

## JHARKHAND

IN-NT

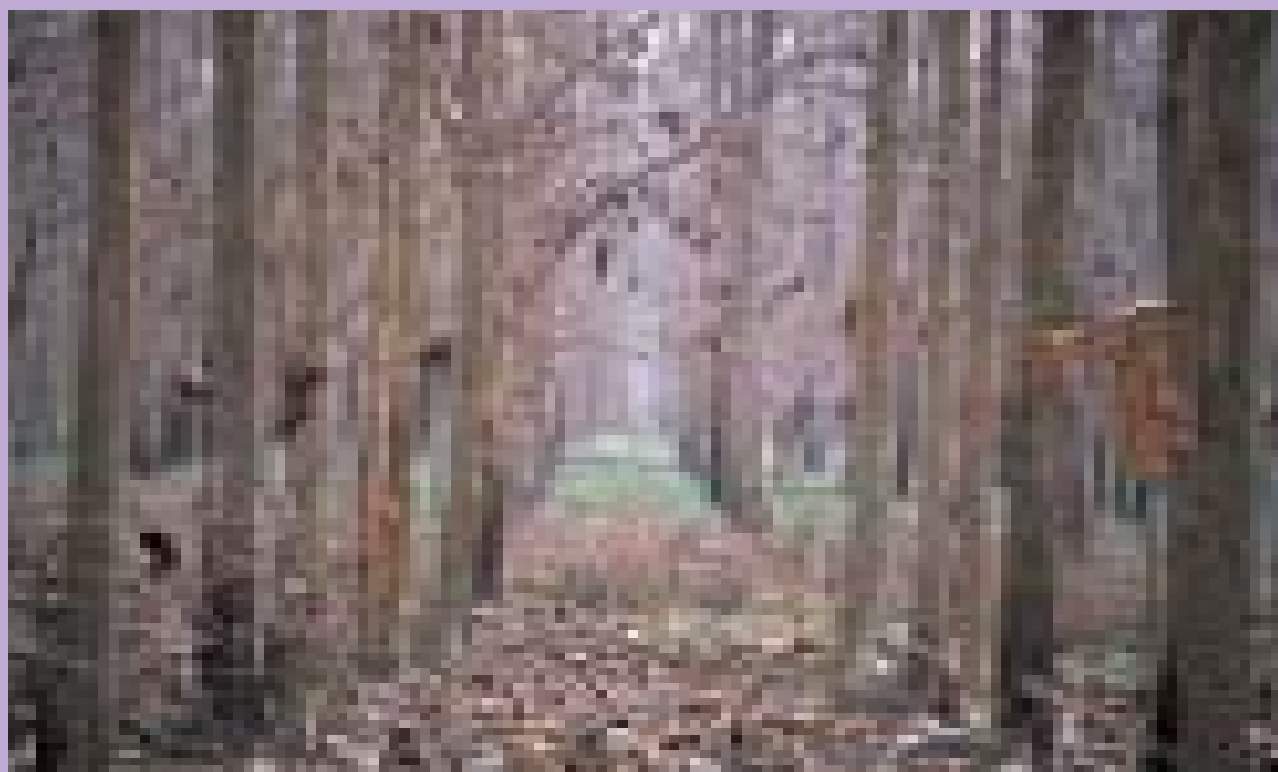


Photo: Asad R. Rahmani

About 13.6% area of Jharkhand is forested that provide habitat to many birds but plantation of teak is not preferred habitat for most of the birds.

Jharkhand is one of the recently formed states of India; it was carved out of Bihar on November 1, 2000. It accounts for 45% of former Bihar's geographical area, mainly the Chotanagpur plateau. It is one of the most important mineral-producing states of the country (Ministry of Environment and Forest 2001). The total area of the State is 79,714,00 ha, about 2.4% of the country's geographical area. The State is bounded by Bihar on the north, West Bengal on the east, Madhya Pradesh on the west and by Orissa on the south. Jharkhand has a forest-dwelling tribal population of about 22.5%. The total human population of the State is 26.91 million (2.6% of the country's population), of which the rural population is 78% (2001 Census). The population density is 338 persons per sq. km.

