

PROJECT REPORT

ON

"SURVEY OF THE POTENTIAL IBAS IN BIHAR"

(OCTOBER 2013 TO FEBRUARY 2014)

UNDER IBCN SMALL GRANT THROUGH RSPB / BNHS



Prepared
By

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INDIAN BIRD CONSERVATION NETWORK

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Background:

This project work was aimed at exploring the areas which were not properly studied earlier or have remained ignored by the workers. Even our existing IBAs were not exposed to their rich potential. On a couple of occasions, we were privileged by the company of Mr. Ian Barber and Dr. Paul Donald, the RSPB representatives. On occasions, our field research worker of Mandar Nature Club, Jai Nandan Mandal, our IBCN members, Dr. Gopal Sharma – Scientist-in-Charge, Bihar and Jharkhand, Zoological Survey of India, Patna., Mr. Navin Kumar. DGM, Bihar State Tourism Development Corporation, Patna., Sri Anup Mukerji, ex – Chief Secretary, Bihar, Dr. Samir Kumar Sinha, Research Officer, Wildlife Trust of India, Valmikinagar Tiger Reserve, W. Champaran, Bihar., Sri Nand Kishore, Director, Valmikinagar Tiger Reserve, W. Champaran, Bihar., Sri Lalit Kumar Singh, Senior Deputy Collector, Jehanabad, Bihar and Dr. Deepak Balasubramanian, Project Coordinator, UNICEF-Bihar were associated in the survey.

The sites in Banka district, could not be explored due to momentary non-conducive situation during the planned schedule. But many new sites were visited which were either unnoticed or unplanned by us as we had lack of feedback about these sites earlier. Out of 38 districts of Bihar state, 17 districts were covered bordering Bangladesh, Nepal and Uttar Pradesh like Bhagalpur, Araria, Kishanganj, Purnea, Katihar, Begusarai, Nalanda, Nawada, Gaya, Jamui, Vaishali, Patna, West Champaran, East Champaran, Samastipur, Darbhanga and Siwan. Despite of many potential sites (most of them are the wetlands) existing and probably qualifying the IBA criteria in the state of Bihar. Since the consciousness has increased in the state and more reports about such sites are coming from Public, Govt., and Media. These sites have not been studied properly and no sufficient baseline data is available. The planned sites are spread in fourteen different districts of the state i.e. districts which are less recognized and explored. Few of them are close to our base of operation and few are hundreds of km. away from each other.

These sites are:

1. Jagatpur Lake (Dist. Bhagalpur): - Non PA / Non IBA

Jagatpur Lake is a small privately owned Freshwater Lake at 25° 20.524' N, 87° 02.385' E about four km north to the northern end of the Ganga bridge (Vikramshila Setu) in Bhagalpur district spread in an area of about 200 ha. The site lies at a distance of only 16 km from the district head quarter of Bhagalpur just by the side of the national highway which connects Bhagalpur to Naugachhia. Jagatpur Lake, however a small waterbody, is one of the best birding sites in Bihar. One cannot imagine such a potential birding site just besides a road which is busy with heavy traffic, day and night. The lake is surrounded by orchards, bamboo groves, crop fields and Banana

plantation. This perennial lake formed by the flood water of the River Ganga and the rainfall never dries completely unless its water is pumped out for irrigation and drying the lake for fishing. During floods, the water area spreads in an area of up to 400 ha which shrinks up to 50 ha in summer. Due to good rainfall in 2013, the water depth was high in the lake.

The major part of the lake is infested with the aquatic weed and other floating, submerged and emergent vegetation. But the *Eichhornia* on the margins of the lake provides good breeding habitat to many species of birds like Purple Swamphen *Porphyrio porphyrio* in thousands, along with good numbers of Bronze-winged Jacana *Metopidius indicus*, Pheasant-tailed Jacana *Hydrophasianus chirurgus*, Indian Moorhen *Gallinula chloropus*, and White-breasted Waterhen *Amaurornis phoenicurus* etc. fishing is a regular practice here but the villagers do not much disturb the birds. There is not much fishing during the winter season and thus it favours the migratory birds during winter. During the winter season specially, one can observe thousands of birds at any point of time.

The Endangered species among the threatened category found here are the Greater Adjutant *Leptoptilos dubius* Black-bellied Tern *Sterna acuticauda*, Vulnerable species are Pallas's Fish-eagle *Haliaeetus leucoryphus* Lesser Adjutant *Leptoptilos javanicus* and the Near Threatened are Oriental Darter *Anhinga melanogaster* Black-necked Stork *Ephippiorhynchus asiaticus* Black-headed Ibis *Threskiornis melanocephalus* and Ferruginous Duck *Aythya nyroca*

Among other species of interest, Dark-throated Thrush *Turdus ruficollis*, Clamorous Reed-warbler *Acrocephalus stentoreus*, Fulvous Whistling Duck *Dendrocygna bicolor* and Lesser Whistling Duck *Dendrocygna javanica*, Cotton Pygmy Goose *Nettapus coromandelianus*, Marsh Harrier *Circus aeruginosus*, and Osprey *Pandion haliaetus* are seen regularly, and sometimes Pied Harrier *Circus melanoleucos* too. Always in winter, one can witness three to four thousand anatids and Coot *Fulica atra* regularly in good number apart from the permanent resident breeders. More importantly, the site is a feeding ground of Greater Adjutant *Leptoptilos dubius*, Lesser Adjutant *Leptoptilos javanicus*, Black-necked Stork *Ephippiorhynchus asiaticus*, Woolly-necked Stork *Ciconia episcopus*, and Black Ibis *Pseudibis papillosa*, which breed close by.

The key threats in and around the lake are the Major road traffic, road construction and other development activities like constructions of school, petrol pump, etc. near the lake, Pumping out water for irrigation Agricultural run off, Siltation etc.

2. Kalbalia dhar (Dist. Bhagalpur) – Non PA/ Non IBA

The site is very close to river Ganga about 3 km further north of the Jagatpur Lake at at 25° 21.892' N, 87° 03.794' E. The road from Bhagalpur to Naugachhia across Jagatpur Lake intercepts the narrow left over channel of river Ganga which more or less continues up to Satish Nagar – Narayanpur (25° 24.290'N and 86°50.897'E) alongside the river course of Ganga about 20-25 km in west.

The site is the regular feeding ground of Lesser Adjutant *Leptoptilos javanicus* in good number, Black Ibis *Pseudibis papillosa* and sometimes the Greater Adjutant *Leptoptilos dubius* and Black-necked Stork *Ephippiorhynchus asiaticus* too. Asian Openbill *Anastomus oscitans*, Lesser-whistling Teal *Dendrocygna javanica* are commonly seen during winter when the water is sufficiently available in the channel other than the Ferruginous Duck *Aythya nyroca* sometimes. Common Kestrel *Falco tinnunculus* and other raptors are the common sights which feed upon the small animals also from the crop fields around the channel.

3. Ganga Prasad Jheel (Dist. Bhagalpur) – Non PA/ Non IBA

Ganga Prasad Jheel in Gopalpur Block Naugachhia Sub Division in Bhagalpur district spread in an area of about 600 - 700 ha along the roadside in a length of about 4 km on the north to river Ganga from 25° 21.534' N and 87° 09.198' E, up to 25° 19.717' N and 87° 10.592' E. The water spread area shrinks to a great extent in summer and the dried area is used for cultivation. The site is said to be the part of the main river course of Ganga which after shifting left over this low lying area in the form of a lake. Recently built roads and embankment interrupted the inflow of water from Ganga river but still the lake receives water from the Kosi river to its north. Some new wetlands have been formed as a result of roads and embankment construction like Tinkonwa Dhar close to the river Ganga at 25° 19.200' N and 87° 09.922' E.

