

Wildlife, Biodiversity & Landscape features of Aarey Milk Colony, Mumbai

A long-term Study (1986–2021)

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INTRODUCTION

In the global scenario of Climate Change & Global Warming protecting Urban Green Zones (UGZs) is critical for sequestering the large quantity of carbon released by vehicles and reduce the heat island effect, cooling the city. They function as de-stressing and socialising areas for children, youth, seniors and help to reduce criminality. UGZs are also ideal habitats for biodiversity and act as catchments of rivers, lakes & ponds (wetlands). When contiguous to other UGZs or Protected Areas, they can harbour landscape-level & migratory species, such as Leopards, Tigers, Elephants, Eagles & Vultures.

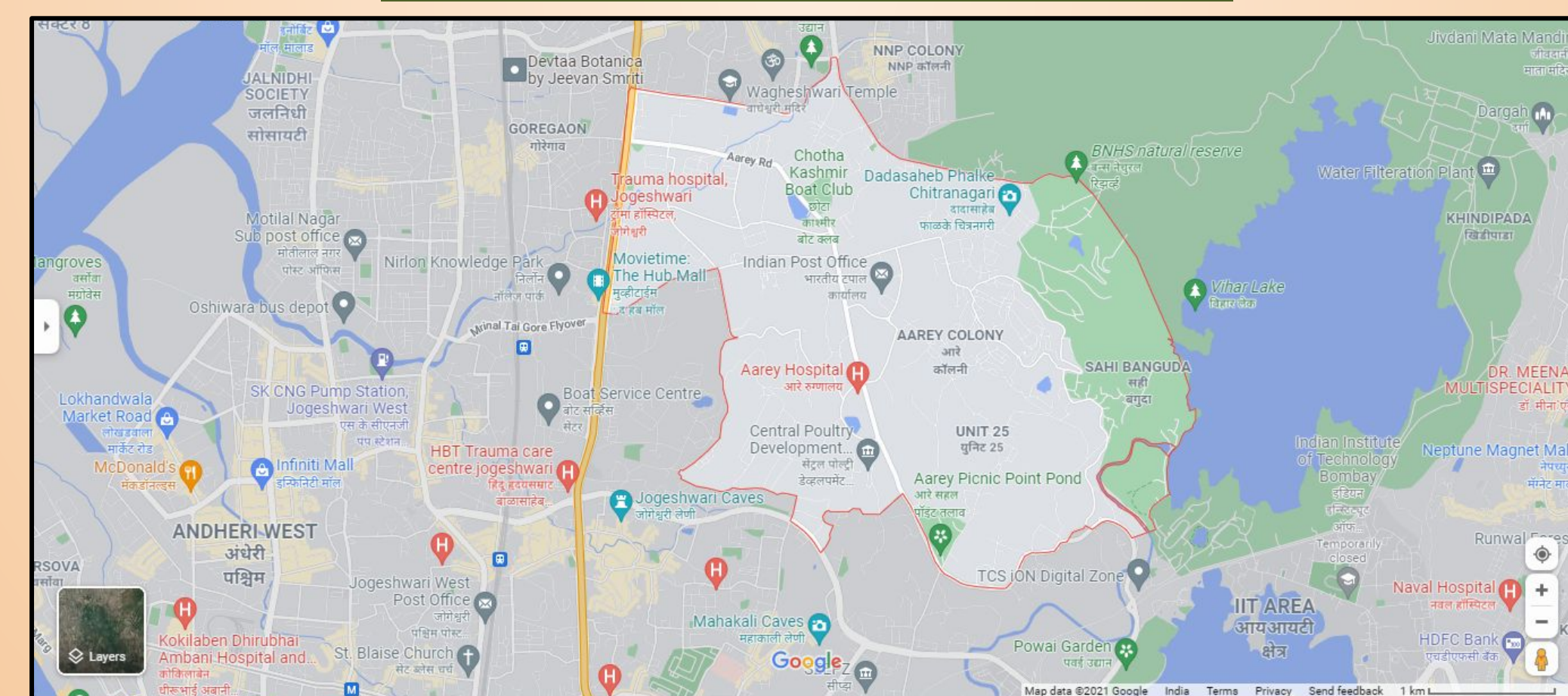
OBJECTIVES

In this study, we aimed to document the biodiversity (Flora, Fungi & Fauna) existing in Aarey Milk Colony (AMC). Another objective was to create educational & outreach materials to disseminate and conduct awareness events (trails & lectures) and undertake conservation action to excite general public about protecting urban biodiversity.

