

## ASSAM

IN-25



Photo: M. Zafar-ul Islam

About 820 bird species are reported from the diverse habitats in Assam.

It is believed that Assam (24° 09' - 27° 58' N and 89° 42' - 96° 01' E) is the anglicized version of 'Asom', the name the Ahoms gave to the country, when they conquered it. Assam, known in ancient lore as Kamarupa, originally included in addition to modern Assam, parts of modern Bengal and Bangladesh.

Assam has a geographical area of 7.84 million ha, which constitutes 2.39% of the country's total area. The area has been reduced to one-third of its original size during the last 30 years due to bifurcation into other states. Topographically, the state can be divided into three parts, namely, the Brahmaputra valley, the Barak valley and the Assam range. The first two parts are plain areas, while the Assam range is a mountainous region. Assam is dominated by the Brahmaputra river which is c. 2900 km in length. Its drainage area is roughly 935,500 sq. km.

Assam is rich in mineral wealth such as oil, coal, limestone, refractory clay, dolomite and natural gas. But tea is the major industry. There are nearly 750 major tea estates in the State. Assam contributes 15.6% of the world's tea production and 55% of India's tea output. Assam is first state in the country where oil was struck in 1889 at Digboi. Assam is the largest producer in the world of the golden coloured 'muga' silk.

There are many world famous protected areas in Assam such as the Kaziranga National Park (NP), Manas NP and Nameri NP. Majuli island is one of the largest river island in the world, where many large colonies of the Lesser Adjutant *Leptoptilos javanicus* can be seen, along with other interesting birds. Nagaon and Morigaon are two very important sites for the Greater Adjutant *Leptoptilos dubius*, where a large number of the adjutants breed.

The human population of the State is 26.64 million (2.6% of the country's population) of which 87.3% is rural and 12.7% is urban (Census 2001). The average population density of the State is 340 persons per sq. km. Tribals constitute about 12.8% of the State's total population.

The climate of Assam is tropical monsoon with the mean annual rainfall varying from 1,500 mm to 4,000 mm. The mean annual temperature ranges between 5 °C to 32 °C.

### Vegetation

The forest types occurring in the State are Tropical Wet Evergreen, Tropical Semi-evergreen, Tropical Moist Deciduous, Subtropical Broadleaf Hill, Subtropical Pine and Littoral and Swamp Forests (Ministry of Environment and Forests 2001).

As per the Forest Survey of India report of 2001, the total recorded forest area is 27,018 sq. km which constitutes 34.4% of the total

geographical area of the State and 3.5% of the country's forest cover. According to legal classification, the reserved forest constitutes 66.8% and unclassed Forest 33.2% (Ministry of Environment and Forests 2001). The dense forest constitute 20.2%, open forest 15.2% and non-forest 64.7%. The State ranks eighth among all the Indian States in respect of area under forest cover (Ministry of Environment and Forests 2001).

#### IBAs AND PROTECTED AREAS

There are five national parks (2.51% of State's geographical area) and 18 wildlife sanctuaries (1.88% of State's geographical area) in the State. The total protected area is 3,43,996 ha which constitutes 4.39% of the total geographical area of the State. Manas Tiger Reserve is a Biosphere Reserve and a World Heritage site, and Kaziranga NP is also a World Heritage site in Assam. Both are identified as IBAs. All the five national parks and all the 18 wildlife sanctuaries are identified IBAs in Assam. Totally there are 46 IBAs in Assam, nearly half are not legally protected. Forty-five sites have been identified on the basis of threatened, 13 on the basis of restricted range species also. Fourteen sites qualify Congregatory criteria (A4), besides qualifying A1 criteria also. As many sites qualify 2 or 3 criteria, the grand total is much more than 46.

#### Number of IBAs and IBA criteria

A1= Threatened species; A2 = Restricted Range species; A3= Biome species; A4=Congregatory species

#### IBAs of Assam

IBA site codes	IBA site names	IBA criteria
IN-AS-01	Amchang Hills	A1
IN-AS-02	Barail Range	A1, A2, A3
IN-AS-03	Barnadi Wildlife Sanctuary	A1
IN-AS-04	Bauwwa <i>Beel</i>	A1
IN-AS-05	Behali Reserve Forest	A1, A3
IN-AS-06	Bherjan-Borajan-Podumoni	A1
IN-AS-07	Bordoibam-Bilmukh Bird Sanctuary	A1
IN-AS-08	Bordoloni-Sampora	A1, A2, A4i
IN-AS-09	Chakrasila Complex	A1, A4i, A4iii
IN-AS-10	Chandubi Lake and adjoining areas	A1
IN-AS-11	Deobali Jalah	A1, A4i
IN-AS-12	Dhansiri Reserve Forest	A1, A4i
IN-AS-13	Dibru-Saikhowa Complex	A1, A2
IN-AS-14	Dipor <i>Beel</i> Bird Sanctuary	A1, A4iii
IN-AS-15	Dum Duma-Dangori-Kumsong Reserve Forests	A1
IN-AS-16	East and North Karbi Anglong Wildlife Sanctuaries	A1
IN-AS-17	Garampani, Nambor and Doigrung	A1
IN-AS-18	Gibbon (Hollongapar) Sanctuary	A1
IN-AS-19	Habang	A4ii
IN-AS-20	Inner Line, Kathakal and Barak Reserve Forests	A1
IN-AS-21	Jamjing and Sengajan	A1
IN-AS-22	Jatinga	A1, A4iv
IN-AS-23	Jengdia <i>Beel</i> and Satgaon	A1
IN-AS-24	Jhanjimukh-Kokilamukh	A1, A4i

IBA site codes	IBA site names	IBA criteria
IN-AS-25	Kaziranga NP	A1, A2, A4i, A4iii
IN-AS-26	Kuarbari-Dalani	A1
IN-AS-27	Langting-Mupa Reserve Forest	A1
IN-AS-28	Laokhowa and Burhachapori Sanctuaries	A1, A2
IN-AS-29	Lumding-Marat Longri	A1
IN-AS-30	Majuli	A1, A4iii
IN-AS-31	Manas National Park	A1, A2
IN-AS-32	Nameri National Park	A1, A2
IN-AS-33	Orang National Park	A1, A4ii
IN-AS-34	Pabho Reserve Forest	A1, A2
IN-AS-35	Pabitora Wildlife Sanctuary	A1, A2, A4iii
IN-AS-36	Pani-Dihing Bird Sanctuary	A1, A4iii
IN-AS-37	Ripu and Chirang-Reserve Forest	A1, A2
IN-AS-38	Sibsagar Tanks	A1, A4i
IN-AS-39	Son Beel	A1
IN-AS-40	Sonai-Rupai Wildlife Sanctuary	A1
IN-AS-41	Subansiri	A1, A2
IN-AS-42	Tamaranga-Dalani-Bhairab Complex	A1, A4iii
IN-AS-43	Tirap-Burhidihing	A1
IN-AS-44	Upper Dihing (East) Complex	A1, A2
IN-AS-45	Upper Dihing (West) Complex	A1, A2
IN-AS-46	Urpod Beel	A1, A4iii

## AVIFAUNA

Assam is extremely rich in bird life. Choudhury (2000) has listed 820 bird species from the State. These include some 280 migrants from the northern latitudes. This richness and diversity in bird species is due to the fact that the northeast and Assam in particular, is a meeting place of two zoogeographic subregions, the Indian and the Indo-Chinese, within the framework of the Oriental (or Indo-Malayan) Zoogeographic Region (Choudhury 2000). Assam is one of the Indian states where detail work on bird life has been done by stalwarts such as E. C. S. Baker, A. O. Hume and A. U. Choudhury (see Choudhury 2000 and BirdLife International 2001 and the references therein).

### Threatened birds for which Assam is significant

Assam has many habitat types that are important for many globally threatened species. Some of IBA sites are very important for the threatened species. If these IBAs are not protected, the global status of such birds will be adversely affected.

#### **Oriental White-backed Vulture** *Gyps bengalensis* and **Slender-billed Vulture** *Gyps tenuirostris* **Critically Endangered**

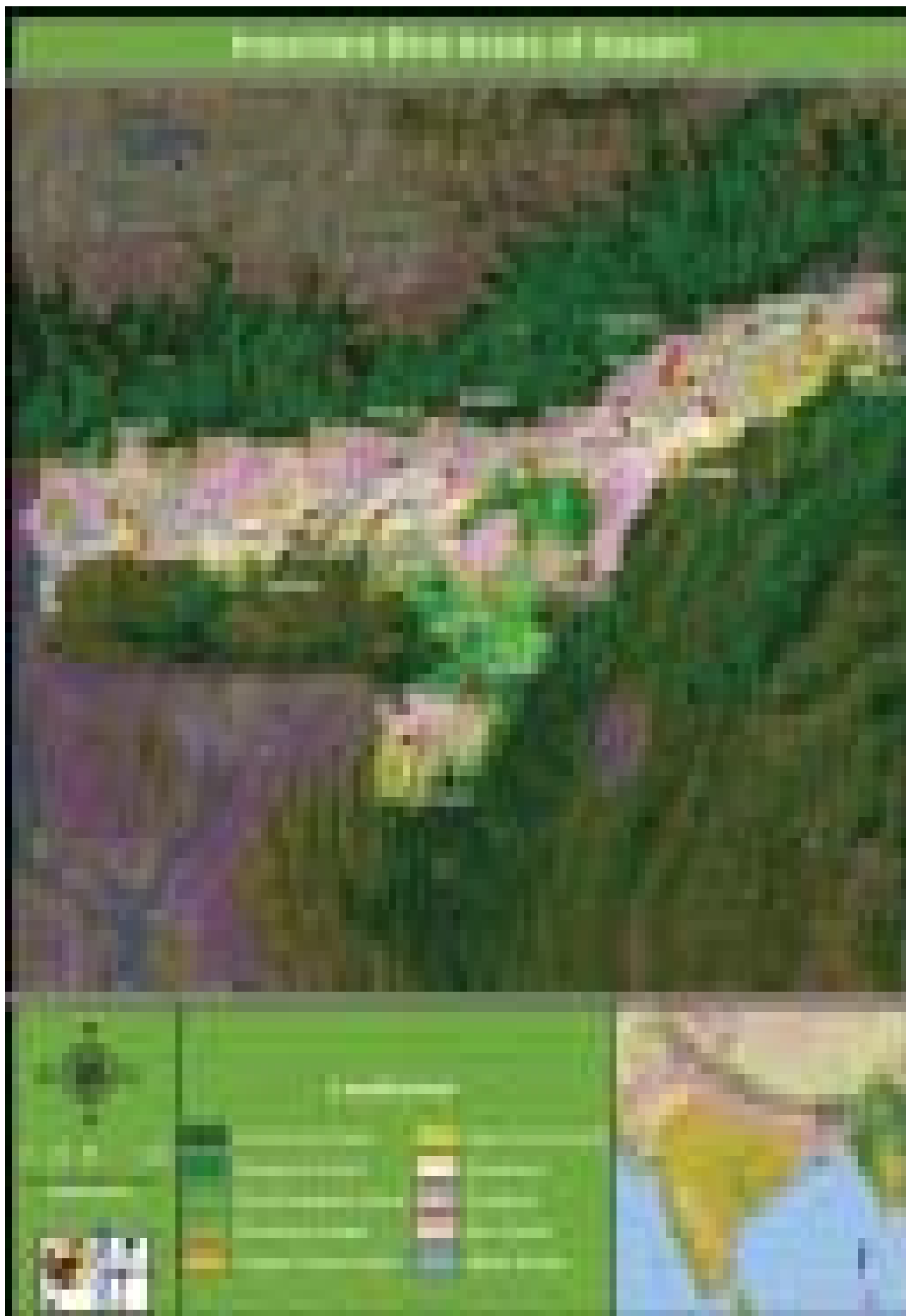
Once common over large parts, both these species have experienced sharp population decline in recent years. Although still sighted sporadically in all the plain districts of the state, the number of birds seen was alarmingly low. This decline is projected to increase in the near future as a result of continued use of diclofenac in veterinary medicines.

#### **White-bellied Heron** *Ardea insignis* **Endangered**

This heron qualifies as Endangered because it has a very small, declining population. This decline is projected to increase in the near future as a result of the loss and degradation of lowland forests and wetlands (BirdLife International 2001). In Assam it is widely and thinly distributed in the Dibru-Saikhowa National Park (Choudhury 1995a, 1998), Jamjing *beel* (Choudhury 1992), Manas National Park (Saikia and Bhattacharjee 1990; Anon. 1990), Kaziranga National Park (Saikia and Bhattacharjee 1993, Bhattacharjee *et al.* 1996), and the Pabitora Wildlife Sanctuary (Saikia and Bhattacharjee 1990, 1993; Choudhury 2000; Barua *et al.* 1997, Barua 1998). Choudhury (2000) has compiled all the sight records, eight in all, five from the protected areas. It is difficult to estimate the total number of this highly secretive bird. However, there is little doubt that the population is very low and is in grave danger due to habitat loss.

#### **White-winged Duck** *Cairina scutulata* **Endangered**

This forest duck qualifies as Endangered because it has a very small, rapidly declining, severely fragmented population as a result of deforestation, wetland drainage and exploitation (BirdLife International 2001). This duck has been reported from the Dibru-Saikhowa NP (Choudhury 1996b, Yahya 1994), Dangori Reserve Forest, Dum Duma Reserve Forest (Choudhury 1996b, Yahya 1994, Talukdar and Bhattacharjee 1995), Jamjing, Kakojan Reserve Forest and Upper Dihing (East Block) Reserve Forest, (Choudhury 1996b, Choudhury 2000), Burhi Dihing river (Buridihing river) (Green 1992), Upper Dihing (West Block) Reserve Forest (Pirie and Choudhury 1976, Choudhury 1996b), Tirap Reserve Forest (Pirie and Choudhury 1976), Joypur Reserve Forest (Choudhury 1996b), Nameri NP (the total population thought to be around 30 individuals, Choudhury 2000), Majuli *Beel*, Moriani range (Mukherjee 1961), and North Cachar Hills (Green 1992).



## List of threatened birds with IBA site codes

IN-AS

Critically Endangered		
Oriental White-backed Vulture	<i>Gyps bengalensis</i>	IN-AS-01, 04, 06, 07, 08, 09, 12, 13, 14, 15, 16, 18, 20, 21, 23, 24, 25, 26, 28, 29, 30, 31, 33, 34, 35, 36, 37, 38, 39, 41, 42, 43, 44, 45, 46
Slender-billed Vulture	<i>Gyps tenuirostris</i>	IN-AS-01, 06, 08, 09, 12, 13, 14, 15, 16, 18, 20, 21, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46
Endangered		
White-bellied Heron	<i>Ardea insignis</i>	IN-AS-08, 13, 21, 25, 32, 35, 44, 45
Greater Adjutant	<i>Leptoptilos dubious</i>	IN-AS-01, 07, 08, 09, 11, 13, 14, 23, 24, 25, 26, 28, 30, 31, 33, 34, 35, 36, 37, 38, 42, 44
White-winged Duck	<i>Cairina scutulata</i>	IN-AS-02, 05, 12, 13, 15, 16, 17, 18, 20, 21(?), 22, 27, 29, 32, 40, 41, 43, 44, 45,
Bengal Florican	<i>Houbaropsis bengalensis</i>	IN-AS-03, 13, 25, 28, 30, 31, 32, 33, 35, 37, 40, 41
Spotted Greenshank	<i>Tringa guttifer</i>	IN-AS-13, 25, 28, 35
Vulnerable		
Spot-billed Pelican	<i>Pelecanus philippensis</i>	IN-AS-01, 04, 07, 08, 13, 14, 20(?), 21, 23, 24, 25, 26, 30, 31, 33, 34, 35, 36, 39
Lesser Adjutant	<i>Leptoptilos javanicus</i>	IN-AS-01, 02, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 41, 42, 43, 44, 45, 46
Lesser White-fronted Goose	<i>Anser erythropus</i>	IN-AS-25
Baikal Teal	<i>Anas formosa</i>	IN-AS-44
Marbled Teal	<i>Marmaronetta angustirostris</i>	IN-AS-25
Baer's Pochard	<i>Aythya baeri</i>	IN-AS-09, 13, 14, 24, 25, 28, 30, 33, 36, 38, 42
Pallas's Fish Eagle	<i>Haliaeetus leucoryphus</i>	IN-AS-07, 09, 10, 13, 14, 21, 23, 25, 28, 30, 32, 33, 35, 36, 41, 42
Greater Spotted Eagle	<i>Aquila clanga</i>	IN-AS-04, 07, 08, 09, 13, 14, 21, 24, 25, 28, 30, 31, 32, 34, 35, 36, 37, 39, 44
Eastern Imperial Eagle	<i>Aquila heliaca</i>	IN-AS-25, 32
Lesser Kestrel	<i>Falco naumanni</i>	IN-AS-25, 31, 32, 35
Swamp Francolin	<i>Francolinus gularis</i>	IN-AS-02, 07, 08, 11, 13, 20(?), 21, 24, 25, 28, 30, 31, 32, 33, 34, 35, 36, 37, 39, 40, 41
Red-breasted Hill-Partridge	<i>Arborophila mandellii</i>	IN-AS-32, 41
Blyth's Tragopan	<i>Tragopan blythii</i>	IN-AS-02
Green Peafowl (no recent record)	<i>Pavo muticus</i>	IN-AS-12(?), 20(?), 29
Sarus Crane	<i>Grus antigone</i>	IN-AS-13
Masked Finfoot (no recent record)	<i>Heliopais personata</i>	IN-AS-15, 20(?), 32, 43, 44
Indian Skimmer	<i>Rynchops albicollis</i>	IN-AS-13, 25
Purple Wood-Pigeon	<i>Columba punicea</i>	IN-AS-13, 16, 25, 32, 44, 45
Rufous-necked Hornbill	<i>Aceros nipalensis</i>	IN-AS-05, 12, 16, 22, 27, 31, 32, 37, 40, 41, 44, 45
Fea's Thrush	<i>Turdus feae</i>	IN-AS-22
Hodgson's Bushchat	<i>Saxicola insignis</i>	IN-AS-25, 31, 32, 37
Marsh Babbler	<i>Pellorneum palustre</i>	IN-AS-13, 25, 28, 30, 31, 32, 35, 37
Tawny-breasted Wren Babbler	<i>Spelaornis longicaudatus</i>	IN-AS-22
Snowy-throated Babbler	<i>Stachyris oglei</i>	IN-AS-44
Jerdon's Babbler	<i>Chrysomma altirostre</i>	IN-AS-13, 25, 30, 31, 37
Slender-billed Babbler	<i>Turdoides longirostris</i>	IN-AS-25, 31, 32
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>	IN-AS-08(?), 13, 25, 30, 31, 34, 36, 37
Hodgson's Prinia	<i>Prinia cinereocapilla</i>	IN-AS-31, 32
Bristled Grass-Warbler	<i>Chaetornis striatus</i>	IN-AS-11, 31, 33
Beautiful Nuthatch	<i>Sitta formosa</i>	IN-AS-22, 45
Finn's Weaver	<i>Ploceus megarhynchus</i>	IN-AS-13, 25, 31, 33, 35

Near Threatened		
Darter	<i>Anhinga melanogaster</i>	IN-AS-07, 09, 12, 13, 14, 20, 21, 24, 25, 28, 29, 30, 31, 33, 35, 36, 38, 42, 44
Painted Stork	<i>Mycteria leucocephala</i>	IN-AS-07
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	IN-AS-13, 14, 25, 28, 31, 33, 35, 36
Oriental White Ibis	<i>Threskiornis melanocephalus</i>	IN-AS-24, 25, 38
Ferruginous Pochard	<i>Aythya nyroca</i>	IN-AS-07, 09, 11, 13, 14, 24, 25, 28, 30, 33, 35, 36, 38, 42, 44
White-tailed Sea-Eagle	<i>Haliaeetus albicilla</i>	IN-AS-13, 25, 32
Lesser Grey-headed Fish-Eagle	<i>Ichthyophaga ichthyaeus</i>	IN-AS-13, 31
Greater Grey-headed Fish-Eagle	<i>Ichthyophaga ichthyaeus</i>	IN-AS-07, 09, 13, 14, 25, 28, 32, 33
Cinereous Vulture	<i>Aegypius monachus</i>	IN-AS-13, 25, 31
Red-headed Vulture	<i>Sarcogyps calvus</i>	IN-AS-05, 09, 21, 25, 31, 32, 33
Pallid Harrier	<i>Circus macrourus</i>	IN-AS-09, 31
White-cheeked Hill Partridge	<i>Arborophila atrogularis</i>	IN-AS-25, 29, 44
Black-bellied Tern	<i>Sterna acuticauda</i>	IN-AS-13, 24, 25, 28
Blyth's Kingfisher	<i>Alcedo hercules</i>	IN-AS-12, 13, 20, 25, 33, 44
Great Pied Hornbill	<i>Buceros bicornis</i>	IN-AS-05, 09, 12, 13, 20, 25, 27, 29, 31, 43, 44, 45
Brown Hornbill	<i>Anorrhinus tickelli</i>	IN-AS-12, 20, 27, 43, 44, 45
Long-tailed Prinia	<i>Prinia burnesii</i>	IN-AS-12, 13, 25
Rufous-rumped Grass-Warbler	<i>Graminicola bengalensis</i>	IN-AS-25
Chestnut-backed Laughingthrush	<i>Garrulax nuchalis</i>	IN-AS-44

**Greater Adjutant** *Leptoptilos dubius* **Endangered**

Still widely but sparsely distributed throughout the Brahmaputra Valley. It is occasional in the Barak Valley and in the plain areas of the hill districts (Choudhury 2000). It has also been recorded from urban areas, for example Tezpur, Guwahati, Nagaon, Sibsagar and Dibrugarh. This stork qualifies as Endangered as it has a very small, declining population. This decline is projected to increase in the future based on current levels of exploitation, the effects of pollutants and continuing reduction in the availability of nesting sites and quality of feeding sites (BirdLife International 2001). The birds have been recorded from the Dibru-Saikhowa NP (Choudhury 1995a, 1997), Pani Dihing Sanctuary (Saikia 1995, Rahmani *et al.* 1990), Majuli island, Jorhat district (Saikia 1995), Misamari, Sonitpur district (Saikia 1995), Burhachapori WLS (Choudhury 2000), Manas NP (Scott 1989, Anon. 1993), Nalbari, Darrang district (Rahmani *et al.* 1990, Saikia 1995), Orang NP, Darrang district (Rahmani *et al.* 1990, Changkakati and Das 1991), Kaziranga NP (Inskipp 1971, Scott 1989, Bhattacharjee *et al.* 1996), Chakrashila Wildlife Sanctuary (*Oriental Bird Club Bull.* 32: 12), Pabitora WLS (Choudhury 2000); Deepor (= Dipor) *Beel* (Saikia and Bhattacharjee 1989), Sonapur, Nagaon district (Saikia 1995), Bordoibam-Bilmukh Sanctuary (Choudhury 2000), Laokhowa WLS (Rahmani *et al.* 1990; Choudhury 2000), Morigaon district (between Kamrup and Nagaon districts) (Saikia 1995), Nagaon district (Changkakati and Das 1991).

The main problem for this species is lack of food during its breeding season due to over-fishing. Destruction of large nesting trees could also be impacting its population. In urban areas such as Guwahati, there are instances of electrocution by electric wires (Choudhury 2000). Only a tiny fraction of breeding takes place inside protected areas (e.g. Kaziranga), that too sporadic. Most nesting takes place in urban (e.g. Nagaon) or rural areas, sometimes even on roadside trees.

The Greater Adjutant is one of the rarest storks in the world. Public involvement for conserving its nesting sites is absolutely essential for its long-term survival.

Photo: Udayan Barthakur



**Bengal Florican** *Houbaropsis bengalensis* **Endangered**

This bustard has a very small, rapidly declining population largely as a result of the widespread loss of its grassland habitat. It therefore qualifies as Endangered (BirdLife International 2001). It has been reported from Amarapur (Choudhury 1996b), Dibru-Saikhowa NP and Nameri NP (Choudhury 2000), Majuli Island, (Narayan 1992), Sonai-Rupai WLS (Choudhury 2000), Manas NP and Orang NP (Narayan and Rosalind 1990, Narayan 1992), Kaziranga NP (Rahmani *et al.* 1988), Burhachapori WLS, and the adjacent Laokhowa WLS (Narayan and Rosalind 1990), and the Pabitora WLS.

**Spot-billed Pelican** *Pelecanus philippensis* **Vulnerable**

An important breeding population survives in Assam, mainly along the Brahmaputra Valley, Dibru-Saikhowa NP (Choudhury 1995a), Panidihing Sanctuary (Talukdar 1999), Koabari Doloni, Majuli pelicanry, on Majuli island, 11 nests in 1993 (Talukdar 1995), Misamari *beel*, (BirdLife International 2001), Burhachapori WLS (Choudhury 2000), Manas NP (BirdLife International 2001), apparently no recent reports; Orang NP (Talukdar 1999), Kaziranga NP (Inskipp 1971, Das 1991, Talukdar 1999), Rupahi Pathar, Jengdia *beel* (BirdLife International 2001), Pobitora WLS (Talukdar 1999); Deepor (= Dipor) *Beel* (Barman *et al.* 1995), and North Cachar Hills district (Choudhury 2000).

**Lesser Adjutant** *Leptoptilos javanicus* **Vulnerable**

This stork qualifies as Vulnerable because it has a small, declining population as a result of habitat loss and degradation, hunting and disturbance (BirdLife International 2001). In Assam it has been reported from Dibru-Saikhowa NP (Choudhury 1995b, Saikia 1995), Dum Duma (Saikia 1995), Jamjing *beel* (Choudhury 1992), Pani Dihing (Saikia 1995), Nameri NP (Choudhury 1991), Majuli Island (Saikia 1995), Dikhoumukh, (Saikia 1995), Borajan (Choudhury 1995b), Manas NP (Rahmani *et al.* 1988, Saikia 1995); Orang NP (Saikia 1995), Kaziranga NP (Saikia 1995, Bhattacharjee *et al.* 1996), Laokhowa WLS (Kahl 1971, Saikia 1995), Nalbari (Saikia 1995), Chakrashila WLS (*Oriental Bird Club Bull.* 32: 11), Sareswar *beel* (Saikia 1995); Jengdia *beel*, Kamrup district, with 67 nests (Saikia 1995), Pobitora WLS (Saikia 1995), and Deepor *Beel* (Saikia and Bhattacharjee 1989, Barman *et al.* 1995).

**Pallas's Fish-Eagle** *Haliaeetus leucorhynchus* **Vulnerable**

This species is inferred to have a small, declining population as a result of widespread loss, and degradation and disturbance of wetlands and breeding sites throughout its range. It therefore qualifies as Vulnerable (BirdLife International 2001). This species was once very common in the Brahmaputra valley, and remains fairly common in this area, with records from Dibru-Saikhowa NP (Choudhury 1995b, Choudhury 2000), Pani Dihing (Choudhury 1991, Choudhury 2000), Nameri NP (Talukdar and Das 1997), Manas NP (Rahmani *et al.* 1988, Choudhury 2000), Kaziranga NP (Samant *et al.* 1995, Barua and Sharma 1999) and Deepor *Beel*, (Choudhury 2000).

**Swamp Francolin** *Francolinus gularis* **Vulnerable**

This species is classified as Vulnerable because it has undergone a rapid population decline which is projected to continue, concurrent with the rapid decline in the extent and quality of its grassland habitat. Trapping for food and trade is an additional pressure (R. Bhargava *pers. comm.* 2002). In Assam it has been reported from the Dibru-Saikhowa NP, (Talukdar 1993, Choudhury 1995a), Manas NP (Rahmani *et al.* 1988), Orang NP (Javed *et al.* 1999), Kaziranga NP (Mukherjee 1977, Choudhury 2000), Laokhowa WLS (Javed *et al.* 1999), Burhachapori WLS (Choudhury 2000), Pobitora WLS (BirdLife International 2001).

**Slender-billed Babbler** *Turdoides longirostris* **Vulnerable**

This elusive species is inferred to have a small, rapidly declining population because of the extensive destruction and degradation of its tall grassland habitats. It therefore qualifies as Vulnerable (BirdLife International 2001). In Assam it has been reported from the Manas NP (Rahmani *et al.* 1988) and the Kaziranga NP (Barua and Sharma 1999).

**Black-breasted Parrotbill** *Paradoxornis flavirostris* **Vulnerable**

This tall grassland specialist is inferred to have a small, rapidly declining population as a result of extensive loss and degradation of grasslands. It therefore qualifies as Vulnerable (BirdLife International 2001). In Assam it has been reported from the Dibru-Saikhowa NP (Choudhury 1995a).

**Finn's Weaver** *Ploceus megarhynchus* **Vulnerable**

This species has a small, rapidly declining, severely fragmented population as a result of the loss and degradation of *terai* grasslands, principally through conversion to agriculture and overgrazing. These factors qualify it as Vulnerable (BirdLife International 2001). In Assam it has been reported from the Manas NP 1987 (Rahmani *et al.* 1988) and Kaziranga NP (Barua and Sharma 1999).

**Restricted Range species**

Two Endemic Bird Areas, the Eastern Himalayas (EBA 130) and the Assam Plains (EBA 131), lie in Assam. The Eastern Himalayas EBA has 22 restricted range species and 13 of them are found in Assam. The Assam Plains EBA has 3 species and all of them are found in Assam. The Manipur Bush Quail *Perdica manipurensis* of this EBA has not been found in any IBA of this State. Similarly, Hoary-throated Barwing *Actinodura nipalensis* and Streak-throated Barwing *Actinodura waldeni*, two species of EBA 130 that are present in Assam (Choudhury 2000) were not found in any IBA.

Finn's Weaver survives only in few IBAs.

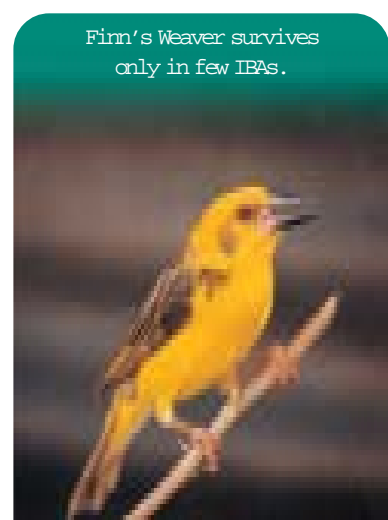


Photo: Rajat Bhargava



## Important Bird Areas in India - Assam

IN-AS

Endemic Bird Area 130: Eastern Himalayas		
Red-breasted Hill-Partridge	<i>Arborophila mandellii</i>	IN-AS-32, 41(?)
Blyth's Tragopan	<i>Tragopan blythii</i>	IN-AS-02
Striped Laughingthrush	<i>Garrulax virgatus</i>	IN-AS-02
Brown-capped Laughingthrush	<i>Garrulax austeni</i>	IN-AS-02
Rufous-throated Wren-Babbler	<i>Spelaeornis caudatus</i>	IN-AS-32
Tawny-breasted Wren-Babbler	<i>Spelaeornis longicaudatus</i>	IN-AS-22
Austen's Babbler	<i>Stachyris oglei</i>	IN-AS-44
Grey Sibia	<i>Heterophasia gracilis</i>	IN-AS-02
Beautiful Sibia	<i>Heterophasia pulchella</i>	IN-AS-02
White-naped Yuhina	<i>Yuhina bakeri</i>	IN-AS-02
Black-browed Leaf-Warbler	<i>Phylloscopus cantator</i>	IN-AS-02, 44, 45
Endemic Bird Area 131: Assam Plains		
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>	IN-AS-08 (?), 13, 25, 30, 31, 34 (?), 36, 37
Marsh Babbler	<i>Pellorneum palustre</i>	IN-AS-13, 25, 28, 30, 31, 32, 35, 37
Secondary Area s079: North Myanmar lowlands		
Chestnut-backed Laughingthrush	<i>Garrulax nuchalis</i>	IN-AS-44

### Biomes

Assam has three biomes: Biome-8 (Sino-Himalayan Subtropical Forest), Biome-9 (Indo-Chinese Tropical Moist Forest) and Biome-12 (Indo-Gangetic Plain). The list of biome species is too long to be mentioned here.

### THREATS AND CONSERVATION ISSUES

Assam also has many conservation problems, which the Forest Department and the IBCN partners are trying to minimize with the help of local people. Habitat destruction and modification is the major and irreversible threat. As many as 42 out of 46 IBAs face this threat. The second most important threat is unsustainable exploitation of natural resources. This includes illegal felling, firewood collection, drainage and poaching. Disturbance to birds in the form of trapping and poaching, and during fishing operations is seen in most of the sites but particularly in 28 IBAs. Expansion of agricultural fields after illegally removing the natural vegetation, and slash-and-burn (*jhumming*) are seen in 26 IBAs. Excessive firewood collection is the major cause of concern in 19 IBAs of the State.

### Threats to IBAs

A= Agriculture intensification/expansion; B= Dams/Dykes; C= Disturbance to Birds; D= Firewood Collection;  
E= Industrialisation/Urbanisation; F= Unsustainable exploitation; G= Others; H= Natural Events

**Illegal felling:** Assam has 34.4% of its geographical area covered with forest (Ministry of Environment and Forest 2001). But this percentage is declining slowly because of deforestation. The illegal felling is mainly because of increased human population. Forests are cleared to have more space for agricultural purposes, particularly affecting lowland forests, and this is taking place even within some protected areas. The habitats of many of the bird species are getting reduced because of this problem.

**Firewood collection:** Many of the protected areas are under severe pressure from the local people. They collect firewood regularly which causes great disturbance to many bird species.

**Conversion of natural habitat to agriculture:** One of the main threats is the continuing conversion of natural grassland and wetlands to agricultural and urban land-uses, together with agricultural intensification and industrialization (Stattersfield *et al.* 1998). These habitats are now much reduced in area and also fragmented.



**Shifting Cultivation:** Unsustainable shifting cultivation in Assam could be made sustainable if people practised it on a small scale using clearing cycles of 15-20 years. But in many areas increased population pressure has led to a rapid reduction in this cycle.

**Encroachment:** There has been extensive encroachment into many IBA sites (some are protected areas) by people displaced during floods in the Brahmaputra river, erosion and inter-ethnic conflicts. In some of the protected areas (IBA sites) management practices are oriented solely towards large mammals.

**Poaching:** Poaching is a major problem in Assam and all the northeastern states of India. Most of the poaching is done for waterbirds during October to February, when migratory birds arrive. The efforts of IBCN partners with the collaboration of the Forest Department are making impacts on many of the IBA sites.

**Habitat degradation:** Assam is a famous tea-producing state of India, large areas are used for tea cultivation. Most of the tea gardens and adjacent habitats are badly affected by insecticides.

Similarly, wetlands are also affected by sewage and pesticides and waterbirds including migratory species are disappearing from many of these habitats.

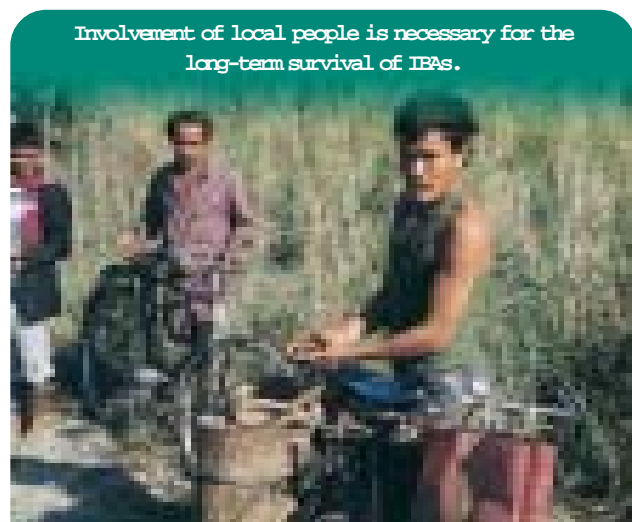


Photo: Asad R. Rahmani

IN-AS

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'Birds Festival' organised for awareness in Sivarajan, Assam - July 2003.



Photo: IBON

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## AMCHANG HILLS



IBA Site Code	: IN-AS-01
State	: Assam
District	: Kamrup
Coordinates	: 26° 06' 12" N, 91° 44' 60" E
Ownership	: State
Area	: 7,400 ha
Altitude	: 50 – 569 m
Rainfall	: >1,600 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Moist Deciduous Forest, Tropical Semi-evergreen, Evergreen forests, Wetland

IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Not officially protected

## GENERAL DESCRIPTION

Amchang (or Amcheng) Hills lie very close to Guwahati city, the capital of Assam. Besides being rich in flora and fauna, the area has the potential to become a permanent green belt at the eastern edge of this city with a population of about two million people. The site includes three Reserve Forests: Amchang (5,318 ha), South Amchang (1,550 ha) and Khanapara (996 ha), and a wetland called Khamranga *beel*. The reserve forest areas have been recommended for a wildlife sanctuary due to an almost isolated population of Asian elephants *Elephas maximus* and Gaur *Bos frontalis* (Choudhury 1999, 2002a) and other species, and as green belt for Guwahati (Choudhury 2002b). Considering its importance, the State Forest Department has prepared a proposal for declaring it as a sanctuary (Barua 2003).

The area consists of low hills, which are part of a plateau. The lowest parts are about 50 m, near Khamranga *beel*, while the highest point is 569 m (Parahopa Peak).

This IBA enjoys a tropical climate which may be called the 'Tropical monsoon type.' The summer is hot and wet, while the winter is cool and dry.

The forest type is Tropical Moist Deciduous, with small pockets of Tropical Semi-evergreen. In the depressions, *Alpinia allughas* herbs and *Arundo donax* and *Neyraudia reynaudiana* (both locally called *Nal*) grass occur. Plantations of the Forest Department are mostly of Teak *Tectona grandis*.

## AVIFAUNA

A rich and diverse bird life exists in the area. About 200 species have so far been recorded while there could be more than 300 (A. U. Choudhury *pers. comm.* 2003). The Greater Adjutant *Leptoptilos dubius* and Lesser Adjutant *L. javanicus* are regularly seen both in the *beel* as well on the hills. In the latter area, they are seen in flight. The Critically Endangered Oriental White-backed Vulture *Gyps bengalensis* and the Slender-billed Vulture *G. tenuirostris* were common till the mid-1990s, but are now very rare. Nesting by the former species in recent years was also reported (Mrigen Barua *in litt.* 2003). The Spot-billed Pelican *Pelecanus philippensis* was a frequent visitor to Khamranga *beel* but now it is occasional.

In winter, a very large number of migratory waterfowl are found

in Khamranga *beel*. With protection, their number could easily reach 20,000 (A4iii criteria).

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Vulnerable	
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>

## OTHER KEY FAUNA

Other fauna in the area is exceptionally rich. Five species of primates have been confirmed: Hoolock Gibbon *Hylobates hoolock*, Slow Loris *Nycticebus coucang*, Capped Langur *Trachypithecus pileatus*, Rhesus Macaque *Macaca mulatta* and the Assamese Macaque *M. assamensis*. There are reports of the Pig-tailed Macaque *Macaca nemestrina* and Stump-tailed Macaque *M. arctoides*. Other mammals include the Asian Elephant, Tiger *Panthera tigris*, Leopard *P. pardus*, Leopard Cat *Prionailurus bengalensis*, Jungle Cat *Felis chaus*, Gaur, Sambar *Cervus unicolor* and Barking Deer *Muntiacus muntjak*. The reptiles diversity is, however, poorly known.

## LAND USE

- q Forestry
- q Cultivation on the fringe areas including encroachments
- q Fishing in the *beel*

## THREATS AND CONSERVATION ISSUES

- q Illegal felling of trees
- q Firewood collection
- q Charcoal making
- q Encroachment
- q Poaching
- q Disturbance by railway line

Such a good forest cover relatively free from encroachment near a

AS-01

The threatened Hoolock Gibbon *Hylobates hoolock* is recorded from this IBA.

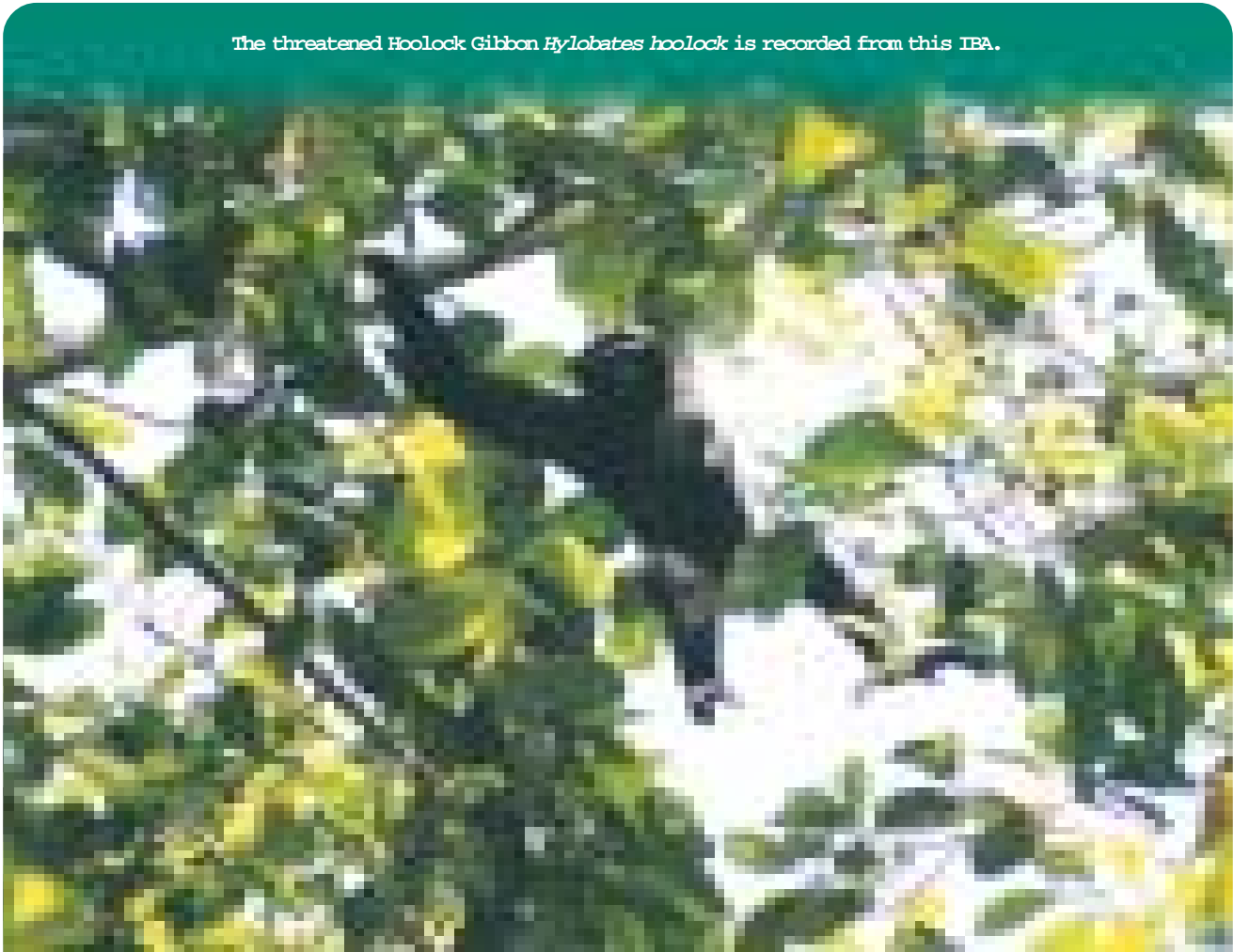


Photo: Udayan Borthakur

growing city is a rare feature. Before it is too late, adequate protection measures should be taken.

Illegal felling of trees for timber, firewood and charcoal making, increasing encroachment, and occasional poaching are the main issues. The proposal to construct a main road as a subsidiary to National Highway 37, through part of Khanapara and South Amchang RFs, should be reassessed.

This area has great tourism potential because of its location near Guwahati city.

**KEY CONTRIBUTOR**

Anwaruddin Choudhury

**KEY REFERENCES**

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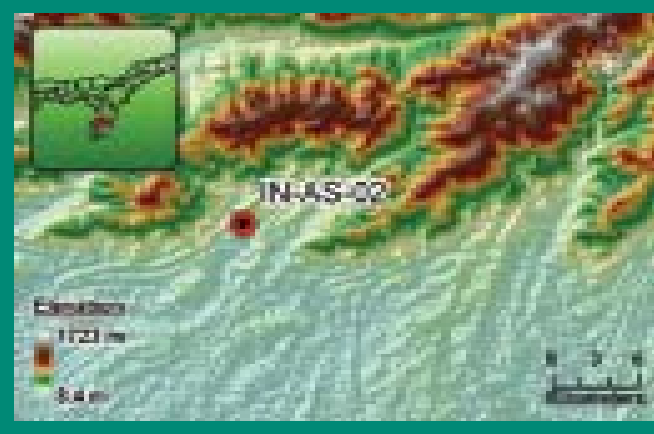
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**POST SCRIPT**

An area of 79 sq. km has been notified as ‘Amchang Wildlife Sanctuary’ in June 2004.

