



भारतीय वन्यजीव संस्थान
Wildlife Institute of India

Newsletter

Volume 9 Number 4

Winter 2002

Registration No. 59743/94

Working with the Sarus Crane

K.S. Gopi Sundar

In spite of being abundant in several places in India, in spite of being larger-than-life, and in spite of being deeply ingrained in Hindu culture, the Sarus Crane *Grus antigone* is one of the least understood species of cranes in the world. Though there is information on several aspects of its life-history, the reasons for the decline in the numbers of the Sarus are not clearly understood. The key to successful conservation of any endangered species is without doubt an understanding of the ways of the species, insights into seemingly small things that the species does, accompanied by intimate knowledge of the threats faced by the species. To discover what the problems were, and how to tackle them, the Wildlife Institute of India instituted a field study in Etawah and Mainpuri districts of Uttar Pradesh state in India. We got more than we bargained for! Some particularly juicy tit-bits from the field are celebrated in this piece.

To catch a Sarus ... and band it too!

Standing at more than five-and-a-half feet, weighing nearly 12 kilos, with a bright red head, and eyes which fixed one with a malevolent glare! The apparition moved closer, opened its grey-and-white wings of more than two metres, and stood upright to display its full height. Another step closer, it opened its beak and hissed like a pressure cooker. Behind the defending male, the milder female and the two brownish-grey juveniles made good their escape into a pond, into tall reeds. A Sarus parent had driven its point home all too apparently – “keep off my chicks”!

I gazed in dismay at the full-blown threat attack of the male; at this rate juveniles of the Sarus would never be colour-banded. But I could not help admiring that a single Sarus had been successful in keeping at bay two humans. We moved back, the adult dropped the posture, and hurried away to join the family, now well hidden amongst the tall reeds. I couldn't help wondering if some of the local human habits had rubbed



Adult Sarus Cranes of nest #27 recover the hidden chick with loud *korrrrs* and lead it back to the nest, where one chick has already been recovered. Note how the adults keep the chick protectively between them. (Photo: K.S. Gopi Sundar)

In this Issue

Working with the Sarus Crane <i>K.S. Gopi Sundar</i>	1
Trekking through the Sharada Valley <i>Dhananjai Mohan</i>	6
Kalesar – The Pride of Haryana <i>Bivash Pandav</i>	10
Conservation in Practice <i>Karthikeyan Vasudevan</i> <i>Sunil B. Banubakode</i>	11
The Bir Moti Bagh Wildlife Sanctuary: Home of Hog Deer in Semi-arid Zone!! <i>K. Sivakumar</i>	13
Wildlife Forensic DNA Facility: A new initiative of Wildlife Institute of India <i>Reeta Sharma and S.P. Goyal</i>	14
Gibbon Wildlife Sanctuary, Assam: A Treasure Island <i>A.K. Gupta</i>	15
A Sanctuary for Terns in the Arabian Sea <i>Basudev Tripathy</i>	18
Bakhira Bird Sanctuary: The Heaven of Purple moorhen <i>Sarat Chandra Tripathy</i>	18
Now Tsomoriri For Birds <i>Mohamad Abass</i>	20
Bio-acoustics: Importance in Wildlife Conservation and Management <i>Anil Kumar</i>	21
Annual Meeting for Landscape Ecology: A gateway to the emerging field! <i>K. Ramesh</i>	23
Brown Bear Research and Conservation in Scandinavia <i>A.J.T. Johnsingh</i>	26
Human-Bear Conflict and Acceptance of Bears to the Society <i>Naim Akhtar</i>	31
Viruses – The Havoc Makers <i>Dinesh Singh Pundir</i>	32
News: Training Programme and Workshops	33
Campus News	34
On the Move	35



The chick of nest #27 lying doggo between grasses when given the *hrrrrr* call by the parent birds. Sarus Crane chicks are very good swimmers and can take off into the grass if the nest is approached, and strong communication between the adults and the chicks from the very first day after the chicks hatch help many chicks survive. (Photo: K.S. Gopi Sundar)

off to the cranes. Etawah district in Uttar Pradesh, where the study was being carried out, has the reputation of being amongst the roughest places in India.

Another time, five of us surrounded a Sarus family with two chicks near Saiphai town and caught both chicks, while the adults flew off to a distance and vociferously trumpeted their disapproval. Four well-built men leapt out of a house in the adjoining village, ran over brandishing large sticks, and threatened us to leave the Sarus alone, or else.... Not to be outdone, the local craniacs who were helping with the banding, hurled back abuse at them for trying to stop "government work". In this place, Sarus lives were better cared for than those of humans! It took a good ten minutes of explaining to calm everyone down and prevent a mild war.

