

REPORT ON VISIT TO AASAMANT BIODIVERSITY PARK, RATNAGIRI

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INTRODUCTION:

The current report is a compilation of various observations made by me as an intern at the Aasamant Biodiversity Park, located at MIDC region, Ratnagiri. This submission has been made in pursuit of an ongoing service internship at the Aasamant Benevolence Foundation, Ratnagiri. The internship required me to visit the Park once a day over a period of 5 consecutive days, and spend a minimum of 45 minutes at the site. The responsibilities delegated included visual observation of local flora and fauna, identification of possible plants and birds present there, observation of other animals like reptiles and smaller mammals, and insects. Likewise, I spent 60 to 90 minutes every day at the Park every morning, between 7.30am to 9.00am from 3/5/2020 to 8/5/2020. During this period, I was assisted by another appointee Mr. Khetle, who was the care-taker in charge of the Park during those days. He helped me identify some plants at the Park, and narrated incidences of spotting some other mammals during these days.

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**Observations on Day 1: An Overview of the location:** On the first day of my visit series, I happen to be a stranger to the Park, and know absolutely nothing about the wild animals and plants growing inside. It is located at a corner of the Industrial Development Area of MIDC, and is shaped unevenly. It is spread over an area of 2 sq.km approximately, and is covered by both, wild, natural vegetation and specially planted trees and shrubs of various species. Despite reaching the location as early as 7.20am, the park appears extremely hot and dried up, with the sun forcing its way towards an unbearable summer day. The recent pandemical lockdown has forced the care-taker to skip several days of watering the plants, and the ill effect reflects on the brown shed leaves and crisp dry grass. However, the plants shall receive their share of water soon as the care-taker returns today. My first walk around the Park is alone, and though not highly informative, it gives me a good insight into the ground reality of my project subject. The first sighting I made were the Citrus limon (L.) Osbeck, commonly known as *lemon plants*. Another remarkable sighting was the Neem tree, (the *Kadulimba*), famously known to keep away pests due to its highly bitter leaves. The constantly rustling grass reminded me of the

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presence of multiple reptiles in the area, and kept me restricted to the clean open footways of the Park.

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### Observations on Day 2: Reconnaissance and butterfly sighting:

By now, I am aware of the general topography of the plot, and have visited the farthest corners of the park. I met the care-taker Mr. Khetle, who is also the keeper of keys for the Park. I learned about the butterfly garden today, which is a small portion of land filled with about 30 plants of small sizes. Some of them have colourful flowers, and some have multi-shaped leaves. Mr. Khetle tells me that every morning around 6am and evening around 6pm, the local butterflies swarm the garden, looking for their favourite flowers. Some of these plants provide the food for butterflies through flowers, while others provide leaf cover and protection for resting periods. The butterflies are now returning in better numbers because the Park plants are receiving adequate water recently, and because human intervention to the surrounding habitats has reduced significantly owing to the lockdown. Throughout the day, I was able to spot certain butterflies, which fit the description of scientifically recognised species. The most commonly sighted was the *Bushbrown butterfly*<sup>1</sup>, entirely true to its name, with a body filled with varying shades of brown. It was mostly found in areas of good camouflage, especially between dried leaves and stems of older plants. Another great insect observed was the *Common Palmfly Butterfly*<sup>2</sup>; a less popular but equally beautiful resident of the Aasamant butterfly garden. Usually, these beings are not spotted until early June, but the recent change in human activity and drastic change in climate may have invited them out of their cocoons earlier than the regular months of the year. Out of the insects I sighted, the most beautiful was the bright yellow coloured *Common Leopard Butterfly*<sup>3</sup>. It flew higher than the other butterflies, sometimes even travelling to the peaks of some of the taller trees. Its colour was not meant for camouflage, as it could be spotted from afar; instead, it was a type of warning to predatory birds and reptiles that if attacked, it would fight back. My further reading on butterflies told me that often, bright colours confuse birds flying very high in the sky, making them think

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<sup>1</sup>Also called *Mycalaesis sp.* (*Nymphalidae*).

<sup>2</sup>Also called *Ellynnias Hypermaestra* (*Nymphalidae*).

