



## Vikramshila Gangetic Dolphin Sanctuary: Home To National Aquatic Animal Of India

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### Abstract

Gangetic dolphin (*Platanista gangetica*) is an endangered species found in Gangetic-Brahmaputra plain of India. It has been declared as the national aquatic animal of India. The species is found in Ganges–Brahmaputra–Meghna and Karnaphuli–Sangu River systems of India, Bangladesh and Nepal. A 60 km stretch of Ganga from Sultanganj to Kahalgaon in the district of Bhagalpur has been declared as Vikramshila Gangetic Dolphin Sanctuary named after the Pal dynasty university ‘Vikramshila’. This species has been declared as National Aquatic Animal of India. The number of dolphins represent the health of aquatic system along with people response to this creature.

**Key Words:** Gangetic dolphin, Dolphin sanctuary, Bhagalpur, Vikramshila, National Aquatic Animal

### 1. Introduction

Vikramshila Gangetic Dolphin Sanctuary was notified in the year 1991. Gangetic dolphin has been notified as National Aquatic Animal of India on 18<sup>th</sup> May 2010 by Ministry of Environment, Forest and Climate Change, Government of India. The decision was taken in the first meeting of National Ganga River Basin Authority (NGRBA) chaired by Prime Minister Dr. Manmohan Singh on 5<sup>th</sup> October 2009. This day (5<sup>th</sup> October) is celebrated as “National Dolphin Day”. As per the ministry’s notification, their estimated population was 2000 in 2010 (“Dolphin Declared National Aquatic Animal,” 2010). As per current study in 2022 the abundance of Gangetic Dolphin in Ganga Basin is estimated to be 3320 ±620 individuals (G. Das et al., 2022).

**Figure 1** Gangetic Dolphin with its snout in the air while diving on the surface



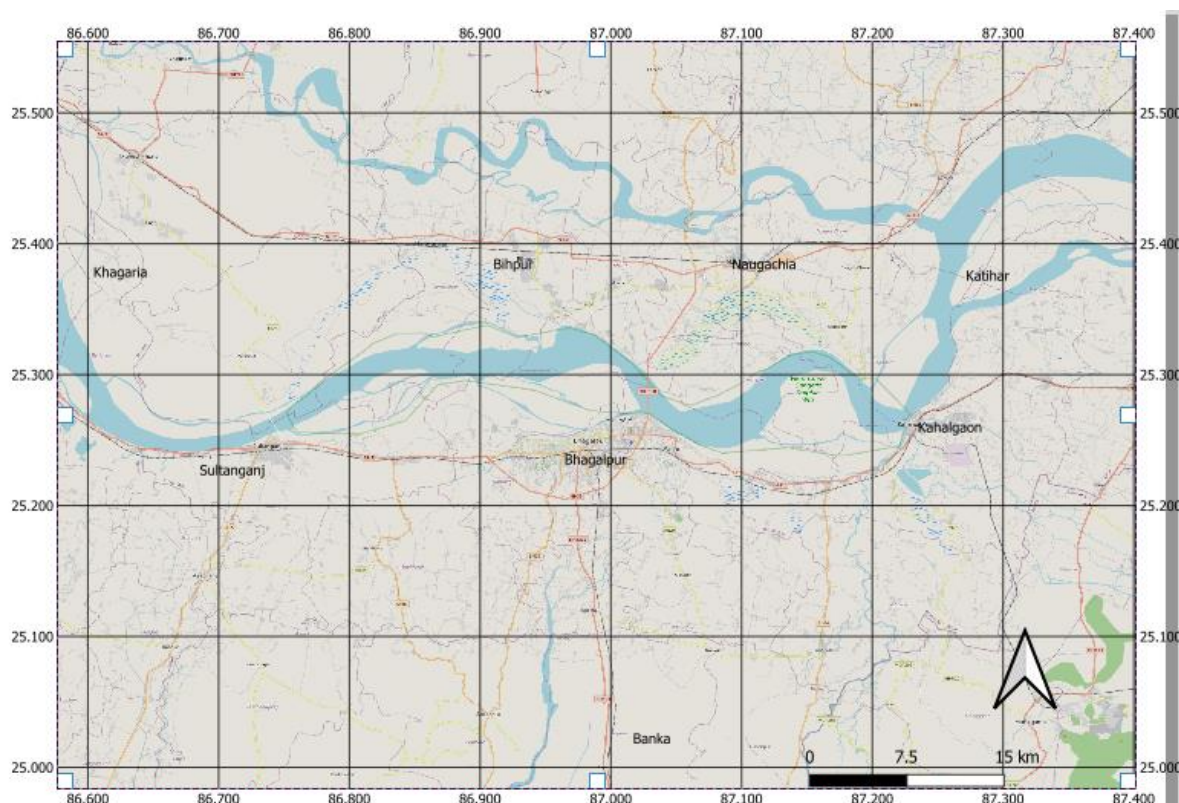
Source: Sumit Kumar (Author)