BARAIL RANGE



IBA Site Code : IN-AS-02

State : Assam

District : Cachar / North Cachar Hills

Coordinates : 25° 00' 10" N, 92° 52' 30" E

Ownership : State, community

Area : c. 80,000 ha

Altitude : 100 – 1,959 m

Rainfall : 2,000 – 6,000 mm

Temperature : 2 °C to 35 °C

Biogeographic Zone : North-East

Habitats : Tropical Wet Evergreen, Semi-evergreen and Sub Tropical Broadleaf Hill Forests

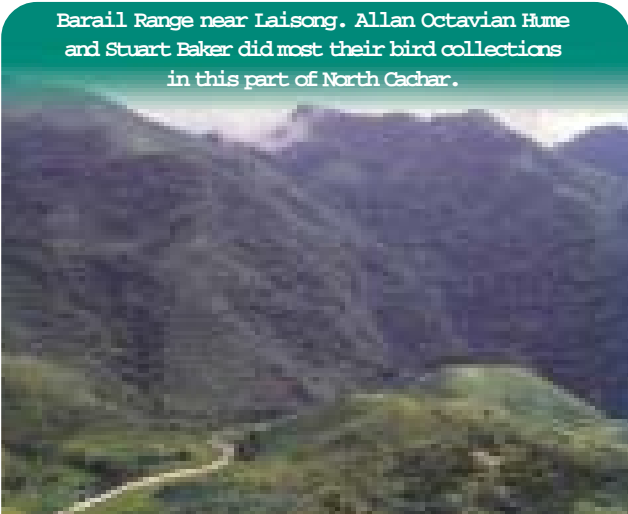
**IBA CRITERIA:** A1 (Threatened Species), A2 (Endemic Bird Area 130: Eastern Himalayas), A3 (Biome-8: Sino-Himalayan Subtropical Forest; Biome-9: Indo-Chinese Tropical Moist Forest)

**PROTECTION STATUS:** Not officially protected

GENERAL DESCRIPTION

The Barail Range forms one of the most diverse, but lesser known, ecosystems of the region. The great altitudinal variations (from less than 100 m to towering peaks of more than 1,900 m) and the resultant diversity of vegetation, coupled with a rich faunistic composition, makes the area an ideal choice for a wildlife reserve and an IBA. The Barail is the highest hill range in Assam. It includes the North Cachar Hill Reserve Forest (RF) of Cachar district, Barail RF of Cachar and North Cachar Hills districts and the unclassified forests stretching from the Simleng river valley in the west to Laike in the east (in North Cachar Hills district).

The Barail Range is the watershed between the Brahmaputra and Barak rivers. The terrain ranges from flat and undulating in the river valleys, to mountainous with steep slopes. The highest peak is 1,959 m near Laike, while Hamplopet (1,867 m) is the second highest, both of which are outside reserve forests. The climate is tropical monsoon type. The Barail forests are biologically important, with a number of endangered species (Choudhury 1993). Hill rivers and streams such as the Simleng (Luva), Jatinga and Modhura rivers are the main water sources, along with an unrecorded number of *nullahs* that feed the rivers. The annual rainfall varies from 2,000 mm to more than 6,000 mm. The westernmost part of the range receives the heaviest rainfall in Assam (Choudhury 1993).



Barail Range near Laisong. Allan Octavian Hume and Stuart Baker did most their bird collections in this part of North Cachar.

The undulating foothills in the south and the plains beyond have been extensively converted to tea gardens and settled cultivation, respectively. The main secondary landscape elements are cultivated flatland, extensive bamboo brakes, tree plantations (Teak *Tectona grandis*, Sal *Shorea robusta*), secondary and disturbed forest (betel-vine plantation), and village gardens including Arecanut Palm plantations.

Vegetation is Tropical Evergreen at low elevations (below 1,000 m), Semi-evergreen in the areas of human disturbance, and Sub-Tropical Broadleaf in the upper reaches (>1,800 m). Champion and Seth (1968) classified it as Cachar Tropical Evergreen Forest, Cachar Tropical Semi-evergreen Forest and Subtropical Broadleaf Hill Forest. The undisturbed riparian patches are rich in palms and canes. Large patches of Wild banana occur in the openings of moist forest and along waterways.

**AVIFAUNA**

This site was selected as an IBA based on its exceptionally rich bird life, including many threatened species. The high avian diversity of the Barails was documented long ago (Baker 1922-30, Hume 1877, 1880). The only known population of Blyth’s Tragopan *Tragopan blythii* in Assam is in the extreme east of the Barails near Laike. The only known breeding site of the Cinereus Vulture *Aegypius monarch tenuirostris* in Assam was also in the Barails. The Lesser Adjutant *Leptoptilos javanicus* is seen in the southern valleys, while there are past records of the Swamp Francolin *Francolinus gularis* from the southwestern fringe (Choudhury 2000).

The site covers two biomes: Biome-8 (Sino-Himalayan Subtropical Forests) at c. 1,000 to 2,000 m and Biome-9 (Indo-Chinese Tropical Moist Forest) mainly below c. 1,000 m. BirdLife International (undated) has listed 95 species in Biome-8, of which nine are found here. Two out of nine species listed in Biome-9 are also present. Both are quite common in the Tropical Moist Forests. As can be expected, some species of other biomes are also found, mainly as winter migrants. For example, Grey-backed Shrike *Lanius tephronotus* (Biome-5: Eurasian High Montane and Tibetan) is seen in winter, while Hill Partridge *Arborophila torqueola* is seen at the higher reaches of this site.



## Important Bird Areas in India – Assam

Endangered	
White-winged Duck	<i>Cairina scutulata</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Swamp Francolin	<i>Francolinus gularis</i>
Blyth's Tragopan	<i>Tragopan blythii</i>
Endemic Bird Area 130: Eastern Himalayas	
Blyth's Tragopan	<i>Tragopan blythii</i>
Striped Laughingthrush	<i>Garrulax virgatus</i>
Brown-capped Laughingthrush	<i>Garrulax austeni</i>
Grey Sibia	<i>Heterophasia gracilis</i>
Beautiful Sibia	<i>Heterophasia pulchella</i>
White-naped Yuhina	<i>Yuhina bakeri</i>
Black-browed Leaf-Warbler	<i>Phylloscopus cantator</i>
Biome-8: Sino-Himalayan Subtropical Forest	
Pied Falconet	<i>Microhierax melanoleucos</i>
Mountain Bamboo-Partridge	<i>Bambusicola fytchii</i>
Blue-throated Barbet	<i>Megalaima asiatica</i>
Bay Woodpecker	<i>Blythipicus pyrrhotis</i>
Black-winged Cuckoo-Shrike	<i>Coracina melaschistos</i>
Short-billed Minivet	<i>Pericrocotus brevirostris</i>
Slender-billed Oriole	<i>Oriolus tenuirostris</i>
Maroon Oriole	<i>Oriolus traillii</i>
Grey Treepie	<i>Dendrocitta formosae</i>
Biome-9: Indo-Chinese Tropical Moist Forest	
Grey Peacock-Pheasant	<i>Polyplectron bicalcaratum</i>
Pale-headed Woodpecker	<i>Gecinulus grantia</i>

## OTHER KEY FAUNA

The Barail Range has rich mammalian fauna. Seven species of primates are found, these are: Slow Loris *Nycticebus coucang*, Stump-tailed Macaque *Macaca arctoides*, Assamese Macaque *M. assamensis*, Rhesus Macaque *M. mulatta*, Pigtailed Macaque *M. nemestrina*, Capped Langur *Trachypithecus pileatus* and Hoolock Gibbon *Hylobates hoolock*. Other mammals include the Asiatic Black Bear *Ursus thibetanus*, Tiger *Panthera tigris*, Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa*, Jungle Cat *Felis chaus*, Leopard Cat *Prionailurus bengalensis*, Golden Cat *Catopuma temminckii*, Marbled Cat *Pardofelis marmorata*, Wild Dog *Cuon alpinus*, Sambar *Cervus unicolor*, Muntjak Deer *Muntiacus muntjak*, Wild Boar *Sus scrofa*, Binturong *Arctictis binturong* and the Serow *Nemorhaedus sumatraensis*. Small

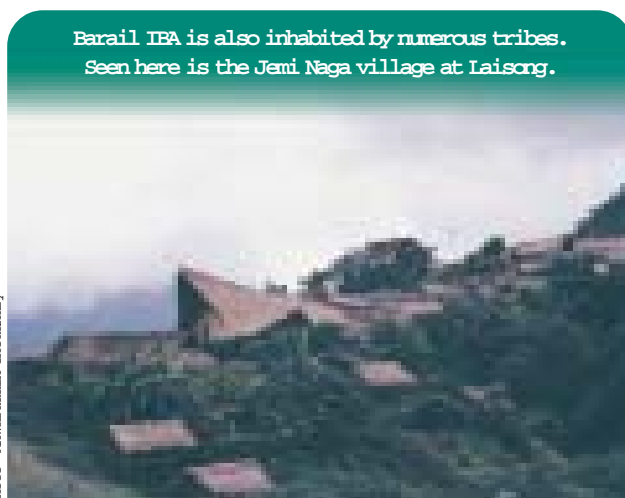


Photo: Anwaruddin Choudhury

populations of Gaur *Bos frontalis* also occur. Asian Elephant *Elephas maximus* is locally extinct now. Common reptiles include various species of lizards and snakes throughout the site. The Brown Hill Tortoise *Manouria emys* is also met with occasionally.

## LAND USE

- q Forest
- q Agriculture (*Jhum*)

## THREATS AND CONSERVATION ISSUES

- q Agriculture (*Jhum* / Shifting cultivation)
- q Plantation (Teak, Sal, Betel)
- q Encroachment
- q Hunting / Poaching

The entire range does not have a single hectare under any protected area, although it was proposed for a national park (Choudhury 1989) as well as a biosphere reserve (Choudhury 1993), the latter covering about 790 sq. km. The area proposed for national park and biosphere reserve include the Barail and North Cachar Hill Reserve Forests and the unclassified state forests up to Mahur, Hamplopet and the Trans-Barail areas covering the catchment areas of the River Simleng (Luva).

The hill slopes, especially outside the reserve forests, are getting degraded by *jhum* cultivation, tree felling and betel-vine plantation. The vines are planted after clearing the middle layer (shrubs) and understorey in mature forest, and are practiced by *Khasi* settlers. Sometimes banana is also cultivated in these plantations. The forest understorey is cleared right up to the hilltop in some places (Birand and Pawar 2001).

Other major issues in the area are hunting or poaching of wildlife. The main tribes of the area are Hmar, Kuki, Jemi Naga, Khasi (Jaintia), Karbi and Dimasa Kachari.

## KEY CONTRIBUTORS

Anwaruddin Choudhury, Aysegul Birand and Samrat Pawar

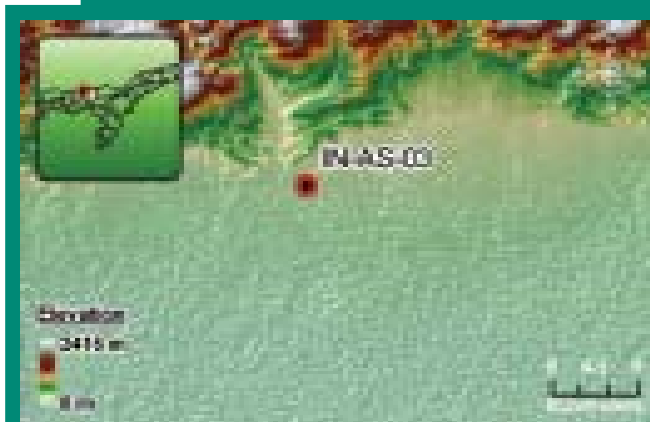
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## POST SCRIPT

An area of 326 sq. km has been notified as 'Barail Wildlife Sanctuary' in June 2004.

## BARNADI WILDLIFE SANCTUARY



IBA Site Code	: IN-AS-03
State	: Assam
District	: Darrang
Coordinates	: 26° 47' 36" N, 91° 43' 48" E
Ownership	: State
Area	: 2,622 ha
Altitude	: 100 – 200 m
Rainfall	: > 2,000 mm
Temperature	: 7 °C to 34 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Moist Deciduous Forest, Tropical Semi-evergreen Forest and Tropical Grassland

**IBA CRITERIA:** A1 (Threatened Species), Data Deficient

**PROTECTION STATUS:** Wildlife Sanctuary, established in August 1980

## GENERAL DESCRIPTION

Barnadi Wildlife Sanctuary lies in the northern part of Darrang district, on the international border with Bhutan, 60 km from the district headquarters, Mangaldoi. The Sanctuary is bordered by the Barnadi river and Nalapara river to the west and east respectively, and fringed by cultivation, tea gardens and settlements to the south. On the northern boundary with Bhutan lies a contiguous sanctuary. Barnadi is close to Khalingdaur Reserve Forest in the east.

The area, which lies at the foothills of the Himalaya, consists largely of flat *bhabar* plains, intersected by numerous *nullahs* (streams) that remain dry for the greater part of the year.

Barnadi was established specifically to protect the Pygmy Hog *Sus salvanius* and Hispid Hare *Caprolagus hispidus*, both of which were thought to be extinct prior to 1971, when they were rediscovered at this site (Oliver 1980, 1981; Rahmani *et al.* 1988). The Sanctuary is also important as a refuge for other threatened species such as the Asian Elephant *Elephas maximus*, Tiger *Panthera tigris* and Gaur *Bos frontalis*.

Although about 60% of the Barnadi Wildlife Sanctuary is reported to be grassland, most of it is now grassy woodland. Plantation of *Tectona grandis*, *Careya arborea*, *Artocarpus chaplasha*, *Dillenia* sp. and *Anthocephalus* sp. has destroyed the open grasslands. Only one remains in the Sanctuary along River Deosunga which is about 200 m at its broadest (Anon. 1990).

The main Forest types are Tropical Moist Deciduous along the northern edge of the Sanctuary, and mixed scrub and grassland in the southern part with few trees. The vegetation in the south, however, has been drastically modified by human activity. Most of the natural vegetation has been cleared and replaced by commercial plantations of *Bombax ceiba*, *Gmelina arborea*, *Phoebe goalparensis*, *Tectona grandis* and *Eucalyptus* and by thatch grasses (mostly *Saccharum*, with some *Phragmites* and *Themeda*).

## AVIFAUNA

The site has been selected as IBA due to the presence of the Bengal florican *Houbaropsis bengalensis* which was reported earlier from the grassland. The grassland is still present, albeit not in pristine condition, but there has been no recent record of the florican from

this area (G. Narayan *pers. comm.* 2003). However, if proper protection is given, the grassland could be revived. Much like other similar forests of Assam, Barnadi WLS is also extremely rich in bird diversity but no detailed study has been conducted. As far as general bird life is considered, this site should be considered Data Deficient.

## Endangered

Bengal Florican (?)	<i>Houbaropsis bengalensis</i>
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## OTHER KEY FAUNA

The fauna of the Sanctuary includes the Capped Langur *Trachypithecus pileatus*, Asian Elephant, Tiger, Leopard *Panthera pardus*, Hog Deer *Axis porcinus*, Pygmy Hog, Hispid Hare and Gaur. Although the Sanctuary is small, it is a favourite haunt of wild elephants, often in large numbers.

## LAND USE

- q Forestry
- q Nature conservation

## THREATS AND CONSERVATION ISSUES

- q Hunting
- q Uncontrolled burning of vegetation
- q Grazing

The Sanctuary suffers from acute water scarcity throughout winter. More than 300 ha in southwest Barnadi was extensively encroached upon, prior to its designation as a Sanctuary. Cattle, domestic buffalo and some sheep graze in the grasslands.

Insurgency has played havoc with the inherently weak management of this important site, as a result of which poaching and tree cutting are rampant.

## KEY CONTRIBUTORS

Anwaruddin Choudhury, Goutam Narayan and Bibhuti Lahkar

## KEY REFERENCES

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AS-03

Grassland along the Deosunga river, Bamadi IBA occasionally becomes  
haunt of Bengal Florican and Swamp Francolin.



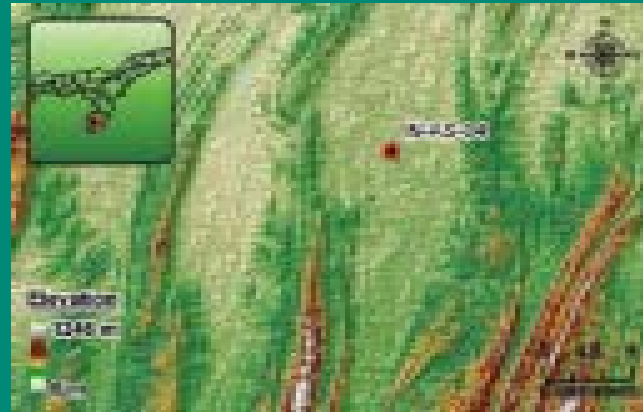
Photo: Anwaruddin Choudhury

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## BAUWWA BEEL



IBA Site Code	: IN-AS-04
State	: Assam
District	: Hailakandi
Coordinates	: 24° 37' 60" N, 92° 34' 60" E
Ownership	: State / Private
Area	: c. 70 ha
Altitude	: 60 m
Rainfall	: >3,000 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Freshwater Swamp

IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Not officially protected

## GENERAL DESCRIPTION

This wetland in southern Assam's Hailakandi district is located near Hailakandi town and is surrounded by villages. In winter, large parts become dry with marshy areas on the fringes. Although reclamation and siltation have reduced the area, it is more than 150 ha in monsoon and around 70 ha in the post-monsoon season (Choudhury 2000). Bauwwa Beel is relatively small but remains as significant in the Barak Valley region of the state as many others have been lost to land reclamation.

## AVIFAUNA

More than 90 species have been identified but there are likely to be more. The Lesser Adjutant *Leptoptilos javanicus* is seen regularly, but in small numbers. The Spot-billed Pelican *Pelecanus philippensis* is very rare in the entire Barak Valley. One was killed by hunters in 2002-03, indicating its occasional appearance in the site. The Swamp Francolin *Francolinus gularis* has become locally extinct. A few Oriental White-backed *Gyps bengalensis* have been recorded in recent years.

The only recent records of the Eurasian Golden Plover *Pluvialis apricaria* and Eastern or Great Knot *Calidris tenuirostris* in Assam were from this IBA (Choudhury 2000).

## Critically Endangered

Oriental White-backed Vulture	<i>Gyps bengalensis</i>
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## Vulnerable

Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>

## OTHER KEY FAUNA

Golden Jackal *Canis aureus*, Small Indian Mongoose *Harpactes javanicus*, and various turtles have been reported.

## LAND USE

- q Fishing
- q Agriculture

## THREATS AND CONSERVATION ISSUES

- q Land reclamation and paddy cultivation
- q Siltation
- q Over-fishing
- q Poaching of birds

Reclamation for cultivation and siltation has already reduced the size of the wetland to a great extent. Over-fishing is the other major conservation issue. Poaching of waterbirds is a regular problem.

## KEY CONTRIBUTORS

Anwaruddin Choudhury and Abdul Munim Mazumdar

## REFERENCE

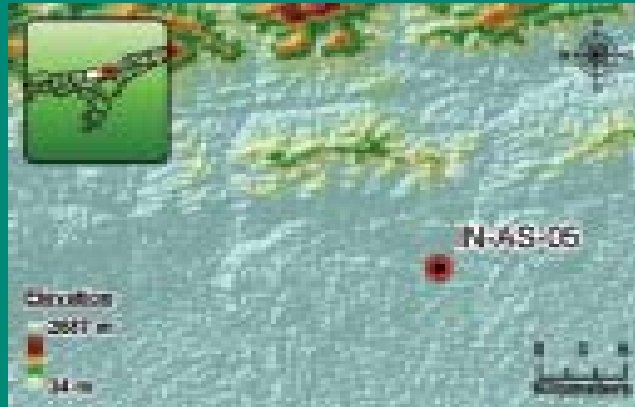
Choudhury, A. U. (2000): The Birds of Assam. Gibbon Books and WWF-India, NE Regional Office, Guwahati.

Bauwwa beel is a major wetland of southern Assam.



Photo: Anwaruddin Choudhury

## BEHALI RESERVE FOREST



IBA Site Code	: IN-AS-05
State	: Assam
District	: Sonitpur
Coordinates	: 26° 55' 00" N, 93° 22' 60" E
Ownership	: State
Area	: 14,000 ha
Altitude	: 80 – 150 m.
Rainfall	: > 2,300 mm.
Temperature	: 6 °C to 34 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Wet Evergreen Forest and Semi-evergreen Forest

**IBA CRITERIA:** A1 (Threatened Species), A3 (Biome-9: Indo-Chinese Tropical Moist Forest)

**PROTECTION STATUS:** Not officially protected

## GENERAL DESCRIPTION

Behali Reserve Forest is located at the foothills of the Eastern Himalaya, in Sonitpur district of Assam, on the Assam-Arunachal Pradesh border. It is part of the Sonitpur Elephant Reserve that was notified in 2003. The area is flat with gentle slopes. Some hilly areas lie in the extreme north of the IBA.

The forest is Tropical Wet Evergreen and Semi-evergreen. Some fine patches of primary rainforest are still to be seen in the area. The top canopy consists of species such as *Tetrameles nudiflora*, an emergent deciduous species, which is widely used by hornbills for nesting (A. U. Choudhury *pers. comm.* 2003).

## AVIFAUNA

A rich and diverse bird life exists in the area, but a full checklist is yet to be completed. This IBA is known for its population of White-winged Duck *Cairina scutulata* (Choudhury 2000). There are four species of hornbills, the Oriental Pied *Anthracoceros albirostris*, Wreathed *Aceros undulatus*, Great Pied *Buceros bicornis* and the globally threatened Rufous-necked *Aceros nipalensis*. The last named species is only occasional in winter. The Lesser Adjutant *Leptoptilos javanicus* is seen regularly in small numbers at the edges of the IBA and in the encroached areas. In winter, the abundance of birds increases to a great extent, with the arrival of altitudinal migrants (A. Choudhury *pers. comm.* 2003).

As no detailed study on birds has been conducted, this site could be considered Data Deficient.

Endangered	
White-winged Duck	<i>Cairina scutulata</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Near Threatened	
Red-headed Vulture	<i>Sarcogyps calvus</i>
Great Pied Hornbill	<i>Buceros bicornis</i>

## OTHER KEY FAUNA

Behali is an important area for the Asian Elephant *Elephas maximus*, Slow Loris *Nycticebus coucang*, Capped Langur *Trachypithecus pileata*, Tiger *Panthera tigris* and Leopard Cat *Prionailurus bengalensis*, among others.

## LAND USE

- ☐ Forestry
- ☐ Agriculture

## THREATS AND CONSERVATION ISSUES

- ☐ Encroachment
- ☐ Illegal felling of trees
- ☐ Poaching
- ☐ Insurgency

Behali RF is among the survivors in Sonitpur where organized encroachment has destroyed most of the forest outside the protected areas. A relatively small area of this IBA has been encroached, but it is under constant pressure (Choudhury 2002). Illegal tree felling and occasional poaching are other issues. The interstate border dispute between Assam and Arunachal Pradesh often makes the area vulnerable to encroachment and felling of trees.

## KEY CONTRIBUTOR

Anwaruddin Choudhury

## KEY REFERENCES

- Choudhury, A. U. (2000) *The Birds of Assam*, Gibbon Books & WWF-India NE Region, Guwahati. Pp 240.
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## BHERJAN-BORAJAN-PODUMONI WILDLIFE SANCTUARY



IBA Site Code	: IN-AS-06
State	: Assam
District	: Tinsukia
Coordinates	: 27° 28' 30" N, 95° 22' 30" E
Ownership	: State
Area	: 774 ha
Altitude	: 119-122 m
Rainfall	: 2,300-3,800 mm
Temperature	: 7 °C to 32 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Wet Evergreen Forest

IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Wildlife Sanctuary, established in October 1999

## GENERAL DESCRIPTION

Bherjan (105 ha), Borajan (493 ha) and Podumoni (176 ha) are tiny pockets of lowland tropical forest present in Tinsukia district, Assam. These forest areas have the distinction of having the highest biomass of primates anywhere in the Indian subcontinent (Choudhury 1995a, 1995b). The three areas are disjunct and separated by tea gardens and human habitations. These are entirely on the flat plains of the Brahmaputra Valley, so they lie in the Endemic Bird Area called Assam Plains by BirdLife International (undated).

Older alluvium of the River Brahmaputra covers all three areas. The compact and brownish soil is suitable for tea plantation, hence, all the forests have tea gardens on the fringe areas. There are small, scattered marshes, with swamps, covered with dense growth of grass and *Alpinia* herb.

The natural vegetation of all these areas is Tropical Wet Evergreen 'rainforest' type. Bherjan is almost entirely covered with trees with closed canopy. The original vegetation has been replaced by a fairly old mixed plantation dominated by the deciduous species *Lagerstroemia parviflora* and *Terminalia myriocarpa*. The Podumoni part is mostly in a degraded state due to large-scale felling. The canopy has been very badly broken up. Only a few mature trees of *Artocarpus*, *Bombax*, *Lagerstroemia* and *Mesua*

species can be seen. Bojaran is a pocket of excellent rainforest, dominated by *Dipterocarpus macrocarpus*. Except for Teak, all the species as in the other two forest pocket are found. Bamboo species are found in all areas. *Stenochleana palustre*, an edible fern, grows abundantly all over, especially in the openings and clearings.

## AVIFAUNA

Eighty-four species of birds have been identified (Choudhury 1995a) including some threatened and Near Threatened species. This site has been identified as an IBA based on the presence of three threatened species, notably the Lesser Adjutant *Leptoptilos javanicus* and two species of *Gyps* vultures. At least three pairs of Lesser Adjutant nest in Borajan RF. Locally it is called *Godul* (Choudhury 1995a). Many lowland birds of the Tropical Wet Evergreen Forests of Assam, of which only fragments are left, are found here.

The Oriental Pied Hornbill *Anthracoceros albirostris* and the Near Threatened Great Pied Hornbill *Buceros bicornis* are occasional visitors to Bherjan and Podumoni.

The site lies in Biome-9 (Indo-Chinese Tropical Moist Forest) as classified by BirdLife International (undated).

## Critically Endangered

Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

## Vulnerable

Lesser Adjutant	<i>Leptoptilos javanicus</i>
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## OTHER KEY FAUNA

Other fauna of the Sanctuary include the Short-tailed Mole *Euroscaptor micrura*, Slow Loris *Nycticebus coucang*, Pig-tailed Macaque *Macaca nemestrina*, Rhesus Macaque *M. mulatta*, Assamese Macaque *M. assamensis*, Capped Langur *Trachypithecus pileatus*, Hoolock Gibbon *Hylobates hoolock*, Stump-tailed Macaque *M. arctoides* (locally extinct), Chinese Pangolin *Manis pentadactyla*, Golden Jackal *Canis aureus*, Leopard Cat *Prionailurus bengalensis*, Leopard *Panthera pardus*, Tiger *P. tigris* (stray), Asian Elephant *Elephas maximus* (stray),

A forest trail in Bherjan forests, which is now part of Bherjan-Borajan-Podumoni wildlife sanctuary.



Photo: Awaruddin Choudhury

Common Giant Flying Squirrel *Petaurista petaurista*, Pallas's Squirrel *Callosciurus erythraeus*, Malayan Giant Squirrel *Ratufa bicolor*, Chinese Porcupine *Hystrix hodgsoni*, Wild Boar *Sus scrofa* and Barking Deer *Muntiacus muntjak*.

#### LAND USE

- q Nature conservation

#### THREATS AND CONSERVATION ISSUES

- q Illegal felling
- q Firewood collection
- q Encroachment
- q Poaching
- q Pollution of waterbodies by insecticides used in the tea gardens

The presence of a forest village in Borajan causes much biotic pressure. This village (Palga Forest village) could be relocated. No more encroachment by the 'Forest villagers' should be allowed. Roads passing through the middle of Bherjan and Borajan RFs should be aligned along the boundaries. The powerline passing through Borajan RF also needs to be realigned outside the forest area.

Since all the forests are small, they should be fenced off. An awareness campaign is also necessary in the fringe villages and tea gardens. The possibility of rescue and translocation of "village" Hoolock Gibbons to Bherjan Reserve Forest may be explored. Due to wanton felling in the village woodlands to the north and east of Bherjan, the Hoolock Gibbons in those areas are under threat. In the degraded portions of the Sanctuary, the regeneration is excellent and only a small plantation may be required. The adjacent tea estates could raise plantations of selected species of trees and bamboo on their fringe areas. This will greatly supplement the range and food of the primates and birds, without any loss to the estates.

Among birds, poachers mainly target Kaleej Pheasant *Lophura leucomelanos* and Red Junglefowl *Gallus gallus*, the later is locally exterminated in Podumoni and Bherjan forests, while extremely rare in Borajan.

#### KEY CONTRIBUTOR

Anwaruddin Choudhury

#### KEY REFERENCES

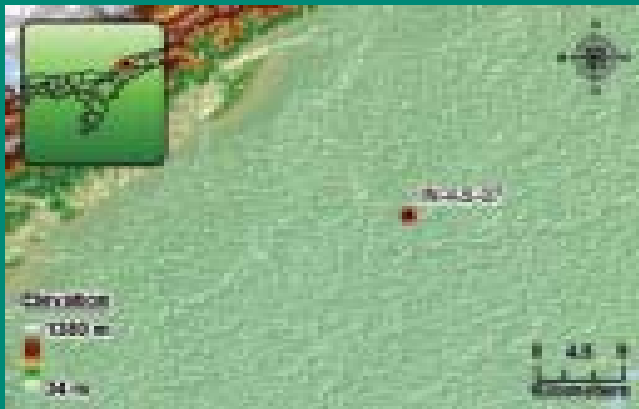
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Termites not only help in recycling the wood material but also are consumed by other animals.



Photo: M. Zafar-ul-Islam

BORDOIBAM-BILMUKH BIRD SANCTUARY



IBA Site Code	: IN-AS-07
State	: Assam
District	: Dhemaji and Lakhimpur
Coordinates	: 27° 19' 60" N, 94° 19' 60" E
Ownership	: State
Area	: 1,124 ha
Altitude	: 90 - 95 m
Rainfall	: > 2,000 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Flooded Valley Grassland, Wetland

IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Wildlife Sanctuary, established in July 1996

GENERAL DESCRIPTION

Bordoibam-Bilmukh is a large freshwater lake that was created during the great earthquake of 1950. It was part of the River Subansiri, which now flows 7 km away from the lake. The Sanctuary is 50 km from Lakhimpur, the district headquarters, and 455 km from Guwahati. A large number of migratory waterfowl are seen in winter while some globally threatened species such as the Spot-billed Pelican *Pelecanus philippensis* and Lesser Adjutant *Leptoptilos javanicus* are seen all over the year. The wetland is fringed by tall emergent vegetation, mainly *Arundo donax*, where the Swamp Francolin *Francolinus gularis* was not uncommon some years ago. However, the grassland has been destroyed by villagers, so this bird is now rarely seen.

The typical aquatic, floating and emergent vegetation of wetlands is seen in this wetland also. In the drying and dried up part, *Arundo donax* dominates along with sedges. A few *Barringtonia acutangula* trees are found on the fringes.

AVIFAUNA

More than 165 bird species have been recorded (Phukan *et al.* 1997). Besides the Lesser Adjutant, there are some records of Greater Adjutant *Leptoptilos dubius*. Pallas's Fish-Eagle *Haliaeetus leucoryphus* is another globally threatened species seen here. It is of great conservation concern, as this large raptor requires undisturbed wetlands.

The Bordiobam wetland is known as a breeding ground of the Large Whistling Duck *Dendrocygna bicolor*, Purple Swampphen *Porphyrio porphyrio*, Bronze-winged Jacana *Metopidius indicus*, White-breasted Waterhen *Amauornis phoenicurus* and Watercock *Gallicrex cinerea* (Talukdar 1993).

Although this IBA does not support more than 20,000 birds (A4iii criteria), it has great potential as a major waterfowl sanctuary of Assam. It has been selected on the basis of the endangered species found here.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>

Vulnerable

Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanica</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>

Near Threatened

Darter	<i>Anhinga melanogaster</i>
Painted Stork	<i>Mycteria leucocephala</i>
Ferruginous Pochard	<i>Aythya nyroca</i>
Greater Grey-headed Fish-Eagle	<i>Ichthyophaga ichthyaeus</i>

OTHER KEY FAUNA

Other important fauna of the site include the Fishing Cat *Prionailurus viverrina*, and Hog deer *Axis porcinus*. The latter has become very rare due to the destruction of its grassland habitat. Some Smooth Indian Otters *Lutrogale perspicillata* still survive. Not much work has been done on amphibians and reptiles, although *Hoplobatrachus tigerinus*, *Bufo melanostictus*, and *Rhacophorus* spp. have also been recorded.

Bright-headed Cisticola *Cisticola exilis* is seen in the grassland areas.

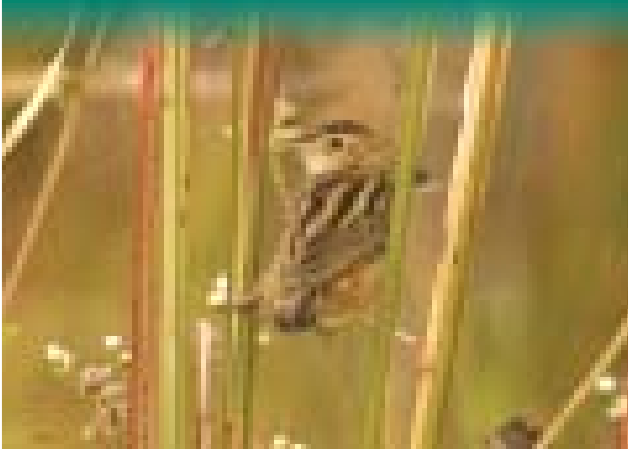


Photo: Ketil Knudsen / Peter Tobi

AS-07

Waterfowl in Bordoibam-Bilmukh: The reeds seen in the background has been destroyed in recent years.



Photo: Anwaruddin Choudhury

**LAND USE**

- q Agriculture
- q Fishing
- q Nature conservation

**THREATS AND CONSERVATION ISSUES**

- q Heavy siltation
- q Agriculture
- q Fishing
- q Poaching of birds
- q Livestock grazing
- q Aquatic weeds

The Forest Department of Assam has submitted a proposal to make this wetland a bird sanctuary. Presently, the wetland is controlled by the Revenue Department and fishing lease is granted annually (Choudhury 1990; Talukdar 1993). The disturbance caused by

fishermen is tremendous and scares away the migratory birds. There are three villages on the fringe. Some villagers oppose the creation of the sanctuary, although the majority of them are supportive or neutral. Fishing, collection of grass and reeds, and poaching are the major problems.

**KEY CONTRIBUTORS**

Anwaruddin Choudhury, Bikul Goswami, Megamix Nature Club

**KEY REFERENCES**

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Talukdar, B. K. (1993) Need to preserve Bordoibam wetland. *Newsletter for Birdwatchers* 33(5):90.



## BORDOLONI - SAMPORA



IBA Site Code	: IN-AS-08
Administrative Region	: Assam
District	: Lakhimpur and Dhemaji
Coordinates	: 27° 25' 00" N, 94° 22' 60" E
Ownership	: State and private
Area	: 3,000 ha
Altitude	: 90 m
Rainfall	: 2,500 – 3,500 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Wet Savanna Grassland

**IBA CRITERIA:** A1 (Threatened Species), A2 (Endemic Bird Area 131: Assam Plains), A4i (1% biogeographic population)

**PROTECTION STATUS:** Not officially protected

## GENERAL DESCRIPTION

This IBA site includes a large marshy tract with *beels* and grassland in eastern Assam. It lies partly in Dhakuakhana sub-division of Lakhimpur district (Sampora area) and Dhemaji district (Bordoloni area). Situated 50 km east of Lakhimpur town, this site is important for waterbirds. The terrain is flat, being on the floodplains. During monsoon, a major part of the IBA is completely inundated.

## AVIFAUNA

Although a full checklist is not available, this wetland complex was covered during various waterfowl counts and information on many threatened species is available. Particularly noteworthy are records of the Endangered White-bellied Heron *Ardea insignis* and large populations of the Swamp Francolin *Francolinus gularis* (Choudhury 2000). Vultures (common till the 1990s), Greater Adjutant *Leptoptilos dubius* and Spot-billed Pelican *Pelecanus philippensis* are other important species recorded. This IBA was proposed as a bird sanctuary in late the 1980s (Choudhury 1991). It is highly likely to harbour the Black-breasted Parrotbill *Paradoxornis flavirostris*, as there are past records from the adjoining areas (BirdLife International 2001).

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
White-bellied Heron	<i>Ardea insignis</i>
Greater Adjutant	<i>Leptoptilos dubius</i>
Vulnerable	
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Swamp Francolin	<i>Francolinus gularis</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Black-breasted Parrotbill (?)	<i>Paradoxornis flavirostris</i>
Endemic Bird Area 131: Assam Plains	
Black-breasted Parrotbill (?)	<i>Paradoxornis flavirostris</i>

A few thousand waterfowl, including ducks and geese, winter in this area while a few thousand Amur Falcons *Falco amurensis* migrate through it during fall. The site also fulfils for A4i criteria (1% of biogeographic population) due to the congregation of Amur Falcon. There is a nesting record of the Near Threatened Lesser Grey-headed Fish Eagle *Ichthyophaga nana* (= *humilis*) (Choudhury 2000).

## OTHER KEY FAUNA

The Hog deer *Axis porcinus*, Fishing cat *Prionailurus viverrina* and the Rhesus Macaque *Macaca mulatta* are noteworthy (A. U. Choudhury pers. comm. 2003).

## LAND USE

- q Forestry
- q Agriculture
- q Fishing

## THREATS AND CONSERVATION ISSUES

- q Encroachment for agriculture
- q Siltation
- q Reed gathering
- q Poaching of birds
- q Disturbance to birds
- q Pesticides

Reclamation of the marsh for cultivation, siltation and poaching of birds are the main issues.

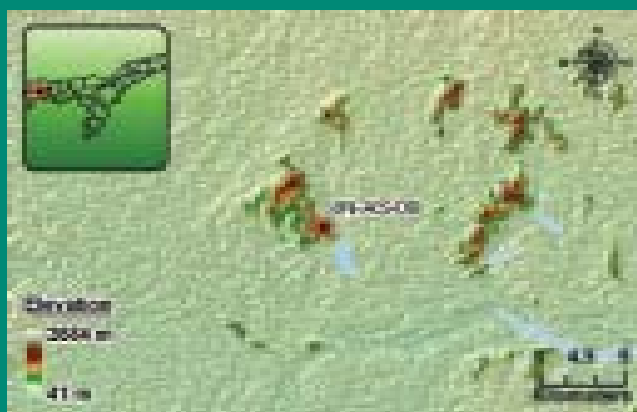
## KEY CONTRIBUTOR

Anwaruddin Choudhury

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## CHAKRASHILA COMPLEX



IBA Site Code	: IN-AS-09
State	: Assam
District	: Dhubri and Kokrajhar
Coordinates	: 26° 18' 30" N, 90° 22' 00" E
Ownership	: State
Area	: c. 5,300ha
Altitude	: 30 - 455 m
Rainfall	: 2,000 - 3,000 mm
Temperature	: 7 °C to 34 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Moist Deciduous Forest, Tropical Grassland, Tropical Semi-evergreen Forest

**IBA CRITERIA:** A1 (Threatened Species), A4i ( $\geq 1\%$  biogeographic population), A4iii ( $\geq 20,000$  waterbirds)

**PROTECTION STATUS:** Wildlife Sanctuary, established in July 1994.

## GENERAL DESCRIPTION

The Chakrashila complex includes the Chakrashila Wildlife Sanctuary (4,556 ha) and three adjacent wetlands - Dhir, Diplai and Dakra. The Sanctuary is 68 km from Dhubri, the district headquarters, and 219 km from Guwahati city. The nearest Railway Station is Kokrajhar, which is on the broad gauge line from Howrah to Guwahati. The Sanctuary can be approached from Salkocha, a small town on the National Highway 37, from where Chakrashila is about 10 km.

This IBA is an ideal spot for birdwatchers. Its biodiversity provides many niches for several species of residential birds and attracts hundreds of migratory birds. The Sanctuary is hilly, with three lakes (Dhir, Diplai and Dakra) on its southern periphery. There are three major perennial springs inside the Sanctuary: Haohaowi Jhora, Mauriya Jhora and Bamuni Jhora. The Asian Wetland Bureau, and the International Waterfowl and Wetlands Research Bureau have identified the first two lakes as internationally important sites for protection of a number of species.

Dhir *beel* is situated 30 km from Kokrajhar town at the base of Chakrashila Wildlife Sanctuary. During the rainy season, these wetlands get connected with the Brahmaputra river. All these wetlands are rich in aquatic flora and fauna and are breeding grounds for fish. Together, these wetlands constitute more than 800 ha.

The site has mainly Moist Deciduous Forest with Sal *Shorea robusta* as the dominant species. There are grasslands, shrubs and bamboo thickets also. This forest is richly endowed with orchids and other creepers.

## AVIFAUNA

A total of 213 bird species are known to occur in the Sanctuary and the surrounding waterbodies (Barua 1995, Lahkar 2003).

Chakrashila was a happy hunting ground for local landlords (*Zamidars*) and others even after it was declared as a reserve forest in 1966. Poaching of birds, mainly waterfowl, was also prevalent in the area before it was declared as wildlife sanctuary. This indiscriminate hunting led to the local extinction of a few species such as the Swamp Francolin *Francolinus gularis* (Lahkar 2003). The Swamp Francolin was common in the area, mainly near the Chakrashila village and Dhir *beel* till the late eighties, but due to

destruction of habitat in the form of agriculture, settlements, firewood and thatch collection, felling and over hunting it has been wiped out gradually from the area (Lahkar 2003).

However, some globally threatened species are still seen, namely Greater Adjutant *Leptoptilos dubius*, Lesser Adjutant *L. javanicus* and two *Gyps* species of vultures.

Among the Near Threatened species, we have Darter *Anhinga melanogaster*, Ferruginous Duck *Aythya nyroca*, Greater Grey-headed Fish-Eagle *Ichthyophaga ichthyaetus*, Red-headed Vulture *Sarcogyps calvus*, Great Pied Hornbill *Buceros bicornis* and Pallid Harrier *Circus macrourus* (Lahkar 2003).

Both wetlands, Dhir and Diplai, attract a lot migratory birds in winter including Near Threatened Ferruginous Duck and the Vulnerable Baer's Pochard *Aythya baeri*. On January 11, 1991 during the mid-winter Annual Waterfowl Census, 565 Ferruginous Ducks were counted in the Diplai *beel* and c. 500 in the Dhir *beel* on January 9, 1991 and 328 on January 8, 1992 (Choudhury 2000).

Based on the AWC, Choudhury (2000) has listed Baer's Pochard records from Diplai *beel*: 118 were reported in 1989 and 53 in 1990. In Dhir *beel*, 26 Baer's Pochard were reported in 1989, and 55 in 1990. As the AWC data are not very reliable, these figures have to be considered with caution.

The Greater Spotted Eagle *Aquila clanga* was recorded in Dakra *beel* in 1995 (Barua 1995).

According to Lopez and Mundkur (1997), 19,828 birds of 43 species were counted in 1994 in Dhir *beel* during Annual Waterfowl Count. In 1995, the population increased to 26,433 but the number of species remained same. The population declined in 1996 to only 7,102 but the number of species seen was 41. In the Diplai *beel*, in 1994, the total number of waterfowl was 3,224 of 37 species. For Dakra *beel*, we have census information of 1996. A total of 2,409 birds of 20 species were counted.

Lahkar (2003) observed three immatures along with two adults of the Jerdon's Baza *Aviceda jerdoni* in the Sanctuary. This suggests the possibility of breeding of this species inside the Sanctuary.

The site falls in the Assam Plains Endemic Bird Area (Stattersfield *et al.* 1998) but the terrain of the Sanctuary is hilly, while the surrounding areas are plain, having a mixture of *beels* and wet grasslands. Three species have been listed in this IBA: Manipur

Bush-Quail *Perdica manipurens*, Marsh Babbler *Pellorneum palustre* and Black-breasted Parrotbill *Paradoxornis flavirostris*. Only Marsh Babbler is likely to occur here as some good patches of agrassland are still found.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Baer's Pochard	<i>Aythya baeri</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Ferruginous Pochard	<i>Aythya nyroca</i>
Greater Grey-headed Fish-Eagle	<i>Ichthyophaga ichthyaetus</i>
Red-headed Vulture	<i>Sarcogyps calvus</i>
Pallid Harrier	<i>Circus macrourus</i>
Great Pied Hornbill	<i>Buceros bicornis</i>

#### OTHER KEY FAUNA

At least 34 species of mammals have been recorded so far in Chakrashila Wildlife Sanctuary, out of which 6 species are globally threatened. Some of the important mammals include the Golden Langur *Trachypithecus geei*, Rhesus Macaque *Macaca mulatta*, Chinese Pangolin *Manis pentadactyla*, Crab-eating Mongoose *Herpestes urva*, Tiger *Panthera tigris*, Leopard *P. pardus*, Leopard Cat *Prionailurus bengalensis*, Barking Deer *Muntiacus muntjak*, Gaur *Bos frontalis*, Hoary-bellied Himalayan Squirrel *Callosciurus pygerythrus*, Particoloured Flying Squirrel *Hylopetes alboniger* and Golden Jackal *Canis aureus*. A variety of reptiles and amphibians are also found in this site such as Kraits *Bungarus* spp., Cobras *Naja* spp., Python *Python molurus* and Monitor Lizard *Varanus* sp.

