

## RECORDS OF INDO-PACIFIC FINLESS PORPOISE *NEOPHOCAENA PHOCAENOIDES* (G. CUVIER, 1829) FROM NORTHERN GULF OF KACHCHH COAST, GUJARAT, WESTERN INDIA

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### ABSTRACT

Indo pacific finless porpoise *Neophocaena phocaenoides* (G. Cuvier, 1829) commonly known as Finless porpoise is one of the important marine mammals found in Indian waters. The present records aim to report two instances of the dead finless porpoise from the Northern Gulf of Kachchh (Kachchh coast) along with some of their morphometric character and measurements. This article discusses the occurrence of the species twice in the year 2019 (March and December). This forms the first substantiated record of the Indo-pacific Finless porpoise from the Northern Gulf of Kachchh.

**Keywords:** Kachchh, Marine Mammal, Indo-pacific Finless Porpoise, Guajrat

### INTRODUCTION

The Indo-Pacific finless porpoise *Neophocaena phocaenoides* (Mammalia: Cetartiodactyla: Phocoenidae) also known as the Finless porpoise, is one of seven porpoise species found globally. It is distributed in the coastal waters around India, Pakistan, Bangladesh, Malaysia, Korea, Taiwan, China, Japan, and Indonesia (Gao, 1991; Gao and Zhou 1995; Preen 2004; Collins *et al.*, 2005; Ponnampalam, 2012; Wang and Reeves, 2017). Throughout their range, the porpoises stay in shallow waters, up to 50 m (160 ft) deep, close to the shore, in waters with soft or sandy seabeds, estuaries and mangrove swamps. In India, the species is distributed along the length of the east and west coast out of which the stranding and sighting reports are mainly from the west coast (Monolisha and Patterson, 2014; Wang and Reeves, 2017; Sule *et al.*, 2017). This may be due to more favorable and suitable habitat availability towards the western coast (Sule *et al.*, 2017).

Indo-Pacific finless porpoise (*N. Phocaenoides*) falls under “Vulnerable (VU)” category of IUCN Red List (Wang and Reeves 2017), in Appendice - I of CITES, Appendix II of the Convention on Migratory Species (CMS) and in Schedule-I of Indian Wildlife Protection Act 1972 making its sightings important for conservation.

Studies on the marine mammal in India are still not adequate looking at its coastal development against its rich diversity of 25 species (Kumaran, 2002). Gujarat state has a long coastline of 1650 km inclusive of two Gulf viz. the Gulf of Kachchh and the Gulf of Khambhat. The spectrum of habitats makes the area suitable for marine biota. Scattered studies reporting marine mammals along the Gujarat coast occur; most of them being from the Gulf of Kachchh (GoK) and restricted to the Marine National Park (Singh 2003). Moreover, most occurrence reports are of Dugong or Dolphins (Singh *et al.*, 2004; Kukadia *et al.*, 2016; Anand *et al.*, 2017; Apte *et al.*, 2019). The occurrence of the species along with many other marine mammals in GoK has been discussed by Singh (2003). However, very few records exist on Finless porpoises’ sightings and stranding.