### Vegetation

According to the Forest Survey of India report 2001, Jharkhand ranks 10<sup>th</sup> among all the States and Union Territories of India in respect of the area under forest cover. The dense forest distributed in the northwest and the southeast of the State constitutes about 15%, the open forest areas are evenly distributed in the north, central and southeastern parts of the State and constitute about 13.6%, and the non-forested area is about 71.6%. The total recorded forest area is about 23,605 sq. km which contains reserve forest of about 18.6%, protected forest of 81.3% and unclassified forest about 0.1% (Ministry of Environment and Forest 2001). The main forest types are (a) Peninsular Dry and Moist Sal Forests, (b) Hill Valley Swamp Forest, (c) Moist Sal Savannah, (d) Moist Mixed Deciduous Forest, (e) Riverine Forest, (f) Bamboo and Cane brakes (Ministry of Environment and Forest 1999).

The increase in the forest cover in the Santhal Pargana and the Gaya district is mainly due to plantation of *Dalbergia sissoo*, *Acacia catechu*, *Eucalyptus* spp., *Acacia* spp. raised during the early 1990s. Losses in Singhbhum and Hazaribagh districts are mainly due to encroachments and also due to the transfer of about 2 sq. km of forest area to the Kiriburu mines in the Singhbhum district and 7 sq. km of forest area to the Piparwar Coal Project of Central Coalfields Ltd. in the Hazaribagh district (Ministry of Environment and Forest 2001).

### IBAs AND PROTECTED AREAS

The protected areas of the State include the Betla (Palamau) National Park (area: 23167 ha), which is the only National Park in the State and ten wildlife sanctuaries namely, Dalma Wildlife Sanctuary (area: 19322 ha), Hazaribagh Wildlife Sanctuary (IBA site, area: 18625 ha), Koderma Wildlife Sanctuary (area: 17795 ha), Lawalong Wildlife Sanctuary (area: 20700 ha), Mahauaduar Wildlife Sanctuary (area: 6325 ha), Palamau Wildlife Sanctuary (IBA site, area: 79433 ha), Palkot Wildlife Sanctuary (18300 ha), Parasnath Wildlife Sanctuary (area: 4933 ha), Topchanchi Wildlife Sanctuary (area: 875 ha), Uduwa Lake Wildlife Sanctuary (IBA site, area: 565 ha). There are only three IBAs in Jharkhand: Hazaribagh Wildlife Sanctuary, Palamau National Park and Uduwa Lake Bird Sanctuary.

IBAs of Jharkhand

IBA site codes	IBA site names	IBA criteria
IN-JH-01	Hazaribagh Wildlife Sanctuary and North Karanpur Valley	A1
IN-JH-02	Palamau Tiger Reserve	A1, A3
IN-JH-03	Udhuwa Lake Wildlife Sanctuary	A1

AVIFAUNA

Jharkhand is one of the least studied states and the information on birds is meagre. A bird checklist of the State is not available. The only ornithological work (e.g. Jamal Ara) was conducted nearly 40 years ago when Jharkhand was a part of Bihar. Later, Shahi (1982) published some articles on poaching crises which also dealt with areas which are now in Bihar. Nevertheless, in Palamau Tiger Reserve about 170 bird species have been recorded (Sinha and Mukherjee 1995), including six globally threatened species and 33 Biome-restricted species. Although none of the globally threatened species have significant populations in this IBA, the forests, especially the core area of 21,300 ha is good for birds of Dry Deciduous Forest (Biome-11). We have included this site specifically on the basis of biome-restricted assemblage criteria.

Hazaribagh Wildlife Sanctuary is rich in avifauna although a systematic survey needs to be done here in order to know more about birds and their density and abundance. In 1996, Ara (1966) published a preliminary list of 97 bird species. Since then, no further study has been conducted on birds in this IBA. The site has the typical Dry Deciduous Forest of central India. Based on the biome classification of BirdLife International (undated), it lies in the Indo-Malayan Tropical Dry Zone (Biome-11).

Udhuwa Lake Bird Sanctuary is situated in the northeastern part of the State and here also not much work has been done, but Choudhary *et al.* (1992) have identified 83 species of birds, including many forest species. The list includes such rarities as Nordmann’s Greenshank or Spotted Greenshank *Tringa guttifer*. This however, needs to be reconfirmed. A. Mishra (*pers. comm.* 2001) has sighted the Near Threatened Black-necked Stork *Ephippiorhynchus asiaticus*. At present, Udhuwa does not qualify for A4 (iii) criteria but once it is properly protected, this IBA has great potential to become an important waterfowl refuge (A. Mishra *pers. comm.* 2001).

