

Foraging behaviours of Baya Weaver *Ploceus philippinus*, during non-breeding seasons in northern Tamil Nadu, India

Baya Weaver *Ploceus philippinus* (Linnaeus 1766) (Aves: Passeriformes: Ploceidae) is distributed throughout India and most of Southeast Asia (Ali et al. 1957). The IUCN Red List of Threatened Species classifies *Ploceus philippinus* under organisms of 'Least Concern' (Birdlife International 2016). They are social, gregarious, polygamous, colonial nesters with an architectural genius for building intricate and pendant nests. In India, the breeding season is from May to November (Ali & Ripley 1987; Rasmussen & Anderton 2005). In general, *P. philippinus* select a variety of trees for nesting, but prefer tall, unbranched trunks and long-swaying foliage of palm trees that keeps away predators and provide convenient leaf strips for building nests (Davis 1974). During breeding season, the males moult into a yellow and brown nuptial plumage, but females remain pale brown. During non-breeding seasons both male and female are pale brown in colour (Ali & Ripley 1987). They are granivorous (Avery 1979) forming communal roosts on crops and hence considered agricultural pests (Gadgil & Ali 1975; Hamid Ali et al. 1976). Studies in various parts of the country have shown that they cause immense damage to paddy and other crops (Dhindsa & Toor 1980; Shyama 1997). All the above studies have come from states other than Tamil Nadu. Hence, I decided to take up a study on foraging behaviours of Baya Weaver during their non-

breeding season from five villages; two from Arakonam Taluk and three from Nemeli Taluk of Ranipet District.

Study Area and Methodology

Arakonam (13.077°N & 79.666°E) and Nemili (12.598°N & 78.515°E) taluks are situated in the eastern part of Ranipet district and 71km from Chennai. Ranipet District covers an extent of 2,234km² with a population of c. 1,210,000 (2011 census). The main occupations of the people are agriculture followed by weaving and employment as labourers in unorganized sectors. The major crops are paddy, jowar, bajra, ragi, pulses, groundnut, and vegetables. The minimum monthly mean temperature is 22.4°C and maximum is 34.1°C. The average annual rainfall in the district is 1000mm. (Figure 1).

With the assistance of informants (2) and land owners (2), I visited 30 villages covering the two taluks, identified five villages where flocks with sizeable number of Baya Weaverbirds occur and also where paddy is intensively cultivated. I visited each of these five village for three days consecutively, and counted the number of birds in each flock, number of visits to paddy crop, duration of foraging in each visit, roosting patterns and plants used for roosting. The observations were carried out from 06.00 to 18.00 hrs between December 2019 and March 2020. Number of birds in each flocks was counted

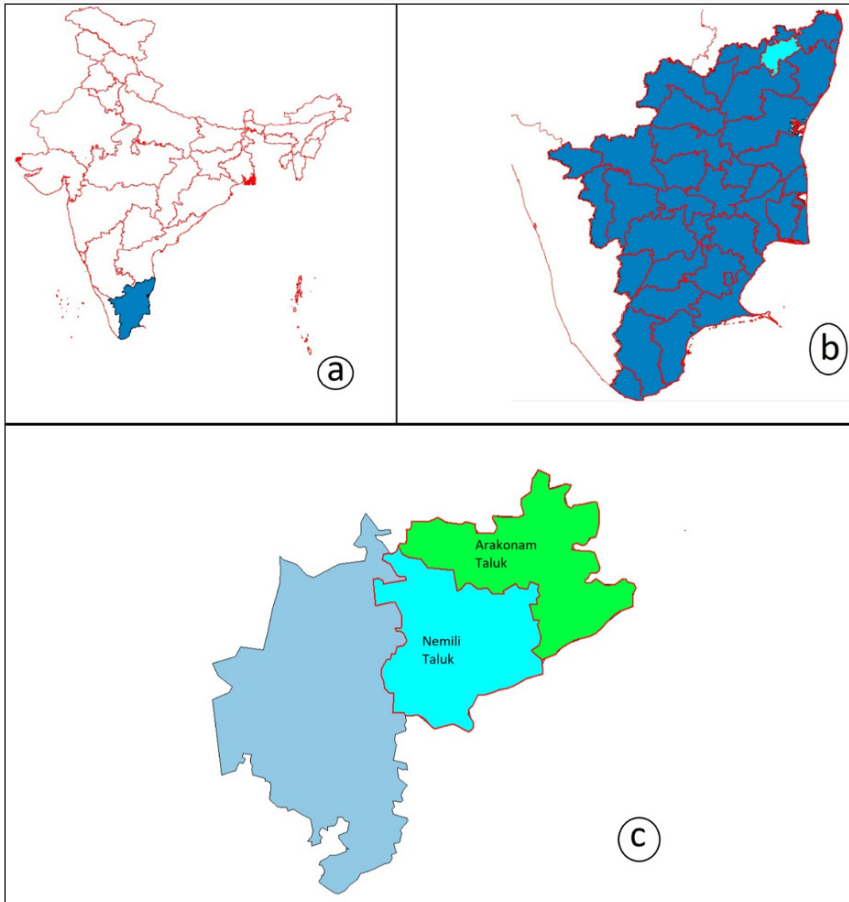


Figure 1. Study area map. a—India map showing Tamil Nadu | b—Tamil Nadu map showing Ranipet District, and | c—Ranipet District showing Arakonam and Nemili Taluks.

when they roosted on shrubs or herbs or power cables. Duration of foraging on paddy crop was observed using stop clock in smart phones. Photographs and videos were taken using Nikon P1000 digital camera.

