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Contents

Cover photo: Chinese Rubythroat (*Calliope tschebaiewi*). © Rajiv Bisht.

JUNGLE LODGES AND RESORTS - THE BITTER TRUTH

It was on 25th of December 2018, the first time I had an experience of staying in the Bhagawathi Nature Camp situated amidst the forest in Kudremukha. It is one of the nature camps that belongs to Jungle Lodges and Resorts in Karnataka. Jungle Lodges and Resorts is a leading private limited state government company. The board of directors include a cabinet

One of the tents at Jungle Lodge, Kudremukha.

The stream on which a check dam was built at Jungle Lodge, Kudremukha.

The location of Jungle Lodge at Kudremukha National Park.

minister, five IAS officers, and two IFS officers. The first jungle lodge was established by the 'Tiger Tops' in the year 1980 at Kabini and later it was handed over to the state government. Jungle Lodges and Resorts are present throughout Karnataka and they provide accommodation, safari, and other services to the visitors.

Since we were working on documentation of the floral species at the mining area of Kudremukha National Park, we halted at the Bhagawathi Nature Camp. The Nature camp is situated at the edges of the forest and is filled with tourists throughout the year creating light, noise, and air pollution. They also have born fire at the spot which is a sad thing to happen inside a national park. They also constructed a check dam across a stream to make it look like a visitor's attraction so that the visitors can swim and enjoy in the streams which caused submergence of forest in monsoon, resulting in the death of a few trees.

The interesting fact is that two highways pass through this national park—a national highway connecting Mangalore and Solapur (NH 169) and a state highway that connects Kerekatte and Kottigehara (SH 66). There are two forest check posts at each end of the highway where the details of

Images of the tag provided at the forest check post.

the vehicle and phone number of the driver is noted down and a tag is given, which is linked with the system.

Once the vehicle reaches the other check post they gather the information from that tag such as speed and movement of the vehicle. In the tag it is mentioned that people are not allowed to stop and get out of the vehicle in between the check posts. On one hand the forest department does not allow the people to get down from their vehicles and spend time inside the national park, while on the other hand they have constructed the resort inside the national park where it is filled with tourists almost all the time. This goes against the forest department's own policies; Kudremukha National Park is a UNESCO world heritage site and eco-sensitive zone.

Around 1 am I heard some noise outside my room as if something moving on the leaf litter. Initially, I was scared but was also curious to know what it was. When I turned on my torch I saw was a group of deer. I was surprised to see these animals very close to the residential place. On discussion of this with my lecturer I learnt that these deer come near the human settlements at night to escape from predators. This struck me because with the establishment of resorts in the core zone it has resulted in behavioural change of these herbivores. So this resort is not only creating pollution and disturbance but also has resulted in behavioural change in animals.

The Jungle Lodges and Resorts have built resorts similarly in many other national parks and wildlife sanctuaries. They have also increased the number of tents and number of jeeps for safaris. The impacts of such lodges in protected areas need to be investigated scientifically and systematically at the earliest so as to take suitable conservation actions.

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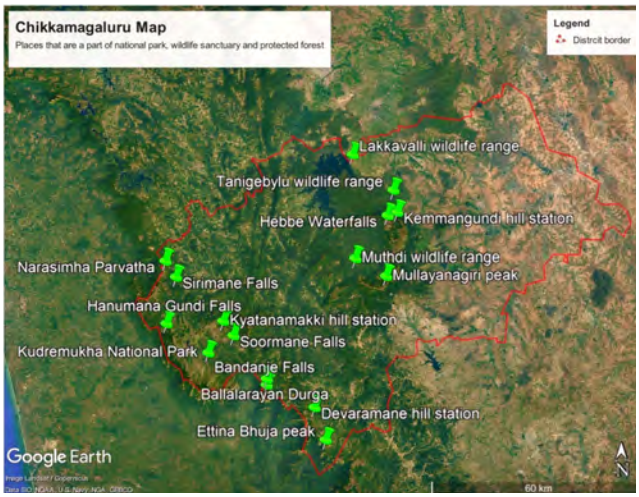
Ecotourism Unmasked: Profits at the Cost of Environmental Degradation

Chikkamagaluru also known as the land of coffee lies in the Malnad sub-region of Karnataka. It is located at a distance of 251 km from the capital city of Bengaluru, sharing its borders with Hassan, Udupi, Dakshina Kannada, Shimoga, Davangere, Tumkur, and Chitradurga districts. Geographically, it is located between 12.9117 & 13.8981 N and between 75.0794 & 76.3639 E. It includes the taluk Koppa, Sringeri, Narasimharajapura, Tarikere, Kadur, Mudigere, Kalasa, and Chikkamagaluru. Around 60% of the district is a part of Western Ghats including Kudremukha National Park and Bhadra Wildlife Sanctuary, and home to numerous waterfalls and hill stations. It receives 1,900+ mm of annual rainfall. Tropical evergreen forest, wet deciduous forest, dry deciduous forest, and dry forest are found in this district. The population of the district according to an estimate in 2022 was 1,502,109. Chikkamagaluru is one of the most famous tourist destination, and witness heavy



Map highlighting some of the most popular ecotourism destinations of Chikkamagaluru district.

Map of Karnataka highlighting Chikkamagaluru district.

inflow of tourists from all the parts of the state and country. My curiosity and concern to know about the impacts of ecotourism on environment led me to meet wildlife activist and conservationist, D.V. Girish with whom I discussed the following things.

Heavy inflow of tourists

Due to the emergence of the social media platforms especially Instagram, it has become a source of information for people to explore new places. Places which were unknown to people for the past several years have all of a sudden become the most popular tourist destinations and there is a hike in the number of tourists. An article published by the Asianet Suvarna News stated that the number of tourists visiting Chikkamagaluru has crossed three million in just six months (Jan–Jul) 2023 and is expected to cross eight million. Chikkamagaluru district has a small population of 15 lakhs and the Chikkamagaluru town population is around 1.6 lakhs. Which means that the district is witnessing tourists almost 5

Image depicting the traffic caused due to heavy inflow of tourists at Kemmangundi, Chikkamagaluru. © Zabi Ullah.

times the existing population. The resources which, are meant for small population is now being utilized by large number of people. There is a term called 'carrying capacity' which means that each place will have a certain limit to which it can accommodate the people so that the tourists get good experience of the natural beauty at the same time the local environment is undisturbed.

The numbers have gone way beyond the carrying capacity. These uncontrolled numbers has led to problems like disturbing the air quality, sound pollution by the vehicles, traffic which was an urban phenomenon has now reached to the remote places. When the crowd is very high it is very difficult to manage the place hence it has resulted in the littering of the plastic wastes at the spots in large amounts, it is also disturbing to the wildlife.

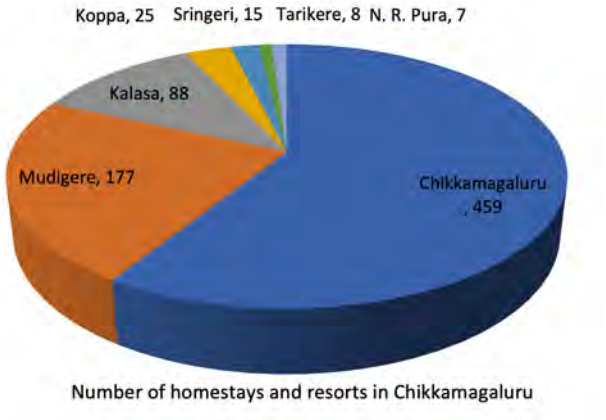
Uncontrolled number of homestays and resorts

Homestays and resorts are the integral part of the tourism. As the number of tourists increase the number of homestays and resorts also increases. There are 531 homestays and resorts that are registered under the ecotourism development board but in reality the numbers are way beyond, there are around 800 plus homestays and resorts according to my survey conducted using google earth making 250 plus unregistered ones. There are many homestays and resorts that are being constructed inside the sensitive regions, very close to the forest. It has resulted in the degradation of the forest. It has become a party place where they play loud music, consume alcohol and enjoy themselves, which, disturbs the wildlife and the local people. The concept of homestays was that it would help the local community being a source of employment and economic growth but it has also turned into commercial business where many outsiders have purchased the lands and have constructed homestays. In many places they exploit the water resources.

Image depicting plastic litter at Mullayanagiri, Chikkamagaluru. © Zabi Ullah.

Table. Number of registered homestays and resorts in Chikkamagaluru district. Source: District Tourism Development Council, Department of Tourism, Chikkamagaluru.

	Taluks	Number of homestays and resorts
1	Chikkamagaluru	321
2	Mudigere	166
3	Koppa	20
4	Sringeri	11
5	Tarikere	07
6	Kalasa	04
7	Kadur	01
8	Narasimharajpura	01
Total		**531**



Actual number of homestays and resorts in Chikkamagaluru district.

Poor management by the Karnataka State Forest Department and Ecotourism Development Board.

They have no restriction on the number of tourists visiting per day which has resulted in the problem of overcrowding and inconvenience. Many places do not have enough number of staff to manage the crowds. Basic facilities like toilets, drinking water facilities, plastic monitoring, dust bins are not been managed by the departments. Moreover, many places do not have the entry fee and no staff by the department.

Jungle lodges and resorts

Most of the jungle lodges and resorts are being constructed within the sensitive regions; for example, Bhagawathi nature camp in Kudremukha, hill resort in Kemmangundi, and River Tern lodge in Bhadra Reservoir. Air pollution, noise pollution by vehicles due to heavy inflow of tourists and activities such as camp fire will impact the wildlife causing disturbance, change in the animal behaviour and also migration of the wild animals.

Ecotourism policy

Karnataka state has tourism policy to regulate the tourism, in which it clearly mentions that the ecotourism shall focus on increasing awareness towards conservation and sustainability of biodiversity and natural environment. It also mentions that tourism shall be done after careful consideration of the destination's carrying capacity and in adherence to the orders and guidelines issued by the relevant authorities. They have also mentioned the water conservation and harvesting, adopting renewable source of energy and adopting pollution control measures, but all these are not being effectively implemented. Since the district witnesses heavy inflow of tourists there is a need for separate ecotourism policy for the district to manage the ecotourism, many environmentalists have raised their voice for the cause.

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https://kannada.asianetnews.com/travel/30-lakh-tourists-visited-to-chikkamagaluru-in-six-months-grg-rxunee

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Intraspecific competition among predators: two Checkered Keelback snakes grabbing a single Daudin's Bullfrog

Predator interference or competition can have a significant impact on how predators interact with one another and how a system expressing it behaves dynamically (Olivares et al. 2011) like the struggle between individuals, for food, territory, and mates (Gause 1934) particularly, the competition among predators for prey or other resources (Bazykin et al. 1998). Intraspecific competitive interactions between conspecific predators can affect the birth and death rates of their whole population (Turchin 2003).

Two Checkered Keelbacks *Fowlea piscator* predating on a single prey species *Hoplobatrachus tigerinus*. © Aadit Patel.

Antagonistic interactions may also affect predator efficiency in finding and killing prey (Turchin 2003), which can imply the modification of the predator functional response. Predation and competition directly affect trophic relationships among species, which are key in dictating species coexistence (Pimm 1982). Reduced food availability can force previously tropically distinct species to overlap, thereby intensifying competitive interactions (Campos et al. 2011).