List of threatened birds with IBA site codes

Critically Endangered		
Oriental White-backed Vulture	<i>Gyps bengalensis</i>	IN-JH-01, 02, 03
Vulnerable		
Lesser Adjutant	<i>Leptoptilos javanicus</i>	IN-JH-03
Pallas’s Fish-Eagle	<i>Haliaeetus leucoryphus</i>	IN-JH-03
Greater Spotted Eagle	<i>Aquila clanga</i>	IN-JH-02
Lesser Kestrel	<i>Falco naumanni</i>	IN-JH-02
Green Munia	<i>Amandava formosa</i>	IN-JH-02
Near Threatened		
Darter	<i>Anhinga melanogaster</i>	IN-JH-03
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	IN-JH-02, 03
Oriental White Ibis	<i>Threskiornis melanocephalus</i>	IN-JH-02, 03

DISTRIBUTION OF THREATENED SPECIES

In some of the IBAs Lesser Adjutant have been recorded, especially from the Udhuwa Wildlife Sanctuary (Arvind Mishra *pers. comm.* 2003); the Pallas’s Fish Eagle is another important bird which is reported regularly from this IBA (Arvind Mishra *pers. comm.* 2003). The Green Munia was recorded earlier from Palamau National Park in 1878 (one specimen in the British Museum of Natural History). There is no recent record of this bird from this region except the sale of 2000 Green Munia at Ranchi, which does not imply a large population in this region as trapping activities are focused in Orissa and Madhya Pradesh (BirdLife International 2001). The Greater Spotted Eagle and the Lesser Kestrel are migratory birds and can be seen in and around the Udhuwa Lake and the Palamau National Park but not in significant numbers (Arvind Mishra *pers. comm.* 2003).

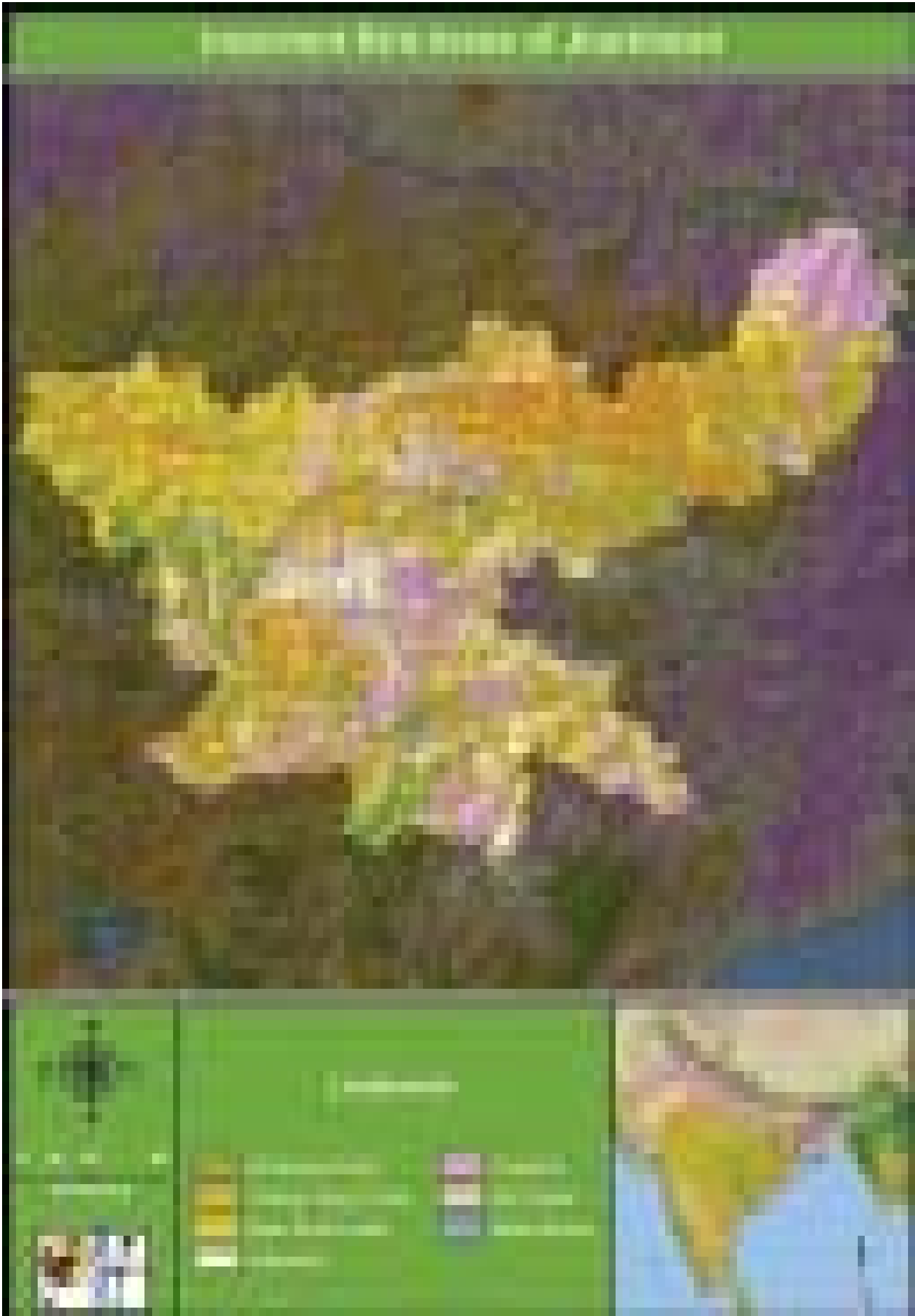
The other potential areas are Satpahad hills and other wetlands sites which are not properly studied. More intensive surveys are required to know the density and population of birds.

