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Research Article

OWLS AND OWLETS OF REHMANKHEDA FOREST, LUCKNOW, INDIA

***Daya Shanker Sharma¹, Ankit Sinha¹, Shivangi Mishra¹ and Amita Kanaujia^{1,2}**

¹Biodiversity and Wildlife Conservation Laboratory, Department of Zoology,
University of Lucknow

²Institute for Wildlife Sciences, ONGC Centre for Advanced Studies, University of Lucknow
Lucknow-226007, Uttar Pradesh, India

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ABSTRACT

Most owls are nocturnal birds of prey. This study was carried out in the Rehmankheda forest, which has an area of 1.325 sq. km and is situated 25 km from Lucknow city. This forest is a part of the Central Institute of Subtropical Horticulture. The aim of this study was to generate a list of owls found in dense forest of Rehmankheda. Point count method was adopted with limited distance. Out of eleven owl species found in Uttar Pradesh (Grimmett *et al.* 1999) six species of owls were found in Rehmankheda forest.

Key Words:

Owls, Rehmankheda, Lucknow, species, surveys, birds

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INTRODUCTION

Owls are birds of the Order Strigiformes, which includes about two hundred species of mostly solitary and nocturnal birds of prey typified by an upright stance, a large, broad head, binocular vision, binaural hearing, sharp talons, and feathers adapted for silent flight. Exceptions include the diurnal Northern Hawk-Owl and the gregarious Burrowing Owl. Owls hunt mostly small mammals, insects and other birds although a few species specialize in hunting fish. They are found in all regions of the Earth except Antarctica and some remote islands. Owls exhibit very sharp binocular vision and exceptional hearing ability. They vary in size from miniature owlets to giant owls. They are known for speed and efficient hunting. Birds of prey are a herald of wellness of environment (Das *et al.*, 2011).

Owls are divided into two families: the true owls or typical owls, Strigidae; and the barn-owls, Tytonidae. Owls can rotate their heads and necks as much as 270°. Sexual dimorphism is a physical difference between males and females of a species. Reverse sexual dimorphism is where females are larger than males and it has been observed across multiple owl species. The degree of size dimorphism varies across multiple populations and species, and is measured through various traits,

such as wing span and body mass. Overall, female owls tend to be slightly larger than males (Anonymous 4).

This study has been carried out in the Rehmankheda Forest which is located in Lucknow district. This paper is intended to assess the distribution of owls in dense forest of Rehmankheda.

Study Area

Rehmankheda forest is a part of the Central Institute of Subtropical Horticulture which comes under the aegis of Indian Institute of Horticulture, Bangalore. Rehmankheda is 25 km from Lucknow city (Anonymous 1). This forest occupies an area of 132.5 ha. Lucknow has a total of only 4.66 % of forest cover, which is much less than the state average of around 7% (Anonymous 3). Different varieties of mangoes, especially Dasherri, are grown in Malihabad adjacent to the city and a block of Lucknow district for export (Anonymous 2). The forest type in Lucknow district is mainly tropical dry deciduous, where Sal (*Shorea robusta*) predominates following Teak (*Tectona grandis*), Silver grey wood (*Termanalia tomentosa*), Bidi leaf tree (*Bauhinia racemosa*) (Das *et al.*, 2011).

The distance from the sea gives Lucknow an extreme continental climate with the prevalence of continental air

*Corresponding author: **Daya Shanker Sharma**

Biodiversity and Wildlife Conservation Laboratory, Department of Zoology, University of Lucknow

during major parts of the year. The summers in Lucknow are very hot and winters very cold. The temperature may rise up to about 46° C in summers, though the average temperature is around 38-39° C. There are about 4-6 days of heat wave when the maximum temperature of a day rises to 4-6° C above normal values. Though the winters are not bitterly cold on most of the days, the temperature may fall to 3-4° C for a few days in winters when the cold winds from the Himalayan region makes the winters chilly. The winters are also marked by mist and fog in the mornings. However, the sun is often seen in the afternoons (Anonymous 3. 2006).

entitled Birds of the Indian subcontinent, Compact handbook of the birds of India and An annotated checklist of the birds of the Oriental Region (Ali, S. and Ripley, S.D. 1987, Grimmett, R., Inskipp, C. and Inskipp, T. 1999, Inskipp, T., Lindsey, N. and Duckworth W. 1996).

RESULTS AND DISCUSSION

During the study period, 6 species of owls and owlets were found in the study area out of 11 species reported in the literature (Grimmett, R., Inskipp, C. and Inskipp, T. 1999).

