2023 (through March 2023) 15 crew-based observers reported a total of 4 sightings of Arabian Sea humpback whales (*Megaptera novaeangliae*), 2 sightings of blue whales (*Balaenoptera musculus*), 1 sighting of sperm whales (*Physeter macrocephalus*), 3 strandings of Bryde's whales (*Balaenoptera brydeii*) and 9 sightings of unidentified whales. During 2021, a total of 34 reports of sightings or stranding were reported whereas in 2022 only 15 such reports were available. The reduction in the number of reports of sightings is attributed mainly to decreased voluntary reporting by the observers since funding for the programme expired.

## INTRODUCTION

Pakistan's Arabian Sea coast is known to have a diverse cetacean fauna which includes both baleen and toothed whales documented by a number of studies, a review of which is provided in Moazzam and Nawaz (2019, 2022). Among baleen whales, three species including Arabian Sea humpback whales (*Megaptera novaeangliae*), blue whales (*Balaenoptera musculus*) and Bryde's whales (*Balaenoptera brydeii*) have been reported from Pakistan, whereas toothed whales include sperm whales (*Physeter macrocephalus*), killer whales (*Orcinus orca*), dwarf sperm whales (*Kogia sima*), pygmy sperm whales (*Kogia breviceps*), Longman's beaked (or tropical bottlenose (*Indopacetus pacificus*) and Cuvier's beaked whales (*Ziphius cavirostris*).

Information about sightings of whales in Pakistani waters were reviewed by Moazzam and Nawaz (2019, 2022), based mainly on the information generated through the crew-based observers programme initiated by WWF-Pakistan. This crew-based observer programme started in 2012 and continued until September 2019. Although funding for the programme has expired, some of the observers still collect and provide information on a voluntary basis yielding insight into the spatial and temporal distribution of whales in the Northern Arabian Sea during 2022 and 2023 (up to March). This paper provides an update on whale sightings based on the information provided by observers.

## MATERIAL AND METHODS

The procedure adopted for sightings of whales in the waters of Pakistan was described in detail by Moazzam (2019, 2021). During the reporting period (2022 and up to March 2023), sighting data was provided on a voluntary basis by 15 observers/captains of tuna gillnet fishing vessels who previously participated in WWF-Pakistan's Crew Based Observer Programme. These observers were trained by WWF Pakistan and have the necessary equipment (GPS, Android mobile phones) to accurately record their positions and observations. Species identifications

were considered positive only if sufficient evidence was available for the authors to confirm identification. In all other cases, identifications were considered unconfirmed as recorded as unidentified whales. It may be added that the number of observers reporting data voluntarily is progressively decreasing. In 2021, a total of 24 observers regularly provided the information which was reduced to only 15 during the present reporting period.

## RESULTS

### Whale sightings

During reporting period (2021 and 2023-up to March), a total of 4 sightings of Arabian Sea humpback whales, 2 sightings of a blue whale, 1 sighting of sperm whale, 3 stranding of Bryde's whale and 9 sightings of unidentified whales were made. Comparatively fewer whale sightings or stranding were recorded during this period as compared to previous years (2016 to 2021).

