



## OVERVIEW

Storks are large-sized, carnivorous, wetland birds with heavy bills and long legs. India harbours eight species of storks, of which seven are common to Bihar, with the Greater Adjutant Stork being the most prominent.

A small breeding population of the Greater Adjutant Stork was discovered by a team of bird watchers of the local Mandar Nature Club in the Bhagalpur district on the floodplains of river Ganges and Kosi. The population seems to be increasing every year in different hamlets (tola) of Kadwa and Khairpur Panchayat (Naugachhia Block) of Bhagalpur District, located on the floodplains of river Kosi, popularly known as Kadwa-Kosi floodplains. These floodplains are a 16 sq. km community conserved area that functions as a breeding and foraging ground for the Greater Adjutant Stork and many other birds. Mandar Nature Club, a local conservation group, is involved in sensitisation and motivation of local communities for the protection of the area, resulting in a steady increase in their numbers, that have been recorded as 75-80 in 2006-07, 155-160 in 2007-08, over 300 in 2010-11 and over 750 in 2018-19 [1].



## GOVERNANCE AND MANAGEMENT

While the area is mainly governed by local communities, the panchayat functionaries also play an important role in the decision-making process related to the conservation of the area. Mandar Nature Club, a Bhagalpur based NGO, and the Bhagalpur Forest Division (Department of Environment, Forest and Climate Change) are involved in guiding and facilitating the conservation activities in the area. Mandar Nature Club (MNC) plays the advisory role in making decisions involving the discussion with the DFO, Bhagalpur for conservation and management-related activities in and around the area while the local village council (Gram Sabha) and individuals make decisions on land use.

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Since the Eco-Development Committees are newly formed in the two panchayats of Kadwa and Khairpur, presently, the Bhagalpur Forest Division is the only management authority for the area. It works in consultation with the Mandar Nature Club (MNC) for technical and voluntary support since 2014. The forest division seeks suggestions from experts on what protective measures to be taken in the field, how and when to release the recovered birds from rescue centres, organise events like education and awareness campaigns, motivating the local community and conducting training programmes for them.

The key role of the division is to support the planned activities by providing several resources, including transport, care and comfort of birds at the rescue centres, maintaining data at the rescue centre, collecting and forwarding the annual report of the status of Greater Adjutant both from the field and the rescue centres. Overall, management of resources and monitoring of conservation strategies being implemented is the responsibility of the governing body of the area.

The Eco-Development Committees formed in Kadwa and Khairpur panchayats, with the support of the forest department and Mandar Nature Club, are the local authorities, who in the future will share the responsibilities of protection of Greater Adjutant population in the breeding zone.

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## CONSERVATION INITIATIVES

- The present conservation efforts include the management of the Rescue and Rehabilitation Center at Bhagalpur where activities like medical care of rescued birds and releasing them back into their original habitat is carried out.
- One temporary Rescue Center in the breeding site and transportation of injured birds is supported by the forest department.
- The placement of nets under the trees used for breeding and the plantation of native trees are some of the activities supported through the Bhagalpur Forest Division.
- Several sensitisation campaigns and training programmes for the youth (Garud Saviors) have been carried out in order to promote conservation in the area. Signages have been erected and knowledge products have been developed and published for the same. Resources for developing a documentary on Greater Adjutant have also been provided by the state forest department.



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## IMPACTS

With the initiatives of the forest division, the EDC, the NGO Mandar Nature Club, as well as the local communities, the area has seen several ecological and socio-economic improvements:

- The Rescue and Rehabilitation Center has contributed to the maintenance of the bird populations in the area by providing timely transportation of injured birds from field sites, medical care to the rescued birds and releasing them with proper care into their original habitats.
- The rehabilitation centre also provides livelihood opportunities to the local communities.
- The education and awareness activities, training programmes for youth and regular school trips and nature trails have showcased the importance of the area and the birds to the local communities and helped them understand the significance behind the ongoing protection and conservation initiatives.

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- The felling of critical tree species has been curtailed through these awareness campaigns.
  - The villagers now actively support the protection and conservation of the Greater Adjutant Stork ever since it has been shown that the birds act as natural predators of rats and snakes that usually infest farmer's fields.
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## IN-SITU CONSERVATION

Apart from the globally threatened Greater Adjutant Stork, the floodplains are also home to other important bird species including Black-Necked Stork, Asian Woollyneck, Lesser Adjutant Stork, and Painted Stork. All the six Indian resident stork species breed in and around the floodplains.

In the Kosi floodplains, north of the Kosi river, Greater Adjutant has been found as the traditional breeders in the Kadwa Kosi diara. Other key fauna of this site includes the endangered Gangetic Dolphin (*Platanista gangetica*) inhabiting the rivers, Indian Monitor Lizard

(*Varanus bengalensis*), Nilgai (*Boselaphus tragocamelus*), Wild Boar (*Sus scrofa*), Jackal (*Canis aureus*), Indian Grey Mongoose (*Herpestis edwardsii*), and different species of turtles and snakes [2].

The area is well cultivated and some large trees like Peepal (*Ficus religiosa*), Kadamb (*Anthocephalus cadamba*), Semul (*Bombax ceiba*), Pakad (*Ficus infectoria*), Banyan (*Ficus bengalensis*), Jamun (*Syzigum cumini*), Gambhar (*Gmelina arborea*), Seesam (*Dalbaergia sisso*), Gulhar (*Ficus glomerulata*), Babool (*Acacia nilotica*), and Arjun (*Terminalia arjuna*) were observed in the area. There are Mango (*Mangifera indica*) and Litchi (*Litchi chinensis*) orchards and at a few places Semul and Kadamb orchards are grown for commercial purposes. Bamboos are commonly grown for commercial as well as for domestic purposes. The main crop of the area is maize, wheat, pulses, oil yielding seeds and potato.

Plantation of native tree species have brought about flood control in the area, thus allowing for the birds and other fauna to flourish in a fertile habitat. Drought has not been reported in the conservation area for more than a decade.

As part of cultural services, the site provides a perfect ground for bird tourism and each year many known naturalists and ornithologists from India and abroad visit the breeding sites of the Greater Adjutants and interact with the local community involved in bird conservation [3].

Frequent field visits of students and residents of the area are also organised, which not only establishes the cultural and educational importance of the area but also helps in generating awareness among the community regarding the importance of these majestic species.



## CONTACT INFORMATION -

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