



CAPTIVATED BY CONSERVATION

The Ram Hattikudur Advanced Training in Conservation 2022–23 batch embarked on their first field trip with excitement and joy. Planned for a period of nine days from 27th October to 4th November, on the morning of 27, the 10 fellows boarded a traveller with luggage and sleeping bags. That morning, our laughter was to mask the nervousness and fear because the previous night we heard stories about horrific blood-sucking leeches from our mischievous mentors. Anyway, equipped with salt sprays and knee-length socks we started our journey.



Mysore

Our first stop was Mysore city. Here we got the opportunity to visit different locations and meet prominent personalities.

Mysore Zoo Walk:

Our first location visit in the city was to the Chamarajendra Zoological Park, Mysore. Our guide Tanuja Dasharath welcomed us heartily and directed us through the zoological park. We were impressed by the precautionary measures being taken to prevent plastic waste in the Zoo. First, we went near the birdhouse; the section was filled with many exotic bird species. Tanuja explained to us the tragic situation of the pet trade in India, how people import pets and later abandon them when they are unable to take care of them. At the primate enclosure, we observed the capuchin monkeys use their prehensile tail to clutch food and climb trees. However, not everything was rosy. We stood

witness to the unfortunate crowd's behaviour towards these caged creatures, calling out to seek the creature's attention. We soon moved to the park's central area where Tanuja and Sanjay briefed us on Sally Walker's legacy, and we felt the zoos in India need people like Sally to make them a better place for conservation and welfare. As we neared the cages of the big cats, we saw the usual disappointing phenomenon of zoo visitors going head over heels, just to catch a glimpse of the charismatic species Leopard and Tiger. We sighed and moved on near the gorilla enclosure. There stood the Guest tree (*Kleinhovia hospita*) and had its precious guest- an ornamental tarantula or the Regal Parachute Spider (*Poecilotheria regalis*). Seeing all of us gaze at the arachnid, even those going gaga over the gorilla now gathered around this tree to catch a glimpse of this smaller, but nevertheless elegant creature. It was interesting to see how flexible a crowd's behaviour could be. While walking,



Payal asked us to imagine if we were to play stripes and spots here and we realised how important role the zoo can play in educating people.

To recapitulate, it was fascinating to understand that visiting a zoo does not always mean that we have to look only at animals inside a cage but also we must look around for animals in their natural habitats. Also, all day at the zoo we saw people of all ages, families, and backgrounds taking moments to talk to each other about something interesting and share their thoughts. We also got to learn the importance of zoos in

striving to educate visitors about zoo animals and their wild counterpart's conservation needs while fostering an appreciation for wildlife in general.

