

Spotted Owlet in Rajasthan: Distribution, Characteristics, and Conservation

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Abstract: *The Spotted Owlet (Athene Brama) is the most prominent owl species found in Rajasthan. The roosting ecology was observed and researched in Sikar. Different desert trees were used as perching sites. Seasonal variation was also observed in their behaviour. They switched their resting sites in summers and winters. They are widely visible in spring. Roosting sites were observed near the nesting sites on the College campus. The owlet was seen sleeping during the daytime and was in an inactive state. They are very active at night and constantly screech and scream. The present papers dynamically describes the ecology and conservation efforts to save the remaining owlets in Sikar.*

Keywords: Spotted Owlet, Roosting, Habitat, Ecology and, Conservation

1. Introduction

There are about 250 species of owls worldwide, and of these, about 36 species are found in India. Owls are nocturnal, predatory birds. All 36 owl species are protected under the Wildlife (Protection) Act, 1972, making their hunting, trade, or any other form of utilisation a punishable offence. TRAFFIC, the wildlife trade monitoring network, is a leading nongovernmental organisation working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development. TRAFFIC highlights 16 owl species that are most commonly recorded in the illicit wildlife trade which includes Spotted Owlet. The spotted owl (*Athene brama*) belongs to the Order *Strigiformes* and the family *Strigidae*. They are cavity nesters associated with agriculture feeding predominantly on insects and rodents.

They are recognised for their important biological control of small mammals and insect pests in crops. Therefore, understanding its ecology and enhancing its survival rate is important. There has not been any work done regarding nesting, roosting, or other behaviour in Sikar, Rajasthan. The present study aims to study and explore roosting ecology, characteristics, and conservation efforts related to the declining number of owlets.

Distribution

Spotted Owlet *Athene brama* is a nocturnal raptor, distributed throughout the Indian Subcontinent and abundant, especially, around human habitation. They have adapted to various environments such as agricultural fields, empty buildings in villages, towns and cities and any open area with trees enough to provide a proper roosting place. Both rural and urban environments contain large old ruins, trees, temples and buildings which are suitable for roosting and nesting of the Spotted Owlet. They usually remain inactive during the day, unless disturbed by anyone, and become active at dusk, and throughout the night and early dawn.

2. Materials and Methods

The present study involves the observation of ecological aspects of the Spotted Owlet. All the observations were carried out in the Shri Kalyan Rajkiya Kanya Mahavidyalaya. The city is the district headquarter and is now declared as a division situated in the eastern part of Rajasthan. It is the sixth most populous city in Rajasthan. It is located at 27.62°N, 75.15°E. The observations were made during the daytime, early morning and evening in the months from October 2022 to March 2023 using a binocular and camera.

Characteristics

According to the handbook issued by the WWF, "Owls of India," the spotted owl has a white facial disk with a spotted crown, ear tufts are absent, the beak is pale yellow, and underparts are white with short brown streaks whereas, the upperparts have which spots and legs are feathered with yellow claws.

It is a small crepuscular owl of 21 cm. When disturbed from their daytime site, they bob their head and stare at intruders mostly squirrels and birds. It lies in Schedule IV of the Wildlife Protection Act, 1972, Appendix II of the CITES and is least Concerned in the IUCN Red List.

Roosting

Different tree species (Like Gulmohar and Dak) were preferred over other tree species as a roosting site in the College Campus. Variation in roosting behaviour due to seasonal changes has also been observed which encompasses roosting time changes with the fluctuations in temperature. The roosting was observed during sunrise, during daytime and at sunset. Different structures including trees, crevices, empty windows and pipes were observed to identify the roosting sites of Spotted Owlet in the selected location of the College Campus.

3. Results and Discussion

College Campus observations were made during the study period of six months. As Spotted Owlet is nocturnal, so it

roosts during the daytime. During the non - breeding season Spotted Owllet was observed to utilize its nesting cavities as a roosting site. The height of the roosting trees was about 13 - 15 m (Gulmohar and Dak) above the ground level. Seasonal variation in roosting behaviour was also reported. Spotted Owllets were seen easily during the month of March when the average temperature was 30 °C whereas it was very less seen during January when the average temperature is around 10 °C.

Spotted Owllets are nocturnal and roost in the day under thick, shady vegetation, cavities in tree, human structures, including functional or non - functional irrigation wells and crevices rock cliffs as observed by Santhanakrishnan *et al* 2010. The findings of roost selection revealed that Spotted Owllet mainly depends on indigenous trees for roosting Santhanakrishnan *et al* 2011 b (Fig 1). The findings of the present work correlates with the worker regarding the dwindling preferences made by the spotted owllet in the College Campus.