The next stop, Ranipura village, had a pair with two chicks. A bit of confusion, the juvenile cranes slipped through the cordon, and a heavy spot of running had them cheeping, kicking and pecking, but in hand and ready to be colour-banded. The entire village decided to investigate, and a dose of on-the-field classes were delivered. Less than a fortnight later, poachers caught one of the chicks in the dead of night and made away with the body leaving behind the head and legs intact with colour-bands. As I drove past the next morning, angry villagers surrounded the motorbike and demanded

that I shift my study site elsewhere. Another round of cajoling, explaining, and condescension followed, with shouting and brandishing of fists, before everyone calmed down. Everyone agreed that if I was the poacher, I would not have come back so soon. The villagers swore to kill the people responsible.



A Sarus Crane pair gives a unison call or a duet on their nest. This pair always nested in the small lake (foreground) and never in the paddy field (behind cranes) in their territory. Such behaviour can be very useful to field biologists studying the breeding habits of these birds. (Photo: K.S. Gopi Sundar)

The crane family at Allipur village, when approached, chose the particularly dirty village pond to hide in. The chick was soon spotted crouching amongst the reeds, was caught without as much as a flutter, so to speak, and was banded. The five craniacs stank all the way home! A week later, while on a routine trip to determine territory size, the same family was beside the same horrid pond, but the chick was without the bands. Two of us chased it in the hope of re-banding, but the chick had fledged, and took to wing. This chick would never be banded. Village boys had caught the bird out of curiosity, broken the band and taken it home as proof of their achievement. A session with the village head followed ending with assurance that children would not tamper with colour-banded crane chicks again.

I had had to change my field assistant for the second year of field work, and five of us set off the next day to colour-band two juveniles, again at Saiphai. These birds were very smart, and did not get cornered in. The adult birds, after hiding the young in a patch of grass, began an elaborate distraction procedure. My new assistant, Ajay, chanced upon one juvenile, and caught it. He, however forgot instructions to always keep an eye on the adults as well. As he victoriously ambled over, he must have felt he was being followed and looked over his shoulder. The male Sarus had nearly reached him, opened out its wings and gave him a full demonstration of the threat display. It proved too much for him; he cowered, held out the chick in offering, and let it go. Visibly shaken, and much laughed at, he bravely participated in the third attempt when the juveniles were finally caught and colour-banded.

From the colour-banded birds, invaluable information on territory size, growth patterns, survival, and weaning behaviour could be collected. In 2001 September, as I was driving past a village school in Saiphai, which was little more than a roof over four brick pillars, a small boy ran out onto the road and yelled at us in hindi. He was obviously annoyed. "There is a Sarus chick in my village. How come you haven't put the coloured bangles on it yet?" The bands had served more purposes than could ever have been envisaged for them!



Sarus Cranes in Etawah and Mainpuri are very pugnacious. This male hisses as my field assistant attempts to approach the nest to measure the eggs. This male was especially aggressive and we were forced to take measurements a day later when the female was incubating the eggs. (Photo: K.S. Gopi Sundar)

researcher since it becomes possible to accurately predict the nesting site of very many pairs.

One particular pair had a small bit of marshland in a corner of their territory. For two years consecutively, they had nested within the reeds of the marshland and raised chicks within, before going away to feed in surrounding crop fields as the chicks grew older. In 2001, I was fairly certain they would breed in the marshland patch again, and sure enough, they did. Two off-white, lightly splotched eggs made their way into the world. On the day the eggs were expected to hatch, I entered the marshland again to find out if they did. On the nest were not two but *four* eggs. One was addled, had rotted completely and was stinking badly; definitely a bad egg. The other three were fine; faint peeping noises from within told of chicks ready to hatch, and the next day two chicks hatched early in the

tampering with the nest. Going by appearance, measurements and hatching dates, all four seemed to have been laid by a single female, in which case this pair had set a new record for clutch size in any species of crane of the entire genus *Grus* anywhere in the world. Why did the pair abandon the third good egg even though the chick was calling from within and was nearly ready to hatch? Could they manage only two chicks at a time or did the disturbance prove too much? We'll never know for sure.