Biomes

The major portions of the state is covered with Biome-11 (Indo-Malayan Tropical Dry Zone). This large biome has Dry Deciduous forest, Dry Evergreen forest, Thorn forest, Semi-desert scrub, Wooded Grasslands, Secondary Grasslands, arable land and abandoned farmland as key habitats (BirdLife International, undated). In the north of the state, a small portion lies under Biome-12 (Indo-Gangetic Plains), with wetlands, moist/marshy grasslands and scrub on marshy ground as the key habitats. Fifty-nine species are listed under Biome-11, all common and widely distributed. The Biome-12 has 13 species, with some globally threatened species. None of the globally threatened species of this biome is reported from Jharkhand.

THREATS AND CONSERVATION ISSUES

Jharkhand is a densely populated State with almost 80% rural population. Most of the people live in villages and about 22.5% of the population is tribal. Large mineral and industrial undertakings are scattered in the tribal belt. Although these industries have created some employment opportunities, most of the tribals are marginalized on their own land. Their marginalization puts further pressures on the existing forests. The key threats to the IBAs and the birds in the State are:



- q Extraction Industry (Mining)
- q Dams
- q Tourism
- q Overgrazing by livestock
- q Lack of administration
- q Extensive poaching of birds
- q Agricultural intensification and expansion
- q Excessive fishing

The vital forest corridors of Hazaribagh and North Karanpur Valley are threatened by the existing and the proposed mining by Coal India Ltd. The environmental and social impacts of coal mining in general, and the impact on wildlife corridors in particular, have been highlighted for many years by groups in this region. One of the important areas in Hazaribagh, likely to be affected by the large-scale opening of coal mining, is the North Karanpur valley. A thermal power station and a dam also threaten the area. Due to constant lobbying by locals in the Hazaribagh region, the World Bank commissioned a study to look at the adverse impacts on wildlife habitat and corridors caused by open cast mining (Vagholekar, *in press*). Parts of the area have already been mined extensively, destroying vital wildlife corridors.

The Hazaribagh-Koderma railway line that was to pass through the Hazaribagh Wildlife Sanctuary has been realigned for environmental reasons. It will now skirt the forests of the National Park and will go from Koderma to Bagoder and Bishungarh. This railway line along with a proposed highway, threatened to divide the protected area into two, making animal movement here hazardous. Environmental groups protested against the railway line and their efforts appear to have borne positive results.

Man-made fires result in the degradation of natural habitat and hamper regeneration. Illicit felling of Khair *Acacia catachu* and Teak *Tectona grandis*, and poaching of animals by armed groups have been reported in the Palamau Tiger Reserve. There are 72 villages in the buffer zone of the Reserve and 113 villages within a radius of 5 km. The projected human population in these villages is 1,16,550 of which 39,000 people live within the Reserve boundary. About 70,000 cattle from these villages graze in the Reserve. Wild animals are affected by the foot and mouth disease and anthrax. Armed extremists are also present in the Reserve, causing a severe law and order problem (Jain 2001). For these reasons, the protection of the forests and wildlife, studies of wildlife and the promotion of tourism have become difficult to implement. Coal mining has been proposed in the area about 1.6 km from the Reserve boundary. The Reserve is also threatened by the Kutku dam of the North Koel multipurpose hydroelectric project.

In the Uduwa Lake Wildlife Sanctuary, poaching of birds and illegal fishing have been the biggest challenges for the Forest Department, since they declared it as a bird Sanctuary, under the Wildlife Protection Act 1972. The surrounding hillocks face a severe threat from the heavy immigration of a suspected Bangladeshi population which has settled beside the lake, which adds to the demands on the surrounding natural resources. Also, the area surrounding both the lakes is used for agriculture, and in summer when the water level of the Berhale recedes, the exposed land is used for agriculture.