Figure 1: Common Habitat of spotted owllet in College Campus

Apart from presence of cavities, these trees have thick foliage and the wide canopy provides protection from weather conditions like sunlight, rain and wind and also protects against disturbance from other bird species like crows and human beings during the day time (Fig 2).



Figure 2: Spotted Owllet Roosting during day time in College Campus

Spotted Owllets were seen shifting from one roosting site to another or spending more time in their cavities during the winter season as observed by Gaba and Vashishat 2018. This is because of low temperature during December - January and this activity was also observed in the present investigation.

Vanitha *et al* 2014 reported that the Spotted Owllets utilized roosting sites near to the agricultural lands in Tamil Nadu and Andhra Pradesh. In addition, this species is also found to roost near human habitation. Roosting in these areas would be considered appropriate to optimize the food intake because of more availability of food which in turn enhances the reproductive success of the species. Other reasons for close proximity to human habitation and agricultural fields could be the availability of proper trees and other roosting sites as reported by Patki 2014. It has also been associated with a dense canopy that provides more thermal cover than sparse canopies as observed by Ali 2015. The roosting preferences of spotted owllet in the present work shows correlation with the findings of these workers.

Moreover, in the present study, roost trees were located close to electric poles with light sources because they attract a variety of insects during night hours. Many times, Spotted Owllet was seen perching on electric power lines and catching insects. In the study of Gaba and Vashishat 2018, roost trees were located close to electric poles with light sources because they attract a variety of insects during night hours. This has also been observed during early sunrise when spotted owllets were seen sitting on electric poles (Fig 3).



Figure 3: Spotted owllet sitting on electric pole

Spotted Owllet preys mainly on invertebrates and medium - sized nocturnal mammals as has been reported by Mehta *et al* 2018. The diet of spotted owllets mainly consisted of insects followed by rodents. Insects preyed upon by spotted owllets were predominantly of orders Coleopteran, Orthoptera and Dermaptera and some unidentified orders which had been reported by Sunitha *et al* 2022 and Zade *et al* 2011. The observations of the present work shows similarity with the observations recorded by these workers.

Conservation Strategy -

Owls are commonly found in the illegal wildlife trade in India due to various superstitions and taboos attached to them. Despite the immense ecological role of owls in our ecosystem, these endangered birds are trapped in large numbers for sacrifice and use in multiple rituals often

promoted by local mystic practitioners.

The use of owl parts such as the skull, feathers, ear tufts, claws, heart, liver, kidney, blood, eyes, fat, beak, tears, eggshells, meat, and bones are commonly prescribed for ceremonial pujas and rituals, especially in smaller towns and villages.

The Spotted Owlet is reported to have the highest frequency of occurrence in illegal trade across the country (Ahmed 2010). The spotted owl is under Hence, in spite of it being listed under 'Least Concern' (IUCN 2012), *in situ* conservation of this species is essential due to its aforementioned role in the urban ecosystem (Kler *et al* 2013).

A few steps to conserve them is as follows -

- **Owl Identification Tools** - They are in the form of ID cards to enable law enforcement authorities to accurately identify 16 commonly found owl species in the illegal wildlife trades, a strategy needs to be made to secure their population from further dwindling. The new ID tools provide essential information related to the species' legal status, habitat, and distribution. They provide valuable tips on identifying the owls at the species level and highlight common threats. (Badola and Fernandes 2021).
- **Laws enacted for conservation** - All owl species found in India are also enlisted under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which restricts their international trade. Furthermore, Indian Law prohibits illegal trade and traffic of the Spotted Owlet.
- **Secure Roosting Sites** - Hanging wooden nesting boxes in the trees can also increase chances of survival. Owllet conservation poster - making and essay - writing activities can be conducted at the school level to educate children about the importance of owls. Special educational programmes should be conducted during festival times in rural areas to prohibit superstitious hunting. The Village panchayats can play a crucial role.
- **Reducing Deforestation** - It will keep their natural ecosystem intact. As owllets prefer tall shady trees this point can also help mitigate the dangerous effects of climate change. More emphasis should be on afforestation and greenery.

4. Conclusion

Due to deforestation due to rapid urbanization and industrialization, a considerable decline in survival rate has been noticed. Reduction in roosting sites has also decreased food availability for the spotted owl. Thus, it may be concluded from the above study that spotted owllets prefer sites that are located at a substantial height from man - made disturbances, these sites also reduce the chances of predators and enemies meddling with the eggs. There is a need to raise public awareness, strict implementation of laws of wildlife protection and illegal trade in wildlife, and restore natural habitat by afforestation will be few steps to conserve the wise raptorial bird. Protecting owllets will support ecosystem restoration and biodiversity.

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