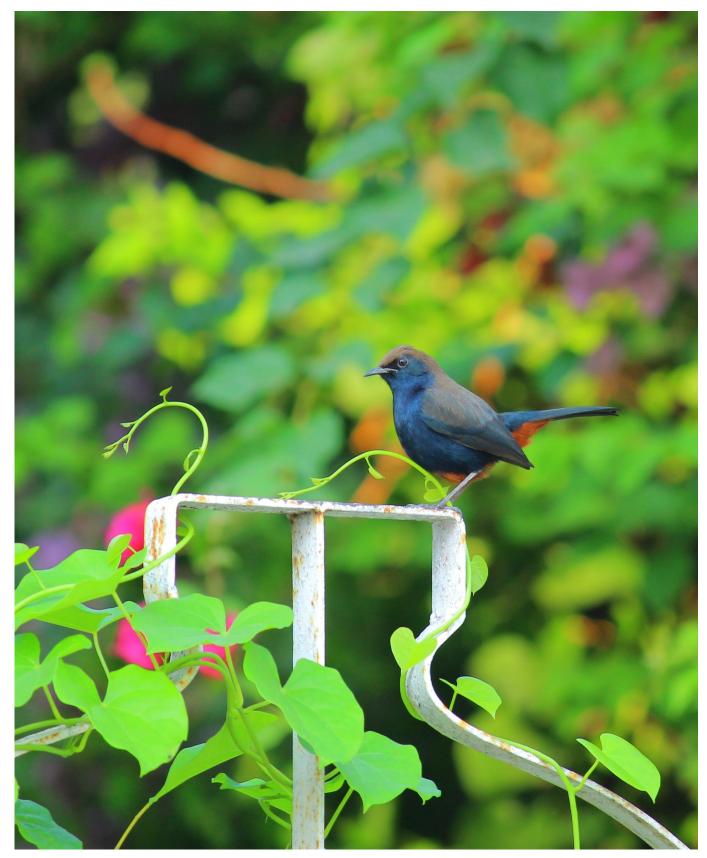
# **SACON News**

Vol. 18 (1) January – March 2021





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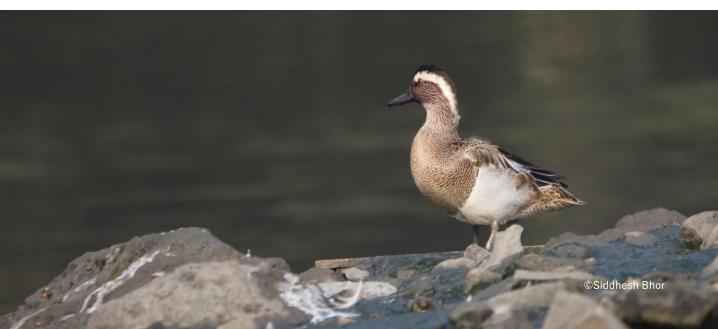
### From the Director's Desk

It is my pleasure to invite the readers to this issue of SACON News. While we all hoped the New Year to have given us relief from Covid-19, unfortunately it has bounced back, perhaps with vengeance restricting our regular activities. Nevertheless, we got accustomed to an extent with many 'new normals', and continued with our tasks, nonetheless adhering to Covid-Appropriate norms.

This issue of SACON News covers major activities of the institute and interesting articles from our research scholars. SACON, as ENVIS Resource Partner, organized a Webinar on Wetlands on January 13th, 2021 as part of World Wetlands Day 2021 titled Get Inspired by DST INSPIRE Fellows, based out of SACON. The other event was World Water Day celebration on the 22nd March in partnership with Tamil Nadu State Wetland Authority, wherein children from Government Tribal School, Anaikatty participated. Members of SACON faculty also delivered Webinar talks on the occasion of National Science Day, 2021, at the International Symposium "Conservation of Life Below Water" (COLIBA-2021) organized by the University of Kerala, and at the training programme on "Soil & Water Conservation Technologies for Climate Smart Agriculture in the Context of Extreme Weather Events" organized by the Indian Institute of Soil and Water Conservation, Udhagamandalam. Also built-in is an interesting illustration of Agamids and other lizards of Kerala.