The lake is heavily infested by aquatic weeds like *Eichhornia* and other floating and submerged vegetation like Dhaincha *Sesbania sesban* which is grown to be used as fuel. There is not much fishing during winter inside the lake but trapping, hunting, and poisoning of birds are reported in the area. The area around the lake is known for the breeding of many important bird species like Black-necked Stork *Ephippiorhynchus asiaticus*, Lesser Adjutant *Leptoptilos javanicus* and Woolly-necked Stork *Ciconia episcopus* and this lake is the main foraging ground for these birds but the local nomadic hunting tribe Gulgulawa is a great threat for the birds as they steal the eggs and chicks of the birds and kill the large birds for food and other purposes. The large birds that breed

inside the villages are safe as local people do not molest them but they are probably not safe in the countryside.

As a result of awareness generated by the members of Mandar Nature Club, the population of these species seems to be increasing in the area. The lake supports a good population of Asian Openbill *Anastomus oscitans*, Black Ibis *Pseudibis papillosa*, Black-headed Ibis *Threskiornis melanocephalus*, and varieties of waders like Grey-headed Lapwing *Vanellus cinereus* in good number. Mudflats of the area are very much potential for waders and other species. During the last 20 years, the Northern Lapwing *Vanellus vanellus* was observed by us only twice in Bihar, once in Gogabeel (Katihar) in 1996 and again in Ganga Prasad Jheel in 2014.

Purple Swamphen *Porphyrio porphyria*, Bronze-winged Jacana *Metopidius indicus*, Pheasant-tailed Jacana *Hydrophasianus chirurgus*, Indian Moorhen *Gallinula chloropus*, White-breasted Waterhen *Amaurornis phoenicurus*, and Red-wattled Lapwing *Vanellus indicus* are breeding among the floating vegetation of *Eichhornia* and other weeds. Lesser Whistling-duck *Dendrocygna javanica*, Cotton Pygmy Goose *Nettapus coromandelianus*, Coot *Fulica atra*, and Ferruginous Duck *Aythya nyroca* are regularly observed here.

The threatened species of birds observed in Ganga Prasad Jheel are: Lesser Adjutant *Leptoptilos javanicus* as Vulnerable and Oriental Darter *Anhinga melanogaster* Black-necked Stork *Ephippiorhynchus asiaticus* Black-headed Ibis *Threskiornis melanocephalus* Ferruginous Duck *Aythya nyroca* as Near Threatened.

Construction of Roads and embankments, Poaching, hunting, and poisoning of birds, Pumping out of water for irrigation, Agricultural run off, Siltation and Grazing of livestock are the key threats for the site.

4. Kajra Dhar (Dist. Araria) – Non PA/ Non IBA

Kajra Dhar, a small waterbody of about 150 ha at 26° 06.137'N and 87° 16.288'E about 6 km from Raniganj in Araria district is mainly a rain fed wetland which swells during monsoon up to a length of about 3 km and .05 km in width. This wetland remains almost choked with *Eichhornia* but even then extensive fishing practice takes place here through different methods. Other than *Eichhornia*, Makhana *Euryale ferox* is grown inside the waterbody. Jute *Corchorus sp.* Maize, Wheat and other crops are cultivated heavily on the margin of the wetland throughout. The tribal community has settled in a village besides the lake migrated here distant places of Bihar and Jharkhand The Bangladeshi refugees also have made their Refugee Colony near the lake. These tribals and other

local communities always keep on hunting the lake for fishes, molluscs and crustaceans from under the floating *Eichhornia* vegetation and also using boats in good number for fishing.

In our infrequent visits, Kajra Dhar seems not very rich in avifauna as regards to the diversity and count but this is the regular feeding ground for the birds like Lesser Adjutant *Leptoptilos javanicus*. There are few colonies of breeding Lesser Adjutant which mainly depend on this wetland for food. 15 nests of Lesser Adjutant were observed on three trees in the campus of Raniganj police station in January 2014 at 26° 04.801'N and 87° 14.335'E. This suggests that the site supports more than 1% biogeographic Population in India of Lesser Adjutant. The Greater Adjutant *Leptoptilos dubius* are also being reported by the people from this area no authentic record is found yet.

Among the threatened species, vulnerable Lesser Adjutant *Leptoptilos javanicus* near threatened River Tern *Sterna aurantia* have been observed in this wetland. But the other birds of importance are the Bank Myna *Acridotheres ginginianus*, Bengal Bush-Lark or Rufous-winged Bush-Lark *Mirafra assamica*, Black Ibis *Pseudibis papillosa* Pied Harrier *Circus melanoleucos* Lesser Whistling Teal *Dendrocygna javanica*, Coot *Fulica atra*, Black Ibis *Pseudibis papillosa*, Purple Heron *Ardea purpurea*, Golden Oriole *Oriolus oriolus*, Plum Headed Parakeet *Psittacula cyanocephala* and the waders like Wood Sandpiper *Tringa glareola*, Little Ringed Plover *Charadrius dubius*, Stints, Snipes and Grey-headed Lapwing *Vanellus cinereus*.

The key threats observed are the Pumping out water for Irrigation, Agricultural run off., Siltation, Aquatic weeds, lack of regular study, Encroachment of Lake area etc.

5. Raniganj Protected Forest (PF)

Raniganj Protected Forest basically a grassland at Hasanpur, in Araria district at 26° 06.588'N and 87° 14.051'E is spread in an area of about 300 acre is only very close to Kajra Dhar about 3.5 km NW in aerial distance.

This PF is a deep sandy bed and grassland with an arboretum developed with some plantations introduced in between the grassland. A big pond has also been created in the campus. Now the waterbirds specially the Lesser Whistling Teal *Dendrocygna javanica* are roosting in this pond in hundreds when they are disturbed in the wetlands in the surround. The deep sand layer makes difficult for the crops and other trees to survive except the grassland.

Some other grasslands around Raniganj PF are Singhia PF 25° 58.435' N and 87° 18.753' E in Purnea district (about 16 km), Hariya Bara PF 25°08.449' N and 87°26.344' E in Araria (21 km.) and Simraha PF 26° 12.051' N and 87° 19.238' E in Araria (13 km.) all in aerial distance from Raniganj PF are again rich in grassland birds and the possible sites for Bengal Florican which was explored by the member of RSPB Dr. Paul Donald with the IBCN state coordinator Arvind Mishra in 2014. These sites were not explored earlier for birds but the sightings in a single visit are really encouraging

Key Bird species observed in the area are:

1. Asian Koel	<i>Eudynamis scolopacea</i>	Raniganj
2. Black francolin	<i>Francolinus francolinus</i>	Hariya Bara, Simraha - Araria
3. Brown Shrike	<i>Lanius cristatus</i>	Simraha
4. Common Woodshrike	<i>Tephrodornis pondicerianu</i>	Raniganj
5. Common Greenshank	<i>Tringa nebularia</i>	Araria route
6. Common Iora	<i>Aegithina tiphia</i>	Singhia forest, Purnea
7. Common Kestrel	<i>Falco tinnunculus</i>	Hariya Bara, Simraha - Araria
8. Common Woodshrike - nest	<i>Tephrodornis pondicerianus</i>	Hariya Bara, Simraha - Araria
9. Eurasian Thick-knee	<i>Burhinus oedicephalus</i>	Kosi-Bhagalpur (nest) and Hariya Bara, Simraha - Araria
10. Indian Bushlark	<i>Mirafra erythroptera</i>	Araria, Mahananda
11. Indian Cuckoo	<i>Cuculus micropterus</i>	Raniganj
12. Lesser Adjutant		Kosi, Purnea, araria
13. Rufous-winged Bushlark (Bengal Bushlark)	<i>Mirafra assamica</i>	Mahananda river, Araria
14. Shikra	<i>Accipiter badius</i>	Simraha
15. Yellow-throated Sparrow (Chestnut-shouldered Petronia)	<i>Petronia xanthocollis</i>	Singhia forest, Purnea
16. Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>	Hariya Bara, Simraha - Araria

The grassland area of Raniganj PF is inhabited by the birds like Indian Cuckoo *Cuculus micropterus*, Common Woodshrike *Tephrodornis pondicerianu*, Bengal Bush Lark *Mirafra assamica*, Red-winged Bush-Lark or Indian Bush-Lark *Mirafra erythroptera* and Black Francolin *Francolinus francolinus* Yellow-wattled Lapwing *Vanellus malabaricus* and has also been explored for the search of Bengal Florican *Houbaropsis bengalensis*.