The Checkered Keelback *Fowlea piscator* (Schneider,

1799) is widely dispersed throughout southern Asia where they can be found along rivers, ponds, and paddy fields (Wallach et al. 2014) and is one of the most often found aquatic snakes and possibly the most abundant snake species in India (Whitaker & Captain 2004). At about 1600 h on 23 December 2021 in Kundi village, Valsad, Gujarat, India (20.6647N, 72.9654E), we observed a Checkered Keelback Snake grabbing *Hoplobatrachus tigerinus* (Daudin 1803) in its jaws. On close observation we noticed that there were two Checkered Keelback snakes grabbing and competing for the same prey item. This was a unique observation, which can give insight to conspecific predator interactions within same species of reptiles for food resource.

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#243
21 December 2023

Sighting of tail bifurcation in Common House Gecko from Sathyamangalam, Erode District, Tamil Nadu

Hemidactylus frenatus is the most abundant gecko in Bangladesh where it is widely distributed in diverse habitats, including forests and human settlements in both rural and urban areas (Khandakar et al. 2020).

Tail bifurcation in a Common House Gecko. © M. Kishore.

On 17 February 2022, the Common House Gecko were observed from the first author house near Sathyamangalam in the rural area. The location of the observation is 11.5224 N & 77.2454 E. The gecko was observed on the wall about 5 m above the ground. On closer observation, we noticed that this gecko had a bifurcated tail. During this unusual observation, it seems the tail was not shed properly and the new tail was regenerated with a partially shed tail. This note is the third report of tail bifurcation in *H. frenatus*.

The previous reports of tail bifurcation or two tail are recorded in many places among species belonging to the genus *Hemidactylus*. Previously, two-tailed geckoes from India—Northern House Gecko *Hemidactylus flaviviridis* in Maharashtra (Kumbar et al. 2011), Northern House Gecko *Hemidactylus flaviviridis* in Gujarat (Vyas & Upadhyay 2020), Bombay Leaf-Toad Gecko *Hemidactylus prashadi* in Maharashtra (Yankanchi & Kumbar 2016), Tokey Gecko Gekko gecko from Kaziranga, Assam (Gogoi et al. 2018), and Common House Gecko *Hemidactylus frenatus* in Tamil Nadu (Vishnu & Ramesh 2021)—were reported. And outside India two tails have been reported in Gallagher's Leaf-toed Gecko *Asaccus gallagheri* in United Arab

Emirates (Koleska 2018), Yellow-bellied House Gecko *Hemidactylus flaviviridis* in Chitwan from Nepal (Bhattarai et al. 2020), and Common House Gecko *Hemidactylus frenatus* in Bangladesh (Khandakar & Sultana 2020).

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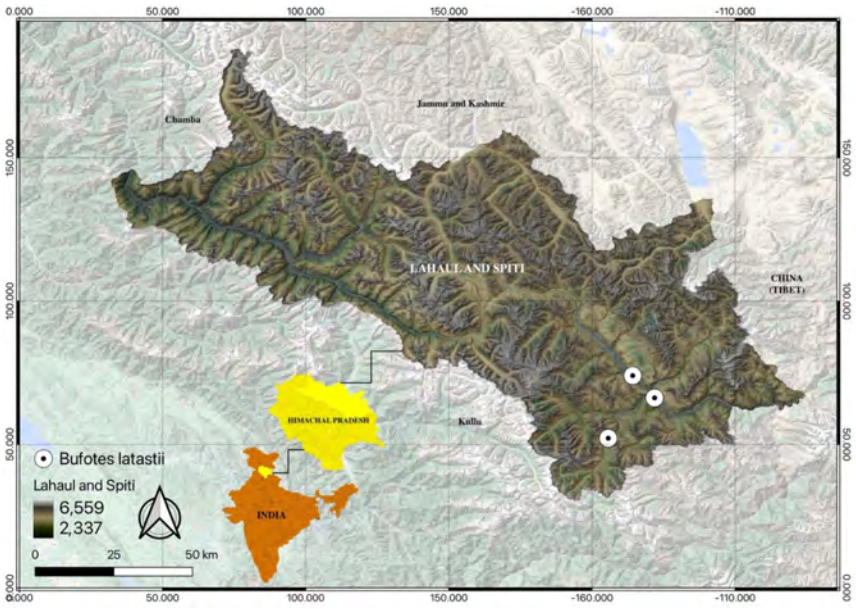
Field observations on the Ladakh Toad and new locality records from Spiti Valley,Himachal Pradesh

The Ladakh Toad, *Bufotes latastii* (Boulenger, 1882), is a species of toad in the Bufonidae family. The species is known for its patchy distribution and preference for rocky habitats, woodlands, and scrublands. It typically lives at elevations between 800 and 2,200 m. Adult toads are most active during the breeding season, which typically lasts from April to June. The species is closely associated with running water and adult toads are found to be more common in areas with a higher percentage of rocky habitats and lower percentage of shrub cover. *Bufotes latastii* is only confined to the western Himalaya, which stretches from northern Pakistan to Kashmir Valley and Ladakh in India (peripherally east of the Karakoram). *Bufotes pseudoraddei*, *B. baturae*, *B. zamdaensis*, *Duttaphrynus stomaticus*, *D. melanostictus*, and *D. himalayanus* are the other six toad species found in the western Himalaya, where this species is allopatric (Litvinchuk et al. 2018).

The Ladakh Toad *Bufotes latastii* dorsal (A) and lateral (B). © Abdus Shakur.

Asian toads in the Trans-Himalayan region have developed distinctive coping mechanisms to endure the harsh winter climates within their habitat, such as delaying hibernation until the first snowfall of the year. However, the impact of a delay in snowfall on the timing of hibernation in these toads is not well understood.



Map indicating locations of *Bufotes latastii* close to Pin Valley National Park, Lahaul and Spiti, Himachal Pradesh, India.

The timing of first snowfall has a substantial impact on how long the toads remain active before hibernating, which was evident from the research conducted on the Asiatic Toad *Bufo gargarizans* in the Trans-Himalayan region of China (Wang et al. 2015), which suggests that delaying hibernation may be an adaptive strategy. Also, it allows these toads to take advantage of availability of food resources and insulating properties of snow, which help them from the bitter cold and protect their hibernacula from freezing. However, along with the above mentioned factors that delay hibernation among toads, other equally important factors are temperature, photoperiod, and body conditions, where toads in better condition delay their hibernation until later in the season. Significant research has been conducted which found that the timing of hibernation has an impact on the survival and reproductive success of the toads (Ashpole et al. 2021).

Here we report the postponement of hibernation in the Ladakh Toad *Bufotes latastii*, which is a notable phenomenon with potential implications for the ecosystem. On 12 January 2023, around eight individuals were observed at three different locations 32.0904°N, 78.1911°E; 32.1648°N, 78.1179°E; and 31.9558°N, 78.0362°E close to Pin Valley National Park at 1400 h; 1640 h; and 2125 h, respectively. This observation could indicate a change in the species behaviour and natural rhythms, and may be caused by various factors such as changes in temperature, food availability, or other environmental conditions. It is important to report such events to relevant authorities to help understand the underlying causes of the postponement and develop appropriate methods to understand the species and its habitat. Our observation aims to raise awareness of this phenomenon and contribute to the knowledge base on this toad species.

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Report on the first coordinated Asian Waterbird Census at Gaya, Bihar

An important indicator of healthy wetlands is the waterbirds species diversity which indicate its quality and conservation status. Many species are listed threatened due to human-induced threats like habitat destruction, contamination, poaching and trapping activities along with illegal wildlife trade. Species diversity is one of the most intuitive and widely adopted measures of biodiversity (Colwell & Coddington 1994) and one of the effective ways to observe diversity and richness is periodic census.

Every year in Asia, the Asian Waterbird Census (AWC) is carried out by thousands of participants and organizations covering major migratory flyways and stopover sites. In India, Andaman & Nicobar, Andhra Pradesh, Assam, Jharkhand (Prakash et al. 2016), Jammu & Kashmir (Sharma et al. 2022), Odisha, Uttar Pradesh, and some other states conducting AWC regularly and the relative data is available as summary reports

Rare sighting of a flock of Bar-headed Geese in Mohanpur Dam. © Mohammad Danish Masroor.

Rare sighting of Brahminy Shelducks in Barwadih Dam. © Mohammad Danish Masroor.

Rare sighting of Greater Painted-Snipe near Mohanpur Dam. © Mohammad Danish Masroor.

Table 1. List of species recorded during the AWC 2022 (Gaya).

	Family	Common name	Scientific name	Barwadih Dam	Mohanpur Dam	Cobracamp Pond	Kal chakra Pond	Gopi bigha Pond	Bisar Talab	Katari hill Pond	Total
1	Anatidae	Bar-headed Goose	*Anser indicus* (Latham, 1790)	0	6	0	0	0	0	0	6
2		Ruddy Shelduck	*Tadorna ferruginea* (Pallas, 1764)	2	0	0	0	0	0	0	2
3		Common Teal	*Anas crecca* Linnaeus, 1758	0	4	0	0	0	0	0	4
4		Gadwall	*Mareca strepera* (Linnaeus, 1758)	4	24	0	0	0	0	0	28
5		Lesser Whistling- Duck	*Dendrocygana javanica* (Horsfield, 1821)	590	0	511	788	351	293	175	2708
6		Northern Shoveler	*Spatula clypeata* (Linnaeus, 1758)	0	1	2	0	0	0	0	3
7		Indian Spot-billed Duck	*Anas poecilorhyncha* J.R. Forester, 1781	0	6	0	0	0	0	0	6
8	Rallidae	Common Moorhen	*Gallinula chlorophus* (Linnaeus, 1758)	0	0	0	6	3	3	15	27
9		Purple Swamphen	*Porphyrio porphyrio* (Linnaeus, 1758)	1	0	0	0	0	0	0	1
10		White-breasted Waterhen	*Amaurornis phoenicurus* (Pennant, 1769)	0	0	0	5	0	3	4	12
11	Ardeidae	Black-crowned Night Heron	*Nycticorax nycticorax* (Linnaeus, 1758)	0	0	0	0	0	3	0	3
12		Cattle Egret	*Bbabulcus ibis* (Linnaeus, 1758)	15	0	0	0	13	0	11	39
13		Great Egret	*Ardea alba* Linnaeus, 1758	0	13	1	0	0	0	0	14
14		Grey Heron	*Ardea cinerea* Linnaeus, 1758	6	1	0	0	0	0	0	7
15		Indian Pond Heron	*Ardeola grayii* (Sykes, 1832)	0	4	0	0	10	0	5	19
16		Median Egret	*Mesophoyx intermedia* (Wagler, 1829)	0	0	4	5	0	0	0	9

