

நமது வனம் NAMATHU VANAM

May 2024 -July 2024

(Bilingual Quarterly e-magazine of TASPEF)
(For free circulation only)

WORLD MIGRATORY BIRD DAY

**SIGHTING OF A RARE PRIMATE
IN KALAKAD HILLS**

**THE RISING DEMAND FOR
RED GOLD**

**THE HIDDEN TREASURE
BENEATH OUR FEET**

STING



Bar headed goose
Bharatpur B S

Photo Courtesy: Chella Subramanian

Great Snipe

The greatest snipe reaches a speed of over 90 km/H almost 7000 km, flying over Scandinavia and Sub-Saharan Africa.



Photo Courtesy: Carl Chaitanya Hawker

Artic Tern

Every July, this tiny bird, takes off from nesting spots in the Artic to fly over Africa and the Indian Ocean to finally reach Antarctica in November. The round up distance is upto 95000 Km equal to two trips around the world.



Photo Courtesy: Paul Hargreaves

**TAMILNADU ASSOCIATION OF SENIOR PROFESSIONALS
OF ENVIRONMENT AND FORESTS
(TASPEF)**



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Dear TASPEF members,

Greetings from the Editorial team.

On 11th May 2024, the “World Migratory Bird Day” will be celebrated. This month is also the hottest month in our sub-continent. If you happen to reside on one of these Bird migratory paths and if your place happens to be their wayside resting place, you are blessed! If so do write to us your experiences.

Do help the birds beat the summer heat in whatever capacity you can.

The first “World Migratory Bird Day” was organised by African – Eurasian Waterbird Agreement (AEWA) and “Convention on Migratory Species” (CMS) in the famous wildlife reserve “Ole Ari Nyiro” in Laikipia, Kenya, owned by Ms. Kuki Gallman, a Italian born, Kenyan citizen, an author, environmental activist and a conservationist, on 8-9th April 2006.

Birthday Wishes

The Editorial team wishes all the members who are celebrating their birthday in the months of May, June and July 2024.

“A VERY HAPPY BIRTHDAY”

To create awareness on the plight of migratory birds and the urgent need to conserve their breeding grounds and protect their migratory routes, leading birding organisations viz., Environment for the Americas(EFTA), the Convention on Migratory Species (CMS) and the Agreement on the Conservation of African- Eurasian Waterbirds

(AEWA) combined the two of the world's major bird education campaigns; "International Migratory Bird Day" (IMBD) and the "World Migratory Bird Day" (WMBD) into one single name "World Migratory Bird Day" starting from 2018. This day will be celebrated twice in a year, on every second Saturday in the month of May and October, to coincide with the bird migrations in both the hemispheres of our Planet. This year these dates are on May 11th and 12th October 2024.

The theme for the first "World Migratory Bird Day" was "Wings". The current year theme is "Importance of Insects for Migratory Birds" The campaign will focus on Insects and their decreasing population which will in turn affect bird population.

Annually, India hosts migratory birds from over 29 countries – from the smallest "Little Stint" which weighs as little as 15 grams but flies 8000 Kilometres from Artic region to come to India in the winter; to some of the large birds like the Great Indian Bustard and the Pelicans.

Can we do our little service to these God's Creations by preventing high rise power cables which entangle and kill the migratory birds on their migratory routes? Deepen the breeding water bodies so that they are filled with water and fish population is abundant? educate farmers to avoid harmful pesticides which kills the beneficial insects and pollutes the water bodies? May be organise bird feed too? Can we plant flowering and fruiting plant species that support birds and insect populations in our little back yards, gardens and avenues? Provide bird feeds and bird baths where feasible? List goes on, if there is a will to do the right thing.

Also, let us not forget our resident bird population. Provide them this summer, with water for bathing and drinking in clean bowels along with some grains please.

Let me end this editorial with a quote

"The presence of a single bird can change everything for one who appreciates them."
— Julie Zickefoose, Saving Jemima: Life and Love with a Hard-Luck Jay

Warm regards
V.Prabhakaran, IFS (Retd),
Editor,
Namathu Vanam

Sighting of a rare primate in Kalakad Hills

V.Sundararaju. IFS, Retd,

Former DCF

Kalakad Wildlife Sanctuary during the '80s:

Before I narrate the incidence of encountering a rare primate, I must explain about Kalakad Wildlife Sanctuary. It is situated about 50 kms from Tirunelveli on the Eastern slopes of the Western Ghats. Though it was declared as a Wildlife Sanctuary during 1976 mainly to protect the rare and endangered species of Lion Tailed Macaque, which inhabits Evergreen forests, the Sanctuary contains other types of forests such as Moist deciduous, Dry deciduous, Thorn Forest and Scrub jungle also.

One of the Oldest Forest Rest Houses at Sengaltheri:

The stretch of forest commencing from Kalakad upto Sengaltheri consists of Dry and Moist deciduous forests on the eastern slope and Semi evergreen and Evergreen Forests at the top. Sengaltheri is an elevated place at the top of Kalakad hills with an altitude of 940ms MSL. The distance between Kalakad and Sengaltheri is about 18 kilo metres. There is an old Forest Rest House at Sengaltheri built during 1906-07 with an estimated cost of Rs.2687/- in a verdant place of scenic beauty with a panoramic view of the natural forests and wide range of undulating hills.



Forest Rest House at Sengaltheri built during 1906-07.

Bears and the Phoenix fruits:

When I discuss about the Rest house, the Sloth Bears sighted there regularly can't be missed. There were a lot of Wild Date Palms (*Phoenix humilis-Malai-icham*) in front of the rest house. When the plants were bearing fruits, bears used to visit the area to taste the fruits. Many times, we had seen groups of 3 or 4 bears eating the Phoenix fruits.

Late Mr Jambulingam, IFS (Retd) was the Chief Wildlife Warden at that time. He used to visit Sengaltheri frequently. Watching lot of bears regularly in proximity to the rest house, he jovially asked me during a visit "Hi! Are you having a Bear Farm here!". Since it was the Core zone of the Sanctuary, it had a serene, undisturbed and congenial atmosphere to the animals. So, bears were accustomed to roam freely and eat the fruits.

At this juncture, some useful information about Sloth bear may evoke interest among the readers. Sloth Bears are found in the forest areas from the foot hill of Himalayas up to Kanyakumari. They live in forests where food is available sufficiently and prefer the rocky outcrop and boulders for taking shelter during hot weather. They are nocturnal in general. When the weather is cool and there is no disturbance, they may come out even during day time. It will be of 2 to 3 feet at shoulder level with an average length of 4 to 5 feet.

The Sloth Bear (*Melursus ursinus*), which is omnivorous, climbs over the trees to pluck the wild fruits. It eats jungle fruits like Jamun (*Syzygium cumini*-Naval), Ber (*Ziziphus mauritiana*-Ilanthai), Banyan (*Ficus glomerata*-Atthi), Bael (*Aegle marmelos*-Vilvam), Konnai (*Cassia fistula*-Konnai), Pelu

(*Careya arborea*-Ayma), Khajur (*Phoenix humilis*-Malai-icham), the flowers of Mohwa (*Madhuca indica*-Iluppai), honey, grubs, insects (specially termites) and the tender shoots of grasses. During summer the fruits will be available in plenty in the forests. This is also the best season for honey. The combs of the large rock bee (*Apis dorsata*) and the smaller forest bee (*Apis indica*) with full of honey will be very much relished by bears.

During monsoon, insects will be plenty. The bears will be in search of the insects under small boulders, dead wood and in the crevices of trees and rocks. Bears use to break down termite mounds and suck the termites which constitute their staple food. After the monsoon, bears which live near the human habitations are in the habit of raiding sugarcane and maize crops. They dig below the ground surface in search of big white grubs of large dung beetles. They climb palm trees to drink the toddy from the pots. During the flowering season of Mohwa (*Madhuca latifolia*-Iluppai) trees between March and April, the bears gather under the trees to feed on the fallen petals.

One could never forget the rare experience of watching the bears at close quarters.

Kalakad-Mundanthurai Tiger Reserve:

The forest was intact except a few cardamom leases and two private estates located inside. The water-fall namely Netterikkal flowing on the eastern slope of Kalakad hills is almost perennial and can be sighted even from a distance of about 25 to 30 kilo metres from Kalakad. Pachayar, Kodumudiyar or Nambiyar, Karungalkasam river and Manimuthar are some of the major rivers which originate from Kalakad hills.

Our experience of encountering a rare primate dated back to 1982. It was 2nd Friday during June 1982. Southwest monsoon rain had been in full swing. But that day there was light drizzling only. The climate was very pleasant. We had gone over to Sengaltheri

for inspection of the cardamom lease units. There is a small temple of Goddess Karumandi Amman located on the bank of Karumandi Amman River. This river flows down and joins Manimuthar. Near this temple, a stone wall has been erected across the river to a height of 0.5 metre and to a width of 1 metre to divert the excess water into Nanguneri canal. On the western bank of the canal, a stone wall has been raised to a distance of about 300 metres to facilitate the water to join Pachaiyar river. A few Thitmin (*Podocarpus wallichianus*-Narambali) trees belong to the Family Coniferae were found there.

The Cardamom lease units were located beyond the temple. There was a trekking route passing through that area to reach Kakkachi, a place bordering Kalakad and Mundanthurai Wildlife Sanctuaries (Subsequently during 1988 the two sanctuaries were merged and named as Kalakad-Mundanthurai Tiger Reserve). The forests in these areas were of Evergreen type.

Sighting of Lion-tailed macaque, a thrilling experience:

After inspecting the cardamom lease units, we started trekking along the route to Kakkachi for a short while. Generally, we used to keep our eyes and ears open and mouth shut while walking through the forests in order to have a glimpse of wild animals. The same discipline was maintained during our trek. The route was having only dim light as canopy of lofty trees had covered the entire stretch. The trail was covered with ferns, cycas, rattans and other under growths. The footpath was full of moisture. The Forester and the Forest Guard who accompanied had already warned us about the mist and the seasonal rain. After covering a distance of about a km, we halted for a while. The Forest Guard who was standing by my side whispered by stretching his hands above our head. There, on the top of a tree branch, a Lion Tailed Macaque was moving slowly.