The key threats observed are the Plantation among the grassland, Lacking the management of grassland, Scheme of developing Amusement Park in the area of grassland.

This site is partially protected by the department of environment and forests and there is no poaching, poisoning, hunting.

6. Kachhudah Lake (Dist. Kishanganj)

Kachhudah lake a horse shoe shaped wetland spread in an area of about 150 ha in Thakurganj block of Kishanganj district of Bihar at 26° 22.624'N and 88° 06.768'E is mainly a rainfed wetland that also receives water from Mahananda river during flood. About 12 ha area of this lake belongs to the state government and rest is the private property. The lake is heavily infested with *Eichhornia* since long which is locally known as Jal Kachhoo or Dal Kachoo and thus the village and the lake is named like this where *Eichhornia* floats.

There are the villages, cultivation including the bamboo grooves all around leaving very less open water for birds and even for fishing. Some 20-25 years back, depth of the lake was about 7-8 ft. which has remained only 4-5 ft. now. Other than the common crops like paddy, Banana, Bamboo, Makhana *Euryale ferox* and Tea is also cultivated here. The lake was leased for fishing until probably 2010, is also an important source of livelihood in the area but now the lake seems no more suitable for good fishing. Some tribal population also resides besides the lake and collect fishes, molluscs and crustaceans from under the floating *Eichhornia* vegetation.

The area is never frequented by the birdwatchers but the maiden visit by Arvind Mishra records Long-tailed Shrike *Lanius schach* and *tricolor*, Common Stonechat *Saxicola torquata*, Stoliczka's Bushchat or White-browed Bushchat *Saxicola macrorhynchus*, Brown Shrike *Lanius cristatus* and Lesser Adjutant *Leptoptilos javanicus* other than some common bird species. Grey Headed Lapwing *Vanellus cinereus* and Lesser Whistling Duck *Dendrcygn javanica* are seen the dominant species which are found in hundreds. A couple of rapid earlier visits were made by the members of Mandar Nature Club, Bhagalpur.

This is the regular feeding ground for the birds like Lesser Adjutant *Leptoptilos javanicus*. The colonies of breeding Lesser Adjutant around are mainly depending for food on this wetland. 12 nests of Lesser Adjutant were observed on four different trees at Saintha Bari 26° 21.935'N and 88° 09.170'E in 2014. The Flying Foxes (Bats) were also found clinging under these trees.

Among the threatened species, Endangered Egyptian Vulture *Neophron percnopterus*, Vulnerable White-browed Bushchat *Saxicola macrorhynchus*, Lesser Adjutant *Leptoptilos javanicus* are observed and other species of interest are Black Ibis *Pseudibis papillosa*, Brown-headed Barbet *Megalaima zeylanica*, Jungle Babbler *Turdoides striatus*, Lesser Golden-backed Woodpecker or Blackrumped Flameback *Dinopium benghalense* and Common Iora *Aegithina tiphia*.

The key threats observed are Pumping out water for Irrigation, Grazing, Agricultural run-off, Siltation, Aquatic weeds, Lack of study and Proposing scheme for beautification of lake and developing tourism leading to plantation and boating and more human activities in the small Kachhudah lake may change the ecological values of the lake. There seems to be no major hunting in the area.

7. Mahananda River Course

This Mahananda River Course is a network of three rivers namely Mahananda, Donk and Mechi. Mahananda river confluences with river Donk at 26° 09.655'N and 87° 56.382'E. near Odra Ghat gives rise to many islands and sandbars which extend in an area of about 7 km long and 2 km wide near the confluence covering an area of about 15 sq. km..

The courses of these two rivers along with the sandbars and the virgin grasslands on the islands provide suitable habitat to many resident and migratory species of birds like varieties of larks, pipits, waders and many more which were twice explored by the members of RSPB Mr. Ian barber and Dr. Paul Donald with the IBCN state coordinator Arvind Mishra in 2013 and 2014 while in search of Bengal Florican *Houbaropsis bengalensis*.

The other birds observed in and around the area of Mahananda River Course naming a few are: Ashy Wood Swallow *Artamus fuscus*, Ashy-crowned Sparrow Lark *Eremopterix grisea*, Black-bellied Tern *Sterna acuticauda*, Common Stonechat *Saxicola torquata*, Indian Bushlark *Mirafra erythroptera*, Lesser Sand Plover *Charadrius mongolus* in breeding plumage, Oriental Sky Lark *Alauda gulgula*, River Lapwing *Vanellus duvaucelii*, Rufous-winged Bushlark or Bengal Bushlark *Mirafra assamica*, Sand Lark *Calandrella raytal*, Short-eared Owl *Asio flammeus*, Small Pratincole *Glareola lactea* and Zitting Cisticola *Cisticola juncidis*. Large number of people from local community depend on fishing for their livelihood. The grasslands on the islands and sandbars are

the possible sites for Bengal Florican. The site was unexplored for avifauna until we started exploring it since 2013.

Threatened bird species observed are Endangered Black-bellied Tern *Sterna acuticauda* and Near Threatened River Lapwing *Vanellus duvaucelii* and River Tern *Sterna aurantia*. The other important species seen in the area are Ashy Woodswallow *Artamus fuscus*, Ashy-crowned Sparrow-Lark *Eremopterix grisea*, Bank Myna *Acridotheres ginginianus*, Bengal Bush-Lark or Rufous-winged Bush-Lark *Mirafra assamica*, Black Ibis *Pseudibis papillosa*, Brown-headed Barbet *Megalaima zeylanica*, Jungle Babbler *Turdoides striatus*, Lesser Golden-backed Woodpecker or Blackrumped Flameback *Dinopium benghalense* and Red-winged Bush-Lark or Indian Bush-Lark *Mirafra erythroptera*.

The utility of the river course, land, grasslands and the natural vegetation in the area is used for the purpose of Agriculture, Fishing, Fodder, Grazing and Housing Material. A tribal village settlement is also there on the island near the confluence who mainly depend on fishing, grasses and some cultivation.

The threats observed in the area are heavy grazing which might be destroying the eggs of the breeding birds, lacking grassland management, agricultural run-off, siltation and lack of regular study.

8. Eco Park, IOC, Barauni (Dist. Begusarai)

The ecological park (Eco Park) of Indian Oil Corporation (IOC), Barauni Refinery is situated at about 5 Km. from the main plant in the Biological Treatment Plant (BTP) spread over an area of 75 acres at 25° 25.320' N, 86° 04.400' E in the district of Begusarai of Bihar. This artificially developed park having Terrestrial plantations, garden and two man made ponds which receive the treated effluent discharge from the main plant of the refinery. The water depth in the north pond is nearly 2'4" and in the east pond it is about 6'. A small forest like cover has been raised on one side of these water bodies which is a roosting place for variety of birds. The nearest town from IOC Barauni Refinery which was established in 1964 is Begusarai which is about 8 km from the Eco Park. The site is close to the river Ganga and the famous Kowar Lake Bird Sanctuary (IBA) which receives flood water from the river Burhi Gandak is about 30 km away from here.

