



On news reports of the Ganges River dolphin (*Platanista gangetica*), Bangladesh

The Ganges River dolphin, also known as the South Asian river dolphin or ‘Susu’, *Platanista gangetica* (Roxburgh, 1801) is present along the Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu River systems and their tributaries, from the foothills of the Himalaya to the limits of the tidal zone in Nepal, India, and Bangladesh (Paudel & Koprowski 2020). The Ganges River dolphin is an obligate freshwater species, but its presence in the estuary waters of the Sundarbans mangrove forest of Bangladesh was verified (see Smith *et al.* 2010). The fishermen on the Ganges River and its major tributaries in India have long practiced using dolphin oil as an attractant for certain catfish, and harpooning dolphins was outlawed in 1972, so is a rare occurrence now. However, it does not appear that dolphin deaths are decreasing (Sinha 2002). The river dolphin frequently gets entangled in fishing nets and mostly suffocates to death (Dewhurst-Richman *et al.* 2019, Shil *et al.* 2023). The population of the species has been decreasing across its entire habitat, dropping from around 5000 individuals in 1982 to fewer than 2000 in 1997, and likely falling to around 1000 by 2003 (Alam & Sarkar 2012).

Habitat loss and fragmentation caused by dams, large embankment schemes and dredging, heavy siltation, bycatch mortality, river pollution by agrochemicals and oil spills, prey depletion, and intentional killing pose serious threats to the Ganges River dolphin (Bashir *et al.* 2010, Rashid *et al.* 2015). Due to the alarming rate of population decline, the species has been assessed as “Endangered” by the IUCN red list (Kelkar *et al.* 2022). In Bangladesh, the Ganges River dolphin is vulnerable and the presence of the species has been confirmed in the Padma, Meghna, Jamuna, Karnaphuli, Halda, Bangkhali, and Turag Rivers (IUCN 2015). However, very little is known about this dolphin's home range or movement habits in other rivers of the country.

In this study, we have investigated articles from online news portals to find out their distribution range, hotspots, and people's attitudes.

We searched for online news articles regarding the species in different search engines (Google, Bing) by some selective keywords. We used some specific key terms like “Ganges River dolphin”, “dolphin”, “shushuk”, and ‘Susu’ to look for online news about the species. We also combined those specific terms with other words like “killed/rescued”, “fisherman”, etc. to narrow the results. We also visited the websites of the country's famous online news portals such as Prothom Alo, Bangla Tribune, Daily Janakantha, and the Daily Star for reports and searched by those same keywords. Both Bangla (the native language of Bangladesh) and English (the official language) news articles were searched. To avoid data duplication, dates, places, river names, portal names, and links of the news were carefully observed and collected. To avoid misidentification of species, photos of the reports were consulted carefully. In case of photographs not being present, the species distribution was scrutinised, and suspicious reports were not taken into consideration. GPS locations were estimated based on the locations indicated in the news reports using Google Earth Pro software. If locational data was missing, the occurrence was not used for producing maps. A distributional map was produced with QGIS (3.28.1) and data were analyzed with Microsoft Excel (version 2023).

A total of 115 individuals of Ganges River dolphin were documented from 2006 to 2023 (up until February 2023; Fig. 1). We found no dolphin records in 2007, 2008, 2013, 2014, and 2017. The Halda and Karnaphuli rivers had the highest number of records. Besides this, Kuakata, the upper streams of the Sundarbans, and the Brahmaputra River have notable sightings. There were slightly higher occurrences during July, August, and September, which correspond with the rainy season. Of the 115 individuals, 81 (70.4%) were reported as mortality cases due to anthropogenic interference (accidental and

suffocating to death in net) and unknown causes, and the rest ($n=34$; 29.6%) were reported alive when they were encountered by a fisherman or a local person. These were all trapped in the fishing nets. Dolphins were mostly killed when they were encountered live entangled in nets. Among those entangled live individuals, 71.4 % ($n=25$) were killed by the fisherman and local people, and only 25.7 % ($n=9$) were rescued and released back into the wild (with a single incidence where it was transferred to a zoo after being rescued). Among the mortality cases ($n=81$), we found 31.5% ($n=36$) were consumed mainly as oil and flesh, 39.1% ($n=45$) were buried. The Bangladesh Wildlife (Conservation and Security) Act was implemented in 2012. However, we found no significant difference between people's response to a live dolphin entangled in a fishing net before (nine incidents) and after (25 incidents) the Wildlife Act implementation in 2012 ($\chi^2=0.0907$, $p=0.7633$).