#### LAND USE

- q Forestry
- q Nature conservation
- q Fishing
- q Tourism and recreation

#### THREATS AND CONSERVATION ISSUES

- q Illegal felling
- q Poaching
- q Fishing
- q Siltation

For the past many years, conservationists have been demanding the inclusion of Dhir and Diplai beels in the Chakrashila Wildlife Sanctuary but the request is pending with the Government.

The major issue is fishing with very fine mesh nets which catch non-target species and fish fingerlings. Poaching of birds also takes place, but it could be easily controlled by better management and awareness. The wetlands are under the control of the Fisheries Department, that further complicates the problem, as their aim is to maximize fish catch and not conservation.

All these problems show the need to work with local communities to benefit them and also conserve the site.

#### KEY CONTRIBUTORS

Nature's Beckon, Bablu Dey, Kulojyoti Lahkar and Mridu Paban Phukan

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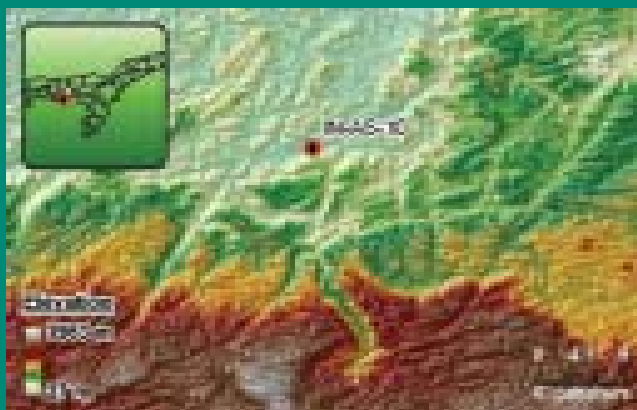
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Chakrashila wildlife sanctuary and adjacent wetlands such as Diplai and Dhir beels are important for many bird species including vulnerable Baer's Pochard.



Photo: Anwaruddin Choudhury

## CHANDUBI LAKE AND ADJOINING AREAS



IBA Site Code	: IN-AS-10
State	: Assam
District	: Kamrup
Coordinates	: 25° 52' 00" N, 91° 25' 00" E
Ownership	: State
Area	: >2,000 ha
Altitude	: 70-150 m
Rainfall	: >2,000 mm
Temperature	: 6 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Fresh water Lake, Tropical Moist Deciduous Forest

IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Not officially protected

## GENERAL DESCRIPTION

This wetland was formed during the great earthquake of 1897, thus it has immense value as a tectonic lake. It is inside Barduar Reserve Forest in Kamrup district, about 60 km southwest of Guwahati city, close to the Meghalaya border. Mayang Hill Reserve Forest lies to the south of Chandubi Lake. Being located inside a reserve forest has made it a secluded wetland with low biotic interference, and a potential site for bird conservation. Chandubi lake covers c. 300 ha and with its magnificent scenery is already on the tourist map. A large number of picnickers throng here every winter, mostly from Guwahati city and nearby areas. With proper planning and management, the area could be a major site for ecotourism. The villagers of Rajapara forest village and other fringe villages will also benefit from ecotourism.

The lake is surrounded by low undulating hills covered with Moist Deciduous forest and patches of Semi-evergreen Forests. Sal *Shorea robusta* is the dominant tree species in the area.

## AVIFAUNA

Lesser Adjutant *Leptoptilos javanicus* and Pallas's Fish-Eagle *Haliaeetus leucoryphus* are the threatened species found in this lake, which also attracts a large number of waterfowl. In the adjoining Tropical Moist Deciduous Forests, White-cheeked Hill-Partridge *Arborophila atrogularis*, Mountain Bamboo-Partridge *Bambusicola fytchii*, Blyth's Kingfisher *Alcedo hercules*, Blue-throated Barbet *Megalaima asiatica*, White-throated Bulbul *Criniger flaveolus*, Grey Peacock Pheasant *Polyplectron bicalcaratum* are the various biome species of conservation interest.

## Vulnerable

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>

## OTHER KEY FAUNA

Among mammals, we see Slow Loris *Nycticebus coucang*, Assamese macaque *Macaca assamensis*, Rhesus macaque *M. mulatta*, Capped Langur *Trachypithecus pileatus*, Hoolock gibbon *Hylobates hoolock*, Dhole or Wild dog *Cuon alpinus* (occasional), Asiatic Black Bear *Ursus thibetanus*, Yellow-throated Marten *Martes flavigula*, Hog-badger *Arctonyx collaris*, Ferret-badger *Melogale* sp., Jungle Cat *Felis chaus*, Leopard Cat *Prionailurus bengalensis*, Leopard

*Panthera pardus*, Tiger *Panthera tigris*, Asian Elephant *Elephas maximus*, Wild Boar *Sus scrofa*, Sambar *Cervus unicolor*, Barking Deer *Muntiacus muntjak*, Serow *Naemorhedus sumatraensis* (rare), Malayan Giant Squirrel *Ratufa bicolor*, Irrawaddy or Himalayan Hoary-bellied squirrel *Callosciurus pygerythrus*, Hoary Bamboo Rat *Rhizomys pruinosus*, Chinese Porcupine *Hystrix brachyura*, Chinese Pangolin *Manis pentadactyla*, and Rufous-tailed Hare *Lepus nigricollis ruficaudatus*. There are also unconfirmed reports of the Pig-tailed macaque *Macaca nemestrina*, Stump-tailed macaque *M. arctoides* and Clouded leopard *Neofelis nebulosa* (Choudhury 2003).

## LAND USE

- q Forest
- q Agriculture
- q Fishing

## THREATS AND CONSERVATION ISSUES

- q Siltation
- q Fishing
- q Felling of trees
- q Encroachment

There is a proposal to declare the area a wildlife sanctuary, totaling about 50 sq. km including Chandubi Lake, most of Mayong Hill RF and part of Barduar RF (Choudhury 1989).

Like all the wetlands of Assam, Chandubi also faces poaching, extensive fishing, siltation and massive encroachment. If properly protected, Chandubi Lake has great potential to attract thousands of waterfowl. Pallas's Fish-Eagle is still seen in this lake, which proves that the habitat is still suitable as a waterfowl refuge. Better protection from poaching and illegal fishing would make this IBA a great waterfowl sanctuary.

## KEY CONTRIBUTORS

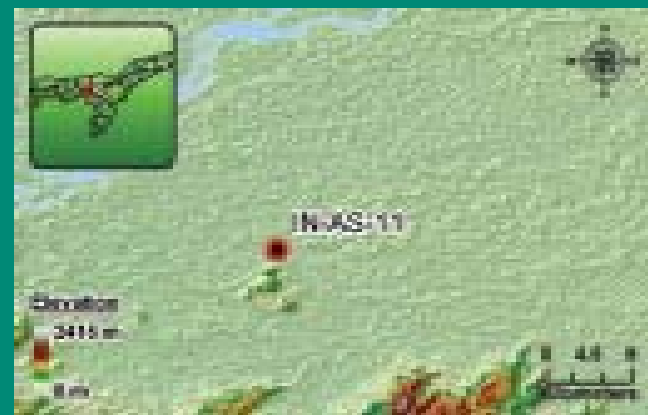
Anwaruddin Choudhury and Kulojyoti Lahkar

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DEOBALI JALAH, SIALMARI, HAIBARGAON,  
KHUTIKATIA (NAGAON)



IBA Site Code	: IN-AS-11
State	: Assam
District	: Nagaon
Ownership	: State and private
Coordinates	: 26° 15' 00" N, 92° 15' 30" E
Area	: c. 4,000
Altitude	: 60 m
Rainfall	: 1,000 – 1,800 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Freshwater Swamp, Tropical Grassland, Urban landscape

IBA CRITERIA: A1 (Threatened Species), A4i ( $\geq 1\%$  biogeographic population)  
PROTECTION STATUS: Not officially protected

GENERAL DESCRIPTION

Deobali Jalah (c. 1,000 ha) includes a marshy tract with *beels* (wetlands) and grassland in central Assam. Located 15 kms to the south-west of Nagaon town, it is perhaps the last remaining intact grassland which is still unprotected in Nagaon district. The entire area is interspersed with numerous wetlands. The Haria river to the south and the Kollong river to the north form the natural barriers for the grassland, while the other sides are occupied by human habitation.

Nagaon is a town situated almost in the middle of Assam and surrounded by thickly populated Assamese villages. In the township two nesting colonies of Greater and Lesser adjutants exist - North Haibargaon and Khutikatia- which are approximately 4 km. from each other. These are traditional breeding sites of Greater and Lesser adjutants and locals say that these have been used for nesting for many years. These places are urban areas with thick human habitations. New buildings are being built very near to the nesting trees. The nesting trees are private property and are located just near the settlements. A few busy public roads intersect the North Haibargaon colony also. A small river named Kolong flows about 100m from the colony. On the other hand, the Khutikatia colony is about 100m away from the national highway 37, which runs parallel to the colony (Singha 1999).



Photo: M. Zafar-ul Islam

Other site Sialmari is a permanent and regular feeding ground of the Greater Adjutant in Nagaon township, about 7 km and 4 km from North Haibargaon and Khutikatia nesting colonies respectively. It is a bone-collecting place, comprising agricultural fields, barren fields, a small rivulet 100m from the bone dump and a dry land on the other bank of the river. This dry land gets inundated during heavy monsoon and occasionally crops are grown. Every night, inedible part of slaughtered cattle and their bones are brought from the town and dumped here. The stomach content and other meat parts are thrown over the ground and bones are collected in an upside open bamboo case. Jackals and dogs devour most of the food at night and only a small amount of food is left for Greater and Lesser adjutants, vultures and crows (Singha 1999).

AVIFAUNA

So far more than 100 bird species have been identified in the area. Some of the uncommon species found in the area are Jerdon's Bushchat *Saxicola jerdoni*, Bristled Grass-Warbler or Grassbird *Chaetornis striatus*, Greater Adjutant *Leptoptilos dubius* and Lesser Adjutant *Leptoptilos javanicus*. The last three are treated as globally threatened (BirdLife International 2001). For the Bristled Grass-Warbler, there are only a handful of sites in Assam (Choudhury 2000). Among the winter visitors, Garganey *Anas querquedula*, Northern Pintail *Anas acuta* and the Near Threatened Ferruginous Duck *Aythya nyroca* are noteworthy. Swamp Francolin *Francolinus gularis* is another threatened species recorded in this IBA.

Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Swamp Francolin	<i>Francolinus gularis</i>
Bristled Grass-Warbler	<i>Chaetornis striatus</i>
Near Threatened	
Ferruginous Pochard	<i>Aythya nyroca</i>

Hilloljyoti Singha has done a detailed study for his Ph.D on Greater Adjutant in the Brahmaputra valley. He mentioned in his thesis that these three sites are very important for the Greater Adjutant.

Green Guard (IBCN member) taking care of Greater Adjutant.



Photo: M. Zafar-ul Islam

During the studies, he found 18 nests of Greater Adjutant in Haibargaon, and 5 nests in Khutikatia. He also counted 92 bird in the non-breeding season (65 adult and 27 juveniles).

#### OTHER KEY FAUNA

Other fauna of the grassland include Golden Jackal *Canis aureus*, Mongoose *Herpestes edwardsi*, Jungle Cat *Felis chaus* and different species of turtles.

#### LAND USE

- q Agriculture
- q Fishing
- q Dumping ground

#### THREATS AND CONSERVATION ISSUES

- q Collection of reeds and thatch
- q Agricultural encroachment
- q Use of chemicals and pesticides
- q Poaching and trapping
- q Excessive fishing
- q Nesting Tree cutting
- q Disturbance to birds
- q Livestock grazing in the feeding ground
- q Recently killing of birds in the field for food

Encroachment by local villagers, excessive collection of reed and thatch from the grasslands, seasonal cultivation of paddy in small clearings, which is on the increase with tractors used for ploughing in recent years. Other issues that are seriously threatening the existence of this grassland are poaching of birds and excessive fishing.

Rescue center for the Storks has been setup by the researchers of Aaranayak (a local IBCN partner NGO in Assam).

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## DHANSIRI RESERVE FOREST



**IBA CRITERIA:** A1 (Threatened Species), A4i (≥ 1% biogeographic population)  
**PROTECTION STATUS:** Not officially protected

### GENERAL DESCRIPTION

Dhansiri is the second largest reserve forest in Assam. Located in Karbi Anglong district, bordering Nagaland's Intanki National Park, it is rich in both birds and mammals. Dhansiri and the adjacent forests of Daldali Reserve forest, Barlangpher District Council RF (DCRF) and Tamulbari DCRF were proposed for a tiger reserve (Choudhury 1992, 1993a, 1998). It is already a part of Dhansiri-Lungding Elephant Reserve that was notified in 2003. The area consists of undulating plains to low hills, which are part of Karbi plateau. Because of continuous erosion by rivers Dhansiri, Jamuna, Lungding, Borlangpher, Diphu Nala and others, the area has become much lower in elevation than the northern plateau and southern hills. Geographically, the area is known as the Dhansiri Gap. The lowest parts are about 150 m above msl. The highest point is 598 m (Thangnangsip) in Khelma area. The elevation of the larger part of the proposed reserve is 200-250 m. The Dhansiri river marks the southern and southeastern boundary of the proposed reserve. Other important rivers include the Lungding, Barlangpher, Chhotalangpher, and Diphu Nala. Most of the smaller nullahs become dry during winter. The climate of the area may be called the 'tropical monsoon type.' The summers are hot and wet, while the winters are cool and dry.



Photo: Arwaruddin Choudhury

The area is in the low rainfall zone (actually a rain-shadow zone) of northeastern India. The forest type is Tropical Moist Deciduous and Tropical Semi-evergreen (Choudhury 1993a). The top canopy consists of *Tetrameles nudiflora*, *Amoora wallichii*, *Artocarpus chaplasha*, *Michelia champaca*, *Mesua ferrea*, *Phoebe goalparensis*, *Gmelina arborea*, *Duabanga sonneratioides*, *Dillenia scabrella*, *Canarium resiniferum* and *Mansonia dipikae* (endemic to the area). The middle layer consists of *Eugenia jambolana*, *Premna benghalensis*, *Dillenia indica*, *D. scabrella*, *Albizia procera* and *Emblica officinalis*. The understorey has *Zizyphus* spp., *Clerodendron* spp., *Calamus* spp., with *Lantana camara* in the open patches. Abandoned *jhums* (slash-and-burn shifting cultivation of the hill tribes) are covered with various grasses such as *Themeda villosa*, *Saccharum procerum*, *Imperata cylindrica*, and shrubs (*Eupatorium odoratum*). In the depressions *Alpinia allughas*, herbs, and *Arundo donax* and *Neyraudia reynaudiana* grasses (both locally called Nal) occur. Plantations of the Forest Department are mainly *Tectona grandis* (Teak), *Gmelina arborea* and *Albizia procera*.

### AVIFAUNA

A rich and diverse bird life exists in the area. About 250 species have been recorded so far while there may be more than 350 (Choudhury 1998). The White-winged Duck *Cairina scutulata* has been reported from Dhansiri RF (Choudhury 1993a) while there are historic records from near Dhansiri River, near Daldali RF (Godwin-Austen 1874; Hume 1890; Hutchinson 1946). In Inglongiri, the ducks have been reported in flight or roosting on trees. In Dhansiri, they were recorded in the lake near Langcholiet, just outside the boundary of the reserve forest. There is also an old report from a pool in the upper reaches of the Diphu-nala (Choudhury 1998). The Burmese or Green Peafowl *Pavo muticus* is now extinct in the area. Five species of hornbills are reported from this IBA site: Oriental or Indian Pied *Anthraceros albirostris*, Great Pied *Buceros bicornis*, Wreathed *Aceros undulatus*, Rufous-necked *Aceros nipalensis* and Brown *Anorrhinus tickelli*. In winter, the abundance of birds increases to a great extent with the arrival of altitudinal migrants and winter visitors. The Spot-



winged Starling *Saroglossa spiloptera* is seen in swarms, especially on the northern edge of Dhansiri RF (Choudhury 1998). The Fairy Bluebird *Irena puella*, Black Bulbul *Pycnonotus atriceps* and Grey-winged Blackbird *Turdus boulboul* are abundant and found all over the place. The birds of Biome 5, 7, 8, 9, 11 and 12 have been recorded in Dhansiri. They are too many to list here.

Five Near Threatened species are recorded from this IBA including the Blyth's Kingfisher *Alcedo hercules* and Long-tailed Prinia *Prinia burnesii*.

Among the more common forest birds, notable species are Black or Black-crested Baza *Aviceda leuphotes*, Blyth's Baza or Jerdon's Baza *A. jerdoni*, Pied Falconet *Microhierax melanoleucos*, Green Imperial Pigeon *Ducula aenea*, Mountain Imperial Pigeon *D. badia*, Barred-tailed Cuckoo-dove *Macropygia unchall*, Wedge-tailed Green Pigeon *Treron sphenura*, and Thick-billed Green Pigeon *T. curvirostra*.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
White-winged Duck	<i>Cairina scutulata</i>
Vulnerable	
Lesser Adjutant (occasional)	<i>Leptoptilos javanicus</i>
Green Peafowl (no recent report)	<i>Pavo muticus</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Blyth's Kingfisher	<i>Alcedo hercules</i>
Great Pied Hornbill	<i>Buceros bicornis</i>
Brown Hornbill	<i>Anorrhinus tickelli</i>
Long-tailed Prinia	<i>Prinia burnesii</i>

#### OTHER KEY FAUNA

Other fauna in the area is exceptionally rich. Seven species of primates, i.e., the Hoolock Gibbon *Hylobates hoolock*, Slow Loris *Nycticebus coucang*, Capped Langur *Trachypithecus pileatus*, Rhesus Macaque *Macaca mulatta*, Pig-tailed Macaque *M. nemestrina*, Assamese Macaque *M. assamensis* and Stump-tailed Macaque *M. arcoides* are found (Choudhury 1996b).

Other mammals include Asian Elephant *Elephas maximus*, Tiger *Panthera tigris*, Leopard *Panthera pardus*, Clouded Leopard *Neofelis nebulosa*, Marbled Cat *Pardofelis marmorata* (Choudhury 1996a), Leopard Cat *Prionailurus bengalensis*, Jungle Cat *Felis chaus*, Dhole or Wild Dog *Cuon alpinus*, Asiatic Black Bear *Ursus thibetanus*, Sloth Bear *Melursus ursinus*, Sun Bear *Helarctos malayanus*, Gaur *Bos frontalis*, Wild Water Buffalo *Bubalus bubalis* (= *arnee*) (a small population reported), Serow *Naemohedus sumatraensis*, Sambar *Cervus unicolor*, Hog Deer *Axis porcinus*, Barking Deer *Muntiacus muntjak*, Binturong *Arctictis binturong* and Malayan Giant Squirrel *Ratufa bicolor*.

The diversity of reptiles has not been assessed fully, however, the notable species recorded were Keeled Box Turtle *Pyxidea mouhotii* (Choudhury 1993b). Common Monitor Lizard *Varanus bengalensis*, Water Monitor Lizard *V. salvator*, Rock Python *Python molurus*, King Cobra *Ophiophagus hannah*, Indian Cobra *Naja naja*, Banded Krait *Bungarus fasciatus*, Common Krait *B. caeruleus*, Buffstriped Keelback *Amphiesma stolata*, Common Vine Snake *Ahaetulla nasuta* and Green Pit Viper *Trimeresurus gramineus* have been recorded. The Reticulated Python *Python reticulatus* has also been reported (Choudhury 1998).

#### LAND USE

- q Forestry
- q Cultivation including *jhum* (in encroachments)

#### THREATS AND CONSERVATION ISSUES

- q Encroachment
- q Poaching
- q Illegal felling of trees
- q Insurgency

Dhansiri is among the few remaining large areas of tropical forest in northeast India, and needs protected area status. In the whole of Dhansiri RF, encroachment was negligible till the mid-1990s. Subsequently, some encroachment has occurred but is still small (unlikely to be more than 10% of the total area), as it has become a rare phenomenon nowadays in Assam. Although located near the Assam-Nagaland border, poaching is surprisingly not a major threat, the main reason being the absence of any major villages across the border. The presence of Intanki National Park (an IBA) in Nagaland also act as a buffer. However, poaching is rampant there. The local poachers mainly go for deer, occasionally primates, small mammals such as porcupines, birds, and reptiles such as the monitor lizards.

Illegal felling of trees and insurgency activities are other noteworthy conservation issues.

Dhansiri was recommended for protected area (sanctuary or national park) and tiger reserve along with surrounding areas, because it is among the last large wilderness tracts left in Assam. It has large populations of Tiger, Hoolock Gibbon, Capped Langur, Gaur, and a sizeable population of Asian Elephant, besides diverse other life forms and is still mostly pristine habitat.

This area has great tourism potential because of its location near Diphu, the district headquarters of Karbi Anglong. Diphu is connected with Guwahati, the capital of Assam by an all-weather motorable road. Similarly, the bustling city of Dimapur in Nagaland, which has an airport, is also near by. Lumding, an important railhead of the North East Frontier Railway is also close by. Thus Dhansiri is easily approachable for both domestic and foreign tourists. Trolleys can be used for transport along the railway track that marks the boundary of Dhansiri, Tamulbari and Daldali RFs, at many places (Choudhury 1998).

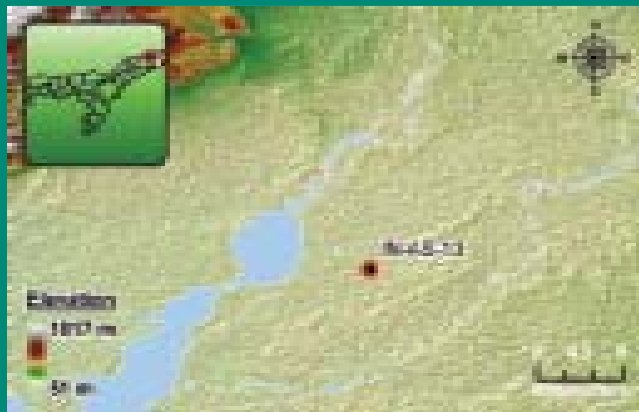
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Anwaruddin Choudhury and Kulojyoti Lahkar

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## DIBRU-SAIKHOWA COMPLEX



IBA Site Code	: IN-AS-13
State	: Assam
District	: Tinsukia, Dibrugarh and Dhemaji
Coordinates	: 27° 41' 24" N, 95° 21' 00" E
Ownership	: State
Area	: 80,000 ha
Altitude	: 90-100 m
Rainfall	: 2,300-3,600 mm
Temperature	: 6 °C to 36 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Moist Deciduous Forest, Tropical Grassland

**IBA CRITERIA:** A1 (Threatened Species), A2 (Endemic Bird Area 131: Assam Plains)  
**PROTECTION STATUS:** National Park, established in 1999

### GENERAL DESCRIPTION

This complex covers Dibru-Saikhowa National Park, Poba Reserve Forest, Kobo *chaponi* (river islands) proposed reserve forest, Amarpur *chaponi*, Maguri and Motapung *beel* (lake), and the adjacent riverine tract of the Brahmaputra and Lohit rivers. The Dibru-Saikhowa NP proper covers 34,000 ha in the districts of Tinsukia and Dibrugarh in eastern Assam. It is 13 km north of Tinsukia town. It is also a Biosphere Reserve. The area is known as a major haunt of the globally threatened White-winged Duck *Cairina scutulata*, Black-breasted Parrotbill *Paradoxornis flavirostris* and Marsh Babbler *Pellorneum palustre*.

In 1986, the Government of Assam declared Dibru and Saikhowa Reserve Forests as Dibru-Saikhowa Wildlife Sanctuary, covering 64,000 ha which also included Amarpur *chaponi* and the adjacent riverine tract of the Brahmaputra and Lohit rivers. Subsequently, the area was upgraded to a national park. However, at the time of final notification as a sanctuary and as well as a national park, only the reserve forest areas were included. Maguri and Motapung *beels* in Tinsukia district, although very important for the conservation of waterfowl, are outside. Similarly, Poba and Kobo, important biodiversity sites, are located north of the Park and are in Dhemaji district. We have included all these adjacent sites in one IBA.

Dibru-Saikhowa has the largest salix swamp forest in northeastern India. Tropical Moist Deciduous, Tropical Semi-evergreen, Evergreen Forests and grassland forms the main habitat type. The original vegetation of the Park was tropical rainforest, but a large part sank by a few meters during the earthquake in 1950, causing significant geomorphological changes. Due to regular flooding, the rainforest gradually gave way to deciduous forest and swamps (Choudhury 1998).

The relatively remote Amarpur area, on the northern side of the Brahmaputra river, not included in the Park but is a part of the wider Dibru-Saikhowa Biosphere Reserve, has significant areas of tall grass, which are largely absent in the other areas of the Park. The Amarpur peninsula within the Biosphere Reserve covers about 3,000 ha. It is generally low-lying and much of it is flooded during the monsoon season (Allen 2002).

### AVIFAUNA

Dibru-Saikhowa complex is very rich in bird life, with more than 310 species already identified (Choudhury 1994, 1997). It is one of the sites in the northeast where highly endangered and elusive White-bellied Heron *Ardea insignis* is seen. Choudhury (2002) saw a lone bird in Salbeel area in November 1993.

The two Critically Endangered *Gyps* species of vultures were not uncommon during 1992-94, but now both are very rare. During a survey in October 2001, no Oriental White-backed Vulture *Gyps bengalensis* and Slender-billed Vulture *Gyps tenuirostris* were sighted (Choudhury 2002).

Two more Endangered birds that could have significant populations in this IBA are White-winged Duck *Cairina scutulata* and Bengal Florican *Houbaropsis bengalensis*. Four nests of White-winged Duck have been recorded. Most of the recent sightings have been listed in Choudhury (1996) and historic records in Green (1992). The Bengal Florican is a rare resident of the grasslands. There are many sight records from this IBA (Choudhury 2002).

Another Endangered bird of which we have few confirmed records from India is Nordmann's Greenshank *Tringa guttifer*. Choudhury (2002) reports a lone bird near Dighaltarang on the bank of the Dangori river in November 1993.

Greater Adjutant is one of the rarest storks in the world.



Photo: M. Zafar-ul-Islam

Baker (1904) had reported nest of Masked Finfoot *Heliopais personata* in July at Dighaltarang but Choudhury (2002) could not find any evidence of existence of this species.

The tall wet grasslands of Dibru-Saikhowa are important for many threatened and non-threatened species. Stattersfield *et al.* (1998) have identified three endemic species in the Assam Plains Endemic Bird Area: Manipur Bush Quail *Perdica manipurensis*, Black-breasted Parrotbill *Paradoxornis flavirostris* and Marsh Babbler *Pellorneum palustre*. The first species is historically not found in the floodplains of the Brahmaputra but the remaining two endemics are found in this site. Choudhury (2002) sighted the Marsh Babbler a number of times, mainly in Toralipathar in 1992-1994. The Black-breasted Parrotbill lives in dense tall grass so sighting it is not easy. Nevertheless, Choudhury (2002) was able to see two individuals in association with the Rufous-necked Laughingthrush *Garrulax ruficollis* in Amarapur on December 1993.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps benghalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
White-bellied Heron	<i>Ardea insignis</i>
Greater Adjutant	<i>Leptoptilos dubius</i>
White-winged Duck	<i>Cairina scutulata</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>
Spotted Greenshank	<i>Tringa guttifer</i>
Vulnerable	
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Baer's Pochard	<i>Aythya baeri</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted-Eagle	<i>Aquila clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Sarus Crane	<i>Grus antigone</i>
Masked Finfoot (no recent record)	<i>Heliopais personata</i>
Indian Skimmer (no recent record)	<i>Rynchops albicollis</i>
Purple Wood-Pigeon	<i>Columba punicea</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Jerdon's Babbler	<i>Chrysomma altirostre</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>
Finn's Weaver	<i>Ploceus megarhynchus</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Ferruginous Pochard	<i>Aythya nyroca</i>
White-tailed Sea-Eagle	<i>Haliaeetus albicilla</i>
Lesser Grey-headed Fish-Eagle	<i>Ichthyophaga humilis</i>
Greater Grey-headed Fish-Eagle	<i>Ichthyophaga ichthyaetus</i>
Cinereous Vulture	<i>Aegypius monachus</i>
Black-bellied Tern	<i>Sterna acuticauda</i>
Blyth's Kingfisher	<i>Alcedo hercules</i>
Great Pied Hornbill	<i>Buceros bicornis</i>
Long-tailed Prinia	<i>Prinia burnesii</i>
Endemic Bird Area 131: Assam Plains	
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>
Marsh Babbler	<i>Pellorneum palustre</i>

The sighting of the Black-breasted Parrotbill is significant as there are hardly any recent records from anywhere in its range (Choudhury 1997). Another notable record from this IBA is sighting of a pair of Sarus Crane *Grus antigone*, the first sighting of the species in north-east Indian for several decades. The birds were of nominate race *antigone* and this record has extended their range by 500 km.

The Grey Treepie *Dendrocitta formosa* and Oriental Turtle Dove *Streptopelia orientalis* were found to be resident at lower altitudes (c. 100 m) (Choudhury 1997) than previously recorded by Ali and Ripley (1987).

Jerdon's Babbler *Chrysomma altirostre*, the globally Vulnerable species of tall wet grasslands, is common in the more extensive habitat in Amarapur (Allen 2002). Puff-throated Babbler *Pellorneum ruficeps*, is quite common in the forested areas at Kolomi, and was seen in the same habitat of low bushes at the forest edge as Marsh Babbler; it was also found in Amarapur (Allen 2002). The tall grass of Amarapur is of great value for many Restricted Range grassland birds (Allen 2002)

Dibru-Saikhowa is among the most important wintering sites in Assam of the Black Stork *Ciconia nigra* (Choudhury 1997).

Excellent reports and papers on the bird life of this site by Choudhury (1994, 1997, 1998, 2002), show that this IBA has 2 globally Critically Endangered, 5 Endangered, 13 Vulnerable, and 11 Near Threatened species. The site qualifies A1 (Threatened Species), and A2 (Restricted Range criteria). The list of Biome-restricted species is too long to be included here. It is one of the best known IBAs of Assam.

#### OTHER KEY FAUNA

Other fauna includes Asian Elephant *Elephas maximus*, Tiger *Panthera tigris*, Leopard *P. pardus*, Sloth Bear *Melursus ursinus*, Slow Loris *Nycticebus coucang*, Pigtailed Macaque *Macaca nemestrina*, Rhesus Macaque *M. mulatta*, Assamese Macaque *M. assamensis*, Capped Langur *Trachypithecus pileatus*, Barking Deer *Muntiacus muntjak*, Hog Deer *Axis porcinus*, Flying Squirrel *Petaurista* sp., Gangetic River Dolphin *Platanista gangetica*, Monitor Lizards *Varanus bengalensis*, *V. salvator*, various turtles including *Kachuga sylhetensis*, snakes including Indian Cobra *Naja naja* and Indian Rock Python *Python molurus*. Assam Roof Turtle *Kachuga sylhetensis* was also recorded for the first time in the area, constituting the easternmost limit of its distribution (Choudhury 1994).

Greater Rufous-headed Parrotbill *Paradoxornis ruficeps* is one of the resident birds in the Northeast India.



Photo: Ketil Knudsen / Peter Lobo

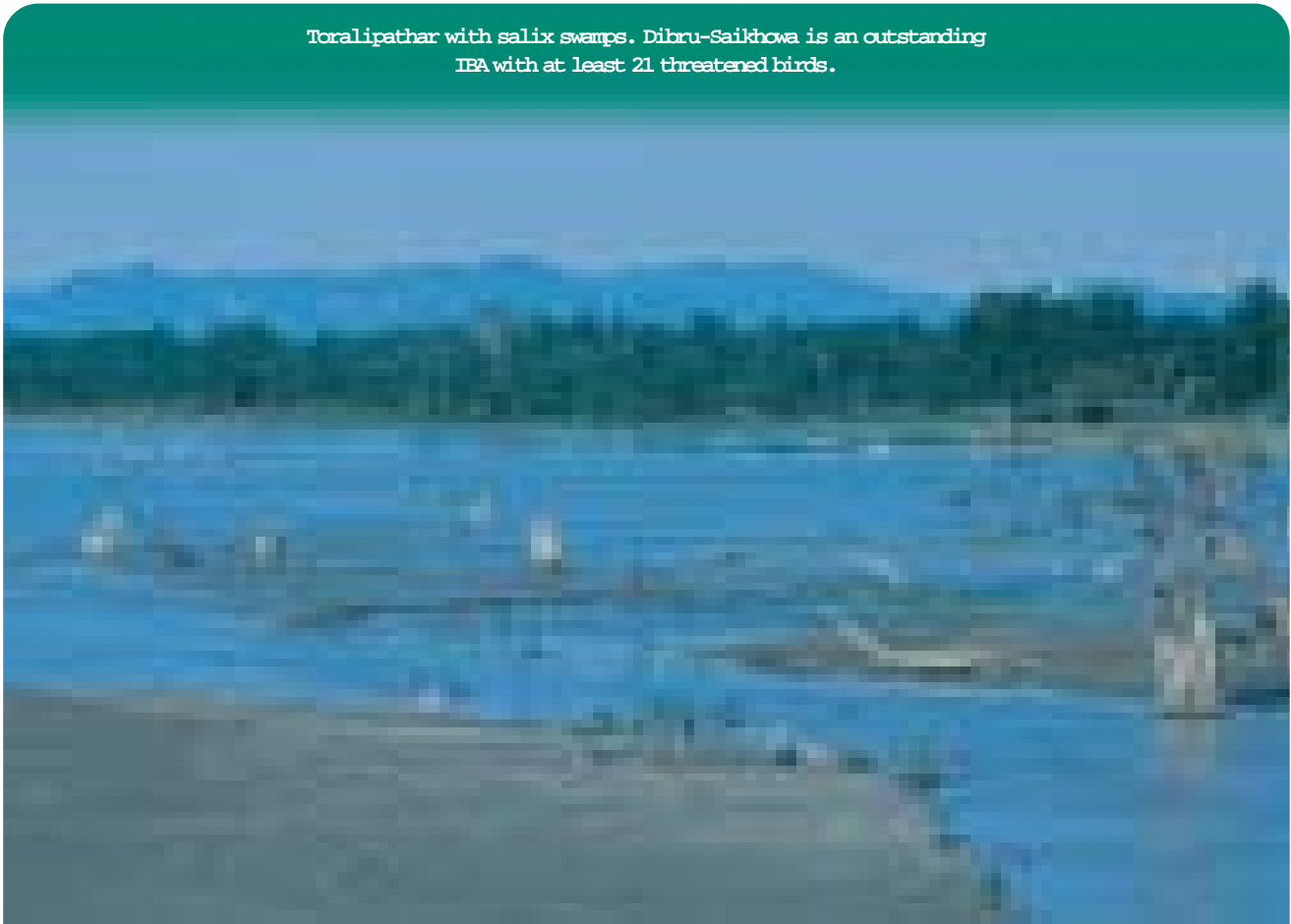


Photo: Anwaruddin Choudhury

LAND USE

- q Nature conservation
- q Tourism
- q Fishing

THREATS AND CONSERVATION ISSUES

- q Logging
- q Erosion
- q Poisoning of waterbodies
- q Cattle grazing
- q Disturbance to birds
- q Firewood collection

The main conservation issue is diversion of a channel of the Lohit river through Ananta *nullah*, a small channel in early 1990s. This has resulted in widening of the latter channel into a wide river, which ultimately made the National Park an island. Large areas have been eroded in the process. The next major issue is the presence of two large forest villages inside the Park. Most of the forests have been heavily exploited for timber, and very little dense forest remains. Fishing activities cause a considerable amount of disturbance, and there is heavy grazing pressure from domestic livestock. The peripheral areas are being reclaimed for agriculture, and there has been considerable encroachment by the forest villagers. A large portion of the area is under threat because of a natural shift in the course of the Brahmaputra river. Local people use chemical pesticides for fishing in the Park as well as Maguri and Motapung *beels*, which kills large number of life forms. Encroachment in Kobo chapori has taken alarming proportion.

KEY CONTRIBUTOR

Anwaruddin Choudhury

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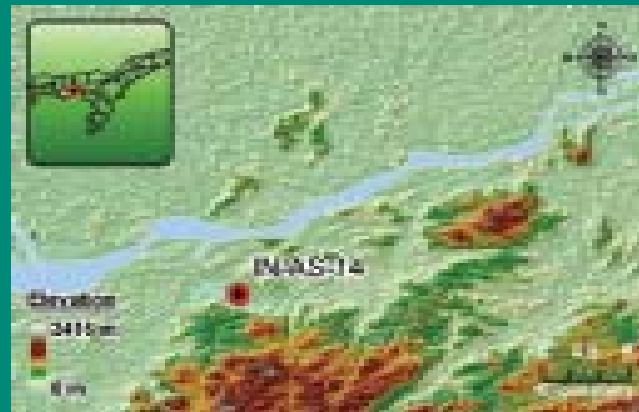
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## DEEPOR BEEL BIRD SANCTUARY



IBA Site Code	: IN-AS-14
State	: Assam
District	: Kamrup
Coordinates	: 26° 07' 00" N, 91° 40' 29" E
Ownership	: State
Area	: 414 ha
Altitude	: 53 m
Rainfall	: >2000 mm
Temperature	: 7 °C to 37 °C
Biogeographic Zone	: North-East
Habitats	: Freshwater Swamp, Lake

**IBA CRITERIA:** A1 (Threatened Species), A4iii ( $\geq 20,000$  waterbirds)  
**PROTECTION STATUS:** Wildlife Sanctuary, established in January 1989

## GENERAL DESCRIPTION

Deepor Beel Bird Sanctuary, southwest of Guwahati city, is located in Kamrup (metropolitan) district, on the southern bank of the Brahmaputra river. The sanctuary is a permanent freshwater lake with abundant aquatic vegetation. Deepor is one of the largest of many such lakes or 'beels' in lower Assam. A Ramsar site, the Deepor beel covers an area of about 900 ha. At maximum flooding, it is c. 4 m deep, while during the dry season, the depth drops to about 1 m. The main sources of water of this lake are the Basistha and Kalamoni rivers, and local monsoon run-off between May and September. The Beel drains into the Brahmaputra river, located about 5 km away. About half of the Beel dries out during the winter and the exposed shores are converted into paddy fields. The southern side of the lake is contiguous with Rani Reserve Forest.

The climate is humid and tropical monsoon, with a prolonged monsoon season from May to September, and a relatively cool, winter.

A large variety of aquatic flora of tropical wetland are found in Deepor Beel and its adjoining areas. On one side, this IBA is surrounded by forest, with *Terminalia belerica*, *Tectona grandis* (plantation), *Ficus bengalensis*, and *Bombax malabaricum* as dominant tree species. The Giant Water Lily *Euryale ferox* is of

considerable botanical and economic importance. Dominant aquatic plants include *Eichhornia crassipes*, *Pistia stratiotes*, *Ottelia alismoides* and *Lemna minor*. Most of the surrounding areas are under rice cultivation.

## AVIFAUNA

Around 150 species of birds have been recorded so far in and around the Sanctuary, including nine threatened species (A. U. Choudhury pers. comm. 2002). Barman *et al.* (1995) have studied the avifauna of this IBA. They found 62 species of waterbirds, including 16 species of Anatidae. Interestingly, they also mention 1,018 individuals of Baer's Pochard *Aythya baeri* in their 1988-89 survey, but subsequently the population declined to 250 in 1989-90, 3 in 1990-91, 135 in 1991-92, and none in 1992-93. If the figure for 1988-89 is correct, it must be the largest known flock of this rare species ever reported from India.

In the surrounding broadleaf forests, White-cheeked Hill-Partridge *Arborophila atrogularis* is seen, along with other forest birds.

Deepor Beel harbours many species of migratory birds in winter as well as resident birds. But birds get disturbed from the end of December caused by heavy fishing for feasts of New Year and Assamese *Magh Bihu* in mid-January. Though Deepor beel is leased out every year and fishing is a regular activity (year-round), disturbance touches peak by the end of December as locals also start 'community fishing' during that period for feasts after harvests. Poaching of waterfowls occurs but it is not a major threat (K. Lahkar pers. comm. 2003).

Oriental White-backed *Gyps bengalensis* and Long-billed *G. indicus* vultures are still seen, mainly in winter, near Deepor Beel. Other vultures found in the region, Eurasian Griffon *Gyps fulvus* and Himalayan Griffon *G. himalayensis* are also seen in nearby areas (K. Lahkar pers. comm. 2003).

The Greater Adjutant *Leptoptilos dubius*, regularly seen in Guwahati city garbage dumps and near slaughter houses, is occasionally seen in Deepor Beel. However, its cousin, the Lesser Adjutant *Leptoptilos javanicus*, listed as Vulnerable (BirdLife International 2001) is much more common.

Ferruginous Duck *Aythya nyroca* is also commonly seen in winter. A total number of 688 birds were counted on January 4<sup>th</sup> 1991 under the Asian Waterfowl Census (Choudhury 2000).

Egrets in Deepor beel. This IBA is also a Ramsar Site and is located within the city limits of Guwahati.



Photo: Anwaruddin Choudhury

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Vulnerable	
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Baer's Pochard	<i>Aythya baeri</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Ferruginous Pochard	<i>Aythya nyroca</i>
Greater Grey-headed Fish-Eagle	<i>Ichthyophaga ichthyaeus</i>

OTHER KEY FAUNA

Despite Deepor Beel's proximity to the sprawling Guwahati city and nearby settlements, the Asian Elephant *Elephas maximus* regularly visits the beel. In the nearby Rani RF and other forested areas, mammals such as Hoolock Gibbon *Hylobates hoolock*, Assamese Macaque *Macaca assamensis*, Rhesus Macaque *Macaca mulatta*, Capped Langur *Trachypithecus pileatus*, Slow Loris *Nycticebus coucang*, Leopard *Panthera pardus*, Jungle Cat *Felis chaus*, Leopard Cat *Prionailurus bengalensis*, three species of Civets (Large Indian *Viverra zibetha*, Small Indian *Viverricula indica* and Palm *Paguma larvata*), Mongoose *Herpestes* sp.,



Photo: Anwaruddin Choudhury

Sambar *Cervus unicolor*, Barking Deer *Muntiacus muntjak*, Chinese Pangolin *Manis pentadactyla* have been recorded.

LAND USE

- q Agriculture
- q Fishing
- q Nature conservation
- q Water management

THREATS AND CONSERVATION ISSUES

- q Siltation
- q Heavy fishing
- q Pollution from city effluents
- q Disturbance to birds
- q Trapping during winter
- q Railway line
- q Industrial pollution from the wool mill
- q Encroachment

Surrounding areas of Deepor Beel are privately owned, except for the Rani Reserve Forest, which is state-owned. The Government of Assam declared 414 ha of the beel area as a Sanctuary. Shooting and bird trapping are prohibited by the Indian Wildlife (Protection) Act 1972, but enforcement is lacking. Being close to a city of about two million human beings, biotic pressure is increasing. The railway line that passes through the southern edge of the Beel has damaged the ecosystem of the area. There is a constant threat to denotify the Sanctuary, although it may not be so easily done, due to strict guidelines formulated by the Supreme Court of India.

The Beel is heavily infested by Water Hyacinth. Fishing is another major conservation issue, especially during the mass fishing season when a large number of fishermen descend on this Beel, create intolerable noise, and disturb the birds.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Kulojyoti Lahkar and Prasanta Saikia

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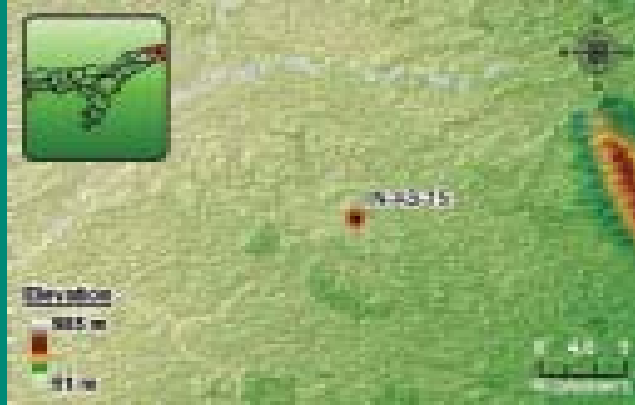
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## DUM DUMA, DANGORI AND KUMSONG RESERVE FORESTS



IBA Site Code	: IN-AS-15
State	: Assam
District	: Tinsukia
Ownership	: State
Coordinates	: 27° 39' 30" N, 95° 43' 30" E
Area	: 6,050 ha
Altitude	: c. 140 m
Rainfall	: 2,300 – 4,000 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Wet Evergreen Forest

IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Not officially protected

## GENERAL DESCRIPTION

Dum Duma (2,880 ha), Dangori (920 ha) and Kumsong (2,250 ha), these three reserve forests in Tinsukia district, in eastern Assam constitute the IBA. The forests of all areas are Tropical Evergreen Rainforest types dominated by *Dipterocarpus macrocarpus* (Hollong) on flat plains. All these areas are surrounded by tea gardens and human settlements. These forests are known for their populations of White-winged Duck *Cairina scutulata*, but are also important for other wildlife, especially primates. The largest confirmed gathering of the White-winged Duck in the world was recorded in Dangori RF, where 14 were seen roosting at one site in 1995 (Choudhury 1996, 1998).