BTP is surrounded by a tree line. A small forest like cover has also been raised on one side of these water bodies which is a roosting place for variety of birds. The park has diverse habitat of trees, shrubs, climbers, creepers, bamboos, grasses, bushes and ornamental plants, flower beds, grooves, orchards and the forested vegetation. The aquatic habitat like ponds, nullahs, effluent tanks etc have plankton, submerged, floating and emergent vegetation and marginal plants. This diversity in habitat has a nice assemblage of bird species like Waterfowls, Garden birds, Arboreal birds and the birds that prefer tree or bushes. Some trees like Semul *Bombax malabarica*, *Ficus sp.*, Arjun *Terminalia arjuna*, Muchkund *Pterospermum acerifolium*, Babool *Acacia nilotica*, Bamboos etc. are more preferred by the birds in the Eco Park for their roosting and breeding. The park has luxuriant growth of *typha* on the margin of the ponds and the aquatic vegetation like *Spirodela*, *Azolla*, *Hydrilla*, *Ceratophyllum*, *Alternanthera* and *Vallisnaria* have been recorded in the ponds.

This very small area of Eco Park has turned in to an asylum for about 100 bird species and breeding ground for at least 21 species of birds and 22 other species are also supposed to breed to the park. May be for the reason that they feel more safe in this secured area. The birds like Black Crowned Night Heron *Nycticorax nycticorax*, Pond Heron *Ardeola grayii* and Little Cormorant *Phalacrocorax niger*, Indian Moorhen *Gallinula chloropus* and Little Grebe *Tachybaptus ruficolis* have found it as an excellent breeding habitat. Hundreds of them can be seen during the breeding season together. But surprisingly there are almost no fish found in the ponds. Probably the birds get fish for their food from the very close by area.

Lesser Whistling Teal *Dendrcygnajavanicas* seem to be the dominating species in the park. Rufous Woodpecker *Celeus brachyurus / Micropternus brachyurus*, Yellow Fronted Pied Woodpecker *Picoides mahrattensis / Dendrocopos mahrattensis*, Pied Cuckoo *Clamator jacobinus*, Grey Bellied Cuckoo *Cacomantis passerines*, Oriental Honey Buzzard *Pernis ptilorhynchus*, Crested Serpent Eagle *Spilornis cheela*, Booted Eagle *Hieraaetus pennatus*, Great Crested Grebe *Podiceps cristatus* and Asian Paradise Flycatcher *Terpsiphone paradise* are some species of interest found in the Eco Park.

Among the threatened bird species, the near threatened Ferruginous Duck *Aythya nyroca*, and Darter *Anhinga rufa / Anhinga melanogaster* other than the Brahminy Starling *Sturnus pagodarum*, Brown-headed Barbet *Megalaima zeylanica*, Grey-headed Starling or Chestnut-tailed Starling *Sturnus malabaricus*, Indian Grey Hornbill *Ocyrceros birostris*, Jungle Babbler *Turdoides striatus*, Lesser Golden-backed Woodpecker or Blackrumped Flameback *Dinopium benghalense*, Yellow-fronted Pied Woodpecker or Yellow-crowned Woodpecker *Dendrocopos mahrattensis*, Yellow-

legged Green-Pigeon or Yellow-footed Green-Pigeon *Treron phoenicoptera* of Indo-Malayan Tropical Dry Zone.

The area is free from external threats but no fish are there and Pollution and Filthy smell of the effluent is a disturbing factor.

9. Giddhi, Pansokhar and other surrounding lakes (Dist. Nalanda / Nawada)

The small Giddhi pond at 25° 08.989' N and 85° 27.469' E and Pansokhar (Pushpkarni) pond at 25° 08.924' N and 85° 27.132' E near the Nalanda ruins near Mohaddinagar village in Noorsarai block of Nalanda district are about 18 km from the famous tourism destination of Rajgir and only 3 km from the Nalanda ruins. These ponds are home of many resident and migratory birds. Earlier these ponds were used for shooting of birds on occasions but since 2009, the awareness is generated among the people by the initiative of the member IBCN Sri Navin Kumar, DGM, BSTDC, Bihar and the state coordinator Arvind Mishra and the advocacy has been done at the official level, the hunting has reduced and the local community is coming forward for its protection.

Giddhi pond has a depth of about 12-15 ft. but due to the supply of water for irrigation, the normal depth shrinks to about 5-6 ft. Both Giddhi and Pansokhar ponds are very close to each other. The Pansokhar pond is a shallower waterbody. These ponds are mainly rain fed but also receive water from the local rivers around like Panchane, Giriyak, Paimar and Pali Canal during flood. The area is devoid of large number of trees or shrubs and surrounded by the cultivation land.

Not threatened species and other species enlisted for priority conservation value are found in these ponds nor the huge congregation of the water birds. But still the species regularly observed in this area are:

1.	Cattle Egret	<i>Bubulcus ibis</i>
2.	Little Egret	<i>Egretta garzetta</i>
3.	Intermediate Egret	<i>Egretta intermedia</i>
4.	Great Egret	<i>Ardea alba</i>
5.	Pond Heron	<i>Ardeola grayii</i>
6.	Little Grebe	<i>Tachybaptus ruficollis</i>
7.	Little Cormorant	<i>Phalacrocorax niger</i>
8.	Black Ibis	<i>Pseudoibis papillosa</i>
9.	Asian Openbill	<i>Anastomus oscitans</i>
10.	Bar Headed Goose	<i>Anser indicus</i>

11.	Lesser Whistling Duck	<i>Dendrocygna javanica</i>
12.	Northern Pintail	<i>Anas acuta</i>
13.	Gadwall	<i>Anas strepera</i>
14.	Shoveller	<i>Anas clypeata</i>
15.	Ruddy Shelduck	<i>Tadorna ferruginea</i>
16.	Red-crested Pochard	<i>Netta rufina</i>
17.	Eurasian Wigeon	<i>Anas penelope</i>
18.	Common Coot	<i>Fulica atra</i>
19.	Indian Moorhen	<i>Gallinula chloropus</i>
20.	Purple Swamphen	<i>Porphyrio porphyrio</i>
21.	Bronze-winged Jacana	<i>Metopidius indicus</i>
22.	Red-wattled Lapwing	<i>Vanellus indicus</i>
23.	Black-winged Stilt	<i>Himantopus himantopus</i>
24.	Wood sandpiper	<i>Tringa glareola</i>
25.	Common Snipe	<i>Gallinago gallinago</i>
26.	Greater Coucal	<i>Centropus sinensis</i>

Much awareness and advocacy is being initiated for the conservation of these wetlands by involving community, erecting signages, designating the local people as ‘Pakshi Rakshak’ (Birds Protectors). These wetlands and the birds are specially important for being very close to the international tourist sites.

The key threats to the site are shooting and trade of birds, wallowing of cattle including pigs in the waterbodies, constructions all around, Fishing lease, pumping out water for Irrigation, felling of trees and lack of plantation.

10. Ghora Katora (Dist. Nalanda)

A 7 km long forest trail of Tropical Dry Deciduous Forest, Tropical Bamboo Brakes, shrub forest from Rajgir through the Rajgir Hill Range leads to a small beautiful lake surrounded by hills from three of its sides measuring about 1 sq. km. known as Ghora Katora Lake. Average depth of the lake is 7 ft. and maximum depth is 12.5 ft. This natural lake exists since 6 BC and renovated in

2013-14. The lake is situated at about 91 msl with the peaks of the surrounding hills range up to 300 msl. The site is close to the Pant Wildlife Sanctuary at Rajgir in Nalanda district. This sanctuary was notified on 25 May 1978. The Total Area of the sanctuary is 35.84 Sq. Kms.

The site was famous as the stable for the horses of king Jarasandh, a known character of Mahabharata in hindu mythology. Ghora Katora means the Bowl of Horse in hindi language. On this forest trail leading to the lake, no motor vehicles are allowed and Tanga (Horse Cart), is the only means of conveyance. The lake is a natural depression of the land filled by the rain water and its water is being used for irrigation by the local farmers. The lake shrinks to even 0.5 sq. km. in the lean period (Gopal Sharma and Navin Kumar Kumar 2014).

