

Newsletter for Birdwatchers

Vol. 44

No. 3

May - June 2004



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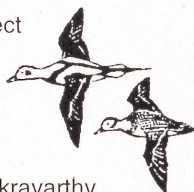
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A Note from the Publisher

Dear Fellow Birdwatchers,



This issue is a collection of articles and notes on waterfowl in general and heronries in particular. Mr. Mrutyumjaya Rao, Junior Telecom Officer, BSNL, began his moonlighting with the Uppalapadu heronry, after learning about this fascinating heronry in 1988, through a friend at Bapatla. Since then, he and a group of committed bird lovers have been campaigning relentlessly to conserve this heronry. They have a steadfast work cutout with the local authority and the forest department to save this unique heronry and their joint efforts have resulted in palpable progress, despite many hidden hurdles that came in the way of the heronry's very existence.

Uppalapadu - Heaven on Earth for the Pelicans?

The Uppalapadu bird conservation campaign has paid rich dividends and this can be gauged by the immense popularity, that has swept the region about this heronry in recent years. The cacophony of the nesting waterfowl is turning out to be a melodious symphony to many discerning ears. A path breaking initiative, to erect artificial nesting platforms at vantage points in the heronry in collaboration with the authorities, had stirred a great deal of excitement in all. But the weather played spoilsport and the platforms collapsed before the birds could occupy them. Hopefully, stronger structures will accomplish the mission and fulfill the aspirations of the nature lovers in future.

Cooperation and Ecological Solidarity

The Uppalapadu article not only gives a graphic account of the efforts made so far to protect this heronry, but also provides an

A view of the Uppalapadu Heronry. Photo : K. Mrutyumjaya Rao



enduring proof that, creating awareness, collective consultation, and multilateral approach, are vital to redress and resolve the conservation deadlocks, between the stakeholders and nature lovers. There is no denying that complete ecological solidarity has encompassed this village community in recent years, and

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leucocephala), Blackheaded ibis (*Threskiornis melanocephalus*), Asian open bills (*Anastomus oscitans*), Glossy ibis (*Plegadis falcinellus*) and Black crowned night herons (*Nycticorax nycticorax*). In all, up to 60 species of birds visit this bird habitat. This is an

A Death Knell called Highways Project

Dr. Chakravarthy has aptly communicated his concern about the loss of avenue trees along the highways and its impact on the nesting waterfowl. In Karnataka, the centuries-old relationship between avenue trees and waterfowl has come to an abrupt end with unrestrained use of axes, saws, chain-saws and bulldozers. These implements were arrayed in good numbers all along the highways, as a part of the prestigious golden quadrilateral highway project to widen the existing national highways. Thousands of trees, their trunks, logs and branches that housed hundreds of nesting waterfowl such as cormorants, grey herons, and egrets; hole-nesters such as parakeets, mynas, owls and owlets; squirrels and macaques were lumbered with no qualms and carted away. Even at a modest estimate, the Bangalore-Mysore National Highway has lost around 10,000 trees. For months, only meter-high mutilated tree stumps dotted the highway like an eyesore to remind us about the grand old interrelationships between the tree-loving denizens and the avenue trees. Now these stumps have also been removed, obliterating the last traces of vibrant and countless ecological units that were functioning as efficient carbon sinks as well.

In some exceptional cases, the avenue trees have been saved by retaining them as medians, and a new lane has been laid adjacent to the existing lane. But this was not practicable in all the sectors, especially when it came to the serious business of land acquisition. If the trees were to be retained as a median, lands needed to be acquired only on one side of the highway, and this posed critical problems to the land acquisition officer who had to deal evenhandedly with the thorny issue. This was best resolved by acquiring the lands evenly on both the sides of the existing highway, without any prejudice. Otherwise the highways project would have hit a road block, in the vacillation between acquiring lands to the right side of the highway and lands to the left side of the highway. Well, there may not be any injustice to the landowners in the land acquisition process, but certainly the trees were not given a fair trial. The highways authority has deposited monies with the forest department as compensation, under the legislation for the trees lost and the department has in turn planted hundreds of saplings. Many saplings have succumbed to the vagaries of weather, livestock grazing, developmental activities and poor maintenance. The surviving saplings are an apology for those mighty trees, doomed like the cedars of Lebanon, in the name of development.

Thanking you,
 Yours in bird conservation
 S. Sridhar
 Publisher, NLBW



Report on Uppalapadu Bird Habitat

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unique heronry where thousands of birds are taking refuge throughout the year. Different species of birds visit this pond in different seasons. Several species including the Grey pelicans are nesting at this site.

The birds like Rosy starling (*Sturnus roseus*), Cattle egrets (*Bubulcus ibis*) are very useful to the farmers. They are controlling pests on crops like Paddy, Blackgram, Chillies, Cotton, Ground nut etc., which are being cultivated around the heronry.

enduring proof that, creating awareness, collective consultation, and multilateral approach, are vital to redress and resolve the conservation deadlocks, between the stakeholders and nature lovers. There is no denying that complete ecological solidarity has encompassed this village community in recent years, and the sensible measures taken by them have resulted in luring a good number of pelicans and painted storks to the heronry. Uppalapadu can now be boasted as one of the main thoroughfares for resident waterfowl in India.

This is a welcome relief, as many heronries across the Indian peninsula are losing their ecological riches and some are already on the verge of bankruptcy. A terrible example that torments the minds of many a birdwatcher, is the Makaravalli heronry near Hanagal in Karnataka. This heronry was similar to the Uppalapadu in many respects, but the villagers blamed the birds for polluting the pond with their droppings. In a rapid action, the island of acacia trees harboring the nests, were besieged and malevolently cut to shreds by the village community. Quite a few darters, cormorants, herons and egrets found themselves shivering and dumbfounded as the entire heronry disappeared under their feet, rendering them homeless.

The avian inhabitants in many other heronries are undergoing a multiplicity of miseries. While the painted storks and the pelicans have either abandoned or failing to turn up in fair numbers at their traditional nesting sites, such as Telineelapuram, Nelapattu, Arderu Sarapalli, and Veerapura in Andhra Pradesh, Vedantagal and Koondankulam in Tamilnadu and Kokrebellur and Kaggaladu in Karnataka, it is immensely gratifying to note that they have adopted the Uppalapadu heronry as one of their last citadels, in South India.

Concerns about other Heronries and Wetlands

True, there too are concerns about other heronries and wetlands in India. Dr. Choudhary has reported an interesting phenomenon of the courts at Godda city in Jharkhand, virtually providing security to the nesting open billed storks. Dr. Saxena & Parihar have bemoaned the loss of cranes due to pesticide poisoning in Madhya Pradesh. Dr. Chakravarthy, Iyer Mohan, Anil Kumar Chhangani, Singha, Dr. Bhatnagar, Chauhan, and many others have made considerable efforts to remove the curtains of ignorance, if any, that exist about heronries and waterfowl across India. Theirs is the voice of reason and echo many of our cherished values, ecological perspectives, and religious tenets. They need to be synergised to amend our ways of thinking, even as they are on the thresholds of a change; a change for the better for mankind and the natural world alike.

A Death Knell called Highways Project

Dr. Chakravarthy has aptly communicated his concern about the loss of avenue trees along the highways and its impact on the nesting waterfowl. In Karnataka, the centuries-old relationship between avenue trees and waterfowl has come to an abrupt end with unrestrained use of axes, saws, chain-saws and bulldozers. These implements were arrayed in good numbers all along the highways, as a part of the prestigious golden quadrilateral highway project to widen the existing national highways. Thousands of trees, their trunks, logs and branches that housed hundreds of nesting waterfowl such as cormorants, grey herons, and egrets; hole-nesters such as parakeets, mynas, owls and owlets; squirrels and macaques were lumbered with no qualms and carted away. Even at a modest estimate, the Bangalore-Mysore National Highway has lost around 10,000 trees. For months, only meter-high mutilated tree stumps dotted the highway like an eyesore to remind us about the grand old interrelationships between the tree-loving denizens and the avenue trees. Now these stumps have also been removed, obliterating the last traces of vibrant and countless ecological units that were functioning as efficient carbon sinks as well.

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Uppalapadu village pond in Andhra Pradesh is an excellent abode of Grey pelicans (*Pelecanus philippensis*). Besides the pelicans there are an appreciable number of Painted storks (*Mycteria leucocephala*), Blackheaded ibis (*Threskiornis melanocephalus*), Asian open bills (*Anastomus oscitans*), Glossy ibis (*Plegadis falcinellus*) and Black crowned night herons (*Nycticorax nycticorax*). In all, up to 60 species of birds visit this bird habitat. This is an

Report on Uppalapadu Bird Habitat

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Honorary Wildlife Warden, Life member BSAP, Junior Telecom Officer BSNL

unique heronry where thousands of birds are taking refuge throughout the year. Different species of birds visit this pond in different seasons. Several species including the Grey pelicans are nesting at this site.

The birds like Rosy starling (*Sturnus roseus*), Cattle egrets (*Bubulcus ibis*) are very useful to the farmers. They are controlling pests on crops like Paddy, Blackgram, Chillies, Cotton, Ground nut etc., which are being cultivated around the heronry.

Location

State : Andhra Pradesh District : Guntur
 Nearest city : Guntur 7km; Vijayawada – Guntur 32km

Uppalapadu village is between Guntur and Tenali. Buses plying between Guntur & Nandivelugu and Guntur & Tenali via **Nandivelugu**, stop for a while at Uppalapadu.

Bird area

Previously the heronry extended 32 acres consisting of *Acacia nilotica*, *Prosopis juliflora* and aquatic plants such as mosses, *Ipomoea aquatica*, *Typha angustata*, *Eichornia crassipes* and other vegetation preferred by Jacanas, Coots, Moorhens etc. At present the birds are confined to a six acre plot only.