I presuppose, person who reads this issue will find it interesting. While we would like to come back to our readers with more interesting articles in the subsequent issue, let us remind ourselves not to lower our guards against Covid-19. Stay safe and stay blessed.

Dr. S. Muralidharan, Director in charge





### **INSTITUTIONAL EVENTS**

### New Director in charge, SACON

Dr. S. Muralidharan, Senior Principal Scientist was handed over the charge of Director, SACON with effect from 6<sup>th</sup> March 2021 till the process of appointment of a new Director is completed. This came after Dr. K. Sankar was relieved of his duties as Director, SACON on 6<sup>th</sup> March 2021 following the completion of his five-year tenure as SACON Director.

#### Webinar on Wetlands

The SACON ENVIS Resource Partner, amidst the prevailing pandemic, conducted a Webinar on Wetlands on January 13<sup>th</sup>, 2021 as part of World Wetlands Day 2021 titled "Get Inspired by DST INSPIRE Fellows".



We had two Govt. of India DST INSPIRE Fellows associated with SACON as speakers covering different aspects of wetlands. Zoom was used as the platform for the webinar delivery and considering the overwhelming response received from over 500 participants, the webinar was also streamed live on the YouTube channel. The participants comprised college students, researchers, and faculty from various institutions of the country. Dr. Goldin Quadros, Principal Scientist & ENVIS Coordinator, SACON, introduced the speakers and welcomed the participants.

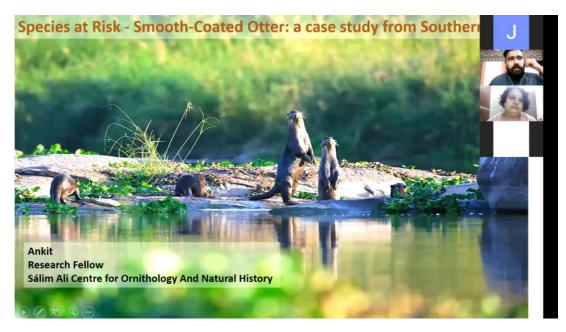
The first speaker Dr. Mythreyi Devarajan, from the Ecotoxicology Division, SACON spoke on the topic "Wetlands are not Wastelands – A Pallikaranai Case study". In her talk, Dr. Mythreyi gave an overview of wetlands, ecosystem services



and anthropogenic threats to wetlands including impacts of dumping waste in a wetland. Furthermore, she explained how carbon and methane emissions, biomining and dredging make the wetlands shrink in size. She also shared some views on scientific ways to dispose waste and suggested that Pallikaranai can be saved if there is a collective will to do so.

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#### **INSTITUTIONAL EVENTS**



Mr. Ankit Moun, the second speaker and INSPIRE Fellow associated with the Environmental Impact Assessment Division shared his experience of working with otters. He gave a detailed presentation around the topic "Species at Risk: a case study from South India". Mr. Ankit gave an overview of his study area, otter species, their distribution, and threats. Furthermore, he discussed about the areas occupied by the otters and their habitat status in Tungabhadra Otter Conservation Reserve. He compared the habitat variables between otter and non - otter sites and concluded emphasizing the necessity for habitat restoration to achieve conservation goals.

The participants had several interesting questions which were answered by both the speakers. The webinar ended with the vote of thanks by Dr. Goldin Quadros, Principal Scientist. The registered participants were provided with e - certificates.