Results and Discussion

A total of five flocks of Baya Weaverbirds consisting of 2130 individuals were counted in the study areas (Table1). As stated by Ali & Ripley (1987), there

exists no differentiation in plumage between male and female during the non-breeding season. They strictly followed communal roosting and foraging. The minimum flock size was 255 birds, while the maximum was 800. They moved as flocks from morning to evening and maintained the flock size throughout the day. On the contrary, during the breeding season (May–November) the males would moult into yellow plumage,

separate from the flock and move to nest-supporting plants for construction of nests followed by mating with selected counterparts. Pandian & Ahimaz (2018) have enumerated 4,476 Baya Weaverbirds on 270 nest-supporting plants i.e., an average of 16 birds per nest-supporting plant in rural Tamil Nadu.

It was observed that the flocks fly in close formations by performing different manoeuvres (Fig. 2a). The flocking behavior varies and the birds took various complicated formations to reach foraging as well as roosting sites. They commence their daily foraging between 06.00hr and 06.15hr in the morning and conclude their foraging before 18.00hr in the evening. Between 12.00hr and 15.00hr no foraging activities were observed and the flocks roost on nearby vegetations. Mean number of visits to paddy fields in the forenoon was 12 and 7 in the afternoon. The number of visits per day varies from a minimum of 18 to a maximum of 22. In each foraging visit, the flock stays on paddy crop only for a short span of time even when

there were no disturbances to them. They stay on the crop from 15 seconds to 25 seconds, glean paddy grains speedily and take sudden flight to adjacent places for temporary roosting. While, they stay on the crops for shorter duration, they roost on shrubs/herbs/power cables for longer duration. The duration of stay of these birds on paddy crops is shorter as compared to the duration spent roosting on shrubs/herbs/power cables. The reason could be disturbance caused by people by banging utensils or other means to chase them away from crops and the birds prefer to stay on the crops only for brief spells while foraging. The birds use five plant species such as *Lantana camara* L., *Prosopis juliflora* (Sw.) DC., *Canthium coromandelicum* L., *Pithecellobium dulce* (Roxb.) Benth., and *Abutilon indicum* (Link) Sweet. for roosting (Fig. 2b,e, f). They also roost on power cables forming a close pile. A maximum of 320 birds was observed on power cables in a single roost (Fig. 2c,d). As stated by Gadgil



Figure 2. Foraging behavior of Baya Weaverbirds. a—A flock moving to paddy field | b—Roosting on *Prosopis juliflora* | c—and | d—Roosting on power lines | e—and | f—Roosting on *Lantana camara* | g—and | h—Birds foraging on paddy crop. © M. Pandian.

Table 1. Details of flocks of Baya Weaverbirds foraging on paddy crop in Arakonam and Nemili Taluks.

	Name of the village	No. of flocks	No. of birds counted	No. of visits to crop per day	Average duration of foraging in each visit (seconds)
1	Guruvarajapet (13.128°N & 79.575°E)	1	800	20	20
2	Salai-Minnal (13.077°N & 79.558°E)	1	320	16	20
3	Melandurai (13.039°N & 79.642°E)	1	370	22	15
4	Palayapalayam (13.045°N & 79.504°E)	1	255	18	20
5	Melakadu (13.042°N & 79.615°E)	1	385	19	25
	Total	5	2130	95	20

& Ali (1975) the habit of communal roosting may help them to communicate about source of food and protection from predators.

The present study reveals that a large flock containing few hundred individuals continuously visiting paddy crops before harvest and gleaning grains from the spikes cause considerable loss to the farmers and hence it matches with the observations of Dhindsa & Toor (1980) and Shyama (1997). Further quantitative study is required to estimate the exact damage caused to grain production per hectare by this bird.

Conclusion

The present investigation confined to a small geographical region (five villages) containing 2,130 birds reveals that the area has an enormous potential to support significantly high populations of *P. philippinus* during the non-breeding period and also cause considerable damages to paddy crops. Based on my observations the following measures have been proposed for securing the habitat for these birds.

- (a) A special management plan could be devised for the area, considering the anthropogenic and natural stresses that the habitat is currently subjected to.
- (b) Local community, particularly land holders, and agricultural workers, should be sensitized to understand the need to preserve the precious populations of Baya weaverbirds.
- (c) A detailed systematic survey on the population status, flocking behaviours and impact of this bird on the paddy crops covering the entire Ranipet District may be

carried out to help in drafting an action plan to conserve the populations of *P. philippinus*.

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Acknowledgements: I thank D. Balaji (Villupuram), S. Kamarajan (Minnal), and V. Sumathi (Chennai) for assistance in data collection and A. Giridharan (Minnal) for help with data analysis and photography.

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Citation: Pandian, M. (2020). Foraging behaviours of Baya Weaver *Ploceus philippinus*, during non-breeding seasons in northern Tamil Nadu, India. *Bird-o-soar* #50, In: *Zoo's Print* 35(6): 29–32.