

# Asian Openbill-Storks *Anastomus oscitans* of Raiganj Bird Sanctuary, Uttar Dinajpur district, West Bengal

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**R**aiganj Bird Sanctuary (25°58'N 87°53'E), located in the Uttar Dinajpur district of West Bengal (<http://uttardinajpur.gov.in/>), was officially designated a 'Bird Sanctuary' in 1985. It lies 4 km north of Raiganj town and is known for its large breeding population of Asian Openbill-Storks *Anastomus oscitans*. The breeding colony of Asian Openbill-Storks here is estimated among the top ten heronries of India in terms of number of nests (Subramanya 1996) and is recognized as an Important Bird Area (Islam & Rahmani 2004). The bird sanctuary is popularly known as "Kulik Bird Sanctuary" because the Kulik River flows on the periphery of the sanctuary and acts as its eastern and southern boundaries.

There is little published literature on the wildlife of this protected area, with few researchers having worked on its birds (Shahi 1983; Datta & Pal 1990, 1993; Sharma 1998, 2001, 2004, 2007a, 2007b; Jha 2006). The sanctuary has a high diversity of birds with 164 species already identified (Sharma 2007a).

The Raiganj Bird Sanctuary is a mixed breeding heronry of various species of waterbirds including Little Cormorant *Phalacrocorax niger*, Indian Shag *P. fuscicillis*, Black-crowned Night-Heron *Nycticorax nycticorax*, Cattle Egret *Bubulcus ibis*, Little Egret *Egretta garzetta*, Large Egret *Casmerodius albus*, Median Egret *Mesophoyx intermedia* and Pond Heron *Ardeola grayii*, alongside a very large number of breeding Asian Openbill-Storks. The heronry has been active at least since 1984 (*personal observations*). This is now an annually active heronry and established as the largest Asian Openbill-Stork heronry in India. Most of this nesting activity occurs between July–December, and 30,000–40,000 individuals breed in this heronry (Sharma 2001, 2007a, 2007b).

The heronry is an artificial plantation created by the social forestry program of West Bengal Forest Department, which began its planting activities in the 1970s. The principal tree species in the sanctuary are kadam *Anthocephalus cadamba*, jarul *Lagerstroemia flosreginae*, sisoo *Dalbergia sisoo* and eucalyptus *Eucalyptus* spp. (*personal observations*). The region's vegetation is classified as Tropical Dry Deciduous Forest (Champion & Seth 1968). The area of the sanctuary is

1.30 km<sup>2</sup> in which 0.14 km<sup>2</sup> and 1.16 km<sup>2</sup> are designated as the core and buffer areas respectively. The sanctuary is 'U'-shaped and includes a network of irrigation canals connected with Kulik River. There is also a small island in the core area of the sanctuary, which has mainly *Eucalyptus* sp., trees and is a creation of the irrigation canals. The island is the main breeding ground for Asian Openbill-Storks. The birds breed on 656 trees within the protected area. However, they also breed outside, on trees along NH34 and in several backyard gardens adjacent to the sanctuary (Table 2). During the monsoon (seasonal rainfall: July–October) the river's waters enter the sanctuary, carrying with them a wide variety of food for the birds, including the Apple Snail *Pila globosa*, which is the main food of Asian Openbill-Storks.

Asian Openbill-Storks start flocking into Raiganj Bird Sanctuary with the arrival of monsoon (generally July) and stay up to January. In the first phase, a group of birds arrives and inspects the area and selects nesting trees. In late July or early August, the majority of the breeding flock arrives and commences nest-building activities in the trees. Competition for selection of nesting trees and nest building is high in this heronry. The density of nesting pairs is very high and frequently spills outside the sanctuary to the trees alongside NH34, and even to trees in nearby gardens. Asian Openbill-Storks frequently nest alongside other species in the heronry. In this heronry, clutch sizes of the Asian Openbill-Storks averages four, with two chicks fledging from each successful nest (Sharma 2001). During this time, predation of eggs by Jungle Crows *Corvus macrorhynchos* is a common occurrence. The incubation period varies between 30–40 days. The storks allow close observation of the nests, and fallen chicks are often tamed by the local people, and are a common sight each year (Sharma 1998).

In October, adults' training unfledged juveniles is the predominant activity of the heronry. Adults frequently shade the young birds from the sun with their wings. Often on winter mornings, juveniles are found facing the sun and drying their outspread wings that may have collected dew or moisture off the foliage, at night. However, further observation is required to confirm this behaviour. During

this phase of their life, I have observed (and have been informed by villagers) that a large number of juveniles fall down from the nest and are killed by village dogs, jackals *Canis aureus*, jungle cats *Felis chaus* and monitor lizards *Varanus* sp. Some juveniles that fall from the nests, are fed on the ground by the adults for a few days, but usually are abandoned and die. A large number of Asian Openbill-Stork chicks die in this manner, though exact numbers are not available. At the end of December most Openbill-Storks leave the sanctuary, with a few thousand staying within, until January. While robust estimates of Asian Openbill-Stork populations are not available, crude estimates based on counts are presented here (Table 1). The population appears to fluctuate between 20,000–56,000 birds annually. Better estimates of populations, and reasons for the fluctuations of numbers need to be determined. Crude counts are also available of the number of birds that breed immediately around the Raiganj Bird Sanctuary (Table 2).