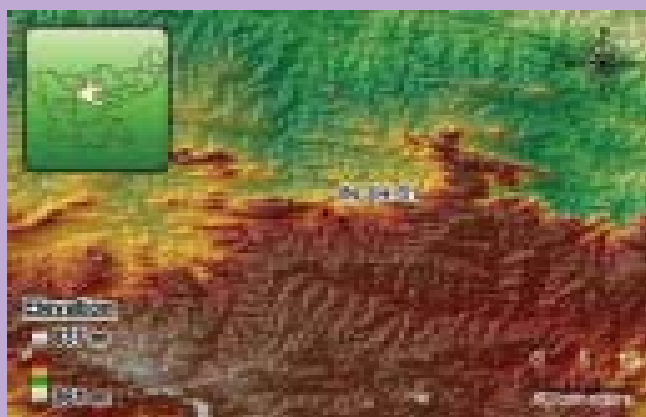
#### THREATS TO IBAS

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

#### REFERENCES

- Ara, J. (1966) Hazaribagh National Park (Bihar) re-visited, *J. Bombay Nat. Hist. Soc.* 63: 123-138.
- BirdLife International (2001) *Threatened Birds of Asia. BirdLife International Red Data Book*. BirdLife International, Cambridge, U.K.
- BirdLife International (undated) *Important Bird Areas (IBAs) in Asia: Project briefing book*. BirdLife International, Cambridge, U.K., unpublished.
- Choudhary, S. K., Mishra, A., Ghosh, T. K. and Jha, A. (1992) Uduwa Lake Bird Sanctuary: Status Report I. Mandar Nature Club, Bhagalpur. Pp. 26.
- Jain, P. (2001) Project Tiger Status Report, Project Tiger Ministry of Environment and Forests, Government of India, New Delhi. Unpublished.
- Ministry of Environment and Forests (1999) State of Forest. Forest Survey of India, Dehra Dun.
- Ministry of Environment and Forests (2001) State of Forest. Forest Survey of India, Dehra Dun.
- Shahi, S. P. (1982) Bird Massacre in Manjhul. *Hornbill* 3: 17-22.
- Sinha, S. P. and Mukherjee, S. K. (1995) The Management of Palamau Tiger Reserve: A Report. Wildlife Institute of India, Dehradun. Pp 24.
- Vagholekar, N. (in press) Mining impacts on wildlife habitat-a national picture, Kalpavriksh, Pune.

## HAZARIBAGH WILDLIFE SANCTUARY AND NORTH KARANPUR VALLEY



IBA Site Code	: IN-JH-01
State	: Jharkhand
District	: Hazaribagh
Coordinates	: 24° 08' 19" N, 85° 20' 18" E
Ownership	: State
Area	: 1,98,625 ha
Altitude	: Not available
Rainfall	: Not available
Temperature	: Not available
Biogeographic Zone	: Deccan Peninsula
Habitats	: Tropical Dry Deciduous Forest

IBA CRITERIA: A1 (Threatened Species), Data Deficient  
 PROTECTION STATUS: Wildlife Sanctuary, established in May 1976

### GENERAL DESCRIPTION

Hazaribagh Wildlife Sanctuary (18,625 ha) and the North Karanpur Valley (180,000 ha) are located in the Upper Damodar region of the newly formed Jharkhand state. The Sanctuary is drained by 37 streams and 5 rivers and is a vital catchment for the Damodar River. Around one-third area of the Valley is under forest cover, mainly Sal *Shorea robusta* with a substantial wildlife population, especially in the thickly forested Mahudi and Satpahar ranges.

Earlier, the Sanctuary was under the control of the Raja of Ramgarha and was meant for royal shooting for sport and entertainment purposes.

The forest of Hazaribagh Wildlife Sanctuary and North Karanpur Valley in Jharkhand are vital wildlife corridors connecting the jungles of Palamau in the west to those of Ranchi in the south, and the Konar watershed in the east. Hazaribagh is one of the first protected areas of the erstwhile Bihar state before its division.

### AVIFAUNA

The Sanctuary is rich in avifauna though a systematic survey needs to be done. In 1966, Ara (1966) published a preliminary list of 97 bird species. Since then, no further study has been conducted on birds in this sanctuary.

The site has typical Dry Deciduous Forest of central India. Based on the biome classification of BirdLife International (undated), it lies in the Indo-Malayan Tropical Dry Zone (Biome-11).

Not much is known about the bird life so we consider this site as Data Deficient.

