



DISTRIBUTION AND NESTING HABITAT OF ASIAN OPENBILL STORK (ANASTOMUS OSCITANS) IN NAVSARI, GUJARAT, INDIA.

Zoology

**Vaghela Harshit
Bavchandbhai**

Msc Zoology(Pure) Student, Government College Daman, VNSGU, Gujarat.

ABSTRACT

The Asian Openbill stork is long legged large wader bird belonging to Ciconiidae family. A field study on distribution and nesting habitat of Asian Openbill stork was conducted during breeding season of 2019 & 2021 at Navsari, Gujarat, India is called residential migratory birds. The survey was done in April 2019. In which it was found that Open bill stork comes in April and leave in September. The survey found that Openbill stork migrated only to lay eggs, so it is not a native bird. This paper is observation of the Openbill stork lives, the materials which is used for making a nest, on which tree it makes a nest, how many eggs it lays, how many chicks hatch from those eggs, how many of those chicks survive, etc. These birds fall into Least Concern category according to IUCN status. Total 567 nests were observed during the study. Both male and female performed equal duty during nest construction and to feed young one. Though there were varieties of anthropogenic activities at the study site but still this was best breeding site for Asian Openbill stork. Conservation priorities should also focus on protecting their habitat.

KEYWORDS

Openbill stork, Distribution, Nesting habitat, Nesting trees, Railway station, Navsari city, Residential migratory.

INTRODUCTION:-

The Asian Openbill stork is long legged large wader bird belonging to Ciconiidae family. Asian Openbill stork birds fall into Least Concern category according to IUCN status. It forages mainly in rice paddy, where it feeds on mollusca, small fish, and frogs (Robson 2002). Historically, the Asian Openbill was widespread across mainland Southeast Asia and the Indian subcontinent (Robson 2002). Although its population size has decreased in recent years, the stork is not thought to be especially threatened and is listed as a species of least concern (BirdLife International 2015). It currently breeds from India, Pakistan, and Nepal eastward throughout Indochina (BirdLife International 2015). Although being resident in these locations, the Asian Openbill is now dispersing more widely in Southeast Asia, which may possibly be explained by changes in climate and food availability (Roy and Sah 2013).

It is defined as the habit of nesting colonially (Sharma A 2001). They are usually found in flocks but single birds are not uncommon (Blanford W.T. 1898). The number of birds has strong link with biodiversity of an area that acts as potential indicator of environmental quality (Kumar P. 2010). Good indicators are specialized in their habitat needs, thus reacting rapidly to changes (Miller G.T. and Spoolman S.M. 2009). Asian Openbill Storks have been considered to the most useful indicator of environment health because they are ecologically versatile and live in different type of habitats (Jarvinen O. And Vaisanen R.A. 1979). Birds most often respond to secondary changes brought about by the primary causes. Generally, birds are quite consistent in their habitat preferences (Murin T. & Pfeiller, B. 2002). Often the changes in the abiotic regime of an ecosystem, or cause variables, may be overlooked, be too subtle, or be of no interest to be monitored directly (Koskimies P. 1989).

Nest building and selection of nesting sites (Rahmani and Sankaran, 1990) is a well programmed behavioural trait of birds, mainly migratory where safe and sheltered nest location is prerequisite to successful nesting against predation, a major cause for nest failure (Ricklefs, 1969; Descamps et al., 2005; Donehower et al., 2007). The nest concealment hypothesis states that predation risk decreases when vegetation density around the nest site is high, as it helps in concealment of nests and also interferes with the visual, auditory, olfactory and chemical detection of predators (Martin, 1993). Availability of water body in vicinity is instrumental in determining the vegetation pattern which in turn warrants adequate nest-site availability (Raulings, et al., 2010) with sustainable food and nest-construction material for birds. The nest building ability of male birds is related to female mate choice and the reproductive success of the pair (Hoi et al., 1994; 1996). Nest size has a positive correlation with the amount of parental investment and is also indicative of the willingness of males to invest in reproduction, possibly a post mating sexually selected trait and species in which both sexes participate in nest building, have larger nests (Soler et al., 1998).

acts as potential indicator of environmental quality (P. Kumar 2010). Good indicators are specialized in their habitat needs, thus reacting rapidly to changes. Asian Openbill Storks, have been considered to the most useful indicator of environment health because they are ecologically adaptable and live in diverse type of habitats (G.T. Miller and S.E. Spoolman 2009, O. Jarvinen and R.A. Vaisanen 1979). It is a resident breeder in tropical southern Asia from India and Sri Lanka east to Southeast Asia (Bock 2002; Manna 2009). The species is very rare in the Sind and Punjab regions of Pakistan, but widespread and common in India, Sri Lanka, Burma and Thailand (Ali and Ripley, 1978).

MATERIALS AND METHODS:- STUDY AREA:

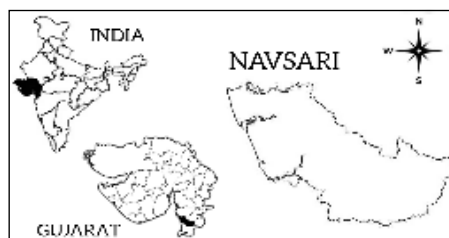


Fig 1. Map of Navsari Study area

Navsari (Fig 1) is located at 20.95°N 72.93°E. It has an average elevation of 9m (29') above sea level. The city is located in southern Gujarat and is situated near the Purna River, within a few kilometres of the river's delta, which is west of the city and empties into the Gulf of Khambhat.

Only Navsari Railway station Road and Around Navsari Railway station Openbill stork birds are found in Navsari district. In this paper we discuss the status of Openbill stork located in Navsari Railway station Road and Around Navsari Railway station from Navsari district in Gujarat. The study used observation methods. Oheligo binocular (20×50) and OPPO A5-2020 mobile camera was used in field work.