The Gangetic dolphin are recognized as ‘highly endangered’ in Schedule I of the Wildlife Protection Act (1972). This species is (Gangetic dolphin) among the four ‘obligate’ species of freshwater dolphins. Other are ‘baiji’ found in the Yangtze River (China), the ‘bhulan’ of the Indus (Pakistan) and the ‘boto’ of the Amazon River (Latin America). These four species live only in river and lakes. Vikramshila Gangetic Dolphin Sanctuary is the only protected sanctuary for this dolphin.

### 2. Gangetic Dolphin

Gangetic Dolphin has a limited vision and are dependent on echolocation system. They are practically blind due to non-crystalline eye lenses. The dolphins have a longer snout which help is collection of food from mud in the bottom of river (Sinha & Sharma, 2003).

Gangetic dolphin (*Platanista gangetica*) is an endangered species with only 2000 species in 2010. It is sighted in India, Nepal, and Bangladesh river system. Almost half of dolphin population are in Bihar. In a study conducted for Ganga Basin by (G. Das et al., 2022) the sighting rate of Gangetic Dolphin in decreasing rate in the river is Kosi > Ganga > Roopnarayan> Ghaghra> Chambal> Gandak > Yamuna. No Gangetic dolphin was sighted in Son River due to decreasing water (quantity) and depth of river. Dolphin was also sighted in Mahananda river in Marua village under Baishi block, Purnea district(Choudhary et al., 2023). Barak river has the largest population of Dolphin in North-eastern India(Mazumder et al., 2014). Kushi river in Assam a tributary of Brahmaputra is considered as the last refuge of Gangetic Dolphin in the Eastern part of India(Jelil, 2015). Dolphins were sighted in Nepal in the rivers of Mahakali, Karnali, Narayani, and Kosi Rivers.



**Figure 2** Extent of Vikramshila Dolphin Sanctuary in Ganga river from Sultanganj to Kahalgaon (Bhagalpur)  
Source: Author

### 3. Threat to Gangetic Dolphin

Threat to aquatic life is directly or indirectly anthropogenic (involvement of human being) in nature. Indo Gangetic plain supports a large human population being among the most fertile regions of the world. Endowed with the perennial Himalayan river in North and Peninsular river from South makes it the fertile ground for flora and fauna. Today, forest cover is almost nil in Bihar except few patches in Jamui, Gaya and West Champaran. The only Tiger Reserve of Bihar, Valmiki Tiger Reserve, is located in West Champaran district that houses numerous animals, reptiles and birds in Bihar.



**Figure 3** Gangetic Dolphin diving in water  
Source: Sumit Kumar (Author)

Bihar being an agricultural dominating state with fewer industries is able to protect the environment at the cost of lower standard of living for its people. Recent data shows that the wetlands and water bodies in the state of Bihar has decreased from 7.20 % in 2005-06 to 6.60% in 2015-16(Kumar & Das, 2022). Measures have been taken by the Bihar Government to identify all the water bodies and conserve and protect it seeing the declining area of wetlands and water bodies.

### 3.1 Anthropogenic Threats

Population of Gangetic dolphin has greatly reduced, and protection of this species has been taken on priority. Fishermen have been trained not to disturb the species and not to use the mega net that traps almost everything. Dolphin oil (extracted from dolphin blubber) was earlier used to attract small fishes by the fishermen. Extensive awareness and monitoring on the ground by the local forest department and Wildlife Institute of India has helped minimise the hunting of dolphins in the Sanctuary. Deployment of “Ganga Praharis” i.e. enthusiastic and supportive local fishermen by the department of WII has enabled in proper monitoring of fishing activities in the region. Apart from dolphins, these praharis are also responsible for preventing poaching of migratory birds in the sanctuary by illegal poachers who hunt red-crested pochards, garganeys, ruddy shelducks, common pochards, northern shovelers, etc.