Description of site

The village has two tanks Tank 'A' and Tank 'B'. Tank 'A' has a bird site of 32 acres. The Zilla parishad high school is situated in the middle of this tank and occupies 7 acres of the tank area. The high school divides the tank into two parts Part (P) and Part (C). Part (P) is the present bird site and is about 6 acres consisting of *P. juliflora* is the main vegetation. This present bird site of 6 acres has 4.5 acres pertaining to the pond and 1.5 acres is a low level ground with shallow water belonging to the Zilla parishad high school. This 1.5 acres marked (S) in the map consists of *E. crassipes* (water hyacinth) and *Typha angustata* Indian reed mace. The 1.5 acres site was separated by a bund (B) which is earmarked as high school boundary. The bund comprises of dense rows of *P. juliflora* vegetation. It acts like a buffer zone protecting the bird area from humans and predators. The bird area part (P) is separated from tank 'A' by a bund marked 'SB'. About 40% of the 4.5 acres of the pond has *P. juliflora* vegetation.

Bird life

From 1989-90 onwards the site is being continuously under observation for bird life and for conservation initiatives by me and the bird lovers joining me from time to time. In all, we visited the heronry on 96 occasions. From 1997 frequency of visits increased and after the arrival of Pelicans we began visiting the pond every month. We observed that a very good number of resident birds in thousands such as Cattle egrets, Little cormorants, Asian open bills, Black crowned night herons, Jacanas, Moorhens, Spot-billed ducks, etc., used to roost and breed in the tank at the beginning. However from 1992 onwards Painted storks, Black headed ibis and Glossy ibis have started visiting this tank. Glossy ibis, a nomadic species visit this tank during rainy season. Their population has increased to 2500. The Painted stork population has increased to 1045 with 400 active nests. Black headed ibis increased to 9000 with 900 active nests. The Open bills increased to 8000 with 1000 nests (10-8-02).

The grey pelicans have been roosting and breeding successively for the past six years. They have started arriving from 1998-99 onwards. In the beginning only one pelican visited this pond in the month of January '99 and stayed for a period of 3 weeks. Now the number has tremendously increased and on 29-1-04 there were 600 pelicans with 270+ active nests. On 30-3-04 there were 450 Pelicans. On 22-4-04 at 05-45hrs., I visited the heronry along with Sri P.A.V. Udayabhasker, Conservator of Forests, and his staff. There were 625 Pelicans including immatures. On that day between 06-10hrs and 06-20hrs., 154 Pelicans in eight batches returned to the heronry from their feeding grounds. Sri P.A.V. Udayabhasker not only monitored their movements but also worked out the measures required for the improvement of the heronry.

The arrival of pelicans is advancing from year to year. Presently the pelicans are arriving by the third week of September and this has become an important pelicanry in India. Elsewhere, the pelicanaries are under pressure.

The Nelapattu pelicanry is under heavy pressure and there are ups and downs with reports of nesting failure due to failure of monsoon. This year the birds have skipped Nelapattu. Another Pelicanry in Andhra Pradesh is at Telineelapuram. During 2001-02 season on 11-1-2002 there were 240 Pelicans with 94 nests. (Pelicans arrive in September / October and leave by April). Here the problem is with the feeding grounds; the irrigation tanks are drying up quickly due to failure of rains. The swamp is degraded. I am given to understand that Pelicans arrived in fewer numbers or skipped Kokkrellur in Karnataka, due to failure of rains. At Uppalapadu there is not much water problem. Water is available throughout the year. From 1989 to 2004, water scarcity was pronounced only once in 2003. Even though water was available in the feeder channel, the level was very low and water did not flow into the bird area. So the water was pumped to 4.5 acres portion with the assistance of the forest department. Now UPL has become an important, progressive Pelicanry in India.

In the beginning, when they started arriving (Painted storks 1992-94; and Grey pelicans 1998-2000), it was doubted whether the Painted storks and Grey pelicans would establish their colonies at all, at Uppalapadu at a later date. Presently, the Painted storks have established their breeding successfully. They are feeding in the surrounding village ponds and it was reported that the Pelicans were fishing in the Krishna river. Further surveys and studies are required to learn more about their feeding habits and habitat preferences.

During the 2003-04 season, I found eight active Darter nests. This is for the first time that nests of these nearly threatened species could be seen. It is also for the first time that Little cormorants were seen nesting along side the darters.

Rosy starlings generally used to visit this pond to roost between January and April. Some times their population shot upto 4000. They find the *Prosopis* thicket quite ideal for roosting. The number has considerably decreased to two digits and some times they skip this pond. The reasons are not clear. It could be that the migration of birds to this area has decreased or that the pressure on the habitat has affected the roosting. However in March 1992 an unexpected congregation of Rosy pastors was seen. On 8-3-92 an impressive flock of 50,000 Rosy starlings arrived in a huge swarm and by glancing through the binoculars the spread of the swarm was guessed to be more than half a km². The entire flock busily encircled the pond and the adjacent fields just like a sandstorm. They took 45 minutes to settle down in the pond and on *Prosopis* thickets. It was a thrilling and enchanting experience to watch this unusual congregation of Rosy pastors. I am at a loss to understand as to why such an enormous number of Rosy pastors congregated during that particular season in that area.

Dynamic population of Grey pelicans

Season	No. of Pelicans	nests
1998-99	1	nil
1999-00	40	15
2000-01	190	55
2001-02	240	96
2002-03	320	120
2003-04	600	270+



The Pelicans and their nests increased two fold during 2003-04 compared to 2002-03. This may be due to failure of nesting at Nelapattu and failure of rains at other pelicanaries.

Pressure on smaller waterfowl

The smaller waterfowl are facing heavy pressure and are unable to compete with the bigger birds and presently for the last two years the egret population has decreased considerably. At one point of time, their population exceeded ten thousand. Night herons and Little cormorants are also decreasing in numbers in summer, due to competition for nesting sites from their bigger cousins. Egrets, Cormorants, Night herons, Jacanas, Purple moorhens, Pond herons and a few other waterfowl can be seen in lesser numbers during summer.

The phenomenon of early arrival of Grey pelicans and that too in increased numbers and consequent encroachment of nesting sites are exerting considerable pressure on the open bills. The open bills breed between July and December. The pelicans have started arriving by the third week of September itself and continue to arrive until December. As a result the open bills are forced to abandon the nests, and their nestlings still dependent on parental care are suffering considerably.

During 2001-02 season many nestlings of open bill were forced to leave their nests and were seen wandering in the adjacent paddy fields, unable to feed or fend for themselves. Some were being chased and confronted by predators like dogs and cats. The Painted storks have also started arriving by the last week of October or early November. But they are finding it difficult to chance upon a suitable nesting site in the over-crowded heronry. They can be seen settling down in the pond and finally leaving the heronry in a huff. But those Painted storks that arrive later, say by December or January, stand a good chance of finding a vacant nesting site in the heronry.

On 13-3-2003, I observed a good number (13) of Purple moorhens brooding their eggs in nests in the 1.5 acre shallow waterbody belonging to the high school. This was the first time I had seen the purple moorhen nests in such numbers, but due to severe drought conditions that ensued in the following weeks, the Purple moorhens were forced to abandon their nests. Earlier, one could watch Streaked baya weavers busily building their nests in the heronry. But they too seem to have abandoned this heronry in recent years.

Nesting

The main vegetation is *P. juliflora* which has grown to a height of about 12ft. The dense intricate branches of *Prosopis* support the gregarious colonial nesting of Grey pelicans, Painted storks, Black headed ibis, Asian Open bills, Night herons, Darters. The vegetation is also able to survive for longer periods.

Grey Pelicans arrive in September and build their nests on top and middle layers of *Prosopis*. Sometimes they build nests at the bottom edges of the *Prosopis* at a height of 4 to 5 feet from the water level. Once a Pelican pair had built a nest hardly four feet above the ground level at a bund. The Painted storks that visit during December prefer to build their nests on top and middle layers of *Prosopis*. The Open bills generally visit this pond during the rainy season and begin their nesting activities from July. They choose top and middle layers of *Prosopis*. But some of their nests are disturbed due to early arrival of Pelicans. Black headed ibis also arrive during the rainy season. The nesting season of Black headed ibis coincides with that of Open bills. They nest mainly during the rainy season, but the second phase of nesting takes place in winter. The Ibis prefer to place their nests in the middle and lower layers of '*Prosopis*'. Due to pressure exerted by Open bills, the Black headed ibis is unable to nest on top layers of *Prosopis*. At the lower layer, the nests are

hardly 1-2 feet above the water level. Nesting is gregarious and very close to each other and often overlap. It is interesting to watch the nesting pattern of Ibis. On some *Prosopis* vegetation the incubating birds just like a sloping white lawn from middle layer to bottom layer almost touching the water and ground level on the bunds. Asian open bills and White Ibis use tender shoots from fields and water hyacinth for lining and cushioning their nests.

Other forms of life

The pond is also a residence for fresh water turtles and snakes. Once I observed a small shoal of red coloured fish resembling female sword tails. Previously there were plenty of paper wasps, mainly nesting in the thatched roofs of class rooms and also in other classrooms with permanent structure. Now only one or two remain. Occasionally squirrels place their nests on *Polyalthea longifolia* trees.

Predators

The main predators are crows, snakes and occasionally raptors, dogs and cats. It was reported by a watchmen that sometimes, Jungle cats raid the heronry and quietly walk away with nestlings under the cover of darkness. But the predation levels are not high, to sound an alarm about this aspect for the time being.

Loss of habitat, threats and problems

Previously the entire tank 'A' of 32 acres was a bird area. The water to Tank 'A' is fed by an irrigation channel from Takkallapadu area. Tank 'B' gets water from Tank 'A'. Enough water is stored throughout the year in both the tanks. The water in tank 'B' is utilised for village purposes such as bathing, washing clothes, cleaning utensils and other domestic purposes. The water in tank 'A' is becoming increasingly polluted due to excreta of thousands of birds, by the fallen food meant for the nestlings such as fish, and by the dead and dying chicks that fall into the water. The same water flows to tank 'B'. The villagers take care of the birds and protect them from poachers. But, the villagers are a worried lot. They are susceptible to skin diseases because they use the polluted water. Some villagers are complaining about itching, rashes, pustules and other skin diseases. Once in 1993 and again between 1997 and 1999 there was heavy pressure on the heronry due to repeated complaints and half of the vegetation was rooted out by the village panchayat. This included the entire *Acacia nilotica*, mosses and other aquatic plants in Part 'C'. More than three-fourths of the bird habitat was lost and finally six acres of bird area was separated from the pond, by constructing a bund in June 2000.