MATERIALS & METHODS

AMC has been a regular visiting area for bird lovers and nature enthusiast. SPROUTS has been documenting this biodiversity for over 35yrs. The sighting and documentation of flora and fauna was *ad lib* and opportunistic, during trails and other nature related activities in the area since 1986. But detail records of bird, insects (butterflies), fungi, mammals, plants as checklists have also been properly recorded by the authors, while on regular nature trails. Similarly photographic evidence has also been collected and uploaded (recorded) on public forums such as eBird, India Biodiversity Portal, etc.

STUDY AREA & DURATION

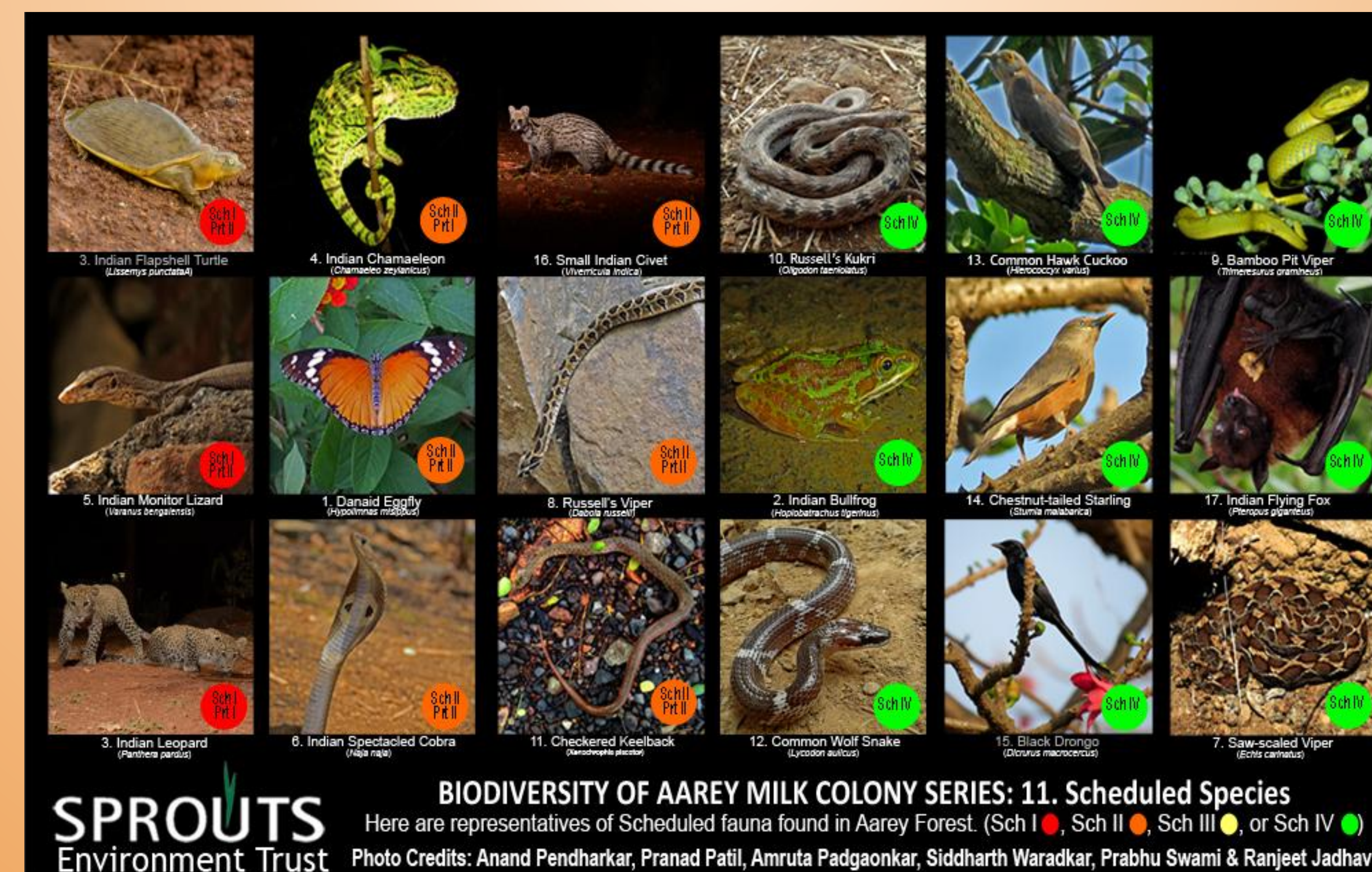
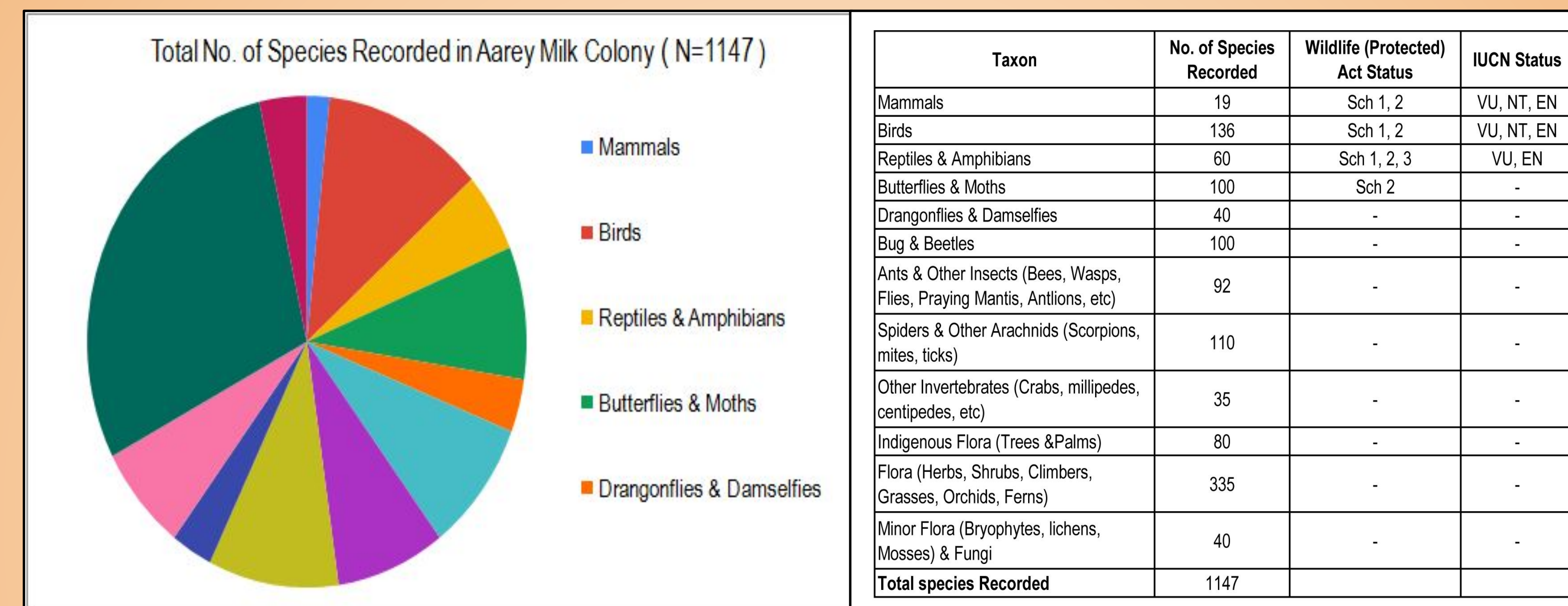