## Webinar talk at Central University of Kerala on the occasion of National Science Day, 2021

On the occasion of National Science Day celebrations 2021 (24<sup>th</sup> to 26<sup>th</sup> February 2021), Dr. Riddhika Ramesh, Scientist from the Division of Environmental Impact Assessment, SACON, gave a virtual talk on "Mammals in changing landscapes" at the Department of Zoology, Central University of Kerala. She spoke about the current land use changes and their role in shaping mammalian assemblage patterns based on her field ecological studies conducted in Southern India and South Africa. The occasion was inaugurated by the Honorable Vice-Chancellor of Central University of Kerala, Prof. H. Venkateswarulu.



### **INSTITUTIONAL EVENTS**

### Webinar talk at the International Symposium "Conservation of Life Below Water" (COLIBA-2021) organized by University of Kerala

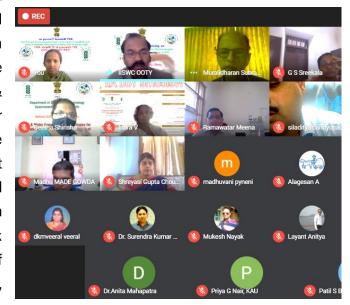
Dr. Riddhika Ramesh, Scientist from the Division of Environmental Impact Assessment, SACON, gave an oral presentation on "Multiscale habitat use of Smooth-coated Otter along Riverscapes of Southern India" at the International Symposium "Conservation of Life Below Water" (COLIBA-2021) under the theme: "Estuarine & Freshwater Biodiversity".



The symposium was virtually held between 18<sup>th</sup> and 20<sup>th</sup> March 2021 and organized by the Department of Aquatic Biology & Fisheries, University of Kerala (UoK). The thematic sessions had national and international plenary speakers with a diverse expertise on Aquatic and Fisheries ecology.

## Talk at an online training programme organized by Indian Institute of Soil and Water Conservation

Dr. S. Muralidharan delivered a talk titled "Impact of climate change and indiscriminate pesticide use on avian diversity; An Indian scenario" at the online Training Programme on "Soil & Water Conservation Technologies for Climate Smart Agriculture in the Context of Extreme Weather Events" at ICAR - Indian Institute of Soil and (IISWC) Water Conservation, 18th February 2021. The two-week programme, sponsored by DST, Govt of organised by IISWC. India, was Regional Centre, Udhagamandalam.





### **INSTITUTIONAL EVENTS**

### World Water Day 2021





To celebrate the World Water Day on the 22<sup>nd</sup> March 2021, SACON ENVIS Resource Partner on Wetlands in association with the Tamil Nadu State Wetland Authority (TNSWA) organised Drawing and Essay writing competitions for the students of Government Tribal Higher Secondary School Anaikatti, Coimbatore. The competitions were held in six categories i.e. three each for Drawing and Painting. The topic for competitions was "Importance of Water during COVID times". The students of class 9th, 10th, and 11th participated in the competitions held on the school premises, following the standard safety protocol on 19th March 2021. Materials for writing (paper and pen) and drawing (chart paper, colours, and pencil) were sponsored by SACON and TNSWA.

## Research Aptitude Development Scheme (RADS) digitally launched at Payyannur College, Kerala



On 28th March 2021 Dr. Arun, P.R., Senior Principal Scientist, SACON at 10.30AM launched the online-Research Aptitude Development (RADS) at Payyannur Scheme College, Payyannur, Kerala. RADS is an initiative of the Zoology Department of Payyannur College Zoology Old Students and Association- Payyannur College 2004-'07 Batch. RADS is aiming to nurture their students' Research Aptitude for having a better professional and social life.