**Figure 4** Local community on the Banks of River Ganga in Shankarpur Diara, Bhagalpur  
Source: Sumit Kumar (Author)

Construction of barrage (Farakka barrage) has disrupted the natural movement of dolphins. Fishing nets often trap the dolphins. Alternative to Dolphin oil which is used to attract fish has been developed(Sinha, 2002). Intense fishing has reduced the amount of prey in Barak River in Assam which has made dolphin almost extinct in the river(Choudhury et al., 2019).

### 3.2 Threat from Pollution

High level of mercury compound is reported at Varanasi during a study conducted in 2003(Sinha & Sharma, 2003). Mercury compounds badly affect the physiology and nervous system of aquatic animals even at low doses reported by researchers at Patna University(Kumari & Chand, 2021). Elevated level of DDT was found in blubber of Gangetic Dolphin(Kannan et al., 1994). River dolphins are at a higher risk from water pollution than its marine counterparts(Kannan et al., 1994). Measures have been done to keep the rivers pollution free.



**Figure 5** Grey Herons thriving on the waters of the River Ganga  
Source: Sumit Kumar (Author)

Sewage treatments plants (STP) are constructed for the riparian cities under *Namami Gange* Project. Industrial effluents are treated before discharging to stream. At Barharwa Ghat in Patna, idol immersion pool has been made to isolate idol immersion from mainstream of Ganga which is showing positive results (B. K. Das et al., 2020). Similar activities at Kali Ghat in Bhagalpur adjacent to the parts of Vikramshila Gangetic Dolphin Sanctuary has helped in preventing the river water from direct contamination through chemicals.

Microplastics are emerging threat to aquatic life(Mashirin & kc, 2022). Novel way of using plastic bottles for construction of wall as a measure for usage of plastic as sustainable material has been devised by the researchers(Srivastav, 2023). Emerging Organic Contaminants (EOC) are also reported in the Ganges which causes threat to aquatic life (Richards et al.,2023).

#### 4. Vikramshila Gangetic Dolphin Sanctuary

Bhagalpur is an old city on the bank of River Ganga and in Mahabharata mentioned as Anga. Anga was one of the 24 *janpad* mentioned in ancient text. King Karna was the ruler during Mahabharat period. 30 km east of Bhagalpur town lies the ruins of Vikramshila University. This university was a flourishing seat of learning during the Pal period. The local language spoken is Angika. Champa was the important town of Anga kingdom.

River Ganga divides the district and in North of Ganga lies a town called Naugachia. Sultanganj lying 25 km west of Bhagalpur town is an important religious town from where devotees take a holy dip in Ganga and carry the holy water up to Baba Baidyanath Dham in Deoghar district of Jharkhand. People walk on foot in the month of *Sawan* (July- Aug) from Sultanganj to Deoghar to offer *jal* (holy water of Ganges) to the *Shivalingam*. During the month of *Sawan*, Ganga is in full flow due to monsoon season. The stretch of Vikramshila Gangetic dolphin sanctuary starts from Sultanganj in up stream (86.700 E) and continues up to Kahalgaon in East (downstream) (87.250 E). It covers a Gangetic stretch of around 60 km.

**Table 1** Urban areas in vicinity of Vikramshila Dolphin Sanctuary

Urban Area	Urban Local Body	Population (2011)
1. Sultanganj	Municipal Council	52,892
2. Bhagalpur	Municipal Corporation	4,10,210
3. Naugachia	Nagar Panchayat	49,069
4. Kahalgaon	Nagar Panchayat	33,700

Nathnagar is dotted with Jain Temples. On the bank of River Ganga lies the Budhanath Temple in Jogsar locality. Ganga has drifted several kilometres away from the city towards North and during monsoon period the water touches the city. There is a picturesque site at Kuppa Ghat, which has ashram of *Mahirshi Mehi* whose followers are spread in adjoining districts of Banka, Munger, Katihar, Purnea, Khagaria. There are several river islands called '*diara*' in local parlance.

*Gangotas* are the local community associated with these river islands. There is a regular conflict among the local people on land ownership due to changing course of river and disappearance and reappearance of river island. Vikramshila Setu bridge on Ganga at Barari connects North Bhagalpur with the southern part of the district. Chanan is the local river which meets Ganga in its Southern bank. *Buddhuchak- Teen Tanga diara* (Three-legged river island) is close to Kahalgaon (within the boundaries of the sanctuary). which faces the problem of erosion and land subsidence. It is a disaster displaced settlement. The people in *Buddhuchak- Teen Tanga diara* mostly belong to Godhis- Mahaldars (surname), Bind, Paswan and Kharwar communities. Godhi, Bind and Kharwar are part of the 22 sub-castes of the riverine caste group of Mallahs (also known as Nishads) who were involved in river-related occupations as boatmen, fishermen, net weavers, salt makers, etc(Shah & Laha, n.d.).