	Family	Common name	Scientific name	Barwadih Dam	Mohanpur Dam	Cobracamp Pond	Kal chakra Pond	Gopi bigha Pond	Bisar Talab	Katari hill Pond	Total
17	Phalacrocoracidae	Great Cormorant	*Phalacrocrax carbo* (Linnaeus, 1766)	2	0	0	0	0	0	0	2
18		Little Cormorant	*Microcarbo niger* (Vieillot, 1817)	34	2	0	0	0	2	0	38
19	Charadriidae	Red-wattled Lapwing	*Vanellus indicus* (Boddaert, 1783)	6	6	0	0	0	0	0	12
20		Yellow-wattled Lapwing	*Vanellus malabaricus* (Boddaert, 1783)	3	0	3	0	0	0	0	6
21	Alcedinidae	Pied Kingfisher	*Ceryle rudis* (Linnaeus, 1758)	1	0	0	0	0	0	0	1
22		White-throated kingfisher	*Halcyon smyrnensis* (Linnaeus, 1758)	2	0	0	0	1	0	1	4
23	Scolopacidae	Green Sandpiper	*Tringa ochropus* Linnaeus, 1758	0	7	0	0	0	0	0	7
24		Common Greenshank	*Tringa nebularia* (Gunnerus, 1767)	3	0	0	0	0	0	0	3
25	Jacanidae	Bronze-winged Jacana	*Metopidius indicus* (Latham, 1790)	0	0	0	6	0	0	14	20
26	Rostratulidae	Greater Painted-Snipe	*Rostratula benghalensis* (Linnaeus, 1758)	0	2	0	0	0	0	0	2
27	Podicipedidae	Little Grebe	*Tachybaptus ruficollis* (Pallas, 1764)	4	8	0	0	0	0	0	12
28	Ciconiidae	Asian Openbill	*Anastomus oscitans* (Boddaert, 1783)	1	0	14	0	0	0	0	15
29	Threskiornithidae	Indian Black Ibis	*Pseudibis papillosa* (Temminck, 1824)	4	5	0	0	0	0	0	9
30	Recurvirostridae	Black-winged Stilt	*Himantopus himantopus* (Linnaeus, 1758)	0	0	9	0	0	0	0	9
Total number of species found				**16**	**14**	**7**	**5**	**5**	**5**	**7**	
Total				**678**	**89**	**544**	**810**	**378**	**304**	**225**	**3028**

Human encroachment on the peripheral land of Barwadih Dam. © Mohammad Danish Masroor.

Bird trap installed on plants near Mohanpur Dam. © Mohammad Danish Masroor.

(Wetlands International South Asia 2022). In the context of Gaya district as well as Magadh division, no methodical and periodical data on migratory birds were collected so far. Census involves firsthand counting of migratory waterbirds which will provide an important outlook on status of birds as well as their habitats, which will in turn be helpful in developing management and conservation strategies. The importance of healthy wetlands may not be understated- it defines a wide range of very important feeding, breeding, foraging and roosting habitats for existing species including migratory waterbird of the regional fauna.

This report includes the data collected from the first ever AWC conducted in Gaya district of Bihar, including the diversity of birds and the present health status of the respective water bodies and wetlands.

Survey sites and methodology

The census was conducted, following AWC guidelines, on 8–10 January 2022. Large and small water bodies were selected including both urban and forest habitats in order to prepare preliminary data record. A total number of seven sites were selected after pilot survey. Among these two water bodies are water covering areas of 10–14 ha, followed by two 3–5 ha, and three of 0.5–1.5 ha. The counting of birds was followed by direct sighting method, point count method and block method and the species were identified with the help of field guides (Kumar 2019; Grimmett et al. 2011). Common and scientific name of the species for preparation of document is followed according to the literature given by Praveen et. al. (2016). Observations were made during daytime of 0700–1600 h.

Results and discussion

During the waterbird census a total of 30 species of wetland birds were recorded belonging to 12 families (Table 1). Out of these 7 species were water birds while 23 species were wetland dependent birds. An estimated number of 3,028 birds were observed during the census covering all seven sites. The maximum number of bird species was recorded at Barwadih Dam (16 species / 678 individuals) followed by Mohanpur Dam (14 / 89), Cobracamp Pond (7 / 544), Katarihill Pond (7 / 225), Kalchakra Pond (5 / 810), Gopi Bigha Pond (5 /378) and Bisar Talab (5 /304). Lesser Whistling Ducks (2,708) were seen in maximum numbers while Pied Kingfisher (1) and Purple Moorhen (1) were observed minimally.

Conclusion and recommendations:

A total of 3,028 birds belonging to 30 species of 12 families of birds were recorded during the survey. The selected water bodies hosted healthy populations of different groups of birds. Across the selected seven habitats, four water bodies were located in urban settlements while two were dams and one was a pond in wild area. The observations revealed that different species of birds preferred different habitats for survival, foraging and breeding. While Lesser Whistling-Duck was common in six selected sites among seven, some small waders were observed in shallow water bodies. Hunting was observed in all the sites. Birds were being trapped by installing trap nets in most of the sites. One such net at Mohanpur dam used for catching birds by the locals. Even the feathers of few birds were found on some places around the dam which also indicating the possibility of bird trapping activities. There are two water exhausting canals were observed by which farmers exhaust water for agricultural activities decreasing the level of water in both dams. The human encroachment observed on the periphery of waterbodies is also altering and degrading the habitat of migratory waterbirds. The population size of birds like Bar-headed Goose, Brahminy Shelduck, Greater Painted-Snipe, and other migratory waders may increase if hunting is controlled and the habitat rejuvenated properly. There is a need for more bird watching activities in the district, as their inputs will help to design the conservation and safeguarding of migratory waterbirds of Gaya.

The following are the recommendations from our observations:

1. Rejuvenation of Barwadih dam and Mohanpur dam is

Glimpses of the census team and forest staff participating in the first AWC bird count of Gaya district. © Mohammad Danish Masroor.

the demand of hour. It should be rejuvenated in the manner in which 10–15 m wide shallow water covering may take place in surrounding for wading birds.

2. Agricultural activities on the land of Barwadih dam which formed due to storage of soil inside the dam boundaries should be banned and human encroachment should be replaced out of the boundary. If not done, these activities may lead to habitat fragmentation and anthropogenic pressure.

3. Aforementioned water exhausting canals should be managed in the way by which water wastage and illegal exhausting may decrease to 50%.

4. Regular patrolling in the migratory season and yearly census counting may be needed to limit poaching and netting activities near Barwadih dam and Mohanpur Dam.

5. Barwadih Dam and Cobra camp pond may be connected to each other to enhance wetland status.

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Status of avifauna at the selected waterlogged areas of Aligarh district, Uttar Pradesh

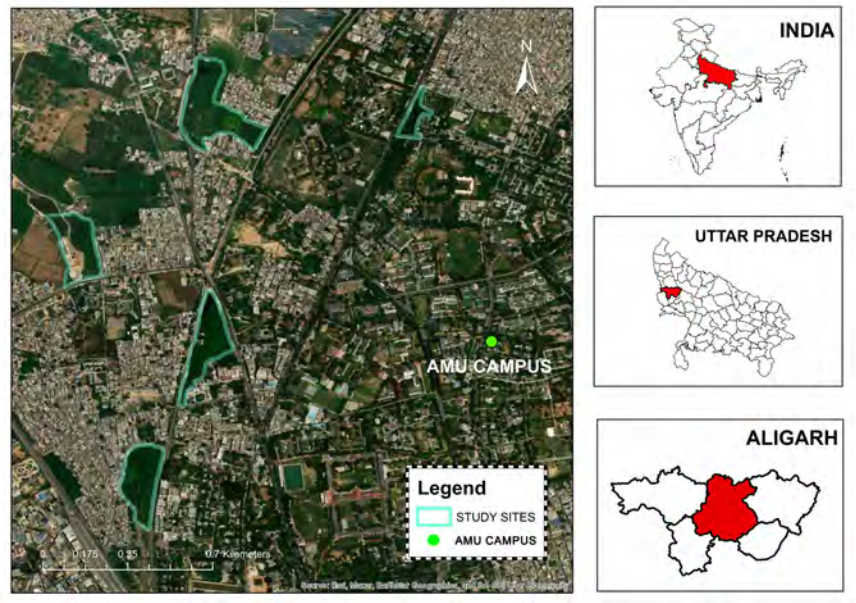
The urban waterlogged areas are the undeveloped residential low-lying landscape that receives water from domestic sewage and rainfall drainage. They are characterized by shallow water overlying the interspersed soil and dominated by submerged or emergent aquatic vegetation. These areas have been considered highly productive habitats for diverse fauna species (Rajpar et al. 2019).

Garbage dump at one of the sites. © Mirza Altaf Baig.

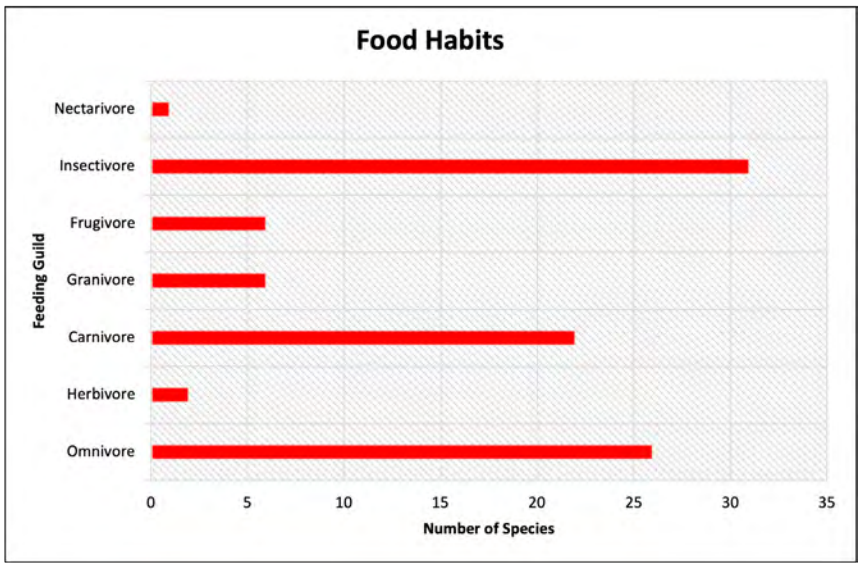
Within the last two decades, ornithological studies in district Aligarh covered several aspects such as roosting behaviour (Khan & Zarreen 2010), the impact of urbanization (Akram et al. 2015; Siddiqui et al. 2019), and community structure (Khan et al. 1993). This study is an attempt to examine the avian population that utilizes waterlogged areas around the Aligarh Muslim University campus.

An overhead tank being constructed at the study site. © Mirza Altaf Baig.

A total of five sites were selected where the waterlogged conditions remain throughout the year. They collectively account for an area of 41.66 acres. Floral species around the selected sites include *Azadirachta indica*, *Mangifera indica*, *Psidium guajava*, *Ficus benghalensis*, *Ficus religiosa*, *Eucalyptus* spp., *Melia azedarach*, *Ceiba pentandra*, *Delonix*



Location of the study sites.



Number of observed avian species in different feeding guilds.

regia, *Prosopis juliflora*, and *Pontederia crassipes*.

