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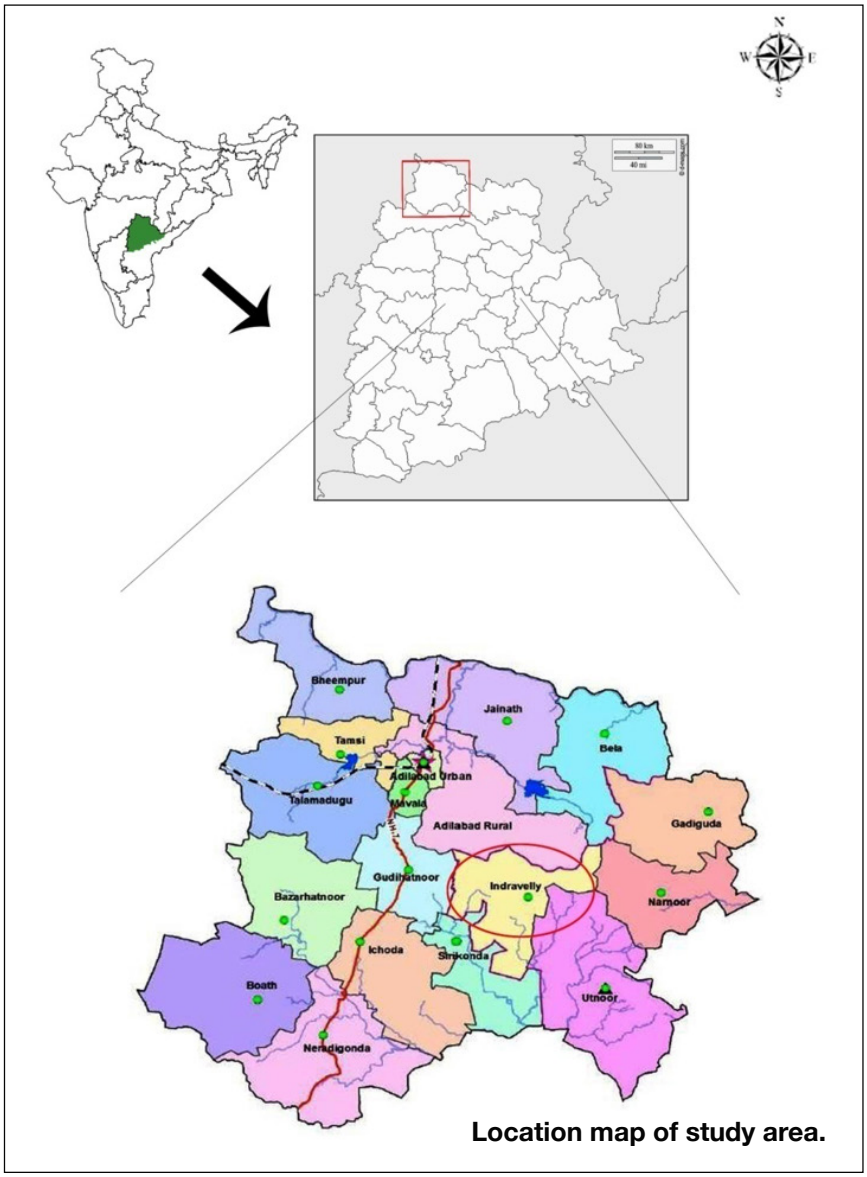
Cover photo: Bay-backed Shrike. © T. Siva.

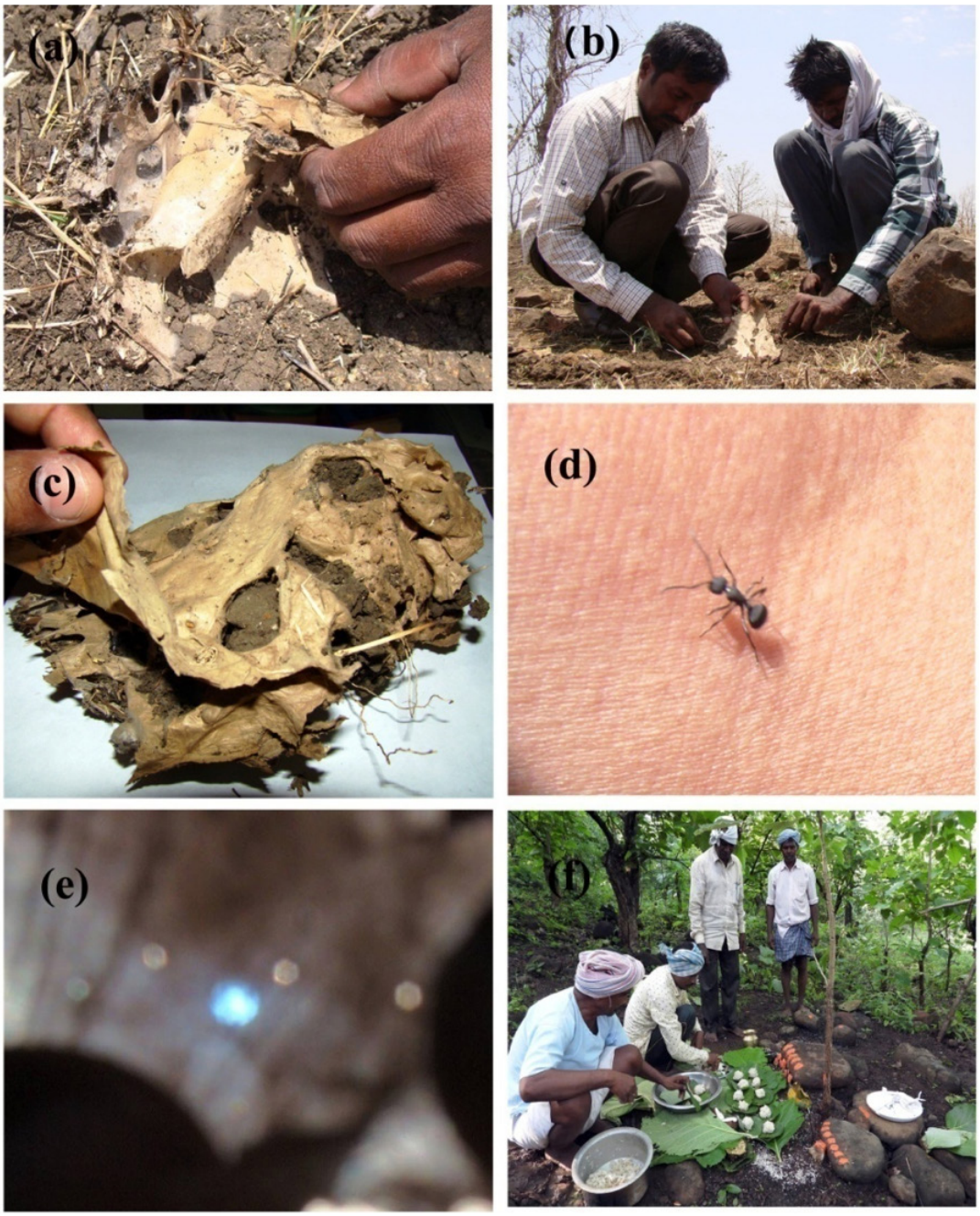
A note on traditional knowledge of the Gond tribe of Adilabad District, Telangana, India in use of *Polyrhachis lacteipennis* ant nest material to observe solar eclipse.

Gonds are the largest aboriginal group among Indian tribes with a population of between 4 and 5 million spread over northern Telangana, eastern Maharashtra, eastern Madhya Pradesh, Jharkhand and western Orissa (Fürer-Haimendorf & Fürer-Haimendorf 1979; Murthy 2012). Gonds are experts in the field of astronomy as they can assess the weather to pursue their agricultural practises based on their astronomical knowledge (Vahia & Ganesh 2013; Pingle 1984; Pingle & Fürer-Haimendorf 1987). Here, we present their knowledge to observe the solar eclipse in a safe mode without causing any harm to the naked eye by using a thin whitish rubber like membrane secreted by the Bullhorn Ant (Singh et al. 2020). For the first time this type of unique practice is recorded during the field survey which was conducted in the Gond hamlets of Indravelli revenue mandal of Adilabad District of Telangana State, India.



Location map of study area.

The Bullhorn Ant *Polyrhachis lacteipennis* Smith belongs to the subfamily of Formicinae of the family Formicidae which is black in colour and has characteristic of three pairs of spines which can make their nest in subterranean, lignicolous, and arboreal locations. They prepare their nests by a rubber like nest material which is thin



a, b, c—nest of Bullhorn Ant | d—Bullhorn ant | e—demonstration of solar eclipse through the nest | f—typical Gond people.

and whitish, secreted by both the larvae and adult workers and construct carton nests at the base of trees by cementing twigs with their salivary exudates (Robson & Kohout 2007; Karmakar et al. 2012).

Bullhorn Ant has unique capacity to build a sac like structure where the whole colony is found to be packed within the sac with no opening. The rubber like nest material is thin and whitish. The nest is built along the way of the tunnelling done by the species, usually nests are found under the stones in agricultural fields. The ant species was identified by using the key illustrated by Karmaly (Narendra & Kumar 2006).

The membranous nest of bullhorn ants can well provide an insight into the astronomical knowledge of the Gond tribe. Though the

tribe is credited with possessing traditional knowledge both in botany and other allied spheres, it is believed that they had little knowledge about astronomy in general and solar eclipse in particular.

According to local tribal people residing in forested areas of Indravelli mandal of Adilabad District, Gonds used to watch solar eclipses by gazing at the sky through a piece of a thin but opaque brown-coloured nest found underneath rocks in agriculture fields. If looked through the fragile film of the nest, the sun appears as a sphere light blue in colour even when the unbearable brightness of the sun is at its peak. The image of the great ball of fire is also reduced considerably. The finding related to the ant nest and Gond's astronomical knowledge however creates a scope for further in-depth studies in exploration of traditional knowledge of aboriginal people.

References

Fürer-Haimendorf, C.V. & E.V. Fürer- Haimendorf (1979). *The Gonds of Andhra Pradesh: Tradition and Change in an Indian Tribe*. George Allen & Unwin, London.

Karmakar, R., S. Banik, T. Biswas, R. Brahmachary & C.R. Sahu (2012). A Captive Study on Activity: Rest, Nesting and Aggression Behavior of an Indian Ant Species, *Polyrhachis lacteipennis* (Smith 1858) (Hymenoptera: Formicidae: Formicinae). *Proceedings of the Zoological Society* 65: 71–78

Murthy, E.N. (2012). Ethnomedicinal plants used by gonds of Adilabad district, Andhra Pradesh, India. *International Journal of Pharmacy & Life sciences* 3: 2034–2043.

Narendra, A. & M.S. Kumar (2006). *On a trail with ants: A handbook of the ants of peninsular India*. Tholasi Publication, Bengaluru 208pp.

Pingle, U. (1984). Anthropometric and genetic distance between Gonds of Central India. *American Journal of Physical Anthropology* 65: 291–304.

Pingle, U. & C.V. Fürer-Haimendorf (1987). *Gonds and Their Neighbours: A Study in Genetic Diversity*. Lucknow, Ethnographic & Folk Culture Society.

Robson, S.K. & R.J. Kohout (2007). A review of the nesting habits and socioecology of the ant genus Polyrhachis Fr. Smith. *Asian Myrmecology* 1: 81–99.

Singh, A.P., K. De, M. Siliwal & V.P. Uniyal. (2020). Observation of a unique nesting in Bullhorn Ant Polyrhachis lacteipennis. Bugs R All #188, In: *Zoo's Print*. 35 21–23.

Vahia, M.N. & H. Ganesh (2013). Aspects of Gond Astronomy. *Journal of Astronomical History and Heritage*.16: 29–44.

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Occurrences of Calamaria Reed Snake from Mudumalai Tiger Reserve.

Road-killed Calamaria Reed Snake in Mudumalai Tiger Reserve, Nilgiris, Tamil Nadu, India.

The Calamaria Reed Snake *Liopeltis calamaria* was originally described from Sri Lanka (Günther 1858) and subsequently reported from India (Smith 1943). It is a terrestrial, diurnal snake usually preferring dry mixed deciduous habitats near water bodies, and also mostly found underneath rotten logs on the forest floor covered with a thick layer of leaf litter (Amarasinghe et al. 2020). This species is insectivorous, having a preferred diet of smooth-bodied caterpillars, crickets, grasshoppers, and spiders (Narayanan et al. 2020). It is known to inhabit mainly mountainous tracts including low 300 m (Karunarathna et al. 2004; Karunarathna & Perera 2010; Ganesh et al. 2018), mid 900 m (Chikane & Bhosale 2012) and high elevations 1600–2000 m (Ferguson 1902; Wall 1921; Malhotra & Davis 1991). In India, this species is found in the Western Ghats, Eastern Ghats

and Himalayan regions (Amarasinghe et al. 2020). In this note, we report a road killed Calamaria Reed Snake *Liopeltis calamaria* from Mudumalai Tiger Reserve, Nilgiris, Tamil Nadu, India.