Since the area meant for the birds is isolated from the pond with a bund 'SB', the bird area is left with little maintenance. This area is insufficient for the nesting birds with the sustaining capacity decreasing drastically. Bigger birds are driving away smaller birds. Birds are overcrowding and nesting in dense clusters almost throughout the year. Even though there is a provision for maintaining the water level, they are not strictly enforced and the water position has worsened considerably.





Nearly 50% of the vegetation started decaying during 2000-01, and part of 2002. It was thought that due to overcrowding of birds there was no photosynthesis and also droppings on leaves and branches throughout the year forced the vegetation to decay. Secondly, the stagnant polluted water was submerging the *Prosopis* above the trunk level for longer periods. It was reported that fertilizers that were dated were used (after expiry date) as fish feed by fishermen who had taken the pond on lease to cultivate fish in the pond used by the birds. But, the exact reasons are yet to be analysed.

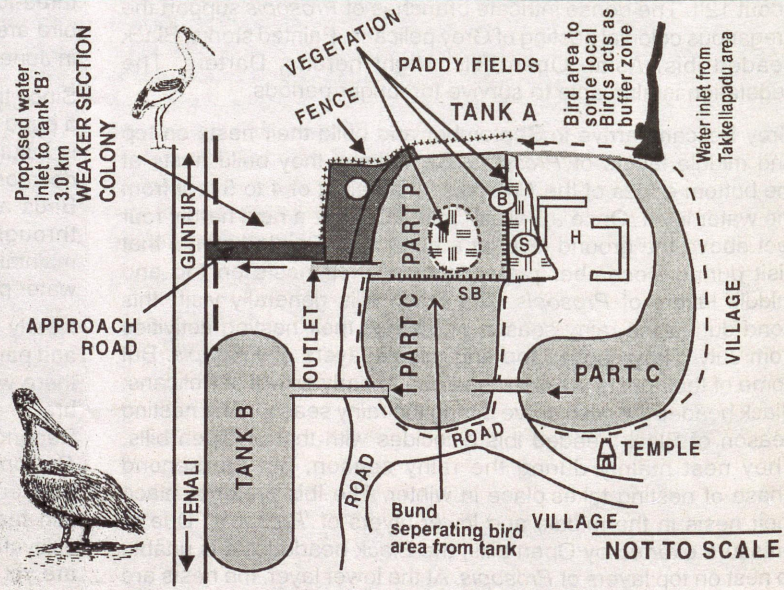
UPPALAPADU BIRD COUNT

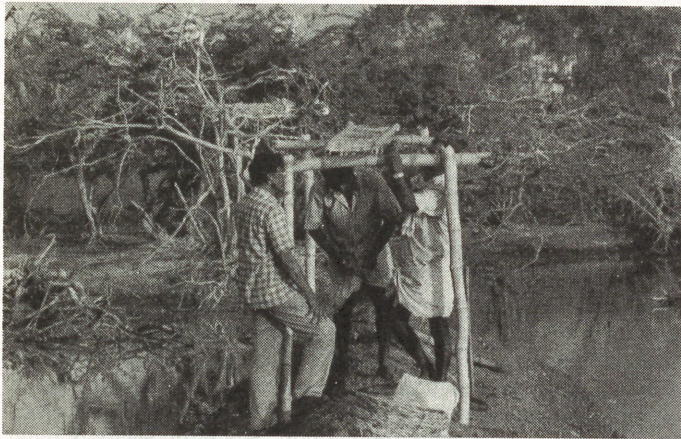
Name of the Bird	12.01.92	8.03.92	15.01.97	6.04.97	22.11.97	4.01.98	4.02.98	29.03.98	11.10.98	25.12.98	17.01.99	9.05.99	13.06.99	17.07.99
1. Little Cormorant	2000	1500	1000	1000	400	350	200	140	200	200	250	250	22	100
2. Darter	4	2	5	NA	NA	NT	3	-	-	4	3	5	-	-
3. Night Heron	2000	2000	800	1200	400	1000	800	1200	800	800	650	600	200	200
4. Cattle Egret	6000	6000	10000	5000	500	4000	6000	4000	200	600	1600	300	600	100
5. Painted Storks	5		87	25	NA	60	20	70	NA	9	200	25	12	5 Imm
6. Openbilled Storks	1000	2000	200	3500	350	700	250	1600	7000	3000	200	600	1000	2500
7. Lesser Whistling Teals	47	33	6	NA	NA	NA	NA	NA	NA	NA	121	-	12	-
8. White Ibis			400	350	350	700	1000	400	300	400	1000	200	35	200
9. Purple Moorhen	7	3	6	6	5	4	4	6	6	6	10	6	8	10
10. Purple heron	2	1	NA	4	1	NT	4	1	1	1	3	-	-	-
11. Coot	40	37	6	4	NA	NA	8	14	NA	NA	22	65	-	-
12. Pady Bird	260		NT	15	NT	NT	15	18	16	12	6	-	-	-
13. Rosy Pastors	2000	50,000	NA	300	NA	NA	4000	200	NA	NA	300	-	-	-
14. Glossy Ibis			NA	NA	16	12	NA	NA	NA	NA	NA	NA	NA	NA
15. Spotbilled Duckes		41	NA	NA	4	4	NA	NA	NA	NA	17	15	59	NA
16. Moorhen		5	2	NT	4	NT	6	6	NA	NA	7	NA	2	NT
17. Bronze Winged Jacana	11	9	4	NT	5	NT	4	6	6	4	3	4	2	4
18. White Wagtail	1		3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19. Yellow Wagtail	2	7	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20. Pheasant Tail Jacana	5	7	4	3	NT	NT	4	2	2	2	1	NT	NT	NT
21. Little Egret			NT	NT	NT	70	NT	30	20	NT	NT	NT	NT	200
22. Spoon Bill			NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	NA
23. Dab Chick	4	1	NT	NT	NT	NT	NT	NT	NT	NT	2	NT	NT	NT
24. Spotbilled Pelican	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	NA	NA	NA
25. Large Pied Wagtail	1	1												
26. Median Egrets	8													
27. Large Egrets	4													
28. Cotton Teal	4	11												
29. Streaked Baya Weaver		200						8						
30. Wood Sandpiper		2												
31. Whitebreasted waterhen		2										2	2	
32. Koel		1												
33. Chif Chaf		4												
34. Pied Bushchat		1												

NA = Not Available NT = Bird Count Not Taken Incl = Including Imm = immature
 Spot Billed Pelican = Spot billed pelican arrived at the tank during the first week of January 1999. If left the tank during last week of Jan 1999

UPPALAPADU BIRD HABITAT

- Tank 'A' = Original Bird Habitat
-  PART P = Present Bird area of six acres.
- Tank 'B' = Water of this tank utilised by villagers.
- H = High School Building
- Ⓢ = Water body with Typha, Water Hyacinth etc. abutting high school as a buffer zone.
- Ⓛ = Bund with vegetation earmarked as a boundary to High School.
-  Approach Road
-  Site for visitors
-  Proposed watch tower





Artificial nesting platforms were constructed with bamboo

But at present the problem of the decay of vegetation is not there. A few of these plants have re-shooted. Is it due to decrease in bird numbers from 2002 summer? From 2002 onwards the number of egrets has considerably decreased to two or three digits. Once their numbers exceeded 10,000. Now there is a two month gap during summer. Little cormorants, Black crowned night herons and a few egrets are roosting during summer and as such the density and the overcrowding has decreased considerably and 90% of vegetation is free from birds. From Feb 2002, the bird area has been well maintained with little scope for stagnation of water and submersion of plants beyond the trunk level.

Grey pelicans are voracious consumers of fish from other parts of the pond and were causing heavy loss to the fish lease holders, resulting in loss of revenue to the Panchayat. From 2002 onwards the Panchayat has stopped auctioning the fishing rights in the village pond, which was a major source of revenue of around Rs. 1,00,000/- per year to the Panchayat.

There are also other complaints. The birds remove tender saplings of paddy, chillies, and other dry crops from sapling beds, and from fields during seedling transplantation and after transplantation. The birds use these materials for lining and cushioning their nests. Due to this the farmers are suffering in many ways. (1) Loss of tender saplings (2) Loss of wages (3) Retransplantation (4) Loss of man hours (5) Delay in retransplantation and stabilization, most often affecting the crop and yields.

Regarding water supply to the village there are two modes. One is for drinking - water supply. There is no problem with drinking water. A six km long pipeline was laid from the main pipeline of Sagamjagarlamudi - Guntur water supply scheme to supply drinking water to the village. The other one is for domestic purpose. The problem of excreta of birds was solved by separating the bird area by constructing bund SB in tank 'A' giving a new lease of life to the bird habitat. But the villagers still insist that such diversion of the water inlet has not solved the problem. The *Prosopis* plantation raised on the bund SB to give life to the bird area has yielded an excellent result and the birdlife is stabilizing. But the bund SB is becoming weaker and weaker and there were breaches twice during this rainy season (2004). The breaches were immediately attended to by the village panchayat and further strengthened by the Forest department. The villagers are claiming the bund is unable to support the profuse growth of *Prosopis* as the roots have become broader than the width of the bund itself

and widespread branches are intruding into Part "C" and bird droppings are continuing to pollute the water. The villagers agreed to trim the inner dry branches intruding into part 'C' instead of axing down a major portion of *Prosopis* on bund SB. Strengthening of the bund has now become a priority. The domestic water problem of the villagers is to be solved permanently, in order to ensure the long time survival of the heronry.

