

Correspondence

Status of the Green Munia *Amandava formosa* in the Eastern Ghats with a note on its seasonality

India is home to eight species of munias, among which the Green Munia *Amandava formosa* (Telugu-*Pacha jinuvaaye*, Odia-*Hari Churi*) is endemic to the Indian subcontinent. Unfortunately, their beauty and melodious calls lead to indiscriminate trapping and trafficking of these birds, that resulted in a population decline (Rahmani 2012). This decline was additionally compounded by the intensification of agriculture and the loss of shrubland, which quickly paved way to categorize it as Vulnerable by the IUCN (BirdLife International 2023). We report Green Munia from the north-eastern Andhra Pradesh and review its status in the Eastern Ghats of Andhra Pradesh and Odisha and compare its movements with those of its population in the Aravalli hills, Rajasthan. We also constructed a distribution map, using Microsoft PowerPoint, as well as seasonal graphs, using GraphPad Prism and Adobe Photoshop.

During a three-day birdwatching event organized by *Hyderabad Birding Pals* at Mareduhilli (17.598°N, 81.713°E), more than 30 participants saw multiple flocks of Green Munia on 14 and 15 May 2022 in an uncultivated field c.30 km north of Mareduhilli, Andhra Pradesh [80]. The weather at the time of sighting was pleasant (26–28°C, > 90% humidity) with a gentle breeze. The sky was predominantly cloudy with some sunny periods in between, and the birds were active throughout the day. On 14 May 2022, the opportunistic sighting of two individuals was followed by the observation of multiple flocks of smaller numbers ranging from six to 15 individuals, which included males, females, and juveniles [81, 82]. Overall, conservative estimates of 35–50 individuals were recorded during this birdwatching session. During a subsequent visit on 15 May 2022 to the same site and exploring similar habitats in adjacent areas, we observed several small flocks ranging from eight to 15 individuals with one large flock of 25–30, including juveniles, which enabled us to place an estimate of c.150 individuals. The observation of juveniles indicated potential breeding at this location [82]. The birds observed were actively foraging on the ground covered with plants such as *Parthenium hysterophorus*, *Solanum sp.*, and *Lantana camara* at a height of 30–100 cm [83]. When approached, they perched on the subterminal branches of *Solanum sp.* for a few seconds before retreating into dense foliage, rendering them camouflaged [84]. Given the presence of similar habitats in the vicinity, there could be a larger thriving population yet to be discovered.

Gopalakrishna R



80. The Green Munia habitat near Mareduhilli consists of dense open uncultivated scrublands with scattered bushes and trees featuring *Parthenium hysterophorus*, *Solanum sp.*, and *Lantana camara*.



81. An adult male Green Munia from Mareduhilli.



82. A juvenile Green Munia from Mareduhilli.

Both: Sriam Reddy



83. *Parthenium hysterophorus*, below which Green Munia was observed to forage.



84. Thorny shrubs to which Green Munias retreated upon human or animal approaches.

Both: Gopalakrishna Ramachandran

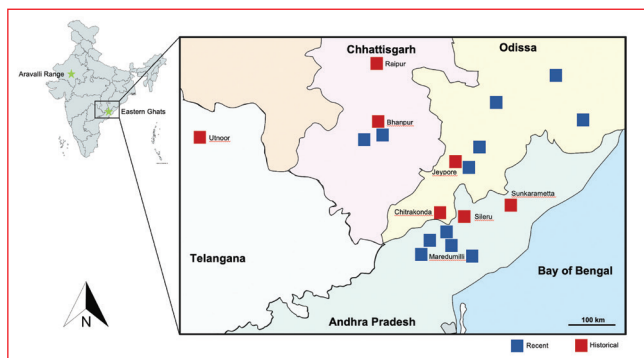


Fig. 1: Distribution of Green Munia in the Eastern Ghats (exact eBird localities not shown).

The Green Munia population is restricted to a small region in the Eastern Ghats around the trijunction of Chhattisgarh, Odisha, and Andhra Pradesh (Fig. 1). It has occurred around Bhanpur, Bastar District, Chhattisgarh (Whistler & Kinnear 1934) and more recently was observed in Jagdalpur, Bastar District, Chhattisgarh (Warren 1996). Two specimens were collected in 1934 from the adjoining regions of Jeypore, Odisha (Whistler & Kinnear 1934). Towards the southern part of Odisha, eight specimens of Green Munia (4 each of males and females) were collected from Chitrakonda, Malkajgiri District (formerly undivided Korakput District) between 15–17 March 1977 (Majumdar 1988). During the period of the Hyderabad State Ornithological Survey, Green Munia was said to have frequented tall grasses in Utloor [=Utnur], Adilabad District, Telangana; this information was included by the authors based on a reliable report (Ali & Whistler 1934). La Personne observed Green Munia to be “fairly common” at Sankarametta, Vishakhapatnam [=Vizagapatam] District, Andhra Pradesh, where six specimens were collected in March 1930 (Whistler & Kinnear 1934), which could be the earliest known record for this species in the south. Green Munia was also observed in Lambasingi [=Lamasinghi], Vishakhapatnam District, Andhra Pradesh, in 1944 (Abdulali 1945). A female specimen (USNM 583150; Orrel 2024) was collected from Sapparla, 32 km east of Sileru, Vishakhapatnam District, Andhra Pradesh, on 19 March 1975 (Ali & Ripley 1983; Ripley et al. 1988).