### **POPULAR ARTICLES**

### Studying a Wetland: Challenges and Concerns

By Mythreyi Devarajan, DST INSPIRE Fellow & SACON Alumni Email: mythreyi.devarajan@gmail.com

For three years continuously, I visited Pallikaranai to collect samples of fish for my research on 'monitoring the levels of environmental contaminants', particularly Polycyclic Aromatic Hydrocarbons. In April 2020, while analyzing my data to bring it to a logical conclusion, I saw the complete picture of the complex cause-effect relationships; while some causes whose effects I could not comprehend, some effects whose causes I could not locate. "Why study this Marsh" one may ask. Amidst the chaos, whirring, and buzzing of a metropolitan city nestles this marsh that was once pristine. Bird watchers congregate to have a glimpse of the spectacle of many migratory species of birds flocking year after year. Pallikaranai, a wetland ecosystem located in the southern part of Chennai, Tamil Nadu, is unique. If you are someone born in an urban setup in the 1990s, you are likely to understand my fascination for any form of life, both mobile and static. Although quite charming, the only creatures that I regularly saw while growing up in Chennai city were house crows, dogs, cats, house flies, and mosquitoes. Even the occasional Jungle crow was quite spectacular and not mundane.





Pallikaranai marsh supports 349 species of flora and fauna with more than 130 species of birds. It is one of the most productive landscapes and a bird watcher's paradise. The marsh harbours abundance of egrets, purple herons, shrikes, the ethereal beauty of the greyish-white flamingos turning brilliant pink in season, the nearly threatened spot-billed pelican, threatened black-headed ibis, and if you are fortunate, the endangered knots (Pity, I haven't been able to spot a single one albeit regular attempt). Until the past decade, this marsh did not feature in the migration maps of Greater Flamingos. However, in recent times, naturalists have observed a linear increase in the number of Greater Flamingo that visit Pallikaranai. Annually, several thousands of Greater Flamingos were observed to migrate from Rann of Kutch in Gujarat to Point Calimere with dispersions in various parts of Tamil Nadu. Closer to Chennai, they preferred visiting Pulicat lake rather than Pallikaranai. Since 2012, splashes of white and gorgeous pink have dazzled the locals and tourists alike.

The development of humankind has been closely associated with water bodies, but unfortunately, anthropogenic activities have often resulted in the chemical contamination of these resources. The toxic leaching and enormous pressures of various development activities on the wetland threaten this ecosystem which is fragile and sensitive. In an urban landscape like Chennai, the area and infrastructure required for the safe disposal of household, corporation, industrial and agricultural waste are enormous. Unfortunately, water bodies in and around the city are being treated as dump yards. And like other water bodies, Pallikaranai, too, could not escape human influence. Callous dumping of municipal wastes along the water body, sewage discharge, and construction activities (buildings, railway stations, roads) have shrunk the Pallikaranai wetland to a great extent over the years. The south Chennai waste dump yard at Perungudi and the Sewage Treatment Plant span across 250 acres of the prime marshlands of Pallikaranai wetland.





The most daunting task of my field surveys was to find fishers to help me with collection of fish samples at Pallikaranai. This was reasonably easy but only long. It sometimes took me up to 20 days to find a team willing to help, but the same team never turned up again for the next field visit. So, I went through the sequential process of analyzing where the problem was and finding alternatives. The first complication was fishing in protected areas that required permits from the Tamil Nadu Forest Department. I got the permit with much more ease than other steps. Finding a professional fisherman to do this should have been technically easy as the Coast of the Bay of Bengal runs Parallel to Pallikaranai.

The catch here is that Coastal Fisherfolks are people who fear the Sea-God. Maybe it was the mechanism to demarcate each other's territorial boundaries, but the folktale goes that the Sea-God would stop fruiting if they fish in inland wetlands. So, in my quest to find fisherfolk who fished in inland wetlands, I visited other water bodies proximal to Chennai. This solved my first problem of finding fishermen who would fish in areas that were not marine. But, if the water-body happened to be Pallikaranai? The response was standard, "Ma'am, you could ask us to fish in any other water, we will do that, but please do not ask us to fish in the garbage! It would be best if you weren't eating fish from there anyway. We will give you the highest quality of fish from other water-bodies like Chembarambakkam, Pulicat, or from anywhere." If I mentioned research, the response was, "You can do research in other wetlands instead, and we will even send the samples to your lab." To sort this, I resorted to surveying local people who lived here from the 1970s and 80s and those who moved in recently. The area hadn't developed to this extent, and it was a big water body so that the locals would go swimming and fishing regularly. It was only intuitive, and I didn't know for sure. Fortunately, this yielded a couple of names who were known to fish here. I got in touch with them and planned my fishing expedition. The folks I got in touch with were fishermen who chose alternative careers because fishing got prohibited in Pallikarnai. One was a nightwatchman, and the other one segregated plastic in dumped waste. Just two people meant that my sampling efforts would continue for a couple of days. The conditions in Pallikaranai were trying. There were more debris, aquatic plants, and other impediments than water.