Lion tailed macaque walking on the ground, a rare sight

The greyish white mane on its cheeks and tufted tail were visible clearly. It was walking over the branch of a tree in a gentle manner without any excitement. Indeed, it was a thrilling experience to watch the macaque, which is considered to be one of the rarest primates of the Western Ghats. Because, on a few earlier occasions, while trekking was undertaken along the route to Kakkachi to watch the Lion Tailed Macaque, this elusive monkey could not be sighted. A few minutes passed. The Forester who was going ahead of us had noticed the macaque only a little later and said "Sir! Sir! There is a macaque". Though he said in low voice, the macaque became alert, jumped over the other trees and vanished quickly. Really it was a fortunate occasion to have a glance of this endangered monkey as the sanctuary has been formed with the sole purpose of protecting this rare species. Once Mr.Mohammed Hussain, IAF (Retd) the Chief Conservator of Forests (He was earlier the Principal of Southern Forest Rangers College,

Coimbatore) visited the area eager to watch this macaque. But he was disappointed as he could not sight the animal. The Lion tailed Macaque (*Macaca silenus*) has a great mane of long dark-grey or brownish grey hairs growing from the temples and cheeks and a glossy black coat. This macaque inhabits the Evergreen Tropical Forests quite away from the human settlements. It is arboreal in nature. But on one occasion during 2010, while travelling from Upper Kodayar, a pair was noticed climbing down a tree, walking over the ground and climbing over another tree near Kakkachi. It is said that these macaques are feared by Nilgiri langurs and Bonnet macaques. Because of its dark colour, shy and seclusive habits it is spotted rarely. These monkeys are always gregarious. Destruction of the habitat has made the animal endangered.



THE RISING DEMAND FOR RED GOLD

By G. Sivagurunathan, ACF, Retd.



Red Sanders plantation in Nayapakkam R.F in Tiruvallur Range

The Red Sanders (*Pterocarpus santalinus*) is highly sought-after in the global market. It is classified as endangered species by the International Union for Conservation of Nature (IUCN) Red List. This unique tree species is characterized by its distinctive bark resembling crocodile bark, three-lobed foliate leaves with broadly ovate or nearly orbicular, axillary flowers with simple or sparingly branched racemes. Notably, the red sanders belong to the subfamily Papilionoideae of family Leguminosae.

The Red Sanders is a medium-sized deciduous species with a straight trunk and a full, rounded canopy. Trees are commercially categorized into two grades based on the wood's characteristics: Premium and standard. Premium trees are distinguished by their distinctive, wavy wood grain texture and an intense red colour. In contrast, standard trees exhibit a straight-grain pattern and a lighter shade of red. The heartwood of the red sanders contains a red pigment called "santalil", earning it the evocative nickname "Red gold".

The wood's vibrant red colour serves as a natural dye in various industries, including pharmaceuticals, paper pulp, textiles, leather tanning, and alcoholic beverages. Additionally, the bark and heartwood possess medicinal properties and are used as astringents, tonics, and diaphoretics in traditional medicine. They are also believed to be beneficial for treating biliary infections and skin ailments.

The wood's distinctive, wavy grain has a huge demand in the global market, primarily exported to Japan for crafting the unique three-stringed lute, the "Shamisen". This wood is also prized for creating name seals, frames, intricate carvings, and traditional tableware. Notably, in Japanese tradition, musical instruments and other objects crafted from red sanders are considered essential dowry items in weddings. Conversely, the straight-grained wood finds use in carving religious idols and toys. Additionally, the timber serves various functional purposes, including house posts, agricultural tools, poles, and shafts, cart components like bent rims, and even boxes and picture frames.

DISTRIBUTION:

The tree thrives in hilly landscapes, typically on slopes with shallow, infertile, rocky, and well-drained soil. It requires significant sunlight and avoids areas with excess waterlogging.

The Red Sanders (*Pterocarpus santalinus*) is native to the Eastern Deccan hills, particularly the Cuddapah district, and extends briefly into neighboring Kurnool, Nellore, Vellore, Chengalpet, and Tiruvallur districts. According to State Forest Department (SFD) records, Tamil Nadu currently has 6,967.74 hectares dedicated to Red Sanders plantations, supporting an estimated population of 590,229 trees.



Red Sander wood ready for market after cleaning the sapwood

STUDIES ON WAVY GRAIN:

The rarity of wavy-grained Red Sanders, estimated to occur naturally in less than 1% of trees, has significantly increased its export value. Consequently, the species is commercially classified into two grades: "premium" for wavy-grained wood and "standard" for straight-grained wood. Identifying these grain patterns in the field traditionally involves removing a small section of bark to expose the heartwood and visually assess its characteristics. Interestingly, research has shown that seedlings from wavy-grained trees exhibit distinct features compared to those from straight-grained trees. These include slower growth, shorter internodes, smaller and greener leaves with petioles, and a more compact crown. These findings suggest that these morphological differences could potentially be used as markers for early identification of wavy-grained genotypes in seedlings

ADULTERATION:

Due to the high value of red sanders, unscrupulous actors sometimes substitute its heartwood with *Adenanthera pavonina* in the Indian market and *Dalbergia louvelii* in China.

POLLINATION:

The flowering of Red Sanders (*P. santalinus*) is restricted to the dry season and occurs exclusively at night. These papilionaceous flowers open after dusk and are primarily pollinated by bees, including rock bees and carpenter bees. Notably, the species exhibits a tendency to eliminate fruits resulting from self-pollination, leading to very low fruit production. This characteristic, coupled with low fruit set, contributes to poor regeneration in the wild. Consequently, the future of the Red Sanders population appears bleak, with potential for further decline and increased susceptibility to genetic erosion and inbreeding



Red Sanders leaves and pods

depression due to the shrinking population size. Matured seed pods develop over eleven months after flowering, taking on a reddish-brown colour with wings and typically containing one or two seeds.

GERMINATION:

The Red Sanders (*P. santalinus*) seeds exhibit significant dormancy, lasting for about a year. Germination rates are typically low, potentially due to various factors such as temperature fluctuations, water stress, predation, pod size limitations, light intensity variations, soil conditions, seed moisture content, seasonal changes, and even the collection location. Notably, seeds stored in darkness displayed no germination, possibly due to the lack of readily available nutrient reserves crucial for the initial growth of newly sprouted seedlings. Furthermore, research suggests that the poor and erratic germination observed in Red Sanders is likely linked to the presence of phenolic compounds within the pods and hormonal imbalances within the seeds themselves. To ensure optimal nursery establishment, seeds and fruits are typically collected from genetically superior Red Sanders trees.

In Arimalam, Pudukottai district, many residents rely on cultivating nurseries for various tree species as their primary source of income. Interestingly, their traditional pre-treatment method for red sanders seeds involves creating mounds within their gardens using locally collected seeds. These mounds are rich in termites, which naturally consume the winged parts of the seeds after a few days. Subsequently, the remaining seeds are sown in designated mother beds.

A significant increase in germination percentage with a reduced germination period was observed when seeds were subjected to sequential soaking. This involved soaking the red sander seeds in water for 48 hours, changing the water every 12 hours to remove phenolic compounds, followed by immersion in 500 ppm GA₃ (Gibberellic acid) for 12 hours. This sequential soaking process has been shown to be effective in achieving early synchronized germination with a higher success rate.

CONCLUSION:

Based on various studies investigating pre-sowing treatments for Red Sander seeds, the following methods have been identified as most effective in promoting germination:



Red Sanders (Pterocarpus Santalinus) Nursery

1. Soaking seeds in 500 ppm GA₃ solution for 24 hours, followed by thorough rinsing and sowing.
2. Soaking seeds in 250 ppm GA₃ solution for 24 hours, followed by thorough rinsing and sowing.
3. Manually separating seeds from pods using a sharp knife or scalpel, followed by direct sowing.
4. Soaking entire pods in lukewarm water for 8 days, changing the water every 24 hours to facilitate leaching of inhibitory chemicals present within the pods.

STUDIES ON VEGETATIVE PROPAGATION:

Efforts to propagate *P. santalinus* vegetatively through methods like semi-hardwood cuttings, cleft grafting, and air layering proved unsuccessful in generating sufficient quantities of planting material for forestry programs.

MICRO PROPAGATION OF RED SANDERS:

Tissue culture has emerged as a promising tool for both conservation and large-scale propagation of various tree species. Since the 1980s, scientists have explored tissue culture techniques for Red Sanders, focusing on improving shoot development using seedling explants. However, Red Sanders, belonging to the Fabaceae family, presents significant challenges for in vitro culture due to its inherent recalcitrance. Notably, an efficient protocol for micropropagation specifically targeting high-quality and genetically superior Red Sanders trees has not yet been established. Efforts to develop such protocols have been hampered by factors such as severe contamination, rapid browning of the culture medium, and poor response from the plant tissue during shoot initiation.

Micropropagation using nodal explants from young shoots of a phenotypically superior, ten-year-old, high-quality experimental tree demonstrates significant potential for both the propagation and conservation of high-quality

Red Sanders trees. While research has been conducted, large-scale seedling multiplication through tissue culture remains an ongoing area of development for agricultural applications.

NEW HOPES FOR EXPORT:

The species has faced threats from illegal harvesting and smuggling, leading to its depletion in natural forests. However, red sander wood sourced from artificial propagation (plantations) constitutes a significant portion of legal exports. The species has been included in the Review of Significant Trade (RST) process since around 2004.

The Review of Significant Trade (RST) is a CITES mechanism that intensifies scrutiny on a specific species' export from a particular country. This process aims to ensure compliance with the Convention's regulations. In the past, the RST has even recommended suspending trade with India regarding Red Sanders. However, in 2023, the environment ministry announced the unconditional removal of Red Sanders from India's RST process. This decision is anticipated to benefit farmers cultivating Red Sanders by enabling them to increase their income through legal plantation-sourced exports. Furthermore, it is expected to incentivize farmers to cultivate more Red Sander trees, fostering a sustainable income source.

FUTURE PERSPECTIVES:

Premium-grade Red Sander wood commands a significant price of ₹40,00,000 per metric ton in the international market. This price is expected to rise further due to the ongoing illicit trade, which disrupts the balance between supply and demand.

Despite facing overexploitation for centuries, the resilience of *Pterocarpus santalinus* trees offers a glimmer of hope for their future. To ensure their survival and genetic diversity, implementing conservation strategies is crucial. These efforts should involve the large-scale establishment of seedling

plantations not only within their natural habitats but also in suitable geographically distinct areas with similar growing conditions. Such a comprehensive approach will safeguard the genetic material of this valuable species for posterity.