The study was carried out for one year, from June 2019 to June 2020. The birds were observed during the most active period of the day, i.e., 0600–1000 h and 1600–1800 h (Bibby et al. 1998). The birds were identified and classified based on the standard field guide and checklist of species was prepared following Grimmett et al. (2011). The birds were listed using the direct count methods, walking around the waterlogged areas and listing the bird species. Opportunistic observations were also recorded. A pair of binoculars (Olympus 8 x 40) was used to record the observations from a distance to avoid any disturbance. During the field visits, photos were captured using Canon SX60 HS and Canon SX430 IS point and shoot cameras.

A total of 94 species of birds belonging to 19 orders and 43 families were observed. Passeriformes was the most dominant order (40 species). The list was categorized as per the migratory status, feeding habits, IUCN Red List, Wildlife (Protection) Act, 1972 and the population trend. An analysis of data revealed that a majority of the species were residents (75.53%) followed by winter visitors (20.21%), summer visitors (3.19%), and passage migrants (1.06%). Further analysis based on the IUCN Red List status revealed that the Least Concern category includes the majority of species (89), followed by Near Threatened (03) including the Painted Stork, Black-headed Ibis, and Alexandrine Parakeet; one Vulnerable, i.e., the Common Pochard and one

Table. Checklist of bird species recorded from the selected waterlogged areas around AMU campus, Aligarh district, Uttar Pradesh, India.

	Order	Family	Species	Scientific name	Status	Feeding guild	IUCN Red List	WPA 1972	Population trend
1	Galliformes	Phasianidae	Indian Peafowl	*Pavo cristatus*	R	O	LC	Sch. I	Stable
2	Anseriformes	Anatidae	Lesser Whistling-Duck	*Dendrocygna javanica*	R	O	LC	Sch. IV	Decreasing
3			Gadwall	*Mareca strepera*	WV	H	LC	Sch. IV	Increasing
4			Indian Spot-billed Duck	*Anas poecilorhyncha*	R	H	LC	Sch. IV	Decreasing
5			Northern Shoveler	*Spatula clypeata*	WV	O	LC	Sch. IV	Decreasing
6			Common Pochard	*Aythya ferina*	WV	O	VU	Sch. IV	Decreasing
7	Podicipediformes	Podicipedidae	Little Grebe	*Tachybaptus ruficollis*	R	C	LC	Sch. IV	Decreasing
8	Ciconiiformes	Ciconiidae	Painted Stork	*Mycteria leucocephala*	R	C	NT	Sch. IV	Decreasing
9	Pelecaniformes	Threskiornithidae	Black-headed Ibis	*Threskiornis melanocephalus*	R	C	NT	Sch. IV	Decreasing
10			Red-naped Ibis	*Pseudibis papillosa*	WV	C	LC	Sch. IV	Decreasing
11			Glossy Ibis	*Plegadis falcinellus*	WV	C	LC	Sch. IV	Decreasing
12		Ardeidae	Indian Pond-Heron	*Ardeola grayii*	R	C	LC	Sch. IV	Unknown
13			Purple Heron	*Ardea purpurea*	R	C	LC	Sch. IV	Decreasing
14			Cattle Egret	*Bubulcus ibis*	R	C	LC	Sch. IV	Increasing
15			Great White Egret	*Ardea alba*	R	C	LC	Sch. IV	Unknown
16			Little Egret	*Egretta garzetta*	R	C	LC	Sch. IV	Increasing
17	Suliformes	Phalacrocoracidae	Little Cormorant	*Microcarbo niger*	R	C	LC	Sch. IV	Unknown
18	Accipitriformes	Accipitridae	Black-winged Kite	*Elanus caeruleus*	R	C	LC	Sch. I	Stable
19			Black Kite	*Milvus migrans*	R	C	LC	Sch. I	Stable
20			Egyptian Vulture	*Neophron percnopterus*	R	C	EN	Sch. IV	Decreasing
21			Shikra	*Accipiter badius*	R	C	LC	Sch. I	Stable
22	Gruiformes	Rallidae	White-breasted Waterhen	*Amaurornis phoenicurus*	R	O	LC	Sch. IV	Unknown
23			Purple Swamphen	*Porphyrio porphyrio*	R	O	LC	Sch. IV	Unknown
24			Common Moorhen	*Gallinula chloropus*	R	O	LC	Sch. IV	Stable
25			Common Coot	*Fulica atra*	R	O	LC	Sch. IV	Increasing
26	Charadriiformes	Jacanidae	Pheasant-tailed Jacana	*Hydrophasianus chirurgus*	R	O	LC	Sch. IV	Decreasing
27			Bronze-winged Jacana	*Metopidius indicus*	R	O	LC	Sch. IV	Unknown

	Order	Family	Species	Scientific name	Status	Feeding guild	IUCN Red List	WPA 1972	Population trend
28	Charadriiformes	Recurvirostridae	Black-winged Stilt	*Himantopus himantopus*	WV	C	LC	Sch. IV	Increasing
29		Charadriidae	Red-wattled Lapwing	*Vanellus indicus*	R	C	LC	Sch. IV	Unknown
30		Rostratulidae	Greater Painted-Snipe	*Rostratula benghalensis*	R	O	LC	Sch. IV	Decreasing
31		Scolopacidae	Common Redshank	*Tringa totanus*	WV	C	LC	Sch. IV	Unknown
32			Green Sandpiper	*Tringa ochropus*	WV	C	LC	Sch. IV	Increasing
33			Wood Sandpiper	*Tringa glareola*	WV	C	LC	Sch. IV	Stable
34	Columbiformes	Columbidae	Rock Dove	*Columba livia*	R	G	LC	Sch. IV	Decreasing
35			Eurasian Collared-Dove	*Streptopelia decaocto*	R	G	LC	Sch. IV	Increasing
36			Red Turtle-Dove	*Streptopelia tranquebarica*	R	G	LC	Sch. IV	Decreasing
37			Laughing Dove	*Spilopelia senegalensis*	R	O	LC	Sch. IV	Stable
38			Yellow-footed Green-Pigeon	*Treron phoenicopterus*	R	F	LC	Sch. IV	Increasing
39	Psittaciformes	Psittacidae	Alexandrine Parakeet	*Palaeornis eupatria*	R	F	NT	Sch. IV	Decreasing
40			Rose-ringed Parakeet	*Alexandrinus krameri*	R	F	LC	Sch. IV	Increasing
41	Cuculiformes	Cuculidae	Jacobin Cuckoo	*Clamator jacobinus*	SV	I	LC	Sch. IV	Stable
42			Common Hawk-Cuckoo	*Hierococcyx varius*	R	I	LC	Sch. IV	Stable
43			Western Koel	*Eudynamys scolopaceus*	R	O	LC	Sch. IV	Stable
44			Greater Coucal	*Centropus sinensis*	R	O	LC	Sch. IV	Stable
45	Strigiformes	Strigidae	Spotted Owlet	*Athene brama*	R	I	LC	Sch. IV	Stable
46	Caprimulgiformes	Apodidae	Little Swift	*Apus affinis*	R	I	LC		Increasing
47	Bucerotiformes	Upupidae	Common Hoopoe	*Upupa epops*	R	I	LC	Sch. IV	Decreasing
48	Coraciiformes	Coraciidae	Indian Roller	*Coracias benghalensis*	R	I	LC	Sch. IV	Increasing
49		Alcedinidae	White-breasted Kingfisher	*Halcyon smyrnensis*	R	C	LC	Sch. IV	Increasing
50		Meropidae	Asian Green Bee-eater	*Merops orientalis*	R	I	LC		Increasing
51	Bucerotiformes	Bucerotidae	Indian Grey Hornbill	*Ocyceros birostris*	R	O	LC	Sch. I	Stable
52	Piciformes	Megalaimidae	Brown-headed Barbet	*Psilopogon zeylanicus*	R	F	LC	Sch. IV	Stable
53			Coppersmith Barbet	*Psilopogon haemacephalus*	R	F	LC	Sch. IV	Increasing
54		Picidae	Black-rumped Flameback	*Dinopium benghalense*	R	I	LC	Sch. IV	Stable
55	Passeriformes	Laniidae	Long-tailed Shrike	*Lanius schach*	R	C	LC	Sch. IV	Unknown
56		Dicruridae	Black Drongo	*Dicrurus macrocercus*	R	I	LC	Sch. IV	Unknown

	Order	Family	Species	Scientific name	Status	Feeding guild	IUCN Red List	WPA 1972	Population trend
57	Passeriformes	Oriolidae	Indian Golden Oriole	*Oriolus kundoo*	SV	F	LC	Sch. IV	Unknown
58		Corvidae	Rufous Treepie	*Dendrocitta vagabunda*	R	O	LC	Sch. IV	Decreasing
59			Large-billed Crow	*Corvus macrorhynchos*	R	O	LC	Sch. IV	Stable
60			House Crow	*Corvus splendens*	R	O	LC	Sch. V	Stable
61		Hirundinidae	Wire-tailed Swallow	*Hirundo smithii*	SV	I	LC		Increasing
62		Pycnonotidae	Red-vented Bulbul	*Pycnonotus cafer*	R	O	LC	Sch. IV	Increasing
63		Cisticolidae	Ashy Prinia	*Prinia socialis*	R	I	LC	Sch. IV	Stable
64			Plain Prinia	*Prinia inornata*	R	I	LC	Sch. IV	Stable
65			Zitting Cisticola	*Cisticola juncidis*	R	I	LC		Increasing
66			Common Tailorbird	*Orthotomus sutorius*	R	I	LC	Sch. IV	Stable
67		Phylloscopidae	Common Chiffchaff	*Phylloscopus collybita*	WV	I	LC	Sch. IV	Increasing
68			Greenish Warbler	*Phylloscopus trochiloides*	PM	I	LC	Sch. IV	Increasing
69		Sylviidae	Lesser Whitethroat	*Curruca curruca*	WV	I	LC	Sch. IV	Stable
70		Leiotrichidae	Large Grey Babbler	*Argya malcolmi*	R	I	LC	Sch. IV	Stable
71			Jungle Babbler	*Argya striata*	R	I	LC	Sch. IV	Stable
72		Zosteropidae	Indian White-eye	*Zosterops palpebrosus*	R	O	LC	Sch. IV	Decreasing
73		Sturnidae	Bank Myna	*Acridotheres ginginianus*	R	O	LC	Sch. IV	Increasing
74			Common Myna	*Acridotheres tristis*	R	O	LC	Sch. IV	Increasing
75			Asian Pied Starling	*Gracupica contra*	R	O	LC	Sch. IV	Increasing
76			Brahminy Starling	*Sturnia pagodarum*	R	O	LC	Sch. IV	Unknown
77			Common Starling	*Sturnus vulgaris*	WV	O	LC	Sch. IV	Decreasing
78		Muscicapidae	Bluethroat	*Cyanecula svecica*	WV	I	LC	Sch. IV	Stable
79			Oriental Magpie-Robin	*Copsychus saularis*	R	I	LC	Sch. IV	Stable
80			Indian Robin	*Saxicoloides fulicatus*	R	I	LC	Sch. IV	Stable
81			Black Redstart	*Phoenicurus ochruros*	WV	I	LC	Sch. IV	Increasing
82			Brown Rockchat	*Oenanthe fusca*	WV	I	LC	Sch. IV	Stable
83			Red-breasted Flycatcher	*Ficedula parva*	R	I	LC	Sch. IV	Increasing
84		Nectariniidae	Purple Sunbird	*Cinnyris asiaticus*	R	N	LC	Sch. IV	Stable
85		Passeridae	House Sparrow	*Passer domesticus*	R	O	LC	Sch. IV	Decreasing