Conservation efforts and developmental works

- * During our regular visits we requested the village Sarpanch Sri Peddi Sambasivarao to take suitable steps to protect the eggs, nestlings and waterfowl from poachers. He has taken the measures suggested by us and this problem has been solved.
- * In 1998 an Eco Club was opened by Sri K.V.S Subrahmanyam D.F.O WildLife, Eluru in the Zilla parishad high school. Rs. 2000/- was given by Forest Dept. to the Club (Book of Indian Birds + Rs 600/-). Later the amount was spent towards purchase of binoculars for the Club.
- * On 17-2-2000 with the help of Sri Makineni Peda Rathaiah, M.L.A., Sri Peddi Appaji, village sarpanch and other villagers we were able to stop the thoughtless uprooting of the vegetation and thus saved the heronry.
- * During June 2000 the villagers came forward and a six acre portion was separated for the birds by constructing a bund (SB) under 'Neeru-meeru' program.
- * Prevented trespassers by blocking the path at both ends. As a result, the bird population has increased. It has been decided to raise *Prosopis* on SB, as the *Prosopis* is fast growing and the intricate branches can support gregarious nesting of Pelicans. *P. juliflora* was seeded along the bund to compensate the loss of vegetation. *Prosopis* were germinated from seeds and there was profuse growth. Within one and half years of planting the *Prosopis* was able to support Openbills nesting and within two years the intricate branches were able to support Pelican nesting. This gave a new lease of life and stability to the heronry.
- * Forest department appointed two temporary watchmen from February 2002. Water level was maintained and regulated by these two watchmen.
- * During May 2002. Eight mounds (total length :190 meters) were constructed by the forest department to plant required vegetation. Sri Yusuf Sharif DFO, Sri P.A.V Udayabhasker C.F, Sri Hiralal Samaria. District Collector of Guntur, village panchayath, Forest Ranger Sri Satyanarayana and other staff are to be commended for their efforts.
- * Alert watchmen and villagers arrested four poachers, who had arrived in an auto from Vijayawada on 10th December 2002, sneaked into the heronry during the midnight, and killed fifteen Painted storks and some other birds. The auto was impounded and a case was booked against them.
- * On 4-1-03 six artificial nests were constructed with bamboo and nest shaped baskets and raised creepers to look natural. But they collapsed before the birds could occupy them.
- * Small *Prosopis* nursery was raised and saplings (1.5 feet) were planted in July 2003. But the birds removed these plants to utilise as lining material for their nests.
- * Forest department submitted a project report for Rs 70.2 lakhs to the Tourism Department to develop the habitat. Provision has been made for purchasing the adjacent area of 10 acres to expand the bird area in stages.

- * The village panchayat has given a piece of land belonging to it for constructing a watch tower and a guest house to accommodate visitors.
- * The first phase of the project, viz., fencing and approach road was constructed in 2003.
- * The forest department has agreed in principle to notify the Uppalapadu heronry as a 'Community Reserve'.
- * Promoting awareness among the villagers and other stakeholders about the paramount need to conserve the heronry.
- * Regular liaison with forest authorities and others in charge of improvement and development of the habitat.

During January 2001 Sri P.Pathanjali (NRI, USA) visited UPL and was thrilled to see the birds in that small protected habitat. He started an organization "SPECIES" during July 2001. Marathon runs were conducted by him in 2001 and 2002 for a distance of 24km and 18km respectively, in order to create an awareness about the need to protect this heronry.

Over the last three decades, the villagers have exhibited sufficient tolerance and liking for the birds, despite the pollution of the pond on account of bird droppings. But, the situation got out of control when a section of the villagers brought heavy pressure to clear the vegetation in the heronry. It is highly appreciative of Sri Makineni Peda Rathiah M.L.A., Sri Peddi Appaji, village sarpanch and other villagers who rose to the occasion and diffused the crisis and saved the heronry. The water problem was solved to some extent not only by separating the bird area but also by the reconstruction of filter beds. The youth of UPL Mr. Siva, Mr.Vamsi, and Mr.Kishore have participated in monitoring and conservation efforts. Sri Ramankumar. K, Sri Srinivaskumar.K, Sri Dilipkumar,

Sri S.P.Reddy of Bapatla and Sri T.N.Varaprasad of Guntur Sri K.Hanumantharao of Hyderabad were among the others monitoring birds and conservation. Sri M. Sitaramaiah of Uppalapadu village and Ramana.K of Guntur have also actively participated in the conservation efforts. Without these two bird lovers and the youth of Uppalapadu and other bird lovers' support it would not have been possible to continue our monitoring and conservation efforts. The timely support of Sri K.Sudhakar, Sri P.Chittisaibabu, Sri J.Tulasinarayana and late Sri E.L.Narayana of Bapatla who made untiring efforts towards the conservation of the heronry against all odds, can never be forgotten.

I am thankful to Sri Dayakar (A.V.K. Narasimha Rao) of Bapatla who informed me about this pond during the year 1988. I am very much thankful to my officers and colleagues and other staff at BSNL, for their encouragement and co-operation and also to Sri Dr. B. Sudhakar Reddy of 'I.G.I.D.R' Mumbai who has given constant encouragement and support. Since the villagers have exhibited their eagerness to protect this heronry and have given a green signal for further development of the heronry, I am confident that the future of the heronry is bright.

For their decades of tolerance for the birds, and their ceaseless efforts to conserve the heronry, the villagers, the nature lovers, the Panchayat, and the Forest Department deserve a special thanks. The heronry has become an important bird area of India and has been identified as an IBA site. The villagers' gratitude, continued devotion and interest towards birds is highly praiseworthy. A cash reward may be given to the UPL Panchayat which can be used as a corpus for future development of the heronry. A project with long term plan to improve this bird sanctuary to 32 acres which is equal to its original area will certainly catapult this heronry to a lofty place in the hierarchy of important heronries of Asia.



At Beejanahalli, South West of Kabini reservoir, Mysore (11° 45' N, 76° 5' E – 12° 15' N, 76° 25' E), a small nesting Colony of Cormorants was sighted on 8th December 2003.

Untidy, conical platforms of dry sticks, grass, dry twigs of *Casuarina*, *Eucalyptus* and *Acacia auriculiformis* in forks/branches of nine *Casuarina* trees were located. Nests were built on trees above ten metres from ground level. There were 27 nests, 18 of Large cormorant, (*Phalacrocorax carbo* shaw) and nine of Little cormorant, (*Phalacrocorax nigervieillot*). Seeing Dr. Ananda Rao, Dr. Prakash and me watching the birds through 8 x 30 binoculars, a villager quipped, "These birds have been nesting here for the past five years".

The nesting congregation of birds exhibited nest building, fortification, courtship, incubation, feeding the chicks and other activities. A few nests were under construction, a few with eggs, others with nestlings and some, with fledglings, indicating that breeding and nesting commenced at different times or have been progressing at different rates. The nesting birds were noisy and commotion prevailed at the nesting site accompanied by flapping and bill clapping sounds. Large - sized birds with white face, yellow gular and white thigh patch were the Large cormorants whose young were brown above, white below with brown or black. Smaller sized, black birds with silvery grey wing coverts and a few scattered silky white feathers were the Little cormorants. Young were dressed with brown above, pale - white below.

Breakaway Heronries?

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Jungle crows (*Corvus macrorhynchos* sykes), Common myna (*Acridotheres tristis* Linn.) and Pond herons (*Ardeola grayii* sykes) were gleaning the ground below the nesting trees over fallen food remains / materials. Brahminy kite, (*Haliastur indus* Boddeart) hovered around the nesting trees and the cormorants seemed to offer no resistance or defense. Even at an average clutch size of two/nest (normal clutch size = 3 to 5 / nest, Ali and Ripley, 1995), the nesting success at the site was about 30% suggesting a lower turnover rate.

On January 15, 2004 another small colony of nesting Little cormorant (3 nests), Cattle egret (*Bubulcus ibis* Boddaert) (2 nests), Black ibis (*Pseudibis papillosa* Temminck) (3 nests) and Pond heron (4 nests) was located near Holalu, Mandya (12° 38' N lat. 76° 53' long. 716 amsl). The nests were on *Casuarina* trees along water channel. Hiremath and Desai (2003) reported a number of such small colonies of water birds in South India.

Karnataka is witnessing a delay in the commencement of monsoon rains and a shortfall in the annual precipitation. As a result, waterbirds like cormorants are forced to leave traditional, large breeding congregation and look for breeding in smaller colonies wherever water and food are available. Breeding in large colonies confer multiple advantages to waterbirds like providing information on food sources, safety and protection from natural enemies etc., so that birds of different species co-operatively breed and roost. Breeding in small colonies may

accrue lesser success rate and birds may suffer greater risk of mortality. Yet waterbirds like cormorants may be forced to breed and roost in small colonies at sites 'not so suitable' for them to do so.

According to Hiremath and Desai (2003) commencement of breeding activities in Shag (*Phalacrocorax fuscicollis stephens*) is the function of their latitudinal distribution and this even is moderated by monsoon rains. In addition, anthropogenic factors influence selection of site for roosting and nesting by waterbirds. The Golden Quadrilateral Highway Project has brought about changes in landscape across the country, where by many National Highways are being widened. In the process, many ancient, lofty trees with well spread canopies are being felled. Avenue trees at selected places provide secure niche for some waterbirds for

nesting and roosting like Mathikere on Bangalore-Mysore Highway. Religious places of worship or sites with religious sanctity, sacred groves and avenues are some of the only secure sites left for waterbirds to nest and roost, by and large in India. Therefore conservation of split-up heronries or roosts will play a vital role in the years to come for the sustenance of waterfowl populations in India.

References

- Ali.S and Ripley.S.D. (1995). A pictorial Guide to the Birds of the Indian Subcontinent. Bombay Natural History Society, Oxford University Press, Bombay.
- Hiremath.S.V and Desai.R.N. 2003, Breeding Activity of the Indian Shag. NLBW 43 (1) : 11.



Waterbirds of Kumbhalgarh Wildlife Sanctuary, Rajasthan, India.

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Introduction

Kumbhalgarh Wildlife Sanctuary (KWS) lies between 73° 2' and 73° 30' East and 25° 0' and 25° 40' North. It was declared a Wildlife Sanctuary in 1971 and it covers an area of 585 sq. km. The KWS is situated in parts of western slopes of the Aravalli mountain varying from 274 to 1155 meters. During summer the temperature is more than 30°C and may rise up to 48°C and the minimum temperature recorded during study period was 2°C. The average annual rainfall is 725 mm, with a maximum 950mm and minimum 403mm. This wide range of climatic conditions along with the great altitudinal variations provides different microhabitats. Therefore, this sanctuary encompasses different vegetation types such as deciduous, dry-deciduous, dry-savannah-forest, euphorbia scrub and dry grasslands. There are about 24-25 waterbodies (including large, small dams and talabs) throughout the sanctuary. After the monsoon rains all these waterbodies are full with water and becomes good wetlands for the resident and migratory aquatic birds. Most of these water bodies are within the sanctuary area and are well protected and undisturbed with plenty of aquatic food, which attracts local migratory water birds.