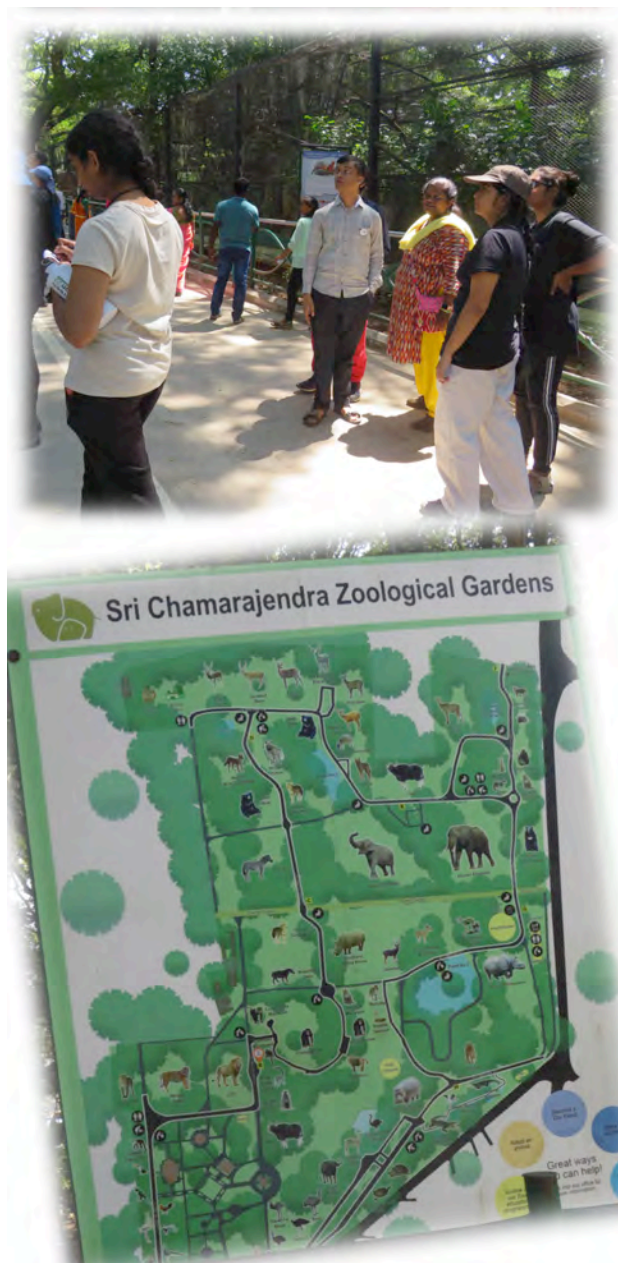
Interaction with Professor Mewa Singh

The RHATC team got the opportunity to meet the distinguished professor, Dr. Mewa Singh, who is internationally recognized for his work in the area of animal behaviour, ecology, and wildlife conservation, on their visit to the University of Mysore on two occasions. The first meeting was an opportunity for the fellows to introduce themselves and share their background. The second congregation gave us insights into the work done by the great primatologist through his presentation, "Approaches to wildlife conservation in the Indian context focusing mainly on two species Lion-tailed Macaque (LTM) and Bonnet Macaque (BM)".

Our RHATC batch has fellows from diverse educational backgrounds, some of us were nescient about Dr. Mewa Singh, despite the fact we all had hearty conversations with him. Although, even after experiencing numerous lung-related discomforts he continued with his presentation till the end and his friendliness and sense of humour immediately struck a chord with all of us. We also had the opportunity to listen to and have discussions with his students who have been working on important conservation projects.

A few insights from Dr. Mewa Singh's presentation:

- 'Approaches to wildlife conservation in Indian context', two species Lion-tailed Macaque (LTM) and Bonnet Macaque (BM) were compared to explain the principles of conservation.
- Anthropomorphism, which is reflected in interpretation and not in scientific methodology.



- How religion and politics affect conservation actions were explained with examples of Nilgai (*Boselaphus tragocamelus*) and Rhesus Macaque (*Macaca mulatta*).

To summarize, it was a great privilege for all the RHATC fellows to have shared space with such an experienced and renowned conservationist. His humility is something to learn from. The opportunity to hear stories about struggles and challenges in his field of work motivated and inspired all fellows to keep working in the field of conservation. It also helped us understand how important it is for researchers to publish their work in peer-reviewed journals so that they can be later converted into policies. In order to work together for a greater cause we need to sometimes lose some of the heroic and ego-driven tendencies that too often pervade our profession and embrace a new role as patient custodians.

Stay at Arjun's Farm

The RHATC team's accommodation during their visit to the city of Mysore was Arjun's farm. The team reached Arjun's farm on Bogadi Road late evening and the fellows started pitching their respective tents, which was a new experience for most of us and the excitement was palpable. The feeling of accomplishment outweighed all the struggles of pitching our first tents. In addition, the birthday celebration of our fellows, Swathi and Akanksha, added celebration to the exuberance. The misty morning walks around the field felt like absolute bliss as we were lucky enough to have sighted a diversity of butterflies, spiders, bugs, and birds.

The stay at Arjun's farm was a wonderful experience. The entire farmhouse was well maintained and both Arjun and his family served us mouth-watering sweet dishes and food. In brief, the RHATC team had a gala time during their stay at his farmhouse.