	Order	Family	Species	Scientific name	Status	Feeding guild	IUCN Red List	WPA 1972	Population trend
86	Passeriformes	Passeridae	Chestnut-shouldered Bush-sparrow	*Gymnoris xanthocollis*	R	G	LC	Sch. IV	Stable
87		Estrildidae	Indian Silverbill	*Euodice malabarica*	R	G	LC	Sch. IV	Stable
88			Scaly-breasted Munia	*Lonchura punctulata*	R	G	LC	Sch. IV	Stable
89		Motacillidae	Western Yellow Wagtail	*Motacilla flava*	WV	I	LC	Sch. IV	Decreasing
90			Citrine Wagtail	*Motacilla citreola*	WV	I	LC	Sch. IV	Increasing
91			Grey Wagtail	*Motacilla cinerea*	WV	I	LC	Sch. IV	Stable
92			White Wagtail	*Motacilla alba*	WV	I	LC	Sch. IV	Stable
93			White-browed Wagtail	*Motacilla maderaspatensis*	R	I	LC	Sch. IV	Stable
94			Paddyfield Pipit	*Anthus rufulus*	R	I	LC	Sch. IV	Stable

Status: R—Resident | WV—Winter Visitor | SV—Summer Visitor | PM—Passage Migrant.
Feeding Guild: O—Omnivore | H—Herbivore | C—Carnivore | G—Granivore | F—Frugivore | I—Insectivore | N—Nectarivore.
IUCN Status: LC—Least Concern | VU—Vulnerable | NT—Near Threatened | EN—Endangered.
WPA, 1972 {Wild Life (Protection) Act, 1972}: Sch.–Schedule.

Endangered, i.e., the Egyptian Vulture.

A classification of the observed species based on population trend revealed that the population of a majority of species is stable (35), followed by increasing (25) and decreasing (22) trends. The population trend of 12 species is unknown (IUCN 2022).

The areas investigated in this study encompass of water hyacinth along with some other aquatic plants as well as shallow open-water areas devoid of aquatic vegetation. The water hyacinth and aquatic plants serve as hiding cover for avian species while open water areas as the foraging grounds. The shallow water is rich in food resources, such as fishes, amphibians, insects and aquatic plants that are the major diet of avian species especially waterfowl, cormorants, grebes, sandpipers, stilts, and egrets.

Unfortunately, these fragile areas have been shrinking at an alarming rate due to urban development. An overhead tank is under construction at one of the study sites where Painted Stork, Common Redshank, and Wood Sandpiper were the regular visitors. Moreover, people living close to these sites use them for washing clothes as well as for dumping garbage. Therefore, there is a considerable need to conduct detailed studies pertaining to various aspects of the avian ecology at these waterlogged areas.

Photos of bird species captured from the selected waterlogged areas around AMU campus, Aligarh district, Uttar Pradesh, India

Asian Pied Starling.

Bank Myna.

Black Drongo.

Black Kite.

Black-winged Stilt.

Bluethroat.

Brahminy Starling.

Bronze-winged Jacana.

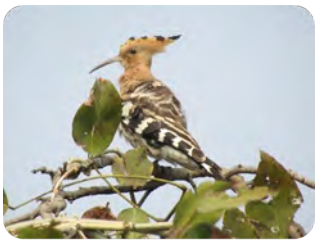
Brown Rockchat.

Brown-headed Barbet.

Cattle Egret.

Citrine Wagtail.

Common Coot.



Common Hoopoe.

Common Moorhen.

Common Pochard.

Common Redshank.

Common Starling.

Common Tailorbird.

Egyptian Vulture.

Gadwall.

Great White Egret.

Greater Painted-Snipe.

Green Sandpiper.

Indian Pond-Heron.

Indian Roller.

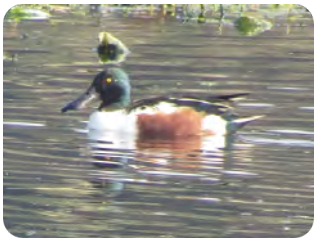
Indian Spot-billed Duck.

Laughing Dove.

Lesser Whistling-Duck.

Little Cormorant.

Little Grebe.



Northern Shoveler.

Paddyfield Pipit.

Painted Stork.

Plain Prinia.

Purple Heron.

Purple Swamphen.

Red-wattled Lapwing.

Rock Dove.

Western Koel.

Western Yellow Wagtail.

White Wagtail.

White-breasted Kingfisher.

White-breasted Waterhen.

White-browed Wagtail.

Wire-tailed Swallow.

Wood Sandpiper.

Yellow-footed Green Pigeon.

Zitting Cisticola.

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First photographic record of Chinese Rubythroat from Kalagarh Tiger Reserve, Uttarakhand

Chinese Rubythroat *Calliope tschebaiewi* are found throughout China (Northwestern Gansu, Qinghai, Sichuan, northwestern Yunnan), extreme eastern Kashmir, southern, eastern, northeastern Tibetan Plateau, Myanmar and non-breeding in the foothills of eastern Nepal to northeastern India, and northeastern Bangladesh (del Hoyo et al. 2020).

Chinese Rubythroat (Male). © Rajiv Bisht.

Chinese Rubythroat (Male) taking a dip in river Mandala. © Rajiv Bisht.

The male Chinese Rubythroat is grey on top with a black chest, a white belly and a brilliant red neck. Also, the white panels and margins on the black tail, the white 'moustache' stripe and the white eyebrows are clearly visible. A duller, colder grey-brown colour with a white belly and throat characterizes the female. It resembles the Himalayan Rubythroat. It breeds in open alpine and subalpine regions with scattered rocks and brush, the ideal environment is often higher than the Himalayan lowland brush during the winter. The song is composed of a series of loud, rich warbles that are less diverse and on an average shorter than those of the Himalayan Rubythroat (Grimmett et al. 2016).

The Corbett National Park (CNP), which also contains the Kalagarh Tiger Reserve (KTR), is located in the Pauri Garhwal District of Uttarakhand. KTR is the new name for the CNP's northern region. On 5 November 2022, we went birdwatching in the Pauri Garhwal District's Rathuwadhab Village (KTR).

At around 1525 h, we heard a bird singing. A Rubythroat was perched on some rocks adjacent to the Mandaal River bed as we drew nearer to the singing bird. The bird dove into the river a few times. *Lantana camara* and *Ziziphus nummularia* are the dominant plants in the region. The breast band of the bird was black and it had a stunning red throat. Its upper sections were brownish-grey, and it featured a noticeable white supercilium and moustachial stripe. A few photographs were taken of the bird, which seemed a little different from the typical Himalayan Rubythroat that is rather abundant in that region and we confirmed the identification from Grimmett et al. (2016). We again visited the same place on the 18 December 2022 and noticed one female near the same river bed. Chinese Rubythroat was last noticed in Forest Research Institute in 2020 (eBird 2023). This is the second record from the state and the first record from Pauri Garhwal District.

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Observation of colour aberration and feeding of halophytes by House Sparrow in Ramanathapuram District, Tamil Nadu

The House Sparrow, *Passer domesticus* (Linnaeus, 1758) is the most widespread bird species in the world and its geographical range extends over Europe, northern Africa, and parts of Asia including the Indian subcontinent (Ali & Ripley 1987). They are native and resident in Eurasia from British Isles, northern Scandinavia, northern Russia, and northern Siberia, Africa, India and Burma (Cramp 1994). Globally, most intense nest building occurs from February to May and less during rest of the year (Lowther & Cink 2020; Birds of the World 2022). House Sparrows construct nests within buildings, however, modern construction designs around the world lack suitable nesting habitats such as holes or crevices for the construction of nests (Vincent 2005). Sixteen distinct colour mutations were described in House Sparrow by Grouw (2012) and Kumar & Kushwaha (2018). The IUCN Red List has evaluated the conservation status of House Sparrow as 'Least Concern' (BirdLife International 2016).

Black coloured House Sparrow individual. © M. Pandian.

The study site Mukkaiyur Village (9.129 N, 78.481 E) is located in Ramanathapuram District of southern Tamil Nadu. Apart from traditional cultivation of paddy, millet, pulses, and cotton, tourism, pilgrimage, fishing, salt pans, and cottage industries involving palm products are the major source of income for

the people in the region. The average annual rainfall is 800 mm. The maximum and minimum annual temperatures of the district are 36°C and 20°C, respectively (https://Ramanathapuram.nic.in). The study was conducted during June 2022. A coastal village having a definite population of House Sparrow was identified. Since abundant halophytes occur in the coastal areas, the birds were observed continuously from 0600–1800h daily and recorded their foraging on halophytes. A solitary black coloured House Sparrow individual was also recorded. No live nests, eggs, chicks or adult birds were handled and a minimum distance of c. 15 m was maintained during the observations. Photography was done using a Nikon P1000 digital camera.

Results and discussion

The study revealed that the individuals of House Sparrows (n = 12) consumed succulent leaves of halophytes, such as *Suaeda maritima* (L.) Dumfort. (Amaranthaceae) and *Sesuvium portulacastrum* (L.) L. (Aizoaceae). Succulent parts of *S.portulacastrum* contains 10.2–12.5% protein and high minerals like Ca, Na, Cl, K, and Mg (Lokhande et al. 2012). Similarly, *S. maritima* contains 12.96% protein and other minerals (Yuttana 2015). Since the studied habitat is a coastal area, the individuals of House Sparrows might have consumed the succulent leaves of these two halophytic plants probably to meet their protein and mineral requirements. However, detailed study is required to ascertain the reasons for consuming halophytes.

In Mukkaiyur Village, an abnormal black colored adult House Sparrow individual was observed. It was freely foraging with other individuals of a flock. No antagonistic behaviours existed between them while foraging, aggregation, and roosting. Albinism and melanism are two most commonly reported form of polymorphism in birds (Mundy 2006). Grouw (2012) has described 16 distinct colour mutations including melanistic colour (black colour) in the House Sparrows based on the specimens found in museum collections and it was due to abnormal deposit of melanin in skin and feathers. Though six most common heritable colour aberrations are found in birds, viz., albinism, leucism, brown, dilution, Ino, and melanism, brown colour is the most common mutation in the House Sparrows (Grouw 2012). Kumar & Kushwaha (2018) have recorded black and reddish individuals of House Sparrow. The recording of a solitary, live black colored House Sparrow in the present study site might have been due to colour mutation as stated by Grouw (2012).

Conclusion

The study area being a coastal village, has become a potential habitat for House Sparrows. Efforts need to be made to create awareness among the local residents about the need to conserve declining populations of House Sparrows. More nesting sites in the form of cavities in the newly constructed buildings have to be created and artificial nest-boxes have to be installed in residential areas and commercial establishments. Continuous study is required to monitor the colour aberrations and feeding on halophytes by House Sparrows in these coastal villages.

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OCEAN CONSERVATION ADVOCACY THROUGH ART

In a world where the ocean faces unprecedented threats, both locally and globally, the increasing destruction is putting humankind at risk. The rising tide of destruction and pollution jeopardizes the invaluable services provided by the ocean.

