

An observation on the occurrences of Rufous-throated Wren-Babbler in Darjeeling Hills, India

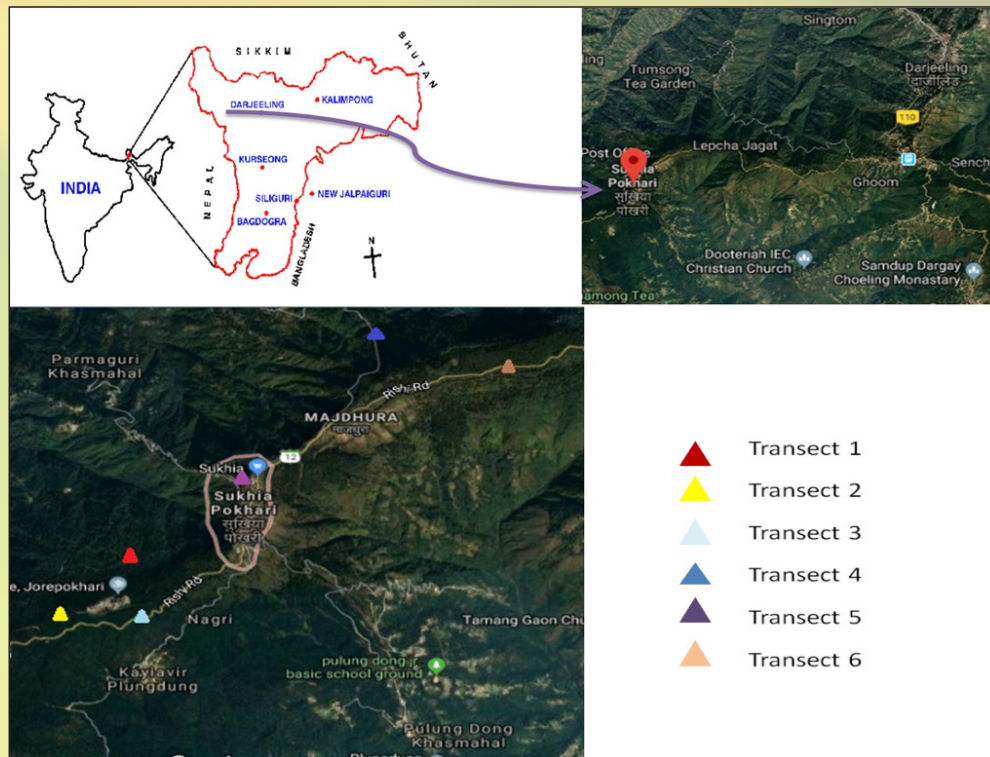
The Rufous-throated Wren-Babbler *Spelaeornis caudatus* (Blyth, 1845), an endemic species of the eastern Himalaya, was reported from Darjeeling in 1845 by Edward Blyth. It has a distribution range that extends from eastern Nepal to Arunachal Pradesh (Rasmussen & Anderton 2005). Its altitudinal range extends from 1,500–2,500 m; occasionally up to 3,100m (IUCN 2016), and has been categorized as 'Near Threatened' (BirdLife International 2017).

The bird is a silent skulker and inhabits moist dense broadleaved forest among thick undergrowth, especially ferns, mossy rocks, and fallen trees in narrow gully (Grimmett et al. 1998). There are no species-specific studies on it except for a first-time record (Rahut 2013) and mentions of its presence (Rangini et al. 2014).

Jorepokhri Salamander Sanctuary is situated in



(a) Adult (b) juvenile Rufous-throated Wren-Babbler *Spelaeornis caudatus*.



Map of the study area showing respective transects.

Table 1. Observations noted during visual encounters of Rufous-throated Wren-Babbler.

No. of sighting	Time	Flock size	Flock composition	Canopy level	Activity	Locality (Coordinates)	Vegetation type
1	0700 h	Moderately sized flock (Visually encountered 4)	Single species	Ground	Foraging	27.1656° N 88.2769° E	Among the weeds and grass (<i>Hydrocotyle javanica</i>) on the forest floor
2	0706 h	Visually encountered 1	Mixed flock	0.3 m above the ground	Foraging	27.0022° N 88.2858° E	Under growth of <i>Polygonum molle</i> and <i>Rubus</i> sp

Table 2. Encounter rate calculated as number of individuals sighted divided by the total km walked in its suitable habitat.

Transect no.	No. of individuals	Km walked	Encounter rate
1	5	56	0.089
2	-	42	
3	-	42	
4	-	21	
5	-	14	
6	-	56	

Sukhia Pokhri, a small town located at a distance of 11 km from Asia's highest railway station, Ghoom in Darjeeling (2,258m). Sukhia Pokhri with an average elevation of 2,194 m experiences warm temperate moist evergreen/deciduous forest type (Champion & Seth

Table 3. Details of transects walked.

