

Aravali Biodiversity Park Visit

A trip back in time where
plants thrive without human intervention

CCC704: Environmental Studies

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plants thrive without human intervention

by

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*Manan R. Kumar
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1

Introduction

The Aravalli Biodiversity Park (ABP) is developed on 699 acres in Vasant Vihar.[1] It is one of the six biodiversity parks built in Delhi. The reason for developing such a park in Delhi was:

- **Extinction of Delhi's biodiversity:** One of the prime objectives of the park is to bring back Delhi's extinct biodiversity.
- **Education and Research:** It serves the purpose of promoting nature education among students and creating environmental awareness among the public.

1.1. Components of the Park

The park can be divided into the *Visitors Zone* and the *Educational Zone*. The educational zone consists of:

- **Medicinal Gardens:** Due to over-exploitation of Aravali's medicinal plants, the plants went extinct in the area.
- **Conservatory of Orchids**
- **Conservatory of Ferns**
- **Conservatory of Butterflies**
- **Nature Reserve zone**

1.2. History of the Park

The area is highly degraded due to past mining and is infested with *Prosopis juliflora* (Vilayati kikar).

The pace of development of the park can be observed from the figures obtained over different periods of time as observed in Figure 1.1.[2]

1.3. Trip

1.3.1. Weather Conditions

It rained for three consecutive days following the visit date due to a depression moving closer to north-western India [4]. Due to waterlogging and increased Yamuna river water level, our scheduled plan for Yamuna Biodiversity Park was called off at the last moment. We were merged with another batch that was heading to Aravali Biodiversity Park.



Figure 1.1: (a) ABP in 1984 (b) ABP in 2011 (c) ABP in 2022

1.3.2. Timeline

Assembly:	07:20
Departure:	07:50
Exit:	08:10
Arrival (ABP):	10:30
Departure (from ABP):	11:55
Arrival (at campus):	14:15

1.3.3. Pre Departure Routine

I reached the assembly point at 07:20. Fellow colleagues ensured that they got enough food to last till eternity. There were more than 100 students going to different places. Everyone was curious about where they were going and guessing.

1.3.4. Journey

“It's not the destination, it's the journey that matters”¹

On our way to Aravali Biodiversity Park (Vasant Vihar), we saw several landmarks, alongside the beautiful landscapes in Uttar Pradesh. Our entry in Noida was marked by a sudden change in landscape - long trees were replaced by marvelous buildings, insects replaced with pollutants - and then the next time we saw dense forest was in the biodiversity park. On our way, we also saw the, ironically, holy river Yamuna - filled with visibly toxic chemicals.

¹While the journey to Aravali Biodiversity Park was amazing, the park itself was quite overwhelming so this quote does not really apply here.

2

Observation

The Aravali Biodiversity Park houses various varieties of plants. Alongside that, they have over 120 species of butterflies in their butterfly conservatory. In addition to that, they have over 200 species of birds. However, not all birds stay throughout the year. Some of the birds are migratory birds and some of them are passage birds¹.

Most of the plants before it was converted to a biodiversity plants were from the british era. They imported plants from Mexico. There are a couple of Vilayati kikar plants still there. The plants were imported because they grow quickly and the region was in dire need of flora. However, the plant grows in marshy areas and the root goes deep and depletes the groundwater level. It is an invasive species and it colonises an entire area within no time. The government has recently ordered to replace this plant around Delhi with other plants.[3]

The butterfly conservatory is located inside a shell which was a mining area. It was later converted into an open theatre for the Madhurao India farmhouse.

We also learnt about activities butterflies and several other animals do to deceive their prey. Some mimic the flying techniques of other butterflies and some evolved to change their physical appearance to look like other butterflies. The other butterflies refereed to here are the butterflies bland in taste. We saw some butterflies sitting over flowers. Butterflies are the number one reason for pollination. Their important

Throughout the time, we were surrounded by trees, but there were some trees that are really useful for us.

- **Drumstick (*Moringa oleifera*):** It increases immunity and helps to maintain a healthy Blood Pressure. It also increases haemoglobin, and can be used to reduce the risk of diabetes.
- **Arbi (*colocasia esculenta*):** It is used to treat ulcers.
- **sarpgandha (*Rauvolfia serpentin*):** Commonly known as Indian Snakeroot, it is used as an anti-venom.
- **Aloevera (*Aloe Vera*):** This is used in day to day life to maintain good skin.
- **Curry Leaves (*Murraya koenigii*):** It is rich in calcium.
- **Arjuna Bark (*Terminalia arjuna*):** It helps in treating heart diseases. It is also used as a precautionary measure for the same.