The forest is dominated by 'gorya dhawa' (*Anogeissus latifolia*), dhawa (*A. pendula*), salar (*Boswellia serrata*), gol (*Lannea coromandelica*), kherni (*Wrightia tinctoria*), kumbat (*Acacia senegal*), khair (*A. catechu*), ber (*Zizyphus mauritiana*), dhonk (*Butea monosperma*), etc. The undergrowth mainly consists of jharber (*Z. nummelaria*), ardnas (*Adhatoda vasica*), gangan (*Grewia tenax*), franger (*G. flavescens*), kanter (*Capparis separaia*), lantana (*Lantana indicus*), etc. Some climbers and grasses are also found.

The main fauna of KWS includes, Leopard (*Panthera pardus*), Hyena (*Hyaena hyaena*), Indian wolf (*Canis lupus*), Jackal (*Canis aureas*), Hanuman langurs (*Semnopithecus entellus*), Fourhorned antelope (*Tetracerus quadricornis*), Chinkara (*Gazella gazella*), Porcupine (*Hystrix indica*), Sambar (*Cervus unicornis*), Blue bull (*Boselaphus tragocamelus*), Toddy cat (*Paradoxorus hermaphroditus*), Jungle cat (*Felis chaus*), Fox (*Vulpes bengalensis*), Mugger crocodile (*Crocodylus palustris*) and Rock python (*Python molurus*).

Data were collected during long-term eco-behavioural study on Hanuman Langurs from 1994 to 2001. The aim of this study was to ascertain the nature of birds in various microhabitat types in and around KWS, and the progress of restoration of bird diversity in this region.

Methodology

I have been monitoring bird diversity in and around KWS since 1994. A series of transects that were laid in the sanctuary for intensive survey of Hanuman Langur population, were used. Besides this, birds were recorded by point count methods in the major vegetation types as well as at waterbodies (rivers, dams) and in agro-ecosystems for the six-year period. Apart from this, chance encounters were also recorded while following langurs. All identifications were based on Woodcock (1980), Ali Ripley (1983), Grewal (1995) and Kazmierczak, (2000) and only those species with confirmed identification are listed in this paper. Birds were sighted and identified with the help of a pair of binoculars (20 x 50 and 7 x 35).

Results

A total of 66 species of waterbirds belonging to 17 families have been recorded in the KWS till August 2001.

Therefore the KWS would seem to support a fairly large number of waterbird species. During the normal rainfall years, when all dams and waterbodies in and around KWS area get filled up to their capacities there is obviously no scarcity of food material which is perhaps enough for resident and migratory, aquatic avifauna of KWS. Also the number of large trees, rocks, cliffs and small islands in the reservoirs provide enough "safe places" for roosting. These two factors may be the main reasons for the attraction of resident as well as migratory waterbirds.

Out of 66 species of waterbirds found in KWS, three species viz, painted stork, sarus crane, Indian skimmer are listed in "Threatened Birds of the World" (Birdlife International 2000). 1 species is categorized as "near threatened" (*Sarcogyps calvus* and *Mycteria leucocephala*) and 2 species, *Grus antigone*, *Rynchops albicollis*, as "vulnerable".

Table-1: Water Birds of Kumbhalgarh Wildlife Sanctuary with Status

S. No.	Family	Name	Scientific name	Status
1	Podicipedidae 1	Little grebe	<i>Tachybaptus ruficollis</i>	C
2	Pelecanidae 2	Rosy pelican	<i>Pelecanus onocrotalus</i>	R
3	Phalacrocoracidae 3	Large cormorant	<i>Phalacrocorax carbo</i>	R
4	"	Indian shag	<i>P. fuscicollis</i>	C
5	"	Little cormorant	<i>P. niger</i>	C
6	"	Darter	<i>Anhinga melanogaster</i>	UC
7	Ardeidae 4	Grey heron	<i>Ardea cinerea</i>	UC
8	"	Purple heron	<i>A. purpurea</i>	C
9	"	Pond heron	<i>Ardeola grayii</i>	C
10	"	Cattle egret	<i>Bubulcus ibis</i>	C
11	"	Large egret	<i>Casmerodius albus</i>	C
12	"	Intermediate	<i>Egretta intermedia</i>	R
13	"	Little egret	<i>E. garzetta</i>	C
14	"	Night heron	<i>Nycticorax nycticorax</i>	C
15	Ciconiidae 5	Painted stork	<i>Mycteria leucocephala</i>	UC*
16	"	Openbill stork	<i>Anastomus oscitans</i>	R
17	"	Whitenecked stork	<i>Ciconia episcopus</i>	UC
18	"	White stork	<i>C. ciconia</i>	R
19	"	Black stork	<i>C. nigra</i>	R
20	Threskiornithidae 6	White ibis	<i>Threskiornis melanocephalus</i>	C
21	"	Black ibis	<i>Pseudibis papillosa</i>	R
22	"	Spoonbill	<i>Platalea leucorodia</i>	C
23	Phoenicopteridae 7	Flamingo	<i>Phoenicopiterus roseus</i>	UC
24	Anatidae 8	Greylag goose	<i>Anser anser</i>	R
25	"	Barheaded goose	<i>Anser indicus</i>	R
26	"	Lesser whistling teal	<i>Dendrocygna javanica</i>	C
27	"	Brahminy duck	<i>Tadorna ferruginea</i>	UC
28	"	Pintail	<i>Anas acuta</i>	C
29	"	Common teal	<i>A. crecca</i>	C
30	"	Spotbilled duck	<i>A. poecilorhyncha</i>	C
31	"	Mallard	<i>A. platyrhynchos</i>	UC
32	"	Wigeon	<i>A. penelope</i>	C
33	"	Shoveller	<i>A. clypeata</i>	C
34	"	Common pochard	<i>Aythya ferina</i>	UC
35	"	Tufted duck	<i>A. fuligula</i>	C
36	"	Cotton teal	<i>Nettapus coromandelianus</i>	UC
37	"	Comb duck	<i>Sarkidiornis melanotos</i>	R
38	Gruidae 9	Sarus crane	<i>G. antigone</i>	UC*
39	Rallidae 10	Whitebreasted waterhen	<i>Amaurornis phoenicurus</i>	C
40	"	Moorhen	<i>Gallinula chloropus</i>	VC
41	"	Purple moorhen	<i>Porphyrio porphyrio</i>	UC
42	"	Coot	<i>Fulica atra</i>	VC
43	Jacaniidae 11	Pheasant-tailed jacana	<i>Hydrophasianus chirurgus</i>	UC
44	"	Bronzewinged jacana	<i>Metopidius indicus</i>	R
45	Rostratulidae 12	Painted snipe	<i>Rostratula benghalensis</i>	UC
46	Recurvirostridae 13	Blackwinged stilt	<i>Himantopus himantopus</i>	C

47	Charadriidae 14	Redwattled lapwing	<i>Vanellus indicus</i>	VC
48	"	Yellow-wattled lapwing	<i>V. malabaricus</i>	R
49	"	Little ringed plover	<i>Charadrius dubius</i>	R
50	"	Blacktailed godwit	<i>Limosa limosa</i>	UC
51	"	Redshank	<i>Tringa totanus</i>	UC
52	"	Greenshank	<i>T. nebularia</i>	UC
53	"	Wood sandpiper	<i>T. glareola</i>	C
54	"	Common sandpiper	<i>Actitis hypoleucos</i>	C
55	"	Common snipe	<i>Gallinago gallinago</i>	C
56	Laridae 15	Indian river tern	<i>Sterna aurantia</i>	C
57	"	Little tern	<i>S. albifrons</i>	UC
58	"	Indian skimmer	<i>Rynchops albicollis</i>	UC*
59	Alcedinidae 16	Lesser pied kingfisher	<i>Ceryle rudis</i>	UC
60	"	Common kingfisher	<i>Alcedo atthis</i>	C
61	"	Whitebreasted kingfisher	<i>Halcyon smyrnensis</i>	VC
62	Motacillidae 17	Yellow wagtail	<i>Motacilla flava</i>	C
63	"	Yellowheaded wagtail	<i>M. citreola</i>	VC
64	"	Grey wagtail	<i>M. cinerea</i>	C
65	"	White wagtail	<i>M. alba</i>	UC
66	"	Large pied wagtail	<i>M. maderaspatensis</i>	C

C - Common; R - Rare; UC - Uncommon; VC - Very common

* - Listed in Threatened Birds of the World (Birdlife International-2000)

Acknowledgment

This study is a part of Indo-US Primate Project, a collaborative programme of the Ministry of Environment and Forests, Government of India, and the U. S. Fish & Wildlife Service. (Grant Agreement No. INT/FWS-22). I would like to thank Prof. S.M. Mohnot, Director, Indo-US Primate Project, Dr. Ashok Purohit, Head, Department of Zoology, J.N.V. University. To the State Forest Department staff and officials of Kumbhalgarh Wildlife Sanctuary, especially A.C.F. Shri Lalit Singh Ranawat and Shri Sukhdave and Shri Madan Mali, Field Assistants for their support during this field study I offer my thanks. I am also thankful to Mr. Bundu Khan for his help during computation of this work.

References

- Ali, S. and S.D. Ripley (1983). Handbook of Birds of India and Pakistan, Bombay Natural History Society, Oxford University Press.
- Ali, S. and S.D. Ripley (1987). Compact handbook of the Birds of India, Pakistan, together with those of Bangladesh, Nepal, Bhutan and Sri Lanka. Oxford University Press, New Delhi, p.737+104 plates.
- Birdlife International (2000). Threatened Birds of the World. Barcelona and Cambridge, UK: Lynx Edicion and Birdlife International.
- Grewal, Bikram (1995). Birds of the Indian Subcontinent. Odyssey, Hong Kong. P.193.
- Kazmierczak, K. (2000). A Field guide to the Birds of India, Sri Lanka, Pakistan, Nepal, Bhutan, Bangladesh and The Maldives. Pica Press, U.K.
- Woodcock, M. (1980). Collins Handguide to the Birds of the Indian Sub-continent. St. Jame's Palace, London, P. 176.