On 4 December 2021 at 14:30 hours, we photographed an adult road-killed Calamaria Reed Snake in dry deciduous forest (11.579 °N, 76.590 °E) at an elevation of 880 m in Mudumalai Tiger Reserve, Tamil Nadu, India. We took photographs for further confirmation of this species and the specimen was collected and preserved. The length of the individual was 280 mm. Dorsal scale rows were 15:15:15, ventrals and subcaudals 141 and 68, respectively, preocular 1, postoculars 2, undivided nasal, and the third and fourth of seven supralabials extended to the eye. The collected morphological data were used to compare with available information to confirm the identity (Smith 1943).

Boulenger (1894) first reported Calamaria Reed Snake from Kotagiri area of Nilgiris and Wall (1921) subsequently recorded this species from higher elevation areas of Nilgiris region. Recently Narayanan et al. (2020) rescued the snake from Sholur area in upper Nilgiris. The present record adds one more species of snake to the Mudumalai Tiger Reserve as well as the lower altitudinal record. Further records of this species are highly warranted to understand the distribution pattern and altitudinal preferences of the species in Nilgiris.

References

Amarasinghe, A.A.T., S. Karunarathna, P.D. Campbell, S.R. Ganesh & G. Vogel (2020). Taxonomy and distribution of *Liopeltis calamaria* (Günther, 1858) (Reptilia: Colubridae) including redescription of the syntypes. *Taprobanica* 09(01): 39–49.

Boulenger, G.A. (1894). *Catalogue of the Snakes in the British Museum (Natural History). Volume II, Containing the Conclusion of the Colubridæ Aglyphæ.* British Museum of Natural History, London, 382 pp.

Chikane, S. & H. Bhosale (2012). Reptiles of Kaas, northern Western Ghats, Maharashtra, India, with notes on habitat preferences, abundances and threats. *Sauria* 34(3): 3–15.

Ferguson, H.S. (1902). Travancore snakes. *Journal of the Bombay Natural History Society* 14(2): 386–387.

Ganesh, S.R., A. Kalaimani, P. Karthik, N. Baskaran, R. Nagarajan & S.R. Chandramouli (2018). Herpetofauna of southern Eastern Ghats, India – II; from Western Ghats to Coromandel Coast. *Asian Journal of Conservation Biology* 7(1): 28–45.

Günther, A.C.L.G. (1858). *Catalogue of Colubrine snakes of the British Museum*. British Museum (Natural History), London, 281 pp.

Karunarathna, D.M.S.S., D.H.P.U. De Silva, H.T.A.P. Pelris, M.D.C. Asela, U.T.I. Abewardena, A.A.D.A. Udayakumara, D.G.R. Sirimanna & W.C.C. Soysa (2004). Two new sightings of *Liopeltis calamaria*. *Journal of the Wildlife and Nature Protection Society of Sri Lanka* 23(5–6): 23–26.

Karunarathna, D.M.S.S. & W.P.N. Perera (2010). New Distribution Records for *Liopeltis calamaria* (Günther 1858) (Reptilia: Serpentes: Colubridae), with notes on its Bioecology and threats in Sri Lanka. *Sauria* 32(2): 49–55.

Malhotra, A. & K. Davis (1991). A report on the herpetological survey of the Srivilliputhur Reserve Forests, Tamil Nadu. *Journal of the Bombay Natural History Society* 88: 157–166.

Narayanan, S., S. Somanna & P.P. Mohapatra (2020). Araneophagic behaviour of the elusive snake *Liopeltis calamaria* (Günther 1858) (Reptilia: Squamata: Colubridae). *Records of the Zoological Survey of India* 120(2): 171–174.

Smith, M.A. (1943). *The Fauna of British India, Ceylon and Burma, including the whole of the Indo-Chinese region. Reptilia and Amphibia Vol. III. Serpentes*. Taylor and Francis, London, 583 pp.

Wall, F. (1921). *Ophidia Taprobanica or the Snakes of Ceylon*. Colombo Museum, H.R. Cottle, Government Printer, 581 pp.

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First record of Variable Malayan Butterfly from Chota Nagpur Plateau (Purulia), West Bengal, India

The butterfly *Megisba malaya* is commonly known as Malayan belonging to Lycaenidae family of superfamily Papilionidae (Kehimkar 2016).

The species *Megisba malaya* was first reported by Horsfield in 1828. In India, three subspecies of this butterfly are found namely *Megisba malaya thwaitesi* (Tailless Malayan), *Megisba malaya sikkima* (Variable Malayan) reported by Moore in 1881 and 1884 respectively and *Megisba malaya presbyter* (Andaman Malayan) reported by Fruhstorfer in 1918 and anonymous 2021.

Variable Malayan Butterfly photographed from Ajodhya Hills, Purulia, West Bengal.

Present study is the first documented report of *Megisba malaya sikkima* (Variable Malayan) from Chota Nagpur Plateau (Purulia). During field survey on 14 August 2020, the butterfly *Megisba malaya sikkima* was recorded from Ajodhya Hills located in Purulia District.

The butterfly was photographed using Nikon Coolpix P600. The specimen was not captured. The butterfly was identified as *Megisba malaya sikkima* on the basis of four similar basal spots on UNH (Evans 1932; Wynter-Blyth 1957; Kehimkar 2016). The

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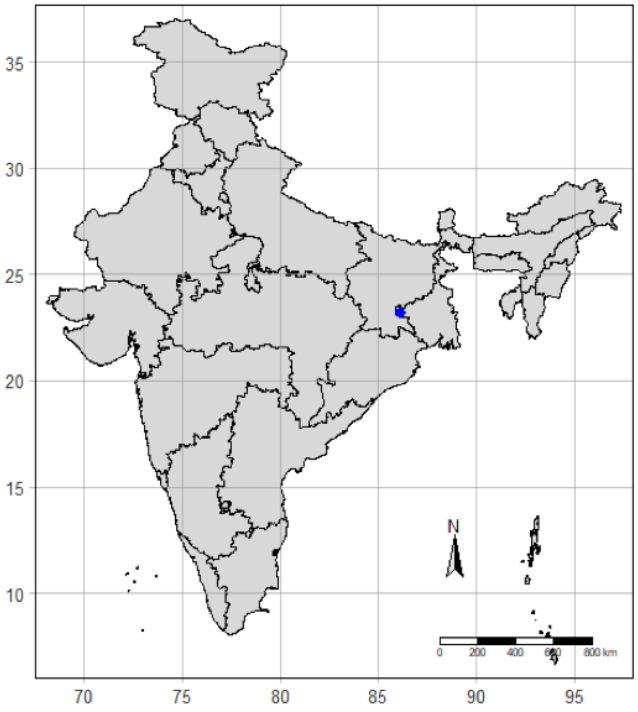
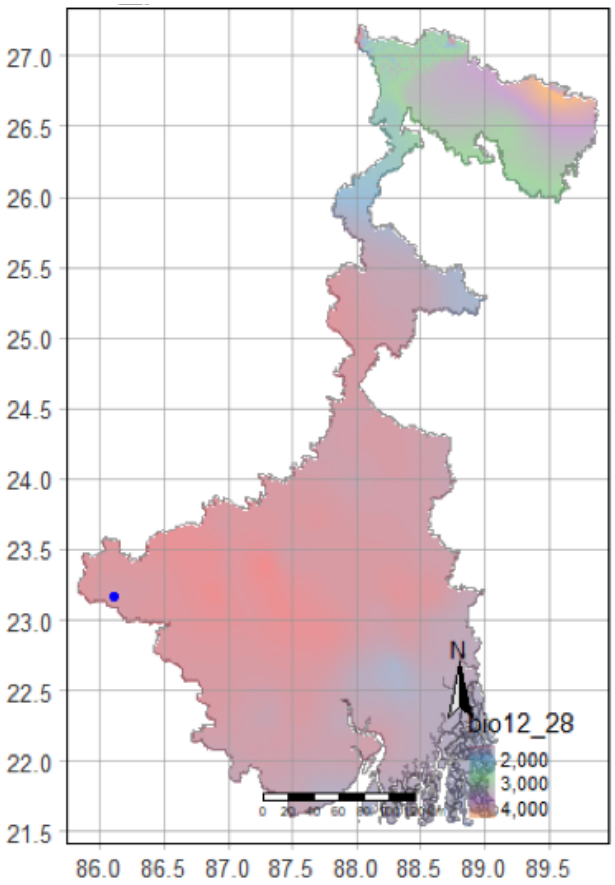
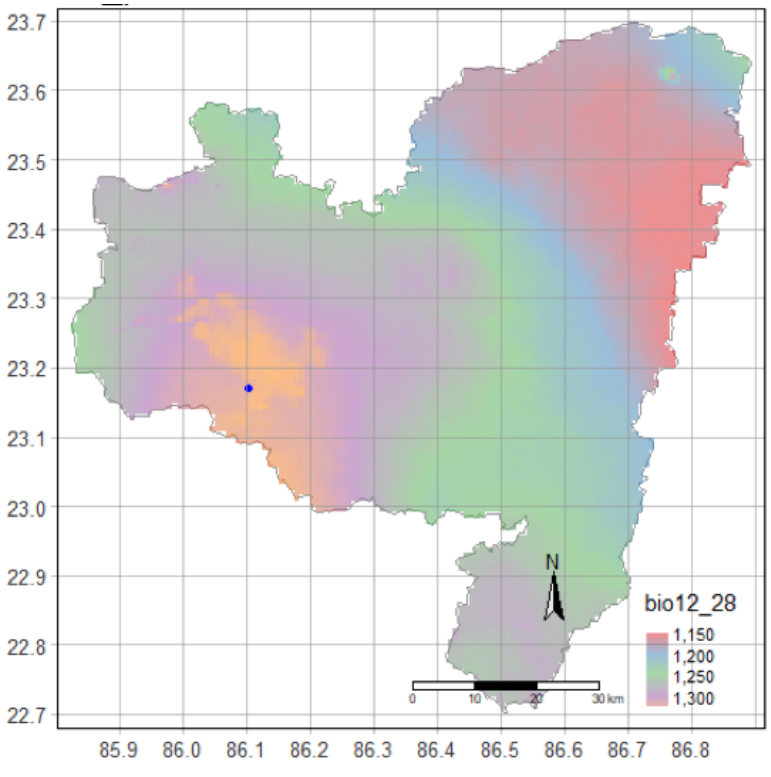


India map showing Purulia District.



Map of West Bengal showing the locality of the observation.



Map of Purulia District with observation site.

Coordinates of the site from where Variable Malayan Butterfly was photographed plotted on all the maps

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photograph was uploaded in Butterflies of India website with media code fa393. The coordinates (86.104E, 23.170N) of the site from where the butterfly was photographed were plotted in raster plot that is done by using R Studio 3.6.3 (R Studio Team 2020) (Figure 1a,b,c).

In India, the Malayan Butterfly is reported from Eastern Ghats, Western Ghats, West Bengal, Uttaranchal, Arunachal Pradesh, and northeastern part of India (Kehimkar 2016). Apart from India, this butterfly is also found in Nepal, Bhutan, Bangladesh, Myanmar, and Sri Lanka (Kehimkar 2016). Wet forests in lower altitudes are preferred by this butterfly and it is mostly seen in forest edges and bushes and fly close to the ground (Kehimkar 2016). In West Bengal the butterfly species were found in Alipurduar, south 24 Parganas, Nadia, Jalpaiguri, and Uttar Dinajpur District (Anonymous 2021). This is the first report of this butterfly from Chota Nagpur Plateau (Purulia) in written form. The present documentation of the Variable Malayan from a different ecoregion will help in selecting conservation strategy for this butterfly species.

References

Anonymous, (2021). *Megisbamalaya* (Horsfield, [1828]) – Malayan. Kunte, K., S. Sondhi & P. Roy (Eds.). *Butterflies of India, v. 3.15*. Indian Foundation for Butterflies. http://www.ifoundbutterflies.org/sp/709/Megisba-malaya.

Evans, J.H. (1932). *Identification of Indian Butterflies*. Bombay Natural History Society, Mumbai, 454 pp.

Kehimkar, I. (2016). *Butterflies of India*. Bombay Natural History Society, Mumbai.

RStudio Team (2020). RStudio: Integrated Development for R. Studio, PBC, Boston, MA URL http://www.rstudio.com/.

Wynter-Blyth, M.A. (1957). *Butterflies of The Indian Region*. Bombay Natural History Society, Bombay, 523 pp.