60% to 70% Heartwood Formed in Red Sanders

A study of a 20-year-old Red Sander plantation in Bangalore revealed significant variation in height, girth, and heartwood content among individual trees. Heartwood content ranged from entirely absent to nearly 65%, highlighting the inherent variability within the species. Similarly, a 45-year-old plantation exhibited heartwood content variations between 6.18% and 81.95%. These findings emphasize the crucial importance of selecting seedlings from superior genotypes for farmers.

To revive the past glory of this valuable red gold species, collaborative efforts are essential among government agencies, farmers, entrepreneurs and policymakers to join hands for its propagation, protection, sustainable utilization and conservation.

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RECAP OF MEMORIES

By V.Sambasivam IFS, (Retd) Former DCF & Dr. K.S.Devadass DCF, Retd

Life after retirement of Thiru V.R.Chitrapu IFS, PCCF (Retd) in his village Vempadu, Nakkapalli Mandal, Anakapalli district Andhra Pradesh.



I and Mr. Devadoss on invitation visited his village for two days on 24th & 25th of February 2024. We landed at TUNI station on 24th morning and were received by his men, We were warmly welcomed by the couple when we reached their house. My relationship started with him in 1979 June when I was ACF Kodaikanal and his first posting as territorial District Forest officer Dindigul after serving 5 years as DFO Coonoor tea division, TANTEA.



He did his range training at Coonoor range. He was promoted as Deputy conservator of forests while undergoing Range training itself due to his Army service taken in to account .

Mr.Devadass was the range officer Poomparai and then at Bodi range at Theni.



Even though I was an ACF he delegated all powers of the DFO and made me to act as Sub DFO of kodaikanal except posting and transfer of staff in Kodaikanal . He even informed the CF that he will not accompany him most of the time and ACF will be available .

One of the most remarkable achievements is the abolition of age-old system of kumri cultivation wherein Minister, Maharaja of Pudukkottai, and some Forest staff were absentee kumridars in Kodaikanal region. We have saved fragile rich soil of Kodai hills and prevented the sedimentation at Amravati dam and there by increased ayacut area .We worked in tandem for conservation.

After retirement Mr. VRC was residing in a rented house in Vempadu village about 90 KM south of Visakhapatnam . He decided to improve and live on a 18 acre farm bought by him and 2 brothers in 1995 .The land is rectangular shape bounded by motorable road on both sides. He has constructed ecofriendly elegant farm house raised about 9 feet above ground level supported by concrete pillars. Entire house is constructed with palmyra timber and bamboos. He is very particular that the entire construction expenditure should go to local people as wages. Initially raised steps with bamboo splints to climb and step on living area on the first floor. spacious verandah

cum reception hall. His office is also located in the front part of the verandah. Abutting veranda, a spacious rectangular big room where kitchen, puja, dinning and bedroom without any partition. Bamboo splints were used for walls doors, and windows. Flooring with timber planks.



On the rear side were the steps to get down to bath room and rest room. Basement is used for car parking, and storage of farm implements.

About 90 feet away from the main building is a spacious rest house with three beds and attached bath room . A lovely sit out with all amenities such as cushion chairs, teapoy and benches .



Rest House

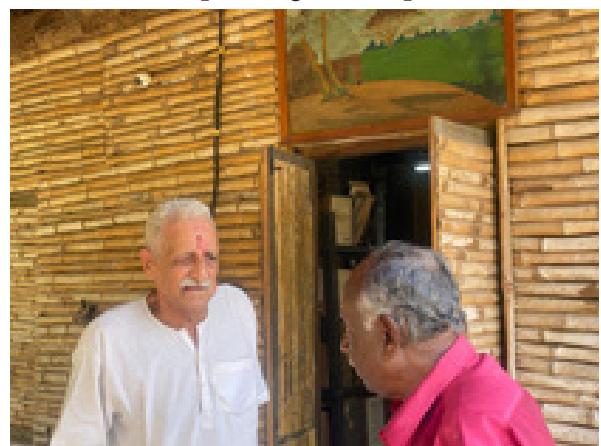
CONSTRUCTION MATERIALS

Rain tree, *samania saman* wooden planks were used for flooring in main house living area. The walls, windows, doors are made only with bamboo splints. The false ceiling in guest house is covered with round bamboos .Roofing with Mangalore tiles. He has purchased old Mangalore tiles from the people who dismantled Mangalore tiled house for new construction. The cost of an old tile was Rs 1/ whereas the new tile costs about Rs 17/.

The super structure is supported with Palmyra beams, rafters and bamboos. The house and rest house are furnished antique wooden sofa set, teapoy and dining table.

Cattle shed, tractor shed cart shed constructed in traditional manner with bamboo and palmyra leaves no metal or asbestos roofing sheets are used.

At the entrance of his farm, bamboo thorn gate is provided. He has installed a marble statue of Shiridi Saibaba in loving memory of his late beloved daughter. Baba statue is garlanded daily .He has provided water in two mud pots to quench the thirsty of villagers, school children passing and a concreate bench under Mimusops elengi tree is provided .

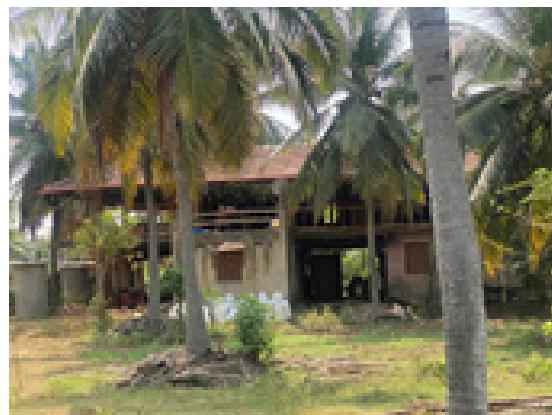


ECO SYSTEM AND COEXISTENCE

He had experience of many forest and plantation crops except coconut. He found an expert on coconut in the state and visited his

farm. Expert inspected his farm and with his guidance slowly improved the health of trees and restocked with new coconut seedlings. At present about 1000 coconut trees are there. He has conserved moisture of coconut trees by Providing mulching all trees

TREE SPECIES



He has raised the following species in his farm.

Mimosops elengi, Gmelina arborea, Grewia tilifolia, Adenanthera pavonina, Prosopis spicigera, Azadirachta indica, Caroupita guanensis, Casuarina equisetifolia, Casuarina junghiniana, Borassus flabalifer, Subabul, Soyamida febrifuga, Rose wood, Sissoo, Terminalias.

BAMBOO SETUM

Farmed with Dendro calamus stricture, Bamusa bamboo, Dendrocalamus gigantea, Bambusa nutans, Oxytenanthera stocksii, Bambusa balcoa, Bambusa tulda.

NATURAL FENCE

Palmyra, Bamboo, Agave , prosopis species are planted along the boundary to act as natural fence. Found profuse natural regeneration of neem, bamboo, curry leaf, Tulasi, subabul.

HORTICULTURE CROP

Emblica , Mangifera, Tamarindus, Sapota, Banana, lemon, gauva in suitable places.

FLORICULTURE



Both sides from the main gate to his house are planted with Hibiscus rosasinensis , Thevetia , (yellow , pink white flowers) for aesthetic fragrance, naga shenbagam.

EDAPHIC FACTOR



The PH value of the soil is more than 7 and the annual precipitation is about 500mm. The temperature raises up to 45 C during summer. The acute saline patches of 2 ha have been ameliorated by recycling farm yard manure and *Casuarina junghuniana* species. (good coppice) and is in the process of reclamation. The entire farm is being manured with farm yard manure. Solar energy is fully harvested in the farm.

One big open well and 4 bore wells are supplying irrigation needs. Shallow patches ,bunds acting as rain water harvesting structures and improve sub soil moisture. All silviculture, scientific techniques are being adopted for all species.

CATTLE UNIT

About 35 numbers of ongole breed are tied around each coconut tree in night time and sent for grazing nearby areas in day time which

is looked after by two labors He gets sufficient milk from cows and not selling the excess milk instead the calves are allowed to feed. He is also having about 50 goats and few chicken. He is having two Madhol dogs to accompany the night watchman for patrolling the farm land during night time. Few times they may stay to nearby villages and kill chicken for which he pays compensation of Rs 300 when dog kills a goat in the village ,he compensates by replacing a goat .His relationship with local people is excellent.

RECYCLING RESOURCES

Cow dung is used as farm yard manure. Pollarded branches twigs are used for making charcoal. Palmira leaves as thatches.

There is one small tractor and bullock cart.

There are 11 farm laborers from the village engaged throughout year and carpenter as and when required for carpentry work.

TRUST



A Trust was created in memory of late daughter and is sponsoring several eligible villages girls' education amounting to Rs 7 lakh per year and supporting a school for blind girls at Rs 14 lakhs per year. What a marvelous service he is doing? He is spending his lovely pilot officer daughter's hard yearned money for the needy people as per her last wish. Hats off to her ambition of helping poor and physically challenged persons.

We have visited a beautiful clean beach about 5 KM from his farm house.

HOSPITALITY

Madam has taken strenuous effort to keep us pleasant ,cool, with varied dishes native sweets and enjoyed warm affection .After walk in morning and evening provided tender coconut water and appetizer for breakfast. We will never forget green gram dosa, chappatti uppuma with coconut chutney, tomoato chatini, potato cum onion kurma for lunch. Most unforgettable is thick curd, avaka pickle and paper folded sweets. It is life time sweet memories.



While working in Kodaikanal during camp sir used to tell me that we are getting good pay what to do with this money. I used to think in my mind sir is the only gentleman to say the salary is high. Now while talking, he told me that we are getting good pension several times of last pay drawn what to do with money. What he told during 1979 repeated to me during 2024 after 45 years. I have never come across such a simple and unassuming gentleman in my life time. His intention of spending entire pension more to the society is laudable. Imbibed humanity need not restricted to homo sapiens; too all living organisms.