Recent observations of the Green Munia indicate a viable population in various locations in southern Odisha and northern Andhra Pradesh. In the eastern part of the Karlapat Wildlife Sanctuary (WLS), the species was observed between 15–20 April 2009, when approximately 25 individuals were photographed (Palei 2011; Palei et al. 2012). In southern Odisha, Green Munia has been observed in several WLS and forest divisions, indicating a continuing population in the region. Sightings reported from the Lakhari Valley WLS (Palei 2012), Athgarh Forest Division (Palei et al. 2014), Baisipalli WLS (Das et al. 2013), Amtiguda, and Sunabeda (Purohit et al. 2021) include some of them.

In northern Andhra Pradesh, the recent documentation of the Green Munia was a photograph from Darakonda, Vishakhapatnam District on 27 September 2017 (Varma 2017). Subsequently, sightings continued, with photographs taken at Gudisa, East Godavari District, on 02 February 2022 (Bandi & Dodla 2022) and at Kanivada-Chaparai ghat road, East Godavari District, on 03 March 2022 (Polimati 2022). The species was then observed during our bird-walks, as described above. Subsequent sightings were sporadic and not regular until 21 May 2023. The sighting pattern remained consistent, with a high prevalence observed between May and August 2023.

Green Munia is currently listed as a species of ‘High Priority’, primarily due to its restricted distribution coupled with its threatened IUCN status (SoIB 2023). It is currently confined to two distinct regions within the country. Apart from the Eastern Ghats, the only other population is from the Aravalli Range, particularly around Mt. Abu, in the Sirohi District of Rajasthan (Fig. 1). Despite the geographical distance of more than 1,000 km, both areas have exhibited evidence of a thriving population in the past decade, as indicated by the presence of both adults and juveniles.

Observations of Green Munias have been documented throughout the year at Mt. Abu and its surrounding areas. However, sightings in northwestern Andhra Pradesh have shown some seasonality, which we investigated further. We obtained Green Munia data from eBird, spanning from 08 March 1930 to 31 March 2024, comprising 1084 records (see *acknowledgements*). Duplicate records with identical counts, dates, and locations were filtered, resulting in a dataset of 871 records. This dataset was then analyzed for the states of Andhra Pradesh, Odisha, and Rajasthan (863 records).

Rajasthan had a greater share of records, with 782 records spread throughout the year, with a slight decrease in the average count between May and August, indicating they are primarily resident there (Fig. 2). In contrast, observations from Andhra Pradesh (42 records) and Odisha (39 records) had strong seasonal patterns. In southern Odisha, consistent with our analysis (Fig. 2), Green Munia was observed primarily from January to July, with peak flock numbers occurring in April (Purohit et al. 2021). However, in northeastern Andhra Pradesh, the number of sightings in May gradually decreased until September (Figure 2 & 3). The sudden peak in sightings probably suggests the collective arrival of a migration event. Maredumilli attract birders year-round, but most sightings are noted only between May and August. Except for a few sporadic records, there are no sightings from either of the states between September and December. A bird survey at Papikonda WLS, Andhra Pradesh, conducted from 15 to 18 March 2024 covered several sites where Green Munia is known to occur, yet the species was not detected during this survey (Papikonda National Park Survey 2024). Compared to the Aravalli population, the sighting pattern of Green Munia in the Eastern Ghats was

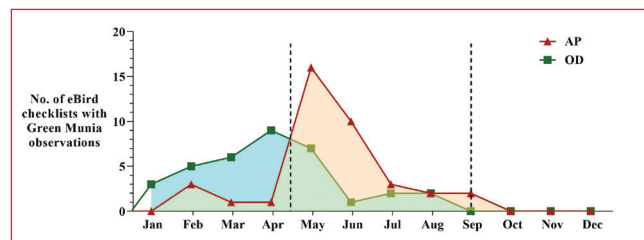


Fig. 2: Seasonality of the Green Munia population in Andhra Pradesh (red) and Odisha (green) from eBird.