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New record of *Octolasion cyaneum* in Sikkim, India

The new record of *Octolasion cyaneum* in the Sikkim Himalaya reported from the study area located at 27.275 N; 88.489 E, Thangsing, Fambonglho Buffer zone, East Sikkim, India. The Fambonglho Wildlife Sanctuary is a dedicated site for the conservation of wildlife in Sikkim whereon the light blue-grey specimen of earthworms found and had cylindrical body, length 65–200 mm, diameter 5–8 mm, segments 140–158, clitellum 29–34 segments, and colour light blue-grey. Several researches were undertaken on the earthworms across the world (Michaelsen 1909) but a few investigations of the earthworm survey were conducted in Sikkim considering availabilities and their life cycles relating to the microclimate, soil ecology, and forest health. Nevertheless, there were reports of earthworm from Darjeeling and Sikkim Himalaya (Julka & Halder 1977; Soota & Halder 1981; Halder 2003).

Besides, some reports were published from the other parts of the world on the terrestrial

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oligochaeta and the tropical earthworm of temperate grassland (Cernosvitov 1941) as well as some researchers reported from similar climatic conditions like Sikkim (Paliwal 2013). Considering all the contributions, it is felt that the documentation of earthworm of Sikkim is necessary.

In addition, Julka et al. (2009) reported the earthworm diversity of India having 418 species belonging to 70 genera under nine families. In recent past, Paliwal (2013) reported the earthworm diversity of Darjeeling District where it represented 47 species under six families exhibiting 11% of national earthworm diversity.

Earlier record in India: *Octolasion cyaneum*. Distribution: West Bengal: Near D.I. Fund Rest House Jorpokri (Julka 1975), 1 km east of Jorpokri (Julka 1975). Jammu & Kashmir (Najar & Khan 2011); Uttarakhand (Rajwar et al. 2018); Himachal Pradesh; Tamil Nadu: Nilgiris District – Udagamandalam (Ootacamund) (Kathireswari et al. 2005). Other parts of the world: Europe, North America, South America, Australia.

New Record in Sikkim: *Octolasion cyaneum* Savigny 1826, Thangsing, [27.275 N; 88.489 E], Thangsing, Fambonglho buffer zone and its vicinity, east Sikkim; collection date: 13.vi.2013; elevation: 1,655 m; coll. D.K. Pradhan.

The protologues of the newly record species in Sikkim are as under:-*Octolasion cyaneum*, 1826 Enterioncyaneum Savigny, Mem. Acad. Sci. Inst. Fr., 5 : 181 ; 1972 *Octolasium cyaneum* + *O. cyaneum* var. *armoricum* : Bouché, Inst. Nat. Rech. Agron., 260; 1991 *Octolasion cyaneum*: Mršić, Acad. Sci. Art. Slov. (Hist. Nat.), 31: 227; 2003; *Octolasion cyaneum*: Csuzdi & Zicsi, Pedozool. Hung., 1: 193; *Octolasion cyaneum*: Šapkarev 1989: 48; Šapkarev 2002: 305; Family Lumbricidae.

Noteworthy point is that *Octolasion cyaneum* (Savigny, 1826) was in existence in the rich biome at the buffer zone of Fambonglho having considerable amount of humic acid and fulvic acid. The role of their existence in the nature is yet to be unfolded and deserves more researches.

The newly recorded species, *Octolasion cyaneum*, in Sikkim was found in the vegetation matrix predominantly covered with *Rhododendron arboretum* Sm., *Alnus nepalensis* D.Don., *Evodia farxinifolia* Hook. F, *Engelhardtia* Lesch ex Blume, *Mentha spicata* L., *Arundinaria lamellos* Munro., *Walsura tubulata* Hiern., *Quercus fenestrate* Roxb., *Quercus spicata* Smith, *Quercus lamellos* Smith, *Quercus glauca* Thunb. *Semecarpus anacardium* Linn, *Senecio scandens* Wall and *Rhus griffithii* Hook. F and few more. In addition to this, the shady south facing hills of the sub-temperate region having moist

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and rocky places of forest areas was found suitable for its habitat. Most importantly, the soil of the location was covered with leaf litters and there was no report of any adverse impact of *Octolasion cyaneum* on the vegetation of Sikkim. Having said that, *Octolasion cyaneum* warrants more researches on the impact as well as biological relationship in the Sikkim Himalaya.

References

Cernosvitov, L. (1941). Oligochaeta for III Tibet. *Proceedings of Zoological Society London* (B)111: 281–287.

Halder, K.R. (2003). Oligochaeta: Earthworm, pp. 91–116. In: Alfred, J.R.B. (ed): *Fauna of Sikkim State Fauna Series 9 (Part 5*). Zoological Survey Of India, Kolkata, India.

Julka, J.M. (1975). Abnormal variations in *Perionyx millardi* Stephenson (Megascolecidae: Oligochaeta). *Newsletter-Zoological Survey of India* 1(2): 26–27.

Julka, J.M. & K.R. Halder (1977). New records of earthworms (Oligochaeta: Lumbricidae) from Sikkim. *Newsletter-Zoological Survey of India* 3: 296–297.

Julka, J.M., R. Paliwal & P. Kathireswari (2009). Biodiversity of Indian earthworms- An overview, pp. 36–56. In: Edwards, C.A., R. Jayaraaj & I.A. Jayraaj (eds.). *Proceedings of Indo US Workshop on Vermitechnology in Human Welfare*. Rohini Achagam, Coimbatore, India.

Kathireswari, P., J.M. Julka & J.W. Reynolds (2005). Checklist of Oligochaeta of Tamil Nadu, India. *Megdrilogica* 10(8): 57–68.

Najar, I. & A. Khan (2011). New record of an earthworm *Octolasion cyaneum* (Savigny 1826) from Srinagar, Kashmir (J&K), India. *Ecology, Environment and Conservation* 17: 511–513.

Michaelsen, W. (1909). The Oligochaeta of India, Nepal, Ceylon, Burma and the Andaman Islands. *Memoirs of the Indian Museum* 1: 103–253.

Paliwal, R. (2013). Endemic Annelids (Earthworms) of Darjeeling District, West Bengal, India. *Records of Zoological Survey of India* 113(2): 91–103.

Rajwar, N., S. Bisht, V. Singh & J. Reynolds (2018). Earthworm (oligochaeta) diversity of Kumaum Himalayas, India with first record of woodland blue worm, *Octolasion cyaneum* (Savigny 1826), (Lumbricidae). *Megadrilogica* 23(12): 161–169.

Soota, T.D. & K.R. Halder (1981). On some earthworms from Eastern Himalayas. *Records of Zoological Survey of India* 79: 231–234.

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First record of Indian Cupid from Purulia, West Bengal, India

The butterfly *Everes lacturnus* commonly known as Indian Cupid belongs to the Lycaenidae family of superfamily Papilinoidea (Kehimkar 2016). The species was first reported by Godart in 1824. The butterfly species was identified on the basis of the tailed hind wing (HW), underside (UN) of the wings almost white with some black spots, presence of outer discal spot on space 6 in line with spaces 5 on underside of the hind wing (UNH), and presence of two orange crowned black spots in spaces 2 and 3 on UNH tornus (Evans 1932; Wynter-Blyth 1957; Kehimkar 2016). This is the first written form of report of *Everes lacturnus* from Purulia, West Bengal located in Chota Nagpur Plateau area.

Indian Cupid butterfly photographed at the Leprosy Mission campus, Purulia, West Bengal.

During the field survey 20 July 2020 one specimen of *Everes lacturnus* was registered at the Leprosy Mission campus situated in Purulia district, West Bengal, India. The specimen was not captured. By the use of Nikon Coolpix P600 camera the butterfly species was photographed.

The coordinates of the study site (23.329 N 86.338 E) from

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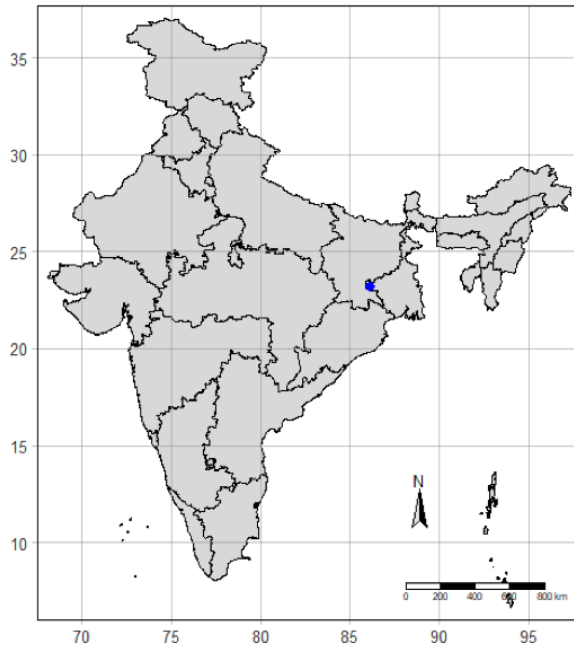
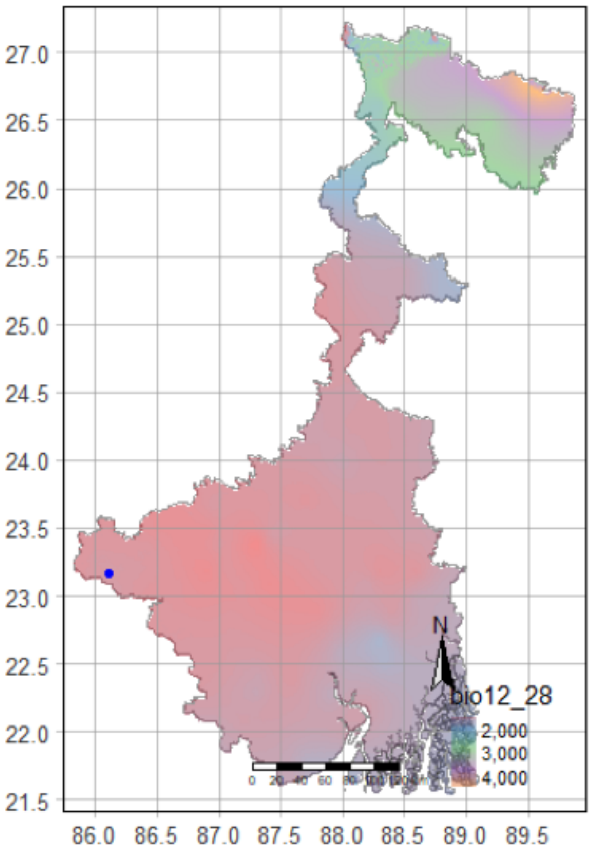


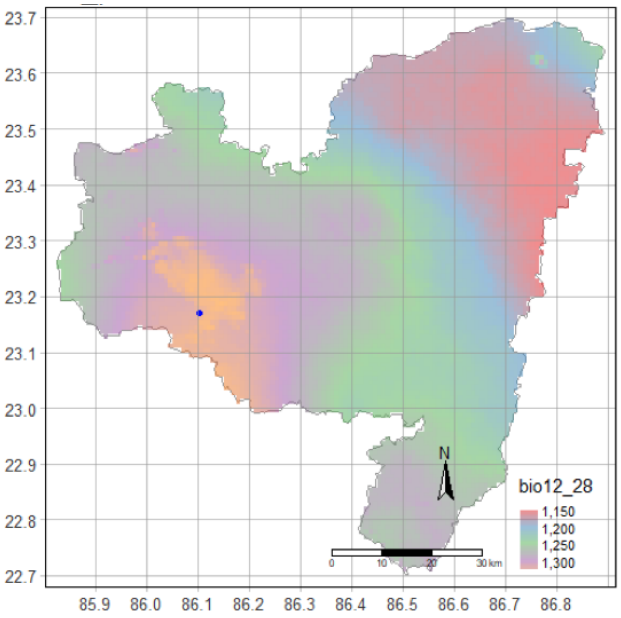
India map showing Purulia District.



Map of West Bengal showing the locality of the observation.

where the butterfly species were observed in collection of nectar from an *Ocimum americanum* plant were plotted in raster plot done by using R Studio 3.6.3 for visualizing the location (R Studio Team 2020).

The butterfly Indian Cupid has distribution in India with records from Maharashtra, Mizoram, Kerala, Telengana, Andhra Pradesh,



Coordinates of the site from where butterfly Indian cupid was photographed plotted in Purulia map.

Tamil Nadu, Karnataka, West Bengal, Nagaland, Gujrat, Odisha, Uttarakhand, Assam, Chattisgarh, and Chandigarh (Churi 2022). Besides India, this butterfly species also found in Sri Lanka, Nepal, Bhutan, Bangladesh, Myanmar (Kehimkar 2016). Woody hilly habitats are preferred by this butterfly species but they are also

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seen on plains and depends on flowers for food (Kehimkar 2016). In West Bengal the butterfly species was earlier recorded from three districts namely Hooghly, Burdwan, and Bankura (Churi 2022).