The vegetation type of the sites is mainly Tropical Evergreen Rainforest, dominated by *Dipterocarpus macrocarpus*, *Shorea assamica*, *Mesua ferrea*, *Terminalia myriocarpa*, *Artocarpus chaplasha*, *Dillenia indica*, *Anthocephalus cadamba*, *Bombax ceiba* and *Ficus* spp. There are many jungle pools or ponds in these areas, which are the major haunts of the White-winged Duck.

Stork-billed Kingfisher *Halcyon capensis* is one of the resident birds in the Northeast.



Photo: Ketil Knudsen / Peter Lobo

## AVIFAUNA

The site is important for rainforest birds. More than 100 species have been recorded but more are likely to occur (A. U. Choudhury pers. comm. 2002). The White-winged Duck and Brown Hornbill *Anorrhinus tickelli* are noteworthy species while there are reports of the Masked Finfoot *Heliopais personata* from Dum Duma RF (Choudhury 1997). Sino-Himalayan Subtropical Forest species (Biome-8) such as Blue-throated Barbet *Megalaima asiatica*, Bay Woodpecker *Blythipicus pyrrhotis*, White-throated Bulbul *Alophoixus flaveolus*, Black-winged Cuckoo-shrike *Coracina melaschistos* and Nepal Fulvetta *Alcippe nipalensis* are commonly seen.

This site has been selected as an IBA as it is one of the most important areas for the long-term protection of the globally Endangered White-winged Duck.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
White-winged Duck	<i>Cairina scutulata</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Masked Finfoot (reported)	<i>Heliopais personata</i>

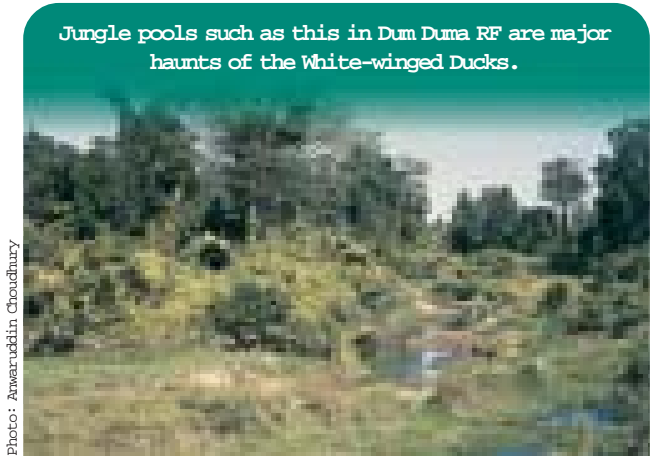
## OTHER KEY FAUNA

Leopard *Panthera pardus*, Hoolock Gibbon *Hylobates hoolock*, Capped Langur *Trachypithecus pileatus*, Rhesus Macaque *Macaca mulatta*, Pig-tailed Macaque *M. nemestrina*, Slow Loris *Nycticebus coucang*, Malayan Giant Squirrel *Ratufa bicolor*, Common Giant Flying Squirrel *Petaurista petaurista*, Barking Deer or muntjak *Muntiacus muntjak* and a small herd of Wild Water Buffalo *Bubalus arnee* (= *bubalis*). The Wild Elephant *Elephas maximus* and Tiger *Panthera tigris* are no longer found here.

## LAND USE

q Forest





THREATS AND CONSERVATION ISSUES

- q Habitat destruction
- q Poaching
- q Trapping
- q Egg and duckling collection
- q Pollution from tea gardens (insecticides)
- q Fishing in jungle pools
- q Disturbance to the birds

It was proposed that the Dum Duma and Dangori Reserved Forests together be declared as a wildlife sanctuary for the better protection and management of the areas, since both areas are habitats of the White-winged Duck (Choudhury 1996). Kumsong RF has already been encroached upon to a great extent, and there is also illegal tree felling. Sporadic felling is recorded in Dum Duma and Dangori RFs as well. This site urgently needs legal status to prevent further encroachment and curtail poaching.

Awareness programmes should be taken up among the villagers, tea garden labourers and management about the importance of these forests for the survival of threatened species.

KEY CONTRIBUTORS

Anwaruddin Choudhury and Kulojyoti Lahkar

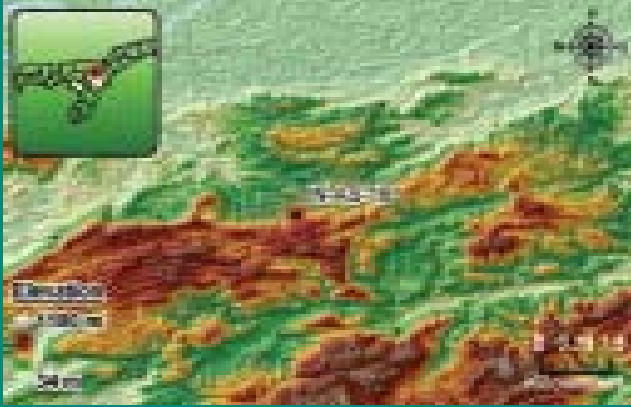
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## EAST AND NORTH KARBI ANGLONG SANCTUARIES



IBA Site Code	: IN-AS-16
State	: Assam
District	: Karbi Anglong
Coordinates	: 26° 28' 00" N, 93° 21' 30" E
Ownership	: State
Area	: 31,781 ha
Altitude	: 80 - 500 m
Rainfall	: >1,800 mm
Temperature	: 6 °C to 34 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Semi-evergreen, Tropical Moist Deciduous, Tropical Bamboo Brakes

IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Wildlife Sanctuaries, established in 2000

## GENERAL DESCRIPTION

This site includes two protected areas in Karbi Anglong district namely, East Karbi Anglong Wildlife Sanctuary (22,181 ha) and North Karbi Anglong Wildlife Sanctuary (9,600 ha), which are contiguous. The latter sanctuary connects the former with the world famous Kaziranga National Park (also an IBA), a link that is vital for the wild Asian Elephants *Elephas maximus*. Although the area was proposed as a single protected area as 'North Karbi Anglong Wildlife Sanctuary' (Choudhury 1992a, 1992b; Choudhury 1993), the authorities were compelled to declare two separate sanctuaries. While the Mikir Hills reserve forest area has been notified as 'East Karbi Anglong WLS, the unclassified and community forests to the north is known as 'North Karbi Anglong WLS'. In the latter area, rights and concessions of the settlers have to be considered as the area falls under community forests. This area is a part of Kaziranga-Karbi Anglong Elephant Reserve.

The elevation of the larger part of the proposed reserve is 200-300 msl. Kaliyoni and Diffolu rivers originate from these forests, which have numerous perennial streams.

The forest type is mainly Tropical Semi-evergreen with patches of Tropical Moist Deciduous. Large tracts under bamboo cover can be seen in parts of North Karbi Anglong Sanctuary due to *jhum* (slash-and-burn shifting cultivation practiced by hill tribes). Abandoned *jhums* are covered with various grasses such as *Themeda villosa* and *Saccharum procerum*, and scrub. In the depressions, *Alpinia allughas* herb, and *Arundo donax* and *Neyraudia reynaudiana* grasses (both are called *Nal*) occur.

## AVIFAUNA

A rich and diverse bird life exists in the area. About 200 species have been recorded, while there would be more than 350 (A. U. Choudhury pers. comm. 2002). The White-winged Duck *Cairina scutulata* has been reported from Kaliyoni area that lies east of East Karbi Anglong WLS (Gee 1958), however, there is no recent report. There are four species of Hornbills, the Oriental Pied *Anthracoceros albirostris*, Great Pied *Buceros bicornis*, Wreathed *Aceros undulatus* and Rufous-necked *Aceros nipalensis*. Brown Hornbill *Anorrhinus tickelli* has been reported, but that needs verification. The Rufous-necked Hornbill is extremely rare and it is not known whether it is

resident in the area or moves in during winter from Barail Range. The Lesser Adjutant *Leptoptilos javanicus* is seen at the edge of North Karbi Anglong WLS and occasionally in the valley of Langlokso, near East Karbi Anglong WLS.

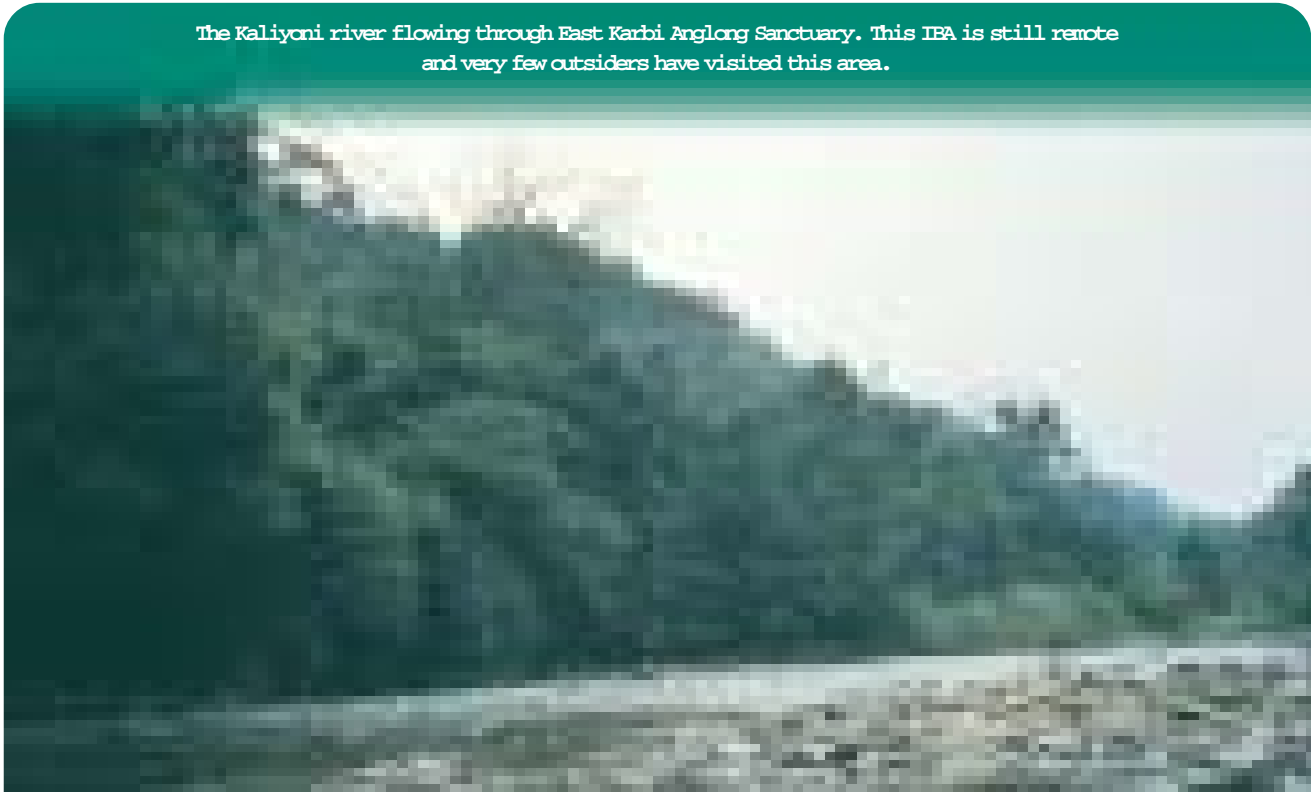
The Oriental White-backed Vulture *Gyps bengalensis* and Slender-billed Vulture *G. tenuirostris* are still seen in small numbers in the northern areas of North Karbi Anglong WLS. The Vulnerable Purple Wood or Pale-capped Pigeon *Columba punicea* occurs in the Sanctuaries.

The site falls in Biome-9 (Indo-Chinese Tropical Moist Forests), according to the classification of BirdLife International (undated). Important biome species of this site are: White-cheeked Hill Partridge *Arborophila atrogularis*, Grey Peacock Pheasant *Polyplectron bicalcaratum*, Black-backed Forktail *Enicurus immaculatus*, Himalayan Golden-backed Woodpecker *Dinopium shorii*, Crow-billed Drongo *Dicrurus annectans*, Necklaced Laughingthrush *Garrulax moniligerus*, Black-gorgeted Laughingthrush *G. pectoralis*, Rufous-necked Laughingthrush *G. ruficollis* and Sultan Tit *Melanochlora sultanea*.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
White-winged Duck	<i>Cairina scutulata</i>
Vulnerable	
Lesser Adjutant (occasional)	<i>Leptoptilos javanicus</i>
Purple Wood-Pigeon	<i>Columba punicea</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>

## OTHER KEY FAUNA

This IBA site is exceptionally rich in mammalian fauna. Seven species of primates, i.e., Hoolock Gibbon *Hylobates hoolock*, Capped Langur *Trachypithecus pileatus*, Rhesus Macaque *Macaca mulatta*, Pig-tailed Macaque *M. nemestrina*, Assamese Macaque *M. assamensis*, Stump-tailed Macaque *M. arctoides* and Slow Loris *Loris tardigradus*, occur (Choudhury 1996). Other mammals include the Asian Elephant *Elephas maximus*, Tiger



*Panthera tigris*, Leopard *P. pardus*, Sloth Bear *Melursus ursinus*, Clouded Leopard *Neofelis nebulosa*, Leopard Cat *Prionailurus bengalensis*, Jungle Cat *Felis chaus*, Dhole or Wild Dog *Cuon alpinus*, Asiatic Black Bear *Ursus thibetanus*, Malayan Sun Bear *Helarctos malayanus*, Gaur *Bos frontalis*, Serow *Nemorhaedus sumatraensis*, Sambar *Cervus unicolor*, Barking Deer *Muntiacus muntjak*, and Malayan Giant Squirrel *Ratufa bicolor*.

During floods in Kaziranga, the Sloth Bear, Rhinoceros *Rhinoceros unicornis*, Wild Water Buffalo *Bubalus arnee* (= *bubalis*), Hog Deer *Axis porcinus* and occasionally the Swamp Deer *Cervus duvaucelii* take shelter in North Karbi Anglong WLS.

The diversity of reptiles is poorly known. The Brown Tortoise *Manouria emys*, Indian Rock Python *Python molurus* and King Cobra *Ophiophagus hannah* are found, along with other snake species.

LAND USE

- Forestry
- Cultivation, including *jhum*

THREATS AND CONSERVATION ISSUES

- Cultivation
- Illegal felling of trees
- Poaching
- Encroachment
- Insurgency

The rights and concessions of settlers in North Karbi Anglong WS have not yet been settled. This is a major issue as adequate conservation measures are not possible without settlement of such cases. East Karbi Anglong WLS is virtually inaccessible, which has helped natural protection but made management difficult. *Jhum* is also a major issue. Illegal felling of trees, insurgency and poaching are other noteworthy conservation issues.

This area has great tourism potential because of its location near Kaziranga, and also for its innumerable waterfalls, especially in East Karbi Anglong WLS.

KEY CONTRIBUTOR

Anwaruddin Choudhury

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## GARAMPANI, NAMBOR AND DOIGRUNG



IBA Site Code	: IN-AS-17
State	: Assam
District	: Karbi Anglong and Golaghat
Coordinates	: 26° 25' 16" N, 93° 43' 50" E
Ownership	: State
Area	: 15,000 ha
Altitude	: 100 - 120 m
Rainfall	: > 2,000 mm
Temperature	: 6 °C to 36 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Semi-evergreen Forest

IBA CRITERIA: A1 (Threatened Species)

**PROTECTION STATUS:** Garampani Wildlife Sanctuary, established in July 1952;  
Nambor - Doigrung Wildlife Sanctuary, established in 2003

## GENERAL DESCRIPTION

This site comprises Garampani (605 ha) and Nambor (3,700 ha) wildlife sanctuaries in Karbi Anglong district and the proposed Nambor-Doigrung Wildlife Sanctuary in Golaghat district. The area is low undulating country, being at the edge of an Archaean plateau called Karbi Plateau. The plains are the floodplains of the Dhansiri river. The forest type is Tropical Semi-evergreen with pockets of pure Evergreen, interspersed with small forest marshes. The area is known for its hot springs, hence named Garampani (Garam = hot; pani = water). The Nambor forests are important for the Asian Elephant *Elephas maximus* and Gaur *Bos frontalis*. Nambor and Garampani were in the news in the early 1990s because of the 'elephant phenomenon', when the wild pachyderms used to stop vehicular traffic in search of food. More than a thousand local tourists visit Garampani every winter for picnics.

The forest is largely intact, with a closed canopy. The middle storey is dense and the undergrowth includes cane brakes. Figs *Ficus* spp. are common and provide food to many frugivores. The undergrowth is usually shrubby. Some deciduous tree species such as *Tetrameles nudiflora* can be seen throughout the range.

## AVIFAUNA

More than 160 species of birds have been recorded in the area, including the Endangered White-winged Duck *Cairina scutulata* (Choudhury 2000), Near Threatened Great Pied Hornbill *Buceros bicornis* and the Lesser Adjutant *Leptoptilos javanicus* in the adjoining fields. This could be a very important IBA for the conservation of White-winged Duck. Choudhury (2000) estimated a population of 20 ducks in Nambor.

Endangered	
White-winged Duck	<i>Cairina scutulata</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>

As the forest is largely intact, this site is extremely important for the protection of many forest birds of the Indo-Chinese Tropical Moist Forests (Biome-9) and the Indo-Gangetic Plains

(Biome-12). Detailed survey of bird life is required in this site to know the full avian diversity of this IBA.

## OTHER KEY FAUNA

Besides the Asian Elephant and the Gaur, there are Tiger *Panthera tigris*, Leopard *P. pardus*, Pig-tailed Macaque *Macaca nemestrina*, Assamese Macaque *M. assamensis*, Rhesus Macaque *M. mulatta*, Slow Loris *Loris tardigradus*, Capped Langur *Presbytis pileatus* and Hoolock Gibbon *Hylobates hoolock* (Choudhury 1993).

In the past, Gharial *Gavialis gangeticus* was reported from Dhansiri river but now only a few turtles and snakes including the King Cobra *Ophiophagus hannah* and Indian Rock Python *Python molurus* are found in this IBA.

## LAND USE

- q Forest
- q Nature conservation
- q Tourism
- q Agriculture

## THREATS AND CONSERVATION ISSUES

- q Encroachment
- q Vehicular traffic
- q Poaching, especially by people from Nagaland
- q Illegal felling

A busy national highway passes through the sanctuaries as well as the reserve forest. Wild animals are often crushed to death by the speeding vehicles and are also disturbed. This IBA is inadequately protected and needs immediate attention.

## KEY CONTRIBUTOR

Anwaruddin Choudhury

## KEY REFERENCES

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## GIBBON (HOLLONGAPAR) SANCTUARY



IBA Site Code	: IN-AS-18
State	: Assam
District	: Jorhat
Coordinates	: 26° 37' 47" N, 94° 22' 47" E
Ownership	: State
Area	: 2,098 ha
Biogeographic Zone	: North-East
Altitude	: 119 m (average)
Rainfall	: 2,000–3,400 mm
Temperature	: 6 °C to 34 °C
Habitats	: Tropical Semi-evergreen Forest

IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Wildlife Sanctuary, established in July 1997

## GENERAL DESCRIPTION

Hollongapar Gibbon Sanctuary is located in Jorhat district of eastern Assam. It has a history of more than a century as a reserved forest, as it was notified on August 27, 1881 as Hollongapar Reserve Forest (Choudhury 1999). This small reserve forest is known for its primate populations and was proposed as a Sanctuary mainly for their conservation (Choudhury 1989). The Sanctuary is 25 km from Jorhat town and 320 km from Guwahati, and well connected by motorable roads. The Sanctuary covers an area of about 2,000 ha of Tropical Semi-evergreen Forest in the basin of the Brahmaputra river.

The Sanctuary is known for its populations of Hoolock Gibbon *Hylobates hoolock* and Stump-tailed Macaque *Macaca arctoides*. The first study on gibbons in this forest was carried out by Tilson (1979).

Despite the fact that it is a small area, the forest is still intact. The top canopy of the forest has evergreen trees, such as *Dipterocarpus macrocarpus*, *Shorea assamica*, *Artocarpus chaplasha* and *Tetrameles* sp. The second storey also has mostly evergreens, including *Mesua ferrea*, *Sapium baccatum* and *Amoora wallichii*.

## AVIFAUNA

No work on the bird fauna has been done in this Sanctuary, except for sight records of White-winged Duck *Cairina scutulata* by Choudhury (2000). This site has been selected as an IBA only on the basis of occurrence of this highly endangered species. However, more globally threatened forest species are likely to occur here. The forest, though small, and partitioned by a railway line and a *kutch* road, is still intact. Many forest species are likely to occur here. We consider this as a Data Deficient site because good information on the bird life is lacking.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
White-winged Duck	<i>Cairina scutulata</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>

## OTHER KEY FAUNA

The other fauna of the Sanctuary includes Asian Elephant *Elephas maximus*, Tiger *Panthera tigris*, Leopard *P. pardus*, Leopard Cat *Prionailurus bengalensis*, Sambar *Cervus unicolor* (no recent sighting), Barking Deer *Muntiacus muntjak*, Wild Boar *Sus scrofa*, Chinese Porcupine *Hystrix brachyura*, Chinese Pangolin *Manis pentadactyla* and Malayan Giant Squirrel *Ratufa bicolor*. Primates recorded were Slow Loris *Nycticebus coucang*, Assamese Macaque *M. assamensis*, Rhesus Macaque *M. mulatta*, Pig-tailed Macaque *M. nemestrina*, Stump-tailed Macaque, Capped Langur *Trachypithecus pileatus* and Hoolock Gibbon (Choudhury 1999). Indian Rock Python *Python molurus* and a variety of other snakes are also found.

## LAND USE

- q Forestry
- q Nature conservation
- q Tourism

## THREATS AND CONSERVATION ISSUES

- q Illegal felling
- q Encroachment
- q Elephant-human conflict
- q Poaching

Hollongapar Gibbon Sanctuary has a relict evergreen forest left. Railway line close to the IBA may disturb many animals.



Photo: Udayan Borthakur

Hollongapar Gibbon Sanctuary has a relict evergreen forest left. The surrounding areas have been converted to cultivation and tea plantation



Photo: Udayan Borthakur

Hollongapar is an isolated forest patch surrounded by tea plantations and human settlements. Once it was contiguous with the large forest tract that extended to Nagaland. A barrier of tea gardens now separates the nearest forest areas of Disoi and Disoi Valley Reserve Forests. Moreover, the habitat in these forests has been badly degraded due to continuous felling and encroachment. There is conflict with Asian Elephants, as more than a dozen animals are confined in a small area, and their moving about often creates problem for the villagers and tea garden labourers. There were some good forest patches in the tea estates outside the Reserve Forest that used to supplement the habitat requirement of some species, including the Elephants, Rhesus Macaques and Capped Langurs. Now most of these areas have been cleared and planted with tea, which makes them unsuitable for wildlife. Poaching of birds and mammals by poachers from Nagaland and tea garden labourers is also another cause of concern for the wildlife in this IBA.

The railway line passing through the forest has created an effective barrier to the movement of the Slow Loris and Hoolock Gibbon. The neighboring tea estates and villages also use the gravel road through the forest that connects Madhupur with Meleng, and this creates disturbance inside the Sanctuary.

Thus, regular patrolling along the sanctuary portion of the Mariani - Amguri road, setting up of an anti-poaching camp on the main road, legal acquisition of additional land from the adjacent tea estates, and motivation of the villagers and tea garden labourers are conservation actions that need to be taken up urgently.

#### KEY CONTRIBUTORS

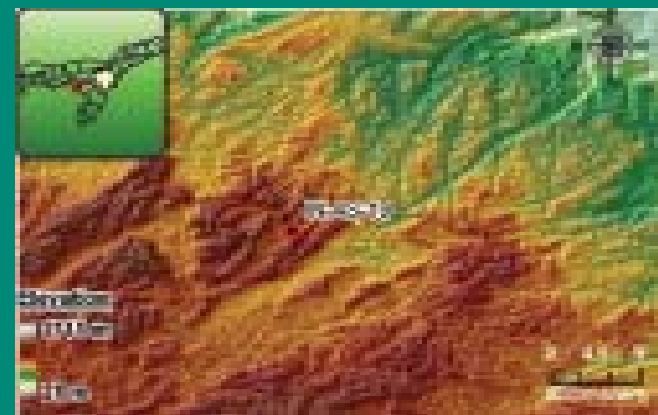
Anwaruddin Choudhury and Kulojyoti Lahkar

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HABANG



IBA Site Code	: IN-AS-19
State	: Assam
District	: Karbi Anglong
Coordinates	: 25° 48' 00" N, 92° 15' 00" E
Ownership	: Private and Community
Area	: c. 1,000 ha
Altitude	: 700 – 900 m
Rainfall	: > 1,600 mm
Temperature	: 4 °C to 30 °C
Biogeographic Zone	: North-East
Habitats	: Montane Grassy Slopes, Tropical Bamboo Brakes

IBA CRITERIA: A4ii (≥ 1% of the global population of congregatory terrestrial species)  
PROTECTION STATUS: Not officially protected

GENERAL DESCRIPTION

Habang or Umwang is a relatively remote area in Assam’s Karbi Anglong district. The area comprises of a few villages inhabited by *Khasi* tribe with some Nepali-speaking people. A few hutments of the *Karbi* tribe also exist. The terrain is rolling country on a plateau. The Umkhen or Borpani river passes through the south of this IBA, beyond which is the state of Meghalaya.

AVIFAUNA

Habang is significant because it is the site of a major congregation of the migrating Amur Falcon *Falco amurensis*. This raptor migrates from northeastern China and southeastern Siberia to southern Africa through northeast India (Ali and Ripley 1987), and it congregates in large numbers for night roosting at Habang (Choudhury 2000). While its abundance is not known, at least 3,000 were found roosting on a single day in late October 2000. Sometimes, there are more than 5,000 individuals. The birds move through the area for about a month. Hence, it is possible that more than 90,000 birds pass through the area and roost *en route*. This is one of the few sites that qualify A4ii criteria (≥ 1% of the global population of congregatory terrestrial species: BirdLife International, undated)



Photo: Anwaruddin Choudhury

The Mountain Bamboo Partridge *Bambusicola fytchii* has been recorded. There is very interesting report of a remnant population of peafowl, probably the globally threatened Green Peafowl *Pavo muticus*, however, this needs confirmation (A. U. Choudhury *pers. comm.* 2003).

OTHER KEY FAUNA

The Hoolock Gibbon *Hylobates hoolock* occurs in the nearby forests (A. U. Choudhury *pers. comm.* 2003).

LAND USE

- q Settlement
- q Agriculture

THREATS AND CONSERVATION ISSUES

- q Live capture for food and sale
- q Insurgency

The main issue is the capture of Amur Falcons by the Khasis as well as the Nepalese. Every year, in October-November, the villagers capture the roosting birds, by sitting on a specially made *machan* erected on stands of bamboo. While many birds are eaten in the villages, some are taken to urban areas such as Shillong for sale.

The local Forest Department and The Rhino Foundation for Nature in North East India jointly undertook the first awareness drive. Subsequently, this practice of annual capture has been reduced drastically. Interestingly, no one in the villages, including school teachers and headmen, were aware of the name of the species or its long-distance migration (A. U. Choudhury *pers. comm.* 2003).

KEY CONTRIBUTORS

Anwaruddin Choudhury and Amol Sharma

KEY REFERENCES

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## INNERLINE, KATAKHAL AND BARAK RESERVE FORESTS



IBA Site Code	: IN-AS-20
State	: Assam
District	: Cachar and Hailakandi
Coordinates	: 24° 10' 51" N, 92° 30' 04" E
Ownership	: State
Area	: 130,000 ha
Altitude	: 50-600 m
Rainfall	: 2,400-3,500 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Wet Evergreen and Semi-evergreen forests

IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Not officially protected

## GENERAL DESCRIPTION

This site covers parts of Cachar and Hailakandi districts in southern Assam, bordering Mizoram and Manipur. The Innerline Reserve Forest (RF) is the largest RF in Assam, with an area of more than 110,000 ha. Katakhal and Barak RFs are contiguous with Innerline. The area is mainly composed of low hills that are the northern promontories of the Lushai or Mizo Hills. Small patches of plain area found between the hills are mostly under human habitation. Dhaleswari, Barak and Sonai are the main rivers. These reserve forests, along with some other adjacent reserve forests, were proposed as Dhaleswari Wildlife Sanctuary in the early 1980s. The area has a rich diversity of mammals and birds (Choudhury 1983). Part of Katakhal RF has been ornithologically surveyed as far back as the 19<sup>th</sup> century (Inglis 1896-1910).

The forests are mainly Tropical Wet Evergreen and Tropical Semi-evergreen. The two characteristic tree species of the area are *Dipterocarpus turbinatus* and *Palaquium polyanthum*. There are vast and continuous stretches of bamboo with cane and reeds. There are some small but excellent patches of tropical rain forest on the plains in the Innerline RF.

## AVIFAUNA

So far, about 250 species have been listed, including many endangered ones (A. U. Choudhury *pers. comm.* 2003). The White-winged Duck *Cairina scutulata* is still sporadically recorded, but there is no recent report of the Masked Finfoot *Heliopais personata*. There are specimens of this elusive bird in American Museums, collected from the northern edge of Innerline RF (BirdLife International 2001).

The Spot-billed Pelican *Pelecanus philippensis* was also recorded from the fringe of Katakhal RF, but there is no recent report. The Swamp Francolin *Francolinus gularis* has perhaps vanished from the area due to encroachment on its grassland habitat for cultivation, while the last confirmed record of the Green Peafowl *Pavo muticus* in Assam was from Barak RF (Choudhury 2000).

The site lies in Biome-9 (Indo-Chinese Tropical Moist Forest). Some of the major species of the biome that are seen here are Lesser Necklaced Laughingthrush *Garrulax monileger*, Black-gorgeted Laughingthrush *G. pectoralis*, and Rufous-necked Laughingthrush *G. ruficollis*.

During winter, many birds of other biomes such as Biome-7 (Sino-Himalayan Temperate Forest) and Biome-8 (Sino-Himalayan Subtropical Forest) move in. Notable forest birds are Grey-bellied Tesia *T. cyaniventer*, Blyth's Kingfisher *Alcedo hercules*, Blue-throated Barbet *Megalaima asiatica*, Bay Woodpecker *Blythipicus pyrrhotis*, Maroon Oriole *Oriolus trailii*, Black-naped Oriole *O. tenuirostris*, Grey Treepie *Dendrocitta formosae*, Black-winged Cuckoo Shrike *Coracina melaschistos*, Short-billed Minivet *Pericrocotus brevirostris*, White-throated Bulbul *Alophoixus flaveolus*, Black Bulbul *Hypsipetes leucocephalus* and Grey Peacock Pheasant *Polyplectron bicalcaratum*.

## Critically Endangered

Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

## Endangered

White-winged Duck	<i>Cairina scutulata</i>
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## Vulnerable

Spot-billed Pelican (no recent record)	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Swamp Francolin (no recent record)	<i>Francolinus gularis</i>
Green Peafowl (no recent record)	<i>Pavo muticus</i>
Masked Finfoot (no recent record)	<i>Heliopais personata</i>

## Near Threatened

Darter	<i>Anhinga melanogaster</i>
Blyth's Kingfisher	<i>Alcedo hercules</i>
Great Pied Hornbill	<i>Buceros bicornis</i>
Brown Hornbill	<i>Anorrhinus tickelli</i>

## OTHER KEY FAUNA

This IBA site has the highest primate diversity in Assam with eight species (Choudhury 1989). They are the Slow Loris *Nycticebus coucang*, Rhesus Macaque *Macaca mulatta*, Pig-tailed Macaque *M. nemestrina*, Stump-tailed Macaque *Macaca arctoides*, Assamese Macaque *M. assamensis*, Capped Langur *Trachypithecus pileatus*, Phayre's Leaf Monkey *T. phayrei* and Hoolock Gibbon *Hylobates hoolock*. Other fauna includes Elephant *Elephas maximus*, Sloth Bear *Melursus ursinus*, Malayan Sun Bear

*Helarctos malayanus*, Tiger *Panthera tigris*, Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa*, Sambar *Cervus unicolor*, Hog Deer *Axis porcinus*, Barking Deer *Muntiacus muntjak*, Serow *Nemorhaedus sumatraensis* and Gaur *Bos frontalis*. The Gangetic dolphin *Plantanista gangetica* occurs in Barak River and during monsoon in Dhaleswari and Katakhal rivers also. There are historic records of the Sumatran Rhinoceros *Dicerorhinus sumatrensis* and Wild Water Buffalo *Bubalus arnee* (= *bubalis*) (Choudhury 1997, 2001). Among reptiles, there were innumerable past records of the Gharial *Gavialis gangeticus*. Turtles recorded include the Keeled Box Turtle *Pyxidea mouhotii* and Eastern Hill or Asian Brown Tortoise *Manouria emys*. Both Indian Rock and Reticulated pythons (*Python molurus* and *P. reticulatus*) have been recorded here, besides the King Cobra *Ophiophagus hannah* and other snakes.

LAND USE

- q Forest
- q Agriculture
- q Jhum cultivation

THREATS AND CONSERVATION ISSUES

- q Encroachment
- q Deforestation
- q Unsustainable Bamboo harvesting

The site is under heavy biotic pressure, including encroachment, felling of trees, large-scale and unscientific harvesting of bamboo for paper mills. Poaching, often across the Mizoram border, is also a major issue.

This site has tropical rainforest, identified as Cachar Type by Champion and Seth (1968). This forms one of the largest surviving contiguous belts of reserved forests in the state (Choudhury 1993). This area has been strongly recommended as a national park (Choudhury 1989) or a sanctuary (Choudhury 1993). These forests are still unprotected despite being extremely rich in biological wealth. In 1983, a memorandum was submitted to the Government of Assam to declare it as a wildlife sanctuary, but not much has happened during the last 20 years. The proposed sanctuary or a national park would cover

Innerline RF (whole), Katakhal RF (whole), Barak RF (whole), Dohaila RF (part), Longai RF (part) and Tilbhum RF (part). In addition to the reserved forests, a small portion of unclassified state forest areas, north of Shingla RF and the adjoining areas of the Innerline RF should also be included. The estimated area of the reserve or a sanctuary would be about 167,000 ha, with provision for future expansion (Choudhury 1993). Since this plan was submitted, lot of encroachment has taken place in about 60,000 ha. In order to prevent further encroachment, it is absolutely essential that the remaining forest be legally protected soon.

KEY CONTRIBUTOR

Anwaruddin Choudhury

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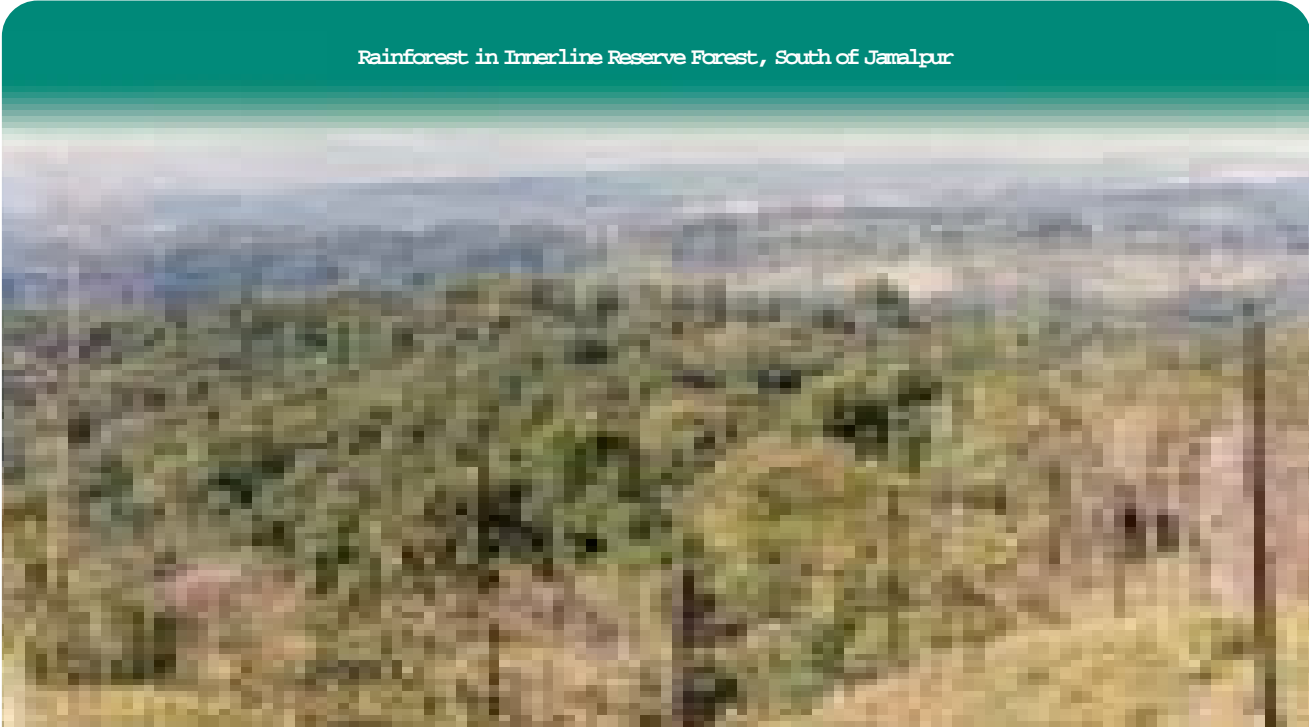


Photo: Anwaruddin Choudhury

## JAMJING AND SENGAJAN



IBA Site Code	: IN-AS-21
State	: Assam
District	: Dhemaji
Coordinates	: 27° 35' 17" N, 94° 54' 20" E
Ownership	: State
Area	: 9,500 ha
Altitude	: 90-100 m
Rainfall	: >2,000 mm
Temperature	: 7 °C to 31°C
Biogeographic Zone	: North-East
Habitats	: Wooded Grassland, Wetland, Salix Swamp

IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Not officially protected

## GENERAL DESCRIPTION

This large grassland-wetland complex in Dhemaji district in eastern Assam is located northwest of Dibru-Saikhowa National Park, on the north bank of the Brahmaputra River. The site comprises two reserve forests, Jamjing (8,000 ha) and Sengajan (1,200 ha). It is accessible from Jonai and Dhemaji towns. The main Jamjing *beel* (300 ha) is outside the Reserve Forest. This poorly known tract has a number of threatened bird species, such as the White-bellied Heron *Ardea insignis* and Spot-billed Pelican *Pelecanus philippensis* (Choudhury 1992, 2000). As in Dibru-Saikhowa National Park, *Salix* swamp forest is a feature of this IBA. Large parts of the area have been encroached upon for seasonal cultivation of paddy and mustard.

Tree growth is stunted due to prolonged flooding but in some parts *Salix* trees are the dominant vegetation. The margins of the wetland are usually covered with reeds such as *Arundo donax*.

## AVIFAUNA

More than 200 species of birds have been recorded in the area (A. U. Choudhury *pers. comm.* 2003). There were past records of the White-winged Duck *Cairina scutulata*.

Pallas's Fish-Eagle is a globally threatened species.



Photo: V.L. Tripathy / ENNS Library

## Critically Endangered

Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

## Endangered

White-bellied Heron	<i>Ardea insignis</i>
White-winged Duck (old records)	<i>Cairina scutulata</i>

## Vulnerable

Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucorhynchus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>

## Near Threatened

Darter	<i>Anhinga melanogaster</i>
Red-headed Vulture	<i>Sarcogyps calvus</i>

Swamp Francolin *Francolinus gularis*, Striated Babbler *Turdoides earlei* and Black-breasted Weaver *Ploceus bengalensis* are some of the species of the Indo-Gangetic Plain (Biome-12) in which this site falls. Many species from other biomes are also seen, such as Himalayan Griffon *Gyps himalayensis*, Grey-sided Bush Warbler *Cettia brunnifrons*, Bay Woodpecker *Blythipicus pyrrhotis*, Black-winged Cuckoo-shrike *Coracina melaschistos*, Redheaded Babbler *Stachyris ruficeps* and Rufous-necked Laughingthrush *Garrulax ruficollis*.

The site qualifies A1 (Threatened Species) criteria as it has two Critically Endangered species of vultures, two Endangered species (one with old records only) and four Vulnerable species. It also has two Near Threatened species. As no detailed work has been done on the bird life of this site, many more species of these categories are likely to occur here.

## OTHER KEY FAUNA

Not much is known about the flora and fauna of this area, but Asian Elephant *Elephas maximus*, Wild Buffalo *Bubalus arnee* (= *bubalis*), and Tiger *Panthera tigris* are known to occur occasionally. In the wetland, Fishing Cat *Prionailurus viverrinus*,

Jamjing wetlands are important for water birds. The fisherfolk in this remote area still use dugout canoes.

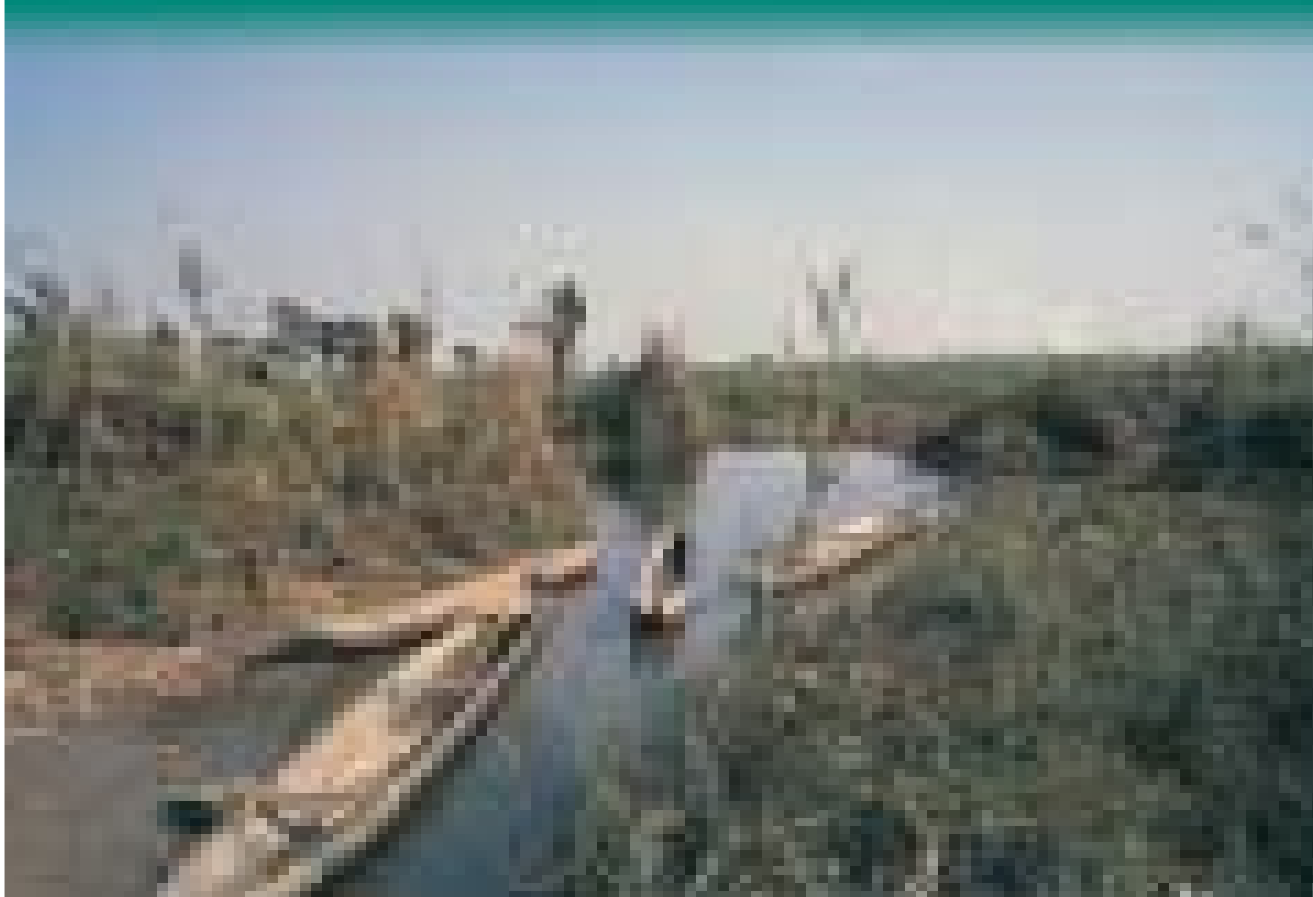


Photo: Anwaruddin Choudhury

and otters *Lutra lutra* and *Lutrogale perspicillata* are found. Chinese Pangolin *Manis pentadactyla* is also reported to be present, but difficult to see due to its nocturnal behaviour.

