

Plumage description of the juvenile White-bellied Shortwing *Brachypteryx albiventris*, and a note on its phenology

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The White-bellied Shortwing¹ *Brachypteryx albiventris* is one of the endangered (BirdLife International 2010), endemic birds of the Indian Subcontinent. Until recently there was very little information on the biology of the species, with less than 100 sightings in the last 120 years (Robin & Sukumar 2002; Robin *et al.* 2006). However, recent studies have raised the level of information available on this species. Even so, the juvenile of the species has so far not been described (Rasmussen & Anderton 2005).

Here I characterise the plumage of the juveniles of this species based on data from four years of mistnet-based captures from 2004 to 2008. I have also tried to include some key descriptions to identify the juvenile of this species from that of other confusingly similar species.

This study was conducted at Grasshills National Park, in the Anamalai Hills of the Western Ghats, between 2004 and 2008. Birds were captured using mistnets placed on natural trails in the forest. These nets (12mx2m) were placed at a density of 10 nets per hectare in each plot. The nets were kept 'open' to capture birds, from the break of dawn (0550 to 0600 hrs) for five hours each sampling day. Each net was visited at least every 30 mins in a cyclic manner so that birds do not remain in the net for long. Birds were transferred from the net to individual, dark-coloured cotton bags till they were tagged with numbered metal bands. A total of 149 birds were captured during the study.

Ten of these were juveniles, which were captured from across the study period. For every individual captured, bill, and tarsus lengths were measured with a digital vernier calliper (Series 500, Mitutoyo Corp., USA), flattened chord wing, and tail, lengths with a wing rule (WING15ECON, Avinet Inc., USA), and body mass with weighing scales (30g, Pesola AG, USA) (De Beer *et al.* 2000; Ralph 1999).

Plumage & morphology

The plumage colour of a juvenile is slaty-blue, like an adult shortwing, but with mottled brown plumage. The amount of mottled brown on an individual varies (Figs. 1–3), perhaps indicating difference in age, and changes from more blotchy young individuals to more blue older individuals. The colour of the irides is grey in juveniles, and not the deep-brown, or reddish-brown colour irides of an adult bird.

A summary of key quantitative morphometric characters is provided in Table 1. Clearly there is variation in the size of juvenile birds, once again, perhaps depending on the age of the individual bird.



Fig. 1. White-bellied Shortwing juvenile with greyish iris. All photos: V. V. Robin.

Fig. 2. A highly mottled juvenile White-bellied Shortwing.

Fig. 3. A midly mottled White-bellied Shortwing juvenile.

Photos: V. V. Robin

1. A.k.a., White-bellied Blue Robin



Fig. 5. Landscape of Shola habitat where endemic birds including the White-bellied Shortwing are found.



Fig. 4. A juvenile Nilgiri Flycatcher *Eumyias albicaudata*.

It must be noted that a juvenile White-bellied Shortwing resembles a juvenile Nilgiri Flycatcher *Eumyias albicaudata* (Fig. 4) in its plumage colouration. Juveniles of both the species are slaty-blue. Nilgiri Flycatcher being the lighter of the two, with mottled brown plumage. The distinguishing character between these two species may be the longer tarsi of the shortwing, while the flycatcher has a more erect stance, and additionally, white at the base of its tail feathers, which latter is a known diagnostic

character of the Nilgiri Flycatcher. It can be reliably used to distinguish a juvenile as well.

Timing of breeding

Juvenile shortwings were captured across the year, in April (1 bird), July (4), September (1), October (1), and November (3). It may be noted that the sampling effort was not equal across different months. Hence these data cannot be interpreted across months, nor can they be used as an indicator of breeding intensity.

It does, however indicate that the timing of breeding is indeed variable in the species, spanning almost eight months of a year. This was also noted while conducting a study on the breeding song of this species. This result could also be possible from multiple breeding bouts, for example a peak during the south-western monsoon, and another with the retreating monsoon later in the year.

While this study provides some preliminary information on juveniles, and phenology of the White-bellied Shortwing, a more detailed study that examines individuals from the egg stage to adulthood will throw more light on the biology of the species. More intensive monitoring all through the year may also be required to understand phenology and its drivers of this threatened endemic.

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Photo: Divya Mudappa

Photo: V. V. Robin

Table 1. Morphometric measurements of the juvenile White-bellied Shortwing

	Right tarsus (mm)	Right wing (mm)	Tail (mm)	Bill (mm)	Weight (gm)
N	6	10	9	6	8
Mean	27.12	76.1	65.22	16.94	22.5
Max	29.4	78	86	17.8	25.75
Min	20.9	72	60	16	19