References

Churi, P. (2022). *Everes lacturnus* (Godart, [1824]) – Orange-crowned Cupid. Kunte, K., S. Sondhi & P. Roy (Chief Editors). *Butterflies of India, v. 3.28*. Indian Foundation for Butterflies. http://www.ifoundbutterflies.org/sp/958/Everes-lacturnus.

Evans, J.H. (1932). *The Identification of Indian Butterflies*. (Second Edition Revised). The Bombay Natural History Society, Mumbai, 454 pp.

Kehimkar, I. (2016). *Butterflies of India*. The Bombay Natural History Society, Mumbai.

***RStudio Team* (2020).** RStudio: Integrated Development for R. RStudio, PBC, Boston, MA. *URL http://www.rstudio.com/.*

Wynter-Blyth, M.A. (1957). *Butterflies of the Indian Region*. The Bombay Natural History Society, Mumbai, 523 pp.

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New distribution of Grey Count from Bankura District in West Bengal, India.

Tanaecia lepidea (Butler, 1868) is a butterfly commonly known as Grey Count. It is very active during the day and is commonly found in the forests, hills, near water streams in northern part of West Bengal including the districts of Darjeeling Jalpaiguri, Alipurduar, Kalimpong, Cooch Behar, Orissa, Sikkim and other northeastern India habitats, but not known to occur in other parts of West Bengal (Wynter-Blyth 1957; Kehimkar 2008; Bhakare & Ogale 2018).

Open & closewing view of *Tanaecia lepidea* photographed from Jhilimili Forest in the Ranibandh CD block of Bankura District, West Bengal, India. ©Subhendu Khan

It is a dark brown butterfly with pale grey border on hindwings and a narrow border is visible in the forewing (Wynter-Blyth 1957). Wavy brown line present on UNF parallel to the termen (Kehimkar 2008). During an opportunistic survey (Williams 2015) on 10 July 2020, a single specimen of *Tanaecia lepidea* was photographed near the forest area situated next to the Jhilimili High School which is close to Jhilimili Forest in the Ranibandh CD block of Bankura District of West Bengal state in India.

Authors had found two individuals from the same location within a 100 m radius. The vegetation is

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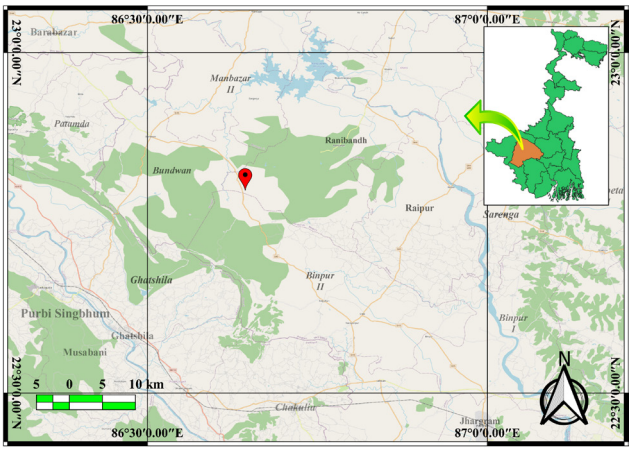

Map of the Jhilimili Forest in Ranibandh CD block of Bankura District, West Bengal, India where *Tanaecia lepidea* was sighted.

surrounded by Sal, Mohua, and Banyan trees. Authors photographed this specimen while it was basking on a coconut tree. Later found another specimen within 10 minutes but was unable to take photographs. Previous studies of this butterfly was recorded from northern Eastern Ghats (Goswami et al. 2018) and it is commonly found in the northern part of West Bengal (Kehimkar 2008). There is no previous record of *Tanaecia lepidea* from Bankura and Purulia districts, West Bengal's part of Chotanagpur Plateau (Samanta et al. 2017; Mukherjee & Mondal 2020).

References

Bhakare, M. & H. Ogale (2018). *A guide to the Butterflies of Westerns Ghats (India) Included Butterflies of Kerala, Tamilnadu, Karnataka, Goa, Maharashtra and Gujarat States.* Milind Bhakare (privately published), 319 pp.

Goswami, R., O. Thorat, V. Aditya & S.N. Karimbumkara (2018). A preliminary checklist of butterflies from the northern Eastern Ghats with notes on new and significant species records including three new reports for peninsular India. *Journal of Threatened Taxa* 10(13): 12769–12791. https://doi.org/10.11609/jott.3730.10.13.12769-12791

Mukherjee, K. & A. Mondal (2020). Butterfly diversity in heterogeneous habitat of Bankura, West Bengal, India. *Journal of Threatened Taxa* 12(8): 15804–15816. https://doi.org/10.11609/jott.5136.12.8.15804-15816

Kehimkar, I. (2008). *The book of Indian Butterflies*. Bombay Natural History Society, Mumbai, 386 pp.

Samanta, S., D. Das & S. Mandal (2017). Butterfly fauna of Baghmundi, Purulia, West Bengal, India: a preliminary checklist. *Journal of Threatened Taxa* 9(5): 10198–10207. https://doi.org/10.11609/jott.2841.9.5.10198-10207

Williams, M. (2015). Rearing and Breeding Techniques. *In: Practical Guide to the Study of Lepidoptera in Africa*. 2nd ed. Lepidopterist's Society of Africa, 27 pp.

Wynter-Blyth, M.A. (1957). *Butterflies of the Indian Region*. Bombay Natural History Society, 163 pp.

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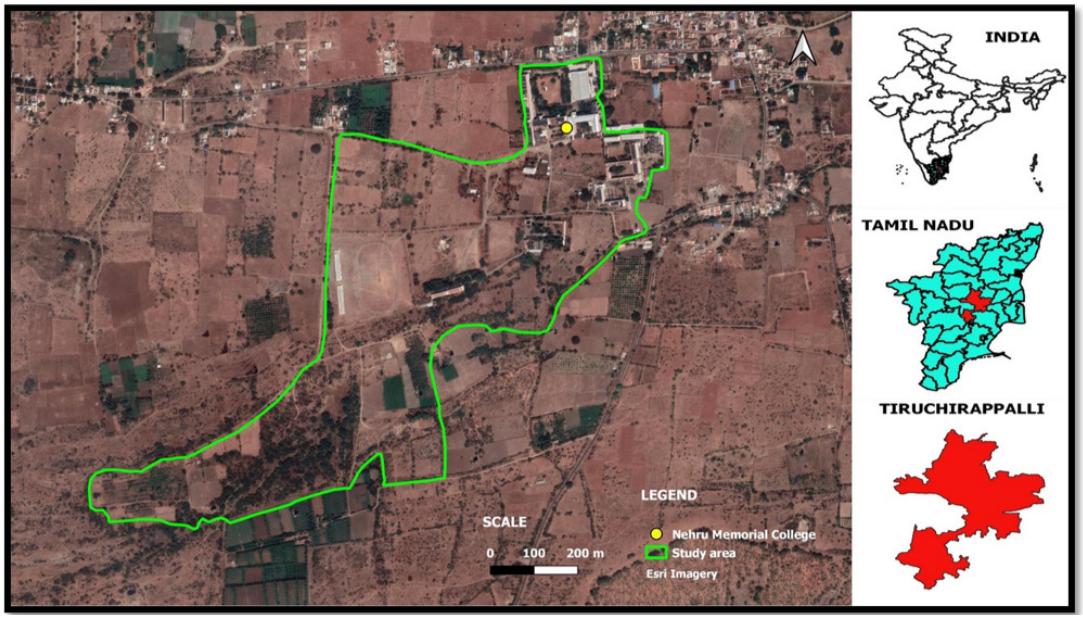
Avifauna checklist of Nehru Memorial College campus of Tiruchirappalli District, Tamil Nadu

The present study was carried out in 50 acres of the Nehru Memorial College campus and 69 acres of Puthanampatti village of Tiruchirappalli District, Tamil Nadu (11.0698 °N, 78.6881 °E). The elevation ranges from 106 to 116 meters above the mean sea level. Tiruchirappalli District receives the north-east monsoon and some showers during the south-west monsoon. The study area is open with dry habitat comprising of shrub (*Cassia auriculata*, *Flueggea leucopyrus*, *Lantana camara*, *Dodonaea viscosa*, *Tecoma stans*), herb (*Tridax procumbens*, *Tephrosia purpurea*, *Sida cordata*, *Boerhavia diffusa*, *Tribulus terrestris*, *Parthenium hysterophorus*) and trees (*Azadirachta indica*, *Prosopis juliflora*, *Millettia pinnata*) in and around the college campus. During the study period, paddy was in cultivation and lemon plantations were present.

The study was carried out from November 2015 to January 2017 and January 2019 to June 2021. The birds were identified and classified on the basis of standard field guide. The checklist of species was prepared following Grimmett et al. (2011). Birds were counted by using direct count methods, walking within the college campus and Puthanampatti village. The birds were observed during the most active period of the day, i.e., between 06:00 to 10:00 AM and 04:00 to 06:00 PM (Bibby et al. 1998). During the field visit photos were taken using Nikon D3300 with zoom lens 55–500 mm. Binocular (Olympus 10 x 50) was used to record the



Location of the study area of Nehru Memorial College in and around Puthanampatti village

Table 1. Avifauna checklist of Nehru Memorial College.

	Order	Family	Common name	Scientific name	Status	Food Habit	IUCN Status	WLPA Schedule
1	Galliformes	Phasianidae	Grey Francolin	*Francolinus pondicerianus*	RE	O	LC	IV
2			Indian Peafowl	*Pavo cristatus*	RE	O	LC	I
3			Rain Quail	*Coturnix coromandelica*	RE	O	LC	IV
4	Anseriformes	Anatidae	Indian Spot-billed Duck	*Anas poecilorhyncha*	RE	O	LC	IV
5	Podicipediformes	Podicipedidae	Little Grebe	*Tachybaptus ruficollis*	RE	C	LC	IV
6	Pelecaniformes	Ardeidae	Intermediate Egret	*Ardea intermedia*	RE	C	LC	IV
7			Little Egret	*Egretta garzetta*	RE	C	LC	IV
8			Cattle Egret	*Bubulcus ibis*	RE	I	LC	IV
9			Indian Pond-Heron	*Ardeola grayii*	RE	C	LC	IV
10			Black-crowned Night-Heron	*Nycticorax nycticorax*	RE	C	LC	IV
11	Suliformes	Phalacrocoracidae	Little Cormorant	*Microcarbo niger*	RE	P	LC	IV
12	Accipitriformes	Accipitridae	Black-winged Kite	*Elanus caeruleus*	RE	C	LC	I
13			Indian Spotted Eagle	*Clanga hastata*	RE	C	VU	I
14			White-eyed Buzzard	*Butastur teesa*	RE	C	LC	I
15			Black Kite	*Milvus migrans*	RE	C	LC	I
16			Brahminy Kite	*Haliastus indus*	RE	C	LC	I
17			Shikra	*Accipiter badius*	RE	C	LC	I
18			Common Buzzard	*Buteo buteo*	WM	C	LC	I
19			Oriental Honey-buzzard	*Pernis ptilorhynchus*	RE	C	LC	I
20			Booted Eagle	*Hieraaetus pennatus*	WM	C	LC	I
21			Eurasian Marsh-Harrier	*Circus aeruginosus*	WM	C	LC	I
22			Pallid Harrier	*Circus macrourus*	WM	C	NT	I
23			Eurasian Kestrel	*Falco tinnunculus*	WM	C	LC	IV
24			Red-necked Falcon	*Falco chicquera*	RE	C	NT	I

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	Order	Family	Common name	Scientific name	Status	Food Habit	IUCN Status	WLPA Schedule
25	Accipitriformes	Accipitridae	Peregrine Falcon	*Falco peregrinus*	WM	C	LC	I
26	Gruiformes	Rallidae	White-breasted Waterhen	*Amaurornis phoenicurus*	RE	O	LC	IV
27			Eurasian Moorhen	*Gallinula chloropus*	RE	O	LC	IV
28	Charadriiformes	Burhinidae	Indian Thick-knee	*Burhinus indicus*	RE	O	LC	IV
29		Charadriidae	Red-wattled Lapwing	*Vanellus indicus*	RE	I	LC	IV
30		Scolopacidae	Common Snipe	*Gallinago gallinago*	WM	I	LC	IV
31			Common Sandpiper	*Actitis hypoleucos*	WM	C	LC	IV
32			Wood Sandpiper	*Tringa glareola*	WM	C	LC	IV
33			Common Greenshank	*Tringa nebularia*	WM	C	LC	IV
34		Turnicidae	Yellow-legged Buttonquail	*Turnix tanki*	RE	O	LC	IV
35	Columbiformes	Columbidae	Rock Pigeon (Feral Pigeon)	*Columba livia*	RE	G	LC	IV
36			Eurasian Collared-Dove	*Streptopelia decaocto*	RE	G	LC	IV
37			Red-collared Dove	*Streptopelia tranquebarica*	RE	G	LC	IV
38			Laughing Dove	*Spilopelia senegalensis*	RE	G	LC	IV
39			Spotted Dove	*Streptopelia chinensis*	RE	G	LC	IV
40	Pterocliformes	Pteroclidae	Chestnut-bellied Sandgrouse	*Pterocles exustus*	RE	O	LC	IV
41	Psittaciformes	Psttiaculidae	Rose-ringed Parakeet	*Psittacula krameri*	RE	G	LC	IV
42	Cuculiformes	Cuculidae	Southern Coucal	*Centropus sinensis parroti*	RE	O	LC	IV
43			Blue-faced Malkoha	*Phaenicophaeus viridirostris*	RE	I	LC	IV
44			Pied Cuckoo	*Clamator jacobinus*	RE	O	LC	IV
45			Asian Koel	*Eudynamys scolopaceus*	RE	O	LC	IV
46			Grey-bellied Cuckoo	*Cacomantis passerinus*	RE	I	LC	IV
47			Common Hawk-Cuckoo	*Hierococcyx varius*	RE	I	LC	IV
48	Caprimulgiformes	Caprimulgidae	Indian Nightjar	*Caprimulgus asiaticus*	RE	I	LC	IV
49	Strigiformes	Strigidae	Spotted Owlet	*Athene brama*	RE	C	LC	IV
50			Indian Scops-Owl	*Otus bakkamoena*	RE	I	LC	IV

