

# ASSAM and SYLHET PLAINS



IN India, all wetlands in this region fall within the catchment of the Brahmaputra river, while in Bangladesh it includes inland wetland habitats associated with the Brahmaputra–Jamuna and Meghna–Kalni rivers. This huge lowland area of marshy plains and large lakes is now the global stronghold of Greater Adjutant, following the historical crash of the vast breeding colonies in Myanmar. It also supports important breeding populations of Spot-billed Pelican, Lesser Adjutant and Pallas’s Fish-eagle, and a large non-breeding population of Baer’s Pochard. The conservation of grassland birds on the Assam and Sylhet plains is covered in G02, and forest wetland birds (such as White-winged Duck) in F06.

- **Key habitats** Freshwater wetlands on riverine plains.
- **Countries and territories** **India** (West Bengal, Arunachal Pradesh, Assam, Meghalaya); **Bangladesh**.

Threatened species

	CR	EN	VU	Total
●	1	1	4	6
✈	—	—	—	—
🐦 <sup>1</sup>	—	—	3	3
Total	1	1	7	9

Key: ● = breeding in this wetland region.

✈ = passage migrant.

🐦 = non-breeding visitor.

<sup>1</sup> The Conservation Dependent Dalmatian Pelican is also a non-breeding visitor to this region.

The Assam and Sylhet plains region is within Conservation International’s Indo-Burma Hotspot (see pp.20–21).

*Lesser Adjutant is a fairly common breeding bird in Assam.*

PHOTO: JACOB WIJKEMA





Table 1. Outstanding Important Bird Areas in the Assam and Sylhet plains.

IBA name	Status	Territory	Threatened species
1 Orang NP	PA	Assam	Breeding Spot-billed Pelican, Lesser Adjutant and Pallas's Fish-eagle
2 Nagaon	—	Assam	Large breeding colonies of Greater Adjutant
3 Deepor Beel WS	PA <sup>R</sup>	Assam	Non-breeding Lesser Adjutant, Greater Adjutant and Baer's Pochard
4 Tangua Haor	PA <sup>R</sup>	Bangladesh	Breeding Pallas's Fish-eagle, non-breeding Baer's Pochard
5 Hakaluki Haor	—	Bangladesh	Breeding Pallas's Fish-eagle, non-breeding Baer's Pochard

Important waterbird populations occur in several of the IBAs listed for region G02 (Jaldapara WS, D'Ering Memorial WS, Manas NP, Kaziranga NP and Dibru-Saikhowa NP). Note that more IBAs in this region will be included in the *Important Bird Areas in Asia*, due to be published in early 2004.

Key IBA name: NP = National Park.

Status: PA = IBA is a protected area; (PA) = IBA partially protected; — = unprotected; R = IBA is wholly or partially a Ramsar Site (see pp.31–32). White-rumped and/or Slender-billed Vultures of region G03 have (or had) populations in several IBAs in this region.

*The most extensive natural wetlands to survive in India are in Assam, including in Kaziranga National Park.*



PHOTO: TIM LOSEBY

Several of the threatened waterbirds that breed in this region require tall trees for nesting, including Greater Adjutant.



PHOTO: JON HORNBUCKLE

## OUTSTANDING IBAs FOR THREATENED BIRDS (see Table 1)

Five IBAs have been selected in this region, primarily because of their importance to Greater Adjutant, Baer's Pochard and Pallas's Fish-eagle, as well as Spot-billed Pelican and Lesser Adjutant. Many more sites for these birds will be documented during BirdLife's ongoing IBA Project.

## CURRENT STATUS OF HABITATS AND THREATENED SPECIES

A century ago, the lowlands of north-east India and north-east Bangladesh were covered by shallow wetlands, seasonally flooded grasslands and swamp forest, but large areas have now been drained and converted to cultivation and pasture. The plains of Assam have been intensively developed, but there are still some extensive natural wetlands there. Habitat loss has been more severe in West Bengal and northern Bangladesh, where only a few fragments of wetland remain. Many of the surviving wetlands are included in the region's extensive network of protected areas, some of which are very large, having been established for the protection of Indian rhinoceros *Rhinoceros unicornis* and other large mammals. However, some of these reserves are affected by the long-running political unrest in several north-east Indian states, which might also disrupt other conservation initiatives in the region.