#### Critically Endangered

Oriental White-backed Vulture *Gyps bengalensis*

### OTHER KEY FAUNA

Major fauna includes Tiger *Panthera tigris*, Leopard *P. pardus*, Sambar *Cervus unicolor*, Spotted Deer *Axis axis*, Nilgai *Boselaphus tragocamelus*, Gaur *Bos frontalis*, Sloth bear *Melursus ursinus*, Golden Jackal *Canis aureus* and Wild dog or Dhole *Cuon alpinus*.

### LAND USE

- q Nature conservation and research
- q Tourism and recreation
- q Watershed management

### THREATS AND CONSERVATION ISSUES

- q Dams and extraction industry (Mining)
- q Tourism
- q Extreme poaching
- q Agricultural intensification and expansion

The vital forest corridors of Hazaribagh and North Karanpur Valley are threatened by existing and proposed mining by Coal India Ltd. The overall environmental and social impacts of coal mining in Hazaribagh in general, and the impact on wildlife corridors in particular has been highlighted for many years by groups in this region. One of the important areas in Hazaribagh likely to be affected by large-scale opening of coal mining is the North Karanpur valley. A thermal power station and a dam also threaten the area. Due to constant lobbying by locals in the Hazaribagh region, the World Bank commissioned a study to look at adverse impacts on wildlife habitat and corridors due to open cast mining (Vagholekar *in press*). Parts of the area have already been mined extensively destroying vital wildlife corridors.

The Hazaribagh-Koderma railway line that was to pass through the Hazaribagh WLS has been realigned due to environmental reasons. It will now skirt the forests of the Sanctuary and will go from Koderma to Bagoder and Bishungarh. This railway line along with a proposed highway had threatened to cut the protected area into two, making animal movement hazardous. Environmental groups had protested against the railway line and the efforts appear to have borne positive results.

Tourism also causes disturbance to wildlife within the Sanctuary. The forest understorey lacks new trees which means that as the trees die, no others will come up to replace them. The intensity of grazing has increased considerably within the last five years and takes place much more openly and boldly. Along with grazing, lopping, felling of young trees, and removal of bark for rope making also goes on.

### KEY CONTRIBUTOR

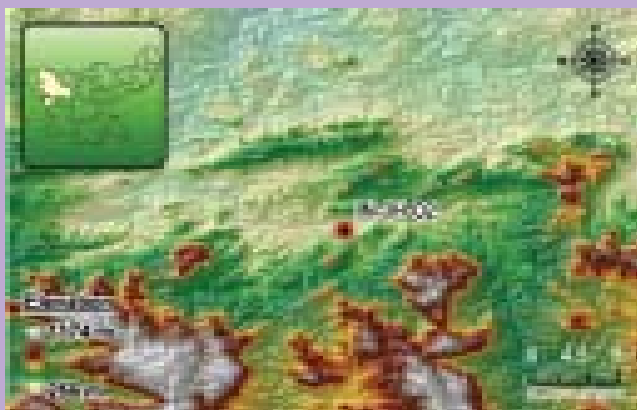
Neeraj Vagholekar

### KEY REFERENCES

- Ara, J. (1966) Hazaribagh National Park (Bihar) re-visited. *J. Bombay Nat. Hist. Soc.* 63: 123-138.
- Vagholekar, N. (*in press*) Mining impacts on wildlife habitat - A national picture. Kalpavriksh, Pune.

JH-02

## PALAMAU TIGER RESERVE



<b>IBA Site Code</b>	: IN-JH-02
<b>State</b>	: Jharkhand
<b>District</b>	: Palamau
<b>Coordinates</b>	: 23° 39' 36" N, 84° 09' 35" E
<b>Area</b>	: 79,433 ha
<b>Altitude</b>	: 300 -1,140 m
<b>Rainfall</b>	: 1,036 mm
<b>Temperature</b>	: 1 °C to 50 °C
<b>Ownership</b>	: State
<b>Biogeographic Zone</b>	: Deccan Peninsula
<b>Habitats</b>	: Tropical Bamboo Brakes, Tropical Dry Deciduous, Tropical Grassland, Riverine Vegetation

**IBA CRITERIA:** A1 (Threatened Species), A3 (Biome-11: Indo-Malayan Tropical Dry Zone)

**PROTECTION STATUS:** Tiger Reserve, established in June 1974

### GENERAL DESCRIPTION

Palamau Tiger Reserve lies in the western part of the Chhotanagpur plateau. It was one of the first nine Tiger reserves launched in 1973. The forest stretches from the edge of the Netarhat Hill Range in the south to the river Auranga in the north and from the Latehar-Sarju road in the east to the Madhya Pradesh border in the west. The forests of Palamau are the catchment of the River North Koel. The Reserve has Sal *Shorea robusta* forests in the lower slopes and Dry Deciduous forests in the upper slopes. Bamboo and scattered open grassy patches are common. Almost pure patches of Bel *Aegle marmelos* are unique vegetation types found mostly in the northern part of the Reserve. The Reserve also has several waterfalls and a hot water spring (Jain 2001).