The Perungudi waste dumpyard, Pallikarnai, Chennai



Hence, one could not use a cast net. Only a gill net or line net or spearing was possible. And gill net in this area would require more people, but line net or spearing could not assure me of an adequate sample size. So I sent the two off to bring two more people promising extra money. Ultimately, it was the day-end before they turned up, and fishing in the darkness (while preferable!) was dangerous, unlike other local water bodies! So with a promise to turn up the next day, we parted. The only two who turned up the following day were untrained locals. We were mentally exhausted to find a few more, and so I decided that I would be the extra hand that was needed. The field assistants tried their mighty best to avoid calling me into the water-body until required. At the end of this, I could manage to collect just nine fish samples, and all of them were the same species, Oreochromis niloticus. The sample size was not adequate and had no variety! This meant pursued sampling efforts the next day, but I was afraid that the two who turned up today might not show up again. It also meant storing the samples in a freezer somewhere till I had an adequate sample size to be shipped to the lab at SACON. I arranged for this and unwillingly called it a day, hoping that tomorrow will be a better day. As my luck would have it, the next morning got only worse; I had a no-show and renewed my efforts to reach them. At well past midday, I received a call from one of them saying that they are very sick, have some rashes and fever, and call them for any other work but fishing here. I couldn't blame them, as I was feeling sick myself and had rashes.

To carry on my sampling exercise for almost two years, I reached out to several governmental agencies, NGOs, local people, and every time this was the only pattern to find help. Finally, at the end of the sampling exercise, it was my fishing assistants who heaved a sigh of relief! Finding plastic particles, deformed organs, extra organs, and infected organs became a routine part of the fish necropsy exercise. The excitement of seeing an anomaly had turned into a mundane and ritualistic activity. Sampling and analyzing the samples from Pallikaranai was not just invigorating, and it was also a great teacher of patience! Insightful on how forgiving and resilient ecosystems are. While a complete reversal of damage to the wetland appears to be impossible, towards salvaging what remains, possibilities galore!

Pallikaranai is one such wetland that is very likely to disappear soon if active and appropriate interventions are not made now. Therefore, the way forward is to focus with a sense of utmost urgency, on assessing the extent of vulnerability of human settlements in this area, discourage any further settlement, paying attention to the consequence of development on the hydrological cycle and climate change, and discouraging development in these fragile areas. To achieve this, a multi-pronged approach must be deployed to set this wetland on its recovery path. These may include stringent government statutes; rigorous monitoring exercises; creating landfills with a scientific approach to eliminate the risk of waste seeping underground, and arrest any leak or seepage from the dumps; incentivising industrial waste treatment, and targeted awareness campaigns with a focus on industry owners.

### POPULAR ARTICLES

### "Beginnings to Big innings"

By Gourav Sonawane, Junior Research Biologist, SACON Email: grvsonawane@yahoo.com

