Nocturnal birds in the Eastern Ghats of Tamil Nadu

J. Patrick David & B. Vinoth

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J. Patrick David, 59/12, State Bank Staff First Colony, By-Pass Road, Madurai625010, Tamil Nadu, India. E-mail: *patdavid28@gmail.com*
B. Vinoth, Project Assistant, CareEarth Trust,No.3, 6th Street, Thillaiganga Nagar, Chennai61, Tamil Nadu, India. E-mail: *b.vinoth.ktm@gmail.com*
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Abstract

We recorded nocturnal bird species, as part of a larger project to document avian diversity, in the Eastern Ghats of Tamil Nadu, from March 2012 to February 2015. This region has not been surveyed intensively before, except for the Vernay Survey in the late 1920's. We recorded nocturnal bird species at their roosting sites during the day, and in the night we identified them by their calls. In total, we recorded 12 species of nocturnal birds. This included nine species of owls, and three of nightjars.Most number of records were of the Spotted Owlet, Jungle Owlet, Indian Nightjar, and Jerdon's Nightjar. The Savanna Nightjar is reported for the first time from this area. These species were recorded from five types of habitat. Habitat loss due to expanding cultivation, wood cutting, cattle grazing, construction of resorts, and direct impacts, such as road kills, are threats to these species. Creation of awareness,and protecting existing habitats is essential for securing the long term survival of these enigmatic species.

Introduction

Forty-three species of nocturnal birds have been recorded in India, of which 32 are owls (Tytonidae, and Strigidae).The remaining are nightjars (Caprimulgidae), and frogmouths (Podargidae) (Grimmett *et al*. 2011). In peninsular India, 22 species have been recorded (Grimmett *et al*. 2011), of which, some species live close to human habitation, and play an important role in controlling agricultural pests, and insects (Neelnarayanan *et al*. 1999; Pande & Dahanukar 2011).

Understanding the distribution of, and habitat useage by these nocturnal species is essential to decipher their habitat requirements, and plan conservation strategies. This has been done to a certain extent for the forest owls in the Western Ghats of Kerala, and Tamil Nadu (Jayson & Sivaram 2009). As a first step towards such an exercise in the Eastern Ghats of Tamil Nadu (hereafter EGTN) we documented nocturnal bird species, and their habitats, in EGTN, and the adjoining plains. Nocturnal bird records from EGTN are either old (Whistler & Kinnear 1935a,b), or are simply a part of a bird checklist, without any further information on their habitats (Vasanth 1990; Karthikeyan 1996; Daniels & Saravanan 1998; Kalaimani 2011; Tom & Praveen 2014; Chandrasekaran & Kumaraguru, *undated*). Nocturnal birds are not usually given the same attention as diurnal birds. This might be, primarily, due to our inability to see in the dark, or we feel threatened at night by wild animals in the wilderness, or a general bias towards diurnal species, or a lack of familiarity with nocturnal species' calls (which is now changing). Our survey too was initially focussed on diurnal birds, but sighting nocturnal birds during the day encouraged us to attempt a full-fledged documentation of nocturnal species as well.

This documentation was part of a larger project to assess avian species diversity, and distribution in EGTN, funded by the Ministry of Environment, Forest and Climate Change. The survey was staggered over three years, from March 2012 to February 2015. In this short paper we provide a checklist of nocturnal species, compare them with past records, identify their habitats, and discuss conservation issues.

Study area

The Eastern Ghats in Tamil Nadu are disjointed hills in the north, north-eastern, north-western, and central parts of the state (Fig.1). The disjointed hills include the Yelagiri, Javvadu, Gingee, Chitheri, Kalrayan, Shevroy, Kolli, and Pachamalai hills, and the hills of Vellore, and Villupuram districts. These hills lie to the east of Stanley Reservoir (Mettur Dam), and are known here as the 'Eastern Cluster'. The Melagiris, in Krishnagiri District, and the forests of Dharmapuri, Erode, and Sathyamangalam forest division, lie to the north, and west of the reservoir, and are known as the 'Western Cluster'. The Sathyamangalam forest adjoins the main Western Ghats range, separated only by the Moyar River Valley. The hills south of River Cauvery were not covered during