### AVIFAUNA

Although the avifauna is largely unstudied, about 170 bird species have been recorded (Sinha and Mukherjee 1995), including six globally threatened species and 24 biome restricted species. Although none of the globally threatened species have significant populations in Palamau, the Reserve, especially the core area of 21,300 ha is good for birds of dry deciduous forests (Biome-11). We have included this site mainly on the basis of biome-restricted assemblage criteria. More studies are required to find out the density and abundance of various species of birds.

Among 170 species reported from this area Plum-headed Parakeet *Psittacula cyanocephala* are seen easily.



Photo: Ajit Deshmukh

#### Critically Endangered

Oriental White-backed Vulture *Gyps bengalensis*

#### Vulnerable

Greater Spotted Eagle *Aquila clanga*  
Lesser Kestrel *Falco naumanni*  
Green Munia *Amandava formosa*

#### Near Threatened

Black-necked Stork *Ephippiorhynchus asiaticus*  
Oriental White Ibis *Threskiornis melanocephalus*

#### Biome-11: Indo-Malayan Tropical Dry Zone

Oriental White-backed Vulture *Gyps bengalensis*  
Red-headed Vulture *Sarcogyps calvus*  
White-eyed Buzzard *Butastur teesa*  
Jungle Bush-Quail *Perdica asiatica*  
Common Peafowl *Pavo cristatus*  
Yellow-wattled Lapwing *Vanellus malabaricus*  
Yellow-footed Green-Pigeon *Treron phaenicoptera*  
Plum-headed Parakeet *Psittacula cyanocephala*  
Sirkeer Cuckoo *Phaenicophaeus leschenaultii*  
Common Indian Nightjar *Caprimulgus asiaticus*  
Indian Grey Hornbill *Ocyrceros birostris*  
Yellow-crowned Woodpecker *Dendrocopos mahrattensis*  
Indian Lark *Mirafra assamica*  
Ashy-crowned Sparrow-Lark *Eremopterix grisea*  
Black-headed Cuckoo-Shrike *Coracina melanoptera*  
Small Minivet *Pericrocotus cinnamomeus*  
Indian Robin *Saxicoloides fulicata*  
Rufous-bellied Babbler *Dumetia hyperythra*  
Large Grey Babbler *Turdoides malcolmi*  
Ashy-wren Warbler *Prinia socialis*  
Jungle Warbler *Prinia sylvatica*  
Brahminy Myna *Sturnus pagodarum*  
White-bellied Drongo *Dicrurus caeruleus*  
Ashy Woodswallow *Artamus fuscus*

#### OTHER KEY FAUNA

Other than the Tiger *Panthera tigris*, mammals commonly sighted are Leopard *Panthera pardus*, Asian Elephant *Elephas maximus*, Gaur *Bos frontalis*, Sambar *Cervus unicolor*, Chital *Axis axis*, Barking deer *Muntiacus muntjak* and Nilgai *Boselaphus tragocamelus*.

#### LAND USE

- ☐ Grazing land of livestock
- ☐ Agriculture
- ☐ Transportation

#### THREATS AND CONSERVATION ISSUES

- ☐ Construction of dam
- ☐ Extraction industry (mining)
- ☐ Poaching and hunting by tribals
- ☐ Illegal felling of trees
- ☐ Livestock grazing
- ☐ Forest fires
- ☐ Law and order problem (insurgency)
- ☐ Invasive species (weeds)

The area is under stress from excessive grazing and man-made fires which result in degradation of natural habitat and hamper regeneration. Illicit felling of Khair *Acacia catechu* and Teak *Tectona grandis*, and poaching of animals by armed groups are reported. There are 72 villages in the buffer zone of the Reserve and 113 villages within a radius of 5 km of the Reserve. The projected human population in these villages is 1,16,550, of which 39,000 people live within the Reserve boundary. About 70,000 cattle from these villages graze in the Reserve. Wild animals are affected by foot-and-mouth disease and anthrax. Armed extremists are also present in the Reserve causing a severe law and order problem (Jain 2001). Due to this reason, protection of the forest and its wildlife, study of wildlife and promotion of tourism has become difficult to carry out.

