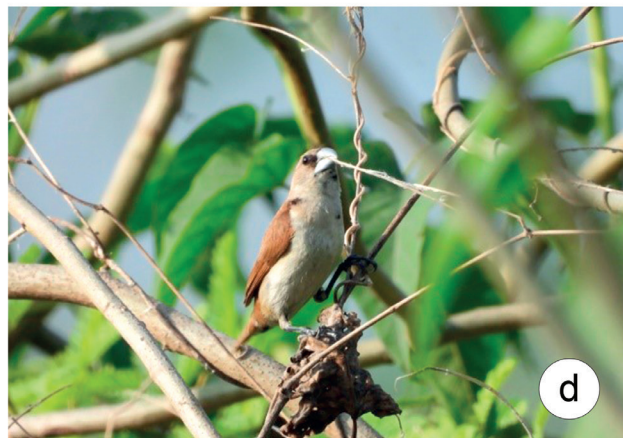


## Study on Scaly-breasted Munia around the wetlands of Veedur, Tamil Nadu, India

The Scaly-breasted Munia or Spotted Munia *Lonchura punctulata* (Linnaeus, 1758) (Aves: Passeriformes: Estrildidae) is a sociable, estrildid finch native to India, Nepal, Bhutan, Sri Lanka, Afghanistan, Bangladesh, Cambodia, Myanmar, Vietnam, China, and Thailand. The species is introduced to Australia, Cuba, Haiti, Jamaica, Mauritius, Seychelles, UAE, United States, and French Polynesia (BirdLife International 2016). In India, the species presence has been reported in Pune District, Maharashtra (Sumant et al. 2019), Raipur, Madhya

Pradesh (Ali & Ripley 1983) and Ramtirtha, Odisha (Singh & Rout 1992). Scaly-breasted Munia feeds on seeds of grass (Mehta 1997). Though Scaly-breasted Munia occurs widely in India, no systematic study on its number, and nesting sites exists especially from southern India barring few published works on records in regional checklists, from parts of Andhra Pradesh, Telangana (Arigela et al. 2020), Kalpakkam and Tambaram areas, (Hussain et al. 2011) of Tamil Nadu. In this paper, bird count, foraging, and roosting habits of the Scaly-breasted Munia in the



high resolution  
images re-  
quired  
as jpgs or  
pngs

Various behaviours of Scaly-breasted Munia: a—An individual roosting on twig of *Prosopis juliflora* | b—Female individual foraging grass seeds with Tricolored Munia | c—Group of birds foraging on grass seeds | d—A female individual carrying nest material.

Table 1. Individuals of Scaly-breasted Munia enumerated in various sites of Veedur wetlands.

	Village/Place	GPS	Number of birds counted	Percentage (%)
1	Veedur Reservoir	12.075642°N – 79.596735°E	48	22.64
2	Veedur-Mailam Road	12.075305°N – 79.597768°E	4	1.89
3	Veedur Lake-Sugarcane field	12.085330°N – 79.606292°E	52	24.53
4	Veedur Lake reeds	12.080586°N – 79.608387°E	18	8.49
5	Veedur village pond	12.069227°N – 79.598269°E	32	15.09
6	Veedur Lake bund area	12.152909°N – 79.904296°E	58	27.36
	<b>Total</b>		<b>212</b>	<b>100.00</b>

wetlands adjacent to Veedur Reservoir (12.07°N—79.58°E) in Tindivanam Taluk, Villuppuram District, Tamil Nadu were documented. The aim of this study was to investigate the number of individuals of Scaly-breasted Munia inhabiting the area, their roosting, foraging behaviours, and interactions with other bird species.

The Veedur reservoir covers an area of 7.7 km<sup>2</sup> with storage capacity of 600 tmc water, and irrigates 1,295 ha of cultivating lands. Agriculture is the primary occupation in the district. The major crops of the region are rice, jowar, pearl millet, finger millet, sugarcane, and pulses such as black gram, green gram, and pigeon pea. Temperature ranges 36–20°C. The average annual rainfall is 1,060 mm (Viluppuram 2021).

With the help of an assistant, survey was conducted in the study area from 01 February to 30 June 2021 between 0600 and 1800 h. The individual numbers of Scaly-breasted Munia, communal roosting behaviour, foraging behaviours, and interactions with other species were observed from a safe distance (c.30m) with help of binoculars,

without causing disturbance to the birds. The total number of birds was enumerated by following the total count method (Bibby et al. 2000) and analyzing the photographs taken when the birds were foraging, and roosting during the day.

Bird censuses were conducted every second week of month during February–June 2021 and bird population size is expressed as an average of each session's total count. The foraging and roosting behaviours, and the choices of grains/seeds consumed by the birds were photographed. Locations of the study sites were determined using a Garmin Etrex 20x GPS device. Photographs and videography were made using a Nikon P1000 digital camera.