THE HIDDEN TREASURE BENEATH OUR FEET

By Dr G. Ramani

“Nature does not hurry, yet everything is accomplished.” - “Lao Tsu”

In the realm of ecology, the concept of Mycelium or Mycorrhizal Network, has captivated scientists for its intricate role in the subterranean world. Beneath the verdant canopies of forests, a hidden tapestry of inter-connected fungal filaments grow on the hyphae known as Mycelium. These thin threads have high tensile strength and weave their way through the soil covering the forest floor. These fungal filaments, like microscopic roots, intertwine with the roots of the trees and plants, creating an underground communication network. Mycelium serves as a vital bridge between all plant species by exchanging nutrients and information.



Fungal mycelium by Science News Releases

Mycelium is the very oldest fungi, with its origin dating back to at least 700-800 million years. This was first discovered by a research team led by ‘Steve Bonneville’. In the last sixty years, the intensive research on mycelium has paved a new path to the world underneath our feet. The fungi mycelium has been found in many archaeological excavations around the world, indicating their ancient origin.

Mycorrhizal network acts just like a “Dark Web” (The hidden internet web networks underneath Surface Web.) of the forest, connecting plants of different ages and species. Scientists are now discovering that Mycorrhizal networks play a crucial role in the health and in the longevity of the forest plant species. They, facilitate the transfer of water, minerals and nutrients from mature and healthy trees to younger saplings and seedlings ensuring their survival and growth.

Mycelium has been found to communicate through its own language, like neurotransmitters and electrical impulses, similar to the human nervous system. This underground network allows trees to share warnings of impending threats and even coordinate defences against pests and diseases. We may call this ‘Auto Protective Mechanism’. The study of Mycelium is shedding new light on the complex interdependencies within the ecosystems.

‘MYCELIUM’ – THE BACKBONE OF THE WILD

Mycelium is just not only a network of communication, but it is also a conduit for exchanging water, nitrogen, carbon and other vital nutrients, minerals with one plant species to another. In this mycorrhizal network, a

whole bunch or hub of trees can detect the neighbourhood diseased plants from the emissions of their distress signals and provide them with essential nutrients and help them to recover. Thus, the mycelium play a very important ecological role in keeping the health of forests.



Photo Courtesy: Britt Holewinski

Mycelium play a vital role in completing the energy cycle of the ecosystem by decomposing the organic matter into useful compounds and thereby enriching and replenishing the soil with nutrients. Studies have shown that, plants too exhibit feelings. Here too, Mycorrhizal networks play a vital role by communicating with each other and consoling damaged plant species and help in their recovery.

Most of the mycorrhizal networks are microscopic, but some fungal species can also grow in to colossal size. There is a large mycorrhizal network found in the USA, that is estimated to be about 'Ten Square kilo meters' in spread. The *Armillaria ostoyae* found growing the Malhuer National Forest in Oregon, is one of the largest growing mushroom in the world with an estimated weight ranging between 7500 to 35000 tons!

SURVIVAL OF THE FITTEST

The law in the jungle is 'Survival of the fittest'.

The Survival of trees and plants depends on the effectiveness of photosynthesis, which depends on availability of sun light. However, in some dark and shady spots over grown with thick vegetation, sun light does not penetrate the forest canopy to the plant undergrowth, leading to poor photosynthesis. This potentially curtails/arrest these plants growth. The Mycelium Network underneath the ground, protects these plants by means of sharing and supplying the essential nutrients from the other nearby healthy plants and trees. This is yet another vital functions of mycelium/mycorrhizal network in the ecosystem.



A cross- section of the a seedling connected to the mycorrhizal network.

The parasites grow by using other plants energy, but mycelium play a supportive role. In some places the young plant roots cannot reach ground water, due to rock or thick soil or other hindrances. Here, the mycelium roots supply water to these plant roots from another nearby plant roots which have penetrated deep down. This 'nature's intelligence program' maintains 'Equilibrium', and potentially avoids deforestation.



Fungus mycelium network the biggest communication network

NATURE AND ITS HIGHER INTELLIGENCE

The Phenomena of “Existence” always amaze us by its numerous qualities/phenomenon and mysterious nature. ‘Co-Existence’ - This word might be very opt for this mycelium networks, as they maintaining a great relationship between plant and tree species.

In the Existence, everything is communicated by means of ‘FREQUENCIES’. The whole universe language is nothing but the frequencies. Through this frequency we all are closely connected with everything, to the plants, to the birds and animals and to the ocean and to the whole of cosmos. We all are interdependent on each other. My emotions may affect your emotions, like ‘Chaos Theory’, the flickers of a small butterfly wings too has some impact on this universe. So, let us be supportive to all species around us and show our unconditional compassion to all living things in our universe.

When next time, you happened to be there in a forest, breathe deep and think about this amazing underground network of mycelium and their role in supporting our ecosystems and take steps to protect them.

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Apart From these above sites, also studied the contents from various online sites,blogs and so on.

AUTHOR

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By Profession

I am a ‘Investment Strategy Research Analyst’ (ISRA) & Corporate Ranker & Consultant and does content writings.

By Passion

Apart from my Academic pursuits,I am a freelance writer by choice,who wish to share the wisdom's learned to my beloved family and friends and to the world around me.Until now wrote more than 7000+ write ups on various subjects/aspects of humanities.

Havin ‘UG-Chemistry’ Background,Recently passionated towards learning and writing science and technological stuffs.

I also conducts workshops,that emphasis and rise self-awarenes among the individuals along with Pranayama and meditation. Conducted seminar among 10000+ Schools & College children about ‘Absolute Education’ and ‘Memory Skills’ - On behalf of ‘Times Of India’
Newspaper In Education - project.

NEWS IN A NUTSHELL

BIODIVERSITY SURVEY REVEALS RICH REPTILE AND AMPHIBIAN DIVERSITY IN MUDUMALAI TIGER RESERVE



MTR Deputy Director C. Vidhya highlighted the significance of the survey.

Theppakadu, Kargudi, Mudumalai, and Nelakottai regions of the Muthumalai Tiger Reserve (MTR) core area witnessed a two-day herpetofaunal survey in late February 2024, aimed at documenting the region's biodiversity. The survey, conducted by forest officials, recorded an impressive 51 varieties of reptiles and 31 species of amphibians. The forests in these areas range from deciduous to semi-evergreen. MTR Deputy Director C. Vidhya highlighted the significance of the survey, stating, "We usually conduct an annual census for larger species like tigers, elephants, and leopards, but it's crucial to focus on the micro fauna as well." "Understanding the smaller species aids in developing effective conservation plans for the tiger reserve," she added.

Forest Range Officer Manoj Kumar noted that another survey is planned after the monsoon in June or July. "The data compilation from both surveys will provide a comprehensive estimation of amphibians and reptiles in the MTR core area," he said. The core area of MTR, covering approximately 321 square kilometers, supports a diverse population of over 120 tigers and 1,000 Asian elephants. Other notable species include gaur, porcupine, jackal, and leopard.

Source: Time of India 27.02.2024)

INDIA'S AIR QUALITY RANKS THIRD WORST GLOBALLY

Bangladesh is the world's most polluted country and Delhi is the most polluted capital. But India also has the most air quality monitors in South Asia – while some wealthy petro-nations have virtually none.

The air quality global ranking of cities for 2023 has been released by a Swiss firm, IQAir, which has been reporting this annually for over six years now.

Never before has one country dominated the top spots for the worst air quality to the extent that India does, but the report also exposes massive gaps in monitoring pollution in the global south which stem from a lack of funds, political will or both. Air pollution is linked to over eight million deaths annually, or almost 16 per minute, and is considered a major health risk.

Nine of the top 10 most polluted cities are in India, up from six the previous year. Meanwhile, 42 cities in the top 50 are in India, up from 39; and an astounding 83 cities in the top 100 are Indian (up from 63 and 65 in the previous two years).

Delhi is back to being the most polluted capital of the world, the fifth time in the last six years. Its PM 2.5 level has averaged over 102 micrograms per cubic metre, up 10 units from the previous year. WHO's safe guideline is just 5 micrograms.

The report by IQAir summarises PM2.5 air quality data from 7,812 cities spanning 134 countries, regions, and territories. It sourced the data from 30,000 air quality monitoring stations operated by research institutions, governmental bodies, universities and educational facilities, non-profit organizations, private companies, and citizen scientists.

Source: Times of India 20.03.2024)



RARE BIRDS SPOTTED AT NANJARAYAN TANK BIRD SANCTUARY



Ruddy Shelducks, Pied Avocet spotted in Nanjarayan Tank Bird Sanctuary.

Members of the Nature Society of Tirupur have sighted a lone Eurasian Wigeon and five Ruddy Shelducks at the Nanjarayan Tank Bird Sanctuary on the outskirts of Tirupur city. The sighting of the Eurasian Wigeon, a migratory duck species, and the Ruddy Shelducks, a type of waterfowl, has added to the diversity of bird species at the sanctuary, which now stands at 187. In a separate development, a Forest Department watcher spotted a Pied Avocet at the sanctuary on Tuesday. The Pied Avocet is a shore bird that is rarely seen in inland water bodies. Experts said the sightings of these rare birds are significant and indicate the growing diversity and ecological importance of the Nanjarayan Tank Bird Sanctuary.

(Source: The Hindu 19.06.2024)



RADIO-COLLARS NILGIRI TAHR

WWF India Successfully Radio-Collars Nilgiri Tahr in Mukurthi National Park. In a significant milestone, WWF India, in collaboration with the Tamil Nadu Forest Department, has successfully radio-collared a fully grown saddleback Nilgiri tahr in Mukurthi National Park without tranquilizing the animal. For two years, WWF India scientist A Predit and his team familiarized themselves with a herd of Nilgiri tahr in Mukurthi, the western catchment area of the Western Ghats. The team, along with Nilgiri Tahr project officials, experimented with the first-ever radio-collaring of a mountain ungulate, choosing a high stress-tolerance male individual.

Using the drop net method, the animal was captured and released back into the wild within 20 minutes, without the use of tranquilizers. According to Supriya Sahu, Additional Chief Secretary, Environment, Forests, and Climate Change Department, the weight of the radio collar was less than 750 grams, which is less than 1% of the animal's body weight and will not impede its movement.

