

# Nilgiri Biosphere Nature Park - a narratively of successful restoration with the native species

## Field trip report to NBNP:

We visited the Nilgiri Biosphere nature park (NBNP) on 19 October 2022. We reached our destination at 10 am. Upon entering the park, Sanjay gave us an introduction to the park, its history, and its present state. The NBNP, established in 1986 by the Coimbatore zoological park and conservation centre (CZPCC), currently covers a total land of 70 acres. 450 species of plants have been planted among which, 285 species have established themselves in the park. The most amazing fact about the park is that it's one of the only two botanical gardens in Asia, to have more than 90% of native species, and is recognized to be so by Botanic Gardens Conservation International (BGCI), UK. We were also introduced to the park botanist Mr. Kandaswamy who guided us through the park.

## The concept of reforestation:

The first thing Sanjay explained to us was the concept of reforestation, and how removing an already established tree and trying to grow a new tree in its place is a bad idea. This is because a sapling consumes oxygen and releases carbon dioxide to the same extent we do. And it takes ages for the tree to grow and become carbon negative. Therefore, in the process, there would be more carbon dioxide added to the atmosphere than that would be consumed.

## *Ficus benghalensis* and the tribal deity:

A large *Ficus* tree was one of the first large native species we came across. Sanjay explained that the tree is 150 years old, and the stone beneath is a deity worshiped by the Irulas. We were amazed at how there are significant cultural differences in different parts of our country.

## The worth of a tree:

Next to the *Ficus* tree was a signboard saying how a tree is worth Rs. 1,39,75,840 by Prof. T.M. Das of the

University of Kolkata. A tree living for 50 years will generate Rs. 22,60,000 worth of oxygen, provide Rs. 44,83,340 worth of air pollution control, control soil erosion and increase soil fertility to the tune of Rs. 22,60,000, recycle Rs. 27,12,000 worth of water, and provide a home for animals worth Rs. 22,60,000. It was astounding for us to learn that this figure was without the inclusion of the value of fruits, lumber, or beauty derived from trees. So, the overall value of a tree in its lifetime is just unimaginable.

## The native, non-native, and the invasive:

As we continued walking, Sanjay explained to us the importance of native species and the risks posed by non-native species. We also understood that a non-native does not necessarily mean invasive. But an invasive species is a concern nevertheless in whatever ecosystem it is in. We also came to know that some of the non-natives in the park were planted by mistake, assuming that they were native. When you have scientific names such as *Tamarindus indica* for a non-native plant, such assumptions are obvious.

## The Butterfly garden:

When we entered the butterfly garden, we were amazed at the sight of countless butterflies just fluttering around. There were tigers which included the Plain Tiger (*Danaus chrysippus*), Common Tiger (*Danaus genutia*), Blue tiger (*Tirumala limniace*), Dark Blue tiger (*Tirumala septentrionis*) and Crows which included the Common Crow (*Euploea core*), and Double Banded Crow (*Euploea sylvester*). Sanjay explained that the reason for such a high density of butterflies is because of the availability of their native host plants *Crotalaria retusa* and *Crotalaria longiceps*. Now that they are established, they are being pollinated by the butterflies. Sanjay also pointed out that some of the non-natives in the park have turned themselves into adapted hosts



for the butterflies. We also saw an artificial pond that was developed for turtles and frogs. A number of dragonflies and damselflies were seen hovering around the pond.

### Tales of the invasive snails:

After we came out of the butterfly garden, we saw a giant African snail (*Lissachatina fulica*) on the ground. Sanjay explained that it is an invasive species. During World War II, they were brought in as a source of food on some Pacific Islands. But when their population increased, a carnivorous snail *Euglandina rosea* was introduced to control them. But the latter preyed upon the native *Partula* snails, causing the extinction of most of their species. This was moral for us to understand how taking decisions without proper scientific studies can lead to ecological disasters.

### Native trees, some non-native trees, and the biodiversity in the park:

As we continued moving into the park, we came across a high variety of native trees. We saw the flame of the forest (*Butea monosperma*), the White Silk Cotton tree (*Bombax ceiba*), the Devil tree (*Alstonia scholaris*), *Sterculia foetida*, *Gnetum ula*, *Commiphora caudata*, *Hydnocarpus pentandrus*, *Hopea parviflora*, and many more. We also saw non-native species such as *Rauwolfia tetraphylla*, *Chrysophyllum cainito*, and *Spathodia campanulata*. Mr. Kandaswamy explained to us the characteristics of different trees and their medicinal uses. We also came across the highly diverse fauna of the park. We saw the hoof marks and pellets of wild ungulates, heard calls of forest bird species such as the Tickell's Blue Flycatcher, and marvelled at the wide variety of centipedes and millipedes, planthoppers, spiders, ant nests on trees, and a caterpillar that exactly mimicked a dry leaf. When we asked Sanjay what was the biggest management challenge of the park, we got to know that it is removing the invasive species manually.

### A group photo under the Holématthi:

As we came across the Holématthi tree (*Terminalia*

*arjuna*), we decided to take a group photograph.

We felt happy as we hugged the giant tree but soon felt sad when we saw that people had scratched, and written their names on the tree just like they do any rocks, they would do.

### The Park nursery:

Kandaswamy took us to the park's nursery where the different native species of saplings were grown. In this nursery, only the native species are grown, the saplings of which are supplied to different places.

### Ending the park tour with a sip of tea:

After we came out of the nursery, we sat under a tree near the cafeteria. We were given given tea to refresh ourselves. Then we departed.

### Conclusion:

The NBNP narrates the success story of a restoration project. It shows us how restoration is done in a scientific manner and keeping the native species as a priority. In return, this creates ideal habitats for the native fauna and aids in their conservation and helps reduce negative interaction with the wildlife.

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