

SACON News



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In this issue

Institutional events

- ✓ Visit of Forest Guard Trainees from different Institutes to SACON
- ✓ International Day for Biological Diversity 2019
- ✓ Release of Special Cover
- ✓ Visit of State Forest Service Officer Trainees
- ✓ Visit of In-service State Forest Service Officers
- ✓ Superannuation of Staff member of SACON

Popular articles

- ✓ Effect of anthropogenic disturbances on the mammalian species and their habitat in Bellary district
- ✓ The unrevealed little rann of Kutch
- ✓ Birds of Sikkim – from my gallery
- ✓ Mesmerizing beauty of wetlands
- ✓ DST-INSPIRE Fellowship Review MEET-2019
- ✓ Workshop Cum Stakeholder's Consultation to Formulate a Plan for Conservation of Biodiversity in and around the Nokrek Biosphere Reserve

From the Director's Desk

This newsletter, April to June 2019 issue covers institutional events/ activities of SACON and popular articles from research fellows and faculty for the first quarter of the financial year 2019-2020.



SACON along with ENVIS Resource Partner celebrated International Day of Biodiversity in May by participating in a national event organised by several Government organisations. This event was inaugurated by the Hon'ble Vice President of India, Shri Venkaiah Naidu. SACON's contribution in Indian ornithological research was recognized by the Indian Postal Service by officially releasing 'Special Cover' and 'Permanent Pictorial Cancellation Stamp' commemorating World Environment Day. In this quarter, we also hosted newly recruited 73 Forest Guard Trainees as part of their induction training program, and conducted one-day training modules for 35 State Forest Service Officer Trainees and 12 In-service State Forest Service Officers of various State Forest Departments.

Additionally, this issue also covers some interesting popular articles from SACON researchers. They have shared their intriguing field experiences from diverse geographical regions ranging from dry scrublands of Karnataka to lush greens of Sikkim. One of the articles also features beautiful artworks by one of our researchers.

I extend my best wishes to the SACON community to continue to execute successful research across the country.

Dr. K. Sankar
Director

Release of Special Cover



The India Postal Service has approved a **“Special Cover”** along with the **“Permanent Pictorial Cancellation Stamp”** for its usage for cancellation of letters (both inward and outward posts) in Anaikatty Post Office, Coimbatore – 641 108 in recognition of SACON’s contribution in the field of ornithological research in the country. In this regard, an event was organized at SACON, Coimbatore in commemoration of World Environment Day – 2019 to officially release a “Special Cover” and “Permanent Pictorial Cancellation Stamp” on 6th June 2019 at SACON, Coimbatore.



Smt. Sheuli Burman, IPoS, Postmaster General, Western Region graced the occasion as the **‘Chief Guest’** and released the “Special Cover”. The “Permanent Pictorial Cancellation Stamp” was released by the Branch Post Master, Anaikatty, Coimbatore. The Department of Posts also released **“Pack of Bird Postcards (Plain and Cancelled) on “Rare Birds of Coimbatore”**. **Dr. Sudhir Gopal Jakhere, IPoS**, Senior Superintendent of Post Offices, Coimbatore

Division, Coimbatore along with senior officials of the Department of Posts attended the event.

Visit of State Forest Service Officer Trainees

A One-day module was conducted by SACON for 35 State Forest Service Officer Trainees from Andhra Pradesh, Madhya Pradesh, and Forest Development Corporation Maharashtra Limited as part of the Induction Training Programme of the Central Academy for State Forest Service (CASFoS), Coimbatore on the theme of “Ecology and Environmental Science” on 7th June 2019 at SACON, Coimbatore. Topics of module and details of the resource persons of SACON who conducted the module are given below:



Environmental Impact Assessment, Practice & Prospects – *Dr. P.R. Arun, Sr. Principal Scientist, SACON.*

Landscape Level approach for conservation planning in India – *Dr. Karunakaran, P.V., Principal Scientist, SACON.*

Role of genetics in biodiversity conservation – *Dr. Shomita Mukherjee, Sr. Principal Scientist, SACON.*

Wetland Ecology: Role of Birds – *Dr. Goldin Quadros, Principal Scientist, SACON.*

Visit of In-service State Forest Service Officers

A total of 12 In-service State Forest Service Officers of various State Forest Departments visited SACON, Anaikatty, Coimbatore for Field Exercise and Case Study on “Wildlife Forensics” on 13th June 2019, as part of the Workshop organized by the Central Academy for State Forest Service, Coimbatore on **“Wildlife Management”**.