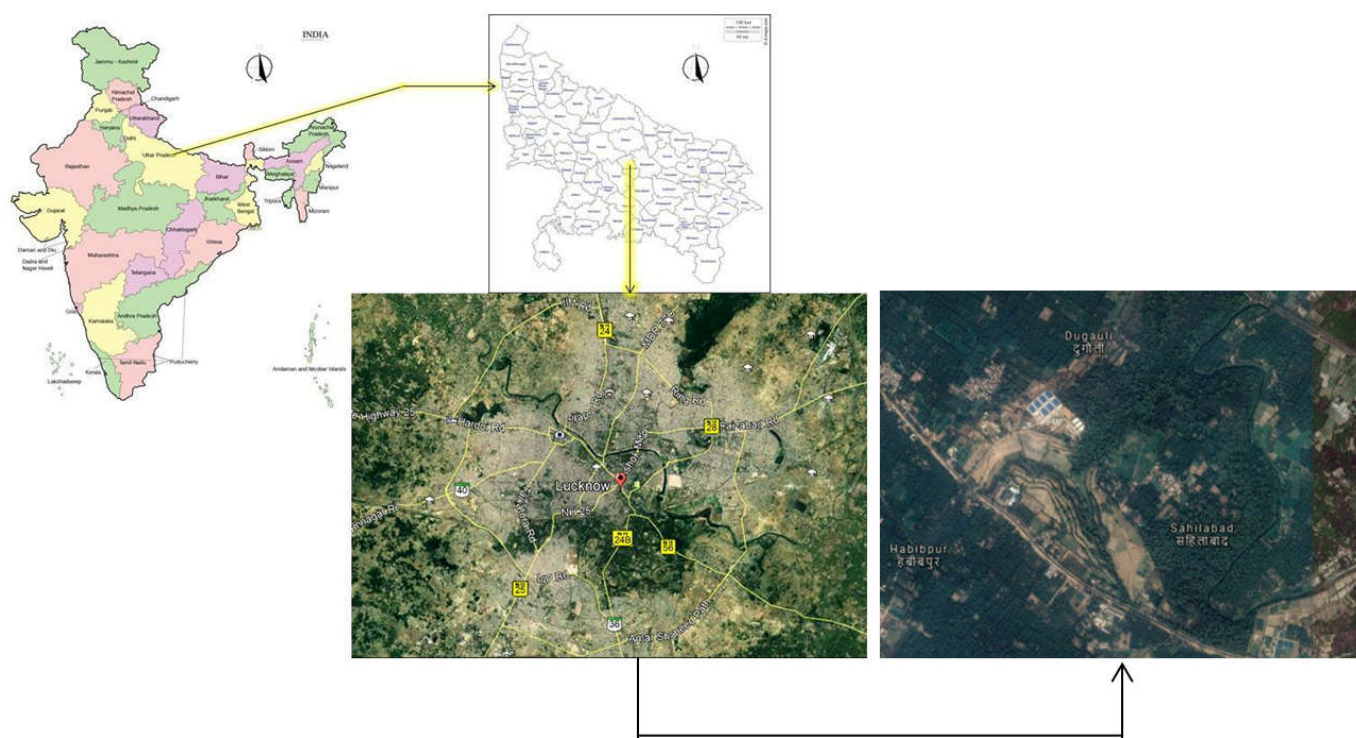


Fig 1 Map of Study Area: Rehmankheda, Lucknow

MATERIAL AND METHODS

Point count method was adopted with limited distance (Hutto, et. al. 1986, Bibbyet. al., 1992). Points were selected randomly to limit the error. Fifteen point counts were plotted; each was 100 m from the previous one. The time of sampling on each site was 15 minutes. Five points were surveyed each day and the remaining points were sampled the following days. Surveys were undertaken during dusk (from after sunset to about 20 min after dark) for determining owl presence and rough location of the nest hollow followed by daylight hour for the confirmation of location of nest hollow and photography of owls. Most of the surveys were conducted along the periphery of forests on calm nights from March to October when owls are most responsive. Broadcast surveys were also conducted during night to determine the presence of owls. Broadcast surveys consisted of playing breeding calls to elicit an owl response. Fewer field trips were undertaken during the rainy season.

Owl habitats have been surveyed throughout the forest, equipped with powerful flashlights, a DSLR Camera (Canon 70D) and binoculars (Bushnell 10x70x70). Care was taken to photograph each species in the daytime for confirmation of identity. Identification of owls was confirmed using the books

Hence, key factors affecting their ability to colonize an area or continue to live in an area would be sufficient food, suitable nesting and roosting sites. Owls feed mainly on rodents, reptiles and birds, while insects and fish form a smaller part of their regular diet (Anonymous 4). Since, this forest is surrounded by agricultural lands which apparently harbor sufficient food for owls, which led the owls to colonize this type of habitat.

