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RESEARCH NOTE

An ecosystem service to a horticultural farm by the spotted owlet, *Athene brama* (Temminck)

ABRAHAM VERGHESE*[1], C. B. SOUMYA[2] and S. DEVI THANGAM[3]

[1]Former Director, ICAR-National Bureau of Agricultural Insect Resources, Bengaluru - 560024, India
[2]G P S Institute of Agricultural Management, Peenya, Bengaluru
[3]MES College of Arts, Commerce and Science, Malleswaram, Bengaluru - 560003

***E-mail:** abraham.avergis@gmail.com

ABSTRACT: The services rendered by birds to horticultural ecosystems in terms of pest suppression, pollination and scavenging are of immense value. This paper reports the ecosystem serivicers by the spotted owlet**,** *Athene brama* (Temminck) to a horticultural form in Bengaluru. The study depicts the significant role of owlet in checking the rodent population in orchards.

Keywords : Birds, ecosystem service, horticulture, owlet, rodents.

The ecosystem services rendered by birds to horticulture in terms of insectivory, pollination and scavenging are often overlooked. One of the reasons is the unawareness (or ignorance) of the role of birds. Another reason being the lack of connect between birds and man in time as diurnal birds are mostly active in the mornings and late evenings, and the farm operators who come in between, miss out on them. Further the activity and presence of nocturnal birds, like the spotted owlet (*Athene brama* Temminck) go unnoticed. The present observations are mostly the collation of birdwatcher's notes of the authors on the spotted owlet from in and around the city of Bengaluru.

The spotted owlet is common throughout India, and in Bengaluru city (12.9716° N, 77.5946° E) and outskirts where we kept a tab on it from the 1990's to 2020, the owls showed a declining trend. In an urbanized layout, the birds in four decades, declined completely. Consequently, the number of the rodent, *Bandicota bengalensis* (Gray and Hardwicke) increased. The lesser bandicoot *B. bengalensis* are found throughout India (https://indiabiodiversity.org/species/show/238540).

The documentation for Table 1 was done by foot (call and sight records) once a fortnight and range in blocks of five years interval were from the bird notes. The corresponding sighting of the lesser bandicoot (*B. bengalensis*) was also documented.

In 2016, we began to search for *A. brama* around and beyond the urban perimeters of the city. It was found that they were present mainly in farm lands with cultivation, especially where fruit and vegetables were grown.

In these rural areas, the population of the birds was comparatively lower (2-10 owlets in a stretch of 25-50 acres). In one farm, near Bangalore-Hassan highway, a group of 6 owlets were found roosting on a large tamarind (*Tamarindus indica* L.) tree in July 2018, while adjacent open farms, recorded no owlets. It was decided to survey the rodent scenario here, based on field burrows/ damage index/farmer interview. The observations were maintained till December 2019.

In the urban area, the disappearance of the owlet is mainly due to high powered street lamps, high rising apartments, and lack of open vacant lands which enable

Table 1. Weekly range of *A. brama* sighted in an urbanized layout (Indiranagar) of Bengaluru city

Year	Rangeof *A. brama*./evening (Up to 10 pm)	Range of *Bandicota*/ in one km stretch
1990-1995	7-10	0
1995-2000	3-5	4-9
2000-2005	1-2	11-14
2005-2020	0	18-32

Table 2. Presence/absence of rodents and owlet 2018-19

Location	No. of owlets	Presence of rodents	Remarks
Large farm (Bangalore-Hassan Highway)	6 -8 (at roost)	Absent	Roost available for owlet. No burrows or lesser bandicoot damage found
Small farms	0	Present	Small farms damage on cassava, water melons, etc Fresh burrows detected

Fig. 1. Day roosting by *A brama* (Photo by Dr C. B. Soumya)

the owlet to swoon on unwary rodents. Consequently population of lesser bandicoots increased. In fact, in a study in Pune, Pande *et al*. (2007) found that lesser bandicoot population is critical for the breeding of *A. brama*. The converse was true in present study, as urbanization limited roosting and nesting niches and foraging potential of *A. brama*. There was clear (indirect though) evidence of probable check on rodents by *A. brama*. In the absence of *A. brama* in small farm-stead, lesser bandicoot damage was reported/recorded (Table2). In the farm where six owlets were recorded, not a single lesser bandicoot was sighted or damage recorded.

It was evident that sustaining woody trees like tamarind (*T. indica*) trees and similar large woody trees (Fig.1) gives adequate nesting niches that will enable ecosystem service by *A. brama*, in terms of rodent control. However, urbanization with crowded high-rise buildings and lights affect the owlet negatively. Further, this owlet is a known insectivore (Ali and Ripley, 1983) which further enhances their ecosystem services to agriculture and hence calls for conservation and an appreciation of their beneficial roles.

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