LAND USE

- q Agriculture
- q Fishing
- q Forest
- q Grazing

THREATS AND CONSERVATION ISSUES

- q Encroachment for seasonal cultivation
- q Reclamation of wetlands for agriculture
- q Excessive fishing
- q Siltation
- q Destruction of grasslands for paddy and mustard cultivation
- q Livestock grazing
- q Hunting, trapping and poisoning of birds

Encroachment for seasonal cultivation is a major issue that needs to be addressed. Poisoning of birds is also a serious concern. Poor accessibility, at least four hours trek from the highway, has made any law enforcement very difficult. Although Jamjing was proposed as a bird sanctuary, it was never considered seriously. Perhaps now, as it has been identified as on IBA, a part of it should be protected as a Sanctuary. Presence of exotic weeds such as *Eichhornia crassipes* (Water Hyacinth) in the aquatic bodies poses a threat to the indigenous species of plants and to the aquatic faunal diversity. This site needs better protection.

KEY CONTRIBUTORS

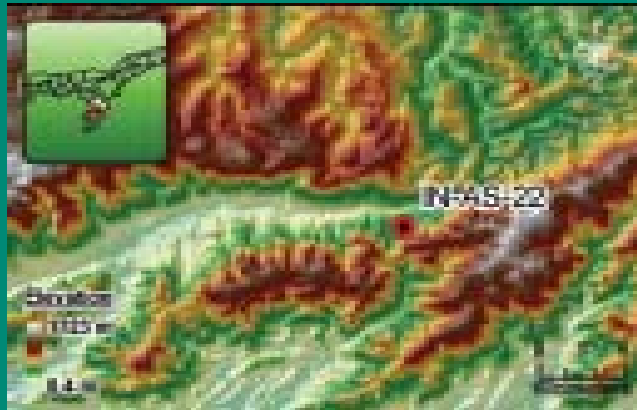
Anwaruddin Choudhury and Bikul Goswami

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## JATINGA



IBA Site Code	: IN-AS-22
State	: Assam
District	: North Cachar Hills
Coordinates	: 25° 06' 15" N, 92° 58' 20" E
Ownership	: Private
Area	: c. 1,000 ha
Altitude	: 500-1,000 m
Rainfall	: 2,000-6,000 mm
Temperature	: 3 °C to 30 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Evergreen Forest, Semi-evergreen Forest, <i>jhum</i> land and Orchards

**IBA CRITERIA:** A1 (Threatened Species), A4iv (the site is known or thought to exceed thresholds set for migratory species as bottleneck sites)

**PROTECTION STATUS:** Not officially protected

## GENERAL DESCRIPTION

Jatinga village is located 9 km southeast of Haflong, the district headquarters of North Cachar Hills in central Assam. Logically, it should have been a part of the Barail IBA, but it has been kept as a separate site because of the unique ornithological phenomenon for which the area is famous. Its conservation needs are specific and attention may be diluted if we clump it with the Barail IBA.

Jatinga is a big village located on a ridge that extends to the slopes of the main Barail Range. It is the second largest village in the district with a population of about 2,000. It was in 1905 that some villagers (*Jaintia* tribe) discovered that birds are attracted to light at night in certain weather conditions and began using this knowledge to kill the birds for food.

There is a very interesting story about how this phenomenon was discovered. It happened that a tiger killed a domestic water buffalo sometime in September 1905. The villagers went out in search of it with lighted torches on a dark and misty night. They could not trace the carcass but a rather unusual phenomenon followed. A large number of birds started coming towards them, some even settling on their bodies. The villagers thought that the birds were a gift from God to compensate the loss of the buffalo, and so killed the birds for food. Later on, they discovered that the visit of the birds was an annual phenomenon during certain months. The killing generally starts around mid-August and lasts until the end of October. Some of the essential preconditions for the phenomenon are dark moonless nights and presence of dense fog or cloud, particularly if there is a slight drizzle.

Southwesterly wind also helps in attracting the birds to torch light. At a time when all the above conditions are fulfilled, the villagers sit with petromax lamps and bamboo poles. The birds, attracted by the lights arrive singly or in small loose groups, and circle above the lights. Some species such as pittas land on the ground or house-tops while species like kingfishers perch in nearby trees or on telephone/electric wires. The 'hunters' then hit the birds with the poles. The birds that land on the ground are often caught with bare hands.

In the past, the haul of one night sometimes reached 500-600 birds with around 200 as the maximum per person. But now the peak collection by a single person in a day may be 50-60. About 4,000 birds were reportedly killed in 1997.

The following species are frequently killed: Tiger Bittern or Malayan Night Heron *Gorsachius melanolophus*, Black Bittern *Dupetor flavicollis*, Chestnut Bittern *Ixobrychus cinnamomeus*, Little Egret *Egretta garzetta*, Cattle Egret *Bubulcus ibis*, Pond Heron *Ardeola grayii*, Cotton Teal *Nettapus coromandelianus*, Lesser Whistling-Duck *Dendrocygna javanica*, Ruddy Kingfisher *Halcyon coromanda*, Oriental Dwarf Kingfisher *Ceyx erithacus*, Hill Partridge *Arborophila torqueola*, Kaleej Pheasant *Lophura leucomelanos* Yellow-legged Green Pigeon *Treron phoenicoptera*, Emerald Dove *Chalcophaps indica*, Spotted Dove *Streptopelia chinensis*, Lesser Necklaced Laughingthrush *Garrulax monileger*, Hooded Pitta *Pitta sordida*, Indian Pitta *P. brachyura*, White-breasted Waterhen *Amaurornis phoenicurus*, Kora or Watercock *Gallinix cinerea*, Koel *Eudynamis scolopacea*, Hawk-cuckoo *Hierococcyx* spp., Black Drongo *Dicrurus macrocercus*, Greater Racket-tailed Drongo *D. paradiseus* and Eurasian Woodcock *Scolopax rusticola*. The majority of the birds killed are usually immature, they are also resident or at the most locally migratory.

The interesting bird phenomenon of Jatinga came into the limelight in the 1960s (Gee 1964). Since then much publicity was given to the fallacy that 'migratory' birds commit mass suicide in Jatinga. Now, however, it has become quite clear that they are killed or captured. Of course, a few birds dash against buildings and are injured or even killed.

Panoramic view of Jatinga village from the main Barail Range



Photo: Anwaruddin Choudhury



To make the villagers aware of the importance of conservation, a birdwatching club was formed in 1982. The Forest Department of Assam has also built three birdwatching towers. One tower has floodlights for diverting the birds from the hunters' petromax lanterns. As most of the birds are common, not protected species, it may be difficult to stop the annual killing by legal action. Motivation and awareness of the villagers seem to be the most practical solution. Already, the villagers do not kill the birds on Sundays (most of the villagers are Christian). Killing on Saturdays is also being stopped as part of their growing awareness.

In this bird phenomenon, strong winds play a key role. 'Jatinga' is a Jemi Naga word meaning 'pathway of rain and water'. Near Jatinga, the high Barail Range deflects the southwesterly wind at places. Moreover, the ridge (also called the Jatinga Ridge) separating the Brahmaputra and the Barak basins slopes down and joins the main Barails, resulting in a funnel effect. The southwesterly wind blowing over the Jatinga Valley with the high walls of the Barails on both sides suddenly gets an opening at Jatinga, resulting in a channel of very high velocity wind. After crossing the 'funnel' at Jatinga Tinali (trijunction) (altitude c. 600 m), it reaches the bowl-shaped Dolong Valley. The floor of the valley is at about 500 m, bounded by a mountain wall of about 1,500 m (Kaukaha peak is 1,736 m) in the south, a dome-shaped hill (sometimes called the Lomromon Hill, highest point 730 m) towards east and the Jatinga Ridge (highest part c. 750 m) towards west, its only opening is towards the north. So, wind blowing between 600 and 700 m elevation is channeled through the Tinali (a stretch of about 500 m from the main bird watching tower to the old Forest Beat Office), but faces the barriers of the three walls. As a result, the entire valley and the Jatinga Ridge remains covered with thick fog, while the other nearby areas remain clear. In fact, from the western edge of the Khasi Hills to the mountains of the Indo-Myanmar border, a stretch of more than 350 km, Jatinga valley forms the only gap. Hence, many locally migrant birds use it as a flyway, while the gap also allows channeling of wind at a very high velocity. It is probable that many of the birds killed are on (local) passage migration between the north (northern North Cachar Hills and the Brahmaputra Valley) and the south (Barak Valley region) of the Barails.

There is little doubt that the birds in Jatinga are disturbed in their roosts by the very high velocity wind and thick cover of fog and mist, accompanied by drizzle. It is highly probable that the birds come towards the lights for refuge, as most of them go back to their roost with the improvement of weather (Choudhury 1996, 2000).

The vegetation of the area is Tropical Evergreen and Semi-evergreen type. Forests degraded by *jhum* cultivation are dominant in the immediate vicinity of the village. There are large orange orchards in the village and surrounding areas.

AVIFAUNA

Among the many bird species, the Vulnerable Beautiful Nuthatch *Sitta formosa* is frequently encountered in the adjacent slopes of the Barail Range. The White-winged Duck *Cairina scutulata* was recorded only once during the bird killings (Phukan 1987). The Green Cochoa *Cochoa viridis* and Purple Cochoa *Cochoa purpurea* are in the forests near Jatinga. White-cheeked Hill-Partridge *Arborophila atrogularis*, Grey Peacock Pheasant *Polyplecton*

*bicalcaratum*, and Black-gorgeted Laughingthrush *Garrulax pectoralis* are also found in the adjoining forests.

This is perhaps the only site in India that was selected on the basis of A4iv criteria (site known or thought to exceed thresholds set for migratory species at bottleneck sites). Although Jatinga does not truly fulfil the criteria as most of the species found are common and short distance migrants, the phenomenon is so unique that the site needs to be identified as an IBA.

Endangered	
White-winged Duck	<i>Cairina scutulata</i>
Vulnerable	
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Fea's Thrush	<i>Turdus feae</i>
Tawny-breasted Wren-Babbler	<i>Spelaornis longicaudatus</i>
Beautiful Nuthatch	<i>Sitta formosa</i>

OTHER KEY FAUNA

Jatinga is rich in other wildlife also. Notable species are: Slow Loris *Nycticebus coucang*, Assamese Macaque *Macaca assamensis*, Stump-tailed Macaque *M. arctoides*, Capped Langur *Trachypithecus pileatus*, Hoolock Gibbon *Hylobates hoolock*, Asiatic Black Bear *Ursus thibetanus*, Clouded Leopard *Neofelis nebulosa* and Serow *Nemorhaedus sumatraensis*.

LAND USE

- q Human habitation
- q Cash crop plantation and horticulture
- q Cultivation
- q Forest

THREATS AND CONSERVATION ISSUES

- q Killing of birds
- q Slash and burn shifting cultivation (*jhum*)
- q Timber smuggling

The annual mass killing of birds by the villagers is the main conservation issue. The forest department posts guards during the Jatinga phenomenon to prevent mass killing of birds. They place bright torches to deflect the birds from the 'killing fields'. Jatinga provides a good opportunity for an environmental awareness campaign against mass killing of birds. As the villagers are mostly educated and Jatinga has received a great deal of publicity, an environmental awareness programme would be easy to propagate.

KEY CONTRIBUTOR

Anwaruddin Choudhury

KEY REFERENCES

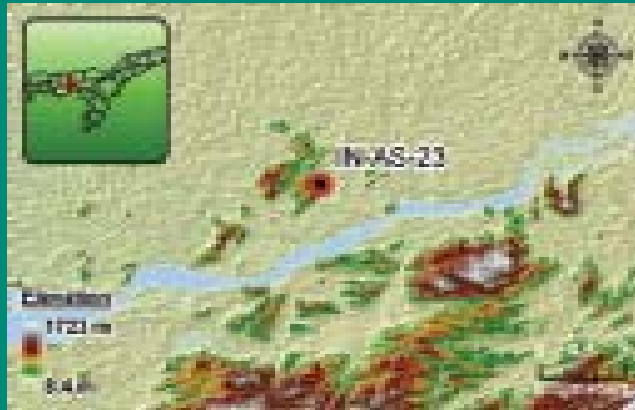
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## JENG DIA BEEL AND SATGAON



IBA Site Code	: IN-AS-23
State	: Assam
District	: Kamrup
Coordinates	: 26° 16' 00" N, 91° 46' 00" E
Ownership	: State and private
Area	: c. 500 ha
Altitude	: 45-50 m
Rainfall	: >2,000 mm
Temperature	: 7 °C to 36 °C
Biogeographic Zone	: North-East
Habitats	: Wetland (freshwater lakes and pools), human habitation

IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Not officially protected

## GENERAL DESCRIPTION

Jengdia or Jaingia Beel is located north of Guwahati city in Kamrup district. It is a freshwater lake with marshes on the fringe. The IBA lies in the floodplains of the Brahmaputra river. There are hillocks nearby covered with degraded mixed scrub and shrub vegetation. Satgaon village is known for the nesting of Greater and Lesser Adjutant *Leptoptilos dubius* and *L. javanicus*. The village is c. 25 km from Guwahati by road, otherwise it is just 5 km as the crow flies.

## AVIFAUNA

Jengdia Beel is known for migratory waterfowl, and Satgaon village for the nesting colonies of Greater and Lesser Adjutants. The Greater Adjutant, often seen in Guwahati city, breeds here (Hilloljyoti Singha *pers. comm.* 2002). According to A. U. Choudhury (*pers. comm.* 2003), during 1994-95, there were 17 nests of Lesser Adjutant and seven of Greater Adjutant. In the previous years, more nests of both species were there and now the number has decreased due to cutting of trees and killing of young, by Garo and Bodo tribes living nearby, for the pot. However, cutting of trees is the main problem as the villagers often resent killing of these birds.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Vulnerable	
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>

## OTHER KEY FAUNA

Not many large mammals survive in this area as it is densely inhabited. However, Leopard *Panthera pardus*, Jungle Cat *Felis chaus* and Golden Jackal *Canis aureus* are occasionally seen.

## LAND USE

- q Human habitation
- q Agriculture
- q Fishing

## THREATS AND CONSERVATION ISSUES

- q Agricultural intensification and expansion
- q Felling of nesting trees
- q Siltation
- q Excessive fishing

The destruction of nesting trees is the main issue. The Government of Assam at the behest of Shri. Pradyut Bordoloi, Minister of State for Environment & Forests has prepared an action plan, and implementation is being done with the help of other stakeholders (Choudhury 2003).

## KEY CONTRIBUTORS

Kulojyoti Lahkar, Anwaruddin Choudhury, Hilloljyoti Singha and Nur Hussain

## KEY REFERENCES

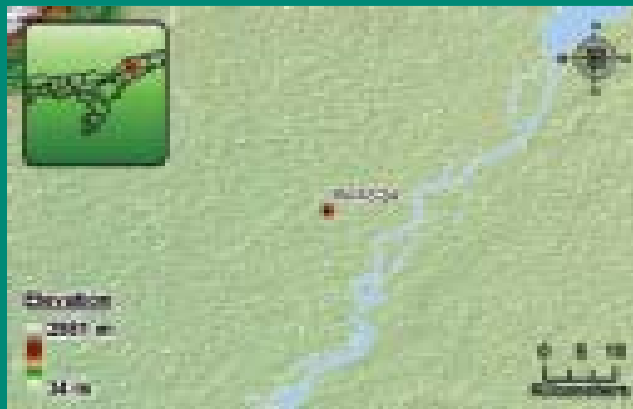
Choudhury, A. U. (2003). Conservation of the Greater Adjutant Stork in and around Guwahati city. Dept. of Environment & Forests, Government of Assam, Guwahati. Pp. 3.

Spot-billed Pelicans *Pelecanus philippensis* regularly seen in this IBA.



Photo: Peter Lobo

## JHANJIMUKH - KOKILAMUKH



IBA Site Code	: IN-AS-24
State	: Assam
District	: Jorhat
Coordinates	: 27° 13' 00" N, 94° 28' 00" E
Ownership	: State
Area	: 2,500 ha
Altitude	: 90 m
Rainfall	: 2,500 - 3,500 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Seasonal Marsh, Riverine Vegetation

**IBA CRITERIA:** A1 (Threatened Species), A4i (≥1% biogeographic population)  
**PROTECTION STATUS:** Not officially protected

## GENERAL DESCRIPTION

This site includes the riverine tracts of the Brahmaputra River near its confluence with one of its tributaries, the Jhanji. In addition, there are some lakes and marshes such as Digholi, Misamari, Kawoimari and Laujan, which harbour avifauna. Situated 30 km northeast of Jorhat, the district headquarters, this wetland complex is an important site for waterbirds. The terrain is flat, being part of the floodplains of the Brahmaputra. During monsoon, the major part of this area is completely inundated.

## AVIFAUNA

Although a full checklist is not available, information on many threatened species is available. This IBA is particularly noteworthy for the records of Baer's Pochard *Aythya baeri*, which has been listed as Vulnerable. It has been recorded in four *beels* within this site, Misamari, Digholi, Kawoimari and Laujan (Choudhury 2000).

A few thousand waterfowl, including ducks and geese, winter in the area. Seven more threatened species were recorded in the area.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Vulnerable	
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Baer's Pochard	<i>Aythya baeri</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Oriental White Ibis	<i>Threskiornis melanocephalus</i>
Ferruginous Pochard	<i>Aythya nyroca</i>
Black-bellied Tern	<i>Sterna acuticauda</i>

## OTHER KEY FAUNA

Gangetic Dolphin *Plantanista gangetica* inhabits the rivers and various turtles are also found.

## LAND USE

- ☐ Fishing
- ☐ Agriculture

## THREATS AND CONSERVATION ISSUES

- ☐ Aquaculture / Fishing
- ☐ Encroachment for agriculture
- ☐ Poisoning of birds

Reclamation of *beels*, heavy fishing and poaching of birds are the main issues. A 'bird festival' like the one organised in January 2003, could generate interest among local people.

Bird watching tours could play an important role in generating interest among people.



If properly protected, these wetland complex could attract thousands of waterbirds, fulfilling A4iii criterion.

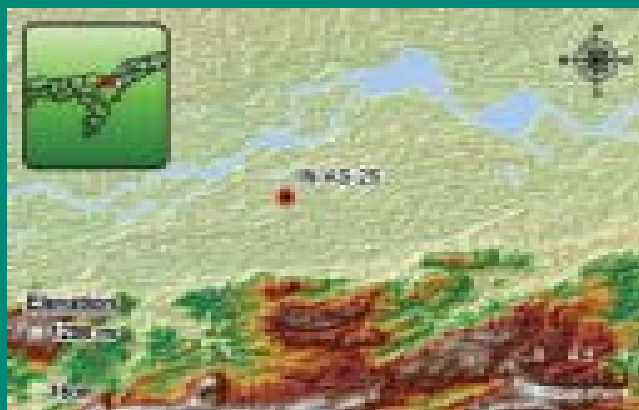
## KEY CONTRIBUTORS

Prashanta Kumar Saikia, Shanta Sharma, Anwaruddin Choudhury and Kulojyoti Lahkar

## REFERENCE

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## KAZIRANGA NATIONAL PARK



IBA Site Code	: IN-AS-25
State	: Assam
District	: Nagaon, Golaghat and Sonitpur
Coordinates	: 26° 39' 17" N, 93° 20' 51" E
Ownership	: State
Area	: 84,980 ha
Altitude	: 67 – 80 m
Rainfall	: > 2,000 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Grassland, Tropical Moist Deciduous, Tropical Semi-evergreen Forest

**IBA CRITERIA:** A1 (Threatened Species), A2 (Endemic Bird Area: Assam Plains), A4i (≥ 1% biogeographic population), A4iii (≥ 20,000 waterbirds)

**PROTECTION STATUS:** National Park, established in January 1974

## GENERAL DESCRIPTION

Kaziranga National Park (47,171 ha) is an internationally famed wilderness, mainly known for the Indian One-horned Rhinoceros *Rhinoceros unicornis*. However, Kaziranga has large populations of many others endangered species, notably the Tiger *Panthera tigris*, Wild Buffalo *Bubalus arnee* (= *bubalis*) (largest population in the world), Asian Elephant *Elephas maximus*, Swamp deer *Cervus duvaucelii* and many more. However, it is equally rich in avian diversity with more than 490 bird species. Situated in the floodplains of the Brahmaputra river, it covers parts of Nagaon, Golaghat and Sonitpur districts of central Assam. Panbari and Kukurakata Reserve Forests, small but important areas for many forest bird species, lie just outside the Park, but are included in the IBA. The Kaziranga authorities administer these reserve forests.

Kaziranga is a world heritage site, a part of the Kaziranga-Karbi Anglong Elephant Reserve and is a proposed Ramsar site.

The terrain of the Park is flat (67-80 m above msl), with an east to west and south to northwest incline. Being in the floodplain of the Brahmaputra River, the soil of the Park is mainly recent alluvium. Floods are an annual phenomenon, and 50-70 per cent of the total landmass gets submerged for many days. The floodwaters generally recede after 7-10 days. Areas along the base of the Karbi Anglong (a plateau) are at a higher elevation (80 msl) and form natural 'highlands' that do not get flooded. Soil erosion and the shifting course of the Brahmaputra induce constant change in the total area of the landmass.

Numerous small rivers and channels flow through the Park from east to west and some, which originate from the Karbi plateau in the south, run northwards and ultimately drain into the Brahmaputra river. Shallow oxbow lakes, locally known as 'beels' are the relics of older channels. There are many such beels inside the Park. Some beels have been silted up, producing swamps and marshes. Consequently, there has been an increase in areas of tall grass and a reduction in areas of short grass. The habitat of Kaziranga is such that waterbodies and grasslands form a significant part of the Park's area. Wetlands cover 7%, grasslands 57% (tall grass 52%; short grass/marshes 5%), sand 7%, and woodland 29% of the total area of the original Park (Kushwaha and Madhavan Unni 1996; Kushwaha 1997).

There are three main types of vegetation: alluvial inundated grassland, Tropical Wet Evergreen Forest and Tropical Semi-evergreen forest. Grasslands predominate in the west, with tall elephant grass on the higher ground and short grasses on the lower ground surrounding the beels. *Erianthus ravennae*, *Phragmites karka*, *Arundo donax*, *Imperata cylindrica* and *Saccharum* spp. are the main grass species. The herbaceous *Alpina allughas* grows abundantly all over the grassland, especially in the damp areas. Amidst the grasses are numerous forbs, and scattered trees of *Bombax ceiba*, *Dillenia indica*, *Careya arborea* and *Emblica officinalis*. Tropical Wet Evergreen Forests, near Kanchanjuri, Panbari, and Tamulipathar blocks, are dominated by trees such as *Aphanamixis polystachya*, *Talauma hodgsonii*, *Dillenia indica*, *Garcinia tinctoria*, *Ficus* sp., *Cinnamomum bejolghota* and *Syzygium* sp. Tropical Semi-evergreen Forests occur near Baguri, Bimali and Haldibari. *Barringtonia acutangula* grows in the waterlogged areas.

## AVIFAUNA

Kaziranga NP harbours more than 478 bird species (Barua and Sharma 1999) now increased to 490 (Choudhury 2003), including 24 globally threatened species. While it would not be possible to describe status and distribution of each threatened species, it is worth mentioning that Kaziranga is one of the outstanding IBAs, especially for birds of the tall, wet grasslands of the Assam Plains Endemic Bird Area and Biome-12 (Indo-Gangetic Plains).

Out of the 478 bird species listed by Barua and Sharma (1999), 197 are residents, 165 are migrants, 46 are local migrants, and the status of the remaining species is uncertain. Notable resident species with significant populations are: Spot-billed Pelican *Pelecanus philippensis*, Lesser Adjutant *Leptoptilos javanicus*, Swamp Francolin *Francolinus gularis*, Bengal Florican *Houbaropsis bengalensis*, Pallas's Fish-Eagle *Haliaeetus leucoryphus*, Greater Grey-headed Fish-Eagle *Ichthyophaga ichthyaeus*, White-bellied Heron *Ardea insignis*, Black-necked Stork *Ephippiorhynchus asiaticus*, Bristled Grass-Warbler *Chaetornis striatus*, Marsh Babbler *Pellorneum palustre*, Black-breasted Parrotbill *Paradoxornis flavirostris* and Finn's Weaver *Ploceus megarhynchus*.

Some of the uncommon residents are Oriental White-backed Vulture *Gyps bengalensis*, Slender-billed Vulture *G. tenuirostris*,



Red-headed Vulture *Sarcogyps calvus*, Black-bellied Tern *Sterna acuticauda*, Pied Falconet *Microhierax melanoleucos*, Greater Adjutant *Leptoptilos dubius*, Jerdon's Bushchat *Saxicola jerdoni*, Rufous-vented Prinia *Prinia burnesii*, Jerdon's Babbler *Chrysomma altirostre* and Slender-billed Babbler *Turdoides longirostris*. Some of the species, especially of the tall grasslands and thick shrubs may not be as rare as thought because finding them is rather difficult, especially on brief bird watching surveys. Possibly, the globally threatened Pale-capped Pigeon *Columba punicea* breeds in the Park, is considered as a summer visitor by Barua and Sharma (1999).

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
White-bellied Heron	<i>Ardea insignis</i>
Greater Adjutant	<i>Leptoptilos dubius</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>
Spotted Greenshank	<i>Tringa guttifer</i>
Vulnerable	
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Lesser White-fronted Goose	<i>Anser erythropus</i>
Marbled Teal	<i>Marmaronetta angustirostris</i>
Baer's Pochard	<i>Aythya baeri</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Eastern Imperial Eagle	<i>Aquila heliaca</i>
Lesser Kestrel	<i>Falco naumanni</i>
Swamp Francolin	<i>Francolinus gularis</i>
Indian Skimmer	<i>Rynchops albicollis</i>
Purple Wood-Pigeon	<i>Columba punicea</i>
Hodgson's Bushchat	<i>Saxicola insignis</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Jerdon's Babbler	<i>Chrysomma altirostre</i>
Slender-billed Babbler	<i>Turdoides longirostris</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>
Finn's Weaver	<i>Ploceus megarhynchus</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Oriental White Ibis	<i>Threskiornis melanocephalus</i>
Ferruginous Pochard	<i>Aythya nyroca</i>
White-tailed Sea-Eagle	<i>Haliaeetus albicilla</i>
Greater Grey-headed Fish-Eagle	<i>Ichthyophaga ichthyaetus</i>
Cinereous Vulture	<i>Aegypius monachus</i>
Red-headed Vulture	<i>Sarcogyps calvus</i>
White-cheeked Hill-Partridge	<i>Arborophila atrogularis</i>
Black-bellied Tern	<i>Sterna acuticauda</i>
Blyth's Kingfisher	<i>Alcedo hercules</i>
Great Pied Hornbill	<i>Buceros bicornis</i>
Long-tailed Prinia	<i>Prinia burnesii</i>
Rufous-rumped Grass-Warbler	<i>Graminicola bengalensis</i>
Endemic Bird Area 131: Assam Plains	
Marsh Babbler	<i>Pellorneum palustre</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>

After Manas and Orang, Kaziranga has the largest and most secure population (about 30 individuals) of the highly Endangered Bengal florican *Houbaropsis bengalensis* in Assam (Narayan *et al.* 1989). A. U. Choudhury (*pers. comm.* 2002) did not notice any decline during his surveys in 1995-96.

Kaziranga is also famous for its nesting colonies of the Spot-billed Pelicans and Adjutants. Almost all the species of tall, wet grasslands of the Brahmaputra floodplains are found here. Thus, Kaziranga is one of the most important bird areas of India.

This fabulous IBA also has 14 Near Threatened species, some of them with significant wintering or breeding populations in the Park.

According to the classification by BirdLife International (undated), this IBA lies in Biome-12 (Indo-Gangetic Plains). Thirteen species are listed in this biome, out of which twelve are found here. Bird species of at least six other biomes are also seen, generally in winter. For instance, Himalayan Griffon *Gyps himalayensis*, Brown-headed Gull *Larus brunnicephalus*, Grey-backed Shrike *Lanius tephronotus* found in Biome-5 (Eurasian High Montane) occur in Kaziranga in winter. Similarly, Slaty-backed Flycatcher *Ficedula hodgsonii*, Slaty Blue Flycatcher *F. tricolor*, Ferruginous Flycatcher *Muscicapa ferruginea*, Himalayan Rubythroat *Luscinia pectoralis*, Chestnut-headed Tesia *Tesia castaneocoronata*, Grey-bellied Tesia *T. cyaniventer*, Grey-sided Bush Warbler *Cettia brunnifrons*, Chestnut-crowned Bush Warbler *C. major* belonging to Biome-7 (Sino-Himalayan Temperate Forests) winters in this site.

Kaziranga is also famous for its large populations of waterbirds, especially Bar-headed Goose *Anser indicus*. In total, more than 20,000 waterbirds are found in the *beels* and riverine tracts that fall in the national park area. Therefore, this site also qualifies in A4iii criteria. Between 2-3 thousand Bar-head Geese are found in Kaziranga. According to Wetlands International (2002), the total population of this goose is between 52,000 to 60,000, and 1% population threshold is 560. At least 4-5% of the global population of Bar-headed Goose winters at this site, thus qualifying A4i criteria also.

#### OTHER KEY FAUNA

Kaziranga is famous for its large mammals such as Indian One-horned Rhinoceros, Asian Elephant, Wild Buffalo, Swamp Deer, Gaur *Bos frontalis*, Sambar *Cervus unicolor* and Tiger *Panthera tigris*. Other fauna in the Park include 15 species of threatened mammals. In addition to the mammals already mentioned, there are the Slow Loris *Nycticebus coucang*, Capped Langur *Trachypithecus pileatus*, Rhesus Macaque *Macaca mulatta*, Hoolock Gibbon *Hylobates hoolock*, Sloth Bear *Melursus ursinus*, Otters (*Lutra lutra* and *L. perspicillata*), Gangetic Dolphin *Plantanista gangetica*, Barking Deer *Muntiacus muntjak* and Malayan Giant Squirrel *Ratufa bicolor*.

#### LAND USE

- ☐ Nature conservation
- ☐ Tourism/recreation
- ☐ Forestry

#### THREATS AND CONSERVATION ISSUES

- ☐ Erosion
- ☐ Poaching
- ☐ Grazing
- ☐ Illegal fishing
- ☐ Encroachment
- ☐ Increasing vehicular traffic along the highway
- ☐ Periodic high flood

Kaziranga, a World Heritage Site is an outstanding IBA. So far 24 threatened birds have been recorded. Kaziranga is also known world over as having the largest population of the Indian Rhinoceros *Rhinoceros unicornis*.



Photo: Anwaruddin Choudhury

Kaziranga is among the best protected parks in Asia. However, issues such as increased vehicular traffic along the highway (accidental killing of animals is a regular phenomenon), periodic high flood, possible alignment of east-west highway (that will widen the existing highway, virtually doubling it), pollution from the tea gardens, threat from accidents in Numaligarh refinery, invasion by *Mimosa* weed, and rhino poaching are matters of great concern. Threat from the proposed railway has been averted for the time being due to protest by people (Choudhury 1987), but concerned persons should be alert to avoid the revival of this plan. Poaching of the rhino for its horn is the biggest threat and efforts to prevent it take up most of the time of the management. Thanks to effective patrolling, poaching is under control, and rhino numbers in Kaziranga indicate a healthy population.

There is a need to set up a system of long-term monitoring of animals and habitat. At present, all management practices are tuned towards rhino and larger mammals, with no attention given to species such as the Bengal Florican. The impact of annual controlled burning on the habitat of the Bengal Florican and other grassland birds needs to be assessed.

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## KUARBARI DALANI



IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Not officially protected

## GENERAL DESCRIPTION

Kuarbari or Koabari is a small marshy area near Dhakuakhana township in Lakhimpur district, eastern Assam. Surrounded by villages with cultivation, this site attracts a large number of waterfowl including Spot-billed Pelican *Pelecanus philippensis*, Greater *Leptoptilos dubius* and Lesser *L. javanicus* Adjutants and Asian Openbill *Anastomus oscitans* (Choudhury 2000). The villagers in the area are highly motivated to protect the area and there is virtually no hunting, although poisoning was regular in the past. *Dalani* means swamp. Dal is a kind of aquatic grass. This wetland IBA has the usual short grasses on the fringe. Bamboos and tall trees are found in the surrounding villages.

## AVIFAUNA

Detailed study on this site has been conducted since 1989. Due to the protection by villagers, quite a large number of waterfowl are found here, although the site still does not qualify in A4iii criteria ( $\geq 20,000$  waterbirds). This site has been selected purely on the basis of regular and significant numbers of the adjutant storks found here. Critically Endangered Oriental White-backed Vultures *Gyps benghalensis* and Slender-billed vultures *G. tenuirostris* are also seen, but they are widespread, move around a lot and are found in numerous other areas.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps benghalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Vulnerable	
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>

## OTHER KEY FAUNA

As the wetland is surrounded by human habitation, not many wild mammals are found in the site.

## LAND USE

- q Agriculture
- q Fishing

## THREATS AND CONSERVATION ISSUES

- q Agriculture
- q Fishing
- q Grazing by livestock
- q Poisoning of birds

Although the villagers are highly motivated towards conservation, there is always a threat from poachers who poison birds. This can be stopped by extensive conservation education and enforcement of the Wildlife Protection Act. However, siltation and cultivation, and not occasional poaching, are going to be the major issues for the survival of this site. A local NGO, the Megamix Nature Club, has been trying to create awareness among the villagers. This site could be declared as Community Conservation Area, under the amended Wildlife (Protection) Act, 2003.

## KEY CONTRIBUTORS

Bikul Goswami, Anwaruddin Choudhury and Megamix

## KEY REFERENCES

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Traditional community fishing in Kuarbari Dalani near Dhakuakhana. Such fishing is being replaced at places with dangerous methods such as use of mosquito net (even fry cannot escape), and poison.



Photo: Anwaruddin Choudhury

## LANGTING-MUPA RESERVE FOREST



IBA Site Code	: IN-AS-27
State	: Assam
District	: North Cachar Hills
Coordinates	: 25° 34' 30" N, 93° 08' 30" E
Ownership	: State and Autonomous Council
Area	: 49,300 ha
Altitude	: 150 - 500 m
Rainfall	: 800 - 1,500 mm
Temperature	: 6 °C to 32 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Moist deciduous, Tropical Semi-evergreen Forests

IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Not officially protected

## GENERAL DESCRIPTION

Langting-Mupa is a large forested area in the northern part of North Cachar Hills district in central Assam. The topography of the area varies from undulating plains to low hills, which are part of an Archaean plateau. Judging from topographical and floral criteria, it may be placed in the Eastern Himalayas Endemic Bird Area (Stattersfield *et al.* 1998). The Diyang, Lungding and Langting are the main rivers. The average elevation of the larger part of this IBA is 150-200 m above msl.

Most of the smaller *nullahs* become dry during winter as the area is in a low rainfall zone (rain shadow area).

The forest type is Tropical Moist Deciduous with Tropical Semi-evergreen along the *nullahs*. Abandoned *jhums* (slash-and-burn shifting cultivations) are covered with various grasses.

The site has some linkage with three other IBAs, Dhansiri, Lumding-Marat Longri and Barail Range. It is also a part of the Dhansiri-Lungding Elephant Reserve that was notified in 2003.

## AVIFAUNA

A rich and diverse bird life exists in the area. More than 180 species have been recorded, while there may be more than 250 altogether (A. U. Choudhury *pers. comm.* 2003). The globally threatened Green Peafowl *Pavo muticus*, which used to occur in North Cachar Hills (Ali and Ripley 1987), is now locally extinct. In North Cachar Hills, Langting-Mupa Reserve was the key area for this species. The White-winged Duck *Cairina scutulata* has been reported from the pools in the north and southeast parts of the reserve. There was a record from Dihangi area, southwest of this IBA (Green 1992).

Four species of hornbills - Oriental Pied *Anthracoceros albirostris*, Wreathed *Aceros undulatus*, Great Pied *Buceros bicornis* and the Brown Hornbill *Anorrhinus tickelli* - occur here. The last two species are considered Near Threatened by BirdLife International (2001). The Rufous-necked Hornbill *Aceros nipalensis* has been recorded sporadically from the southeastern corner, just north of Barail Range (Choudhury 2000).

Galliformes such as the Red Junglefowl *Gallus gallus* and Kaleej Pheasant *Lophura leucomelana* are abundant in Langting-Mupa, while the Grey Peacock Pheasant *Polyplectron bicalcaratum* and Mountain Bamboo-Partridge *Bambusicola fytchii* are also common.

In winter, the abundance of birds increases to a great extent with the arrival of altitudinal migrants. The list is too long to mention here. As the forest is still intact in many areas, the bird life is very rich.

Endangered	
White-winged Duck	<i>Cairina scutulata</i>
Vulnerable	
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Near Threatened	
Great Pied Hornbill	<i>Buceros bicornis</i>
Brown Hornbill	<i>Anorrhinus tickelli</i>

## OTHER KEY FAUNA

The region is exceptionally rich in mammals, with seven species of primates including the Hoolock gibbon *Hylobates hoolock*, possibly three species of bear including the Sun Bear *Ursus malayanus*, and the Asian Elephant *Elephas maximus* and Tiger *Panthera tigris* (A. U. Choudhury *pers. comm.* 2003). The Gaur *Bos frontalis* in this IBA had among the most majestic heads in the country (Stracey 1963). This IBA is also known for its rich turtle fauna (Bhupathy and Choudhury 1992) and a wetland known as Turtle Lake.

## LAND USE

- Forestry
- Agriculture

## THREATS AND CONSERVATION ISSUES

- Illegal felling of trees
- Encroachment
- Poaching
- Insurgency

Felling of trees and encroachment are the two major issues in this IBA, apart from poaching. In recent years, insurgency has become common in the area.

## KEY CONTRIBUTOR

Anwaruddin Choudhury

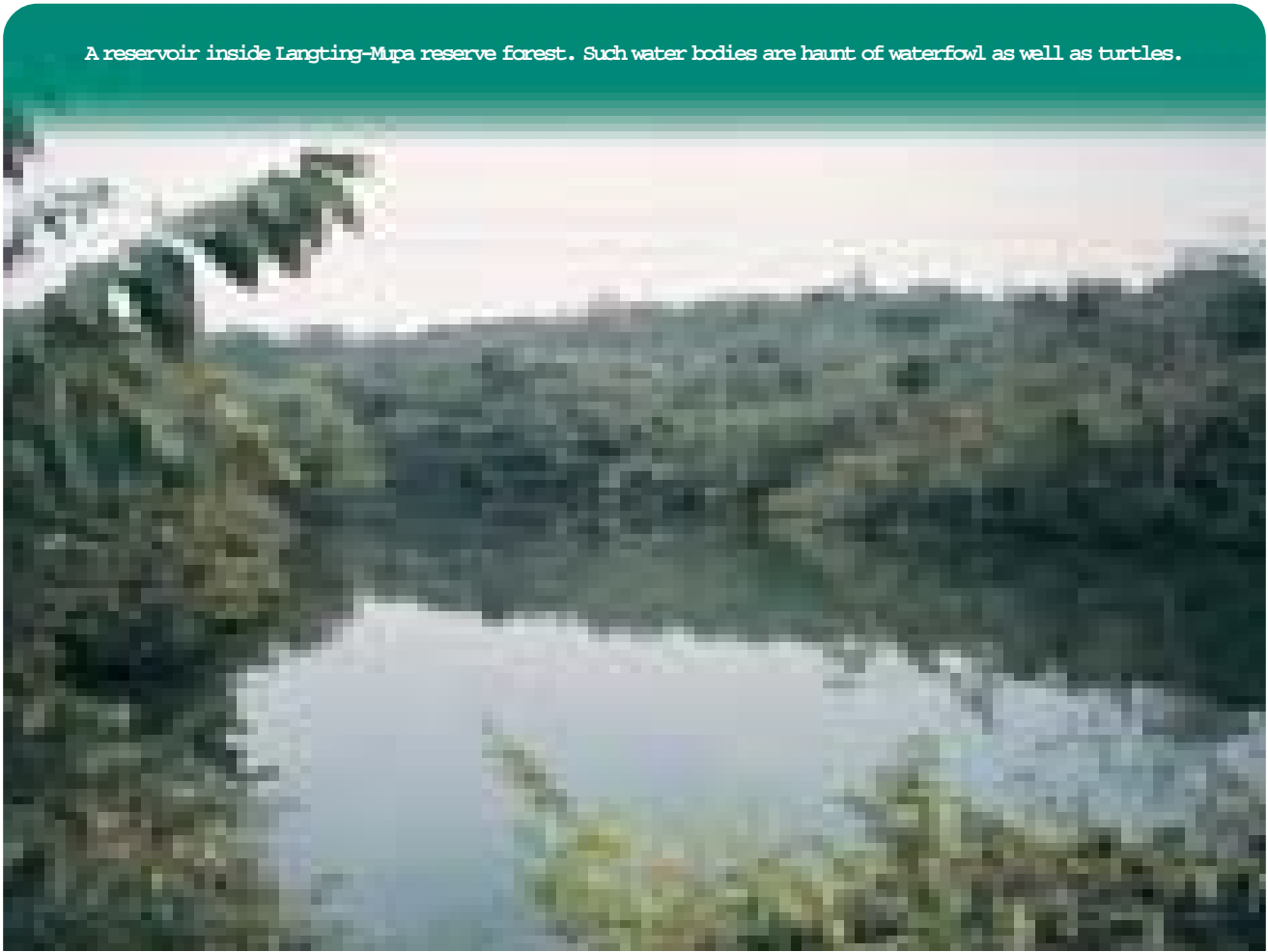


Photo: Anwaruddin Choudhury

AS-27

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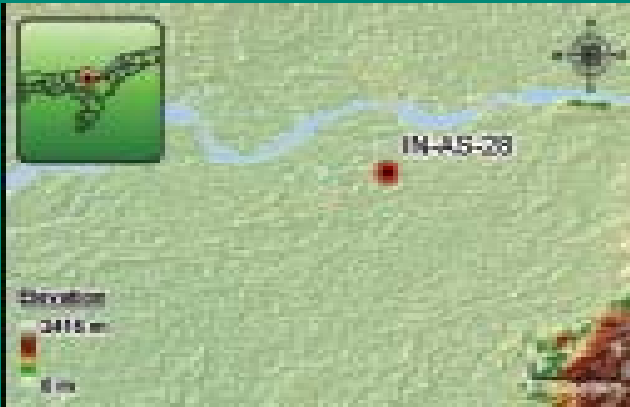
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## LAOKHOWA AND BURHACHAPORI SANCTUARIES



IBA Site Code	: IN-AS-28
State	: Assam
District	: Nagaon and Sonitpur
Coordinates	: 26° 32' 54" N, 92° 46' 16" E
Ownership	: State
Area	: 11,417 ha
Altitude	: 60-70 m
Rainfall	: 2,000-2,500 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Moist Deciduous Forest, Tropical Grassland, Freshwater Swamp, Tropical Secondary Scrub

**IBA CRITERIA:** A1 (Threatened Species), A2 (Endemic Bird Area 131: Assam Plains)

**PROTECTION STATUS:** Wildlife Sanctuaries: Laokhowa established in 1979; Burhachapori established in 1995

## GENERAL DESCRIPTION

Laokhowa Wildlife Sanctuary (7,011 ha) is located in Nagaon district in central Assam. It was declared as a game reserve way back in 1907 because of its population of Indian One-horned Rhinoceros *Rhinoceros unicornis*. Burhachapori Wildlife Sanctuary (4,406 ha) is contiguous with Laokhowa, and is located on the south bank of the Brahmaputra west of the Kolia Bhomara Bridge near Tezpur. This Sanctuary, however, is in Sonitpur district. During summer, Burhachapori virtually becomes an island. Both Laokhowa and Burhachapori are on the floodplains of the Brahmaputra river.

In Burhachapori, about 20% is forest, 65% grasslands and the rest waterbodies and scrub forest. Laokhowa is similar to Kaziranga in terrain and situated further downstream on the southern bank of the Brahmaputra. Roughly 35% of Laokhowa is grassland, 30% waterbodies and the remaining area under natural forest or plantations of *Bombax ceiba*, *Dalbergia sissoo* and *Albizia procera*. Marasuti, a tributary of the Brahmaputra flows along the northwestern part of the Sanctuary (Bhagabati and Lahkar 1998, Choudhury 1998).

The natural vegetation is mainly forest interspersed with tall trees, grasslands and wetland vegetation. The forests are primarily of Tropical Moist Deciduous, with patches of Semi-evergreen types. The understorey is found to vary from one forest patch to another, depending upon the character of the dominant trees. In some patches, it is dominated by Pteridophytes, and in others by species of *Eupatorium*, *Mikania* and *Ageratum*. Climbers and herbs like *Hydrocotyle* and *Colocasia* are present. Some epiphytic ferns, namely *Asplenium* and *Pyrrosia* can be seen. The dominant trees include *Albizia procera*, *Acacia catechu*, *Barringtonia acutangula*, *Dalbergia sissoo* and *Bombax ceiba*. Grasses grow in the relatively dry areas (Bhagabati and Lahkar 1998).