Among the total species reported, spotted owlet (*Athene brama*) population was 43% following by Jungle owlet (*Glaucidium radiatum*) 30% while other species population was found comparatively low as barn owl comprises of 11 %, Mottled wood owl (*Strix ocellata*) 6%, Indian Scops owl (*Otus bakkamoena*) also 6 % and Indian eagle owl (*Bubo bengalensis*) 4%. (Fig.2)

Typically forest roosting species like Indian Scops Owl (*Otus bakkamoena*), Jungle Owlet (*Glaucidium radiatum*), Mottled wood owl (*Strix ocellata*), Spotted Owlets (*Athene brama*) and Barn Owl (*Tyto alba*) were recorded in Rehmankheda forest area. Indian Eagle owl (*Bubo bengalensis*) was also found at the outskirts of the forest area. The owls found in our study are

resident species in this forest. We recorded them in different seasons repeatedly.

residing in forests. Barn Owls also nest in tree cavities (Hassan *et al.*, 2006).



Barn Owl (*Tyto alba*)



Mottled wood owl (*Strixocellata*)



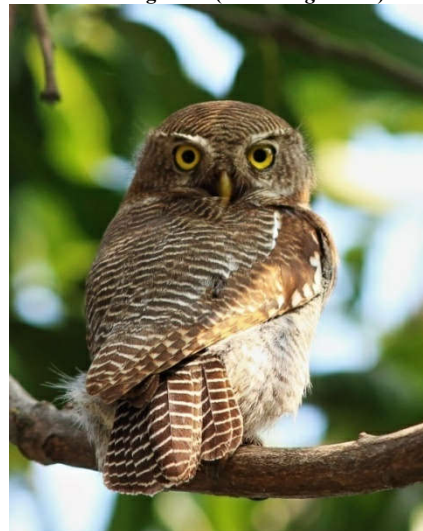
Indian Scops owl (*Otus bakkamoena*)



Indian Eagle owl (*Bubo bengalensis*)



Spotted owllet (*Athene brama*)



Jungle owllet (*Glaucidium radiatum*)

Photographs showing owls and owllets found in Rehmankheda forest

Nesting sites of Barn Owls, Mottled Wood Owls and Spotted Owllets were located. Most of the population of Barn Owl (*Tyto alba*) were recorded in urban areas but it also has been found

Ten species of owls have been recorded in Dudhwa National Park (Rahmani, A.R. and Salim, Javed, 1998). However, Dudhwa occupies a huge area 490.3 sq.km while six species of

owls have been recorded in dense forest of Rehmankheda (1.325sq.km) itself.

S.N.	Name of species	Scientific name	IUCN status (IUCN 2017-2)
1.	Barn Owl	<i>Tyto alba.</i> (Scopoli,1769)	Least concern
2.	Indian Scops Owl	<i>Otus bakkamoena</i> (Pennant, 1769)	Least concern
3.	Indian Eagle Owl	<i>Bubo bengalensis</i> (del Hoyo <i>et al.</i> , 1999)	Least concern
4.	Spotted Owlet	<i>Athene brama</i> (Temminck, 1821)	Least concern
5.	Jungle Owlets	<i>Glaucidium radiatum</i> (Tickell, 1833)	Least concern
6.	Mottled Wood Owl	<i>Strix ocellata</i> (del Hoyo <i>et al.</i> 1999)	Least concern

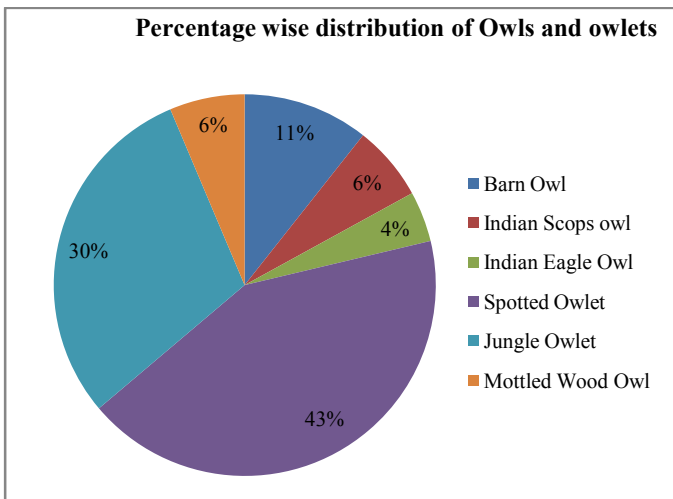


Fig. 2

This strongly suggests that Rehmankheda forest caters good food supply to owls due its agricultural dominating region, where a good population of small mammals reside.

Dusky Eagle Owl (*Bubo coromandus*) hides by day in dense foliage and is generally found in Mango groves and forest areas (Grimmett, R., Inskipp, C. and Inskipp, T. 1999). It is likely that populations of this species exist in the forest but we did not manage to locate them during this survey. The call of a Brown Hawk Owl (*Ninox sculata*) also had been heard once during a survey in Rehmankheda forest but we did not manage to photograph it. So, this species has not been added in our list, since for confirmation, further field surveys have to be undertaken.

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