Mysore Regional Natural History Museum

The fellows Mysore itinerary also included a visit to the Mysore Regional Natural History Museum. A humongous banyan tree welcomed us at the entry. Mr. Sreenivasa, the museum's education officer greeted us. Upon entering the museum building, elephant statues made out of iron wires, and a cheetah statue made from taxidermy adorned the hall. The statues and specimens mesmerized us. The Van Ingen brothers were the hands behind the near-perfect cheetah taxidermy. Mr. Sreenivasa gave us a brief about the creators and process of taxidermy. What next greeted us was unheard of before. We could touch the specimens! Like amused kids, we ran our hands through these. Unfortunately, not all people experience things the same way. Sreenivasa showed us how apathetic people had shoved waste plastic wrappers into the specimens which was disheartening to see.

An array of specimens including hooves of different rhino species and a huge Balinese whale skeleton was engrossing. The next was a very creative seashell collection and an exhibit on freshwater ecosystems. We saw an exhibit section dedicated to the Humpback Mahseer. The specimens included the fish's scales and pharyngeal teeth which left us wondering how huge this fish can grow. There were also other displays showing the importance of freshwater ecosystems and the threats they are facing. The museum intriguingly informed us about evolutionary stages. The museum also had a good collection of butterflies, birds, seeds, fruits, and woodland; a section was dedicated to information on different tribal people of India, their lifestyles, and their costumes. The museum hosted dioramas that were enrapturing, including expressions of animals modelled exemplarily.



The museum is really helping in engaging people in science and nature and it is an ideal place for students to explore different kinds of things which would help them have a sound knowledge of the rich Indian history and diversity in the context of flora and fauna. The visit to the museum was a learning experience for all of us as it dealt with various aspects of natural history depicting the flora, fauna, and ecosystems thereby promoting conservation and environmental awareness through its exhibit galleries and educational activities.

Chamundeshwari Temple

While visiting a place it is always important to understand the different deities of that region as it helps us understand where they came from and their significance. We all got the opportunity to visit the Chamundeshwari temple for which we took a short scenic drive from Mysore to the Chamundi Hills. At the temple entrance the sculpture of Mahishasura, the deity of the local tribes was present from

which the city Mysore got its name. With a group photo in front of a massive idol, we continued our journey to the next phase of comprehending different approaches to conservation. The RHATC team's next travel destination after Mysore was Liana Forest Farm located in Hunsur owned by the famous herpetologist and conservationist Gerry Martin.

The Liana Trust Experience with Romulus Whitaker, Gerry Martin and Chandini Chhabra

The Liana Trust is a farm located on the outskirts of Hunsur. The moment we reached the place, we were welcomed by Gerry Martin. We went to the dining area and introduced ourselves to Gerry Martin. The dining area was a very pleasant space made of wood and situated just across a mesmerizing lake. The place had a lot of interesting things to see, like bananas in a glass box and their peels kept in a jar, and instead of dish soap, there was ash to clean the utensils, a trampoline in sight, etc.



Interaction with Romulus Whitaker

While interacting with Gerry, he told us that he has a very ‘ancient living specimen’ called Rom, it took us a while to realize that we were going to meet the legendary ‘Romulus Whitaker’. We turned around to see an old white man, with long white hair whom we had seen all our childhood on television educating us about snakes, coming towards us. It was an unbelievable and emotional moment. He started interacting with the fellows by telling his childhood story of how he got interested in snakes and ultimately arrived at the land of snakes – India with his family. He told us about his not-so-easy herpetology journey and how he has pioneered and achieved so much in terms of creating the most efficient and successful herpetology projects in India by his mantra to just push oneself and never give up no matter how many times you fail.

Here are some of the stories Rom shared with us:

- Rom mentioned how he used ‘Miami Snake Park’ as a basis for the Madras Crocodile Bank. He spoke about his journey with the Irula tribe and how he was mesmerized by their ways of catching snakes.
- The stories of his journey continued and one such story was when Rom once asked Irula tribesmen to teach him to catch snakes, but they denied it by saying that he was too old to learn now and that they would have taught him if he was 4-years-old.
- His work with the Irula tribe in venom extraction for the production of anti-venom in India as Rom knew how severe the problem of snake bites was in India.
- His stories also included the two-month pilot project that was worked on with the Irulas in Florida for the eradication of the Burmese Python as this invasive species became a very big problem and infested the ecosystem. They worked in association

with Dr. Frank Mazadi from the University of Florida and had to work using scientific methods. According to him, the Irulas were not very satisfied after the completion of the project, even though it was considered a success; because they believed it could have been performed better if they used their traditional snake-catching methods (like tracking through slithering marks, smell, shed skin, poop, etc.) instead of the scientific methods.

