

only a roosting site or it was a breeding site also for the swifts, it was certain that the swifts continued using the tree despite the presence of the falcons. The relationship between predator and prey in this instance is not understood; was it any kind of symbiosis? What benefit did both these species get from one another? Or was it simply a case of the falcons tolerating the swifts in their neighborhood? Why would the swifts continue to use this tree when their predators were nesting there? I searched on 'Google scholar' extensively but did not find any reference or observation of these two species inhabiting the same tree.

2) The choice Palmyra Palm as a nesting tree by the Red-necked Falcon is unusual. This species does not have any specific tree preference for its nesting and it is regarded as unspecialized in its nesting choice (Naoroji 2011). A nesting of this falcon in a Palmyra in the Union Territory of Puducherry was discovered in January 2016; this was the first report of the Red-necked Falcon nesting in a Palmyra from India (Lekshmi & Boobalan 2018). However, this species has been observed breeding on Palmyra in Bangladesh (Foysal 2015) and the Red-headed Falcon in Africa has been reported breeding on a Palmyra (Osborne 1981). Thus, this is only the second report of the Red-necked Falcon breeding on a Palmyra Palm in India.

Both the above observations are unusual. The breeding biology of the Red-necked Falcon in India has been widely reported in the recent years (Naoroji 2011, Vora *et al.* 2017, Lekshmi & Boobalan 2018) and it has also been seen nesting on electricity pylon (Mori 2018). However, the nesting on a Palmyra and that too with the Asian Palm Swifts in the same tree, is very interesting. I visited this tree again in November 2019 but did not find the falcons or the swifts there. On 25 February 2020, I visited the palm tree with Neel Sureja, Hemanya Radadiya, Raju Karia and Taej Mundkur. We saw the falcon pair in the tree and could observe some part of what seemed to be a

new nest. At around 18:00 hrs, we saw some palm swifts, going out and returning back in the same tree. A local farmer had informed Neel that this pair was being seen in this tree for 8 years now. Thus, it seems that the falcon pair is regular in this tree and the palm swifts are also resident in the palm tree. A unique situation where the predator and prey are living in the same tree!

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Sarus Crane *Grus antigone* pair successfully fledging a chick at Thol Lake, near Ahmedabad, with help of local farmer community

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The environs of the Thol Lake, near Ahmedabad, have a rich agricultural base that has traditionally sustained waterfowl and other avian populations. From paddies during the monsoon months providing post-harvest fallen grains to resident and incoming wintering birds, to the subsequent wheat crop that too caters adequately to the needs of migrants returning to their breeding grounds, the agro mosaic offers a classic example of how the needs of waterfowl and terrestrial birds are being met in the framework of a larger lake ecosystem.

Large, contiguous tracts of paddy cultivation around Thol Lake due to ready availability of rain water from the lake, greatly augmented in the recent years by the Narmada Canal waters, provide suitable nesting habitat for the Sarus Crane (*Grus antigone*). Annual records of three pairs, having carved out distinct territories within the ca. 500 acres of cultivation, have been maintained by me over nearly two decades of monitoring.





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Periodic drought conditions, however, alter agricultural patterns and consequently, the nesting of the Sarus Crane. So dependent is this species on paddy cultivation, especially with the virtual obliteration of the region's earlier natural marshes, that drought affects its breeding to a large extent. Given the negligible rains in the 2018 monsoon season and the uncertainty regarding the release of Narmada waters in to the lake for irrigation, the farmers refrained from sowing paddy, thus jeopardizing the nesting of the Sarus Crane. Despite regular surveys, no nesting by the three pairs that have been regularly monitored by me was recorded.

It was in one of these highly fragmented patches of paddies, totaling not more than 10-12 *bighas* and shared between three farmer families, that on 14 October 2018, I received calls (and cell phone photographs) regarding the presence of a pair of Sarus Crane with two chicks! It was surmised from the photographs that the chicks were about 4-5 days old. Neither the local farmers, nor I, could establish where the nesting had

actually taken place, but it was assumed that it was the third pair, which traditionally nested in an area some 750 meters to the south, which had these chicks. Initially, this pair with chicks, and that too in a small patch of paddy, was viewed with some concern by the farmers, due to the potential damage to the crop. But judicious discussions persuaded the farmers to ensure that the Sarus family was not disturbed. Close but discreet observation of the area was maintained and although the locals asserted that both chicks were seen till 17-18 October 2018, a more detailed check showed only one chick on 20 October 2018. No attempt was made to enter the area for a more comprehensive assessment of the dead chick as that could stress the parents to move away and thereby, leave the remaining chick in danger.