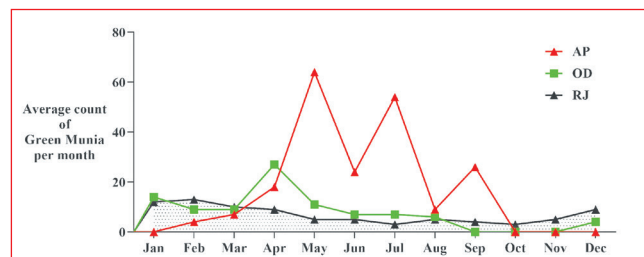


Fig. 3: Monthly average counts of Green Munias for Andhra Pradesh (red), Odisha (green), and Rajasthan (black) from eBird.

suggestive of movement, contrary to the assumption that they were residents. Further research and monitoring are necessary to better understand the seasonal dynamics and habitat utilization patterns of the Eastern Ghats Green Munia population.

In addition to the population found in Mt. Abu, Rajasthan, the Eastern Ghats population may be the only other viable population for Green Munias known today. The Eastern Ghats region, due to its poor accessibility, remains relatively unexplored, which could contribute to the limited knowledge about the distribution of the species in this region. Compounding this issue, several areas bordering Andhra Pradesh, Odisha, and Chhattisgarh are sensitive, imposing restrictions on general visits, including birdwatching.

As per the local people, decades ago, the Green Munias used to feed extensively in their "podu" cultivation (forest clearing by burning) decimating their crops. Upon engaging in discussions with elder residents of the area, it was revealed that they perceive the presence of Green Munias as a pest to their agricultural production. The measures taken to reduce their agricultural damage could have resulted in a decline/movement of their population in this region. Being aware of this population, a comprehensive solution encompassing community involvement through awareness and education, alongside research and monitoring, is imperative.

We thank Hyderabad Birding Pals, DFO Selvam Chandran and the Andhra Pradesh Forest Department for their permission and encouragement for this bird survey. We thank Raja Bandi and Jimmy Carter Polimati for the discussions on their sightings of Green Munia. We thank Ravi Gollamandala for identifying the plant species. We thank Jenna Curtis and the eBird-India Sensitive Species Committee for providing access to the data of Green Munia. Both the authors contributed equally to this manuscript and declare no conflict of interest.