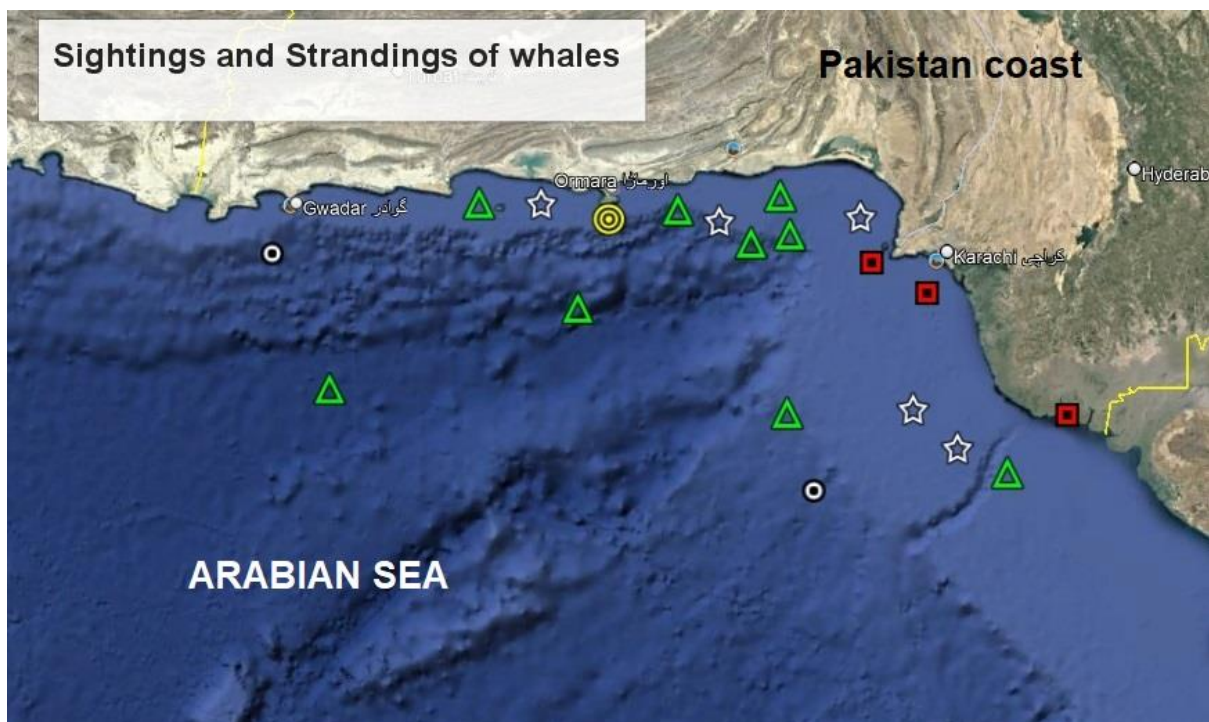


Fig. 1. Sighting of Whales along Pakistan coast during 2022 and 2023 (up to March). Arabian Sea humpback whales (white stars), blue whales (white circles), Bryde's whales (red square), sperm whales (yellow circle) and unidentified baleen whales (Green triangles).

### Arabian Sea humpback whales

During the study period, only 5 sightings of Arabian Sea humpback whales were made from coastal waters along Balochistan coast (Fig. 1). In one case on 17 April 2022 an Arabian Sea humpback whale was sighted near Phor, Balochistan that could not be photographed. However, the observer was sure because of its typical hump under the dorsal fin and distinctive tail fluke. On 16 October 2022, an Arabian Sea humpback whale was observed to be feeding on the school of Indian oil sardines (*Sardinella longiceps*) near Churna Island (Fig. 2). On 2 November 2022, another Arabian Sea humpback whale was sighted near Bal, Ormara. The photograph could not be taken but its flipper slapping was observed.

On 1 March 2023, another Arabian Sea humpback whale was photographed and observed near the Indus Swatch about 25 n. miles from the coastline (Fig.3). This Arabian Sea humpback

whale had a noticeable indentation on its back anterior to the dorsal fin, similar to a photo-identified whale from Oman, OM11-010 (featured in a figure in Minton *et al.*, 2022). OM11-010 was first observed in Oman in 2011, at which time the fluke and dorsal injuries had completely healed and formed scar tissue. This highly distinctive whale was observed again by divers off the coast of India in December 2019 (Minton *et al.*, 2022). Another observer photographed the same whale about 20 n. miles further north after a few hours later. Although the quality of photos obtained did not allow researchers to confirm with certainty that it was OM11-010, the distinctive scarring and damage is compellingly similar. In addition, some of the whale sightings from the area that could not be assigned to species level may include Arabian Sea humpback whales.



Fig. 2. An Arabian Sea Humpback Whale feeding on dense school of sardines near Churna Island.



Fig. 3. Arabian Sea Humpback Whale sighted on 1 March 2023 near Indus Swatch that looks very similar to ASHW OM11-010, identified for the first time in Oman in 2011 (sensu Minton *et al.*, 2022).

## Blue whales

There were only 2 confirmed sightings of a blue whale during the study period. One individual was observed on 6 October 2022 from Sindh coast, 107 n. miles southwest of Karachi (Fig. 4). Another blue whale was observed near Gwadar on 6 April 2022, which could not be photographed, however, because of its diving and surfacing pattern it was identified as blue whale. The observer who reported this was adequately trained to distinguish blue whale's diving and surfacing pattern from that of other whales. There may be other sightings of blue whales which may be included in the sightings of unidentified whales from the area but because of limited information cannot be assigned to blue whales.