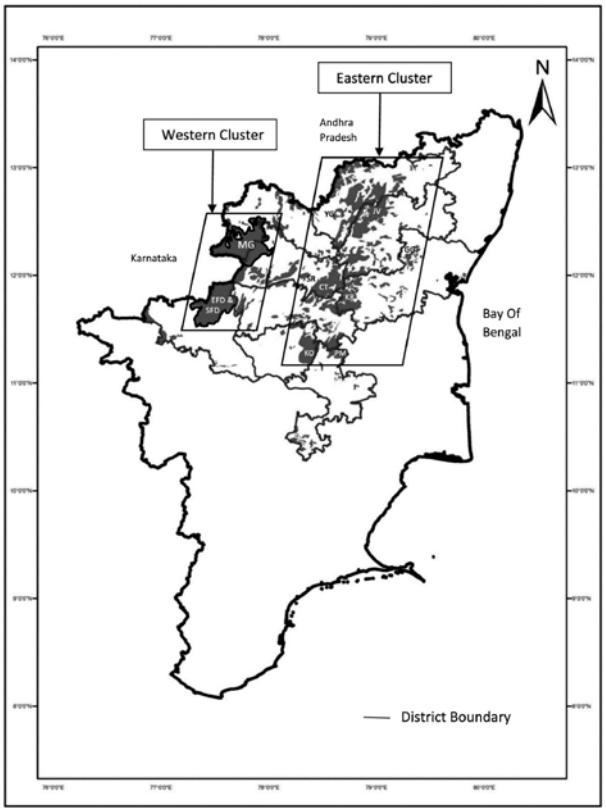

Fig. 1. Eastern Ghats of Tamil Nadu
Legend: YG–Yelagiri, JV–Javvadu, GG–Gingee Hills, SR–Shevroys, CT–Chitheri, KR–Kalrayan, KO–Kolli, PM–Pachamalai, MG–Melagiris, EFD–Erode Forest Division, SFD–Sathyamangalam Forest Division.

the survey as they are often considered to be outliers of the Western Ghats (Santharam *et al*. 2014), and hence not strictly a part of EGTN. Forests of EGTN have been heavily disturbed, and no longer exist as climax vegetation. Hence the landscape is a mix of remnant forest, plantation, cultivation, and habitation.

Methods

Due to their cryptic nature, nocturnal species are difficult to sight during the day. Even if they are sighted, identification is often difficult due to morphological similarity, e.g., nightjars. In such circumstances, their calls have helped to identify them (Kemp & Siriporn 2009; Pande & Dahanukar 2011; Koparde & Sirish 2013). We too followed a similar method, of listening to calls, to identify nocturnal birds, for the present study.

After completing our diurnal survey we identified suitable spots inside the forest, or at the village–forest edge to carry out our nocturnal documentation. Around 1700 hrs we reached a pre-determined spot, and sat their quietly, listened to bird calls till 1900 hrs. If there were no calls, we played back recorded calls using a mobile phone (Nokia C5-03), and speaker, to elicit a response. Before setting out on the survey, we familiarised ourselves with calls from standard websites, e.g., www.indiabirds.com, and www.xeno-canto.org. We also recorded bird calls in the field, on the mobile phone. Roosting nocturnal birds, spotted during the diurnal surveys, were recorded, along with a description of the habitat where they were seen (Table 1).

Table 1. Habitat traits

Habitat	Habitat trait
Rocky hillock	A chiefly bare hillock with huge rocks, boulders, and very little vegetation.
Habitation	Villages and cultivation
Plantation	Plantation of coconut, eucalyptus, red sanders.
Open scrub	An area covered with short vegetation (mostly thorny), with bare, or grass-covered ground.
Dense forest	A forest of either a dense undergrowth with short to medium height trees, or a forest with very little undergrowth but with good canopy cover (shaded).

Results & discussion

Species richness

We recorded 12 species during the survey: Three Caprimulgidae, and nine Strigidae (Table 2). This represents 28% of species recorded in India, and 55% recorded in peninsular India. Among the species recorded from peninsular India, only species restricted to the Western Ghats, and the northern Eastern Ghats remain unrecorded from these hills. These are the Great Eared Nightjar *Lyncornis macrotis*, Bay Owl *Phodilus badius*, Sri Lanka Frogmouth *Batrachostomus moniliger*, and Large-tailed Nightjar *Caprimulgus macrurus*.