The site is very close to famous historical, religious, and archaeological sites. The Buddhist Stupa, Jal Mandir at Pawapuri which is a Jain pilgrimage destination, Jarasandh Cave, and the ruins of Nalanda University are a few examples. The Giddhi and Pansokhar (Pushpkarni) ponds near to nalanda ruins are also a good harbor for varieties of migratory and resident species. Rajgir is also famous for its natural hot springs which attract a lot of tourists.

The site is being managed by the Department of Environment and Forests and the Department of Tourism, Government of Bihar.

The avifauna of this IBA is inadequately studied, but it seems to have great potential specially for the forest species. About 55 bird species have been recorded by Navin Kumar, a member of IBCN, Bihar (Anon. 2013, 2014). Looking at the potential of the site, it is surprising that no threatened species is being reported from here. Even the check list presently available, do not have the commoner species like Brown Headed Barbet *Megalaima zeylanica*, Brahminy Starling *Sturnus pagodarum*, Grey-headed Starling or Chestnut-tailed Starling *Sturnus malabaricus* and the birds like parakeets. It can not be said that these species are not present here but probably not enough time and concentration was given to record the species of the site and many species might have been overlooked or remained unidentified specially the warblers and babblers.

Despite of the being a potential birding site, even our visit could not record any threatened species but one species of Sino-Himalayan Temperate Forest Rufous-breasted Bush-robin *Tarsiger hyperythrus* and seven species have been identified till now belonging to the Indo-Malayan Tropical Dry Zone which are Ashy Prinia *Prinia socialis*, Jungle Babbler *Turdoides striatus*, Painted Spurfowl *Galloperdix lunulata*, Jungle Prinia *Prinia sylvatica*, White-browed Fantail Flycatcher -

Rhipidura aureola, Yellow-legged Green-Pigeon or Yellow-footed Green-Pigeon *Treron phoenicoptera*, Indian Robin *Saxicoloides fulicata*, Lesser Golden-backed Woodpecker or Blackrumped Flameback *Dinopium benghalense*.

Excessive tourism is a great threat on this small waterbody and to the forest trail. A sharp decline in the number of waterbirds has been observed which is obviously due to this reason.

11. Pawapuri Tank (Dist. Nalanda)

Pawapuri Tank (Jal Mandir) at 25° 05.605'N and 85° 32.339 'E about 15-20 km from Rajgir is another example of conserving the birds religiously. The birds are conserved here following the preaching of Lord Mahavira “Ahimsa Parmo Dharma” means most religious thing is the non-violence. This great pilgrimage of Jain religion said to be established since 6 BC is an important tourism destination of Bihar in Buddha Circuit. This tank measuring 1451 ft in length and 1223 ft. in width is full of aquatic vegetation like Lotus, Eichhornia and others. The water level and quality of water is maintained by the trust of the temple. The source of water in the tank is mainly the rain but the water pumps are installed to be used in the summer. The water also fed in to the pond through the overflow of the canal connected with Panchane and Sakri river. The pilgrims carry food for the fishes to offer them and enjoy. Even the migratory birds are so familiar and comfortable with the visitors that can't be imagined. One can photograph them even from a distance of 10 ft. or so. Not being rich in diversity of birds but thousands of migratory and resident birds of different species can be observed here specially during winter other than the varieties of fishes and water snakes. The commonly seen bird species at Pawapuri are:

1.	Little Cormorant	<i>Phalacrocorax niger</i>
2.	Lesser whistling Teal	<i>Dendrocygna javanica</i>
3.	Cotton Teal	<i>Nettapus coromandelianus</i>
4.	Shoveller	<i>Anas clypeata</i>
5.	Gadwall	<i>Anas strepera</i>
6.	Bronze Winged Jacana	<i>Metopidius indicus</i>
7.	Pheasant Tailed Jacana	<i>Hydrophasianus chirurgus</i>
8.	Indian Moorhen	<i>Gallinula chloropus</i>
9.	Purple Swamphen	<i>Porphyrio porphyrio</i>

12. Salim Ali Zubba Sahni Baraila Lake Bird Sanctuary (Dist. Vaishali)

Salim Ali Zubba Sahni Baraila Lake Bird Sanctuary notified in 1997 is the third largest bird sanctuary of Bihar in Vaishali district situated at 25° 45' 57" N and 85° 32' 00" E. This water body

is spread over an area of about 2500 hectares but only about 195 hectare area has been notified as the bird sanctuary. This lake despite having its excellent potentiality has been least studied by the birdwatchers and thus due to insufficient data available this site neither could be designated as an IBA nor it could be recommended as a potential Ramsar site. The lake receives the rainwater and floodwater from the Noon and Baya rivers nearby. During 2010 and 2011 the lake was almost completely dry and cultivated.

This wetland is one among the three wetlands in Bihar identified by the Ministry of Environment and Forests, Government of India under Wetland Conservation Programme as the priority sites for the purpose of conservation, management action and financial support (MoEF 2001). The other two are Kawar Lake Bird Sanctuary, Begusarai and Kusheshwar Asthan Bird Sanctuary in Darbhanga district.

Extreme threat of poaching and hunting of birds does not allow the birds to stay inside the lake. The bird trapping nets are set throughout the lake area and even the terrestrial birds around the lake are not safe. The local people including the children remain engage in hunting them by different methods. They also pluck the wings of the insects, insert insecticides / pesticides in to them and throw on the ground to hunt the insectivorous birds.

The lake infrequently visited by the members of Mandar Nature Club, research workers of Patna University Mr. Ajit Kumar Singh, Mr. G. P. Purusharthi and our other IBCN members Sri Navin Kumar, Dr. Gopal Sharma and others.

Few of the birds commonly seen in the lake are:

1. Little Grebe	<i>Tachybaptus ruficollis</i>
2. Great Cormorant	<i>Phalacrocorax fuscicollis</i>
3. Little Cormorant	<i>Phalacrocorax niger</i>
4. Pond Heron	<i>Ardeola grayii</i>
5. Great Egret	<i>Ardea alba</i>
6. Little Egret	<i>Egretta garzetta</i>
7. Intermediate Egret	<i>Egretta intermedia</i>
8. Asian Openbill	<i>Anastomus oscitans</i>
9. Woolly-necked Stork	<i>Ciconia episcopus</i>
10. Black Ibis	<i>Pseudibis papillosa</i>
11. White-breasted Waterhen	<i>Amaurornis phoenicurus</i>
12. River lapwing	<i>Vanellus duvaucelii</i>

13. Red-wattled Lapwing	<i>Vanellus indicus</i>
14. Common Sandpiper	<i>Tringa hypoleucos</i>
15. White-throated Kingfisher	<i>Halcyon smyrnensis</i>
16. Barn Swallow	<i>Hirundo rustica</i>
17. UNIDENTIFIED DUCKS	

13. NMCH Pond (Dist. Patna)

The wetlands and low lying lands in urban and suburban areas of Patna near Nalanda Medical College and Hospital (NMCH), Patna City, Punpun river embankment and Old Bypass are some of the interesting birding sites for the bird lovers.

Since the ponds in the NMCH area at 25° 36' 08.82" N and 85° 12' 02.06" E belong to the government so the disturbance are less despite the residential colony spread around. Fishing is done in these ponds but the birds are not seen to be disturbed.

In this area in a single day, we could spot 33 species and around 550 individual birds. Some of the species include Lesser Whistling Duck, Osprey, Brown Shrike, Indian Cormorant, White Breasted Kingfisher, Bronze-Winged Jacana and Purple Moorhen can be seen in sufficient numbers at several low-lying areas around the capital.

It seems that the avian diversity is fairly rich in and around the wetlands of Patna. Apart from the low-lying areas, the banks of Ganga from Gandhi Ghat to Digha Ghat are important for the varieties of bird species.

Most of the wetlands of Patna are being filled for the development of the colonies and apartments causing great loss of biodiversity including the birds. However, the degradation of permanent waterbodies has become a great concern.