	Order	Family	Common name	Scientific name	Status	Food Habit	IUCN Status	WLPA Schedule
51	Strigiformes	Strigidae	Mottled Wood Owl	*Strix ocellata*	RE	C	LC	IV
52			Indian Eagle Owl	*Bubo bengalensis*	RE	C	LC	IV
53	Apodiformes	Apodidae	Alpine Swift	*Tachybaptus melba*	RE	I	LC	IV
54			Little Swift	*Apus affinis*	RE	I	LC	IV
55			Asian Palm-Swift	*Cypsiurus balasiensis*	RE	I	LC	IV
56	Bucerotiformes	Upupidae	Eurasian Hoopoe	*Upupa epops*	RE	C	LC	IV
57	Coraciiformes	Coraciidae	Indian Roller	*Coracias benghalensis*	RE	I	LC	IV
58		Alcedinidae	Common Kingfisher	*Alcedo atthis*	RE	P	LC	IV
59			White-throated Kingfisher	*Halcyon smyrnensis*	RE	C	LC	IV
60			Pied Kingfisher	*Ceryle rudis*	RE	P	LC	IV
61		Meropidae	Green Bee-eater	*Merops orientalis*	RE	I	LC	IV
62			Blue-tailed Bee-eater	*Merops philippinus*	WM	I	LC	IV
63	Piciformes	Megalaimidae	Coppersmith Barbet	*Psilopogon haemacephalus*	RE	O	LC	IV
64		Picidae	Black-rumped Flameback	*Dinopium benghalense*	RE	I	LC	IV
65	Passeriformes	Campephagidae	Small Minivet	*Pericrocotus cinnamomeus*	RE	I	LC	IV
66			Black-headed Cuckooshrike	*Lalage melanoptera*	RE	I	LC	IV
67		Oriolidae	Indian Golden Oriole	*Oriolus kundoo*	RE	O	LC	IV
68			Black-hooded Oriole	*Oriolus xanthornus*	RE	O	LC	IV
69		Vangidae	Common Woodshrike	*Tephrodornis pondicerianus*	RE	I	LC	IV
70		Aegithinidae	Common Iora	*Aegithina tiphia*	RE	I	LC	IV
71		Dicruridae	Black Drongo	*Dicrurus macrocercus*	RE	I	LC	IV
72		Monarchidae	Indian Paradise-Flycatcher	*Terpsiphone paradisi*	RE	I	LC	IV
73		Laniidae	Brown Shrike	*Lanius cristatus*	RE	I	LC	IV
74		Corvidae	Bay-backed Shrike	*Lanius vittatus*	WM	I	LC	IV
75			Rufous Treepie	*Dendrocitta vagabunda*	Re	O	LC	IV
76			House Crow	*Corvus splendens*	RE	O	LC	V

	Order	Family	Common name	Scientific name	Status	Food Habit	IUCN Status	WLPA Schedule
77	Passeriformes	Corvidae	Large-billed Crow	*Corvus macrorhynchos culminatus*	RE	O	LC	IV
78		Hirundinidae	Barn Swallow	*Hirundo rustica*	WM	I	LC	IV
79			Red-rumped Swallow	*Cecropis daurica*	RE	I	LC	IV
80			Streak-throated Swallow	*Petrochelidon luvicola*	WM	I	LC	IV
81		Alaudidae	Rufous-tailed Lark	*Ammomanes phoenicura*	RE	O	LC	IV
82			Ashy-crowned Sparrow-Lark	*Eremopterix griseus*	RE	O	LC	IV
83			Jerdon's Bushlark	*Mirafra affinis*	RE	I	LC	IV
84		Alaudidae	Oriental Skylark	*Alauda gulgula*	RE	O	LC	IV
85		Pycnonotidae	Red-vented Bulbul	*Pycnonotus cafer*	RE	O	LC	IV
86			White-browed Bulbul	*Pycnonotus luteolus*	RE	O	LC	IV
87		Cisticolidae	Ashy Prinia	*Prinia socialis*	RE	I	LC	IV
88			Plain Prinia	*Prinia inornata*	RE	I	LC	IV
89			Zitting Cisticola	*Cisticola juncidis*	RE	I	LC	IV
90			Common Tailorbird	*Orthotomus sutorius*	RE	I	LC	IV
91		Acrocephalidae	Booted Warbler	*Iduna caligata*	WM	I	LC	IV
92			Blyth's Reed Warbler	*Acrocephalus dumetorum*	WM	I	LC	IV
93		Phylloscopidae	Green Warbler	*Phylloscopus nitidus*	WM	I	LC	IV
94			Greenish Warbler	*Phylloscopus trochiloides*	WM	I	LC	IV
95		Leiothrichidae	Large Grey Babbler	*Argya malcolmi*	RE	I	LC	IV
96			Yellow-billed Babbler	*Turdoides affinis*	RE	I	LC	IV
97		Sturnidae	Rosy Starling	*Pastor roseus*	WM	O	LC	IV
98			Brahminy Starling	*Sturnia pagodarum*	RE	O	LC	IV
99			Common Myna	*Acridotheres tristis*	RE	O	LC	IV
100		Sylviidae	Lesser Whitethroat	*Curruca curruca*	WM	I	LC	IV
101		Muscicapidae	Asian Brown Flycatcher	*Muscicapa dauurica*	WM	I	LC	IV

	Order	Family	Common name	Scientific name	Status	Food Habit	IUCN Status	WLPA Schedule
102	Passeriformes		Indian Robin	*Copsychus fulicatus*	RE	I	LC	IV
103			Oriental Magpie-Robin	*Copsychus saularis*	RE	I	LC	IV
104			Pied Bushchat	*Saxicola caprata*	RE	I	LC	IV
105		Nectariniidae	Purple-rumped Sunbird	*Leptocoma zeylonica*	RE	N	LC	IV
106			Purple Sunbird	*Cinnyris asiaticus*	RE	N	LC	IV
107			Loten's Sunbird	*Cinnyris lotenius*	RE	N	LC	IV
108		Dicaeidae	Pale-billed Flowerpecker	*Dicaeum erythrorhynchos*	RE	F	LC	IV
109		Ploceidae	Baya Weaver	*Ploceus philippinus*	RE	G	LC	IV
110		Estrildidae	Indian Silverbill	*Euodice malabarica*	RE	G	LC	IV
111			White-rumped Munia	*Lonchura striata*	RE	G	LC	IV
112			Scaly-breasted Munia	*Lonchura punctulata*	RE	G	LC	IV
113			Tricolored Munia	*Lonchura malacca*	RE	G	LC	IV
114		Passeridae	House Sparrow	*Passer domesticus*	RE	G	LC	IV
115			Yellow-throated Sparrow	*Gymnoris xanthocollis*	RE	G	LC	IV
116		Motacillidae	Western Yellow Wagtail	*Motacilla flava*	WM	I	LC	IV
117			Grey Wagtail	*Motacilla cinerea*	WM	I	LC	IV
118			White-browed Wagtail	*Motacilla maderaspatensis*	RE	I	LC	IV
119			Paddyfield Pipit	*Anthus rufulus*	RE	I	LC	IV
120			Tawny Pipit	*Anthus campestris*	WM	I	LC	IV


Grey Francolin

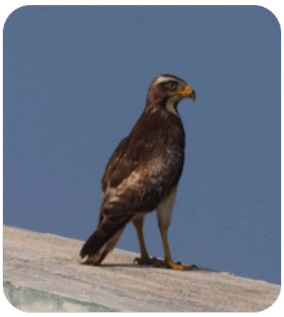

Indian Peafowl

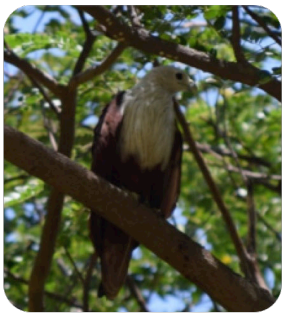

Cattle Egret


Indian Pond-Heron


Black-winged Kite


Indian Spotted Eagle


White-eyed Buzzard


Brahminy Kite


Shikra


Booted Eagle


Eurasian Kestrel

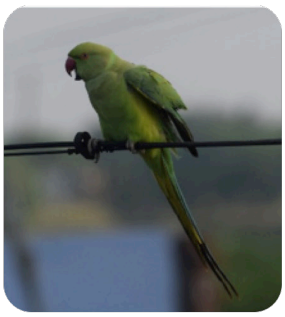

Red-wattled Lapwing


Eurasian Collared-Dove


Laughing Dove


Spotted Dove


Chestnut-bellied Sandgrouse

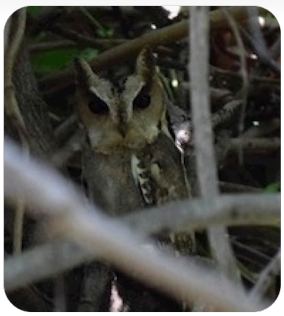

Rose-ringed Parakeet


Southern Coucal


Blue-faced Malkoha


Pied Cuckoo


Common Hawk-Cuckoo


Indian Scops-Owl

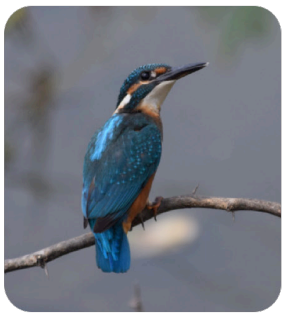

Indian Eagle Owl

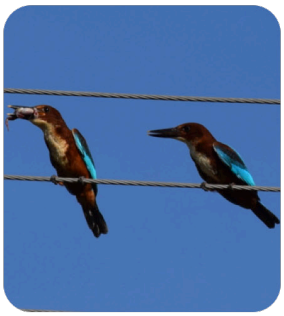

Alpine Swift


Asian Palm-Swift


Eurasian Hoopoe


Indian Roller

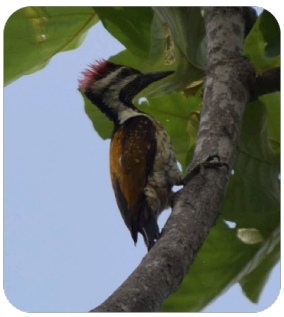

Common Kingfisher


White-throated Kingfisher


Green Bee-eater


Blue-tailed Bee-eater


Coppersmith Barbet

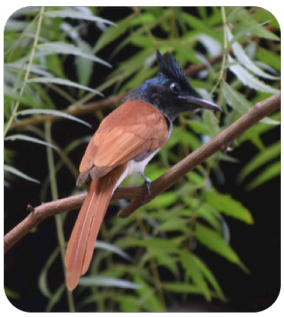

Black-rumped Flameback


Small Minivet


Black-headed Cuckooshrike


Indian Golden Oriole


Black Drongo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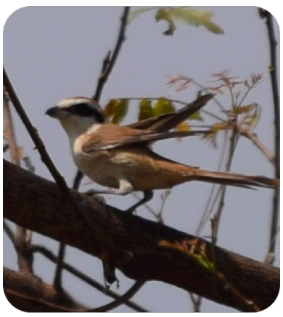
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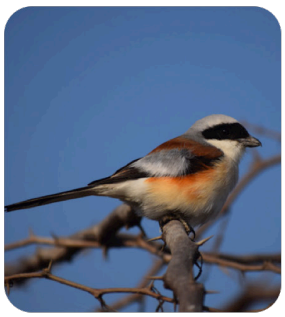
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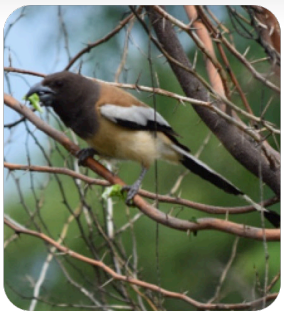
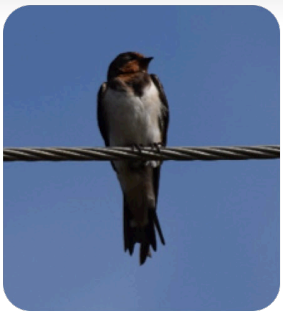