## AVIFAUNA

About 200 bird species have been recorded in the site (Lahkar 2003). Rahmani *et al.* (1990) during their surveys in late 1980s did not find any Bengal Florican in Laokhowa and Burhachapori areas due to disturbance at that time. However, subsequently, Talukdar (1995), Goswami *et al.* (1999) and Choudhury (2002) found that florican sighting has become frequent, due to improvement of the habitat. In 1998, an injured male florican was

rescued by the Forest Department. If the grasslands are properly protected, this IBA could become a major habitat for this highly endangered species. This IBA site is also important for about 16 threatened and Near Threatened species.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>
Spotted Greenshank (?)	<i>Tringa guttifer</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Baer's Pochard	<i>Aythya baeri</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Marsh Babbler (?)	<i>Pellorneum palustre</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Ferruginous Pochard	<i>Aythya nyroca</i>
Greater Grey-headed Fish-Eagle	<i>Ichthyophaga ichthyaetus</i>
Black-bellied Tern	<i>Sterna acuticauda</i>
Endemic Bird Area 131: Assam Plains	
Marsh Babbler (?)	<i>Pellorneum palustre</i>

## OTHER KEY FAUNA

The Laokhowa-Burhachapori IBA continues to be one of the important habitats of Indian One-horned Rhinoceros, a globally endangered animal. Laokhowa had about 60 rhinos before they were killed in the 1970s and finally exterminated during political upheaval in the 1980s. Even now, rhinos appear occasionally after the rains, but they become victims of poachers. Nevertheless, the situation can be improved with strict management, and rhinos can

be reintroduced as the habitat is still suitable. Elephants *Elephas maximus* are still found, resulting in human-animal conflict, as a very large number of villages surround the forests and grasslands. Wild Water Buffalo *Bubalus arnee* (= *bubalis*) is also seen, but they suffer from interbreeding with domestic buffalo. Tiger *Panthera tigris*, Hog Deer *Axis porcinus*, Wild Boar *Sus scrofa*, Porcupine *Hystrix brachyura*, Large Indian Civet *Viverra zibetha*, Indian Grey Mongoose *Herpestes edwardsii*, Jungle Cat *Felis chaus*, Common Otter *Lutra lutra*, Clawless Otter *Amblonyx cinereus* and Golden Jackal *Canis aureus* are some other mammals of this IBA (Bhagabati and Lahkar 1998, Choudhury 1998).

#### LAND USE

- q Nature conservation
- q Forestry
- q Fishing
- q Agriculture (in forest villages)

#### THREATS AND CONSERVATION ISSUES

- q Livestock grazing
- q Illegal fishing
- q Firewood collection and felling of trees
- q Thatch grass collection
- q Disturbance to birds
- q Encroachment
- q Siltation of wetlands

There are eight forest villages, seven inside the Sanctuary, one just at the boundary, and several tribal settlements. In all, 10-15 thousand people belonging to *Bodo* and *Lalung* tribes stay inside the Sanctuary. Moreover, immigrants from erstwhile Eastern Bengal have settled all around the Sanctuary.

Although Laokhowa was declared as a wildlife sanctuary in 1979, it was brought under the administration of the wildlife division only in June, 1987. Commercial fishing and grass cutting rights have been suspended, but the Sanctuary still provides fish, thatch grass, fodder and fuel to at least 15,000 people, most of them from the eight tribal villages within the Sanctuary. Additionally, hundreds of people and thousands of cattle from the villages, and buffaloes from *Khutis* (buffalo camps) still use it everyday (Rahmani *et al.* 1990).

This site has great potential to become an excellent habitat for the fauna of Brahmaputra floodplain grasslands, much like the famous Kaziranga National Park (IBA). The only step required is to follow the Wildlife Protection Act, under which these two sanctuaries were declared. There is an urgent needs to clear all encroachments and stop illegal activities.

#### KEY CONTRIBUTORS

Kulojyoti Lahkar, Anwaruddin Choudhury, Asad R. Rahmani, Goutam Narayan, Abani Kr. Bhagavati and Shimanta Kumar Goswami

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Heavy grazing has destroyed the tall savanna grassland in many parts of Laokhowa sanctuary.



Photo: Anwaruddin Choudhury



## LUMDING - MARAT LONGRI



IBA Site Code	: IN-AS-29
State	: Assam
District	: Nagaon and Karbi Anglong
Coordinates	: 25° 47' 58" N, 93° 01' 27" E
Ownership	: State
Area	: 67,400 ha
Altitude	: 100 – 500 m
Rainfall	: <800 – 1,500 mm.
Temperature	: 7 °C to 34 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Moist Deciduous Forest and Tropical Semi-evergreen Forest

**IBA CRITERIA:** A1 (Threatened Species)

**PROTECTION STATUS:** Marat Longri Wildlife Sanctuary, established in 2003

### GENERAL DESCRIPTION

This site includes Marat Longri Wildlife Sanctuary (45,100 ha) in Karbi Anglong district and Lumding Reserve Forest (22,300 ha) in Nagaon district covering parts of central Assam. A part of this area, along with Dhansiri Reserve Forest, was proposed for a tiger reserve (Choudhury 1998). It is already a part of Dhansiri-Lungding Elephant Reserve that was notified in 2003. Marat Longri WLS includes four reserve forests: Disama, Kaki (Karbi Anglong part), Inglongkiri and Miyungdisa.

The area consists of plains and undulating country to low hills, which are part of the Karbi plateau and plains of the Kopili and Diyung rivers. Other important rivers are Jamuna and Lungding. The Jamuna river marks the northern boundary of Marat Longri WLS. While these rivers are perennial, most of the smaller streams become dry during winter.

The area has a tropical monsoon type climate: summers hot and wet, winters cool and dry. The area is in a relatively low rainfall zone (rain-shadow area) of northeast India.

The forest type is tropical Moist Deciduous and Tropical Semi-evergreen. Abandoned *jhums* (slash-and-burn shifting cultivation of hill tribes) are covered with various grasses such as *Themeda villosa*, *Saccharum procerum*, *Imperata cylindrica*, *Eupatorium odoratum*, and shrubs. Plantations of the Forest Department are mostly of Teak *Tectona grandis*, *Gmelina arborea* and *Albizia procera*.

### AVIFAUNA

About 240 species have been recorded during short visits but there could be 300 to 350 species (A. U. Choudhury *pers. comm.* 2003). The White-winged Duck *Cairina scutulata* has been recorded in Marat Longri WLS (Choudhury 1993) and Lumding RF. There are past records from near Kaki RF (Nagaon district). The Green Peafowl *Pavo muticus* used to frequent the riverbanks, but is not seen any more. Among the hornbills, Oriental Pied *Anthraceros albirostris*, Great Pied *Buceros bicornis* and Wreathed *Aceros undulatus* are commonly seen. Other birds of interest are the White-cheeked Hill Partridge *Arborophila atrogularis*, Grey Peacock Pheasant *Polyplectron bicalcaratum*, Black-backed Forktail *Enicurus immaculatus*, Himalayan Golden-backed Woodpecker *Dinopium shorii*, Necklaced Laughingthrush *Garrulax*

*moniligerus*, Black-gorgeted Laughingthrush *G. pectoralis*, Rufous-necked Laughingthrush *G. ruficollis* and Sultan Tit *Melanochlora sultanea*. These species are included in Biome-9 (Indo-Chinese Tropical Moist Forest).

Many species of other biomes are also seen. Notable amongst them are: Common Hill Partridge *Arborophila torqueola*, Bamboo Partridge *Bambusicola fytchii*, Pied Falconet *Microhierax melanoleucos*, Grey-headed Parakeet *Psittacula finschii*, Asian Emerald Cuckoo *Chrysococcyx maculatus*, Bay Woodpecker *Blythipicus pyrrhotis*, Maroon Oriole *Oriolus traillii*, Black-naped Oriole *O. tenuirostris*, Grey Treepie *Dendrocitta formosae*, Black-winged Cuckoo-shrike *Coracina melaschistos*, White-throated Bulbul *Alophoixus flaveolus*, Grey-winged Blackbird *Turdus bouboul* and Red-headed Babbler *Stachyris ruficeps*.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
White-winged Duck	<i>Cairina scutulata</i>
Vulnerable	
Lesser Adjutant (occasional)	<i>Leptoptilos javanicus</i>
Green Peafowl (old records)	<i>Pavo muticus</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
White-cheeked Hill-Partridge	<i>Arborophila atrogularis</i>
Great Pied Hornbill	<i>Buceros bicornis</i>

### OTHER KEY FAUNA

Like all other forest areas of northeast, Lumding-Marat Longri is also rich in animal life. Choudhury (1996) has reported seven species of primates: Hoolock Gibbon *Hylobates hoolock*, Capped Langur *Trachypithecus pileatus*, Rhesus Macaque *Macaca mulatta*, Pig-tailed Macaque *M. nemestrina*, Assamese Macaque *M. assamensis*, Stump-tailed Macaque *M. arctoides* and Slow Loris *Nycticebus coucang*.

This IBA site is an important habitat for the Asian Elephant *Elephas maximus* and the area is notified as an Elephant Reserve under Project Elephant. It also harbours two large cats, Tiger *Panthera tigris* and Leopard *P. pardus*, one medium sized cat Clouded leopard *Neofelis nebulosa*, and two small cats, Leopard Cat *Prionailurus bengalensis* and Jungle Cat *Felis chaus*, apart from Wild dog *Cuon alpinus* and Asiatic Black Bear *Ursus thibetanus*. Herbivores are Gaur *Bos frontalis*, Serow *Nemorhaedus sumatraensis*, Sambar *Cervus unicolor*, Barking Deer *Muntiacus muntjak*, and Malayan Giant Squirrel *Ratufa bicolor*. In the dense parts of the forest, Binturong *Arctitis binturong* is found, but due to its nocturnal nature, it is rarely seen.

Not much is known of the reptilian and amphibian fauna of this site. Choudhury (1993) has recorded Keeled Box Turtle *Pyxidea mouhotii* and many common reptiles of Assam forests.

LAND USE

- q Forestry
- q Jhum cultivation

THREATS AND CONSERVATION ISSUES

- q Encroachment
- q Poaching
- q Illegal felling of trees
- q Insurgency
- q Jhum cultivation

Encroachment in the forest was negligible till mid 1980s. Subsequently, it has taken place in Lumding RF, as well as part of

Marat Longri, but large tracts are still free from human disturbance. Although poaching is not a major threat as yet, deer, primates, porcupines, large birds and monitor lizards are sometimes killed for food by local people.

Illegal felling of trees and insurgency are two major social and conservation issues, needing urgent attention if this area is to be saved. One of the ways to tackle these problems is regulated and culturally sensitive ecotourism. This IBA has great tourism potential because of its easy accessibility. A national highway passes through the northern boundary of Marat Longri WLS while the southern boundary is largely contiguous with the Diphu-Lumding main road. The Nagaon-Lumding road (recently upgraded to a national highway) passes through the middle of Lumding RF. Silbheta Falls is a popular picnic spot on the Jamuna River in Marat Longri WLS. Lumding is an important railhead of the North East Frontier Railway. Therefore, logistically, this site is well connected.

KEY CONTRIBUTOR

Anwaruddin Choudhury

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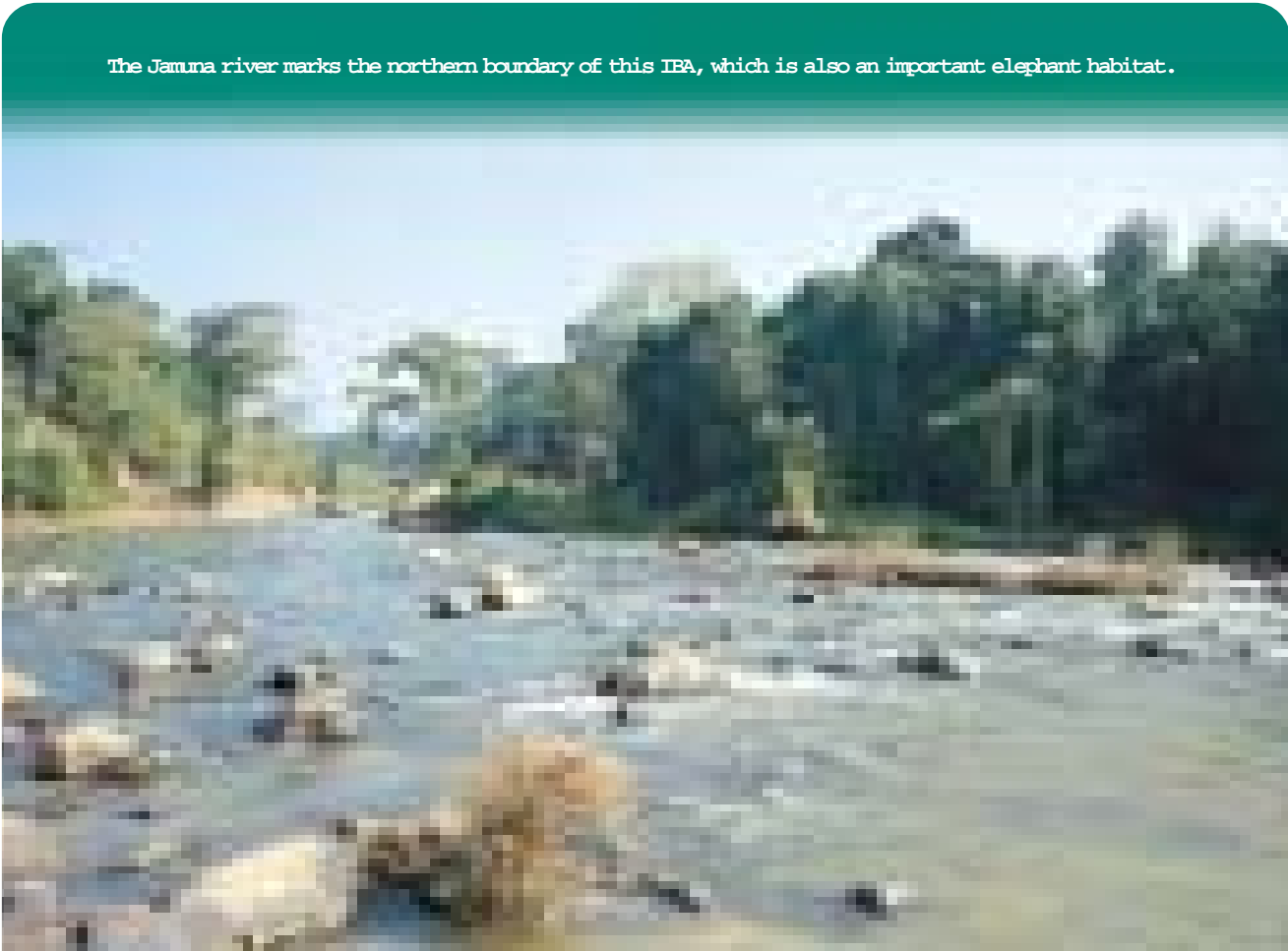


Photo: Anwaruddin Choudhury

## MAJULI



IBA Site Code	: IN-AS-30
State	: Assam
District	: Jorhat
Coordinates	: 26° 53' 39" N, 94° 00' 51" E
Ownership	: State and private
Area	: 88,000 ha
Altitude	: 85 m
Rainfall	: > 2,000 mm
Temperature	: 6 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Riverine Vegetation, Tropical Secondary Scrub, Tropical Grassland, Fresh Water Swamp

**IBA CRITERIA:** A1 (Threatened Species), A4iii ( $\geq 20,000$  waterbirds)

**PROTECTION STATUS:** Not officially protected

#### GENERAL DESCRIPTION

Majuli Island in the Brahmaputra River is located about 15 km from the district headquarters at Jorhat in eastern Assam. It is perhaps the second largest river island in the world, and comprises a large riverine island with innumerable small islets, locally called *chapories*. Originally, the island was a part of the Jorhat plain, south of the Brahmaputra River but southward diversion of the main channel of the river (c. 300 years ago) has resulted in the formation of this island. The northern channel is now known as the Kherkatia and Luitsutis. The topography of the area is flat floodplain with lakes (*beels*) and marshes on the one hand and anthropogenic structures such as embankments and roads on the other. Tuni river flows through the middle of the site for some distance. The main island is surrounded by more than twenty *chapories* (sandbars) (Bhagabati and Lahkar 1998).

Majuli, with its fertile floodplains and highly productive wetlands, forms ideal habitats for a variety of birds. It not only supports diverse resident birds, but also attracts a large number of migratory birds, including some uncommon species. The influence of Vaishnavite culture on the island, which restricts killing animals for meat has resulted in great tolerance for wildlife and respect for environment, not seen in other parts of the Brahmaputra Valley. Majuli continues to be a good example of the symbiotic relation between nature and culture, which traditionally provides a congenial environment for the protection of all life forms (Bhagabati and Lahkar 1998).

High rainfall, high moisture content in the soil and flat plains favour the growth of evergreen and deciduous trees, grasses, a wide variety of marsh vegetation, bamboos and canes (Bhagabati and Lahkar 1998).

#### AVIFAUNA

More than 250 species of birds have been recorded (A. U. Choudhury *pers. comm.* 2002). These include historic records of many endangered species. The Black-breasted or Black-throated Parrotbill *Paradoxornis nipalensis*, Marsh Spotted Babbler *Pellorneum palustre* and Jerdon's Babbler *Chrysomma altirostre* were recorded at Kamalabari (Stevens 1914-15).

In winter, the Spot-billed Pelican *Pelecanus philippensis* can be observed in small numbers in all major *beels*, especially Chakuli, Bhareki, Duboritoli and Saru-Kakarikata. Lesser Adjutant

*Leptoptilos javanicus* is a common breeding bird, nests are sometimes found in tall trees close to human settlements. Greater Adjutant *L. dubius* is rare, or seen occasionally. No nest has been found in recent years. A nest of Pallas's Fish-Eagle *Haliaeetus leucoryphus* was found on a *Ficus* tree, near Duboritoli *beel* (Bhagabati and Lahkar 1998).

Majuli is famous for its waterfowl, both resident and migrant. The Lesser Whistling Duck *Dendrocygna javanica* sometimes gathers in hundreds on large *beels*, along with other waterfowl. Northern Pintail *Anas acuta*, Northern Shoveller *A. clypeata*, Gadwall *A. strepera*, and Garganey *A. querquedula* are abundant. Three Falcated Teal *Anas falcata* were found in Bhareki *beel*, together with other ducks (Bhagabati and Lahkar 1998). On the river banks, the Brahminy Duck or Ruddy Shelduck *Tadorna ferruginea* is common in winter, along with the Bar-headed *Anser indicus* and the Greylag geese *A. anser*.

Swamp Francolin *Francolinus gularis* is found in the grassland, but in very low numbers, mainly due to restriction of its habitat.

Bengal florican *Houbaropsis bengalensis* was also reported occasionally, but there does not appear to be a viable population in Majuli. Being closer to the northern bank of Brahmaputra, Majuli must have had Bengal florican habitats before cultivation took over (Rahmani *et al.* 1990). The Bengal Florican is still present on similar but uninhabited islands near Kaziranga, only about 40 km downstream. The Bishwanath plain on the northwestern side of Majuli was once a good florican area. Choudhury (2002) mentions that florican is sighted sporadically in scattered grasslands, mostly in the *chapories* of Brahmaputra River. Therefore, it is likely that this bird is also found in Majuli and adjoining areas.

The Common Crane *Grus grus* regularly visits Majuli in small numbers (5-10 birds), especially in an area called Bhakat *chapor*i near Auniati-Alimurgaon. This *chapor*i is rich in grasses and sedges.

Due to cultural tolerance of birds and other wildlife by the majority of inhabitants of Majuli Island, the birds are left unmolested. It is not uncommon to see a flock of duck swimming or roosting 10-15 m from a house. Though the whole island is inhabited, long-term viability of many resident birds is assured. Two globally Critical *Gyps* species of vultures, two Endangered species and nine Vulnerable species have been identified till now - perhaps many more are yet to be added in the checklist.

Although no systematic census of waterfowl has been conducted, it is likely that the total population of waterfowl in all the *beels* of Majuli and adjoining Brahmaputra River could be much above 20,000, thus qualifying the site for IBA criteria A4iii.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>
Vulnerable	
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Baer's Pochard	<i>Aythya baeri</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Marsh Babbler (Old record)	<i>Pellorneum palustre</i>
Jerdon's Babbler (Old record)	<i>Chrysomma altirostre</i>
Black-breasted Parrotbill (Old record)	<i>Paradoxornis flavirostris</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Ferruginous Pochard	<i>Aythya nyroca</i>

OTHER KEY FAUNA

Majuli Island is thickly populated, so there is not much natural forest left. Till the first half of the last century, Tiger was frequently sighted in different parts of Majuli, but presently, it is only occasionally seen (Bhagabati and Lahkar 1998). A small population of the wild Water Buffalo *Bubalus arnee* (= *bubalis*) is found in the Banaria *chaponi*. Barking Deer *Muntiacus muntjak* was common, but now extremely rare due to hunting. There is a migratory population of Asian Elephant *Elephas maximus*. Hog Deer *Axis porcinus* is another species sometimes seen in the wet grassland areas. In the rivers, Gangetic River Dolphin *Plantanista gangetica* is not uncommon. Numerous *beels*, streams and rivers provide ideal habitats for turtles and amphibians.

LAND USE

- q Agriculture
- q Nature conservation

THREATS AND CONSERVATION ISSUES

- q Agricultural intensification and expansion
- q Growth of anthropogenic structures
- q Fishing
- q Brick kilns
- q Siltation
- q Flood and erosion

Despite high human habitation, bird life is relatively safe, due to the sensitivity and tolerance of local people. There is already an active group of people, disseminating environmental education amongst the local people. Since Majuli is not a notified protected area but an inhabited riverine tract with cultivations, wetlands, light woodlands and growing towns, there is a threat from man-made factors such as habitat alteration, cutting of nesting trees, etc. However, continuous awareness and motivation will help conserve the avifauna, which is already getting protection to a great extent.

KEY CONTRIBUTORS

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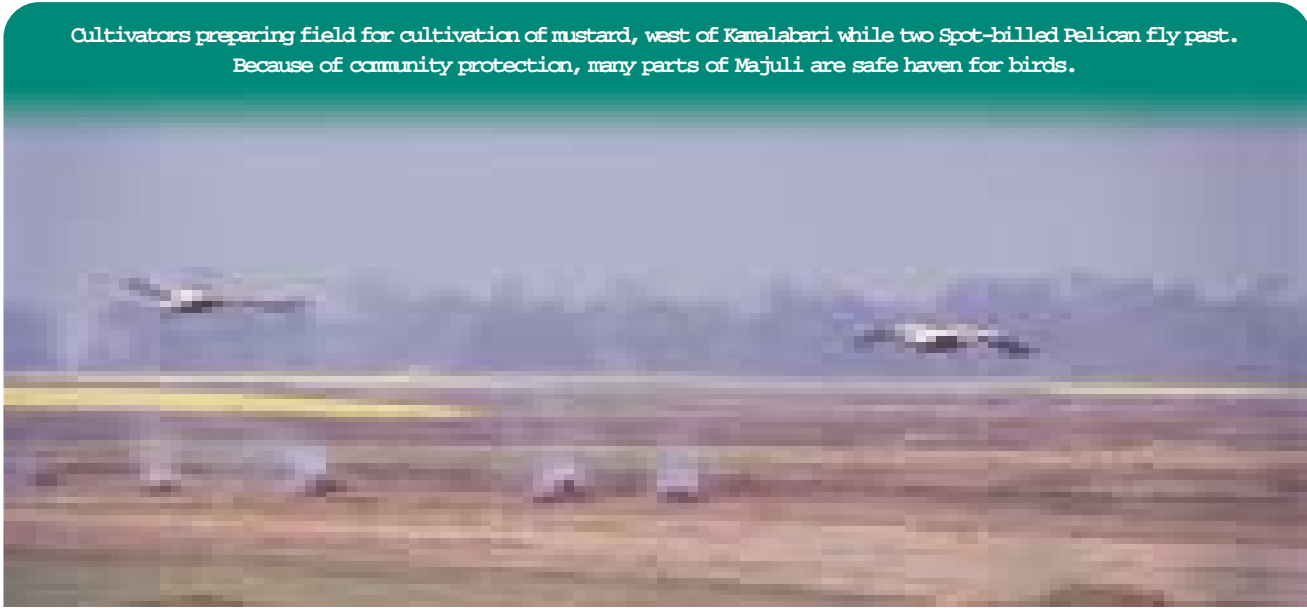


Photo : Anwaruddin Choudhury



## MANAS NATIONAL PARK



IBA Site Code	: IN-AS-31
State	: Assam
District	: Barpeta and Bongaigaon
Coordinates	: 26° 43' 01" N, 90° 55' 39" E
Ownership	: State
Area	: 50,000 ha
Altitude	: 100 – 300 m
Rainfall	: 2,000 – 3,000 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Moist Deciduous, Tropical Semi-evergreen, Tropical Grassland, Riverine Vegetation

**IBA CRITERIA:** A1 (Threatened Species), A2 (Endemic Bird Area 131: Assam Plains)

**PROTECTION STATUS:** National Park, established in September 1990

## GENERAL DESCRIPTION

The Manas National Park, a world heritage site, is located in western Assam on the international border with Bhutan. The most well known of the wildlife reserves of northeast India and second only to Kaziranga, it was earlier called the North Kamrup Wildlife Sanctuary. The river Manas with its distributaries, the Beki and Hakua, flows through the Park. Other smaller streams include Jongrong, Gyati and Garuchara.

Known for its scenic beauty, Manas is also home to a number of globally threatened birds and mammals. The Park has now the only viable population of the Critically Endangered Pigmy Hog *Sus salvanius*. An added advantage to Manas is the presence of the 102,300 ha Royal Manas National Park across the border in Bhutan. For many species, it is a large contiguous wilderness area.

The terrain in Manas is mostly flat, gently sloping plain typical of *bhabar* and *terai*. Towards the north, small hilly promontories of the Bhutan Himalaya can be seen. Approximately half of Manas is savanna grassland, while the rest is Moist Deciduous and Semi-evergreen forest. There are no large *beels* (waterbody), but small *beels* and pools occur in the southern areas.

The three main types of vegetation are: i) Tropical Semi-evergreen forests in the northern part of sanctuary; ii) Tropical Moist Deciduous Forests (the most common type); and iii) extensive alluvial grasslands in the western part of the National Park, comprising many grass species, and a variety of tree and shrub species (e.g. *Dillenia pentagyna*, *Phyllanthus emblica*, *Bombax ceiba*, and species of *Clerodendrum*, *Leea*, *Grewia*, *Premna* and *Mussaenda*). There is also a considerable variety of aquatic flora along riverbanks and in the numerous pools (Jain and Sastry 1983). Drier deciduous forests represent early stages in succession and are replaced by Moist Deciduous forests away from watercourses, which, in turn, are succeeded by Tropical Semi-evergreen climax forest. Grasslands cover about 50% of the Sanctuary. Some 393 species of dicotyledons, including 197 trees, and 98 species of monocotyledons have been identified.

## AVIFAUNA

Around 310 bird species have been reported from this IBA (Narayan *et al.* 1989, Ali *et al.* 1985). Several uncommon species, including the Greater Adjutant *Leptoptilos dubius* and Lesser

Adjutant *Leptoptilos javanicus* and Spot-billed Pelican *Pelecanus philippensis* can be seen here. Manas has perhaps, the largest known population of the Bengal Florican *Houbaropsis bengalensis* where Narayan, (1992) estimated about 80 birds in 1989-90.

It is an important area for most of the tall wet grassland species, such as Swamp Francolin *Francolinus gularis*, Marsh Babbler *Pellorneum palustre*, Slender-billed Babbler *Turdoides longirostris*, Jerdon's Babbler *Chrysomma altirostre*, Bristled Grass-warbler *Chaetornis striatus* and many others. Hodgson's Bushchat *Saxicola insignis*, another tall grassland species is present in Manas during winter. Manas is one of the few places where the Vulnerable Finn's Baya *Ploceus megarhynchus* is found nesting.

According to the biome classification of BirdLife International (undated), Manas mainly lies in the Indo-Gangetic Plains (Biome-12) where 13 species are considered as biome represented. Except for Collared Myna *Acridotheres albocinctus* that anyway is restricted to Manipur and a small portion of adjoining Assam, all the remaining 12 species are found in Manas. Presence of such a high percentage of biome-restricted birds proves the habitat is still intact and in pristine condition.

Based on the excellent bird life and significant populations of some globally threatened species, Manas Tiger Reserve is considered as one of the Outstanding IBAs of India (BirdLife International 2003).

Manas, a World Heritage Site 'in danger' is known for its scenic beauty as well as endangered wildlife.

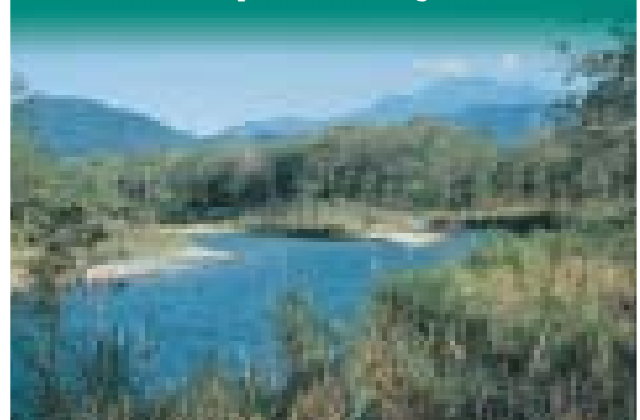


Photo: Arwaruddin Choudhury



Critically Endangered	
Oriental White-backed vulture	<i>Gyps bengalensis</i>
Slender-billed vulture	<i>Gyps tenuirostris</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>
Vulnerable	
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Lesser Kestrel	<i>Falco naumanni</i>
Swamp Francolin	<i>Francolinus gularis</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Hodgson's Bushchat	<i>Saxicola insignis</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Jerdon's Babbler	<i>Chrysomma alirostre</i>
Slender-billed Babbler	<i>Turdoides longirostris</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>
Hodgson's Prinia	<i>Prinia cinereocapilla</i>
Bristled Grass-warbler	<i>Chaetornis striatus</i>
Finn's Weaver	<i>Ploceus megarhynchus</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Lesser Grey-headed Fish-eagle	<i>Ichthyophaga humilis</i>
Greater Grey-headed Fish-Eagle	<i>Ichthyophaga ichthyaeus</i>
Cinereous Vulture	<i>Aegypius monachus</i>
Red-headed Vulture	<i>Sarcogyps calvus</i>
Great Pied Hornbill	<i>Buceros bicornis</i>
Pallid Harrier	<i>Circus macrourus</i>
Endemic Bird Area 131: Assam Plains	
Marsh Babbler	<i>Pellorneum palustre</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>

#### OTHER KEY FAUNA

Manas harbours some of the richest mammalian diversity in India. More than 60 mammals have been identified, including 22 listed in the Wildlife (Protection) Act 1972 (Rahmani, *et al.* 1992). Only the most endangered are mentioned here. This Park is the only known site for the globally threatened Pygmy Hog *Sus salvanius*. A captive breeding and reintroduction programme is on going (G. Narayan, *pers. comm.* 2001). Hispid Hare *Caprolagus hispidus* is another endangered species doing well in Manas. Its pellets indicate its presence in all suitable grasslands. Some of the pure population of Wild Buffalo *Bubalus arnee* (= *bubalis*) is found in Manas. In all other areas interbreeding with domestic buffalos is a major problem. To the west of Manas river, in Bhutan, Golden Langur *Trachypithecus geei* is found.

Manas is also known for its large herds of Asian Elephant *Elephas maximus* and Hog Deer *Axis porcinus*. Before the devastation brought about by insurgency, it was not uncommon to see congregations of up to 200 Hog Deer. In deeper jungle, Clouded Leopard *Neofelis nebulosa* is found, but difficult to see due to its nocturnal habit and shy nature. There is a small population of Swamp Deer *Cervus duvaucelii*. Earlier, their habitat was shared by the Indian Rhinoceros *Rhinoceros unicornis* but sadly poachers killed most of these animals. Tiger *Panthera tigris* is still present, although in smaller numbers.

Reptiles are among the lesser-known animals of Manas. In addition to the Yellow Monitor Lizard *Varanus flavescens* and the King Cobra *Ophiophagus hannah*, which belong to the endangered category, Manas also harbours a variety of turtles and terrapins. The Assam Roof Turtle *Kachuga sylhetensis* was recently found (Sharma 1988), which is a range extension for this extremely rare species. Other rare turtles are the Eastern Hill Terrapin *Melanochelys tricarinata* and the Indian Sawback or Roofed Terrapin *Kachuga tecta*.

#### LAND USE

- q Nature conservation
- q Tourism

#### THREATS AND CONSERVATION ISSUES

- q Encroachment
- q Grazing
- q Firewood collection and felling of trees
- q Poaching
- q Insurgency

Since 1989, this world Heritage Site has suffered significantly due to insurgency-related problems (Rahmani *et al.* 1989; Choudhury 1989). Between 1989 and 1992, most of the interior camps and bridges were burnt down and Rhinoceros and Swamp Deer population almost wiped out. With the breakdown of administration, professional poachers and timber smugglers took full advantage of the situation. While the insurgents themselves were not always involved, the situation worsened because of the law and order problem created by them. It was only around 1995-96 that the situation improved slightly, but it is yet to reach the pre-1989 level. There has been some encroachment by local villagers and graziers. Burning in the dry season, hunting and extraction of timber and firewood are practiced at a non-sustainable level in the buffer zone. The Park, once extremely popular with tourists, is now visited by a small number of tourists each year.

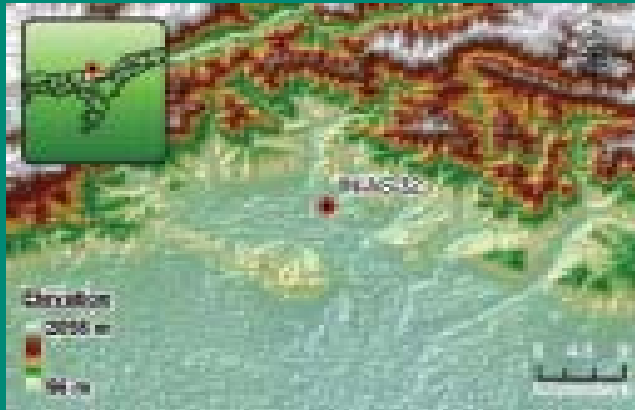
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Anwaruddin Choudhury, Goutam Narayan and Asad R. Rahmani

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## NAMERI NATIONAL PARK



IBA Site Code	: IN-AS-32
State	: Assam
District	: Sonitpur
Coordinates	: 27° 00' 36" N, 92° 47' 24" E
Area	: 20,000 ha
Ownership	: State
Altitude	: 80 - 350 m
Rainfall	: 2,000 - 2,800 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Semi-evergreen, Tropical Moist Deciduous, Tropical Grassland, Riverine Vegetation

**CRITERIA:** IBA CRITERIA: A1 (Threatened Species), A2 (Endemic Bird Area 130: Eastern Himalayas; Endemic Bird Area 131: Assam Plains)

**PROTECTION STATUS:** National Park, established in 1998

## GENERAL DESCRIPTION

Located in the district of Sonitpur, 40 km from Tezpur town in northern Assam, Nameri National Park is also a tiger reserve under Project Tiger. This Park is on the interstate border with Arunachal Pradesh. Relatively better known among the new protected areas of Assam, Nameri was earlier part of Naduar Reserve Forest. The river Jia-Bhareli with its tributaries, the Nameri, Upper Dikorai and Bor Dikorai flow through the Park. The Park is beautiful, with snow-capped Himalayan peaks visible on clear winter days.

Nameri is home to a number of globally threatened birds and mammals. For the Endangered White-winged Duck *Cairina scutulata*, the Park has now the only noteworthy population on the north bank of the Brahmaputra (Choudhury 2000a, 2000b). An added advantage is the presence of Pakke (Pakhui) Wildlife Sanctuary across the border in Arunachal Pradesh, which is about 86,200 ha. For many species, they form a contiguous large wilderness.

The terrain in Nameri is gently sloping plain, typical of *bhabar* and *terai*. Towards the north, small hilly promontories of the Arunachal Himalaya are seen. Most of Nameri is forested and grassland is found along the rivers. There are a number of pools within the jungle.

Nameri National Park can be classified into 8 distinct vegetation types: Moist Evergreen, Moist Semi-evergreen, Deciduous Forest, grassland, scrubland, mixed forests, degraded forests, riverine forest and cultivated land. Moist Semi-evergreen Forest covers about 16,000 ha, followed by grasslands (1,570 ha). The evergreen forest is dominated by *Duabanga grandiflora*, *Mesua ferea* and species of *Tetrameles*, *Eugenia* and *Terminalia*.

## AVIFAUNA

Nameri is very rich in avifauna. Till now 363 species of birds have been identified (Saikia and Kakati 1999). Perhaps the most secure population of White-winged Duck is found here (Das 1995), along with 11 threatened species and biome species such as the Crow-billed Drongo *Dicrurus annectans*, Black-backed Forktail *Enicurus immaculatus*, Sultan Tit *Melanochlora sultanea*, Lesser Necklaced Laughingthrush *Garrulax moniliger*, Greater Necklaced Laughingthrush *G. pectoralis*, Rufous-necked Laughingthrush *G. ruficollis*, Grey Peacock Pheasant *Polyplectron bicalcaratum* and Himalayan Flameblack *Dinopium shorii*. Masked Finfoot

*Heliopais personata* is also reported here, although not many have seen this shy bird.

White-winged Duck *Cairina scutulata*, one of the endangered species is found in Nameri and the site additionally qualifies congregatory criterion of A4i by holding 1% of its biogeographic population. In 1997, six birds were recorded (Zafar-ul Islam *pers. comm.* 2003), the 1% threshold being five individuals.

Nameri is the most important haunt of the White-winged Duck in the North Bank of the Brahmaputra River



Photo: M. Zafar-ul Islam

In the winter, Ibisbill *Ibidorhyncha struthersii* is regularly seen on the river bank and Hodgson's Bushchat *Saxicola insignis* is found in the tall grassland near rivers and streams.

Nameri is also good for forest raptors. Talukdar and Das (1997) have identified 16 species of raptors, some of them Near Threatened. Nameri river is famous for its large numbers of Great Cormorants *Phalacrocorax carbo* and pratincoles. Talukdar (1997) has reported up to 500 Great Cormorants.

Besides the Biome-9 species in Nameri, we also found species identified for Biome-7 (Sino-Himalayan Temperate Forest) such as Darjeeling Woodpecker *Dendrocopos darjellensis*, Slaty Blue Flycatcher *Ficedula tricolor*, White-throated Redstart *Phoenicurus schisticeps*, Nepal House Martin *Delichon nipalensis*, Aberrant Bush Warbler *Cettia flavolivacea*, White-throated Laughingthrush

*Garrulax albogularis*, Bar-throated Minla *Minla strigula*, Yellow-bellied Flowerpecker *Dicaeum melanoxanthum*.

The main species of Sino-Himalayan Subtropical Forest (Biome-8) avifauna are Stripe-breasted Woodpecker *Dendrocopos atratus*, Golden-throated Barbet *Megalaima franklinii*, Asian Emerald Cuckoo *Chrysococcyx maculatus*, Orange-bellied Leafbird *Chloropsis hardwickii*, Grey Treepie *Dendrocitta formosae*, Maroon Oriole *Oriolus traillii*, Black-winged Cuckoo Shrike *Coracina melaschistos*, Rosy Minivet *Pericrocotus roseus*, Short-billed Minivet *P. brevirostris*, Small Niltava *Niltava macgrigoriae*, Slaty-backed Forktail *Enicurus schistaceus*, Green Cochoa *Cochoa viridis*, Black Bulbul *Hysipetes leucocephalus*, White-throated Bulbul *Alophoixus flaveolus*, Slaty-bellied Tesia *Tesia olivea*, Black-chinned Yuhina *Yuhina nigrimenta*, Black-throated Sunbird *Aethopyga saturata*, Streaked Spiderhunter *Arachnothera magna* and Rufous-throated Partridge *Arborophila rufogularis*.

Critically Endangered	
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
White-bellied Heron	<i>Ardea insignis</i>
White-winged Duck	<i>Cairina scutulata</i>
Bengal Florican (Occasional)	<i>Houbaropsis bengalensis</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Eastern Imperial Eagle	<i>Aquila heliaca</i>
Lesser Kestrel	<i>Falco naumanni</i>
Swamp Francolin	<i>Francolinus gularis</i>
Red-breasted Hill-Partridge (?)	<i>Arborophila mandellii</i>
Masked Finfoot	<i>Heliopais personata</i>
Purple Wood-Pigeon (?)	<i>Columba punicea</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Hodgson's Bushchat	<i>Saxicola insignis</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Slender-billed Babbler	<i>Turdoides longirostris</i>
Hodgson's Prinia	<i>Prinia cinereocapilla</i>
Near Threatened	
White-tailed Sea-Eagle	<i>Haliaeetus albicilla</i>
Greater Grey-headed Fish-Eagle	<i>Ichthyophaga ichthyaetus</i>
Red headed Vulture	<i>Sarcogyps calvus</i>
Endemic Bird Area 130: Eastern Himalayas	
Red-breasted Hill-Partridge (?)	<i>Arborophila mandellii</i>
Rufous-throated Wren-Babbler	<i>Spelaeornis caudatus</i>
Endemic Bird Area 131: Assam Plains	
Marsh Babbler	<i>Pellorneum palustre</i>

#### OTHER KEY FAUNA

Nameri is famous for its population of Asian Elephant *Elephas maximus* and Tiger *Panthera tigris*. It is considered an important

site for long-term protection of these mammals. Therefore, Project Tiger and Project Elephant are funding the management of this site. Sambar *Cervus unicolor*, Hog Deer *Axis porcinus*, Barking Deer *Muntiacus muntjak* and Gaur *Bos frontalis* are the common ungulates. Jungle Cat *Felis chaus*, Leopard Cat *Prionailurus bengalensis*, Golden Jackal *Canis aureus*, Large Indian Civet *Viverra zibetha* and Small Indian Civet *Viverricula indica* are some of the smaller predators reported from Nameri. Good numbers of Otters *Lutra lutra* are found in the stream and rivers, wherever fishing is prohibited.

The endemic Assam Roofed Terrapin *Kachuga sylhetensis* was reported. Keeled Box Turtle *Pyxidea mouhotii*, present in evergreen hill forest streams of northeast India and East Asia (Daniel 2002) is also found in Nameri.

#### LAND USE

- q Nature conservation
- q Forest
- q Tourism / recreation

#### THREATS AND CONSERVATION ISSUES

- q Encroachment
- q Over grazing
- q Illegal fishing
- q Occasional poaching

Nameri is under grave threat from potential encroachers who have already cleared the adjacent Balipara and Naduar Reserve Forests. Even the slightest opportunity due to slack administration may put the Park in jeopardy. The site is in need of great conservation attention.

At least 18 Elephants have been poisoned by villagers in the recent past in the Nameri NP and adjoining Pakhui WLS. This is mainly in retaliation to crop damage on the encroached land.

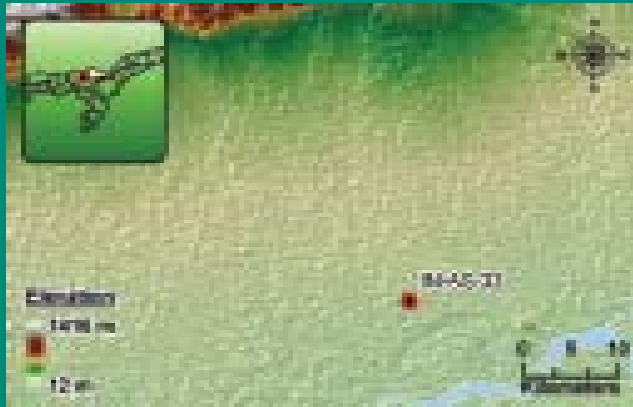
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Prashanta Saikia, Anwaruddin Choudhury and Kulojyoti Lahkar

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## ORANG NATIONAL PARK



IBA Site Code	: IN-AS-33
State	: Assam
District	: Darrang and Sonitpur
Coordinates	: 26° 38' 18" N, 92° 23' 18" E
Area	: 7,881 ha
Ownership	: State
Altitude	: 40 - 50 m
Rainfall	: 2,000 - 3,000 mm
Temperature	: 7 °C to 32 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Moist Deciduous, Wet Savanna Grassland, Wetland

**IBA CRITERIA:** A1 (Threatened Species), A4ii ( $\geq 1\%$  of the global population of congregatory terrestrial species)

**PROTECTION STATUS:** National Park, established in 1999

## GENERAL DESCRIPTION

Orang National Park is well known as an important habitat the Indian One-horned Rhinoceros *Rhinoceros unicornis*. The Park lies 18 km off the national highway from Orang town and 15 km off the highway from Dhansirimukh town. The distance from Guwahati to Orang is 140 km. The Park is situated on the northern bank of the Brahmaputra river. The Pachnoi and Dhansiri rivers flow along its eastern and western boundaries respectively. Both these rivers are tributaries of the Brahmaputra. The terrain is flat, being the floodplain of these rivers. Two distinct alluvial terraces are found: the lower Orang of more recent origin along the river Brahmaputra and the older upper Orang to its north, separated by a high bank traversing the National Park from east to west.