“The radio-collaring was done on March 21,” said Project Director M Ganesan. “Since then, the saddleback has moved from Mukurthi to Devil’s gap gorge in Kerala. The animal is resting well and its movement is normal. We are mapping its habitat, atmospheric temperature, and other valuable insights. The collar’s battery can generate data for at least one to two years.” Ganesan also announced that the first synchronized census of Nilgiri tahr in Tamil Nadu and Kerala is tentatively scheduled for late April. Efforts are underway to complete the population estimation in all 123 fragmented habitats as soon as possible before the census begins. “We have finished the task in the Anamalai Tiger Reserve,” he added. This successful radio-collaring will provide valuable data on the movements, habitat use, and population dynamics of Nilgiri tahr, a vulnerable species endemic to the Western Ghats. The findings will contribute to the conservation and management strategies for this iconic ungulate

(Source: The New Indian Express 31.02.2024)



CURBING ILLEGAL SHARK TRADE

Sharks, the apex predators in the ocean that hunt a variety of marine species, are essential in maintaining the ecosystem balance. But due to overfishing and low birth rates, they are at a higher risk of extinction compared to most other vertebrates.



In a ground breaking report titled “Netted in illegal wildlife trade: Sharks of India”, TRAFFIC and WWF-India have revealed alarming facts about the illicit shark trade in India, the ongoing threats and pressing conservation concerns over these magnificent creatures.

Wildlife experts said nearly 16,000 kg of shark fins were seized between January 2010 and December 2022, making up the majority of shark-based products seized. Reports showed fins were found in over 80 percent of the total seizures. Large quantities of shark cartilage and teeth were also confiscated.

India's Tamil Nadu state saw 65 percent of shark seizures, followed by Karnataka, Gujarat, Kerala and Maharashtra. The confiscated products were to be shipped to Singapore, Hong Kong, Sri Lanka and mainland China, the report revealed.

The lack of capacity to identify the shark fins against numerous potential shark species in trade is a significant gap in curbing their illicit trade. Insufficient monitoring mechanisms further make it challenging to differentiate between legal and illegal trade of sharks,” said Dr. Dipankar Ghose, Senior Director of Biodiversity Conservation at

WWF India and Interim Head of TRAFFIC’s India Office.

To assist law enforcement officials such as Customs in nabbing the smugglers, TRAFFIC has developed 3D-printed and painted replica fins, and also published a new 3D Shark Fin Identification Guidebook on 11 shark and ray species.

(Source: Times of India 20.03.2024)



கன்னியாகுட்டரியல் புல கிறந்தது

கன்னியாகுமரி: குலசேகரம் அருகே முள்ளம்பன்றி தாக்கியதில் ஓடிய புலி, ரப்பர் தோட்டத்தில் பால் வெட்டி கொண்டு இருந்த தொழிலாளி மற்றும் இருசக்கர வாகனத்தில் வந்தவரை தாக்கிவிட்டு அருகில் உள்ள தோட்டத்தில் விழுந்து உயிரிழந்துள்ளது. புலி தாக்கியதில் பாதிக்கப்பட்ட இருவரும் மருத்துவமனையில் தீவிர சிகிச்சைப் பெற்று வரும் நிலையில், இச்சம்பவம் குறித்து குலசேகரம் வனத்துறையினர் விசாரணை மேற்கொண்டு வருகின்றனர். முதற்கட்ட விசாரணையில், பேச்சிப்பாறை அடுத்த ஆண்டிப்பட்டி பகுதியை சேர்ந்தவர் ஜெகன் (28). இவர் அன்னாசிப்பழம் விவசாயம் செய்து வருகிறார். இவர், தோட்டத்திற்கு இருசக்கர வாகனத்தில் சென்றுள்ளார். அப்போது, காக்கச்சல் பகுதியில் வந்துகொண்டிருந்த பொழுது, திடீரென பாய்ந்து வந்த புலி கண்ணிமைக்கும் நேரத்தில் ஜெகனை தாக்கிவிட்டு தப்பியுள்ளது. இதில், படுகாயம் அடைந்த ஜெகனை அருகில் இருந்தவர்கள் மீட்டு சிகிச்சைக்காக குலசேகரம் அரசு மருத்துவமனைக்கு அனுப்பி வைத்துள்ளனர். இதனையடுத்து, புலியானது அருகில் உள்ள தனியார் ரப்பர் தோட்டத்திற்குள் புகுந்து அங்கு பால் வெட்டிக் கொண்டிருந்த திருநந்திக்கரை பகுதியை சேர்ந்த பூதலிங்கம் (61) என்பவரையும் தாக்கியுள்ளது. இதில், பலத்த காயம் ஏற்பட்ட பூதலிங்கம் கூச்சலிட்டதால், அப்பகுதியில் இருந்தவர்கள் அவரை மீட்டு குலசேகரம் அரசு மருத்துவமனைக்கு அழைத்துச் சென்றுள்ளனர். இருவருக்கும் தீவிர சிகிச்சை பிரிவில் சிகிச்சை அளிக்கப்பட்டு வருகிறது. இந்நிலையில், பூதலிங்கத்தை தாக்கிவிட்டு ரப்பர் தோட்டத்தின் அருகே பள்ளத்தில் விழுந்த புலி மயங்கியுள்ளது. இது குறித்து, அப்பகுதி மக்கள் குலசேகரம் காவல் நிலையத்திற்கும், வனத்துறை அலுவலகத்திற்கும் தகவல் தெரிவித்துள்ளனர். தகவல் அறிந்து சம்பவ இடத்திற்கு வந்த போலீசார் மற்றும் வனத்துறையினர் மயங்கி இருந்த புலியை சோதனை செய்துள்ளனர். இதில், புலி ஏற்கனவே இறந்து விட்டது தெரியவந்துள்ளது. புலி எப்படி இறந்தது என்பது மர்மமாக உள்ளது என வனத்துறை உயர் அதிகாரிகளுக்கும், முன்னடந்துறை புலிகள் காப்பக அதிகாரிகளுக்கும் தகவல் தெரிவித்துள்ளனர். தொடர்ந்து, உயிரிழந்த புலியை ஆய்வு செய்ததில், அவை சுமார் 15 வயதுடைய பெண் புலி என்பதும், புலியின் உடலில் கழுத்து மற்றும் பல்வேறு இடங்களில் காயம் மற்றும் கழுத்துப் பகுதியில் மூள்ளம் பன்றியின் முட்கள் குத்திய நிலையில் இருந்துள்ளது. எனவே, புலியானது, வனப்பகுதியில் மூள்ளம் பன்றியை வேட்டையாட முயன்று இருக்கலாம். இந்தப் போராட்டத்தில் மூள்ளம் பன்றியின் முட்கள் புலியை குத்தி காயத்தை ஏற்படுத்தி இருக்கலாம். இதன் காரணமாக புலி இறந்திருக்கும் என வனத்துறையினர் தெரிவித்தனர். தொடர்ந்து உயிரிழந்த புலியை மீட்டு உடற்கூறு ஆய்வுக்காக கொண்டு சென்றனர். பின்னர், வனத்துறையினர் தொடர்ந்து இது குறித்து விசாரணை மேற்கொண்டு வருகின்றனர். குடியிருப்பு பகுதியில் புகுந்த புலி 2 பேரை தாக்கி விட்டு உயிரிழந்த சம்பவம் அப்பகுதி மக்களை அச்சத்தில் ஆழ்த்தியுள்ளது. முன்னதாக, கோதையாறு கற்றுவட்டார குடியிருப்பு பகுதியில் சுற்றித்திரிந்த புலி குட்டியை வனத்துறையினர் மீட்டு சிகிச்சை அளித்துள்ளனர். ஆனால், அவை சிகிச்சை பலனின்றி உயிரிழந்துள்ளது குறிப்பிடத்தக்கது.

(Source: ETV Bharat, Tamilnadu)



TAMIL NADU'S CONSERVATION EFFORTS FOR THE ENDANGERED NILGIRI TAHR



Nilgiri Tahr in Valparai
Photo Courtesy: V. Prabhakaran, IFS (Retd)

The government of Tamil Nadu has launched a three-day survey of the Nilgiri Tahr, the state's iconic animal. The government of Tamil Nadu has launched a three-day survey of the Nilgiri Tahr, the state's iconic animal. This initiative aims to better understand and conserve this endangered species that faces numerous challenges, including habitat loss and poaching.

The survey is being carried out in collaboration with renowned organizations such as the Wildlife Institute of India (WII), the World Wide Fund for Nature (WWF), and the International Union for Conservation of Nature (IUCN). This collaborative effort brings together expertise from various stakeholders, underscoring the multi-faceted approach required for effective conservation.

The Nilgiri Tahr is an endemic species found only in the Western Ghats of India, specifically in the southern regions of Tamil Nadu and Kerala, as well as the Nilgiri Hills and the Eastern Ghats. These majestic ungulates inhabit rugged mountainous terrain, ranging from 1,200 to 2,600 meters, characterized by montane grasslands and shola forests.

The Nilgiri Tahr is currently listed as an endangered species by the IUCN and is protected under Schedule I of the Wildlife (Protection) Act, 1972. This designation highlights the severe threats faced by the species, including habitat loss, fragmentation due to human activities such as deforestation, agriculture, and infrastructure development, as well as poaching and competition with domestic livestock.

Source: Adda247 30.04.2024

5000 RED-EARED SLIDER TURTLES SEIZED AT CITY AIRPORT



Red-eared slider invasive turtles

Customs officers at Chennai airport on Saturday seized around 5000 red-eared slider turtle hatchlings that were abandoned at the international arrival terminal and launched a hunt for the flyer who smuggled the hatchlings from Malasia.

Red eared turtles of Mexican origin are in-demand exotic species in the US to be reared as pets. Highly invasive, the turtles have been spotted in Indian water bodies too, indicating unregulated smuggling of the species into the country.

This is the second wildlife seizure at Chennai airport within a week. On April 12, customs officers seized 484 red eared slider turtles and nine African spurred tortoises from a flyer identified as Mohamed Mubin. Based on his inputs, a suspended policeman was arrested. In 2023-24, customs sleuths thwarted 17 attempts to smuggle exotic pets into the country and seized a variety of species including monkeys, rats and snakes.

(Source : Times of India dated 21.04.2024).

IUCN UPGRADES “ASIATIC LIONS AS VULNERABLE FROM ENDANGERED”

The International Union for conservation of Nature (IUCN), which categorized the Asiatic lion as “endangered” in 2008, has reclassified it as “Vulnerable”, indicating a positive shift in its conservation status.