The birds observed in the ponds of NMCH and the wetlands around Patna are:

1.	Cattle Egret	<i>Bubulcus ibis</i>	NMCH ponds
2.	Little Egret	<i>Egretta garzetta</i>	NMCH ponds
3.	Intermediate Egret	<i>Egretta intermedia</i>	
4.	Little Cormorant	<i>Phalacrocorax niger</i>	NMCH ponds

	Large Cormorant	<i>Phalacrocorax fuscicollis</i>	
6.	Indian Moorhen	<i>Gallinula chloropus</i>	
7.	Purple Swamphen	<i>Porphyrio porphyrio</i>	NMCH ponds
8.	Pond Heron	<i>Ardeola grayii</i>	NMCH ponds
9.	Red-wattled Lapwing	<i>Vanellus indicus</i>	
10.	Bronze-winged Jacana	<i>Metopidius indicus</i>	NMCH ponds
11.	Lesser Whistling Duck	<i>Dendrocygna javanica</i>	NMCH ponds
12.	Osprey	<i>Pandion haliaetus</i>	NMCH ponds
13.	Shikra	<i>Accipiter badius</i>	
14.	Black Kite	<i>Milvus migrans govinda</i>	NMCH ponds
15.	White-breasted kingfisher	<i>Halcyon smyrnensis</i>	NMCH ponds
16.	Palm Swift	<i>Cypsiurus parvu</i>	
17.	Black Drongo	<i>Dicrurus adsimilis</i>	NMCH ponds
18.	Brown Shrike	<i>Lanius cristatus</i>	
19.	Brahminy Starling	<i>Sturnus pagodarum</i>	
20.	Common Myna	<i>Acridotheres tristis</i>	NMCH ponds
21.	Pied Starling	<i>Sturnus contra</i>	
22.	Jungle Babbler	<i>Turdoides striatus</i>	
23.	Collared Dove	<i>Streptopelis decaocto</i>	NMCH ponds
24.	Spotted Dove	<i>Streptopelia chinensis</i>	
25.	Spotted Owlet	<i>Athene brama</i>	
26.	House Crow	<i>Corvus splendens</i>	NMCH ponds
27.	Jungle Crow	<i>Corvus macrorhynchos</i>	
28.	House Sparrow	<i>Passer domesticus</i>	NMCH ponds
29.	Purple sunbird	<i>Nectarinia asiatica</i>	
30.	Red-vented Bulbul	<i>Pycnonotus cafer</i>	

31.	Rose-ringed Parakeet	<i>Psittacula krameri</i>	
32.	Rufous Treepie	<i>Dendrocitta vagabunda</i>	
33.	White Wagtail	<i>Motacilla alba</i>	NMCH ponds

14. Pachaila Chaur (Dist. Begusarai)

There are some larger lakes and *moins* around Kawar Lake Bird Sanctuary which are known for large congregation of waterbirds specially during winter when both resident and migrant species assemble in good number. Pachaila Chaur is one among them at 25° 37.859" N, 86° 16.468" E about 11 km east of the Kawar lake in aerial distance covering an area of more than a thousand of acre near the village Salona at P.O. Bakhri but the water logged area remains to about 20% in summer. This large wetland lies in two districts of Begusarai and Samastipur. According to the people, half of the area of Pachaila is the private land and half belongs to the government. The lake is recharged by the flood water of Baghmata (Kareh) and the rain. The aquatic flora enlisted are Karmi *Ipomea aquatica*, Sarainchi *Alternanthera sp.*, Manijra *Sesbania sp.*, **Semar (local name)**, **Reshma (local name)**, *Lemna*, Chilmil *Aeschynomene indica* and *Hydrilla* but *Eichhornia* is found less.

Ours was probably the first visit to this wetland for the study of avifauna. In the peak winter and foggy condition, a large Rat Snake was observed coiled among the Chilmil plants which are having very weak stem. A mongoose was seen crossing the lake also. There is extensive fishing activity inside the lake and huge cultivation around. Peppermint is cultivated and processed on the margin of the lake. In the lean period about 20 boats operate for fishing but in a good time the fishermen operate about 100 boats in the lake. During last many past years, heavy siltation has taken place and now at most of the points the depth of has remained only 3-4ft. according to the local people, half of the land is private and half belongs to the government. Due to the heavy use of insecticides, pesticides and fertilizers in Peppermint cultivation, the molluscs and crabs are reducing in number and thus affecting the population of birds like Asian Openbill *Anastomus oscitans*, Ibises and others.

Pachaila is all surrounded by the nets for trapping the birds in many many kilometers. The area is known to supply the ducks and other birds for sale in near and far area. Without taking the help of good number of armed police, raid on these nets and the hunters is not possible. Sometimes, such raids were organized but even now one can seize many truckloads of such nets from this area. The

bird trappers use arms also in their defense. This shows the huge potential of birds in Pachaila chaur, but during peak winter, we could not cover the whole area since nobody was agreed to provide us boat for taking deep inside. We could observe the birds like Common Stonechat *Saxicola torquata*, Marsh Harrier *Circus aeruginosus*, Common Kestrel *Falco tinnunculus*, Palm Swift *Cypsiurus parvus*, Barn Swallow *Hirundo rustica*, Black Ibis *Pseudoibis papillosa*, Indian Roller *Coracias benghalensis*, Citrine Wagtail *Motacilla citreola*, Little Grebe *Tachybaptus ruficollis*, Northern Shoveller *Anas clypeata*, Red-crested Pochard *Netta rufina*, Northern Pintail *Anas acuta*, Common Pochard *Aythya ferina*, Common Coot *Fulica atra*, Grey Heron *Ardea cinerea* and Pheasant-tailed Jacana *Hydrophasianus chirurgus*.

The key threats observed are intensive hunting, use of insecticides, pesticides and fertilizers, siltation and human disturbance for fishing and other activities.

15. Sisoni Jheel (Dist. Begusarai)

Sisoni Man or moin or chaur at 25° 31.084" N, 86° 13.507" E about 10 km southeast of Kawar Lake in Begusarai district near the villages Chak Muzaffarpur and Bishanpur measuring about 2 sq. km, is a horse-shoe shaped waterbody having a depth of about 16 ft. length of the lake is about 4 km and average width 200 – 500 m. this lake never dries even in summer which is mainly rain fed and also recharged by the Burhi Gandak river which is about a km from the lake in its south. According to the local people, 25% of the merged area is the private land and rest belongs to the government. During British period, Indigo was cultivated here and the guest house of the britishers is still known as 'Sisoni Kothi'

The chaur has abundant submerged, floating and emergent aquatic vegetation like Karmi *Ipomea aquatic*, Kamal *Nelumbo nucifera*, Patpati *scirpus articulatus* and Pooran *Nymphaea sp.*

This chaur has for the first time visited by anyone for the study of birds. Not many species of birds we could observe in the lake which is all surrounded by the heavy cultivation of Barley, Wheat and Banana etc. and village settlements on the margin but the community reports that few migratory birds like Red-crested Pochard *Netta rufina*, Northern Pintail *Anas acuta* and the adjutants visit this area. We could see a sizeable flock of Asian Openbill *Anastomus oscitans* flying above. Some 20 – 25 years ago, 4 tube well pumps were installed here for irrigation which are inoperative since last 15 years. The lake is leased for fishing and the grass carp damage their crops and for this reason, the farmers have stopped cultivating wheat crop on the margin of the lake.

Intensive human activities, fishing, agriculture and anthropogenic pressure on the lake probably does not allow the birds to stay in and around the lake.

