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First photographic evidence of Indo-Pacific Humpback Dolphin (*Sousa chinensis* Osbeck, 1765) from the tidal river Rupnarayan, West Bengal, India

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Sousa chinensis (Osbeck, 1765) of the genus *Sousa* (subfamily Delphininae) also known as the Indo-Pacific Humpback Dolphin (IPHD from hereon), is classified as 'Vulnerable' (VU) according to the IUCN Red List (Jefferson *et al.* 2017). This species is protected under Appendix I of (Conservation of International Trade of Endangered Species of Flora and Fauna (CITES) and is also listed in Appendix II of the Convention on Migratory Species (CMS). Jefferson *et al.* (2014) discovered four species of *Sousa* in their taxonomic analysis of humpback dolphins, with the IPHD being distinct from the other species.

IPHD is found in the coastal waters of the eastern and western Indian Ocean, as well as in the northwestern, southwestern, and western central Pacific oceans (Jefferson *et al.* 2017). These dolphins have been observed throughout the Indian coastline (Blandford 1888–91; Lydekker 1903, 1908; Lal Mohan, 1982, 1983; Pillai & Kasinathan 1988; Parsons 1998; Kumarran 2002; Sutaria & Jefferson 2004; Afzal *et al.* 2008; Muralidharan 2013; Sule *et al.*, 2015; Panicker & Sutaria 2013; Sutaria 2009; Jefferson & Smith, 2016). On the western coast of India, most sightings are concentrated along the Malabar shoreline in Kerala (Pillai & Gihir 1974; Leatherwood & Reeves 1989; Lal Mohan 1995). Observations and specimens have been documented along the coast of Andhra Pradesh, and Saurashtra and Surat in Gujarat (Owen 1866; Leatherwood & Reeves 1989; Pillai & Gihir 1972; Sutaria *et al.*, 2015; Kumaran, 2002; Sathasivam, 2000). Pillai & Gihir (1972, 1974) reported the sightings of humpbacked dolphins further north in Pakistan and the Indus Delta. These dolphins are known to venture several kilometers upstream in rivers, particularly in China, including the Yangtze and Pearl Rivers (Wang & Sun 1982; Parsons *et al.*, 1995). However, reports from the midwestern coast of India are comparatively scarce. These dolphins have been reported to occupy a variety of habitats in coastal areas, including estuaries (Parsons, 1998; Muralidharan, 2013; Ross *et al.*, 1994), mangrove islands (Cagnazzi *et al.*, 2011; Durham 1994), enclosed bays (Karczmarski *et al.*, 1999; Chen *et al.*, 2009), and shallow rocky reefs (Karczmarski *et al.*, 2000), and often enter rivers (Singh, 2003). *Sousa chinensis* prefers shallow inshore waters ranging from a minimum of ~1 m to a maximum of 21-30 m depth (Ross *et al.*, 1994; Sutaria & Jefferson, 2004).

As part of the rangewide river dolphin estimation project, the Wildlife Institute of India surveyed river dolphins from December 2022 to March 2023 in the tidal river Rupnarayan, a tributary of the Hooghly river in West Bengal. The Rupnarayan river in West Bengal experiences substantial tidal effects over its entire course. During the survey, the team recorded sightings of IPHD with its calf in Panshuilli village (22.597348° N, 87.851851° E), where the Rupnarayan and Mundeswari rivers meet, on March 3, 2024 at approximately 09:50 h IST (Figure 1 & 2). The width, depth, and salinity of the site were determined to be 270 meters, 2.8 meters, and 1 ppt, respectively. The sighting was approximately 130 km from the mouth of the Bay of Bengal and no IPHD has been recorded in a tidal river upstream, at this distance, globally.