(Source: Times of India 11.03.2024)



RED SANDERS SEIZED FROM TEMPLE TOP

In a significant development, Tiruvallur police have unearthed a large cache of red sanders concealed on the terrace of a temple and on a lake bed in a neighborhood during the second week of March. The incident came to light when forest officials received a tip and alerted the police. Upon investigation, authorities discovered 50 red sanders logs arranged on the open terrace of the temple. Further search led to the recovery of an additional 55 logs concealed on a nearby lake bed. As Tiruvallur is a border district, police suspect that the red sanders were brought in from the neighbouring state of Andhra Pradesh. The seized logs have been handed over to forest officials for further investigation. The discovery of the red sanders has raised concerns about illegal trade and smuggling of the highly protected species. Forest authorities are actively investigating the matter and are determined to identify and apprehend those responsible. (Source Times of India 09.03.2024)



COIMBATORE ADMINISTRATION DENIED PERMISSION TO CUT HISTORICAL TAMARIND TREE IN POLLACHI



Coimbatore: Tamarind trees, over 50 years old, creating a verdant canopy along a 16-km road from Ambarampalayam to Sethumadai in Pollachi, have been saved from being cut down thanks to local resistance and administrative intervention. The aged trees were threatened by a road improvement project at Thathur junction, aimed to expand the accident-prone zone. The project, estimated at 2.2 crore, intended to widen the two-lane road for 200 meters on either side of the junction.

However, Coimbatore District Collector Kranthi Kumar Pati intervened just before the election announcement, instructing the Highways Department to seek alternative means to avoid cutting down the trees. This decision was supported by protests from local environmental groups, who gathered to advocate for the preservation of these ecological assets. On April 20, around 20 members from a local federation protested at Mukkonam, Anaimalai, highlighting the trees' importance to the local ecosystem and their perennial green canopy that provides significant relief during summer.

Pollachi Papyrus' Pravin Shanmughanandam has petitioned both the Coimbatore district administration and the State government, advocating for the declaration of certain roads as Heritage Roads, ensuring a green buffer to protect the scenic vistas.

Sub-Collector Catherine Saranya also highlighted the detrimental impact on nature and the scenic environment that would result from removing the trees, reaffirming the decision to protect them.

Minister TRB Rajaa had tweeted saying, "he'll ensure the iconic stretch between Ambarampalayam and Sethumadai will not be touched".

As a response, Highways Department officials have promised to revisit the plan and explore alternatives within the next week. (Source SimpliCity News Team April 21,2024)

செங்கால் நாரை

கொ .தனபால் எம் .எஸ் .சி
துணை வனப்பாதுகாவலர் (ஓய்வு)

நாரைப் நாரைப் செங்கால் நாரைப்
பழும்படு பனையின் கிழங்கு பிளேற்தன்ன
பவளக் கூர்வாய் செங்கால் நாரைப்
நீயுறின் பெடையும் தென்றிசைக் குமரியாட
வடதிசைக்கேகுவீராயின்
எம்மூர்ச் சத்தியுத்த வாவியுள் தங்கி
நடைசுவர்க் கூரைக் கடனாகுறற் பல்லி
பாடு பார்த்திருக்குமென் மனைவியைக் கண்டு
'எங்கோன் யாறன்வழுதி கூடலில்
இடையின்றி வாடையின் மெலிந்து
கையது கொண்டு மெய்யது பொத்திக்
காலது கொண்டு மேலது தழீலீப்
பேறையுள் இருக்கும் பாம்பென உயிர்க்கும்
ஏழையாவனைக் கண்டனம் எனுமே'

சுத்தமுத்துபுலவர், புறநானுறு

பள்ளிப்பருவத்தில் பெறும்பாலோர் தீப்பாடலை படித்தீர்ப்பிர்கள் என நினைக்கிறன் . யடிம்பதுற்கும் மனம்பாடம் செய்வதுற்கும் எரிமையான தீப்பாடல் ஜம்பது வந்பாக்கள் கழித்து நினைவு கூறும் தநுணம் மட்டுமென்று அதில் குறிப்பிட்ட பறவையை பார்க்கும் பாக்சீயமும் எனக்கு கிடைத்துது .

2016ஆம் ஆண்டு ஒய்வு பெற்று முதல் பறவைகள் நோக்குதல் (Bird watching /Birding) எனது பொழுது போக்கானது. தீனமும் உள்ளார்ஸிஸலைகளிலும் ,வனப்பகுதிகளிலும் கூற்றி தீர்க்கு பல்வேறு பறவைகளை பார்ப்பதுண்டு .

ஆண்டு நோறும் குறிப்பிட்ட காலத்தில் பறவைகள் கிடம் பெயர்வதை 'வலைச் வருநால் ' என்பர் . உலகெங்கிலுமினுந்து பல வகை பறவைகள் பல்லாயிர கணக்கில் குங்கியாவிற்கு குளிர் காலத்தில் வலைச் வருவதால், பறவை குர்வலர்கள் ஆண்டு நோறும் அக்டோபர் முதல் மார்ச் முடிய ஓய்வில்ஸாமல் புது புது பறவைகளை பார்க்க முயன்வார்கள்.



நான் எடுத்த செங்கால் நாளை புணக்படத்.

2021ம் ஆண்டு என நினைக்கிறன் முஜால்ஷினா ரீபிலின்டுவ எனப்படும் பறவை ஜோராப்பாவிலிருந்து கேரளா விற்கு வந்திருப்பதாக அறிக்கேண். நான் பார்க்காத பறவை என்பதால் கொச்சி சென்று பார்த்து விட வேண்டும் என திட்டமிடு , சிறுக் கேள்வி சில காரணங்களால் தடை யட்டு போனது. 2022லும் திட்டமிட்டு போக முடியவில்லை.

2023ம் ஆண்டு டிசம்பர் மாதம், பறவைகள் பார்க்க அந்தமான் சென்று தீரும்பும்போது விமான நிலையத்தில் குறுங்செய்தி பார்த்தேன். நான் தங்கியுள்ள பெங்களூரிலிருந்து 60 கீமீ தொலைவில் உள்ள ஒரு ஏரியில் கீப்பறவை வந்திருப்பதாக என் நண்பர் சொன்னாவுடன் மறு நான் செல்ல உடனே திட்டமிட்டோம்.

2023 டிசம்பர் 26 , அதீகாலை 5 மணிக்கு பும்பட்டு நானும் என் நண்பநும் அங்குள்ளதை அடைந்தோம் . தொலைவில் வெள்ளை நிற பறவை ஒன்று கீருப்பது கண்டு வைனாகுலர் மூலம் உறுதி செய்து கீன்றும் கொஞ்சம் அருடில் செல்ல முயன்றோம்.

பறவைகளுக்கு தொல்லை தூராத தீட்டு வரை சென்ற சிறுக் கேமரா மூலம் களிக் கொண்டோம். அப்போது தான் மேற்குறிப்பிட்ட சங்க கால பாடல் நூபகம் வந்தது. அதில் குறிப்பிட்ட பல விஷயங்கள் கூச்சர்யத்தில் கூழக்கியது .



Laura Stanculescu என்பவரால்

ரோமானியாவில் எழுக்கப்பட்ட புகைப்படம்.

இங்கு விட்டு இருங்கு மன்னாரை பார்த்து கலி படி பரிசு பெற்று செல்லலாம் என்று வந்து வறுமையில் வாடி குளிர் தாங்காமல் சுருண்டு படிந்திருக்கும் தன நிலை பற்றி ஊரில் தன வருநகையை எதிர்கொள்கிறீர்க்கும் தன் மனைவிக்கு , மேலோ யுக்கும் நானரை மூலம் செய்தி ஆனுப்ப கீக்கவினார் பாடுவதாக அமையந்து கீச்சுக்க காலப்பாடஸ் அற்புதும்.

வறுமையில் வாடி கீருந்தாலும் விரைவில் வருவேன் என மனைவிக்கு தகவல் அளிப்பதே மூலச் செய்தி என்றாலும், தூது அனுப்பும் பறவையை நன்று கவனித்து அதையும் துல்லியமாகவும், சிறப்பாகவும் வர்ணித்தது என் போன்ற பார்வை ஆர்வலர்களுக்கு மிக் கீழ்ச்சி அளிக்கிறது.

White Stork எனப்படும் செங்கால் நாராய் பறவை ஜோராப்பிய நாடுகளில் கீருந்து குளிர் காலத்தில் கூப்ரிக்கா மற்றும் கீந்தியாவிற்கு தீட்டு பொருள்களை வெளியிட விரும்புகிறது.

தமிழகத்தில் கீப்பறவை நவம்பர் மாதம் முதல் மார்ச் மதும் வரை சில கீடங்களில் ,நீர் நிலைகளின் அருசில் குறிப்பாக கண்ணியாகுமாரி,கீருளிள்லேவளி கூதிய பகுதிகளில் தென்பட்டு உள்ளதற்கான பதிவுகள் உள்ளது.

செங்கால் நானரை,அறிய வகை பறவை கீல்லை எனினும் , தென் கீந்தியாவிற்கு வரும் எண்ணிக்கை மிக சொற்படை. பெரும்பாலான கூட்டம் கூப்ரிக்கா சென்று விடுகிறது.

தெற்கு ஜோராப்பிய நாடுகளில் பெரும்பாலும் காணப்படும் செங்கால் நானரைகள் , பொயிச் சூடுகள் கட்டி கீனப்பெருக்கம் செய்கின்றன. வாழ்நாள் முழுவதும் ஜோடிகள் பிரிவீல்லை.

கடுமையான குளிர் காலத்தை தனிக்கக் கூடிய கூப்பிரிக்கா மற்றும் கீந்தியாவின் மேற்கு மற்றும் தென் பகுதிக்கு வஸ்சை வருகின்றன.

சிறிய விலங்கினங்கள்,பூச்சி மற்றும் மீன் கீதன் உணவாகும்.

சங்க கீலக்கியத்தில் குறிப்பிட்ட தீங்கு செங்கால் நானரையை பார்த்து படம் பிடித்தத்தில் மட்டும் மகிழ்ச்சி.

நன்றாக வணக்கம்.



A trek in the Semi-Evergreen Forests of Minchiguli Valley – fond memories.