With active participation of the farmers, a vigil was kept on the two principal predators here, feral dogs and jungle cat. While no direct sighting or attack by the jungle cat was witnessed, possibly due to the nocturnal nature of this

Sarus Crane....

predator, its presence was evident from scat found during surveys of the patch. With the drying up of the paddy fields, closer observations were made of the family – earlier records indicated that while females stayed with the chick throughout, the male tended to wander to feed, especially when prey was scarce in the immediate vicinity of the nesting area. This absence, however brief and always within ear shot of the female's alarm calls, could be detrimental to the chick due to the constant presence of feral dogs in the area. In order to ensure that the adults got adequate feed, *jowar* seeds were strategically scattered in the areas frequented by the family, in a way that the birds could feed on it. We had observed that placing the seeds in a heap attracted wild pigs. Additionally, the farmer with the largest land holding and who also had a bore well that irrigated the entire patch was requested to flood small fallow patches, since past observations had shown that this would inevitably draw the Sarus family in search for invertebrates and amphibians that the flooding normally attracted.

Still, food scarcity in the present patch would only increase and harvesting of paddy would mean loss of the vegetative cover and exposure of the yet vulnerable chick to predators, although the standing *jowar* crop within the area would be of use. Regular scattering of cereals/grains and flooding of small patches was even more useful when the paddy was finally harvested and the patch lay bare. At this time, the chick was still only about a month old, hardly mobile enough to escape predation, requiring the close attendance of the parents and was a long way from the ninety-odd days when a Sarus chick normally takes flight. It was observed that threats during day time were negated with the adults walking the chick into the adjacent *jowar* fields that provided some semblance of cover. Invariably, by dusk, the family would return to the security of a small pond that was not drained by farmers due to its high salinity, which had made it unsuitable for crops.

With paddy harvested during the second week of November, the adult cranes were seen making several movements towards their traditional nesting ground but returned each time to roost in the small pond. With the sowing of the wheat crop by mid-December, the Sarus family was seen feeding on the freshly sown grain. To assuage farmer resentment, scattering of *jowar* seeds was stepped up. This was later supplemented by husked rice grains procured from local farmers. It was presumed that the adults, once the chick fledged by the second week of January 2019, would attempt to either fly into the more familiar surroundings of their earlier nesting territory or fly to the Thol Lake, which has been traditionally used by the Sarus pair, accompanied by the young, for nightly roosts. But, till the second week of March,

the family remained in the same area and roosted in the same pond, despite the water shrinking rapidly. It was only by mid-March that the Sarus family was observed in very early hours within Thol Lake and on daylight, flew back to the patch where the chick was raised. By then, the chick had fledged and could fly short distances. Attentive parenting shielded it from constant predation attempts by feral dogs and also from jungle cats, whose recurrent presence was evidenced by repeated sighting of scat. Parental care amongst Sarus Cranes is known to be particularly attentive as indeed it was in this particular case.

Here, the role of the small and marginal farmers in understanding the needs of the adult and young birds should be much commended. Their initial dissent but subsequent willingness to discuss, debate, and accept a certain loss of produce was invaluable in the successful fledging of the chick. With regard to addressing farmers concerns, it was seen that logical reasoning, while tabulating likely crop loss, was important while accommodating the crucial element of farmers seeking redressal for loss of produce. Other livelihood features, like domestic animal rearing and better animal husbandry practices to enhance productivity, were also attempted here.

It can be argued that this one instance cannot become a template for conservation. It can, however, also be asserted that bringing in the farming community, with which the Sarus Crane shares its annual cycle of nesting, into decision making and stakeholder-ship, could be replicated elsewhere. Understanding the nesting ecological requirements of the Sarus Crane, in conjunction with the needs of the farming community, is of critical importance. Scientific knowledge of the species, however crucial, will only be bolstered by the acceptance and involvement of local communities. In this regard, Gujarat can take a lead in the conservation of the Sarus Crane. There is a good population of the Sarus Crane in central Gujarat and adjoining areas. Involving farmers to protect the Sarus Crane, while compensating for any loss in produce which might occur, will definitely help in the conservation of the species. The Forest Department and other NGOs or wildlife conservation bodies can look into this and further develop a model for sustainable conservation of the species.

The one individual who played a central role in this entire exercise, Shri Babuji Thakore, and whose personal contribution was invaluable, passed away on 31 January 2019. This article is a very humble tribute to Shri Babuji Thakore. □