As changes, such as warming, ocean acidification and many more reshape the underwater landscape, the call for collective action echoes louder than ever. Amidst the turmoil, visual art emerges as a powerful storyteller, vividly illustrating the pressing need to address ocean conservation.

The students from CS Academy, as a part of the 1OCEAN initiative run by Zooreach in order to showcase their shared passion for ocean conservation embarked on a creative journey using glass bottles as their canvas. The

children poured their heart into each creation making it into a tangible representation of the pressing need to address the threats faced by the ocean. Below attached are few of their work done by the students.

To conclude, as we admire the beauty and depth of their creations on glass bottles, it is my and the Zooreach team's sincere hope that these young advocates continue their journey beyond the canvas.

May their passion for ocean conservation drive them to actively engage in initiatives, campaigns, and sustainable practices that contribute to the preservation of our precious marine ecosystems.

CS Academy INTERNATIONAL

1OCEAN zooreach Zoo Outreach Organisation

Tea, kids and the birds—Birding education in CSI School, Devon Estate, Koppa Taluk, Chikkamagaluru District

Growing up in the Devon tea plantation of Koppa taluk, Chikkamagaluru district, I was always fascinated with the bird diversity over here. It was my dream from a long time to get at least a few kids in the tea plantation interested in birding. So, I organized a two-day birding education from 13–14 December 2023 to the school children of CSI school, Devon Estate.

Students drawing the bird they are familiar with. © Melito Pinto.

Since the total strength of the school was 26 students, I took the sessions with everyone seated together in a single classroom. On day 1, I began first with a mini assessment of how much the kids know about birds. So, I asked them to draw any bird that they were familiar with. While most all of the kids drew the peafowl, others drew parakeets which they call as 'Ramagili'. After this, I asked them how many birds they can name, and interestingly they named around 15 species of birds.

Students enthusiastically observing birds through the binoculars. © Melito Pinto.

Students helping each other using the binoculars. © Melito Pinto.

Melito explaining the kids about the common birds of Devon tea plantation. © Mamatha Shetty.

Next, I began by asking the question on what makes a bird? They swiftly responded by saying that the birds can fly and they lay eggs. I appreciated their answer and introduced them to the other aspects of birds such as the feathery body, and nest making. When I asked them what to do they think the birds feed, majority of the answers were pertaining to grains and fruits and one of them mentioned 'other birds'. So, I followed up this and showed them the examples of frugivorous, granivorous, piscivorous, nectarivorous and carnivorous birds. Continuing with the given examples, I told them about the ecological importance of birds by asking what would happen if each bird in their feeding niche were to disappear.

With the basic concepts covered, I introduced them to birding and dos and don'ts when birding. When I asked them what they should not do when birding, they swiftly responded 'we should not disturb the birds'. This was a prompt response from their end without me giving them any kind of clue. Then I showed them equipment

Group photo with the students and their teacher Mrs. Mamatha Shetty. © Anil Pereira.

such as the binoculars that are used during birding and also introduced them to the concept of documenting their observations through nature journalling. With the basic concepts covered, the session of day 1 came to an end.

On day 2, I showed them around 40 common species of birds that can be observed in the Devon tea plantation, along with their calls. While showing them the pictures of birds such as the Indian Pitta *Pitta brachyura*, I introduced them to the concept of resident and migratory birds. Once the presentation ended, I showed them how to use the binocular. Then I took them to a nearby site which consisted of arecanut plantation along with a wetland. We could see the cattle grazing with Cattle Egrets *Bulbulcus ibis* surrounding them. I gave the binocular to one of the kids and asked him to observe the egrets and pass the binocular on to others once he's done observing. This is when amazing things began happening. The moment the students got their hands on the binoculars, they not only enthusiastically started watching the birds, but also voluntarily showed the younger kids how to use the binoculars. They even spotted many birds which I failed to spot. Such was their enthusiasm. After watching birds with them for some time, I ended the session of day 2, while asking them to keep observing the birds whenever they can and also to take care not to litter anywhere in their surrounding from here on.

The effect of introducing the students to birdwatching was evident to me on the same day of 14 December 2023, when two kids who attended the session knocked the house door in the evening asking me to come with them to watch a bird that they observed nearby.

These two days of birdwatching with the students of CSI school has made me determined to continue my birding education with all students in the different schools of Koppa. Additionally, I'm happy about the fact that now I've got new birding buddies in the tea plantation through these kids.

Acknowledgements
I'm grateful to Mr. M.K. Saptha Girish for his suggestions on conducting birding education to kids. I'm also grateful to Mrs. Mamatha Shetty and Ms. Sumithra, teachers, CSI school, Devon Estate, for their cooperation with conducting birding education to the students.

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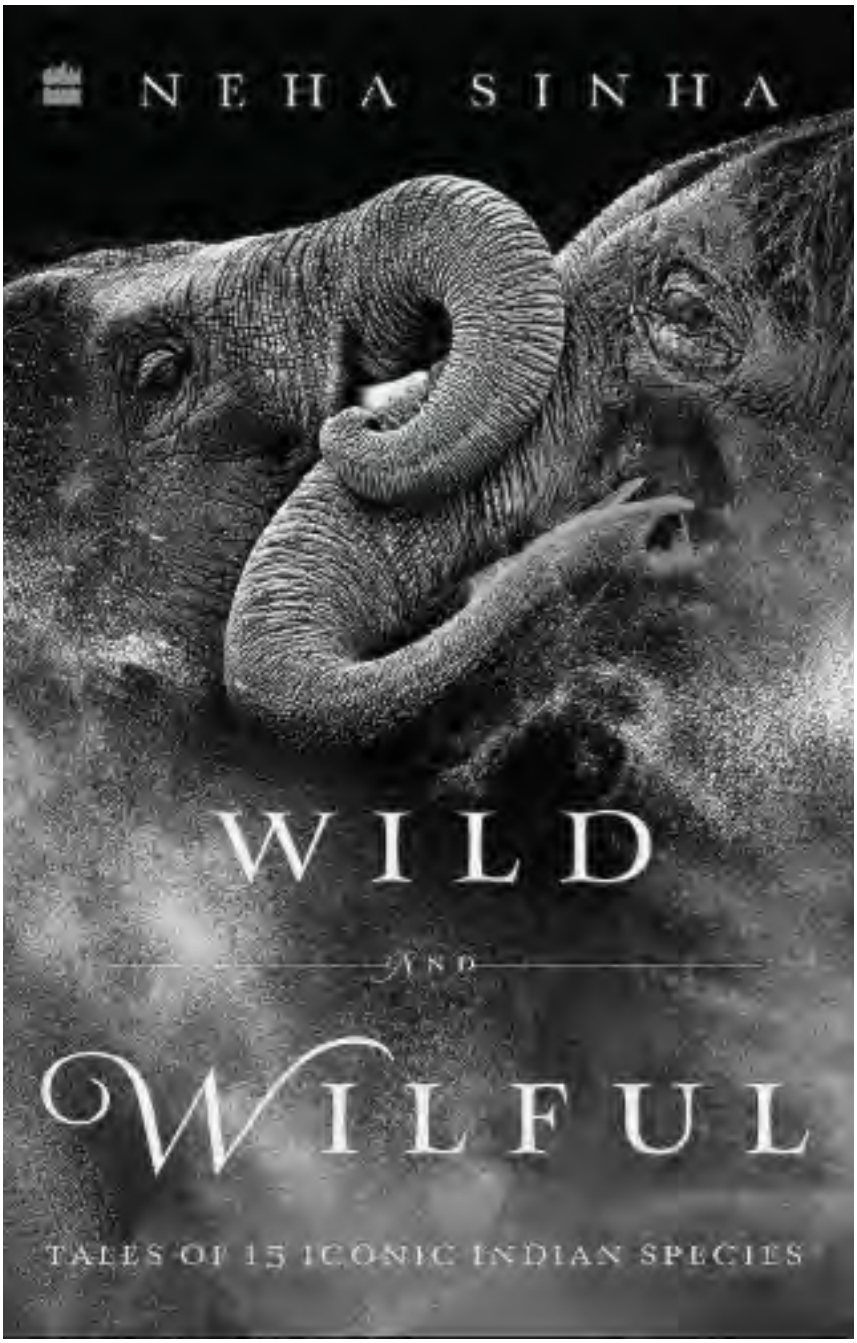
Wild and Wilful

Author: Neha Sinha

Published by HarperCollins (10 February 2021); Price: Rs. 599.00

Lot many aspects stay hidden in the world of wildlife. Neha Sinha, with her cinematic narration, and more than a pinch of satire and 'worth narrating' realities of working towards wildlife conservation, traverses these paths with panache. Keeping aside the passé style of arranging the contents page, she rather adopts a refreshing idea of categorising these chapters on 15 different animals largely based on where they occur the most- the earth (land), sky, water, and our hearts. Through her elegant writing, she puts forward the urgency in conservation and the many struggles and achievements in the process. We tried our hand at reviewing the book and here is our take on it, chapter wise. Go ahead with caution, spoilers here and there.



Earth

Chapter 1: The Leopard and the Cockroach

The story goes about telling the tales of different scenarios that a leopard might find itself in (Or might not want to be found itself in.). The author has described the leopard as elegant as it is, as it should be talked about. The story starts from the middle and then as the chapter goes on the details are revealed which makes the reader interested to know how the story unfolds. The chapter travels from one story to the other narrating

incidents of what a leopard goes through in an area populated by humans. Some of the stories don't just start off, a narrative is set first and then built up to its climax which is helpful in understanding the whole scenario. References were given so as to make it simple and understandable to even common people who might not know about the Wildlife (Protection) Act, 1972. the title is well served when the author compares a leopard (near or in the human settlements) to a cockroach, which resonates with how most people treat the creature. The chapter though has some harsh realities of what a leopard faces in this country; it ends on a hopeful note.

Chapter 2: The Monkey Joint Family

The chapter revolves around the love-hate feelings (mostly hate when people are troubled due to their own doings) that people share towards the Rhesus Macaques. Love – because people connect the creature's existence to a religious component and feed them, and, hate – due to the troubles that are caused. The story has quite a few puns which make the chapter more interesting to read also it compares how humans get very irritated when they see a similar behavior to theirs in an animal and want it to be in control. Callbacks are there in this chapter as the price of an animal's life is compared to a cup of coffee which was mentioned earlier in the chapter. It also mentions some basic problems of our society that are not so much related to the monkeys but makes one think.

Chapter 3: The Phoenix of the Desert

Beginning with narrating a friend's experience of observing the Great Indian Bustard (GIB), the author takes the readers through a tour of the arid stretches of Gujarat and Rajasthan, the habitat of the bird. Mocking at the irony of the bird's bejewelled name with its present situation, the author unfolds the persistent threats faced by the bird in detail. Talking of this, she also mentions how the bird had lost the pageant to being the national bird. She vividly explains the phrase 'development comes with a price' and also throws light on the mirage that has blinded hollow brains to see deserts as wastelands. Talking of this neglect, she talks of yet another species in the north-east, the White-bellied Heron and its tryst with surviving in the dam doomed Arunachal Pradesh. The Black-necked Crane also makes an appearance which tells a different story. The chapter explains the steps taken so far by the governments, most of them floppy and done with slothfulness. She narrates her story of going in quest of the bird in the army land of Pokhran and finishes off the chapter with the recent conservation efforts being taken in favour of the birds.