Orang was earlier a pure alluvial grassland, probably maintained by grazing and fire by villagers. In 1915, it was declared a Game Reserve. The villagers deserted the area due to an epidemic. In 1932, plantation of fast growing local species such as *Albizia procera* and *Lagerstroemia flosreginae* was started and some parts of the Reserve were denotified in 1928 to settle farmers from the erstwhile East Bengal under the Grow-More-Food programme. Intensive plantation was started in 1962. Along with the earlier planted local species, *Dalbergia sissoo*, *Acacia catechu*, *Tectona grandis*, *Artocarpus chaplasha*, *Terminalia* spp., *Gmelina arborea* and *Bombax ceiba* were planted. In 1969, Professional Grazing Reserve (PGR) areas east of the River Pachnoi were included in the Game Reserve.

Mainly established to save the highly endangered Rhinoceros, the grasslands of the Park also support healthy populations of the Swamp Francolin *Francolinus gularis* and Bengal Florican *Houbaropsis bengalensis*. Lesser Adjutant *Leptoptilos javanicus* and Pallas's Fish-Eagle *Haliaeetus leucoryphus* nest in the Park (Rahmani *et al.* 1990). There is also a recent record of sighting of the Bristled Grass-Warbler *Chaetornis striatus* (Choudhury 2000).

At one time, Orang was one of the finest representatives of natural wet, alluvial grasslands of the floodplains of the Brahmaputra river (much like Kaziranga). Even now, more than 60% of the Park is under grasses such as *Arundo donax*, *Imperata cylindrica*, *Saccharum* spp., *Cynodon dactylon*, *Phragmites karka* and *Andropogon* spp. Natural forest constitutes only 2.6%, while planted forest covers 13.6% of this Park. Waterbodies (*beels*) and swamps constitute about 12% of the area.

## AVIFAUNA

Orang is one of the most important sites for birds of wet, tall grasslands of the Indo-Gangetic plains. Almost all species of conservation concern are found in this small National Park of nearly 8,000 ha. During surveys between 1985 and 1989, Rahmani *et al.* (1990) estimated a population of 30-40 Bengal Floricans.

This IBA site contains about 225 bird species (Talukdar and Sharma 1995), including rarities such as Baer's Pochard *Aythya baeri*, Blyth's Kingfisher *Alcedo hercules* and Finn's Weaver or Yellow Weaver *Ploceus megarhynchus*.

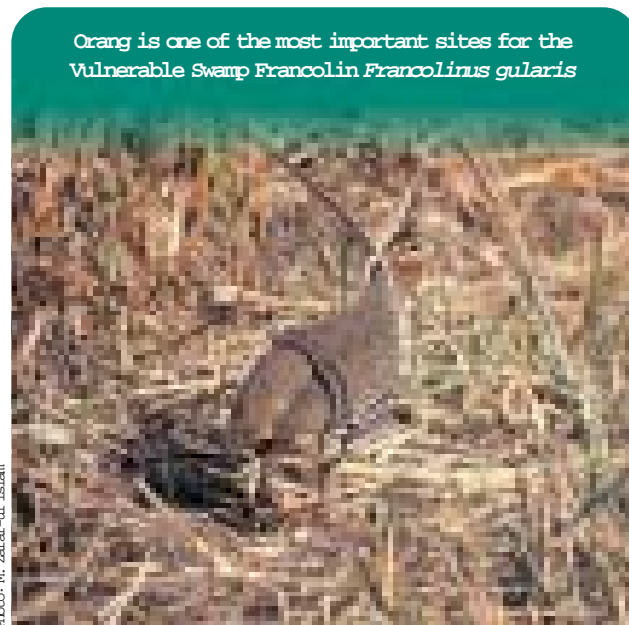
Orang is also one of the few protected areas where Finn's Baya or Yellow Weaver *Ploceus megarhynchus* is found. The other well-known site being Manas (IBA). It is considered as one of the three Outstanding IBAs of Assam (BirdLife International 2003).

Critically Endangered	
Oriental White-backed vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>
Vulnerable	
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Baer's Pochard	<i>Aythya baeri</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>
Swamp Francolin	<i>Francolinus gularis</i>
Bristled Grass-Warbler	<i>Chaetornis striatus</i>
Finn's Weaver	<i>Ploceus megarhynchus</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Ferruginous Pochard	<i>Aythya nyroca</i>
Greater Grey-headed Fish-Eagle	<i>Ichthyophaga ichthyaetus</i>
Red-headed Vulture	<i>Sarcogyps calvus</i>
Blyth's Kingfisher	<i>Alcedo hercules</i>



Stattersfield *et al.* (1998) have listed three species in the Assam Plains Endemic Bird Area (EBA) (Manipur Bush Quail *Perdica manipurensis*, Black-breasted Parrotbill *Paradoxornis flavirostris* and Marsh Babbler *Pellorneum palustre*). Looking at the extent of grasslands habitat, the last two species are likely to be present in this site.

This site qualifies two criteria: it has globally threatened species (A1), and it has more than 1% of the population of the Bengal Florican (A4ii) criteria.



#### OTHER KEY FAUNA

Orang NP was declared for the protection of the Rhinoceros. Between 50-60 rhinos are found here, despite intensive poaching pressure. A healthy population of Tiger *Panthera tigris* is maintained by herbivores such as Hog Deer *Axis porcinus*, Wild Pig *Sus scrofa* and a very large number of domestic animals that roam just outside the Park. This small area also has a small population of wild Asiatic Elephant *Elephas maximus*. Gangetic Dolphin *Platanista gangetica* also occurs in the rivers. Chinese Pangolin *Manis pentadactyla*, Chinese Porcupine *Hystrix brachyura*, Small Civet *Viverricula indica*, Jungle Cat *Felis chaus*, Smooth Indian Otter *Lutrogale perspicillata* and Rufous-tailed Hare *Lepus nigricollis ruficaudatus* are some of the small mammals of the Park.

The Swamp Deer *Cervus duvaucelii* population was exterminated by 1972, when license hunting prevailed (Talukdar and Sharma 1995). Old records also show the existence of Hispid Hare *Caprolagus hispidus*, but it is not found in Orang now. Pygmy Hog *Sus salvanius*, another highly endangered species, was introduced in 1976 rather unsuccessfully.

Reptiles are represented by the Indian Tent Turtle *Kachuga tentoria*, Brown Roof Turtle *K. smithi*, Malayan Box Turtle *Cuora amboinensis*, Eastern Hill Terrapin *Melanochelys tricarinata*, Spotted Black Terrapin *Geoclemys hamiltonii*, Indian Softshelled Turtle *Aspideretes gangetica* (Talukdar and Sharma 1995). All these are listed in the Indian Wildlife (Protection) Act 1972.

A new species of frog, *Kalophrynus orangensis*, was described from Orang (Ahmed 2002).

#### LAND USE

- Tourism and recreation
- Conservation

#### THREATS AND CONSERVATION ISSUES

- Poaching
- Encroachment
- Soil erosion
- Livestock grazing

Erosion by the Dhansiri river, occasional attempts by the surrounding villagers to encroach and increasing cattle population in the fringe areas are some of the key conservation issues. Poaching of rhino is a constant threat. During the early 1990s, due to good management, poaching of rhino was eliminated, but in recent years, it has gone up and now from 90 in 1996, the population is probably 50-60 heads. It is necessary to post highly motivated officers so the old glory of Orang could be brought back. Environmental awareness campaign should be started in the surrounding villages. A more detailed study on bird life, especially threatened species should be conducted.

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Bhupen Talukdar, Anwaruddin Choudhury and Asad R. Rahmani

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## PABHO RESERVE FOREST



IBA Site Code	: IN-AS-34
Administrative Region	: Assam
District	: Lakhimpur
Coordinates	: 27° 03' 13" N, 93° 59' 49" E
Ownership	: State
Area	: 4,900
Altitude	: 90 m
Rainfall	: 2,500 – 3,500 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Freshwater Swamp, Sub Tropical Secondary Scrub

**IBA CRITERIA:** A1 (Threatened Species), A2 (Endemic Bird Area 131: Assam Plains)

**PROTECTION STATUS:** Not officially protected

## GENERAL DESCRIPTION

This site is located near the confluence of the Ranga river with the Khabolu river and consists of degraded grassland with *beels* and marshes. The woodland area has been completely destroyed due to felling. This site was known as Milroy Buffalo Sanctuary during British days as a good number of Asiatic Wild Buffalo *Bubalus arnee* (= *bubalis*) used to occur (Choudhury 1994). Situated 20 km south of Lakhimpur town, the district headquarters, this wetland complex is an important site for waterbirds.

## AVIFAUNA

More than 130 species have been listed but more are likely to occur (A. U. Choudhury pers. comm. 2003). Among threatened species, regularly seen are the Greater Adjutant *Leptoptilos dubius* and Lesser Adjutant *Leptoptilos javanicus*, Spot-bill Pelican *Pelecanus philippensis* and Swamp Francolin *Francolinus gularis*. The White-winged Duck *Cairina scutulata* has not been reported in recent years (Choudhury 2000). A few thousand waders and ducks winter in the area. It is also a potential site for the Vulnerable species Black-breasted Parrotbill *Paradoxornis flavirostris*.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Vulnerable	
Spot-bill Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Black-breasted Parrotbill (?)	<i>Paradoxornis flavirostris</i>
Endemic Bird Areas 131: Assam Plains	
Black-breasted Parrotbill (?)	<i>Paradoxornis flavirostris</i>

## OTHER KEY FAUNA

Gangetic Dolphin *Platanista gangetica* is seen in the Khabolu river while the Water Buffalo has become stray. Tiger *Panthera tigris* is an occasional visitor (A.U. Choudhury pers. comm. 2003).

## LAND USE

- q Agriculture
- q Fishing

## THREATS AND CONSERVATION ISSUES

- q Encroachment for agriculture
- q Reclamation and siltation of *beels*
- q Fishing
- q Poaching of birds

Encroachment is a major concern for the area as about a third is already under illegal cultivation. Reclamation of *beels*, heavy fishing and poaching of birds are other main issues. Detailed investigation on the bird life and other wildlife of this site is urgently required. If properly protected, this site has potential to become a very important waterfowl habitat.

## KEY CONTRIBUTORS

Anwaruddin Choudhury and Bikul Goswami.

## REFERENCES

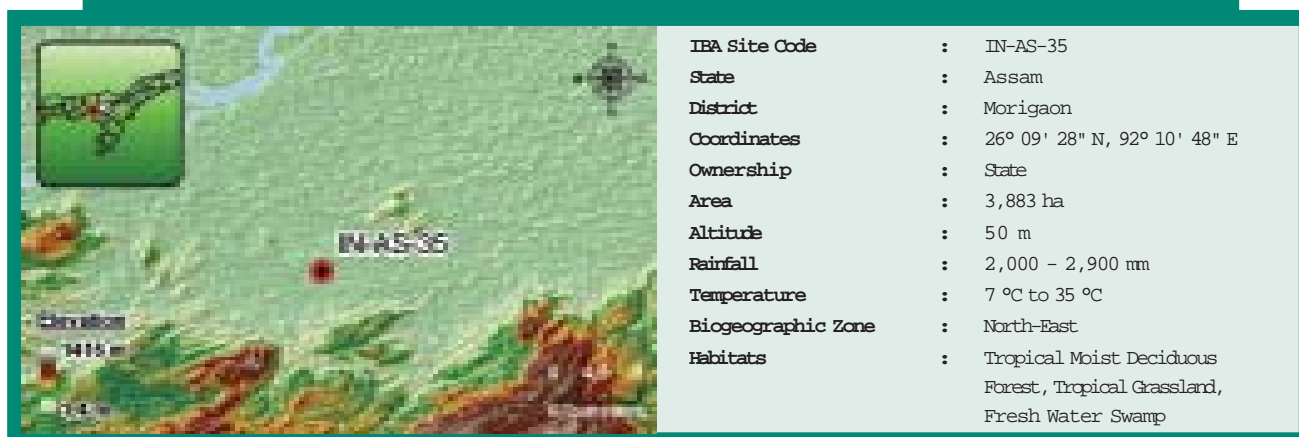
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The Endangered Greater Adjutant *Leptoptilos dubius* is regularly seen in this IBA.



Photo: Hillojyoti Singh

## PABITORA WILDLIFE SANCTUARY



**IBA CRITERIA:** A1 (Threatened Species), A2 (Endemic Bird Area 131: Assam Plains), A4iii ( $\geq 20,000$  waterbirds)

**PROTECTION STATUS:** Wildlife Sanctuary, established in July 1987

## GENERAL DESCRIPTION

Located close to Guwahati, the capital of Assam, Pabitora is high on the agenda of visitors to northeast India. It is only an hour's drive from the capital. The Sanctuary is known for its dense population of Indian One-horned Rhinoceros *Rhinoceros unicornis*. Around 70 animals are found in 1,600 ha, making it the most densely populated rhino area in the world! The original Sanctuary area is flat terrain, being on the floodplains, and consists of grassland (c. 70%) with c. 100 ha of forest and some waterbodies (*beels*). The hill of Raja Mayong, which has been included subsequently in this Sanctuary, is an isolated hillock with Moist Deciduous Forest.

Pabitora is traversed by seasonal channels that become lakes in winter. These include Garanga, Haduk, and Tuplung. Tamuliduba is large and close to the main road. Crop fields are present all around this small reserve.

Pabitora was a traditional grazing reserve, where the villagers used to graze their cattle and buffalo. It was declared as a Reserve Forest and then a Wildlife Sanctuary to protect the rhinos. In winter, Pabitora becomes a birder's haven, with thousands of waterfowl thronging the wetlands.

Pabitora can be divided into three distinct categories: forest, grassland and water bodies or *beels*. Only about 13% of the total area is under tree cover, consisting of *Albizia procera*, *Bombax ceiba*, *Lagerstromia flosreginae* and *Barringtonia acutangula*. About 72% of Pabitora consists of wet savannah of *Arundo donax*, *Erianthus ravennae*, *Phragmites karka*, *Imperata cylindrica*, and *Saccharum* spp. (Barua 1998, Choudhury 2000). The remaining area is covered by *beels*. Water hyacinth *Eichornia crassipes* is a major problem, especially to waterfowl, as it forms thick mats on the water surface. *Euryale ferox* is seen in some open areas. It is a very good breeding ground for Pheasant-tailed Jacana *Hydrophasianus chirurgus* and Bronze-winged Jacana *Metopidius indicus*.

## AVIFAUNA

The site contains more than 190 bird species, including many threatened ones such as the Spot-billed Pelican *Pelecanus philippensis*, White-bellied Heron *Ardea insignis*, Lesser Adjutant *Leptoptilos javanicus*, Greater Adjutant *L. dubius*, Bengal Florican *Houbaropsis bengalensis* and Swamp Francolin *Francolinus gularis*. The Pelicans used to breed here (Choudhury 2000), but

no longer do so. The Bengal florican has not been seen since the mid 1990s, due to disturbance.

Pabitora grasslands and wetlands harbour most of the representative birds of the Brahmaputra floodplains such as Striated Babbler *Turdoides earlei* and Yellow Weaver *Ploceus megarhynchus*.

The wetlands of Pabitora attract thousands of waterfowl during winter. The site qualifies for A4iii criteria because more than 20,000 waterfowl are regularly found there. Talukdar (1996) has recorded 57 wetland species, including 16 ducks and geese and four species of storks. During a waterfowl count in 1997, more than 55,000 birds of 36 species were seen (Barua 1998).

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps benghalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
White-bellied Heron	<i>Ardea insignis</i>
Greater Adjutant	<i>Leptoptilos dubius</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>
Spotted Greenshank	<i>Tringa guttifer</i>
Vulnerable	
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Lesser Kestrel	<i>Falco naumanni</i>
Swamp Francolin	<i>Francolinus gularis</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Finn's Weaver	<i>Ploceus megarhynchus</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Ferruginous Pochard	<i>Aythya nyroca</i>
Endemic Bird Area 131: Assam Plains	
Marsh Babbler	<i>Pellorneum palustre</i>

The site lies in the Indo-Gangetic Plains (Biome-12) and the Assam Plains Endemic Bird Area (EBA 131) where Stattersfield *et al.* (1998) have identified three species, wholly confined to this EBA (Manipur Bush Quail *Perdica manipurensis*, Black-breasted Parrotbill *Paradoxornis flavirostris* and Marsh Babbler *Pellorneum palustre*). The last species has been reported from this site (Mrigen Barua *pers. comm.* 2001).

BirdLife International (undated) has identified 13 species in Biome-12. Till now, eight species have been identified from this site, and more are likely to be present.

#### OTHER KEY FAUNA

Besides the Indian One-horned Rhinoceros, Fishing Cat *Felis viverrinus*, Golden Jackal *Canis aureus*, Common Otter *Lutra lutra*, and Wild Boar *Sus scrofa* are found in the original sanctuary area, while Leopard *Panthera pardus*, Leopard Cat *Prionailurus bengalensis*, Rhesus Macaque *Macaca mulatta* and Barking Deer *Muntiacus muntjak* are seen in Raja Mayong area. A herd of feral water buffaloes is present. Reptiles include turtles such as Brahminy Terrapin *Hardella thurjii*, Spotted Pond terrapin *Geoclemys hamiltonii*, and various species of snakes.

#### LAND USE

- q Forest
- q Conservation
- q Tourism and recreation

#### THREATS AND CONSERVATION ISSUES

- q Grazing and grass collection
- q Fishing
- q Encroachment
- q Poaching

Being a small Sanctuary surrounded by human habitation, there is constant threat from encroachers, poachers, fishermen and graziers. The grassland birds are often the most affected, as in some winters, there is hardly a sizeable patch of tall grassland. The destruction of the grassland started in 1998 when there was a heavy and prolonged flood, and excessive grazing by domestic stock that followed did tremendous damage so that till 2002, the grass could not recover to its pre-1998 level. With ever-increasing cattle population, there is constant pressure on the grassland. A few Bengal Floricans were not uncommon till the mid 1990s, one or two even up to 1998, but now it is a rarity. A large population of Swamp Francolin occurred in the area, but in 1999-2000, it was reduced to less than a third and their call was rarely heard. There is slight improvement now, but conditions have still not been restored to pre-1998. The villagers of the fringe area often fish in the wetlands, causing disturbance to waterfowl.

#### KEY CONTRIBUTORS

Mrigen Barua and Anwaruddin Choudhury

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Water birds in Pagladuba in Pabitora sanctuary. This IBA has the densest population of Indian one-horned rhinoceros in the world.



Photo: Anwaruddin Choudhury

PANI-DIHING BIRD SANCTUARY

**IBA Site Code** : IN-AS-36

**State** : Assam

**District** : Sibsagar

**Coordinates** : 27° 04' 00" N, 94° 34' 60" E

**Ownership** : State

**Area** : c. 4,000 ha

**Altitude** : 90 m

**Rainfall** : 2,500 – 3,500 mm

**Temperature** : 7 °C to 35 °C

**Biogeographic Zone** : North-East

**Habitats** : Tropical Grassland, Freshwater Swamp

**IBA CRITERIA:** A1 (Threatened Species), A4iii (≥ 20,000 waterbirds)

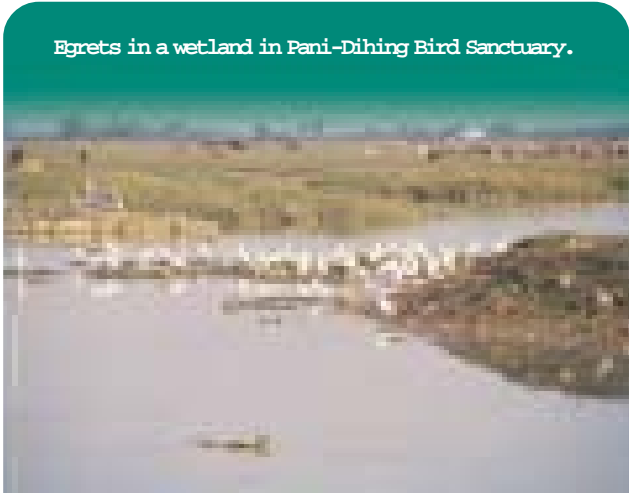
**PROTECTION STATUS:** Wildlife Sanctuary, established in 1995

GENERAL DESCRIPTION

This site includes Pani-Dihing Bird Sanctuary (3,393 ha) and its environs (600 ha), including Phokolai and Dorou *beels*. Situated 17 km north of Sibsagar town, the district headquarters, this large wetland complex lies on the south bank of River Brahmaputra, near its confluence with the tributary Disang. The terrain is flat, being on the floodplains. During monsoon, most of the area is inundated. The main *beels* (wetlands) of the area are Phokolai, Dorou (both outside the Sanctuary), Sagunpora, Ghoka, Tokia and Jarjaria. The main channels that feed the area are Dimou, Boloma, Balijan and Singorajan.

Pani-Dihing and adjacent areas are known for migratory waterfowl, while there are also important resident species. It used to be a hunters paradise, and people from Sibsagar town used to go for shooting ducks and geese. Now sport hunting has been stopped, but poisoning of waterfowl still goes on.

The strip of swampy reed jungle of the northern border comprises chiefly *Arundo donax* and plants of the genus *Alpinia*, *Vetiveria zizanioides* and *Saccharum spontaneum* are also common, whereas *Phragmites karka* is becoming rarer, possibly because of collection by the villagers. Thorny vines wind around these tall grasses and during the summer rainfall, it becomes impenetrable with thick clumps of *Eichornia crassipes*.



Egrets in a wetland in Pani-Dihing Bird Sanctuary.

Photo : Anwaruddin Choudhury

AVIFAUNA

More than 160 species of birds have been recorded in the area so far (Choudhury 1988, 1991, 1993; Barooah 1990, 1994). There are historic records of the Black-breasted Parrotbill *Paradoxornis flavirostris* from the area (J. R. Cripps in Hume 1888). Pani-Dihing is now famous for its vast flocks of Bar-headed geese *Anser indicus* and Greylag geese *A. anser*, and thousands of other waterfowl. It easily qualifies for A4iii criteria (≥ 20,000 water birds) in addition to A1 criteria (significant number of threatened species).

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps indicus</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Vulnerable	
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Baer's Pochard	<i>Aythya baeri</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucorhynchus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Black-breasted Parrotbill (historic record)	<i>Paradoxornis flavirostris</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Ferruginous Pochard	<i>Aythya nyroca</i>
Endemic Bird Area 131: Assam Plains	
Black-breasted Parrotbill (historic record)	<i>Paradoxornis flavirostris</i>

In the reed thickets on the northern border, 400-500 pairs of Cattle Egret *Bubulcus ibis*, Pond Heron *Ardeola grayii*, Chinese Pond Heron *Ardeola bacchus*, Little Egret *Egretta garzetta*, Purple Heron *Ardea purpurea*, Grey Heron *A. cinerea*, Little Cormorant *Phalacrocorax niger* and Glossy Ibis *Plegadis falcinellus* breed.



*Arundo donax* and *Phragmites karka* are mostly preferred for nesting (Barooah 1994).

#### OTHER KEY FAUNA

Since the mid 1990s, Asian Elephants *Elephas maximus* have started appearing here for a short time during migration. There are recent records of even a One-horned Rhinoceros *Rhinoceros unicornis* and Tiger *Panthera tigris*. Common Otters *Lutra lutra* and Hog deer *Axis porcinus* are regularly seen. Gangetic dolphin *Plantanista gangetica* is seen during monsoon in the Sanctuary, and throughout the year at the confluence of the Disang and Brahmaputra rivers. Among reptiles, the Brown Roof Turtle *Kachuga smithii*, Indian Tent Turtle *K. tentoria*, and Gangetic Softshell *Aspideretes gangeticus* have been identified, but there could be many more species.

#### LAND USE

- q Nature conservation
- q Agriculture
- q Fishing

#### THREATS AND CONSERVATION ISSUES

- q Aquaculture / Fishing
- q Encroachment for agriculture
- q Grazing
- q Poisoning of birds
- q Disturbance to birds by humans
- q Burning of grass

In the past, Panidihing attracted hunters from near and far. A bag

of 50 birds in a day was quite common. Fortunately, these mass killings have been checked, but some poaching still goes on. A few years ago a large scale poison baiting with Furadon was done in Pani-Dihing, which has drastically reduced the raptor population. Measures should be taken to enhance their population and to regenerate the diversity of bird species in the Sanctuary. Fishing, grazing, encroachment and inadequate protection measures are other major conservation issues.

The Phokolai and Dorou *beels*, which are outside the Sanctuary, should be declared as 'community reserves' because of their rich assemblage of waterfowl. Phokolai is also the largest single *beel* in Sibsagar district.

#### KEY CONTRIBUTORS

Diptimanta Barooah, Anwaruddin Choudhury and Kulojyoti Lahkar

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## RIPU AND CHIRANG RESERVE FORESTS



IBA Site Code	: IN-AS-37
State	: Assam
District	: Kokrajhar
Coordinates	: 26° 47' 34" N, 90° 19' 60" E
Ownership	: State
Area	: 1,20,000 ha
Altitude	: 100 – 300 m
Rainfall	: 2,000 – 3,000 mm
Temperature	: 6 °C to 30 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Semi Evergreen and Tropical Moist Deciduous Forest

**IBA CRITERIA:** A1 (Threatened Species), A2 (Endemic Bird Area 131: Assam Plains)

**PROTECTION STATUS:** Not officially protected

## GENERAL DESCRIPTION

Ripu and Chirang are two reserve forests with contiguous habitat, in extreme western Assam bordering West Bengal and Bhutan. They are also part of the buffer zone of Manas Tiger Reserve. The forests of Ripu and Chirang are contiguous with those of Buxa Tiger Reserve of West Bengal and Phipsoo Wildlife Sanctuary of Bhutan. These forests have the largest known population of the endangered Golden Langur *Trachypithecus geei* in India (Choudhury 2002). Since 1989, a third of these forests have been clear felled and encroached upon due to insurgency related problems. Located in the northern part of Kokrajhar district and nestling in the foothills of the Bhutan Himalaya, Ripu and Chirang have some of the finest examples of *bhabar* forest with Sal *Shorea robusta* as the dominant species. Further north, the forest is Semi-evergreen type. These reserve forests are easily accessible from Kokrajhar district headquarters, about 25 km away.

The terrain is largely flat or gently sloping from north to south, with some foothills towards the north. The main rivers that flow through this IBA are Sankosh, Saralbhangra, and Champamoti. There is a large wetland called Maachbhandar inside Chirang RF. Besides dense Tropical Semi-evergreen and Tropical Moist Deciduous forests, riverine forests with light woodland and grasslands are also found.

Ripu and Chirang are vital habitats that serve as a corridor linking Manas National Park, Assam with Buxa in West Bengal, and also the forests of Bhutan, especially important for Asian Elephants *Elaphas maximus*. These forests are already part of the Chirang-Ripu Elephant Reserve of Assam.

## AVIFAUNA

No detailed study on avifauna has been conducted but preliminary surveys reveal around 300 bird species (A. U. Choudhury *pers. comm.* 2003).

The sites fall in Biome-9 (Indo-Chinese Tropical Moist Forests) but many species of Biome-7, Biome-8 and Biome-11 are also seen here such as Rufous-breasted Blue Flycatcher *Ficedula hodgsonii*, Grey-bellied Tesia *Tesia cyaniventer*, Bay Woodpecker *Blythipicus pyrrhotis*, Maroon Oriole *Oriolus traillii*, Grey Treepie *Dendrocitta formosae*, Black-winged Cuckoo-shrike *Coracina melaschistos*, Short-billed Minivet *Pericrocotus brevirostris* and White-throated Bulbul *Alophoixus flaveolus*. Lesser Necklaced

Laughingthrush *Garrulax moniligerus*, Greater or Black-gorgeted Laughingthrush *G. pectoralis*, Rufous-necked Laughingthrush *G. ruficollis*, and Sultan Tit *Melanochlora sultanea* are typical Biome-9 species.

Twelve globally threatened species are found in these forests. The presence of Bengal Florican is not confirmed, but as it is found in Manas (another IBA), it is likely to occur in the grasslands of Ripu-Chirang. The presence of the Rufous-necked Hornbill *Aceros nipalensis* proves that the forest is still pristine, at least in parts. On the Bhutan side, this bird is still not uncommon in undisturbed forests.

## Critically Endangered

Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

## Endangered

Greater Adjutant	<i>Leptoptilos dubius</i>
Bengal Florican (?)	<i>Houbaropsis bengalensis</i>

## Vulnerable

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Hodgson's Bushchat (?)	<i>Saxicola insignis</i>
Marsh Babbler (?)	<i>Pellorneum palustre</i>
Jerdon's Babbler (?)	<i>Chrysomma altiloquax</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>
(No recent record)	

## Endemic Bird Area 131: Assam Plains

Marsh Babbler	<i>Pellorneum palustre</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>

## OTHER KEY FAUNA

The major attraction of these forests is the Golden Langur. Assamese macaque *Macaca assamensis* and Rhesus macaque *M. mulatta* are also found, sometimes together. Six species of large and small cats are reported: Tiger *Panthera tigris*, Leopard *P.*

*pardus*, Clouded Leopard *Neofelis nebulosa*, Marbled Cat *Pardofelis marmorata*, Fishing Cat *Prionailurus viverrina* and Golden Cat *Catopuma temminckii*. The Hispid Hare *Caprolagus hispidus* is another rare mammal found chiefly in the grasslands, where Bengal Florican is likely to be found. Ripu-Chirang forests are rich in ungulates. Sambar *Cervus unicolor*, Hog Deer *Axis porcinus*, Chital *A. axis*, Barking Deer *Muntiacus muntjak*, Wild Water Buffalo *Bubalus arnee* (= *bubalis*) (occasional) and Gaur *Bos frontalis* share the habitat with the Asian Elephant, Asiatic Black Bear *Ursus thibetanus*, and Sloth bear *Melursus ursinus*. Two species of otters *Lutra lutra* and *Lutrogale perspicillata* are recorded in the rivers and streams. Chinese pangolin *Manis pentadactyla*, Chinese porcupine *Hystrix brachyura* and Binturong *Arctictis binturong* are notable species of this IBA.

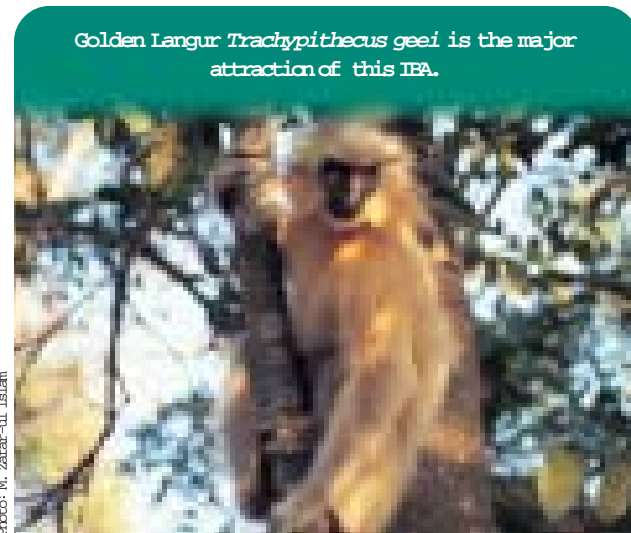


Photo: M. Zafar-ul-Islam

Golden Langur *Trachypithecus geei* is the major attraction of this IBA.

The reptile fauna is rich, with Indian Softshell Turtle *Aspideretes gangeticus*, Peacock Softshell Turtle *A. hurum*, Indian Rock Python *Python molurus*, Russell's Viper *Daboia russelii*, Common Monitor Lizard *Varanus bengalensis*, Water Monitor *V. salvator*, and Tucktoo Gecko *Gekko gekko*. More than 100 species of butterflies have been recorded.

#### LAND USE

- q Forest
- q Agriculture (in encroachments and forest villages)

#### THREATS AND CONSERVATION ISSUES

- q Illegal felling of trees
- q Poaching
- q Encroachment

These rich forests have been severely affected by social unrest since 1989. The unrest began with a demand for autonomy for local tribals, but it soon led to insurgency with attendant political and socioeconomic problems. Professional timber smugglers took full advantage of the situation and clear felled large areas, especially Chirang RF. At present such felling has been stopped, but the situation is still not under total control of the Forest Department. Even now, the Forest Department staff is unable to patrol the remote areas of the IBA.

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Bablu Dey, Subhash Chanda, Arindam Brahma and Anwaruddin Choudhury

#### KEY REFERENCE

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SIBSAGAR TANKS



IBA Site Code : IN-AS-38

State : Assam

District : Sibsagar

Coordinates : 26° 58' 60" N, 94° 37' 60" E

Ownership : Temple trusts, Community

Area : 150 ha

Altitude : 100 m

Rainfall : 2,500 – 3,500 mm

Temperature : 7 °C to 35 °C

Biogeographic Zone : North-East

Habitats : Freshwater tank

IBA CRITERIA: A1 (Threatened Species), A4i (≥ 1% biogeographic population)

PROTECTION STATUS: Not officially protected

GENERAL DESCRIPTION

This IBA site includes three large historic tanks Joysagar (60 ha), Sivasagar (50 ha) and Gourisagar (40 ha) and their high banks in and around Sibsagar town in eastern Assam. Since time immemorial, birds have been protected in these sacred temple tanks. Every winter hundreds, often thousands, of ducks and geese spend the whole day resting and feeding on these tanks, which are easily accessible by metalled roads. The surrounding terrain is flat plain country.

Sibsagar and Joysagar tanks are known for their spectacular flocks of ducks and geese. The largest wintering flocks of Bar-headed *Anser indicus* and Greylag *Anser anser* geese ever recorded in Assam, were in Joysagar tank. About 5,800 and 3,000 respectively were counted in 1995 (Bibhab Talukdar in Choudhury 2000).

Most of the tanks are open water but on the margins there is

emergent and floating vegetation. Fortunately, these tanks are free from Water Hyacinth *Eichhornia crassipes*.

AVIFAUNA

More than 60 species of birds have been recorded on the waterspread as well as in the trees on the banks. Lesser Adjutant *Leptoptilos javanicus* and Greater Adjutant *L. dubius* are seen in the trees growing around the tanks. Choudhury (1988) has seen seven Baer's Pochard *Aythya baeri* on Sibsagar tank in 1988, amongst thousands of other ducks. Great Crested Grebe *Podiceps cristatus*, is seen in Sibsagar and Joysagar tanks, sometimes in hundreds. Before return migration, they appear in breeding plumage and territorial display is seen.

Both the Bar-headed and Grey geese are present in large numbers, much above their 1% biogeographic population threshold, as recently determined by Wetlands International (2002). For example, between 52,000 to 60,000 Bar-headed Goose are estimated in the world, with 1% population threshold of 560. It is not uncommon to see 1-2 thousands in these tanks. In 1995, a total of 5,800 were counted, which constitute about 10% of the population. Similarly, the South Asian non-breeding population of the Greylag Goose *Anser anser rubirostris* is estimated to be 15,000 (Wetlands International 2002). With a total of 3,000 found in these tanks in 1995, it constitutes nearly 20% of this biogeographic population. Thus, this site easily qualifies A4i criteria.



Photo: Ketil Knudsen/Peter Lobo

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Baer's Pochard	<i>Aythya baeri</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Oriental White Ibis	<i>Threskiornis melanocephalus</i>
Ferruginous Pochard	<i>Aythya nyroca</i>

Geese at Joysagar tank, the largest of the three tanks which form this IBA. Due to protection, often huge congregations of geese could be seen in winter



Photo: Anwaruddin Choudhury

#### OTHER KEY FAUNA

As these tanks are surrounded by human habitation, no large wild mammal is present. Only Smooth Indian Otter *Lutrogale perspicillata* occasionally fish in the tanks, but they are now extremely rare. Among reptiles, large softshell turtles have been recorded.

#### LAND USE

- ☐ Wetland
- ☐ Human habitation

#### THREATS AND CONSERVATION ISSUES

- ☐ Occasional poaching
- ☐ Increasing human activities
- ☐ Angling/Hunting turtles at night

Increasing human population and construction activities could be conservation concerns in future, but at present there does not appear to be any major problem. Nevertheless, the surrounding residents need to be motivated and awareness generated that they are

preserving a rich heritage. Occasional poaching has been reported but it is not a serious matter. These tanks may also be declared as 'Community Reserves' under the amended Wildlife (Protection) Act. These tanks, which are present right in the middle of a city give a good opportunity to generate environmental awareness among students and provide a good area for birdwatching.

#### KEY CONTRIBUTORS

Diptimanta Barooh, Anwaruddin Choudhury and Kulojyoti Lahkar

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## SON BEEL



IBA Site Code	: IN-AS-39
State	: Assam
District	: Karimganj
Coordinates	: 24° 40' 00" N, 92° 27' 00" E
Ownership	: State / Private
Area	: 1,500 ha
Altitude	: 40 m
Rainfall	: >3,000 mm
Temperature	: 7 °C to 36 °C
Biogeographic Zone	: North-East
Habitats	: Freshwater Lake

IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Not officially protected

## GENERAL DESCRIPTION

Son beel is a large lake in Karimganj district of southern Assam. It is flanked by hills on its west and east. In winter, the extent is only a few fragmented beels, totalling less than 500 ha. It is still the largest beel in Assam but it is being reduced (Choudhury 2000) and unfortunately, there is no conservation effort to save it. The Shingla River, originating in Mizoram, is its major inlet as well as outlet. Further downstream, there is another large lake known as Rata beel, beyond which the Shingla river bifurcates into two rivers Kochua and Kakra. Son beel is accessible from Hailakandi and Karimganj towns.

*Barringtonia acutangula* is the main tree that grows in the beel besides reeds such as *Arundo donax* and various aquatic plants.

## AVIFAUNA

More than 150 species of birds have been recorded, although the actual diversity must be much more (A. U. Choudhury pers. comm. 2003). The lake attracts thousands of waterfowl, but due to constant disturbance by fishermen, they do not stay long. If properly managed, Son beel has all the potential to become a Ramsar Site, and could harbour more than 20,000 waterfowl. The Spotbilled Pelican *Pelecanus philippensis* and Greater Adjutant *Leptoptilos dubius* have stopped coming, while the Lesser Adjutant *Leptoptilos javanicus* is still seen.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Vulnerable	
Spot-billed Pelican (no recent records)	<i>Pelecanus philippensis</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Swamp Francolin (no recent records)	<i>Francolinus gularis</i>

## OTHER KEY FAUNA

Not much work has been done on mammals, reptiles and amphibians of this important wetland. What we do know is that two species of otters (*Lutra lutra* and *Lutrogale perspicillata*) are

found. There are unconfirmed reports of Fishing Cat *Prionailurus viverrina*. Hog Deer *Axis porcinus* is also reported but its number is much reduced due to poaching and disturbance.

## LAND USE

- ☐ Wetland
- ☐ Agriculture
- ☐ Fishing

## THREATS AND CONSERVATION ISSUES

- ☐ Reclamation and paddy cultivation
- ☐ Siltation
- ☐ Excessive fishing
- ☐ Poaching of birds

The entire area has been silted up and reclaimed to a great extent. Winter paddy is widely grown, and that again has threatened the beel by accelerating reclamation and siltation. Excessive fishing activities disturb the wetland biodiversity.

## KEY CONTRIBUTOR

Anwaruddin Choudhury

## KEY REFERENCE

Choudhury, A. U. (2000) *Birds of Assam*, Gibbon Books and WWF-India NE Region, Guwahati.

Great Cormorant *Phalacrocorax carbo* are the winter visitors to the Northeast.



Photo: Ketil Knudsen/Peter Lobo



## SONAI-RUPAI WILDLIFE SANCTUARY



IBA Site Code	: IN-AS-40
State	: Assam
District	: Sonitpur
Coordinates	: 26° 55' 11" N, 92° 34' 32" E
Ownership	: State
Altitude	: 100 - 300 m
Area	: 22,000 ha
Rainfall	: 2,000 - 2,800 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Wet Evergreen, Tropical Semi-evergreen, Tropical Moist Deciduous Forests and Tropical Grassland

IBA CRITERIA: A1 (Threatened Species)

PROTECTION STATUS: Wildlife Sanctuary, established in 1998

## GENERAL DESCRIPTION

Sonai-Rupai was declared as a Game Reserve in 1934, because of its rich biodiversity that included the Indian One-horned Rhinoceros *Rhinoceros unicornis*, and reported populations of Wild Buffalo *Bubalus arnee* (= *bubalis*). Both these species are, however, locally extinct from this sanctuary. Located about 40 km northwest of Tezpur town, in the district of Sonitpur, in northern Assam, Sonai-Rupai has a number of threatened birds that got little attention earlier. These are the White-winged Duck *Cairina scutulata*, Bengal Florican *Houbaropsis bengalensis*, Swamp Francolin *Francolinus gularis* and the occasional Rufous-necked Hornbill *Aceros nipalensis* (Choudhury 2000, 2002).

This sanctuary is on the interstate border with Arunachal Pradesh. Sonai-Rupai was earlier part of Charduar Reserve Forest. The rivers Gabharu, Gelgeli, Sonai and Rupai flow through the Sanctuary. An added advantage is the presence of Doimara RF and beyond this the Eaglenest Wildlife Sanctuary across the border in Arunachal Pradesh, covering about 50,000 ha. For many species of fauna, it is one large wilderness area.

The terrain in Sonai-Rupai is flat and gently sloping towards the south, typical of *bhabar* and *terai* areas. Towards north, promontories of the small hills of Arunachal Himalaya can be seen. Most of Sonai-Rupai is tree forest, but there are large patches of grassland.

## AVIFAUNA

Preliminary surveys reveal about 160 species of birds, but detailed studies could yield more than 250 (A. U. Choudhury *pers. comm.* 2002). During the late 1980s, Rahmani *et al.* (1990) did surveys in search of the Bengal Florican. They could not sight the Bengal Florican, but found that nearly 200 ha of the Gelgeli grassland is one of the best grasslands of its kind and quite suitable for the florican. The vegetation compares well with other ideal florican habitats in Manas, Orang and Kaziranga. Choudhury (2002) also could not find the Bengal Florican either, but says “perhaps a few birds remain”. However its presence was confirmed recently in this IBA (A. U. Choudhury *pers. comm.* 2004).

As the forest of Sonai-Rupai is continuous with Doimara Reserve Forest and then Eaglenest Wildlife Sanctuary in Arunachal Pradesh, the bird life is extremely rich. Rufous-necked Hornbill *Aceros nipalensis* can be seen, along with forest species such as

Grey Peacock Pheasant *Polyplectron bicalcaratum*, Himalayan Flameblack *Dinopium shorii*, Slaty Blue Flycatcher *Ficedula tricolor*, Maroon Oriole *Oriolus traillii*, Black-winged Cuckoo Shrike *Coracina melaschistos*, Small Niltava *Niltava macgrigoriae*, Black-backed Forktail *Enicurus immaculatus*, Slaty-backed Forktail *E. schistaceus*, Sultan Tit *Melanochlora sultanea*, White-throated Bulbul *Alophoixus flaveolus*, Slaty-bellied Tesia *Tesia olivea*, Black-chinned Yuhina *Yuhina nigrimenta*, Lesser Necklaced Laughingthrush *Garrulax moniliger*, Greater Necklaced Laughingthrush *G. pectoralis*, Rufous-necked Laughingthrush *G. ruficollis*, Black-throated Sunbird *Aethopyga saturata* and Streaked Spiderhunter *Arachnothera magna*.

Detailed investigation on the bird life has not been done in this site, so we do not know much about the Restricted Range species. The site lies at the interface of the Indo-Gangetic Plains (Biome-12) and Indo-Chinese Tropical Moist Forest (Biome-9), and at the edge of Eastern Himalayas Endemic Bird Area (EBA-130: Stattersfield *et al.* 1998), so it is likely that many more species of conservation concern are found here. Presently, we have included this site only on the basis of presence of threatened species (A1) criteria.

Critically Endangered	
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
White-winged Duck	<i>Cairina scutulata</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>
Vulnerable	
Swamp Francolin	<i>Francolinus gularis</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>

## OTHER KEY FAUNA

Sonai-Rupai Wildlife Sanctuary has all the major mammal fauna present in Evergreen, Semi-evergreen and Moist Deciduous forests of Assam. Its continuity with the extensive forests of Arunachal Pradesh has enhanced its mammalian and avian diversity. It harbours the big four, i.e. Asian Elephant *Elephas maximus*, Tiger *Panthera tigris*, Leopard *P. pardus*, and Gaur *Bos frontalis*. Only One-horned Rhinoceros and Wild Buffalo are missing. Among

primates it has Assamese Macaque *Macaca assamensis* and Rhesus Macaque *M. mulatta*. The smaller carnivores are Jungle Cat *Felis chaus*, Leopard Cat *Prionailurus bengalensis*, Golden Jackal *Canis aureus*, Large Indian Civet *Viverra zibetha* and Small Indian Civet *Viverricula indica*. Sambar *Cervus unicolor*, Hog Deer *Axis porcinus* and Barking Deer *Muntiacus muntjak* are found in this IBA.

The reptiles and amphibians found in Sonai-Rupai are not well recorded.