After this heart-warming session with Rom, we had Biryani for lunch, and Rajib and Akansha heartedly thanked Sanjay and Payal for giving the fellows the opportunity to meet Romulus Whitaker.

Interaction with Gerry Martin

After Rom, Gerry Martin had an insightful talk and discussion with the fellows. The first discussion with Gerry was about the general situation of human–snake interaction in India. The discussion topic was Russell’s Viper Telemetry Project, and how most of the snake bites happen in monsoon as it is the breeding season of the snakes and people working barefoot on farms get bitten.

This was followed by a visit to Gerry’s exotic animal collection, where animals seized from the exotic pet trade were kept in captivity. The following exotic species were observed:

Veiled chameleons from Yemen, Blue Tree Monitor lizards from Papua New Guinea, Green Tree Pythons, Milk snakes, Humped Nose Pit Viper, Russell’s Viper, Corn Snake, Mata Mata Turtle, King Cobra, Saw-Scaled Viper, Common Krait, Albino Spectacled Cobra, and Russell’s Viper along with other species.

In the second gathering, Gerry gave us a presentation on snake bites in India.



Some of the key takeaways from his presentation were:

- There are about 343 known snake species in India out of which only 50 can do significant damage whereas around 17 of them are medically significant. In India, the big four Russell's Viper, Saw-scaled Viper, Common Krait, and Spectacled Cobra are considered major threats by the local people.
- Some people usually confuse a Saw-scaled Viper with a Humped-nose Pit Viper. Hence, educating people about snakes around them is very important to understand what kind of damage they can cause to humans if any.
- Results of anti-venom and how the median effective dose reacts to the median lethal dose are different.
- The session also included things like Dos and Don'ts after a snakebite mitigation effort and other basic knowledge about snakes.

This was followed by a question and answer round, discussions and then dinner.

Interaction with Chandni Chhabra

We also got the opportunity to interact with Chandni Chhabra, an educator who tries to bring the wonder of science and nature to life for children. She informed us about her wildlife education initiative NerdBird and told us about how she got interested in educating children about wildlife. Chandni's journey and contribution to conservation education felt enlivening. The important takeaway from her session is that educating educators such as school teachers and equipping them with the right tools to teach will help create a bigger impact in the long term. It is important to empower educators as it helps in creating an infinite chain reaction.

Herping Experience and Orientation to Radio Telemetry Method:

During our time on the farm we also got the opportunity to go herping and an orientation

was conducted on the radio telemetry method. During the herping experience the first thing we spotted was a huge Checkered Keelback, followed by an Indian Bullfrog, moth caterpillar, a painted frog, a bandicoot, mouse, etc.

We had a session with Gerry on radio telemetry methods which are used for monitoring and tracking snakes. We played an exciting game where we had to find the hidden transmitter using the receiver and antenna.

Following this session fellows bought books like 'Snakes of India', 'Every Creature has a Story', and 'My Husband and Other Animals' from Rom and Janaki and took their autographs to personalize our books. The last activity was the revelation of Gerry Martin's treasure box. The box had a cow's skull, shaded snake skin, fangs, eggs of caiman, emu, and rat snake, burned chameleon in a forest fire, etc.

Overall, the visit to the Liana farms and interactions with Gerry taught us about the importance of approaching people's sentiments delicately to achieve wider conservation goals. After these amazing sessions and 1.5 days of priceless learning and experiences, we had to say goodbye to Liana, Gerry, and Rom with a group photo.

The next layover where we spent the maximum number of days was Coorg.