The most widely recorded species were the Spotted Owlet *Athene brama*, Jungle Owlet *Glaucidium radiatum*, Indian Nightjar *C.asiaticus*, and Jerdon's Nightjar *C. atripennis*. Surprisingly, the Savanna Nightjar *C. affinis* had remained unrecorded from EGTN, till our survey.

Habitat use

Five types of habitats were used by nocturnal birds (Table 1; Fig. 2). Owls were recorded from all the five habitats, while nightjars were recorded only from dense forest, and open scrub. Most of the records of the Indian Eagle-Owl *Bubo bengalensis* were fromrocky hillocks, the habitat where it is generally found

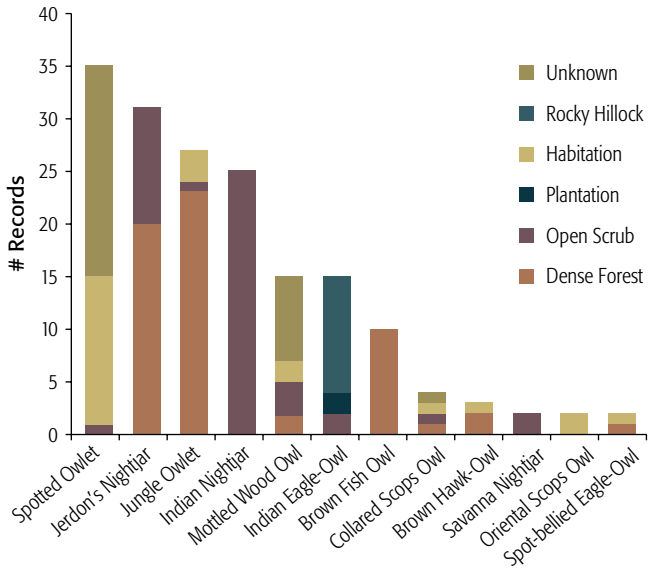

Fig.2: Habitat use by nocturnal bird species

(Grimmett *et al*. 2011). The two records of the Savanna Nightjar were from open scrub covered with grass.

More than 80% of the records of Jungle Owlet, and Brown Fish Owl *Ketupa zeylonensis* were from dense forest. Infact, all the records of Brown Fish Owl were from dense forest, indicating its preference for riparian vegetation. Another forest specialist is the Spot-bellied Eagle Owl *B. nipalensis*. Though one of the records was from a habitation, it was very close to dense forest. Most of the records of the Jerdon's Nightjar were also from dense forest. However, all the records of its congener, the Indian Nightjar, were from open scrub.

Except for four species, Jerdon's Nightjar, Brown Fish Owl, Brown Hawk-Owl, and Jungle Owlet, most of the records of other species were close to human habitation. Since much of the natural habitat of EGTN has been denuded, with drastic conversion of natural forests into cultivation, and habitation, our sampling has an inherent bias of being from close to human habitations. However it is gladdening that several species are resilient, adapt to changing landscape, and are still persisting in the available natural habitat. We do not have prior data on bird densities to compare trends. However, if there has been a decline, it was not catastrophic, and did not wipe out species. Future analysis of landscape level changes, of vegetation, and habitat use by nocturnal birds, will throw more light on the ability of species to adapt to changes in land cover. This exercise should be carried out for the entire Eastern Ghats.

Past and present records

During the Vernay Survey in EGTN (Whistler & Kinnear 1935a,b), eight species of nocturnal birds were recorded. Three, which were not recorded by that survey, were found to be widespread during our survey: Indian Nightjar, Mottled Wood Owl *Strix ocellata*, and Jungle Owlet. The Spot-bellied Eagle Owl, was recorded by the Vernay Survey in the Shevroys. We recorded it from Erode, and Dharmapuri forest division on the western side. However there is a strong possibility that it could occur in the Tirthamalai Range, as a similar sounding call was recorded near the forest guest house, but the recording was subsequently lost. The Brown Wood Owl *Strix leptogrammica* was recorded during the Vernay Survey only