Descriptive accounts of numbers of Asian Openbill-Storks in Raiganj Bird Sanctuary is available from the year 1984, the year before it was notified as a wildlife sanctuary. At the beginning of the year 1984 excess of 22,300 birds were counted by the Forest Department. Up to the year 1992, it appeared that the breeding population increased to more than two times the population in 1984. In 1993 the breeding population of Asian Openbill-Storks reduced drastically to nearly half due to heavy rains and subsequent flooding in the sanctuary. The population then steadily increased stabilizing to 30,000 - 40,000 breeding birds. Such fluctuations of the population of Asian Openbill-Storks in the Raiganj Bird Sanctuary are a common phenomenon and have been documented earlier (Sridhar 2004). Crude estimates of birds dying due to natural flooding and heavy rains have been collected (Anon 2005, Sharma 2001, Sridhar 2004) and are presented in Table 3. Due to conservation efforts between the years 2000–2006 the population of Asian Openbill-Storks in the Raiganj Bird Sanctuary increased and stabilized to 40,000–50,000 breeding birds in spite of a large number of weather-related mortalities in 2006.

The Asian Openbill-Stork has an estimated global distribution over 1,000,000–10,000,000km<sup>2</sup>. Its estimated global population is 1,30,000 (Wetlands International 2002). Global population trends are not known, but the species is not believed to approach the thresholds for the population decline criterion of the IUCN Red List (i.e., declining more than 30% in ten years or three generations). For these reasons, the species is evaluated as of 'Least Concern' (BirdLife International 2007). This species is native of and breeds in Bangladesh, India, Bhutan, Cambodia, Thailand, Vietnam, Laos, Myanmar, Nepal, Pakistan and Sri Lanka (BirdLife International 2007).

The total breeding population of Asian Openbill-Storks in the South Asia is more than 1,25,000 and the 1% threshold population is 1,250 individuals (Wetlands International 2002). The small Raiganj Bird Sanctuary regularly supports 32%–40% of the Asian Openbill-Stork's South Asia population—making it globally significant for the species.

It is still not known why such a large number of Asian

Openbill-Storks breed in the small Raiganj Bird Sanctuary, which is subject to several forms of human disturbances. Birds could be exhibiting a high degree of philopatry (the tendency of a migrating animal to return to a specific location in order to breed or feed), which requires study by marking individual birds. Additionally, the region is a flood plain with plenty of rice paddies, dotted with many large water bodies, riverine beds and marshy areas that are full of their main food, Apple Snail *Pila globosa*.

Threats to the Asian Openbill-Storks are poaching of chicks and eggs, especially in the nests outside the sanctuary and along the national highway (Datta & Pal 1993; Sharma 2001; Jha 2006). People dislike the foul smell of the birds' droppings, in their gardens, and do not support their protection. Despite the high numbers of Asian Openbill-Storks in the Raiganj Bird Sanctuary, the threats to eggs, chicks and nests are growing, and the risk of large-scale deaths and reduced breeding success due to uncontrollable, natural or stochastic factors is very high. The sanctuary will benefit in the long run from robust counting techniques to enumerate annually, its heronry-nesting species.

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**Table 1. Crude estimates of breeding Asian Openbill-Storks in the Raiganj Bird Sanctuary during 1984–2006.**

| Year | Population | Year | Population |
|------|------------|------|------------|
| 1984 | 22,300     | 1996 | 36,400     |
| 1985 | 24,200     | 1997 | 39,900     |
| 1986 | 28,800     | 1998 | 37,700     |
| 1987 | 36,100     | 1999 | 31,000     |
| 1988 | 37,800     | 2000 | 46,800     |
| 1989 | 40,000     | 2001 | 56,200     |
| 1990 | 39,800     | 2002 | 49,400     |
| 1991 | 41,500     | 2003 | 54,300     |
| 1992 | 47,000     | 2004 | 53,500     |
| 1993 | 21,600     | 2005 | 51,500     |
| 1994 | 36,800     | 2006 | 40,100     |
| 1995 | 20,900     |      |            |

**Table 2. Crude estimates of breeding Asian Openbill-Storks outside the Raiganj Bird Sanctuary during 2002–2006.**

| Year       | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------|-------|-------|-------|-------|-------|
| Population | 1,680 | 1,920 | 2,020 | 1,450 | 1,130 |

**Table 3. Crude estimates of Asian Openbill-Storks killed during storms / floods in the Raiganj Bird Sanctuary during 2002–2006.**

| Year       | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------|-------|-------|-------|-------|-------|
| Population | 2,870 | 2,640 | 3,290 | 1,750 | 3,360 |



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