A week later, as I cruised past on my motorbike to ensure that the chicks were fine and a-growing, I noticed that the nest had visitors of the Sarus kind. *Two more eggs, this time laid by a female of an adjoining pair, lay on the very same nest.* Whatever happened to territoriality? Incredibly, two pairs were taking turns to use a single bit of marshland to nest in. They were even using the very same nest. The pair with the two chicks was engaged in finding

Nesting for success

Breeding Sarus Crane pairs stand out like a beacon in the landscape. These pairs are severely territorial using their trumpet-like, deafening unison calls to advertise ownership of their territories. The Etawah-Mainpuri region is a Sarus shangri-la with the largest concentration of Sarus Cranes known in the world. Natural wetlands with their tuberous plants, aquatic fauna and, perhaps most importantly, water in the dry season, are coveted by the Sarus. The study area ironically also has one of the fastest growing human populations of the country. Natural wetlands are taken over for growing crops and the Sarus are left to do the required adjustments in their annual cycles with what is left. The single most important role of natural wetlands in a breeding Sarus pair's life is their overwhelming use as a nesting site. Irrespective of the kind of territories they have, Sarus nest in natural wetlands even if it is a tiny patch in a sea of crop fields and villages. This is good news for any

morning nearly at the same time. The third good egg moved slightly and the chick peeped from within. Unfortunately, the third chick was not to be. Disturbed by people who entered the marshland for grass and lotus stems, the two adult Sarus went away from the nest tending to their two chicks. When I went in to investigate a couple of days later, the egg was already cold, starting to smell and definitely abandoned. The pair was left with a chick each from the two pairs of eggs.

Did the same female lay all four eggs? This was bizarre for a species that was seldom known to lay more than two eggs in a clutch. Or did people put in two eggs from another nest? When questioned, farmers and village boys denied



A 45-day old Sarus Crane chick caught for colour banding during the Wildlife Institute of India project in Mainpuri district. At less than two months of age, Sarus chicks grow to more than four feet, but are flightless and can be caught by running them down or surrounding them. These methods are used around the globe, and have very little effect on the cranes' behaviour. (Photo: K.S. Gopi Sundar)



the cranes. He walked over to another part of the reedland, broke off stands of reeds and built a rough nest. On this structure, he placed the two eggs and walked away to continue farming.

As a rule, the Sarus do not take kindly to having their nest tampered with. At the slightest amendment or addition of an object foreign to the original structure, Sarus pairs abandon their nest and eggs. If eggs are removed from nests for some reason, Sarus pairs pay no attention to the eggs and choose to give them up even if the eggs are placed just beside the nest. Having had seen this happening the previous nesting season in a couple of nests, I sadly gave up these two eggs as goners.

A few hours later, as I was returning home, I noticed that the farmers had taken a break for lunch. But what caught my attention were the two cranes. *They were patching up the human-made nest with more*

vegetation, and even as I watched, the female Sarus climbed the nest, positioned herself and lowered herself gently on the two eggs as if it was the most natural thing to do! This was not the end of this story. I watched for 24 days as the pair took turns to incubate the eggs. On the 25th day, some village boys took away the eggs to play with. This pair had more than its share of problem. Eleven days later, much to my astonishment, the same pair laid two more eggs and on the very same nest which had been lovingly made for them by a farmer. Forget tampering. This pair had been made a new nest and they accepted it. They even used it to lay a second clutch! Both chicks hatched from the second clutch, one was colour-banded, and on 29 May 2002 at nearly ten months of age, both dispersed from their natal territory to begin lives of their own.

Mysterious four eggs in one nest. One single nest used by two otherwise ferociously territorial pairs. Accepting nests made by humans. So many anomalies in just two years of study. *Were they indeed anomalies? Are Sarus Cranes changing their behaviour and letting humans alter not just their home but also their life styles? How mu*

Another colour banded chick in Mainpuri district. This chick successfully dispersed from its natal territory in 2001, and was seen with a flock of young cranes about eight kilometers away from its nest. Colour-banding is the most harmless method to individually mark birds and in the case of the Sarus Crane study, provided crucial information on territory size, dispersal distance, and post-dispersal behaviour. (Photo: K.S. Gopi Sundar)

food for their demanding duo about 200 meters away. My observations over the past 18 months had led me to understand that the marshland was part of the territory of the pair which had four eggs. And I also knew that the adjoining pair had no natural wetland area in their territory. It appeared that in emergencies Sarus Crane pairs relaxed their ownership rules. What do you know!