<sup>3</sup>Also called *Phalanta Phalantha* (*Nymphalidae*).

that it is a flower and not a butterfly. Thus, I learnt that even the most delicate beings are given their own forms of self-defence by nature, and they are experts at using these physical advantages for their own benefit.

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### Observations on Day 3: Understanding the trees and plants :

Now that the trees are receiving ample water daily, the regional ecosystem has been kick-started. The greener, well fed leaves can now be seen growing through dry branches, and the shade they provide is cooler and denser. I have located certain spots where I can sit in the shade to observe the birds in silently. As I visit these spots, I recognise some trees around me from their scent and the small number of fruits the bear. The largest in the vicinity is the very special Mango tree<sup>4</sup>. It bears raw fruit, which has surprisingly not been visited by local animals yet; they will raid once the fruit is ripe. At three different locations, I spot the Peepal tree<sup>5</sup>; they are all young still, and need to grow to ten times their current size to become life-sustaining units of nature. The distinctive leaf shape distinguishes them from the surrounding wild growth. At the centre of the Park, I spot a Cashew tree<sup>6</sup>, which bears fruit, but is shorter than its usual height. Mr. Khetle tells me that it is a kalam (mutation), and hence bears fruit despite being young. The fruit is itself as famous as the nut it bears, and both are enjoyed as ingredients in many Konkani diets. The thick canopy of the cashew tree and relatively low branches invite some butterflies, especially the Common Leopard. I am also made aware of some medicinally and environmentally useful plants around the Park, including the Rudraksa<sup>7</sup>, Adulsa<sup>8</sup>, Amala<sup>9</sup>, Bibba<sup>10</sup> and Neem<sup>11</sup>. The regular fruit plants like Chikoo, Peru, flowers like Sonchafa, and wood-stock trees like Saag, Vad and Khair have been

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<sup>4</sup>Called *Mangifera Indica*.

<sup>5</sup>Called *Pimpal*, & *Ficus Reliogiosa*.

<sup>6</sup>Called *Kaju*, & *Annacardium Occidentale*.

<sup>7</sup> Called *Elaeocarpus Gannitrus*.

<sup>8</sup> Called *Justicia adhotoda*.

<sup>9</sup> Called *Phyllanthus Emblica*.

<sup>10</sup> Called *Semecarpus Anacardium*.

<sup>11</sup> Called *Azadirachta Indica*.

planted here, although I have not been able to spot all of them during my visits. On my third day, I have also spotted a gang of monkeys enter the Park from the surrounding plots, and rest on the taller trees to avoid the summer heat. Surprisingly, they neither disturb the branches, nor destroy fruits or flowers; their approach is rather peaceful. The watering tanks provide them easy access to water, so they stay there briefly, before wandering off again. Their movement here is silent, as if they enjoy the peace in the park.

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#### Observations on Day 4: Bird – sighting and study:

By now, I am sufficiently well aware of the nooks and corners of the Biodiversity of the Park, including the spots of dense shade, sources of water, wild undergrowths and meandering walkways. The director of the NGO has provided me with a collection of audio tracks full of bird calls recorded by professionals. Over the preceding evening, I have studied these bird calls to the necessary extent, and having familiarised myself with most of them, I set out today to observe if these birds are present in the bio-park. I need to be extremely silent and cautious in order to avoid scaring the birds away. After scouting several spots of shade, I am able to distinguish the sounds of a particular bird from the surrounding hum-drum of Mother Nature. I refer the audio tracks once again and confirm that it is the call of the *Common Kingfisher*. It is very high pitched, rapidly recurring, and sharp call, repeated after gaps of silent pauses lasting a second or two. The kingfisher is known for its diving and abilities, and I managed to observe it whirl past me twice or thrice. Another sighting was the local male *KokilPakshi*<sup>12</sup>, with a much more melodious and thick call. The male Koel is a sizeable bird, and hence is not sought after as easy prey; that is why its call is loud and fearless. The most common bird at the Park was the *Bulbul*<sup>13</sup>, which is popular for having a red spot on either cheek. The Bulbul was distinctly recognizable because of its semi-circular flight pattern; it seldom flies straight, and always takes a round-about journey through small branches and tree

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<sup>12</sup>Called *Asian Koel*.