A total of 212 adult individuals of Scaly-breasted Munia were enumerated at six sites in the Veedur wetland areas. Site-VI contained the highest number of birds (58; 27.36%) and least number of birds (4; 1.89%) were observed in site-II (Table 1). The present study area consisting of multiple sites (wetlands) adjacent to the reservoir harbours high number of Scaly-breasted Munia

individuals. Paddy crops occurred within 100–200 m distance from the study sites.

The birds were observed in flocks containing Baya Weavers *Ploceus philippinus*, Streaked Weavers *Ploceus manyar*, Indian Silverbills *Euodice malabarica*, White-rumped Munia *Lonchura striata*, Tricolored Munia *Lonchura malacca* and Red Avadavat *Amandava amandava*. In India, Scaly-breasted Munia occurs in open scrub, cultivated lands interspersed with trees (Grewal et al. 2016). In the present study also, the species were found in open scrub wetlands adjacent to cultivating agricultural lands as stated by Grewal et al. (2016).

The present study revealed that Scaly-breasted Munia always moved as small flocks along with other birds and followed communal roosting and foraging. They preferred *Saccharum officinarum*, *Saccharum spontaneum* (Poaceae), *Typha angustifolia* (Typhaceae), *Azadirachta indica* (Meliaceae), *Lantana camara* (Verbenaceae), *Vachellia nilotica*, *Prosopis juliflora* (Fabaceae), and overhead power transmission lines as roosting sites. Observation on 20 foraging flocks revealed that the individuals of Scaly-breasted Munia always moved with Baya Weavers, Streaked Weavers, Indian Silverbills, White-rumped Munia, Tricolored Munia, and Red Avadavat. It was observed that Scaly-breasted Munia had the habit of moving with associate birds for foraging thrice a day. The flocks moved out of roosting sites between 0615 and 0630 h, 1030 h, and 1130 h and between 1600 h and 1730 h daily for foraging on paddy *Oryza*

*sativa* (Poaceae) and seeds of grasses. The grasses foraged by birds were identified as *Eleocharis attenuata*, *Fimbristylis* sp., *Eragrostis japonica*, *Echinochloa* sp., *Chrysopogon zizanioides*, *Setaria pallidifusca*, *Paspalidium geminatum* (all Poaceae), and a reed *Typha angustifolia*. In the present study, individuals of Scaly-breasted Munia were found foraging on seeds of grasses as stated by Mehta (1997). They forage on paddy when it is at the milky and unripe seed stage. Some individuals targeted spilled, moist paddy grains on the harvested fields as well.

The mixed communal roosting consisting of different species serves as the centre for the communication of information regarding the location of food sources, and exchange of warning signals about the approach of any predators (Zahavi 1971; Gadgil 1972; Ward & Zahavi 1973; Gadgil & Ali 1976). In the present study area, flocks containing individuals of Scaly-breasted Munia, Streaked Weaver, Baya Weaver, Indian Silverbills, Tricolored Munia, White-rumped Munia, and Red Avadavat were found roosting and foraging collectively without any interspecific competition among them over sharing of common food and roosting sites (Images 1a–c).

In the present study, a solitary nest was observed in the thick crown of lemon tree *Citrus limon* (Rutaceae). A ball-shaped nest with lateral entrance facing eastwards was found at a height of 3 m above the ground. The nest was made up of leaf blades of grasses and fibres of *Typha angustifolia*. No



other nests were observed in the nearby trees. Many birds were observed carrying nest materials to the *T. angustifolia* reeds grown in standing water (Image 1d). It was not possible to enumerate and study the patterns of nest construction in the thick reeds due to distance from edges of water bodies, inaccessibility, and depth of water. It shows that the birds used *T. angustifolia* reeds as nesting sites. It further indicates that the reed beds have become a potential breeding ground for this species due to the availability of nearby paddy crops and grasslands.

During the present study, 212 individuals of Scaly-breasted Munia were documented. Here, the birds followed mixed communal roosting and foraging. Apart from paddy, they consumed seeds of various grass species. A solitary nest was observed on lemon tree and the birds used *T. angustifolia* reeds as nesting species in the studied wetland areas. Harvesting of roosting plants/grass/trees would result in habitat loss to the species. In spite of rapid urbanization, industrialization, increasing human populations, habitat destruction, and increasing areas of cultivation of grain crops, the wetlands adjacent to the reservoir provides habitat to considerable populations of the Scaly-breasted Munia. A special management plan could be devised to protect the wetlands in the areas.

#### Acknowledgements

I thank D. Balaji (Mailam), K. Sriram (Rettanai), and A. Giridharan (Minnal) for their assistance in data collection and photography.

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#### M. Pandian

No. F1901, Taisha, Natesan Nagar West, Virugambakkam, Chennai, Tamil Nadu 600092, India.  
Email: pandian.m14@gmail.com.

**Citation: Pandian, M. (2022).** Study on Scaly-breasted Munia around the wetlands of Veedur, Tamil Nadu, India. *Bird-o-soar* #172, In: *Zoo's Print* 37(7): 31–34.