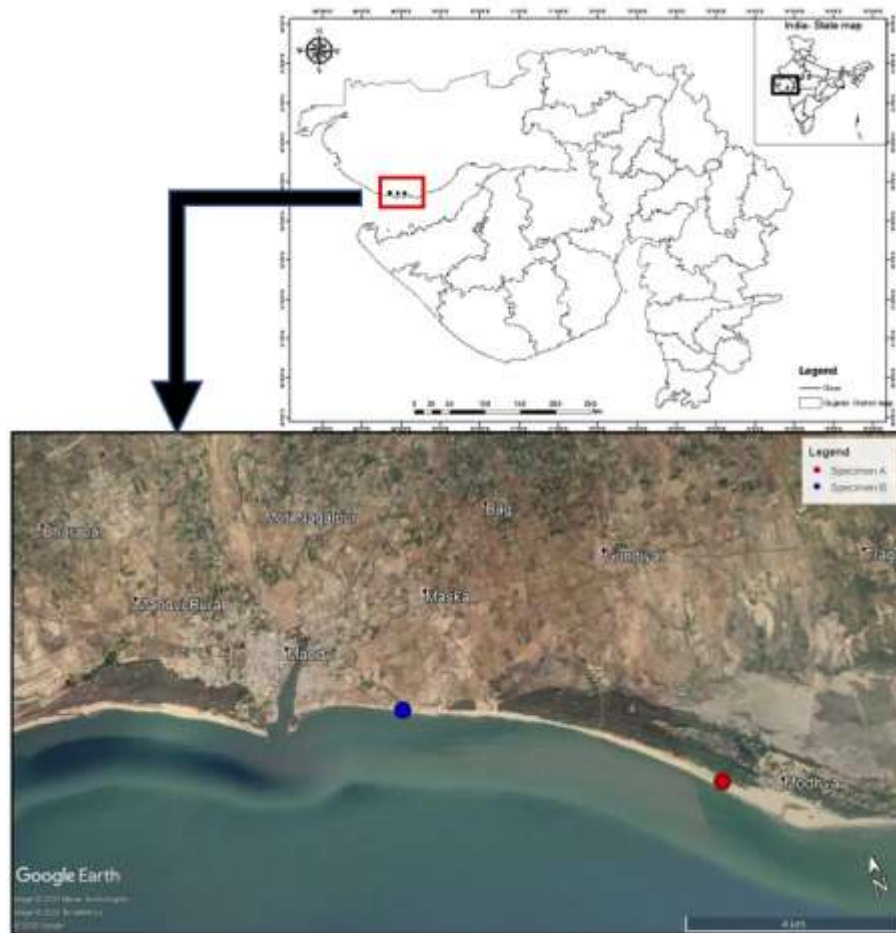
### **Study Area and Morphometric Documentation**

Both the records of *N. phocaenoides* here are from Mandvi and the adjacent coastline, the Northern Gulf of Kachchh (Fig.1). The sites were visited by the team of researchers and students on the report of stranding of an animal. The field photographs on the actual site were taken as a record followed by morphometric evaluation upto the possible level (as per fig. 2). The sex of the stranded animal was determined by looking at the genital and mammary slits on the ventral body surface (Fig. 3d).

### **RESULTS AND DISCUSSION**

Here we report the occurrence of two stranded (dead) Indo Pacific finless porpoise along the Mandvi coast, Northern GoK during the year 2019 (Fig. 1). The putrefied carcass of the porpoise was found ashore on 14 March 2019 and a freshly dead specimen on 18 December 2019. This forms the first report of the Finless porpoise along the Northern Gulf of Kachchh coast as well as adds to the existing marine mammal reports from the Indian coastline. The recorded detail of this stranding can be useful baseline data for future studies on marine mammal research.

First occurrence of the species was recorded on 14 March 2019, along the upper intertidal zone along the coastal stretch of Mandvi. The body of the porpoise was much decayed, limiting proper measurements, color, and sex identification (Fig. 3f). The total length of the animal was found to be 124 cm (excluding the tail portion which was putrefied).

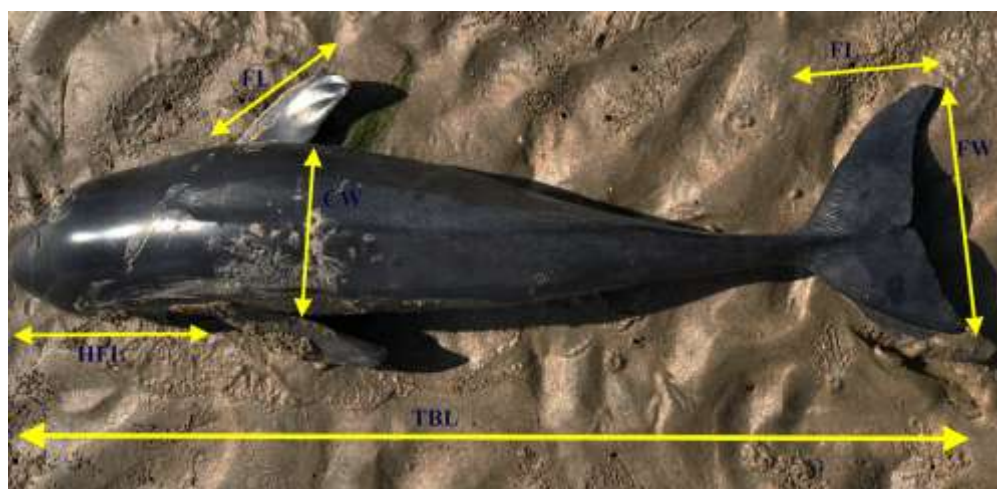


**Figure 1: Location map of reported dead Finless porpoise along Kachchh coast (Northern GoK).**  
(Inset image source: Google earth)