Along with that, we saw feces of some animal (likely neelgai). They defecate to mark their territory. Several other animals perform similar actions like dogs and tigers urinate while butterflies secrete pheromones to mark their territory. Birds stand out, though, because they actively sing to keep other birds away from their territory.

¹ passage bids: If you refer to someone as a bird of passage, you mean that they are staying in a place for a short time before going to another place

While this is an outstanding way to mark their territories, it gives poachers a clear indication of animals they can find in that area, therefore, posing a threat to the animal.

3

Discussion

Our guide discussed with us a variety of ideas. I noted some fascinating discussions here:

3.1. Birds of Prey

We discussed about birds and their roles. Something, however, that got everyone's attention was the discussion about birds of prey. They can't be identified unless we have a clear picture. Sometimes, even having a picture is not enough because they might have the same physical appearance.

The one bird that stood out in the discussion was **Vulture**.

Vultures feed on dead body of animals. However, because animals are fed chemicals and vultures are feed on the contaminated bodies of animals, vultures also end up losing their life.

3.2. Hunting and Poaching

The main difference between hunting and poaching is that hunting is legal, while poaching is illegal. People with hunting permit can legally hunt permitted animals in permitted areas. Poaching is the illegal killing, capturing, or taking of wildlife. Poachers enter protected areas illegally and kill animals for their benefits.

3.3. Monitory Lizard in India

Tribes in Maharashtra claim that oil extracted from certain body parts of lizard helps in treating arthritis without any scientific backing. The consequence of this is that monitory lizard in the area has gone down. The lizard is killed in a very barbaric way since people cut certain body parts of the lizard and leave it to die by itself.

3.4. Government and citizens

We, and our government, play an important role in conserving our environment. While implementation of rules is crucial to stop bad actors from disturbing the ecosystem, we (the citizens) play an equally important role in comply with the government rules.

4

Conclusion

One of the most important things to take back from Aravali Biodiversity Park is that nothing is permanent. We can improve things, but that will only happen if we want.¹

We learnt that the area was a mining area, and it was only after 2004 that the biodiversity park was developed and maintained. We also learnt how creatures adapt to their surroundings and different ways they pursue to survive like getting attacked by a prey.

Restricted areas like Aravali Biodiversity Park protect plant and animal species, helping to maintain biodiversity.² These areas also safeguard natural habitats from destruction due to human activities like deforestation, urbanization, and agriculture.

It is important for us to keep care of our environment because all other lifeforms are connected with the environment and they care, but we supposedly evolved and got disconnected with the environment. It is our fundamental duty to give plants and animals the space they deserve. 4.1 is the image



Figure 4.1: Figure: Aravali Biodiversity Point Viewpoint

¹It's not only applicable in context of environment but also our lives.

²Aravali Biodiversity Park serves as a crucial part of Delhi. It is one of the few reasons Delhi's biodiversity is alive.

References

- [1] Delhi Biodiversity Foundation D.D.A. *Aravali Biodiversity Park*. 2024. URL: <https://www.delhibiodiversityparks.org/aravalli-biodiversity-park.html> (visited on 09/28/2024).
- [2] Google Earth. *Google Earth Timeline*. 2024. URL: <https://earthengine.google.com/timelapse/> (visited on 09/23/2024).
- [3] IASToppers. *Vilayti Kikar*. 2023. URL: https://www.iastoppers.com/downloads_article/vilayati-kikar.pdf (visited on 09/28/2024).
- [4] Hindustan Times. *Severe waterlogging in NCR; IMD predicts more showers today | Weather updates*. 2024. URL: <https://www.hindustantimes.com/cities/delhi-news/delhi-rain-severe-waterlogging-in-ncr-imd-predicts-more-showers-september-13-2024-weather-updates-101726191355450.html> (visited on 09/22/2024).

A

Trip Pictures

I didn't take many pictures during the field trip. Some beautiful captures from the trip:



Figure A.1: Trip Pictures