## CONSERVATION ISSUES AND STRATEGIC SOLUTIONS (summarised in Table 3)

### Habitat loss and degradation

#### ■ CONVERSION TO AGRICULTURE

Many wetlands are shallow and particularly susceptible to being drained and converted for pasture or cultivation. Throughout much of the Brahmaputra valley and Bangladesh local people have cut canals to drain water from small wetlands, substantially reducing waterbird habitats. Similarly, irrigation projects divert water from rivers in the dry season, thus reducing the inflow to wetlands. Partly owing to deforestation in their upper catchments, the

Table 2. Threatened birds of the Assam and Sylhet plains.

Species			Distribution and population
Dalmatian Pelican <i>Pelecanus crispus</i>			Small non-breeding population in Assam
Spot-billed Pelican <i>Pelecanus philippensis</i>			Several hundred pairs breed in Assam
Lesser Adjutant <i>Leptoptilos javanicus</i>			Fairly common breeding bird in Assam
Greater Adjutant <i>Leptoptilos dubius</i>			A high proportion of the known global population breeds in Assam
Marbled Teal <i>Marmaronetta angustirostris</i>			Several recent records of small numbers
Pink-headed Duck <i>Rhodonessa caryophyllacea</i>	EX?		Recorded in the past, but the species is now presumed extinct
Baer's Pochard <i>Aythya baeri</i>			Large non-breeding population in Assam and, especially, north-east Bangladesh
Pallas's Fish-eagle <i>Haliaeetus leucoryphus</i>			Significant breeding population in the <i>haors</i> (lake depression) wetlands of north-east Bangladesh and the Brahmaputra floodplain
Sarus Crane <i>Grus antigone</i>			A small population survives in Assam
Indian Skimmer <i>Rynchops albcollis</i>			Scarce non-breeding visitor along major rivers

Other threatened waterbirds recorded from this region as rare visitors are: Oriental Stork *Ciconia boyciana*, Lesser White-fronted Goose *Anser erythropus*, Baikal Teal *Anas formosa*, Hooded Crane *Grus monacha*, Spotted Greenshank *Tringa guttifer* and Spoon-billed Sandpiper *Eurynorhynchus pygmeus*. In addition to the waterbirds, Greater Spotted Eagle *Aquila clanga* (VU; see F01) and Imperial Eagle *A. heliaca* (VU; see G01) occur in winter. Note that three species that occur in forested wetlands in this region, White-bellied Heron *Ardea insignis*, White-winged Duck *Cairina scutulata* and Masked Finfoot *Heliopais personata*, are covered in F06.

● = region estimated to support 50–90% of global breeding population, ○ = 10–50%, ○ = <10%;  = region estimated to support 10–50% of global non-breeding population,  = <10%; EX? = probably extinct

There is an important breeding population of Pallas's Fish-eagles in the haor wetlands of north-east Bangladesh.



PHOTO: TIM LOSEBY

Brahmaputra and other rivers carry increasing silt loads which they deposit in riverine wetlands, making them shallower, facilitating reclamation and leading to succession to grassland. Important sites need to be protected by controlling or eliminating drainage and conversion to agriculture, careful management of irrigation projects, even some way upstream, and digging or dredging to counter excessive siltation. Awareness campaigns are required, targeted at local governments with jurisdiction over important wetlands and civil society, to emphasise the global importance of these wetlands for large waterbirds and other biodiversity, and the role that clean natural wetlands play in preserving water quality and fish stocks.

■ **DEVELOPMENT (URBAN, INDUSTRIAL, ETC.)**

The region's growing network of roads and expanding industry are reducing wetland habitat. In Bangladesh, a government scheme of oil and gas exploration may cause damage to wetlands. In general, such developments should avoid important wetlands, and major development projects need careful consideration through environmental impact assessments.

■ **CUTTING OF NEST TREES**

Loss of nesting trees is a major threat to the region's important breeding populations of Spot-billed Pelican, Lesser Adjutant, Greater Adjutant and Pallas's Fish-eagle. Trees are cut commercially for match production or to provide firewood to brick factories, and privately for building materials, furniture or fuel. Many of the surviving mature trees are on private land near human habitation, where nesting storks are sometimes deliberately persecuted to remove their unpleasant noise and aroma. Special protection needs to be given to the trees used by nesting pelicans, storks and eagles, including the establishment of small wetland sanctuaries or 'mini-reserves'. As many

Table 3. Conservation issues and strategic solutions for birds of the Assam and Sylhet plains.

