Chapter-II

Status and the biology of the species

2.1 Greater Adjutant Stork (*Leptoptilos dubius*):

Class: Aves

Order: Ciconiiformes

Family: Ciconiidae

Genus: *Leptoptilos*

Species: *dubius*

The Greater Adjutant Stork (*Leptoptilos dubius*) is the largest bird among the storks. The body is with black grey and dirty white colored feather and the neck and head are naked and reddish and yellow in color. A naked pinkish guller pouch which is 25 to 35 cm. Long, hanging from the base of the neck, distinguishes it from the Lesser Adjutant Stork (*Leptoptilos javanicus*) in over head flight the broad black wing with a whitish band along the middle are distinctive.

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During breeding season adults become slate grey in colour, which is slightly glossed with green, including wings and tail. The innermost secondaries and greater wing coverts are silvery grey forming a broad band on wings. Ruffs of fluffy white feathers are found around the base of the neck. The underside of the body is white including soft flimsy tail covert. The non-breeding adults lack the silvery grey wing band. The immature birds are scantily feathered on the naked parts and their inner secondaries and coverts are dark brown. Nestling is pure white with down feather.

Status:

The Greater Adjutant Stork (*Leptoptilos dubius*) is classified as endangered (EN A3cde) on the IUCN Red List (2004) and is listed under schedule IV of the Indian Wildlife (Protection) Act, 1972.

Habitats:

The Greater Adjutant Stork (*Leptoptilos dubius*) inhabits wetland habitats; especially those that are primarily dry and where fish are abundant, including lakes swamps, riverbeds, stagnant pools and paddy fields. The nesting sites of the birds are located generally near small or large flowing water channels within three kilometers from a large fishing habitat and not more than five kilometer distance of a garbage dump (Saikia and Bhattacharjee, 1998). The site selection for nesting depends on the presence of tall and branched trees intermixed with dense bamboo clumps. The trees

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selected for nesting in Brahmaputra valley are – *Bombax malabaricum*, *Albizia lucida*, *Alstronia scholaris*, *Anthocephalus cadamba* and *Artocarpus integrifolia*.

**Range:**

The *Leptoptilos dubius* was formerly found in South and South East Asia, i.e., Northern India, Eastern India, Nepal Terai, Bangladesh, Myanmar, Thailand, Laos, Vietnam and Cambodia. But according to the recent reports there are only two small and separate breeding populations – one in Assam (North East India) and one in Cambodia (Saikia and Bhattacharjee, 1989; Mundkur et al, 1995). *Leptoptilos dubius* also visits Vietnam, Thailand and Myanmar when not breeding.

**Breeding:**

The *L. dubius* congregates at the colony site at the beginning of dry season in the month of October. The bird nests on large widely branched trees with few leaves. Two to three eggs are laid between November and January. After 28 to 30 days the eggs hatch and nestling are cared for until April. The early breeders generally lay three eggs whereas two eggs in case of comparatively late breeder.
II- Status and the biology of the species

Food:

*L. dubius* consumes fish, frog, reptiles, crustaceans, large insects, carrions and even small ducks and puppies. *L. dubius* is also known to feed on human refuge dumps, where it takes food from other scavengers, including vultures.

Threats:

The present knowledge regarding the threats indicated that the loss of nesting habitat and feeding sites had a huge impact on this stork species. Suitable wetland habitats have been cleared, drained, polluted with pesticides, heavy metals and disturbed by human. Adult birds are hunted and chicks and eggs are collected for trade. Cutting of nesting trees is another factor of habitat disturbance. For the last one decade, the monitoring of the nests and habitat has been done, but the species still should have threat from the unknown angle. It may be that the heavy metal during the breeding period particularly on the eggshell flays a major role in survival potential of the individuals.

