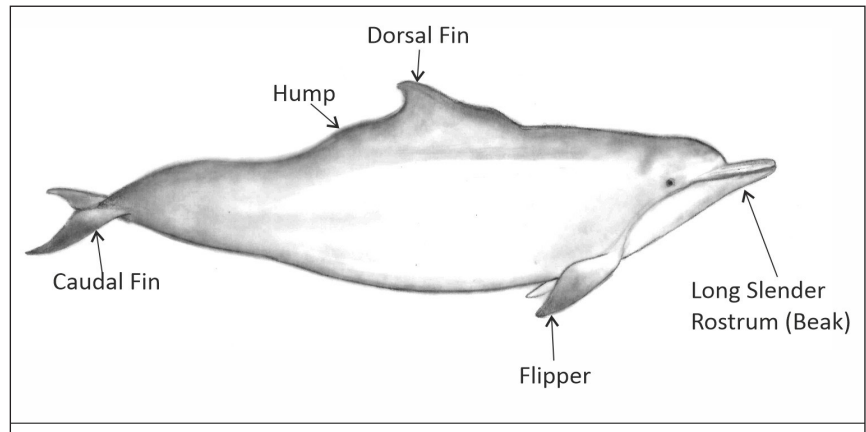
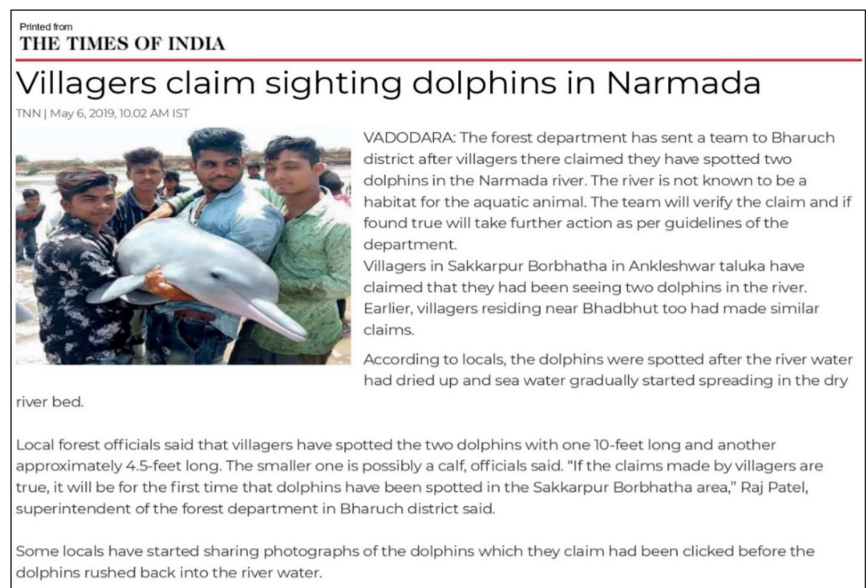


The occurrence of Indo-Pacific Humpback Dolphin in estuarine area of Narmada River, Gujarat

Gujarat State is one of the maritime states endowed with the longest coastline of all the Indian states with rich coastal biodiversity (Sengupta & Deshmukh 2000). The intertidal zone of the coastal area of the state shelters a variety of marine life, ranging from big vertebrates (including marine mammals) to small invertebrates such as gastropods (Singh 2003). The Indo-Pacific Humpback Dolphin *Sousa chinensis* (Osbeck, 1765) is a marine mammalian species belonging to the order Cetacea and Delphinidae family (Vivekanandan & Jeyabaskaran 2012). It is categorized as 'Vulnerable' as per the IUCN Red List of Threatened Species (Jefferson et. al. 2017; IUCN 2023). It is a Schedule-I marine mammal as per the Indian Wildlife (Protection) Amendment Act, 2022. It is included in Appendix I of the Conservation of International Trade of Endangered Species of Flora and Fauna (CITES) and listed in Appendices II of the Convention on Migratory



A pencil sketch showing morphological identification characters of Humpback Dolphin.



A newspaper cutout of a claim of dolphin sighting by local people in the past. (Source: Times of India, 06 May 2019).

Species (CMS). Several studies have described various habitats wherein Indo-Pacific Humpback Dolphins occur (Jefferson 2000; Karczmarski et al. 2000, 2016; Folkens et

al. 2002; Shirihai et al. 2006; Jefferson & Smith 2016). As per these studies, they mainly live along coastal areas such as bays, lagoons, estuaries, mangrove forests, coral



Detection of Indo-Pacific Humpback Dolphin near Mahegam Village, Narmada Estuary (Bharuch District). The inset picture shows the characteristic hump of this species. © GEER Foundation.



Long slender rostrum (beak) of Indo-Pacific Humpback Dolphin in the inset picture. © GEER Foundation.