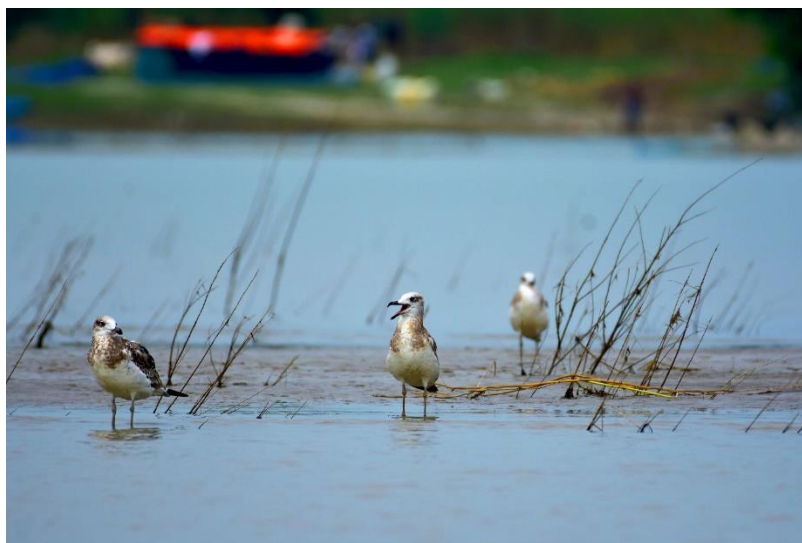


**Figure 6** Children from the local fishermen community  
Source: Sumit Kumar (Author)

Gogabil, a community reserve in Katihar district, is close to this river island. Major birds sighted in Gogabil is Black Ibis, Jungle Babbler, Bank Myna, Red Munia, Northern Lapwing, Spot-billed Duck and Oriental Turtle Dove (Kumari et al., 2023).

Mandar Nature Club, a local NGO working for conservation of nature including migratory birds, is very active in this area. This organization in conjunction with Forest Department of Bihar sensitises the local people about the man-nature relationship and conservation of water bodies along with fauna and flora (Khan, 2021). Members of the club take active participation in spreading awareness about conservation of birds and animals and aims at involving local communities to aid in conservation.

Dharhara is a village in Gopalpur block of Bhagalpur district which is an epitome of girl child protection (against female foeticide) by planting ten fruit trees for every girl child born. This is a model village where the local community and nature interaction is visible through people's participation. The village has a total population of 7,000 and total number of trees are around 1,00,000 mostly mangoes and litchi (Tewary, 2010). Preference for male child which is rampant around the region is being equated by the novel idea of Dharhara village community.



**Figure 7** Pallas Gulls (migratory birds) in Vikramshila Gangetic Dolphin Sanctuary  
Source: Sumit Kumar (Author)

It's difficult to establish a successful wildlife sanctuary. This is especially true in a dynamic environment like the Ganges River, where flood cycles create significant changes in the landscape, both seasonal and annually. The difficulty is equally significant because the Sanctuary's resources support one of the world's poorest human populations. The Vikramshila Gangetic Dolphin Sanctuary is home to population of dolphins and a diverse range of other animals such as smooth-coated otters, gharial, mugger crocodile, flap-shelled turtles, etc. If protective measures will be taken seriously, this sanctuary would significantly aid in the conservation of the Ganges system's important biodiversity components.

## 5. Conclusion

Vikramshila Gangetic Dolphin Sanctuary has not only helped in protecting dolphins of the region but has also helped in safeguarding the migratory birds that come to the Indian sub-continent during winters. Vast floodplains of Ganga, lakes and ponds connected on its banks, mud flats in the river, etc. provide a perfect habitat for numerous bird species such as ducks, egrets, raptors and waders such as sandpipers, redshanks, greenshanks, plovers, stints, stilts, lapwings, dunlins, etc. to name a few.

Even though a lot of research work and surveys are conducted in the sanctuary from time to time to find out the actual number of birds and animals in the sanctuary, more study is required at regular intervals throughout the year to ascertain the true potential of the place. It can also help in opening new channels of eco-tourism in the region providing additional opportunities to locals for earning their living.

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