16. Kanchira Wetland (Dist. – Katihar)

Kanchira wetland near Manihari chowk in Katihar district at 25° 23.112” N and 87° 37.597” E spread in an area of about 22 Acre is formed as the result of excavating the ground soil for brick industry. The site is very close to the area of Goga Beel, Baghar Beel and Baldia Chaur (an IBA). Gradually this wterbody has started developing in to an excellent birding site. when the birds in the area of Goga Beel or Baghar Beel disturbed for any reason, this wetland supports birds to roost and forage. The working people seem not hostile to the birds. having situated about few hundred meters down besides the main road, the site naturally attracts any birder crossing through the road. Hundreds of Asian Openbill and good number of Lesser Adjutant *Leptoptilos javanicus* along and Wooly-necked Stork *Ciconia episcopus* is always found in this wetland. 12 of the Wooly-necked Stork and 5 of Lesser Adjutant were counted once here along with some migratory species like Bar-headed Goose *Anser Indicus*, Red-crested Pochard *Netta rufina*, wagtails and small waders. There is no facility of boat but even walking around this wetland, one can see many species of waders visiting the site regularly. Now, the site is being regularly visited by the members of Mandar Nature Club, Janlakshya and other IBCN members. A population of domestic ducks is also seen during every visit mixed with wild population. The area is surrounded by the agricultural fields and human settlements.

The birds observed in Kanchira wetland are:

Wooly-necked Stork	<i>Ciconia episcopus</i>
Bar-headed Goose	<i>Anser Indicus</i>
Red-crested Pochard	<i>Netta rufina</i>
Little Cormorant	<i>Phalacrocorax niger</i>
Great Cormorant	<i>Phalacrocorax carbo</i>
Little Egret	<i>Egretta garzetta</i>
Great Egret	<i>Casmerodius albus/ Ardea alba</i>
Intermediate Egret	<i>Egretta intermedia / Mesophoyx intermedia</i>
Indian Pond Heron	<i>Ardeola grayii</i>
Grey Heron	<i>Ardea cinerea</i>
Purple Heron	<i>Ardea purpurea</i>

Black-headed Ibis	<i>Threskiornis aethiopica</i> / <i>Threskiornis melanocephalus</i>
Black Ibis	<i>Pseudibis papillosa</i>
Asian Openbill	<i>Anastomus oscitans</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Asian Pied Starling	<i>Sturnus contra</i>
Common Myna	<i>Acridotheres tristis</i>
Brahminy Starling	<i>Sturnus pagodarum</i>
Citrine Wagtail	<i>Motacilla citreola</i>
Coppersmith Barbet	<i>Megalaima haemacephala</i>

17. Menhdar Jheel (Dist. Siwan)

Menhdar Lake or Mahendra Nath Lake in the district of Siwan in Bihar at 25° 59' 08" N and 84° 26' 10" E is a small historic lake or pond is spread in an area of about 60 ha. Local people have many a times raised for its conservation and the lake was twice visited by the Chief Minister but his assurances have not come in reality. The lake is almost choked by *Eichhornia* and other aquatic weeds but still having some water depth. The lake is said to be developed by the former king of Nepal. The cattle including buffaloes wallow in to the lake and seems to have made their regular pathway for crossing the lake. Not much diversity of birds could be found but the presence of 500 Purple Swamphen, 400 Lesser Whistling Duck, 100 Cattle Egret were observed other than Purple Heron, Little Cormorant and Black Shouldered Kite. There could be a good number of snipes and other aquatic species.

Besides the lake, there is a famous Temple known as Mahendra Nath Temple.

18. Jehanabad Administrative Area and township:

The administrative Area and township of Jehanabad a small district headquarter town of Bihar at 25° 12' 09.61" N, 84° 59' 22.93" E is situated at the confluence of two small seasonal rivers, Dardha and Yamuniya. Within a kilometer along the city road and river zone there is the presence of a large breeding colony of Asian Openbill *Anastomus oscitans*. They breed on a large number of trees such as Neem *Azadirachta indica*, Peepal *Ficus religiosa*, Gulmohar *Delonix regia*, Tamarind *Tamarindus indica*, Mango *Mangifera indica*, Ashoka *Polyalthia longifolia* Banyan *Ficus benghalensis*, Stone Apple *Aegle marmelos*, Eucalyptus *Eucalyptus obliqua*, Gular *Ficus racemosa*, Jamun *Syzygium cumini*, Jackfruit *Artocarpus heterophyllus*, Pakad *Ficus virens*, Teak *Tectona grandis*, Semal *Bombax ceiba*, and Siris *Albizia lebbek*.

Asian Openbill breeds in very large numbers in the government-owned administrative offices, court, and jail, and many privately owned campuses like LIC and Sahajanand Saraswati Library. Other than some common species, Asian Openbill are present in over 10,000 in number during breeding. The survey was conducted with the help of Dr. Gopal Sharma of ZSI, Patna Sri Navin Kumar, DGM of Bihar State Development Corporation, Bihar and Sri Lalit Kumar Singh, Senior Deputy Collector of Jehanabad, The local people say that these birds have been observed breeding here since 1989 and their population is increasing. The site seems to be emerging as the largest breeding zone of Asian Openbill in Bihar.

19. **Brahmayoni Hill (Dist: Gaya)**

Gaya is a place known by both Hindu and the Buddhist religions is surrounded by several hills including Mangala-Gauri, Ram-Shila, Shringa-Sthan and Brahmayoni by three sides and the river Phalgu flowing on the fourth side.

Brahmayoni Hill, the highest hill in Gaya on which a small temple is situated on the hill and a five-headed female image is worshipped as a female energy of Brahma. The Brahmayoni Hill is a sacred place for the Hindus and pindas are offered here during the Pitripaksha mela in large numbers.

The hills of Gaya are exploited heavily for the stones / boulders and are reducing fast in their expansion. The hills have scanty vegetation and some trees.

The birds observed here with the help of an avid birdwatcher Dr. Deepak Balasubramanian are:

Brahmayoni Hill, Gaya	
1	Gray Francolin
2	Indian Cormorant
3	Little Egret
4	Cattle Egret
5	Indian Pond-Heron
6	Shikra
7	Black Kite
8	White-breasted Waterhen
9	Red-wattled Lapwing
10	Wood Sandpiper
11	Eurasian Collared-Dove
12	Spotted Dove
13	Laughing Dove
14	Common Hawk-Cuckoo
15	Greater Coucal
16	Rock Eagle-Owl
17	Spotted Owlet
18	Asian Palm-Swift

19	White-throated Kingfisher
20	Pied Kingfisher
21	Green Bee-eater
22	Indian Roller
23	Eurasian Hoopoe
24	Brown-headed Barbet
25	Black-rumped Flameback
26	Eurasian Kestrel
27	Brown Shrike
28	Long-tailed Shrike
29	Indian Golden Oriole
30	Black Drongo
31	Large-billed Crow
32	Bengal Bushlark
33	Red-vented Bulbul
34	Western Crowned Leaf-Warbler
35	Gray-breasted Prinia
36	Ashy Prinia
37	Jungle Babbler
38	Oriental Magpie-Robin
39	Black Redstart
40	Siberian Stonechat
41	Common Myna
42	Asian Pied Starling
43	Brahminy Starling
44	Purple Sunbird

Birds observed in the other areas of the township are:

	Forest Guest House, A.P.Colony, Gaya. 06.50 am to 07.15 am
1	Lesser Whistling-Duck
2	White-breasted Waterhen
3	Eurasian Moorhen
4	Bronze-winged Jacana
5	Spotted Dove
6	Asian Koel
7	Coppersmith Barbet
8	Rose-ringed Parakeet
9	Red-vented Bulbul
10	Blyth's Reed-Warbler
11	Jungle Babbler
12	Oriental Magpie-Robin
13	Indian Chat
14	Common Myna
15	Asian Pied Starling
16	Purple Sunbird

20. Wetlands of East Champaran District:

West Champaran district of Bihar with its district headquarter at Betia is known for the Valmiki Tiger Reserve and Udaipur – Saraiya Man IBAS. East Champaran is known for many historical, archaeological and religious sites with its district headquarter at Motihari. The area is known to claim the tallest Buddhist Stupa in the world built by King Ashoka at Kesaria. The area is also known for the memory of Champaran Satyagrah of Mahatma Gandhi who first raised voice against the atrocities of the British Indigo planters against poor peasants of Champaran.