Aarey Milk Colony was established in 1949. It is more than 3100 acres, situated in Goregaon East, Mumbai, Maharashtra, India. It lies within the eco-sensitive zone of Sanjay Gandhi National Park (SGNP). Aarey Milk Colony is a mosaic landscape having varied elevation with different land uses, *adivasi padas*, *tabelas* (cattle sheds), milk factory, hostel, hospital, crop field and upper catchment zone (watershed zone) for Mithi and Oshiwara Rivers.

OBSERVATIONS

The first author and Research Head (Anand Pendharkar) casually began documenting and making notes of the wildlife found in the mosaic landscape of AMC, in July 1986, after a college excursion to the region, as an undergraduate student. Within the first few years, he observed that the juxtaposition of densely forested habitats, natural and man-made grasslands, riverine vegetation, plantations, cattle sheds and small built-up complexes, and its contiguity with the SGNP, provided AMC with unique and diverse ecosystems and ecotones, unavailable even in the SGNP. The limited access to the AMC road, which used to be closed for night traffic, was ideal for natural and undisturbed wildlife movements. Locals regularly reported Leopard and the occasional Hyena occurrences, besides encounters with Indian Cobra, Indian Rock Python, Grey Mongoose and Small Indian Civet, and herds of Spotted Deer, all of which continue to be sighted to this date. What began as sporadic and opportunistic observations, turned into a regular study, via the **Mumbai Biodiversity Project (MBP)**, which was launched by SPROUTS ca. 2005 and covered all landscapes of the Mumbai Metropolitan Region (MMR), from coasts to forests, to urban campuses to public parks and roads, as well as mangroves and lakes.