Overall, the author's excellent writing takes you through a visual tour through the deserts. We like how she has explained minutest of things cinematically and has given ample facts and descriptions to make the audience understand the plight of the birds. However, at some places small errors cause one to pause and wonder, e.g., 'many fingered sea' (p. 52); does the author wish to compare it to a marine animal? 'GIBs dying of thousand cuts in a chemical-laden field' (p. 54) was found rather confusing. Yet another was 'the upturned beaks' (p. 56) of the greater flamingos, when in reality they have quite the opposite of it. Then there are a few

grammatical/printing errors (pp. 58, 61, 66). However, these hardly hinder the wonderful read.

Chapter 4: Don't kiss a Cobra

The whole chapter is about two snake species- the Indian Cobra and the King Cobra, the deep-rooted superstitions around them, their rescuers and their quest to educate people about the reptile. Talking about mythology and human understanding of wildlife, the author tries to explain the dilemma of conserving snakes due to their slithered position between myth and reality (and as a god and a troublemaker). She also adds how amidst the existing problems in the conservation of the animal, sociological problems wedge in too. She does not fail to mark the mention of pop culture's role in moulding people's understanding of and attitude towards the already persecuted animal. Narrating stories of experts' experience with these reptiles, she also tries to explain how the King Cobra is different from other snakes. Through her writing, the author mocks at the prejudiced attitude of the people and government towards its national reptile.

Chapter 5: The Obituary that will not be Written

As is the signature style, the chapter begins with a description of the elephant. A pleasant read, in the chapter the author mentions how some people don't address the gentle giant as 'it' but as 'who' since they believe they are no less of people than we are. Neha also includes contrasting stories of how some people would choose a golf course in the no development zone. A single line – 'An elephant maybe wild but it's not entirely free to be wild' – captures the entire essence of the chapter. The story travels through various places, explains the problems faced by such majestic creatures and the extent to which these animals are pushed and their safety compromised both in and out of a wildlife sanctuary. An elephant in this country has a lot to face – a golf course, railway tracks, plastic, electric fences, fireballs, abuse, and humans. Yet in some places, there is still hope and happy stories of the re-establishment of elephants in a tiger reserve that didn't have any for several decades.

Though everything seemed fine with the narration, one information about the incident was missing in the chapter. A friend of ours who was present at the time of the 'The Railway Elephant' mentioned in the book, pointed out to us that the elephant was pregnant at the time of the incident.

Chapter 6: The Mother of Men and Tiger

The author brings many stories together and narrates a different perspective of the people in each one. The chapter starts with two tales of tigers from two different places, yet the narrative is somewhat the same, it's a beautiful creature but a distance should be kept. the chapter is a good read but one has to read it a few times to truly get the whole story that the author is trying to convey. The story travels many places from Sariska to Seoni and with the change in place, there are also many changes in perceptions. To add on the scientific names of the trees in a particular place was something important to mention. The more proximity to the creature the more hate/fear is in the people. It also draws attention to the fact that

even with an animal as popular as the tiger, only a few individuals get attention from the public, even though they might not be right for the cause they are supporting the animals, other remains unnoticed – it is evident how people pay attention to an extraordinary narrative.

Sky

Chapter 7: Tiger of the Gardens

Between the megafaunas, butterflies also find a place in Neha Sinha's Wild and Wilful. Talking about the various butterfly species she has observed (a skill she has mastered over the years), she tries to explain the readers the vast variety and occurrence of the insect. Through narrations of their life and behaviours and role in the environment she tries to spill out facts. Also, she forgets not to emphasise on the threats they have been facing. But amidst all, she highlights the fact of how the most polluted of cities like Delhi hosts these winged beauties, thus highlighting how adaptable the animals have been.

Thus, through her engaging writing style, she does capture the attention of the audience in the first go itself. Also, the inclusion of factual descriptions about the insects and not just their beauty serves the purpose of educating people about them. Repeated use of some metaphors can put the reader a little off. Also the author could have avoided some unnecessary mentions like that of the Malabar Thrush (a bird), amidst the conversation about butterflies. It completely leaves the reader wondering where it appeared from, and thus diverts them from the context.

Chapter 8: Letters in the Sky

The chapter explains the infamous Amur Falcon massacre in Nagaland's Doyang Reservoir. Giving a description of the place and the people, the author explains about the Naga people's legacy – hunting. In the chapter, she explains the bird's migration, the onset of the massacre, and the consequences of the massacre. She mentions how stereotypical social views led to the outcry within the nation. Being a part of the action plan team, the author narrates her own experiences of the ups and downs towards the road to successful mitigation of the problem.

Meticulously covering all the phases of mitigating this human-animal negative interaction, the author, through her narrations, grasps the attention of the readers to the incident. The addition of some basic understanding about the falcon and its migratory behaviour gives the reader a fairly good understanding of the unique bird. Through the chapter, she explains how calculated team actions and collaborations with communities can lead to successful interventions.

Water

Chapter 9: Dolphins of the Mind

Walking the readers through the ghats of the ill-fated Yamuna, the author describes the abode of the dolphins and also lays out interesting facts about the animal. Talking about overseeing the animal and what causes it, she also lists what can be a solution to the problem. Giving a glimpse on the studies being done on dolphins, and excerpts from conversations with scientists, she also explains the struggles of it. She also explains the age-long cultural

connection of Indians and rivers. Additionally, through explanations and unapologetic criticisms on the follies of laws (E.g., National Waterways Act) and actions related to rivers, she highlights the grievous situation of both river and dolphin conservation. She ends it with the hope that one day things will work out.

The very quirky entry of the protagonist here is unlike that of other chapters. So is the writing style followed throughout. Making use of an interactive way of writing, Neha makes the audience a part of the journey. This is one of best ways to garner interests of the audience and can help build a connection with the topic being narrated (here, about the dolphins). Yet another way to make the audience empathise with the character is to use more humanized feelings and situations, which the author has made good use of. She uses the word 'assault', a term generally used on humans, to the animal so as to explain to people the intensity of harm. Elaboration on how rivers have always been a part of Indian culture, also strikes the right chords with our audience. Apart from criticising, the mentioning of salient features of the Wetlands Act which works towards the conservation of the river and hence the animal, makes the audience aware of how a law should look like.

Chapter 10: The Stone-faced Neighbour

A strangely brave man, who even after the situation he is in due to the mugger, does not have a bit of hate towards the creature, but considers them as his kids. While this is the case in one part of the country, on the other hand where relocating these creatures as a 'precaution' without a proper management plan was carried out. In yet another part of the country, even though there is not much love towards this species, people know the schedule of the creatures and manage their own so as to reduce conflicts, the title is apt as Mugger doesn't have very expressive features – a thing which people often look for, for relatability and since that's not present these are some of the creatures which don't get candlelight march even when the Wildlife (Protection) Act is violated in the name of tourism/precautions. 'Conservation is not a thing to be 'done' it is just to be lived through' this would be the ultimate lesson that should be considered in this chapter.

Heart

Chapter 11: Love in times of COVID-19

This chapter isn't about the crimes or misconducts against wildlife, which we usually hear about, it's just about how an international visitor, the rosy starlings, which goes unnoticed otherwise or only a few people care to notice plays an important role in the life of the author in the times of uncertainty and life comes to a stand-still, due to the pandemic. The author has already seen these visitors in a different form in a different place, and the realization sunk in only after some time.

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Reviewed by P. Kritika and Aishwarya S. Kumar, Zoo Outreach Organisation Trust, Coimbatore, Tamil Nadu 641006, India.

Nilgiris - A Call For Help

Voice of a Sentient Highland

Author: Godwin Vasanth Bosco
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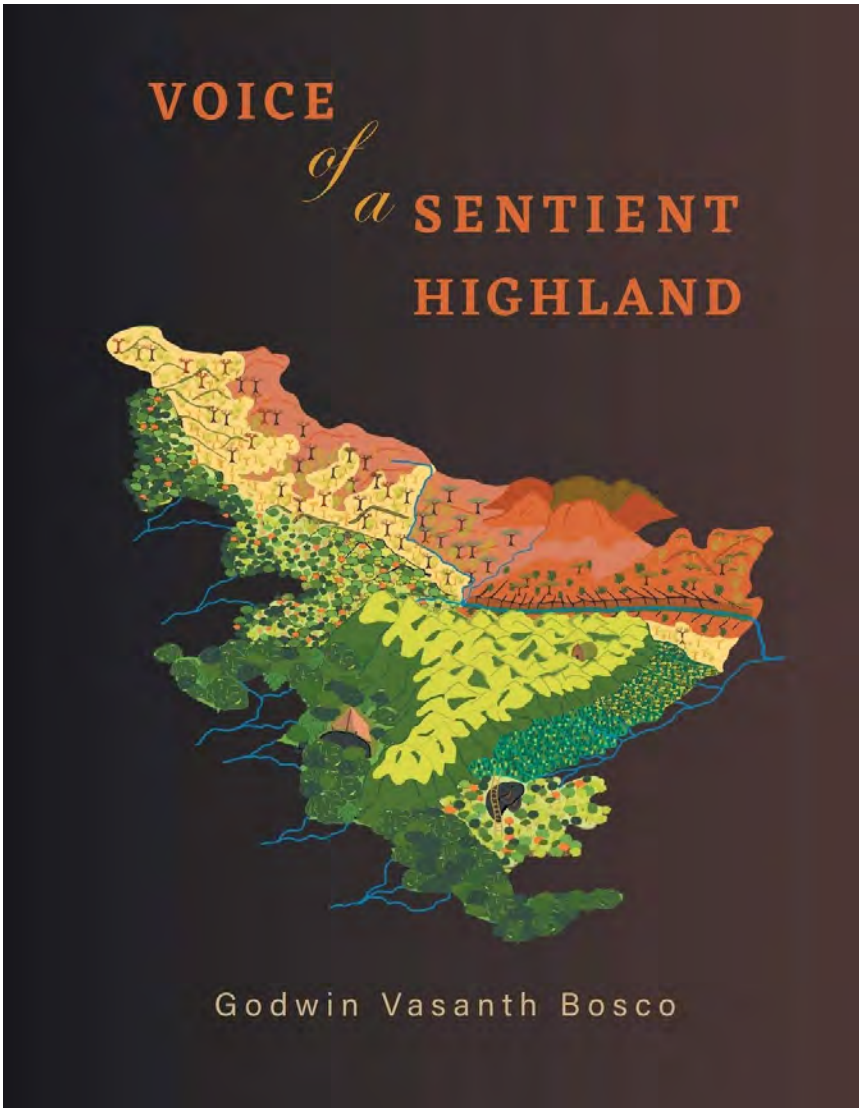
Introduction

The author Godwin Vasanth Bosco, is an ecologist working for restoration of forests and grasslands of Nilgiri highlands and Western Ghats of India. He is the founder of Upstream Ecology and the person who came up with the ideology of holistic ecosystem and grassland restoration effort program in the Nilgiris.