Conservation issues	Strategic solutions
<b>Habitat loss and degradation</b>	
<ul style="list-style-type: none"> <li>■ CONVERSION TO AGRICULTURE</li> <li>■ DEVELOPMENT (URBAN, INDUSTRIAL, ETC.)</li> <li>■ CUTTING OF NEST TREES</li> <li>■ REDUCED FOOD SUPPLY</li> <li>■ DISTURBANCE</li> <li>■ POLLUTION/PESTICIDES</li> <li>■ INTRODUCED WEEDS</li> </ul>	<ul style="list-style-type: none"> <li>➤ Minimise drainage and extraction of water for irrigation near key wetlands for threatened birds, including through awareness campaigns targeted at local governments with jurisdiction over these areas</li> <li>➤ Assess the environmental impact of proposed development projects, and develop new roads and industry away from key wetlands</li> <li>➤ Work with landowners to protect pelican, stork and eagle nest trees, and plant trees and erect artificial nest platforms to provide additional habitat</li> <li>➤ Reduce pressure on waterbird nest trees by promoting community forestry projects and alternatives to fuelwood, and replant native swamp forests</li> <li>➤ Improve management of fisheries at key wetlands, and ban fishing using chemicals</li> <li>➤ Continue traditional management at waste disposal sites to ensure a supply of carrion for Greater Adjutants, and/or provide supplementary feeding</li> <li>➤ Regulate human activities at key wetlands to minimise disturbance</li> <li>➤ Limit the use of agrochemicals, and encourage traditional organic farming methods</li> <li>➤ Control water hyacinth infestations using mechanical or biological methods</li> </ul>
<b>Protected areas coverage and management</b>	
<ul style="list-style-type: none"> <li>■ GAPS IN PROTECTED AREAS SYSTEM</li> <li>■ WEAKNESSES IN RESERVE MANAGEMENT</li> </ul>	<ul style="list-style-type: none"> <li>➤ Protect all extensive areas of natural wetland by establishing new protected areas or extending existing reserves</li> <li>➤ Create wildlife sanctuaries in the haor basin of north-east Bangladesh</li> <li>➤ Develop a network of sanctuaries to protect wetland fragments where threatened waterbirds nest and feed</li> <li>➤ Improve the capacity of the government departments responsible for environment and forestry in India and Bangladesh</li> </ul>
<b>Exploitation of birds</b>	
<ul style="list-style-type: none"> <li>■ HUNTING</li> <li>■ PERSECUTION</li> </ul>	<ul style="list-style-type: none"> <li>➤ Strengthen hunting and species protection laws and improve their enforcement, especially at key wetlands</li> <li>➤ Control gun ownership</li> </ul>
<b>Gaps in knowledge</b>	
<ul style="list-style-type: none"> <li>■ INADEQUATE DATA ON THREATENED BIRDS</li> </ul>	<ul style="list-style-type: none"> <li>➤ Locate and monitor key waterbird colonies and foraging sites, notably those of Greater Adjutant</li> <li>➤ Conduct winter surveys for Baer's Pochard</li> <li>➤ Search for Pink-headed Duck</li> </ul>

waterbirds colonies are on private land, notably those of Greater Adjutant, negotiation with landowners is required to ensure that any disagreements over colony protection are settled amicably and in favour of conservation. To provide additional nesting habitat, trees should be planted and artificial nest platforms erected near existing and abandoned waterbird colonies and at other potential nesting sites, carefully sited to avoid disturbance and persecution. Existing efforts in the *haor* basin of north-east Bangladesh to replant native swamp forest on village common lands that were once forested should be promoted (both there and possibly elsewhere). Meanwhile, pressure could be reduced on wood resources, by (e.g.) community forestry projects and the use of gas for brick production and domestic purposes.

#### ■ REDUCED FOOD SUPPLY

Many wetlands in this region are important fisheries, but the already intense fishing pressure has increased in recent years, reducing the availability of food for pelicans and storks (as well as people). Fishing communities should return to a longer-term perspective in fishery management (with less frequent harvesting of fish), by establishing sanctuaries in parts of the wetlands, and enforcing conservation provisions on the leaseholders of the most valuable fisheries. Some fishermen use pesticides to kill fish, at least in Dibru-Saikhowa National Park, a practice which should be banned. In north-east India, Greater Adjutants frequently feed at municipal dumps or in agricultural areas, but recent changes in agricultural and municipal practices appear to have reduced the quantity of carrion available to them. The continuation of traditional management methods should be considered at key waste disposal sites (e.g. those at Tezpur and Gauhati) to provide a regular food supply to the storks; provision of waste and carrion at designated rural sites might also prove effective.