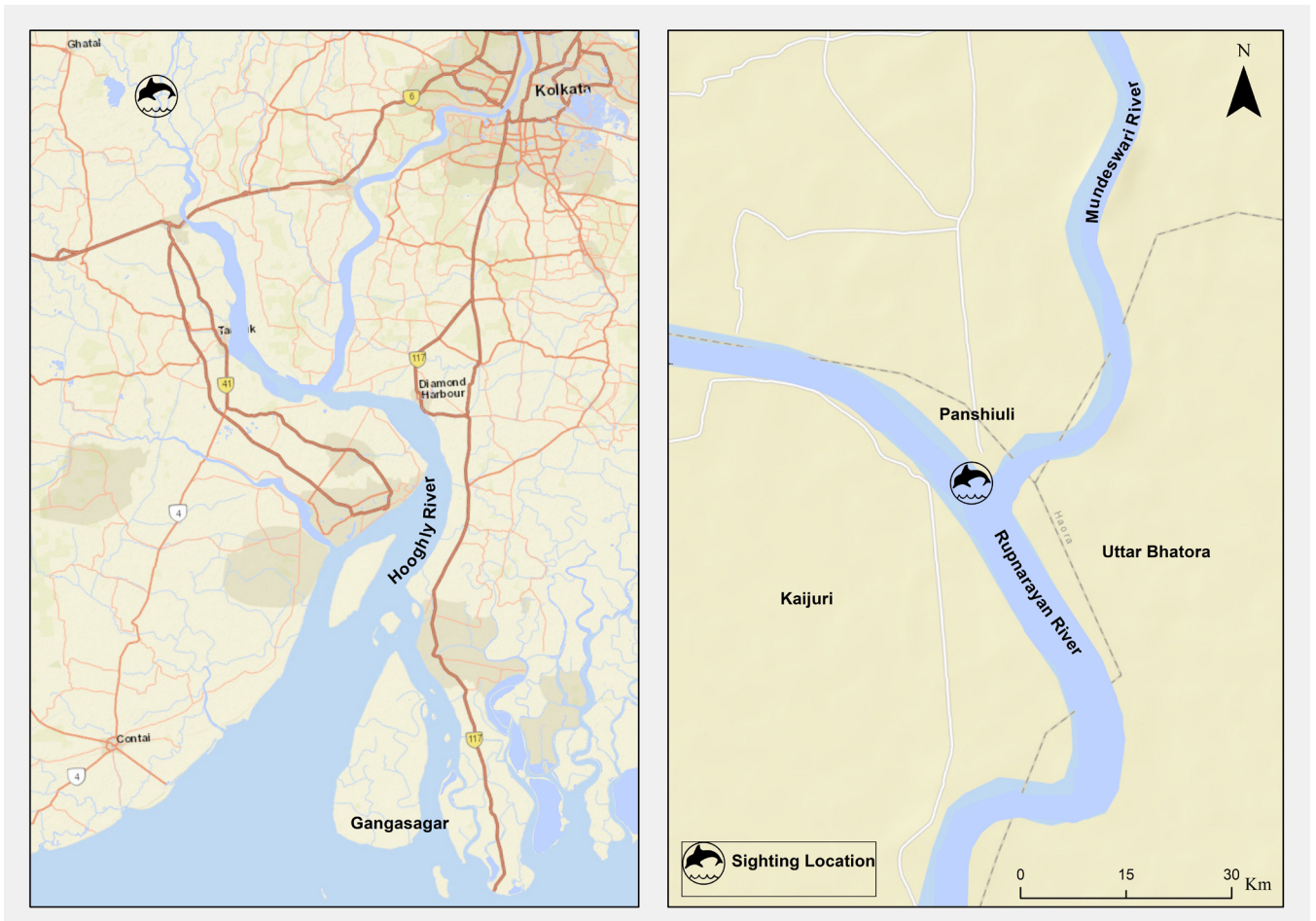


Figure 1: Location of the Indo-Pacific Humpback Dolphin sighting in the Rupnarayan river (March 2024)



Figure 2: Photographs of Indo-Pacific Humpback Dolphin with calf, as recorded in Rupnarayan river (March, 2024)

Tidal rivers are vulnerable ecosystems that act as transitional zones where freshwater and saltwater converge. Marine mammals may be driven to specific areas to seek out alternative habitats depending on changes in water quality, temperature, or habitat availability. Their presence, behavior, and population dynamics can reflect the overall condition of the ecosystem, including water quality and habitat integrity (Wang *et al.* 2019). Observations of IPHD in this tidal river—more than 100 kilometers from the mouth of the bay—highlight the importance of these intermediate habitats between freshwater and marine environments. This situation prompts us to consider the implications of changing riverine salinity and the persistence of intermediate habitats in light of climate change. A more detailed study is required to understand whether encounters with IPHD are a regular occurrence. There is an immediate need to identify such zones for awareness and capacity building in case of stranding or entanglement. These observations are also crucial for the sustainable management of aquatic ecosystems as a unified entity (both freshwater and marine), serving as a reminder to assess our preparedness for emerging challenges.

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CONFLICT OF INTEREST

Qamar Qureshi & Vishnupriya Kolipakam are both academic editors at the Journal of Wildlife Science. However, they did not participate in the peer review process of this article except as authors. The authors declare no other conflict of interest.

DATA AVAILABILITY

No additional data was used in this research.

AUTHORS' CONTRIBUTION

DG, GRC, KR, PB contributed to fieldwork. DG prepared the first draft. GRC, VK, QQ, SR provided inputs on the draft.

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