Coorg Experiences at Rainforest Retreat, Madikeri

Our first destination was the Rainforest Retreat in Coorg owned by the couple Drs. Sujata and Anurag Goel. Rainforest Retreat is an eco-lodge within the Mojo Plantation. Sujata welcomed us with a delicious lunch. The greenery and moist weather were pleasant and lively. In the evening along with coffee, we interacted with Sujata and

had a brief introduction where everyone shared and listened to thoughts about conservation. During the introduction, we heard the pleasant call of the Malabar Whistling Thrush for the first time. As the night proceeded the air was filled with the sounds of various different animals living in the forest. We saw many invertebrates— cicadas, katydids, beetles, moths, crabs, fireflies, hexapoda spiders, stick insects, praying mantis, different species of frogs, Western Ghats Large Snail, and the Malabar Pit Viper.

Ridge Walk Experience

The next day we went for a 7 km ridge walk with Ravi who works at RR. He was well versed with the native flora and the following was observed:

- Wild tobacco, wild brinjal, citrus species, and some edible berries. A natural recipe for organic insecticide can be made by adding hot water, cow urine and wild tobacco. Some of us used leaves of wild tobacco to keep leeches at the bay.
- Different kinds of fungi such as the golden fungus, rust fungus, and black fungus, and many symbiotic associations of the fungus.
- Almost the whole place was covered by beautiful ferns of different types and bryophytes. We also spotted some orchids, the *Bulbophyllum* were flowering, and a rare species of plant – *Ceropegia*.
- Along the ridge were plantations of coffee, pepper, and cardamom, all of which were growing in the canopy of trees in the forest.

Ravi pointed out the massive landslides which occurred in that area back in 2018. We observed that the place was hit by a landslide and it was all covered with moss which gave the appearance of a rocky hill. Dr. Sanjay Molur explained to us how with a landslide, the place loses its precious topsoil which is very important for any vegetation to grow and



how it takes years to bring back that nutrient-rich topsoil. We also talked about aquifers i.e., sediment that holds groundwater. As the rainforest area records 200–300 cm rainfall, it is highest in that area. The groundwater level rises and sometimes the top layer becomes wobbly which is a sign of landslides. It affects the layers of soil which took many years to form. We got to know how grasslands play an important role in preventing landslides and how long it takes to rejuvenate again. Now only the moss layer can be seen. We were shocked after hearing that after the landslides, it will take 30 to 40 years to regain the original. We also got to know about the difference between fox-tailed and fish-tailed palm growing in that area and how fish-tailed is a native species and fox-tailed is invasive. Many insects and spiders were also spotted, different species of dragonflies and damselflies, funnel web spiders, giant wood spiders (female) with many males on their web, skink, and many species of beetles. Shola grasslands were visible from the ridge walk and the highest peak in Coorg- Tadiandamol was also visible.

The following species were seen along the way—the blue bottle butterfly, slug moth caterpillar, chocolate pansy butterfly, dead shieldtail snake, road-killed green vine snake, heterometrous scorpion, *Indrella ampulla*, lycosa spider, termites (and learned that they don't actually cause harm to the trees), puffball fungus, grapefruit tree, and many more.

The ridge walk was followed by a somewhat tiring but unique task of disseminating gobar-filled compost across coffee plantations.

Composting Experience

The organic coffee plantations on Sujata's farm were a sight to sore eyes. Sujata explained how on her farm she doesn't use any chemicals, pesticides, or fertilizers. The manure used on her farm is purely made of composting leaf

litter, wet waste, etc. she explained to us how to put it around the coffee plants in a circle away from the roots and cover it with leaf litter (mulching) so that when it rains the nutrients can spread equally to all parts of the roots, and how roots spread below the ground as much as the branches spread above the ground. During the whole process, Ravi and Muthu helped and guided us in the process.

It was a very good experience, running around, carrying the compost, putting it in the right way, filling the baskets, and working as a group. All of it was very tiring but at the same time very enjoyable. One important lesson that we took forward from this experience was that it takes a lot of hard work to nurture a plant from its seed and hopefully now, we are less likely to waste any food, tea, or coffee.