V.Sundararaju. IFS, Retd, DCF



Jodikerai, a similar area like Minchiguli Valley with Grassland and Shola Pockets

Photo Courtesy: Mr. Sivakumar, Hassanur

The following incident took place sometime during 1976 in Sathyamangalam Range. Late Mr. Raja Singh IFS retd. was the Conservator of Forests (CF) of Coimbatore Circle at that time. He wanted to inspect Sathyamangalam and Thalamalai Ranges. The tour programme was received and, everyone was ready to have a smooth inspection as he was said to be a strict officer. The day also came and, he turned up for field inspection. He wanted to inspect Minchiguli valley in Sathyamangalam Range. The valley is in Guthiyalathur RF at an altitude of 1300 metre MSL. Accordingly, after making necessary arrangements, the FRO, Sathyamangalam Range, myself and other field staffs accompanied the CF as the DFO, Late Mr. G. Samuel could not attend the programme due to certain unavoidable circumstances. We travelled by jeep to Geddesal, a tribal hamlet via

Hassanur and reached a place called Shooting Lodge which was said to be used by the British Officers as the campsite during their hunting expedition. It was in a dilapidated condition at that time. After that, we started walking through the forest for about four km, when we came across a *Grewia tiliaefolia* Thadasu tree.

To break the monotony, I identified the tree and said that the tree would be more durable than teak. The tribe also endorsed my opinion. The pace of our trek started slowing down because of the steep slope. Another tree observed there was identified as *Bridelia retusa* (Mul Vengai). En route, we were greeted by the familiar friends of forest such as *Sapindus emarginatus* (Poocha-kai), *Cassia fistula* (Sarakkonnai), *Santalum album* (Sandanam), *Tectona grandis* (Thekku), *Dalbergia latifolia* (Eetti), *Toona ciliata* (Sandana Vembu),

Vitex altissima (Mayiladi), etc. By the time we reached the valley, the FRO had become very tired and could not walk further. So, one FG was kept as escort to the FRO and stationed in a safe place.

After some time, the forest type started changing with tree species of the semi-evergreen forests like *Terminalia paniculata* (Pilla Maruthu), *Lagerstromia lanceolata* (Ven Thekku), *Pterocarpus marsupium* (Vengai), *Machilus macrantha* (Kolamavu), *Hopea parviflora* (Kongu), etc. As we were trekking slowly, the path was blocked by thick vegetation and there was no way to proceed further. When I enquired the accompanying Sholaga hill tribe, he pointed out a footpath a little distance away. But CF told me to go straight through the thick vegetation by making a way!. It was the order of the higher officer and, we had to obey his instruction!.

After trekking for a short distance, the way was blocked by a big rock. The hill tribe climbed on the rock and gave a supporting hand to me and to CF and helped us to climb on the rock and we proceeded further. After sometime casually, CF asked me 'How old are you?' I said '25 years old Sir'. He exclaimed and commented 'Less than half of my age' with a big laugh!.

The RF map carried with us was shown to the CF. He displayed some interest in reading the map. Then he wanted to relax for some time. So, I felt that it was time to have some refreshment. I instructed the Forester to provide biscuits and beverage to the CF. Coffee, tea, tender coconut and bottled drinks like Torino, Gold Coin and Limca had been carried by the staff. He took biscuits first, and when he was asked about the beverage what he liked, after knowing the details of all the beverages, the CF asked 'Have you got 'Lemonade'? I thought that probably it might be a bottled drink. I told him very politely that we did not have that drink. Then

with a little hesitance, he accepted a tender coconut. From the top of the hill, we were able to have a good command of the nearby forests containing grasslands interspersed with Tropical evergreen forest (Shola Forest) restricted to small patches in the valleys and along the steep slopes and semi-evergreen forests down below. The natural sceneries made everyone feel mentally happy. The river that drained the valley, named as Minchiguli Halla in the map finally joined Swarnawathi River which flows northwards into Mysore. After sometimes, CF wanted to return.

This time we took a different route that passed through adjoining the Shola forest patch. We expected that our downward trek to be much easy than our upward climb. Planning the strenuous trek, the clever Forester had already prepared a stick with the locally available dried wood. Our staff were afraid to hand over the baton to the CF. Being new to the department and with inborn fearless nature, I requested the CF very politely to use the stick as the trek appeared to be steep and slippery. He stared at me for a moment and accepted the baton with little hesitation. The forests being evergreen was dense. Species like *Elaegnus kologa* (Wild Olive), *Rhodomyrtus tomentosa* (Thavittu Koyya), *Mahonia leschenaultii* (Mullu Kadambai), *Cinnamomum wightii* (Vettadu), *Celtis tetrandra* (Manja Pattani), *Glochidion neilgherrense* (Naidha), *Syzygium cumini* (Naval), etc., made our trek more relaxed as it took some time to identify them leisurely with the help of the flora book which I had carried with me. Since the route was steep, the CF also spent some time in observing the trees. After walking for some time, he found it to be very comfortable with the support of the stick. As we wanted to be very cautious, I and another able-bodied Forester followed him closely one in the front and another at the back. The forest type changed gradually as we trekked further. While climbing down, he pointed out a few tree species and asked their names. As I was

fresh from the Forest College, I identified them as *Adina cordifolia* (Manja Kadambu), *Alstonia scholaris* (Ezhilai Palai) and *Terminalia tomentosa* (Karu Maruthu) quickly. I also added the essential uses of the species. The other dumb denizens of the forest who bade farewell to us while trekking down were *Bauhinia racemosa* (Malai-Atthi), *Hardwickia binata* (Aaccha), *Scheleichera oleosa* (Puvam), *Ziziphus mauritiana* (Ilanthei), etc.

At one point, the tribal man showed the dropping of a wild animal and identified it as the scat of the Wild dog. He further added that the Dhole had eaten a deer as the faecal matter had some hair particles. Somehow, we tried our level best to keep the trek going smoothly. The path was steep and everyone was sweating profusely. The tribe again showed droppings of another wild animal and identified it as droppings of a Sloth Bear. He added that the animal had eaten wild date fruits by raking up the droppings with a stick in his hand. The CF became curious by observing the knowledge of the tribe on wildlife. Within another thirty minutes, we returned to the lower portion of the valley where the FRO was resting. The FRO seemed to become active by seeing the CF and enquired about the trip. The CF also showed anxiety to know about the FRO's health. After walking for about another half an hour, we reached the place where the jeep was parked and returned to Sathyamangalam safely.

Owing to the contiguousness of different types of forests, plenty of wild animals like the Indian Elephant, Indian Bison or Gaur, Tiger, Panther, Sloth Bear, Spotted Deer, Sambar, Mouse Deer, Blackbuck, Four-horned Antelope, Wild Boar, Striped Hyena, etc., could be sighted commonly in the forests. During my training period of three months in the Range, I had the rare opportunity of attending the post-mortem of three gaurs and two elephants. The local Veterinary Doctor conducted the post-mortem of the gaurs in various parts of

the Range during different periods. All the three animals had faced natural death. The Forest Veterinary Officer (FVO) Late Dr.V. Krishnamurthy, who was with the Forest Department, conducted the post-mortem of the elephants. Out of the two elephants, one had died naturally due to old age and, the other one due to electrocution of the low-lying electric lines which were running through the forests on the hill slopes on the north-eastern side of Bennari-Hassanur (Dhimbam) road. After that accident, we wrote to the Tamil Nadu Electricity Board (TNEB) and taller electric poles were planted to avoid any such future electrocution. Though Sathyamangalam, Thalamalai and Bhavani Sagar Forest Ranges were known for quite a good number of wild animals of various species, it was declared as Wildlife Sanctuary only during 2008 after the formation of Sathyamangalam Forest Division. Subsequently, after collecting ample evidence through the findings of the Centre for Molecular Biology, Hyderabad, it was ascertained that the Sanctuary was home to as many as 30 Tigers. In 2012, a report was submitted to the Ministry of Environment and Forests (MoE&F), Government of India (GoI) for declaring the Sanctuary as Tiger Reserve. Based on the proposal sent by the Government of Tamil Nadu, the Wildlife Sanctuary became Tiger Reserve on 18th March 2013. Though this region had plenty of wild animals, it had taken about three decades to declare this as a protected area. This has been made possible due to the awareness of the officials at various levels and the common public to a certain extent about conserving the forest ecosystem and the biodiversity.

I underwent Range training for three months in Sathyamangalam Range and one-month office training at the DFO's office at Erode. After completion of my training successfully, I was posted as Reception Range Officer with my headquarters at Udhagamandalam under the control of the WLW

Late Mr. S. John Joseph in 1977. I was allotted a quarter for my stay in the Forest Colony located at the Fern Hill, Udhagamandalam. Mr K. R. Varatharajan, IFS (Retd) who was the then FRO, Parsons Valley Range (P.V. Range) was my neighbour. He is a perfect person with vast knowledge on forestry, modest and generous. He used to take me to his Range during field inspection. I had accompanied him to the Western Catchment area bordering Kerala on a few occasions and enjoyed watching Nilgiri Tahr for the first time. When the hills here were covered with grassland, the valleys were filled with stunted forests locally called as 'Sholas'. It was a picturesque spot and provided a bird's-eye view of the Avalanche Lake. One could be very sure of sighting Nilgiri Tahr if he visited the Western Catchment. In due course of time, many Officers started visiting the area primarily for watching the mountain goat.

One day the FRO, P.V. Range told me about the inspection of the CF, Coimbatore Circle Mr. Raja Singh, IFS (Retd). He was particular about visiting Western Catchment area probably with the idea of watching the Nilgiri Tahr. I told him about the CF's preference for the bottled drink 'Lemonade'. He too had informed his staff about enquiring the brand but could not get any positive reply. Hence, on the previous day of the programme, I and the FRO searched for the bottled drink in many shops and hotels of the entire Udhagamandalam town. Finally, we could get four bottles of lemonade around 10.30 pm in 'Shinkows', a Chinese restaurant located at Udhagamandalam.

That particular day the CF, DFO, Nilgiris South and the FRO, P.V. Range along with the field-staff had visited Western Catchment and, fortunately, they could sight a few herds of Nilgiri Tahr. After enjoying the rare visit of the mountain goats, during the time of their relaxation,

the FRO had offered some biscuits and tea

to the higher Officers. Surprisingly the CF had asked for lemonade, the bottled drink. When the FRO had said "Yes Sir, it is available" and offered the bottle, the CF was immensely pleased and accepted the bottle thanking him gracefully. When he was offered a straw, the CF had refused it politely saying "Never a straw". The inspection went on smoothly, and they returned happily. The FRO thanked me profusely for providing the timely information and the help rendered for buying the bottled drink after a long search in Udhagamandalam.