References

- Abdulali, H., 1945. Birds of the Vizagapatnam District. *Journal of the Bombay Natural History Society* 45: 333–347.
- Ali, S., & Ripley, S. D., 1974. *Handbook of the Birds of India and Pakistan*. Volume 10 Oxford University Press, Bombay. Pp. 1–109.
- Ali, S., & Ripley S. D., 1983. *Handbook of the birds of India and Pakistan together with those of Bangladesh, Nepal, Bhutan and Sri Lanka*. Compacted. Delhi: Oxford University Press. Pp. 1–737.
- Ali, S., & Whistler H., 1934. The Hyderabad State Ornithological Survey. Part 3. *Journal of the Bombay Natural History Society* 36 (4): 898–919.
- Bandi, R., & Dodla, K., 2022. Webpage URL: <https://ebird.org/checklist/S102255880> [Accessed on 18 May 2022.]
- Das K. S., Sahoo P. D., Dash N., & Sahu H. K., 2013. Avifaunal diversity of Baisipalli Wildlife Sanctuary, Odisha. *Indian BIRDS* 8 (4): 90–92.
- Gopalakrishna, R., 2022. Webpage URL: <https://ebird.org/checklist/S110355122> [Accessed on 18th May 2022.]
- IUCN Red list, 2018. Webpage URL: <https://www.iucnredlist.org/species/22719618/131995719> BirdLife International (2018). "Amandava formosa". IUCN Red List of Threatened Species. [Accessed 18th May 2022.]
- Majumdar, N., 1988. On a collection of birds from Koraput district, Orissa, India. *Records of the Zoological Survey of India Miscellaneous Publications Occasional Paper* 108: 53.
- Palei H. S., 2012. Sighting of Green Avadavat *Amandava formosa* in Karlapat Wildlife Sanctuary, Odisha, India. *ZOO's PRINT*. 27 (1): 25.
- Palei H. S., Mahapatra P. P., Dutta S. K., Singh L. A. K., Sahu H. K., & Rout S. D., 2011. Avifauna of Karlapat Wildlife Sanctuary, southern Orissa, India. *Indian Forester* 137: 1197–1202.
- Palei, N. C., Rath, B. P., & Sahu, H. K., 2012. Avifauna of Lakhari Valley Wildlife Sanctuary. *Odisha Newsletters for Birdwatchers* 52 (4): 54–57
- Palei, N. C., Rath, B. P., Sajjan, S. K., & Mishra, A. K., 2014. Avifauna of Athgarh forest division, Odisha. *Journal of Entomology and Zoology Studies* 2 (5): 329–334.
- Papikonda National Park Survey, 2024. Webpage URL: <https://ebird.org/tripreport/213406> [Accessed on 20 May 2024.]
- Payne, R. B., 2021. Green Avadavat (*Amandava formosa*), version 1.1. In *Birds of the World* (J. del Hoyo, A. Elliott, J. Sargatal, D. A. Christie, and E. de Juana, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.gmava1.01.1>
- Polimati, J. C., 2022. Webpage URL: <https://ebird.org/checklist/S104138616> [Accessed on 18th May 2022.]
- Purohit, S., Khamari, P. B., & Palita. S. K., 2021. Studies on Breeding Populations of Green Munia (*Amandava formosa*) in Koraput of Eastern Ghats, Southern Odisha. *India Proceedings of National Academy of Science India, Biological Sciences*. 91 (2): 423–429.
- Rahmani, A. R., 2012. *Threatened Birds of India—Their Conservation Requirements* Indian Bird Conservation Network, Royal Society for the Protection of Birds and Birdlife International. Oxford University Press. Pp. 555–559.
- Rasmussen P. C., & Anderton J. C., 2012. *Birds of South Asia, the Ripley guide Vols. 1 and 2. Second Edition*. National Museum of Natural History: Smithsonian Institution, Michigan State University and Lynx Edicions, Washington, D.C., Michigan and Barcelona. Pp. 1–683.
- Reddy, S., 2022. Webpage URL: <https://ebird.org/checklist/S110462743> [Accessed on 18 May 2022.]
- Ripley, S. D., Beehler, B. M., & Krishna Raju, K. S. R., 1988. Bird of Visakhapatnam Ghats, Andhra Pradesh, (Part 2) *Journal of the Bombay Natural History Society*. 85 (1): 90–107
- SoIB 2023. State of India's Birds factsheet: Green Munia xi (India) <https://stateofindiabirds.in/species/gmava1/> [Accessed on 16 May 2024.]
- Varma, H., 2017. Webpage URL: <https://ebird.org/india/checklist/S40258862> [Accessed on 18 May 2022.]
- Warren, L., C., 1996. Webpage URL: <https://ebird.org/checklist/S28764601> [Accessed on 8 March 2024.]
- Whistler, H., & Kinnear, N. B., 1934. The Vernay Scientific Survey of the Eastern Ghats (Ornithological Section). Part VI *Journal of the Bombay Natural History Society* 36: 836–37.

– Sriram Reddy & Gopalakrishna Ramachandran

Sriram Reddy, Hyderabad Birding Pals, H. No. 403, Block C, RK towers, Mayuri Marg, Begumpet, Hyderabad -500016, INDIA. Email: sriram.birdwatcher@gmail.com
Gopalakrishna Ramachandran, Tata Institute of Fundamental Research Hyderabad, 36/P, Gopanpally, Serilingampally, Ranga Reddy District, Hyderabad-500046, INDIA
Email gopalakrishnaiyer@gmail.com [Corresponding author]

Reflections from a survey of the Village Reserve Forests and Community Forests of Garo Hills, Meghalaya, north-eastern India

The states of north-eastern India are part of the Indo-Burmese biodiversity hotspot (Myers 2000). The region has among the highest avian biodiversity in the Oriental region, with over 850 species, many of which are forest dependent. In the Garo Hills of Meghalaya, the Wildlife Trust of India (WTI) helped the forest department of Meghalaya establish Village Reserved Forests (VRFs) and Community Forests (CFs) They are administered by the community with assistance from the WTI, Garo Hills District Council (GHADC), and Meghalaya State Forest Dept (SFD). We were a part of a bird survey conducted during May–June 2022 and January 2023 in the VRFs and CFs flanking the two National Parks in the Garo Hills: the Nokrek National Park in the West Garo Hills District and the Balpakram National Park in the South Garo Hills District. I share a few reflections on the habitats as well as some interesting species noted during these surveys.

The survey was conducted in two phases, with West Garo (WG) and South Garo (SG) surveyed in summer between 28 May 2022 and 15 June 2022 and a second phase in winter covering only South Garo between 07 January 2023 and 16 January 2023. Seven VRFs and two CFs were surveyed in West Garo. In South Garo, six VRFs and one CF were surveyed; in addition, a Reserve Forest (RF) and an extension of the RF were included in the South Garo surveys. All these locations were covered by walking along existing trails (Table 1).

The sites that were surveyed encompassed a range of forest