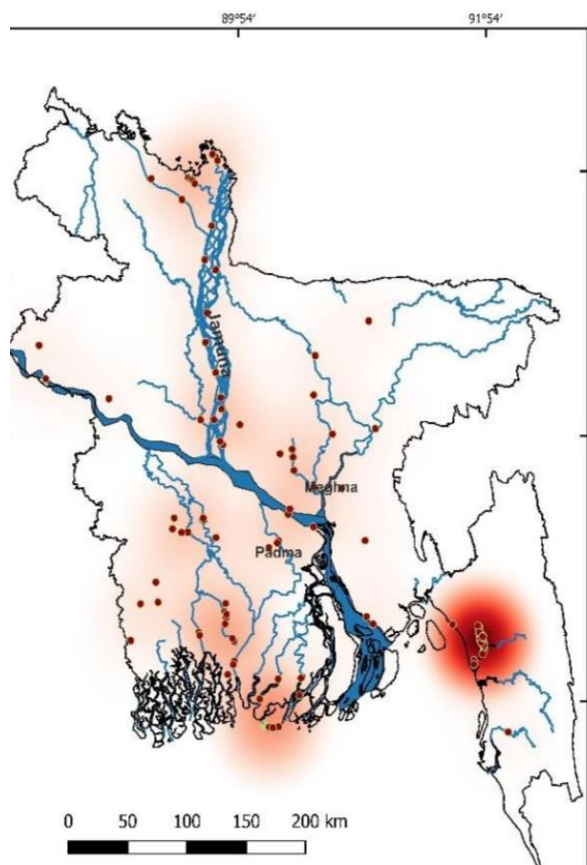


Figure 1: Map showing the records (dots represent single events) of Ganges River dolphins captured in Bangladesh.

The highest number of reports of the Ganges River dolphin were found in the Halda River, Chittagong. The river remains in good ecological condition, and it is one of the healthiest natural

breeding grounds for carp fishes (Akther *et al.* 2023). We also found some reports from the Karnaphuli River. However, none were from the upper stream of the river (Kaptai Lake). Smith *et al.* (2001) sighted no river dolphins in Kaptai Lake and expressed concern for the species' survival in the area. In Patuakhali sea beach, a notable number of individuals were reported. None of them were alive. The dead bodies had been washed up on the seashore. No live specimens were found in Kuakata, Patuakhali. The cause of death was mostly accidental impact of the propellers of boats. There were 12 reports of the river dolphin in the upper region of the Sundarbans. There were also a notable number of reports from the Brahmaputra and its tributaries. Once there was a large population of the species in the Meghna River, though we found only three occurrences of the species in that river (Kasuya & Haque 1972). We found four sightings in three rivers (Turag, Buriganga, Dhaleswari) at Dhaka. Baki (2017) recorded 62 sightings in the Turag River from 2012–2023. In addition, two studies reported 29 and 34 sightings in 2003–2004 and 2012–2023 from the river Buriganga, respectively (Alam *et al.* 2015, Alam & Sarker 2012). A single specimen was recorded from a marsh called Chanda Bill at Gopalganj in 2010. Two separate sightings were reported in Mymensingh (Ishwarganj) and Netrokona (Mohongonj) which are located very far from the main river system of Bangladesh. These two were butchered to facilitate oil extraction activities. There was no previous evidence of this species in the Matamuhuri River, though researchers assumed it exists there (Ahmed 2000, Smith *et al.* 2001). On September 9, 2018, a news report from the river provided additional support for the claim regarding the species, reinforcing its validity. If an entangled one is encountered by humans, they are usually killed rather than rescued. The main reason for killing a Ganges River dolphin is to get its oil. Local people believe it has a great power to heal diseases such as rheumatoid arthritis. Besides, the oil is used as fish bait (Bairagi 1999, Sinha 2002). The reports indicate that 7% of the total dolphins were taken to the University or research institute for investigating the cause of death or for other educational purposes. A live specimen was taken to a zoo (Rangpur) after having been rescued from entanglement in a fishing net from the Dharla River. Its eventual fate was not recorded in the reports. In 1995, a live specimen was taken to a fish tank after rescue from a

fishing net in the Halda river, but died the following day (Ahmed 2000). The occurrences of river dolphins were high in July, August, and September, with September recording the most. There are also significant occurrences in January. The seasonal patterns found in the present study are more or less similar to Baki *et al.* (2017). These months are generally known to have heavy rainfall and the water level of the river and tributaries rises in Bangladesh. We found 36 news reports with both the weight and length of the species. A strong positive relationship between the body length and the weight of the Ganges River dolphin has been observed ($r=0.71$). The present study found a good number of sightings in several places (Table 1), which might be an indicator of a good population.

Table 1. Some of the heaviest and longest dolphin reported during 2006-2023 (— = no data)

Year	Est. Weight (kg)	Est. length (m)	Location	River
2016	320	—	Shahjadpur, Sirajganj	Jamuna
2020	400	—	Bera, Pabna	Hursagor
2021	400	—	Kazipara, Sirajganj	Jamuna
2021	120	~3	Hathazari, Chittagong	Halda
2018	200	~2.5	Fulchori, Gaibandha	Brahmaputra
2021	140	~2.5	Kaunia, Rangpur	Teesta
2022	120	~2.5	Hathazari, Chittagong	Halda

The areas should be surveyed regularly to determine population size and trends. For the conservation of the species, knowledge among fishermen and the application of the legislation are crucial. To reduce human-wildlife conflict, a great effort from different authorities such as locals, farmers, agriculturists, municipal officers, industrialists, social activists, and ministries of government is needed. Also, a systematic investigation is necessary to assess the population size across the entire country.

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