SACON organized a series of lectures to the officers during their visit. Topics and details of the resource persons of SACON who conducted the lectures are given below:

Application of molecular tools in wildlife forensics – *Dr. Shomita Mukherjee, Sr. Principal Scientist, Division of Conservation Biology, SACON.*

An overview of toxicological impact on birds – *Dr. S. Muralidharan, Sr. Principal Scientist, Division of Ecotoxicology, SACON.*

Avian Forensics – Case Studies at SACON – *Dr. S.K. Sharma, Project Scientist, Division of Avian Physiology and Genetics, SACON.*

Superannuation of Staff member of SACON

Mr. A. Devaraj, Office Attendant of SACON superannuated from the service of SACON on 31st May, 2019.



Correspondence: dirsacon@gmail.com

Popular articles

Effect of anthropogenic disturbances on the mammalian species and their habitat in Bellary district

Asit K. Behera, T. Ramesh, and Riddhika Ramesh

Deforestation, habitat alteration and unsustainable resource use in response to a perceived conflict with human interests, due to the growth of the human population are the major causes of landscape modification and biodiversity loss. These changes in the ecosystem can alter the configuration in species assemblage. All species are not equally affected by anthropogenic activities, some being unable to adapt are extirpated, while others thrive. Alteration in the species assemblage can have a cascading effect leading to ecological degradation, niche

expansions throughout the trophic web and extinction of some species.



Bellary forest division is located in the central region of the eastern part of Karnataka and forms a part of the southern portion of the Deccan peninsula. At its extremes, it is situated between 14° 30' and 15° 50' north latitude and 75° 40' and 77° 11' east longitude. The forests vary from mixed dry deciduous to thorny scrub type. Bellary has two different seasons: a long dry season (October – May) and a short wet season (June – September). The mean daily temperature ranges from 16.7°C to 29.7°C. April and May happen to be the hottest months with oppressive heat. The general elevation of the district is from 500m to 700m above mean sea level. Except for the hilly region in the west, the entire area in the east is open and plain with dreary and sandless expanses of black-cotton soil.

I (first author) started my study in the month of December 2018 that involves camera-trap surveys. The study area comprises of two sanctuaries: Daroji Sloth Bear Sanctuary and Gudekote Bear Sanctuary. The Daroji Sloth Bear Sanctuary is spread over 82.72 sq. km. It was created in 1994 exclusively for the conservation of Sloth Bear. Besides Sloth bear, Leopard is the other key species found here. About 85 km away is the Gudekote Bear Sanctuary, a relatively new sanctuary that was established in 2013 based on the healthy number of Sloth Bear population and also to minimize the human-sloth bear conflict. The Gudekote bear Sanctuary spreads over 38.48 sq. km. Both the sanctuaries have very similar habitat. The vast rocky landscapes appear

like a blanket painted with different shades of brown, sprinkled with a bit of green, like stars on a clear night sky. These sanctuaries contain dry evanescent scrubs and thorny forests with vegetation that predominately comprises of *Acacia catechu*, *Acacia horrida*, *Albizia amara*, *Anogeissus latifolia*, *Hardwickia binata*, *Azadirachta indica*, *Boswellia serrata*, *Chloroxylon swietenia*, *Prosopis juliflora* and *Ziziphus jujuba*.

Looking at these landscapes, one might wonder how could any animal possibly live here? Boulders, rocks, and thorns are all that is present here, along with the blazing heat. But with rocks and boulders, there will be caves, and with caves, there will be shade. Such landscapes are perfect to shelter the cave-dwelling and burrowing animals like sloth bears, Indian foxes, golden jackals, Indian crested porcupines, and Indian pangolins.



Earlier both the sanctuaries had large areas of barren hillocks, that was later converted into the present-day lush green bushy area with the immense and constant efforts of Karnataka Forest Department.

