



On usage of perches by the Spotted Owllet

The Spotted Owllet *Athene brama* (Temminck, 1821), although a common, native species in India (Ali & Ripley, 1983), is poorly studied (Kumar, 1985; Jadhav & Parasharya, 2003; Pande *et al.*, 2007). The present study examines the use of various perch substrates and perching heights by Spotted Owllets between 2007 and 2009 in Madurai District (9°30'N, 77°28'E), Southern India. Four habitats; rural, urban, riverbanks, and agricultural lands (transects of 4500m length and 50m width were used for each habitat) were selected and surveyed between 18:00 and 22:00 h for usage of perches. In each survey, perching substrate and perching height used (height on which Spotted Owllet perched) while foraging were recorded following Bell & Ford (1990). The perching heights were grouped into various class intervals: 0–2m, >2–4m, >4–6m, >6–8m, >8–10m, >10m. The chi-square test was applied for testing percent usage of perch substrates and perching heights between habitats.

In total, 1,660 perch data points of Spotted Owllets (411 observations from rural, 435 from urban, 388 from riverbanks, and 426 from agricultural lands) were recorded. The Spotted Owllets used seven different types of perch substrates for hunting prey; of these, utility of electric power lines (51.3%) and trees (28.6%) were more common than others (buildings 5.4%, shrubs 4.9%, compound walls 3.9%, fence posts 3.7%, and ground 2.2%). The height of substrates ranged from 1 to 25m: 2–9m in rural, 4–25m in urban, 1–9m in riverbanks, and 1–16m in agricultural lands. Although demonstrating considerable range, the majority (60%) of Spotted Owllets perched 6–8m above the substrate followed by 4–6m (14.9%), 2–4m (13%), 0–2m (6.9%), 8–10m (4.2%), and >10m (1%).

The usage of perch substrates among habitats was significantly varied ($\chi^2 = 135.8$; $df = 6$; $p < 0.05$). The Spotted Owllets perched predominantly on electric power lines in rural (57.6%), urban (51.9%), and agricultural lands (60.1%), while they mostly used trees (44.2%) on riverbanks. Other than electric power lines and trees the percent usage of other kinds of perch substrates also varied among habitats. The usage of fence posts (12.0%) was common in rural areas; buildings (17.3%) and compound walls (11.6%) in urban areas, and shrubs (16.5%) in riverbanks.

Usage of perching heights differed significantly among habitats ($\chi^2 = 86.8$; $df = 5$; $p < 0.05$). In all habitats they usually perched at a height of 6–8m level, but the percent usage ranged from 46.3% (in riverbanks) to 80.3% (in agricultural lands). The other dominant perching height preferred by Spotted Owllet was 4–6m (19.2%) in rural, 8–10m (25.2%) in urban, 2–4m (32.5%) in riverbanks and equally 4–6m and 8–10m (8.5%) in agricultural lands.

The Spotted Owllets in our study used man-made perches such as electric power lines (51.3%) rather than natural perches. The distribution of electric power lines are a common feature in our study area, especially around the human settlements and crop lands. These structures provide ready access and an unobstructed view. On many occasions, Spotted Owllets were found using electric power lines close to street light in use, as light sources attract variety of insects during night hours. Lammers & Collopy (2007) stated that avian predators are attracted to overhead utility power lines because they provide perches for various activities, including hunting prey. In the absence of electric power lines, Spotted Owllets preferred and utilized other perches such as trees, buildings, shrubs, compound walls and fence posts. However, the preference of perch substrates often varied depending upon habitat

types and availability and behaviour of prey during foraging.

The Spotted Owlets perched mostly at a height of 6–8m level (60%), which is highly optimum for efficient foraging of its prey species. High elevated perches may provide a larger field of view (Leyhe & Ritchison, 2004; Asokan & Ali, 2010) and increase the chances of detecting prey. Shafir & Roughgarden (1997) and Butler *et al.* (2005) stated that distance to prey is a key factor influencing the perching height selection in sit-and-wait predators. However, the nature and height of perches used by Spotted Owlets may be related to the type of prey captured, vegetation structure and availability of perches.

Further work should quantify the availability of perch substrates vs. use of perches by Spotted Owlets.

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