Nesting of Phalacrocoracidae, Threskiornithidae and Ardeidae at Ahmedabad Zoo

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Background

Ahmedabad Zoo is situated in the heart of the city with the Kankaria lake adjacent to it. A four-lane asphalt road lies between the zoo compound wall and the lake.

Water birds have been seen nesting on trees inside the zoo for many years but no records or monitoring had been undertaken. This year Mr. Kandarp and I carried out a short but rewarding survey. The main objective of the survey was to identify the species that were nesting and to count the number of nests.

Four visits, each of approximately 3 hours were made on 13/7/03, 24/7/03, 27/07/03 and 3/08/03 respectively.

Methodology

The counting was divided into four different paths and on each visit one path was chosen and the survey conducted. Following four parameters were recorded on every visit:

1. Name of tree
2. Name of the nesting bird
3. Height at which the nest was made
4. Nesting material

Visit 5 was conducted to particularly monitor the changes in the number of nests of White ibis and spoon bill. These birds are known to nest even in August/September. There were indeed 10 new nests of each of these birds.

Nine species belonging to 3 families were recorded nesting.

Nesting characteristics

Nesting was restricted within the compound of the zoo. Only two trees outside the compound had nesting activity. Cattle egrets and night herons nested on these trees.

There was a distinct difference in the nesting material used by the shags and the egrets. The nest of the shags was made up of twigs that had leaves. The dry leaves were present when the birds were nesting. Night herons had nests similar to that of the shags. The shags were seen bringing nesting materials from the open plots of the closed mills behind the zoo, about 500 meters as the crow flies. Shags were also seen breaking off leafy branches from the very trees they were nesting. The high number of shag nests made by using fresh leafy twigs showed their preference for this material.

The egrets had nests made up of naked twigs. All species of the egrets had most nests made up of dry twigs that did not have any leaves. The egrets were seen gathering these twigs from the plantation area where a lot of felled trees had been stored. The egrets were regularly seen collecting dry twigs from this area. The egrets were also seen stealing nesting material from the nests of birds that were within pecking distance. Also on the first transect egrets were seen collecting twigs that had fallen down

from the nests of other birds. The nests of the egrets were flimsy twig platforms seemingly too small for the birds especially in case of the large egret.

The shags nested in the upper canopy and also on the outward branches of the middle canopy. The canopy and the branches had no kind of vegetation cover

that meant that the nest had no kind of protection from predators and climatic variations. In Keoladeo, shags are known to nest in very large colonies in tiers, but here the shags mainly restricted themselves to the upper canopy.

Night herons nested in the denser middle canopy and in the inner branches and foliage.

Cattle egrets and the little, median and large egrets nested in the middle and lower canopy, in the dense foliage.

The white ibis and spoonbill colonies were more segregated and tended to be in discrete smaller colonies within a large colony. Their nesting material mainly consisted of twigs. These birds

Visits	Number of nests of each species										
	Indian shag	Night heron	Little Egret	Median Egret	Great Egret	Cattle Egret	Spoon Bill	White Ibis	Little Cormorant	UI Nests	
Visit 1	94	188	0	3	20	0	0	0	30	15	350
Visit 2	157	154	1	2	3	11	5	40	10	0	383
Visit 3	24	204	16	5	12	58	0	8	1	0	328
Visit 4	12	96	15	10	3	58	5	6	19	9	233
Visit 5							10	10			20
	287	642	32	20	38	127	20	64	60	24	1314

Species	No. of nests	%
Indian shag	642	48.85
Night heron	287	21.84
Cattle egret	127	9.66
Little cormorant	60	4.56
White ibis	64	4.87
Little egret	32	2.43
Large egret	38	2.89
Median egret	20	1.52
Spoon bill	20	1.52
Unidentified nests	24	1.82
Total nests	1314	99.96



had nests very close to one another as compared to the egrets or shags.

The nests were like small colonies in a large colony. There was a marked tendency to segregation in both the spoonbills and the white ibis.

On a ficus tree the little cormorants nested very close together, below the shags but at the same time on an asopalav tree the little cormorants nested in the canopy. There were no shags nesting on this tree.

The shags preferred trees that had a large spread canopy like neem, peltophorum (copper pod) etc. The number of shag nests in asopalav trees were comparatively less as these trees did not have large canopies. The number of egret nests was very high in the asopalav trees and they were seen nesting in tiers particularly in these trees in the zoo nursery.

Food Habits

Cattle egrets, little, median and large egrets: Chiefly have insects, flies, earthworms and to a minor extent tadpoles, frogs and lizards as their diet.

Food of night herons includes fish, frog, aquatic insects and dragon fly larvae.

White Ibis and spoonbill: Diet consists of small fish, tadpoles, frogs, molluscs, crustacean and aquatic insects.

Indian shag and little cormorant: Diet consists mainly of fish in case of the shag. Little cormorant diet also includes tadpoles, frogs and crustacean to a lesser extent.

Food is an essential factor for any nesting bird and in this case the food requirements of all the birds that nested were fulfilled to a great extent by the presence of the Kankaria lake. Adult birds were seen foraging in the lake on all the visits. The other large source of water, which could be a potential site for food for these birds, is the Sabarmati river. The river is only one and a half kilometer, as the crow flies. The introduction of Narmada water meant that there was ample water and the stocks of fish replenished every time water was fed into the river from the main canal.

Egrets and night herons were seen foraging on the edge of water on the circumference of the lake as well as on the edge of water on the island that lies in the middle of the lake.

Breeding

Breeding of all these birds coincide with the rains and in North India it is usually between June/July and September. Variances do occur with the availability of food and nesting sites.

During Visit 1, chicks and fledglings of most of the birds had been recorded. The number was particularly high in cattle egrets, night herons and, little cormorants to a lesser extent. On visit 5, most of the shag nests were empty. Fledglings were seen outside their nests on the branches of trees, squabbling for space. There were exceptionally high numbers of night herons and egrets fledglings that had come out of their nests and were perched on the branches next to their nests.

On visit one, we saw disparity in the growth of chicks of the same brood. In a little cormorant nest, we saw that a fledgling was out on the branch while there were still two smaller birds in the nest. This has also been mentioned in Birds of the Sub continent: *'Disparity in growth of chicks of the same brood suggests that the eggs are laid at longer intervals than 24 hours and that incubation commences with the first egg.'*

In all the 9 species that were breeding, both adults are known to share the nesting chores i.e. nest building, incubation and feeding. Most of them lay 3-5 eggs. The fact that above 1300 nests were sighted and assuming that only one chick from each nest leaves the nest at the end of the nesting season, approximately 3900 birds would have been present in the zoo compound during the nesting season.

The most interesting element of this study was the nesting of the birds in only 2/3rd of the zoo compound. The birds preferred to nest in the interior of the zoo going farther from the lake, rather than continue to nest on the remaining peripheral trees that grow along the zoo compound. There is photographic evidence of the birds nesting on this site for over a decade. Only one night heron nest was seen in this part. This part of the compound was not even used for perching.

Perching was mainly restricted to a few large trees which were either totally dead or had an open canopy. Spoonbills, ibises, and mostly shags used these trees for perching. Also, there were no nests on these perching trees.

Shortcomings

The main shortcoming was the counting of nests itself. If one stood under the tree to count the nests, the ones on the canopy were undercounted. At the same time if it was done from a distance to include the canopies, the ones in the foliage were missed. Counts from both these points could not be included; it led to double counting.

Identification of the species was also quite difficult in the case of the egrets. At times one could see only the white of an egret but the species could not be identified. The nesting of the egrets and night herons in the dense foliage meant that there were undercounts.

A long term monitoring of the site will help us more in understanding this extraordinary phenomenon that is taking place in the heart of the city. Ringing of the nesting birds could tell us more about their local migration and the extent to which they move about once the breeding season is over.

Food that is an important factor for the choice of a nesting site also raises certain queries. The piscivores were seen feeding in the lake opposite to the nesting sites. But large flocks were also seen flying towards the river. There is every possibility of these birds going to the river to get food. No clear evidence was found regarding the feeding of the egrets, night herons, ibises and spoonbills. The egrets could be feeding on the maggots that occur due to the constant presence of rotting flesh / faecal matter in parts of the zoo compound. Further work on this aspect has to be conducted.



Waterfowl Census in Dheer Beel, Assam

Hillojyoti Singha, Amarjit Narayan Dev, Rimpul Hazarika, Kaustoo Gopal Goswami and Banita Roy
 Department of Zoology, Birjhora Mahavidyalaya, Bongaigaon, PIN 793380, Assam.

It was a fine morning of 23 January 2004. Though it was foggy in the beginning, the weather was clear by the time (0900 h) we reached Dheer Beel (26° 17' & 90° 23'). It is an internationally important wetland, located in Dhubri District, beside the Chakrasila Wildlife Sanctuary; however it is unprotected till date. It is about 45 km west from our college (situated at district HQ town Bongaigaon) by road. Some researchers, NGOs, including Hillojyoti Singh a also have been collecting data about its avifauna and ecology for Asian Wetland Bureau and for Wetlands International from 1987 to 1993. However, these data are not available in published literature and there had been a gap in studies till 2003. Therefore, we wanted to resume the waterfowl census from this winter.

Dheer Beel is a fresh water lake, connected to River Brahmaputra by a narrow channel on the northern bank. Most part of the lake is open; however, floating vegetation e.g., water hyacinth is present here and there and are accumulated in some places by the fishermen where fish are encouraged to gather, locally called 'katal'. Some bamboo poles are also erected in the katal to hold the water hyacinth together, which serve as perching sites for some birds, e.g., cormorants. Besides, in shallow region of the beel, there are some submerged vegetation, mainly *Vallisneria*. In the beel, large scale fishing occurs, birds are reported to be poisoned to some extent, and agriculture practice is being done along the edges. Cattle grazing is also observed on the bank of the beel.