Other than many potential wetlands in the district, the Madhopur Govind village an area of about 700 acre near Chakia between $26^{\circ} 21.820' N$ to $26^{\circ} 22.673' N$ and $85^{\circ} 03.131' E$ to $85^{\circ} 04.067' E$ where a good population of about 60-70 peafowls is surviving restricted to this particular village only and they are protected by the community. Mehsi, a small town located near to this site is famous for many small scale pearl button industries which is made from oyster shell available in the river Sikarahana.

Sugarcane was the main cash crop for the farmers in this area but now the cultivation of sugarcane has reduced due to less economic return. The farmers are not getting genuine rate and the sugar mills at Chakia and Motihari have been closed.

i. **Moti Jheel**

Moti Jheel at $26^{\circ} 39.146' N$ and $84^{\circ} 55.062' E$ is in the heart of the Motihari city. This is a lake and canal which divides Motihari into two sections. Spectacular views are available for visitors on either side of the canal. Activities such as boating and sightseeing are available here. A flyover has been opened to allow the public to commute more easily. This lake is fed by the overflow of river Gandak, rain water but the sewage and garbage of the city is also drained in to it. Lake is being choked by the aquatic weeds like Eichhornia. These factors disallow the major avifauna in the lake other than the moorhens, jacanas and waterhen etc. politicians time to time assure the public for its cleaning and beautification.

ii. **Matwali Jheel (Dist. Motihari)**

Matwali Jheel (Lake) about 1 km from Pipra Kothi $26^{\circ} 33.427' N$ and $84^{\circ} 56.544' E$ in the district of East Champaran is a horse shoe shaped lake of about 10 km long and 200 m. wide in average at $26^{\circ} 33.561' N$ and $84^{\circ} 56.676' E$ on the eastern side and $26^{\circ} 34.312' N$ and $84^{\circ} 57.225' E$ on the western side. This lake is also known as the Pipra Kothi lake. The depth of

water on the eastern side is about 16 ft. whereas the western part of the lake is much shallower. Shooting the waterfowls is still taking place here and poaching bird trade is also reported. For the reason, the birds do not stay regularly in this lake. Both the sides of the lake is under cultivation on the private land but the lake falls under the land of the government which leased for fishing.

There are some more smaller and large waterbodies in the district which are the concern of non but the fishermen and the bird trappers and trappers.

Many small and large wetlands in different districts of Bihar including the parts of the floodplains around Ganga, Kosi, Gandak, Ghaghra (Karnali), Baghmata (Kareh), Burhi Gandak other than the Kamla and Balan rivers are there. Few of them are the Narsan Chaur (Dist. Motihari), Matihani Jheel (Dist. Samastipur) near Dalsinghsarai, Kasraiya Dhar near Maheshkhoot (Dist. Khagaria) and many more. Even the small ox-bow lakes near Motipur at 26° 15.540' N and 85° 10.872' E by the roadside support the most popular migratory bird among the people in Bihar named as Lalsar (Red-crested Pochard). The Dhar (left over channel) of Ganga river at Amapur village some 6-7 km before Kahalgao on the roadside at 25° 13.712'N and 89° 12.027'E support the good number of birds like Asian Openbill *Anastomus oscitans*, Gadwall *Anas strepera*, Lesser Whistling Duck *Dendrocygna javanica*, Common Redshank *Tringa totanus*, Pied Avocet *Recurvirostra avosetta* and other waders regularly. The Manikpur Chaur of about 150 – 200 ha at 26° 01.771' N and 85° 07.905' E in near Bhagwanpur canal in Vaishali has a good diversity of birds which are unexposed.

Recently a study was done by the team of ZSI Patna and they have reported 72 species from 20 chours in different districts of north Bihar namely Turkey Chaur (Muzaffarpur) at 26° 02.306'N and 85° 20.201'E, Harpur Machia Chaur (Muzaffarpur) 26° 08.230'N 85° 22.171'E, Baraila Lake (Vaishali) 25° 44.973'N 85° 35.216'E, Bhoga Chaur ((Madhubani) 26° 17.634'N 86° 69.900'E, Sarsopahi Chaur (Madhubani) 26° 14.288'N 86° 10.791'E, Muria Kathwa Chaur (Darbhanga), 26° 11.839'N 86° 00.208'E, Maran Chaur (Darbhanga) 26° 08.817'N 85° 59.164'E, Majilsa Pokhar Chaur (Darbhanga) 26° 07.895'N 86° 01.936'E, Hathia Cole (Khagaria) 25° 31.849'N 86° 43.101'E, Tin Dobha Chaur (Khagaria) 25° 37.315'N 86° 43.569'E, Satanpur Chaur Pir Ashthan (Samastipur) 25° 42.263'N 85° 48.357'E, Matsa Gandha Chaur (Saharsa) 25° 54.274'N 86° 35.024'E, Ghelar Chaur (Madhepura) 25° 58.863'N 86° 40.958'E, Samsolia Chaur (Madhepura) 25° 56.948'N 86° 40.582'E, Rajaura Chaur (Begusarai) 25° 37.225'N 86° 09.731'E, Karu Gamaal Chaur (Begusarai) 25° 39.129'N 86° 10.500'E, Pathkaul Chaur

(Begusarai) 25° 35.410'N 86° 09.716'E, Dandari Chaur (Begusarai) 25° 28.139'N 86° 18.100'E, Naula Chaur (Begusarai) 25° 31.222'N 86° 02.149'E, Chatar Chaur (Araria) 26° 00.024'N 87° 30.111'E. (Sharma Gopal, 2011). But these are only the randomly selected sites from different districts and do not make the complete list of the chours. Altogether, the numerous chours support, and are critical to the survival of hundreds of thousands of ducks and other waterfowl in the winter, thus satisfying A4iii criteria (The site is known or thought to hold, on a regular basis $\geq 20,000$ waterbirds) of BirdLife International (undated). Sometimes the waterfowl number is so huge, that many species would easily fit A4i criteria also (The site is known or thought to hold, on a regular basis, $\geq 1\%$ of the biogeographic population of a congregatory waterbird species). There is an urgent need to gather species specific and site (chour) specific data from this IBA site.

The wetlands in south Bihar especially in the district of Jamui, seem to be free from hunting and poaching of birds. Even the smaller wetlands or ponds in the remote villages of Chakai / Chandramundi region, migratory birds were found comfortably swimming. At Chandramundi village, in a smaller village pond, 150 Pintail, 2 Bar Headed Goose and 6 Ruddy Shelduck were observed at 24° 35.237'N and 86° 27.666'E.

There are some more smaller wetlands near Sono and Batia in Jamui district close to the Nagi and Nakti Bird sanctuaries like Pailbajan Dam at 24° 44'37" N and 86° 19' 09.9" E, Khapariya Reservoir at 24° 41' 31.2" N and 86° 19' 36.3" E, Jirhuliya reservoir or Kali Pahari reservoir at 24° 39'.44.8" N and 86° 21' 51.8" E and the Sono nursery of the forest department which are known to be the shelter for birds which also visit the sanctuaries. In these bird sites even the migratory waterbirds seem to be in close association with the villagers who are engaged in their activities close by. .

But the outsiders hesitate to visit this naxal affected area and this could be the reason that the poachers and hunters also do not dare to enter this area and the birds remain protected. Local community seemed to be happy to see the assemblage of birds here and agree to protect them. But the Bagheris are caught and sold in this area as reported. In the name of Bagheris, they normally catch all small birds like larks, pipits, munias etc. from the ground and cultivation. The sites like Badua / Hanumana Dam (Dist. Munger / Banka), Chandan / Laxmipur Dam (Dist. Banka), Bilasi Dam (Dist. Banka) and Odhni dam (Dist. Banka) could not be visited in the appropriate season due to some non-conducive environment.

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