Interaction with Maya about her M.Phil Dissertation

Maya is Sujata's and Anurag's daughter who plays an integral part in running the Mojo Plantation. She took us to show around Valley 2 which was one of the places affected by the landslide, and how they tried to plant different species and are still testing which native species can be planted and can withstand harsh weather. But still, after planting they faced wild boars raiding that area to feed on the sweet potatoes. Maya shared how the clay and mud after the landslide happened were utilized by some art students during workshops to make mud cottages and glass bottles which were used to make windows, and also naturally made colours for painting it. For the time they have left the land to be regrown as a forest so fewer coffee plants were present there. There were lots and lots of *Wedelia* which is a new invasive species that often occurs in disturbed habitats and spreads. There were other plant species such as the charcoal wood tree, Gongura plant, *Sauropus androgynous*, heliconia, rose apple, rue plant,





and a species of *Strobilanthes*, *Elaeocarpus*, and *Garcinia* which is a native species. She told how *garcinia* is used to reduce fat and is added to non-vegetarian food and only recently the fitness industry has taken interest in *kokum* to make expensive weight loss products. Then we went briefly to the Valley 3 and saw many invertebrates along our way. At the end of the walk, we spotted a *Beddome's Keelback*. After lunch, we had a discussion with Maya where she explained her thesis which she did in her M. Phil in the Geology Department of Cambridge. It was on anthropomorphism and preserving wilderness in cultivation. The highlight of Maya's interaction with us was her knowledge about the plantations, biodiversity and the landscape around them. She intricately explained how conservation issues are interlinked with humans living around those wild spaces. After her talk, we all started our trek towards Kalur River.

The Kalur River Experience

The walk to the Kalur River helped us witness different species like the beautiful hawkmoth caterpillars, attractive yellow-purple in colour, and bushes of wild roses blooming on both sides of the path. We played skipping stones but after finding the life on a single stone that was a dragonfly nymph, we stopped playing it. We also got to know how these water bodies have great biodiversity. There are many different

ecosystems existing in the same river such as the riffle, cascades, and pond-type, each of which has different species adapted depending on the flow of the water. The thought experiment which included a question of what will happen if there is a dam constructed in the riffle part of the river helped us understand the negative impacts of the construction of dams in such ecosystems. The negative impacts included a riffle can go extinct due to the slower pace of the water and the slow-flowing part of the river will also be affected due to the dam that blocks the flow of water and nutrients along with it. Another situation was given as to what will happen if we open the dam after a while, which also had the same answer that it will affect the life living on both sides of the dam, the organisms may flow into the pond like part of the river with a great force and hence won't survive and the organisms there will also get washed away. The conclusion was that changing the course of the river or constructing a dam will always be harmful to the organisms living in it.

The conclusion of the exercise was that environmental impact assessment is necessary while building any infrastructure in nature. Otherwise, people will face flooding when the river increases its area after rain and people have built their houses near it.

Time at Rainforest Retreat was enriching as Maya and Sujata helped us to understand the balance between wildlife and anthropocentric activities. In addition, the food at the rainforest retreat also requires a separate mention as it was delicious, healthy and nourishing. Also, we would like to give a big shout-out to Ravi, Muthu and all the co-workers for preparing such delicious meals and sharing their knowledge of the biodiversity and of the land with us.



Experience in The Magnolia Mist with Abhishek and Anna

Abhishek and Anna run the Magnolia Mist, a certified organic farm, and homestay at Galibeedu, Kodagu district, Karnataka. Abhishek started the tour by taking us to a spot where we could see the transition area between the rainforest and the shola grassland. Abhishek explained to us the characteristics of the shola grasslands and their importance as unique habitats. We got to know why the big trees were not seen in such an ecosystem, because of the rocky soil, only grass species could grow in such soil and they perform an excellent function in holding the soil tight due to their roots. The abundant growth of Acacia whose propagation was made easier by the civets in the area. Abhishek told us that an acacia species grows prominently here, as they have adapted themselves to thrive in difficult conditions. We also got to know that leopards and elephants were prevalent here. We saw a Leopard scat on the road that had a huge amount of fur in it, most probably that of Sambar deer.

The density of orchid species found in this area was very high. We also saw the native Phoenix palm with charcoal deposits at the bottom of the trunk which stands witness to its resistance against the fire. Since the dates from this palm have a big seed and very less pulp, it is not considered ideal for commercialization, some people use it to make brooms.