#### ■ DISTURBANCE

Many wetlands are heavily used by people, and at least two Spot-billed Pelican colonies in Assam have been abandoned or shifted because of human disturbance. Most large waterbirds have declined dramatically in Bangladesh owing to habitat disturbance and hunting, and the large and rapidly expanding human population (130 million in 2001, 220 million by 2020) will undoubtedly exert huge pressure on the remaining natural wetlands and their resources. Protected areas need to provide waterbirds with secure and undisturbed foraging and nesting habitat: they should be zoned and patrolled to prevent excessive use or disturbance by people in their core areas.

#### ■ POLLUTION/PESTICIDES

The use of synthetic agrochemicals is largely uncontrolled in India and Bangladesh, and their run-off affects aquatic ecology, especially where cultivation has spread to the fringes of wetlands. Inflow of fertilisers promotes excessive growth of aquatic vegetation, notably of water hyacinth (see below), while toxic pesticides and herbicides build up in the food chain. Other sources of pollution are tea treatment plants, oil fields and sewage, which cause eutrophication and deposit toxins in wetlands near towns and cities. The use of pesticides or fertilisers and the output of industrial effluents need to be monitored and controlled, especially in areas close to important wetlands, along with improvements in sewage treatment. Traditional organic agricultural practices should be encouraged.

#### ■ INTRODUCED WEEDS

The clogging of the Kaziranga wetlands in Assam with water hyacinth *Eichhornia crassipes* is a major threat to Spot-billed Pelicans, which do not nest when floods fail to flush this weed from the wetlands, thereby reducing the open water that they require for feeding. Mechanical

*The haor wetlands of north-east Bangladesh are important fisheries.*



PHOTO: PAUL THOMPSON

removal or biological control methods should be used to clear the carpets of weed.

### Protected areas coverage and management

#### ■ GAPS IN PROTECTED AREAS SYSTEM

This is the only part of the Indian subcontinent where there is an opportunity to protect extensive tracts of natural wetlands and seasonally flooded grasslands. Some large protected areas have already been established, and new reserves and extensions to existing reserves should be considered to increase the coverage of these rapidly dwindling habitats. The *haor* basin of north-east Bangladesh currently receives little protection, and the outstanding IBAs listed above should be considered for declaration as wildlife sanctuaries; Tangua Haor was recently designated as a Ramsar Site, although the district administration has issued fishing permits for the site, a potential conflict of interests that needs to be resolved. Many threatened waterbird colonies and feeding areas are in relatively small, unprotected wetland fragments, and Greater Adjutants nest mainly in urban and suburban areas within a few kilometres of rubbish dumps. A network of small, community-managed wetland sanctuaries or ‘mini-

reserves’ needs to be developed in Assam and elsewhere to protect these sites.

#### ■ WEAKNESSES IN RESERVE MANAGEMENT

In both India and Bangladesh, a capacity-building exercise is required to focus on governmental departments responsible for environment and conservation, through the provision of extra funding and training of personnel.

### Exploitation of birds

#### ■ HUNTING

Waterbirds, especially ducks, are commonly shot or trapped (often using mist-nets at night) in many parts of north-east India and Bangladesh; their meat is sold in local markets, for example in Assam. Hunting laws need to be strengthened and strictly enforced at important wetlands, particularly in protected areas. Education programmes are required to publicise the legal status and importance of threatened species to local hunters and communities, including using information boards at key breeding and wintering sites. Control of gun ownership might be a practical method of addressing this problem in some areas.

#### ■ PERSECUTION

Pelicans, storks and other waterbirds are persecuted in Assam (and presumably elsewhere in the region) because fishermen and fish-pond owners believe that are damaging their business by reducing fish stocks. Eggs and chicks may be collected for food or destroyed, incubating adults shot off the nest, or birds deliberately poisoned. As with hunting, threatened species need to be legally protected from these activities, while awareness programmes need to publicise the laws and improve the public’s perception of waterbirds.

### Gaps in knowledge

#### ■ INADEQUATE DATA ON THREATENED BIRDS

This is one of the most important regions of Asia for several species of threatened large waterbirds, notably Greater Adjutant, and further research is needed to locate and monitor their breeding colonies and major foraging sites, and help determine where conservation action is required. This region appears to be important for wintering Baer’s Pochards, but the information on its status at some sites is unclear, apparently because of the difficulty of distinguishing it from similar *Aythya* ducks; winter surveys of Baer’s Pochards are required, with observers specially trained to identify it. Searches should be made for Pink-headed Duck although it is probably extinct.

Large numbers of Baer’s Pochards winter in Assam and north-east Bangladesh.



PHOTO: TIM LOSEBY