Transect no.	Transect name	Transect length (km)	Start point	End point	Vegetation
1	Maney Bhanjyang Road	4	26.996447N 88.165274E	26.991459N 88.148677E	Dense vegetation with little sunlight penetrating the upper canopy, dense undergrowths dominated by trees of <i>Quercus</i> sp., <i>Alnus nepalensis</i> , <i>Castanopsis</i> sp., <i>Evodia</i> sp., <i>Michelia</i> sp. and abundance of undergrowths such as <i>Polygonum</i> sp., <i>Rubus</i> sp., <i>Urtica</i> sp., <i>Herpetospermum pedunculatum</i> and different species of ferns.
2	Jorepokhri Road	3	26.995877N 88.165712E	26.986921N 88.145305E	Dry coniferous type of vegetation with tall pine trees (<i>Cupressus cashmeriana</i> , <i>Pinus roxburghii</i> , and <i>Cryptomeria japonica</i>) and patches of dense cover of <i>Sinarundinaria maling</i> .
3	Simana Road	3	26.993662N 88.165712E	26.985642N 88.144680E	Moderately dense vegetation of pine trees as well as broad-leaved trees like <i>Castanopsis</i> sp., <i>Michelia</i> sp., <i>Acer campbellii</i> , <i>Persea</i> sp., <i>Symplocos</i> sp. with considerable densities of undergrowth of <i>Sinarundinaria maling</i> and <i>Eurya</i> sp.
4	Mim Road	1.5	27.006294N 88.172860E	27.014696N 88.181612E	Moist vegetation with patches of <i>Cryptomeria japonica</i> , young broad-leaved trees like <i>Alnus nepalensis</i> and very few large trees like <i>Castanopsis</i> sp. and <i>Quercus</i> sp. The density of trees is comparatively low with moderate density of undergrowth of <i>Rubus</i> sp. and various species of ferns.
5	Gurasey Parmen	1	27.000966N 88.166550E	27.002953N 88.168747E	Very scanty forest coverage with few large trees of <i>Rhododendron</i> sp. and some young trees like <i>Acer campbellii</i> , with a good density of undergrowths of <i>Glochidion acuminatum</i> , <i>Polygonum</i> sp. and ferns along with terrace farming on the hill slopes.
6	Darjeeling Road	4	27.007715N 88.175177E	27.012668N 88.196823E	Dense but dry pine forest (<i>Cryptomeria japonica</i>) and trees like <i>Symplocos</i> sp., <i>Prunus</i> sp., <i>Quercus</i> sp. and dense patch of <i>Cestrum</i> sp., <i>Tetrastigma rumicispermum</i> , <i>Rubus</i> sp. that make up the undergrowth on road sides.

1968). The area receives average annual precipitation of 2,547 mm; with the highest average precipitation, i.e., 781.5 mm in July. With an average temperature of 17.9°C, August is the warmest month and with 6.6°C, January is recorded as the coldest month of the year. The vegetation type in the different transects differ significantly in the ratio of floral species.

Six transects were studied seven times each between July and September 2017, of which transects 1, 2, and 3 were located in the protected area of Jorepokhri Salamander Sanctuary and transects 4, 5, and 6 were located in the adjoining forests. The transects were surveyed by walking at a speed of 1 km/hr recording all sightings of Rufous-throated Wren Babbler. Distances walked were noted to obtain a crude estimate of relative abundance (Bibby et al. 2000).

During the study period, the bird was sighted only twice. The bird was observed only in transect 1, with an encounter rate of 0.089/km. The trees that make up the top canopy of transect 1 reaches heights of up to 40 m from the ground. The dominant trees in the transect were *Quercus lamellosa*, *Alnus nepalensis*, *Q. fenestrata*, *Castanopsis hystrix*, *Acer campbellii*, and *Q. lineata*. The vegetation constituting the under-storey was *Polygonum molle*, *Rubus* sp., *Laportea terminalis*, *Urtica dioica*, and *Viburnum erubescens*.

The vegetation in transect 1 is similar to the habitat descriptions provided by (Ali & Ripley

1971; Inskipp & Inskipp 1991), i.e., the area has dense canopy and shrub undergrowth with moisture-laden forest floor. The bare minimum study of the vegetation of all the transects studied showed that the vegetation of different transects did not differ much in the species level but greatly differed in the ratio of occurrences of floral species in different transects. The very low encounter rate calculated by this study as 0.089/km even in its historically known suitable habitat justifies its conservation status as 'Near Threatened' and may get upgraded to 'Vulnerable' if the current rate of habitat loss persists.

The sighting of a juvenile in the study area suggests that they might be breeding in the area. Identifying crucial factors involved in nest-site selection is essential for implementing conservation measures for birds and their habitats (Gokula & Vijayan 2001). Moreover, this study also suggests possible range extension of the bird because it was described to breeding above 2,400 m (Ali & Ripley 2001) but the study area has an average altitude of 2,258 m.

This study has demonstrated the importance of relatively mature forest for the endemic birds and an urgent need to strengthen the protected area network by expansion and management. Since this species has a narrow ecological niche, it has become increasingly rare with a very small, rapidly declining population, largely as a result of widespread loss of its habitat (BirdLife International 2000). Activities aimed for

infrastructure development like construction of roads and towers for installation of high-tension lines has resulted in the massive felling of trees and canopy clearance threatening the very existence of this species in the area.

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