I hope these fond memories of my earlier career penned above, will be a source of information on the topography, places of unique importance and botanical reference of the vegetation in those days.



STING

K.Dhanapal DCF, Retd.

Towards the end of my two weeks stay in Japan in september 2023, I went to a popular souvenir shop in the busy area of Shibuya in Tokyo. While I was scanning the items floor by floor, one small item caught my attention.



"Black Scorpion" in a neatly packed airtight bag, manufactured in Thailand which is cooked and dehydrated (written on the container) with an expiry date 25-12-2023 and Black Rhino Beetles with longer expiry date 26-01-2025. One Black spider costs roughly about 1700 INR.

I was wondering how on earth these people developed such a taste!! Maybe the southeast Asians can eat anything on earth. How they are marketing such things, do they grow in any farm, do they have any medicinal property? These things started in my mind later when I looked at the photographs back at home in India. Then I started reading about Scorpions.

Scorpions are ubiquitous, found in almost all continents except Antarctica

There are over 1500 species of scorpions around the world and one fifth of them are poisonous. Out of the 86 species found in India, only two are poisonous the Indian Red Scorpion and the Indian Black Scorpion.

Indian Red Scorpion is much smaller compared to Black and contrary to the belief, Indian Red Scorpion is more poisonous than the Black. Scorpion stings are need not always be poisonous. They are capable of dry stings which deliver no poison and the action is only for self defence.

Scorpion-sting related fatalities mostly occur in India, Mexico, Iran and Tunisia.

They are found in different habitats like forests, deserts, hilly terrain and grasslands. They survive even in radioactive fields where most life is destroyed. As a prehistoric species they lived through many catastrophes. Scorpions survived over 400 million years without any change in the body structure.

Since March 2020, scientists from the Institute of Natural History Education and Research (INHER), Pune have described seven new species of scorpions from the Western Ghats – six from the Sahyadris in Maharashtra

and one from the southern Western Ghats near Bengaluru.

Out of the seven, three are bark-dwelling and the remaining are rock-dwelling species.



Scorpions are important part of the food chain as a prey and predator. They feed on insects that are potentially harmful to humans and serve as a food source to predators like Owls, honey badgers, civets and even monkeys.

Illegal wildlife trade, habitat degradation and conflict with humans are some of the threats these species face. Scorpions are not specifically

covered by Wildlife (Protection) Act 1972 or any other International Biodiversity protection Laws making them more prone for illegal trade and thereby face extinction in future.

Scorpions need to be protected for their role in the ecosystem as well as for the medicinal properties which may help us in treating disease like cancer.

Coming to the subject of this article, did I spend 1700 INR for Black Scorpion?

I leave it to your imagination!!!

References:

Newly described scorpion species from Western Ghats highlight need for more research and conservation by Vinaya Kurtkoti in Mongabay

www.onmanorama.com



EXPLORING THE WONDERS OF KEYSTONE SPECIES

By G. Sivagurunathan, ACF, Retd.

In the heart of the Western Ghats, nestled among gigantic trees and luxuriant vegetation, lies a hidden world of intricate relationships and delicate balances. It is here that I, a humble forester, discovered the profound significance of keystone* species, the uncelebrated heroes of our forest ecosystems. During my tenure in the Social Forestry wing, the term “keystone species” occasionally crossed my path, but it failed to spark my curiosity. However, upon my transfer to the Territorial wing and subsequent postings in the Western and Eastern Ghats, my eyes were opened to the remarkable impact these species can have on the entire system.

As a dedicated forester, I made it my mission to explore and understand the role of keystone* species in the Western Ghats. I traversed dense forests, climbed rugged mountains, and crossed roaring rivers, all in the pursuit of knowledge. Along the way, I encountered a myriad of fascinating creatures, each playing a crucial role in maintaining the health and balance of the ecosystem. From the small insects that pollinate flowers to the majestic elephants that shape the landscape, I witnessed first-hand the profound influence of keystone species. These creatures may seem insignificant, but their absence can trigger a chain reaction that ripples through the entire ecosystem, leading to unexpected and often detrimental consequences.

Interestingly bees are keystone species due to their role as pollinators. The pollination services provided by the bees are essential for the survival and reproduction of many plants, as well as for the food web that rely on these plants. However, bee populations have been

declining year after year due to various factors such as habitat loss, forest fire, pesticide use, and climate change. It is important for communities to take action to support bee conservation efforts and preserve the vital role of bees in our environment.

Another example is the Malabar giant squirrel, a mesmerising creature that plays a pivotal role in seed dispersal. By feeding on various fruits, the squirrel carries seeds far and wide, contributing to the regeneration of forests and ensuring the survival of countless plant species. Without these keystone species, the entire ecosystem would suffer, as plants would struggle to reproduce and the forest would gradually decline.



INDIAN VULTURE (Indian Long Billed Vulture)

Another keystone species that captured my attention is the Indian vulture, a magnificent bird that performs the vital task of scavenging carcasses. In my native village near Tirunelveli, the sight of 15-20 vultures congregating near the slaughtering house was a familiar sight

during my youth. These majestic birds, with their imposing height of up to three feet and striking appearance, instilled a sense of awe and trepidation in me as I ventured along the path where they feasted on the remains of slaughtered cattle. By consuming dead animals, vultures prevent the spread of diseases and maintain the health of the entire ecosystem. While the population of Vultures dwindles for varying reasons, the eco system is disturbed considerably. I continued my exploration, I encountered numerous other keystone species, each with its own unique contribution to the intricate web of life.

In the dense Southern Western Ghats, a mountain range in India, the role of Ficus species as keystone species is well recognized. With several species of ficus in the Southern Western Ghats region, six of which are endemic, including *Ficus dalhousie* and *Ficus beddomei*, these trees play a critical role in maintaining the ecosystem's balance. Numerous insects (fig wasps), birds, and mammals rely heavily on figs for their growth and survival. One fascinating characteristic of Ficus species is their unique reproductive process. Each species requires a specific pollinating wasp for reproduction (Ramirez, 1970). Without these specialized wasps, which carry pollen from one synconium (a specialized fig structure) to another, propagation would be impossible. To attract dispersers, Ficus species produce abundant fruit crops. These trees produce thousands of fruits over a short period, attracting a wide range of frugivores. Primates like the Bonnet macaque, Common langur, Lion-tailed macaque, and Nilgiri langur find a natural food source in these figs. This fruiting strategy results in the patchy distribution of the trees within the forest. The multipurpose properties of Ficus species and their ability to adapt to various climatic regions and soil conditions make them potentially valuable in various fields.



FICUS RACEMOSA

Ficus species produce fleshy attractive fruits for the dispersal mainly through bats and birds. The Ficus fruits are also eaten by the Three-striped palm squirrel, Malabar giant squirrel, Grizzled giant squirrel, Palm civet etc. Seeds of Ficus species were noticed in the pellets of the Deer, bear and scats of civets. Ripe fruits fallen in the ground might have been consumed by the terrestrial mammals.

Apart from providing food for birds, insects, bats and other animals, their spreading crown and dense foliage provide shelter and ideal nesting and also roosting places, for animals and birds. With their ecological significance and practical applications, Ficus species undoubtedly deserve recognition as keystone species of the Western Ghats, and each ficus tree acts as a sanctuary.

The Western Ghats, particularly in Kalakad Mundanthurai Tiger Reserve (KMTR), is home to the fascinating *Cullenia exallirata*, a species with a unique flowering pattern that attracts a diverse array of wildlife. During the dry season, when fruits are scarce, *Cullenia exallirata* becomes a crucial food source for several species, including the Lion-tailed macaque, Nilgiri langur, Malabar Giant squirrel, and various species of birds. Additionally, the night time activity around

the *Cullenia exallirata* flowers reveals a whole new world of nocturnal visitors, including bats, flying squirrels, spiny dormice, and brown palm civets. Understanding the interactions between this keystone species and the wildlife it supports is essential for conservation efforts in the Western Ghats.

Another keystone species among mammals is the mighty elephant. As one of the largest herbivores on the planet, elephants consume a staggering amount of food, averaging up to 150 kilograms daily. This prodigious appetite results in the excretion of nearly 100 kilograms of dung per day, which plays a vital role in nutrient recycling and maintaining soil fertility. Elephants also cover vast distances, ranging up to 125 square miles during their daily or seasonal movements. This wide-ranging behaviour facilitates seed dispersal, as the seeds consumed by elephants pass through their digestive system and are deposited in new locations, contributing to the genetic diversity and resilience of plant populations. Additionally, elephants act as ecosystem engineers by creating and modifying their environment. They use their trunks to dig water holes, which become essential sources of water for other animals during the dry season. Elephants also clear vegetation by knocking down trees and shrubs, creating open areas that can be utilized by a variety of species for grazing, nesting, or hunting. However, the survival and well-being of elephants are under threat from habitat loss, poaching, and human-elephant conflicts. The decline of elephant populations has far-reaching consequences, not only for the elephants themselves but also for the entire ecosystem in which they play a pivotal role. Recognizing the significance of elephants as keystone species is crucial for the conservation and management of their habitats and populations. By protecting elephants, we safeguard the integrity and resilience of the ecosystems they inhabit, ensuring the survival

of numerous other species and the overall health of our planet.

From keystone predators that regulate prey populations to keystone herbivores that shape vegetation, these species are the foundation upon which our forests thrive. The realization of the importance of keystone species has profoundly impacted my perspective as a forester. It has instilled in me a deep sense of responsibility to protect and preserve these unsung heroes of our ecosystems. Through my work, I strive to raise awareness about the vital role they play and advocate for their conservation. As a forester, I have had the privilege of witnessing the extraordinary diversity of our forests. I have seen the beauty of the Western Ghats, the majesty of the Eastern Ghats, and the resilience of our natural world. It is my sincere hope that future generations will continue to appreciate and protect these immeasurable treasures, ensuring that the keystone species that underpin them will thrive for generations to come.

* “A keystone species is a species that plays a critical and disproportionately large role in maintaining the structure and functioning of an eco-system.” A keystone species helps define an entire ecosystem. Without these species, the ecosystem would be dramatically different or cease to exist altogether.

KEYSTONE SPECIES



Lion Tailed Macaque In The Upper Canopy



*Banyan Tree(*Ficus benghalensis*)*

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