The second stranding of a dead individual porpoise recorded on 18th December 2019 in the same coastal stretch along the Mandvi coastal belt. The site was spatially close to the location of the first reporting site. The specimen was measured and photographed (Fig.3a-e). The confirmation of the species was done using distinguishing characters like the absence of the dorsal fin replaced by a bump-like structure down to the middle of the back, presence of an anterior head bump, partial posterior lower jaw, spade-shaped teeth, caudal fluke served as characteristic feature of Finless porpoise in both cases. The external measurements were taken along with total body length (Snout to notch of the tail fluke) which in specimen-B was found to be 82 cm. Moreover, the sex of the dead specimen was designated by observing the genital and mammary slit. The same in the second instance was found to be female sub-adult porpoise (Fig. 3d). Flippers with the rounded tip measured 17.2 cm to the tip of the anterior insertion in length. Basic morphometric records from both the specimens are presented in Table 1. Both the reporting of the specimen was informed to the local forest official and the dead specimens were finally procured by the Forest Department for further investigation.

**Table 1 (A) and (B): Morphometric measurements of the recorded finless porpoise, (Specimen-A Porpoise observed in March-2019 and Specimen-B: Porpoise observed in December 2019)**

	Specimen-A (March 2019)	Specimen-B (Dec. 2019)
<b>Total Body length (Snout tip to median notch)</b>	124 cm (excluding tail due to decay)	82 cm
<b>Circular Body width</b>	98 cm	45.7 cm
<b>Flipper length</b>	27.86 cm (Damaged)	17.2 cm
<b>Fluke width</b>	Fluke Missing	20.3 cm
<b>Tail length (starting to tip of fluke)</b>	Tail decayed	17.18 cm
<b>Head length</b>	Decayed	38 cm
<b>Length from flipper to head</b>	30.4 cm	15 cm
<b>Length of Upper jaw</b>	22.8 cm	23.3
<b>Length of Lower jaw</b>	20.5 cm	21.5
<b>Ratio of Upper jaw: lower jaw</b>	1.11	1.08
<b>Total weight</b>	~60Kg	--



**Figure 2: Fresh porpoise found in second occurrence case with morphometric dimensions taken into consideration. (TBL- Total body length, HFL – Head to flipper length, CE – circumferential width, FL – Flipper length, FW – Fluke width, FL in tail – Fluke length)**



**Figure 3: Photographs showing instances of dead porpoise *Neophocaena pater* reported along Kachchh coast. (a-e) Fresh porpoise reported in Dec 2019. a). Fresh photograph of stranded animal. b). peculiar bump seen on the head c). short flippers backwardly directed d). Confirmation of female specimen by presence of genital slit and mammary slit presented by large and small arrows respectively e). typical porpoise fluke (f-g) Second specimen -Dec.2019, decayed specimen with fluke missing and prominent head and teeth seen. (Photograph courtesy: e, f – Mr. Vivek Chauhan and Mansi Goswami & a-e Mr. Nityanand Jani)**

Records of the species are very scanty along the Indian coast and especially on the western coast of India (please refer Table 2 from Monolisha and Patterson, 2014). Present observations form the first record of the Indo-Pacific finless porpoise (*N. Phocaenoides*) from the northern Gulf of Kachchh and probably one of the few records of the finless porpoise from the state. Kachchh coast forms the northern lip of GoK and is fringed by creeks, mangroves and sandy beaches. Apart from ecological richness, the area has witnessed heavy coastal development. Yet, the marine mammal records from this large stretch are scanty and inadequate. Kukadia *et al.*, (2016) have recorded humpback dolphin from Jakhau while the rest of the reports are from Marine National Park limits (Singh, 2003; Singh *et al.*, 2004). The spatially close occurrence of porpoise can be suggestive of a good viable population in the area.

India has a vast coastal belt with the western state Gujarat covering nearly 1650-km coastal stretch, however, we deficit in having proper knowledge of marine mammals along the Indian waters (Kumaran, 2002). As the proper monitoring and studies on species such as the Indo-pacific finless porpoise are challenging and data limiting; stranding and death records can serve as an important tool to map the status, distribution and threats to the species. Paltier *et al.*, (2019) in his compilation has clearly emphasized the stranding of marine mammals with the vehicular traffic in the sea. The northern stretch of GoK (Kachchh coast) is diverse ecologically and economically important having numerous existing and upcoming coastal developments including busy ports. Conservation of marine mammals with proper documentation can be a useful tool to understand distribution and to frame a proper conservation policy for marine mammals.

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