2.2 Lesser Adjutant Stork (*Leptoptilos javanicus*)

Class: Aves
Order: Ciconiformes
Family: Ciconiidae

*Studies on some environmental stresses on two species of storks*
Genus: *Leptoptilos*
Species: *javanicus*

The Lesser Adjutant Stork (*Leptoptilos javanicus*) is somewhat smaller than the Greater Adjutant Stork (*L. dubius*) and is without a gullet pouch, which is the distinctive character of *L. dubius*. It has a massive dirty yellowish wedge shaped bill. The bird is chiefly glossy metallic black above and white below, with sparse hair like feather son almost naked reddish yellow head and neck. In young upper plumage are less glossy and head and neck are more feathered.

**Status:**

2005 IUCN Red List Category (as evaluated by Bird Life International the official Red List authority for birds for IUCN): Vulnerable

The Lesser Adjutant Stork (*Leptoptilos javanicus*) qualifies as Vulnerable because it has a small, declining population as a result of habitat loss and degradation, hunting and disturbance. This stork is enlisted in the schedule IV of Indian Wildlife (Protection) Act, 1972.

**Habitat:**

The Lesser Adjutant Stork (*Leptoptilos javanicus*) is an inhabitant of fresh and saltwater wetlands, including riverbeds, flood-plains, flooded fields and marshes.
II- Status and the biology of the species

swamps, forest pools, lakes and paddy fields (Especially in monsoon months), sandy islands, extensive areas of wet seepage, and less frequently of drier grasslands and pasture, from Bangladesh to Indonesia it is particularly closely associated with coastal mangroves and associated mudflats.

In the Brahmaputra Valley of Assam, L. javanicus has been found to inhabit wet lands, paddy fields, fellow agricultural land, marshes, wet grass land and patches of water hyacinths Eichhornia crassipes (Saikia, 1995) Habitat used by the species in Assam is flexible and seasonal. The bird selects tall trees with thick undergrowth of bamboo for nesting, but the key factor appears to be the proximity of water, the nesting colonies are generally surrounded by wetlands, marshy lands, small or large waterholes and paddy fields (Saikia 1995). The trees used for nesting are generally Bombax ceiba, Ficus religiosa and Alstronia scholaris.

Ranges:

The Lesser Adjutant Stork (Leptoptilos javanicus) ranges from India south through Myanmar and Thailand to Laos, Cambodia, Vietnam and Peninsular Malaysia to the Greater Sundas including Sumatra, Kalimantan, Java and Bali (Indonesia), Sabah and Sarawak (Malaysia) and Brunei. It is thought to be extinct in China and in Singapore. The species was originally resident in central and Northeastern India in all well watered and thinly populated areas (Ali and Ripley 1968 - 1998).

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Breeding:

The Lesser Adjutant generally nests in scattered and usually small colonies. Often admixed with other species; single nests are also recorded, perhaps increasingly as populations dwindle (Hancock et al. 1992, Wells 1999). The timing of breeding events varies geographically and fluctuates annually, but tends to coincide with the beginning of the dry season. In Northeast India and Nepal the main period of activity occurs in November – January, although courtship begins as early as July (Kahi 1971, Saikia 1995, Choudhury 2000c).

Food:

Birds usually feed solitarily, well scattered over foraging sites; three or four individuals often forage in the same area but usually 10-100 m apart (Saikia 1995), often around 50 m apart (del Hoyo et al. 1002). In the Brahmaputra valley individuals tended to forage more successfully in thinly vegetated wetlands than in large open water sites. The food of *L. javanicus* includes fishes, amphibians, reptiles, crustaceans etc.

Threats:

The *Leptoptilos javanicus* has experienced a rapid decline recently due to habitat loss and habitat degradation and became a threatened species of the world.
References:


Studies on some environmental stresses on two species of storks
II- Status and the biology of the species


*Studies on some environmental stresses on two species of storks*
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Saikia, P.K. (1995): Ecobiology of Adjutant Storks with Special Reference to Leptoptilos javanicus (Horsfield) in the Brahmaputra Valley, Assam; Ph.D thesis; Gauhati University; Assam; India.


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Plate 3

Foraging area of Adjutant Stork (Sivasagar area)

Foraging area of Adjutant Stork (Sivasagar area)