Man-made forest fires are common in Jharkhand.



Photo: Sa. Lim Javed

JH-02

Coal mining has been proposed about 1.6 km from the Reserve boundary. The Reserve is also threatened by the Kutku Dam of the North Koel multipurpose hydroelectric project.

#### KEY CONTRIBUTORS

Arvind Mishra and D. S. Srivastava

#### KEY REFERENCES

- Jain, Pushp (2001) Project Tiger Status Report, Project Tiger Ministry of Environment and Forests, Government of India, New Delhi. Unpublished.
- Jain, S. I. and Sastry, A. R. K. (1983) Botany of some tiger habitats in India. Botanical survey of India, Department of Environment, Government of India.
- Sinha, S. P. and Mukherjee, S. K. (1995) The Management of Palamau Tiger Reserve: A Report. Wildlife Institute of India, Dehradun. Pp. 24.

JH-03

## UDHUWA LAKE BIRD SANCTUARY



<b>IBA Site Code</b>	: IN-JH-03
<b>State</b>	: Jharkhand
<b>District</b>	: Sahebganj
<b>Coordinates</b>	: 24° 59' 37" N, 87° 49' 21" E
<b>Ownership</b>	: State
<b>Area</b>	: 565 ha
<b>Altitude</b>	: Not available
<b>Rainfall</b>	: 1,000 mm
<b>Temperature</b>	: 13 °C to 40 °C
<b>Biogeographic Zone</b>	: Gangetic Plain
<b>Habitats</b>	: Freshwater Swamp (Reservoir)

**IBA CRITERIA:** A1 (Threatened Species)  
**PROTECTION STATUS:** Wildlife Sanctuary, established in 1991

### GENERAL DESCRIPTION

Udhwa or Udhwa Lake is situated 11 kms southeast of Rajmahal in the Sahebganj district of Jharkhand state. This Bird Sanctuary is constituted by two waterbodies, namely Pataura (155 ha) and Berhale (410 ha). Pataura is a comparatively clean waterbody and the average depth is about 2 m whereas Berhale is a shallow one having average depth of about 70 cm. Berhale is largely choked with aquatic vegetation, with small pockets of clear water.

Both these waterbodies are inter-connected by a water channel and the whole bird Sanctuary is connected with River Ganga at Farraka by Udhwa Nala which is a 25 km stretch. Pataura is surrounded by hillocks on one side, and on the other side, the Forest Department has done some plantations (on the hillocks).

### AVIFAUNA

Not much work has been done on this Sanctuary, but Choudhary *et al.* (1992) have identified 83 species of birds, including many forest species. The list includes such rarities as Nordmann's Greenshank or Spotted Greenshank *Tringa guttifer* but this needs confirmation. A. Mishra (*pers. comm.* 2001) has sighted the Near Threatened Black-necked Stork *Ephippiorhynchus asiaticus*.

At present, it does not qualify in A4iii criteria but once it is properly protected, Udhwa has great potential to become an important waterfowl refuge (A. Mishra *pers. comm.* 2001).

Critically Endangered	
Oriental White-backed Vulture	<i>Gyps bengalensis</i>
Vulnerable	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>
Near Threatened	
Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Oriental White Ibis	<i>Threskiornis melanocephalus</i>

### OTHER KEY FAUNA

There are not many large mammals of conservation concern. The lake has about 22 fish species, most of them of commercial value (Choudhary *et al.* 1992).

### LAND USE

- ☐ Agriculture
- ☐ Fishing

### THREATS AND CONSERVATION ISSUES

- ☐ Agriculture and illegal settlements
- ☐ Illegal fishing and poaching
- ☐ Tree felling in surrounding areas
- ☐ Use of fertilizers and pesticides

Poaching of birds and illegal fishing are the biggest challenges for the Forest Department ever since it was declared as a bird sanctuary under the Indian Wildlife (Protection) Act. The surrounding hillocks suffer a severe threat due to heavy influx of suspected illegal Bangladeshi migrants who have settled beside the lake and have added to the demand on the surrounding natural resources. Also, the area surrounding both the lakes is used for agriculture, and in summer when the water-level of Berhale recedes, the exposed land is also used for agriculture.

### KEY CONTRIBUTOR

Arvind Mishra

### KEY REFERENCE

Choudhary, S. K., Mishra, A., Ghosh, T. K. and Jha, A. (1992) Udhwa Lake Bird Sanctuary: Status Report I. Mandar Nature Club, Bhagalpur. Pp. 26.