DATA COLLECTION:-

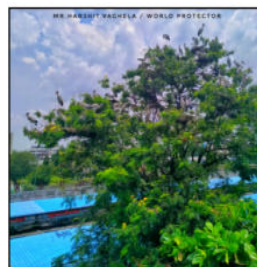


Fig 2. Openbill Stork Colony

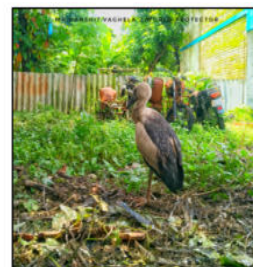


Fig 3. Juvenile Openbill Stork

The number of birds has strong link with biodiversity of an area that

The data collection was every week from April in study. Time duration of data collection was 2 years. A field study on distribution and nesting habitat of Asian Openbill stork was conducted during breeding season of 2019 & 2021 at Navsari, Gujarat, India. It is called residential migratory birds. The survey was done in April 2019. In which it was found that Open bill stork comes in April and leave in September. The survey found that Openbill stork migrated only for mating and laying egg, so it is not a native bird. This paper observes where the Openbill stork lives, what materials it uses to make a nesting, on which tree it makes a nest, how many eggs it lays, how many chicks hatch from those eggs, how many of those chicks survive, etc.

Total 567 nests were observed during the study. The green branches of the trees and the green leaves of the trees were used as nesting materials. The green twigs were used to make the main stage of the nest and the leaves were used to soften the nest. Mating and egg laying was observed in the May and June month. Generally female lays two to three eggs. The average incubation period recorded is about 25-27 days. Both male and female incubate the eggs and by the end of June nesting's were eggs observed in almost all the nests. Both male and female carried out the duties of incubation, feeding to the young ones and other parental cares. Generally, in the month of September and October all the juvenile leaves the nests along with their parents.

During the study, it was found that various anthropogenic disturbances like movement of vehicles, urbanization, human movement in and around Navsari railway station were observed. And even though there is a lot of noise pollution, these birds prefer to live here and this place is safer for them to avoid other predators.

RESULTS AND DISCUSSION:-

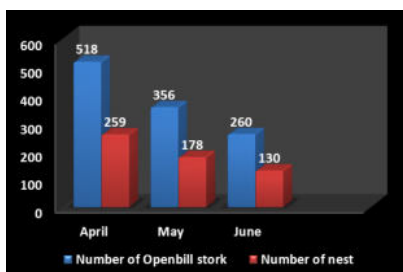


Fig 4. Number of Openbill stork and Nest

The start of breeding season, total 1134 birds landed on trees of Navsari railway station and around railway station and started nesting. total 567 nests were built in three months. Highest number of 518 birds came in April month and 356 birds came in May month and 260 birds came in June month (Fig 4).

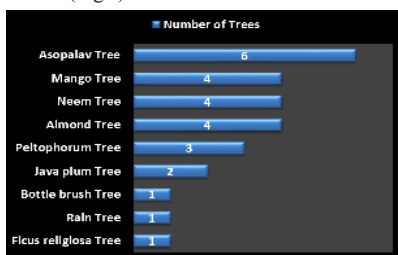


Fig 5. Major Trees species used for building nest

Generally, Openbill stork prefer to nest the larger trees. During our study, it was found that openbill storks was found building their nests on 9 different tree species recorded (Fig 5). And the Openbill Stork building their nests on total 26 trees and maximum 34 nests was found on Peltophorum tree.

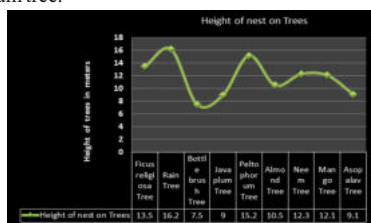


Fig 6. Nesting Height

During the study we also record how high the openbill stork builds its nest. And we noticed a nest built at height of 16.2 meters on tallest Rain tree (Fig 6). Openbill stork prefer same site for nesting every year, however, they may leave it and choose new site due to some disturbance.

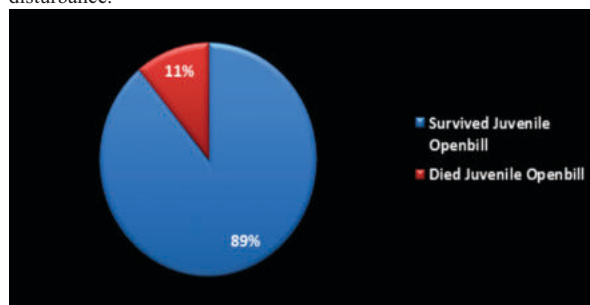


Fig 7. Number of Survived and Died Juvenile Openbill stork

During the study we observed total of 1161 eggs in nest. And 27 of 567 nests were observed to have 3-3 eggs. Also, we recorded 6 unfertilized eggs. The chicks hatched from 1155 eggs after 25-27 days of incubation. Survey observed that out of total of 1,028(89%) juveniles survived and 127(11%) juveniles died (Fig 7). 127 Deaths of juvenile birds' Natural disasters such as rain with strong winds. falling of young Ones birds from nest. Juvenile birds fall down from nest and starvation to death.

CONCLUSIONS:-

Based on the study it was concluded that, Navsari Railway station and area around railway station is one of the best breeding sites for openbill stork. Awareness should be created among the locals for these birds as well as other wildlife. And the forest department, NGO, all zoologists should make efforts to protect the nesting colonies. In the future, new zoology students will be helping to further study openbill Stork's Breeding Biology and Nesting Ecology. This study may lead to the sketching of well-defined conservation strategy and recommends protection of the trees selected for nesting.

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