We hired a country boat and started our survey at 0930 h. We counted water birds as mentioned in the 'Asian Waterfowl Census (South Asia) – India' data sheet. We moved slowly from one end of the lake to encircle it keeping a minimum distance of 50 m on the right hand side from the shore so that we could cover the bulk of the mid portion of the lake. We counted individual birds as well as birds in flock following the standard method of sampling technique (Javed *et al.* 2000). We tried to approach flocks of birds in front of us as close as we could and counted birds on both sides of us as well. To avoid double count, we did not count birds which landed in front of us flying from our back as well as from either sides. On 19 January 2003 also the same method had been followed, but that team also landed on the bank and counted birds at the edges. On the other hand, in 2004, we concentrated our survey mainly in the waterbody.

In two successive seasons, we saw 33 species of water birds, among which 21 were migratory (including resident with migratory population), one was vagrant (Blacknecked Grebe) and 11 were resident (Table1). We also found two vulnerable species (Lesser Adjutant Stork and Baer's Pochard) and one near threatened (Ferruginous Pochard) (Islam and Rahmani 2002).

Some shore birds were missed in 2004 as we concentrated in the main waterbody, some were counted in flight, however. Some migratory birds, viz., Eurasian Wigeon, Mallard, Red-crested Pochard, Northern Lapwing, Great Crested Grebe, Blacknecked Grebe and Whiskered Tern were found in small numbers. Grey-headed Lapwing, which is found in this part of the country, is also seen in both the seasons.

It has been seen that the number of some birds is not consistent in both the seasons; some were found in large number in 2003 but not in the next season and vice versa. Only two seasons' data of one visit each is not sufficient to offer comment on this; however, it should be mentioned that there are some wetlands scattered around Dheer Beel viz., Urad, Diplai, Tamranga, Doloni, Konora, and Paropota. The last four are so close to each other that these could be considered as one wetland complex. So, a simultaneous study and regular monitoring of these wetlands would be logical to know how these are used by waterfowls.

Table 1. Waterfowl found in Dheer Beel in two successive winter seasons 2003 and 2004.

Sl. No.	Species	2003	2004
1	Little Grebe <i>Tachybaptus ruficollis</i>	7	0
2	Great Crested Grebe <i>Podiceps cristatus</i>	2	3
3	Blacknecked Grebe <i>Podiceps nigricollis</i>	1	0
4	Little Cormorant <i>Phalacrocorax niger</i>	93	184
5	Indian Pond Heron <i>Ardeola grayii</i>	66	03
6	Little Egret <i>Egretta garzetta</i>	00	32
7	Median Egret <i>Mesophoyx intermedia</i>	14	52
8	Large Egret <i>Casmerodius albus</i>	00	14
9	Asian Openbill <i>Anastomus oscitans</i>	13	71
10	Lesser Adjutant Stork <i>Leptoptilos javanicus</i>	03	00
11	Lesser Whistling Duck <i>Dendrocygna javanica</i>	183	42
12	Eurasian Wigeon <i>Anas penelope</i>	06	08
13	Gadwall <i>Anas strepera</i>	18	1222
14	Common Teal <i>Anas crecca</i>	564	1500
15	Mallard <i>Anas platyrhynchos</i>	00	03
16	Northern Pintail <i>Anas acuta</i>	241	82
17	Northern Shoveller <i>Anas clypeata</i>	117	05
18	Red-crested Pochard <i>Rhodonessa rufina</i>	02	00
19	Baer's Pochard <i>Aythya baeri</i>	26	00
20	Ferruginous Pochard <i>Aythya nyroca</i>	156	05
21	Common Pochard <i>Aythya ferina</i>	00	136
22	Common Coot <i>Fulica atra</i>	10	46
23	Northern Lapwing <i>Vanellus vanellus</i>	00	07
24	Grey-head Lapwing <i>Vanellus cinereus</i>	30	43
25	Red-wattled Lapwing <i>Vanellus indicus</i>	07	00
26	Common Sandpiper <i>Actitis hypoleucos</i>	03	00
27	Whiskered Tern <i>Chilodias hybridus</i>	00	01
28	Small Blue Kingfisher <i>Alcedo atthis</i>	01	04
29	White-breasted Kingfisher <i>Halcyon smyrnensis</i>	02	01
30	Common Swallow <i>Hirundo rustica</i>	53	62
31	White Wagtail <i>Motacilla alba</i>	26	00
32	Citrine Wagtail <i>Motacilla citreola</i>	11	00
33	Grey Wagtail <i>Motacilla cinerea</i>	10	00



References

Islam, M.Z. and Rahmani, A.R.2002. Threatened Birds of India. Buceros Vol. 7, No. 1& 2. Compiled from Threatened Birds of Asia. Birdlife International Red Data Book (2001). Cambridge, U.D. BirdLife International.

Javed, Salim, Kaul, Rahul and Bombay Natural History Society 2000. Field Methods for Bird Surveys. Department of Wildlife Sciences, Aligarh Muslim University, Aligarh and World Pheasant Association, South Asia Regional office (SARO), Delhi, Bombay Natural History Society, Mumbai, India.



Studies on the Distribution of the Heronries in and around Ajmer City Ecosystem

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Flamingo Research Station, Ana Sagar Lake, Ajmer 305006, Rajasthan.

Heronries are basically essential components for studying breeding behaviour in Ornithology in diverse biogeographic regions in an Agro-Ecosystem in India. These Biogeographic Zones of India are undergoing detrimental changes owing various anthropogenic activities and how ecosystems are the most affected. These changes should be examined as an ecosystem process, a function of the interactions between birds and their environment.

Some information on Heronries of the Raigad District Maharashtra, in Tehsil Kharar of Ropar District, Punjab and Keoladeo National Park, Bharatpur, Rajasthan is available (Singh and Sodhi, 1985, Naoroji, 1990, Mahabal, 1990 and Pande, et al. 2002). However, no detailed studies have been done on Heronries of Ajmer Ecosystem. The present study was undertaken to gather information on the Heronries of Ajmer in an Agro-Ecosystem.

Topographically, Ajmer can be regarded with hard surface material in different degrees of weathering. There are a few catchment areas of considerable significance where rain water collects during monsoons.

The area lies between 26° 25' and 26° 29' North latitude and 74° 37' and 74° East longitude. The area is characterised by the presence of outcrops of Aravallis ranges of varying heights and the plateau in which Ajmer stands marks the highest point in the map of India.

Ajmer is characterised by many low depth water-bodies, viz. Anasagar, Foy Sagar Pushkar, Budha Pushkar and Phool Sagar surrounded by the Aravalli Hills which served as potential source of rain water downflow for these Wetlands.

In city Ajmer there are two manmade freshwater lakes (Ana Sagar and Foy Sagar) situated in thickly populated areas. The most picturesque site in Ajmer city is the famous Ana Sagar Lake. It is an artificial lake formed by throwing up an embankment between two hillocks named Bajrangadh, Khobra Bhairun, after the respective Hindu temples built on them.

The Daulat Bagh was laid out by Mughal King Jahangir as a royal pleasure garden near Baradaris; now it is a public garden maintained by the Municipal Council of Ajmer. At the southern side of Anasagar, several bathing ghats with gardens attached to them exist.

A preliminary survey of heronries in and around Ajmer city of Rajasthan was undertaken in the year 2003. During the present survey a number of heronries and breeding populations of Cattle Egret, (*Bubulcus ibis* Lirmaeus), Indian Pond-Heron, (*Ardeola grayii* Sykes), Black-Crowned Night Heron (*Nycticorax nycticorax* Linnaeus), (Ciconiiformes:Ardeidae) and Oriental White Ibis, (*Threskiornis melanocephalus*. Latham (Ciconiiformes : Threskiornithidae) were noticed at different places in and around the city of Ajmer, Ecosystem, Rajasthan.

The city of Ajmer lies between 26° 25' and 26° 29' North latitude and 74° 37' and 74° east longitude. Field studies were conducted from April 2003 to December 2003.

Breeding behavioural activities were studied by "Focal Animal Technique" (Altman, (1974). Breeding was studied by conducting regular nest survey inside the heronry during the breeding season. Patterns of heronries in the Daulat Bagh and of different places in and around Ajmer city Rajasthan were studied by the method adopted by Singh and Sodhi (1985).

The present study was, therefore, aimed at gathering eco-behavioural data on heronries of Ajmer in an Agro-ecosystem. Each nesting tree was sampled for knowing vegetation structure which can be later interpreted in terms of Selection Strategies. Sampling was done around each nesting tree by using belt transect of 6 m (3 on each sides) width and 30m length in four directions from the nesting tree. All the trees within this transect were identified. Nest material and nest dimensions were also recorded.

All behavioural observations were made using *Focal Animal Sampling Method* which was followed throughout the observation period. Once in a week, one full day observations were carried out to study in different hours of the day. Daily monitoring of heronries was done twice a day (morning and evening) to record their arrival to the colony at the commencement of each breeding season up to their departure from the colony at the end of each season.

A watch tower (machan) was constructed in each breeding season to observe the colony as well as some focal nests from the initiation of nest building till the nests were vacated or abandoned. The focal pairs were observed continuously from dawn to dusk (0500 to 1700 hr.) each day, six days a week. Individuals of each focal pair was identified by their natural markings, facial and bill pattern and individual idiosyncrasies. Time budget of the parents on the nest was done till the fledging of the last juvenile from the nest. Reproductive success of the whole colony in each year was found out on the basis of daily monitoring. Meteorological information was collected from Flamingo Research Station, Ajmer, situated near the colony. Habitat preference of breeding birds was studied by recording the *species* of tree where the bird was sighted, height at which the sighting were made and the activity at the time of observation. Observations were made using 8x40 Binoculars from a point and a telescope from a punt.

The results are summed up follows:

Heronries were observed on Tamarind trees *Tamarindus indica* (21 trees). On an average the height of all the nests was 10 to 12 m above the ground level. Further all the nesting sites of Herons Egrets and White Ibis were close to Ana Sagar Lake Freshwater Wetland.

The system of classification of Heronries was followed by (Singh and Sodhi, 1985).