The book bears an intensified treasure of knowledge about Nilgiri highlands and its connected ranges. It takes the reader on a tour in the highlands, where the grasslands, forests, vegetations, landscapes, plants, animals, native, invasive, exotic and endemic species, rivers, valleys, microbes, coral reefs, communities, climate crisis, habitat degradation, anthropogenic activities, carbon sequestration, and emissions are the aspects to be recorded along the journey. The author has upheld to the whole world about nature being sensible and radiating its voice through various signs or indications for us humans to stop degrading the quality of natural habitat and allow the nature to revive itself by providing it time and enough space, which is a potent characteristic of the ecosystem and hence the apt title of the book.

The author has provided us with extraordinary ideas and solutions for the problems

that have been rooted by human beings to rectify and come to a common ground of co-existence in nature through his experiences in the field for almost a decade, his education and applications of the subject, immense research and his passion for comprehending and love towards the Nilgiris and its ecosystem.

Apart from this, at the beginning the book itself explains the modules and how to read the book with ease. The astonishing part of the book is its pictures and graphical representations, the mesmerizing moments captured in the wild that clearly depict the spell bounding beauty of nature that one would get caught with awe. The readability of the book is eased with pictures to relate to, distribution of information placed at different points on the page and small notes inside text boxes.

Chapter wise review:

Chapter 1: Nilgiri Highlands

It consists of 5 topics, and each topic gives a brief introduction about the Nilgiri Mountain range. Readers can easily fall into a reading trap by just looking into the beautiful pictures of *Strobilanthes kunthiana* (Neela-kurinji) and many other pictures of flora and fauna. Contains an introduction to Nilgiris and its connected ranges, formation of Western and Eastern Ghats by splitting away of the Indian plate from an early supercontinent formation, moving out of Gondwanaland and the collision with Eurasian plate. Followed by different types of vegetation range present in this region such as, the mid-elevation evergreen forest, wet evergreen forest, mixed types of hill forest, moist deciduous forest, dry deciduous forest, scrub jungle vegetation and the montane shola-grassland mosaic vegetation. Continuing to this, it mentions about 3,500 different plant species and numerous animal species in the region. It highlights 25 different indigenous peoples, each with their own unique languages, customs and ways of living. It sheds light on how the ecology of the region was not disturbed due these indigenous people living. Addition to this the author has spoken about how the Nilgiri terrain represents nearly every kind of sustainable living, from shifting cultivation, pastoralism, and bartering to hunter-gatherers.

Chapter 2: The Shola Grasslands

The author introduces the reader to the magnificent shola grasslands in this chapter, how sholas make-up as a unique mosaic of tropical montane forests and montane grasslands, and about how distinctly they maintain the edges with the grasslands. Breathtaking pictures of the landscape covered by grasslands are included for better comprehension and to admire its beauty. Sri Lankan and Nilgiri shola highlands slightly differ, and it explains what the differences in these two regions are. Explains about sholas having high endemic plant communities and native tussock grasses, which provides a unique environment for other life forms to survive. There are some fascinating facts explained about the proportion of occurrence of montane grasslands and sholas in the high elevations of the plateau with lower region of the plateaus. There are a total of 600 species of flowering plants and 100 species of grasses in Nilgiri plateau. One can learn about the biogeography of sholas in this chapter and would be surprised to know the sholas are home to plants that evolved 350 million years ago and remnants of

Gondwana and Laurasia time too. The author conveys the antiquity of the grasslands with regards to "The plant *Kalanchoe grandiflora*". Later the topic shifts from evolution to climatic conditions and other topographical features that contributed to forming the shola-grassland mosaic. In the last part of the second chapter, it's all about the crucial ecosystem services the shola forests provide.

Chapter 3: Drastic Changes

In this concise chapter, the author guides us through the evolution of the flora in the Nilgiri Biosphere, examining three distinct periods: pre-colonization, the era of independence, and the present day. The arrival of colonizers brought in new agricultural practices which further led to wiping off pristine forests.

The chapter points out the early 1800s establishment of main towns, after which the entire plant diversity was scrapped off to grow invasives and introduced plants and vegetables. The misinterpretation of grasslands as wastelands formed amongst humans had some serious consequences such as, construction of dams, reservoirs, and hydroelectric projects that led to the submerging of most of the regions within the Nilgiri Biosphere. It talks about gradual diminishing of the quality of soil over time. The author has included pictures to depict the present scenarios. Bitter incidents regarding how the animals due to invasives like *Lantana camara* has and is still affecting their lives and increased fragmentation resulting in human-wildlife negative interactions. The conclusion of this chapter features a detailed schematic representation illustrating the issues, dynamics, and threats confronting the Nilgiri Biosphere in a manner that is easily comprehensible.

Chapter 4: Altered Plant Ecologies

Due to the introduction of exotic species, the landscape of Nilgiri has been highly altered, it is obvious that human interventions are the only cause for these consequences to take place in the natural world. The concept of converting grasslands into commercially valuable plantations for obtaining products for human usage by afforestation, due to ignorance and considering it as wastelands or barren lands in the early 18th century paved ways for invasive trees to take-over the landscapes. It projects how exotic species can become invasive species and what are their impacts on ecosystem in detail such as, the allelopathic effects of these invasives that a native species suffer, hydrological disruption, invasives altering the soil nutrients, out-competing and eliminating the native species, numerous weeds, and ornamental plants other than trees becoming invasives as well. The author stresses, the precious and unique habitat of shola-grasslands being compromised to exotic plants and trees, immediate restoration and conservation actions required to save these grasslands.

Chapter 5: Extant Native Plant Ecology

In this chapter the author explains about the diversity of Nilgiri Biosphere Reserve, and he describes the landscape as a microcosm of earth. The incredible diversity in terms of landscape and flora has been thoroughly mentioned. There is a map showing the current land cover of shola-grassland which shows extant native plant ecology and presently the native plant communities in shola-grassland

are found on the four edges of the plateaus: The Northern edge, Eastern edge, Southern edge and Western edge. The chapter covers the entire diversity of native plants, invasives and endemic plant species that are situated at the edges of northern, eastern, southern, and western edges of Nilgiris. The interesting thing to note about this chapter is there are many glossy images of different landscapes, endemic flowers and shola grassland, its pictures make the book lively. Lastly, it speaks about the only watershed present in the inner plateau of sholas, that has disruptive water flow, its ecology and how sacred the watershed is for the communities and native species of plants existing in that region.

Chapter 6: Regeneration

An extremely intriguing chapter regarding the regeneration of native plant species in a place full of exotic and invasive plant species. It talks about the displacement of native species with large blocks of plantation forests with exotic trees and this has resulted in alteration of plant ecology. The chapter highlights how the regeneration of shola sapling has started to occur underneath several types of exotic tree plantations and this is a major phenomenon that is occurring in the Nilgiris Plateau. The Author has addressed a widely known issue that the monoculture plantations of non-native trees are incapable of supporting native vegetation. Further, this chapter is divided into five sections and subsections that deal with the specification of regeneration, displacing pressure being overcome, influencing factors, example for regeneration and regeneration as whole in Nilgiris. It is surprising to read about the exotic species giving a hope to regrow the native trees and to have an area where coexistence might be possible. Lastly, it has been mentioned about the management that needs to be done to safeguard the regenerative species as well as the ones that will regenerate and the measures that can be taken to help grow and develop a lesser disturbance to them by involving the local communities and working on restorative actions.

Chapter 7: Beyond Resilience

This section of the book portrays the larger picture of environmental degradation due to anthropogenic activities, especially the release of dangerous gases. Author here has done his part of giving evidence from data, examples and trends fathoming the fact that technological solutions cannot fix a depleting coral reef or restore any degraded ecologies or reduce the excessive pressure on land that may reduce carbon emissions. Initially, bringing light to the adverse current situation, he has tried to convince through the industrial matrix to go carbon negative. There lies the depth or in detailed information regarding significance of understanding the level or intensity of damage that has been caused by anthropogenic activities to the ecology, which pushes the wilderness to being incapable of repairing itself even when it has the potential to revive, by not providing time and space it requires. In conclusion, this chapter urges all of us to take necessary actions by learning about ecology to bring back the glory of this sentient highland for a better future.

Costly but Worthy

This section requires a separate discussion area. Mostly a student or an individual wouldn't

be able to afford this book or buy due to the high cost, but whereas universities, libraries, and other organizations can easily afford this book and I say it should be purchased by them, as this book holds solid pillar of knowledge that builds a strong foundation for people to understand their own homeland and its ecology in which they are also a part of and it strikes one's minds with what intensity the nature is being ignored. Based on all the above-mentioned characters the book is **priceless**.

Acknowledgement: We appreciate Godwin Vasanth Bosco for presenting his wonderful book to Dr. Sanjay Molur and to the fellows of RHATC. Thanks to Dr. Molur for initiating the review of the book, as he thought the book and work done by the author is admirable and essential for all to understand. This statement will be agreed once the reader thoroughly reads the book. It aided all the fellows in comprehending the significance of grasslands and forest, misconception towards grasslands and solutions to overcome the ongoing global crisis based on which we, at Ram Hattikudur Advance Training in Conservation course at Zoo Outreach Organization have incorporated the ideology in our learnings to bloom to become conservationists.

Reviewed by A. Shivaani, N. Suraj, H. Maitreyi, Amrin Ansari, V.B. Pannaga, L.M. Aparna, Praveen Rozario, S. Joel, M. Paridhi & C.K. Arjun, RHATC Fellow 2023–24, Zoo Outreach Organisation Trust, Coimbatore, Tamil Nadu 641006, India.

ZOO'S PRINT

Communicating science for conservation

ZOO'S PRINT Publication Guidelines

We welcome articles from the conservation community of all SAARC countries, including Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka and other tropical countries if relevant to SAARC countries' problems and potential.

Type — Articles of semi-scientific or technical nature. News, notes, announcements of interest to conservation community and personal opinion pieces.

Feature articles — articles of a conjectural nature — opinions, theoretical, subjective.

Case reports: case studies or notes, short factual reports and descriptions.

News and announcements — short items of news or announcements of interest to zoo and wildlife community

Cartoons, puzzles, crossword and stories

Subject matter: Captive breeding, (wild) animal husbandry and management, wildlife management, field notes, conservation biology, population dynamics, population genetics, conservation education and interpretation, wild animal welfare, conservation of flora, natural history and history of zoos. Articles on rare breeds of domestic animals are also considered.

Source: Zoos, breeding facilities, holding facilities, rescue centres, research institutes, wildlife departments, wildlife protected areas, bioparks, conservation centres, botanic gardens, museums, universities, etc. Individuals interested in conservation with information and opinions to share can submit articles ZOOS' PRINT magazine.

Manuscript requirements
Articles should be typed into a Word document with no more than 800 words of text and 10 key References (Tables, Images with copyright information, and Videos are encouraged) and emailed to zp@zooreach.org. Include the names of one or two potential reviewers when submitting a publication.

Articles which should contain citations should follow this guideline: a bibliography organized alphabetically and containing all details referred in the following style: surname, initial(s), year, title of the article, name of journal, volume, number, pages.

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Articles will be edited without consultation unless previously requested by the authors in writing. Authors should inform editors if the article has been published or submitted elsewhere for publication.

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