<sup>13</sup>Called *Red Whiskered Bulbul*.

canopies. I also spotted its cousin, the Red Vented Bulbul (From the red spot below its hind feathers) in the vicinity. On the same occasion, my attention was attracted by a deep, gruff, drum – like call coming from the deeper parts of the Park, so I went there to investigate. Expecting to find either a large bird or an owl, I was surprised to find it coming from a Green little bird, with a red chest and temple spot. It was mutating its throat region to produce the drum-beat sound, and was shifting from branch to branch, creating a nice musical effect. As I later found out, it was the *Coppersmith Barbet*, and it was on a lookout for its breakfast of pests and worms. As I was about to end my stroll, I saw a pair of Parrots<sup>14</sup> join the party as well. They flew in from the outer MIDC zone, and upon reaching the compound, hopped from branch to branch, as if in a dance. Other remarkable sightings include the Myena, the nuisance causing crow, and the urban pigeon in great numbers.

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#### **Observations on Day 5: Learning from the Park ecosystem:**

The Aasamant Biodiversity Park is a self-contained ecosystem consisting of trees, animals, insects and birds belonging to various species. The wheel of life is supported by minimal human intervention, that is to artificially provide water when needed, and plant more suitable trees to support the biotic life. The trees are home to different exotic as well as commonplace birds, who feed on the endless supply of insects present in the grass, while the common lizards, chameleons and occasional snakes dominate the groundline. Through my inquiries, I found that way before the park was formally established, the land being open and wild, it was used by a snake- catcher (sarpamitra) to rehabilitate snakes who had wandered off into deep human civilisation. These snakes had made the plot land their home, and their generations have bred here to create a network of reptiles and their corresponding predators, the mongoose family.

During my days at the Park, I slowly noticed that all the birds that I spotted were in pairs; i.e, two parrots, two koels, two pairs of kingfishers, etc. After doing some online research, I realised that they were sighted in pairs because it was mating season, and

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<sup>14</sup>Also called *Alexandrine Parakeet*.

they were searching a proper place to call home. I realised that as Ratnagiri grew more developed, these children of nature were evicted from their beloved trees by force, and had to seek refuge elsewhere. The park had become their new refuge, and they wished to start their family there. Thus, they had become strong pillars to their new ecosystem.

Another phenomenon I observed was the use of dry grass by lizards for protection. Although I could constantly hear rustling of leaves during my presence at the Park, I would seldom see a lizard creeping around. The reason was because the grass had dried and lay on the ground in horizontal streams. The lizards had slithered over it and under it to shape tiny tunnel like structures all over the Park. The observer could no longer see the lizards, but they could peek out of their tunnels to see oncoming predators. This provided them protection from larger reptiles, predatory birds and animals like the mongoose. They also used the grass as a nesting region, as it protected them from direct impact of the sunlight, thus regulating the heat spread. I realised that though the human considers himself intelligent, the less civilised animals and plants have their own share of intelligence which they expertly employ to safeguard themselves.

In order to keep some record of my time at the Park as sweet memories, and to add visual stimulus to my report, I captured some interesting moments that I experienced at the Park. Attached below are some of the pictures that I captured, which are complementary to this report:

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**1. Two beautiful components of the Butterfly Garden Plant-base:**



## 2. Survival through Adaption in the Park:

The bamboo sheds leaves to avoid loss through water evaporation, so it looks weak, but it survives. Meanwhile, the flowering shrub has many green leaves, but it has lost too much water, and its fruit has died. It may not be able to reproduce during monsoon.

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### 3. Fruits with different purposes:

Some fruits like the Cashew are useful for consumption, so they are protected by the domesticated Cashew kalam. Meanwhile, wild trees drop their fruits across the groundline, to enhance pollination; these wild fruits are devoured by birds and insects alike.



#### 4. The tree niche :

Each giant tree is surrounded by multiple shrubs, bushes, creepers and saplings. They protect each other from the elemental forces of nature, and create a small eco – niche.



**5. The grass – reptile niche:**

Dry grass is generally useless for other residents of the Park, except for reptiles. As mentioned in the report, this grass provides superb protection to lizards and chameleons from extreme heat to avian predators. Their movement below such grass has created furrows and tiny tunnels in the hay, almost as if it has been inter-woven.