Rufous Treepie


House Crow


Large-billed Crow


Barn Swallow


Jerdon's Bushlark

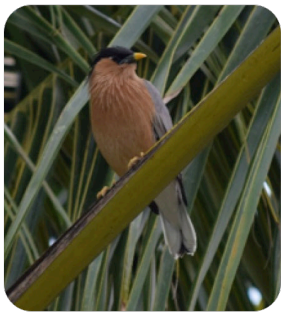

Oriental Skylark


Ashy Prinia

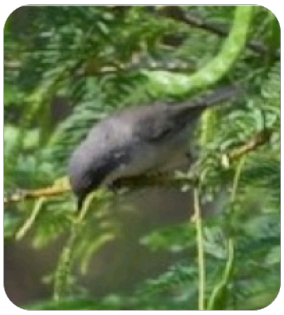

Plain Prinia


Large Grey Babbler


Yellow-billed Babbler

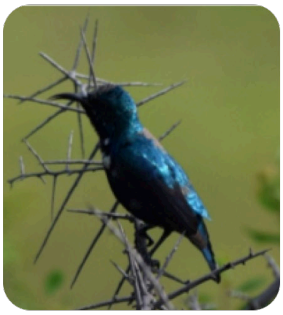

Brahminy Starling

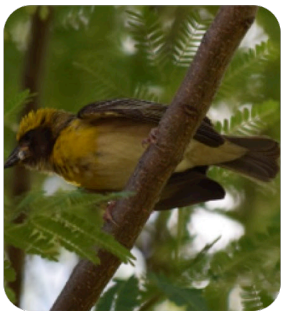

Common Myna


Lesser Whitethroat


Asian Brown Flycatcher


Indian Robin


Purple Sunbird

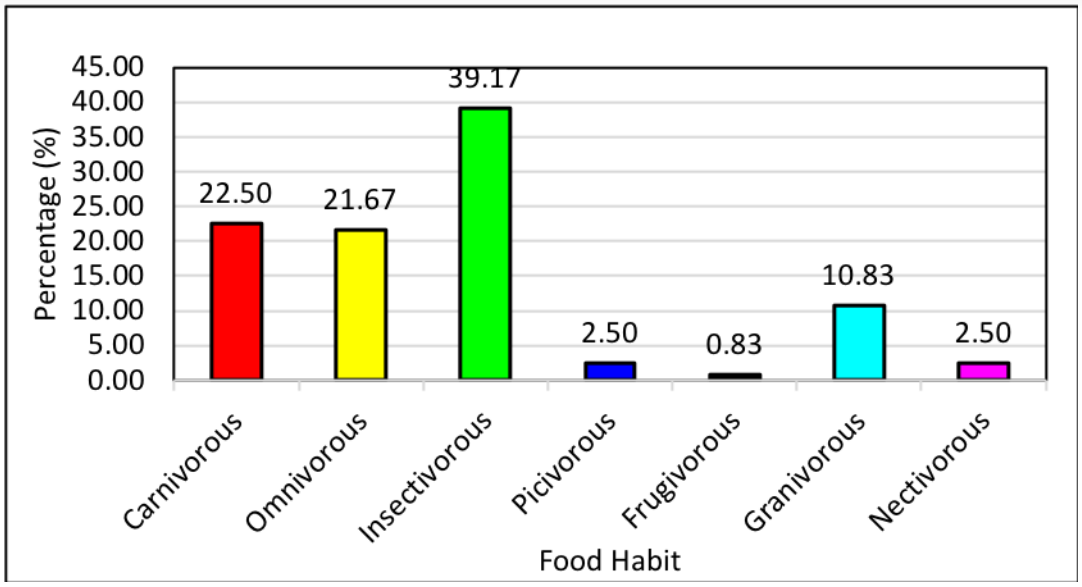

Baya Weaver


Indian Silverbill


White-browed Wagtail


Paddyfield Pipit

All the images ©T. Siva



Food habitat and there percentage composition.

observations from the distance in order to avoid any disturbance to birds. The list was categorized as per the IUCN Red List, feeding habits and migratory status.

In the present study 120 species of birds were observed and recorded belonging to 19 orders and 48 families (Table 2). For a quick summary of species, family, and other compositional analyses, look up the Figures and Table.

The study revealed that the rich diversity of birds is attributable to habitat structure and geographical location of the campus. The area seems to provide diverse habitats for residential birds and a corridor for migratory birds.

References

Bibby, C., M. Jones & S. Marsden (1998). *Expedition Field Techniques: Bird Surveys*. Royal Geographical Society, London.

Grimmett, R., C. Inskipp & T. Inskipp (2011). *Birds of the Indian subcontinent.* Oxford University Press, New Delhi, 528 pp.

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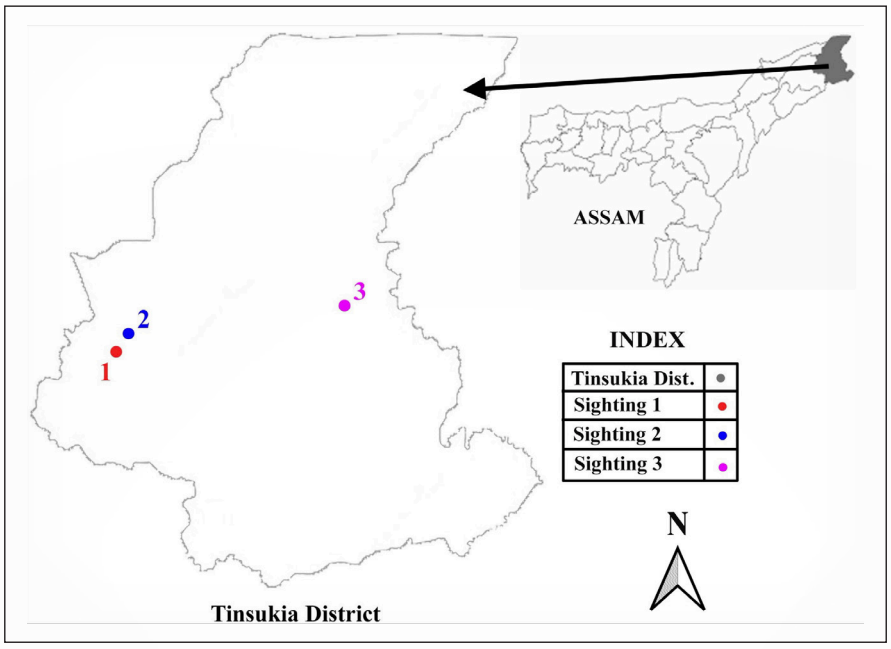
Sightings and preliminary observations of Great Eared-Nightjar in Tinsukia District, Assam

Tinsukia District (27.5°N, 95.37°E), one of the 34 administrative districts in the state of Assam, harbours rich biodiversity as the geographical location is marked with dense forests, serving as natural habitat for a large number of wild species (Abedin 2021).

The Nightjars are medium sized nocturnal or crepuscular birds (Order Caprimulgiformes, Family Caprimulgidae), characterised by long wings, short legs, and very short bills. Their primary source of food is insects. Nightjars are found all around the world, with the exception of Antarctica and certain island groups. They can be found in a variety of habitats, most commonly the open country with some vegetation. They usually nest on the ground, with a habit of resting and roosting on roads (Cleere 2017). The colour of their plumage and their unusual perching habits help conceal them during the day and are generally nocturnal.

The Great Eared-Nightjar *Lyncornis macrotis* is a nocturnal species. At rest, it shows prominent ear-tufts, and is generally more richly marked with golden bluff and rufous than other nightjars. It has fine rufous barring on black ear-coverts and throat, buff underparts boldly barred with dark brown, and tail broadly banded with golden-buff and dark brown. In flight, it appears large, with slow and buoyant flight action (often feeding high in the air), and lacks white or buff spots on wings or tail.

The song is a clear, wailing *pee-wheeeu*. It is the largest species in the family in terms of length, which can range 31–41 cm. Males weigh an average of 131 g (4.6 oz) and females weigh an average of 151 g (5.3 oz) so it is the second heaviest species in the family (Dunning Jr. 2008).



Map showing the sightings of Great Eared-Nightjar *Lyncornis macrotis* in Tinsukia District of Assam.

One evening, we noticed a fairly large bird flying above with a long ending note voice. We began to search for it and after a rapid survey of around 20 minutes, we could finally locate the bird. At first sight, we thought it to be a Grey Nightjar; upon observing closely we noticed its ear-tufts, with golden bluff and rufous. We identified it as Great Eared-Nightjar *Lyncornis macrotis* using the field guide (Grimmett et al. 2011). That evening we could only observe it for around five minutes before it took off, but didn't manage to take a photograph.

On the following day, we started looking for the bird in the nearby areas including the garden which resides most of the long-standing trees in the village.

After searching for a few hours, we noticed it sitting on a perch very well camouflaged (Image 2 & 3). We observed the bird for 90 minutes and left the bird undisturbed on the perch. This is the first known record of the bird from this region. Following this sighting, we also recorded this species in Natun Gaon Village, near Maguri-Matapung Beel & Kakopather. The bird was observed using 8 x 40 binoculars and documented using 400 mm lens.

Across the three sightings, we witnessed site fidelity (the tendency to return to a previously occupied location) behaviour very prominently. The habitat of the sighting was near human habitation with trees and bamboo plantations or tea gardens. It was sighted in summer season (June–September), indicating the probability of it being a summer visitor for upper Assam. We could observe only one individual across all the sightings.

Sighting 1 – Daytime, sat on a fallen tree about one metre from the ground, sleeping

Great Eared-Nightjar in the garden of Guijan area. ©Imon Abedin

Table 1. Sighting data of Great Eared-Nightjar *Lyncornis macrotis* in Tinsukia District by the authors

Sighting	Location	Coordinates	Date	No. of days sighted consecutively	Sighted by
1	Guijan Village	27.580N, 95.331E	30.vi.2015	15 Days	Abedin, I. & J. Abedin
2	Natungaon Village, near Maguri-Matapung Beel	27.567N, 95.369E	25.vii.2018	12 Days	Abedin, I. & J. Abedin
3	Lankadweep Village, Kakopather	27.635N, 95.704E	21.viii.2021	16 Days	Abedin, I. & J. Abedin

most of the time, rarely showing any movement. It went to feed at dusk and was aerial but low, mostly fed on termites at around 6–8 m high, returned and sat on a branch (5 m high) for around five minutes before it took off again.

Each aerial encounter for feeding was around 7–10 minutes. We were able to observe 3–5 cycles each evening. During the observation, we only heard it calling thrice. It remained quiet in most instances.

Sighting 2 – The call was very prominent here. It used to call each time it returned to its perch. The feeding pattern was exactly the same as the previous one. It sat on a bamboo pole at 5–6 m high approximately. We observed 2–4 cycles in the evening before it flew off.

Great Eared-Nightjar in Maguri-Matapung Beel in Natungaon area. ©Swapnanil Borah

Great Eared-Nightjar in Lankadweep Village of Kakoather. ©Imon Abedin

Sighting 3 – We observed it only during the day, perched on a bamboo fence 1.5 m high approximately. It went off at dusk and returned at dawn. We were unable to track it at night.

Apart from these three sightings, there were two other sightings, one at Tinsukia (22 October 2019 by M. Sayeer) and the other at Dibrugarh (9 September 2020 by M. Pratim) as per the eBird data.

The bird has a high probability to get sighted in locations near human habitation surrounded with trees and tea gardens or bamboo plantations during summer season.

It also needs dire research in breeding, migration, and behaviour to have a better understanding regarding their conservation implications in the northeastern India.

References

Abedin, I., (2021). *Serene Soraipung – The Mystic Tale of Dihing-Patkai National Park*. Naturism, West Bengal.

Cleere, N. (2017). Nightjars (Caprimulgidae). *In: del Hoyo, J., A. Elliott, J. Sargatal, D.A. Christie & E. de Juana (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona.*

Grimmett, R., C. Inskipp & T. Inskipp (2011). *Birds of the Indian Subcontinent. 2nd ed*. Oxford University Press & Christopher Helm, London, 528 pp.

Dunning Jr., J.B. (Ed.) (2008). *CRC Handbook of Avian Body Masses, 2nd ed*. CRC Press.