The heronries in Daulat Bagh and Kesar Bagh Police Post during this survey were identified and classified as follows:

1. All the heronries were very close to human settlement and hence they were described as 'Associated' type of heronries.
2. The nesting and breeding of Herons, Egrets and White Ibis was observed only on Tamarind trees and hence they were treated as 'Tree' type of heronries.
3. All these heronries were of 'Mixed type' of various species of Herons, Egrets and White Ibis were nesting together.
4. The heronries were either on a single tree or on scattered trees located in a small area, hence they were identified as 'Loose type'.
5. All these heronries seem to be small-sized.

Hence, considering heronries surveys, altogether, two nesting and breeding sites of Herons, Egrets and White Ibis have been sighted in Ajmer Ecosystem in and around the city. During this survey these species were observed to be nesting for the first time.

Three species, namely, Cattle Egret, (*Bubulcus ibis*), Indian Pond Heron, (*Ardeola grayii*), Black-Crowned Night Heron, (*Nycticorax nycticorax*) begin nesting around the second week of July. The Oriental White Ibis, (*Threskiornis melanocephalus*) start in early August and continue up to November. Their peak nesting season is September.

CORRESPONDENCE

AN UNUSUAL CLUTCH SIZE IN SARUS CRANE (*Grus antigone*) AT KODAIYA WETLAND DISTRICT MAINPURI (UTTAR PRADESH). RAJEEV CHAUHAN, Secretary General, Society for Conservation of Nature, 567, Karamganj Punjabi Colony, Etawah. U.P. 206001. Devendra Kumar, Divisional Forest Officer, Shrawasti, U.P.

The Indian Sarus crane (*Grus antigone antigone*) is the only resident species of Gruidae south of the Himalayas. Apart from the black necked crane (*G. nigricolis*), it is the only crane breeding in the Indian subcontinent Ali and Ripley, 1980). One third of this population was found in the districts Etawah and Mainpuri (Sundar *et. al.* 1999 and Chauhan & Kumar, 2000). In 1999 the Wildlife Institute of India established a field station in Etawah to conduct research on the ecology of Sarus crane (*Grus antigone*) in India. During the field work we observed that the normal clutch size was two and occasionally one egg, (Mukherjee *et.al.* 2000). Three egg clutches are rare.

On August 23, 2001, we observed three nests with two eggs and two nests with one egg. Later we saw through the binoculars, another nest in the middle of the wetland. It was built of Typha and Eichornia and was surrounded by tall Typha. It was difficult to verify the clutch size, but we noticed that the bird female had difficulties with the nest and once when the bird stood up, we found four eggs in the nest. It surprised us; and subsequently we discovered that it was the first record of a four egg clutch observed so far.

Acknowledgment

We are thankful to K.S.Gopi Sundar, SFR Wildlife Institute of India for literature and Ajay Kumar Verma for field assistance.

Heronry Predation: Black Kite, (*Milvus migrans* Boddert) and Brahminy Kite, (*Haliastur indus*, Boddert.) House Crow, (*Corvus splendens*, Vieillot) and Jungle Crow, (*C. macrorhynchos*, Wagler). These were opportunists, maintaining no fixed territory and investigated every nest for food. They fed at the Heronries. No adult of the Herons and Egret, and White Ibis was attacked by any predator. No kills were observed made around sunrise, during the day or the evening.

References

- Altman, I. 1974 Observational study of Behaviour: Sampling Method. *Behaviour* : 49 : 227-267.
- Mahabal, A. 1990. Heronries in Raigad District, Maharashtra- A preliminary survey. *J.Bombay Nat. Hist. Soc.* 87(1), 137-138.
- Naoroji, R., 1980. Predation by *Aquila* Eagles on nesting Storks and Herons in Keoladeo National Park Bharatpur. *J.Bombay Nat.Hist.Soc.* 87 (1):37-46.
- Pande, A.S, Mestri, P.G. and Mahabal, A. 2002. Heronries of the Raigad District Maharashtra. *Newsletter for Birdwatchers.* 42 (2): 19-20.
- Singh, N and Sodhi, N.S. 1985. Heronries and the breeding population density of the Cattle Egret *Bubulcus ibis coromandus* (Boddaert) during 1985 in tehsil Kharar of the Ropar District (*Punjab*). *Pavo.* 23 (1/2): 77-84.

References

- Ali, S & S.D. Ripley (1980). Handbook of birds of India and Pakistan. Vol.2: Megapods To Crab plover. Oxford University Press.
- Chauhan, R & D. Kumar (2000). A survey of Sarus cranes (*Grus antigone*) in Etawah And Mainpuri districts, Uttar Pradesh, India. Technical Report, Society for Conservation of Nature, Etawah (U.P), Pp. 1-8.
- Mukherjee, A., V.C.Soni, C.K.Borad & B.M.Parasharya (2000). Nest and eggs of Sarus Crane (*Grus antigone* Linn.). *Zoos Print* 15(12) 375-385.
- Sundar, K.S.G., J.Kaur & B.C.Chaudhury (1999). Distribution, general ecology and Conservation status of the Indian Sarus crane (*Grus antigone antigone*) in India Survey 1998-1999. Wildlife Institute of India, Dehradun. Pp 122.

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NEW NESTING COLONY OF OPEN BILL STORKS IN GODDA DISTRICT, JHARKHAND. Dr. D.N. CHOUDHARY, Senior Activist, Mandar Nature Club, Bhagalpur 812002, BIHAR.

A new nesting colony of open bill stork (*Anastomus oscitans*) has been recorded for the first time in the S.D.O. residence and court campus in the heart of Godda city, a district headquarter of Jharkhand state.

Two large breeding centres are located in the area within a range of 15 kms.

Poraiyahat (Site A) is about 10 Kms from Godda city. The Hatiya campus of Poraiyahat is one of the oldest nesting sites of these birds. Villagers report that more than 2000 birds used to nest on peepal and banyan trees every year for 15 years. The villagers protected these birds from poaching and perhaps this is the reason for the survival of the storks in this particular place.

Site B is the S.D.O. residence and court campus in the heart of Godda City, and the birds have been nesting here for the last 5-6 years, undisturbed by the city's activity and noise.

A three years survey report (2002-2002) of Dr. D.N. Choudhary reveals the following facts:

- i. Site B (Godda City) is a mono colony of only open bill storks (OBS).
- ii. The breeding season started from July. The birds start to assemble here in the 2nd week of July to commence their nesting activities.
- iii. The nests were constructed at 10-15 mtr. height preferably at the top of peepal, Tamarind and Banyan Trees.
- iv. Some birds utilize the older nests with slight addition and alteration.
- v. In the year 2000 and 2001, all the nests were constructed on tree tops in the S.D.O. residence campus but in July, 2002 birds selected one new peepal tree for their nesting.
- vi. Though the nests were made from the twigs of peepal, banyan and tamarind, they were lined with the green leaves of Eucalyptus. During the nesting season one member of each nest remained busy collecting the leaves of Eucalyptus from nearby Godda temple campus. The other partner used to arrange the leaves inside the nest.
- vii. The number of nests was greatest in the year 2002. In all 227 nests were counted in the year 2000, 222 in 2001 and 242 in 2002.
These Eucalyptus trees also shelter a large number of resident population of Rose-ringed parakeets.
- viii. The ridiculous nestlings were seen in the nests from late September and the birds fledged off with their chicks in the last week of November. But in the year 2002, they vacated site B between 12th and 16th December.
- ix. A similar occurrence was also observed in Site A i.e. Poraiyahat, but the aggregation of birds was always larger than that of the Site B.
- x. These birds fed in the paddy fields and wetlands of Goda, Poraiyahat, Panjwara, Pathargama and other nearby areas.
- xi. According to villagers, the birds at the Site B (Godda city) is an off-shoot of the flock from Site A (Poraiyahat), the result of a decreasing number of large nesting trees. Some OBS were shifting from Site A to Site B. This was evident from the increasing number of OBS every year in Site B.

* * *

PESTICIDES KILLING DEMOISELLE CRANES. Dr. RAJIV SAXENA & GAURAV PARIHAR, MIG- 853, Darpan Colony, Thatipur, Gwalior 474011 (M.P).

Demoiselle cranes are regular winter visitors to the Sakhya Sagar lake situated in Madhav National Park, Shivpuri district,

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Printed and Published bi-monthly by S. Sridhar at Navbharath Enterprises, Seshadripuram, Bangalore - 560 020, India.

For Private Circulation Only.



Madhya Pradesh. In the last 15 years. Their number varied each year from less than 100 to 7000 in 1987-88, depending largely upon the availability of water in the wetlands of Gujarat, and in nearly waterbodies like Dihaila Jheel. They feed in surrounding agricultural fields at night and in the morning, and return to Sakhya Sagar by noon.

Sporadic reports hinted that a few of them die each year after consuming an overdose of pesticide. In 1990-91 during winter five demoiselle cranes and four barheaded geese were found dead in the national park. Investigation revealed that they had consumed groundnut and other shoots with an overdose of urea [Saxena, R. {1991} : NLBW. 31 {3/4} : 8].

We visited Sakhya Sagar on 20 Jan. 2000 to conduct waterfowl census. Two demoiselle cranes were found paralytic in the shallow water near the banks of this lake between two points known as Landing Station No. 1 and 3. Landing Stations were the anchoring places for the boats of the erstwhile Maharaja of Gwalior.

Both the birds were alive but unable to stand on their feet and move. Thinking that their feet may be entangled with some submerged material, we along with the park staff took them out of water on to the dry bank. Their feet were not entangled with anything nor was there any sign of external injury. Despite our helping hands they could not stand, and remained in squatting position. They were sick and frightened. It was a clear indication that they had consumed some poisonous material. Before our approach a marsh harrier was sitting near by, watching and waiting for these migratory birds to die. We informed the park authorities. Sadly nothing could be done. Next day there was no sign of them except some tell tale scattered feathers.

Cover. Male **Magpie Robin** (*Copsychus saularis*) at nest. One of the most lucid songsters that expresses warmth and harmony is the Magpie Robin. It is a welcome bird in our orchards, gardens and parks. It is hard to find a more cheerful bird rendering its unequivocal soft whistling song, form a vantage point. Between the songs, the robin descends to the ground to pick up an insect or two, returns to the perch and resumes its musical repertoire.

Photo: S. Shreyas