We then trekked down the steepest slopes of our lives barely balancing not to fall down the valley, Abhishek humorously added to our anxieties by informing us about the density of Malabar Pit Vipers and King Cobras.

The magnificent Champaka tree welcomed us to the Magnolia Mist. After a scrumptious meal made from a native species of red rice grown on their plantation, Abhishek took us around

the estate. He explained how he does organic farming and the fact that he has left about 40% of the total area of the estate undisturbed. He also explained how this has a positive impact on the yields. He took us through a huge stretch of open land which had no cultivation.

There was a small stream running at one side of this, that floods the entire open space during heavy rains. He explained that along with the flood waters, a few species of fish arrive at this valley which they use as breeding sites, and return with the receding waters. We walked past a small pond of water next to the paddy field, which had a huge population of tadpoles. He told us how the population of rats helps with insect control in the paddy fields. Sanjay added to this that even though rats and mice collect paddy seeds from the crops, they don't actually feed on it, rather, they use it to line the walls of their burrows. Since they keep changing burrows, we can collect the paddy from the burrows. More than 10 kg of paddy can be found in one single burrow. So, the farmers don't face any loss, they even stand to gain from the labour-intensive work that the rats have already done for them. We then walked through the tea plantation, the horrific leech-infested area where all leeches were crawling toward us. Interestingly, tea wasn't the only crop we saw here. Along with tea, several other crops like pepper were also grown.

The next stop was at the area where Abhishek showed us how he dries the Costus and tea leaves. He also told us that the demand for Costus has seen a tremendous rise due to its effects on insulin production in our bodies. He informed us that people who drink this tea along with the maintenance of proper dietary restrictions have been able to withdraw from Type 2 diabetic medications.



Abhishek then took us to the coffee storehouse, the subtle savour of coffee filled our noses, and the aroma lifted our moods. Here Abhishek stores, roasts, and grinds dried coffee seeds. He explained that he only starts processing the coffee once the order has been placed by the customer. This helps retain the freshness of the coffee and also, the ratio of arabica and robusta in accordance with the customer's needs can be modified. He also took us through the packaging process which involves the use of a one-way valve in the paper pouch, which lets in the air but keeps away the moisture, keeping the coffee fresher for a longer time than when he uses airtight packets. He also showed us how to identify natural and genuine cardamom from adulterated cardamom. He explained how the cardamom seeds are harvested prematurely to maintain the green colour, when in reality, the flavour and potency of the cardamom attain their peak only when it becomes ripe turning yellow in colour. But, in the markets, yellow cardamoms are sold at a much lower price than green ones. Abhishek has an opportunity to develop the roadway which will act as an economic enhancement but he chooses not to develop considering the devastating impact it could have on wildlife around the area.

The teeming wildlife found there attests to the good health of this ecosystem. It is inspiring how Abhishek and Anna have managed to find that balance to maintain the native forest cover along with practising sustainable cultivation practices.

Learnings and Experiences with Neethi Mahesh

Neethi Mahesh, a river ecologist and conservationist from Bengaluru, spent a day with us to talk about scientific forest restoration along riparian zones in the Dubare reservoir area. We reached Dubare Elephant Camp and met with her and some members from the local

Jenukuruba tribe at 10 AM. After acquainting ourselves with the terrain, we commenced our walk to the riparian corridor which was used by elephants to cross forest fragments. Gundajja and Siddajja, tribal members, and some forest officials led a 45-minute walk to the riparian zone. We traversed from dry deciduous forest to moist deciduous forest before we got to a scenic riverbank. Neethi let us absorb our environment for a bit before giving us the task at hand.

We learned biodiversity mapping is crucial to ecology and conservation. Acquiring the taxonomy and spatial distribution of species that thrive and survive in defined ecosystems helps form an understanding of the possible interactions when it comes to conservation. Working with indigenous communities (in this case, the Jenukuruba tribe) unlocks otherwise privileged information and helps with gaining momentum on conservation projects. By the riverbank, Neethi instructed us on how to identify the names of mid-to-large trees as well as the saplings that grew in the area. These trees had withstood the forces of nature and supported the surrounding ecology. The task was to replicate the vegetation at the Dubare riparian zone along other riverbank locations of the river Kaveri. Some of the species that we found were native to the zone were *Hopea parviflora* (Malabar Ironwood), *Pongamia pinnata* (Indian Beech), *Mangifera indica* (Wild Mango), *Vitex altissima* (Peacock Chaste Tree), *Vitex leucoxyton* (Whitewood Chaste Tree), *Diospyros malabarica* (Indian Persimmon), and *Syzygium heyneanum* (River Jamun).