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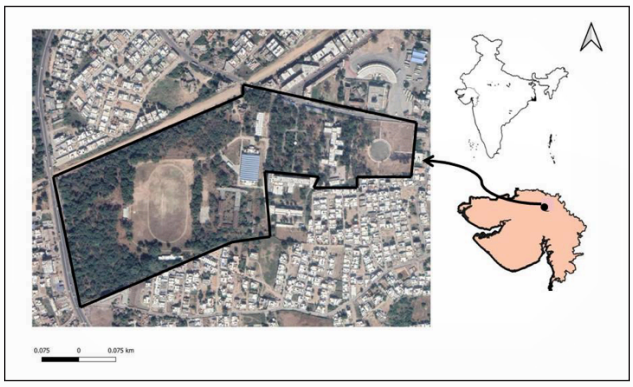
Avifaunal diversity of M.N. College, Visnagar, Gujarat

Visnagar is an urban area located in north Gujarat which falls in biogeographic zone 4 – the semi-arid area (Singh 2001). The climatic condition of this area is semi-arid with three distinct seasons: winter (November–February), summer (March–June), and monsoon (July–October). The lowest temperature in the winter remains around 14–17 ^{0}C, whereas it raises up to 44–46^{0}C in summer. During July and August, an average rainfall of around 700–800mm/annum is recorded. Our study site M.N. College campus (23.69 ^{o}N, 72.53 ^{o}E) is located in central part of Visnagar City. The approximate area of the college campus covers 41.85 acres. Though it is a human-dominated area, the campus has a wide variety of different floral species like *Madhuca indica, Azadirachta indica, Prosophis juliflora, Ziziphus nummularia, Syzygium cumini, Ficus benghalensis, Caryota urens*, and *Saraca asoca*, which are used for nesting and feeding purposes by many bird species.

Data were collected during the period of 13 months from February 2019 to March 2020 covering all three seasons. Field data were collected in the morning (0800–1100 h) and evening (1600–1800 h). The data includes a total of 104 field visits with an average of eight field visits per month by walking and roaming in the campus. For the observation, we used binoculars (Celestron up-close G2 10×50, Olympus 10×50 S, Celestron up-close G2 8×50). For the photographic record, we used DSLR cameras (Canon 1300d with canon 55–250 mm, Tamron 70–300 mm lens) and for bird identification, books and field guides (Grimmett et al. 2011; Ali 2002) were used. Birds sighted during the study period were categorized according to their status as residents (R) and migrant birds (M). All the birds were arranged according to the common name, scientific name, order, family, IUCN status, and migratory status. We recorded a total of 84 bird species from 41 families in the college campus during our study period. Our study found presence of 15% of total bird diversity of 235 bird species in Mehsana District (https://birdsofgujarat.co.in/). For species, family, and other other compositional analyses, see the Figures. The reason for such a huge diversity is the good vegetation in the campus. The campus protects old trees which may help Lesser Golden-backed Woodpecker to thrive here. The campus has a variety of flowering plants which attract birds like the Purple Sunbird .



Map of M. N. College, Visnagar (Gujarat), India

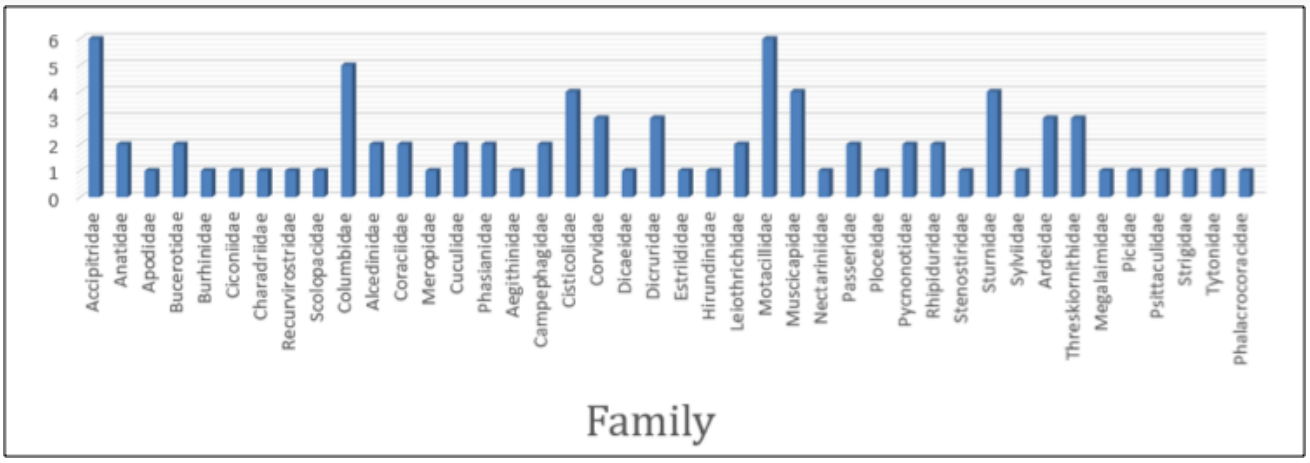


Figure 2. List of biHrd families of M.N. College, Visnagar.

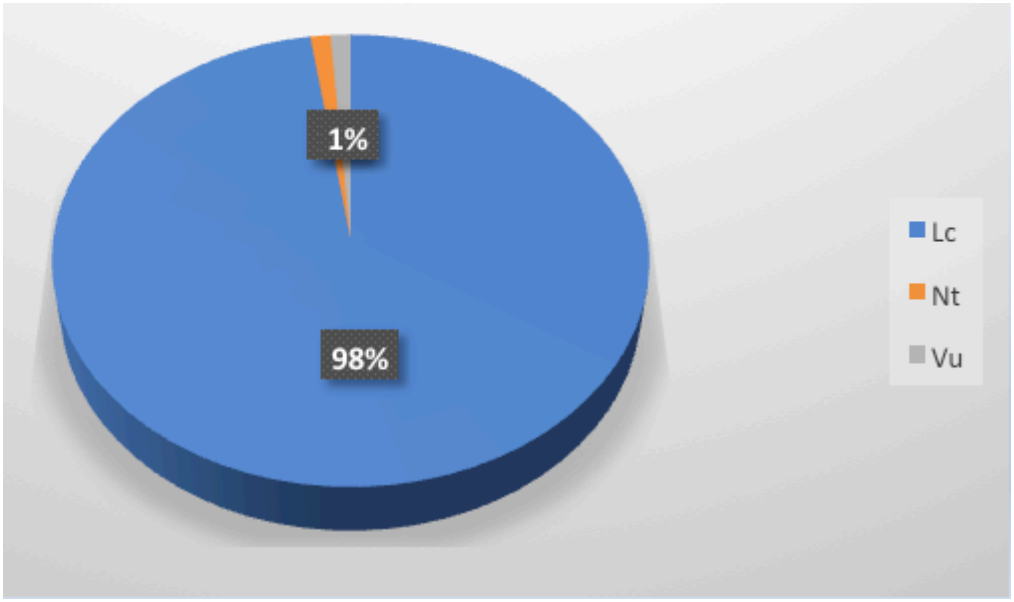


Figure 3. IUCN status of birds of M.N. College, Visnagar

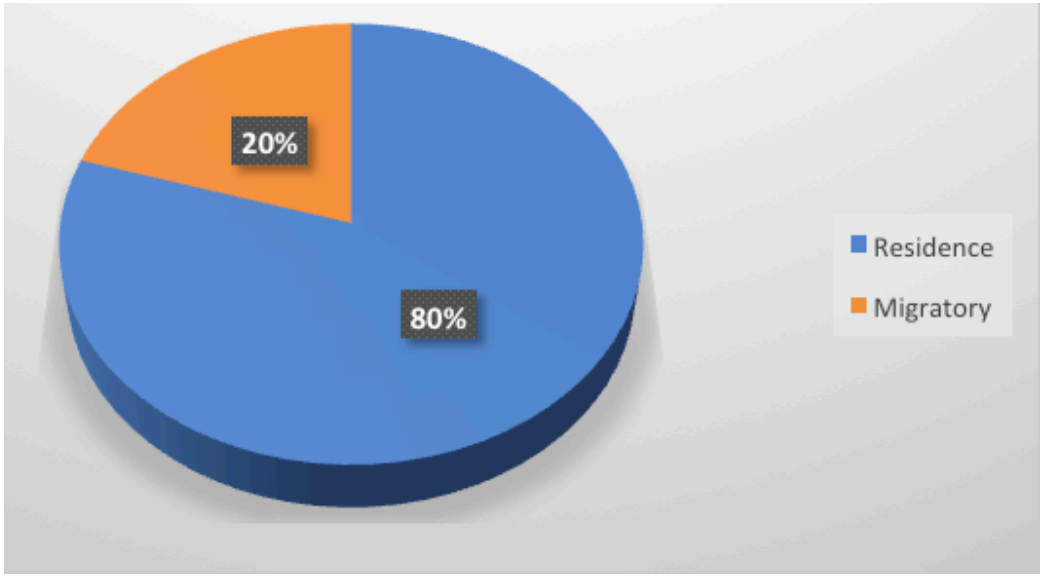


Figure 4. Migratory status of birds of M.N. College, Visnagar

Table 1. Checklist of birds found in M.N. College, Visnagar

Common Name	Scientific name	IUCN Red List status	Migratory status
Order: Accipitriformes			
Family: Accipitridae			
Black Kite	*Milvus migrans*	LC	R
Black-shouldered Kite	*Elanus axillaris*	LC	R
Common Buzzard	*Buteo buteo*	LC	M
Eurasian Marsh Harrier	*Circus aeruginosus*	LC	M
Oriental Honey-buzzard	*Pernls ptilorhynchus*	LC	M
Shikra	*Accipiter badius*	LC	R
Order: Anseriformes			
Family: Anatidae			
Knob-billed Duck	*Sarkidiornis melanotos*	LC	R
Indian Spot-billed Duck	*Anas poecilorhyncha*	LC	R
Order: Apodiformes			
Family: Apodidae			
Little Swift	*Apus affinis*	LC	R
Order: Bucerotiformes			
Family: Bucerotidae			
Indian Grey Hornbill	*Ocyceros birostris*	LC	R
Eurasian Hoopoe	*Upupa epops*	LC	R
Order: Charadriiformes			
Family: Burhinidae			
Eurasian Thick Knee	*Burhinus oedicnemus*	LC	R
Order: Ciconiiformes			
Family: Ciconiidae			
Woolly-necked Stork	*Ciconia episcopus*	V	R
Family: Charadriidae			
Red-wattled Lapwing	*Vanellus indicus*	LC	R
Family: Recurvirostridae			
Black-winged Stilt	*Himantopus himantopus*	LC	R
Family: Scolopacidae			
Green Sandpiper	*Tringa ochropus*	LC	M
Order: Columbiformes			
Family: Columbidae			
Rock Pigeon	*Columba livia*	LC	R
Laughing Dove	*Streptopelia senegalensis*	LC	R
Eurasian Collared-Dove	*Streptopelia decaocto*	LC	R
Red Collared Dove	*Streptopelia tranquebarica*	LC	R
Yellow-footed Green-Pigeon	*Treron phoenicopterus*	LC	R

Common Name	Scientific name	IUCN Red List status	Migratory status
Order: Coraciiformes			
Family: Alcedinidae			
Common Kingfisher	*Alcedo atthis*	LC	R
White-throated Kingfisher	*Halcyon smyrnensis*	LC	R
Family: Coraciidae			
European Roller	*Coracias garrulus*	LC	M
Indian Roller	*Coracias benghalensis*	LC	R
Family: Meropidae			
Green Bee-eater	*Merops orientalis*	LC	R
Order: Cuculiformes			
Family: Cuculidae			
Asian Koel	*Eudynamys scolopaceus*	LC	R
Greater Coucal	*Centropus sinensis*	LC	R
Order: Galliformes			
Family: Phasianidae			
Indian Peafowl	*Pavo cristatus*	LC	R
Gray Francolin	*Ortygornis pondicerianus*	LC	R
Order: Passeriformes			
Family: Aegithinidae			
Common Iora	*Aegithina tiphia*	LC	R
Family: Campephagidae			
Small Minivet	*Pericrocotus cinnamomeus*	LC	R
Large Cuckooshrike	*Coracina macei*	Lc	R
Family: Cisticolidae			
Common Tailorbird	*Orthotomus sutorius*	LC	R
Plain Prinia	*Prinia inornata*	LC	R
Ashy Prinia	*Prinia socialis*	LC	R
Grey-breasted Prinia	*Prinia hodgsonii*	LC	R
Family: Corvidae			
House Crow	*Corvus splendens*	LC	R
Indian Jungle Crow	*Corvus macrorhynchos*	LC	R
Rufous Treepie	*Dendrocitta vagabunda*	LC	R
Family: Dicaeidae			
Pale-billed Flowerpecker	*Dicaeum erythrorhynchos*	LC	M
Family: Dicruridae			
Black Drongo	*Dicrurus macrocercus*	LC	R
White-bellied Drongo	*Dicrurus caerulescens*	LC	R
Ashy Drongo	*Dicrurus leucophaeus*	LC	M
Family: Estrildidae			
Indian Silverbill	*Euodice malabarica*	LC	R
Family: Hirundinidae			
Dusky Crag Martin	*Ptyonoprogne concolor*	LC	R