In the last six months of fieldwork, with the help of forest department staff, I was able to conduct the range-wise camera-trap survey. I started the survey from Daroji wildlife range, then in Gudekote range covering Protected Areas, Reserved Forests and adjoining mosaic farmlands. A total of 17 mammalian species were

observed in Daroji and Gudekote Bear Sanctuary



during this study, including leopard, sloth bear, golden jackal, Indian fox, jungle cat, rusty-spotted cat, small Indian civet, Asian palm civet, ruddy mongoose, common grey mongoose, Hanuman langur, bonnet macaque, Indian crested porcupine, wild pig, black-napped hare, Indian pangolin and Indian palm squirrel. Besides, footprints of a striped hyena were observed while conducting mammalian sign survey. Also, there was a direct sighting of four-horned antelope without any capture in camera traps. In the plain areas of Gudekote range outside the sanctuary, two additional mammalian species were observed i.e. Indian grey wolf and blackbuck. Before this study, most of the local people weren't even aware of the presence of the Indian grey wolf in the range.



During my fieldwork, I observed lots of human disturbances not just in the Reserved Forests but also in the Protected Areas (except in Gudekote

Bear Sanctuary). With huge human and livestock population, there is constant pressure on the forests. People are also highly dependent on NTFP collection. There are encroachments of the forested land for farming, resulting in significant habitat loss. Evidence of poaching like nooses to catch Indian hare and snares for catching wild pigs could be found in some frequently used animal trails inside the forest area. Further, all these unchecked encroachment into the forest habitat has given rise to more intimate contacts with wild animals which resulting in increased human-wildlife conflict incidences, especially between humans and leopards/sloth bears. The conflicts could be livestock predation, human injury or death, wild animal mortality, and crop damage.

In the other ranges of Bellary district, there are several mines of iron and manganese. As open cast mining practice is adopted, the impact of mining on the environment is immense. All these above-mentioned anthropogenic disturbances along with the continuous human appearances threaten the existence of the wild animals.



In order to prevent further loss of wild animal species along with their natural habitats, it's essential to initially collect information on fine-scale habitat structure determining the habitat requirement of species across different land-use gradients and about wild animals' occurrence to facilitate protection and restoration of critical habitats. Through this study, we are attempting to

understand the impact of landscape changes and fragmentation on mammalian communities in the Bellary district. Eventually, along with the efforts of Karnataka Forest Department, the findings of this study are expected to create awareness among the people about the effect of human disturbances on the population and behaviour of wild animals and the possibilities for the coexistence of humans and wildlife in harmony.

Correspondence: asitbehara@gmail.com

The unrevealed little rann of Kutch

Apurva Patil

"It is not the strongest of the species that survive, nor the most intelligent, it is the one that is most adaptable to change" – *Charles Darwin*. I experienced the same during my fieldwork on Sarus crane at little rann of Kutch (LRK), Gujarat. When we talk about desert, we imagine an "arid land spread across the horizon and clear sky". The desert of LRK is also similar. Spread over 4953 sq. km area, this desert is famous for its wetlands formed by the mixture of sweet and salty water, elevated plateaus/ beyt's, unique herbaceous vegetation, shrimp farming and traditional salt panning by Agariya community. Majority of this area is protected for the Indian



wild ass and was thus declared as **Wild Ass Sanctuary** in 1972. Apart from wild ass, this desert also inhabits Indian fox, desert, striped hyena, grey wolf, blue bull among others. One of the uniqueness of this region is that it acts as one of the stopovers for the birds of central Asian

flyway as small-sized monsoonal wetlands are formed attracting various migratory birds throughout the winters. During the fieldwork, my team and I got a chance to visit some remote areas of LRK accessible only in the summers as the muddy land of the desert remains wet in other seasons. It was the month of April and the entire desert was barren, sandy, and salty cracked land with maximum temperature touching 45°C. Local people advised us not to go to LRK as it wasn't a good time to visit it but we went instead as it was part of our field area. We were able to understand the desert life better as we moved through the remote parts of it.