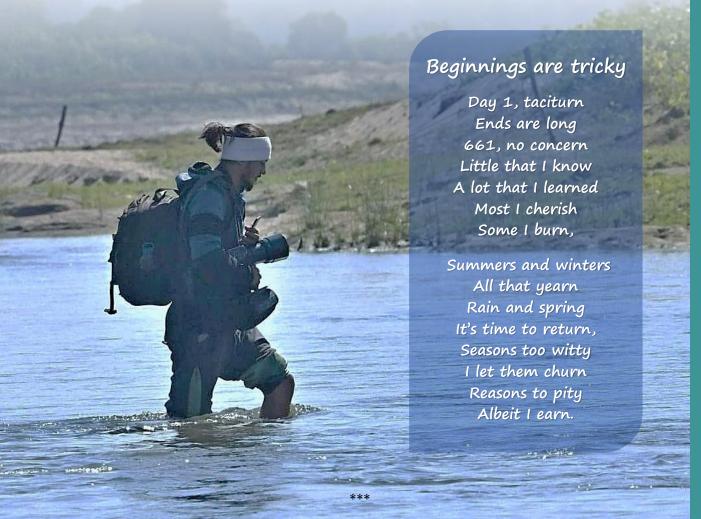
It has been a delightful journey from an 8-year-old answering the question "Who is known as the Birdman of India?" to working in an institution named after the same legend "Dr. Sálim Moizuddin Abdul Ali". All I remember is every time I heard Salim Ali's name some string oscillated in my head, may be a manifestation of my subconscious but all I feel now is grateful for the opportunity I got to work in this institution. Spending two years (661 days) as a Researcher at SACON, every moment of it gave me an immense sense of responsibility as well as joy; and with each passing day, all these feelings accrued to a level of bliss.

On 26<sup>th</sup> March 2021, at 0715 hours, a morning stroll through the trails for bird watching, I was shocked at the scene that my eyes were seeing. Walking towards one of the water tanks constructed in the vicinity of SACON what I saw were two big ears, terrified eyes, of an innocent little calf stuck in the water tank; it was a Gaur calf. Seeing me he tried to escape from the pool but fell back into it. I ran back to my room and told my roommate Shantanu and informed one of our security officers Mr. Magudi. We went to the spot and then called the forest officials for help. Around 1200 hours, three forest officials came and tried to rescue the calf. As two of them went close, the calf started bellowing loudly with all his strength; a dreadful and unforgetable sight indeed.



We saw an adult Gaur frantically moving in the bushes, probably the mother of the calf. Though none of us knew when the calf had fallen, his struggles made him appear extremely exhausted and the scorching noon heat had made the whole event more stressful for the calf. The forest personnel somehow managed to pull out the calf from the tank, but quite evidently the calf had no energy to stand on his own and the bleeding knees were the signs of his tedious struggle. We stayed back for a while to see whether the calf is safe and was able to walk back to his mother or not, but it couldn't. The officials told us to leave the place so that the other members of the herd can come and comfort the calf. Again around 1330 hours I went back to check and learnt that the calf had left the place and probably found his mother. I don't know whether I was contented or blue but it was a learning experience. Probably additional safety measures and changes in the tank can be made to avoid such incidents in the future. Perhaps the inner inclination of the tank can be made a little coarse that can help animals to pull themselves out of the tank should they accidentally get it.

Nevertheless, many episodes and incidences happened in the last two years; be it numerous encounters with elephants, falling in Krishna river, seeing a crocodile from fewer than five meters, a fawn suckling its mother, or witnessing the first peck hole in an egg and watching the joy of new life; it all made me get closer to nature. Here below, I have tried to weave all my thoughts and experiences into this small poem;



**POPULAR ARTICLES** 



## Birds and invasives: An observation on Plum-headed Parakeet

Psittacula cyanocephala feeding on Parthenium By Gayathri V, Junior Research Biologist, SACON