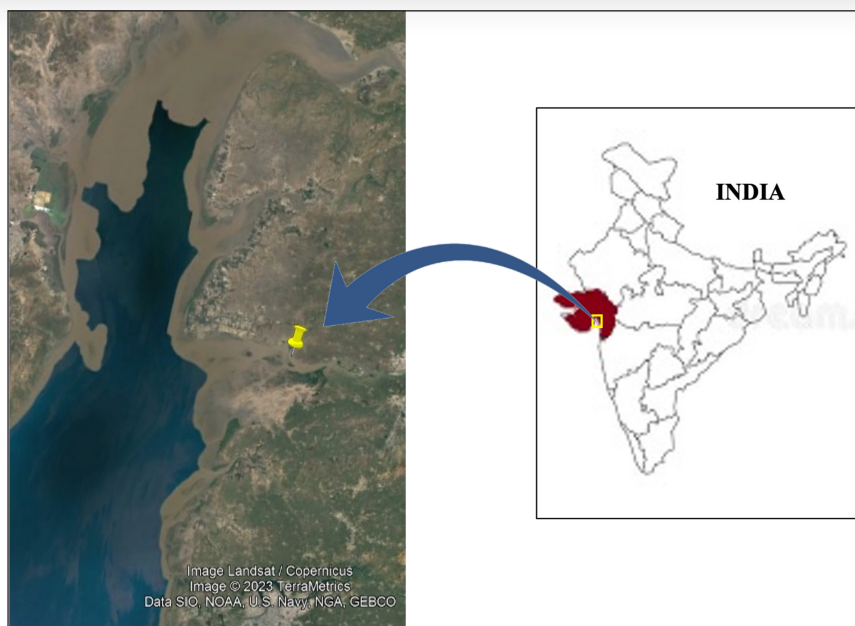
reefs, sand-banks, large river mouths, and other watery regions and they remain close to coastal habitats. It inhabits the shallow water coastal seas and remain mostly within 400 m of the shore, in water less than 15 m deep (Karczmarski et al. 2000). The distribution records of different subspecies

of Humpback Dolphins *Sousa* spp. in coastal regions worldwide (Würsig et al. 2018). This species has been well distributed along the coast of the country (Lydekker 1903, 1908; Mohan 1982, 1983; Pillai & Kasinathan 1988; Parsons 1998; Kumaran 2002; Afsal et al. 2008; Muralidharan 2013).

It is also frequently found in the offshore shallow water areas in Marine National Park & Sanctuary, Jamnagar of Gujarat State (Singh 2003). The Narmada Estuary and adjoining waterbodies constitute very significant area; various inland and coastal fauna species have been reported at different locations (Kamboj et al. 2017).

In addition to the records by researchers, news of local villagers of Sakkarapur Borbhatha (21.6728 N & 72.9742 E) in Ankleshwar Taluka (Bharuch District) had claimed having observed some dolphins in the Narmada River, and their claim was published in a newspaper (Times of India 2019). However, they had not reported the species of dolphin they had encountered.

Therefore, the research team of GEER Foundation conducted long-term ecological monitoring of Narmada Estuary initiated to keep vigilant watch for the occurrence of any species of dolphin in coastal/ riverine area at the junction of Narmada River and the Arabian sea near different villages (e.g., Mahegam, Suva, Jageshwar, and surrounding area of Alia bet).



Location of Indo-Pacific Humpback Dolphin sighting in the estuarine area near Mahegam Village of Bharuch Taluka (Bharuch District).

On 2 December 2022, during field observations conducted from a pre-established observation point in the estuarine area of Narmada River near Mahegam Village (21.6711 N & 72.7583 E) of Bharuch Taluka (Bharuch District), the team captured sufficient photographic records of three individuals of the species which was later identified as Indo-Pacific Humpback Dolphin. Though the photographs taken by GEER researchers can be considered as record shots, the dolphin's morphological characters such as a long slender rostrum (beak) and a hump on the back could be seen in the photographs providing

necessary evidence of the presence of this species in estuarine area near Mahegam Village. The team also conducted a rapid interview of local fishermen. According to responses of the fishermen, some dolphins (locally called "Magra") are occasionally seen around full moon day during high tide in this area. However, they did not have proper information about the species. It is well-known that sightings of dolphins are increased during high tide (Fury & Harrison 2011).

Thus, the photographic record by the GEER Foundation research team is the first authentic record of the

occurrence of the Indo-Pacific Humpback Dolphin in the Narmada River estuary in the Bharuch District near the Gulf of Khambhat (GoKh).

Recommendations

This Schedule-I species needs effective protection against anthropogenic activities. The GEER Foundation team's confirmed record of occurrence in the Narmada Estuary (near Mahegam village) indicates the critical need to conserve this species and its habitats from human disturbance. Gujarat Forest Department of Bharuch District and NGOs in the area should organize awareness programmes in Mahegam and nearby villages to correctly identify this species and make people aware of the importance of its conservation.

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