LRK has around 74 elevated plateaus also called as beyt's hosting a variety of unique flora which is mainly halophytic and is one of the reasons behind survival of many wild animals during the floods in monsoon. Flat grasses such as *Suaeda fruticosa* and *S. nudiflora*, are the succulent halophytic plants abundantly found in the desert area serving as food for the Indian wild ass. Sighting of the Indian fox with pups made us understand how they have adapted themselves to the desert conditions. Fox pups were around 2 months old and sighted in the den. Fox prefers to stay in den only in summers and constantly shifts from one place to another with their pups. The dens get flooded in monsoon and therefore they move towards beyt's. Foxes are adapted to the



desert in a way that their mating season starts somewhere between October and December, coinciding with the season of arrival of winter

migratory birds. This gives them a good opportunity to hunt small birds and animals; along with the availability of other vegetation in abundance which fulfills their food requirement. Their gestation period is around 50-60 days, giving birth to 2-4 pups inside the den where they remain for their entire weaning period for about 3-4 months. The weaning period coincides with the end of winter migratory period, hence eliminating possible threats for pups from the migratory bird predators. They remain in their dens until the arrival of monsoon. They subsequently leave their dens once they are self-dependent and can hunt for themselves.

During our fieldwork, we also visited temples near Nanda bet, LRK. The place offers a no-man's-land experience as it is far off from any civilization, except for the people in the temple, and a few hundred cows living inside the premises. It holds a high religious significance among the local Rajput community of Gujarat. Temples in such desolated desert areas are the only source of some food and water. Though these temples are famous for cows, they have been providing shelter to many birds too. House sparrows are one of them. Before entering the temple, I heard birds chirping which caught my attention and in no time I was inside the temple. I was amazed by the breathtaking sight of hundreds of sparrows all over the walls of the temple. There are hardly any sparrows left in our cities, but here, in a desert, they have prospered in an unbelievable way. People in LRK have charitableness for animals and also they pay special attention to the conservation of sparrows and other bird species. People have made small efforts by hanging hundreds of artificial nests made up of cardboard, wood, plastic, and metal for providing shelters to sparrows. Sparrows around here take advantage of these and they also use broomsticks, grass blades, cotton, ropes, and dry coconut coir as a nest material. Even though the majority of nests were occupied by single pairs of sparrows, activity in each of them was different from the another. Some nests

had hatchlings; some pairs were building nests, whereas some nests were abandoned. Apart from grains offered by the people, sparrows also fed on ants and cockroaches found usually in the temple's area where people offer food for the deity. People have kept clay pots for water and several bird feeders. People have also planted many trees in the vicinity of the temple which provides a source of nectar to several bird species. Visits to such places remind me of an Albert Einstein's quote, "The value of a man resides in what he gives and not in what he is capable of receiving".

Correspondence: patilapurva25@gmail.com

Birds of Sikkim – from my gallery

Niveditha RK

Sikkim will always remain in the memory lane reflecting its scenic beauties with huge snow-covered peaks, the velvety green mountains, the turquoise blue rivers, the Rhododendron flowers, the flying squirrels, the fox that crossed our vehicle, the Assamese macaques who love to flavour their lips with litchi fruits, the call of the Blue Whistling Thrush that replaced our alarms and all of the feathered fairies that have left us in wonder. Even though Sikkim is the smallest state of India, it is nowhere less in its diversity of bird fauna. There are about 568 species of birds recorded in Sikkim (ENVIS Sikkim). Within the 7096 sq. km area, it has a varied climate, topography, vegetation and altitudinal ranges (Ali 1962; Mani 1974). The different habitat types ranging from the tropical to subtropical, temperate broadleaved, mixed coniferous, sub-alpine and alpine exists here. Hence these could be the supporting factor for the existence of diverse species of birds.

I have come across many species of birds that were new to me, of which I am sharing some of the encounters in this column. Instead of the usual photographic feed, I thought of portraying artworks of some birds, which I found really interesting for various reasons.

White-crested Laughingthrush



The first species on the list are the White-crested Laughingthrush. As I heard them making some giggles and laughter, I rushed to see the birds. They were pecking on some onion peels near our basecamp. To me, they looked like little Santa clauses hopping here and there (wearing a brown dress instead of the normal red). They were literally laughing. I have heard at least ten species of laughingthrushes, among which this became my favourite. If you haven't heard please try to listen to their calls, for sure there is a hidden surprise.