Table 2. List of nocturnal birds recorded in EGTN (including past records)

Common Name	Scientific Name	# Sites recorded (present survey)	Past records
Grey Nightjar	*Caprimulgus indicus*	0	Shevroys (Karthikeyan 1996), and Kolli (Daniels & Saravanan 1998)
Jerdon's Nightjar	*Caprimulgus atripennis*	31	Chitheri (Whistler & Kinnear 1935a), Kolli (Daniels & Saravanan 1998)
Indian Nightjar	*Caprimulgus asiaticus*	25	No records
Savanna Nightjar	*Caprimulgus affinis*	02 (Shevroys and Pachamalai foothill)	No records
Brown Hawk Owl	*Ninox scutulata*	03 (Chitheri, Biligundlu and Hogenakkal)	No records
Jungle Owlet	*Glaucidium radiatum*	27	Kolli (Daniels and Saravanan 1998), Shevroys (Karthikeyan 1996)
Spotted Owlet	*Athene brama*	35	Shevroysand Kurumbapatti (Whistler & Kinnear 1935b), Kolli (Daniels & Saravanan 1998)
Oriental Scops Owl	*Otus sunia*	02 (Kolli, Koil Natham)	Mr. Daly collected eggs from Shevroys (Whistler & Kinnear 1935b)
Collared Scops Owl	*Otus bakkomaena*	04 (Yelagiri, Kolli, Pachamalai. Pachamalai foothill)	Shevroys (Karthikeyan 1996)
Mottled Wood Owl	*Strix ocellata*	15	Shevroys (Karthikeyan 1996)
Brown Wood Owl	*Strix leptogrammica*	0	Specimen in Chennai museum from Shevroys (Whistler & Kinnear 1935b)
Indian Eagle Owl	*Bubo bengalensis*	15	Tirthamalai (Whistler & Kinnear 1935b)
Spot-bellied Eagle Owl	*Bubo nipalensis*	02 (Kanniamman koil, Tamaraikarai)	Shevroys (Whistler & Kinnear 1935b)
Brown Fish Owl	*Ketupa zeylonensis*	10	Chitheri (Whistler & Kinnear 1935b)

Note: Biligundlu, and Hogenakkal are in the Cauvery River's riparian tract. Koil Natham, and Tamaraikarai are in Erode Forest Division, and Kanniamman Koil is in Dharmapuri Forest Division.

from the Shevroys. We did not carry out a nocturnal survey at high altitudes in the Shevroys, where the species is likely to occur, due to inclement weather.

Four species of nocturnal birds have been reported in the past from Shevroys (Karthikeyan 1996), and three from the Kolli Hills (Daniels & Saravanan 1998). An interesting species recorded by those surveys was of the Grey Nightjar *C. indicus*. The Grey Nightjar has not been reported widely from outside the Western Ghats, i.e., from within peninsular India, and was not recorded during our survey either. The Brown Hawk Owl, which was recorded at Chitheri during the present survey, was not reported by the Vernay Survey. The species was also recorded along the Cauvery's riparian tract in Hogenakkal, and Biligundlu during the present survey. The Savanna Nightjar *C. affinis* was recorded at a couple of sites during the present survey. There are no past records of this species, and recent surveys in the Melagiris (Tom & Praveen 2014), and Sathyamangalam forest division (Chandrasekaran & Kumaraguru undated) did not record the species.

Conservation issues

Our survey revealed that most of the forest habitat has been taken over for cultivation, and habitation. There was large scale cultivation of tapioca on most of the hills. Coffee plantations are abundant in the Shevroys and the Kolli Hills. Other crops cultivated were paddy, sugarcane, pineapple, and banana. Resorts are everywhere in the Shevroys and the Kolli Hills. Direct disturbances /threats to these species were also evident in the form of road kills (two instances of road kills were recorded in the foothills of Pachamalai, and the Shevroys), wood-cutting, and cattle grazing. Therefore there is an urgent need to protect the existing habitats by regulating the expansion of cultivation, and construction of resorts. The creation of awareness amongst the local people, about the presence, and value of these species, is also necessary to prevent wood cutting, and cattle grazing.

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