Fig. 4. Blue whale sighted at 23 19 588 N 66 06 913 E on 6 October 20

### **Bryde's Whales**

During the reporting period, 3 strandings of Bryde's whales were reported from the Pakistan coast. A dead Bryde's whale was found floating near Churna Island on 25 January, 2022 which has a swollen tongue (Fig. 5). Another Bryde's whale drifted in Karachi Port on 8 March, 2022 which was later towed to Karachi Fish Harbour (Fig. 6). This animal was butchered and its meat was allegedly used as raw material for production of fishmeal. A third Bryde's whale was stranded at Mal Creek on 24 February, 2023 (Fig. 7). There may be other sightings of Bryde's whales which may be included in the sightings of unidentified whales from the area but because of limited information cannot be assigned to Bryde's whales. It is interesting that all strandings reported since 2020 were of Bryde's whales which may be on account of their presence in comparatively shallower waters on the continental shelf and interaction with fishing gears resulting in their entanglement and death.



Fig. 5. Dead Bryde's whale floating near Churna Island in 25 January 2022



Fig.6. Bryde's whale entangled in gillnet in the offshore waters and drifted in Karachi Port.



Fig. 7. Bryde's whale stranded at Mal Creek on 24 February, 2023

### **Sperm Whale**

On 12 November 2022, an observer photographed a sperm whale peeking from the sea surface near Ormara (Fig. 8). This was a solitary individual which dived and was not seen coming out of sea again.



Fig. 8. Sperm whale peeking near Ormara (Balochistan Coast)

### **Unidentified Whales**

There were 9 sightings of unidentified whales during the reporting period. During all these sightings whales could not be assigned to any specific baleen whale species because only their blows were seen at a significant distance from the boat, and lack of other evidence (such as dive pattern) prevented a species ID. Of these, 7 were reported in 2022 whereas two records were made in March 2023. In these cases photographs and video clips are not available.

## DISCUSSION

Fewer whale sightings were reported from the Pakistan crew-based observer programme during 2022 and 2023 (up to March) compared to previous years (2016 to 2021) which is evident from Table-I. The decrease in sighting/stranding during the reporting period is mainly due to reduction in the number of observers voluntarily reporting to WWF-Pakistan. It may be pointed out that most of the sightings and standings are reported from North East Arabian Sea IMMA which is known to be a hotspot for whales, especially during March and April.

It was interesting to note Arabian Sea humpback whales feeding on a massive school of Indian oil sardinella (*Sardinella longiceps*) near Churna Island. The fish school was spread in an area of about 2 km<sup>2</sup> and ASHW was seen plunging through the school. Occurrence of ASHW OM11-010 (sensu Minton *et al.*, 2022) is first record of an ASHW which was previously reported from Oman and India is made from Indus Swatch (east coast of Pakistan).

It may be noted that the WWF-Pakistan's Crew-based Observer Programme formally ended on September 30, 2019, resulting in a decrease of reported sightings since then. It may further be added that only limited records of whales due to the decreased in number of observers voluntarily reporting sightings to WWF-Pakistan.

Table 1. Summary of Sightings of whales recorded from Pakistan Coast (Arabian Sea)

Year	AHBW	Blue Whale	Bryde's Whale	Unidentified Baleen Whale	Sperm Whale	Killer Whale	Cuvier's Beaked whale	Total
2016	12	0	3	32	0	0	0	47
2017	42	13	5	30	4	1	0	95
2018	13	2	1	15	4	0	0	35
2019	7	1	1	8	6	0	3	26
2020	5	1	0	12	0	1	0	19
2021	4	1	1	28	0	0	0	34
2022	3	2	2	7	1	0	0	15
2023 (up to March)	1	0	1	2	0	0	0	4

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 whales off the coast of Pakistan are clearly very valuable, as highly limited information about the population of this whale is available. While the programme officially ended on September 30, 2019, WWF-Pakistan is endeavouring to secure funds to ensure the continuation of the Crew-Based Observer Programme, even with a limited number of observers.

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