Asian Barred Owlet



A wise owl sat on a tree top and I couldn't escape its view on the daily walk. It was the Asian Barred Owlet. A little cute brown bird. It was around 6 in

the morning and it was all puffed up. It was continuously wagging its tail. I call it wise because like a Wiseman, it observes a lot. I got the chance to see how observant this one is. A Blue Whistling Thrush was sitting on the upper branch, a hen made noises from the house below and a shriek of the Shikra was heard from the sky. It was noticing everything, not with its eyes but with its ears. As shown in the painting, it was continuously changing its angle of view towards the surrounding sounds and even looked at me (fifth portrait).

Long-tailed Broadbill



A bird that I always wished to see, but never thought that I would see it so soon, that too in good numbers. Until I saw them, I thought they were solitary species, but the flock I saw had 16 birds, a big treat indeed!. A Blue Whistling Thrush was seen mocking the birds. They moved along the trail from one tree to other as I followed. I denote them as a colour palette, for their feather colours are so fresh that one can directly take it on a brush and paint.

Crimson Sunbird

Crimson lake is one of my favourite colours and so is this bird. It was the time for cherry blossoms in Sikkim and doubtlessly sunbirds. Other species of birds like the Streaked Spider-hunter, the Oriental White-eye, the Orange-bellied Leafbird, among others were seen around the cherry blossoms throughout the day. One specific bird

that captured my attention was the Crimson Sunbird. In addition to their beautiful shining



crimson coloured body, two violet streaks on their neck added on to their beauty.

Himalayan Monal



In December 2018 we were on a trip to the Tsogmo Lake. Besides being a tourist spot it was a very good birding spot. Alpine forests, alpine grassland, and water bodies in this region support a variety of bird species. Ruddy shelducks, Eurasian Hobby, Wallcreeper, Snow Finches were common among the list and fortunately, I got a chance to see a graceful bird. I was sitting inside the car near the window gazing at mountains. I saw a metallic-coloured flag lying on the grassy meadow and suddenly recognized it as the Himalayan Monal. I screamed to stop the vehicle and all of us jumped out of it to see the bird. It was a male, which slowly started moving inside the bushes and faded away, but not its shimmering colours.

Sultan Tit



Last but not least, the Sultan Tit. Whenever I referred about other species of Tits in my field guide, my eyes by default ventures to this bird. I heard them for the first time in Kitam Bird Sanctuary. They had a short whistle-like note. My field assistant Sandip was more eager than me in spotting the bird. Dried yellow leaves on the branches made it difficult to spot the bird. Towards the end of the trail walk, I took my water bottle and lifted my head upwards to take a sip. And there it was, a pair of Sultan Tits hanging from a branch straight above me. They were too close and didn't mind our presence. They were searching for insects in the barks as we watched them quietly until they finished the meal.

Correspondence: niverkt@gmail.com

The mesmerizing beauty of wetlands

Sreya Bhattacharya

After completing almost one and a half year of fieldwork in Gujarat, I have gathered some amazing experiences and learned a lot about my subject species i.e. Sarus Crane. In this article, I am sharing one of the exuberant experiences during my fieldwork. Being in Gujarat feels as if I am in heaven for bird watching. My study species itself is an iconic species and well known for its mesmerizing beauty, bright colours, and height. The word Sarus (SARAS in Hindi); originates from a Sanskrit word SARASAH; that means lake

bird. Undoubtedly, Sarus is an example of one of the most beautiful wetland birds.



As part of my project work, I am studying the present population, status, and distribution of Sarus crane all over Gujarat. The more I explored my species, the more overwhelming it was. One of its interesting behaviours is to congregate in wetlands during summer. For this year my team and I had decided to cover all the important wetlands of Gujarat. We planned our fieldwork from May to June and marked all the important



wetlands and dams of Gujarat. Sarus usually prefer wetlands with moderate water level, marshy wetlands or wetlands surrounded by the agricultural fields.

We also occasionally had amazing sightings of local pairs in small village ponds. We first completed surveying wetlands of Ahmedabad, Anand, Kheda, and Vadodara.