Thanikodi M, Research Assistant, SACON Email: gayathrivenkatramanan91@gmail.com

While working on a project surveying the Mudumalai Tiger Reserve, my field assistant and I used to drive through the forest roads for birding. On one such occasion (11th February 2019), we observed a female Plum-headed Parakeet flying low near a clearing. We drove closer to observe the bird and found it to be feeding on Parthenium (Parthenium hysterophorus). Presuming it to be an unusual behaviour, I collected some additional information. Parthenium belonging to the Asteraceae family is a widespread invasive weed found across several Protected Areas of India, thus threatening natural and agroecosystems. However, this observation shows that the plant also acts as a source of food for parakeets. Locals in the Gudalur area, adjoining the Tiger Reserve also reported sighting of the parakeets feeding on these invasive plants revealing the incident to be a frequent occurrence in the region. This observation shows that birds are highly adaptive and may feed on many invasive weeds similar to the earlier reports of birds feeding on Lantana Camara. However, it is unsure if this incident of parakeet feeding on parthenium is a rare occurrence!!





### Researchers' Corner—Art & Conservation

### Freezing a few moments with my gregarious mates

By Priyanka Bansode, Junior Research Biologist, SACON Email: priyankabansode02@gmail.com



While growing up in a concrete jungle of a metropolitan city, I was acquainted with only a handful of bird species. My knowledge and observational skills as a child were limited to identifying only sparrows, crows, kites, bulbuls, parakeets, and pigeons. Nevertheless, as it is said, "Happiness is enjoying the little things in life" and here I was appreciating whatever little I could witness as a child. Of all the species, sparrows often in a group of 10 to 15, would always grab my attention the most. Their early morning chirps, their chores through the day of finding food, nesting material, interactions within themselves would be so engrossing to observe. As the years went by, little did I know that one day I will get an opportunity to study this species while vagabonding through several states across the country. Sighting them is rare in the urban habitats, particularly larger cities, but they are thriving well in suburbs and rural places. As the species was always known to be gregariously living with humans, can still be seen in good numbers in small towns, villages, farmlands, and small open grasslands but a rarity in uninhabited forests and large cities. As per the recent State of India's Bird (2020) report, even though the population of the house sparrow is currently stable, their decreasing number in the large cities is ascertained to be due to lack of suitable nesting sites and lack of insect population (a key part of sparrow's diet). Nevertheless, my childhood mates still visit me in my urban setup, in small numbers if not big, and often give me a chance to freeze a few moments. Every time I observe their behavior through my lens, I am reminded of the beautiful lines by Vincent Van Gogh— "Keep your love of nature, for that, is the true way to understand art more and more".



### Researchers' Corner—Art & Conservation

### An Illustration of Agamids and other lizards of Kerala

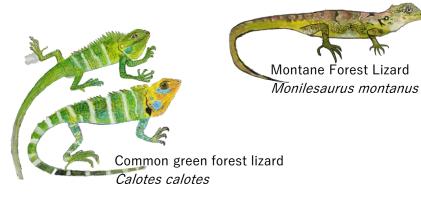
By Ashish AP, Junior Research Biologist, SACON Email: ashishap1994@gmail.com

There are more than 170 species of reptiles in Kerala and around 160 of them are scaled reptiles like snakes, lizards and skinks (squamata). Agamids like garden lizard are some of the large squamates. This is just a humble attempt to draw those Agamids found in Kerala. Though not an agamid, \*Chameleon is also added to this illustration.

















### Researchers' Corner—Art & Conservation

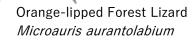


Indian Flying Lizard Draco dussumieri

Large scaled forest lizard Calotes grandisquamis

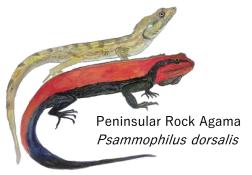


Calotes nemoricola





Oriental Garden Calotes Calotes versicolor





Monilesaurus rouxii







सालिम अली पक्षीविज्ञान एवं प्रकृतिविज्ञान केंद्र Sálim Ali Centre for Ornithology and Natural History

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

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#### **Editorial Board**

Dr. Aditi Mukherjee, Dr. T. Ramesh & Mr. R. Jayakumar Views expressed in this newsletter are not necessarily those of the Editors or Sálim Ali Centre for Ornithology and Natural History.

### January - March 2021

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