Another abnormal nesting story happened at the same time. A pair with a narrow bit of reedland parallel and adjacent to a main road, always nested there unmindful of the traffic, the stares of the people, even to the yells from a volley ball field that lay on the other side of the marshland. In 2001, an aspiring farmer from a village close by decided to plant paddy in a part of the very same reedland. He and his family members cleared out the portion they wanted to farm in, and in the process, disturbed the nest of the Sarus. The farmer's son, however, decided to help



This Sarus Crane in Etawah district was the protagonist of an interesting drama. This nest was the first, and was destroyed by farmers, who built another nest in the reeds seen behind the crane. The crane pair accepted the man-made nest, re-laid a clutch on the same nest after the first pair was lifted by village boys, and successfully raised both chicks of the replacement clutch until they dispersed from their natal territory. This pair was very accustomed to human presence, as can be seen from this picture, and this relationship with the humans was probably instrumental in their accepting a nest made by farmers. (Photo: K.S. Gopi Sundar)



Ajay, my field assistant, perhaps liked the banding exercise the least during field work. He was chased and pecked at by adult Sarus Cranes who took umbrage to having their chicks caught and handled. Once, Ajay was trapped between dense reeds and an angry adult male Sarus Crane, and took a nasty peck on his forehead before being rescued by the rest of us. Here, one of the calmer adults approaches Ajay warily as he hangs on to the chick that was banded. (Photo: K.S. Gopi Sundar)

longer can the Sarus hold out? Hitherto unknown priceless little gems of information on Sarus behaviour and ecology have been discovered. We are now getting huge quantities of information with which to try and save the Sarus Cranes. But will we ever have enough to confidently claim that we understand the birds? Whatever the answer, the surprises make one eager to continue working. The challenge to understand the species is on.

Knowing a *hrrrrr* from a *korrrrr*...

It was September 2000 and the eggs of nest number 27 had hatched! From 300m away, the Sarus Crane adults could be seen nuzzling two golden-yellow chicks. The nest had been cleared of egg shell fragments, and the chicks were peeping away to the watchful parents. This nest was in a small patch of grassland amid crop fields. This was the first successful nest of my first nesting season with the Sarus, and both eggs had hatched!

Smiling at the dwarf-like appearance of the chicks next to the looming adults, I walked over to the nest, balancing on

the bunds of the crop fields. I needed to catch the chicks for measurements. This should be easy. Or so I thought.

The adults snapped to attention, the male hurried over in my direction pretending he had a broken wing, and when he was but a dozen metres away, he flopped down into the water. Anyone seeing him for the first time then would have been led into thinking that he was in distress, and somehow a leg or two was broken. He splashed around, and when I continued approaching the nest, he stood, decided enough was enough, spread his wings and hissed threateningly. I chucked a couple of grass blades at him, and he called out loud in alarm, and flew away to join the female.

The nest was empty. The chicks had disappeared into the half-grown paddy. The male had been completely successful in distracting the intruders. I was left standing knee-deep next to a nest with few broken shreds of shell. After pottering around amid the paddy stalks for few minutes, and conceding that catching Sarus chicks is not as easy as it looks, I retraced my steps and sat on a bund to see if the chicks joined the adults.

The female walked over to some paddy stalks, bent down, and muttered a low,

but clearly audible "*hrrrrr*". Aha! That was it! I ran over to the area, looking to see fluffy bits of golden-brown swimming in the inundated fields. Nope. They had disappeared. It was time to catch the chicks using the Sarus way. I walked around slowly, at short intervals rendering at short intervals *hrrrrrrs* that I hoped matched the real call. Owing to a somewhat high confidence level that I was being a great crane, this search lasted a full 20 minutes. No chicks came swimming over to "daddy".

Wet, cold, irritated and data-less, I walked back to my motorbike followed by a vastly amused and grinning assistant. Disgusted and puzzled, I was about to drive away when the adults called. From their behaviour, it was obvious that they had lost the chicks amongst the paddy. Both adults were searching, and at periodic intervals, calling: a loud, shrill "*korrrrr*". In less than a minute and about six *korrrrs* each, two chicks, none the worse for the experience they had been through, were led back to the nest. The adults stood on the nest and blasted a triumphant unison call. They had won.

I came back a couple of days later, and the chicks did their disappearing trick again. The adults walked away giving loud alarm calls. When they stopped, I walked around slowly, this time calling



Pre-fledged Sarus Cranes are adept at hiding even after they reach over four feet in height. This picture shows two chicks (right, grey colour in crop field) hiding after the adult birds called out urgent *hrrrrr*s to them when we approached the family to colour-band the pre-fledged birds. (Photo: K.S. Gopi Sundar)

"korrrr". In less than a minute, two golden-yellow chicks were swimming around my legs. Curious, I gave a rendition of the first call – hrrrrr. The chicks lay doggo on the water with their necks extended forward, and froze. Another hrrrrr, the chicks quickly swam behind paddy stalks and froze. The third hrrrrr, and both were out of sight completely. While a korrrr beckons, a hrrrrr means "swim/ run and freeze".