On 19th May 2019 we started our fieldwork as usual and were able to witness the breathtaking beauty of the wetland with a huge number of Sarus. This beauty inspired us more to explore all the small wetland of Gujarat. In the scorching heat of summer, we would observe them without exhaustion as their stunning beauty and their display behaviour continuously mystified us. It was all worth it to have that eye-catching view of wetlands which would eliminate all our tiredness within seconds.

Another interesting fact about these wetlands is, that in some area Sarus shares its habitat with Crocodile. Wetlands of Charotar region of Gujarat are famous for its mugger population. Surprisingly, this is also one of the most populated regions for Sarus too. The Charotar region is also well known for its canal connectivity, wetland numbers, and paddy fields which are also favourable habitat conditions for Sarus. The coexistence of these two species is one of the main attractions of this area. These wetlands are a paradise for any bird watchers in the winters as well.



The Sarus Crane is listed as vulnerable species as per IUCN Red List. In our study, so far we have observed that the population of Sarus is thriving strongly in Gujarat. I hope that the data collected from the field surveys will help us to

understand the habitat use and current status of Sarus and will reflect the importance of wetlands in Sarus conservation in Gujarat.

Correspondence: bsreya1994@gmail.com

DST-INSPIRE Fellowship Review MEET- 2019

Mythreyi Devarajan

An “INSPIRE Fellowship Review Meet” was organized at SSN College of Engineering, OMR, Kalavakkam, Kancheepuram District, Tamil Nadu from 27th- 29th June 2019. INSPIRE Fellows were asked to participate in the meet and display their research work through a poster. I attended the meeting and presented my research work titled “Polycyclic Aromatic Hydrocarbon Contamination in Pallikaralai wetland, Tamil Nadu, India; Fish as an Indicator”. It was a great opportunity to interact with scientists from DST-INSPIRE and other INSPIRE Fellows and get to know the diverse



arenas which are funded by DST-INSPIRE. Dr. Umesh Kumar Sharma, Scientist E, INSPIRE Programme Division, appreciated my work and made some comments on how the work could be enriched. The officials also addressed our various queries and qualms regarding funding. Overall, it was a very fulfilling experience

Correspondence: mythreyi.devarajan@gmail.com

Workshop Cum Stakeholder's Consultation to Formulate a Plan for Conservation of Biodiversity in and around the Nokrek Biosphere Reserve

A “Workshop Cum Stakeholder's Consultation to Formulate a Plan for Conservation of Biodiversity in and around the Nokrek Biosphere Reserve” was jointly organized by UNESCO, Ministry of Environment, Forest and Climate Change, Govt. of India, and Department of Environment and Forest, Meghalaya during 27-28 May 2019. The theme of the consultation workshop was to formulate a plan for the conservation of biological diversity in and around the Nokrek Biosphere Reserve (NBR). The NBR has a large extent of community forests which are being used for *jhum* cultivation.

Some of these areas were brought under the Community Reserves, where SACON has initiated a study. The workshop was attended by various stakeholders of NBR, such as the local community village headman (*Nogma*), officials from UNESCO, MoEFCC, Scientists from Wildlife

Institute of India, Dehradun, North Eastern Space Application Centre, Shillong, and official from Department of Environment and Forests. A presentation entitled “Community Reserves and



their conservation significance in the Nokrek Biosphere Reserve region” was presented by Ms. Tremie Sangma, Junior Research Biologist, on behalf of SACON's Research Project, “Characterisation of Community Reserves and Assessment of their Conservation Values in Meghalaya”.

Correspondence: meghalayaproject@googlegroups.com

Editorial Board

Dr. Aditi Mukherjee, Dr. T. Ramesh & Mr. R. Jayakumar

Views expressed in this newsletter are not necessarily those of the Editors or the Sálim Ali Centre for Ornithology and Natural History.

सालिम अली पक्षिविज्ञान एवं प्रकृतिविज्ञान केन्द्र

Sálim Ali Centre for Ornithology and Natural History

A Centre of Excellence under Ministry of Environment, Forest and Climate Change, Govt. of India

आनेकट्टी, कोयंबटूर - 641 108

Anaikatty (Post), Coimbatore – 641 108

Tamil Nadu, INDIA

Tele: +91 - 422-2203100, 109; Fax: +91 – 422 – 2203132

Website: www.sacon.in

Email: salimali@sacon.in, salimalicentre@gmail.com

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