Common Name	Scientific name	IUCN Red List status	Migratory status
Family: Leiothrichidae			
Jungle Babbler	*Turdoides striata*	LC	R
Large Grey Babbler	*Argya malcolmi*	LC	R
Family: Motacillidae			
Tree Pipit	*Anthus trivialis*	LC	M
Paddyfield Pipit	*Anthusru fulus*	LC	R
Yellow Wagtail	*Motacilla flava*	LC	M
Grey Wagtail	*Motacilla cinerea*	LC	M
White Wagtail	*Motacilla alba*	LC	M
Citrine Wagtail	*Motacilla citreola*	LC	M
Family: Muscicapidae			
Indian Robin	*Saxicoloides fulicatus*	LC	R
Oriental Magpie-Robin	*Copsychus saularis*	LC	R
Red-breasted Flycatcher	*Ficedula parva*	LC	M
Brown Rock Chat	*Oenanthe fusca*	LC	
Family: Nectariniidae			
Purple Sunbird	*Cinnyris asiaticus*	LC	R
Family: Passeridae			
House Sparrow	*Passer domesticus*	LC	R
Chestnut-shouldered Petronia	*Petronia xanthocollis*	LC	R
Family: Ploceidae			
Baya Weaver	*Ploceus philippinus*	LC	R
Family: Pycnonotidae			
Red-vented Bulbul	*Pycnonotus cafer*	LC	R
White-eared Bulbul	*Pycnonotus leucotis*	LC	R
Family: Rhipiduridae			
White-spotted Fantail	*Rhipidura albogularis*	LC	R
White-browed Fantail	*Rhipidura aureola*	LC	R
Family: Stenostiridae			
Grey-headed Canary-Flycatcher	*Culicicapa ceylonensis*	LC	M
Family: Sturnidae			
Common Myna	*Acridotheres tristis*	LC	R
Bank Myna	*Acridotheres ginginianus*	LC	R
Brahminy Starling	*Sturnia pagodarum*	LC	R
Rosy Starling	*Pastor roseus*	LC	M
Family: Sylviidae			
Lesser Whitethroat	*Curruca curruca*	LC	M
Order: Pelecaniformes			
Family: Ardeidae			
Indian Pond Heron	*Ardeola grayii*	LC	R
Cattle Egret	*Bubulcus ibis*	LC	R
Little Egret	*Egretta garzetta*	LC	R

Common Name	Scientific name	IUCN Red List status	Migratory status
Family: Threskiornithidae			
Red-naped Ibis	*Pseudibis papillosa*	LC	R
Black-headed Ibis	*Threskiornis melanocephalus*	NT	R
Glossy Ibis	*Plegadis falcinellus*	LC	M
Order: Piciformes			
Family: Megalaimidae			
Coppersmith Barbet	*Psilopogon haemacephalus*	LC	R
Family: Picidae			
Lesser Goldenbacked Woodpecker	*Dinopium benghalense*	LC	R
Order: Psittaciformes			
Family: Psittaculidae			
Rose-ringed Parakeet	*Psittacula krameri*	LC	R
Order: Strigiformes			
Family: Strigidae			
Spotted Owlet	*Athene brama*	LC	R
Family:Tytonidae			
Barn Owl	*Tyto alba*	LC	R
Order: Suliformes			
Family: Phalacrocoracidae			
Little Cormorant	*Microcarbo niger*	LC	R

LC—Least Concern | V—Vulnerable | NT—Near Threatened | R—Resident | M—Migrant

References

Grimmett, R., C. Inskipp & T. Inskipp (2011). *Birds of the Indian Subcontinent. 2nd ed*. Oxford University Press & Christopher Helm, London, 528 pp.

Ali, S. (2002). *The Book of Indian Birds*. Bombay Natural History Society.

Singh, H.S. (2001). *Natural Heritage of Gujarat*. Gujarat Ecological Education and Research (GEER) Foundation, Gandhinagar. 262 pp.

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Egyptian Vultures extending to new landscapes in southern Tamil Nadu: Need for measures

Vultures being obligate or opportunistic scavengers play a keystone role in the ecosystems' health (Buechley & Sekercioglu 2016; DeVault et al. 2016). Botha et al. (2017) assessed them as the most threatened guild of birds in the world due to anthropogenic factors. Among the seven species of vultures seen mainly in Moyar of Nilgiri Biosphere Reserve, Egyptian Vultures are the only species sighted regularly in a few southern districts of Tamil Nadu in the last decade.

The Egyptian Vulture *Neophron percnopterus* from the family Accipitridae is locally known as 'Kodangi Kazhugu' and 'Thirukazhukundra Kazhugu' in Tamil. The vulture is mainly found in savanna, shrubland, grassland, wetlands, and rocky areas (cliffs and mountain peaks) in Asia, Africa, and Europe. The species is listed as Endangered on the IUCN Red List owing to a recent and extremely rapid population decline in India (>90% in the last decade), Europe (50–79% over the last three generations), and Africa (BirdLife International 2022). The species is declining in virtually all parts of its range, apparently for several different reasons that include, disturbance, lead poisoning, direct and secondary poisoning, electrocution, collisions with wind turbines, reduced food availability, and habitat change. Egyptian Vultures, also known as the White Scavenger Vulture or Pharaoh's Chicken, used to be a common sight in the countryside in the drier parts of Tamil Nadu about three decades ago. The Egyptian

Egyptian Vulture on cattle carcass at Pothaiyadi, Tirunelveli ©N. Raveendran

Three Egyptian Vultures together sighted at Sivakalai, Tirunelveli ©Anitha Veeravendhan

Table 1. Egyptian Vulture sighting reported in southern Districts of Tamil Nadu post 2010

Year and Month	Name of the place, District	Total No of birds sighted	E bird/ Others
2013 May	Naguneri, Tirunelveli	2	E bird
2013 March	Koonthamkulam, Tirunelveli	2	E bird
2014 January	Vallanadu, Thoothukudi	2	E bird
2015 June	Vagaikulam, Thoothukudi	2	Others
2015 June	Kaspa Tank, Thoothukudi	2	Others
2016 January	Koonthakulam, Tirunelveli	1	E bird
2016 January	Naguneri, Tirunelveli	1	E bird
2016 October	Pothaiyadi, Tirunelveli	1	E bird
2016 November	Pothaiyadi, Tirunelveli	1	E bird
2017 January	Koonthamkulam, Tirunelveli	4	E bird
2017 November	Pothaiyadi, Tirunelveli	2	Others
2017 November	Vallanadu, Thoothukudi	1	E bird
2019 December	Thoothukudi	1	E bird
2020 January	SAC Women's college, Cumbum, Theni	1	E bird
2020 January	Vaagaikulam, Srivaikuntam, Thoothukudi	3	E bird
2021 September	Koonthamkulam, Tirunelveli	2	Others
2022 January	Pothaiyadi, Tirunelveli	2	Others
2022 January	Sivakalai, Tirunelveli	2	Others

Vulture sighting records compiled post 1972 by Siva & Quadros (2021) showed that 37 observations spread over 16 districts of Tamil Nadu, and the maximum sightings were from the Tirunelveli District.

We have several records of sightings of Egyptian Vultures from birders and ourselves (both from e bird and others) and this has been compiled post 2010 from southern districts of Tamil Nadu (Table 1).

In 2013, in Koonthankulam Bird Sanctuary (Tirunelveli District, Tamil Nadu) the sighting of two juvenile vultures was feeding on the carcass of a cow. After 10 minutes they flew away. In 2014, bird were sighted in Vallanadu, followed by Vagaikulam and Kaspa Tank 2015. In 2017, the repeated sighting was in Vallanadu, Kootampuli in 2019, and Mudivaithanendal in 2020 (Vinoba pers. comm.). In 2020, another juvenile was sighted in the Perungulam tank near Sivagalai in September 2020 (Sakthi Manickam pers. comm.). In Tirunelveli suburbs, it was sighted on four occasions in 2020, besides Pattukottai in March 2020 and Cumbum in January 2020 and February 2021. They are both sighted mostly in Thoothukudi and Tirunelveli districts in southern Tamil Nadu

and interestingly all are juveniles and sub-adults. The juveniles flaunt brown feathers while those of sub-adults are a blend of white and brown (Grimmett et al. 2011).

Ramnagara and Mysore districts in neighbouring Karnataka have recorded breeding populations (Samson & Ramakrishnan 2016). In 2013, the last breeding pair of Vultures were recorded from Thenkanikottai near Hosur near the Karnataka border. The exact reason for Egyptian Vulture decline in Tamil Nadu is yet to be studied. The major reasons widely believed by conservationists are feeding on poisoned rats, harmful effluents of leather tanning industries, and toxification of dump yards. They generally scavenge at dump yards and feed on carcasses of domestic livestock carcasses, wild animals, human food waste (Milchev et al. 2012), and eggs of other birds. They also feed on worms in cow dung, and other insects. The use of deworming drugs in cattle and pesticide-laden insects could also lead to their death.

One of the assumptions of the Egyptian Vulture sighting in these districts is that they descend from Moyar Valley of the Nilgiris and fly down to grasslands where they could feed on dead animals and carcasses. Most of the sightings of the birds in southern Tamil Nadu, especially in the districts of Tirunelveli and Thoothukoodi are juveniles. According to the farmers, the vultures generally arrive to feed on the dead cattle (carcass) within the second day. The timing of Egyptian Vulture arrival and the sightings of only juveniles is to be probed and monitored further, as there were records in the early 1980s about the breeding population of Egyptian Vultures in south Tamil Nadu. Multiple sightings every year in the last decade from various parts of Tamil Nadu other than the established areas of Moyar Valley in Nilgiris is a positive sign of population revival.

Breeding performance is one of the main components of the demography of a raptor population. An exhaustive search of the hillocks in all southern districts of Tirunelveli, Thoothukudi, and Kanyakumari should be done to identify nests and any breeding populations. Exhaustive studies on its demography may serve as an important stepping stone for successful conservation programs. So, for the revival of the population we need to understand the factors responsible for its decline. Reinforcement of the population through restocking might also have a positive effect on the population trend but only when it is applied together with measures reducing mortality (Velevski et al. 2014). Supplementary feedings and nest guarding as conservation tools could be applied in territories with low occupancy rates to not only improve the quality of the territory in terms of food availability but also to decrease the probability of disturbance, and direct persecution.

Conservation measures mitigating the main threats such as poisoning, electrocution, and poaching should be a priority in these territories to secure the survival of the most productive pairs and their fledglings.

References

BirdLife International (2022). Species factsheet: *Neophron percnopterus*. Downloaded from http://www.birdlife.org on 25.iv.2022.

Botha, A.J., J. Andevski, C.G.R. Bowden, M. Gudka, R.J. Safford, J. Tavares & N.P. Williams (2017). *Multi-species Action Plan to Conserve African-Eurasian Vultures.* CMS Raptors MOU Technical Publication No. 5. CMS Technical Series No. xx. Coordinating Unit of the CMS Raptors MOU, Abu Dhabi, United Arab Emirates.

Buechley, E.R. & C.H. Sekercioglu (2016). The avian scavenger crisis: looming extinctions, trophic cascades, and loss of critical ecosystem functions. *Biological Conservation* 198: 220–228.

DeVault, T.L., J.C. Beasley, Z.H. Olson, M. Moleon, M. Carrete, A. Margalida & J.A. Sanchez-Zapata (2016). Ecosystem Services Provided by Avian Scavengers. USDA National Wildlife Research Center-Staff Publications,1836.

Grimmett, R., C. Inskipp & T. Inskipp (2011). *Birds of Indian Subcontinent. Second edition.* Oxford University Press & Christopher Helm, London, 528 pp.

Milchev, B., S. Nikolay & V. Popov (2012). Diet of the Egyptian Vulture *Neophron percnopterus* after livestock reduction in eastern Bulgaria. *North-Western Journal of Zoology* 8(2): 315–323.

Samson, A. & B. Ramakrishnan (2016). Observations of a population of Egyptian Vultures *Neophron percnopterus* in Ramnagaram Hills, Karnataka, southern India. Vulture News 71: 36–49.

Siva, T. & G. Quadros (2021). Egyptian Vulture *Neophron percnopterus* in Udhayamarthandapuram Bird Sanctuary, Thiruvaraur District, Tamil Nadu: a First record. *Ambient Science* 8(1): 37–38.

Velevski, M., B. Gruba & L. Tomovic (2014). Population Viability Analyses of the Egyptian Vulture *Neophron percnopterus* in Macedonia and Implications for Its Conservation. *Acta Zoologica Bulgarica* 66(1): 43–58.

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