Though clearly lacking in appearance, "daddy" was learning the crane lingo. The smirk on the assistant's face had disappeared. The smaller chick of the nest was predated when it was about 25 days of age, while the elder was banded, and dispersed successfully from its natal territory. In fact, when I revisited Etawah in January 2003, the banded chick was seen with a small flock of young cranes, without a partner as yet, about three kilometers from where it was born. The bird was the largest in the flock, and was larger than most of the other adult cranes who had territories in the vicinity. The "dwarf-like appearance" was long gone!

Trekking through the Sharada Valley

Dhananjai Mohan

Some dreams take a very long time to come true. The trek through the Ladhya and Sharada valleys in the foothills of eastern Kumaon was one such dream, which came true in November 2002. I first came across a mention of this region when I first read the Jim Corbett books nearly two decades ago. Corbett has

written very extensively about this region, which was heavily affected by man-eating tigers, in two of his books 'The Man-eaters of Kumaon' and 'The Temple Tiger and more Man-eaters of Kumaon'. The lucid description of the flora-fauna speak volumes about the richness of the area, particularly that of the mega-faunal species. To Corbett this was perhaps the best area for anybody interested in wildlife (e.g. hunting and angling) in all the areas he had roamed. In his words:

There are a few places in Kumaon where a fortnight's holiday could be more pleasantly spent than along the eastern border of Almora (now Champawat) district. Hiking in the Himalayas is becoming a very popular pastime, and I could suggest no more pleasant hike for a sportsman or for a party of young army men or students than the following...

From here on he described many places in the lower Ladhya –Sharada valleys. Kaldhunga is a location on the banks of the mighty Sharada, which also makes the international border between India & Nepal; Chuka & Sem are villages at the confluence of Ladhya & Sharada & Thak & Kot-Kendri are villages near the ridge separating Ladhya from the plains.

I managed to get an opportunity to trek through the area about which I could only imagine during the last 20 years or so, when I joined Dr. AJT Johnsingh of the Wildlife Institute of India who was undertaking a preliminary survey of tiger & other mega-faunal species as a part of the Terai Arc Tiger Conservation Landscape Project. This was Dr. Johnsingh's third trek to this area during the last ten years.

In the morning of 26th of November we reached Chalthi which is almost on the banks of Ladhya after spending the previous night in the more than 100 years old Chorgallia Forest bungalow. After fortifying ourselves with a heavy breakfast (the next meal was at least 10 hours away) we

started on our walk to Chuka village. The walk was to follow the last 20 km of Ladhya river before its merges with the blue waters of the Sharada. Instead of following the river from Chalthi bridge, which would have taken us to a deep pool in the riverbed, we climbed a saddle to get into the river avoiding the pool. On the climb towards the saddle, which was made tough by the fact that we had an extra heavy breakfast, one *Bischofia javanica* tree attracted our attention. The tree was playing host to a multitude of birds. While the Pin-tailed Green Pigeons, Himalayan Slaty-headed Parakeets and a Lineated Barbet were busy with the berries, a *Chloropsis* was spotted merged well in the canopy. Ashy Bulbuls filled the air with pleasing calls and a pair of Chestnut bellied Nuthatches was feeding up & down the trunk of the tree. The other side of the saddle was no less interesting as we were greeted by a small flock of White-crested Laughing Thrush. But what impressed us most was a grove of Chir Pine (*Pinus roxburghii*) trees in a small valley, which took birth near the saddle. These Chir Pine trees were very tall with most of them exceeding 30 m. There was no way to assess the height and all we could do was to request the local Range Forest Officer (RFO) to get their height measured as we had a feeling that some individual in the grove might give competition to the tallest Chir tree which is growing on the banks of Tons river western Garhwal a little downstream village Sandra. We requested the RFO to take special care to protect these rare trees from fire as one tall tree had already been burnt badly.

A little down from the saddle slope we could see the pool of emerald green water on the river bed which had forced us to embark on the climb. The pool had formed because of excessive debris that had been brought along the Bisoria *nallah* which is on the right bank of the Ladhya. In fact, the debris had fanned out over a very large area and we had to walk for nearly a kilometer on what can be compared to moonscape: an expanse of rocks, sand & mud with almost no vegetation. The catchment of the *nallah* appeared to be well-forested as was much of the region and the landslide was perhaps the result of the local geology and erratic rainfall. It was on this expanse of debris that we encountered the first



Emerald pool on Ladhya river. (Photo: Dhananjai Mohan)