LAND USE

- q Forest
- q Grassland
- q Riverine wetland

THREATS AND CONSERVATION ISSUES

- q Politically organized encroachment
- q Felling of trees
- q Grazing
- q Illegal fishing
- q Occasional poaching

Sonai-Rupai Wildlife Sanctuary has not received the kind of attention that such a valuable wilderness area deserves. It has all the potential to become one of the most important sanctuaries of northeast India. If Gelgeli grassland is protected and managed, the Bengal Florican would perhaps return. It can also serve as one of the reintroduction sites for the highly endangered Pygmy Hog *Sus salvanius*. This site is under grave threat from potential encroachers who have already cleared the adjacent Balipara and

Charduar Reserve Forests. Already, a part has been encroached since the early 1990s. Even the slightest opportunity given to the encroachers due to slackness in administration, may put the entire sanctuary in jeopardy. Hence, the site is in need of high conservation attention. The problem has been aggravated due to insurgency as well as a plan to convert some of the open areas into a firing range. Such plans should be dropped once and for all.

KEY CONTRIBUTORS

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Gelgeli grasslands in Sonai-Rupai support small populations of globally threatened Bengal Florican and Swamp Francolin.

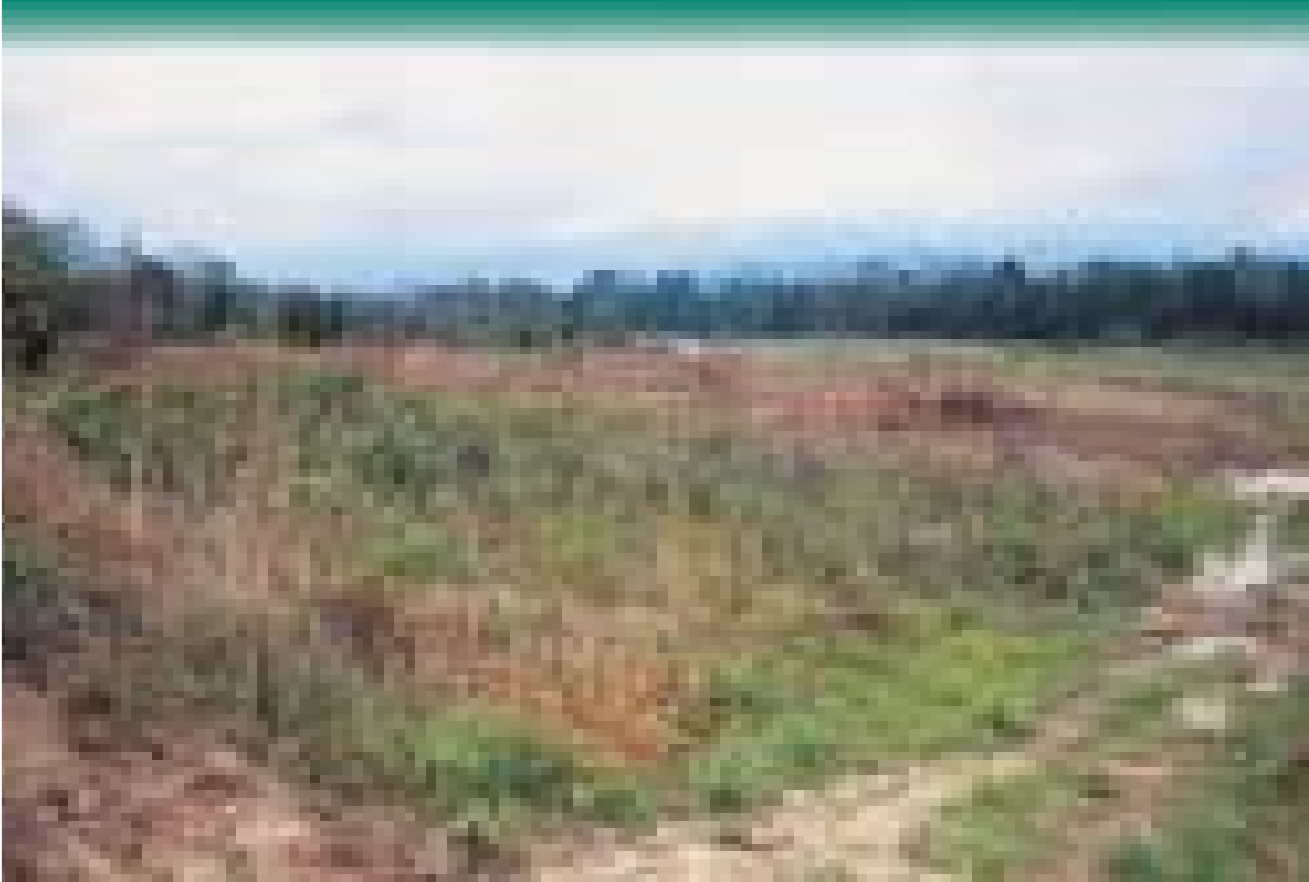


Photo: Anwaruddin Choudhury

## SUBANSIRI



IBA Site Code	: IN-AS-41
State	: Assam
District	: Dhemaji and Lakhimpur
Coordinates	: 27° 33' 30" N, 94° 17' 30" E
Ownership	: State
Area	: 451 ha
Altitude	: 100 – 1,000 m
Rainfall	: 2,000 – 5,000 mm
Temperature	: 6 °C to 34 °C
Biogeographic Zone	: Himalaya
Habitats	: Tropical Wet Evergreen, Tropical Semi-evergreen, Riverine Vegetation

**IBA CRITERIA:** A1 (Threatened Species), A2 (Endemic Bird Area 130: Eastern Himalayas)

**PROTECTION STATUS:** Not officially protected

## GENERAL DESCRIPTION

This site includes two reserve forests, Subansiri in Dhemaji district and Dulung in Lakhimpur district in northeastern Assam. The river Subansiri passes through the middle of the IBA, while its tributaries Pavo, Geruka, Dirpai and Dulung drain other parts of the site. It is here that the Subansiri River debouches into the plains, forming a broad braided stretch of aquatic and terrestrial habitats.

The terrain of the site is hilly, as it covers foothills of the Eastern Himalayas. Small flat areas occur along the southern portion. The higher parts of Subansiri Reserve Forest are more than 300 m above msl.

The site is known for wildlife, especially Asian Elephant *Elephas maximus* and birds. There was an excellent patch of *terai* grassland in Dirpai area of Subansiri RF, where the Bengal Florican *Houbaropsis bengalensis* and the Swamp Francolin *Francolinus gularis* used to occur. While the call of the francolins is still heard, the florican has become sporadic. This is mainly due to encroachment and settlements in its grassland habitat. There is also a record of the Chestnut-breasted or Red-breasted Hill Partridge *Arborophila mandellii* from the higher areas of Subansiri RF (Choudhury 2000).

The entire area is clothed with thick, lush Tropical Evergreen and Semi-evergreen forests, with absolute habitat contiguity with Taley Valley Wildlife Sanctuary (IBA) of Arunachal Pradesh, across the river Subansiri.

## AVIFAUNA

Subansiri is an extremely important habitat for bird life. More than 200 bird species have been identified, some of them rare (A. U. Choudhury *pers. comm.* 2003). This site represents Biome-9 (Indo-Chinese Tropical Moist Forests) but birds of other biomes (5, 7, 8, 11 and 12) are also found here, some species only in winter. Some of the important species noted are the Himalayan Griffon *Gyps himalayensis*, Rufous-breasted Blue Flycatcher *Ficedula hodgsonii*, Slaty Flycatcher *F. tricolor*, Ferruginous Flycatcher *Muscicapa ferruginea*, Chestnut-headed Tesia *Tesia castaneocoronata*, Grey-bellied Tesia *T. cyaniventer*, Blue-throated Barbet *Megalaima asiatica*, Bay Woodpecker *Blythipicus pyrrhotis*, Maroon Oriole *Oriolus traillii*, Black-naped Oriole *O. tenuirostris*, Grey Treepie *Dendrocitta formosae*, Black-winged

Cuckoo Shrike *Coracina melaschistos*, White-throated Bulbul *Alophoixus flaveolus*, Black Bulbul *Hypsipetes leucocephalus*, Grey-winged Blackbird *Turdus boulboul*, Redheaded Babbler *Stachyris ruficeps*, Himalayan Golden-backed Woodpecker *Dinopium shorii*, Necklaced Laughingthrush *Garrulax moniligerus*, Black-gorgeted Laughingthrush *G. pectoralis* and Rufous-necked Laughingthrush *G. ruficollis*.

## Critically Endangered

Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

## Endangered

White-winged Duck	<i>Cairina scutulata</i>
Bengal Florican (no recent record)	<i>Houbaropsis bengalensis</i>

## Vulnerable

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>
Swamp Francolin	<i>Francolinus gularis</i>
Red-breasted Hill-Partridge (no recent report)	<i>Arborophila mandellii</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>

## Endemic Bird Area 130: Eastern Himalayas

Red-breasted Hill-Partridge (no recent report)	<i>Arborophila mandellii</i>
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## OTHER KEY FAUNA

Subansiri Reserve Forest has most of the major mammal species found in Tropical Evergreen and Semi-evergreen forests of Assam. It has four species of primates, such as the Slow Loris *Nycticebus coucang*, Capped Langur *Trachypithecus pileatus*, Assamese Macaque *Macaca assamensis* and Rhesus Macaque *M. mulatta*. Asiatic Black Bear *Ursus thibetanus* is perhaps the largest predator but is confined to higher altitudes. In the steamy jungles and tall grasslands, there are Tiger *Panthera tigris*, Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa* and Marbled Cat *Pardofelis marmorata* (Choudhury 1996). Gaur *Bos frontalis*, Serow *Nemorhaedus sumatraensis*, Sambar *Cervus unicolor*, and Barking

Deer *Muntiacus muntjak* are the ungulates. Malayan Giant Squirrel *Ratufa bicolor* is quite common in closed canopy forest. The Gangetic River Dolphin *Plantanista gangetica* is usually found in the monsoon, while Common Otter *Lutra lutra*, and Smooth Indian Otter *Lutrogale perspicillata* are found throughout the year in undisturbed streams and rivers.

LAND USE

- q Forest

THREATS AND CONSERVATION ISSUES

- q Environmental impact of the Lower Subansiri Hydel Project
- q Encroachment
- q Illegal felling of trees
- q Poaching
- q Grazing

India’s largest hydroelectric project (Siang project is yet to be commissioned) is being constructed here. Known as the Lower Subansiri Hydroelectric Project, its installed capacity will be 2000 MW. This is the most significant conservation issue that will affect the site. The central and state governments have laid down certain conditions to minimize the damage to the biodiversity of the site. One of the conditions laid down by the Government of India is the declaration of adjacent forests as wildlife sanctuaries or national parks. Therefore, this IBA site may soon get sanctuary status.

Owing to the very high biodiversity value of this proposed IBA, it is vital that a detailed bio-habitat analysis is undertaken by a reputed organization like the BNHS, before any decision can be taken with regard to the Lower Subansiri Hydroelectric Project. Such studies would need to focus on the presence and the likely impact on rare and endangered species of plants and animals and also on the impacts of wildlife on account of loss of riverine habitats such as sand banks, rivulets, denning and nesting sites and breeding

grounds of aquatic fauna. A special study is required to assess the impact of the dam, reservoir and supporting infrastructure such as labour and housing colonies on the migration route of elephants (Saghal and Sharma 2002).

According to the National Hydroelectric Power Corporation (NHPC), only 42 ha of Taley Valley WLS would be submerged by the reservoir. The fact is that the proposed reservoir would submerge a large primary forests of Taley RF and Panir RF in Arunachal Pradesh and Subansiri RF in Assam. These are vital forests for a large number of endangered species protected under the Indian Wildlife Protection Act (Choudhury 2002, Vagholikar and Ahmed 2003). The proposed submergence extends approximately 75 km upstream. Therefore, the impact on areas outside the Taley Valley WLS, including corridors and riverine patches, is likely to be as severe as the damage to the Sanctuary itself.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Neeraj Vagholikar, Manju Menon and Bikul Goswami

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Dirpai grasslands and the Himalayan foothills behind Subansiri reserve forest are home to many threatened birds.



Photo: Anwaruddin Choudhury

## TAMARANGA-DALANI-BHAIRAB COMPLEX



IBA Site Code	: IN-AS-42
State	: Assam
District	: Bongaigaon
Coordinates	: 26° 15' 00" N, 90° 30' 00" E
Ownership	: State
Area	: 4,600 ha
Altitude	: 30 - 499 m
Rainfall	: 2,000 - 3,000 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Freshwater Swamp, Tropical Moist Deciduous Forest, Tropical Bamboo Brakes

IBA CRITERIA: A1 (Threatened Species), A4iii ( $\geq 20,000$  waterbirds)

PROTECTION STATUS: Not officially protected

## GENERAL DESCRIPTION

Tamaranga-Dalani-Bhairab Complex includes the wetlands of Tamaranga, Konora, Paropota and Dalani, and an isolated hillock, Bhairab Pahar, in western Assam. The hillock has been proposed as a reserve forest. The area comprises four wetlands totalling more than 1,000 ha, and one proposed Reserve Forest of c. 3,605 ha. This IBA site is situated only 30 km from Bongaigaon town, the district headquarters. The *beels* (wetlands) are leased out by the Government for fishing. The proposed Reserve Forest is rocky hillock, part of an Archaean plateau, covered with degraded Moist Deciduous Forest and Bamboo brakes. Tamaranga and Dalani are large *beels* that attract many migratory birds including some rare ones. They are also good breeding grounds for resident waterbirds. The hill is surrounded by tribal settlements of the Bodo, Garo and Rabha tribes, who have been involved by the Forest Department under the Joint Forest Management scheme to protect the biodiversity. To promote ecotourism, the district administration has initiated a project named Bihanga Vihar.

The wetlands are covered with Water Hyacinth *Eichhornia crassipes*. Wherever this pernicious weed is not found, submerged and emergent plants can be seen. The surrounding forest is Tropical Moist Deciduous, dominated by *Sal Shorea robusta*.

## AVIFAUNA

More than 150 bird species are known to occur in this Complex, though the number could be much higher.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
Greater Adjutant	<i>Leptoptilos dubius</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Baer's Pochard	<i>Aythya baeri</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucorhynchus</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Ferruginous Pochard	<i>Aythya nyroca</i>

The site regularly holds more than 20,000 waterfowl in winter so it qualifies A4iii criteria ( $\geq 20,000$  waterbirds). It also harbours threatened species, so it fits A1 criteria also. As we do not have detailed data on the bird life of this site, we considered the site as Data Deficient.

## OTHER KEY FAUNA

Other fauna of the site include mammals such as the Golden Langur *Trachypithecus geei* (Choudhury 2002), Rhesus Macaque *Macaca mulatta*, Wild Boar *Sus scrofa*, Leopard *Panthera pardus*, Chinese Pangolin *Manis pentadactyla*, Barking Deer *Muntiacus muntjak*, and a small herd of Gaur *Bos frontalis*. Reptiles such as the Elongated Turtle *Indotestudo elongata* have been recorded on Bhairab Pahar, while various softshell turtles occur in the *beels*. Indian Rock Python *Python molurus* and Monitor Lizard *Varanus bengalensis* have also been recorded.

## LAND USE

- q Agriculture

## THREATS AND CONSERVATION ISSUES

- q Extensive fishing
- q Agriculture
- q Poaching / hunting
- q Collection of firewood

Bhairab Pahar is already degraded, although it has an important population of the Golden Langur and of Gaur. The wetlands are being overexploited. Uncontrolled fishing and spread of Water Hyacinth are the major problems for birds. With duly enforced conservation measures, these wetlands could become a paradise for waterfowl. Detailed investigation of bird life is urgently required. Nature awareness campaign should be started in the surrounding villages and schools.

## KEY CONTRIBUTORS

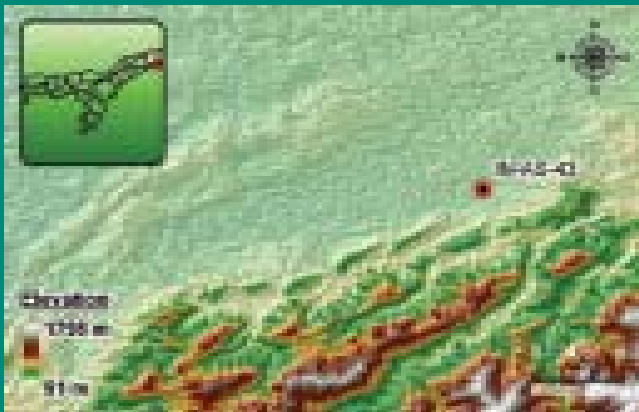
Hillojyoti Singha, Kulojyoti Lahkar and Sadashib Nath Sen

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TIRAP-BURHIDIHING



IBA Site Code	: IN-AS-43
State	: Assam
District	: Tinsukia
Coordinates	: 27° 20' 00" N, 95° 50' 60" E
Ownership	: State
Area	: 15,450 ha
Altitude	: 100 – 250 m
Rainfall	: 2,500 – 4,000 mm
Temperature	: 7 °C to 32 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Semi-evergreen Forest, Tropical Wet Evergreen Forest

IBA CRITERIA: A1 (Threatened Species)  
PROTECTION STATUS: Not officially protected

GENERAL DESCRIPTION

This IBA site in extreme eastern Assam includes seven reserve forests and two proposed reserve forests. The reserve forests are Burhidihing-North and South Block (2,295 ha), Kotha (1,130 ha), Namphai (2,100 ha), Tinkopani (3,030 ha), Tirap (1,454 ha), Tipong (445 ha) and additions to Tirap and Tipong (4, 995 ha). This IBA covers plains of the Burhi-Dihing River, as well as the foothills of Patkai Range.

All these areas bear tropical rainforest and are known strongholds of the endangered White-winged Duck *Cairina scutulata* (Choudhury 1996a, 1998). The Masked Finfoot *Heliopais personata* has been also reported (Choudhury 1997). These forests are also rich in primates and other wildlife.

A national highway and other roads pass through the area, making it accessible to a great extent. The approach to Namdapha National Park in Arunachal Pradesh is through this area and the habitat is still contiguous.

The vegetation of the site is mainly Tropical Wet Evergreen type, with *Dipterocarpus macrocarpus*, *Shorea assamica*, *Terminalia myriocarpa*, *Artocarpus chaplasha*, *Dillenia indica*, and *Ficus* spp. dominating. The important grasses are *Arundo donax*, *Phragmites karka*, *Imperata cylindrica*, and *Saccharum* spp. found along riverbanks and in depressions.

AVIFAUNA

Except for surveys by Choudhury (1996a, 1998) in search of White-winged Duck, not much work has been done on avifauna in this area. This site is extremely rich in birds, especially hornbills, pheasants and other forest birds. Most of the Indian bird species of the Indo-Chinese Tropical Moist Forests (Biome-9) are likely to be found in this IBA, besides species of other biomes (5, 7, 8, and 11) in winter. The important biome bird species are the Grey Peacock Pheasant *Polyplectron bicalcaratum*, Mountain Bamboo-partridge *Bambusicola fytchii*, Masked Finfoot *Heliopais personata*, Himalayan Flameback or Golden-backed Woodpecker *Dinopium shorii*, Blue-throated Barbet *Megalaima asiatica*, Bay Woodpecker *Blythipicus pyrrhotis*, Brown Hornbill *Anorrhinus tickelli*, Greater Necklaced Laughingthrush *Garrulax pectoralis*, Himalayan treepie *Dendrocitta formosae*, White-throated Bulbul *Alphoixus flaveolus*, Rufous-bellied Niltava *Niltava sundara*, and Nepal Fulvetta *Alcippe nipalensis*.

Detailed investigation on the bird life is required. Presently, we do not have information on the Restricted Range species, if any, found here. Similarly, information on biome-restricted assemblages is lacking. As the forest is largely intact, this site is extremely important for the protection of many forests birds.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
White-winged Duck	<i>Cairina scutulata</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Masked Finfoot	<i>Heliopais personata</i>
Near Threatened	
Great Pied Hornbill	<i>Buceros bicornis</i>
Brown Hornbill	<i>Anorrhinus tickelli</i>

OTHER KEY FAUNA

Tirap-Burhidihing IBA is rich in mammalian fauna. Seven species of primates are found there: Hoolock Gibbon *Hylobates hoolock*, Capped Langur *Trachypithecus pileatus*, Pigtailed Macaque *Macaca nemestrina*, Stump-tailed macaque *M. arctoides*, Rhesus Macaque *M. mulatta*, Assamese Macaque *M. assamensis* and Slow Loris *Nycticebus coucang* (Choudhury 1996b). The site is known for its large herds of Asian Elephant *Elephas maximus*. Major carnivores are Tiger *Panthera tigris*, Leopard *P. pardus* and Wild Dog *Cuon alpinus*. Asiatic Black Bear *Ursus thibetanus* is also reported. Malayan Giant Squirrel *Ratufa bicolor* and Common Giant Flying Squirrel *Petaurista petaurista* live in the closed canopy forest areas. Sambar *Cervus unicolor* and Barking Deer *Muntiacus muntjak*, as well as Gaur *Bos frontalis* are the major herbivores.

The reptiles and amphibians found in this IBA are not well recorded.

LAND USE

- q Forest
- q Agriculture

Tirap-Burhidihing IBA is a stronghold of the Endangered White-winged Duck.



Photo: Anwaruddin Choudhury

#### THREATS AND CONSERVATION ISSUES

- q Illegal felling of trees
- q Encroachment
- q Fishing
- q Opportunistic capture of Whitewinged ducklings and collection of eggs
- q Poaching
- q Coal mining in the vicinity

Encroachment has been a major issue in Kotha and Namphai areas. Most of the former forest is already under the plough. Fishing in the jungle pools that are habitats of the endangered White-winged Duck, and illegal felling are the other main issues. There is open cast coal mining just outside the site, which is a major environmental issue for this part of Assam. Namphai Reserve Forest was recommended as a sanctuary (Choudhury 1996a) but the issue is still pending with the government.

The lowland tropical rain forest has mostly disappeared from

Assam (and other parts of India), therefore, protection of this site is crucial, not only for threatened birds but also for many mammals and reptiles included in the Indian Wildlife (Protection) Act 1972.

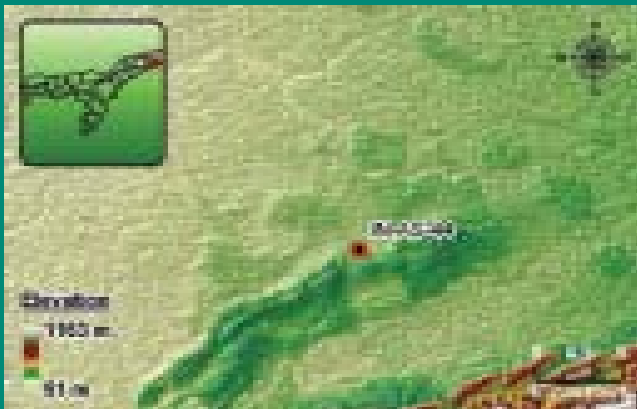
#### KEY CONTRIBUTORS

Anwaruddin Choudhury and Kulojyoti Lahkar

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## UPPER DIHING (EAST) COMPLEX



IBA Site Code	: IN-AS-44
State	: Assam
District	: Tinsukia
Coordinates	: 27° 23' 60" N, 95° 37' 30"E
Ownership	: State
Area	: 19,200 ha
Altitude	: 120 - 200 m
Rainfall	: 3,000 - 3,700 mm
Temperature	: 7 °C to 32 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Wet Evergreen Forest

**IBA CRITERIA:** A1 (Threatened Species), A2 (Endemic Bird Area 130: Eastern Himalayas, Secondary Area s079: North Myanmar lowlands)

**PROTECTION STATUS:** Not officially protected

### GENERAL DESCRIPTION

Upper Dihing (East) Complex includes four reserve forests, namely Upper Dihing (East Block) including the area leased to oil fields (13,168 ha), Kakojan (2,345 ha), Duarmara (653 ha) and Torani (2,040 ha) Reserve Forests. The Upper Dihing (East Block), Kakojan and Digboi Oil field areas are contiguous, while Torani and Duarmara are isolated areas some distance away. These forests are among the last remaining patches of Tropical Evergreen Forests of some significance in Assam. The area consists of slightly undulating plains. Dibru, the main river, flows through the Upper Dihing and Kakojan Reserve Forests. Many small perennial streams criss-cross the area, notably the Kharjan river. Small jungle pools and natural or artificial swampy areas are also present (Lahkar 2001). These forests are globally important, as a sizeable number of the White-winged Duck *Cairina scutulata* is found here (Choudhury 1996, 1998). There are also relatively recent reports of the Masked Finfoot *Heliopais personata* from this site (Choudhury 1997). There is also a past record of the Baikal Teal *Anas formosa* (Hooper 1958).

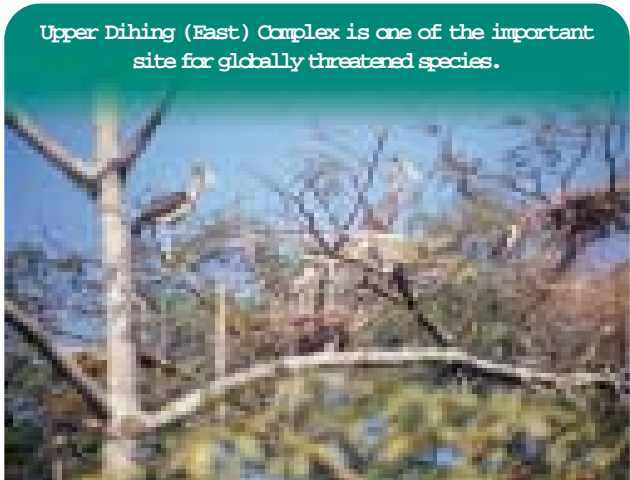
The vegetation of the site is mainly Tropical Wet Evergreen Rain Forest type. The important tree species are *Dipterocarpus macrocarpus*, *Shorea assamica*, *Mesua ferrea*, *Terminalia myriocarpa*, *Artocarpus chaplasha*, *Dillenia indica*, *Anthocephalus cadamba*, *Bombax ceiba* and *Ficus* spp. Scattered marshy depressions bear *Alpinia allughas*, *Arundo donax*, *Imperata cylindrical* and *Saccharum* spp. *Tectona grandis* is seen on roadside plantations (Lahkar 2001).

### AVIFAUNA

About 300 species of birds are reported from the site that includes threatened species such as the White-bellied Heron *Ardea insignis* and Purple Wood or Pale-capped Pigeon *Columba punicea* (Lahkar 2001). The Malay Fish-Owl *Bubo ketupu* has also been recorded (Lahkar 2002). Some interesting species of various biomes are: White-cheeked Hill Partridge *Arborophila atrogularis*, Grey Peacock Pheasant *Polyplectron bicalcaratum*, Masked Finfoot, Bamboo Partridge *Bambusicola fytchii*, Pale-headed Woodpecker *Gecinulus grantia*, Crow-billed Drongo *Dicrurus annectans*, Black-gorgeted Laughingthrush *Garrulax pectoralis*, Black-backed Forktail

*Enicurus immaculatus*, Spotted Wren Warbler *Spelaeornis formosus*, Rufousbellied Niltava *Muscicapa sundara*, Dull Slatybellied Ground Warbler *Tesia cyaniventer*, Pied Falconet *Microhierax melanoleucos*, Grey-headed Parakeet *Psittacula finschii*, Blyth's Kingfisher *Alcedo hercules*, Brown Hornbill *Anorrhinus tickelli*, Rufous-necked Hornbill *Aceros nipalensis*, Golden-throated Barbet *Megalaima franklinii*, Blue-throated Barbet *M. asiatica*, Bay Woodpecker *Blythipicus pyrrhotis*, Bluenaped Pitta *Pitta nipalensis*, Maroon oriole *Oriolus trailii*, Black-browed Treepie *Dendrocitta frontalis*, Himalayan Treepie *D. formosae*, Smaller Grey Cuckoo Shrike *Coracina melaschistos*, Short-billed Minivet *Pericrocotus brevirostris*, Orange-bellied Chloropsis *Chloropsis hardwickii*, White-throated Bulbul *Criniger flaveolus*, Spot-throated Babbler *Pellorneum albiventris*, Nepal Babbler *Alcippe nipalensis*, Slaty-backed Forktail *Enicurus immaculatus*, Black-breasted Thrush *Turdus dissimilis* and Red-headed Tit *Aegithalos concinnus*.

Other interesting birds, the Chinese Pond Heron *Ardeola bacchus*, rarely seen in eastern Assam, was recorded in October, 2000; the Malay or Tiger Bittern *Gorsachius melanolophus* was also seen in October 2000 (Lahkar 2001). More than 30 Ferruginous Pochards *Aythya nyroca* were counted in Digboi Oil Field in February 2000 (Lahkar 2001).



Upper Dihing (East) Complex is one of the important site for globally threatened species.

Photo: M. Zafar-ul-Islam

The Masked Finfoot is a rare bird all over its range from northeastern India to Malaya and Sumatra. It is a shy and secretive bird inhabiting wetlands inside the rainforests, preferring similar habitat as the White-winged Duck *Cairina scutulata*. Many local villagers and forest staff are not aware of any such bird although they are familiar with the White-winged Duck (Choudhury 1997). Individuals were seen near Dhekiayan forest village of Upper Dihing (East Block) RF in 1990-91 by Robin Sonowal and in Dibru river near Nazirating, just outside the boundaries of the Kakojan and Upper Dihing (East Block) RF in August-September 1992 by T. Moran (Choudhury 1997).

The Golden Plover *Pluvialis apricaria* is an uncommon winter visitor in Assam. Five birds were seen near Kherjan forest village just outside the Upper Dihing (east block) RF. This is the second record for the state (Choudhury 2000, Lahkar 2001).

Individuals of the Pale-capped Pigeon *Columba punicea* were also reported from this IBA, mainly in the Upper Dihing (East Block) RF (Lahkar 2001).

Malay Fish-Owl or Buffy Fish Owl was also reported from Upper Dihing RF almost after 100 years (Lahkar 2001).

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
White-bellied Heron	<i>Ardea insignis</i>
Greater Adjutant	<i>Leptoptilos dubius</i>
White-winged Duck	<i>Cairina scutulata</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Baikal Teal	<i>Anas formosa</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Masked Finfoot	<i>Heliopais personata</i>
Purple Wood-Pigeon	<i>Columba punicea</i>
Rufous-necked Hornbill	<i>Aceros nepalensis</i>
Austen's Babbler	<i>Stachyris oglei</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Ferruginous Pochard	<i>Aythya nyroca</i>
White-cheeked Hill-Partridge	<i>Arborophila atrogularis</i>
Blyth's Kingfisher	<i>Alcedo hercules</i>
Great Pied Hornbill	<i>Buceros bicornis</i>
Brown Hornbill	<i>Anorrhinus tickelli</i>
Chestnut-backed Laughingthrush	<i>Garrulax nuchalis</i>
Endemic Bird Area 130: Eastern Himalayas	
Austen's Babbler	<i>Stachyris oglei</i>
Black-browed Leaf-Warbler	<i>Phylloscopus cantator</i>
Secondary Area s079: North Myanmar lowlands	
Chestnut-backed Laughingthrush	<i>Garrulax nuchalis</i>

#### OTHER KEY FAUNA

Mammalian fauna of the site includes Tiger *Panthera tigris*, Leopard *P. pardus*, Asian Elephant *Elephas maximus*, Hoolock Gibbon *Hylobates hoolock*, Capped Langur *Trachypithecus pileatus*, Pig-tailed Macaque *Macaca nemestrina*, Rhesus Macaque *M. mulatta*, Slow Loris *Nycticebus coucang*, Gaur *Bos frontalis*, Golden Jackal *Canis aureus*, Wild Dog *Cuon alpinus*, Malayan Giant Squirrel *Ratufa bicolor*, Common Giant Flying Squirrel *Petaurista petaurista*, Sambar *Cervus unicolor* and Barking Deer *Muntiacus muntjak*. Not much is known about reptiles and amphibians.

#### LAND USE

- q Forest
- q Industry (oil installations)
- q Agriculture

#### THREATS AND CONSERVATION ISSUES

- q Pollution from oil mining
- q Expansion of oil drilling
- q Illegal felling of trees
- q Illegal fishing and Poaching
- q Encroachment

The main problem is oil drilling that extends over larger parts of Upper Dihing (East Block) RF. Many of the waterbodies near the oil rigs are heavily polluted, posing serious threat to the environment. Illegal felling of trees, encroachment by forest villagers and surrounding villagers, and poaching including collection of eggs and ducklings of the White-winged Duck, are other major issues. There is an urgent need to control poaching, better management of the Reserve Forests, environmental awareness amongst villagers and the people from the oil refineries. The White-winged Duck could become a focal point for the conservation of these excellent tropical moist forests.

#### KEY CONTRIBUTOR

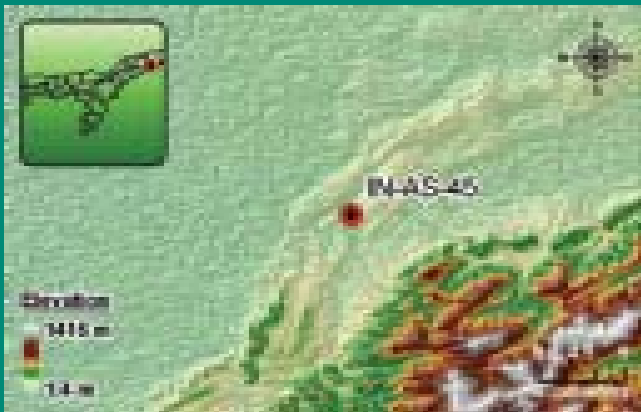
Kulojyoti Lahkar

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UPPER DIHING (WEST) COMPLEX



IBA Site Code	: IN-AS-45
State	: Assam
District	: Dibrugarh, Tinsukia and Sivasagar
Coordinates	: 27° 16' 00" N, 95° 28' 30" E
Ownership	: State
Area	: 46,775 ha
Altitude	: 120 - 474 m
Rainfall	: 3,000 - 4,000 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Tropical Wet Evergreen Forest

IBA CRITERIA: A1 (Threatened Species), A2 (Endemic Bird Area 130: Eastern Himalayas)  
PROTECTION STATUS: Not officially protected

GENERAL DESCRIPTION

This complex includes six Reserve Forests and three proposed Reserve Forests, all contiguous with each other. The areas constituting this IBA are Upper Dihing (27,500 ha), Joypur (10,870 ha), Dirak including additions (3,708 ha), Dilli (3,030 ha), Makumpani including additions (538 ha), Desali (200 ha), Digboi-west block (929 ha). Together they form the largest contiguous tropical rainforest area extant in the whole of Brahmaputra Valley (Choudhury 1996a). Of these, the Upper Dihing (West Block) has a long history of protection and management as a Reserve Forest, which was notified more than a century ago, in 1888. Some of the finest rain forests on flat plains in India are seen here. The area varies from slightly undulating plains in Upper Dihing to hills in Joypur, Dirak and Dilli, which are the foothills of the Patkai Range. The habitats in Dilli, Joypur and Dirak are contiguous with the forests of Arunachal Pradesh.

Burhi-Dihing is the main river flowing through the site. Other notable rivers are Disang or Dilli, Dirak, Namsang and Digboi. Many small perennial streams criss-cross the area, noteworthy are the Janglu and Pawoi nullahs. These forests, especially Upper Dihing (West Block) have the largest known population of the globally endangered White-winged Duck *Cairina scutulata* (Choudhury 1996a, 1998). Together with other forests, the estimated population is higher than in any IBA in the world

A jungle pool near Choraipung, Upper Dihing (west block) reserve forest. This IBA has the largest known population of the Endangered White-winged Duck.



Photo: Anwaruddin Choudhury

(BirdLife International 2001, Choudhury 2000). This area is also rich in primates and was recommended for protected area status way back in the 1980s (Choudhury 1989). Five species of hornbills occur in the area, including the rarer Brown Hornbill *Anorrhinus tickelli* and the Rufous-necked Hornbill *Aceros nipalensis*.

Soraipung (meaning 'bird spring') in Upper Dihing is a well-known site for the Asian Elephant *Elephas maximus* and avifauna.

The habitat is Tropical Rainforest. Champion and Seth (1968) described it as 'Assam Valley Tropical Wet Evergreen Forest'. *Arundo donax*, *Imperata cylindrica* and *Saccharum* spp. occur in the scattered swampy/marshy depressions.

AVIFAUNA

More than 300 bird species have been recorded so far, probably more are present as many skulking and dense forest birds are difficult to see (A. U. Choudhury pers. comm. 2002).

In the 1870s, the White-winged Duck was common in Tinsukia and Dibrugarh districts (Hume and Marshall 1879-1881; Baker 1908) and it was considered to be the fourth commonest duck species (after Teal *Anas crecca*, Mallard *A. platyrhynchos* and Gadwall *A. strepera*) at forest beels/ jungle pools/ wetlands throughout the Sadiya Frontier Tracts in the 1930s, with at least a pair in almost every waterlogged area (Parsons 1939, BirdLife International 2001).

Most of the White-winged Ducks were reported from this IBA site during a study carried out by Choudhury in 1992-96. The population was estimated to be 90 in the Upper Dihing RF (West Block) alone, 19 in Joypur RF during 1992-94 (Choudhury 2000). Lone birds or in small groups such as in twos and threes can easily be seen in the secluded jungle pools of Upper Dihing (West Block) RF.

The Upper Dihing (West Block) RF is also a good place for other rare birds such as Rufous-necked Hornbill *Aceros nipalensis*, Beautiful Nuthatch *Sitta formosa*, Brown Hornbill *Anorrhinus tickelli* and White-bellied Heron *Ardea insignis*. Perhaps this is the only IBA site in Assam, where the Beautiful Nuthatch can be seen (Mridu Paban Phukan verbally to Kulojyoti Lahkar) as there is no recent report of this species from anywhere in Assam (Choudhury 2000), except Barail Hills (Alström et al. 1994).

The elusive White-bellied Heron *Ardea insignis* can also be seen in Joypur Reserve Forest particularly in winter. Usually singles



and twos are seen on the bank of Namsang and Burhi Dihing rivers (Mridu Paban Phukan verbally to Kulojyoti Lahkar).

Another rare bird the Pale-capped Pigeon *Columba punicea* was also sighted in this IBA, in all three reserve forests.

In this IBA, sighting of Rufous-necked Hornbill is also not uncommon as small groups of this globally Vulnerable species is seen deep inside the forest

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Endangered	
White-bellied Heron	<i>Ardea insignis</i>
White-winged Duck	<i>Cairina scutulata</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Purple Wood-Pigeon	<i>Columba punicea</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Beautiful Nuthatch	<i>Sitta formosa</i>
Near Threatened	
Great Pied Hornbill	<i>Buceros bicornis</i>
Brown Hornbill	<i>Anorrhinus tickelli</i>
Endemic Bird Area 130: Eastern Himalayas	
Black-browed Leaf-Warbler	<i>Phylloscopus cantator</i>

#### OTHER KEY FAUNA

The area is rich in other wildlife, with six species of primates: Hoolock Gibbon *Hylobates hoolock*, Capped Langur *Trachypitecus pileatus*, Pig-tailed Macaque *Macaca nemestrina*, Rhesus Macaque *M. mulatta*, Stump-tailed macaque *M. arctoides*, Assamese Macaque *M. assamensis* Slow Loris *Nycticebus coucang* (Choudhury 1996b) and two large cats Tiger *Panthera tigris* and Leopard *P. pardus*. The Clouded Leopard *Neofelis nebulosa*, Leopard Cat *Prionailurus bengalensis*, Marbled Cat *Pardofelis marmorata* and Golden Cat *Catopuma temminckii* probably exist, though records are lacking.

The Wild Dog *Cuon alpinus* is another predator of these forests. Their main prey species are Sambar *Cervus unicolor* and Barking Deer *Muntiacus muntjak*. Asian Elephant and Gaur *Bos frontalis* are two large mammals. The closed canopy forest provides habitat to Malayan Giant Squirrel *Ratufa bicolor* and Common Giant Flying Squirrel *Petaurista petaurista* (Choudhury 1996a). Not much is known about the reptiles and amphibians.

#### LAND USE

- q Forest
- q Industry (oil installations)
- q Agriculture

#### THREATS AND CONSERVATION ISSUES

- q Encroachment by forest villagers
- q Encroachment by fringe villagers
- q Pollution from oil and coal mining
- q Expansion of oil and coal mining
- q Illegal felling of trees
- q Illegal fishing
- q Poaching
- q Snaring and collection of eggs and ducklings
- q Use of pesticides in the nearby tea gardens

The main issue is mining of oil and coal, the former is restricted to Upper Dihing (West Block) RF, the latter in Joypur and Dilli RFs. Many of the water bodies near oilrigs are heavily polluted, thus posing serious threat to the environment. Coal mining in Joypur is done illegally. This needs to be stopped at once.

These forests, especially Upper Dihing (West Block) RF were logged since 1930s which was a major source of raw material for plywood industries and trolley line was laid inside the forest, but that is now abandoned. Despite heavy logging, the habitat and wildlife survived to a great extent. Illegal felling of trees, encroachment by forest villagers and poaching, including collection of eggs and ducklings, of the White-winged Duck are other major issues.

After the great earthquake of 1950 and subsequent floods, many displaced persons were settled inside Upper Dihing (WB) RF as 'Forest Villagers'. This short-term solution led to some of the finest habitats of the White-winged Duck, Masked Finfoot and Elephant being cleared for settlement because of their suitability for paddy cultivation (marshy area with pools). Lakkhipathar, Borjan, Balijan are some such examples. Unfortunately, not much can be done now, except for protecting the remaining habitat from further encroachment and degradation.

#### KEY CONTRIBUTORS

Anwaruddin Choudhury, Kulojyoti Lahkar and Mridu Paban Phukan

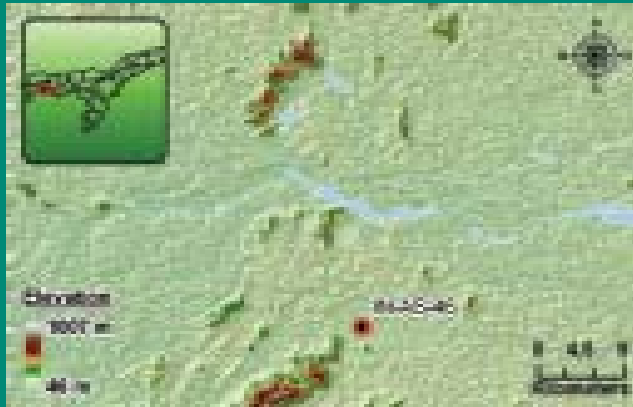
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#### POST SCRIPT

An area of 111 sq. km has been notified as an Dihing-Patkai Wildlife Sanctuary in June 2004.

## URPOD BEEL



IBA Site Code	: IN-AS-46
State	: Assam
District	: Goalpara
Coordinates	: 26° 04' 60" N, 90° 35' 60" E
Ownership	: State
Area	: 1,000 ha
Altitude	: 40 m
Rainfall	: >2,000 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: North-East
Habitats	: Freshwater Swamp, Seasonal Marsh

IBA CRITERIA: A1 (Threatened species), A4iii ( $\geq 20,000$  waterbirds)

PROTECTION STATUS: Not officially protected

## GENERAL DESCRIPTION

Urpod *Beel* is the largest lake in western Assam, comprising a waterspread of c. 700 ha. It is only 12 km from Goalpara town, the district headquarters. It is approximately 150 km from the State capital, Guwahati. Urpod is an important site for wintering waterfowl. It is connected with two more waterbodies, Patakata and Matia *beels* to the east, which makes the total area of the wetland more than 1,000 ha. The Ajagar Hill Reserve Forest to the south, Rakhashini RF to the north and Sagunbahi RF to the west surrounds Urpod *beel*. These RF are mainly degraded Sal *Shorea robusta* forests, except for Ajagar RF, the largest reserve forest of Goalpara district, which is Mixed Deciduous type and adjacent to the West Garo Hills district of Meghalaya. It is in comparatively good condition.

The Urpod *beel* is well known for lotus *Nelumbo*, lilies *Nymphaea*, as well as *Trapa* spp. and *Euryale ferox*. Villagers harvest them for food and medicine. In shallow zones, sedges and reeds abound. *Ipomea aquatica* has covered a large part of the water body, almost acquiring weed proportions.

## AVIFAUNA

Like most other wetlands of Assam, Urpod *beel* is under tremendous human pressure. Despite this, very large numbers of waterfowl are present in winter. If it were adequately protected from human disturbance, it could attract hundreds of thousands of waterfowl. The IBA easily qualifies for the Ramsar criteria of a wetland of international importance. The Lesser Adjutant *Leptoptilos javanicus* is regularly seen. There are no recent records of Greater Adjutant *L. dubius*, but with protection to the habitat, it could reappear.

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>

## OTHER KEY FAUNA

The wetland is surrounded by degraded forest where the Asian Elephant *Elephas maximus* is still seen. There are confirmed records of Leopard Cat *Prionailurus bengalensis*. Probably, other predators also occur. The wetland is enriched with more than 45 species of fish, such as carps, climbing perch (*Anabas*) and catfishes.

## LAND USE

- q Agriculture
- q Wetland
- q Fishing

## THREATS AND CONSERVATION ISSUES

- q Siltation
- q Agriculture
- q Brick kilns
- q Grazing
- q Over fishing

Like all other wetlands, siltation, excessive fishing and reclamation for agriculture are the major conservation issues. An awareness programme has been undertaken for the locals and fishermen.

## KEY CONTRIBUTOR

Nature's Foster

## KEY REFERENCES

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