SGNP, AMC and neighbouring Tungreshwar and Karnala Wildlife Sanctuaries were extensively documented via 1000s of random and planned visits. A few Master's dissertation studies, conducted under MBP, by the primary author and his team of interns and staff over 33 years (1986 to 2021) used non-invasive, open-width transects, and random sampling to record the Biodiversity of AMC.



RESULTS & DISCUSSIONS

A total of **1147 species** were recorded during the study, distributed as follows: Mammals (2%), Birds (12%), Reptiles & Amphibians (5%), Butterflies & Moths (9%), Dragonflies & Damselflies (3%), Bug & Beetles (9%), Ants & Other Insects (8%), Spiders & Other Arachnids (10%), Other Invertebrates (3%), Indigenous Flora (7%), Flora (29%), Minor Flora & Fungi (3%) (Refer to the adjoining Graph & Table).

Several species recorded in AMC are protected under the Wildlife (Protection) Act, 1972 and have varied levels of global threats as per the IUCN status (Refer to the adjoining Table & Image).

CONCLUSIONS

After the preliminary compilation of data of studies by the SPROUTS Team (1986-2021) and comparing and combining finds of other studies, viz. Zeeshan Mirza & Rajesh Sanap (2007-20010), Akshay Gawade & Omkar Pai (2016), Akshay Gawade & Dr. Amol Patwardhan (2017), Javed Ahmed & Yogendra Satam (2013-14) and MMR-EIS (2009-12), the minimum number of species of flora, fauna and fungi recorded from Aarey Milk Colony area comes to a whopping 1147. The detailed study funded by MMR-EIS in two phases from 2009 to 2012 and covering every landscape in the MMR, clearly expresses the ecological importance of the highly biodiverse Aarey Milk Colony.

Another important consideration is the rediscovery of several species of minor predators, such as spiders and scorpions, after a century or descriptions of entirely new species to science, from within the Aarey Milk Colony and some not even found in the neighbouring SGNP. These scientific finds, makes Aarey Milk Colony, a site of very high biodiversity and critical from a conservation point of view. Any permanent and large-scale industrial, infrastructure or residential construction or establishment, can permanently damage the biodiversity and cause local or global extinction of these range restricted and cryptic species. Granting them highest level of protection is imperative and urgent. With ecological degradation, we lose ecosystem services such as pollination, carbon sequestration, disease, temperature & flood control & soil building, and the economic benefits provided to the citizens of Mumbai.

The area also harbours several Scheduled (1, 2, 3 & 4) species, protected under the Wildlife (Protection) Act, 1972 and given special status (Vulnerable, Near Threatened & Endangered) and attention by the IUCN (2002). It is thus our legal and moral responsibility to provide them Right to life and Habitat (under Article 21) and ownership to Mumbai too!

REFERENCES

1. Arlott Norman (2015): Collins Field Guide, Birds of India, Harper Collins Publishers. Pp. 400.
2. Gawade, A. and Patwardhan, A.P. (2021). Diversity of ants in Aarey Milk Colony, Mumbai, India. *Journal of Threatened Taxa*. 13(8), 19108–19117.
3. Grimmett, R., Inskipp, C. and Tim Inskipp (2014): Birds of Indian Subcontinent, Oxford University Press, London. Pp. 528.
4. Islam, M. Z and Rahman, A. R (2004): Important Bird Areas in India: Priority sites for conservation, Indian Bird Conservation Network: Bombay Natural History Society and BirdLife International (UK). Pp. xviii + 1133.
5. Ahmed, J., Satam, Y., Khalap, R., & Mohan, K. (2015a). First record of *Portia albimana* (Simon, 1900) from Maharashtra, Mumbai (Araneae, Salticidae, Spartaeinae). *Peckhamia*, 129(1), 1-6.
6. Ahmed, J., Satam, Y., Khalap, R. & Mohan, K. (2015). A new species of *Dictis* L. Koch, 1872 (Araneae Scytodidae) from Mumbai, India. *Indian Journal of Arachnology*, 4(1) 59-63.
7. Mirza, Z. & Sanap, R. (2010). Biodiversity of Aarey Milk Colony and Film City. Report submitted to Government of Maharashtra and the Forest Department of Maharashtra. Pp 51.
8. Monga, S & S Ghosal (2012). MMR Biodiversity Project-Final Report. Pp. 470.
9. Rasmussen, P and Anderton, John (2005): Birds of South Asia: The Ripley Guide, Vol. 1. Field Guide and Vol. 2. Attributes and Status. Publisher: Smithsonian Institution and Lynx Editions.

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