All tree species performed crucial functions to keep the ecosystem in a pristine condition. Species like the *Mangifera indica* are canopy species that stabilise river banks and provide shade for mid-storey riparian species of trees. The Malabar Ironwood tree saplings can



withstand flooding and submersion during the monsoon as they have a deep tap root system. It is also food for many mammals, birds, and fish. Jamun provides food for many species of birds and fish. The bark is also medicinal for elephants suffering from stomach ailments. Just like the Malabar Ironwood, these trees can also withstand floods and wet conditions.

Once the mapping was done at Dubare, we travelled to a landowner's plot to plant the saplings of the tree species identified. Two of his farmhands helped us plough the soil and plant the saplings. The soil in which they were planted was nutrient-rich with earthworms, bugs and beetles. Neethi informed us that the saplings had to be monitored every month to check for survival threats, diseases and other factors that could prevent them from growing. If successful, this restoration project would:

- Remove air pollutants by absorbing them into their leaves and bark.
- Prevent soil erosion by growing roots that hold the soil together.
- Be a habitat for endangered and other species.
- Prevent floods and landslides by absorbing water and slowly releasing it via transpiration.

The land owner, Jimmy, was very welcoming of the initiatives run by Neethi and was a steward of conservation activities in Coorg, Jimmy spoke about the importance of understanding native and non-native species and the science behind reforestation. As a witness to gradual climate change, like most of us, he continues to support petitions to protect forest habitats from deforestation and 'developmental' projects. Neethi mentioned that even though there was land available for planting saplings and replicating riparian ecosystems, the availability of native saplings was low in the Forest nursery. Projects like these are labour-intensive which is why support from locals is paramount to ensure

that follow-ups are done and critical action is taken at the right time. Converting them to caretakers of their surroundings by helping them conserve scientifically is a function of time as well. Neethi says conservation is not easy but we have got to keep doing what we do and work in groups.

Once we were done with the planting, Neethi also gave us a background of her work as an ecologist, working with water systems and plants. She had worked extensively on studying the Mahseer species. The Mahseer fish is extremely sensitive to its environment and cannot survive in disrupted water habitats. Their migratory behaviour puts them under direct threat from destructive fishing practices and anthropogenic activity. She spoke about how radio tagging them helped to understand their behaviour and the challenges she faced with people not familiar with conservation. She has documented riparian flora and has authored the book 'Riparian Profile of the Dubare Reserve Forest' which the RHATC team used as a field guide to identify plant species for the restoration project.

Interaction with Neethi helped us understand the ecological aspects of riverine biodiversity and the role of native trees in elephant conservation. Fellows witnessed that with evidence-based-conservation planning and getting support from locals very crucial in dictating the success of conservation programmes.

PetroCount Experience

After all the exhilarating experiences we headed back to Coimbatore but took one last pause at the *Pteropus medius* or the Indian Flying Fox bat roost site near Attagulipura, Chamraj nagar district, which made us excited again. The large flying foxes were shrieking and cackling hanging inverted, we had the task of counting bats and

enrolling in PetroCount, a citizen science project to monitor the southern Asian bat populations. Dr. Sanjay Molur, systematically explained to us the methodology to enter data, two methods to count individuals direct and indirect were used in the estimation survey. The citizen science form also inquired about the data collector's information, GPS location of the site, trees, the nearest village, nearest forest, threat information, sacred groves, and many other related factual and anecdotal information.

Overall, the tour gave us scientific insights and the freedom to choose our interest areas. It

felt relaxing and rejuvenating, we felt a sense of belongingness, being together we laughed, danced, studied, debated, questioned and learned different conservation approaches. With all the interactions and experiences, we were 'Captivated by Conservation'.

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